ALLIED MACHINE & ENGINEERING CORP.

2013
Allied Drilling Products Catalog

Represented by:

ALLIED MACHINE & ENGINEERING CORP.

Our focus on product excellence, service to the customer, respect for the individual, and competitive advantage, enable us to deliver outstanding results in a diverse range of manufacturing, production and process engineering industries.

As a result, Allied high performance tooling is helping countless businesses across the world to produce better products with greater accuracy, increased speed and higher quality.

Precision, performance and productivity are core features of Allied tooling and our commitment to innovation in all aspects of hole making technology means we continually set new industry standards in production efficiency, tool life, and manufacturing cost improvements.

This product catalog provides detailed information on products in a comprehensive, easy to use, and informative single source reference guide. However, we recognize that every company's needs are unique, which is why our customer service and technical support team are always available to provide help and advice, should you need it.

Whatever your need, Allied Machine & Engineering Corp. delivers high performance tooling on the cutting edge.

Allied Machine & Engineering *Corp*.
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⚠ WARNING

Tool failure during use can cause serious injury. Follow safety precautions and instructions that accompany machinery and all tools.

Wear safety glasses and appropriate safety equipment at all times when machinery is operating.

Table of Contents

SAFETY ALERT

Your safety and the safety of others is very important. This catalog contains important safety messages. Always read and follow all safety precautions.

This triangle is a safety alert symbol. It alerts you to potential safety hazards that can cause tool failure and serious injury.

When you see this symbol in the catalog, look for a related safety message that may be near this triangle or referred to in the nearby text.

⚠ WARNING There are safety signal words also used in the catalog. Safety messages follow these words.

WARNING (shown above) means that failure to follow the precautions in this message could result in tool failure and serious injury.

NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in injury.

NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit www.alliedmachine.com for the most up-to-date information and procedures.

Notes

OPENING DRILL®

Revolution Drill®

Opening Drill® / Revolution Drill® Reference

Item Detail

Revolution Drill® Body

R 34 X 22 - 150L

Style
R = Standard
SP = Stacked Plate

Revolution Drill® Series
34
36
38
42
44
46
48
52
54
56
58

Drill Ø Range (in)
1.875 - 2.00
2.00 - 2.20
2.20 - 2.40
2.40 - 2.60
2.60 - 2.80
2.80 - 3.00
3.00 - 3.20
3.20 - 3.40
3.40 - 3.60
3.60 - 3.80
3.80 - 4.00

Length to Diameter Ratio
1.0
2.2
2.5
3.5
4.5

Shank Informtion
150L - 1-1/2ø Lathe Shank
200L - 2.0ø Lathe Shank
40M - 40mm ISO 9766
50M - 50mm ISO 9766
CV40 - CV40
CV50 - CV50

Opening Drill® Body

OP1 - 1S - SS1.5

Opening Drill® Series
OP1
OP2
OP3
OP4

Drill Ø Range (in)
(2.00 - 2.50)
(2.50 - 3.00)
(3.00 - 4.12)
(4.12 - 5.62)

Length
1S - Short
1L - Long

Shank
SS 1.5
SS 2.0
40M
50M
HSK 63A/C
HSK 100A/C
CV 40
CV 50
ABS 63
BT 40
BT 50
DV 50

Revolution Drill® Insert & Opening Drill® Insert

OP - 05T308 - 1HHR

For Use With:
Opening Drill®
Revolution Drill®

Insert Specification

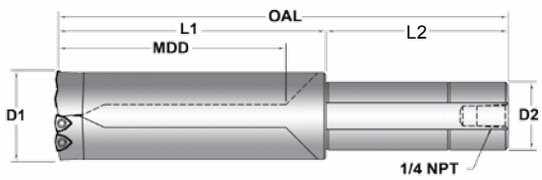
Substrate
C5 (P35) - Blank
C1 (K35) - 1
C2 (K25) - 2

Coating
P - AM300®
H - AM200®
T - TiN
A - TiAlN*
N - TiCN*
U - Uncoated*

Geometry
General Purpose - Blank
High Rake - HR

*Available as a non-stocked standard only.

Straight Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R34X22-150L	1.875"-2.00"	4-1/2"	5-3/8"	8-5/8"	1-1/2"	4"	1/4"	C34-FIX C34-ADJ	2	MS-17M-4	AS-16T9-4	❍
R34X35-150L		7"	7-7/8"	11-1/8"								❍
R34X45-150L		9"	9-7/8"	13-1/8"								❍
SP34X22-150L		4-1/2"	5-3/8"	8-5/8"				C34SP-FIX C34SP-ADJ				❍
Metric												
R34X22-40M	47,63mm - 50,80mm	114mm	136,6mm	206,6mm	40mm	70mm	1/4"*	C34-FIX C34-ADJ	2	MS-17M-4	AS-16T9-4	❍
R34X35-40M		178mm	200,1mm	270,1mm								❍
R34X45-40M		228mm	251,0mm	321,0mm								❍
SP34X22-40M		114mm	136,6mm	206,6mm				C34SP-FIX C34SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R36X22-150L	2.00"- 2.20"	5"	5-7/8"	9-7/8"	1-1/2"	4"	1/4"	C36-FIX C36-ADJ	2	MS-17M-4	AS-18T9-4	❍
R36X35-150L		7-3/4"	8-5/8"	12-5/8"								❍
R36X45-150L		10"	10-7/8"	14-7/8"								❍
SP36X22-150L		5"	5-7/8"	9-7/8"				C36SP-FIX C36SP-ADJ				❍
Metric												
R36X22-40M	50,80mm- 55,88mm	127mm	149,2mm	219,2mm	40mm	70mm	1/4"*	C36-FIX C36-ADJ	2	MS-17M-4	AS-18T9-4	❍
R36X35-40M		197mm	219,1mm	289,1mm								❍
R36X45-40M		254mm	276,2mm	346,2mm								❍
SP36X22-40M		127mm	149,2mm	219,2mm				C36SP-FIX C36SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R38X22-150L	2.20"- 2.40"	5-1/2"	6-3/8"	10-3/8"	1-1/2"	4"	1/4"	C38-FIX C38-ADJ	2	MS-17M-4	AS-18T9-4	❍
R38X35-150L		8-1/2"	9-3/8"	13-3/8"								❍
R38X45-150L		11"	11-7/8"	15-7/8"								❍
SP38X22-150L		5-1/2"	6-3/8"	10-3/8"				C38SP-FIX C38SP-ADJ				❍
Metric												
R38X22-40M	55,88mm- 60,96mm	140mm	162,0mm	232,0mm	40mm	70mm	1/4"*	C38-FIX C38-ADJ	2	MS-17M-4	AS-18T9-4	❍
R38X35-40M		216mm	238,1mm	308,1mm								❍
R38X45-40M		280mm	301,6mm	371,6mm								❍
SP38X22-40M		140mm	162,0mm	232,0mm				C38SP-FIX C38SP-ADJ				❍

*Metric Thread to BSP & ISO 7-1

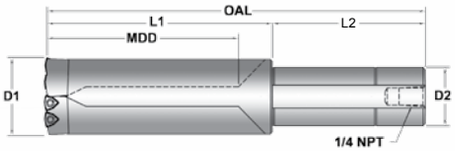
	Item Number, Coating and Availability - 10 Piece Packs					
Grade	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

Revolution Drill® (Stationary Tooling)

Straight Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R42X22-150L	2.40"- 2.60"	5-3/4"	6-3/4"	10-3/4"	1-1/2"	4"	1/4"	C42-FIX C42-ADJ	2	MS-19M-4	AS-18T9-4	❍
R42X35-150L		9-1/4"	10-1/4"	14-1/4""								❍
R42X45-150L		11-3/4"	12-3/4"	16-3/4"								❍
SP42X22-150L		5-3/4"	6-3/4"	10-3/4"				C42SP-FIX C42SP-ADJ				❍
Metric												
R42X22-40M	60,96mm-66,04mm	146mm	171,5mm	241,5mm	40mm	70mm	1/4"*	C42-FIX C42-ADJ	2	MS-19M-4	AS-18T9-4	❍
R42X35-40M		235mm	260,4mm	330,4mm								❍
R42X45-40M		298mm	323,9mm	393,9mm								❍
SP42X22-40M		146mm	171,5mm	241,5mm				C42SP-FIX C42SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R44X22-150L	2.60"-2.80"	6-1/4"	7-1/2"	11-1/2"	1-1/2"	4"	1/4"	C44-FIX C44-ADJ	3	MS-19M-4	AS-18T9-4	❍
R44X35-150L		10"	11-1/4"	15-1/4"								❍
SP44X22-150L		6-1/4"	7-1/2"	11-1/2"				C44SP-FIX C44SP-ADJ				❍
Metric												
R44X22-40M	66,04mm-71,12mm	159mm	191,0mm	261,0mm	40mm	70mm	1/4"*	C44-FIX C44-ADJ	3	MS-19M-4	AS-18T9-4	❍
R44X35-40M		254mm	285,0mm	355,0mm								❍
SP44X22-40M		159mm	191,0mm	261,0mm				C44SP-FIX C44SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R46X22-150L	2.80"-3.00"	6-3/4"	8"	12"	1-1/2"	4"	1/4"	C46-FIX C46-ADJ	3	MS-21M-4	AS-18T9-4	❍
R46X35-150L		10-1/2"	11-3/4"	15-3/4"								❍
SP46X22-150L		6-3/4"	8"	12"				C46SP-FIX C46SP-ADJ				❍
Metric												
R46X22-40M	71,12mm-76,20mm	172mm	203,0mm	273,0mm	40mm	70mm	1/4"*	C46-FIX C46-ADJ	3	MS-21M-4	AS-18T9-4	❍
R46X35-40M		267mm	299,9mm	369,9mm								❍
SP46X22-40M		172mm	203,0mm	273,0mm				C46SP-FIX C46SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R48X10-200L	3.00"-3.20"	3-1/4"	4-1/2"	9"	2"	4-1/2"	1/4"	C48-FIX C48-ADJ	3	MS-21M-4	AS-18T9-4	❍
R48X25-200L		8"	9-1/2"	13-3/4"								❍
SP48X10-200L		3-1/4"	4-1/2"	9"				C48SP-FIX C48SP-ADJ				❍
SP48X25-200L		8"	9-1/2"	13-3/4"								❍
Metric												
R48X10-50M	76,20mm-81,28mm	82mm	114,3mm	194,3mm	50mm	80mm	1/4"*	C48-FIX C48-ADJ	3	MS-21M-4	AS-18T9-4	❍
R48X25-50M		203mm	235,0mm	315,0mm								❍
SP48X10-50M		82mm	114,3mm	194,3mm				C48SP-FIX C48SP-ADJ				❍
SP48X25-50M		203mm	235,0mm	315,0mm								❍

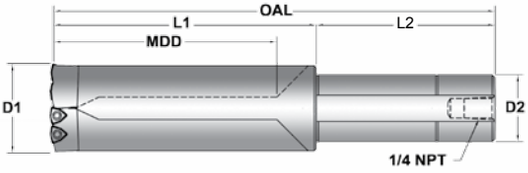
*Metric Thread to BSP & ISO 7-1

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

	Item Number, Coating and Availability - 10 Piece Packs					
Grade	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

Straight Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R52X10-200L	3.20"-3.40"	3-1/2"	5"	9-1/2"	2"	4-1/2"	1/4"	C52-FIX C52-ADJ	3	MS-19M-4	AS-18T9-4	❍
R52X25-200L		8-1/2"	10"	14-1/2"								❍
SP52X10-200L		3-1/2"	5"	9-1/2"				C52SP-FIX C52SP-ADJ				❍
SP52X25-200L		8-1/2"	10"	14-1/2"								❍
Metric												
R52X10-50M	81,28mm-86,36mm	89mm	127,0mm	207,0mm	50mm	80mm	1/4"*	C52-FIX C52-ADJ	3	MS-19M-4	AS-18T9-4	❍
R52X25-50M		216mm	254,0mm	334,0mm								❍
SP52X10-50M		89mm	127,0mm	207,0mm				C52SP-FIX C52SP-ADJ				❍
SP52X25-50M		216mm	254,0mm	334,0mm								❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R54X10-200L	3.40"-3.60"	3-3/4"	5-1/4"	9-3/4"	2"	4-1/2"	1/4"	C54-FIX C54-ADJ	3	MS-19M-4	AS-18T9-4	❍
R54X25-200L		9"	10-1/2"	15"								❍
SP54X10-200L		3-3/4"	5-1/4"	9-3/4"				C54SP-FIX C54SP-ADJ				❍
SP54X25-200L		9"	10-1/2"	15"								❍
Metric												
R54X10-50M	86,36mm - 91,44mm	95mm	133,4mm	213,4mm	50mm	80mm	1/4"*	C54-FIX C54-ADJ	3	MS-19M-4	AS-18T9-4	❍
R54X25-50M		229mm	266,7mm	346,7mm								❍
SP54X10-50M		95mm	133,4mm	213,4mm				C54SP-FIX C54SP-ADJ				❍
SP54X25-50M		229mm	266,7mm	346,7mm								❍

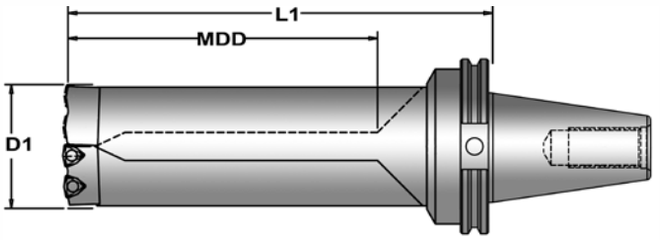
Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R56X10-200L	3.60"-3.80"	4"	5-3/4"	10-1/4"	2"	4-1/2"	1/4"	C56-FIX C56-ADJ	4	MS-21M-4	AS-18T9-4	❍
R56X25-200L		9-1/2"	11-1/4"	15-3/4"								❍
SP56X10-200L		4"	5-3/4"	10-1/4"				C56SP-FIX C56SP-ADJ				❍
SP56X25-200L		9-1/2"	11-1/4"	15-3/4"								❍
Metric												
R56X10-50M	91,44mm - 96,52mm	102mm	146,1mm	226,1mm	50mm	80mm	1/4"*	C56-FIX C56-ADJ	4	MS-21M-4	AS-18T9-4	❍
R56X25-50M		241mm	285,8mm	365,8mm								❍
SP56X10-50M		102mm	146,1mm	226,1mm				C56SP-FIX C56SP-ADJ				❍
SP56X25-50M		241mm	285,8mm	365,8mm								❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	OAL	Shank Dia. (D2)	Shank Length (L2)	Pipe Tap	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R58X10-200L	3.80"-4.00"	4"	5-3/4"	10-1/4"	2"	4-1/2"	1/4"	C58-FIX C58-ADJ	4	MS-21M-4	AS-18T9-4	❍
R58X25-200L		10"	11-3/4"	16-1/4"								❍
SP58X10-200L		4"	5-3/4"	10-1/4"				C58SP-FIX C58SP-ADJ				❍
SP58X25-200L		10"	11-3/4"	16-1/4"								❍
Metric												
R58X10-50M	96,52mm - 101,00mm	102mm	146,1mm	226,1mm	50mm	80mm	1/4"*	C58-FIX C58-ADJ	4	MS-21M-4	AS-18T9-4	❍
R58X25-50M		254mm	298,5mm	378,5mm								❍
SP58X10-50M		102mm	146,1mm	226,1mm				C58SP-FIX C58SP-ADJ				❍
SP58X25-50M		254mm	298,5mm	378,5mm								❍

*Metric Thread to BSP & ISO 7-1

① **Availability Codes**
❍ Stocked
▲ Non-Stocked

CV40 Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R34X22-CV40	1.875"-2.00"	4-1/2"	6-3/4"	C34-FIX C34-ADJ	2	MS-17M-4	AS-18T9-4	❍
R34X35-CV40		7"	9-1/4"					❍
R34X45-CV40		9"	11-1/4"					❍
SP34X22-CV40		4-1/2"	6-3/4"	C34SP-FIX C34SP-ADJ				▲

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R36X22-CV40	2.00"-2.20"	5"	7-1/4"	C36-FIX C36-ADJ	2	MS-17M-4	AS-18T9-4	❍
R36X35-CV40		7-3/4"	10"					❍
R36X45-CV40		10"	12-1/4"					❍
SP36X22-CV40		5"	7-1/4"	C36SP-FIX C36SP-ADJ				▲

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R38X22-CV40	2.20"-2.40"	5-1/2"	7-3/4"	C38-FIX C38-ADJ	2	MS-17M-4	AS-18T9-4	❍
R38X35-CV40		8-1/2"	10-3/4"					❍
R38X45-CV40		11"	13-1/4"					❍
SP38X22-CV40		5-1/2"	7-3/4"	C38SP-FIX C38SP-ADJ				▲

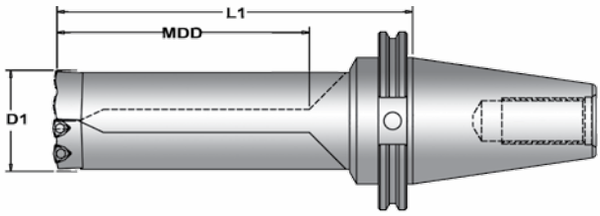
Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R42X22-CV40	2.40"-2.60"	5-3/4"	8-1/8"	C42-FIX C42-ADJ	2	MS-19M-4	AS-18T9-4	❍
R42X35-CV40		9-1/4"	11-5/8"					❍
R42X45-CV40		11-3/4"	14-1/8"					❍
SP42X22-CV40		5-3/4"	8-1/8"	C42SP-FIX C42SP-ADJ				▲

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

	Item Number, Coating and Availability - 10 Piece Packs					
Grade	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

CV50 Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R34X22-CV50	1.875"-2.00"	4-1/2"	6-3/4"	C34-FIX C34-ADJ	2	MS-17M-4	AS-18T9-4	❍
R34X35-CV50		7"	9-1/4"					❍
R34X45-CV50		9"	11-1/4"					❍
SP34X22-CV50		4-1/2"	6-3/4"	C34SP-FIX C34SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R36X22-CV50	2.00"-2.20"	5"	7-1/4"	C36-FIX C36-ADJ	2	MS-17M-4	AS-18T9-4	❍
R36X35-CV50		7-3/4"	10"					❍
R36X45-CV50		10"	12-1/4"					❍
SP36X22-CV50		5"	7-1/4"	C36SP-FIX C36SP-ADJ				❍

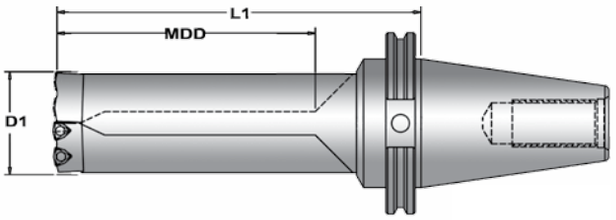
Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R38X22-CV50	2.20"-2.40"	5-1/2"	7-3/4"	C38-FIX C38-ADJ	2	MS-17M-4	AS-18T9-4	❍
R38X35-CV50		8-1/2"	10-3/4"					❍
R38X45-CV50		11"	13-1/4"					❍
SP38X22-CV50		5-1/2"	7-3/4"	C38SP-FIX C38SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R42X22-CV50	2.40"-2.60"	5-3/4"	8-1/8"	C42-FIX C42-ADJ	2	MS-19M-4	AS-18T9-4	❍
R42X35-CV50		9-1/4"	11-5/8"					❍
R42X45-CV50		11-3/4"	14-1/8"					❍
SP42X22-CV50		5-3/4"	8-1/8"	C42SP-FIX C42SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R44X22-CV50	2.60"-2.80"	6-1/4"	8-7/8"	C44-FIX C44-ADJ	3	MS-19M-4	AS-18T9-4	❍
R44X35-CV50		10"	12-5/8"					❍
SP44X22-CV50		6-1/4"	8-7/8"	C44SP-FIX C44SP-ADJ				❍

① **Availability Codes**
❍ Stocked
▲ Non-Stocked

CV50 Shank Revolution Drill® Series



Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R46X22-CV50	2.80"-3.00"	6-3/4"	9-3/8"	C46-FIX C46-ADJ	3	MS-21M-4	AS-18T9-4	❍
R46X35-CV50		10-1/2"	13-1/8"					❍
SP46X22-CV50		6-3/4"	9-3/8"	C46SP-FIX C46SP-ADJ				❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R48X10-CV50	3.00"-3.20"	3-1/4"	5-7/8"	C48-FIX C48-ADJ	3	MS-21M-4	AS-18T9-4	❍
R48X25-CV50		8"	10-7/8"					❍
SP48X10-CV50		3-1/4"	5-7/8"	C48SP-FIX C48SP-ADJ				❍
SP48X25-CV50		8"	10-7/8"					❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R52X10-CV50	3.20"-3.40"	3-1/2"	6-3/8"	C52-FIX C52-ADJ	3	MS-19M-4	AS-18T9-4	❍
R52X25-CV50		8-1/2"	11-3/8"					❍
SP52X10-CV50		3-1/2"	6-3/8"	C52SP-FIX C52SP-ADJ				❍
SP52X25-CV50		8-1/2"	11-3/8"					❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R54X10-CV50	3.40"-3.60"	3-3/4"	6-5/8"	C54-FIX C54-ADJ	3	MS-19M-4	AS-18T9-4	❍
R54X25-CV50		9"	11-7/8"					❍
SP54X10-CV50		3-3/4"	6-5/8"	C54SP-FIX C54SP-ADJ				❍
SP54X25-CV50		9"	11-7/8"					❍

Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R56X10-CV50	3.60"-3.80"	4"	7-1/8"	C56-FIX C56-ADJ	4	MS-21M-4	AS-18T9-4	❍
R56X25-CV50		9-1/2"	12-5/8"					❍
SP56X10-CV50		4"	7-1/8"	C56SP-FIX C56SP-ADJ				❍
SP56X25-CV50		9-1/2"	12-5/8"					❍

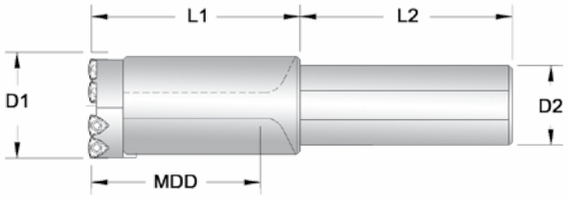
Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjustment Screw (4 Pack)	①
R58X10-CV50	3.80"-4.00"	4"	7-1/8"	C58-FIX C58-ADJ	4	MS-21M-4	AS-18T9-4	❍
R58X25-CV50		10"	13-1/8"					❍
R58X10-CV50		4"	7-1/8"	C58SP-FIX C58SP-ADJ				❍
R58X25-CV50		10"	13-1/8"					❍

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

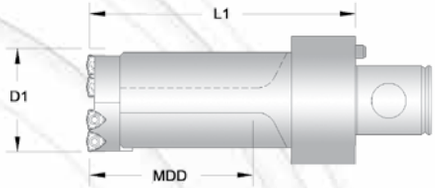
	Item Number, Coating and Availability - 10 Piece Packs					
Grade	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

Straight Shank Opening Drill® Series



	Part Number	Diameter Range (DI)	Max Drill Depth (MDD)	Body Length (LI)	Shank Diameter (D2)	Shank Length (L2)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
Straight Shank (Inch)	OP1-1S-SS1.5	2.00" - 2.50"	3-1/4"	4"	1-1/2"	4"	OP1-WC05	2	MS-13M-4	AS-10T9-4	❍
	OP1-1L-SS1.5		5-1/2"	6-1/4"							❍
	OP2-1S-SS1.5	2.50" - 3.00"	4-3/4"	5-1/2"	1-1/2"	4"	OP2-WC05	2	MS-15M-4	AS-10T9-4	❍
	OP2-1L-SS1.5		7-3/4"	8-1/2"							❍
	OP3-1S-SS1.5	3.00" - 4.12"	5"	6"	1-1/2"	4"	OP3-WC05	2	MS-15M-4	AS-12T9-4	❍
	OP3-1L-SS1.5		9"	10"							❍
	OP4-1S-SS2.0	4.12" - 5.62"	5"	6"	2"	4-1/2"	OP4-WC05	3	MS-15M-4	AS-14T9-4	❍
	OP4-1L-SS2.0		10-1/2"	11-1/2"							❍
Metric											
Straight Shank (Metric)	OP1-1S-40M	50,80mm - 63,50mm	82,55	101,60	40mm	70mm	OP1-WC05	2	MS-13M-4	AS-10T9-4	❍
	OP1-1L-40M		139,70	158,75							❍
	OP2-1S-40M	63,50mm - 76,20mm	120,65	139,70	40mm	70mm	OP2-WC05	2	MS-15M-4	AS-10T9-4	❍
	OP2-1L-40M		196,85	215,90							❍
	OP3-1S-40M	76,20mm - 104,65mm	127,00	152,40	40mm	70mm	OP3-WC05	2	MS-15M-4	AS-12T9-4	❍
	OP3-1L-40M		228,60	254,00							❍
	OP4-1S-50M	104,65mm - 142,75mm	127,00	152,40	50mm	80mm	OP4-WC05	3	MS-15M-4	AS-14T9-4	❍
	OP4-1L-50M		266,70	292,10							❍

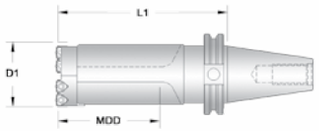
ABS Style Shank Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
ABS63	OP1-1S-ABS63	2.00" - 2.50"	3-1/4"	5-1/2"	OP1-WC05	2	MS-13M-4	AS-10T9-4	❍
	OP1-1L-ABS63		5-1/2"	7-3/4"					❍
	OP2-1S-ABS63	2.50" - 3.00"	4-3/4"	6-1/4"	OP2-WC05	2	MS-15M-4	AS-10T9-4	❍
	OP2-1L-ABS63		7-3/4"	9-1/4"					❍
	OP3-1S-ABS63	3.00" - 4.12"	5"	6-3/4"	OP3-WC05	2	MS-15M-4	AS-12T9-4	❍
	OP3-1L-ABS63		9"	10-3/4"					❍
	OP4-1S-ABS63	4.12" - 5.62"	5"	6-3/4"	OP4-WC05	3	MS-15M-4	AS-14T9-4	❍

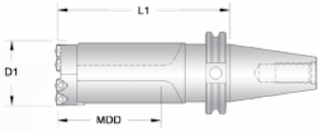
① **Availability Codes**
❍ Stocked
▲ Non-Stocked

CV40 Flange Opening Drill® Series



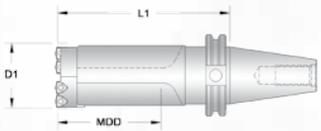
	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
CV 40	OP1-1S-CV40	2.00" - 2.50"	3-1/4"	5-3/8""	OP1-WC05	2	MS-13M-4	AS-10T9-4	❍
	OP1-1L-CV40		5-1/2"	7-3/8"					❍
	OP2-1S-CV40	2.50" - 3.00"	4-3/4"	6-7/8"	OP2-WC05	2	MS-15M-4	AS-10T9-4	❍
	OP2-1L-CV40		7-3/4"	9-7/8"					❍
	OP3-1S-CV40	3.00" - 4.12"	5"	7-3/8"	OP3-WC05	2	MS-15M-4	AS-12T9-4	❍
	OP3-1L-CV40		9"	11-3/8"					❍
	OP4-1S-CV40	4.12" - 5.62"	5"	7-3/8"	OP4-WC05	3	MS-15M-4	AS-14T9-4	❍

CV50 Flange Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
CV 50	OP1-1S-CV50	2.00" - 2.50"	3-1/4"	5-3/8"	OP1-WC05	2	MS-13M-4	AS-10T9-4	❍
	OP1-1L-CV50		5-1/2"	7-5/8"					❍
	OP2-1S-CV50	2.50" - 3.00"	4-3/4"	6-7/8"	OP2-WC05	2	MS-15M-4	AS-10T9-4	❍
	OP2-1L-CV50		7-3/4"	9-7/8"					❍
	OP3-1S-CV50	3.00" - 4.12"	5"	7-3/8"	OP3-WC05	2	MS-15M-4	AS-12T9-4	❍
	OP3-1L-CV50		9"	11-3/8"					❍
	OP4-1S-CV50	4.12" - 5.62"	5"	7-3/8"	OP4-WC05	3	MS-15M-4	AS-14T9-4	❍
	OP4-1L-CV50		10-1/2"	12-3/8"					❍

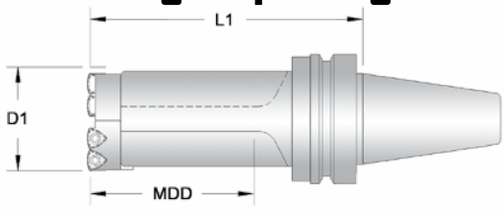
DV50 Flange Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
DV 50	OP1-1S-DV50	50,80mm - 63,50mm	82,55mm	136,55mm	OP1-WC05	2	MS-13M-4	AS-10T9-4	▲
	OP1-1L-DV50		139,70mm	193,70mm					▲
	OP2-1S-DV50	63,50mm - 76,20mm	102,65mm	174,65mm	OP2-WC05	2	MS-15M-4	AS-10T9-4	▲
	OP2-1L-DV50		196,85mm	250,85mm					▲
	OP3-1S-DV50	76,20mm - 104,65mm	127,00mm	187,35mm	OP3-WC05	2	MS-15M-4	AS-12T9-4	▲
	OP3-1L-DV50		228,60mm	288,95mm					▲
	OP4-1S-DV50	104,65mm - 142,75mm	127,00mm	187,35mm	OP4-WC05	3	MS-15M-4	AS-14T9-4	▲
	OP4-1L-DV50		266,70mm	314,35mm					▲

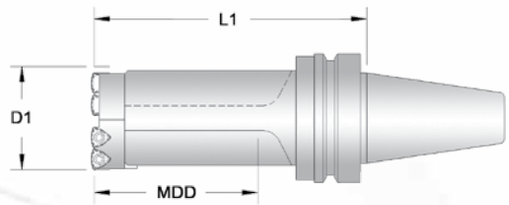
① **Availability Codes**
❍ Stocked
▲ Non-Stocked

BT40 Flange Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
BT 40	OP1-1S-BT40	50,80mm - 63,50mm	82,55mm	136,53mm	OP1-WC05	2	MS-13M-4	AS-10T9-4	▲
	OP1-1L-BT40		139,79mm	193,68mm					▲
	OP2-1S-BT40	63,50mm - 76,20mm	120,65mm	173,63mm	OP2-WC05	2	MS-15M-4	AS-10T9-4	▲
	OP2-1L-BT40		196,85mm	250,83mm					▲
	OP3-1S-BT40	76,20mm - 104,65mm	127,00mm	187,33mm	OP3-WC05	2	MS-15M-4	AS-12T9-4	▲
	OP3-1L-BT40		228,60mm	288,93mm					▲
	OP4-1S-BT40	104,65mm - 142,75mm	127,00mm	187,33mm	OP4-WC05	3	MS-15M-4	AS-14T9-4	▲

BT50 Flange Opening Drill® Series



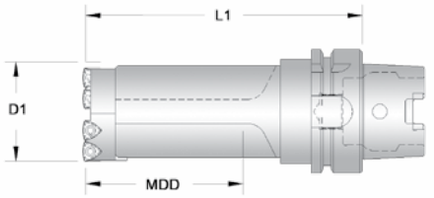
	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
BT 50	OP1-1S-BT50	50,80mm - 63,50mm	82,55mm	146,05mm	OP1-WC05	2	MS-13M-4	AS-10T9-4	▲
	OP1-1L-BT50		139,79mm	203,20mm					▲
	OP2-1S-BT50	63,50mm - 76,20mm	120,65mm	184,15mm	OP2-WC05	2	MS-15M-4	AS-10T9-4	▲
	OP2-1L-BT50		196,85mm	260,35mm					▲
	OP3-1S-BT50	76,20mm - 104,65mm	127,00mm	196,85mm	OP3-WC05	2	MS-15M-4	AS-12T9-4	▲
	OP3-1L-BT50		228,60mm	298,45mm					▲
	OP4-1S-BT50	104,65mm - 142,75mm	127,00mm	196,85mm	OP4-WC05	3	MS-15M-4	AS-14T9-4	▲
	OP4-1L-BT50		266,70mm	336,55mm					▲

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

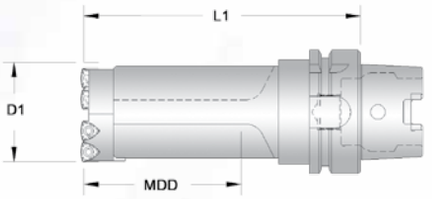
	Item Number, Coating and Availability - 10 Piece Packs					
Grade	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

HSK 63 A/C Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
HSK 63	OP1-1S-HSK63	2.00" - 2.50"	3-1/4"	5-21/32"	OP1-WC05	2	MS-13M-4	AS-10T9-4	▲
	OP1-1L-HSK63		5-1/2"	7-29/32"					▲
	OP2-1S-HSK63	2.50" - 3.00"	4-3/4"	7-5/32"	OP2-WC05	2	MS-15M-4	AS-10T9-4	▲
	OP2-1L-HSK63		7-3/4"	10-5/32"					▲
	OP3-1S-HSK63	3.00" - 4.12"	5"	7-21/32"	OP3-WC05	2	MS-15M-4	AS-12T9-4	▲
	OP3-1L-HSK63		9"	11-21/32"					▲
	OP4-1S-HSK63	4.12" - 5.62"	5"	7-21/32"	OP4-WC05	3	MS-15M-4	AS-14T9-4	▲

HSK 100 A/C Opening Drill® Series



	Item Number	Diameter Range (DI)	Max Drill Depth (MDD)	Gage Length (LI)	Replacement Cartridges	Qty. Inserts Required (Per Cartridge)	Mounting Screw (4 Pack)	Adjusting Screw (4 Pack)	①
HSK 100	OP1-1S-HSK100	2.00" - 2.50"	3-1/4"	5-21/32"	OP1-WC05	2	MS-13M-4	AS-10T9-4	▲
	OP1-1L-HSK100		5-1/2"	8-5/32"					▲
	OP2-1S-HSK100	2.50" - 3.00"	4-3/4"	7-13/32"	OP2-WC05	2	MS-15M-4	AS-10T9-4	▲
	OP2-1L-HSK100		7-3/4"	10-13/32"					▲
	OP3-1S-HSK100	3.00" - 4.12"	5"	7-21/32"	OP3-WC05	2	MS-15M-4	AS-12T9-4	▲
	OP3-1L-HSK100		9"	11-21/32"					▲
	OP4-1S-HSK100	4.12" - 5.62"	5"	7-21/32"	OP4-WC05	3	MS-15M-4	AS-14T9-4	▲
	OP4-1L-HSK100		10-1/2"	13-13/32"					▲

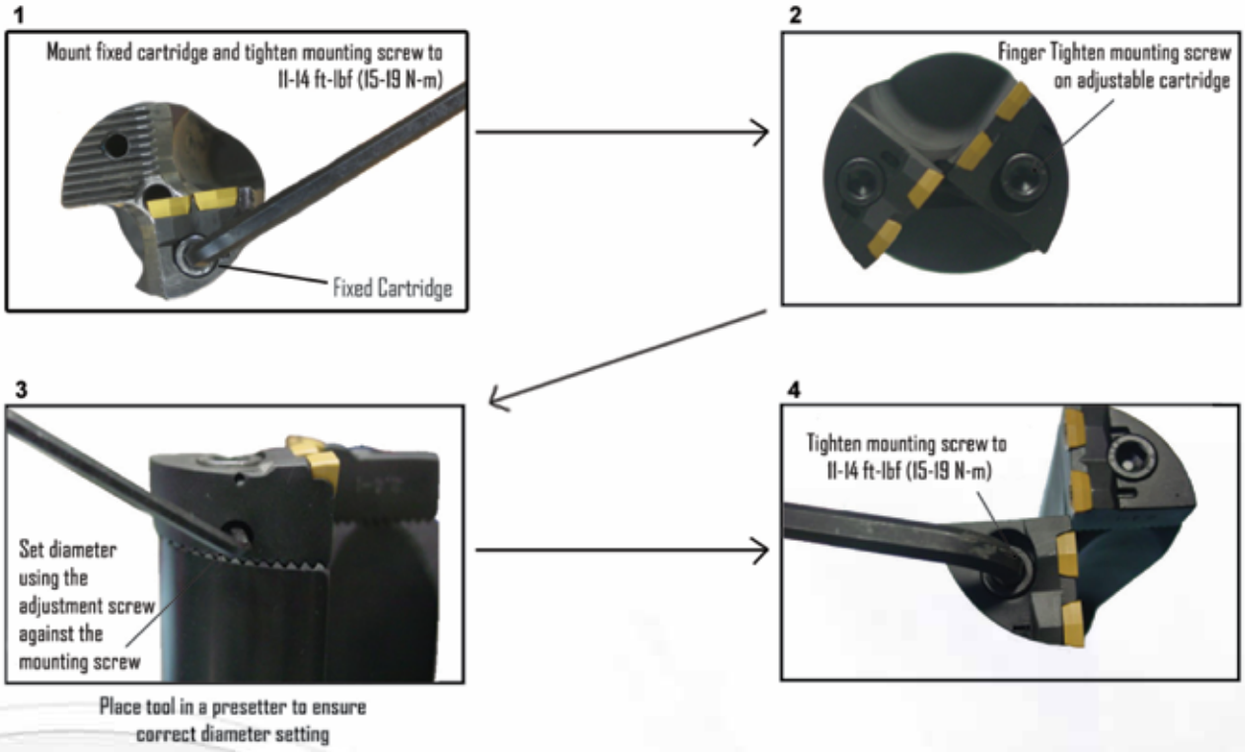
Grade	Item Number, Coating and Availability - 10 Piece Packs					
	AM300®	❶	AM200®	❶	TiN	❶
C5 (P35)	OP-05T308-P	❍	OP-05T308-H	❍	OP-05T308-T	❍
C1 (K35)	OP-05T308-1P	❍	OP-05T308-1H	❍	OP-05T308-1T	❍
C5 (P35)	OP-05T308-PHR	❍	OP-05T308-HHR	❍	-	-
C2 (K25)	OP-05T308-2P	❍	OP-05T308-2H	❍	-	-
Insert Screw 10 Pack					IS-10-10	

Can be supplied with other coatings as a non-stocked standard.

TiAlN	OP-05T308-A
TiCN	OP-05T308-N

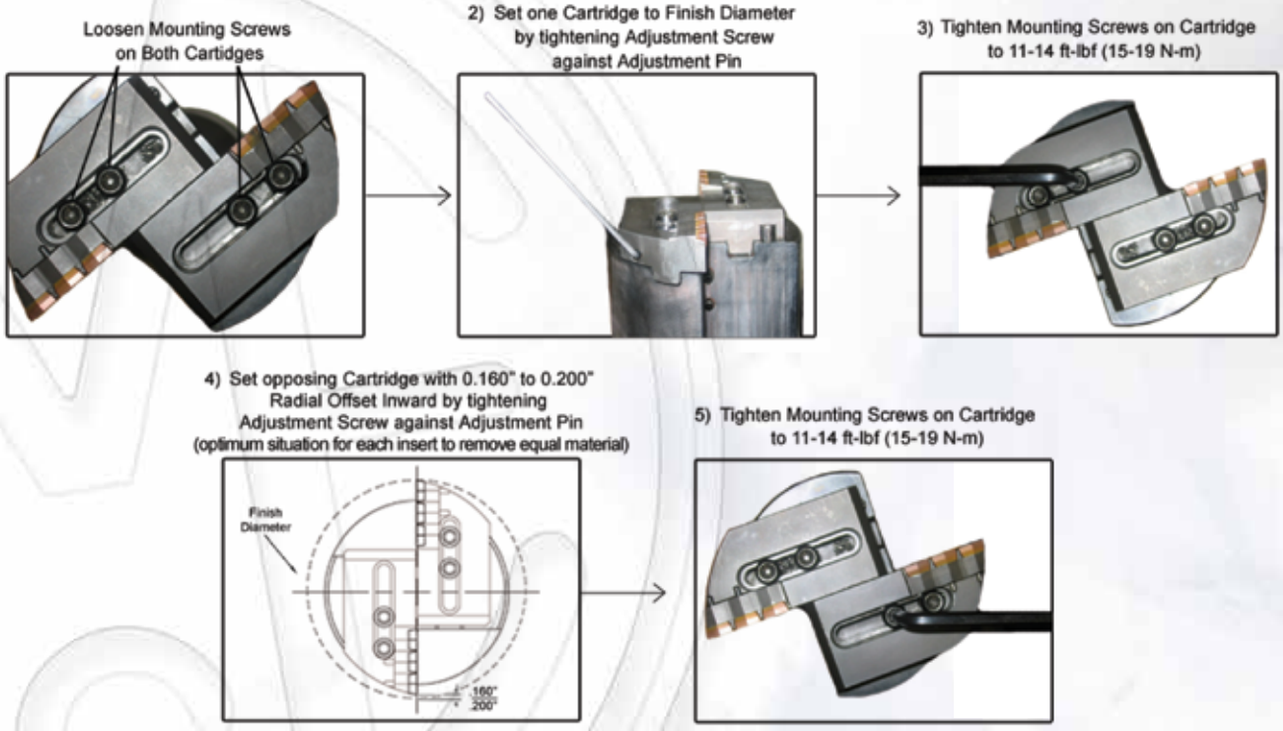
Operation & Setup Procedure

Revolution Drill® Setup Instructions



Place tool in a presetter to ensure correct diameter setting

Opening Drill® Setup Instructions



Recommended Speeds & Feeds

Revolution Drill® & Opening Drill®

(Inch)

IMPORTANT: The speeds and feeds listed below are considered a general starting point for all applications. Factory technical assistance is also available for your specific applications through our Application Engineering Team.

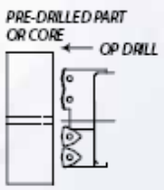
MATERIAL	Material Hardness (BHN)	SPEED SFM AM300®	SPEED SFM AM200®	SPEED SFM TiN	FEED (IPR)
Free Machining Steel 1118, 1215, 12L14, etc.	100-250	900-1300	850-1200	700-900	.0035 - .007
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-275	850-1250	800-1150	650-850	.003 - .0065
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-325	800-1050	750-950	600-850	.0035 - .0065
Alloy Steel 4140, 5140, 8640, etc.	125-375	750-1000	700-900	600-850	.0035 - .0065
High Strength Alloy 4340, 4330V, 300M, etc.	225-400	600-850	550-750	400-650	.003 - .005
Structural Steel A36, A285, A516, etc.	100-350	850-1050	800-950	650-850	.003 - .0065
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150-250	400-800	350-700	250-650	.0025 - .005
High Temperature Alloy Hastelloy B, Inconel 600, etc.	140-310	250-450	250-350	150-300	.0025 - .005
Stainless Steel 400 Series 303, 416, 420	185-350	600-850	550-750	400-650	.003 - .006
Stainless Steel 300 Series 304, 316, 17-4PH	135-275	600-850	550-750	400-650	.003 -.006
Super Duplex Stainless Steel	135-275	500-750	450-650	300-550	.002-.005
Cast Iron Gray, Ductile, Nodular	120-320	700-900	650-800	500-700	.004 - .008
Cast Aluminum	30-180	1250-1650	1200-1550	950-1100	.006 - .012
Wrought Aluminum	30-180	1250-1650	1200-1550	950-1100	.006 - .012
Brass	30-100	950-1350	900-1250	750-1100	.005 - .009

Opening Drill® Minimum Pilot Calculation

To determine the minimum diameter of the pilot hole, use the following calculation:

FINISH DIAMETER - OPENING RANGE = MINIMUM PILOT HOLE DIAMETER

For example: To open up an existing diameter hole to 2.75" diameter, an OP2 tool would be used and the minimum pilot hole diameter would be 2.750-1.880=.870"



Opening Drill® Size	Adjustable O.D. Range	Opening Range Diameter
OP-1	2.00-2.50	1.880
OP-2	2.50-3.00	1.880
OP-3	3.00-4.12	1.880
OP-4	4.12-5.62	2.680

Recommended Speeds & Feeds

Revolution Drill® & Opening Drill®

(Metric)

IMPORTANT: The speeds and feeds listed below are considered a general starting point for all applications. Factory technical assistance is also available for your specific applications through our Application Engineering Team.

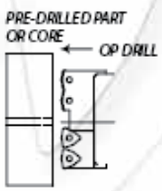
MATERIAL	Material Hardness (BHN)	SPEED M/min AM300®	SPEED M/min AM200®	SPEED M/min TiN	FEED (mm/Rev)
Free Machining Steel 1118, 1215, 12L14, etc.	110-250	274-396	259-366	213-274	0,09 - 0,18
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-275	259-381	244-351	198-259	0,08 - 0,17
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-325	244-320	229-290	183-259	0,09 - 0,17
Alloy Steel 4140, 5140, 8640, etc.	125-375	229-305	213-274	183-259	0,09 - 0,17
High Strength Alloy 4340, 4330V, 300M, etc.	225-400	183-259	168-229	122-198	0,08 - 0,13
Structural Steel A36, A285, A516, etc.	100-350	259-320	244-290	198-259	0,08 - 0,17
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150-250	122-244	107-213	76-198	0,06 - 0,13
High Temperature Alloy Hastelloy B, Inconel 600, etc.	140-310	76-137	76-107	46-91	0,06 - 0,11
Stainless Steel 400 Series 303, 416, 420	185-350	183-259	168-229	122-198	0,08 - 0,15
Stainless Steel 300 Series 304, 316, 17-4PH	135-275	183-259	168-229	122-198	0,08 - 0,15
Super Duplex Stainless Steel	135-275	152-228	137-198	91-152	0,05 - 0,12
Cast Iron Gray, Ductile, Nodular	120-320	213-274	198-244	152-213	0,10 - 0,20
Cast Aluminum	30-180	381-503	381-472	290-335	0,15 - 0,30
Wrought Aluminum	30-180	381-503	381-472	290-335	0,15 - 0,30
Brass	30-100	290-411	274-381	229-335	0,13 - 0,23

Opening Drill® Minimum Pilot Calculation

To determine the minimum diameter of the pilot hole, use the following calculation:

FINISH DIAMETER - OPENING RANGE = MINIMUM PILOT HOLE DIAMETER

For example: To open up an existing diameter hole to 69,85mm diameter, an OP2 tool would be used and the minimum pilot hole diameter would be 69,85-47,75=22,1mm



Opening Drill® Size	Adjustable O.D. Range	Opening Range Diameter
OP-1	50,8-63,5	47,75
OP-2	63,5-76,2	47,75
OP-3	76,2-104,6	47,75
OP-4	104,6-142,7	68,07

Insert Application Recommendations

C5 (P35) – General purpose carbide grade suitable for most applications. Common application in steels and stainless steels.

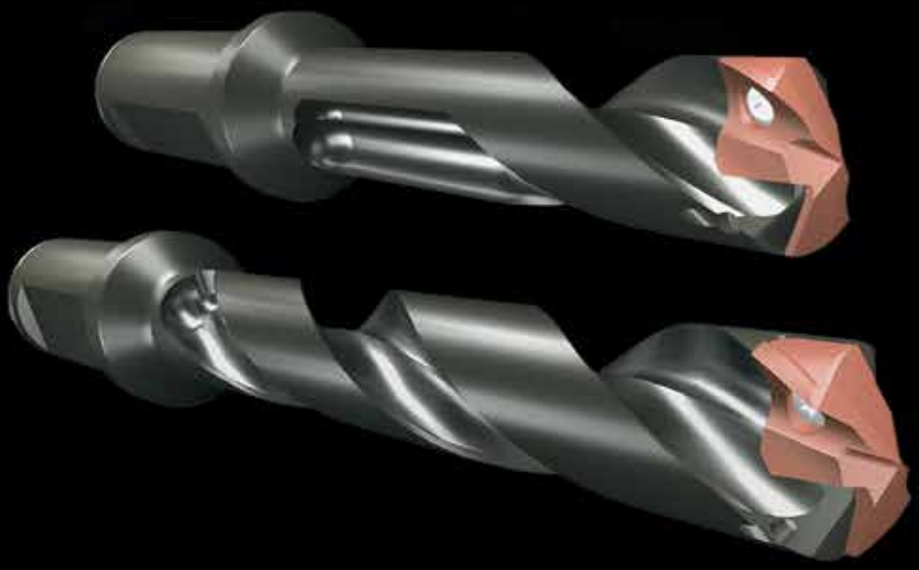
C1 (K35) – Toughest carbide grade recommended for less rigid applications. Provides best combination of edge strength and tool life.

C2 (K25) - Higher wear resistant carbide suitable for abrasive material applications. Recommended for grey, ductile, and nodular irons.

HR (High Rake geometry) – Provides superior chip control and tool life in long chipping, carbon and alloy steels below 200 Bhn.

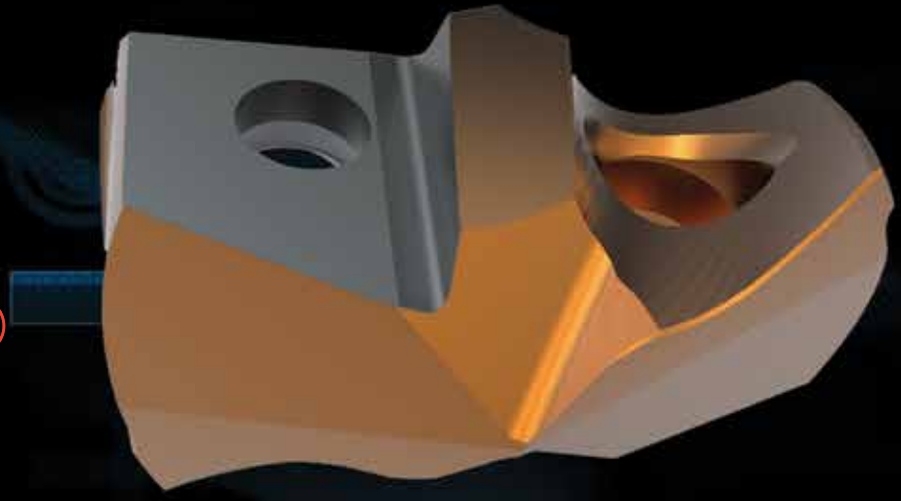
GEN3SYS®

High Penetration Drilling System



GEN3SYS® XT

High Penetration Drilling System



GEN3SYS® + GEN3SYS® XT Reference

GEN3SYS® Drill Insert Item Number

5	C1	12	H	-	.484	-	CI
Insert	Material	Series	Coating		Diameter		Geometry
	C1	12 18	H - AM200®		Inch - 0017		CI - Cast Iron
	C2	13 20	A - TiAlN		Decimal - .515		LR - Low Rake
		14 22	N - TiCN		Metric - 13		
		15 24	T - TiN				
		16 26					
		17 29					

GEN3SYS® XT Drill Insert Item Number

7	C1	11	P	-	.484	CI
Insert	Material	Series	Coating		Diameter	Geometry
	C1	11 18	P - AM300®		Inch - 0017	CI - Cast Iron
	C2	12 20			Decimal - .515	LR - Low Rake
		13 22			Metric - 13	AS - Stainless Steel
		14 24				
		15 26				
		16 29				
		17 32				

GEN3SYS® and GEN3SYS® XT Holder Item Number

6	03	11	H	-	20FM
Holder	Length	Series	Flute		Shank Style
	01 - Stub Length	11 18	H - Helical		F - Flanged with Flat
	03 - 3 x Diameter	12 20	S - Straight		FM - Flanged Metric with Flat
	05 - 5 x Diameter	13 22	C45 - Drill/Chamfer		C - Cylindrical (No Flat)
	07 - 7 x Diameter	14 24			CM - Cylindrical Metric (No Flat)
		15 26			
		16 29			
		17 32			

Ordering Instructions for Standard Stocked Items

All orders are processed through Allied's computerized Order Entry and Invoicing System. Please specify the correct catalog number as well as a full description of the desired item(s) so we can process your order accurately and efficiently. Incorrect item numbers and/or descriptions will cause unnecessary delays and possibly returns that are subject to a 10% restocking charge. Your assistance is critical if we are to achieve our goal of processing orders and shipping in stock items error free within 24 hours.

Holder Ordering Information

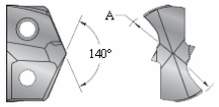
We use a series designator in the header, at the top of each page of both the drill insert and holder sections of the catalog for your reference when ordering. Please refer to these series designators when placing your order. For example, series 12 drill inserts will fit in a series 12 holder.

Regrinding and Recoating

The GEN3SYS® Drilling System is so cost efficient that it eliminates the need for regrinding and recoating. However, if you choose to have your drill inserts reground, it is critical that it be done by Allied. Any slight deviation in performance due to an improperly reground drill insert will more than offset any benefit from regrinding. Allied is the only company that has the experience, knowledge, equipment and inspection process to manage a regrind program for you. Using our service assures that the best tool performance is maintained in your production process. When returning tools for regrinding, please package tools carefully to avoid damage during shipment. Returning drill inserts for regrinding in their original packaging will help avoid damage during shipment. Drill Inserts reground by Allied are repackaged and clearly identified in red as "Allied Regrind" to avoid any confusion with new tools.

11 Series GEN3SYS XI Drill Inserts

Range: 0.4331 to 0.4723 (11,00mm to 11,99mm)



GEN3SYS XI Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	11,00	0.4331	7C111P-11	❍	7C111P-11LR	▲	7C211P-11	❍	7C211P-11CI	▲	7C211P-11LR	▲	7C211P-11AS	❍
7/16"	11,11	0.4375	7C111P-0014	❍	7C111P-0014LR	▲	7C211P-0014	❍	7C211P-0014CI	▲	7C211P-0014LR	▲	7C211P-0014AS	❍
	11,50	0.4528	7C111P-11.5	❍	7C111P-11.5LR	▲	7C211P-11.5	❍	7C211P-11.5CI	▲	7C211P-11.5LR	▲	7C211P-11.5AS	❍
29/64"	11,51	0.4531	7C111P-.453	▲	7C111P-.453LR	▲	7C211P-.453	▲	7C211P-.453CI	▲	7C211P-.453LR	▲	7C211P-.453AS	▲
15/32"	11,91	0.4688	7C111P-0015	❍	7C111P-0015LR	▲	7C211P-0015	❍	7C211P-0015CI	▲	7C211P-0015LR	▲	7C211P-0015AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

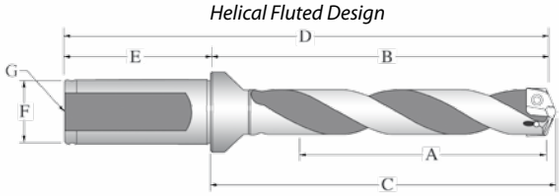
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .4340" AM300®, 11 Series, C2 = 7C211P-.4340
Metric = 11,20 mm AM300®, 11 Series, C2 = 7C211P-11.20

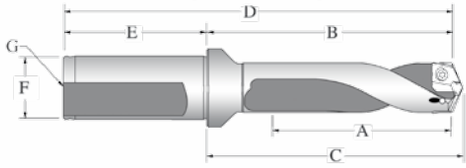
11 Series GEN3SYS XT Holders

Range: 0.4331 to 0.4723 (11,00mm to 11,99mm)

Helical Fluted Design

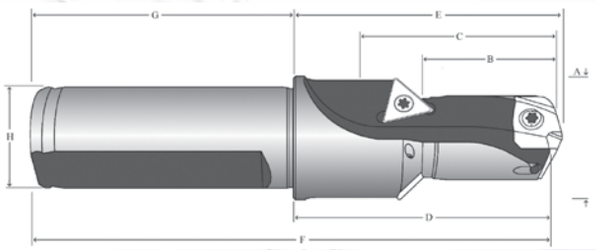


Straight Fluted Design



GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60311S-063F	1-27/64"	2-29/64"	2-17/32"	yes	4-21/64"	1-7/8"	5/8"	1/16"
	5xD	60511S-063F	2-23/64"	3-13/32"	3-31/64"	yes	5-9/32"			1/16"
	7xD	60711S-063F	3-19/64"	4-11/32"	4-27/64"	yes	6-7/32"			1/16"
Helical (Machining Center)	Stub	60111H-063F	5/8"	1-43/64"	1-3/4"	yes	3-35/64"	1-7/8"	5/8"	1/16"
	3xD	60311H-063F	1-27/64"	2-29/64"	2-17/32"	yes	4-21/64"			1/16"
		60311H-063C	1-27/64"	2-29/64"	2-17/32"	no	4-21/64"			1/16"
	5xD	60511H-063F	2-23/64"	3-13/32"	3-31/64"	yes	5-9/32"			1/16"
		60511H-063C	2-23/64"	3-13/32"	3-31/64"	no	5-9/32"			1/16"
	7xD	60711H-063F	3-19/64"	4-11/32"	4-27/64"	yes	6-7/32"			1/16"
		60711H-063C	3-19/64"	4-11/32"	4-27/64"	no	6-7/32"			1/16"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60311S-16FM	36,0	62,6	64,7	yes	110,6	48	16	1/16"*
	5xD	60511S-16FM	59,9	86,6	88,6	yes	134,6			1/16"*
	7xD	60711S-16FM	83,9	110,6	112,6	yes	158,6			1/16"*
Helical (Machining Center)	Stub	60111H-16FM	16,0	42,6	44,7	yes	90,7	48	16	1/16"*
	3xD	60311H-16FM	36,0	62,6	64,7	yes	110,6			1/16"*
		60311H-16CM	36,0	62,6	64,7	no	110,6			1/16"*
	5xD	60511H-16FM	59,9	86,6	88,6	yes	134,6			1/16"*
		60511H-16CM	59,9	86,6	88,6	no	134,6			1/16"*
	7xD	60711H-16FM	83,9	110,6	112,6	yes	158,6			1/16"*
		60711H-16CM	83,9	110,6	112,6	no	158,6			1/16"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60111C45-063F	61/64"	21/32"	15/16"	1-43/64"	1-3/4"	3-35/64"	1-7/8"	5/8"	TCMT-110204
METRIC (mm)									
60111C45-16FM	24,1	16,5	23,8	42,3	44,3	96,4	48	16	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

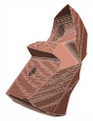
Holder Series	TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
11	71843-IP6-10	8IP-6	8IP-6TL	8IP-6B	.4331-.4723	4.4	11,00 - 11,99	50

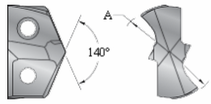
Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

12 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.4724 to 0.5117 (12,00mm to 12,99mm)

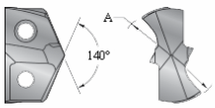




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	12,00	0.4724	5C112H-12	❍	5C112H-12-LR	▲	5C212H-12	❍	5C212H-12-CI	❍	5C212H-12-LR	▲
31/64"	12,30	0.4844	5C112H-.484	❍	5C112H-.484-LR	▲	5C212H-.484	❍	5C212H-.484-CI	▲	5C212H-.484-LR	▲
	12,50	0.4921	5C112H-12.5	❍	5C112H-12.5-LR	▲	5C212H-12.5	❍	5C212H-12.5-CI	❍	5C212H-12.5-LR	▲
1/2"	12,70	0.5000	5C112H-0016	❍	5C112H-0016-LR	▲	5C212H-0016	❍	5C212H-0016-CI	▲	5C212H-0016-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	12,00	0.4724	7C112P-12	❍	7C112P-12LR	▲	7C212P-12	❍	7C212P-12CI	❍	7C212P-12LR	▲	7C212P-12AS	❍
31/64"	12,30	0.4844	7C112P-.484	❍	7C112P-.484LR	▲	7C212P-.484	❍	7C212P-.484CI	▲	7C212P-.484LR	▲	7C212P-.484AS	❍
	12,50	0.4921	7C112P-12.5	❍	7C112P-12.5LR	▲	7C212P-12.5	❍	7C212P-12.5CI	❍	7C212P-12.5LR	▲	7C212P-12.5AS	❍
1/2"	12,70	0.5000	7C112P-0016	❍	7C112P-0016LR	▲	7C212P-0016	❍	7C212P-0016CI	▲	7C212P-0016LR	▲	7C212P-0016AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

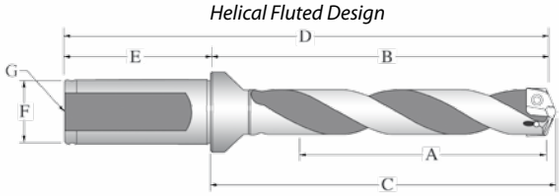
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .4900" AM200®, 12 Series, C2 = 5C212H-.4900
Metric = 12,20 mm AM200®, 12 Series, C2 = 5C212H-12.20

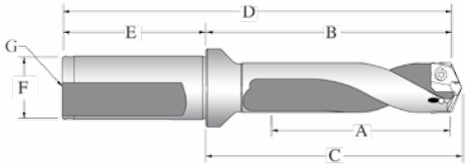
12 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.4724 to 0.5117 (12,00mm to 12,99mm)

Helical Fluted Design

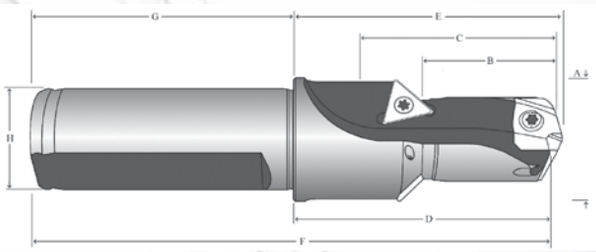


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60312S-075F	1-35/64"	2-5/8"	2-45/64"	yes	4-21/32"	2-1/32"	3/4"	1/8"
	5xD	60512S-075F	2-9/16"	3-21/32"	3-47/64"	yes	5-43/64"			1/8"
	7xD	60712S-075F	3-19/32"	4-25/32"	4-3/4"	yes	6-45/64"			1/8"
Helical (Machining Center)	Stub	60112H-075F	5/8"	1-45/64"	1-25/32"	yes	3-47/64"	2-1/32"	3/4"	1/8"
	3xD	60312H-075F	1-35/64"	2-5/8"	2-45/64"	yes	4-21/32"			1/8"
		60312H-075C	1-35/64"	2-5/8"	2-45/64"	no	4-21/32"			1/8"
	5xD	60512H-075F	2-9/16"	3-21/32"	3-47/64"	yes	5-43/64"			1/8"
		60512H-075C	2-9/16"	3-21/32"	3-47/64"	no	5-43/64"			1/8"
	7xD	60712H-075F	3-19/32"	4-25/32"	4-3/4"	yes	6-45/64"			1/8"
		60712H-075C	3-19/32"	4-25/32"	4-3/4"	no	6-45/64"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60312S-20FM	39,0	66,6	68,8	yes	116,6	50	20	1/8"*
	5xD	60512S-20FM	64,9	92,6	94,8	yes	142,6			1/8"*
	7xD	60712S-20FM	90,9	118,5	120,8	yes	168,6			1/8"*
Helical (Machining Center)	Stub	60112H-20FM	16,0	43,2	45,4	yes	93,2	50	20	1/8"*
	3xD	60312H-20FM	39,0	66,6	68,8	yes	116,6			1/8"*
		60312H-20CM	39,0	66,6	68,8	no	116,6			1/8"*
	5xD	60512H-20FM	64,9	92,6	94,8	yes	142,6			1/8"*
		60512H-20CM	64,9	92,6	94,8	no	142,6			1/8"*
	7xD	60712H-20FM	90,9	118,5	120,8	yes	168,6			1/8"*
		60712H-20CM	90,9	118,5	120,8	no	168,6			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60112C45-075F	31/32"	45/64"	63/64"	1-45/64"	1-25/32"	3-47/64"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60112C45-20FM	24,8	18,0	35,2	43,2	45,4	101,3	50	20	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

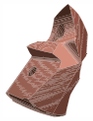
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
12	7247-IP7-10	7247N-IP7-10	8IP-7	8IP-7TL	8IP-7B	0.4724-0.5117	7.4	12.00-12.99	84

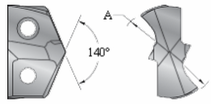
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

13 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.5118 to 0.5511 (13,00mm to 13,99mm)

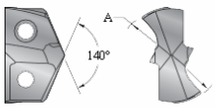




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	13,00	0.5118	5C113H-13	❍	5C113H-13-LR	▲	5C213H-13	❍	5C213H-13-CI	❍	5C213H-13-LR	▲
33/64"	13,08	0.5156	5C113H-.515	❍	5C113H-.515-LR	▲	5C213H-.515	❍	5C213H-.515-CI	▲	5C213H-.515-LR	▲
17/32"	13,49	0.5312	5C113H-0017	❍	5C113H-0017-LR	▲	5C213H-0017	❍	5C213H-0017-CI	❍	5C213H-0017-LR	▲
	13,50	0.5315	5C113H-13.5	❍	5C113H-13.5-LR	▲	5C213H-13.5	❍	5C213H-13.5-CI	❍	5C213H-13.5-LR	▲
35/64"	13,89	0.5469	5C113H-.546	❍	5C113H-.546-LR	▲	5C213H-.546	❍	5C213H-.546-CI	▲	5C213H-.546-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	13,00	0.5118	7C113P-13	❍	7C113P-13LR	▲	7C213P-13	❍	7C213P-13CI	❍	7C213P-13LR	▲	7C213P-13AS	❍
33/64"	13,08	0.5156	7C113P-.515	❍	7C113P-.515LR	▲	7C213P-.515	❍	7C213P-.515CI	▲	7C213P-.515LR	▲	7C213P-.515AS	❍
17/32"	13,49	0.5312	7C113P-0017	❍	7C113P-0017LR	▲	7C213P-0017	❍	7C213P-0017CI	❍	7C213P-0017LR	▲	7C213P-0017AS	❍
	13,50	0.5315	7C113P-13.5	❍	7C113P-13.5LR	▲	7C213P-13.5	❍	7C213P-13.5CI	❍	7C213P-13.5LR	▲	7C213P-13.5AS	❍
35/64"	13,89	0.5469	7C113P-.546	❍	7C113P-.546 LR	▲	7C213P-.546	❍	7C213P-.546CI	▲	7C213P-.546LR	▲	7C213P-.546AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

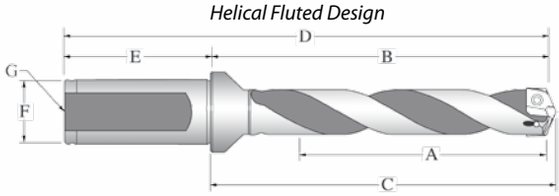
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .5200", C2, AM200®, 13 Series = 5C213H-.5200
Metric = 13,20 mm, C2, AM200®, 13 Series = 5C213H-13.20

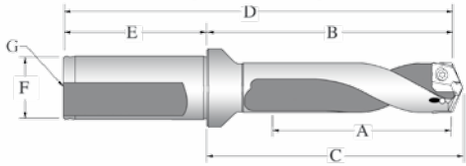
13 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.5118 to 0.5511 (13,00mm to 13,99mm)

Helical Fluted Design

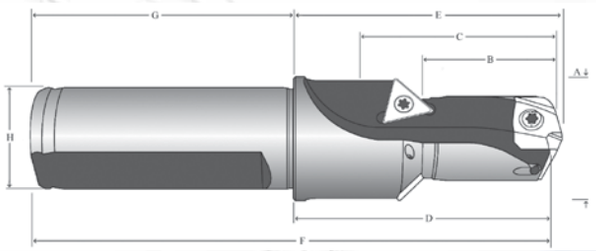


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60313S-075F	1-21/32"	2-47/64"	2-13/16"	yes	4-49/64"	2-1/32"	3/4"	1/8"
	5xD	60513S-075F	2-49/64"	3-53/64"	3-59/64"	yes	5-55/64"			1/8"
	7xD	60713S-075F	3-55/64"	4-15/16"	5-1/16"	yes	6-31/32"			1/8"
Helical (Machining Center)	Stub	60113H-075F	5/8"	1-11/16"	1-25/32"	yes	3-23/32"	2-1/32"	3/4"	1/8"
	3xD	60313H-075F	1-21/32"	2-47/64"	2-13/16"	yes	4-49/64"			1/8"
		60313H-075C	1-21/32"	2-47/64"	2-13/16"	no	4-49/64"			1/8"
	5xD	60513H-075F	2-49/64"	3-53/64"	3-59/64"	yes	5-55/64"			1/8"
		60513H-075C	2-49/64"	3-53/64"	3-59/64"	no	5-55/64"			1/8"
	7xD	60713H-075F	3-55/64"	4-15/16"	5-1/16"	yes	6-31/32"			1/8"
		60713H-075C	3-55/64"	4-15/16"	5-1/16"	no	6-31/32"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60313S-20FM	42,0	69,3	71,5	yes	119,3	50	20	1/8"*
	5xD	60513S-20FM	70,0	97,3	99,5	yes	147,3			1/8"*
	7xD	60713S-20FM	97,9	125,3	127,5	yes	175,3			1/8"*
Helical (Machining Center)	Stub	60113H-20FM	16,0	43,0	45,2	yes	93,0	50	20	1/8"*
	3xD	60313H-20FM	42,0	69,3	71,5	yes	119,3			1/8"*
		60313H-20CM	42,0	69,3	71,5	no	119,3			1/8"*
	5xD	60513H-20FM	70,0	97,3	99,5	yes	147,3			1/8"*
		60513H-20CM	70,0	97,3	99,5	no	147,3			1/8"*
	7xD	60713H-20FM	97,9	125,3	127,5	yes	175,3			1/8"*
		60713H-20CM	97,9	125,3	127,5	no	175,3			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60113C45-075F	1-1/64"	49/64"	1"	1-11/16"	1-25/32"	3-23/32"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60113C45-20FM	25,8	19,5	25,4	43,0	45,2	101,3	50	20	TCMT-110204

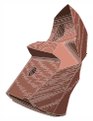
Replacement TORX Plus Screws (supplied in 10 piece packages)

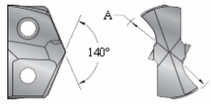
Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
13	7247-IP7-10	7247N-IP7-10	8IP-7	8IP-7TL	8IP-7B	0.5118-0.5511	7.4	13.00-13.99	84

Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

14 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.5512 to 0.5905 (14,00mm to 14,99mm)

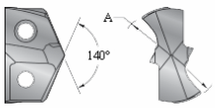




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	14,00	0.5512	5C114H-14	❍	5C114H-14-LR	▲	5C214H-14	❍	5C214H-14-CI	❍	5C214H-14-LR	▲
9/16"	14,29	0.5625	5C114H-0018	❍	5C114H-0018-LR	▲	5C214H-0018	❍	5C214H-0018-CI	❍	5C214H-0018-LR	▲
	14,50	0.5709	5C114H-14.5	❍	5C114H-14.5-LR	▲	5C214H-14.5	❍	5C214H-14.5-CI	❍	5C214H-14.5-LR	▲
37/64"	14,68	0.5781	5C114H-.578	❍	5C114H-.578-LR	▲	5C214H-.578	❍	5C214H-.578-CI	▲	5C214H-.578-LR	▲
	14,80	0.5827	5C114H-14.8	❍	5C114H-14.8-LR	▲	5C214H-14.8	❍	5C214H-14.8-CI	▲	5C214H-14.8-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	14,00	0.5512	7C114P-14	❍	7C114P-14LR	❍	7C214P-14	❍	7C214P-14CI	❍	7C214P-14LR	▲	7C214P-14AS	❍
9/16"	14,29	0.5625	7C114P-0018	❍	7C114P-0018LR	❍	7C214P-0018	❍	7C214P-0018CI	❍	7C214P-0018LR	▲	7C214P-0018AS	❍
	14,50	0.5709	7C114P-14.5	❍	7C114P-14.5LR	▲	7C214P-14.5	❍	7C214P-14.5CI	❍	7C214P-14.5LR	▲	7C214P-14.5AS	❍
37/64"	14,68	0.5781	7C114P-.578	❍	7C114P-.578LR	▲	7C214P-.578	❍	7C214P-.578CI	▲	7C214P-.578LR	▲	7C214P-.578AS	❍
	14,80	0.5827	7C114P-14.8	❍	7C114P-14.8LR	▲	7C214P-14.8	❍	7C214P-14.8CI	▲	7C214P-14.8LR	▲	7C214P-14.8AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

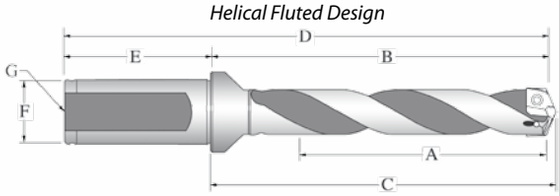
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .5600" AM200®, 14 Series, C2 = 5C214H-.5600
Metric = 14,10 mm AM200®, 14 Series, C2 = 5C214H-14.10

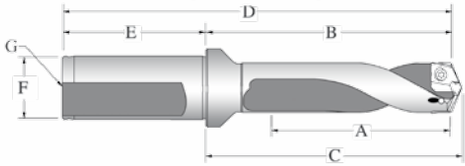
14 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.5512 to 0.5905 (14,00mm to 14,99mm)

Helical Fluted Design

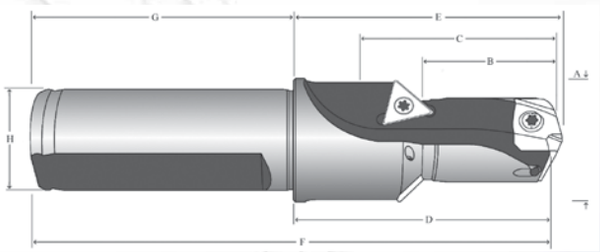


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60314S-075F	1-25/32"	2-55/64"	2-61/64"	yes	4-55/64"	2-1/32"	3/4"	1/8"
	5xD	60514S-075F	2-61/64"	4-1/32"	4-1/8"	yes	6-1/16"			1/8"
	7xD	60714S-075F	4-9/64"	5-7/32"	5-5/16"	yes	7-1/4"			1/8"
Helical (Machining Center)	Stub	60114H-075F	11/16"	1-3/4"	1-55/64"	yes	3-25/32"	2-1/32"	3/4"	1/8"
	3xD	60314H-075F	1-25/32"	2-55/64"	2-61/64"	yes	4-55/64"			1/8"
		60314H-075C	1-25/32"	2-55/64"	2-61/64"	no	4-55/64"			1/8"
	5xD	60514H-075F	2-61/64"	4-1/32"	4-1/8"	yes	6-1/16"			1/8"
		60514H-075C	2-61/64"	4-1/32"	4-1/8"	no	6-1/16"			1/8"
	7xD	60714H-075F	4-9/64"	5-7/32"	5-5/16"	yes	7-1/4"			1/8"
		60714H-075C	4-9/64"	5-7/32"	5-5/16"	no	7-1/4"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60314S-20FM	45,0	72,4	75,0	yes	122,4	50	20	1/8"*
	5xD	60514S-20FM	75,0	102,4	104,9	yes	152,4			1/8"*
	7xD	60714S-20FM	104,9	132,4	134,9	yes	182,4			1/8"*
Helical (Machining Center)	Stub	60114H-20FM	17,5	44,6	47,2	yes	94,6	50	20	1/8"*
	3xD	60314H-20FM	45,0	72,4	75,0	yes	122,4			1/8"*
		60314H-20CM	45,0	72,4	75,0	no	122,4			1/8"*
	5xD	60514H-20FM	75,0	102,4	104,9	yes	152,4			1/8"*
		60514H-20CM	75,0	102,4	104,9	no	152,4			1/8"*
	7xD	60714H-20FM	104,9	132,4	134,9	yes	182,4			1/8"*
		60714H-20CM	104,9	132,4	134,9	no	182,4			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60114C45-075F	1-3/64"	53/64"	1-3/64"	1-3/4"	1-55/64"	3-25/32"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60114C45-20FM	26,7	21,0	26,8	44,6	47,2	102,7	50	20	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

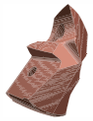
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
14	7247-IP7-10	7247N-IP7-10	8IP-7	8IP-7TL	8IP-7B	0.5512-0.5905	7.4	14.00-14.99	84

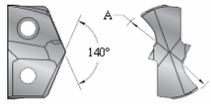
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

15 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.5906 to 0.6298 (15,00mm to 15,99mm)

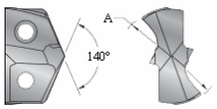




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	15,00	0.5906	5C115H-15	❍	5C115H-15-LR	▲	5C215H-15	❍	5C215H-15-CI	▲	5C215H-15-LR	▲
19/32"	15,08	0.5938	5C115H-0019	❍	5C115H-0019-LR	▲	5C215H-0019	❍	5C215H-0019-CI	❍	5C215H-0019-LR	▲
	15,25	0.6004	5C115H-15.25	▲	5C115H-15.25-LR	▲	5C215H-15.25	▲	5C215H-15.25-CI	❍	5C215H-15.25-LR	▲
39/64"	15,48	0.6094	5C115H-.609	❍	5C115H-.609-LR	▲	5C215H-.609	❍	5C215H-.609-CI	▲	5C215H-.609-LR	▲
	15,50	0.6103	5C115H-15.5	❍	5C115H-15.5-LR	▲	5C215H-15.5	❍	5C215H-15.5-CI	❍	5C215H-15.5-LR	▲
	15,70	0.6181	5C115H-.618	❍	5C115H-.618-LR	▲	5C215H-.618	❍	5C215H-.618-CI	▲	5C215H-.618-LR	▲
5/8"	15,88	0.6250	5C115H-0020	❍	5C115H-0020-LR	▲	5C215H-0020	❍	5C215H-0020-CI	❍	5C215H-0020-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	15,00	0.5906	7C115P-15	❍	7C115P-15LR	▲	7C215P-15	❍	7C215P-15CI	▲	7C215P-15LR	▲	7C215P-15AS	❍
19/32"	15,08	0.5938	7C115P-0019	❍	7C115P-0019LR	▲	7C215P-0019	❍	7C215P-0019CI	❍	7C215P-0019LR	▲	7C215P-0019AS	❍
	15,25	0.6004	7C115P-15.25	▲	7C115P-15.25LR	▲	7C215P-15.25	▲	7C215P-15.25CI	❍	7C215P-15.25LR	▲	7C215P-15.25AS	▲
39/64"	15,48	0.6094	7C115P-.609	❍	7C115P-.609LR	▲	7C215P-.609	❍	7C215P-.609CI	▲	7C215P-.609LR	▲	7C215P-.609AS	❍
	15,50	0.6103	7C115P-15.5	❍	7C115P-15.5LR	▲	7C215P-15.5	❍	7C215P-15.5CI	❍	7C215P-15.5LR	▲	7C215P-15.5AS	❍
	15,70	0.6181	7C115P-.618	❍	7C115P-.618LR	▲	7C215P-.618	❍	7C215P-.618CI	▲	7C215P-.618LR	▲	7C215P-.618AS	❍
5/8"	15,88	0.6250	7C115P-0020	❍	7C115P-0020LR	❍	7C215P-0020	❍	7C215P-0020CI	❍	7C215P-0020LR	▲	7C215P-0020AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

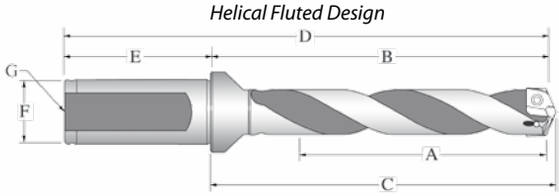
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .5925" AM200®, 15 Series, C2 = 5C215H-.5925
Metric = 15,25 mm AM200®, 15 Series, C2 = 5C215H-15.25

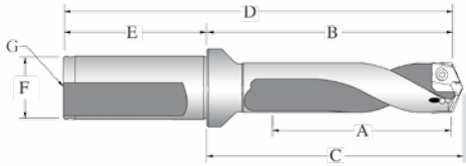
15 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.5906 to 0.6298 (15,00mm to 15,99mm)

Helical Fluted Design

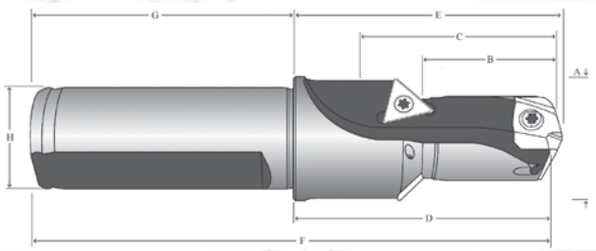


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60315S-075F	1-57/64"	2-61/64"	3-3/64"	yes	4-63/64"	2-1/32"	3/4"	1/8"
	5xD	60515S-075F	3-5/32"	4-7/32"	4-5/16"	yes	6-1/4"			1/8"
	7xD	60715S-075F	4-27/64"	5-31/64"	5-37/64"	yes	7-1/2"			1/8"
Helical (Machining Center)	Stub	60115H-075F	11/16"	1-3/4"	1-27/32"	yes	3-25/32"	2-1/32"	3/4"	1/8"
	3xD	60315H-075F	1-57/64"	2-61/64"	3-3/64"	yes	4-63/64"			1/8"
		60315H-075C	1-57/64"	2-61/64"	3-3/64"	no	4-63/64"			1/8"
	5xD	60515H-075F	3-5/32"	4-7/32"	4-5/16"	yes	6-1/4"			1/8"
		60515H-075C	3-5/32"	4-7/32"	4-5/16"	no	6-1/4"			1/8"
	7xD	60715H-075F	4-27/64"	5-31/64"	5-37/64"	yes	7-1/2"			1/8"
		60715H-075C	4-27/64"	5-31/64"	5-37/64"	no	7-1/2"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60315S-20FM	48,0	75,1	77,6	yes	125,1	50	20	1/8"*
	5xD	60515S-20FM	80,0	107,0	109,6	yes	157,0			1/8"*
	7xD	60715S-20FM	111,9	139,0	141,6	yes	189,0			1/8"*
Helical (Machining Center)	Stub	60115H-20FM	17,5	44,3	46,8	yes	94,3	50	20	1/8"*
	3xD	60315H-20FM	48,0	75,1	77,6	yes	125,1			1/8"*
		60315H-20CM	48,0	75,1	77,6	no	125,1			1/8"*
	5xD	60515H-20FM	80,0	107,0	109,6	yes	157,0			1/8"*
		60515H-20CM	80,0	107,0	109,6	no	157,0			1/8"*
	7xD	60715H-20FM	111,9	139,0	141,6	yes	189,0			1/8"*
		60715H-20CM	111,9	139,0	141,6	no	189,0			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60115C45-075F	1-1/16"	57/64"	1-1/16"	1-47/64"	1-27/32"	3-49/64"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60115C45-20FM	27,0	22,5	26,9	44,3	46,8	102,4	50	20	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

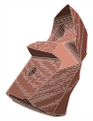
Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
15	7247-IP7-10	7247N-IP7-10	8IP-7	8IP-7TL	8IP-7B	0.5906-0.6298	7.4	15.00-15.99	84

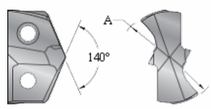
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

16 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.6299 to 0.6692 (16,00mm to 16,99mm)

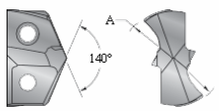




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	16,00	0.6299	5C116H-16	❍	5C116H-16-LR	▲	5C216H-16	❍	5C216H-16-CI	❍	5C216H-16-LR	▲
	16,08	0.6331	5C116H-16.08	▲	5C116H-16.08-LR	▲	5C216H-16.08	▲	5C216H-16.08-CI	▲	5C216H-16.08-LR	▲
41/64"	16,27	0.6406	5C116H-.640	❍	5C116H-.640-LR	▲	5C216H-.640	❍	5C216H-.640-CI	❍	5C216H-.640-LR	▲
	16,50	0.6496	5C116H-16.5	❍	5C116H-16.5-LR	▲	5C216H-16.5	❍	5C216H-16.5-CI	▲	5C216H-16.5-LR	▲
21/32"	16,67	0.6563	5C116H-0021	❍	5C116H-0021-LR	▲	5C216H-0021	❍	5C216H-0021-CI	❍	5C216H-0021-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	16,00	0.6299	7C116P-16	❍	7C116P-16LR	❍	7C216P-16	❍	7C216P-16CI	❍	7C216P-16LR	▲	7C216P-16AS	❍
	16,08	0.6331	7C116P-16.08	▲	7C116P-16.08LR	▲	7C216P-16.08	▲	7C216P-16.08CI	▲	7C216P-16.08LR	▲	7C216P-16.08AS	❍
41/64"	16,27	0.6406	7C116P-.640	❍	7C116P-.640LR	▲	7C216P-.640	❍	7C216P-.640CI	❍	7C216P-.640LR	▲	7C216P-.640AS	❍
	16,50	0.6496	7C116P-16.5	❍	7C116P-16.5LR	▲	7C216P-16.5	❍	7C216P-16.5CI	▲	7C216P-16.5LR	▲	7C216P-16.5AS	❍
21/32"	16,67	0.6563	7C116P-0021	❍	7C116P-0021LR	▲	7C216P-0021	❍	7C216P-0021CI	❍	7C216P-0021LR	▲	7C216P-0021AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

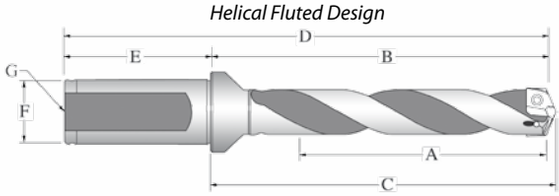
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .6300" AM200®, 16 Series, C2 = 5C216H-.6300
Metric = 16,20 mm AM200®, 16 Series, C2 = 5C216H-16.20

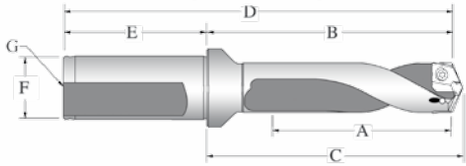
16 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.6299 to 0.6692 (16,00mm to 16,99mm)

Helical Fluted Design

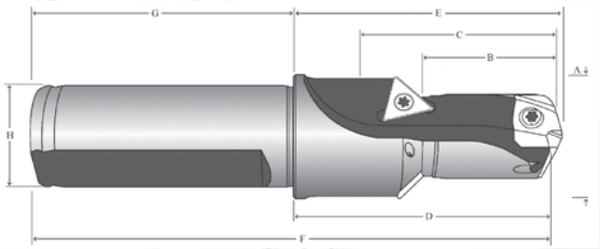


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60316S-075F	2-1/64”	3-13/64”	3-5/16”	yes	5-15/64”	2-1/32”	3/4”	1/8”
	5xD	60516S-075F	3-23/64”	4-35/64”	4-21/32”	yes	6-37/64”			1/8”
	7xD	60716S-075F	4-11/16”	5-29/32”	6”	yes	7-29/32”			1/8”
Helical (Machining Center)	Stub	60116H-075F	13/16”	2”	2-7/64”	yes	4-1/32”	2-1/32”	3/4”	1/8”
	3xD	60316H-075F	2-1/64”	3-13/64”	3-5/16”	yes	5-15/64”			1/8”
		60316H-075C	2-1/64”	3-13/64”	3-5/16”	no	5-15/64”			1/8”
	5xD	60516H-075F	3-23/64”	4-35/64”	4-21/32”	yes	6-37/64”			1/8”
		60516H-075C	3-23/64”	4-35/64”	4-21/32”	no	6-37/64”			1/8”
	7xD	60716H-075F	4-11/16”	5-29/32”	6”	yes	7-29/32”			1/8”
		60716H-075C	4-11/16”	5-29/32”	6”	no	7-29/32”			1/8”
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60316S-20FM	51,0	81,3	84,2	yes	131,3	50	20	1/8”*
	5xD	60516S-20FM	84,9	115,3	118,2	yes	165,3			1/8”*
	7xD	60716S-20FM	118,9	149,3	152,2	yes	199,3			1/8”*
Helical (Machining Center)	Stub	60116H-20FM	21,0	50,8	53,7	yes	100,8	50	20	1/8”*
	3xD	60316H-20FM	51,0	81,3	84,2	yes	131,3			1/8”*
		60316H-20CM	51,0	81,3	84,2	no	131,3			1/8”*
	5xD	60516H-20FM	84,9	115,3	118,2	yes	165,3			1/8”*
		60516H-20CM	84,9	115,3	118,2	no	165,3			1/8”*
	7xD	60716H-20FM	118,9	149,3	152,2	yes	199,3			1/8”*
		60716H-20CM	118,9	149,3	152,2	no	199,3			1/8”*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	Ref. OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60116C45-075F	1-1/16"	61/64"	1-19/64"	2"	2-7/64"	4-1/32"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60116C45-20FM	27,0	24,0	33,1	50,8	53,7	108,9	50	20	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

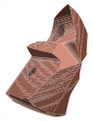
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
16	72556-IP8-10	72556N-IP8-10	8IP-8	8IP-8TL	8IP-8B	0.6299-0.6692	15.5	16.00-16.99	175

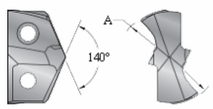
Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

17 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.6693 to 0.7086 (17,00mm to 17,99mm)

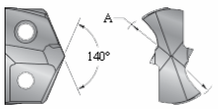




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	17,00	0.6693	5C117H-17	❍	5C117H-17-LR	▲	5C217H-17	❍	5C217H-17-CI	❍	5C217H-17-LR	▲
43/64"	17,07	0.6719	5C117H-.671	❍	5C117H-.671-LR	▲	5C217H-.671	❍	5C217H-.671-CI	▲	5C217H-.671-LR	▲
	17,10	0.6732	5C117H-17.1	▲	5C117H-17.1-LR	▲	5C217H-17.1	▲	5C217H-17.1-CI	❍	5C217H-17.1-LR	▲
	17,20	0.6772	5C117H-17.2	▲	5C117H-17.2-LR	▲	5C217H-17.2	▲	5C217H-17.2-CI	❍	5C217H-17.2-LR	▲
11/16"	17,46	0.6875	5C117H-0022	❍	5C117H-0022-LR	▲	5C217H-0022	❍	5C217H-0022-CI	❍	5C217H-0022-LR	▲
	17,50	0.6890	5C117H-17.5	❍	5C117H-17.5-LR	▲	5C217H-17.5	❍	5C217H-17.5-CI	❍	5C217H-17.5-LR	▲
45/64"	17,86	0.7030	5C117H-.703	❍	5C117H-.703-LR	▲	5C217H-.703	❍	5C217H-.703-CI	❍	5C217H-.703-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	17,00	0.6693	7C117P-17	❍	7C117P-17LR	▲	7C217P-17	❍	7C217P-17CI	❍	7C217P-17LR	▲	7C217P-17AS	❍
43/64"	17,07	0.6719	7C117P-.671	❍	7C117P-.671LR	▲	7C217P-.671	❍	7C217P-.671CI	▲	7C217P-.671LR	▲	7C217P-.671AS	❍
	17,10	0.6732	7C117P-17.1	▲	7C117P-17.1LR	▲	7C217P-17.1	▲	7C217P-17.1CI	❍	7C217P-17.1LR	▲	7C217P-17.1AS	▲
	17,20	0.6772	7C117P-17.2	▲	7C117P-17.2LR	▲	7C217P-17.2	▲	7C217P-17.2CI	❍	7C217P-17.2LR	▲	7C217P-17.2AS	▲
11/16"	17,46	0.6875	7C117P-0022	❍	7C117P-0022LR	❍	7C217P-0022	❍	7C217P-0022CI	❍	7C217P-0022LR	▲	7C217P-0022AS	❍
	17,50	0.6890	7C117P-17.5	❍	7C117P-17.5LR	▲	7C217P-17.5	❍	7C217P-17.5CI	❍	7C217P-17.5LR	▲	7C217P-17.5AS	❍
45/64"	17,86	0.7030	7C117P-.703	❍	7C117P-.703LR	▲	7C217P-.703	❍	7C217P-.703CI	❍	7C217P-.703LR	▲	7C217P-.703AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

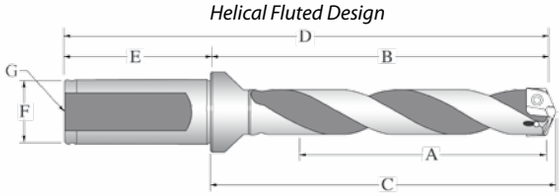
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .6800" AM200®, 17 Series, C2 = 5C217H-.6800
Metric = 17,20 mm AM200®, 17 Series, C2 = 5C217H-17.20

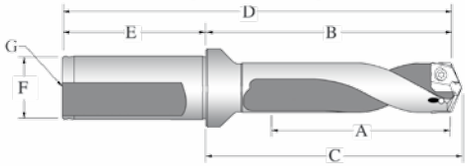
17 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.6693 to 0.7086 (17.00mm to 17.99mm)

Helical Fluted Design

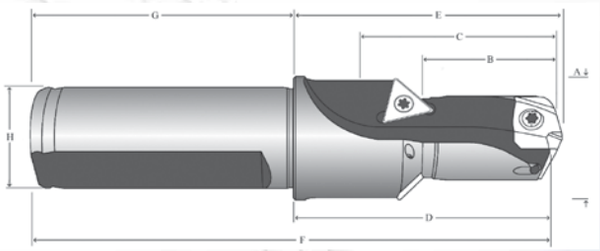


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60317S-075F	2-1/8”	3-5/16”	3-27/64”	yes	5-15/64”	2-1/32”	3/4”	1/8”
	5xD	60517S-075F	3-35/64”	4-47/64”	4-27/32”	yes	6-49/64”			1/8”
	7xD	60717S-075F	4-31/32”	6-9/64”	6-1/4”	yes	8-11/64”			1/8”
Helical (Machining Center)	Stub	60117H-075F	13/16”	1-63/64”	2-7/64”	yes	4-1/64”	2-1/32”	3/4”	1/8”
	3xD	60317H-075F	2-1/8”	3-5/16”	3-27/64”	yes	5-15/64”			1/8”
		60317H-075C	2-1/8”	3-5/16”	3-27/64”	no	5-15/64”			1/8”
	5xD	60517H-075F	3-35/64”	4-47/64”	4-27/32”	yes	6-49/64”			1/8”
		60517H-075C	3-35/64”	4-47/64”	4-27/32”	no	6-49/64”			1/8”
	7xD	60717H-075F	4-31/32”	6-9/64”	6-1/4”	yes	8-11/64”			1/8”
		60717H-075C	4-31/32”	6-9/64”	6-1/4”	no	8-11/64”			1/8”
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60317S-20FM	54,0	84,1	87,0	yes	134,1	50	20	1/8”*
	5xD	60517S-20FM	89,9	120,0	122,9	yes	170,1			1/8”*
	7xD	60717S-20FM	125,9	156,0	158,9	yes	206,0			1/8”*
Helical (Machining Center)	Stub	60117H-20FM	21,0	50,5	53,4	yes	100,5	50	20	1/8”*
	3xD	60317H-20FM	54,0	84,1	87,0	yes	134,1			1/8”*
		60317H-20CM	54,0	84,1	87,0	no	134,1			1/8”*
	5xD	60517H-20FM	89,9	120,0	122,9	yes	170,1			1/8”*
		60517H-20CM	89,9	120,0	122,9	no	170,1			1/8”*
	7xD	60717H-20FM	125,9	156,0	158,9	yes	206,0			1/8”*
		60717H-20CM	125,9	156,0	158,9	no	206,0			1/8”*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60117C45-075F	1"	1"	1-5/16"	1-63/64"	2-7/64”	4-1/64"	2-1/32"	3/4"	TCMT-110204
METRIC (mm)									
60117C45-20FM	25,4	25,5	33,3	50,5	53,4	108,6	50	20	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

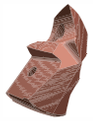
Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
17	72567-IP8-10	72567N-IP8	8IP-8	8IP-8TL	8IP-8B	0.6693-0.7086	15.5	17.00-17.99	175

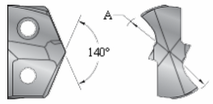
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

18 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.7087 to 0.7873 (18,00mm to 19,99mm)

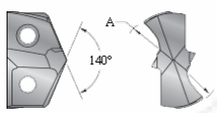




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	18,00	0.7087	5C118H-18	❍	5C118H-18-LR	▲	5C218H-18	❍	5C218H-18-CI	❍	5C218H-18-LR	▲
23/32"	18,26	0.7188	5C118H-0023	❍	5C118H-0023-LR	▲	5C218H-0023	❍	5C218H-0023-CI	❍	5C218H-0023-LR	▲
	18,50	0.7283	5C118H-18.5	❍	5C118H-18.5-LR	▲	5C218H-18.5	❍	5C218H-18.5-CI	❍	5C218H-18.5-LR	▲
47/64"	18,65	0.7344	5C118H-.734	❍	5C118H-.734-LR	▲	5C218H-.734	❍	5C218H-.734-CI	▲	5C218H-.734-LR	▲
	19,00	0.7480	5C118H-19	❍	5C118H-19-LR	▲	5C218H-19	❍	5C218H-19-CI	▲	5C218H-19-LR	▲
3/4"	19,05	0.7500	5C118H-0024	❍	5C118H-0024-LR	▲	5C218H-0024	❍	5C218H-0024-CI	❍	5C218H-0024-LR	▲
	19,25	0.7580	5C118H-.758	❍	5C118H-.758-LR	▲	5C218H-.758	❍	5C218H-.758-CI	❍	5C218H-.758-LR	▲
49/64"	19,45	0.7656	5C118H-.765	❍	5C118H-.765-LR	▲	5C218H-.765	❍	5C218H-.765-CI	▲	5C218H-.765-LR	▲
	19,50	0.7677	5C118H-19.5	❍	5C118H-19.5-LR	▲	5C218H-19.5	❍	5C218H-19.5-CI	❍	5C218H-19.5-LR	▲
	19,80	0.7795	5C118H-19.8	▲	5C118H-19.8-LR	▲	5C218H-19.8	▲	5C218H-19.8-CI	▲	5C218H-19.8-LR	▲
25/32"	19,85	0.7813	5C118H-0025	❍	5C118H-0025-LR	▲	5C218H-0025	❍	5C218H-0025-CI	❍	5C218H-0025-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	18,00	0.7087	7C118P-18	❍	7C118P-18LR	❍	7C218P-18	❍	7C218P-18CI	❍	7C218P-18LR	▲	7C218P-18AS	❍
23/32"	18,26	0.7188	7C118P-0023	❍	7C118P-0023LR	▲	7C218P-0023	❍	7C218P-0023CI	❍	7C218P-0023LR	▲	7C218P-0023AS	❍
	18,50	0.7283	7C118P-18.5	❍	7C118P-18.5LR	▲	7C218P-18.5	❍	7C218P-18.5CI	❍	7C218P-18.5LR	▲	7C218P-18.5AS	❍
47/64"	18,65	0.7344	7C118P-.734	❍	7C118P-.734LR	▲	7C218P-.734	❍	7C218P-.734CI	▲	7C218P-.734LR	▲	7C218P-.734AS	❍
	19,00	0.7480	7C118P-19	❍	7C118P-19LR	▲	7C218P-19	❍	7C218P-19CI	▲	7C218P-19LR	▲	7C218P-19AS	❍
3/4"	19,05	0.7500	7C118P-0024	❍	7C118P-0024LR	▲	7C218P-0024	❍	7C218P-0024CI	❍	7C218P-0024LR	▲	7C218P-0024AS	❍
	19,25	0.7580	7C118P-.758	❍	7C118P-.758LR	❍	7C218P-.758	❍	7C218P-.758CI	❍	7C218P-.758LR	▲	7C218P-.758AS	❍
49/64"	19,45	0.7656	7C118P-.765	❍	7C118P-.765LR	❍	7C218P-.765	❍	7C218P-.765CI	▲	7C218P-.765LR	▲	7C218P-.765AS	❍
	19,50	0.7677	7C118P-19.5	❍	7C118P-19.5LR	▲	7C218P-19.5	❍	7C218P-19.5CI	▲	7C218P-19.5LR	▲	7C218P-19.5AS	▲
	19,80	0.7795	7C118P-19.8	▲	7C118P-19.8LR	▲	7C218P-19.8	▲	7C218P-19.8CI	▲	7C218P-19.8LR	▲	7C218P-19.8AS	▲
25/32"	19,85	0.7813	7C118P-0025	❍	7C118P-0025LR	❍	7C218P-0025	❍	7C218P-0025CI	❍	7C218P-0025LR	▲	7C218P-0025AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

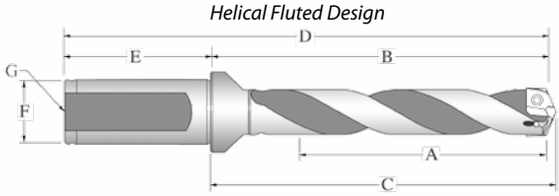
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .7350" AM200®, 18 Series, C2 = 5C218H-.7350
Metric = 18,40 mm AM200®, 18 Series, C2 = 5C218H-18.40

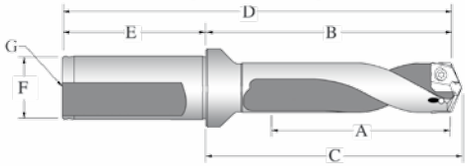
18 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.7087 to 0.7873 (18,00mm to 19,99mm)

Helical Fluted Design

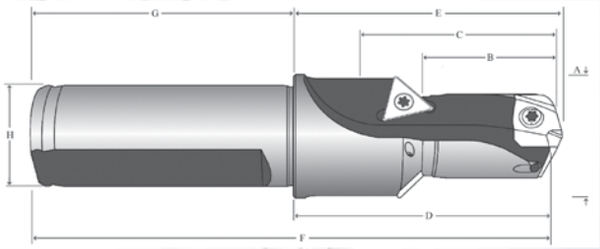


Straight Fluted Design



GEN3SYS and Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60318S-100F	2-3/8"	3-45/64"	3-13/16"	yes	5-63/64"	2-9/32"	1"	1/8"
	5xD	60518S-100F	3-15/16"	5-9/32"	5-25/64"	yes	7-9/16"			1/8"
	7xD	60718S-100F	5-33/64"	6-55/64"	6-61/64"	yes	9-9/64"			1/8"
Helical (Machining Center)	Stub	60118H-100F	7/8"	2-13/64"	2-5/16"	yes	4-31/64"	2-9/32"	1"	1/8"
	3xD	60318H-100F	2-3/8"	3-45/64"	3-13/16"	yes	5-63/64"			1/8"
		60318H100C	2-3/8"	3-45/64"	3-13/16"	no	5-63/64"			1/8"
	5xD	60518H-100F	3-15/16"	5-9/32"	5-25/64"	yes	7-9/16"			1/8"
		60518H-100C	3-15/16"	5-9/32"	5-25/64"	no	7-9/16"			1/8"
	7xD	60718H-100F	5-33/64"	6-55/64"	6-61/64"	yes	9-9/64"			1/8"
		60718H-100C	5-33/64"	6-55/64"	6-61/64"	no	9-9/64"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60318S-25FM	60,0	94,0	96,8	yes	150,0	56	25	1/8"*
	5xD	60518S-25FM	99,9	134,0	136,8	yes	190,0			1/8"*
	7xD	60718S-25FM	139,9	174,0	176,8	yes	230,0			1/8"*
Helical (Machining Center)	Stub	60118H-25FM	22,0	56,0	58,8	yes	111,9	56	25	1/8"*
	3xD	60318H-25FM	60,0	94,0	96,8	yes	150,0			1/8"*
		60318H-25CM	60,0	94,0	96,8	no	150,0			1/8"*
	5xD	60518H-25FM	99,9	134,0	136,8	yes	190,0			1/8"*
		60518H-25CM	99,9	134,0	136,8	no	190,0			1/8"*
	7xD	60718H-25FM	139,9	174,0	176,8	yes	230,0			1/8"*
		60718H-25CM	139,9	174,0	176,8	no	230,0			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60118C45-100F	63/64"	1-1/16"	1-25/64"	2-13/64"	2-5/16"	4-31/64"	2-9/32"	1"	TCMT-110204
METRIC (mm)									
60118C45-25FM	25,1	27,0	35,2	56,0	58,8	114,8	56	25	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

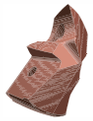
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
18	7375-IP9-10	7375N-IP9-10	8IP-9	8IP-9TL	8IP-9B	0.7087-0.7873	27.0	18.00-19.99	305

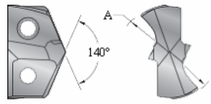
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

20 Series GEN3SYS® and GEN3SYS® XT Drill Inserts

Range: 0.7874 to 0.8660 (20,00mm to 21,99mm)

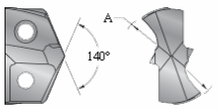




GEN3SYS® Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	20,00	0.7874	5C120H-20	❍	5C120H-20-LR	▲	5C220H-20	❍	5C220H-20-CI	❍	5C220H-20-LR	▲
51/64"	20,24	0.7969	5C120H-.796	❍	5C120H-.796-LR	▲	5C220H-.796	❍	5C220H-.796-CI	▲	5C220H-.796-LR	▲
	20,50	0.8071	5C120H-20.5	❍	5C120H-20.5-LR	▲	5C220H-20.5	❍	5C220H-20.5-CI	❍	5C220H-20.5-LR	▲
13/16"	20,64	0.8125	5C120H-0026	❍	5C120H-0026-LR	▲	5C220H-0026	❍	5C220H-0026-CI	❍	5C220H-0026-LR	▲
	21,00	0.8268	5C120H-21	❍	5C120H-21-LR	▲	5C220H-21	❍	5C220H-21-CI	❍	5C220H-21-LR	▲
27/32"	21,43	0.8438	5C120H-0027	❍	5C120H-0027-LR	▲	5C220H-0027	❍	5C220H-0027-CI	❍	5C220H-0027-LR	▲
	21,50	0.8465	5C120H-21.5	❍	5C120H-21.5-LR	▲	5C220H-21.5	❍	5C220H-21.5-CI	❍	5C220H-21.5-LR	▲
55/64"	21,83	0.8594	5C120H-.859	❍	5C120H-.859-LR	▲	5C220H-.859	❍	5C220H-.859-CI	▲	5C220H-.859-LR	▲

- see page B40 for geometry details



GEN3SYS® XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	20,00	0.7874	7C120P-20	❍	7C120P-20LR	▲	7C220P-20	❍	7C220P-20CI	❍	7C220P-20LR	▲	7C220P-20AS	❍
51/64"	20,24	0.7969	7C120P-.796	❍	7C120P-.796LR	▲	7C220P-.796	❍	7C220P-.796CI	▲	7C220P-.796LR	▲	7C220P-.796AS	❍
	20,50	0.8071	7C120P-20.5	❍	7C120P-20.5LR	▲	7C220P-20.5	❍	7C220P-20.5CI	❍	7C220P-20.5LR	▲	7C220P-20.5AS	❍
13/16"	20,64	0.8125	7C120P-0026	❍	7C120P-0026LR	❍	7C220P-0026	❍	7C220P-0026CI	❍	7C220P-0026LR	▲	7C220P-0026AS	❍
	21,00	0.8268	7C120P-21	❍	7C120P-21LR	▲	7C220P-21	❍	7C220P-21CI	❍	7C220P-21LR	▲	7C220P-21AS	❍
27/32"	21,43	0.8438	7C120P-0027	❍	7C120P-0027LR	▲	7C220P-0027	❍	7C220P-0027CI	❍	7C220P-0027LR	▲	7C220P-0027AS	❍
	21,50	0.8465	7C120P-21.5	❍	7C120P-21.5LR	▲	7C220P-21.5	❍	7C220P-21.5CI	▲	7C220P-21.5LR	▲	7C220P-21.5AS	❍
55/64"	21,83	0.8594	7C120P-.859	❍	7C120P-.859LR	▲	7C220P-.859	❍	7C220P-.859CI	▲	7C220P-.859LR	▲	7C220P-.859AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

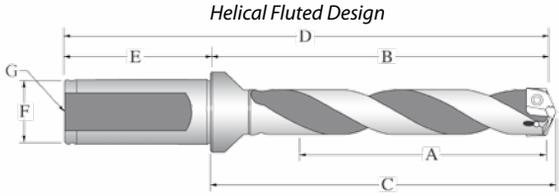
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .8025" AM200®, 20 Series, C2 = 5C220H-.8025
Metric = 20,10 mm AM200®, 20 Series, C2 = 5C220H-20.10

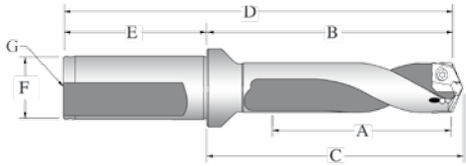
20 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.7874 to 0.8660 (20,00mm to 21,99mm)

Helical Fluted Design

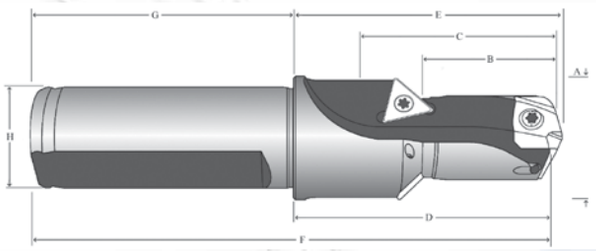


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60320S-100F	2-17/32"	3-61/64"	4-3/64"	yes	6-15/64"	2-9/32"	1"	1/8"
	5xD	60520S-100F	4-11/32"	5-11/16"	5-25/32"	yes	7-61/64"			1/8"
	7xD	60720S-100F	6-1/16"	7-13/32"	7-33/64"	yes	9-11/16"			1/8"
Helical (Machining Center)	Stub	60120H-100F	15/16"	2-17/64"	2-3/8"	yes	4-35/64"	2-9/32"	1"	1/8"
	3xD	60320H-100F	2-17/32"	3-61/64"	4-3/64"	yes	6-15/64"			1/8"
		60320H-100C	2-17/32"	3-61/64"	4-3/64"	no	6-15/64"			1/8"
	5xD	60520H-100F	4-11/32"	5-11/16"	5-25/32"	yes	7-61/64"			1/8"
		60520H-100C	4-11/32"	5-11/16"	5-25/32"	no	7-61/64"			1/8"
	7xD	60720H-100F	6-1/16"	7-13/32"	7-33/64"	yes	9-11/16"			1/8"
		60720H-100C	6-1/16"	7-13/32"	7-33/64"	no	9-11/16"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60320S-25FM	66,0	100,1	102,9	yes	156,1	56	25	1/8"*
	5xD	60520S-25FM	110,0	144,1	146,9	yes	200,1			1/8"*
	7xD	60720S-25FM	153,9	188,1	190,9	yes	244,0			1/8"*
Helical (Machining Center)	Stub	60120H-25FM	24,0	57,6	60,4	yes	113,6	56	25	1/8"*
	3xD	60320H-25FM	66,0	100,1	102,9	yes	156,1			1/8"*
		60320H-25CM	66,0	100,1	102,9	no	156,1			1/8"*
	5xD	60520H-25FM	110,0	144,1	146,9	yes	200,1			1/8"*
		60520H-25CM	110,0	144,1	146,9	no	200,1			1/8"*
	7xD	60720H-25FM	153,9	188,1	190,9	yes	244,0			1/8"*
		60720H-25CM	153,9	188,1	190,9	no	244,0			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60120C45-100F	1-5/64"	1-3/16"	1-29/64"	2-17/64"	2-3/8"	4-35/64"	2-9/32"	1"	TCMT-110204
METRIC (mm)									
60120C45-25FM	27,2	30,0	37,1	57,6	60,4	116,5	56	25	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

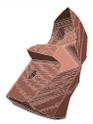
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
20	7375-IP9-10	7375N-IP9-10	8IP-9	8IP-9TL	8IP-9B	0.7874-0.8660	27.0	20.00-21.99	305

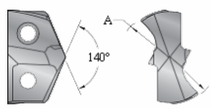
Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

22 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.8661 to 0.9448 (22,00mm to 23,99mm)

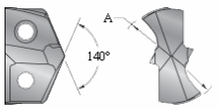




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	22,00	0.8661	5C122H-22	❍	5C122H-22-LR	▲	5C222H-22	❍	5C222H-22-CI	❍	5C222H-22-LR	▲
7/8"	22,23	0.8750	5C122H-0028	❍	5C122H-0028-LR	▲	5C222H-0028	❍	5C222H-0028-CI	❍	5C222H-0028-LR	▲
57/64"	22,61	0.8900	5C122H-.890	❍	5C122H-.890-LR	▲	5C222H-.890	❍	5C222H-.890-CI	▲	5C222H-.890-LR	▲
	23,00	0.9055	5C122H-23	❍	5C122H-23-LR	▲	5C222H-23	❍	5C222H-23-CI	❍	5C222H-23-LR	▲
29/32"	23,02	0.9063	5C122H-0029	❍	5C122H-0029-LR	▲	5C222H-0029	❍	5C222H-0029-CI	▲	5C222H-0029-LR	▲
59/64"	23,42	0.9219	5C122H-.921	❍	5C122H-.921-LR	▲	5C222H-.921	❍	5C222H-.921-CI	❍	5C222H-.921-LR	▲
15/16"	23,81	0.9375	5C122H-0030	❍	5C122H-0030-LR	▲	5C222H-0030	❍	5C222H-0030-CI	❍	5C222H-0030-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	22,00	0.8661	7C122P-22	❍	7C122P-22LR	❍	7C222P-22	❍	7C222P-22CI	❍	7C222P-22LR	▲	7C222P-22AS	❍
7/8"	22,23	0.8750	7C122P-0028	❍	7C122P-0028LR	❍	7C222P-0028	❍	7C222P-0028CI	❍	7C222P-0028LR	▲	7C222P-0028AS	❍
57/64"	22,61	0.8900	7C122P-.890	❍	7C122P-.890LR	▲	7C222P-.890	❍	7C222P-.890CI	▲	7C222P-.890LR	▲	7C222P-.890AS	❍
	23,00	0.9055	7C122P-23	❍	7C122P-23LR	▲	7C222P-23	❍	7C222P-23CI	❍	7C222P-23LR	▲	7C222P-23AS	❍
29/32"	23,02	0.9063	7C122P-0029	❍	7C122P-0029LR	▲	7C222P-0029	❍	7C222P-0029CI	▲	7C222P-0029LR	▲	7C222P-0029AS	❍
59/64"	23,42	0.9219	7C122P-.921	❍	7C122P-.921LR	▲	7C222P-.921	❍	7C222P-.921CI	❍	7C222P-.921LR	▲	7C222P-.921AS	❍
15/16"	23,81	0.9375	7C122P-0030	❍	7C122P-0030LR	❍	7C222P-0030	❍	7C222P-0030CI	❍	7C222P-0030LR	▲	7C222P-0030AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

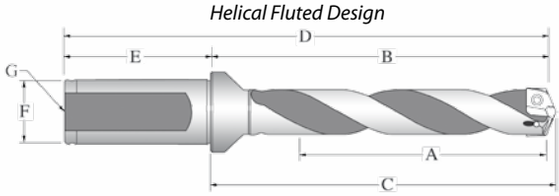
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = .8750" AM200®, 22 Series, C2 = 5C122H-.8750
Metric = 23,12mm AM200®, 22 Series, C2 = 5C122H-23.12

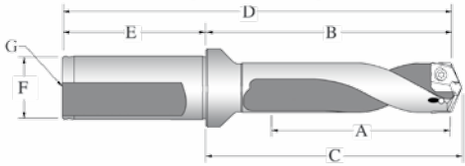
22 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.8661 to 0.9448 (22,00mm to 23,99mm)

Helical Fluted Design

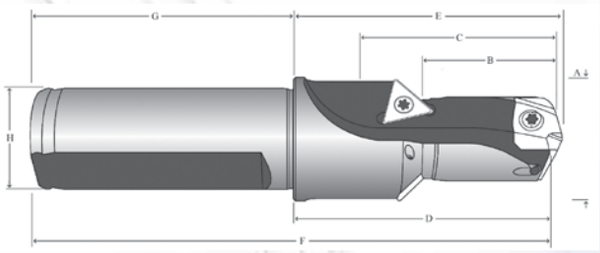


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60322S-100F	2-53/64"	4-9/64"	4-17/64"	yes	6-27/64"	2-9/32"	1"	1/8"
	5xD	60522S-100F	4-23/32"	6-1/32"	6-5/32"	yes	8-5/16"			1/8"
	7xD	60722S-100F	6-39/64"	7-59/64"	8-3/64"	yes	10-13/64"			1/8"
Helical (Machining Center)	Stub	60122H-100F	1-1/16"	2-23/64"	2-31/64"	yes	4-41/64"	2-9/32"	1"	1/8"
	3xD	60322H-100F	2-53/64"	4-9/64"	4-17/64"	yes	6-27/64"			1/8"
		60322H-100C	2-53/64"	4-9/64"	4-17/64"	no	6-27/64"			1/8"
	5xD	60522H-100F	4-23/32"	6-1/32"	6-5/32"	yes	8-5/16"			1/8"
		60522H-100C	4-23/32"	6-1/32"	6-5/32"	no	8-5/16"			1/8"
	7xD	60722H-100F	6-39/64"	7-59/64"	8-3/64"	yes	10-13/64"			1/8"
		60722H-100C	6-39/64"	7-59/64"	8-3/64"	no	10-13/64"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60322S-25FM	72,0	105,3	108,3	yes	161,3	56	25	1/8"*
	5xD	60522S-25FM	119,9	153,3	156,2	yes	209,3			1/8"*
	7xD	60722S-25FM	167,9	201,3	204,2	yes	257,3			1/8"*
Helical (Machining Center)	Stub	60122H-25FM	27,0	60,1	63,0	yes	116,1	56	25	1/8"*
	3xD	60322H-25FM	72,0	105,3	108,3	yes	161,3			1/8"*
		60322H-25CM	72,0	105,3	108,3	no	161,3			1/8"*
	5xD	60522H-25FM	119,9	153,3	156,2	yes	209,3			1/8"*
		60522H-25CM	119,9	153,3	156,2	no	209,3			1/8"*
	7xD	60722H-25FM	167,9	201,3	204,2	yes	257,3			1/8"*
		60722H-25CM	167,9	201,3	204,2	no	257,3			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60122C45-100F	1-9/64"	1-19/64"	1-19/32"	2-23/64"	2-31/64"	4-41/64"	2-9/32"	1"	TCMT-110204
METRIC (mm)									
60122C45-25FM	29,0	33,0	40,5	60,0	63,0	119,0	56	25	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

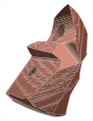
Holder Series	 TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
22	739-IP9-10	739N-IP9-10	8IP-9	8IP-9TL	8IP-9TB	.8661-.9448	27.0	22.00-23.99	305

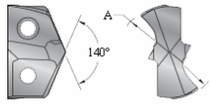
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

24 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 0.9449 to 1.0235 (24,00mm to 25,99mm)

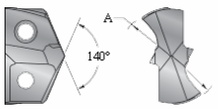




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	24,00	0.9449	5C124H-24	❍	5C124H-24-LR	▲	5C224H-24	❍	5C224H-24-CI	❍	5C224H-24-LR	▲
31/32"	24,61	0.9688	5C124H-0031	❍	5C124H-0031-LR	▲	5C224H-0031	❍	5C224H-0031-CI	❍	5C224H-0031-LR	▲
63/64"	25,00	0.9843	5C124H-25	❍	5C124H-25-LR	▲	5C224H-25	❍	5C224H-25-CI	❍	5C224H-25-LR	▲
1"	25,40	1.0000	5C124H-0100	❍	5C124H-0100-LR	▲	5C224H-0100	❍	5C224H-0100-CI	❍	5C224H-0100-LR	▲
	25,60	1.0080	5C124H-1.008	❍	5C124H-1.008-LR	▲	5C224H-1.008	❍	5C224H-1.008-CI	▲	5C224H-1.008-LR	▲
1-1/64"	25,78	1.0150	5C124H-1.015	❍	5C124H-1.015-LR	▲	5C224H-1.015	❍	5C224H-1.015-CI	❍	5C224H-1.015-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	24,00	0.9449	7C124P-24	❍	7C124P-24LR	❍	7C224P-24	❍	7C224P-24CI	❍	7C224P-24LR	▲	7C224P-24AS	❍
31/32"	24,61	0.9688	7C124P-0031	❍	7C124P-0031LR	▲	7C224P-0031	❍	7C224P-0031CI	❍	7C224P-0031LR	▲	7C224P-0031AS	❍
63/64"	25,00	0.9843	7C124P-25	❍	7C124P-25LR	▲	7C224P-25	❍	7C224P-25CI	❍	7C224P-25LR	▲	7C224P-25AS	❍
1"	25,40	1.0000	7C124P-0100	❍	7C124P-0100LR	❍	7C224P-0100	❍	7C224P-0100CI	❍	7C224P-0100LR	▲	7C224P-0100AS	❍
	25,60	1.0080	7C124P-1.008	❍	7C124P-1.008LR	❍	7C224P-1.008	❍	7C224P-1.008CI	▲	7C224P-1.008LR	▲	7C224P-1.008AS	❍
1-1/64"	25,78	1.0150	7C124P-1.015	❍	7C124P-1.015LR	❍	7C224P-1.015	❍	7C224P-1.015CI	❍	7C224P-1.015LR	▲	7C224P-1.015AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

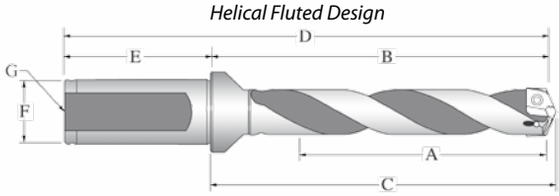
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = 1.0102" AM200®, 24 Series, C2 = 5C124H-1.0102
Metric = 25,74mm AM200®, 24 Series, C2 = 5C124H-25.74

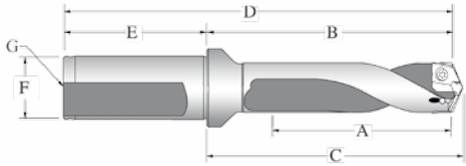
24 Series GEN3SYS and GEN3SYS XT Holders

Range: 0.9449 to 1.0235 (24,00mm to 25,99mm)

Helical Fluted Design

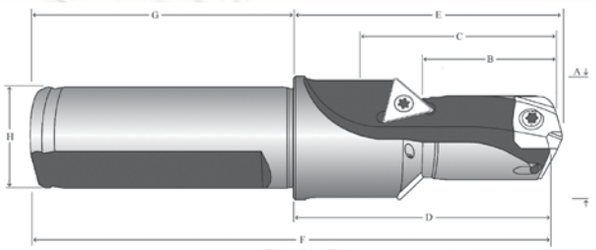


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60324S-100F	3-5/64”	4-31/64”	4-19/32”	yes	6-49/64”	2-9/32”	1”	1/8”
	5xD	60524S-100F	5-1/8”	6-17/32”	6-41/64”	yes	8-13/16”			1/8”
	7xD	60724S-100F	7-11/64”	8-37/64”	8-11/16”	yes	10-55/64”			1/8”
Helical (Machining Center)	Stub	60124H-100F	1-1/8”	2-17/32”	2-41/64”	yes	4-13/16”	2-9/32”	1”	1/8”
	3xD	60324H-100F	3-5/64”	4-31/64”	4-19/32”	yes	6-49/64”			1/8”
		60324H-100C	3-5/64”	4-31/64”	4-19/32”	no	6-49/64”			1/8”
	5xD	60524H-100F	5-1/8”	6-17/32”	6-41/64”	yes	8-13/16”			1/8”
		60524H-100C	5-1/8”	6-17/32”	6-41/64”	no	8-13/16”			1/8”
	7xD	60724H-100F	7-11/64”	8-37/64”	8-11/16”	yes	10-55/64”			1/8”
		60724H-100C	7-11/64”	8-37/64”	8-11/16”	no	10-55/64”			1/8”
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60324S-25FM	78,0	113,8	116,8	yes	169,8	56	25	1/8”*
	5xD	60524S-25FM	129,9	165,8	168,7	yes	221,8			1/8”*
	7xD	60724S-25FM	181,9	217,8	220,7	yes	273,8			1/8”*
Helical (Machining Center)	Stub	60124H-25FM	28,5	64,2	67,1	yes	120,1	56	25	1/8”*
	3xD	60324H-25FM	78,0	113,8	116,8	yes	169,8			1/8”*
		60324H-25CM	78,0	113,8	116,8	no	169,8			1/8”*
	5xD	60524H-25FM	129,9	165,8	168,7	yes	221,8			1/8”*
		60524H-25CM	129,9	165,8	168,7	no	221,8			1/8”*
	7xD	60724H-25FM	181,9	217,8	220,7	yes	273,8			1/8”*
		60724H-25CM	181,9	217,8	220,7	no	273,8			1/8”*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60124C45-100F	1-7/32"	1-27/64"	1-51/64"	2-17/32"	2-41/64"	4-51/64"	2-9/32"	1"	TCMT-110204
METRIC (mm)									
60124C45-25FM	31,0	36,0	45,5	64,2	67,1	123,0	56	25	TCMT-110204

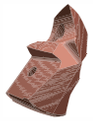
Replacement TORX Plus Screws (supplied in 10 piece packages)

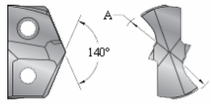
Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
24	739-IP9-10	739N-IP9-10	8IP-9	8IP-9TL	8IP-9B	.9449-1.0235	27.0	24.00-25.99	305

Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

26 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 1.0236 to 1.1416 (26,00mm to 28,99mm)

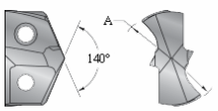




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	26,00	1.0236	5C126H-26	❍	5C126H-26-LR	▲	5C226H-26	❍	5C226H-26-CI	▲	5C226H-26-LR	▲
1-1/32"	26,20	1.0313	5C126H-0101	❍	5C126H-0101-LR	▲	5C226H-0101	❍	5C226H-0101-CI	▲	5C226H-0101-LR	▲
1-3/64"	26,59	1.0469	5C126H-1.046	❍	5C126H-1.046-LR	▲	5C226H-1.046	❍	5C226H-1.046-CI	▲	5C226H-1.046-LR	▲
1-1/16"	26,99	1.0625	5C126H-0102	❍	5C126H-0102-LR	▲	5C226H-0102	❍	5C226H-0102-CI	▲	5C226H-0102-LR	▲
	27,00	1.0630	5C126H-27	❍	5C126H-27-LR	▲	5C226H-27	❍	5C226H-27-CI	▲	5C226H-27-LR	▲
1-3/32"	27,78	1.0938	5C126H-0103	❍	5C126H-0103-LR	▲	5C226H-0103	❍	5C226H-0103-CI	▲	5C226H-0103-LR	▲
	28,00	1.1024	5C126H-28	❍	5C126H-28-LR	▲	5C226H-28	❍	5C226H-28-CI	▲	5C226H-28-LR	▲
1-7/64"	28,17	1.1090	5C126H-1.109	❍	5C126H-1.109-LR	▲	5C226H-1.109	❍	5C226H-1.109-CI	▲	5C226H-1.109-LR	▲
1-1/8"	28,58	1.1250	5C126H-0104	❍	5C126H-0104-LR	▲	5C226H-0104	❍	5C226H-0104-CI	❍	5C226H-0104-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	26,00	1.0236	7C126P-26	❍	7C126P-26LR	❍	7C226P-26	❍	7C226P-26CI	▲	7C226P-26LR	▲	7C226P-26AS	❍
1-1/32"	26,20	1.0313	7C126P-0101	❍	7C126P-0101LR	❍	7C226P-0101	❍	7C226P-0101CI	▲	7C226P-0101LR	▲	7C226P-0101AS	❍
1-3/64"	26,59	1.0469	7C126P-1.046	❍	7C126P-1.046LR	▲	7C226P-1.046	❍	7C226P-1.046CI	▲	7C226P-1.046LR	▲	7C226P-1.046AS	❍
1-1/16"	26,99	1.0625	7C126P-0102	❍	7C126P-0102LR	❍	7C226P-0102	❍	7C226P-0102CI	▲	7C226P-0102LR	▲	7C226P-0102AS	❍
	27,00	1.0630	7C126P-27	❍	7C126P-27LR	❍	7C226P-27	❍	7C226P-27CI	▲	7C226P-27LR	▲	7C226P-27AS	❍
1-3/32"	27,78	1.0938	7C126P-0103	❍	7C126P-0103LR	▲	7C226P-0103	❍	7C226P-0103CI	▲	7C226P-0103LR	▲	7C226P-0103AS	❍
	28,00	1.1024	7C126P-28	❍	7C126P-28LR	▲	7C226P-28	❍	7C226P-28CI	▲	7C226P-28LR	▲	7C226P-28AS	❍
1-7/64"	28,17	1.1090	7C126P-1.109	❍	7C126P-1.109LR	▲	7C226P-1.109	❍	7C226P-1.109CI	▲	7C226P-1.109LR	▲	7C226P-1.109AS	❍
1-1/8"	28,58	1.1250	7C126P-0104	❍	7C126P-0104LR	❍	7C226P-0104	❍	7C226P-0104CI	❍	7C226P-0104LR	▲	7C226P-0104AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

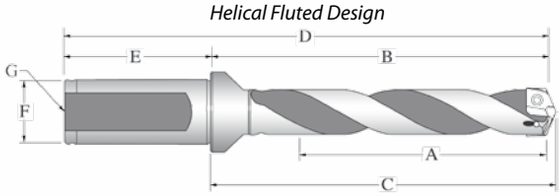
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = 1.1416" AM200®, 26 Series, C2 = 5C126H-1.1416
Metric = 28,18mm AM200®, 26 Series, C2 = 5C126H-28,18

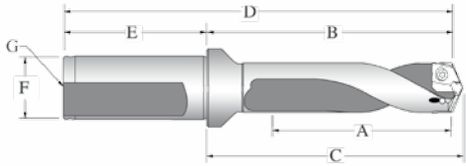
26 Series GEN3SYS and GEN3SYS XT Holders

Range: 1.0236 to 1.1416 (26,00mm to 28,99mm)

Helical Fluted Design

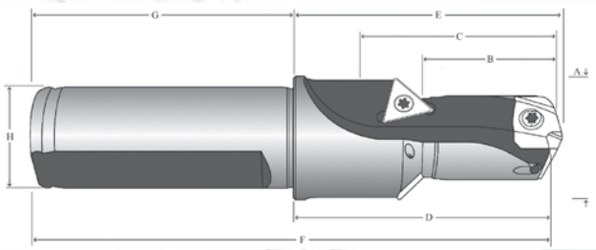


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60326S-125F	3-27/64"	5-1/16"	5-11/64"	yes	7-11/32"	2-9/32"	1-1/4"	1/8"
	5xD	60526S-125F	5-23/32"	7-11/32"	7-29/64"	yes	9-5/8"			1/8"
	7xD	60726S-125F	7-63/64"	9-5/8"	9-47/64"	yes	11-29/32"			1/8"
Helical (Machining Center)	Stub	60126H-125F	1-1/4"	2-7/8"	2-63/64"	yes	5-5/32"	2-9/32"	1-1/4"	1/8"
	3xD	60326H-125F	3-27/64"	5-1/16"	5-11/64"	yes	7-11/32"			1/8"
		60326H-125C	3-27/64"	5-1/16"	5-11/64"	no	7-11/32"			1/8"
	5xD	60526H-125F	5-23/32"	7-11/32"	7-29/64"	yes	9-5/8"			1/8"
		60526H-125C	5-23/32"	7-11/32"	7-29/64"	no	9-5/8"			1/8"
	7xD	60726H-125F	7-63/64"	9-5/8"	9-47/64"	yes	11-29/32"			1/8"
		60726H-125C	7-63/64"	9-5/8"	9-47/64"	no	11-29/32"			1/8"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60326S-32FM	87,0	128,1	130,9	yes	188,1	60	32	1/8"*
	5xD	60526S-32FM	145,0	186,1	188,8	yes	246,1			1/8"*
	7xD	60726S-32FM	202,9	244,0	246,8	yes	304,1			1/8"*
Helical (Machining Center)	Stub	60126H-32FM	32,0	72,9	75,7	yes	133,0	60	32	1/8"*
	3xD	60326H-32FM	87,0	128,1	130,9	yes	188,1			1/8"*
		60326H-32CM	87,0	128,1	130,9	no	188,1			1/8"*
	5xD	60526H-32FM	145,0	186,1	188,8	yes	246,1			1/8"*
		60526H-32CM	145,0	186,1	188,8	no	246,1			1/8"*
	7xD	60726H-32FM	202,9	244,0	246,8	yes	304,1			1/8"*
		60726H-32CM	202,9	244,0	246,8	no	304,1			1/8"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60126C45-125F	1-11/32"	1-17/32"	2-3/64"	2-7/8"	2-63/64"	5-5/32"	2-9/32"	1-1/4"	TCMT-110204
METRIC (mm)									
60126C45-32FM	34,0	39,0	52,1	72,9	75,7	135,1	60	32	TCMT-110204

Replacement TORX Plus Screws (supplied in 10 piece packages)

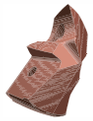
Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
26	7495-IP15-10	7495N-IP15-10	8IP-15	8IP-15TL	8IP-15B	1.0236-1.1416	61.0	26.00-28.99	690

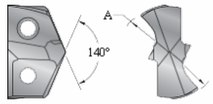
Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

29 Series GEN3SYS and GEN3SYS XT Drill Inserts

Range: 1.1417 to 1.2597 (29,00mm to 31,99mm)

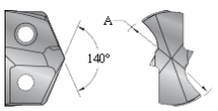




GEN3SYS Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry									
Fractional Equivalent	(mm)	(inch)	C1 AM200® Standard Geometry	❶	C1 AM200® Low Rake Geometry	-LR	C2 AM200® Standard Geometry	❶	C2 AM200® Cast Iron Geometry	-CI	C2 AM200® Low Rake Geometry	-LR
	29,00	1.1417	5C129H-29	❍	5C129H-29-LR	▲	5C229H-29	❍	5C229H-29-CI	▲	5C229H-29-LR	▲
1-5/32"	29,37	1.1563	5C129H-0105	❍	5C129H-0105-LR	▲	5C229H-0105	❍	5C229H-0105-CI	▲	5C229H-0105-LR	▲
	30,00	1.1811	5C129H-30	❍	5C129H-30-LR	▲	5C229H-30	❍	5C229H-30-CI	❍	5C229H-30-LR	▲
1-3/16"	30,16	1.1875	5C129H-0106	❍	5C129H-0106-LR	▲	5C229H-0106	❍	5C229H-0106-CI	▲	5C229H-0106-LR	▲
	30,50	1.2008	5C129H-30.5	❍	5C129H-30.5-LR	▲	5C229H-30.5	❍	5C229H-30.5-CI	▲	5C229H-30.5-LR	▲
1-7/32"	30,96	1.2188	5C129H-0107	❍	5C129H-0107-LR	▲	5C229H-0107	❍	5C229H-0107-CI	▲	5C229H-0107-LR	▲
	31,00	1.2205	5C129H-31	❍	5C129H-31-LR	▲	5C229H-31	❍	5C229H-31-CI	❍	5C229H-31-LR	▲
1-1/4"	31,75	1.2500	5C129H-0108	❍	5C129H-0108-LR	▲	5C229H-0108	❍	5C229H-0108-CI	❍	5C229H-0108-LR	▲

- see page B40 for geometry details



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	29,00	1.1417	7C129P-29	❍	7C129P-29LR	▲	7C229P-29	❍	7C229P-29CI	▲	7C229P-29LR	▲	7C229P-29AS	❍
1-5/32"	29,37	1.1563	7C129P-0105	❍	7C129P-0105LR	▲	7C229P-0105	❍	7C229P-0105CI	▲	7C229P-0105LR	▲	7C229P-0105AS	❍
	30,00	1.1811	7C129P-30	❍	7C129P-30LR	▲	7C229P-30	❍	7C229P-30CI	▲	7C229P-30LR	▲	7C229P-30AS	❍
1-3/16"	30,16	1.1875	7C129P-0106	❍	7C129P-0106LR	❍	7C229P-0106	❍	7C229P-0106CI	▲	7C229P-0106LR	▲	7C229P-0106AS	❍
	30,50	1.2008	7C129P-30.5	❍	7C129P-30.5LR	▲	7C229P-30.5	❍	7C229P-30.5CI	▲	7C229P-30.5LR	▲	7C229P-30.5AS	❍
1-7/32"	30,96	1.2188	7C129P-0107	❍	7C129P-0107LR	▲	7C229P-0107	❍	7C229P-0107CI	▲	7C229P-0107LR	▲	7C229P-0107AS	❍
	31,00	1.2205	7C129P-31	❍	7C129P-31LR	❍	7C229P-31	❍	7C229P-31CI	❍	7C229P-31LR	▲	7C229P-31AS	❍
1-1/4"	31,75	1.2500	7C129P-0108	❍	7C129P-0108LR	❍	7C229P-0108	❍	7C229P-0108CI	❍	7C229P-0108LR	▲	7C229P-0108AS	❍

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

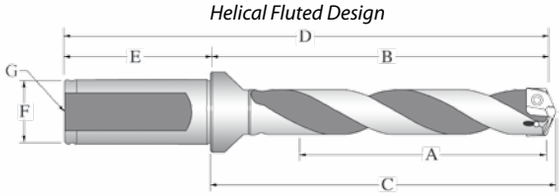
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = 1.2569" AM200®, 29 Series, C2 = 5C129H-1.2569
Metric = 31,82mm AM200®, 29 Series, C2 = 5C129H-31.82

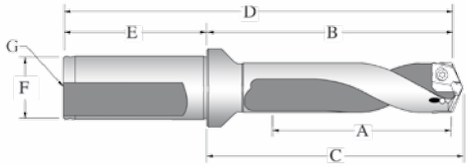
29 Series GEN3SYS and GEN3SYS XT Holders

Range: 1.1417 to 1.2597 (29,00mm to 31,99mm)

Helical Fluted Design

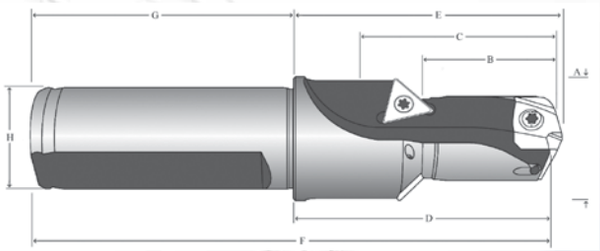


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60329S-125F	3-25/32"	5-3/8"	5-1/2"	yes	7-43/64"	2-9/32"	1-1/4"	1/4"
	5xD	60529S-125F	6-19/64"	7-29/32"	8-1/64"	yes	10-3/16"			1/4"
	7xD	60729S-125F	8-13/16"	10-27/64"	10-17/32"	yes	12-45/64"			1/4"
Helical (Machining Center)	Stub	60129H-125F	1-3/8"	2-31/32"	3-5/64"	yes	5-1/4"	2-9/32"	1-1/4"	1/4"
	3xD	60329H-125F	3-25/32"	5-3/8"	5-1/2"	yes	7-43/64"			1/4"
		60329H-125C	3-25/32"	5-3/8"	5-1/2"	no	7-43/64"			1/4"
	5xD	60529H-125F	6-19/64"	7-29/32"	8-1/64"	yes	10-3/16"			1/4"
		60529H-125C	6-19/64"	7-29/32"	8-1/64"	no	10-3/16"			1/4"
	7xD	60729H-125F	8-13/16"	10-27/64"	10-17/32"	yes	12-45/64"			1/4"
		60729H-125C	8-13/16"	10-27/64"	10-17/32"	no	12-45/64"			1/4"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60329S-32FM	96,0	136,2	139,1	yes	196,2	60	32	1/4"*
	5xD	60529S-32FM	159,9	200,1	203,1	yes	260,1			1/4"*
	7xD	60729S-32FM	223,9	264,1	267,1	yes	324,1			1/4"*
Helical (Machining Center)	Stub	60129H-32FM	35,0	75,2	78,2	yes	135,2	60	32	1/4"*
	3xD	60329H-32FM	96,0	136,2	139,1	yes	196,2			1/4"*
		60329H-32CM	96,0	136,2	139,1	no	196,2			1/4"*
	5xD	60529H-32FM	159,9	200,1	203,1	yes	260,1			1/4"*
		60529H-32CM	159,9	200,1	203,1	no	260,1			1/4"*
	7xD	60729H-32FM	223,9	264,1	267,1	yes	324,1			1/4"*
		60729H-32CM	223,9	264,1	267,1	no	324,1			1/4"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60129C45-125F	1-29/64"	1-23/32"	2-13/64"	2-31/32"	3-5/64"	5-15/64"	2-9/32"	1-1/4"	TCMT-16T304
METRIC (mm)									
60129C45-32FM	37,1	43,5	55,9	75,2	78,2	137,3	60	32	TCMT-16T304

Replacement TORX Plus Screws (supplied in 10 piece packages)

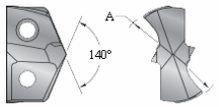
Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
29	7495-IP15-10	7495N-IP15-10	8IP-15	8IP-15TL	8IP-15B	1.1417-1.2597	61.0	29.00-32.00	690

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

32 Series GEN3SYS XT Drill Inserts

Range: 1.2598 to 1.3780 (32,00mm to 35,00mm)



GEN3SYS XT Drill Inserts (supplied in 1 piece packages)

A (Diameter)			Availability & Geometry											
Fractional Equivalent	(mm)	(inch)	C1 AM300® Standard Geometry	❶	C1 AM300® Low Rake Geometry	LR	C2 AM300® Standard Geometry	❶	C2 AM300® Cast Iron Geometry	CI	C2 AM300® Low Rake Geometry	LR	C2 AM300® Stainless Steel Geometry	AS
	32,00	1.2598	7C132P-32	❍	7C132P-32LR	▲	7C232P-32	❍	7C232P-32CI	▲	7C232P-32LR	▲	7C232P-32AS	❍
1-17/64"	32,15	1.2658	7C132P-32.15	❍	7C132P-32.15LR	▲	7C232P-32.15	❍	7C232P-32.15CI	▲	7C232P-32.15LR	▲	7C232P-32.15AS	▲
	32,50	1.2795	7C132P-32.5	❍	7C132P-32.5LR	▲	7C232P-32.5	❍	7C232P-32.5CI	▲	7C232P-32.5LR	▲	7C232P-32.5AS	▲
1-9/32"	32,55	1.2813	7C132P-0109	❍	7C132P-0109LR	▲	7C232P-0109	❍	7C232P-0109CI	▲	7C232P-0109LR	▲	7C232P-0109AS	▲
	33,00	1.2992	7C132P-33	❍	7C132P-33LR	❍	7C232P-33	❍	7C232P-33CI	▲	7C232P-33LR	▲	7C232P-33AS	❍
1-5/16"	33,34	1.3125	7C132P-0110	❍	7C132P-0110LR	❍	7C232P-0110	❍	7C232P-0110CI	▲	7C232P-0110LR	▲	7C232P-0110AS	❍
	33,50	1.3189	7C132P-33.5	❍	7C132P-33.5LR	▲	7C232P-33.5	❍	7C232P-33.5CI	▲	7C232P-33.5LR	▲	7C232P-33.5AS	▲
	34,00	1.3386	7C132P-34	❍	7C132P-34LR	▲	7C232P-34	❍	7C232P-34CI	▲	7C232P-34LR	▲	7C232P-34AS	❍
1-11/32"	34,13	1.3438	7C132P-0111	❍	7C132P-0111LR	▲	7C232P-0111	❍	7C232P-0111CI	▲	7C232P-0111LR	▲	7C232P-0111AS	▲
	34,50	1.3583	7C132P-34.5	❍	7C132P-34.5LR	▲	7C232P-34.5	❍	7C232P-34.5CI	▲	7C232P-34.5LR	▲	7C232P-34.5AS	▲
1-3/8"	34,93	1.3750	7C132P-0112	❍	7C132P-0112LR	❍	7C232P-0112	❍	7C232P-0112CI	▲	7C232P-0112LR	▲	7C232P-0112AS	❍
	35,00	1.3780	7C132P-35	❍	7C132P-35LR	▲	7C232P-35	❍	7C232P-35CI	▲	7C232P-35LR	▲	7C232P-35AS	▲

- see page B40 for geometry details

❶ Availability Codes
❍ Stocked
▲ Non-Stocked - 10 work day lead time

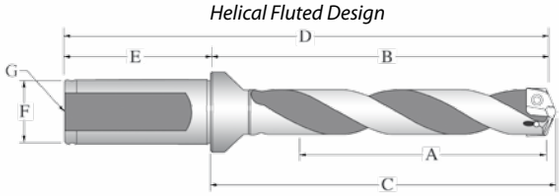
All other coatings are non-stocked standards - 10 day delivery and process fee applies.

Sizes not shown (Non-standard Diameters) are available in all coatings.
When ordering, please follow the examples shown below:
Decimals = 1.2825" AM300®, 32 Series, C1 = 7C232P-1.2825
Metric = 34,20mm AM300®, 32 Series, C2 = 7C232P-34.20

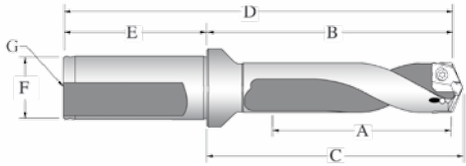
32 Series GEN3SYS XT Holders

Range: 1.2598 to 1.3780 (32.00mm to 35.00mm)

Helical Fluted Design

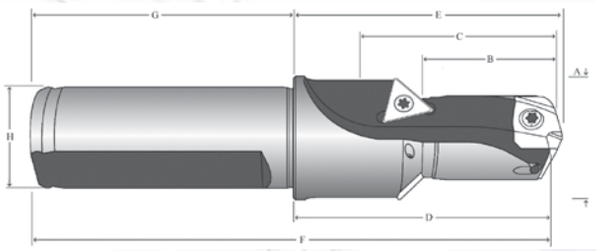


Straight Fluted Design



GEN3SYS and GEN3SYS XT Holders

Style	Length	Item Number	A Drill Depth	B Body Length	C Reference Length	Flat	D Overall Length	E Shank Length	F Shank Diameter	G Pipe Tap
Straight (Lathe)	3xD	60332S-150F	4-9/64"	6-29/64"	6-11/32"	yes	8-59/64"	2-11/16"	1-1/2"	1/4"
	5xD	60532S-150F	6-59/64"	8-31/32"	9-7/64"	yes	11-21/32"			1/4"
	7xD	60732S-150F	9-41/64"	11-23/32"	11-55/64"	yes	14-13/32"			1/4"
Helical (Machining Center)	Stub	60132H-150F	1-1/2"	3-37/64"	3-45/64"	yes	6-17/64"	2-11/16"	1-1/2"	1/4"
	3xD	60332H-150F	4-9/64"	6-29/64"	6-11/32"	yes	8-57/64"			1/4"
		60332H-150C	4-9/64"	6-29/64"	6-11/32"	no	8-57/64"			1/4"
	5xD	60532H-150F	6-59/64"	8-31/32"	9-7/64"	yes	11-21/32"			1/4"
		60532H-150C	6-59/64"	8-31/32"	9-7/64"	no	11-21/32"			1/4"
	7xD	60732H-150F	9-41/64"	11-23/32"	11-55/64"	yes	14-13/32"			1/4"
		60732H-150C	9-41/64"	11-23/32"	11-55/64"	no	14-13/32"			1/4"
METRIC (mm) * Thread to BSP & ISO 7-1										
Straight (Lathe)	3xD	60332S-40FM	105,0	157,7	161,3	yes	227,7	70	40	1/4"*
	5xD	60532S-40FM	175,0	227,7	231,3	yes	297,7			1/4"*
	7xD	60732S-40FM	244,9	297,7	301,3	yes	367,7			1/4"*
Helical (Machining Center)	Stub	60132H-40FM	38	90,7	94,2	yes	160,7	70	40	1/4"*
	3xD	60332H-40FM	105,0	157,7	161,3	yes	227,7			1/4"*
		60332H-40CM	105,0	157,7	161,3	no	227,7			1/4"*
	5xD	60532H-40FM	175,0	227,7	231,3	yes	297,7			1/4"*
		60532H-40CM	175,0	227,7	231,3	no	297,7			1/4"*
	7xD	60732H-40FM	244,9	297,7	301,3	yes	367,7			1/4"*
		60732H-40CM	244,9	297,7	301,3	no	367,7			1/4"*



Drill / Chamfer Holders

Item Number	Step Dia. (A)	Step Length (B)	Drill Depth (C)	Body Length (D)	Tool Ref. Length (E)	OAL (F)	Shank Length (G)	Shank Dia. (H)	Chamfer Insert
60132C45-150F	1-37/64"	1-57/64"	2-29/64"	3-37/64"	3-23/32"	5-1/4"	2-11/16"	1-1/2"	TCMT-16T304
METRIC (mm)									
60132C45-40FM	40,1	48,0	62,4	90,7	94,2	160,6	70	40	TCMT-16T304

Replacement TORX Plus Screws (supplied in 10 piece packages)

Holder Series	TORX Plus Screw 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	Inch: Drill Range Used With	Inch: TORX Plus Screw Admissible Tightening Torque (in. - lbs.)	Metric: Drill Range Used With	Metric: TORX Plus Screw Admissible Tightening Torque (N - cm)
32	7495-IP15-10	7495N-IP15-10	8IP-15	8IP-15TL	8IP-15B	1.2598 - 1.3780	61.0	32.00-35.00	690

Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

GEN3SYS® and GEN3SYS® XT

GEN3SYS® Drill Inserts and Holders – Recommended Speeds and Feeds (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. For 7xD Diameter tools, see adjustment example at bottom of Speed & Feed chart.

Material	Material Hardness (BHN)	Grade	SPEED	FEED											
				12	13	14	15	16	17	18	20	22	24	26	29
			AM200® SFM	0.4724" to 0.5117"	0.5118" to 0.5508"	0.5512" to 0.5905"	0.5906" to 0.6295"	0.6299" to 0.6689"	0.6693" to 0.7083"	0.7087" to 0.7870"	0.7874" to 0.8657"	0.8661" to 0.9375"	0.9449" to 1.0150"	1.0236" to 1.1250"	1.1417" to 1.2597"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C1	480	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025
	150-200	C1	415	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.020	0.021	0.022	0.023
	200-250	C1	390	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C1	450	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025
	125-175	C1	390	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	175-225	C1	355	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022
	225-275	C1	310	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.016	0.017	0.018	0.019	0.020
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C1	390	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024
	175-225	C1	355	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023
	225-275	C1	310	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022
	275-325	C1	265	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.016	0.017	0.018	0.019	0.020
Alloy Steel 4140, 5140, 8640, etc.	125-175	C1	375	0.011	0.015	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024
	175-225	C1	345	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.02	0.021	0.022	0.023
	225-275	C1	310	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022
	275-325	C1	285	0.007	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.016	0.017	0.018	0.019
	325-375	C1	255	0.006	0.007	0.008	0.009	0.010	0.011	0.013	0.014	0.015	0.016	0.017	0.018
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C1	230	0.009	0.010	0.011	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019
	300-350	C1	205	0.007	0.008	0.009	0.010	0.011	0.011	0.012	0.013	0.014	0.015	0.016	0.017
	350-400	C1	185	0.006	0.007	0.008	0.009	0.010	0.010	0.011	0.012	0.013	0.014	0.015	0.016
Structural Steel A36, A285, A516, etc.	100-150	C1	355	0.011	0.012	0.013	0.013	0.015	0.015	0.017	0.019	0.021	0.022	0.023	0.024
	150-250	C1	285	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022
	250-350	C1	265	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C1	255	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.012	0.013	0.014	0.015
	200-250	C1	195	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	120	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013
	220-310	C2	95	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012
Titanium Alloy	140-220	C2	140	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013
	220-310	C2	110	0.005	0.006	0.007	0.007	0.008	0.008	0.009	0.01	0.010	0.011	0.011	0.012
Aerospace Alloy S82	185-275	C2	145	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011
	275-350	C2	120	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.008	0.008	0.009	0.01
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	240	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016
	275-350	C2	185	0.006	0.006	0.007	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C1	220	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.010
	185-275	C1	160	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009
Super Duplex Stainless Steel	135-185	C2	125	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008
	185-275	C2	100	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008
Wear Plate Hardox, AR400, T-1, etc.	400	C1	145	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.011	0.011	0.012
	500	C1	110	0.004	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.010	0.011
	600	C2	80	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.009	0.009	0.010	0.010	0.01
Hardened Steel	300-400	C1	155	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.010	0.010	0.010	0.011
	400-500	C1	120	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.010
SG / Nodular Cast Iron	120-150	C2	500	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.020	0.022	0.022	0.024	0.025
	150-200	C2	480	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.020	0.022	0.022	0.024
	200-220	C2	430	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.020	0.022	0.022
	220-260	C2	370	0.009	0.010	0.011	0.012	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.022
	260-320	C2	335	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.017	0.018	0.019	0.020	0.020
Grey / White Iron	120-150	C2	500	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026
	150-200	C2	480	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025
	200-220	C2	430	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	0.024
	220-260	C2	370	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	260-320	C2	335	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022
Cast Aluminum	30	C2	1000	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023	0.024
	180	C2	75	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023
Wrought Aluminum	30	C2	1400	0.015	0.016	0.017	0.018	0.019	0.020	0.022	0.023	0.024	0.026	0.027	0.029
	180	C2	1000	0.014	0.015	0.016	0.017	0.018	0.019	0.021	0.022	0.023	0.025	0.026	0.028
Aluminum Bronze	100-200	C2	360	0.011	0.012	0.012	0.013	0.014	0.015	0.015	0.016	0.017	0.018	0.019	0.019
	200-250	C2	295	0.009	0.010	0.011	0.012	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.018
Brass	100	C2	660	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.020	0.022	0.023	0.024	0.026
Copper	60	C2	425	0.003	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.010

.80 Adjustment for 7 x Diameter / Example: 200 SFM • 0.80 = 160 SFM 0.008 IPR • 0.80 = 0.0064 IPR

Recommended Speed and Feed Example: If recommended speed and feed is 200 SFM and 0.008 IPR for a 3 x diameter or 5 x diameter holder, then the speed and feed using a 7 x diameter holder in the same application would be 160 SFM and 0.0064 IPR.

GEN3SYS® Drill Inserts and Holders - Recommended Speeds and Feeds (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. For 7xD Diameter tools, see adjustment example at bottom of Speed & Feed chart.

Material	Material Hardness (BHN)	Grade	SPEED AM200® M/min	FEED 12 12,00 to 12,99	13 13,00 to 13,99	14 14,00 to 14,99	15 15,00 to 15,99	16 16,00 to 16,99	17 17,00 to 17,99	18 18,00 to 19,99	20 20,00 to 21,99	22 22,00 to 23,99	24 24,00 to 25,99	26 26,00 to 28,99	29 29,00 to 32,00
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	K35	146	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64
	150-200	K35	127	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.51	0.53	0.56	0.58
	200-250	K35	119	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	K35	137	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64
	125-175	K35	119	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.48	0.51	0.53	0.56	0.58
	175-225	K35	108	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.46	0.48	0.51	0.53	0.56
	225-275	K35	95	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41	0.43	0.46	0.48	0.51
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	K35	119	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61
	175-225	K35	108	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58
	225-275	K35	95	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56
	275-325	K35	81	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41	0.43	0.46	0.48	0.51
Alloy Steel 4140, 5140, 8640, etc.	125-175	K35	114	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61
	175-225	K35	105	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58
	225-275	K35	95	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56
	275-325	K35	87	0.18	0.20	0.23	0.25	0.28	0.30	0.36	0.38	0.41	0.43	0.46	0.48
	325-375	K35	78	0.15	0.18	0.20	0.23	0.25	0.28	0.33	0.36	0.38	0.41	0.43	0.46
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	K35	70	0.23	0.25	0.28	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.46	0.48
	300-350	K35	63	0.18	0.20	0.23	0.25	0.28	0.28	0.30	0.33	0.36	0.38	0.41	0.43
	350-400	K35	56	0.15	0.18	0.20	0.23	0.25	0.25	0.28	0.30	0.33	0.36	0.38	0.41
Structural Steel A36, A285, A516, etc.	100-150	K35	108	0.28	0.30	0.33	0.33	0.38	0.38	0.43	0.48	0.53	0.56	0.58	0.61
	150-250	K35	87	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56
	250-350	K35	81	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.52
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	K35	78	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28	0.30	0.33	0.36	0.38
	200-250	K35	59	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.28	0.30	0.33	0.36
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	K20	37	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28	0.28	0.30	0.30	0.33
	220-310	K20	29	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.25	0.28	0.28	0.30
Titanium Alloy	140-220	K20	42	0.15	0.17	0.20	0.20	0.22	0.22	0.25	0.28	0.28	0.30	0.30	0.33
	220-310	K20	33	0.12	0.15	0.17	0.17	0.20	0.20	0.22	0.25	0.25	0.28	0.28	0.30
Aerospace Alloy S82	185-275	K20	45	0.10	0.12	0.14	0.15	0.16	0.18	0.18	0.20	0.22	0.24	0.26	0.28
	275-350	K20	37	0.09	0.10	0.12	0.14	0.15	0.16	0.16	0.18	0.20	0.22	0.24	0.26
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	K20	73	0.18	0.18	0.20	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.41
	275-350	K20	56	0.15	0.15	0.18	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	K20	64	0.13	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.25
	185-275	K20	47	0.10	0.10	0.13	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.23
Super Duplex Stainless Steel	135-185	K20	38	0.07	0.09	0.10	0.11	0.12	0.13	0.15	0.16	0.18	0.20	0.20	0.22
	185-275	K20	30	0.06	0.08	0.09	0.10	0.11	0.12	0.14	0.15	0.16	0.18	0.18	0.20
Wear Plate Hardox, AR400, T-1, etc.	400	K35	45	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.27	0.27	0.29	0.29	0.31
	500	K35	37	0.11	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.25	0.27	0.27	0.29
	600	K20	25	0.10	0.11	0.13	0.15	0.17	0.19	0.21	0.23	0.23	0.25	0.25	0.27
Hardened Steel	300-400	K35	47	0.13	0.15	0.17	0.19	0.21	0.22	0.23	0.25	0.25	0.27	0.27	0.29
	400-500	K35	37	0.11	0.13	0.15	0.17	0.19	0.20	0.21	0.23	0.23	0.25	0.25	0.27
SG / Nodular Cast Iron	120-150	K20	146	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64
	150-200	K20	138	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58	0.61
	200-220	K20	123	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58
	220-260	K20	108	0.23	0.25	0.28	0.30	0.33	0.38	0.43	0.46	0.48	0.51	0.53	0.56
	260-320	K20	97	0.21	0.23	0.25	0.28	0.30	0.36	0.38	0.43	0.46	0.48	0.51	0.53
Grey / White Iron	120-150	K20	152	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64	0.66
	150-200	K20	146	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64
	200-220	K20	131	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58	0.61
	220-260	K20	113	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58
	260-320	K20	102	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.46	0.48	0.51	0.53	0.56
Cast Aluminum	30	K20	300	0.33	0.35	0.38	0.40	0.43	0.45	0.48	0.50	0.53	0.56	0.58	0.61
	180	K20	225	0.30	0.33	0.35	0.38	0.40	0.43	0.45	0.48	0.51	0.53	0.56	0.58
Wrought Aluminum	30	K20	425	0.38	0.40	0.43	0.45	0.48	0.50	0.55	0.58	0.61	0.66	0.68	0.74
	180	K20	300	0.35	0.38	0.40	0.43	0.45	0.48	0.50	0.55	0.58	0.63	0.66	0.71
Aluminum Bronze	100-200	K20	110	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.48
	200-250	K20	90	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.42	0.43	0.46	0.46
Brass	100	K20	200	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.60	0.63	0.66
Copper	60	K20	130	0.08	0.09	0.11	0.13	0.15	0.16	0.18	0.20	0.20	0.22	0.25	0.25

.80 Adjustment for 7 x Diameter / Example: 61 M/min • 0.80 = 48,8 M/min 0,20 mm/rev • 0.80 = 0,16 mm/rev

Recommended Speed and Feed Example: If recommended speed and feed is 61M/min and 0.20 mm/rev for a 3 x diameter or 5 x diameter holder, then the speed and feed using a 7 x diameter holder in the same application would be 48,8 M/min and 0,16 mm/rev.

GEN3SYS XT Drill Inserts and Holders - Recommended Speeds and Feeds (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. For 7xD Diameter tools, see adjustment example at bottom of Speed & Feed chart.

Material	Material Hardness (BHN)	Grade	SPEED AM300® SFM	FEED (IPR) 11 0.4331 to 0.4723	12 0.4724" to 0.5117"	13 0.5118" to 0.5508"	14 0.5512" to 0.5905"	15 0.5906" to 0.6295"	16 0.6299" to 0.6689"	17 0.6693" to 0.7083"	18 0.7087" to 0.7870"	20 0.7874" to 0.8657"	22 0.8661" to 0.9375"	24 0.9449" to 1.0150"	26 1.0236" to 1.1250"	29 1.1417" to 1.2597"	32 1.2598 to 1.378
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C1	550	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026
	150-200	C1	475	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.020	0.021	0.022	0.023	0.024
	200-250	C1	425	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C1	520	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026
	125-175	C1	450	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.019	0.020	0.021	0.022	0.023	0.024
	175-225	C1	410	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022	0.023
	225-275	C1	350	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.016	0.017	0.018	0.019	0.020	0.021
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C1	450	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025
	175-225	C1	410	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	0.024
	225-275	C1	350	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	275-325	C1	300	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.016	0.017	0.018	0.019	0.020	0.021
Alloy Steel 4140, 5140, 8640, etc.	125-175	C1	415	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025
	175-225	C1	380	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	0.024
	225-275	C1	340	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	275-325	C1	310	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.020
	325-375	C1	280	0.006	0.006	0.007	0.008	0.009	0.010	0.011	0.013	0.014	0.015	0.016	0.017	0.018	0.019
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C1	250	0.008	0.009	0.010	0.011	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020
	300-350	C1	225	0.006	0.007	0.008	0.009	0.010	0.011	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018
	350-400	C1	200	0.005	0.006	0.007	0.008	0.009	0.010	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017
Structural Steel A36, A285, A516, etc.	100-150	C1	410	0.010	0.011	0.012	0.013	0.013	0.015	0.015	0.017	0.019	0.021	0.022	0.023	0.024	0.025
	150-250	C1	330	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023
	250-350	C1	305	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C1	265	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016
	200-250	C1	205	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	130	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013	0.014
	220-310	C2	100	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012	0.013
Titanium Alloy	140-220	C2	140	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013	0.014
	220-310	C2	110	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012	0.012
Aerospace Alloy S82	185-275	C2	165	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012
	275-350	C2	135	0.003	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.011
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	240	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017
	275-350	C2	182	0.005	0.006	0.006	0.007	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C2	220	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.011
	185-275	C2	160	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010
Super Duplex Stainless Steel	135-185	C2	125	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010
	185-275	C2	100	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008
Wear Plate Hardox, AR400, T-1, etc.	400	C1	160	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.011	0.011	0.012	0.012
	500	C1	130	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.010	0.011	0.011
	600	C2	90	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.009	0.009	0.010	0.010	0.010	0.010
Hardened Steel	300-400	C1	170	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.010	0.010	0.010	0.011	0.011
	400-500	C1	130	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.010	0.010
SG / Nodular Cast Iron	120-150	C2	550	0.010	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.020	0.022	0.022	0.024	0.025	0.026
	150-200	C2	520	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.020	0.022	0.022	0.024	0.024
	200-220	C2	465	0.008	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.020	0.022	0.022	0.023
	220-260	C2	405	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.022	0.022
	260-320	C2	365	0.008	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.017	0.018	0.019	0.020	0.020	0.021
Grey / White Iron	120-150	C2	575	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026	0.027
	150-200	C2	550	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025	0.026
	200-220	C2	495	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.020	0.020	0.021	0.022	0.023	0.024	0.025
	220-260	C2	425	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023	0.024
	260-320	C2	380	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022	0.023
Cast Aluminum	30	C2	1150	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023	0.024	0.025
	180	C2	860	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023	0.023
Wrought Aluminum	30	C2	1600	0.013	0.015	0.016	0.017	0.018	0.019	0.020	0.022	0.023	0.024	0.026	0.027	0.029	0.030
	180	C2	1150	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.021	0.022	0.023	0.025	0.026	0.028	0.029
Aluminum Bronze	100-200	C2	415	0.010	0.011	0.012	0.012	0.013	0.014	0.015	0.015	0.016	0.017	0.018	0.019	0.019	0.019
	200-250	C2	335	0.008	0.009	0.010	0.011	0.012	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.018	0.019
Brass	100	C2	755	0.010	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.02	0.022	0.023	0.024	0.026	0.026
Copper	60	C2	490	0.003	0.003	0.003	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.011

.80 Adjustment for 7 x Diameter / Example: 200 SFM • 0.80 = 160 SFM 0.008 IPR • 0.80 = 0.0064 IPR

Recommended Speed and Feed Example: If recommended speed and feed is 200 SFM and 0.008 IPR for a 3 x diameter or 5 x diameter holder, then the speed and feed using a 7 x diameter holder in the same application would be 160 SFM and 0.0064 IPR.

GEN3SYS XT Drill Inserts and Holders – Recommended Speeds and Feeds (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. For 7xD Diameter tools, see adjustment example at bottom of Speed & Feed chart.

Material	Material Hardness (BHN)	Grade	SPEED AM300® M/min	FEED (mm/rev) 11 11,00 to 11,99	12 12,00 to 12,99	13 13,00 to 13,99	14 14,00 to 14,99	15 15,00 to 15,99	16 16,00 to 16,99	17 17,00 to 17,99	18 18,00 to 19,99	20 20,00 to 21,99	22 22,00 to 23,99	24 24,00 to 25,99	26 26,00 to 28,99	29 29,00 to 31,99	32 32,00 to 35,00
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	K35	168	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64	0.66
	150-200	K35	145	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.51	0.53	0.56	0.58	0.61
	200-250	K35	130	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	K35	158	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64	0.66
	125-175	K35	137	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.48	0.51	0.53	0.56	0.58	0.61
	175-225	K35	125	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.42	0.46	0.48	0.51	0.53	0.56	0.58
	225-275	K35	107	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41	0.42	0.46	0.48	0.51	0.53
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	K35	137	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64
	175-225	K35	125	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58	0.61
	225-275	K35	107	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58
	275-325	K35	91	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.41	0.43	0.46	0.48	0.51	0.53
Alloy Steel 4140, 5140, 8640, etc.	125-175	K35	126	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64
	175-225	K35	116	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58	0.61
	225-275	K35	104	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58
	275-325	K35	94	0.15	0.18	0.20	0.23	0.25	0.28	0.30	0.36	0.38	0.41	0.43	0.46	0.48	0.51
	325-375	K35	85	0.15	0.15	0.18	0.20	0.23	0.25	0.28	0.33	0.36	0.38	0.41	0.43	0.46	0.48
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	K35	76	0.20	0.23	0.25	0.28	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.46	0.48	0.51
	300-350	K35	69	0.15	0.18	0.20	0.23	0.25	0.28	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.46
	350-400	K35	61	0.13	0.18	0.18	0.20	0.23	0.25	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.43
Structural Steel A36, A285, A516, etc.	100-150	K35	125	0.25	0.28	0.30	0.33	0.33	0.38	0.38	0.43	0.48	0.53	0.56	0.58	0.61	0.64
	150-250	K35	101	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58
	250-350	K35	93	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	K35	81	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.41
	200-250	K35	62	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	K20	40	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.28	0.28	0.30	0.30	0.33	0.36
	220-310	K20	30	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.25	0.28	0.28	0.30	0.33
Titanium Alloy	140-220	K20	43	0.13	0.15	0.18	0.20	0.20	0.23	0.23	0.25	0.28	0.28	0.30	0.30	0.33	0.33
	220-310	K20	34	0.10	0.13	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.25	0.28	0.28	0.30	0.30
Aerospace Alloy S82	185-275	K20	50	0.10	0.10	0.12	0.14	0.15	0.16	0.18	0.18	0.20	0.22	0.24	0.26	0.28	0.31
	275-350	K20	41	0.09	0.09	0.10	0.12	0.14	0.15	0.16	0.16	0.18	0.20	0.22	0.24	0.26	0.29
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	K20	73	0.15	0.18	0.18	0.20	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.41	0.43
	275-350	K20	56	0.13	0.15	0.15	0.18	0.18	0.20	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.41
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	K20	67	0.10	0.13	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.25	0.28
	185-275	K20	49	0.08	0.10	0.10	0.13	0.13	0.15	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25
Super Duplex Stainless Steel	135-185	K20	38	0.07	0.07	0.09	0.10	0.11	0.12	0.13	0.15	0.16	0.18	0.20	0.20	0.22	0.25
	185-275	K20	30	0.06	0.06	0.08	0.09	0.10	0.11	0.12	0.14	0.15	0.16	0.18	0.18	0.20	0.22
Wear Plate Hardox, AR400, T-1, etc.	400	K35	50	0.13	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.27	0.27	0.29	0.29	0.31	0.31
	500	K35	40	0.11	0.11	0.13	0.15	0.17	0.19	0.21	0.23	0.25	0.25	0.27	0.27	0.29	0.29
	600	K20	27	0.10	0.10	0.11	0.13	0.15	0.17	0.19	0.21	0.23	0.23	0.25	0.25	0.25	0.27
Hardened Steel	300-400	K35	51	0.13	0.13	0.15	0.17	0.19	0.21	0.22	0.23	0.25	0.25	0.27	0.27	0.29	0.29
	400-500	K35	40	0.11	0.11	0.13	0.15	0.17	0.19	0.20	0.21	0.23	0.23	0.25	0.25	0.27	0.27
SG / Nodular Cast Iron	120-150	K20	168	0.27	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64	0.66
	150-200	K20	159	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.48	0.51	0.53	0.56	0.58	0.61	0.63
	200-220	K20	141	0.22	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58	0.60
	220-260	K20	124	0.20	0.23	0.25	0.28	0.30	0.33	0.38	0.43	0.46	0.48	0.51	0.53	0.56	0.58
	260-320	K20	112	0.20	0.21	0.23	0.25	0.28	0.30	0.36	0.38	0.43	0.46	0.48	0.51	0.53	0.55
Grey / White Iron	120-150	K20	175	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.58	0.61	0.64	0.66	0.69
	150-200	K20	168	0.28	0.30	0.33	0.36	0.38	0.41	0.46	0.51	0.53	0.56	0.58	0.61	0.64	0.66
	200-220	K20	151	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.51	0.51	0.53	0.56	0.58	0.61	0.64
	220-260	K20	130	0.23	0.25	0.28	0.30	0.33	0.36	0.41	0.46	0.48	0.51	0.53	0.56	0.58	0.61
	260-320	K20	116	0.23	0.25	0.28	0.30	0.33	0.36	0.38	0.43	0.46	0.48	0.51	0.53	0.56	0.58
Cast Aluminum	30	K20	351	0.30	0.33	0.36	0.38	0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.58	0.61	0.64
	180	K20	262	0.28	0.30	0.33	0.36	0.38	0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.58	0.58
Wrought Aluminum	30	K20	488	0.33	0.38	0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.61	0.66	0.69	0.74	0.76
	180	K20	351	0.30	0.36	0.38	0.41	0.43	0.46	0.48	0.53	0.56	0.58	0.64	0.66	0.71	0.74
Aluminum Bronze	100-200	K20	126	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.48	0.48	0.50
	200-250	K20	103	0.22	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.42	0.46	0.46	0.46	0.48
Brass	100	K20	230	0.29	0.30	0.33	0.36	0.38	0.41	0.43	0.48	0.53	0.56	0.60	0.63	0.66	0.66
Copper	60	K20	149	0.07	0.08	0.09	0.11	0.13	0.15	0.16	0.18	0.20	0.20	0.22	0.25	0.25	0.28

.80 Adjustment for 7 x Diameter / Example: 61 M/min • 0.80 = 48,8 M/min 0,20 mm/rev • 0.80 = 0,16 mm/rev

Recommended Speed and Feed Example: If recommended speed and feed is 61M/min and 0.20 mm/rev for a 3 x diameter or 5 x diameter holder, then the speed and feed using a 7 x diameter holder in the same application would be 48,8 M/min and 0,16 mm/rev.

TAP DRILL INFORMATION

AMERICAN - Unified Inch Screw Thread

Tap Size	Tap Drill Size	Decimal Equivalent	* Theo % Thread	Prob Mean Oversize	Prob Hole Size	** Prob % Thread
1/2 - 20	29/64"	.4531"	72%	.003"	.4561"	68%
9/16 - 12	12.0 mm	.4724"	72%	.003"	.4874"	69%
	31/64"	.4844"	83%	.003"	.4754"	80%
9/16 - 18	1/2"	.5000"	87%	.003"	.5030"	82%
	13.0 mm	.5118"	70%	.003"	.5148"	66%
	31/64"	.5156"	65%	.003"	.5186"	61%
5/8 - 11	17/32"	.5313"	79%	.003"	.5343"	77%
5/8 - 12	35/64"	.5469"	72%	.003"	.5499"	69%
5/8 - 18	9/16"	.5625"	87%	.003"	.5655"	82%
	14.5 mm	.5709"	75%	.003"	.5739"	71%
	37/64"	.5781"	65%	.003"	.5811"	61%
11/16 - 12	39/64"	.6094"	72%	.003"	.6124"	69%
3/4 - 10	41/64"	.6406"	84%	.003"	.6436"	82%
	16.5 mm	.6496"	77%	.003"	.6526"	75%
	21/32"	.6563"	72%	.003"	.6593"	70%
3/4 - 12	43/64"	.6719"	72%	.003"	.6749"	69%
3/4 - 16	11/16"	.6875"	77%	.003"	.6905"	73%
	17.5 mm	.6890"	75%	.003"	.6920"	71%
7/8 - 9	49/64"	.7656"	76%	.003"	.7686"	74%
	25/32"	.7813"	65%	.003"	.7843"	63%
7/8 - 14	51/64"	.7969"	84%	.003"	.7999"	81%
	13/16"	.8125"	67%	.003"	.8155"	64%
15/16 - 12	55/64"	.8594"	72%	.003"	.8624"	69%
15/16 - 20	57/64"	.8906"	72%	.003"	.8936"	68%
1 - 8	22.0 mm	.8661"	82%	.003"	.8691"	81%
	7/8"	.8750"	77%	.003"	.8780"	75%
	57/64"	.8906"	67%	.003"	.8936"	65%
1 - 12	29/32"	.9063"	87%	.003"	.9093"	84%
	59/64"	.9219"	72%	.003"	.9249"	69%
1 - 14	15/16"	.9375"	67%	.003"	.9405"	64%
1-1/8 - 12	1-1/32"	1.0313"	87%	.003"	1.0343"	84%
	1-3/64"	1.0469"	72%	.003"	1.0499"	69%
1-1/4 - 7	1-7/64"	1.1094"	76%	.003"	1.1124"	74%

Taper Pipe Thread (NPT)

Tap Size	Tap Drill Size	Decimal Equivalent	* Theo % Thread	Prob Mean Oversize	Prob Hole Size	** Prob % Thread
1/4 - 18	7/16"	.4375"	N/A	.003"	.4405"	N/A
3/8 - 18	9/16"	.5625"	N/A	.003"	.5655"	N/A
1/2 - 14	45/64"	.7031"	N/A	.003"	.7061"	N/A
3/4 - 14	29/32"	.9063"	N/A	.003"	.9093"	N/A

Based on nominal tap drill diameter. ** Based on .003" probable mean oversize.
To calculate percent of full thread for a given hole diameter:

$$\% \text{ Thread} = \#\text{ of Threads per inch} * \frac{\left(\text{Basic Major Dia. of thread (inch)} - \text{Drill Hole Size (inch)}\right)}{.0130}$$

The above tap drill information represents probable thread percentages for the standard tap drills stocked at Allied. Special insert diameters may be required in order to meet a user specific percentage of thread requirements.

The .003" probable mean oversize hole condition is based on optimum cutting conditions. Probable % of full thread may vary based on less ideal cutting conditions.

Formulas

1. $\text{RPM} = \frac{3.82 \cdot \text{SFM}}{\text{DIA}}$

where:
RPM = revolutions per minute (rev/min)
SFM = speed (ft/min)
DIA = diameter of drill (in)

2. $\text{IPM} = \text{RPM} \cdot \text{IPR}$

where:
IPM = inches per minute (in/min)
RPM = revolutions per minute (rev/min)
IPR = feed rate (in/rev)

3. $\text{SFM} = \text{RPM} \cdot 0.262 \cdot \text{DIA}$

where:
SFM = speed (ft/min)
RPM = revolutions per minute (rev/min)
DIA = diameter of drill (in)

4. $\text{Thrust} = 153{,}700 \cdot \text{IPR} \cdot \text{DIA} \cdot \text{Km}$

where:
Thrust = axial thrust (lbs)
IPR = feed rate (in/rev)
DIA = diameter of drill (in)
Km = specific cutting energy (lbs/in^2)

5. $\text{Tool Power} = .6911 \cdot \text{IPR} \cdot \text{RPM} \cdot \text{Km} \cdot \text{DIA}^2$

where:
Tool Power = tool power (HP)
IPR = feed rate (in/rev)
RPM = revolutions per minute (rev/min)
Km = specific cutting energy (lbs/in^2)
DIA = diameter of drill (in)

MATERIAL CONSTANTS

Type of Material	Km (lbs/in^2)
Plain Carbon and Alloy Steel	
85 - 200 BHN	0.79
200 - 275 BHN	0.94
275 - 375 BHN	1.00
375 - 425 BHN	1.15
High Temperature Alloys	1.44
Stainless Steel:	
135-275 BHN	0.94
30 - 45 RC	1.08
Copper Alloy	
20 - 80 RB	0.43
80 - 100 RB	0.72
Titanium Alloy	0.72
Aluminum Alloy	0.22
Magnesium Alloy	0.16
Cast Iron	
100 - 200 BHN	0.50
200 - 300 BHN	1.08

Note: The above table and equations are found in the Machinery's Handbook. Permission to simplify and print the equations is granted by the Editor of the Machinery's Handbook.

TAP DRILL INFORMATION

Tap Size	Tap Drill Size	Decimal Equivalent	* Theo % Thread	Prob Mean Oversize	Prob Hole Size	** Prob % Thread
12 X 1,25	27/64"	.4219"	79%	0,075 mm	10,79 mm	74%
	10,8 mm	.4252"	74%	0,075 mm	10,88 mm	69%
14 X 2,0	15/32"	.4688"	81%	0,075 mm	11,98 mm	78%
	12,0 mm	.4724"	77%	0,075 mm	12,08 mm	74%
14 X 1,5	12,5 mm	.4921"	77%	0,075 mm	12,58 mm	73%
16 X 2,0	14,0 mm	.5512"	77%	0,075 mm	14,08 mm	74%
16 X 1,5	14,5 mm	.5709"	77%	0,075 mm	14,58 mm	73%
	37/64"	.5781"	68%	0,075 mm	14,76 mm	64%
18 X 2,5	15,5 mm	.6102"	77%	0,075 mm	15,58 mm	75%
18 X 1,5	16,5 mm	.6496"	77%	0,075 mm	16,58 mm	73%
	21/32"	.6563"	68%	0,075 mm	16,75 mm	64%
20 X 2,5	11/16"	.6875"	78%	0,075 mm	17,54 mm	76%
	17,5 mm	.6890"	77%	0,075 mm	17,58 mm	74%
20 X 1,5	18,5 mm	.7283"	77%	0,075 mm	18,58 mm	73%
	47/64"	.7344"	69%	0,075 mm	18,66 mm	65%
22 X 2,5	49/64"	.7656"	79%	0,075 mm	19,52 mm	76%
	19,5 mm	.7677"	77%	0,075 mm	19,58 mm	75%
22 X 1,5	20,5 mm	.8071"	77%	0,075 mm	20,58 mm	73%
	13/16"	.8125"	70%	0,075 mm	20,71 mm	66%
24 X 3	13/16"	.8125"	86%	0,075 mm	20,71 mm	84%
	21,0 mm	.8268"	76%	0,075 mm	21,08 mm	75%
24 X 2	22,0 mm	.8661"	77%	0,075 mm	22,08 mm	74%
	7/8"	.8750"	68%	0,075 mm	22,30 mm	65%
27 x 3	24,0 mm	.9449"	77%	0,075 mm	24,08 mm	75%

Taper Pipe Thread (BSP & ISO 7-1)						
Tap Size	Tap Drill Size	Decimal Equivalent	* Theo % Thread	Prob Mean Oversize	Prob Hole Size	** Prob % Thread
1/4 - 19	7/16"	.4325"	N/A	0,075 mm	11,19 mm	N/A
3/8 - 19	37/64"	.5781"	N/A	0,075 mm	14,76 mm	N/A
1/2 - 14	23/32"	.7188"	N/A	0,075 mm	18,33 mm	N/A
3/4 - 14	15/16"	.9375"	N/A	0,075 mm	23,89 mm	N/A

Based on nominal tap drill diameter. ** Based on 0,075 mm probable mean oversize.
To calculate percent of full thread for a given hole diameter:

$$\% \text{ Thread} = \frac{76{,}93}{\text{Pitch (mm)}} * \left(\text{Basic Major Diameter(mm)} - \text{Drill Hole Size (mm)} \right)$$

Formulas

1. $\text{RPM} = \dfrac{318{,}47 \cdot \text{M/min}}{\text{DIA}}$

where:
RPM = revolutions per minute (rev/min)
M/min = speed (M/min)
DIA = diameter of drill (mm)

2. $\text{mm/min} = \text{RPM} \cdot \text{mm/rev}$

where:
mm/min = mm per minute (mm/min)
RPM = revolutions per minute (rev/min)
mm/rev = feed rate (mm/rev)

3. $\text{M/min} = \text{RPM} \cdot 0{,}003 \cdot \text{DIA}$

where:
M/min = speed (M/min)
RPM = revolutions per minute (rev/min)
DIA = diameter of drill (mm)

4. $\text{Thrust} = 154 \cdot (\text{mm/rev}) \cdot \text{DIA} \cdot \text{Km}$

where:
Thrust = axial thrust in newtons (N)
mm/rev = feed rate (mm/rev)
DIA = diameter of drill (mm)
Km = specific cutting energy (bar)

5. $\text{Tool Power} = \dfrac{(\text{mm/rev}) \cdot \text{RPM} \cdot \text{Km} \cdot \text{DIA}^2}{218604{,}8}$

where:
Tool Power = tool power (HP)
mm/rev = feed rate (mm/rev)
RPM = revolutions per minute (rev/min)
Km = specific cutting energy (bar)
DIA = diameter of drill (mm)

MATERIAL CONSTANTS

Type of Material	Km (kPa)
Plain Carbon and Alloy Steel	
85 - 200 BHN	5,45
200 - 275 BHN	6,48
275 - 375 BHN	6,89
375 - 425 BHN	7,93
High Temperature Alloys	9,93
Stainless Steel:	
135-275 BHN	6,48
30 - 45 RC	7,45
Copper Alloy	
20 - 80 RB	2,96
80 - 100 RB	4,96
Titanium Alloy	4,96
Aluminum Alloy	1,52
Magnesium Alloy	1,10
Cast Iron	
100 - 200 BHN	3,45
200 - 300 BHN	7,45

Note: The above table and equations are found in the Machinery's Handbook. Permission to simplify and print the equations is granted by the Editor of the Machinery's Handbook.

GEN3SYS® and GEN3SYS® XT Drill Inserts

Coolant Recommendations

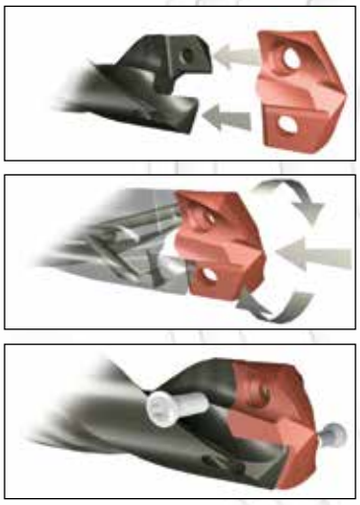
IMPORTANT: The coolant pressure and flow rate recommendations below represent a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the GEN3SYS® High Penetration Drilling System will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Stub, 3xD, 5xD Holder Lengths				
	Pressure		Flow Rate	
Series	PSI	BAR	GPM	LPM
11 mm	500	35	5	19
12 mm	500	35	5	19
13 mm	475	33	5.5	21
14 mm	450	32	6	23
15 mm	430	30	7	27
16 mm	410	29	8	31
17 mm	385	27	8.5	33
18 mm	360	25	9	35
20 mm	300	21	10	38
22 mm	300	21	11	42
24 mm	300	21	11	42
26 mm	300	21	12	46
29 mm	300	21	12	46
32 mm	300	21	12	46

7xD Holder Length				
	Pressure		Flow Rate	
Series	PSI	BAR	GPM	LPM
11 mm	750	53	7.5	29
12 mm	750	53	7.5	29
13 mm	713	50	8.25	32
14 mm	675	48	9	35
15 mm	645	45	10.5	40
16 mm	615	44	12	46
17 mm	578	40	12.75	49
18 mm	540	38	13.5	52
20 mm	450	32	15	57
22 mm	450	32	16.5	63
24 mm	450	32	16.5	63
26 mm	450	32	18	69
29 mm	450	32	18	69
32 mm	450	32	18	69

Assembly of GEN3SYS® and GEN3SYS® XT Tools:

1. Align the flats on the GEN3SYS® or GEN3SYS® XT Drill Insert with the flats on the ears of the GEN3SYS® Holder.
2. Slide the GEN3SYS® or GEN3SYS® XT Drill Insert into the precision ground locating pocket on the GEN3SYS® Holder. The drill insert should not be turned, rotated, or twisted for locking purposes. The holder pocket and locating pads on the drill insert assure optimum fit and repeatability.
3. Place a generous amount of E-Z Break (provided in the packaging) onto the supplied TORX Plus Screws.
4. Tighten the TORX Plus Screws to the recommended torque value specified in the catalog by series. A preset torx driver is available to assure that the proper torque is applied.



	Potential Problem																			
	Accelerated corner wear	Barber pole	Bell mouth hole	Insert chipping	Blue chips	Build Up Edge (BUE)	Chatter	Chip packing	Chipping of point	Damaged or broken tools	Excessive margin wear	High flank wear	Hole lead off	Hole out of position	Hole out of round	Oversize hole	Poor hole finish	Poor tool life	Power spikes - Load meter	Retract spiral	
Setup Condition	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Possible Solutions
Worn or mis-aligned spindle (lathe, screw machine, chucker)	1		3				7		9	10	11		13			16	17			20	• Align spindle and turret or tailstock. • Repair spindle.
Use of low rigidity machine tools.		2	3	4			7		9	10			13	14						20	• Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** do not reduce feed below threshold of good chip formation.)
Poor work piece support		2		4			7			10	11				15		17			20	• Provide additional support for the work piece. Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** do not reduce feed below threshold of good chip formation.)
Flood coolant, low coolant pressure or low coolant volume	1				5	6		8		10		12				16	17	18	19		• Run coolant through tool holder when drilling greater than one times diameter. • Increase coolant pressure and volume through the tool holder. • Reduce penetration rate to fall within the coolant limitations (**NOTICE:** do not reduce feed below threshold of good chip formation.) • Add a peck cycle to help clear chips.
Interrupted cuts. Entry or exit surfaces that are not perpendicular to the spindle. (draft angles, parting lines, curved or stepped surfaces, cross holes and cast or forged surfaces).				4			7		9	10	11		13	14	15	16	17	18			• Pre-mill (spot face) entry or exit surface to remove interruption. • Decrease feed as much as 50% through entry or exit interruption. • Use short holders in low impact entry cuts.
Material harder than expected or running tools beyond recommended speed.	1				5	6				10		12						18			• Reduce speed. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance.
Poor material micro-structure or foreign particles: (forgings and castings that have not been normalized or annealed, poorly prepared steel, flame cut parts and sand casting).				4		6				10		12	13					18			• Compare performance of other tools for similar wear problems, which may indicate poor micro-structure. Anneal or normalize parts to improve micro-structure for machining. • Reduce feeds. (**NOTICE:** Do not reduce feed below threshold of good chip formation.)
Poor chip control.								8		10	11		13			16	17	18	19		• Increase feed to recommended levels. Contact Allied Application Engineering Group for technical recommendations. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance.
Spot drilled holes with included angle less than that matching GEN3SYS® or cored holes.	1			4			7						13					18			• Spot hole with short tool of same or greater included angle as GEN3SYS® Drill Insert. • Reduce feed. (**NOTICE:** Do not reduce feed below threshold of good chip formation.) If possible, drill from solid.

C1 Carbide (K35)
The primary application for this carbide grade is in steel applications. In addition to exceptional wear resistance, C1 carbide is considerably more durable when compared to other carbide grades. The higher toughness allows this grade to function in applications not suitable for other carbides.

C2 Carbide (K20)
The primary application for this carbide grade is in non-ferrous applications (high temperature alloys, stainless steels, aluminums, cast irons). It offers exceptionally high wear resistance. Tool life increases in steel applications can be realized; however, high machine tool rigidity is required.

GEN3SYS® Standard Geometry
An excellent choice for general purpose high penetration drilling. This geometry is available as a standard in both C1 and C2 substrates with Allied's superior AM200® coating. The standard GEN3SYS® geometry is recommended when drilling free machining, carbon, and softer alloy steels.

GEN3SYS® Cast Iron Geometry (-CI)
Specifically designed to improve hole quality, exit, and increase tool life in all cast irons. This specialized geometry contains unique edge and corner preparations to maximize performance in cast irons when combined with Allied's C2 substrate.

GEN3SYS® Low Rake Geometry (-LR)
Designed to increase reliability in harder steels or lower rigidity applications. This geometry contains increased edge and corner strength combined with C1 carbide substrate to maximize insert fracture resistance in more difficult drilling applications.

GEN3SYS® XT Standard Geometry
Allied's next generation of high penetration drilling utilizes corner and cutting edge enhancements combined with our new AM300® coating to deliver more durability, reliability, and productivity. The new GEN3SYS XT® geometry is designed to increase penetration rates and tool life, providing the lowest cost per hole among high penetration drill lines. This geometry is available in both C1 and C2 carbide substrates.

GEN3SYS® XT Stainless Steel Geometry (AS)
Designed with a specific geometry, C2 carbide substrate, and Allied's new AM300® coating to provide unmatched chip control and tool life in austenitic and PH stainless steels, as well as high temperature alloys such as Inconel, Hastelloy, and titanium alloys.

GEN3SYS® XT Cast Iron Geometry (CI)
Combination of a cutting edge enhancement and Allied's new AM300® coating delivers increased durability and tool life in ductile, nodular, and grey cast irons. This geometry is recommended in C2 carbide substrate.

GEN3SYS® XT Low Rake Geometry (LR)
Allied's GEN3SYS XT® Low Rake is the toughest GEN3SYS® geometry Allied offers and is designed for harder steels and less than ideal machining applications. This geometry is recommended in either a C1 or C2 substrate, and AM300® coating.

Notes

Notes

T-A® Drill Inserts and Holders

T-A® and GEN2 T-A® Reference

T-A® Drill Insert Item Number

1	8	2	T	-	0031
Insert	**Material**	**Series**	**Coating**		**Diameter**
	3 - HSS	Y 4	H - AM200®		Inch - 0017
	5 - Super Cobalt	Z 5	A - TiAlN		Decimal - .515
	8 - Premium Cobalt	0 6	N - TiCN		Metric - 13
	C1 - Carbide (K35)	1 7	T - TiN		
	C2 - Carbide (K20)	2 8			
	C3 - Carbide (K10)	3			
	C5 - Carbide (P40)				

GEN2 T-A® Drill Insert Item Number

4	5	3	H	-	0115
Insert	**Material**	**Series**	**Coating**		**Diameter**
	5 - Super Cobalt	Y 4	H - AM200®		Inch - 0017
	C1 - Carbide (K35)	Z 5	A - TiAlN		Decimal - .515
	C2 - Carbide (K20)	0 6	N - TiCN		Metric - 13
		1 7	T - TiN		
		2 8			
		3			

T-A® Holder Item Number

2	30	20	S	-	004	I
Holder	**Length**	**Series**	**Flute**		**Shank Designator**	**Shank Code**
	10 - Stub	Y 2	H - Helical		002 - 2MT 175 - 1-3/4”	I - Imperial Morse Taper
	20 - Short	Z 2.5	S - Straight		003 - 3MT 200 - 2”	M - Metric Morse Taper
	30 - Intermediate	0 3			004 - 4MT 300 - 3”	L - Lathe Shank
	40 - Standard	0.5 4			005 - 5MT 16 - 16mm	F - Flanged Shank
	50 - Extended	1 5			063 - 5/8” 20 - 20mm	FM - Flanged Metric Shank
	60 - Long	1.5 7			075 - 3/4” 25 - 25mm	
	70 - XL				100 - 1” 32 - 32mm	
	90 - 3XL				125 - 1-1/4” 40 - 40mm	
					150 - 1-1/2” 50 - 50mm	

Standard Stocked Items

All orders are processed through Allied's computerized Order Entry and Invoicing System. Please specify the correct catalog number as well as a full description of the desired item(s) so we can process your order accurately and efficiently. Incorrect item numbers and/or descriptions will cause unnecessary delays, and possibly, returns that are subject to a 10% restocking charge. Your assistance is critical if we are to achieve our goal of processing orders and shipping in stock items error free within 24 hours.

Non-Standard T-A® Drill Insert Sizes and Special Geometries

Order a **Non-Standard Diameter** by substituting your required diameter in place of the Allied standard diameter.

Standard Item Number	**132T-0101**
Non-Standard Diameter Standard Geometry (Inch)	**132T-1.0200** (Note: 4 decimal places)
Non-Standard Diameter Standard Geometry (Metric)	**132T-34.20** (Note: 2 decimal places)

Order a **Special Geometry** by adding the **Special Geometry** Code at the end of the Allied standard item number (see page C107)

Standard Item Number	**132T-0101**
Standard Diameter Special Geometry (Inch)	**132T-0101-SK**

Order a **Non-Standard Diameter** with **Special Geometry** by replacing the standard diameter and adding the **Special Geometry Code**

Standard Item Number	**132T-0101**
Non-Standard Diameter Special Geometry (Inch)	**132T-1.0200-SK**(Note: 4 decimal places)

Combinations of Special Geometries on the same item need to be quoted by our Engineering Department. When labeling these items, we will use the following format:

Standard Geometry

Series: #2 T-A®
Diameter: 1.0200
Mat'l: CPM-4 TiN
132T-1.0200

SK2 Geometry

Series: #2 T-A®
Diameter: 1.0200 (SK)
Mat'l: CPM-4 TiN
132T-1.0200-SK

Holder Ordering Information

The chart at the right illustrates the correlation between the drill insert and holder series. We use a series designator in the header, at the top of each page of both the drill insert and holder sections of the catalog for your reference when ordering. Please refer to these series designators when placing your order. For example; series 2 drill inserts will fit in either a series 2 or 2.5 holder. Please note the limited drill range used in 0.5, 1.5 and 2.5 series holders.

Drill Insert Series	Holder Series
Y	Y
Z	Z
0	0 & 0.5
1	1 & 1.5
2	2 & 2.5
3	3
4	4
5 & 6	5
7 & 8	7

Y Series T-A® HSS Drill Inserts

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)

T-A® Drill Inserts

(supplied in 2 piece packages)

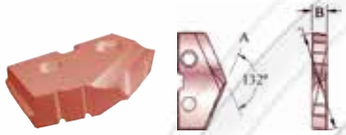
Material	A (Diameter)			B	Item Number, Coating and Availability					
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt		9,50	0.3740	3/32”	15YT-9.5	❍	15YA-9.5	❍	15YN-9.5	❍
	3/8”	9,53	0.3750		15YT-0012	❍	15YA-0012	❍	15YN-0012	❍
	W	9,80	0.3860		15YT-.386	❍	15YA-.386	❍	15YN-.386	❍
	25/64”	9,92	0.3906		15YT-.390	❍	15YA-.390	❍	15YN-.390	❍
		10,00	0.3937		15YT-10	❍	15YA-10	❍	15YN-10	❍
		10,20	0.4016		15YT-10.2	❍	15YA-10.2	❍	15YN-10.2	❍
	13/32”	10,32	0.4063		15YT-0013	❍	15YA-0013	❍	15YN-0013	❍
		10,50	0.4134		15YT-10.5	❍	15YA-10.5	❍	15YN-10.5	❍
	27/64”	10,72	0.4219		15YT-.421	❍	15YA-.421	❍	15YN-.421	❍
		10,80	0.4252		15YT-10.8	❍	15YA-10.8	❍	15YN-10.8	❍
		11,00	0.4331		15YT-11	❍	15YA-11	❍	15YN-11	❍
Premium Cobalt		9,50	0.3740		18YT-9.5	❍	18YA-9.5	❍	18YN-9.5	❍
	3/8”	9,53	0.3750		18YT-0012	❍	18YA-0012	❍	18YN-0012	❍
	W	9,80	0.3860		18YT-.386	❍	18YA-.386	❍	18YN-.386	❍
	25/64”	9,92	0.3906		18YT-.390	❍	18YA-.390	❍	18YN-.390	❍
		10,00	0.3937		18YT-10	❍	18YA-10	❍	18YN-10	❍
		10,20	0.4016		18YT-10.2	❍	18YA-10.2	❍	18YN-10.2	❍
	13/32”	10,32	0.4063		18YT-0013	❍	18YA-0013	❍	18YN-0013	❍
		10,50	0.4134		18YT-10.5	❍	18YA-10.5	❍	18YN-10.5	❍
	27/64”	10,72	0.4219		18YT-.421	❍	18YA-.421	❍	18YN-.421	❍
		10,80	0.4252		18YT-10.8	❍	18YA-10.8	❍	18YN-10.8	❍
		11,00	0.4331		18YT-11	❍	18YA-11	❍	18YN-11	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

GEN2 T-A®

(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter)			B	Item Number, Coating and Availability		GEN2 T-A® Provides:
	Fractional Equivalent	(mm)	(Inch)	Thickness	AM200®	❶	
Super Cobalt		9,50	0.3740	3/32”	45YH-9.5	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation • Supplied with Allied’s exclusive AM200® coating for increased tool life
	3/8”	9,53	0.3750		45YH-0012	❍	
	W	9,80	0.3860		45YH-.386	❍	
	25/64”	9,92	0.3906		45YH-.390	❍	
		10,00	0.3937		45YH-10	❍	
		10,20	0.4016		45YH-10.2	❍	
	13/32”	10,32	0.4063		45YH-0013	❍	
		10,50	0.4134		45YH-10.5	❍	
	27/64”	10,72	0.4219		45YH-.421	❍	
		10,80	0.4252		45YH-10.8	❍	
		11,00	0.4331		45YH-11	❍	

Geometries available (see page C107 for details): -HE.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

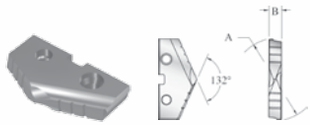
TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

Y Series T-A® Carbide Drill Inserts

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)

T-A® Carbide Drill Inserts

(supplied in 2 piece packages)



Material	A (Diameter)			B	Item Number, Coating and Availability			
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶	TiAIN	❶
C2 (K20)		9,50	0.3740	3/32"	1C2YT-9.5	❍	1C2YA-9.5	❍
	3/8"	9,53	0.3750		1C2YT-0012	❍	1C2YA-0012	❍
	W	9,80	0.3860		1C2YT-.386	❍	1C2YA-.386	❍
	25/64"	9,92	0.3906		1C2YT-.390	❍	1C2YA-.390	❍
		10,00	0.3937		1C2YT-10	❍	1C2YA-10	❍
		10,20	0.4016		1C2YT-10.2	❍	1C2YA-10.2	❍
	13/32"	10,32	0.4063		1C2YT-0013	❍	1C2YA-0013	❍
		10,50	0.4134		1C2YT-10.5	❍	1C2YA-10.5	❍
	27/64"	10,72	0.4219		1C2YT-.421	❍	1C2YA-.421	❍
		10,80	0.4252		1C2YT-10.8	❍	1C2YA-10.8	❍
		11,00	0.4331		1C2YT-11	❍	1C2YA-11	❍
C5 (P40)		9,50	0.3740		1C5YT-9.5	❍	1C5YA-9.5	❍
	3/8"	9,53	0.3750		1C5YT-0012	❍	1C5YA-0012	❍
	W	9,80	0.3860		1C5YT-.386	❍	1C5YA-.386	❍
	25/64"	9,92	0.3906		1C5YT-.390	❍	1C5YA-.390	❍
		10,00	0.3937		1C5YT-10	❍	1C5YA-10	❍
		10,20	0.4016		1C5YT-10.2	❍	1C5YA-10.2	❍
	13/32"	10,32	0.4063		1C5YT-0013	❍	1C5YA-0013	❍
		10,50	0.4134		1C5YT-10.5	❍	1C5YA-10.5	❍
	27/64"	10,72	0.4219		1C5YT-.421	❍	1C5YA-.421	❍
		10,80	0.4252		1C5YT-10.8	❍	1C5YA-10.8	❍
		11,00	0.4331		1C5YT-11	❍	1C5YA-11	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Cast Iron Geometry T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability		
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiAIN	❶	
C3 (K10)		9,50	0.3740	3/32"	1C3YA-9.5-CI	❍	This insert is specifically designed for use in Grey Cast Iron. (Use standard T-A® geometry for Nodular Iron)
	3/8"	9,53	0.3750		1C3YA-0012-CI	❍	
	W	9,80	0.3860		1C3YA-.386-CI	❍	
	25/64"	9,92	0.3906		1C3YA-.390-CI	❍	• C3 Carbide offers high wear resistance for improved tool life.
		10,00	0.3937		1C3YA-10-CI	❍	
		10,20	0.4016		1C3YA-10.2-CI	❍	• Cast Iron (-CI) geometry provides a unique design to minimize chipping.
	13/32"	10,32	0.4063		1C3YA-0013-CI	❍	
		10,50	0.4134		1C3YA-10.5-CI	❍	• TiAIN offers exceptional wear resistance and high heat capabilities to increase tool life and penetration rates in Grey Cast Iron.
	27/64"	10,72	0.4219		1C3YA-.421-CI	❍	
		10,80	0.4252		1C3YA-10.8-CI	❍	
		11,00	0.4331		1C3YA-11-CI	❍	

❶ Availability Codes
❍ Stocked
▲ Non-stocked

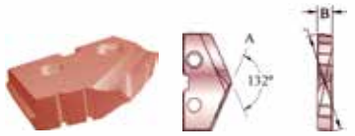
Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Decimals = 0.3745" TiAIN, Y Series, Super Cobalt, HSS	=15YA-.3745
Metric = 10,40mm TiCN, Y Series, Premium Cobalt, HSS	=18YN-10.40
Decimals = 0.3745" TiAIN, Y Series, Super Cobalt, GEN2 T-A®	=45YA-.3745
Metric = 10,40mm TiCN, Y Series, Super Cobalt, GEN2 T-A®	=45YN-10.40

Y Series T-A® Carbide Drill Inserts

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)

GEN2 T-A®
(supplied in 2 piece packages)



Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
C2 (K20)		9,50	0.3740	3/32”	4C2YH-9.5	❍
	3/8”	9,53	0.3750		4C2YH-0012	❍
	W	9,80	0.3860		4C2YH-.386	❍
	25/64”	9,92	0.3906		4C2YH-.390	❍
		10,00	0.3937		4C2YH-10	❍
		10,20	0.4016		4C2YH-10.2	❍
	13/32”	10,32	0.4063		4C2YH-0013	❍
		10,50	0.4134		4C2YH-10.5	❍
	27/64”	10,72	0.4219		4C2YH-.421	❍
		10,80	0.4252		4C2YH-10.8	❍
		11,00	0.4331		4C2YH-11	❍
C1 (K35)		9,50	0.3740		4C1YH-9.5	❍
	3/8”	9,53	0.3750		4C1YH-0012	❍
	W	9,80	0.3860		4C1YH-.386	❍
	25/64”	9,92	0.3906		4C1YH-.390	❍
		10,00	0.3937		4C1YH-10	❍
		10,20	0.4016		4C1YH-10.2	❍
	13/32”	10,32	0.4063		4C1YH-0013	❍
		10,50	0.4134		4C1YH-10.5	❍
	27/64”	10,72	0.4219		4C1YH-.421	❍
		10,80	0.4252		4C1YH-10.8	❍
		11,00	0.4331		4C1YH-11	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

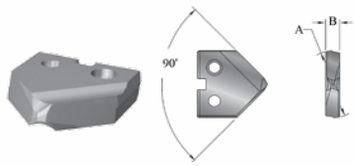
Geometries available (see page C107 for details): -HE.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

Y Series T-A® HSS Drill Inserts

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)



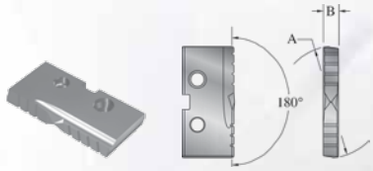
90° Spot and Chamfer T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt		9,50	0.3740	3/32"	15YT-9.5-SP	▲	15YA-9.5-SP	▲	15YN-9.5-SP	▲
	3/8"	9,53	0.3750		15YT-0012-SP	❍	15YA-0012-SP	❍	15YN-0012-SP	❍
	W	9,80	0.3860		15YT-.386-SP	▲	15YA-.386-SP	▲	15YN-.386-SP	▲
	25/64"	9,92	0.3906		15YT-.390-SP	▲	15YA-.390-SP	▲	15YN-.390-SP	▲
		10,00	0.3937		15YT-10-SP	▲	15YA-10-SP	▲	15YN-10-SP	▲
		10,20	0.4016		15YT-10.2-SP	▲	15YA-10.2-SP	▲	15YN-10.2-SP	▲
	13/32"	10,32	0.4063		15YT-0013-SP	▲	15YA-0013-SP	▲	15YN-0013-SP	▲
		10,50	0.4134		15YT-10.5-SP	▲	15YA-10.5-SP	▲	15YN-10.5-SP	▲
	27/64"	10,72	0.4219		15YT-.421-SP	▲	15YA-.421-SP	▲	15YN-.421-SP	▲
		10,80	0.4252		15YT-10.8-SP	▲	15YA-10.8-SP	▲	15YN-10.8-SP	▲
		11,00	0.4331		15YT-11-SP	❍	15YA-11-SP	❍	15YN-11-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.



Flat Bottom T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
Super Cobalt		9,50	0.3740	3/32"	15YT-9.5-FB	❍
	3/8"	9,53	0.3750		15YT-0012-FB	❍
	W	9,80	0.3860		15YT-.386-FB	❍
	25/64"	9,92	0.3906		15YT-.390-FB	❍
		10,00	0.3937		15YT-10-FB	❍
		10,20	0.4016		15YT-10.2-FB	❍
	13/32"	10,32	0.4063		15YT-0013-FB	❍
		10,50	0.4134		15YT-10.5-FB	❍
	27/64"	10,72	0.4219		15YT-.421-FB	❍
		10,80	0.4252		15YT-10.8-FB	❍
		11,00	0.4331		15YT-11-FB	❍

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes

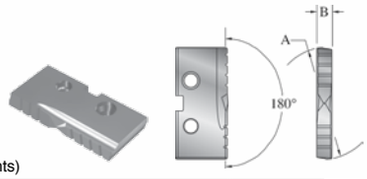
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Decimals = 0.3745" TiAlN, Y Series, Super Cobalt, 90° Spot and Chamfer =15YA-.3745-SP
Metric = 10,40mm TiCN, Y Series, Super Cobalt, Flat Bottom =15YN-10.40-FB

Y Series T-A® Carbide Drill Inserts

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)



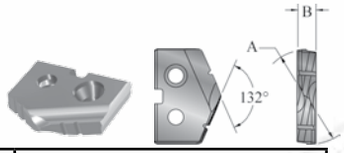
Flat Bottom T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
C2 (K20)		9,50	0.3740	3/32”	1C2YT-9.5-FB	▲
	3/8”	9,53	0.3750		1C2YT-0012-FB	▲
	W	9,80	0.3860		1C2YT-.386-FB	▲
	25/64”	9,92	0.3906		1C2YT-.390-FB	▲
		10,00	0.3937		1C2YT-10-FB	▲
		10,20	0.4016		1C2YT-10.2-FB	▲
	13/32”	10,32	0.4063		1C2YT-0013-FB	▲
		10,50	0.4134		1C2YT-10.5-FB	▲
	27/64”	10,72	0.4219		1C2YT-.421-FB	▲
		10,80	0.4252		1C2YT-10.8-FB	▲
		11,00	0.4331		1C2YT-11-FB	▲

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.



Diamond Coated T-A® Carbide Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability CVD Diamond	❶
N2		9,50	0.3740	3/32”	1N2YD-9.5	▲
	3/8”	9,53	0.3750		1N2YD-0012	▲
	W	9,80	0.3860		1N2YD-.386	▲
	25/64”	9,92	0.3906		1N2YD-.390	▲
		10,00	0.3937		1N2YD-10	▲
		10,20	0.4016		1N2YD-10.2	▲
	13/32”	10,32	0.4063		1N2YD-0013	▲
		10,50	0.4134		1N2YD-10.5	▲
	27/64”	10,72	0.4219		1N2YD-.421	▲
		10,80	0.4252		1N2YD-10.8	▲
		11,00	0.4331		1N2YD-11	▲

Crystalline, Diamond Film Coating produces:

- Increased Hardness
- Increased Durability
- Increased Performance

Extends tool life 30-50 times versus uncoated carbide drill inserts

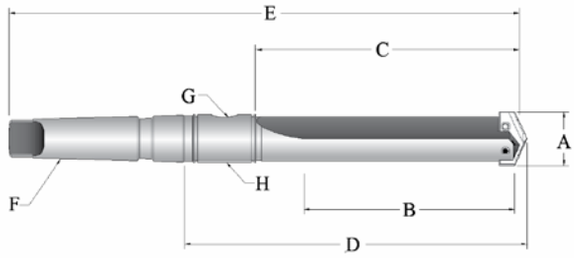
Used in non-ferrous / non-metallic applications

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

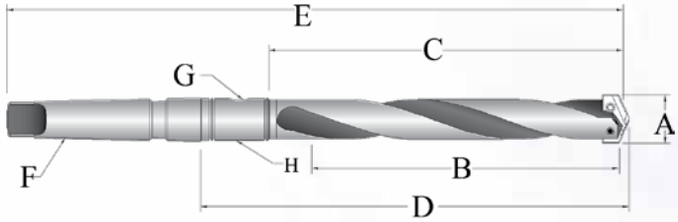
Y Series T-A® Holders

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)



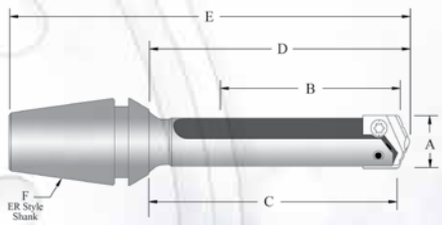
Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	220Y0S-002I	3/8”-27/64”	1-1/4”	2-1/32”	3-15/32”	6-5/16”	#2	1/16”	2T-2SR
Standard	240Y0S-002I	3/8”-27/64”	2-3/8”	3-5/32”	4-19/32”	7-7/16”	#2	1/16”	2T-2SR
⚠ Extended	250Y0S-002I	3/8”-27/64”	4-3/8”	5-5/32”	6-19/32”	9-7/16”	#2	1/16”	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	220Y0S-002M	9,5-11,0	31,8	51,5	88,0	160,3	#2**	1/16”*	2T-2SRM



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Standard	240Y0H-002I	3/8”-27/64”	2-3/8”	3-5/32”	4-19/32”	7-7/16”	#2	1/16”	2T-2SR
⚠ Extended	250Y0H-002I	3/8”-27/64”	4-3/8”	5-5/32”	6-19/32”	9-7/16”	#2	1/16”	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	240Y0H-002M	9,5-11,0	60,3	80,2	116,7	188,9	#2**	1/16”*	2T-2SRM
⚠ Extended	250Y0H-002M	9,5-11,0	111,1	130,9	167,4	239,7	#2**	1/16”*	2T-2SRM



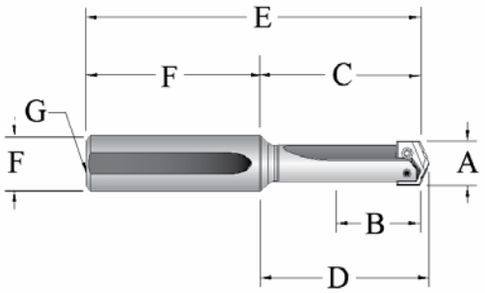
ER Collet Holders

Item Number	A Drill Insert Range	B Max Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Collet Size	Collet Nut without Retaining Ring
210Y0S-16ER	3/8” - 27/64”	1-3/8”	1-29/32”	2”	3-5/64”	ER-16	ER-16N
210Y0S-20ER	3/8” - 27/64”	1-3/8”	1-29/32”	2”	3-15/64”	ER-20	ER-20N

⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

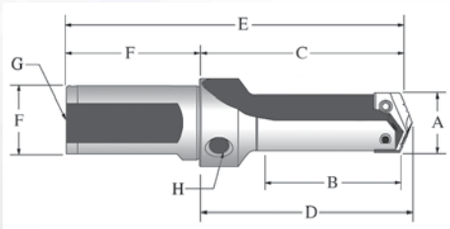
Y Series T-A® Holders

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)

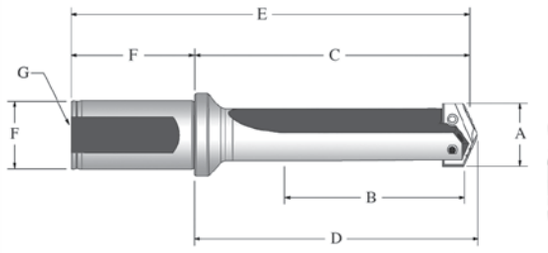


Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia	Length	
Short	220Y0S-075L	3/8”-27/64”	1-1/4”	2-1/32”	2-1/8”	4-13/32”	3/4”	2-3/8”	1/8”
Standard	240Y0S-075L	3/8”-27/64”	2-3/8”	3-5/32”	3-1/4”	5-17/32”	3/4”	2-3/8”	1/8”
⚠ Extended	250Y0S-075L	3/8”-27/64”	4-3/8”	5-5/32”	5-1/4”	7-17/32”	3/4”	2-3/8”	1/8”
⚠ XL	270Y0S-075L	3/8”-27/64”	8-3/4”	9-17/32”	9-5/8”	11-29/32”	3/4”	2-3/8”	1/8”
⚠ 3XL	290Y0S-075L	3/8”-27/64”	11-7/16”	12-7/32”	12-5/16”	14-19/32”	3/4”	2-3/8”	1/8”



Stub Length Flanged Shank Holder



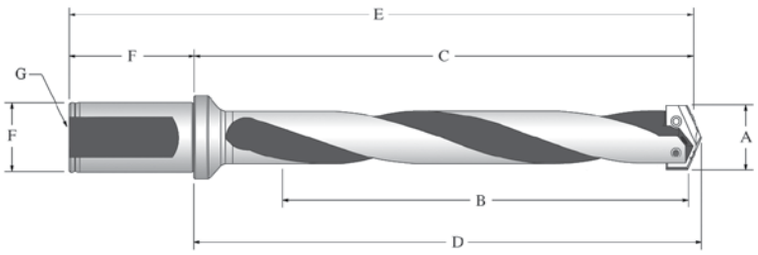
Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	210Y0S-063F	3/8”-27/64”	3/4”	1-7/8”	1-31/32”	3-3/4”	5/8”	1-7/8”	1/16”	1/8”
Short	220Y0S-075F	3/8”-27/64”	1-1/4”	2-13/32”	2-1/2”	4-7/16”	3/4”	2-1/32”	1/8”	N/A
Standard	240Y0S-075F	3/8”-27/64”	2-3/8”	3-17/32”	3-5/8”	5-9/16”	3/4”	2-1/32”	1/8”	N/A
⚠ Extended	250Y0S-075F	3/8”-27/64”	4-3/8”	5-17/32”	5-5/8”	7-9/16”	3/4”	2-1/32”	1/8”	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	210Y0S-16FM	9,5-11,0	19,1	47,6	50,0	95,6	16,0	48,0	1/16”*	1/8”
Short	220Y0S-20FM	9,5-11,0	31,8	61,1	63,5	111,1	20,0	50,0	1/8”*	N/A
⚠ XL	270Y0S-20FM	9,5-11,0	222	251,7	254,1	301,7	20,0	50,0	1/8”*	N/A
⚠ 3XL	290Y0S-20FM	9,5-11,0	290	319,9	322,3	369,9	20,0	50,0	1/8”*	N/A

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Y Series T-A® Holders

Range: 0.374 to 0.436 inch (9,5mm to 11,07mm)



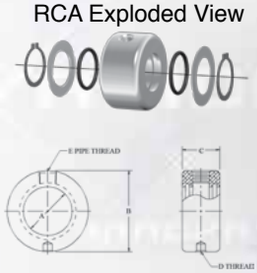
Flanged Shank Helical Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia	Length	
Standard	240Y0H-075F	3/8”-27/64”	2-3/8”	3-17/32”	3-5/8”	5-9/16”	3/4”	2-1/32”	1/8”
⚠ Extended	250Y0H-075F	3/8”-27/64”	4-3/8”	5-17/32”	5-5/8”	7-9/16”	3/4”	2-1/32”	1/8”
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Standard	240Y0H-20FM	9,5-11,0	60,3	89,7	92,1	139,7	20,0	50,0	1/8”*
⚠ Extended	250Y0H-20FM	9,5-11,0	111,1	140,5	142,9	190,5	20,0	50,0	1/8”*

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
Inch	⚠ ◢2T-2SR	3/4”	1-3/4”	7/8”	5/16”-NC	1/8”	2T1-2SR	2T1-2OR-10
Metric	⚠ ◢2T-2SRM	19,05	44,45	22,23	M8 X 1,25	1/8”*	2T1-2SR	2T1-2OR-10

RCA Exploded View



* Metric Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

◢ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws

(supplied in 10 piece packages)

Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	INCH		METRIC	
						Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
Y	724-IP7-10	724N-IP7-10	8IP-7	8IP-7TL	8IP-7B	3/8”-27/64”	7.4	9,5mm-11,00mm	84

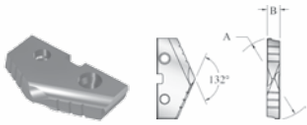
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Z Series T-A® HSS Drill Inserts

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)

T-A® Drill Inserts

(supplied in 2 piece packages)



Material	A (Diameter)			B	Item Number, Coating and Availability					
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt	7/16”	11,11	0.4375	3/32”	15ZT-0014	❍	15ZA-0014	❍	15ZN-0014	❍
		11,50	0.4528		15ZT-11.5	❍	15ZA-11.5	❍	15ZN-11.5	❍
	29/64”	11,51	0.4531		15ZT-.453	❍	15ZA-.453	❍	15ZN-.453	❍
	15/32”	11,91	0.4688		15ZT-0015	❍	15ZA-0015	❍	15ZN-0015	❍
		12,00	0.4724		15ZT-12	❍	15ZA-12	❍	15ZN-12	❍
	31/64”	12,30	0.4844		15ZT-.484	❍	15ZA-.484	❍	15ZN-.484	❍
		12,50	0.4921		15ZT-12.5	❍	15ZA-12.5	❍	15ZN-12.5	❍
	1/2”	12,70	0.5000		15ZT-0016	❍	15ZA-0016	❍	15ZN-0016	❍
Premium Cobalt	7/16”	11,11	0.4375		18ZT-0014	❍	18ZA-0014	❍	18ZN-0014	❍
		11,50	0.4528		18ZT-11.5	❍	18ZA-11.5	❍	18ZN-11.5	❍
	29/64”	11,51	0.4531		18ZT-.453	❍	18ZA-.453	❍	18ZN-.453	❍
	15/32”	11,91	0.4688		18ZT-0015	❍	18ZA-0015	❍	18ZN-0015	❍
		12,00	0.4724		18ZT-12	❍	18ZA-12	❍	18ZN-12	❍
	31/64”	12,30	0.4844		18ZT-.484	❍	18ZA-.484	❍	18ZN-.484	❍
		12,50	0.4921		18ZT-12.5	❍	18ZA-12.5	❍	18ZN-12.5	❍
	1/2”	12,70	0.5000		18ZT-0016	❍	18ZA-0016	❍	18ZN-0016	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

GEN2 T-A®

(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter)			B	Item Number, Coating and Availability		GEN2 T-A® Provides:
	Fractional Equivalent	(mm)	(Inch)	Thickness	AM200®	❶	
Super Cobalt	7/16”	11,11	0.4375	3/32”	45ZH-0014	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation • Supplied with Allied’s exclusive AM200® coating for increased tool life
		11,46	0.4510		45ZH-.451	❍	
		11,50	0.4528		45ZH-11.5	❍	
	29/64”	11,51	0.4531		45ZH-.453	❍	
	15/32”	11,91	0.4688		45ZH-0015	❍	
		12,00	0.4724		45ZH-12	❍	
	31/64”	12,30	0.4844		45ZH-.484	❍	
		12,50	0.4921		45ZH-12.5	❍	
	1/2”	12,70	0.5000		45ZH-0016	❍	
		12,85	0.5060		45ZH-.506	❍	
		12,95	0.5100		45ZH-.510	❍	

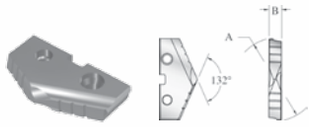
Geometries available (see page C107 for details): -HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

Z Series T-A® Carbide Drill Inserts

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)



T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAIN	❶
C2 (K20)	7/16”	11,11	0.4375	3/32”	1C2ZT-0014	❍	1C2ZA-0014	❍
		11,50	0.4528		1C2ZT-11.5	❍	1C2ZA-11.5	❍
	29/64”	11,51	0.4531		1C2ZT-.453	❍	1C2ZA-.453	❍
	15/32”	11,91	0.4688		1C2ZT-0015	❍	1C2ZA-0015	❍
		12,00	0.4724		1C2ZT-12	❍	1C2ZA-12	❍
	31/64”	12,30	0.4844		1C2ZT-.484	❍	1C2ZA-.484	❍
		12,50	0.4921		1C2ZT-12.5	❍	1C2ZA-12.5	❍
	1/2”	12,70	0.5000		1C2ZT-0016	❍	1C2ZA-0016	❍
C5 (P40)	7/16”	11,11	0.4375		1C5ZT-0014	❍	1C5ZA-0014	❍
		11,50	0.4528		1C5ZT-11.5	❍	1C5ZA-11.5	❍
	29/64”	11,51	0.4531		1C5ZT-.453	❍	1C5ZA-.453	❍
	15/32”	11,91	0.4688		1C5ZT-0015	❍	1C5ZA-0015	❍
		12,00	0.4724		1C5ZT-12	❍	1C5ZA-12	❍
	31/64”	12,30	0.4844		1C5ZT-.484	❍	1C5ZA-.484	❍
		12,50	0.4921		1C5ZT-12.5	❍	1C5ZA-12.5	❍
	1/2”	12,70	0.5000		1C5ZT-0016	❍	1C5ZA-0016	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Cast Iron Geometry T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiAIN	❶	
C3 (K10)	7/16	11,11	0.4375	3/32”	1C3ZA-0014-CI	❍	This insert is specifically designed for use in **Grey Cast Iron**. (Use standard T-A® geometry for Nodular Iron) • C3 Carbide offers high wear resistance for improved tool life. • Cast Iron (-CI) geometry provides a unique design to minimize chipping. • TiAIN offers exceptional wear resistance and high heat capabilities to increase tool life and penetration rates in Grey Cast Iron.
		11,50	0.4528		1C3ZA-11.5-CI	❍	
	29/64”	11,51	0.4531		1C3ZA-.453-CI	❍	
	15/32”	11,91	0.4688		1C3ZA-0015-CI	❍	
		12,00	0.4724		1C3ZA-12-CI	❍	
	31/64”	12,30	0.4844		1C3ZA-.484-CI	❍	
		12,50	0.4921		1C3ZA-12.5-CI	❍	
	1/2”	12,70	0.5000		1C3ZA-0016-CI	❍	

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.4450” TiAIN, Z Series, Premium Cobalt =18ZA-.4450
Metric = 11,45 mm AM200®, Z Series GEN2 T-A® HSS Super Cobalt, Flat Bottom =15ZH-11.45-FB

Z Series T-A® Carbide Drill Inserts

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)

GEN2 T-A®
(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
C2 (K20)	7/16”	11,11	0.4375	3/32”	4C2ZH-0014	❍
		11,50	0.4528		4C2ZH-11.5	❍
	29/64”	11,51	0.4531		4C2ZH-.453	❍
	15/32”	11,91	0.4688		4C2ZH-0015	❍
		12,00	0.4724		4C2ZH-12	❍
	31/64”	12,30	0.4844		4C2ZH-.484	❍
		12,50	0.4921		4C2ZH-12.5	❍
	1/2”	12,70	0.5000		4C2ZH-0016	❍
C1 (K35)	7/16”	11,11	0.4375		4C1ZH-0014	❍
		11,46	0.4510		4C1ZH-.451	❍
		11,50	0.4528		4C1ZH-11.5	❍
	29/64”	11,51	0.4531		4C1ZH-.453	❍
	15/32”	11,91	0.4688		4C1ZH-0015	❍
		12,00	0.4724		4C1ZH-12	❍
	31/64”	12,30	0.4844		4C1ZH-.484	❍
		12,50	0.4921		4C1ZH-12.5	❍
	1/2”	12,70	0.5000		4C1ZH-0016	❍
		12,85	0.5060		4C1ZH-.506	❍
		12,95	0.5100		4C1ZH-.510	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

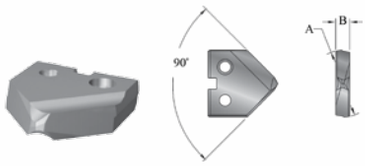
Geometries available (see page C107 for details): -HE
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

Z Series T-A® HSS Drill Inserts

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)



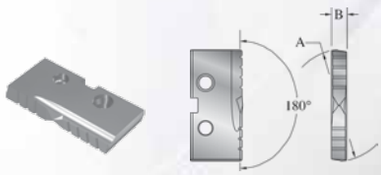
90º Spot and Chamfer T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt	7/16”	11,11	0.4375	3/32”	15ZT-0014-SP	▲	15ZA-0014-SP	▲	15ZN-0014-SP	▲
		11,50	0.4528		15ZT-11.5-SP	▲	15ZA-11.5-SP	▲	15ZN-11.5-SP	▲
	29/64”	11,51	0.4531		15ZT-.453-SP	▲	15ZA-.453-SP	▲	15ZN-.453-SP	▲
	15/32”	11,91	0.4688		15ZT-0015-SP	▲	15ZA-0015-SP	▲	15ZN-0015-SP	▲
		12,00	0.4724		15ZT-12-SP	▲	15ZA-12-SP	▲	15ZN-12-SP	▲
	31/64”	12,30	0.4844		15ZT-.484-SP	▲	15ZA-.484-SP	▲	15ZN-.484-SP	▲
		12,50	0.4921		15ZT-12.5-SP	▲	15ZA-12.5-SP	▲	15ZN-12.5-SP	▲
	1/2”	12,70	0.5000		15ZT-0016-SP	❍	15ZA-0016-SP	❍	15ZN-0016-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.



Flat Bottom T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
Super Cobalt	7/16”	11,11	0.4375	3/32”	15ZT-0014-FB	❍
		11,50	0.4528		15ZT-11.5-FB	❍
	29/64”	11,51	0.4531		15ZT-.453-FB	❍
	15/32”	11,91	0.4688		15ZT-0015-FB	❍
		12,00	0.4724		15ZT-12-FB	❍
	31/64”	12,30	0.4844		15ZT-.484-FB	❍
		12,50	0.4921		15ZT-12.5-FB	❍
	1/2”	12,70	0.5000		15ZT-0016-FB	❍

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes

❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Decimals = 0.4505” TiAlN, Z Series, C5 =1C5ZA-.4505
Metric = 12,10 mm TiCN, Z Series, C2 =1C2ZN-12.10

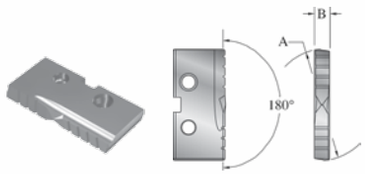
Z Series T-A® Carbide Drill Inserts

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)

Flat Bottom T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

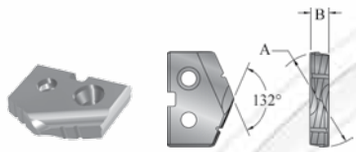
U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
C2 (K20)	7/16”	11,11	0.4375	3/32”	1C2ZT-0014-FB	▲
		11,50	0.4528		1C2ZT-11.5-FB	▲
	29/64”	11,51	0.4531		1C2ZT-.453-FB	▲
	15/32”	11,91	0.4688		1C2ZT-0015-FB	▲
		12,00	0.4724		1C2ZT-12-FB	▲
	31/64”	12,30	0. 4844		1C2ZT-.484-FB	▲
		12,50	0.4921		1C2ZT-12.5-FB	▲
	1/2”	12,70	0.5000		1C2ZT-0016-FB	▲

Diamond Coated T-A® Carbide Drill Inserts

(supplied in 1 piece packages)



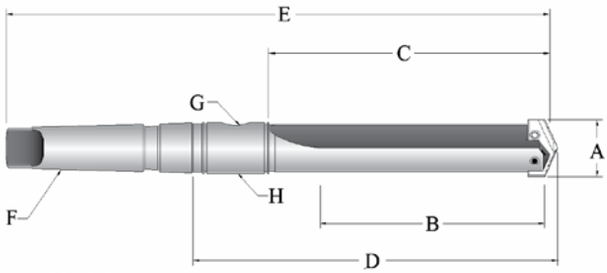
Material	A (Diameter)			B	Item Number, Coating and Availability		Crystalline, Diamond Film Coating produces: • Increased Hardness • Increased Durability • Increased Performance Extends tool life 30-50 times versus uncoated carbide drill inserts Used in non-ferrous / non-metallic applications
	Fractional Equivalent	(mm)	(Inch)	Thickness	CVD Diamond	❶	
N2	7/16”	11,11	0.4375	3/32”	1N2ZD-0014	▲	
		11,50	0.4528		1N2ZD-11.5	▲	
	29/64”	11,51	0.4531		1N2ZD-.453	▲	
	15/32”	11,91	0.4688		1N2ZD-0015	▲	
		12,00	0.4724		1N2ZD-12	▲	
	31/64”	12,30	0.4844		1N2ZD-.484	▲	
		12,50	0.4921		1N2ZD-12.5	▲	
	1/2”	12,70	0.5000		1N2ZD-0016	▲	

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

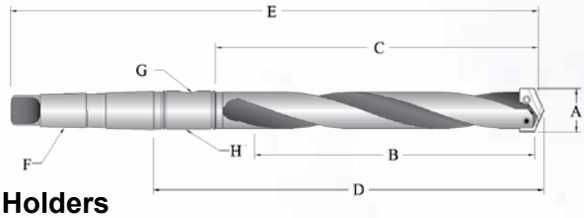
Z Series T-A® Holders

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)



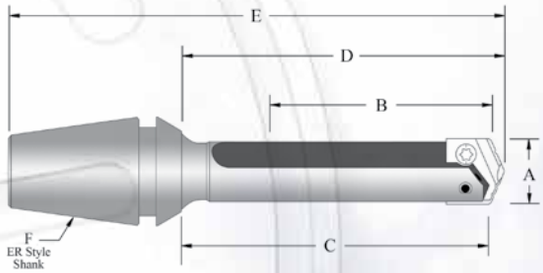
Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	220Z0S-002I	7/16" - 1/2"	1-1/4"	2-1/32"	3-15/32"	6-5/16"	#2	1/16"	2T-2SR
Standard	240Z0S-002I	7/16" - 1/2"	2-3/8"	3-5/32"	4-19/32"	7-7/16"	#2	1/16"	2T-2SR
⚠ Extended	250Z0S-002I	7/16" - 1/2"	4-3/8"	5-5/32"	6-19/32"	9-7/16"	#2	1/16"	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	220Z0S-002M	11,5 - 12,5	31,8	51,5	88,0	160,3	#2	1/16"	2T-2SRM



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Standard	240Z0H-002I	7/16" - 1/2"	2-3/8"	3-5/32"	4-19/32"	7-7/16"	#2	1/16"	2T-2SR
⚠ Extended	250Z0H-002I	7/16" - 1/2"	4-3/8"	5-5/32"	6-19/32"	9-7/16"	#2	1/16"	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	240Z0H-002M	11,5 - 12,5	60,3	80,2	116,7	188,9	#2**	1/16"*	2T-2SRM
⚠ Extended	250Z0H-002M	11,5 - 12,5	111,1	130,9	167,4	239,7	#2**	1/16"*	2T-2SRM



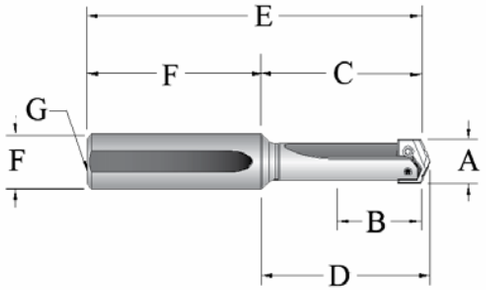
ER Collet Holders

Item Number	A Drill Insert Range	B Max Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Collet Size	Collet Nut without Retaining Ring
210Z0S-16ER	7/16" - 1/2"	1-3/8"	1-29/32"	2"	3-5/64"	ER-16	ER-16N
210Z0S-20ER	7/16" - 1/2"	1-3/8"	1-29/32"	2"	3-15/64"	ER-20	ER-20N

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

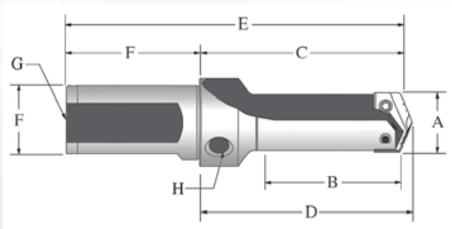
Z Series T-A® Holders

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)

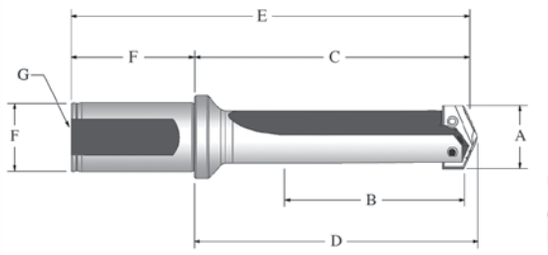


Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia	Length	
Short	220Z0S-075L	7/16" - 1/2"	1-1/4"	2-1/32"	2-1/8"	4-13/32"	3/4"	2-3/8"	1/8"
Standard	240Z0S-075L	7/16" - 1/2"	2-3/8"	3-5/32"	3-1/4"	5-17/32"	3/4"	2-3/8"	1/8"
⚠ Extended	250Z0S-075L	7/16" - 1/2"	4-3/8"	5-5/32"	5-1/4"	7-17/32"	3/4"	2-3/8"	1/8"
⚠ XL	270Z0S-075L	7/16" - 1/2"	8-3/4"	9-17/32"	9-5/8"	11-29/32"	3/4"	2-3/8"	1/8"
⚠ 3XL	290Z0S-075L	7/16" - 1/2"	11-7/16"	12-7/32"	12-5/16"	14-19/32"	3/4"	2-3/8"	1/8"



Stub Length Flanged Shank Holder



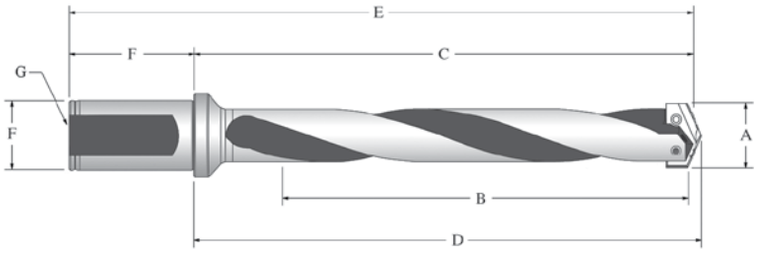
Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	210Z0S-063F	7/16" - 1/2"	3/4"	1-51/64"	1-57/64"	3-43/64"	5/8"	1-7/8"	1/16"	1/8"
Short	220Z0S-075F	7/16" - 1/2"	1-1/4"	2-13/32"	2-1/2"	4-7/16"	3/4"	2-1/32"	1/8"	N/A
Standard	240Z0S-075F	7/16" - 1/2"	2-3/8"	3-17/32"	3-5/8"	5-9/16"	3/4"	2-1/32"	1/8"	N/A
⚠ Extended	250Z0S-075F	7/16" - 1/2"	4-3/8"	5-17/32"	5-5/8"	7-9/16"	3/4"	2-1/32"	1/8"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	210Z0S-16FM	11,5 - 12,5	19,1	45,6	48,0	104,6	16,0	48,0	1/16"*	1/8"*
Short	220Z0S-20FM	11,5 - 12,5	31,8	61,1	63,5	111,1	20,0	50,0	1/8"*	N/A
⚠ XL	270Z0S-20FM	11,5 - 12,5	222,3	251,7	254,1	301,7	20,0	50,0	1/8"*	N/A
⚠ 3XL	290Z0S-20FM	11,5 - 12,5	290,5	319,9	322,3	369,9	20,0	50,0	1/8"*	N/A

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Z Series T-A® Holders

Range: 0.437 to 0.510 inch (11,10mm to 12,95mm)



Flanged Shank Helical Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia	Length	
Standard	240Z0H-075F	7/16" - 1/2"	2-3/8"	3-17/32"	3-5/8"	5-9/16"	3/4"	2-1/32"	1/8"
⚠ Extended	250Z0H-075F	7/16" - 1/2"	4-3/8"	5-17/32"	5-5/8"	7-9/16"	3/4"	2-1/32"	1/8"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Standard	240Z0H-20FM	11,5 - 12,5	60,3	89,7	92,1	139,7	20,0	50,0	1/8"*
⚠ Extended	250Z0H-20FM	11,5 - 12,5	111,1	140,5	142,9	190,5	20,0	50,0	1/8"*

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	O RCA O-ring Replacements 10 Pieces
Inch	⚠ ◢2T-2SR	3/4"	1-3/4"	7/8"	5/16"-NC	1/8"	2T1-2SR	2T1-2OR-10
Metric	⚠ ◢2T-2SRM	19,05	44,45	22,23	M8 X 1,25	1/8"*	2T1-2SR	2T1-2OR-10

RCA Exploded View

* Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

◢ Refer to page C110 for Proper RCA Assembly

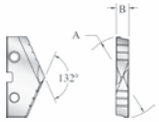
Replacement TORX Plus Screws
(supplied in 10 piece package)

Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	INCH		METRIC	
						Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
Z	7247-IP7-10	7247N-IP7-10	8IP-7	8IP-7TL	8IP-7B	7/16"-1/2"	7.4	11,5mm-12,5mm	84

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

0 Series T-A® HSS Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt		13,00	0.5118	1/8"	150T-13	❍	150A-13	❍	150N-13	❍
	33/64"	13,10	0.5156		150T-.515	❍	150A-.5115	❍	150N-.515	❍
	17/32"	13,49	0.5313		150T-0017	❍	150A-0017	❍	150N-0017	❍
		13,50	0.5315		150T-13.5	❍	150A-13.5	❍	150N-13.5	❍
	35/64"	13,89	0.5469		150T-.546	❍	150A-.546	❍	150N-.546	❍
		14,00	0.5512		150T-14	❍	150A-14	❍	150N-14	❍
	9/16"	14,29	0.5625		150T-0018	❍	150A-0018	❍	150N-0018	❍
		14,50	0.5709		150T-14.5	❍	150A-14.5	❍	150N-14.5	❍
	37/64"	14,68	0.5781		150T-.578	❍	150A-.578	❍	150N-.578	❍
		15,00	0.5906		150T-15	❍	150A-15	❍	150N-15	❍
	19/32"	15,08	0.5938		150T-0019	❍	150A-0019	❍	150N-0019	❍
	39/64"	15,48	0.6094		150T-.609	❍	150A-.609	❍	150N-.609	❍
		15,50	0.6102		150T-15.5	❍	150A-15.5	❍	150N-15.5	❍
	5/8"	15,88	0.6250		150T-0020	❍	150A-0020	❍	150N-0020	❍
		16,00	0.6299		150T-16	❍	150A-16	❍	150N-16	❍
	41/64"	16,27	0.6406		150T-.640	❍	150A-.640	❍	150N-.640	❍
		16,50	0.6496		150T-16.5	❍	150A-16.5	❍	150N-16.5	❍
	21/32"	16,67	0.6563		150T-0021	❍	150A-0021	❍	150N-0021	❍
		17,00	0.6693		150T-17	❍	150A-17	❍	150N-17	❍
	43/64"	17,07	0.6719		150T-.671	❍	150A-.671	❍	150N-.671	❍
	11/16"	17,46	0.6875		150T-0022	❍	150A-0022	❍	150N-0022	❍
		17,50	0.6890		150T-17.5	❍	150A-17.5	❍	150N-17.5	❍
Premium Cobalt		13,00	0.5118		180T-13	❍	180A-13	❍	180N-13	❍
	33/64"	13,10	0.5156		180T-.515	❍	180A-.515	❍	180N-.515	❍
	17/32"	13,49	0.5313		180T-0017	❍	180A-0017	❍	180N-0017	❍
		13,50	0.5315		180T-13.5	❍	180A-13.5	❍	180N-13.5	❍
	35/64"	13,89	0.5469		180T-.546	❍	180A-.546	❍	180N-.546	❍
		14,00	0.5512		180T-14	❍	180A-14	❍	180N-14	❍
	9/16"	14,29	0.5625		180T-0018	❍	180A-0018	❍	180N-0018	❍
		14,50	0.5709		180T-14.5	❍	180A-14.5	❍	180N-14.5	❍
	37/64"	14,68	0.5781		180T-.578	❍	180A-.578	❍	180N-.578	❍
		15,00	0.5906		180T-15	❍	180A-15	❍	180N-15	❍
	19/32"	15,08	0.5938		180T-0019	❍	180A-0019	❍	180N-0019	❍
	39/64"	15,48	0.6094		180T-.609	❍	180A-.609	❍	180N-.609	❍
		15,50	0.6102		180T-15.5	❍	180A-15.5	❍	180N-15.5	❍
	5/8"	15,88	0.6250		180T-0020	❍	180A-0020	❍	180N-0020	❍
		16,00	0.6299		180T-16	❍	180A-16	❍	180N-16	❍
	41/64"	16,27	0.6406		180T-.640	❍	180A-.640	❍	180N-.640	❍
		16,50	0.6496		180T-16.5	❍	180A-16.5	❍	180N-16.5	❍
	21/32"	16,67	0.6563		180T-0021	❍	180A-0021	❍	180N-0021	❍
		17,00	0.6693		180T-17	❍	180A-17	❍	180N-17	❍
	43/64"	17,07	0.6719		180T-.671	❍	180A-.671	❍	180N-.671	❍
	11/16"	17,46	0.6875		180T-0022	❍	180A-0022	❍	180N-0022	❍
		17,50	0.6890		180T-17.5	❍	180A-17.5	❍	180N-17.5	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

0 Series T-A® HSS Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)

GEN2 T-A®
(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
Super Cobalt		13,00	0.5118	1/8”	450H-13	❍
	33/64”	13,10	0.5156		450H-.515	❍
	17/32”	13,49	0.5313		450H-0017	❍
		13,50	0.5315		450H-13.5	❍
	35/64”	13,89	0.5469		450H-.546	❍
		14,00	0.5512		450H-14	❍
	9/16”	14,29	0.5625		450H-0018	❍
		14,50	0.5709		450H-14.5	❍
	37/64”	14,68	0.5781		450H-.578	❍
		15,00	0.5906		450H-15	❍
	19/32”	15,08	0.5938		450H-0019	❍
	39/64”	15,48	0.6094		450H-.609	❍
		15,50	0.6102		450H-15.5	❍
	5/8”	15,88	0.6250		450H-0020	❍
		16,00	0.6299		450H-16	❍
	41/64”	16,27	0.6406		450H-.640	❍
		16,50	0.6496		450H-16.5	❍
	21/32”	16,67	0.6563		450H-0021	❍
		17,00	0.6693		450H-17	❍
	43/64”	17,07	0,6719		450H-.671	❍
	11/16”	17,46	0.6875		450H-0022	❍
		17,50	0.6890		450H-17.5	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

Geometries available (see page C107 for details): -HE
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

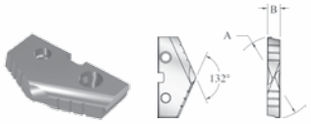
Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.5550” TiAlN, 0 Series, Super Cobalt =150A-.5550
Metric = 13,90 mm TiCN, 0 Series, Premium Cobalt =180N-13.90

0 Series T-A® Carbide Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)

T-A® Carbide Drill Inserts

(supplied in 2 piece packages)



Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶
C2 (K20)		13,00	0.5118	1/8"	1C20T-13	❍	1C20A-13	❍
	33/64"	13,10	0.5156		1C20T-.515	❍	1C20A-.515	❍
	17/32"	13,49	0.5313		1C20T-0017	❍	1C20A-0017	❍
		13,50	0.5315		1C20T-13.5	❍	1C20A-13.5	❍
	35/64"	13,89	0.5469		1C20T-.546	❍	1C20A-.546	❍
		14,00	0.5512		1C20T-14	❍	1C20A-14	❍
	9/16"	14,29	0.5625		1C20T-0018	❍	1C20A-0018	❍
		14,50	0.5709		1C20T-14.5	❍	1C20A-14.5	❍
	37/64"	14,68	0.5781		1C20T-.578	❍	1C20A-.578	❍
		15,00	0.5906		1C20T-15	❍	1C20A-15	❍
	19/32"	15,08	0.5938		1C20T-0019	❍	1C20A-0019	❍
	39/64"	15,48	0.6094		1C20T-.609	❍	1C20A-.609	❍
		15,50	0.6102		1C20T-15.5	❍	1C20A-15.5	❍
	5/8"	15,88	0.6250		1C20T-0020	❍	1C20A-0020	❍
		16,00	0.6299		1C20T-16	❍	1C20A-16	❍
	41/64"	16,27	0.6406		1C20T-.640	❍	1C20A-.640	❍
		16,50	0.6496		1C20T-16.5	❍	1C20A-16.5	❍
	21/32"	16,67	0.6563		1C20T-0021	❍	1C20A-0021	❍
		17,00	0.6693		1C20T-17	❍	1C20A-17	❍
	43/64"	17,07	0.6719		1C20T-.671	❍	1C20A-.671	❍
	11/16"	17,46	0.6875		1C20T-0022	❍	1C20A-0022	❍
		17,50	0.6890		1C20T-17.5	❍	1C20A-17.5	❍
C5 (P40)		13,00	0.5118		1C50T-13	❍	1C50A-13	❍
	33/64"	13,10	0.5156		1C50T-.515	❍	1C50A-.515	❍
	17/32"	13,49	0.5313		1C50T-0017	❍	1C50A-0017	❍
		13,50	0.5315		1C50T-13.5	❍	1C50A-13.5	❍
	35/64"	13,89	0.5469		1C50T-.546	❍	1C50A-.546	❍
		14,00	0.5512		1C50T-14	❍	1C50A-14	❍
	9/16"	14,29	0.5625		1C50T-0018	❍	1C50A-0018	❍
		14,50	0.5709		1C50T-14.5	❍	1C50A-14.5	❍
	37/64"	14,68	0.5781		1C50T-.578	❍	1C50A-.578	❍
		15,00	0.5906		1C50T-15	❍	1C50A-15	❍
	19/32"	15,08	0.5938		1C50T-0019	❍	1C50A-0019	❍
	39/64"	15,48	0.6094		1C50T-.609	❍	1C50A-.609	❍
		15,50	0.6102		1C50T-15.5	❍	1C50A-15.5	❍
	5/8"	15,88	0.6250		1C50T-0020	❍	1C50A-0020	❍
		15,91	0.6265		1C50T-.6265	▲	1C50A-.6265	▲
		16,00	0.6299		1C50T-16	❍	1C50A-16	❍
	41/64"	16,27	0.6406		1C50T-.640	❍	1C50A-.640	❍
		16,50	0.6496		1C50T-16.5	❍	1C50A-16.5	❍
	21/32"	16,67	0.6563		1C50T-0021	❍	1C50A-0021	❍
		17,00	0.6693		1C50T-17	❍	1C50A-17	❍
	43/64"	17,07	0.6719		1C50T-.671	❍	1C50A-.671	❍
	11/16"	17,46	0.6875		1C50T-0022	❍	1C50A-0022	❍
		17,50	0.6890		1C50T-17.5	❍	1C50A-17.5	❍

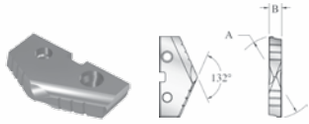
Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

0 Series T-A® Carbide Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



Cast Iron GeometryT-A® Carbide Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiAIN	❶	
C3 (K20)		13,00	0.5118	1/8”	1C30A-13-CI	❍	This insert is specifically designed for use in **Grey Cast Iron**. (Use standard T-A® geometry for Nodular Iron) • C3 Carbide offers high wear resistance for improved tool life. • Cast Iron (-CI) geometry provides a unique design to minimize chipping. • TiAIN offers exceptional wear resistance and high heat capabilities to increase tool life and penetration rates in Grey Cast Iron.
	33/64”	13,10	0.5156		1C30A-.515-CI	❍	
	17/32”	13,49	0.5313		1C30A-0017-CI	❍	
		13,50	0.5315		1C30A-13.5-CI	❍	
	35/64”	13,89	0.5469		1C30A-.546-CI	❍	
		14,00	0.5512		1C30A-14-CI	❍	
	9/16”	14,29	0.5625		1C30A-0018-CI	❍	
		14,50	0.5709		1C30A-14.5-CI	❍	
	37/64”	14,68	0.5781		1C30A-.578-CI	❍	
		15,00	0.5906		1C30A-15-CI	❍	
	19/32”	15,08	0.5938		1C30A-0019-CI	❍	
	39/64”	15,48	0.6094		1C30A-.609-CI	❍	
		15,50	0.6102		1C30A-15.5-CI	❍	
	5/8”	15,88	0.6250		1C30A-0020-CI	❍	
		16,00	0.6299		1C30A-16-CI	❍	
	41/64”	16,27	0.6406		1C30A-.640-CI	❍	
		16,50	0.6496		1C30A-16.5-CI	❍	
	21/32”	16,67	0.6563		1C30A-0021-CI	❍	
		17,00	0.6693		1C30A-17-CI	❍	
	43/64”	17,07	0.6719		1C30A-.671-CI	❍	
	11/16”	17,46	0.6875		1C30A-0022-CI	❍	
		17,50	0.6890		1C30A-17.5-CI	❍	

Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.5400” TiAIN, 0 Series, C5 =1C50A-.5400
Metric = 14,25 mm TiCN, 0 Series, C2 =1C20N-14.25

0 Series T-A® Carbide Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)

GEN2 T-A®
(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
C2 (K20)		13,00	0.5118	1/8”	4C20H-13	❍
	33/64”	13,10	0.5156		4C20H-.515	❍
	17/32”	13,49	0.5313		4C20H-0017	❍
		13,50	0.5315		4C20H-13.5	❍
	35/64”	13,89	0.5469		4C20H-.546	❍
		14,00	0.5512		4C20H-14	❍
	9/16”	14,29	0.5625		4C20H-0018	❍
		14,50	0.5709		4C20H-14.5	❍
	37/64”	14,68	0.5781		4C20H-.578	❍
		15,00	0.5906		4C20H-15	❍
	19/32”	15,08	0.5938		4C20H-0019	❍
	39/64”	15,48	0.6094		4C20H-.609	❍
		15,50	0.6102		4C20H-15.5	❍
	5/8”	15,88	0.6250		4C20H-0020	❍
		16,00	0.6299		4C20H-16	❍
	41/64”	16,27	0.6406		4C20H-.640	❍
		16,50	0.6496		4C20H-16.5	❍
	21/32”	16,67	0.6563		4C20H-0021	❍
		17,00	0.6693		4C20H-17	❍
	43/64”	17,07	0.6719		4C20H-.671	❍
	11/16”	17,46	0.6875		4C20H-0022	❍
		17,50	0.6890		4C20H-17.5	❍
C1 (K35)		13,00	0.5118		4C10H-13	❍
	33/64”	13,10	0.5156		4C10H-.515	❍
	17/32”	13,49	0.5313		4C10H-0017	❍
		13,50	0.5315		4C10H-13.5	❍
	35/64”	13,89	0.5469		4C10H-.546	❍
		14,00	0.5512		4C10H-14	❍
	9/16”	14,29	0.5625		4C10H-0018	❍
		14,50	0.5709		4C10H-14.5	❍
	37/64”	14,68	0.5781		4C10H-.578	❍
		15,00	0.5906		4C10H-15	❍
	19/32”	15,08	0.5938		4C10H-0019	❍
	39/64”	15,48	0.6094		4C10H-.609	❍
		15,50	0.6102		4C10H-15.5	❍
	5/8”	15,88	0.6250		4C10H-0020	❍
		16,00	0.6299		4C10H-16	❍
	41/64”	16,27	0.6406		4C10H-.640	❍
		16,50	0.6496		4C10H-16.5	❍
	21/32”	16,67	0.6563		4C10H-0021	❍
		17,00	0.6693		4C10H-17	❍
	43/64”	17,07	0.6719		4C10H-.671	❍
	11/16”	17,46	0.6875		4C10H-0022	❍
		17,50	0.6890		4C10H-17.5	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

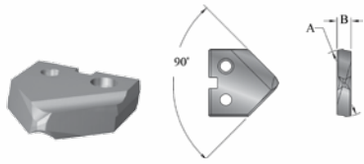
Geometries available (see page C107 for details): -HE
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

0 Series T-A® HSS Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



90º Spot and Chamfer T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt		13,00	0.5118	1/8"	150T-13-SP	▲	150A-13-SP	▲	150N-13-SP	▲
	33/64"	13,10	0.5156		150T-.515-SP	▲	150A-.515-SP	▲	150N-.515-SP	▲
	17/32"	13,49	0.5313		150T-0017-SP	▲	150A-0017-SP	▲	150N-0017-SP	▲
		13,50	0.5315		150T-13.5-SP	▲	150A-13.5-SP	▲	150N-13.5-SP	▲
	35/64"	13,89	0.5469		150T-.546-SP	▲	150A-.546-SP	▲	150N-.546-SP	▲
		14,00	0.5512		150T-14-SP	▲	150A-14-SP	▲	150N-14-SP	▲
	9/16"	14,29	0.5625		150T-0018-SP	▲	150A-0018-SP	▲	150N-0018-SP	▲
		14,50	0.5709		150T-14.5-SP	▲	150A-14.5-SP	▲	150N-14.5-SP	▲
	37/64"	14,68	0.5781		150T-.578-SP	▲	150A-.578-SP	▲	150N-.578-SP	▲
		15,00	0.5906		150T-15-SP	▲	150A-15-SP	▲	150N-15-SP	▲
	19/32"	15,08	0.5938		150T-0019-SP	▲	150A-0019-SP	▲	150N-0019-SP	▲
	39/64"	15,48	0.6094		150T-.609-SP	▲	150A-.609-SP	▲	150N-.609-SP	▲
		15,50	0.6102		150T-15.5-SP	▲	150A-15.5-SP	▲	150N-15.5-SP	▲
	5/8"	15,88	0.6250		150T-0020-SP	❍	150A-0020-SP	❍	150N-0020-SP	❍
		16,00	0.6299		150T-16-SP	▲	150A-16-SP	▲	150N-16-SP	▲
	41/64"	16,27	0.6406		150T-.640-SP	▲	150A-.640-SP	▲	150N-.640-SP	▲
		16,50	0.6496		150T-16.5-SP	▲	150A-16.5-SP	▲	150N-16.5-SP	▲
	21/32"	16,67	0.6563		150T-0021-SP	▲	150A-0021-SP	▲	150N-0021-SP	▲
		17,00	0.6693		150T-17-SP	▲	150A-17-SP	▲	150N-17-SP	▲
	43/64"	17,07	0.6719		150T-.671-SP	▲	150A-.671-SP	▲	150N-.671-SP	▲
	11/16"	17,46	0.6875		150T-0022-SP	▲	150A-0022-SP	▲	150N-0022-SP	▲
		17,50	0.6890		150T-17.5-SP	❍	150A-17.5-SP	❍	150N-17.5-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Structural Steel T-A® Drill Inserts

(supplied in 2 piece packages)

***Thin Wall**
U.S. Patent No.: 7,147,414

****Notch Point®**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

****150º Structural Steel**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability *Thin Wall TiAlN	❶	**Notch Point® TiAlN	❶	150º Structural Steel TiAlN	❶
Super Cobalt		14,00	0.5512	1/8"	150A-14-TW	❍	150A-14-NP	❍	150A-14-SS	❍
	9/16"	14,29	0.5625		150A-0018-TW	❍	150A-0018-NP	❍	150A-0018-SS	❍
	5/8"	15,88	0.6250		150A-0020-TW	❍	150A-0020-NP	❍	150A-0020-SS	❍
		16,00	0.6299		150A-16-TW	❍	150A-16-NP	❍	150A-16-SS	❍
	11/16"	17,46	0.6875		150A-0022-TW	❍	150A-0022-NP	❍	150A-0022-SS	❍
Material	Fractional Equivalent	(mm)	(Inch)	Thickness	*Thin Wall AM200®	❶	**Notch Point® AM200®	❶	150º Structural AM200®	❶
Super Cobalt		14,00	0.5512	1/8"	150H-14-TW	❍	150H-14-NP	❍	150H-14-SS	❍
	9/16"	14,29	0.5625		150H-0018-TW	❍	150H-0018-NP	❍	150H-0018-SS	❍
	5/8"	15,88	0.6250		150H-0020-TW	❍	150H-0020-NP	❍	150H-0020-SS	❍
		16,00	0.6299		150H-16-TW	❍	150H-16-NP	❍	150H-16-SS	❍
	11/16"	17,46	0.6875		150H-0022-TW	❍	150H-0022-NP	❍	150H-0022-SS	❍

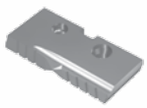
*Use Thin Wall Drill Inserts for material up to 7/16" thick.
**Use Notch Point® Geometry or 150º Structural Steel Drill Inserts for material over 7/16" thick. Use 150º Structural Steel for reduced exit burr.

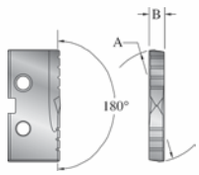
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.5400" TiAlN, 0 Series, C2, GEN2 T-A® =4C20T-.5400
Metric = 15,10 mm AM200®, 0 Series, C1, GEN2 T-A® =4C10H-15.10

0 Series T-A® HSS Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)





Flat Bottom T-A® Drill Inserts
(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
Super Cobalt		13,00	0.5118	1/8”	150T-13-FB	❍
	33/64’’	13,10	0.5156		150T-.515-FB	❍
	17/32’’	13,49	0.5313		150T-0017-FB	❍
		13,50	0.5315		150T-13.5-FB	❍
		14,00	0.5512		150T-14-FB	❍
	9/16”	14,29	0.5625		150T-0018-FB	❍
		14,50	0.5709		150T-14.5-FB	❍
	37/64”	14,68	0.5781		150T-.578-FB	❍
		15,00	0.5906		150T-15-FB	❍
	19/32”	15,08	0.5938		150T-0019-FB	❍
		15,50	0.6102		150T-15.5-FB	❍
	5/8”	15,88	0.6250		150T-0020-FB	❍
		16,00	0.6299		150T-16-FB	❍
		16,50	0.6496		150T-16.5-FB	❍
	21/32”	16,67	0.6563		150T-0021-FB	❍
		17,00	0.6693		150T-17-FB	❍
	11/16”	17,46	0.6875		150T-0022-FB	❍
		17,50	0.6890		150T-17.5-FB	❍

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

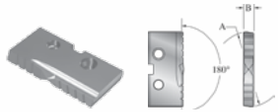
0 Series T-A® Carbide Drill Inserts

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)

Flat Bottom T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
C2 (K20)		13,00	0.5118	1/8"	1C20T-13-FB	▲
	33/64"	13,10	0.5156		1C20T-.515-FB	▲
	17/32"	13,49	0.5313		1C20T-0017-FB	▲
		13,50	0.5315		1C20T-13.5-FB	▲
	35/64"	13,89	0.5469		1C20T-.546-FB	▲
		14,00	0.5512		1C20T-14-FB	▲
	9/16"	14,29	0.5625		1C20T-0018-FB	▲
		14,50	0.5709		1C20T-14.5-FB	▲
	37/64"	14,68	0.5781		1C20T-.578-FB	▲
		15,00	0.5906		1C20T-15-FB	▲
	19/32"	15,08	0.5938		1C20T-0019-FB	▲
	39/64"	15,48	0.6094		1C20T-.609-FB	▲
		15,50	0.6102		1C20T-15.5-FB	▲
	5/8"	15,88	0.6250		1C20T-0020-FB	▲
		16,00	0.6299		1C20T-16-FB	▲
	41/64"	16,27	0.6406		1C20T-.640-FB	▲
		16,50	0.6496		1C20T-16.5-FB	▲
	21/32"	16,67	0.6563		1C20T-0021-FB	▲
		17,00	0.6693		1C20T-17-FB	▲
	43/64"	17,07	0.6719		1C20T-.671-FB	▲
	11/16"	17,46	0.6875		1C20T-0022-FB	▲
		17,50	0.6890		1C20T-17.5-FB	▲

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 0.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Diamond Coated T-A® Carbide Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability CVD Diamond	❶
N2		13,00	0.5118	1/8"	1N20D-13	▲
	33/64"	13,10	0.5156		1N20D-.515	▲
	17/32"	13,49	0.5313		1N20D-0017	▲
		13,50	0.5315		1N20D-13.5	▲
	35/64"	13,89	0.5469		1N20D-.546	▲
		14,00	0.5512		1N20D-14	▲
	9/16"	14,29	0.5625		1N20D-0018	▲
		14,50	0.5709		1N20D-14.5	▲
	37/64"	14,68	0.5781		1N20D-.578	▲
		15,00	0.5906		1N20D-15	▲
	19/32"	15,08	0.5938		1N20D-0019	▲
	39/64"	15,48	0.6094		1N20D-.609	▲
		15,50	0.6102		1N20D-15.5	▲
	5/8"	15,88	0.6250		1N20D-0020	▲
		16,00	0.6299		1N20D-16	▲
	41/64"	16,27	0.6406		1N20D-.640	▲
		16,50	0.6496		1N20D-16.5	▲
	21/32"	16,67	0.6563		1N20D-0021	▲
		17,00	0.6693		1N20D-17	▲
	43/64"	17,07	0.6719		1N20D-.671	▲
	11/16"	17,46	0.6875		1N20D-0022	▲
		17,50	0.6890		1N20D-17.5	▲

Crystalline, Diamond Film Coating produces:

- Increased Hardness
- Increased Durability
- Increased Performance

Extends tool life 30-50 times versus uncoated carbide drill inserts

Used in non-ferrous / non-metallic applications

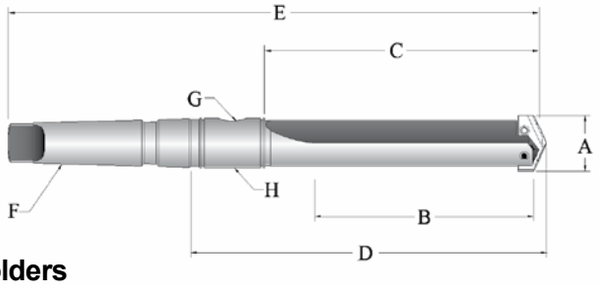
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Decimals = 0.5400" TiAlN, 0 Series, Super Cobalt, Flat Bottom =150A-.5400-FB
Metric = 15,10 mm TiCN, 0 Series, Super Cobalt, Flat Bottom =150N-15.10-FB

0 and 0.5 Series T-A® Holders

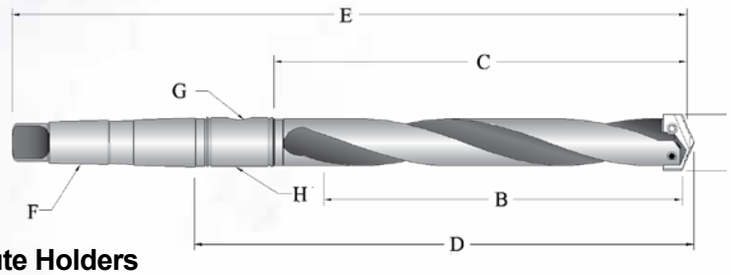
Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22000S-002I	33/64" - 11/16"	1-3/8"	2-3/16"	3-41/64"	6-15/32"	#2	1/16"	2T-2SR
Short	22005S-002I	39/64" - 11/16"	1-3/8"	2-3/16"	3-41/64"	6-15/32"	#2	1/16"	2T-2SR
Standard	24000S-002I	33/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	2T-2SR
Standard	24005S-002I	39/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	2T-2SR
⚠ Extended	25000S-002I	33/64" - 11/16"	4-1/2"	5-5/16"	6-49/64"	9-19/32"	#2	1/16"	2T-2SR
⚠ Extended	25005S-002I	39/64" - 11/16"	4-1/2"	5-5/16"	6-49/64"	9-19/32"	#2	1/16"	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22000S-002M	13,0 - 17,5	35,0	55,5	92,4	164,3	#2**	1/16"*	2T-2SRM
Short	22005S-002M	15,5 - 17,5	35,0	55,5	92,4	164,3	#2**	1/16"*	2T-2SRM

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Standard	24000H-002I	33/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	2T-2SR
Standard	24005H-002I	39/64" - 11/16"	2-1/2"	3-5/16"	4-49/64"	7-19/32"	#2	1/16"	2T-2SR
⚠ Extended	25000H-002I	33/64" - 11/16"	4-1/2"	5-5/16"	6-49/64"	9-19/32"	#2	1/16"	2T-2SR
⚠ Extended	25005H-002I	39/64" - 11/16"	4-1/2"	5-5/16"	6-49/64"	9-19/32"	#2	1/16"	2T-2SR
⚠ Long	26000H-002I	33/64" - 11/16"	7"	7-13/16"	8-17/64"	12-3/32"	#2	1/16"	2T-2SR
⚠ Long	26005H-002I	39/64" - 11/16"	7"	7-13/16"	8-17/64"	12-3/32"	#2	1/16"	2T-2SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	24000H-002M	13,0 - 17,5	63,5	84,1	121,0	192,9	#2**	1/16"*	2T-2SRM
Standard	24005H-002M	15,5 - 17,5	63,5	84,1	121,0	192,9	#2**	1/16"*	2T-2SRM
⚠ Extended	25000H-002M	13,0 - 17,5	114,3	135,0	171,8	243,7	#2**	1/16"*	2T-2SRM
⚠ Extended	25005H-002M	15,5 - 17,5	114,3	135,0	171,8	243,7	#2**	1/16"*	2T-2SRM
⚠ Long	26000H-002M	13,0 - 17,5	177,8	198,5	235,3	307,2	#2**	1/16"*	2T-2SRM
⚠ Long	26005H-002M	15,5 - 17,5	177,8	198,5	235,3	307,2	#2**	1/16"*	2T-2SRM

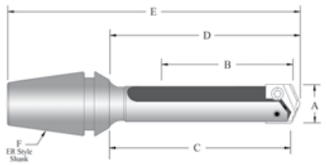
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	0 Series
Grey	0.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

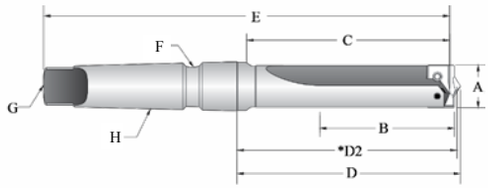
0 and 0.5 Series T-A® Holders

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



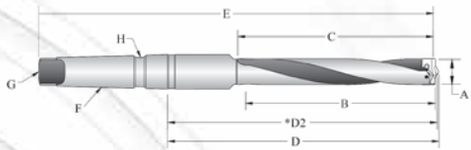
ER Collet Holders

Item Number	A Drill Insert Range	B Max Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Collet Size	Collet Nut without Retaining Ring
21000S-16ER	33/64"-11/16"	1-3/8"	1-57/64"	2"	3-5/64"	ER-16	ER-16N
21000S-20ER	33/64"-11/16"	1-3/8"	1-57/64"	2"	3-15/64"	ER-20	ER-20N



Structural Steel Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	*D2 Ref. Length	E Overall Length	F MT	G Coolant Inlet Style	H Coolant Inlet Style
Short	22000S-003IS036	9/16"	1-3/8"	2-3/16"	2-35/64"	2-31/64"	6-1/16"	#3	TTC	TSC
Short	22005S-003IS040	5/8"	1-3/8"	2-3/16"	2-35/64"	2-31/64"	6-1/16"	#3	TTC	TSC
Short	22005S-003IS044	11/16"	1-3/8"	2-3/16"	2-35/64"	2-31/64"	6-1/16"	#3	TTC	TSC
Metric (mm)										
Short	22000S-003IS036	14	35	56	64.7	63.1	154	#3	TTC	TSC
Short	22000S-003IS040	16	35	56	64.7	63.1	154	#3	TTC	TSC
Short	22000S-003IS044	17.5	35	56	64.7	63.1	154	#3	TTC	TSC



Structural Steel Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	*D2 Ref. Length	E Overall Length	F MT	G Coolant Inlet Style	H Coolant Inlet Style
Standard	24000H-003IS036	9/16"	2-1/2"	3-5/16"	3-43/64"	3-39/64"	7-3/16"	#3	TTC	TSC
Standard	24005H-003IS040	5/8"	2-1/2"	3-5/16"	3-43/64"	3-39/64"	7-3/16"	#3	TTC	TSC
Standard	24005H-003IS044	11/16"	2-1/2"	3-5/16"	3-43/64"	3-39/64"	7-3/16"	#3	TTC	TSC
⚠ Extended	25000H-003IS036	9/16"	6-1/2"	9-7/16"	9-51/64"	9-19/32"	13-5/64"	#3	TTC	TSC
⚠ Extended	25005H-003IS044	11/16"	6-1/2"	9-7/16"	9-51/64"	9-19/32"	13-5/64"	#3	TTC	TSC
Metric (mm)										
Standard	24000H-003IS036	14	64	84	93.3	91.7	183	#3	TTC	TSC
Standard	24005H-003IS040	16	64	84	93.3	91.7	183	#3	TTC	TSC
Standard	24005H-003IS044	17.5	64	84	93.3	91.7	183	#3	TTC	TSC
⚠ Extended	25000H-003IS036	14	165	240	248.8	243.7	338	#3	TTC	TSC
⚠ Extended	25005H-003IS044	17.5	165	240	248.8	243.7	338	#3	TTC	TSC

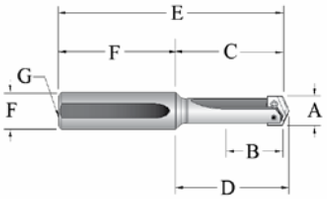
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	0 Series
Grey	0.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C108 for Structural Steel Guidelines & C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

0 and 0.5 Series T-A® Holders

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)

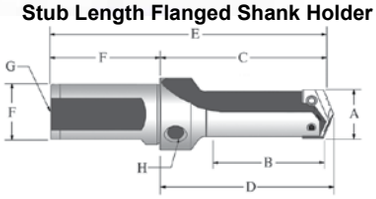


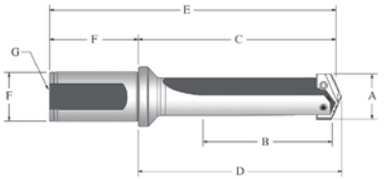
Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	
Short	22000S-075L	33/64" - 11/16"	1-3/8"	2-3/16"	2-19/64"	4-9/16"	3/4"	2-3/8"	1/8"
Short	22005S-075L	39/64" - 11/16"	1-3/8"	2-3/16"	2-19/64"	4-9/16"	3/4"	2-3/8"	1/8"
Standard	24000S-075L	33/64" - 11/16"	2-1/2"	3-5/16"	3-27/64"	5-11/16"	3/4"	2-3/8"	1/8"
Standard	24005S-075L	39/64" - 11/16"	2-1/2"	3-5/16"	3-27/64"	5-11/16"	3/4"	2-3/8"	1/8"
⚠ Extended	25000S-075L	33/64" - 11/16"	4-1/2"	5-5/16"	5-27/64"	7-11/16"	3/4"	2-3/8"	1/8"
⚠ Extended	25005S-075L	39/64" - 11/16"	4-1/2"	5-5/16"	5-27/64"	7-11/16"	3/4"	2-3/8"	1/8"
⚠ Long	26000S-075L	33/64" - 11/16"	7"	7-13/16"	7-59/64"	10-3/16"	3/4"	2-3/8"	1/8"
⚠ Long	26005S-075L	39/64" - 11/16"	7"	7-13/16"	7-59/64"	10-3/16"	3/4"	2-3/8"	1/8"
⚠ XL	27000S-075L	33/64" - 11/16"	11-5/8"	12-7/16"	12-35/64"	14-13/16"	3/4"	2-3/8"	1/8"
⚠ 3XL	29000S-075L	33/64" - 11/16"	15-1/4"	16-1/16"	16-11/64"	18-7/16"	3/4"	2-3/8"	1/8"

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

Stub Length Flanged Shank Holder





Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	21000S-075F	33/64" - 11/16"	7/8"	1-7/8"	1-63/64"	3-29/32"	3/4"	2-1/32"	1/8"	1/8"
Stub	21005S-075F	39/64" - 11/16"	7/8"	1-7/8"	1-63/64"	3-29/32"	3/4"	2-1/32"	1/8"	1/8"
Short	22000S-075F	33/64" - 11/16"	1-3/8"	2-1/2"	2-39/64"	4-17/32"	3/4"	2-1/32"	1/8"	N/A
Short	22005S-075F	39/64" - 11/16"	1-3/8"	2-1/2"	2-39/64"	4-17/32"	3/4"	2-1/32"	1/8"	N/A
Standard	24000S-075F	33/64" - 11/16"	2-1/2"	3-5/8"	3-47/64"	5-21/32"	3/4"	2-1/32"	1/8"	N/A
Standard	24005S-075F	39/64" - 11/16"	2-1/2"	3-5/8"	3-47/64"	5-21/32"	3/4"	2-1/32"	1/8"	N/A
⚠ Extended	25000S-075F	33/64" - 11/16"	4-1/2"	5-5/8"	5-47/64"	7-21/32"	3/4"	2-1/32"	1/8"	N/A
⚠ Extended	25005S-075F	39/64" - 11/16"	4-1/2"	5-5/8"	5-47/64"	7-21/32"	3/4"	2-1/32"	1/8"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	21000S-20FM	13,0 - 17,5	22,2	47,6	50,4	97,6	20,0	50,0	1/8"*	1/8"*
Stub	21005S-20FM	15,5 - 17,5	22,2	47,6	50,4	97,6	20,0	50,0	1/8"*	1/8"*
Short	22000S-20FM	13,0 - 17,5	34,9	63,5	66,3	113,5	20,0	50,0	1/8"*	N/A
Short	22005S-20FM	15,5 - 17,5	34,9	63,5	66,3	113,5	20,0	50,0	1/8"*	N/A
⚠ XL	27000S-20FM	13,0 - 17,5	295	323,9	326,7	373,9	20,0	50,0	1/8"*	N/A
⚠ 3XL	29000S-20FM	13,0 - 17,5	387	416,0	418,8	466,0	20,0	50,0	1/8"*	N/A

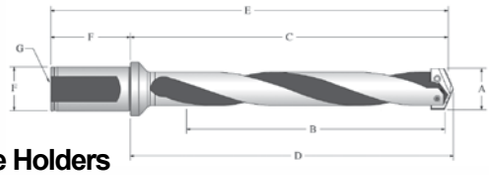
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	0 Series
Grey	0.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

0 and 0.5 Series T-A® Holders

Range: 0.511 to 0.695 inch (12,98mm to 17,65mm)



Flanged Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Shank Dia.	F Shank Length	G Pipe Tap
Standard	24000H-075F	33/64" - 11/16"	2-1/2"	3-5/8"	3-47/64"	5-21/32"	3/4"	2-1/32"	1/8"
Standard	24005H-075F	39/64" - 11/16"	2-1/2"	3-5/8"	3-47/64"	5-21/32"	3/4"	2-1/32"	1/8"
⚠ Extended	25000H-075F	33/64" - 11/16"	4-1/2"	5-5/8"	5-47/64"	7-21/32"	3/4"	2-1/32"	1/8"
⚠ Extended	25005H-075F	39/64" - 11/16"	4-1/2"	5-5/8"	5-47/64"	7-21/32"	3/4"	2-1/32"	1/8"
⚠ Long	26000H-075F	33/64" - 11/16"	7"	8-1/8"	8-15/64"	10-5/32"	3/4"	2-1/32"	1/8"
⚠ Long	26005H-075F	39/64" - 11/16"	7"	8-1/8"	8-15/64"	10-5/32"	3/4"	2-1/32"	1/8"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Standard	24000H-20FM	13,0 - 17,5	63,5	92,1	94,9	142,1	20,0	50,0	1/8"*
Standard	24005H-20FM	15,5 - 17,5	63,5	92,1	94,9	142,1	20,0	50,0	1/8"*
⚠ Extended	25000H-20FM	13,0 - 17,5	114,3	142,9	145,7	192,9	20,0	50,0	1/8"*
⚠ Extended	25005H-20FM	15,5 - 17,5	114,3	142,9	145,7	192,9	20,0	50,0	1/8"*
⚠ Long	26000H-20FM	13,0 - 17,5	177,8	206,4	209,1	256,4	20,0	50,0	1/8"*
⚠ Long	26005H-20FM	15,5 - 17,5	177,8	206,4	209,1	256,4	20,0	50,0	1/8"*

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

White	0 Series
Grey	0.5 Series

T-ACR 45® Chamfer Ring and Accessories

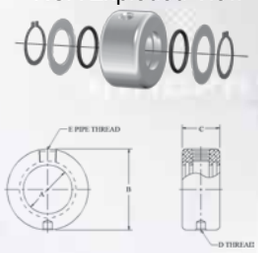
Item Number	Minimum Drill Diameter (inch)	Maximum Drill Diameter (inch)	Maximum Chamfer Diameter (inch)	Chamfer Ring Diameter	Chamfer Ring Length
T-ACR-45-0	0.5118	0.6890	0.814	1.200	0.676

Insert Number (2 Pc Pack)	Insert Screw (10 Pieces)	TORX Plus Driver	Clamping Screw (10 Pieces)	TORX Plus Driver
T-ACRI-45-B-C5A	7255-IP8-10	8IP-8	7375-IP9-10	8IP-9

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
Inch	⚠ ◢2T-2SR	3/4"	1-3/4"	7/8"	5/16"-NC	1/8"	2T1-2SR	2T1-2OR-10
Metric	⚠ ◢2T-2SRM	19,05	44,45	22,23	M8 X 1,25	1/8"*	2T1-2SR	2T1-2OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

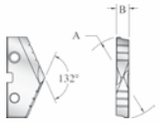
◢ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws
(supplied in 10 piece packages)

Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	INCH Drill Range Used With	INCH TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	METRIC Drill Range Used With	METRIC TORX Plus Screw Admissible Tightening Torque (N-cm)
0	72556-IP8-10	72556N-IP8-10	8IP-8	8IP-8TL	8IP-8B	33/64" - 11/16"	15.5	13,0mm - 17,5mm	175
0.5	72567-IP8-10	72567N-IP8-10	8IP-8	8IP-8TL	8IP-8B	39/64" - 11/16"	15.5	15,5mm - 17,5mm	175

1 Series T-A® HSS Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
HSS	45/64”	17,86	0.7031	5/32”	131T-.703	❍	131A-.703	❍	131N-.703	❍
		18,00	0.7087		131T-18	❍	131A-18	❍	131N-18	❍
	23/32”	18,26	0.7188		131T-0023	❍	131A-0023	❍	131N-0023	❍
		18,50	0.7283		131T-18.5	❍	131A-18.5	❍	131N-18.5	❍
	47/64”	18,65	0.7344		131T-.734	❍	131A-.734	❍	131N-.734	❍
		19,00	0.7480		131T-19	❍	131A-19	❍	131N-19	❍
	3/4”	19,05	0.7500		131T-0024	❍	131A-0024	❍	131N-0024	❍
	49/64”	19,45	0.7656		131T-.765	❍	131A-.765	❍	131N-.765	❍
		19,50	0.7677		131T-19.5	❍	131A-19.5	❍	131N-19.5	❍
	25/32”	19,84	0.7813		131T-0025	❍	131A-0025	❍	131N-0025	❍
		20,00	0.7874		131T-20	❍	131A-20	❍	131N-20	❍
	51/64”	20,24	0.7969		131T-.796	❍	131A-.796	❍	131N-.796	❍
		20,50	0.8071		131T-20.5	❍	131A-20.5	❍	131N-20.5	❍
	13/16”	20,64	0.8125		131T-0026	❍	131A-0026	❍	131N-0026	❍
		21,00	0.8268		131T-21	❍	131A-21	❍	131N-21	❍
	27/32”	21,43	0.8438		131T-0027	❍	131A-0027	❍	131N-0027	❍
	55/64”	21,83	0.8594		131T-.859	❍	131A-.859	❍	131N-.859	❍
		22,00	0.8661		131T-22	❍	131A-22	❍	131N-22	❍
	7/8”	22,23	0.8750		131T-0028	❍	131A-0028	❍	131N-0028	❍
	57/64”	22,62	0.8906		131T-.890	❍	131A-.890	❍	131N-.890	❍
		23,00	0.9055		131T-23	❍	131A-23	❍	131N-23	❍
	29/32”	23,02	0.9063		131T-0029	❍	131A-0029	❍	131N-0029	❍
	59/64”	23,42	0.9219		131T-.921	❍	131A-.921	❍	131N-.921	❍
	15/16”	23,81	0.9375		131T-0030	❍	131A-0030	❍	131N-0030	❍
		24,00	0.9449		131T-24	❍	131A-24	❍	131N-24	❍
Super Cobalt	45/64”	17,86	0.7031	5/32”	151T-.703	❍	151A-.703	❍	151N-.703	❍
		18,00	0.7087		151T-18	❍	151A-18	❍	151N-18	❍
	23/32”	18,26	0.7188		151T-0023	❍	151A-0023	❍	151N-0023	❍
		18,50	0.7283		151T-18.5	❍	151A-18.5	❍	151N-18.5	❍
	47/64”	18,65	0.7344		151T-.734	❍	151A-.734	❍	151N-.734	❍
		19,00	0.7480		151T-19	❍	151A-19	❍	151N-19	❍
	3/4”	19,05	0.7500		151T-0024	❍	151A-0024	❍	151N-0024	❍
	49/64”	19,45	0.7656		151T-.765	❍	151A-.765	❍	151N-.765	❍
		19,50	0.7677		151T-19.5	❍	151A-19.5	❍	151N-19.5	❍
	25/32”	19,84	0.7813		151T-0025	❍	151A-0025	❍	151N-0025	❍
		20,00	0.7874		151T-20	❍	151A-20	❍	151N-20	❍
	51/64”	20,24	0.7969		151T-.796	❍	151A-.796	❍	151N-.796	❍
		20,50	0.8071		151T-20.5	❍	151A-20.5	❍	151N-20.5	❍
	13/16”	20,64	0.8125		151T-0026	❍	151A-0026	❍	151N-0026	❍
		21,00	0.8268		151T-21	❍	151A-21	❍	151N-21	❍
	27/32”	21,43	0.8438		151T-0027	❍	151A-0027	❍	151N-0027	❍
	55/64”	21,83	0.8594		151T-.859	❍	151A-.859	❍	151N-.859	❍
		22,00	0.8661		151T-22	❍	151A-22	❍	151N-22	❍
	7/8”	22,23	0.8750		151T-0028	❍	151A-0028	❍	151N-0028	❍
	57/64”	22,62	0.8906		151T-.890	❍	151A-.890	❍	151N-.890	❍
		23,00	0.9055		151T-23	❍	151A-23	❍	151N-23	❍
	29/32”	23,02	0.9063		151T-0029	❍	151A-0029	❍	151N-0029	❍
	59/64”	23,42	0.9219		151T-.921	❍	151A-.921	❍	151N-.921	❍
	15/16”	23,81	0.9375		151T-0030	❍	151A-0030	❍	151N-0030	❍
		24,00	0.9449		151T-24	❍	151A-24	❍	151N-24	❍

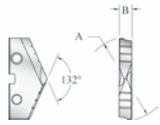
Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN,-TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

1 Series T-A® HSS Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability					
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶	TiAlN	❶	TiCN	❶
Premium Cobalt	45/64”	17,86	0.7031	5/32”	181T-.703	❍	181A-.703	❍	181N-.703	❍
		18,00	0.7087		181T-18	❍	181A- 18	❍	181N-18	❍
	23/32”	18,26	0.7188		181T-0023	❍	181A- 0023	❍	181N-0023	❍
		18,50	0.7283		181T-18.5	❍	181A- 18.5	❍	181N-18.5	❍
	47/64”	18,65	0.7344		181T-.734	❍	181A-.734	❍	181N-.734	❍
		19,00	0.7480		181T-19	❍	181A- 19	❍	181N-19	❍
	3/4”	19,05	0.7500		181T-0024	❍	181A- 0024	❍	181N-0024	❍
	49/64”	19,45	0.7656		181T-.765	❍	181A-.765	❍	181N-.765	❍
		19,50	0.7677		181T-19.5	❍	181A- 19.5	❍	181N-19.5	❍
	25/32”	19,84	0.7813		181T-0025	❍	181A- 0025	❍	181N-0025	❍
		20,00	0.7874		181T-20	❍	181A- 20	❍	181N-20	❍
	51/64”	20,24	0.7969		181T-.796	❍	181A-.796	❍	181N-.796	❍
		20,50	0.8071		181T-20.5	❍	181A- 20.5	❍	181N-20.5	❍
	13/16”	20,64	0.8125		181T-0026	❍	181A- 0026	❍	181N-0026	❍
		21,00	0.8268		181T-21	❍	181A- 21	❍	181N-21	❍
	27/32”	21,43	0.8438		181T-0027	❍	181A- 0027	❍	181N-0027	❍
	55/64”	21,83	0.8594		181T-.859	❍	181A-.859	❍	181N-.859	❍
		22,00	0.8661		181T-22	❍	181A- 22	❍	181N-22	❍
	7/8”	22,23	0.8750		181T-0028	❍	181A- 0028	❍	181N-0028	❍
	57/64”	22,62	0.8906		181T-.890	❍	181A-.890	❍	181N-.890	❍
		23,00	0.9055		181T-23	❍	181A- 23	❍	181N-23	❍
	29/32”	23,02	0.9063		181T-0029	❍	181A- 0029	❍	181N-0029	❍
	59/64”	23,42	0.9219		181T-.921	❍	181A-.921	❍	181N-.921	❍
	15/16”	23,81	0.9375		181T-0030	❍	181A- 0030	❍	181N-0030	❍
		24,00	0.9449		181T-24	❍	181A- 24	❍	181N-24	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Decimals = 0.9025” TiAlN, 1 Series, HSS =131A-.9025
Metric = 19,25 mm TiCN, 1 Series, Super Cobalt =151N-19.25

1 Series T-A® HSS Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

GEN2 T-A®
(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
Super Cobalt	45/64”	17,86	0.7031	5/32”	451H-.703	❍
		18,00	0.7087		451H-18	❍
	23/32”	18,26	0.7188		451H-0023	❍
		18,50	0.7283		451H-18.5	❍
	47/64”	18,65	0.7344		451H-.734	❍
		19,00	0.7480		451H-19	❍
	3/4”	19,05	0.7500		451H-0024	❍
	49/64”	19,45	0.7656		451H-.765	❍
		19,50	0.7677		451H-19.5	❍
	25/32”	19,84	0.7813		451H-0025	❍
		20,00	0.7874		451H-20	❍
	51/64”	20,24	0.7969		451H-.796	❍
		20,34	0.8010		451H-.801	❍
		20,50	0.8071		451H-20.5	❍
	13/16”	20,64	0.8125		451H-0026	❍
		21,00	0.8268		451H-21	❍
	27/32”	21,43	0.8438		451H-0027	❍
		21,50	0.8465		451H-21.5	❍
	55/64”	21,83	0.8594		451H-.859	❍
		22,00	0.8661		451H-22	❍
	7/8”	22,23	0.8750		451H-0028	❍
		22,50	0.8858		451H-22.5	❍
	57/64”	22,62	0.8906		451H-.890	❍
		23,00	0.9055		451H-23	❍
	29/32”	23,02	0.9063		451H-0029	❍
	59/64”	23,42	0.9219		451H-.921	❍
		23,50	0.9252		451H-23.5	❍
	15/16”	23,81	0.9375		451H-0030	❍
		24,00	0.9449		451H-24	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

Geometries available (see page C107 for details): -HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

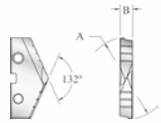
TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

1 Series T-A® Carbide Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

T-A® Carbide Drill Inserts

(supplied in 2 piece packages)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶
C2 (K20)	45/64”	17,86	0.7031	5/32”	1C21T-.703	❍	1C21A-.703	❍
		18,00	0.7087		1C21T-18	❍	1C21A-18	❍
	23/32”	18,26	0.7188		1C21T-0023	❍	1C21A-0023	❍
		18,50	0.7283		1C21T-18.5	❍	1C21A-18.5	❍
	47/64”	18,65	0.7344		1C21T-.734	❍	1C21A-.734	❍
		19,00	0.7480		1C21T-19	❍	1C21A-19	❍
	3/4”	19,05	0.7500		1C21T-0024	❍	1C21A-0024	❍
	49/64”	19,45	0.7656		1C21T-.765	❍	1C21A-.765	❍
		19,50	0.7677		1C21T-19.5	❍	1C21A-19.5	❍
	25/32”	19,84	0.7813		1C21T-0025	❍	1C21A-0025	❍
		20,00	0.7874		1C21T-20	❍	1C21A-20	❍
	51/64”	20,24	0.7969		1C21T-.796	❍	1C21A-.796	❍
		20,50	0.8071		1C21T-20.5	❍	1C21A-20.5	❍
	13/16”	20,64	0.8125		1C21T-0026	❍	1C21A-0026	❍
		21,00	0.8268		1C21T-21	❍	1C21A-21	❍
	27/32”	21,43	0.8438		1C21T-0027	❍	1C21A-0027	❍
	55/64”	21,83	0.8594		1C21T-.859	❍	1C21A-.859	❍
		22,00	0.8661		1C21T-22	❍	1C21A-22	❍
	7/8”	22,23	0.8750		1C21T-0028	❍	1C21A-0028	❍
	57/64”	22,62	0.8906		1C21T-.890	❍	1C21A-.890	❍
		23,00	0.9055		1C21T-23	❍	1C21A-23	❍
	29/32”	23,02	0.9063		1C21T-0029	❍	1C21A-0029	❍
	59/64”	23,42	0.9219		1C21T-.921	❍	1C21A-.921	❍
	15/16”	23,81	0.9375		1C21T-0030	❍	1C21A-0030	❍
		24,00	0.9449		1C21T-24	❍	1C21A-24	❍
C5 (P40)	45/64”	17,86	0.7031	5/32”	1C51T-.703	❍	1C51A-.703	❍
		18,00	0.7087		1C51T-18	❍	1C51A-18	❍
	23/32”	18,26	0.7188		1C51T-0023	❍	1C51A-0023	❍
		18,50	0.7283		1C51T-18.5	❍	1C51A-18.5	❍
	47/64”	18,65	0.7344		1C51T-.734	❍	1C51A-.734	❍
		19,00	0.7480		1C51T-19	❍	1C51A-19	❍
	3/4”	19,05	0.7500		1C51T-0024	❍	1C51A-0024	❍
	49/64”	19,45	0.7656		1C51T-.765	❍	1C51A-.765	❍
		19,50	0.7677		1C51T-19.5	❍	1C51A-19.5	❍
	25/32”	19,84	0.7813		1C51T-0025	❍	1C51A-0025	❍
		20,00	0.7874		1C51T-20	❍	1C51A-20	❍
	51/64”	20,24	0.7969		1C51T-.796	❍	1C51A-.796	❍
		20,50	0.8071		1C51T-20.5	❍	1C51A-20.5	❍
	13/16”	20,64	0.8125		1C51T-0026	❍	1C51A-0026	❍
		21,00	0.8268		1C51T-21	❍	1C51A-21	❍
	27/32”	21,43	0.8438		1C51T-0027	❍	1C51A-0027	❍
	55/64”	21,83	0.8594		1C51T-.859	❍	1C51A-.859	❍
		22,00	0.8661		1C51T-22	❍	1C51A-22	❍
	7/8”	22,23	0.8750		1C51T-0028	❍	1C51A-0028	❍
	57/64”	22,62	0.8906		1C51T-.890	❍	1C51A-.890	❍
		23,00	0.9055		1C51T-23	❍	1C51A-23	❍
	29/32”	23,02	0.9063		1C51T-0029	❍	1C51A-0029	❍
	59/64”	23,42	0.9219		1C51T-.921	❍	1C51A-.921	❍
	15/16”	23,81	0.9375		1C51T-0030	❍	1C51A-0030	❍
		24,00	0.9449		1C51T-24	❍	1C51A-24	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

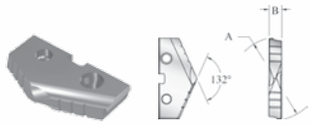
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64ths = 53/64, TiCN, 1 Series, Super Cobalt, GEN2 T-A®	=451N-.828
Decimals = 0.9025” TiAlN, 1 Series, C5	=1C51A-.9025
Metric = 19,25 mm TiCN, 1 Series, Super Cobalt, GEN2 T-A®	=451N-19.25

1 Series T-A® Carbide Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



Cast Iron Geometry T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiAlN	❶
C3 (K10)	45/64”	17,86	0.7031	5/32”	1C31A-.703-CI	❍
		18,00	0.7087		1C31A-18-CI	❍
	23/32”	18,26	0.7188		1C31A-0023-CI	❍
		18,50	0.7283		1C31A-18.5-CI	❍
	47/64”	18,65	0.7344		1C31A-.734-CI	❍
		19,00	0.7480		1C31A-19-CI	❍
	3/4”	19,05	0.7500		1C31A-0024-CI	❍
	49/64”	19,45	0.7656		1C31A-.765-CI	❍
		19,50	0.7677		1C31A-19.5-CI	❍
	25/32”	19,84	0.7813		1C31A-0025-CI	❍
		20,00	0.7874		1C31A-20-CI	❍
	51/64”	20,24	0.7969		1C31A-.796-CI	❍
		20,50	0.8071		1C31A-20.5-CI	❍
	13/16”	20,64	0.8125		1C31A-0026-CI	❍
		21,00	0.8268		1C31A-21-CI	❍
	27/32”	21,43	0.8438		1C31A-0027-CI	❍
	55/64”	21,83	0.8594		1C31A-.859-CI	❍
		22,00	0.8661		1C31A-22-CI	❍
	7/8”	22,23	0.8750		1C31A-0028-CI	❍
	57/64”	22,62	0.8906		1C31A-.890-CI	❍
		23,00	0.9055		1C31A-23-CI	❍
	29/32”	23,02	0.9063		1C31A-0029-CI	❍
	59/64”	23,42	0.9219		1C31A-.921-CI	❍
	15/16”	23,81	0.9375		1C31A-0030-CI	❍
		24,00	0.9449		1C31A-24-CI	❍

This insert is specifically designed for use in **Grey Cast Iron**. (Use standard T-A® geometry for Nodular Iron)

- C3 Carbide offers high wear resistance for improved tool life.
- Cast Iron (-CI) geometry provides a unique design to minimize chipping.
- TiAlN offers exceptional wear resistance and high heat capabilities to increase tool life and penetration rates in Grey Cast Iron.

Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

1 Series T-A® Carbide Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

GEN2 T-A®

(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
C2 (K20)	45/64”	17,86	0.7031	5/32”	4C21H-.703	❍
		18,00	0.7087		4C21H-18	❍
	23/32”	18,26	0.7188		4C21H-0023	❍
		18,50	0.7283		4C21H-18.5	❍
	47/64”	18,65	0.7344		4C21H-.734	❍
		19,00	0.7480		4C21H-19	❍
	3/4”	19,05	0.7500		4C21H-0024	❍
	49/64”	19,45	0.7656		4C21H-.765	❍
		19,50	0.7677		4C21H-19.5	❍
	25/32”	19,84	0.7813		4C21H-0025	❍
		20,00	0.7874		4C21H-20	❍
	51/64”	20,24	0.7969		4C21H-.796	❍
		20,50	0.8071		4C21H-20.5	❍
	13/16”	20,64	0.8125		4C21H-0026	❍
		21,00	0.8268		4C21H-21	❍
	27/32”	21,43	0.8438		4C21H-0027	❍
		21,50	0.8465		4C21H-21.5	❍
	55/64”	21,83	0.8594		4C21H-.859	❍
		22,00	0.8661		4C21H-22	❍
	7/8”	22,23	0.8750		4C21H-0028	❍
	57/64”	22,62	0.8906		4C21H-.890	▲
		23,00	0.9055		4C21H-23	❍
	29/32”	23,02	0.9063		4C21H-0029	❍
	59/64”	23,42	0.9219		4C21H-.921	❍
	15/16”	23,81	0.9375		4C21H-0030	❍
		24,00	0.9449		4C21H-24	❍
C1 (K35)	45/64”	17,86	0.7031	5/32”	4C11H-.703	❍
		18,00	0.7087		4C11H-18	❍
	23/32”	18,26	0.7188		4C11H-0023	❍
		18,50	0.7283		4C11H-18.5	❍
	47/64”	18,65	0.7344		4C11H-.734	▲
		19,00	0.7480		4C11H-19	❍
	3/4”	19,05	0.7500		4C11H-0024	❍
	49/64”	19,45	0.7656		4C11H-.765	❍
		19,50	0.7677		4C11H-19.5	❍
	25/32”	19,84	0.7813		4C11H-0025	❍
		20,00	0.7874		4C11H-20	❍
	51/64”	20,24	0.7969		4C11H-.796	❍
		20,50	0.8071		4C11H-20.5	❍
	13/16”	20,64	0.8125		4C11H-0026	❍
		21,00	0.8268		4C11H-21	❍
	27/32”	21,43	0.8438		4C11H-0027	❍
		21,50	0.8465		4C11H-21.5	❍
	55/64”	21,83	0.8594		4C11H-.859	▲
		22,00	0.8661		4C11H-22	❍
	7/8”	22,23	0.8750		4C11H-0028	❍
	57/64”	22,62	0.8906		4C11H-.890	❍
		23,00	0.9055		4C11H-23	❍
	29/32”	23,02	0.9063		4C11H-0029	❍
	59/64”	23,42	0.9219		4C11H-.921	❍
		23,50	0.9252		4C11H-23.5	❍
	15/16”	23,81	0.9375		4C11H-0030	❍
		24,00	0.9449		4C11H-24	❍

GEN2 T-A® Provides:

- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

Geometries available (see page C107 for details): -HE
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ **Availability Codes**
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.9025” TiAlN, 1 Series, HSS =131A-.9025
Metric = 19,25 mm TiCN, 1 Series, Super Cobalt =151N-19.25

1 Series T-A® HSS Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

90º Spot and Chamfer T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAIN	❶	TiCN	❶
Super Cobalt	45/64”	17,86	0.7031	5/32”	151T-.703-SP	▲	151A-.703-SP	▲	151N-.703-SP	▲
		18,00	0.7087		151T-18-SP	▲	151A-18-SP	▲	151N-18-SP	▲
	23/32”	18,26	0.7188		151T-0023-SP	▲	151A-0023-SP	▲	151N-0023-SP	▲
		18,50	0.7283		151T-18.5-SP	▲	151A-18.5-SP	▲	151N-18.5-SP	▲
	47/64”	18,65	0.7344		151T-.734-SP	▲	151A-.734-SP	▲	151N-.734-SP	▲
		19,00	0.7480		151T-19-SP	▲	151A-19-SP	▲	151N-19-SP	▲
	3/4”	19,05	0.7500		151T-0024-SP	❍	151A-0024-SP	❍	151N-0024-SP	▲
	49/64”	19,45	0.7656		151T-.765-SP	▲	151A-.765-SP	▲	151N-.765-SP	▲
		19,50	0.7677		151T-19.5-SP	▲	151A-19.5-SP	▲	151N-19.5-SP	▲
	25/32”	19,84	0.7813		151T-0025-SP	❍	151A-0025-SP	▲	151N-0025-SP	▲
		20,00	0.7874		151T-20-SP	▲	151A-20-SP	▲	151N-20-SP	▲
	51/64”	20,24	0.7969		151T-.796-SP	▲	151A-.796-SP	▲	151N-.796-SP	▲
		20,50	0.8071		151T-20.5-SP	▲	151A-20.5-SP	▲	151N-20.5-SP	▲
	13/16”	20,64	0.8125		151T-0026-SP	▲	151A-0026-SP	▲	151N-0026-SP	▲
		21,00	0.8268		151T-21-SP	▲	151A-21-SP	▲	151N-21-SP	▲
	27/32”	21,43	0.8438		151T-0027-SP	▲	151A-0027-SP	▲	151N-0027-SP	▲
	55/64”	21,83	0.8594		151T-.859-SP	▲	151A-.859-SP	▲	151N-.859-SP	▲
		22,00	0.8661		151T-22-SP	▲	151A-22-SP	▲	151N-22-SP	▲
	7/8”	22,23	0.8750		151T-0028-SP	❍	151A-0028-SP	❍	151N-0028-SP	❍
		22,50	0.8858		151T-22.5-SP	▲	151A-22.5-SP	▲	151N-22.5-SP	▲
	57/64”	22,62	0.8906		151T-.890-SP	▲	151A-.890-SP	▲	151N-.890-SP	▲
		23,00	0.9055		151T-23-SP	▲	151A-23-SP	▲	151N-23-SP	▲
	29/32”	23,02	0.9063		151T-0029-SP	▲	151A-0029-SP	▲	151N-0029-SP	▲
	59/64”	23,42	0.9219		151T-.921-SP	▲	151A-.921-SP	▲	151N-.921-SP	▲
	15/16”	23,81	0.9375		151T-0030-SP	❍	151A-0030-SP	▲	151N-0030-SP	▲
		24,00	0.9449		151T-24-SP	❍	151A-24-SP	❍	151N-24-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Structural Steel T-A® Drill Inserts

(supplied in 2 piece packages)

***Thin Wall**
U.S. Patent No.: 7,147,414

****Notch Point®**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

****150º Structural Steel**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability *Thin Wall TiAIN	❶	**Notch Point® TiAIN	❶	150º Structural Steel TiAIN	❶
Super Cobalt	-	18,00	.7087	5/32”	151A-18-TW	❍	151A-18-NP	❍	151A-18-SS	❍
	13/16”	20,64	.8125		151A-0026-TW	❍	151A-0026-NP	❍	151A-0026-SS	❍
	-	22,00	.8661		151A-22-TW	❍	151A-22-NP	❍	151A-22-SS	❍
	7/8”	22,23	.8750		151A-0028-TW	❍	151A-0028-NP	❍	151A-0028-SS	❍
	15/16”	23,81	.9375		151A-0030-TW	❍	151A-0030-NP	❍	151A-0030-SS	❍
	-	24,00	.9449		151A-24-TW	❍	151A-24-NP	❍	151A-24-SS	❍
Material	Fractional Equivalent	(mm)	(Inch)	Thickness	*Thin Wall AM200®	❶	**Notch Point® AM200®	❶	150º Structural Steel AM200®	❶
Super Cobalt	-	18,00	.7087	5/32”	151H-18-TW	❍	151H-18-NP	❍	151H-18-SS	❍
	13/16”	20,64	.8125		151H-0026-TW	❍	151H-0026-NP	❍	151H-0026-SS	❍
	-	22,00	.8661		151H-22-TW	❍	151H-22-NP	❍	151H-22-SS	❍
	7/8”	22,23	.8750		151H-0028-TW	❍	151H-0028-NP	❍	151H-0028-SS	❍
	15/16”	23,81	.9375		151H-0030-TW	❍	151H-0030-NP	❍	151H-0030-SS	❍
	-	24,00	.9449		151H-24-TW	❍	151H-24-NP	❍	151H-24-SS	❍

*Use Thin Wall Drill Inserts for material up to 7/16” thick.
**Use Notch Point® Geometry or 150º Structural Steel Drill Inserts for material over 7/16” thick. Use 150º Structural Steel for reduced exit burr.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAIN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

1 Series T-A® HSS Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

Tube Sheet Drilling T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
HSS		19,25	0.7580	5/32”	131H-.7580-IN	❍
	49/64”	19,45	0.7656		131H-.765-IN	❍
	25/32”	19,85	0.7813		131H-0025-IN	❍
Super Cobalt		19,25	0.7580		151H-.7580-IN	❍
	49/64”	19,45	0.7656		151H-.765-IN	❍
	25/32”	19,85	0.7813		151H-0025-IN	❍

Flat Bottom T-A® Super Cobalt Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
Super Cobalt	45/64”	17,86	0.7031	5/32”	151T-.703-FB	❍
		18,00	0.7087		151T-18-FB	❍
	23/32”	18,26	0.7188		151T-0023-FB	❍
		18,50	0.7283		151T-18.5-FB	❍
	47/64”	18,65	0.7344		151T-.734-FB	❍
		19,00	0.7480		151T-19-FB	❍
	3/4”	19,05	0.7500		151T-0024-FB	❍
	49/64”	19,45	0.7656		151T-.765-FB	❍
		19,50	0.7677		151T-19.5-FB	❍
	25/32”	19,84	0.7813		151T-0025-FB	❍
		20,00	0.7874		151T-20-FB	❍
		20,50	0.8071		151T-20.5-FB	❍
	13/16”	20,64	0.8125		151T-0026-FB	❍
		21,00	0.8268		151T-21-FB	❍
	27/32”	21,43	0.8438		151T-0027-FB	❍
		22,00	0.8661		151T-22-FB	❍
	7/8”	22,23	0.8750		151T-0028-FB	❍
		23,00	0.9055		151T-23-FB	❍
	29/32”	23,02	0.9063		151T-0029-FB	❍
	59/64”	23,42	0.9219		151T-.921-FB	❍
	15/16”	23,81	0.9375		151T-0030-FB	❍
		24,00	0.9449		151T-24-FB	❍

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:
Decimals = 0.7752”, TiAlN, 1 Series, Super Cobalt, Flat Bottom = 151A-.7752-FB
Metric = 18,62 mm, TiCN, 1 Series, Super Cobalt, Flat Bottom = 151N-18.62-FB

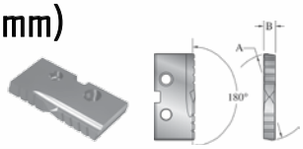
1 Series T-A® Carbide Drill Inserts

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)

Flat Bottom T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
C2 (K20)	45/64”	17,86	0.7031	5/32”	1C21T-.703-FB	▲
		18,00	0.7087		1C21T-18-FB	▲
	23/32”	18,26	0.7188		1C21T-0023-FB	▲
		18,50	0.7283		1C21T-18.5-FB	▲
	47/64”	18,65	0.7344		1C21T-.734-FB	▲
		19,00	0.7480		1C21T-19-FB	▲
	3/4”	19,05	0.7500		1C21T-0024-FB	▲
	49/64”	19,45	0.7656		1C21T-.765-FB	▲
		19,50	0.7677		1C21T-19.5-FB	▲
	25/32”	19,84	0.7813		1C21T-0025-FB	▲
		20,00	0.7874		1C21T-20-FB	▲
		20,50	0.8071		1C21T-20.5-FB	▲
	13/16”	20,64	0.8125		1C21T-0026-FB	▲
		21,00	0.8268		1C21T-21-FB	▲
	27/32”	21,43	0.8438		1C21T-0027-FB	▲
		22,00	0.8661		1C21T-22-FB	▲
	7/8”	22,23	0.8750		1C21T-0028-FB	▲
		23,00	0.9055		1C21T-23-FB	▲
	29/32”	23,02	0.9063		1C21T-0029-FB	▲
	59/64”	23,42	0.9219		1C21T-.921-FB	▲
	15/16”	23,81	0.9375		1C21T-0030-FB	▲
		24,00	0.9449		1C21T-24-FB	▲

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 1.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Diamond Coated T-A® Carbide Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter) Fractional Equivolent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability CVD Diamond	❶
N2	45/64”	17,86	0.7031	5/32”	1N21D-.703	▲
		18,00	0.7087		1N21D-18	▲
	23/32”	18,26	0.7188		1N21D-0023	▲
		18,50	0.7283		1N21D-18.5	▲
	47/64”	18,65	0.7344		1N21D-.734	▲
		19,00	0.7480		1N21D-19	▲
	3/4”	19,05	0.7500		1N21D-0024	▲
	49/64”	19,45	0.7656		1N21D-.765	▲
		19,50	0.7677		1N21D-19.5	▲
	25/32”	19,84	0.7813		1N21D-0025	▲
		20,00	0.7874		1N21D-20	▲
	51/64”	20,24	0.7969		1N21D-.796	▲
		20,50	0.8071		1N21D-20.5	▲
	13/16”	20,64	0.8125		1N21D-0026	▲
		21,00	0.8268		1N21D-21	▲
	27/32”	21,43	0.8438		1N21D-0027	▲
	55/64”	21,83	0.8594	5/32”	1N21D-.859	▲
		22,00	0.8661		1N21D-22	▲
	7/8”	22,23	0.8750		1N21D-0028	▲
		22,50	0.8858		1N21D-22.5	▲
	57/64”	22,62	0.8906		1N21D-.890	▲
		23,00	0.9055		1N21D-23	▲
	29/32”	23,02	0.9063		1N21D-0029	▲
	59/64”	23,42	0.9219		1N21D-.921	▲
	15/16”	23,81	0.9375		1N21D-0030	▲
		24,00	0.9449		1N21D-24	▲

Crystalline, Diamond Film Coating produces:

- Increased hardness
- Increased Durability
- Increased Performance

Extends tool life 30-50 times versus uncoated carbide drill inserts

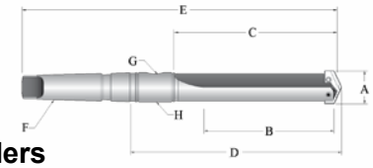
Used in non-ferrous / non-metallic applications

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

1 and 1.5 Series T-A® Holders

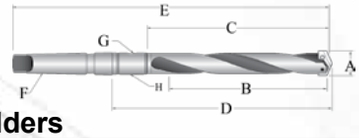
Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22010S-003I	45/64" - 15/16"	2-3/4"	3-7/8"	5-39/64"	9-5/32"	#3	1/8"	2T-3SR
	22010S-004I	45/64" - 15/16"	2-3/4"	3-7/8"	5-43/64"	10-5/32"	#4	1/8"	2T-3SR
Short	22015S-003I	55/64" - 15/16"	2-3/4"	3-7/8"	5-39/64"	9-5/32"	#3	1/8"	2T-3SR
	22015S-004I	55/64" - 15/16"	2-3/4"	3-7/8"	5-43/64"	10-5/32"	#4	1/8"	2T-3SR
Intermediate	23010S-003I	45/64" - 15/16"	4-3/4"	5-7/8"	7-39/64"	11-5/32"	#3	1/8"	2T-3SR
Intermediate	23015S-003I	55/64" - 15/16"	4-3/4"	5-7/8"	7-39/64"	11-5/32"	#3	1/8"	2T-3SR
Standard	24010S-003I	45/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	2T-3SR
	24010S-004I	45/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	2T-3SR
Standard	24015S-003I	55/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	2T-3SR
	24015S-004I	55/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	2T-3SR
⚠ Extended	25010S-003I	45/64" - 15/16"	10-3/4"	11-7/8"	13-39/64"	17-5/32"	#3	1/8"	2T-3SR
⚠ Extended	25015S-003I	55/64" - 15/16"	10-3/4"	11-7/8"	13-39/64"	17-5/32"	#3	1/8"	2T-3SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22010S-003M	18,0 - 24,0	69,8	98,4	142,5	232,5	#3**	1/8"*	2T-3SRM
Short	22015S-003M	22,0 - 24,0	69,8	98,4	142,5	232,5	#3**	1/8"*	2T-3SRM

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Intermediate	23010H-003I	45/64" - 15/16"	4-3/4"	5-7/8"	7-39/64"	11-5/32"	#3	1/8"	2T-3SR
Intermediate	23015H-003I	55/64" - 15/16"	4-3/4"	5-7/8"	7-39/64"	11-5/32"	#3	1/8"	2T-3SR
Standard	24010H-003I	45/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	2T-3SR
	24010H-004I	45/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	2T-3SR
Standard	24015H-003I	55/64" - 15/16"	6-3/4"	7-7/8"	9-39/64"	13-5/32"	#3	1/8"	2T-3SR
	24015H-004I	55/64" - 15/16"	6-3/4"	7-7/8"	9-43/64"	14-5/32"	#4	1/8"	2T-3SR
⚠ Extended	25010H-003I	45/64" - 15/16"	10-3/4"	11-7/8"	13-39/64"	17-5/32"	#3	1/8"	2T-3SR
⚠ Extended	25015H-003I	55/64" - 15/16"	10-3/4"	11-7/8"	13-39/64"	17-5/32"	#3	1/8"	2T-3SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Intermediate	23010H-003M	18,0 - 24,0	120,7	149,2	193,3	283,3	#3**	1/8"	2T-3SRM
Intermediate	23015H-003M	22,0 - 24,0	120,7	149,2	193,3	283,3	#3**	1/8"	2T-3SRM
Standard	24010H-003M	18,0 - 24,0	171,5	200,0	244,1	334,2	#3**	1/8"	2T-3SRM
Standard	24015H-003M	22,0 - 24,0	171,5	200,0	244,1	334,2	#3**	1/8"	2T-3SRM
⚠ Extended	25010H-003M	18,0 - 24,0	273,1	301,6	345,7	435,8	#3**	1/8"*	2T-3SRM
⚠ Extended	25015H-003M	22,0 - 24,0	273,1	301,6	345,7	435,8	#3**	1/8"*	2T-3SRM

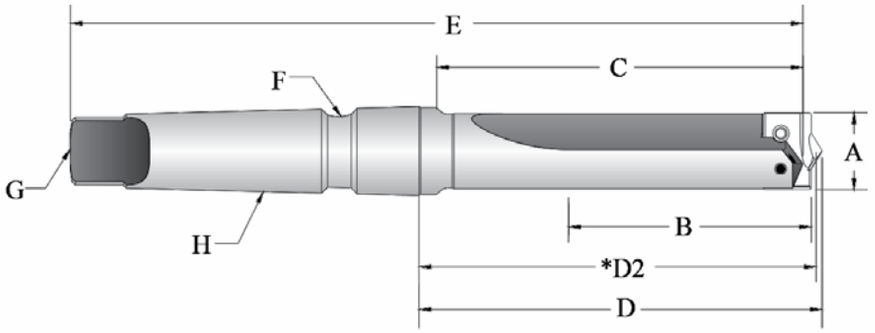
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	1 Series
Grey	1.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

1 and 1.5 Series T-A® Holders

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



Structural Steel Taper Shank Straight Flute Holders

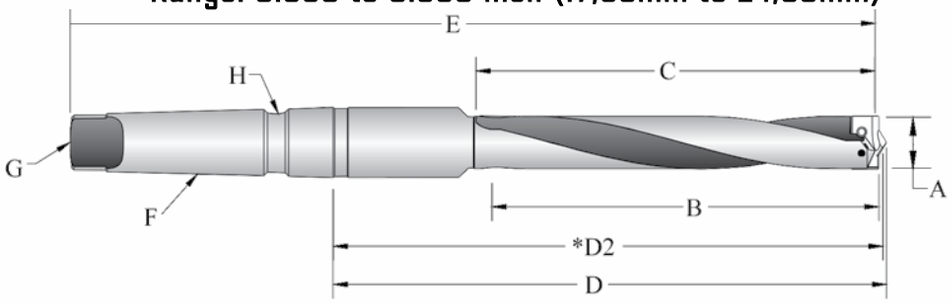
Length	Item Number	A	B	C	D	*D2	E	F	G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Ref. Length	Overall Length	MT	Coolant Inlet-Style	
Short	22010S-003IS045	18mm	2-3/4”	3-7/8”	4-17/64”	4-13/64”	7-3/4”	#3	TTC	TSC
Short	22010S-004IS045	18mm	2-3/4”	3-7/8”	4-21/64”	4-17/64”	8-3/4”	#4	TTC	TSC
Short	22010S-003IS052	13/16”	2-3/4”	3-7/8”	4-17/64”	4-13/64”	7-3/4”	#3	TTC	TSC
Short	22010S-004IS052	13/16”	2-3/4”	3-7/8”	4-21/64”	4-17/64”	8-3/4”	#4	TTC	TSC
Short	22015S-003IS056	7/8”	2-3/4”	3-7/8”	4-17/64”	4-13/64”	7-3/4”	#3	TTC	TSC
Short	22015S-004IS056	7/8”	2-3/4”	3-7/8”	4-21/64”	4-17/64”	8-3/4”	#4	TTC	TSC
Short	22015S-003IS060	15/16”	2-3/4”	3-7/8”	4-17/64”	4-13/64”	7-3/4”	#3	TTC	TSC
Short	22015S-004IS060	15/16”	2-3/4”	3-7/8”	4-21/64”	4-17/64”	8-3/4”	#4	TTC	TSC
Metric (mm)										
Short	22010S-003IS045	18	70	98	108.4	106.8	197	#3	TTC	TSC
Short	22010S-004IS045	18	70	98	109.9	108.3	222	#4	TTC	TSC
Short	22010S-003IS052	21	70	98	108.4	106.8	197	#3	TTC	TSC
Short	22010S-004IS052	21	70	98	109.9	108.3	222	#4	TTC	TSC
Short	22015S-003IS056	22	70	98	108.4	106.8	197	#3	TTC	TSC
Short	22015S-004IS056	22	70	98	109.9	108.3	222	#4	TTC	TSC
Short	22015S-003IS060	24	70	98	108.4	106.8	197	#3	TTC	TSC
Short	22015S-004IS060	24	70	98	109.9	108.3	222	#4	TTC	TSC

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	1 Series
Grey	1.5 Series

1 and 1.5 Series T-A® Holders

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



Structural Steel Taper Shank Helical Flute Holders

Length	Item Number	A	B	C	D	*D2	E	F	G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Ref. Length	Overall Length	MT	Coolant Inlet-Style	
Standard	24010H-003IS045	18mm	4-3/4”	5-7/8”	6-17/64”	6-13/64”	9-3/4”	#3	TTC	TSC
Standard	24010H-004IS045	18mm	4-3/4”	5-7/8”	6-21/64”	6-17/64”	10-3/4”	#4	TTC	TSC
Standard	24010H-003IS052	13/16”	4-3/4”	5-7/8”	6-17/64”	6-13/64”	9-3/4”	#3	TTC	TSC
Standard	24010H-004IS052	13/16”	4-3/4”	5-7/8”	6-21/64”	6-17/64”	10-3/4”	#4	TTC	TSC
Standard	24015H-003IS056	7/8”	4-3/4”	5-7/8”	6-17/64”	6-13/64”	9-3/4”	#3	TTC	TSC
Standard	24015H-004IS056	7/8”	4-3/4”	5-7/8”	6-21/64”	6-17/64”	10-3/4”	#4	TTC	TSC
Standard	24015H-003IS060	15/16”	4-3/4”	5-7/8”	6-17/64”	6-13/64”	9-3/4”	#3	TTC	TSC
Standard	24015H-004IS060	15/16”	4-3/4”	5-7/8”	6-21/64”	6-17/64”	10-3/4”	#4	TTC	TSC
⚠ Extended	25010H-003IS045	18mm	6-1/2”	9-11/32”	9-47/64”	9-1/2”	13-7/32”	#3	TTC	TSC
⚠ Extended	25010H-003IS052	13/16”	6-1/2”	9-11/32”	9-47/64”	9-1/2”	13-7/32”	#3	TTC	TSC
⚠ Extended	25010H-004IS052	13/16”	6-1/2”	9-9/32”	9-47/64”	9-43/64”	14-5/32”	#4	TTC	TSC
⚠ Extended	25015H-003IS060	15/16”	6-1/2”	9-11/32”	9-47/64”	9-15/32”	13-7/32”	#3	TTC	TSC
⚠ Extended	25015H-004IS060	15/16”	6-1/2”	9-9/32”	9-47/64”	9-43/64”	14-5/32”	#4	TTC	TSC
⚠ Long	26010H-004IS052	13/16”	6-1/2”	15-25/32”	16-15/64”	16-11/64”	20-21/32”	#4	TTC	TSC
⚠ Long	26015H-004IS060	15/16”	6-1/2”	15-13/16”	16-17/64”	16-13/64”	20-11/16”	#4	TTC	TSC
Metric (mm)										
Standard	24010H-003IS045	18	121	149	159.2	157.6	248	#3	TTC	TSC
Standard	24010H-004IS045	18	121	149	160.8	159.2	273	#4	TTC	TSC
Standard	24010H-003IS052	21	121	149	159.2	157.6	248	#3	TTC	TSC
Standard	24010H-004IS052	21	121	149	160.8	159.2	273	#4	TTC	TSC
Standard	24015H-003IS056	22	121	149	159.2	157.6	248	#3	TTC	TSC
Standard	24015H-004IS056	22	121	149	160.8	159.2	273	#4	TTC	TSC
Standard	24015H-003IS060	24	121	149	159.2	157.6	248	#3	TTC	TSC
Standard	24015H-004IS060	24	121	149	160.8	159.2	273	#4	TTC	TSC
⚠ Extended	25010H-003IS045	18	165	237	247.3	241.3	336	#3	TTC	TSC
⚠ Extended	25010H-003IS052	22	165	237	247.3	241.3	336	#3	TTC	TSC
⚠ Extended	25010H-004IS052	22	165	236	247.3	245.7	384	#4	TTC	TSC
⚠ Extended	25015H-003IS060	24	165	237	247.3	234.5	336	#3	TTC	TSC
⚠ Extended	25015H-004IS060	24	165	236	247.3	245.7	384	#4	TTC	TSC
⚠ Long	26010H-004IS052	22	165	401	412.4	410.8	525	#4	TTC	TSC
⚠ Long	26015H-004IS060	24	165	401	413.1	411.6	525	#4	TTC	TSC

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	1 Series
Grey	1.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C108 for Structural Steel Guidelines & C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

1 and 1.5 Series T-A® Holders

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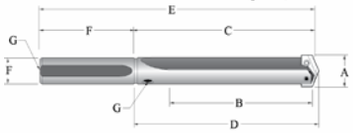
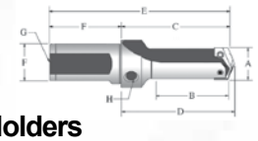
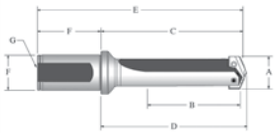


Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	
Short	22010S-075L	45/64" - 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	3/4"	3"	1/8"
	22010S-100L	45/64" - 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	1"	3"	1/8"
Short	22015S-075L	55/64" - 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	3/4"	3"	1/8"
	22015S-100L	55/64" - 15/16"	2-5/8"	3-7/8"	4-1/64"	6-7/8"	1"	3"	1/8"
Intermediate	23010S-100L	45/64" - 15/16"	4-5/8"	5-7/8"	6-1/64"	8-7/8"	1"	3"	1/8"
Intermediate	23015S-100L	55/64" - 15/16"	4-5/8"	5-7/8"	6-1/64"	8-7/8"	1"	3"	1/8"
Standard	24010S-075L	45/64" - 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	3/4"	3"	1/8"
	24010S-100L	45/64" - 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	1"	3"	1/8"
Standard	24015S-075L	55/64" - 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	3/4"	3"	1/8"
	24015S-100L	55/64" - 15/16"	6-5/8"	7-7/8"	8-1/64"	10-7/8"	1"	3"	1/8"
⚠ Extended	25010S-100L	45/64" - 15/16"	10-5/8"	11-7/8"	12-1/64"	14-7/8"	1"	3"	1/8"
⚠ Extended	25015S-100L	55/64" - 15/16"	10-5/8"	11-7/8"	12-1/64"	14-7/8"	1"	3"	1/8"
⚠ XL	27010S-100L	45/64" - 15/16"	18"	19-1/4"	19-25/64"	22-1/4"	1"	3"	1/8"
⚠ 3XL	29010S-100L	45/64" - 15/16"	22-1/4"	23-1/2"	23-41/64"	26-1/2"	1"	3"	1/8"

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders





Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	21010S-100F	45/64" - 15/16"	1-7/8"	2-63/64"	3-1/8"	5-17/64"	1"	2-9/32"	1/8"	1/8"
Stub	21015S-100F	55/64" - 15/16"	2-1/4"	3-31/64"	3-5/8"	5-49/64"	1"	2-9/32"	1/8"	1/8"
Short	22010S-100F	45/64" - 15/16"	2-5/8"	4-7/32"	4-23/64"	6-1/2"	1"	2-9/32"	1/8"	N/A
Short	22015S-100F	55/64" - 15/16"	2-5/8"	4-7/32"	4-23/64"	6-1/2"	1"	2-9/32"	1/8"	N/A
Intermediate	23010S-100F	45/64" - 15/16"	4-5/8"	6-3/32"	6-15/64"	8-3/8"	1"	2-9/32"	1/8"	N/A
Intermediate	23015S-100F	55/64" - 15/16"	4-5/8"	6-3/32"	6-15/64"	8-3/8"	1"	2-9/32"	1/8"	N/A
Standard	24010S-100F	45/64" - 15/16"	6-5/8"	8-3/32"	8-15/64"	10-3/8"	1"	2-9/32"	1/8"	N/A
Standard	24015S-100F	55/64" - 15/16"	6-5/8"	8-3/32"	8-15/64"	10-3/8"	1"	2-9/32"	1/8"	N/A
⚠ Extended	25010S-100F	45/64" - 15/16"	10-5/8"	12-3/32"	12-15/64"	14-3/8"	1"	2-9/32"	1/8"	N/A
⚠ Extended	25015S-100F	55/64" - 15/16"	10-5/8"	12-3/32"	12-15/64"	14-3/8"	1"	2-9/32"	1/8"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	21010S-25FM	18,0 - 24,0	47,6	75,8	79,4	131,8	25,0	56,0	1/8"*	1/8"*
Stub	21015S-25FM	22,0 - 24,0	57,2	88,5	92,1	144,5	25,0	56,0	1/8"*	1/8"*
Short	22010S-25FM	18,0 - 24,0	66,7	107,2	110,7	163,2	25,0	56,0	1/8"*	N/A
Short	22015S-25FM	22,0 - 24,0	66,7	107,2	110,7	163,2	25,0	56,0	1/8"*	N/A
⚠ XL	27010S-25FM	18,0 - 24,0	457	494,5	498,1	550,5	25,0	56,0	1/8"*	N/A
⚠ 3XL	29010S-25FM	18,0 - 24,0	569	602,5	606,1	658,5	25,0	56,0	1/8"*	N/A

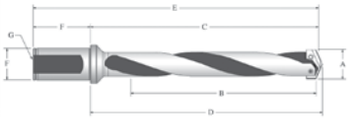
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

White	1 Series
Grey	1.5 Series

1 and 1.5 Series T-A® Holders

Range: 0.690 to 0.960 inch (17,53mm to 24,38mm)



Flanged Shank Helical Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	
Intermediate	23010H-100F	45/64" - 15/16"	4-5/8"	6-3/32"	6-15/64"	8-3/8"	1"	2-9/32"	1/8"
Intermediate	23015H-100F	55/64" - 15/16"	4-5/8"	6-3/32"	6-15/64"	8-3/8"	1"	2-9/32"	1/8"
Standard	24010H-100F	45/64" - 15/16"	6-5/8"	8-3/32"	8-15/64"	10-3/8"	1"	2-9/32"	1/8"
Standard	24015H-100F	55/64" - 15/16"	6-5/8"	8-3/32"	8-15/64"	10-3/8"	1"	2-9/32"	1/8"
⚠ Extended	25010H-100F	45/64" - 15/16"	10-5/8"	12-3/32"	12-15/64"	14-3/8"	1"	2-9/32"	1/8"
⚠ Extended	25015H-100F	55/64" - 15/16"	10-5/8"	12-3/32"	12-15/64"	14-3/8"	1"	2-9/32"	1/8"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Intermediate	23010H-25FM	18,0 - 24,0	117,5	154,8	158,4	210,8	25,0	56,0	1/8"*
Intermediate	23015H-25FM	22,0 - 24,0	117,5	154,8	158,4	210,8	25,0	56,0	1/8"*
Standard	24010H-25FM	18,0 - 24,0	168,3	205,6	209,2	261,6	25,0	56,0	1/8"*
Standard	24015H-25FM	22,0 - 24,0	168,3	205,6	209,2	261,6	25,0	56,0	1/8"*
⚠ Extended	25010H-25FM	18,0 - 24,0	269,9	307,2	310,8	363,2	25,0	56,0	1/8"*
⚠ Extended	25015H-25FM	22,0 - 24,0	269,9	307,2	310,8	363,2	25,0	56,0	1/8"*

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

White	1 Series
Grey	1.5 Series

T-ACR 45® Chamfer Ring and Accessories

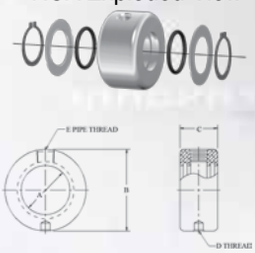
Item Number	Minimum Drill Diameter (inch)	Maximum Drill Diameter (inch)	Maximum Chamfer Diameter (inch)	Chamfer Ring Diameter	Chamfer Ring Length
T-ACR-45-1	0.690	0.854	1.047	1-3/8"	51/64"
T-ACR-45-1.5	0.854	0.960	1.125	1-9/16"	57/64"

Insert Number (2 Pc Pack)	Insert Screw (10 Pieces)	TORX Plus Driver	Clamping Screw (10 Pieces)	TORX Plus Driver
T-ACRI-45-B-C5A	7255-IP8-10	8IP-8	7495-IP15-10	8IP-15

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	O RCA O-ring Replacements 10 Pieces
Inch	⚠ ◣2T-3SR	1"	2-1/8"	1-1/8"	5/16"-NC	1/8"	2T1-3SR	2T1-3OR-10
Metric	⚠ ◣2T-3SRM	25,40	53,97	28,57	M8-1,25	1/8"*	2T1-3SR	2T1-3OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

◣ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws

(supplied in 10 piece packages)

Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	INCH		METRIC	
						Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
1	7375-IP9-10	7375N-IP9-10	8IP-9	8IP-9TL	8IP-9B	45/64"-15/16"	27.0	18,0mm-24,0mm	305
1.5	739-IP9-10	739N-IP9-10	8IP-9	8IP-9TL	8IP-9B	55/64"-15/16"	27.0	22,0mm-24,0mm	305

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

2 Series T-A® HSS Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)

T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
HSS	31/32”	24,61	0.9688	3/16”	132T-0031	❍	132A-0031	❍	132N-0031	❍
	63/64”	25,00	0.9843		132T-25	❍	132A-25	❍	132N-25	❍
	1”	25,40	1.0000		132T-0100	❍	132A-0100	❍	132N-0100	❍
	1-1/64”	25,80	1.0156		132T-1.015	❍	132A-1.015	❍	132N-1.015	❍
		26,00	1.0236		132T-26	❍	132A-26	❍	132N-26	❍
	1-1/32”	26,19	1.0313		132T-0101	❍	132A-0101	❍	132N-0101	❍
	1-3/64”	26,59	1.0469		132T-1.046	❍	132A-1.046	❍	132N-1.046	❍
	1-1/16”	26,99	1.0625		132T-0102	❍	132A-0102	❍	132N-0102	❍
		27,00	1.0630		132T-27	❍	132A-27	❍	132N-27	❍
	1-3/32”	27,78	1.0938		132T-0103	❍	132A-0103	❍	132N-0103	❍
		28,00	1.1024		132T-28	❍	132A-28	❍	132N-28	❍
	1-7/64”	28,18	1.1094		132T-1.109	❍	132A-1.109	❍	132N-1.109	❍
	1-1/8”	28,58	1.1250		132T-0104	❍	132A-0104	❍	132N-0104	❍
		29,00	1.1417		132T-29	❍	132A-29	❍	132N-29	❍
	1-5/32”	29,37	1.1563		132T-0105	❍	132A-0105	❍	132N-0105	❍
		30,00	1.1811		132T-30	❍	132A-30	❍	132N-30	❍
	1-3/16”	30,16	1.1875		132T-0106	❍	132A-0106	❍	132N-0106	❍
	1-7/32”	30,96	1.2188		132T-0107	❍	132A-0107	❍	132N-0107	❍
		31,00	1.2205		132T-31	❍	132A-31	❍	132N-31	❍
	1-1/4”	31,75	1.2500		132T-0108	❍	132A-0108	❍	132N-0108	❍
		32,00	1.2598		132T-32	❍	132A-32	❍	132N-32	❍
	1-9/32”	32,54	1.2813		132T-0109	❍	132A-0109	❍	132N-0109	❍
		33,00	1.2992		132T-33	❍	132A-33	❍	132N-33	❍
	1-5/16”	33,34	1.3125		132T-0110	❍	132A-0110	❍	132N-0110	❍
		34,00	1.3386		132T-34	❍	132A-34	❍	132N-34	❍
	1-11/32”	34,13	1.3438		132T-0111	❍	132A-0111	❍	132N-0111	❍
	1-3/8”	34,93	1.3750		132T-0112	❍	132A-0112	❍	132N-0112	❍
		35,00	1.3780		132T-35	❍	132A-35	❍	132N-35	❍
Super Cobalt	31/32”	24,61	0.9688	3/16”	152T-0031	❍	152A-0031	❍	152N-0031	❍
	63/64”	25,00	0.9843		152T-25	❍	152A-25	❍	152N-25	❍
	1”	25,40	1.0000		152T-0100	❍	152A-0100	❍	152N-0100	❍
	1-1/64”	25,80	1.0156		152T-1.015	❍	152A-1.015	❍	152N-1.015	❍
		26,00	1.0236		152T-26	❍	152A-26	❍	152N-26	❍
	1-1/32”	26,19	1.0313		152T-0101	❍	152A-0101	❍	152N-0101	❍
	1-3/64”	26,59	1.0469		152T-1.046	❍	152A-1.046	❍	152N-1.046	❍
	1-1/16”	26,99	1.0625		152T-0102	❍	152A-0102	❍	152N-0102	❍
		27,00	1.0630		152T-27	❍	152A-27	❍	152N-27	❍
	1-3/32”	27,78	1.0938		152T-0103	❍	152A-0103	❍	152N-0103	❍
		28,00	1.1024		152T-28	❍	152A-28	❍	152N-28	❍
	1-7/64”	28,18	1.1094		152T-1.109	❍	152A-1.109	❍	152N-1.109	❍
	1-1/8”	28,58	1.1250		152T-0104	❍	152A-0104	❍	152N-0104	❍
		29,00	1.1417		152T-29	❍	152A-29	❍	152N-29	❍
	1-5/32”	29,37	1.1563		152T-0105	❍	152A-0105	❍	152N-0105	❍
		30,00	1.1811		152T-30	❍	152A-30	❍	152N-30	❍
	1-3/16”	30,16	1.1875		152T-0106	❍	152A-0106	❍	152N-0106	❍
	1-7/32”	30,96	1.2188		152T-0107	❍	152A-0107	❍	152N-0107	❍
		31,00	1.2205		152T-31	❍	152A-31	❍	152N-31	❍
	1-1/4”	31,75	1.2500		152T-0108	❍	152A-0108	❍	152N-0108	❍
		32,00	1.2598		152T-32	❍	152A-32	❍	152N-32	❍
	1-9/32”	32,54	1.2813		152T-0109	❍	152A-0109	❍	152N-0109	❍
		33,00	1.2992		152T-33	❍	152A-33	❍	152N-33	❍
	1-5/16”	33,34	1.3125		152T-0110	❍	152A-0110	❍	152N-0110	❍
		34,00	1.3386		152T-34	❍	152A-34	❍	152N-34	❍
	1-11/32”	34,13	1.3438		152T-0111	❍	152A-0111	❍	152N-0111	❍
	1-3/8”	34,93	1.3750		152T-0112	❍	152A-0112	❍	152N-0112	❍
		35,00	1.3780		152T-35	❍	152A-35	❍	152N-35	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

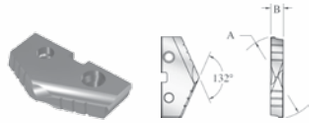
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64ths = 1-5/64”, TiN, 2 Series, HSS	= 132T-1.7081
Decimals = 1.042”, TiAlN, 2 Series, Super Cobalt	=152A-1.042
Metric = 26,30mm, TiCN, 2 Series, Premium Cobalt	=182N-26.30

2 Series T-A® HSS Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability					
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶	TiAlN	❶	TiCN	❶
Premium Cobalt	31/32”	24,61	0.9688	3/16”	182T-0031	❍	182A-0031	❍	182N-0031	❍
	63/64”	25,00	0.9843		182T-25	❍	182A-25	❍	182N-25	❍
	1”	25,40	1.0000		182T-0100	❍	182A-0100	❍	182N-0100	❍
	1-1/64”	25,80	1.0156		182T-1.015	❍	182A-1.015	❍	182N-1.015	❍
		26,00	1.0236		182T-26	❍	182A-26	❍	182N-26	❍
	1-1/32”	26,19	1.0313		182T-0101	❍	182A-0101	❍	182N-0101	❍
	1-3/64”	26,59	1.0469		182T-1.046	❍	182A-1.046	❍	182N-1.046	❍
	1-1/16”	26,99	1.0625		182T-0102	❍	182A-0102	❍	182N-0102	❍
		27,00	1.0630		182T-27	❍	182A-27	❍	182N-27	❍
	1-3/32”	27,78	1.0938		182T-0103	❍	182A-0103	❍	182N-0103	❍
		28,00	1.1024		182T-28	❍	182A-28	❍	182N-28	❍
	1-7/64”	28,18	1.1094		182T-1.109	❍	182A-1.109	❍	182N-1.109	❍
	1-1/8”	28,58	1.1250		182T-0104	❍	182A-0104	❍	182N-0104	❍
		29,00	1.1417		182T-29	❍	182A-29	❍	182N-29	❍
	1-5/32”	29,37	1.1563		182T-0105	❍	182A-0105	❍	182N-0105	❍
		30,00	1.1811		182T-30	❍	182A-30	❍	182N-30	❍
	1-3/16”	30,16	1.1875		182T-0106	❍	182A-0106	❍	182N-0106	❍
	1-7/32”	30,96	1.2188		182T-0107	❍	182A-0107	❍	182N-0107	❍
		31,00	1.2205		182T-31	❍	182A-31	❍	182N-31	❍
	1-1/4”	31,75	1.2500		182T-0108	❍	182A-0108	❍	182N-0108	❍
		32,00	1.2598		182T-32	❍	182A-32	❍	182N-32	❍
	1-9/32”	32,54	1.2813		182T-0109	❍	182A-0109	❍	182N-0109	❍
		33,00	1.2992		182T-33	❍	182A-33	❍	182N-33	❍
	1-5/16”	33,34	1.3125		182T-0110	❍	182A-0110	❍	182N-0110	❍
		34,00	1.3386		182T-34	❍	182A-34	❍	182N-34	❍
	1-11/32”	34,13	1.3438		182T-0111	❍	182A-0111	❍	182N-0111	❍
	1-3/8”	34,93	1.3750		182T-0112	❍	182A-0112	❍	182N-0112	❍
		35,00	1.3780		182T-35	❍	182A-35	❍	182N-35	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

2 Series T-A® HSS Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)

GEN2 T-A®
(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
Super Cobalt		24,50	0.9646	3/16”	452H-24.5	❍
	31/32”	24,61	0.9688		452H-0031	❍
		24,79	0.9760		452H-.976	❍
	63/64”	25,00	0.9843		452H-25	❍
	1”	25,40	1.0000		452H-0100	❍
		25,50	1.0039		452H-25.5	❍
	1-1/64”	25,80	1.0156		452H-1.015	❍
		26,00	1.0236		452H-26	❍
	1-1/32”	26,19	1.0313		452H-0101	❍
		26,50	1.0433		452H-26.5	❍
	1-3/64”	26,59	1.0469		452H-1.046	❍
	1-1/16”	26,99	1.0625		452H-0102	❍
		27,00	1.0630		452H-27	❍
		27,50	1.0827		452H-27.5	❍
	1-3/32”	27,78	1.0938		452H-0103	❍
		28,00	1.1024		452H-28	❍
	1-7/64”	28,18	1.1094		452H-1.109	❍
		28,50	1.1220		452H-28.5	❍
	1-1/8”	28,58	1.1250		452H-0104	❍
		29,00	1.1417		452H-29	❍
	1-5/32”	29,37	1.1563		452H-0105	❍
		29,50	1.1614		452H-29.5	❍
		30,00	1.1811		452H-30	❍
	1-3/16”	30,16	1.1875		452H-0106	❍
		30,50	1.2008		452H-30.5	❍
	1-7/32”	30,96	1.2188		452H-0107	❍
		31,00	1.2205		452H-31	❍
		31,14	1.2260		452H-1.226	❍
		31,26	1.2310		452H-1.231	❍
		31,34	1.2340		452H-1.234	❍
		31,50	1.2402		452H-31.5	❍
	1-1/4”	31,75	1.2500		452H-0108	❍
		32,00	1.2598		452H-32	❍
		32,50	1.2795		452H-32.5	❍
	1-9/32”	32,54	1.2813		452H-0109	❍
		33,00	1.2992		452H-33	❍
	1-5/16”	33,34	1.3125		452H-0110	❍
		33,50	1.3189		452H-33.5	❍
		34,00	1.3386		452H-34	❍
	1-11/32”	34,13	1.3438		452H-0111	❍
		34,50	1.3582		452H-34.5	❍
	1-3/8”	34,93	1.3750		452H-0112	❍
		35,00	1.3780		452H-35	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied’s exclusive AM200® coating for increased tool life

Geometries available (see page C107 for details): -HE
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

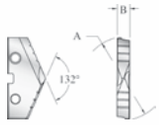
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th =1-5/64”, TiN, 2 Series, HSS	=132T-1.0781
Decimals = 1.1450”, TiAlN, 2 Series, Super Cobalt	=152A-1.1450
Metric = 29,55 mm TiCN, 2 Series, Premium Cobalt	=182N-29.55

2 Series T-A® Carbide Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶
C2 (K20)	31/32”	24,61	0.9688	3/16”	1C22T-0031	❍	1C22A-0031	❍
	63/64”	25,00	0.9843		1C22T-25	❍	1C22A-25	❍
	1”	25,40	1.0000		1C22T-0100	❍	1C22A-0100	❍
		26,00	1.0236		1C22T-26	❍	1C22A-26	❍
	1-1/32”	26,19	1.0313		1C22T-0101	❍	1C22A-0101	❍
	1-3/64”	26,59	1.0469		1C22T-1.046	❍	1C22A-1.046	❍
	1-1/16”	26,99	1.0625		1C22T-0102	❍	1C22A-0102	❍
		27,00	1.0630		1C22T-27	❍	1C22A-27	❍
	1-3/32”	27,78	1.0938		1C22T-0103	❍	1C22A-0103	❍
		28,00	1.1024		1C22T-28	❍	1C22A-28	❍
	1-7/64”	28,18	1.1094		1C22T-1.109	❍	1C22A-1.109	❍
	1-1/8”	28,58	1.1250		1C22T-0104	❍	1C22A-0104	❍
		29,00	1.1417		1C22T-29	❍	1C22A-29	❍
	1-5/32”	29,37	1.1563		1C22T-0105	❍	1C22A-0105	❍
		30,00	1.1811		1C22T-30	❍	1C22A-30	❍
	1-3/16”	30,16	1.1875		1C22T-0106	❍	1C22A-0106	❍
	1-7/32”	30,96	1.2188		1C22T-0107	❍	1C22A-0107	❍
		31,00	1.2205		1C22T-31	❍	1C22A-31	❍
	1-1/4”	31,75	1.2500		1C22T-0108	❍	1C22A-0108	❍
		32,00	1.2598		1C22T-32	❍	1C22A-32	❍
	1-9/32”	32,54	1.2813		1C22T-0109	❍	1C22A-0109	❍
		33,00	1.2992		1C22T-33	❍	1C22A-33	❍
	1-5/16”	33,34	1.3125		1C22T-0110	❍	1C22A-0110	❍
		34,00	1.3386		1C22T-34	❍	1C22A-34	❍
	1-11/32”	34,13	1.3438		1C22T-0111	❍	1C22A-0111	❍
	1-3/8”	34,93	1.3750		1C22T-0112	❍	1C22A-0112	❍
		35,00	1.3780		1C22T-35	❍	1C22A-35	❍
C5 (P40)	31/32”	24,61	0.9688	3/16”	1C52T-0031	❍	1C52A-0031	❍
	63/64”	25,00	0.9843		1C52T-25	❍	1C52A-25	❍
	1”	25,40	1.0000		1C52T-0100	❍	1C52A-0100	❍
		26,00	1.0236		1C52T-26	❍	1C52A-26	❍
	1-1/32”	26,19	1.0313		1C52T-0101	❍	1C52A-0101	❍
	1-3/64”	26,59	1.0469		1C52T-1.046	❍	1C52A-1.046	❍
	1-1/16”	26,99	1.0625		1C52T-0102	❍	1C52A-0102	❍
		27,00	1.0630		1C52T-27	❍	1C52A-27	❍
	1-3/32”	27,78	1.0938		1C52T-0103	❍	1C52A-0103	❍
		28,00	1.1024		1C52T-28	❍	1C52A-28	❍
	1-7/64”	28,18	1.1094		1C52T-1.109	❍	1C52A-1.109	❍
	1-1/8”	28,58	1.1250		1C52T-0104	❍	1C52A-0104	❍
		29,00	1.1417		1C52T-29	❍	1C52A-29	❍
	1-5/32”	29,37	1.1563		1C52T-0105	❍	1C52A-0105	❍
		30,00	1.1811		1C52T-30	❍	1C52A-30	❍
	1-3/16”	30,16	1.1875		1C52T-0106	❍	1C52A-0106	❍
	1-7/32”	30,96	1.2188		1C52T-0107	❍	1C52A-0107	❍
		31,00	1.2205		1C52T-31	❍	1C52A-31	❍
	1-1/4”	31,75	1.2500		1C52T-0108	❍	1C52A-0108	❍
		32,00	1.2598		1C52T-32	❍	1C52A-32	❍
	1-9/32”	32,54	1.2813		1C52T-0109	❍	1C52A-0109	❍
		33,00	1.2992		1C52T-33	❍	1C52A-33	❍
	1-5/16”	33,34	1.3125		1C52T-0110	❍	1C52A-0110	❍
		34,00	1.3386		1C52T-34	❍	1C52A-34	❍
	1-11/32”	34,13	1.3438		1C52T-0111	❍	1C52A-0111	❍
	1-3/8”	34,93	1.3750		1C52T-0112	❍	1C52A-0112	❍
		35,00	1.3780		1C52T-35	❍	1C52A-35	❍

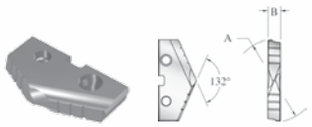
Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -CP, -NP, -IN, -RN, -CN, -NC, -WC, -AN, -TC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

2 Series T-A® Carbide Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Cast Iron Geometry T-A® Drill Inserts

(supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiAIN	❶
C3 (K10)	31/32”	24,61	0.9688	3/16”	1C32A-0031-CI	❍
	63/64”	25,00	0.9843		1C32A-25-CI	❍
	1”	25,40	1.0000		1C32A-0100-CI	❍
		26,00	1.0236		1C32A-26-CI	❍
	1-1/32”	26,19	1.0313		1C32A-0101-CI	❍
	1-3/64”	26,59	1.0469		1C32A-1.046-CI	❍
	1-1/16”	26,99	1.0625		1C32A-0102-CI	❍
		27,00	1.0630		1C32A-27-CI	❍
	1-3/32”	27,78	1.0938		1C32A-0103-CI	❍
		28,00	1.1024		1C32A-28-CI	❍
	1-7/64”	28,18	1.1094		1C32A-1.109-CI	❍
	1-1/8”	28,58	1.1250		1C32A-0104-CI	❍
		29,00	1.1417		1C32A-29-CI	❍
	1-5/32”	29,37	1.1563		1C32A-0105-CI	❍
		30,00	1.1811		1C32A-30-CI	❍
	1-3/16”	30,16	1.1875		1C32A-0106-CI	❍
	1-7/32”	30,96	1.2188		1C32A-0107-CI	❍
		31,00	1.2205		1C32A-31-CI	❍
	1-1/4”	31,75	1.2500		1C32A-0108-CI	❍
		32,00	1.2598		1C32A-32-CI	❍
	1-9/32”	32,54	1.2813		1C32A-0109-CI	❍
		33,00	1.2992		1C32A-33-CI	❍
	1-5/16”	33,34	1.3125		1C32A-0110-CI	❍
		34,00	1.3386		1C32A-34-CI	❍
	1-11/32”	34,13	1.3438		1C32A-0111-CI	❍
	1-3/8”	34,93	1.3750		1C32A-0112-CI	❍
		35,00	1.3780		1C32A-35-CI	❍

This insert is specifically designed for use in **Grey Cast Iron**. (Use standard T-A® geometry for Nodular Iron)

- C3 Carbide offers high wear resistance for improved tool life.
- Cast Iron (-CI) geometry provides a unique design to minimize chipping.
- TiAIN offers exceptional wear resistance and high heat capabilities to increase tool life and penetration rates in Grey Cast Iron.

Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 1-5/64”, TiN, 2 Series, C2 =1C22T-1.0781
Decimals = 1.1450”, TiAIN, 2 Series,C2 =1C22A-1.1450
Metric = 29,50 mm TiCN, 2 Series, C5 =1C52N-29.50

2 Series T-A® Carbide Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)

GEN2 T-A®
(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
C2 (K20)		24,50	0.9646	3/16"	4C22H-24.5	❍
	31/32"	24,61	0.9688		4C22H-0031	❍
	63/64"	25,00	0.9843		4C22H-25	❍
	1"	25,40	1.0000		4C22H-0100	❍
		25,78	1.0150		4C22H-1.015	❍
		26,00	1.0236		4C22H-26	❍
	1-1/32"	26,19	1.0313		4C22H-0101	❍
		26,50	1.0433		4C22H-26.5	❍
	1-3/64"	26,59	1.0469		4C22H-1.046	❍
	1-1/16"	26,99	1.0625		4C22H-0102	❍
		27,00	1.0630		4C22H-27	❍
	1-3/32"	27,78	1.0938		4C22H-0103	❍
		28,00	1.1024		4C22H-28	❍
	1-7/64"	28,18	1.1094		4C22H-1.109	❍
	1-1/8"	28,58	1.1250		4C22H-0104	❍
		29,00	1.1417		4C22H-29	❍
	1-5/32"	29,37	1.1563		4C22H-0105	❍
		30,00	1.1811		4C22H-30	❍
	1-3/16"	30,16	1.1875		4C22H-0106	❍
	1-7/32"	30,96	1.2188		4C22H-0107	❍
		31,00	1.2205		4C22H-31	❍
		31,26	1.2310		4C22H-1.231	❍
	1-1/4"	31,75	1.2500		4C22H-0108	❍
		32,00	1.2598		4C22H-32	❍
		32,50	1.2795		4C22H-32.5	❍
	1-9/32"	32,54	1.2813		4C22H-0109	❍
		33,00	1.2992		4C22H-33	❍
	1-5/16"	33,34	1.3125		4C22H-0110	❍
		34,00	1.3386		4C22H-34	❍
	1-11/32"	34,13	1.3438		4C22H-0111	❍
	1-3/8"	34,93	1.3750		4C22H-0112	❍
		35,00	1.3780		4C22H-35	❍
C1 (K35)	31/32"	24,61	0.9688		4C12H-0031	❍
	63/64"	25,00	0.9843		4C12H-25	❍
	1"	25,40	1.0000		4C12H-0100	❍
	1-1/64"	25,78	1.0150		4C12H-1.015	❍
		26,00	1.0236		4C12H-26	❍
	1-1/32"	26,19	1.0313		4C12H-0101	❍
	1-3/64"	26,59	1.0469		4C12H-1.046	❍
	1-1/16"	26,99	1.0625		4C12H-0102	❍
		27,00	1.0630		4C12H-27	❍
	1-3/32"	27,78	1.0938		4C12H-0103	❍
		28,00	1.1024		4C12H-28	❍
	1-7/64"	28,18	1.1094		4C12H-1.109	❍
	1-1/8"	28,58	1.1250		4C12H-0104	❍
		29,00	1.1417		4C12H-29	❍
	1-5/32"	29,37	1.1563		4C12H-0105	❍
		30,00	1.1811		4C12H-30	❍
	1-3/16"	30,16	1.1875		4C12H-0106	❍
	1-7/32"	30,96	1.2188		4C12H-0107	❍
		31,00	1.2205		4C12H-31	❍
		31,26	1.2310		4C12H-1.231	❍
	1-1/4"	31,75	1.2500		4C12H-0108	❍
		32,00	1.2598		4C12H-32	❍
	1-9/32"	32,54	1.2813		4C12H-0109	❍
		33,00	1.2992		4C12H-33	❍
	1-5/16"	33,34	1.3125		4C12H-0110	❍
		34,00	1.3386		4C12H-34	❍
	1-11/32"	34,13	1.3438		4C12H-0111	❍
	1-3/8"	34,93	1.3750		4C12H-0112	❍
		35,00	1.3780		4C12H-35	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Supplied with Allied's exclusive AM200® coating for increased tool life

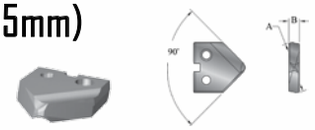
Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

Geometries available (see page C107 for details): -HE
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

2 Series T-A® HSS Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



90º Spot and Chamfer T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt	31/32”	24,61	0.9688	3/16”	152T-0031-SP	▲	152A-0031-SP	▲	152N-0031-SP	▲
	63/64”	25,00	0.9843		152T-25-SP	▲	152A-25-SP	▲	152N-25-SP	▲
	1”	25,40	1.0000		152T-0100-SP	❍	152A-0100-SP	▲	152N-0100-SP	▲
	1-1/64”	25,78	1.0150		152T-1.015-SP	▲	152A-1.015-SP	▲	152N-1.015-SP	▲
		26,00	1.0236		152T-26-SP	▲	152A-26-SP	▲	152N-26-SP	▲
	1-1/32”	26,19	1.0313		152T-0101-SP	▲	152A-0101-SP	▲	152N-0101-SP	▲
	1-3/64”	26,59	1.0469		152T-1.046-SP	▲	152A-1.046-SP	▲	152N-1.046-SP	▲
	1-1/16”	26,99	1.0625		152T-0102-SP	❍	152A-0102-SP	▲	152N-0102-SP	▲
		27,00	1.0630		152T-27-SP	▲	152A-27-SP	▲	152N-27-SP	▲
	1-3/32”	27,78	1.0938		152T-0103-SP	▲	152A-0103-SP	▲	152N-0103-SP	▲
		28,00	1.1024		152T-28-SP	▲	152A-28-SP	▲	152N-28-SP	▲
	1-7/64”	28,18	1.1094		152T-1.109-SP	▲	152A-1.109-SP	▲	152N-1.109-SP	▲
	1-1/8”	28,58	1.1250		152T-0104-SP	▲	152A-0104-SP	▲	152N-0104-SP	▲
		29,00	1.1417		152T-29-SP	▲	152A-29-SP	▲	152N-29-SP	▲
	1-5/32”	29,37	1.1563		152T-0105-SP	▲	152A-0105-SP	▲	152N-0105-SP	▲
		30,00	1.1811		152T-30-SP	▲	152A-30-SP	▲	152N-30-SP	▲
	1-3/16”	30,16	1.1875		152T-0106-SP	▲	152A-0106-SP	▲	152N-0106-SP	▲
	1-7/32”	30,96	1.2188		152T-0107-SP	▲	152A-0107-SP	▲	152N-0107-SP	▲
		31,00	1.2205		152T-31-SP	▲	152A-31-SP	▲	152N-31-SP	▲
	1-1/4”	31,75	1.2500		152T-0108-SP	❍	152A-0108-SP	❍	152N-0108-SP	❍
		32,00	1.2598		152T-32-SP	▲	152A-32-SP	▲	152N-32-SP	▲
	1-9/32”	32,54	1.2813		152T-0109-SP	▲	152A-0109-SP	▲	152N-0109-SP	▲
		33,00	1.2992		152T-33-SP	▲	152A-33-SP	▲	152N-33-SP	▲
	1-5/16”	33,34	1.3125		152T-0110-SP	▲	152A-0110-SP	▲	152N-0110-SP	▲
		34,00	1.3386		152T-34-SP	▲	152A-34-SP	▲	152N-34-SP	▲
	1-11/32”	34,13	1.3438		152T-0111-SP	▲	152A-0111-SP	▲	152N-0111-SP	▲
	1-3/8”	34,93	1.3750		152T-0112-SP	▲	152A-0112-SP	▲	152N-0112-SP	▲
		35,00	1.3780		152T-35-SP	❍	152A-35-SP	❍	152N-35-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

***Thin Wall** U.S. Patent No.: 7,147,414

****Notch Point®** U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

****150º Structural Steel** U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

Structural Steel T-A® Drill Inserts (supplied in 2 piece packages)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability *Thin Wall TiAlN	❶	**Notch Point® TiAlN	❶	150º Structural Steel TiAlN	❶
Super Cobalt	1”	25,40	1.0000	3/16”	152A-0100-TW	❍	152A-0100-NP	❍	152A-0100-SS	❍
	-	26,00	1.0236		152A-26-TW	❍	152A-26-NP	❍	152A-26-SS	❍
	1-1/16”	26,99	1.0625		152A-0102-TW	❍	152A-0102-NP	❍	152A-0102-SS	❍
	-	27,00	1.0630		152A-27-TW	❍	152A-27-NP	❍	152A-27-SS	❍
	1-1/8”	28,58	1.1250		152A-0104-TW	❍	152A-0104-NP	❍	152A-0104-SS	❍
	1-3/16”	30,16	1.1875		152A-0106-TW	❍	152A-0106-NP	❍	152A-0106-SS	❍
	-	31,00	1.2205		152A-31-TW	❍	152A-31-NP	❍	152A-31-SS	❍
	1-1/4”	31,75	1.2500		152A-0108-TW	❍	152A-0108-NP	❍	152A-0108-SS	❍
	-	33,00	1.2992		152A-33-TW	❍	152A-33-NP	❍	152A-33-SS	❍
	1-5/16”	33,34	1.3125		152A-0110-TW	❍	152A-0110-NP	❍	152A-0110-SS	❍
	1-3/8”	34,93	1.3750		152A-0112-TW	❍	152A-0112-NP	❍	152A-0112-SS	❍
Material	Fractional Equivalent	(mm)	(Inch)	Thickness	*Thin Wall AM200®	❶	**Notch Point® AM200®	❶	150º Structural Steel AM200®	❶
Super Cobalt	1”	25,40	1.0000	3/16”	152H-0100-TW	❍	152H-0100-NP	❍	152H-0100-SS	❍
	-	26,00	1.0236		152H-26-TW	❍	152H-26-NP	❍	152H-26-SS	❍
	1-1/16”	26,99	1.0625		152H-0102-TW	❍	152H-0102-NP	❍	152H-0102-SS	❍
	-	27,00	1.0630		152H-27-TW	❍	152H-27-NP	❍	152H-27-SS	❍
	1-1/8”	28,58	1.1250		152H-0104-TW	❍	152H-0104-NP	❍	152H-0104-SS	❍
	1-3/16”	30,16	1.1875		152H-0106-TW	❍	152H-0106-NP	❍	152H-0106-SS	❍
	-	31,00	1.2205		152H-31-TW	❍	152H-31-NP	❍	152H-31-SS	❍
	1-1/4”	31,75	1.2500		152H-0108-TW	❍	152H-0108-NP	❍	152H-0108-SS	❍
	-	33,00	1.2992		152H-33-TW	❍	152H-33-NP	❍	152H-33-SS	❍
	1-5/16”	33,34	1.3125		152H-0110-TW	❍	152H-0110-NP	❍	152H-0110-SS	❍
	1-3/8”	34,93	1.3750		152H-0112-TW	❍	152H-0112-NP	❍	152H-0112-SS	❍

*Use Thin Wall Drill Inserts for material up to 7/16” thick. **Use Notch Point® Geometry or 150º Structural Steel Drill Inserts for material over 7/16” thick. Use 150º Structural Steel for reduced exit burr.

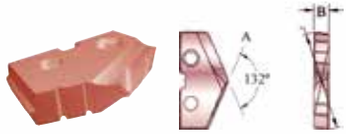
2 Series T-A® HSS Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)

Tube Sheet Drilling T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893; 7,241,089; 7,371,035 & 7,547,166
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

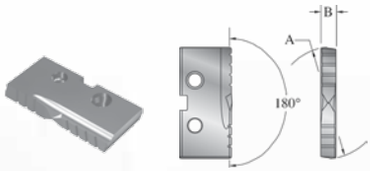


Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	AM200®	❶
HSS	-	25,60	1.0080	3/16”	132H-1.0080-IN	❍
	1-1/64”	25,80	1.0156		132H-1.015-IN	❍
	1-1/32”	26,19	1.0313		132H-0101-IN	❍
Super Cobalt	-	25,60	1.0080		152H-1.0080-IN	❍
	1-1/64”	25,80	1.0156		152H-1.015-IN	❍
	1-1/32”	26,19	1.0313		152H-0101-IN	❍

Flat Bottom T-A® Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
Super Cobalt	31/32”	24,61	0.9688	3/16”	152T-0031-FB	❍
	63/64”	25,00	0.9843		152T-25-FB	❍
	1”	25,40	1.0000		152T-0100-FB	❍
	1-1/64”	25,80	1.0156		152T-1.015-FB	❍
		26,00	1.0236		152T-26-FB	❍
	1-1/32”	26,19	1.0313		152T-0101-FB	❍
	1-1/16”	26,99	1.0625		152T-0102-FB	❍
		27,00	1.0630		152T-27-FB	❍
	1-3/32”	27,78	1.0938		152T-0103-FB	❍
		28,00	1.1024		152T-28-FB	❍
	1-1/8”	28,58	1.1250		152T-0104-FB	❍
		29,00	1.1417		152T-29-FB	❍
	1-5/32”	29,37	1.1563		152T-0105-FB	❍
		30,00	1.1811		152T-30-FB	❍
	1-3/16”	30,16	1.1875		152T-0106-FB	❍
	1-7/32”	30,96	1.2188		152T-0107-FB	❍
		31,00	1.2205		152T-31-FB	❍
	1-1/4”	31,75	1.2500		152T-0108-FB	❍
		32,00	1.2598		152T-32-FB	❍
	1-9/32”	32,54	1.2813		152T-0109-FB	❍
		33,00	1.2992		152T-33-FB	❍
	1-5/16”	33,34	1.3125		152T-0110-FB	❍
		34,00	1.3386		152T-34-FB	❍
	1-11/32”	34,13	1.3438		152T-0111-FB	❍
	1-3/8”	34,93	1.3750		152T-0112-FB	❍
		35,00	1.3780		152T-35-FB	❍

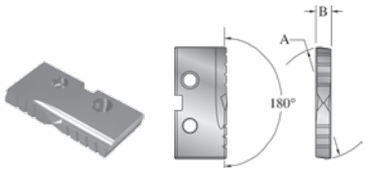
Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

2 Series T-A® Carbide Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Flat Bottom T-A® Carbide Drill Inserts

(supplied in 2 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
C2 (K20)	31/32”	24,61	0.9688	3/16”	1C22T-0031-FB	▲
	63/64”	25,00	0.9843		1C22T-25-FB	▲
	1”	25,40	1.0000		1C22T-0100-FB	▲
	1-1/64”	25,80	1.0156		1C22T-1.015-FB	▲
		26,00	1.0236		1C22T-26-FB	▲
	1-1/32”	26,19	1.0313		1C22T-0101-FB	▲
	1-1/16”	26,99	1.0625		1C22T-0102-FB	▲
		27,00	1.0630		1C22T-27-FB	▲
	1-3/32”	27,78	1.0938		1C22T-0103-FB	▲
		28,00	1.1024		1C22T-28-FB	▲
	1-1/8”	28,58	1.1250		1C22T-0104-FB	▲
		29,00	1.1417		1C22T-29-FB	▲
	1-5/32”	29,37	1.1563		1C22T-0105-FB	▲
		30,00	1.1811		1C22T-30-FB	▲
	1-3/16”	30,16	1.1875		1C22T-0106-FB	▲
	1-7/32”	30,96	1.2188		1C22T-0107-FB	▲
		31,00	1.2205		1C22T-31-FB	▲
	1-1/4”	31,75	1.2500		1C22T-0108-FB	▲
		32,00	1.2598		1C22T-32-FB	▲
	1-9/32”	32,54	1.2813		1C22T-0109-FB	▲
		33,00	1.2992		1C22T-33-FB	▲
	1-5/16”	33,34	1.3125		1C22T-0110-FB	▲
		34,00	1.3386		1C22T-34-FB	▲
	1-11/32”	34,13	1.3438		1C22T-0111-FB	▲
	1-3/8”	34,93	1.3750		1C22T-0112-FB	▲
		35,00	1.3780		1C22T-35-FB	▲

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

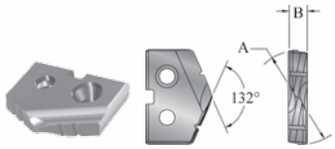
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 1-21/64”, TiN, 2 Series, Super Cobalt, Flat Bottom	=152T-1.3281-FB
Decimals = 1.0650”, TiAlN, 2 Series,Super Cobalt, Flat Bottom	=152A-1.0650-FB
Metric = 26,20 mm Diamond Film Coated, 2 Series, N2 Carbide	=1N22D-26.20

2 Series T-A® Carbide Drill Inserts

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Diamond Coated T-A® Carbide Drill Inserts

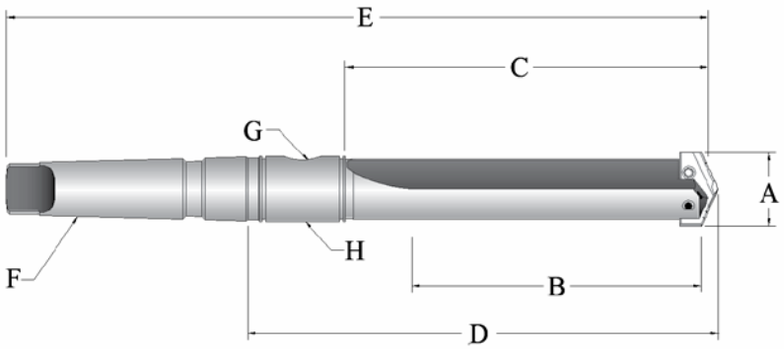
(supplied in 1 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability CVD Diamond	❶	Crystalline, Diamond Film Coating produces:
N2	31/32”	24,61	0.9688	3/16”	1N22D-0031	▲	• Increased Hardness • Increased Durability • Increased Performance
	63/64”	25,00	0.9843		1N22D-25	▲	
	1”	25,40	1.0000		1N22D-0100	▲	
	1-1/64”	25,80	1.0156		1N22D-1.015	▲	
		26,00	1.0236		1N22D-26	▲	Extends tool life 30-50 times versus uncoated carbide drill inserts
	1-1/32”	26,19	1.0313		1N22D-0101	▲	
	1-3/64”	26,59	1.0469		1N22D-1.046	▲	
	1-1/16”	26,99	1.0625		1N22D-0102	▲	
		27,00	1.0630		1N22D-27	▲	
	1-3/32”	27,78	1.0938		1N22D-0103	▲	Used in non-ferrous / non-metallic applications
		28,00	1.1024		1N22D-28	▲	
	1-7/64”	28,18	1.1094		1N22D-1.109	▲	
	1-1/8”	28,58	1.1250		1N22D-0104	▲	
		29,00	1.1417		1N22D-29	▲	
	1-5/32”	29,37	1.1563		1N22D-0105	▲	
		30,00	1.1811		1N22D-30	▲	
	1-3/16”	30,16	1.1875		1N22D-0106	▲	
	1-7/32”	30,96	1.2188		1N22D-0107	▲	
		31,00	1.2205		1N22D-31	▲	
	1-1/4”	31,75	1.2500		1N22D-0108	▲	
		32,00	1.2598		1N22D-32	▲	
	1-9/32”	32,54	1.2813		1N22D-0109	▲	
		33,00	1.2992		1N22D-33	▲	
	1-5/16”	33,34	1.3125		1N22D-0110	▲	
		34,00	1.3386		1N22D-34	▲	
	1-11/32”	34,13	1.3438		1N22D-0111	▲	
	1-3/8”	34,93	1.3750		1N22D-0112	▲	
		35,00	1.3780		1N22D-35	▲	

Shaded diameters will also fit 2.5 series T-A® Holders. Please refer to the T-A® Holder section of this catalog.

2 and 2.5 Series T-A® Holders

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22020S-003I	31/32" - 1-3/8"	3-3/8"	4-1/2"	6-15/64"	9-25/32"	#3	1/8"	2T-3SR
	22020S-004I	31/32" - 1-3/8"	3-3/8"	4-1/2"	6-19/64"	10-25/32"	#4	1/8"	2T-3SR
Short	22025S-003I	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	6-15/64"	9-25/32"	#3	1/8"	2T-4SR
	22025S-004I	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	6-37/64"	11-1/16"	#4	1/4"	2T-4SR
Intermediate	23020S-004I	31/32" - 1-3/8"	5-3/8"	6-1/2"	8-19/64"	12-25/32"	#4	1/8"	2T-3SR
Intermediate	23025S-004I	1-3/16" - 1-3/8"	5-3/8"	6-1/2"	8-37/64"	13-1/16"	#4	1/4"	2T-4SR
Standard	24020S-003I	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	2T-3SR
	24020S-004I	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-19/64"	14-25/32"	#4	1/8"	2T-3SR
Standard	24025S-003I	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	2T-4SR
	24025S-004I	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-37/64"	15-1/16"	#4	1/8"	2T-4SR
⚠ Extended	25020S-004I	31/32" - 1-3/8"	11-3/8"	12-1/2"	14-15/64"	18-25/32"	#4	1/4"	2T-3SR
⚠ Extended	25025S-004I	1-3/16" - 1-3/8"	11-3/8"	12-1/2"	14-37/64"	19-1/16"	#4	1/4"	2T-4SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22020S-004M	25,0 - 35,0	85,7	114,3	160,4	273,8	#4**	1/8"*	2T-3SRM
Short	22025S-004M	30,0 - 35,0	85,7	114,3	167,6	281,0	#4**	1/4"*	2T-4SRM

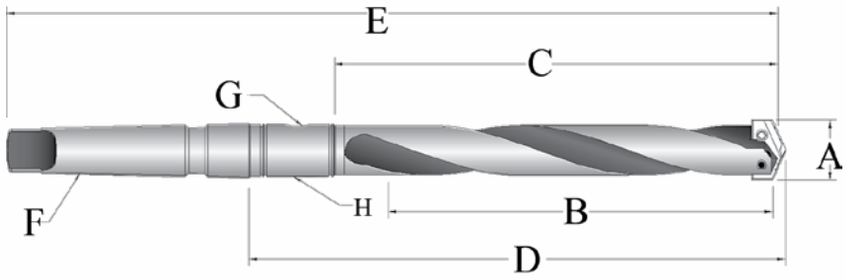
Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	2 Series
Grey	2.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

2 and 2.5 Series T-A® Holders

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Intermediate	23020H-004I	31/32" - 1-3/8"	5-3/8"	6-1/2"	8-19/64"	12-25/32"	#4	1/8"	2T-3SR
Intermediate	23025H-004I	1-3/16" - 1-3/8"	5-3/8"	6-1/2"	8-37/64"	13-1/16"	#4	1/4"	2T-4SR
Standard	24020H-003I	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	2T-3SR
	24020H-004I	31/32" - 1-3/8"	7-3/8"	8-1/2"	10-19/64"	14-25/32"	#4	1/8"	2T-3SR
Standard	24025H-003I	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-15/64"	13-25/32"	#3	1/8"	2T-4SR
	24025H-004I	1-3/16" - 1-3/8"	7-3/8"	8-1/2"	10-37/64"	15-1/16"	#4	1/4"	2T-4SR
⚠ Extended	25020H-004I	31/32" - 1-3/8"	11-3/8"	12-1/2"	14-15/64"	18-25/32"	#4	1/8"	2T-3SR
⚠ Extended	25025H-004I	1-3/16" - 1-3/8"	11-3/8"	12-1/2"	14-37/64"	19-1/16"	#4	1/4"	2T-4SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Intermediate	23020H-004M	25,0 - 35,0	136,5	165,1	211,2	324,6	#4**	1/8"*	2T-3SRM
Intermediate	23025H-004M	30,0 - 35,0	136,5	165,1	218,4	331,8	#4**	1/4"*	2T-4SRM
Standard	24020H-004M	25,0 - 35,0	187,3	215,9	262,0	375,4	#4**	1/8"*	2T-3SRM
Standard	24025H-004M	30,0 - 35,0	187,3	215,9	269,2	382,6	#4**	1/4"*	2T-4SRM
⚠ Extended	25020H-004M	25,0 - 35,0	289,0	317,5	363,6	477,0	#4**	1/8"*	2T-3SRM
⚠ Extended	25025H-004M	30,0 - 35,0	289,0	317,5	370,8	484,2	#4**	1/4"*	2T-4SRM

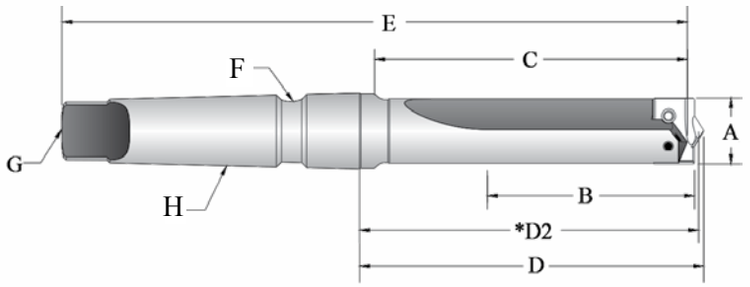
Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	2 Series
Grey	2.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

2 and 2.5 Series T-A® Holders

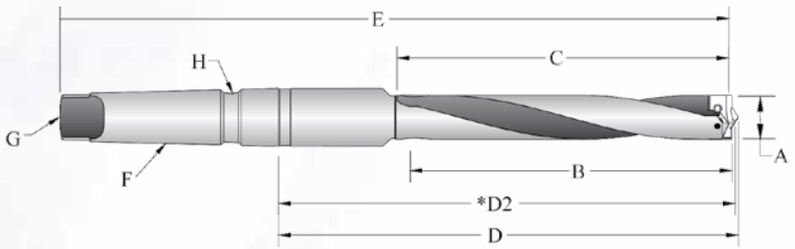
Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Structural Steel Taper Shank Helical Flute Holders

Length	Item Number	A	B	C	D	*D2	E	F	G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Ref. Length	Overall Length	MT	Coolant Inlet Style	
Short	22020S-004IS100	1" - 1-3/8"	3-3/8"	4-1/2"	4-63/64"	4-57/64"	9-3/8"	#4	TTC	TSC
Short	22025S-004IS112	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	4-63/64"	4-57/64"	9-3/8"	#4	TTC	TSC
Metric (mm)										
Short	22020S-004IS100	26	86	114	126.6	124.2	238	#4	TTC	TSC
Short	22025S-004IS112	31	86	114	126.6	124.2	238	#4	TTC	TSC

*Dimension if using a Structural Steel Holder with Notch Point® T-A® Drill Insert Geometry.



Structural Steel Taper Shank Helical Flute Holders

Length	Item Number	A	B	C	D	*D2	E	F	G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Ref. Length	Overall Length	MT	Coolant Inlet Style	
Standard	24020H-004IS100	1" - 1-3/8"	5-3/8"	6-1/2"	6-63/64"	6-57/64"	11-3/8"	#4	TTC	TSC
Standard	24025H-004IS112	1-3/16" - 1-3/8"	5-3/8"	6-1/2"	6-63/64"	6-57/64"	11-3/8"	#4	TTC	TSC
⚠ Extended	25020H-003IS100	1" - 1-3/8"	6-1/2	9-11/32"	9-3/4"	9-29/64"	13-7/32"	#3	TTC	TSC
⚠ Extended	25020H-004IS100	1" - 1-3/8"	6-1/2	9-7/32"	9-3/4"	9-43/64"	14-5/32"	#4	TTC	TSC
⚠ Long	26020H-004IS100	1" - 1-3/8"	6-1/2	16"	16-15/32"	16-25/64"	20-7/8"	#4	TTC	TSC
Metric (mm)										
Standard	24020H-004IS100	26	137	165	177.4	175.0	289	#4	TTC	TSC
Standard	24025H-004IS112	31	137	165	177.4	175.0	289	#4	TTC	TSC
⚠ Extended	25020H-003IS100	26	165	237	247.7	240.1	336	#3	TTC	TSC
⚠ Extended	25020H-004IS100	26	165	237	247.7	245.7	360	#4	TTC	TSC
⚠ Long	26020H-004IS100	26	165	406	418.3	416.3	530	#4	TTC	TSC

*Dimension if using a Structural Steel Holder with Notch Point® T-A® Drill Insert Geometry.

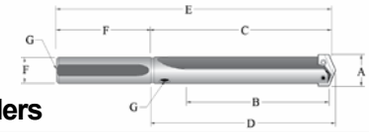
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

White	2 Series
Grey	2.5 Series

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C108 for Structural Steel Guidelines & C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

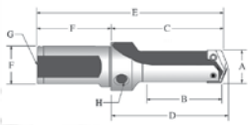
2 and 2.5 Series T-A® Holders

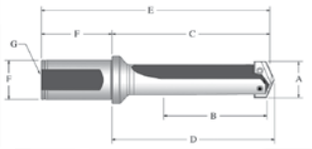
Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	
Short	22020S-100L	31/32" - 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1"	3-1/2"	1/8"
	22020S-125L	31/32" - 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1-1/4"	3-1/2"	1/8"
Short	22025S-100L	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1"	3-1/2"	1/8"
	22025S-125L	1-3/16" - 1-3/8"	3-3/8"	4-1/2"	4-41/64"	8"	1-1/4"	3-1/2"	1/8"
Intermediate	23020S-125L	31/32" - 1-3/8"	5-3/8"	6-1/2"	6-41/64"	10"	1-1/4"	3-1/2"	1/8"
Intermediate	23025S-125L	1-3/16" - 1-3/8"	5-3/8"	6-1/2"	6-41/64"	10"	1-1/4"	3-1/2"	1/8"
Standard	24020S-100L	31/32" - 1-3/8"	7-3/8"	8-1/2	8-41/64"	12"	1"	3-1/2"	1/8"
	24020S-125L	31/32" - 1-3/8"	7-3/8"	8-1/2	8-41/64"	12"	1-1/4"	3-1/2"	1/8"
Standard	24025S-100L	1-3/16" - 1-3/8"	7-3/8"	8-1/2	8-41/64"	12"	1"	3-1/2"	1/8"
	24025S-125L	1-3/16" - 1-3/8"	7-3/8"	8-1/2	8-41/64"	12"	1-1/4"	3-1/2"	1/8"
⚠ Extended	25020S-125L	31/32" - 1-3/8"	11-3/8"	12-1/2"	12-41/64"	16"	1-1/4"	3-1/2"	1/8"
⚠ Extended	25025S-125L	1-3/16" - 1-3/8"	11-3/8"	12-1/2"	12-41/64"	16"	1-1/4"	3-1/2"	1/8"
⚠ XL	27020S-125L	31/32" - 1-3/8"	20-1/8"	21-1/4"	21-25/64"	24-3/4"	1-1/4"	3-1/2"	1/8"
⚠ 3XL	29020S-125L	31/32" - 1-3/8"	27-1/4"	28-3/8"	28-33/64"	31-7/8"	1-1/4"	3-1/2"	1/8"





Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	21020S-125F	31/32" - 1-3/8"	2-1/4"	3-31/64"	3-5/8"	5-49/64"	1-1/4"	2-9/32"	1/4"	1/8"
Stub	21025S-125F	1-3/16" - 1-3/8"	3-5/8"	4-55/64"	5"	7-9/64"	1-1/4"	2-9/32"	1/4"	1/8"
Short	22020S-125F	31/32" - 1-3/8"	3-3/8"	5-1/16"	5-13/64"	7-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Short	22025S-125F	1-3/16" - 1-3/8"	3-3/8"	5-1/16"	5-13/64"	7-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Intermediate	23020S-125F	31/32" - 1-3/8"	5-3/8"	7-1/16"	7-13/64"	9-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Intermediate	23025S-125F	1-3/16" - 1-3/8"	5-3/8"	7-1/16"	7-13/64"	9-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Standard	24020S-125F	31/32" - 1-3/8"	7-3/8"	9-1/16"	9-13/64"	11-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Standard	24025S-125F	1-3/16" - 1-3/8"	7-3/8"	9-1/16"	9-13/64"	11-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Extended	25020S-125F	31/32" - 1-3/8"	11-3/8"	13-1/16"	13-13/64"	15-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Extended	25025S-125F	1-3/16" - 1-3/8"	11-3/8"	13-1/16"	13-13/64"	15-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	21020S-32FM	25,0 - 35,0	57,2	88,5	92,1	148,5	32,0	60,0	1/4"*	1/8"*
Stub	21025S-32FM	30,0 - 35,0	92,1	123,4	127,0	183,4	32,0	60,0	1/4"*	1/8"*
Short	22020S-32FM	25,0 - 35,0	85,7	128,6	132,2	188,6	32,0	60,0	1/4"*	N/A
Short	22025S-32FM	30,0 - 35,0	85,7	128,6	132,2	188,6	32,0	60,0	1/4"*	N/A
⚠ XL	27020S-32FM	25,0 - 35,0	511	554,1	557,7	614,1	32,0	60,0	1/4"*	N/A
⚠ 3XL	29020S-32FM	25,0 - 35,0	692	735,1	738,7	795,1	32,0	60,0	1/4"*	N/A

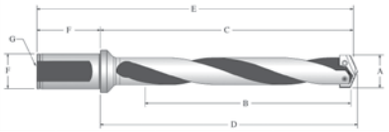
NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

White	2 Series
Grey	2.5 Series

2 and 2.5 Series T-A® Holders

Range: 0.961 to 1.380 inch (24,41mm to 35,05mm)



Flanged Shank Helical Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia.	Length	Rear	Side
Intermediate	23020H-125F	31/32" - 1-3/8"	5-3/8"	7-1/16"	7-13/64"	9-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Intermediate	23025H-125F	1-3/16" - 1-3/8"	5-3/8"	7-1/16"	7-13/64"	9-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Standard	24020H-125F	31/32" - 1-3/8"	7-3/8"	9-1/16"	9-13/64"	11-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Standard	24025H-125F	1-3/16" - 1-3/8"	7-3/8"	9-1/16"	9-13/64"	11-11/32"	1-1/4"	2-9/32"	1/4"	N/A
⚠ Extended	25020H-125F	31/32" - 1-3/8"	11-3/8"	13-1/16"	13-13/64"	15-11/32"	1-1/4"	2-9/32"	1/4"	N/A
⚠ Extended	25025H-125F	1-3/16" - 1-3/8"	11-3/8"	13-1/16"	13-13/64"	15-11/32"	1-1/4"	2-9/32"	1/4"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Intermediate	23020H-32FM	25,0 - 35,0	136,5	179,4	183,0	239,4	32,0	60,0	1/4"*	N/A
Intermediate	23025H-32FM	30,0 - 35,0	136,5	179,4	183,0	239,4	32,0	60,0	1/4"*	N/A
Standard	24020H-32FM	25,0 - 35,0	187,3	230,2	233,8	290,2	32,0	60,0	1/4"*	N/A
Standard	24025H-32FM	30,0 - 35,0	187,3	230,2	233,8	290,2	32,0	60,0	1/4"*	N/A
⚠ Extended	25020H-32FM	25,0 - 35,0	288,9	331,8	335,4	391,8	32,0	60,0	1/4"*	N/A
⚠ Extended	25025H-32FM	30,0 - 35,0	288,9	331,8	335,4	391,8	32,0	60,0	1/4"*	N/A

NOTE: Refer to page C108 for instructions on the recommended use of the 0.5, 1.5, or 2.5 series holders

⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

White	2 Series
Grey	2.5 Series

T-ACR 45® Chamfer Ring and Accessories

Item Number	Minimum Drill Diameter (inch)	Maximum Drill Diameter (inch)	Maximum Chamfer Diameter (inch)	Chamfer Ring Diameter	Chamfer Ring Length
T-ACR-45-2	0.9610	1.380	1.568	1-51/64"	1"

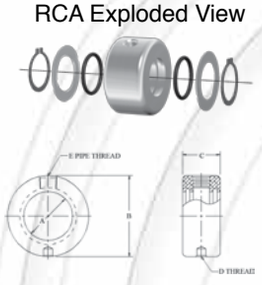
Insert Number (2 Pc Pack)	Insert Screw (10 Pieces)	TORX Plus Driver	Clamping Screw (10 Pieces)	TORX Plus Driver
T-ACRI-45-B-C5A	7255-IP8-10	8IP-8	7514-IP20-10	8IP-20

T-ACR 45® Chamfer Rings are designed for use with stub, short, intermediate, and standard length T-A® Drilling System holders only.

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
Inch	⚠ ◣2T-3SR	1"	2-1/8"	1-1/8"	5/15" - NC	1/8"	2T1-3SR	2T1-3OR-10
	⚠ ◣2T-4SR	1-1/4"	2-1/2"	1-3/8"	3/8" - NC	1/4"	2T1-4SR	2T1-4OR-10
Metric	⚠ ◣2T-3SRM	25,40	53,97	28,57	M8 X 1,25	1/8"*	2T1-3SR	2T1-3OR-10
	⚠ ◣2T-4SRM	31,75	63,50	34,92	M10 X 1,50	1/4"*	2T1-4SR	2T1-4OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

◣ Refer to page C110 for Proper RCA Assembly

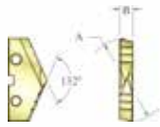
Replacement TORX Plus Screws

(supplied in 10 piece packages)

Holder Series	TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	Preset Torque TORX Plus Hand Driver	Replacement TORX Plus Tips	INCH		METRIC	
						Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
2	7495-IP15-10	7495N-IP15-10	8IP-15	8IP-15TL	8IP-15B	31/32" - 1-3/8"	61.0	25,0mm - 35,00mm	690
2.5	7495-IP15-10	7495N-IP15-10	8IP-15	8IP-15TL	8IP-15B	1-3/16" - 1-3/8"	61.0	30,0mm - 35,00mm	690

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

3 Series Original T-A® Drill Inserts
Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)

T-A® Drill Inserts
(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
Super Cobalt	1-13/32”	35,72	1.4063	1/4”	153T-0113	❍
		36,00	1.4173		153T-36	❍
	1-7/16”	36,51	1.4375		153T-0114	❍
		37,00	1.4567		153T-37	❍
	1-15/32”	37,31	1.4688		153T-0115	❍
		38,00	1.4961		153T-38	❍
	1-1/2”	38,10	1.5000		153T-0116	❍
	1-17/32”	38,89	1.5313		153T-0117	❍
		39,00	1.5354		153T-39	❍
	1-9/16”	39,69	1.5625		153T-0118	❍
		40,00	1.5748		153T-40	❍
	1-19/32”	40,48	1.5938		153T-0119	❍
		41,00	1.6142		153T-41	❍
	1-5/8”	41,28	1.6250		153T-0120	❍
		42,00	1.6535		153T-42	❍
	1-21/32”	42,07	1.6563		153T-0121	❍
	1-11/16”	42,86	1.6875		153T-0122	❍
		43,00	1.6929		153T-43	❍
	1-23/32”	43,66	1.7188		153T-0123	❍
		44,00	1.7323		153T-44	❍
	1-3/4”	44,45	1.7500		153T-0124	❍
		45,00	1.7717		153T-45	❍
	1-25/32	45,24	1.7813		153T-0125	❍
		46,00	1.8110		153T-46	❍
	1-13/16”	46,04	1.8125		153T-0126	❍
	1-27/32”	46,83	1.8438		153T-0127	❍
		47,00	1.8504		153T-47	❍
	1-7/8”	47,63	1.8750		153T-0128	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

3 Series T-A® HSS Drill Inserts

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
HSS	1-13/32”	35,72	1.4063	1/4”	433T-0113	❍
		36,00	1.4173		433T-36	❍
	1-7/16”	36,51	1.4375		433T-0114	❍
		37,00	1.4567		433T-37	❍
	1-15/32”	37,31	1.4688		433T-0115	❍
		38,00	1.4961		433T-38	❍
	1-1/2”	38,10	1.5000		433T-0116	❍
	1-17/32”	38,89	1.5313		433T-0117	❍
		39,00	1.5354		433T-39	❍
	1-9/16”	39,69	1.5625		433T-0118	❍
		40,00	1.5748		433T-40	❍
	1-19/32”	40,48	1.5938		433T-0119	❍
		41,00	1.6142		433T-41	❍
	1-5/8”	41,28	1.6250		433T-0120	❍
		42,00	1.6535		433T-42	❍
	1-21/32”	42,07	1.6563		433T-0121	❍
	1-11/16”	42,86	1.6875		433T-0122	❍
		43,00	1.6929		433T-43	❍
	1-23/32”	43,66	1.7188		433T-0123	❍
		44,00	1.7323		433T-44	❍
	1-3/4”	44,45	1.7500		433T-0124	❍
		45,00	1.7717		433T-45	❍
	1-25/32”	45,24	1.7813		433T-0125	❍
		46,00	1.8110		433T-46	❍
	1-13/16”	46,04	1.8125		433T-0126	❍
	1-27/32”	46,83	1.8438		433T-0127	❍
		47,00	1.8504		433T-47	❍
	1-7/8”	47,63	1.8750		433T-0128	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC, -HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 1-35/64”, TiN, 3 Series, Super Cobalt, GEN2 T-A®	=453T-1.5469
Decimals = 1.6500”, TiAlN, 3 Series, Super Cobalt, GEN2 T-A®	=453A-1.6500
Metric = 47,25 mm TiCN, 3 Series, C5	=1C53N-47.25

3 Series T-A® HSS Drill Inserts

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	AM200®	❶
Super Cobalt	1-13/32”	35,72	1.4063	1/4”	453T-0113	❍	453H-0113	❍
		36,00	1.4173		453T-36	❍	453H-36	❍
	1-7/16”	36,51	1.4375		453T-0114	❍	453H-0114	❍
		37,00	1.4567		453T-37	❍	453H-37	❍
	1-15/32”	37,31	1.4688		453T-0115	❍	453H-0115	❍
		38,00	1.4961		453T-38	❍	453H-38	❍
	1-1/2”	38,10	1.5000		453T-0116	❍	453H-0116	❍
	1-17/32”	38,89	1.5313		453T-0117	❍	453H-0117	❍
		39,00	1.5354		453T-39	❍	453H-39	❍
		39,29	1.5470		453T-1.547	▲	453H-1.547	❍
	1-9/16”	39,69	1.5625		453T-0118	❍	453H-0118	❍
		40,00	1.5748		453T-40	❍	453H-40	❍
	1-19/32”	40,48	1.5938		453T-0119	❍	453H-0119	❍
		41,00	1.6142		453T-41	❍	453H-41	❍
	1-5/8”	41,28	1.6250		453T-0120	❍	453H-0120	❍
		42,00	1.6535		453T-42	❍	453H-42	❍
	1-21/32”	42,07	1.6563		453T-0121	❍	453H-0121	❍
	1-11/16”	42,86	1.6875		453T-0122	❍	453H-0122	❍
		43,00	1.6929		453T-43	❍	453H-43	❍
	1-23/32”	43,66	1.7188		453T-0123	❍	453H-0123	❍
		44,00	1.7323		453T-44	❍	453H-44	❍
	1-3/4”	44,45	1.7500		453T-0124	❍	453H-0124	❍
		45,00	1.7717		453T-45	❍	453H-45	❍
	1-25/32”	45,24	1.7813		453T-0125	❍	453H-0125	❍
		45,50	1.7913		453T-45.5	❍	453H-45.5	❍
		45,64	1.7970		453T-1.797	▲	453H-1.797	❍
		46,00	1.8110		453T-46	❍	453H-46	❍
	1-13/16”	46,04	1.8125		453T-0126	❍	453H-0126	❍
	1-27/32”	46,83	1.8438		453T-0127	❍	453H-0127	❍
		47,00	1.8504		453T-47	❍	453H-47	❍
	1-7/8”	47,63	1.8750		453T-0128	❍	453H-0128	❍
Premium Cobalt	1-13/32”	35,72	1.4063		483T-0113	▲	483H-0113	▲
		36,00	1.4173		483T-36	▲	483H-36	▲
	1-7/16”	36,51	1.4375		483T-0114	▲	483H-0114	▲
		37,00	1.4567		483T-37	▲	483H-37	▲
	1-15/32”	37,31	1.4688		483T-0115	▲	483H-0115	▲
		38,00	1.4961		483T-38	▲	483H-38	▲
	1-1/2”	38,10	1.5000		483T-0116	▲	483H-0116	▲
	1-17/32”	38,89	1.5313		483T-0117	▲	483H-0117	▲
		39,00	1.5354		483T-39	▲	483H-39	▲
	1-9/16”	39,69	1.5625		483T-0118	▲	483H-0118	▲
		40,00	1.5748		483T-40	▲	483H-40	▲
	1-19/32”	40,48	1.5938		483T-0119	▲	483H-0119	▲
		41,00	1.6142		483T-41	▲	483H-41	▲
	1-5/8”	41,28	1.6250		483T-0120	▲	483H-0120	▲
		42,00	1.6535		483T-42	▲	483H-42	▲
	1-21/32”	42,07	1.6563		483T-0121	▲	483H-0121	▲
	1-11/16”	42,86	1.6875		483T-0122	▲	483H-0122	▲
		43,00	1.6929		483T-43	▲	483H-43	▲
	1-23/32”	43,66	1.7188		483T-0123	▲	483H-0123	▲
		44,00	1.7323		483T-44	▲	483H-44	▲
	1-3/4”	44,45	1.7500		483T-0124	▲	483H-0124	▲
		45,00	1.7717		483T-45	▲	483H-45	▲
	1-25/32”	45,24	1.7813		483T-0125	▲	483H-0125	▲
		46,00	1.8110		483T-46	▲	483H-46	▲
	1-13/16”	46,04	1.8125		483T-0126	▲	483H-0126	▲
	1-27/32”	46,83	1.8438		483T-0127	▲	483H-0127	▲
		47,00	1.8504		483T-47	▲	483H-47	▲
	1-7/8”	47,63	1.8750		483T-0128	▲	483H-0128	▲

GEN2 T-A® Provides:

- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life

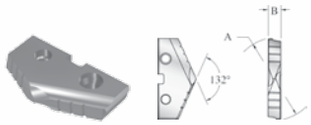
Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC,-HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

3 Series T-A® Carbide Drill Inserts

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)



T-A® Carbide Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶
C2 (K20)	1-13/32”	35,72	1.4063	1/4”	1C23T-0113	❍	1C23A-0113	❍
		36,00	1.4173		1C23T-36	❍	1C23A-36	❍
	1-7/16”	36,51	1.4375		1C23T-0114	❍	1C23A-0114	❍
		37,00	1.4567		1C23T-37	❍	1C23A-37	❍
	1-15/32”	37,31	1.4688		1C23T-0115	❍	1C23A-0115	❍
		38,00	1.4961		1C23T-38	❍	1C23A-38	❍
	1-1/2”	38,10	1.5000		1C23T-0116	❍	1C23A-0116	❍
	1-17/32”	38,89	1.5313		1C23T-0117	❍	1C23A-0117	❍
		39,00	1.5354		1C23T-39	❍	1C23A-39	❍
	1-9/16”	39,69	1.5625		1C23T-0118	❍	1C23A-0118	❍
		40,00	1.5748		1C23T-40	❍	1C23A-40	❍
	1-19/32”	40,48	1.5938		1C23T-0119	❍	1C23A-0119	❍
		41,00	1.6142		1C23T-41	❍	1C23A-41	❍
	1-5/8”	41,28	1.6250		1C23T-0120	❍	1C23A-0120	❍
		42,00	1.6535		1C23T-42	❍	1C23A-42	❍
	1-21/32”	42,07	1.6563		1C23T-0121	❍	1C23A-0121	❍
	1-11/16”	42,86	1.6875		1C23T-0122	❍	1C23A-0122	❍
		43,00	1.6929		1C23T-43	❍	1C23A-43	❍
	1-23/32”	43,66	1.7188		1C23T-0123	❍	1C23A-0123	❍
		44,00	1.7323		1C23T-44	❍	1C23A-44	❍
	1-3/4”	44,45	1.7500		1C23T-0124	❍	1C23A-0124	❍
		45,00	1.7717		1C23T-45	❍	1C23A-45	❍
	1-25/32”	45,24	1.7813		1C23T-0125	❍	1C23A-0125	❍
		46,00	1.8110		1C23T-46	❍	1C23A-46	❍
	1-13/16”	46,04	1.8125		1C23T-0126	❍	1C23A-0126	❍
	1-27/32”	46,83	1.8438		1C23T-0127	❍	1C23A-0127	❍
		47,00	1.8504		1C23T-47	❍	1C23A-47	❍
	1-7/8”	47,63	1.8750		1C23T-0128	❍	1C23A-0128	❍
C5 (P40)	1-13/32”	35,72	1.4063		1C53T-0113	❍	1C53A-0113	❍
		36,00	1.4173		1C53T-36	❍	1C53A-36	❍
	1-7/16”	36,51	1.4375		1C53T-0114	❍	1C53A-0114	❍
		37,00	1.4567		1C53T-37	❍	1C53A-37	❍
	1-15/32”	37,31	1.4688		1C53T-0115	❍	1C53A-0115	❍
		38,00	1.4961		1C53T-38	❍	1C53A-38	❍
	1-1/2”	38,10	1.5000		1C53T-0116	❍	1C53A-0116	❍
	1-17/32”	38,89	1.5313		1C53T-0117	❍	1C53A-0117	❍
		39,00	1.5354		1C53T-39	❍	1C53A-39	❍
		39,29	1.5470		1C53T-1.547	❍	1C53A-1.547	❍
	1-9/16”	39,69	1.5625		1C53T-0118	❍	1C53A-0118	❍
		40,00	1.5748		1C53T-40	❍	1C53A-40	❍
	1-19/32”	40,48	1.5938		1C53T-0119	❍	1C53A-0119	❍
		41,00	1.6142		1C53T-41	❍	1C53A-41	❍
	1-5/8”	41,28	1.6250		1C53T-0120	❍	1C53A-0120	❍
		42,00	1.6535		1C53T-42	❍	1C53A-42	❍
	1-21/32”	42,07	1.6563		1C53T-0121	❍	1C53A-0121	❍
	1-11/16”	42,86	1.6875		1C53T-0122	❍	1C53A-0122	❍
		43,00	1.6929		1C53T-43	❍	1C53A-43	❍
	1-23/32”	43,66	1.7188		1C53T-0123	❍	1C53A-0123	❍
		44,00	1.7323		1C53T-44	❍	1C53A-44	❍
	1-3/4”	44,45	1.7500		1C53T-0124	❍	1C53A-0124	❍
		45,00	1.7717		1C53T-45	❍	1C53A-45	❍
	1-25/32”	45,24	1.7813		1C53T-0125	❍	1C53A-0125	❍
		45,50	1.7913		1C53T-45.5	❍	1C53A-45.5	❍
		45,64	1.7970		1C53T-1.797	❍	1C53A-1.797	❍
		46,00	1.8110		1C53T-46	❍	1C53A-46	❍
	1-13/16”	46,04	1.8125		1C53T-0126	❍	1C53A-0126	❍
	1-27/32”	46,83	1.8438		1C53T-0127	❍	1C53A-0127	❍
		47,00	1.8504		1C53T-47	❍	1C53A-47	❍
	1-7/8”	47,63	1.8750		1C53T-0128	❍	1C53A-0128	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NP, -IN, -RN, -CN, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

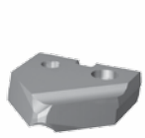
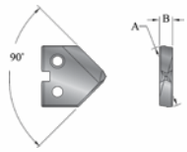
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 1-35/64”, TiN, 3 Series, Super Cobalt, GEN2 T-A®	=453T-1.5469
Decimals = 1.6500”, TiAlN, 3 Series, Super Cobalt, GEN2 T-A®	=453A-1.6500
Metric = 47,25 mm TiCN, 3 Series, C5	=1C53N-47.25

3 Series T-A® HSS Drill Inserts

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)

90º Spot and Chamfer T-A® Drill Inserts
(supplied in 1 piece packages)

U.S. Patent No.: 6,848,869
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	TiAlN	❶	TiCN	❶
Super Cobalt	1-13/32”	35,72	1.4063	1/4”	153T-0113-SP	▲	153A-0113-SP	▲	153N-0113-SP	▲
		36,00	1.4173		153T-36-SP	▲	153A-36-SP	▲	153N-36-SP	▲
	1-7/16”	36,51	1.4375		153T-0114-SP	▲	153A-0114-SP	▲	153N-0114-SP	▲
		37,00	1.4567		153T-37-SP	▲	153A-37-SP	▲	153N-37-SP	▲
	1-15/32”	37,31	1.4688		153T-0115-SP	▲	153A-0115-SP	▲	153N-0115-SP	▲
		38,00	1.4961		153T-38-SP	▲	153A-38-SP	▲	153N-38-SP	▲
	1-1/2”	38,10	1.5000		153T-0116-SP	❍	153A-0116-SP	❍	153N-0116-SP	❍
	1-17/32”	38,89	1.5313		153T-0117-SP	▲	153A-0117-SP	▲	153N-0117-SP	▲
		39,00	1.5354		153T-39-SP	▲	153A-39-SP	▲	153N-39-SP	▲
	1-9/16”	39,69	1.5625		153T-0118-SP	▲	153A-0118-SP	▲	153N-0118-SP	▲
		40,00	1.5748		153T-40-SP	▲	153A-40-SP	▲	153N-40-SP	▲
	1-19/32”	40,48	1.5938		153T-0119-SP	▲	153A-0119-SP	▲	153N-0119-SP	▲
		41,00	1.6142		153T-41-SP	▲	153A-41-SP	▲	153N-41-SP	▲
	1-5/8”	41,28	1.6250		153T-0120-SP	▲	153A-0120-SP	▲	153N-0120-SP	▲
		42,00	1.6535		153T-42-SP	▲	153A-42-SP	▲	153N-42-SP	▲
	1-21/32”	42,07	1.6563		153T-0121-SP	▲	153A-0121-SP	▲	153N-0121-SP	▲
	1-11/16”	42,86	1.6875		153T-0122-SP	▲	153A-0122-SP	▲	153N-0122-SP	▲
		43,00	1.6929		153T-43-SP	▲	153A-43-SP	▲	153N-43-SP	▲
	1-23/32”	43,66	1.7188		153T-0123-SP	▲	153A-0123-SP	▲	153N-0123-SP	▲
		44,00	1.7323		153T-44-SP	▲	153A-44-SP	▲	153N-44-SP	▲
	1-3/4”	44,45	1.7500		153T-0124-SP	▲	153A-0124-SP	▲	153N-0124-SP	▲
		45,00	1.7717		153T-45-SP	▲	153A-45-SP	▲	153N-45-SP	▲
	1-25/32”	45,24	1.7813		153T-0125-SP	▲	153A-0125-SP	▲	153N-0125-SP	▲
		46,00	1.8110		153T-46-SP	▲	153A-46-SP	▲	153N-46-SP	▲
	1-13/16”	46,04	1.8125		153T-0126-SP	▲	153A-0126-SP	▲	153N-0126-SP	▲
	1-27/32”	46,83	1.8438		153T-0127-SP	▲	153A-0127-SP	▲	153N-0127-SP	▲
		47,00	1.8504		153T-47-SP	▲	153A-47-SP	▲	153N-47-SP	▲
	1-7/8”	47,63	1.8750		153T-0128-SP	❍	153A-0128-SP	❍	153N-0128-SP	❍

Geometries available (see page C107 for details): -SW.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.



Structural Steel T-A® Drill Inserts
(supplied in 1 piece packages)

***Thin Wall**
U.S. Patent No.: 7,147,414

****Notch Point®**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

****150º Structural Steel**
U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035
Other U.S. & International Patents Pending

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability *Thin Wall TiAlN	❶	**Notch Point® TiAlN	❶	**150º Structural Steel TiAlN	❶
Super Cobalt	1-7/16”	36,51	1.4375	1/4”	153A-0114-TW	❍	153A-0114-NP	❍	153A-0114-SS	❍
	1-1/2”	38,10	1.5000		153A-0116-TW	❍	153A-0116-NP	❍	153A-0116-SS	❍
		39,00	1.5354		153A-39-TW	❍	153A-39-NP	❍	153A-39-SS	❍
	1-9/16”	39,69	1.5625		153A-0118-TW	❍	153A-0118-NP	❍	153A-0118-SS	❍
Material	Fractional Equivalent	(mm)	(Inch)	Thickness	*Thin Wall AM200®	❶	**Notch Point® AM200®	❶	**150º Structural Steel AM200®	❶
Super Cobalt	1-7/16”	36,51	1.4375	1/4”	153H-0114-TW	❍	453H-0114	❍	153H-0114-SS	❍
	1-1/2”	38,10	1.5000		153H-0116-TW	❍	453H-0116	❍	153H-0116-SS	❍
		39,00	1.5354		153H-39-TW	❍	453H-39	❍	153H-39-SS	❍
	1-9/16”	39,69	1.5625		153H-0118-TW	❍	453H-0118	❍	153H-0118-SS	❍

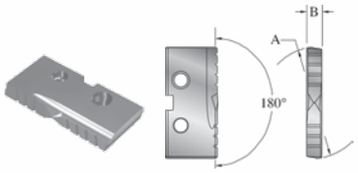
*Use Thin Wall Drill Inserts for material up to 7/16” thick.
**Use Notch Point® Geometry or 150º Structural Steel Drill Inserts for material over 7/16” thick. Use 150º Structural Steel for reduced exit burr.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

3 Series T-A® Flat Bottom Drill Inserts

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)



Flat Bottom T-A® Drill Inserts

(supplied in 1 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
Super Cobalt	1-13/32”	35,72	1.4063	1/4”	153T-0113-FB	❍
		36,00	1.4173		153T-36-FB	❍
	1-7/16”	36,51	1.4375		153T-0114-FB	❍
		37,00	1.4567		153T-37-FB	❍
	1-15/32”	37,31	1.4688		153T-0115-FB	❍
		38,00	1.4961		153T-38-FB	❍
	1-1/2”	38,10	1.5000		153T-0116-FB	❍
	1-17/32”	38,89	1.5313		153T-0117-FB	❍
		39,00	1.5354		153T-39-FB	❍
	1-9/16”	39.69	1.5625		153T-0118-FB	❍
		40,00	1.5748		153T-40-FB	❍
	1-19/32”	40,48	1.5938		153T-0119-FB	❍
		41,00	1.6142		153T-41-FB	❍
	1-5/8”	41,28	1.6250		153T-0120-FB	❍
		42,00	1.6535		153T-42-FB	❍
	1-21/32”	42,07	1.6563		153T-0121-FB	❍
	1-11/16”	42,86	1.6875		153T-0122-FB	❍
		43,00	1.6929		153T-43-FB	❍
	1-23/32”	43,66	1.7188		153T-0123-FB	❍
		44,00	1.7323		153T-44-FB	❍
	1-3/4”	44,45	1.7500		153T-0124-FB	❍
		45,00	1.7717		153T-45-FB	❍
	1-25/32	45,24	1.7813		153T-0125-FB	❍
		46,00	1.8110		153T-46-FB	❍
	1-13/16”	46,04	1.8125		153T-0126-FB	❍
	1-27/32”	46,83	1.8438		153T-0127-FB	❍
		47,00	1.8504		153T-47-FB	❍
	1-7/8”	47,63	1.8750		153T-0128-FB	❍

Geometries available (see page C107 for details): -FN
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

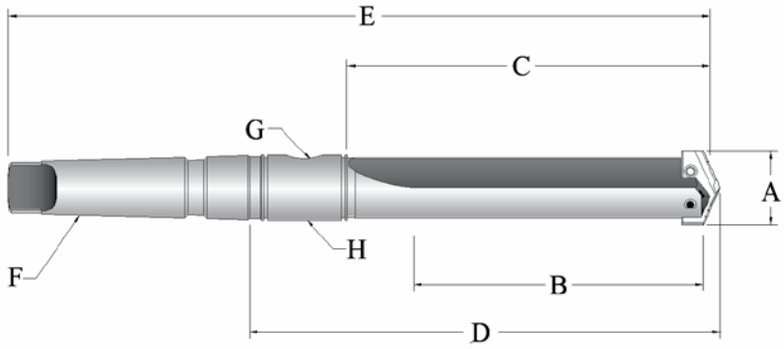
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 1-35/64”, TiN, 3 Series, Super Cobalt GEN2 T-A®	=453T-1.5469
Decimals = 1.6500”, TiAlN, 3 Series, Super Cobalt, GEN2 T-A®	=453A-1.6500
Metric = 47,25 mm TiCN, 3 Series, C5	=1C53N-47.25

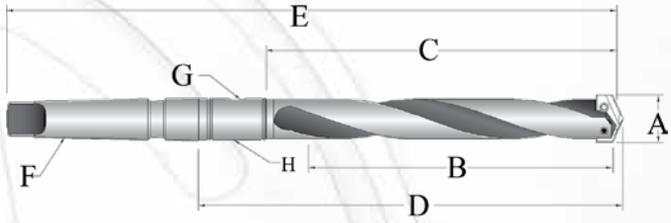
3 Series T-A® Holders

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22030S-004I	1-13/32"- 1-7/8"	4-3/4"	6"	8-1/8"	12-9/16"	#4	1/4"	2T-4SR
	22030S-005I	1-13/32"- 1-7/8"	4-3/4"	6"	8-1/8"	13-13/16"	#5	1/4"	2T-5SR
Intermediate	23030S-004I	1-13/32"- 1-7/8"	6-1/2"	7-3/4"	9-7/8"	14-5/16"	#4	1/4"	2T-4SR
Standard	24030S-004I	1-13/32"- 1-7/8"	8-1/4"	9-1/2"	11-5/8"	16-1/16"	#4	1/4"	2T-4SR
	24030S-005I	1-13/32"- 1-7/8"	8-1/4"	9-1/2"	11-5/8"	17-5/16"	#5	1/4"	2T-5SR
⚠ Extended	25030S-004I	1-13/32"- 1-7/8"	13-3/4"	15"	17-1/8"	21-9/16"	#4	1/4"	2T-4SR
⚠ XL	27030S-004I	1-13/32"- 1-7/8"	22"	23-1/4"	25-3/8"	29-13/16"	#4	1/4"	2T-4SR
⚠ 3XL	29030S-004I	1-13/32"- 1-7/8"	31"	32-1/4"	34-3/8"	38-13/16"	#4	1/4"	2T-4SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22030S-004M	36,0 - 47,0	120,6	152,4	206,4	319,1	#4**	1/4"*	2T-4SRM
⚠ Extended	25030S-004M	36,0 - 47,0	349,3	381,0	435,0	547,7	#4**	1/4"*	2T-4SRM
⚠ XL	27030S-004M	36,0 - 47,0	558,8	590,6	644,6	757,2	#4**	1/4"*	2T-4SRM
⚠ 3XL	29030S-004M	36,0 - 47,0	787,4	819,2	873,2	985,8	#4**	1/4"*	2T-4SRM



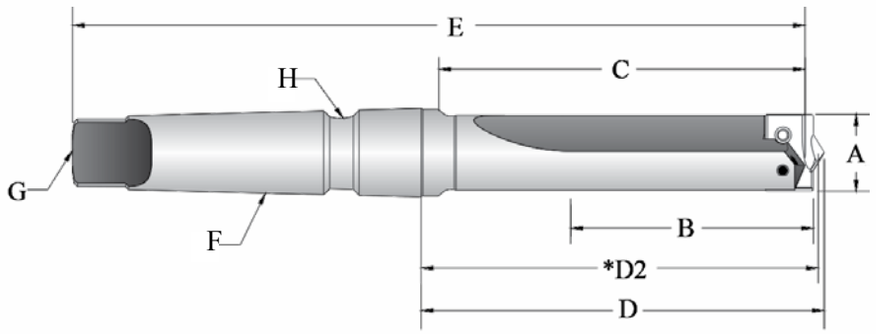
Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Intermediate	23030H-004M	36,0 - 47,0	165,1	196,9	250,9	363,6	#4**	1/4"*	2T-4SRM
Standard	24030H-004M	36,0 - 47,0	209,5	241,3	295,3	408,0	#4**	1/4"*	2T-4SRM

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

3 Series T-A® Holders

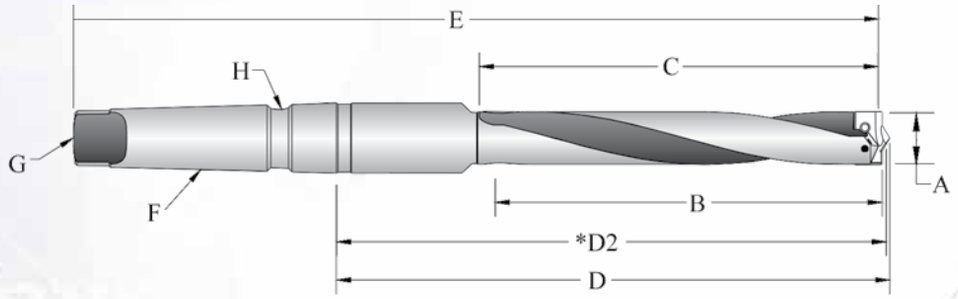
Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)



Structural Steel Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	*D2 Ref. Length	E Overall Length	F MT	G Coolant Inlet Style	H
Short	22030S-004IS126	1-13/32” - 1-7/8”	4-3/4”	6”	6-1/2”	6-7/16”	10-7/8”	#4	TTC	TSC

*Dimension if using a Structural Steel Holder with Notch Point® T-A® Drill Insert Geometry.



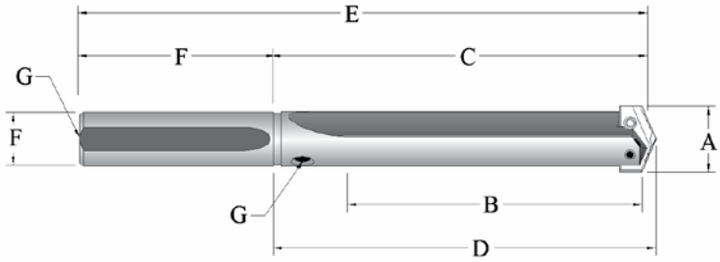
Structural Steel Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	*D2 Ref. Length	E Overall Length	F MT	G Coolant Inlet Style	H
Standard	24030H-004IS126	1-13/32” - 1-7/8”	6-1/2”	7-3/4”	8-1/4”	8-3/16”	12-5/8”	#4	TTC	TSC

*Dimension if using a Structural Steel Holder with Notch Point® T-A® Drill Insert Geometry.

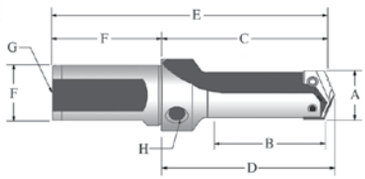
3 Series T-A® Holders

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)

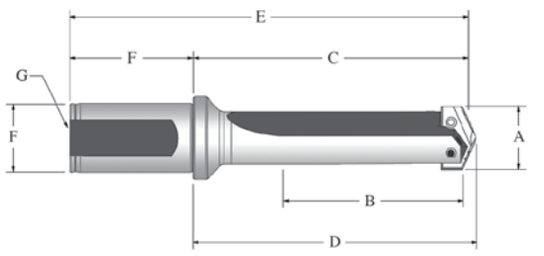


Straight Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	
Short	22030S-125L	1-13/32" - 1-7/8"	4-3/4"	6"	6-3/16"	10"	1-1/4"	4"	1/4"
	22030S-150L	1-13/32" - 1-7/8"	4-3/4"	6"	6-3/16"	10"	1-1/2"	4"	1/4"
Intermediate	23030S-150L	1-13/32" - 1-7/8"	6-1/2"	7-3/4"	7-15/16"	11-3/4"	1-1/2"	4"	1/4"
Standard	24030S-125L	1-13/32" - 1-7/8"	8-1/4"	9-1/2"	9-11/16"	13-1/2"	1-1/4"	4"	1/4"
	24030S-150L	1-13/32" - 1-7/8"	8-1/4"	9-1/2"	9-11/16"	13-1/2"	1-1/2"	4"	1/4"
⚠ Extended	25030S-125L	1-13/32" - 1-7/8"	13-3/4"	15"	15-3/16"	19"	1-1/4"	4"	1/4"
⚠ XL	27030S-150L	1-13/32" - 1-7/8"	22"	23-1/4"	23-7/16"	27-1/4"	1-1/2"	4"	1/4"
⚠ 3XL	29030S-150L	1-13/32" - 1-7/8"	31"	32-1/4"	32-7/16"	36-1/4"	1-1/2"	4"	1/4"



Stub Length Flanged Shank Holder



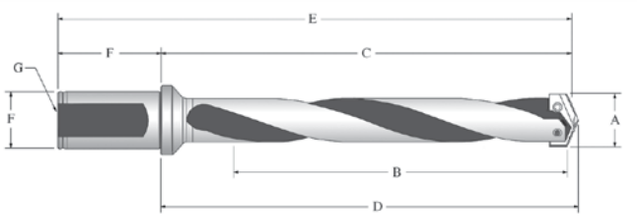
Flanged Shank Straight Flute Holders

Length	Item Number	A	B	C	D	E	F		G	H
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap	
							Dia	Length	Rear	Side
Stub	21030S-150F	1-13/32" - 1-7/8"	3"	4-59/64"	5-7/64"	7-39/64"	1-1/2"	2-11/16"	1/4"	1/4"
Short	22030S-150F	1-13/32" - 1-7/8"	4-3/4"	6-13/16"	7"	9-1/2"	1-1/2"	2-11/16"	1/4"	N/A
Intermediate	23030S-150F	1-13/32" - 1-7/8"	6-1/2"	8-9/16"	8-3/4"	11-1/4"	1-1/2"	2-11/16"	1/4"	N/A
Standard	24030S-150F	1-13/32" - 1-7/8"	8-1/4"	10-5/16"	10-1/2"	13"	1-1/2"	2-11/16"	1/4"	N/A
Metric (mm) *Metric Thread to BSP & ISO 7-1										
Stub	21030S-40FM	36,0 - 47,0	76,2	125,0	129,8	195,0	40,0	70,0	1/4"*	1/4"*
Short	22030S-40FM	36,0 - 47,0	120,7	173,0	177,8	243,0	40,0	70,0	1/4"*	N/A
⚠ Extended	25030S-40FM	36,0 - 47,0	349,3	401,6	406,4	471,6	40,0	70,0	1/4"*	N/A
⚠ XL	27030S-40FM	36,0 - 47,0	558,8	611,1	615,9	681,1	40,0	70,0	1/4"*	N/A
⚠ 3XL	29030S-40FM	36,0 - 47,0	787,4	839,7	844,5	909,7	40,0	70,0	1/4"*	N/A

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

3 Series T-A® Holders

Range: 1.353 to 1.882 inch (34,36mm to 47,80mm)



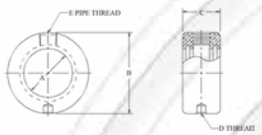
Flanged Shank Helical Flute Holders

Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	Rear
Intermediate	23030H-150F	1-13/32" - 1-7/8"	6-1/2"	8-9/16"	8-3/4"	11-1/4"	1-1/2"	2-11/16"	1/4"
Standard	24030H-150F	1-13/32" - 1-7/8"	8-1/4"	10-5/16"	10-1/2"	13"	1-1/2"	2-11/16"	1/4"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Intermediate	23030H-40FM	36,0 - 47,0	165,1	217,5	222,3	287,5	40,0	70,0	1/4"*
Standard	24030H-40FM	36,0 - 47,0	209,6	261,9	266,7	331,9	40,0	70,0	1/4"*

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A	B	C	D	E	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
		I.D.	O.D.	Length	Thread for Driving Rod	Pipe Tap		
Inch	⚠ ◣2T-4SR	1-1/4"	2-1/2"	1-3/8"	3/8" - NC	1/4"	2T1-4SR	2T1-4OR-10
	⚠ ◣2T-5SR	1-3/4"	3"	1-3/8"	3/8" - NC	1/4"	2T1-5SR	2T1-5OR-10
Metric	⚠ ◣2T-4SRM	31,75	63,50	34,92	M10 X 1,50	1/4"*	2T1-4SR	2T1-4OR-10
	⚠ ◣2T-5SRM	44,45	76,20	34,92	M10 X 1,50	1/4"*	2T1-5SR	2T1-5OR-10

RCA Exploded View



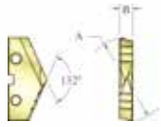
*Thread to BSP & ISO 7-1
** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.
◣ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws
(supplied in 10 piece packages)

Holder Series	 TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	INCH		METRIC	
				Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
3	7514-IP20-10	7514N-IP20-10	8IP-20	1-13/32" - 1-7/8"	121.3	36,0mm - 65,0mm	1370

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

4 Series Original T-A® Drill Inserts
Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)

T-A® Drill Inserts
(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
Super Cobalt		48,00	1.8898	5/16”	154T-48	❍
	1-29/32”	48,42	1.9063		154T-0129	❍
		49,00	1.9291		154T-49	❍
	1-15/16”	49,21	1.9375		154T-0130	❍
		50,00	1.9685		154T-50	❍
	1-31/32”	50,01	1.9688		154T-0131	❍
	2”	50,80	2.0000		154T-0200	❍
		51,00	2.0079		154T-51	❍
	2-1/32”	51,59	2.0313		154T-0201	❍
	2-3/64”	52,00	2.0472		154T-52	❍
	2-1/16”	52,39	2.0625		154T-0202	❍
		53,00	2.0866		154T-53	❍
	2-3/32”	53,18	2.0938		154T-0203	❍
	2-1/8”	53,98	2.1250		154T-0204	❍
		54,00	2.1260		154T-54	❍
	2-5/32”	54,77	2.1563		154T-0205	❍
		55,00	2.1654		154T-55	❍
	2-3/16”	55,56	2.1875		154T-0206	❍
		56,00	2.2047		154T-56	❍
	2-7/32”	56,36	2.2188		154T-0207	❍
		57,00	2.2441		154T-57	❍
	2-1/4”	57,15	2.2500		154T-0208	❍
	2-9/32”	57,94	2.2813		154T-0209	❍
		58,00	2.2835		154T-58	❍
	2-5/16”	58,74	2.3125		154T-0210	❍
		59,00	2.3228		154T-59	❍
	2-11/32”	59,53	2.3438		154T-0211	❍
		60,00	2.3622		154T-60	❍
	2-3/8”	60,33	2.3750		154T-0212	❍
		61,00	2.4016		154T-61	❍
	2-13/32”	61,12	2.4063		154T-0213	❍
	2-7/16”	61,91	2.4375		154T-214	❍
		62,00	2.4409		154T-62	❍
	2-15/32”	62,71	2.4688		154T-0215	❍
		63,00	2.4803		154T-63	❍
	2-1/2”	63,50	2.5000		154T-0216	❍
		64,00	2.5197		154T-64	❍
	2-17/32”	64,29	2.5313		154T-0217	❍
		65,00	2.5591		154T-65	❍
	2-9/16”	65,09	2.5625		154T-0218	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

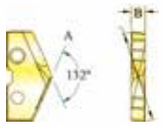
TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

4 Series T-A® HSS Drill Inserts

Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
HSS		48,00	1.8898	5/16”	434T-48	❍
	1-29/32”	48,42	1.9063		434T-0129	❍
		49,00	1.9291		434T-49	❍
	1-15/16”	49,21	1.9375		434T-0130	❍
		50,00	1.9685		434T-50	❍
	1-31/32”	50,01	1.9688		434T-0131	❍
	2”	50,80	2.0000		434T-0200	❍
		51,00	2.0079		434T-51	❍
	2-1/32”	51,59	2.0313		434T-0201	❍
	2-3/64”	52,00	2.0472		434T-52	❍
	2-1/16”	52,39	2.0625		434T-0202	❍
		53,00	2.0866		434T-53	❍
	2-3/32”	53,18	2.0938		434T-0203	❍
	2-1/8”	53,98	2.1250		434T-0204	❍
		54,00	2.1260		434T-54	❍
	2-5/32”	54,77	2.1563		434T-0205	❍
		55,00	2.1654		434T-55	❍
	2-3/16”	55,56	2.1875		434T-0206	❍
		56,00	2.2047		434T-56	❍
	2-7/32”	56,36	2.2188		434T-0207	❍
		57,00	2.2441		434T-57	❍
	2-1/4”	57,15	2.2500		434T-0208	❍
	2-9/32”	57,94	2.2813		434T-0209	❍
		58,00	2.2835		434T-58	❍
	2-5/16”	58,74	2.3125		434T-0210	❍
		59,00	2.3228		434T-59	❍
	2-11/32”	59,53	2.3438		434T-0211	❍
		60,00	2.3622		434T-60	❍
	2-3/8”	60,33	2.3750		434T-0212	❍
		61,00	2.4016		434T-61	❍
	2-13/32”	61,12	2.4063		434T-0213	❍
	2-7/16”	61,91	2.4375		434T-0214	❍
		62,00	2.4409		434T-62	❍
	2-15/32”	62,71	2.4688		434T-0215	❍
		63,00	2.4803		434T-63	❍
	2-1/2”	63,50	2.5000		434T-0216	❍
		64,00	2.5197		434T-64	❍
	2-17/32”	64,29	2.5313		434T-0217	❍
		65,00	2.5591		434T-65	❍
	2-9/16”	65,09	2.5625		434T-0218	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC, -HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

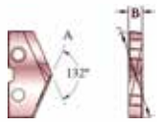
64th =1-59/64”, TiN, 4 Series, Super Cobalt, GEN2 T-A®	=454T-1.9219
Decimals = 1.9200”, TiAlN, 4 Series, Super Cobalt, GEN2 T-A®	=454A-1.9200
Metric = 57,10 mm, TiCN, 4 Series, HSS	=134N-57.10

4 Series T-A® HSS Drill Inserts

Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	❍ Item Number, Coating and Availability TiN	❶	AM200®	❶
Super Cobalt		48,00	1.8898	5/16”	454T-48	❍	454H-48	❍
	1-29/32”	48,42	1.9063		454T-0129	❍	454H-0129	❍
		49,00	1.9291		454T-49	❍	454H-49	❍
	1-15/16”	49,21	1.9375		454T-0130	❍	454H-0130	❍
		50,00	1.9685		454T-50	❍	454H-50	❍
	1-31/32”	50,01	1.9688		454T-0131	❍	454H-0131	❍
	2”	50,80	2.0000		454T-0200	❍	454H-0200	❍
		51,00	2.0079		454T-51	❍	454H-51	❍
	2-1/32”	51,59	2.0313		454T-0201	❍	454H-0201	❍
	2-3/64”	52,00	2.0472		454T-52	❍	454H-52	❍
	2-1/16”	52,39	2.0625		454T-0202	❍	454H-0202	❍
		53,00	2.0866		454T-53	❍	454H-53	❍
	2-3/32”	53,18	2.0938		454T-0203	❍	454H-0203	❍
	2-1/8”	53,98	2.1250		454T-0204	❍	454H-0204	❍
		54,00	2.1260		454T-54	❍	454H-54	❍
	2-5/32”	54,77	2.1563		454T-0205	❍	454H-0205	❍
		55,00	2.1654		454T-55	❍	454H-55	❍
	2-3/16”	55,56	2.1875		454T-0206	❍	454H-0206	❍
		56,00	2.2047		454T-56	❍	454H-56	❍
	2-7/32”	56,36	2.2188		454T-0207	❍	454H-0207	❍
		57,00	2.2441		454T-57	❍	454H-57	❍
	2-1/4”	57,15	2.2500		454T-0208	❍	454H-0208	❍
	2-9/32”	57,94	2.2813		454T-0209	❍	454H-0209	❍
		58,00	2.2835		454T-58	❍	454H-58	❍
	2-5/16”	58,74	2.3125		454T-0210	❍	454H-0210	❍
		59,00	2.3228		454T-59	❍	454H-59	❍
	2-11/32”	59,53	2.3438		454T-0211	❍	454H-0211	❍
		60,00	2.3622		454T-60	❍	454H-60	❍
	2-3/8”	60,33	2.3750		454T-0212	❍	454H-0212	❍
		61,00	2.4016		454T-61	❍	454H-61	❍
	2-13/32”	61,12	2.4063		454T-0213	❍	454H-0213	❍
		61,29	2.4130		454T-2.413	❍	454H-2.413	❍
		61,50	2.4213		454T-61.5	❍	454H-61.5	❍
	2-7/16”	61,91	2.4375		454T-0214	❍	454H-0214	❍
		62,00	2.4409		454T-62	❍	454H-62	❍
	2-15/32”	62,71	2.4688		454T-0215	❍	454H-0215	❍
		63,00	2.4803		454T-63	❍	454H-63	❍
	2-1/2”	63,50	2.5000		454T-0216	❍	454H-0216	❍
		64,00	2.5197		454T-64	❍	454H-64	❍
	2-17/32”	64,29	2.5313		454T-0217	❍	454H-0217	❍
		65,00	2.5591		454T-65	❍	454H-65	❍
	2-9/16”	65,09	2.5625		454T-0218	❍	454H-0218	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life

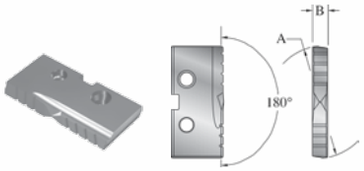
Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC, -HE.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

4 Series T-A® Flat Bottom Drill Inserts

Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)



T-A® Drill Inserts
(supplied in 1 piece packages)

U.S. Patent No.: 6,135,681
Other International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
Super Cobalt		48,00	1.8898	5/16”	154T-48-FB	❍
	1-29/32”	48,42	1.9063		154T-0129-FB	❍
		49,00	1.9291		154T-49-FB	❍
	1-15/16”	49,21	1.9375		154T-0130-FB	❍
		50,00	1.9685		154T-50-FB	❍
	1-31/32”	50,01	1.9688		154T-0131-FB	❍
	2”	50,80	2.0000		154T-0200-FB	❍
		51,00	2.0079		154T-51-FB	❍
	2-1/32”	51,59	2.0313		154T-0201-FB	❍
	2-3/64”	52,00	2.0472		154T-52-FB	❍
	2-1/16”	52,39	2.0625		154T-0202-FB	❍
		53,00	2.0866		154T-53-FB	❍
	2-3/32”	53,18	2.0938		154T-0203-FB	❍
	2-1/8”	53,98	2.1250		154T-0204-FB	❍
		54,00	2.1260		154T-54-FB	❍
	2-5/32”	54,77	2.1563		154T-0205-FB	❍
		55,00	2.1654		154T-55-FB	❍
	2-3/16”	55,56	2.1875		154T-0206-FB	❍
		56,00	2.2047		154T-56-FB	❍
	2-7/32”	56,36	2.2188		154T-0207-FB	❍
		57,00	2.2441		154T-57-FB	❍
	2-1/4”	57,15	2.2500		154T-0208-FB	❍
	2-9/32”	57,94	2.2813		154T-0209-FB	❍
		58,00	2.2835		154T-58-FB	❍
	2-5/16”	58,74	2.3125		154T-0210-FB	❍
		59,00	2.3228		154T-59-FB	❍
	2-11/32”	59,53	2.3438		154T-0211-FB	❍
		60,00	2.3622		154T-60-FB	❍
	2-3/8”	60,33	2.3750		154T-0212-FB	❍
		61,00	2.4016		154T-61-FB	❍
	2-13/32”	61,12	2.4063		154T-0213-FB	❍
	2-7/16”	61,91	2.4375		154T-0214-FB	❍
		62,00	2.4409		154T-62-FB	❍
	2-15/32”	62,71	2.4688		154T-00215-FB	❍
		63,00	2.4803		154T-63-FB	❍
	2-1/2”	63,50	2.5000		154T-0216-FB	❍
		64,00	2.5197		154T-64-FB	❍
	2-17/32”	64,29	2.5313		154T-0217-FB	❍
		65,00	2.5591		154T-65-FB	❍
	2-9/16”	65,09	2.5625		154T-0218-FB	❍

Geometries available (see page C107 for details): -FN.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

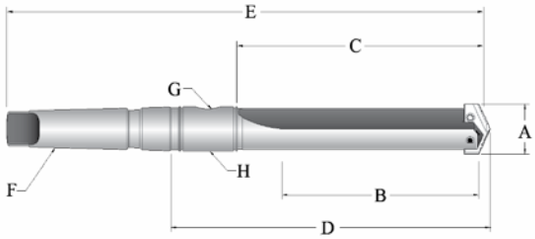
❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64th = 2-1/64”, TiN, 4 Series, Super Cobalt, Flat Bottom	=154T-2.0156-FB
Decimals = 2.0423”, TiAlN, 4 Series, Super Cobalt, Flat Bottom	=154A-2.0423-FB
Metric = 63,25mm, TiCN, 4 Series, Super Cobalt, Flat Bottom	=154N-63,25-FB

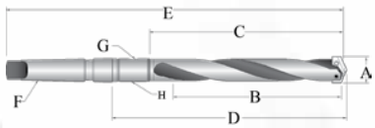
4 Series T-A® Holders

Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)



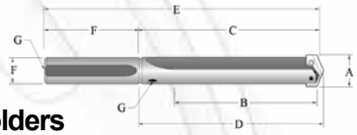
Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22040S-004I	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	8-5/8"	13-1/16"	#4	1/4"	2T-4SR
	22040S-005I	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	8-5/8"	14-5/16"	#5	1/4"	2T-5SR
Standard	24040S-004I	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	12-5/8"	17-1/16"	#4	1/4"	2T-4SR
	24040S-005I	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	12-5/8"	18-5/16"	#5	1/4"	2T-5SR
⚠ Extended	25040S-005I	1-29/32" - 2-9/16"	16-5/8"	18"	20-1 /8"	25-13/16"	#5	1/4"	2T-5SR
⚠ XL	27040S-005I	1-29/32" - 2-9/16"	24-5/8"	26"	28-1/8"	33-13/16"	#5	1/4"	2T-5SR
⚠ 3XL	29040S-005I	1-29/32" - 2-9/16"	34-5/8"	36"	38-1/8"	43-13/16"	#5	1/4"	2T-5SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22040S-005M	48,0 - 65,0	130,1	165,1	219,1	363,5	#5**	1/4"*	2T-5SRM
⚠ Extended	25040S-005M	48,0 - 65,0	422,3	457,2	511,2	655,6	#5**	1/4"*	2T-5SRM
⚠ XL	27040S-005M	48,0 - 65,0	625	660,4	714,4	858,8	#5**	1/4"*	2T-5SRM
⚠ 3XL	29040S-005M	48,0 - 65,0	879	914,4	968,4	1112,8	#5**	1/4"*	2T-5SRM



Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	24040H-005M	48,0 - 65,0	231,8	266,7	320,7	465,1	#5**	1/4"*	2T-5SRM



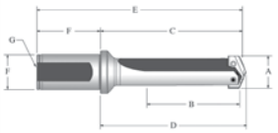
Straight Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Shank Dia.	F Shank Length	G Pipe Tap
Short	22040S-150L	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	6-11/16"	10-1/2"	1-1/2"	4"	1/4"
	22040S-175L	1-29/32" - 2-9/16"	5-1/8"	6-1/2"	6-11/16"	10-1/2"	1-3/4"	4"	1/4"
Standard	24040S-150L	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	10-11/16"	14-1/2"	1-1/2"	4"	1/4"
	24040S-175L	1-29/32" - 2-9/16"	9-1/8"	10-1/2"	10-11/16"	14-1/2"	1-3/4"	4"	1/4"
⚠ Extended	25040S-150L	1-29/32" - 2-9/16"	16-5/8"	18"	18-3/16"	22"	1-1/2"	4"	1/4"
⚠ XL	27040S-150L	1-29/32" - 2-9/16"	24-5/8"	26"	26-3/16"	30"	1-1/2"	4"	1/4"
⚠ 3XL	29040S-150L	1-29/32" - 2-9/16"	34-5/8"	36"	36-3/16"	40"	1-1/2"	4"	1/4"

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

4 Series T-A® Holders

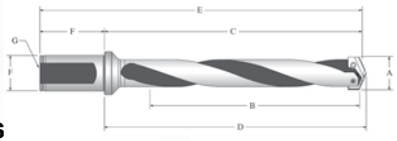
Range: 1.850 to 2.570 inch (46,99mm to 65,28mm)



Flanged Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Shank Dia.	F Shank Length	G Pipe Tap Rear
Short	22040S-150F	1-29/32" - 2-9/16"	5-1/8"	7-1/16"	7-1/4"	9-3/4"	1-1/2"	2-11/16"	1/4"
Standard	24040S-150F	1-29/32" - 2-9/16"	9-1/8"	11-1/16"	11-1/4"	13-3/4"	1-1/2"	2-11/16"	1/4"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Short	22040S-40FM	48,0 - 65,0	130,2	179,4	184,0	249,4	40,0	70,0	1/4"*
⚠ Extended	25040S-40FM	48,0 - 65,0	422,3	471,5	476,0	541,5	40,0	70,0	1/4"*
⚠ XL	27040S-40FM	48,0 - 65,0	625	674,7	679,0	744,7	40,0	70,0	1/4"*
⚠ 3XL	29040S-40FM	48,0 - 65,0	879	928,7	933,0	998,7	40,0	70,0	1/4"*

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.



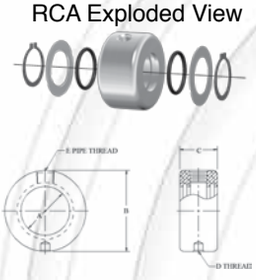
Flanged Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F Shank Dia.	F Shank Length	G Pipe Tap Rear
Standard	24040H-150F	1-29/32" - 2-9/16"	9-1/8"	11-1/16"	11-1/4"	13-3/4"	1-1/2"	2-11/16"	1/4"
Metric (mm) *Metric Thread to BSP & ISO 7-1									
Standard	24040H-40FM	48,0 - 65,0	231,8	281,0	285,8	351,0	40,0	70,0	1/4"*

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	O RCA O-ring Replacements 10 Pieces
Inch	⚠ ◣2T-4SR	1-1/4"	2-1/2"	1-3/8"	3/8" - NC	1/4"	2T1-4SR	2T1-4OR-10
	⚠ ◣2T-5SR	1-3/4"	3"	1-3/8"	3/8" - NC	1/4"	2T1-5SR	2T1-5OR-10
Metric	⚠ ◣2T-4SRM	31,75	63,50	34,92	M10 X 1,50	1/4"*	2T1-4SR	2T1-4OR-10
	⚠ ◣2T-5SRM	44,45	76,20	34,92	M10 X 1,50	1/4"*	2T1-5SR	2T1-5OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1

** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.

◣ Refer to page C110 for Proper RCA Assembly

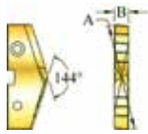
Replacement TORX Plus Screws

(supplied in 10 piece packages)

Holder Series	 TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	INCH Drill Range Used With	INCH TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	METRIC Drill Range Used With	METRIC TORX Plus Screw Admissible Tightening Torque (N-cm)
4	7514-IP20-10	7514N-IP20-10	8IP-20	1-29/32"-2-9/16"	121.3	36,0mm-65,0mm	1370

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

5 Series Original T-A® Drill Inserts
Range: 2.456 to 3.000 inch (62,38mm to 76,20mm)

T-A® Drill Inserts
(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
HSS	2-1/2”	63,50	2.5000	7/16”	135T-0216	❍
		64,00	2.5197		135T-64	❍
	2-17/32”	64,29	2.5313		135T-0217	❍
	2-9/16”	65,09	2.5625		135T-0218	❍
	2-19/32”	65,88	2.5938		135T-0219	❍
		66,00	2.5984		135T-66	❍
	2-5/8”	66,68	2.6250		135T-0220	❍
	2-21/32”	67,47	2.6563		135T-0221	❍
		68,00	2.6772		135T-68	❍
	2-11/16”	68,26	2.6875		135T-0222	❍
	2-23/32”	69,05	2.7188		135T-0223	❍
	2-3/4”	69,85	2.7500		135T-0224	❍
		70,00	2.7559		135T-70	❍
	2-25/32”	70,64	2.7813		135T-0225	❍
	2-13/16”	71,44	2.8125		135T-0226	❍
		72,00	2.8346		135T-72	❍
	2-27/32”	72,23	2.8438		135T-0227	❍
	2-7/8”	73,03	2.8750		135T-0228	❍
	2-29/32”	73,82	2.9063		135T-0229	❍
		74,00	2.9134		135T-74	❍
	2-15/16”	74,41	2.9375		135T-0230	❍
	2-31/32”	75,61	2.9688		135T-0231	❍
		76,00	2.9921		135T-76	❍
	3”	76,20	3.0000		135T-0300	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

5 Series T-A® HSS Drill Inserts

Range: 2.456 to 3.000 inch (62,38mm to 76,20mm)

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478; 7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)

Material	A (Diameter) Fractional Equivalent	A (Diameter) (mm)	A (Diameter) (Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
HSS	2-1/2”	63,50	2.5000	7/16”	435T-0216	❍
		64,00	2.5197		435T-64	❍
	2-17/32”	64,29	2.5313		435T-0217	❍
	2-9/16”	65,09	2.5625		435T-0218	❍
	2-19/32”	65,88	2.5938		435T-0219	❍
		66,00	2.5984		435T-66	❍
	2-5/8”	66,68	2.6250		435T-0220	❍
	2-21/32”	67,47	2.6563		435T-0221	❍
		68,00	2.6772		435T-68	❍
	2-11/16”	68,26	2.6875		435T-0222	❍
	2-23/32”	69,05	2.7188		435T-0223	❍
	2-3/4”	69,85	2.7500		435T-0224	❍
		70,00	2.7559		435T-70	❍
	2-25/32”	70,64	2.7813		435T-0225	❍
	2-13/16”	71,44	2.8125		435T-0226	❍
		72,00	2.8346		435T-72	❍
	2-27/32”	72,23	2.8438		435T-0227	❍
	2-7/8”	73,03	2.8750		435T-0228	❍
	2-29/32”	73,82	2.9063		435T-0229	❍
		74,00	2.9134		435T-74	❍
	2-15/16”	74,41	2.9375		435T-0230	❍
	2-31/32”	75,61	2.9688		435T-0231	❍
		76,00	2.9921		435T-76	❍
	3”	76,20	3.0000		435T-0300	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

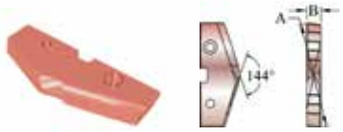
Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64ths =2-33/64”, TiN, 5 Series, HSS, GEN2 T-A®	=435T-2.5156
Decimals = 2.7340”, TiN, 5 Series, HSS, GEN2 T-A®	=435T-2.7340
Metric = 68,50mm, AM200®, 5 Series, Super Cobalt, GEN2 T-A®	=455H-68.50

5 Series T-A® HSS Drill Inserts

Range: 2.456 to 3.000 inch (62,38mm to 76,20mm)

GEN2 T-A®
(supplied in 1 piece packages)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
Super Cobalt	2-1/2”	63,50	2.5000	7/16”	455H-0216	❍
		64,00	2.5197		455H-64	❍
	2-17/32”	64,29	2.5313		455H-0217	❍
	2-9/16”	65,09	2.5625		455H-0218	❍
	2-19/32”	65,88	2.5938		455H-0219	❍
		66,00	2.5984		455H-66	❍
	2-5/8”	66,68	2.6250		455H-0220	❍
	2-21/32”	67,47	2.6563		455H-0221	❍
		68,00	2.6772		455H-68	❍
	2-11/16”	68,26	2.6875		455H-0222	❍
	2-23/32”	69,05	2.7188		455H-0223	❍
	2-3/4”	69,85	2.7500		455H-0224	❍
		70,00	2.7559		455H-70	❍
	2-25/32”	70,64	2.7813		455H-0225	❍
	2-13/16”	71,44	2.8125		455H-0226	❍
		72,00	2.8346		455H-72	❍
	2-27/32”	72,23	2.8438		455H-0227	❍
	2-7/8”	73,03	2.8750		455H-0228	❍
	2-29/32”	73,82	2.9063		455H-0229	❍
		74,00	2.9134		455H-74	❍
	2-15/16”	74,41	2.9375		455H-0230	❍
	2-31/32”	75,61	2.9688		455H-0231	❍
		76,00	2.9921		455H-76	❍
	3”	76,20	3.0000		455H-0300	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

6 Series Original T-A® Drill Inserts

Range: 3.001 to 3.507 inch (76,22mm to 89,08mm)

For use with 5 Series Holders

T-A® Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
HSS	3-1/32”	76,99	3.0313	7/16”	136T-0301	❍
	3-1/16”	77,79	3.0625		136T-0302	❍
		78,00	3.0709		136T-78	❍
	3-3/32”	78,58	3.0938		136T-0303	❍
	3-1/8”	79,38	3.1250		136T-0304	❍
		80,00	3.1496		136T-80	❍
	3-5/32”	80,17	3.1563		136T-0305	❍
	3-3/16”	80,96	3.1875		136T-0306	❍
	3-7/32”	81,76	3.2188		136T-0307	❍
		82,00	3.2283		136T-82	❍
	3-1/4”	82,55	3.2500		136T-0308	❍
	3-9/32”	83,34	3.2813		136T-0309	❍
		84,00	3.3071		136T-84	❍
	3-5/16”	84,14	3.3125		136T-0310	❍
	3-11/32”	84,93	3.3438		136T-0311	❍
	3-3/8”	85,73	3.3750		136T-0312	❍
		86,00	3.3858		136T-86	❍
	3-13/32”	86,52	3.4063		136T-0313	❍
	3-7/16”	87,31	3.4375		136T-0314	❍
		88,00	3.4646		136T-88	❍
	3-15/32”	88,11	3.4688		136T-0315	❍
	3-1/2”	88,90	3.5000		136T-0316	❍

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

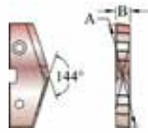
64^{ths} =3-15/64”, TiN, 6 Series, HSS	=136T-3.2344
Decimals = 3.2436”, TiN, 6 Series, HSS, GEN2 T-A®	=436T-3.2436
Metric = 82,30mm, AM200®, 6 Series, Super Cobalt, GEN2 T-A®	=456T-82.30

6 Series T-A® HSS Drill Inserts

Range: 3.001 to 3.507 inch (76,22mm to 89,08mm)

For use with 5 Series Holders

GEN2 T-A®
(supplied in 1 piece packages)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	GEN2 T-A® Provides:
HSS	3-1/32”	76,99	3.0313	7/16”	436T-0301	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation
	3-1/16”	77,79	3.0625		436T-0302	❍	
		78,00	3.0709		436T-78	❍	
	3-3/32”	78,58	3.0938		436T-0303	❍	
	3-1/8”	79,38	3.1250		436T-0304	❍	
		80,00	3.1496		436T-80	❍	
	3-5/32”	80,17	3.1563		436T-0305	❍	
	3-3/16”	80,96	3.1875		436T-0306	❍	
	3-7/32”	81,76	3.2188		436T-0307	❍	
		82,00	3.2283		436T-82	❍	
	3-1/4”	82,55	3.2500		436T-0308	❍	
	3-9/32”	83,34	3.2813		436T-0309	❍	
		84,00	3.3071		436T-84	❍	
	3-5/16”	84,14	3.3125		436T-0310	❍	
	3-11/32”	84,93	3.3438		436T-0311	❍	
	3-3/8”	85,73	3.3750		436T-0312	❍	
		86,00	3.3858		436T-86	❍	
	3-13/32”	86,52	3.4063		436T-0313	❍	
	3-7/16”	87,31	3.4375		436T-0314	❍	
		88,00	3.4646		436T-88	❍	
	3-15/32”	88,11	3.4688		436T-0315	❍	
	3-1/2”	88,90	3.5000		436T-0316	❍	

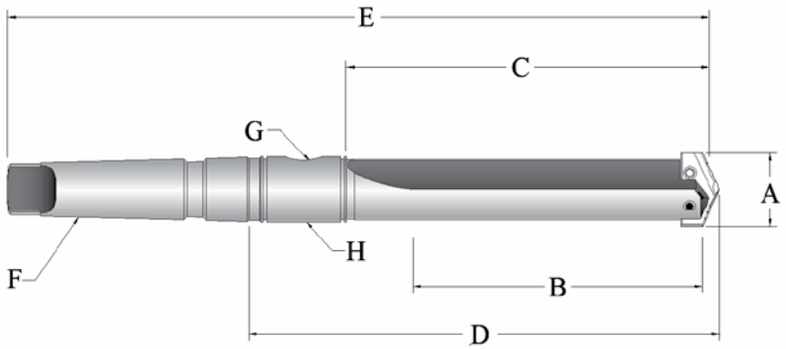
Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶	GEN2 T-A® Provides:
Super Cobalt	3-1/32”	76,99	3.0313	7/16”	456H-0301	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation • Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life
	3-1/16”	77,79	3.0625		456H-0302	❍	
		78,00	3.0709		456H-78	❍	
	3-3/32”	78,58	3.0938		456H-0303	❍	
	3-1/8”	79,38	3.1250		456H-0304	❍	
		80,00	3.1496		456H-80	❍	
	3-5/32”	80,17	3.1563		456H-0305	❍	
	3-3/16”	80,96	3.1875		456H-0306	❍	
	3-7/32”	81,76	3.2188		456H-0307	❍	
		82,00	3.2283		456H-82	❍	
	3-1/4”	82,55	3.2500		456H-0308	❍	
	3-9/32”	83,34	3.2813		456H-0309	❍	
		84,00	3.3071		456H-84	❍	
	3-5/16”	84,14	3.3125		456H-0310	❍	
	3-11/32”	84,93	3.3438		456H-0311	❍	
	3-3/8”	85,73	3.3750		456H-0312	❍	
		86,00	3.3858		456H-86	❍	
	3-13/32”	86,52	3.4063		456H-0313	❍	
	3-7/16”	87,31	3.4375		456H-0314	❍	
		88,00	3.4646		456H-88	❍	
	3-15/32”	88,11	3.4688		456H-0315	❍	
	3-1/2”	88,90	3.5000		456H-0316	❍	

Geometries available (see page C107 for details): -CI, -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.
Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

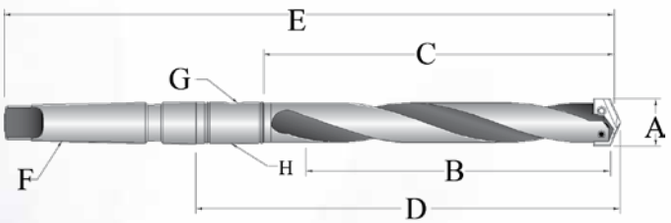
5 Series T-A® Holders

Range: 2.456 to 3.507 inch (62,38mm to 89,08mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22050S-005I	2-1/2" - 3-1/2"	6-3/4"	8-1/2"	11-5/16"	16-15/16"	#5	1/2"	2T-6SR
Standard	24050S-005I	2-1/2" - 3-1/2"	10-3/4"	12-1/2"	15-5/16"	20-15/16"	#5	1/2"	2T-6SR
⚠ Extended	25050S-005I	2-1/2" - 3-1/2"	18-1/4"	20"	22-13/16"	28-7/16"	#5	1/2"	2T-6SR
⚠ XL	27050S-005I	2-1/2" - 3-1/2"	26"	27-3/4"	30-9/16"	36-3/16"	#5	1/2"	2T-6SR
⚠ 3XL	29050S-005I	2-1/2" - 3-1/2"	35"	36-3/4"	39-9/16"	45-3/16"	#5	1/2"	2T-6SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22050S-005M	64,0 - 88,0	171,5	215,9	287,3	430,2	#5**	1/2"*	2T-6SRM
⚠ Extended	25050S-005M	64,0 - 88,0	463,6	508,0	579,4	722,3	#5**	1/2"*	2T-6SRM
⚠ XL	27050S-005M	64,0 - 88,0	660	704,8	776,2	919,1	#5**	1/2"*	2T-6SRM
⚠ 3XL	29050S-005M	64,0 - 88,0	889	933,4	1004,8	1147,7	#5**	1/2"*	2T-6SRM



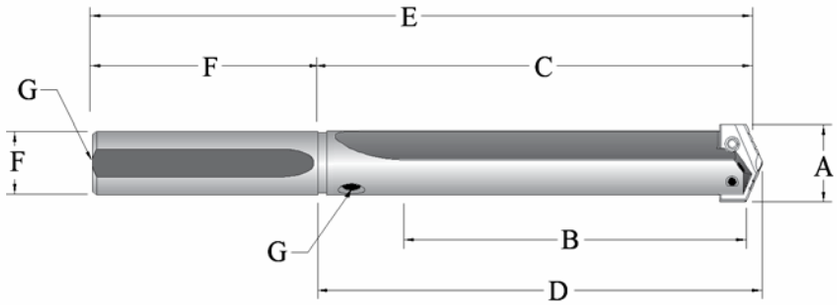
Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	24050H-005M	64,0 - 88,0	273,1	317,5	388,9	531,8	#5**	1/2"*	2T-6SRM

⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

5 Series T-A® Holders

Range: 2.456 to 3.507 inch (62,38mm to 89,08mm)



Straight Shank Straight Flute Holders

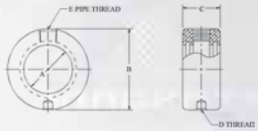
Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	Rear
Short	22050S-200L	2-1/2" - 3-1/2"	6-3/4"	8-1/2"	8-3/4"	12-1/2"	2"	4"	1/2"
Standard	24050S-200L	2-1/2" - 3-1/2"	10-3/4"	12-1/2"	12-3/4"	16-1/2"	2"	4"	1/2"
⚠ Extended	25050S-200L	2-1/2" - 3-1/2"	18-1/4"	20"	20-1/4"	24"	2"	4"	1/2"
⚠ XL	27050S-200L	2-1/2" - 3-1/2"	26"	27-3/4"	28"	31-3/4"	2"	4"	1/2"
⚠ 3XL	29050S-200L	2-1/2" - 3-1/2"	35"	36-3/4"	37"	40-3/4"	2"	4"	1/2"

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A	B	C	D	E	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
		I.D.	O.D.	Length	Thread for Driving Rod	Pipe Tap		
Inch	⚠ ◣2T-6SR	2-1/4"	3-3/4"	1-3/4"	1/2" - NC	1/2"	2T1-6SR	2T1-6OR-10
Metric	⚠ ◣2T-6SRM	57,15	95,27	44,45	M12 X 1,75	1/2"*	2T1-6SR	2T1-6OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1
** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.
◣ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws
(supplied in 10 piece packages)

Holder Series	 TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	INCH		METRIC	
				Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
5	7619-IP25-10	N/A	8IP-25	2-1/2" - 4-1/2"	155.0	64,0mm - 114,0mm	1750

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

7 Series Original T-A® Drill Inserts

Range: 3.508 to 4.000 inch (89,10mm to 101,60mm)

T-A® Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
HSS	3-17/32”	89,96	3.5313	7/16”	137T-0317	❍
		90,00	3.5433		137T-90	❍
	3-9/16”	90,49	3.5625		137T-0318	❍
	3-19/32”	91,28	3.5938		137T-0319	❍
		92,00	3.6221		137T-92	❍
	3-5/8”	92,08	3.6250		137T-0320	❍
	3-21/32”	92,87	3.6563		137T-0321	❍
	3-11/16”	93,66	3.6875		137T-0322	❍
		94,00	3.7008		137T-94	❍
	3-23/32”	94,46	3.7188		137T-0323	❍
	3-3/4”	95,25	3.7500		137T-0324	❍
		96,00	3.7795		137T-96	❍
	3-25/32”	96,04	3.7813		137T-0325	❍
	3-13/16”	96,84	3.8125		137T-0326	❍
	3-27/32”	97,63	3.8438		137T-0327	❍
		98,00	3.8583		137T-98	❍
	3-7/8”	98,43	3.8750		137T-0328	❍
	3-29/32”	99,22	3.9063		137T-0329	❍
		100,00	3.9370		137T-100	❍
	3-15/16”	100,01	3.9375		137T-0330	❍
	3-31/32”	100,81	3.9688		137T-0331	❍
	4”	101,60	4.0000		137T-0400	❍

Geometries available (see page C107 for details): -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64ths =3-63/64”, TiAlN, 7 Series, HSS, GEN2 T-A®	=437A-3.9843
Decimals = 3.5420”, TiAlN, 7 Series, Super Cobalt, GEN2 T-A®	=457A-3.5420
Metric = 102,75 mm TiAlN, 8 Series, HSS, GEN2 T-A®	=438A-102.75

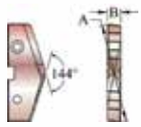
7 Series T-A® HSS Drill Inserts

Range: 3.508 to 4.000 inch (89,10mm to 101,60mm)

GEN2 T-A®

Supplied in 1-piece packages

U.S. Patent No.: 6,685,402 & 6,986,628; 7,011,478
7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶	GEN2 T-A® Provides:
HSS	3-17/32”	89,69	3.5313	7/16”	437T-0317	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation
		90,00	3.5433		437T-90	❍	
	3-9/16”	90,49	3.5625		437T-0318	❍	
	3-19/32”	91,28	3.5938		437T-0319	❍	
		92,00	3.6221		437T-92	❍	
	3-5/8”	92,08	3.6250		437T-0320	❍	
	3-21/32”	92,87	3.6563		437T-0321	❍	
	3-11/16”	93,66	3.6875		437T-0322	❍	
		94,00	3.7008		437T-94	❍	
	3-23/32”	94,46	3.7188		437T-0323	❍	
	3-3/4”	95,25	3.7500		437T-0324	❍	
		96,00	3.7795		437T-96	❍	
	3-25/32”	96,04	3.7813		437T-0325	❍	
	3-13/16”	96,84	3.8125		437T-0326	❍	
	3-27/32”	97,63	3.8438		437T-0327	❍	
		98,00	3.8583		437T-98	❍	
	3-7/8”	98,43	3.8750		437T-0328	❍	
	3-29/32”	99,22	3.9063		437T-0329	❍	
		100,00	3.9370		437T-100	❍	
	3-15/16”	100,01	3.9375		437T-0330	❍	
	3-31/32”	100,81	3.9688		437T-0331	❍	
	4”	101,60	4.0000		437T-0400	❍	

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶	GEN2 T-A® Provides:
Super Cobalt	3-17/32”	89,69	3.5313	7/16”	457H-0317	❍	• Lower drilling forces • Increased drill stability • Smoother breakouts on through holes • Improved chip formation • Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life
		90,00	3.5433		457H-90	❍	
	3-9/16”	90,49	3.5625		457H-0318	❍	
	3-19/32”	91,28	3.5938		457H-0319	❍	
		92,00	3.6221		457H-92	❍	
	3-5/8”	92,08	3.6250		457H-0320	❍	
	3-21/32”	92,87	3.6563		457H-0321	❍	
	3-11/16”	93,66	3.6875		457H-0322	❍	
		94,00	3.7008		457H-94	❍	
	3-23/32”	94,46	3.7188		457H-0323	❍	
	3-3/4”	95,25	3.7500		457H-0324	❍	
		96,00	3.7795		457H-96	❍	
	3-25/32”	96,04	3.7813		457H-0325	❍	
	3-13/16”	96,84	3.8125		457H-0326	❍	
	3-27/32”	97,63	3.8438		457H-0327	❍	
		98,00	3.8583		457H-98	❍	
	3-7/8”	98,43	3.8750		457H-0328	❍	
	3-29/32”	99,22	3.9063		457H-0329	❍	
		100,00	3.9370		457H-100	❍	
	3-15/16”	100,01	3.9375		457H-0330	❍	
	3-31/32”	100,81	3.9688		457H-0331	❍	
	4”	101,60	4.0000		457H-0400	❍	

Geometries available (see page C107 for details): -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

8 Series Original T-A® Drill Inserts

Range: 4.001 to 4.507 inch (101,63mm to 114,48mm)

For use with 7 Series Holders

T-A® Drill Inserts

(supplied in 1 piece packages)

Material	A (Diameter)			B	Item Number, Coating and Availability	
	Fractional Equivalent	(mm)	(Inch)	Thickness	TiN	❶
HSS	4-1/64”	102,00	4.0157	7/16”	138T-102	❍
	4-1/16”	103,19	4.0625		138T-0402	❍
		104,00	4.0945		138T-104	❍
	4-1/8”	104,75	4.1250		138T-0404	❍
		106,00	4.1732		138T-106	❍
	4-3/16”	106,36	4.1875		138T-0406	❍
	4-1/4”	107,95	4.2500		138T-0408	❍
		108,00	4.2520		138T-108	❍
	4-5/16”	109,54	4.3125		138T-0410	❍
		110,00	4.3307		138T-110	❍
	4-3/8”	111,13	4.3750		138T-0412	❍
		112,00	4.4094		138T-112	❍
	4-7/16”	112,71	4.4375		138T-0414	❍
		114,00	4.4882		138T-114	❍
	4-1/2”	114,30	4.5000		138T-0416	❍

Geometries available (see page C107 for details): -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

❶ Availability Codes
❍ Stocked
▲ Non-stocked

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

64ths =3-63/64”, TiAlN, 7 Series, HSS, GEN2 T-A®	=437A-3.9843
Decimals = 3.5420”, TiAlN, 7 Series, Super Cobalt, GEN2 T-A®	=457A-3.5420
Metric = 102,75 mm TiAlN, 8 Series, HSS, GEN2 T-A®	=438A-102.75

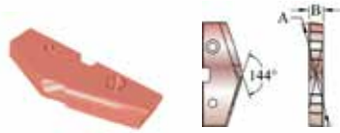
8 Series T-A® HSS Drill Inserts

Range: 4.001 to 4.507 inch (101,63mm to 114,48mm)

For use with 7 Series Holders

GEN2 T-A®
(supplied in 1 piece packages)

U.S. Patent No.: 6,685,402; 6,986,628; 7,011,478
7,018,145; 7,144,893 & 7,371,035
Other U.S. & International Patents Pending
(Refer to pages C112 for active international patents)



Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability TiN	❶
HSS	4-1/64”	102,0	4.0157	7/16”	438T-102	❍
	4-1/16”	103,19	4.0625		438T-0402	❍
	4-3/32”	104,00	4.0945		438T-104	❍
	4-1/8”	104,75	4.1250		438T-0404	❍
		106,00	4.1732		438T-106	▲
	4-3/16”	106,36	4.1875		438T-0406	❍
	4-1/4”	107,95	4.2500		438T-0408	❍
		108,00	4.2520		438T-108	❍
	4-5/16”	109,54	4.3125		438T-0410	❍
		110,00	4.3307		438T-110	❍
	4-3/8”	111,13	4.3750		438T-0412	❍
		112,00	4.4094		438T-112	❍
	4-7/16”	112,71	4.4375		438T-0414	❍
		114,00	4.4882		438T-114	❍
	4-1/2”	114,30	4.5000		438T-0416	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation

Material	A (Diameter) Fractional Equivalent	(mm)	(Inch)	B Thickness	Item Number, Coating and Availability AM200®	❶
Super Cobalt	4-1/64”	102,00	4.0157	7/16”	458H-102	❍
	4-1/16”	103,19	4.0625		458H-0402	❍
	4-3/32”	104,00	4.0945		458H-104	❍
	4-1/8”	104,75	4.1250		458H-0404	❍
		106,00	4.1732		458H-106	❍
	4-3/16”	106,36	4.1875		458H-0406	❍
	4-1/4”	107,95	4.2500		458H-0408	❍
		108,00	4.2520		458H-108	❍
	4-5/16”	109,54	4.3125		458H-0410	❍
		110,00	4.3307		458H-110	❍
	4-3/8”	111,13	4.3750		458H-0412	❍
		112,00	4.4094		458H-112	❍
	4-7/16”	112,71	4.4375		458H-0414	❍
		114,00	4.4882		458H-114	❍
	4-1/2”	114,30	4.5000		458H-0416	❍

GEN2 T-A® Provides:
- Lower drilling forces
- Increased drill stability
- Smoother breakouts on through holes
- Improved chip formation
- Super Cobalt Supplied with Allied’s exclusive AM200® coating for increased tool life

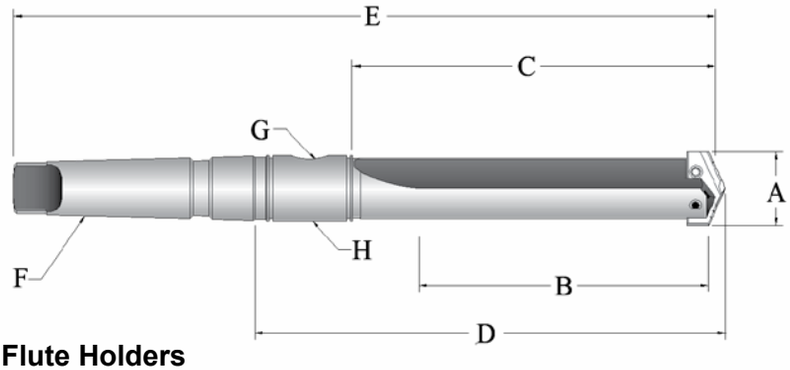
Geometries available (see page C107 for details): -SK, -CR, -HI, -HR, -BR, -NC, -WC.
Additional lead time and process fees apply. Please refer to the Drilling Product Price List for details.

Can be supplied with other coatings as a non-stocked standard. Process fee applies. Example:

TiN	XXXT-XXXX
TiAlN	XXXA-XXXX
TiCN	XXXN-XXXX
AM200®	XXXH-XXXX

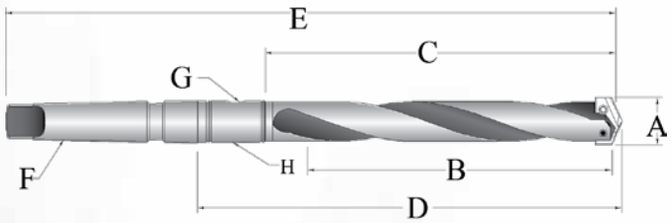
7 Series T-A® Holders

Range: 3.455 to 4.507 inch (87,76mm to 114,48mm)



Taper Shank Straight Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Short	22070S-005I	3-17/32" - 4-1/2"	6-3/4"	8-7/8"	11-11/16"	17-5/16"	#5	1/2"	2T-6SR
Standard	24070S-005I	3-17/32" - 4-1/2"	10-3/4"	12-7/8"	15-11/16"	21-5/16"	#5	1/2"	2T-6SR
⚠ Extended	25070S-005I	3-17/32" - 4-1/2"	21-7/8"	24"	26-13/16"	32-7/16"	#5	1/2"	2T-6SR
⚠ XL	27070S-005I	3-17/32" - 4-1/2"	27"	29-1/8"	31-15/16"	37-9/16"	#5	1/2"	2T-6SR
⚠ 3XL	29070S-005I	3-17/32" - 4-1/2"	37"	39-1/8"	41-5/16"	47-9/16"	#5	1/2"	2T-6SR
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Short	22070S-005M	90,0 - 114,0	171,5	225,4	296,8	439,7	#5**	1/2"*	2T-6SRM
⚠ Extended	25070S-005M	90,0 - 114,0	555,6	609,6	681,1	823,9	#5**	1/2"*	2T-6SRM
⚠ XL	27070S-005M	90,0 - 114,0	685	739,7	811,2	954,0	#5**	1/2"*	2T-6SRM
⚠ 3XL	29070S-005M	90,0 - 114,0	939	993,7	1065,2	1208,0	#5**	1/2"*	2T-6SRM



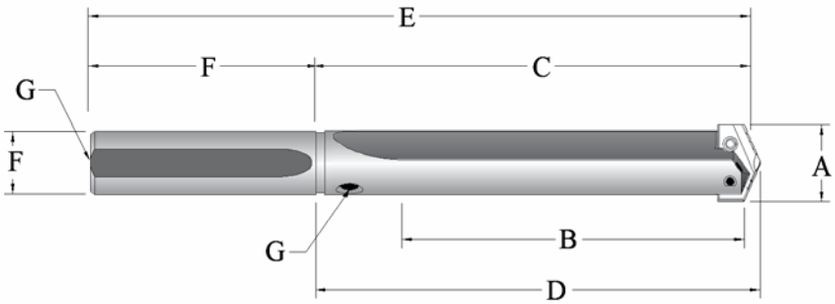
Taper Shank Helical Flute Holders

Length	Item Number	A Drill Insert Range	B Max. Drill Depth	C Body Length	D Ref. Length	E Overall Length	F MT	G Pipe Tap	H RCA
Metric (mm) *Metric Thread to BSP & ISO 7-1 **Per ISO 296 Type BEK									
Standard	24070H-005M	90,0 - 114,0	273,1	327,0	398,5	541,3	#5**	1/2"*	2T-6SRM

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

7 Series T-A® Holders

Range: 3.455 to 4.507 inch (87,76mm to 114,48mm)



Straight Shank Straight Flute Holders

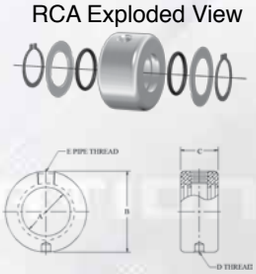
Length	Item Number	A	B	C	D	E	F		G
		Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	Shank		Pipe Tap
							Dia.	Length	Rear
Short	22070S-300L	3-17/32" - 4-1/2"	6-3/4"	8-7/8"	9-1/8"	13-7/8"	3"	5"	1/2"
Standard	24070S-300L	3-17/32" - 4-1/2"	10-3/4"	12-7/8"	13-1/8"	17-7/8"	3"	5"	1/2"
⚠ Extended	25070S-300L	3-17/32" - 4-1/2"	21-7/8"	24"	24-1/4"	29"	3"	5"	1/2"
⚠ XL	27070S-300L	3-17/32" - 4-1/2"	27"	29-1/8"	29-3/8"	34-1/8"	3"	5"	1/2"
⚠ 3XL	29070S-300L	3-17/32" - 4-1/2"	37"	39-1/8"	39-3/8"	44-1/8"	3"	5"	1/2"

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page C109 for Deep Hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Rotary Coolant Adapter (RCA) and Accessories

	Item Number	A I.D.	B O.D.	C Length	D Thread for Driving Rod	E Pipe Tap	RCA Repair Kit Item Number **	RCA O-ring Replacements 10 Pieces
Inch	⚠ ◣2T-6SR	2-1/4"	3-3/4"	1-3/4"	1/2" - NC	1/2"	2T1-6SR	2T1-6OR-10
Metric	⚠ ◣2T-6SRM	57,15	95,27	44,45	M12 X 1,75	1/2"*	2T1-6SR	2T1-6OR-10

RCA Exploded View



* Thread to BSP & ISO 7-1
** RCA Repair Kit includes (2) O-rings, (2) snap rings and (2) thrust washers.
◣ Refer to page C110 for Proper RCA Assembly

Replacement TORX Plus Screws
(supplied in 10 piece packages)

Holder Series	 TORX Plus Screws 10 Pieces	Nylon Locking TORX Plus Screw 10 Pieces	TORX Plus Hand Driver	INCH		METRIC	
				Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (in.-lbs.)	Drill Range Used With	TORX Plus Screw Admissible Tightening Torque (N-cm)
7	7619-IP25-10	N/A	8IP-25	3-17/32" - 4-1/2"	155.0	64,0mm - 114,0mm	1750

Tightening torques are calculated with a friction coefficient of $\mu = 0.14$ and develop 90% of ultimate yield strength.

Recommended Speeds and Feeds - T-A® HSS Drill Inserts (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED			FEED (IPR)						
			TiN SFM	TiAlN SFM	TiCN SFM	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"	1-29/32" to 2-9/16"	2-29/32" to 4-1/2"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	HSS	200	280	260	0.007	0.010	0.013	0.016	0.020	0.023	0.028
	150-200	HSS	180	260	235	0.007	0.010	0.013	0.016	0.020	0.023	0.028
	200-250	HSS	160	240	210	0.006	0.010	0.013	0.016	0.020	0.023	0.028
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	HSS	170	250	220	0.006 ❖	0.009	0.012	0.015	0.019	0.023	0.027
	125-175	HSS	160	240	210	0.006 ❖	0.009	0.012	0.015	0.019	0.023	0.027
	175-225	HSS	150	225	195	0.005 ❖	0.008	0.010	0.014	0.018	0.021	0.024
	225-275	HSS	140	210	180	0.005 ❖	0.008	0.010	0.014	0.018	0.021	0.024
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	HSS	160	240	210	0.006	0.009	0.012	0.015	0.019	0.023	0.027
	175-225	HSS	150	225	195	0.005	0.008	0.010	0.014	0.018	0.021	0.024
	225-275	HSS	140	210	180	0.005	0.008	0.010	0.014	0.018	0.021	0.024
	275-325	SC,PC	130	195	170	0.004	0.007	0.009	0.012	0.016	0.019	0.022
Alloy Steel 4140, 5140, 8640, etc.	125-175	HSS	150	210	195	0.006	0.008	0.010	0.014	0.017	0.019	0.022
	175-225	HSS	140	195	180	0.005	0.008	0.010	0.014	0.017	0.019	0.022
	225-275	HSS	130	180	170	0.005	0.007	0.010	0.014	0.017	0.019	0.022
	275-325	SC,PC	120	170	155	0.004	0.006	0.009	0.012	0.015	0.017	0.020
	325-375	SC,PC	110	155	145	0.003	0.006	0.009	0.012	0.015	0.017	0.020
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	SC,PC	80	110	100	0.005 ❖	0.007	0.009	0.010	0.014	0.017	0.020
	300-350	SC,PC	60	85	80	0.004 ❖	0.007	0.009	0.010	0.014	0.017	0.020
	350-400	PC	50	70	65	0.003 ❖	0.006	0.008	0.009	0.012	0.015	0.018
Structural Steel A36, A285, A516, etc.	100-150	HSS	140	200	180	0.006 ❖	0.010	0.012	0.014	0.018	0.021	0.026
	150-250	HSS	120	170	155	0.005 ❖	0.009	0.010	0.012	0.016	0.019	0.024
	250-350	SC,PC	100	140	130	0.004 ❖	0.008	0.009	0.010	0.014	0.017	0.020
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	SC	80	110	105	0.004	0.006	0.008	0.010	0.012	0.015	0.017
	200-250	SC,PC	60	90	85	0.004	0.006	0.008	0.010	0.012	0.015	0.017
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	SC,PC	30	40	35	0.003 ❖	0.007	0.008	0.010	0.012	0.015	-
	220-310	PC	25	35	30	0.003 ❖	0.006	0.007	0.008	0.010	0.012	-
Titanium Alloy	140-220	SC,PC	35	50	45	0.003 ❖	0.007	0.008	0.010	0.012	0.015	-
	220-310	PC	30	45	35	0.003 ❖	0.006	0.007	0.008	0.010	0.012	-
Aerospace Alloy S82	185-275	SC,PC	75	105	95	0.006 ❖	0.008	0.009	0.010	0.014	0.016	0.020
	275-350	SC,PC	60	90	80	0.005 ❖	0.007	0.008	0.008	0.012	0.014	0.018
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	SC,PC	75	105	95	0.006 ❖	0.008	0.009	0.010	0.014	0.016	0.020
	275-350	SC,PC	60	90	80	0.005 ❖	0.007	0.008	0.008	0.012	0.014	0.018
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	SC,PC	75	105	95	0.003 ❖	0.007	0.008	0.010	0.014	0.016	0.020
	185-275	SC,PC	60	90	80	0.003 ❖	0.006	0.007	0.008	0.012	0.014	0.018
Super Duplex Stainless Steel	135-185	SC,PC	60	80	70	0.003 ❖	0.007	0.008	0.010	0.014	0.016	0.020
	185-275	SC,PC	50	65	60	0.003 ❖	0.006	0.007	0.008	0.012	0.014	0.018
Wear Plate Hardox, AR400, T-1, etc.	400	SC,PC	45	70	55	0.003 ❖	0.006	0.008	0.009	0.012	0.016	0.018
	500	PC	35	45	40	0.002 ❖	0.005	0.007	0.008	0.010	1.012	0.016
	600	N/A	-	-	-	-	-	-	-	-	-	-
Hardened Steel	300-400	PC	50	95	70	0.003 ❖	0.006	0.008	0.009	0.012	0.016	0.018
	400-500	PC	35	45	40	0.002 ❖	0.005	0.007	0.008	0.010	0.012	0.016
Nodular, Grey, Ductile Cast Iron	120-150	HSS	170	250	220	0.007	0.012	0.016	0.020	0.024	0.027	0.030
	150-200	HSS	150	225	195	0.006	0.011	0.014	0.018	0.022	0.025	0.028
	200-220	HSS	130	195	170	0.006	0.009	0.012	0.016	0.018	0.021	0.024
	220-260	SC,PC	110	165	145	0.005	0.007	0.009	0.012	0.014	0.017	0.020
	260-320	SC,PC	90	135	120	0.004	0.006	0.007	0.009	0.012	0.014	0.016
Cast Aluminum	30	HSS	600	850	750	0.008	0.013	0.016	0.020	0.022	0.025	0.025
	180	HSS	300	450	400	0.008	0.013	0.016	0.018	0.022	0.025	0.025
Wrought Aluminum	30	HSS	600	850	750	0.004	0.006	0.010	0.012	0.022	0.025	0.025
	180	HSS	300	450	400	0.008	0.013	0.016	0.018	0.022	0.025	0.025
Aluminum Bronze	100-200	SC	170	250	220	0.006	0.011	0.014	0.018	0.022	0.026	0.028
	200-250	SC	130	190	170	0.005	0.007	0.009	0.012	0.014	0.017	0.020
Brass	100	HSS	300	445	400	0.007	0.012	0.016	0.020	0.024	0.028	0.030
Copper	60	SC	130	165	150	0.002 ❖	0.003	0.006	0.008	0.012	0.014	0.016

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Recommended Speeds and Feeds - T-A® Carbide Drill Inserts (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED			FEED (IPR)				
			TiN SFM	TiAlN SFM	TiCN SFM	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C5	320	420	375	0.008	0.012	0.015	0.018	0.021
	150-200	C5	280	360	325	0.007	0.011	0.014	0.016	0.019
	200-250	C5	260	340	295	0.006	0.010	0.013	0.015	0.017
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C5	300	390	360	0.008 ❖	0.010	0.013	0.017	0.019
	125-175	C5	260	340	295	0.007 ❖	0.010	0.013	0.016	0.018
	175-225	C5	240	310	270	0.006 ❖	0.009	0.012	0.015	0.017
	225-275	C5	210	270	245	0.005 ❖	0.009	0.012	0.015	0.017
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C5	260	340	295	0.007	0.010	0.013	0.016	0.018
	175-225	C5	240	310	275	0.006	0.009	0.012	0.015	0.017
	225-275	C5	210	270	235	0.006	0.009	0.012	0.015	0.017
	275-325	C5	180	230	205	0.005	0.008	0.011	0.014	0.016
Alloy Steel 4140, 5140, 8640, etc.	125-175	C5	250	325	285	0.007	0.010	0.013	0.016	0.018
	175-225	C5	230	300	260	0.006	0.009	0.012	0.015	0.017
	225-275	C5	210	270	235	0.006	0.009	0.012	0.015	0.017
	275-325	C5	200	250	225	0.005	0.008	0.011	0.014	0.016
	325-375	C5	170	220	195	0.004	0.007	0.010	0.013	0.015
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C5	160	200	180	0.006 ❖	0.009	0.010	0.012	0.015
	300-350	C5	140	180	160	0.005 ❖	0.008	0.009	0.011	0.014
	350-400	C5	120	160	140	0.004 ❖	0.007	0.008	0.010	0.012
Structural Steel A36, A285, A516, etc.	100-150	C5	240	310	275	0.008 ❖	0.011	0.014	0.016	0.018
	150-250	C5	200	250	225	0.006 ❖	0.010	0.012	0.014	0.016
	250-350	C5	180	230	205	0.005 ❖	0.009	0.011	0.012	0.014
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C5	160	220	190	0.004	0.007	0.009	0.011	0.013
	200-250	C5	120	170	145	0.004	0.007	0.009	0.011	0.013
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	80	105	90	0.004 ❖	0.007	0.009	0.011	0.013
	220-310	C2	60	85	70	0.004 ❖	0.006	0.008	0.010	0.012
Titanium Alloy	140-220	C2	100	125	105	0.004 ❖	0.007	0.009	0.011	0.013
	220-310	C2	80	110	90	0.004 ❖	0.006	0.008	0.010	0.012
Aerospace Alloy S82	185-275	C2	160	210	185	0.007 ❖	0.008	0.011	0.014	0.016
	275-350	C2	120	160	140	0.006 ❖	0.007	0.010	0.012	0.014
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	160	210	185	0.007 ❖	0.008	0.011	0.014	0.016
	275-350	C2	120	160	140	0.006 ❖	0.007	0.010	0.012	0.014
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C2	160	210	185	0.005 ❖	0.007	0.009	0.010	0.012
	185-275	C2	120	160	140	0.004 ❖	0.006	0.008	0.009	0.010
Super Duplex Stainless Steel	135-185	C2	80	110	95	0.004 ❖	0.007	0.008	0.009	0.011
	185-275	C2	60	80	70	0.003 ❖	0.006	0.007	0.008	0.009
Wear Plate Hardox, AR400, T-1, etc.	400	C5	75	115	100	0.003 ❖	0.006	0.008	0.010	0.012
	500	C5	50	85	70	0.002 ❖	0.005	0.006	0.008	0.010
	600	C5	35	75	55	0.001 ❖	-	0.005	0.006	0.008
Hardened Steel	300-400	C5	110	140	130	0.004 ❖	0.006	0.009	0.011	0.013
	400-500	C5	65	85	75	0.003 ❖	0.005	0.008	0.009	0.011
Nodular, Grey, Ductile Cast Iron	120-150	C2, C3	320	460	415	0.008	0.012	0.015	0.019	0.023
	150-200	C2, C3	270	400	335	0.007	0.011	0.013	0.017	0.021
	200-220	C2, C3	240	360	305	0.006	0.009	0.012	0.015	0.018
	220-260	C2, C3	210	310	260	0.005	0.008	0.011	0.013	0.015
	260-320	C2, C3	180	270	225	0.005	0.007	0.010	0.011	0.013
Cast Aluminum	30	C2	1200	1500	1330	0.010	0.013	0.018	0.020	0.022
	180	C2	800	1000	900	0.009	0.013	0.016	0.018	0.020
Wrought Aluminum	30	C2	1200	1500	1330	0.004	0.006	0.010	0.012	0.014
	180	C2	800	1000	900	0.008	0.013	0.014	0.018	0.020
Aluminum Bronze	100-200	C2	275	360	325	0.005	0.011	0.010	0.014	0.017
	200-250	C2	210	305	260	0.004	0.007	0.007	0.010	0.013
Brass	100	C2	425	600	520	0.006	0.012	0.011	0.015	0.018
Copper	60	C2	260	390	325	0.002 ❖	0.003	0.004	0.006	0.010

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Recommended Speeds and Feeds - GEN2 T-A® HSS (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED		FEED (IPR)						
			TiN SFM	AM200® SFM	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"	1-29/32" to 2-9/16"	2-19/32" to 4-1/2"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	HSS	200	325	0.008	0.012	0.016	0.019	0.020	0.023	0.028
	150-200	HSS	180	300	0.007	0.011	0.015	0.017	0.020	0.023	0.028
	200-250	HSS	160	280	0.006	0.010	0.014	0.016	0.020	0.023	0.028
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	HSS	170	290	0.008 ❖	0.010	0.014	0.018	0.019	0.023	0.027
	125-175	HSS	160	275	0.007 ❖	0.010	0.014	0.017	0.019	0.023	0.027
	175-225	HSS	150	260	0.006 ❖	0.009	0.013	0.016	0.018	0.021	0.024
	225-275	HSS	140	240	0.005 ❖	0.009	0.013	0.016	0.018	0.021	0.024
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	HSS	160	275	0.007	0.010	0.014	0.017	0.019	0.023	0.027
	175-225	HSS	150	260	0.006	0.009	0.013	0.016	0.018	0.021	0.024
	225-275	HSS	140	240	0.006	0.009	0.013	0.016	0.018	0.021	0.024
	275-325	SC	130	225	0.005	0.008	0.012	0.015	0.016	0.019	0.022
Alloy Steel 4140, 5140, 8640, etc.	125-175	HSS	150	240	0.007	0.010	0.014	0.017	0.017	0.019	0.022
	175-225	HSS	140	225	0.006	0.009	0.013	0.016	0.017	0.019	0.022
	225-275	HSS	130	210	0.006	0.009	0.013	0.016	0.017	0.019	0.022
	275-325	SC	120	195	0.005	0.008	0.012	0.015	0.015	0.017	0.020
	325-375	SC	110	180	0.004	0.007	0.011	0.014	0.015	0.017	0.020
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	SC	80	125	0.006 ❖	0.009	0.011	0.013	0.014	0.017	0.020
	300-350	SC	60	100	0.005 ❖	0.008	0.010	0.012	0.014	0.017	0.020
	350-400	SC	50	80	0.004 ❖	0.007	0.009	0.011	0.012	0.015	0.018
Structural Steel A36, A285, A516, etc.	100-150	HSS	140	235	0.008 ❖	0.011	0.015	0.017	0.018	0.021	0.026
	150-250	HSS	120	190	0.006 ❖	0.010	0.013	0.015	0.016	0.019	0.024
	250-350	SC	100	160	0.005 ❖	0.009	0.012	0.013	0.014	0.017	0.020
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	SC	80	125	0.004	0.007	0.010	0.012	0.012	0.015	0.017
	200-250	SC	60	105	0.004	0.007	0.010	0.012	0.012	0.015	0.017
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	SC	30	45	0.004 ❖	0.007	0.009	0.011	0.012	0.015	0.017
	220-310	SC	25	40	0.004 ❖	0.006	0.008	0.010	0.010	0.012	0.014
Titanium Alloy	140-220	SC	35	55	0.004 ❖	0.007	0.008	0.010	0.012	0.015	0.017
	220-310	SC	30	50	0.003 ❖	0.006	0.007	0.009	0.010	0.012	0.014
Aerospace Alloy S82	185-275	SC	75	110	0.006 ❖	0.008	0.009	0.011	0.014	0.016	0.020
	275-350	SC	60	100	0.005 ❖	0.007	0.008	0.010	0.012	0.014	0.018
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	SC	75	110	0.006 ❖	0.008	0.009	0.011	0.014	0.016	0.020
	275-350	SC	60	100	0.005 ❖	0.007	0.008	0.010	0.012	0.014	0.018
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	SC	75	110	0.003 ❖	0.007	0.008	0.011	0.014	0.016	0.020
	185-275	SC	60	100	0.003 ❖	0.006	0.007	0.010	0.012	0.014	0.018
Super Duplex Stainless Steel	135-185	SC	60	85	0.003 ❖	0.007	0.008	0.011	0.014	0.016	0.020
	185-275	SC	50	70	0.003 ❖	0.006	0.007	0.010	0.012	0.014	0.018
Wear Plate Hardox, AR400, T-1, etc.	400	SC	45	70	0.003 ❖	0.006	0.008	0.009	0.012	0.016	0.018
	500	SC	35	45	0.002 ❖	0.005	0.007	0.008	0.010	0.012	0.016
	600	N/A	-	-	-	-	-	-	-	-	-
Hardened Steel	300-400	SC	50	95	0.004 ❖	0.006	0.009	0.011	0.012	0.016	0.018
	400-500	SC	35	45	0.002 ❖	0.005	0.007	0.009	0.010	0.012	0.016
Nodular, Grey, Ductile Cast Iron	120-150	HSS	170	290	0.008	0.012	0.016	0.020	0.024	0.027	0.030
	150-200	HSS	150	260	0.007	0.011	0.015	0.019	0.022	0.025	0.028
	200-220	HSS	130	225	0.006	0.009	0.013	0.017	0.018	0.021	0.024
	220-260	SC	110	190	0.005	0.008	0.011	0.014	0.014	0.017	0.020
	260-320	SC	90	155	0.005	0.007	0.010	0.012	0.012	0.014	0.016
Cast Aluminum	30	HSS	600	-	0.009	0.015	0.018	0.023	0.022	0.025	0.025
	180	HSS	300	-	0.008	0.013	0.016	0.020	0.022	0.025	0.025
Wrought Aluminum	30	HSS	600	900	0.005	0.013	0.016	0.020	0.022	0.025	0.025
	180	HSS	300	650	0.005	0.007	0.012	0.014	0.022	0.025	0.025
Aluminum Bronze	100-200	SC	170	270	0.006	0.009	0.012	0.015	0.017	0.019	0.021
	200-250	SC	130	210	0.005	0.007	0.009	0.011	0.014	0.016	0.018
Brass	100	HSS	300	470	0.007	0.011	0.013	0.018	0.019	0.021	0.023
Copper	60	SC	130	190	0.003 ❖	0.004	0.007	0.010	0.009	0.011	0.012

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Recommended Speeds and Feeds - GEN2 T-A® Carbide (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED AM200® SFM	FEED (IPR) 3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C1	480	0.008	0.012	0.016	0.019
	150-200	C1	415	0.007	0.011	0.015	0.017
	200-250	C1	390	0.006	0.010	0.014	0.016
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C1	450	0.008 ❖	0.010	0.014	0.018
	125-175	C1	390	0.007 ❖	0.010	0.014	0.017
	175-225	C1	355	0.006 ❖	0.009	0.013	0.016
	225-275	C1	310	0.005 ❖	0.009	0.013	0.016
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C1	390	0.007	0.010	0.014	0.017
	175-225	C1	355	0.006	0.009	0.013	0.016
	225-275	C1	310	0.006	0.009	0.013	0.016
	275-325	C1	265	0.005	0.008	0.012	0.015
Alloy Steel 4140, 5140, 8640, etc.	125-175	C1	375	0.007	0.010	0.014	0.017
	175-225	C1	345	0.006	0.009	0.013	0.016
	225-275	C1	310	0.006	0.009	0.013	0.016
	275-325	C1	285	0.005	0.008	0.012	0.015
	325-375	C1	255	0.004	0.007	0.011	0.014
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C1	230	0.006 ❖	0.009	0.011	0.013
	300-350	C1	205	0.005 ❖	0.008	0.010	0.012
	350-400	C1	185	0.004 ❖	0.007	0.009	0.011
Structural Steel A36, A285, A516, etc.	100-150	C1	355	0.008 ❖	0.011	0.015	0.017
	150-250	C1	285	0.006 ❖	0.010	0.013	0.015
	250-350	C1	265	0.005 ❖	0.009	0.012	0.013
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C1	255	0.007	0.007	0.010	0.012
	200-250	C1	195	0.007	0.007	0.010	0.012
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	120	0.004 ❖	0.007	0.009	0.011
	220-310	C2	95	0.004 ❖	0.006	0.008	0.010
Titanium Alloy	140-220	C2	140	0.004 ❖	0.007	0.008	0.011
	220-310	C2	110	0.003 ❖	0.006	0.007	0.009
Aerospace Alloy S82	185-275	C2	240	0.005 ❖	0.006	0.007	0.009
	275-350	C2	180	0.004 ❖	0.005	0.006	0.008
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	240	0.007 ❖	0.009	0.012	0.014
	275-350	C2	180	0.006 ❖	0.008	0.011	0.012
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C2	240	0.006 ❖	0.007	0.009	0.012
	185-275	C2	180	0.005 ❖	0.006	0.008	0.009
Super Duplex Stainless Steel	135-185	C2	125	0.005 ❖	0.007	0.008	0.010
	185-275	C2	100	0.004 ❖	0.006	0.007	0.009
Wear Plate Hardox, AR400, T-1, etc.	400	C2	150	0.003 ❖	0.005	0.008	0.010
	500	C2	120	0.002 ❖	0.004	0.006	0.008
	600	C2	100	0.001 ❖	0.003	0.005	0.006
Hardened Steel	300-400	C1	150	0.004 ❖	0.006	0.009	0.011
	400-500	C1	120	0.003 ❖	0.005	0.008	0.010
Nodular, Grey, Ductile Cast Iron	120-150	C2	500	0.008	0.012	0.015	0.019
	150-200	C2	480	0.007	0.011	0.013	0.017
	200-220	C2	430	0.006	0.009	0.012	0.015
	220-260	C2	370	0.005	0.008	0.011	0.013
	260-320	C2	335	0.005	0.007	0.010	0.011
Cast Aluminum	30	C2	975	0.009	0.015	0.018	0.023
	180	C2	730	0.008	0.013	0.016	0.020
Wrought Aluminum	30	C2	1385	0.005	0.013	0.016	0.020
	180	C2	975	0.005	0.007	0.012	0.014
Aluminum Bronze	100-200	C2	360	0.006	0.009	0.012	0.015
	200-250	C2	300	0.005	0.007	0.009	0.011
Brass	100	C2	650	0.007	0.011	0.013	0.018
Copper	60	C2	420	0.003 ❖	0.004	0.007	0.010

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Structural Steel T-A® Drilling System
Recommended Speeds and Feeds

NOTE: The below speed and feed recommendations are based on a rigid setup utilizing air mist through tool coolant. Speed may be increased up to 50% if using high pressure flood or through coolant.

NOTE: If drilling dry without coolant, speed must be reduced significantly based on setup, drill depth, and material hardness. Up to 50% speed and feed reduction may be necessary in these types of applications. Contact our Application Engineering Team for assistance.

Super Cobalt Thin Wall Drill Insert

Material	Material Hardness (BHN)	Speed (SFM)	Feed (IPR)			
		-TW TiAlN Mist Coolant	9/16" to 11/16"	13/16" to 15/16"	1" to 1-3/8"	1-13/32" to 1-7/8"
Structural Steel A36, A285, A516, etc.	100 - 150	110	0.012	0.018	0.019	0.020
	150 - 250	100	0.011	0.016	0.017	0.019
	250 - 350	90	0.010	0.014	0.016	0.018

Super Cobalt Notch Point and 150° Degree Structural Steel Drill Insert

Material	Material Hardness (BHN)	Speed (SFM)	Feed (IPR)			
		-NP & -SS TiAlN Mist Coolant	9/16" to 11/16"	13/16" to 15/16"	1" to 1-3/8"	1-13/32" to 1-7/8"
Structural Steel A36, A285, A516, etc.	100 - 150	110	0.010	0.012	0.014	0.018
	150 - 250	100	0.009	0.011	0.012	0.016
	250 - 350	90	0.008	0.010	0.011	0.014

Super Cobalt GEN2 T-A® Drill Insert

Material	Material Hardness (BHN)	Speed (SFM)	Feed (IPR)			
		AM200® Mist Coolant	9/16" to 11/16"	13/16" to 15/16"	1" to 1-3/8"	1-13/32" to 1-7/8"
Structural Steel A36, A285, A516, etc.	100 - 150	125	0.010	0.012	0.014	0.018
	150 - 250	115	0.009	0.011	0.012	0.016
	250 - 350	105	0.008	0.010	0.011	0.014

C1 Carbide GEN2 T-A® Drill Insert

Material	Material Hardness (BHN)	Speed (SFM)	Feed (IPR)			
		AM200® Coolant	9/16" to 11/16"	13/16" to 15/16"	1" to 1-3/8"	1-13/32" to 1-7/8"
Structural Steel A36, A285, A516, etc.	100 - 150	165	0.008	0.011	0.015	0.017
	150 - 250	155	0.006	0.010	0.013	0.015
	250 - 350	140	0.005	0.009	0.012	0.013

Recommended Speeds and Feeds - HSS and Carbide Flat Bottom T-A® Drill Inserts (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	SPEED				FEED (IPR) - HSS						Grade	SPEED				FEED (IPR) - Carbide			
		TiN SFM	TiAlN SFM	TiCN SFM	AM200® SFM	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"	1-29/32" to 2-9/16"		TiN SFM	TiAlN SFM	TiCN SFM	AM200® SFM	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	170	250	230	290	0.006	0.009	0.011	0.014	0.016	0.018	C2	270	380	325	425	0.007	0.010	0.013	0.015
	150-200	155	230	205	265	0.006	0.009	0.011	0.014	0.016	0.018	C2	240	320	280	375	0.006	0.009	0.012	0.014
	200-250	140	210	185	245	0.005	0.009	0.011	0.014	0.015	0.017	C2	220	300	260	350	0.005	0.009	0.011	0.013
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	150	220	195	255	0.005 ❖	0.008	0.010	0.013	0.015	0.017	C2	260	345	315	410	0.007❖	0.009	0.011	0.014
	125-175	140	210	185	245	0.005 ❖	0.008	0.010	0.013	0.015	0.016	C2	220	300	260	350	0.006❖	0.009	0.011	0.014
	175-225	130	195	175	225	0.004 ❖	0.007	0.009	0.012	0.014	0.016	C2	200	280	235	320	0.005❖	0.008	0.010	0.013
	225-275	120	185	155	215	0.004 ❖	0.007	0.009	0.012	0.014	0.015	C2	180	240	215	285	0.004❖	0.008	0.010	0.013
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	140	210	185	245	0.005	0.008	0.010	0.013	0.015	0.018	C2	220	300	260	350	0.006	0.009	0.011	0.014
	175-225	130	195	175	225	0.004	0.007	0.009	0.012	0.014	0.017	C2	200	280	240	320	0.005	0.008	0.010	0.013
	225-275	120	185	155	215	0.004	0.007	0.009	0.012	0.014	0.017	C2	180	240	210	285	0.005	0.008	0.010	0.013
	275-325	110	175	150	205	0.004	0.006	0.008	0.010	0.013	0.015	C2	150	210	180	240	0.004	0.007	0.009	0.012
Alloy Steel 4140, 5140, 8640, etc.	125-175	130	185	175	215	0.005	0.007	0.009	0.012	0.013	0.016	C2	215	290	250	340	0.006	0.009	0.011	0.014
	175-225	120	175	155	205	0.004	0.007	0.009	0.012	0.013	0.016	C2	200	270	230	320	0.005	0.008	0.010	0.013
	225-275	110	155	145	180	0.004	0.006	0.009	0.012	0.013	0.016	C2	180	230	205	290	0.005	0.008	0.010	0.013
	275-325	105	145	135	170	0.004	0.005	0.008	0.010	0.012	0.015	C2	175	215	190	280	0.004	0.007	0.009	0.012
	325-375	95	135	125	155	0.003	0.005	0.008	0.010	0.012	0.014	C2	145	190	170	230	0.003	0.006	0.009	0.011
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	70	95	85	110	0.004 ❖	0.006	0.008	0.009	0.010	0.012	C2	140	170	160	220	0.005❖	0.008	0.009	0.010
	300-350	50	75	70	90	0.003 ❖	0.006	0.008	0.009	0.010	0.012	C2	120	160	140	190	0.004❖	0.007	0.008	0.009
	350-400	45	65	60	75	0.003 ❖	0.005	0.007	0.008	0.009	0.011	C2	100	145	120	160	0.003❖	0.006	0.007	0.009
Structural Steel A36, A285, A516, etc.	100-150	120	170	155	195	0.005 ❖	0.009	0.010	0.012	0.015	0.017	C2	205	265	240	325	0.007❖	0.009	0.012	0.014
	150-250	105	145	135	170	0.004 ❖	0.008	0.009	0.010	0.013	0.016	C2	170	215	200	270	0.005❖	0.009	0.010	0.012
	250-350	85	120	110	140	0.004 ❖	0.007	0.008	0.009	0.012	0.015	C2	155	200	180	240	0.004❖	0.008	0.009	0.010
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	70	95	90	110	0.004	0.005	0.007	0.009	0.010	0.012	C2	140	190	160	220	0.003	0.006	0.008	0.009
	200-250	50	80	75	95	0.004	0.005	0.007	0.009	0.009	0.011	C2	100	150	120	160	0.003	0.006	0.008	0.009
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	25	35	30	40	0.003 ❖	0.006	0.007	0.009	0.010	0.012	C2	70	90	80	110	0.003❖	0.006	0.008	0.009
	220-310	20	30	25	35	0.003 ❖	0.005	0.006	0.007	0.008	0.010	C2	50	70	60	80	0.003❖	0.005	0.007	0.009
Titanium Alloy	140-220	35	45	40	50	0.003 ❖	0.006	0.007	0.009	0.010	0.012	C2	85	110	90	130	0.003❖	0.005	0.006	0.008
	220-310	25	40	35	45	0.003 ❖	0.005	0.006	0.007	0.008	0.010	C2	70	95	80	100	0.003❖	0.004	0.005	0.007
Aerospace Alloy S82	185-275	65	90	85	110	0.005 ❖	0.007	0.008	0.010	0.012	0.015	C2	140	120	165	130	0.006❖	0.006	0.010	0.012
	275-350	50	80	70	90	0.004 ❖	0.006	0.007	0.009	0.010	0.012	C2	110	90	125	105	0.005❖	0.005	0.009	0.010
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	65	90	85	110	0.005 ❖	0.007	0.008	0.010	0.012	0.014	C2	140	180	165	210	0.006❖	0.008	0.010	0.012
	275-350	50	80	70	90	0.004 ❖	0.006	0.007	0.009	0.010	0.011	C2	110	140	125	160	0.005❖	0.007	0.009	0.010
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	65	90	85	110	0.005 ❖	0.007	0.008	0.010	0.012	0.014	C2	90	120	110	130	0.005❖	0.007	0.008	0.010
	185-275	50	80	70	90	0.004 ❖	0.006	0.007	0.009	0.010	0.011	C2	70	90	80	105	0.004❖	0.006	0.007	0.009
Super Duplex Stainless Steel	135-185	65	90	85	110	0.005 ❖	0.007	0.008	0.010	0.012	0.014	C2	70	95	85	110	0.004❖	0.006	0.007	0.008
	185-275	50	80	70	90	0.004 ❖	0.006	0.007	0.009	0.010	0.011	C2	55	70	60	85	0.003❖	0.005	0.006	0.007
Wear Plate Hardox, AR400, T-1, etc.	400	-	-	-	-	-	-	-	-	-	-	C2	65	100	85	130	0.003❖	0.004	0.006	0.008
	500	-	-	-	-	-	-	-	-	-	-	C2	45	75	60	100	0.002❖	0.003	0.005	0.006
	600	-	-	-	-	-	-	-	-	-	-	C2	35	65	45	80	0.001❖	0.002	0.004	0.005
Hardened Steel	300-400	45	65	60	80	0.003 ❖	0.005	0.007	0.008	0.011	0.015	C2	100	125	110	135	0.004❖	0.006	0.007	0.009
	400-500	25	40	35	45	0.002 ❖	0.004	0.006	0.007	0.009	0.011	C2	60	75	65	110	0.003❖	0.005	0.006	0.007
Nodular, Grey, Ductile Cast Iron	120-150	150	220	195	255	0.006	0.010	0.014	0.017	0.019	0.020	C2	270	405	360	450	0.007	0.010	0.013	0.016
	150-200	130	195	175	225	0.005	0.009	0.012	0.016	0.018	0.019	C2	230	350	290	390	0.006	0.009	0.011	0.014
	200-220	110	175	150	205	0.005	0.008	0.010	0.014	0.016	0.017	C2	200	320	260	350	0.005	0.008	0.010	0.013
	220-260	95	150	125	175	0.004	0.006	0.008	0.010	0.013	0.014	C2	180	270	220	300	0.004	0.007	0.009	0.011
	260-320	80	120	105	140	0.004	0.005	0.006	0.008	0.010	0.012	C2	160	240	200	265	0.004	0.006	0.009	0.009
Cast Aluminum	30	520	750	650	-	0.007	0.011	0.014	0.017	0.018	0.019	C2	520	750	650	-	0.009	0.013	0.016	0.017
	180	260	400	350	-	0.007	0.011	0.014	0.016	0.017	0.019	C2	260	400	350	-	0.008	0.012	0.014	0.015
Wrought Aluminum	30	520	750	650	850	0.007	0.011	0.014	0.017	0.018	0.019	C2	950	1200	1070	1270	0.005	0.007	0.009	0.010
	180	260	400	350	450	0.007	0.011	0.014	0.016	0.017	0.019	C2	630	800	715	850	0.004	0.006	0.008	0.009
Aluminum Bronze	100-200	130	190	175	230	0.005	0.009	0.012	0.016	0.020	0.024	C2	240	310	280	340	0.004	0.006	0.008	0.011
	200-250	95	150	125	165	0.004	0.006	0.008	0.010	0.012	0.015	C2	180	265	220	285	0.003	0.005	0.006	0.008
Brass	100	150	220	190	250	0.006	0.010	0.014	0.017	0.021	0.025	C2	370	520	450	600	0.005	0.006	0.008	0.012
Copper	60	115	150	130	170	0.002 ❖	0.003	0.006	0.008	0.010	0.014	C2	220	345	280	380	0.002❖	0.002	0.003	0.005

Tool failure can cause serious injury. To prevent: ⚠ **WARNING**

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Recommended Speeds and Feeds

Diamond Coated T-A® Carbide Drill Inserts - Inch

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts.

MATERIAL		CARBIDE					
		GRADE	Speed (SFM)	Feed (IPR)			
			CVD Diamond	3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"
Polymer Matrix Composites	Carbon (Hard)	N2	1000-1500	0.004-0.006	0.008-0.010	0.010-0.012	0.012-0.014
	Carbon Fiber						
	Carbon/Glass Fiber						
	Fiberglass						
	Graphite						
	Plastics	N2	250-1000	0.004-0.006	0.008-0.010	0.010-0.012	0.012-0.014
	Epoxy Resin						
	Bismaleimide Resin						
	Polyester Resin						
	Phenolic Resin						
	Rubber						
Metal Matrix Composites	Aluminum Si<10%	N2	1000	0.008	0.013	0.016	0.02
	10%<Si<15%	N2	850-1000	0.008	0.013	0.016	0.02
	15%<Si<20%	N2	650-850	0.008	0.013	0.016	0.02
	20%<Si<25%	N2	500-650	0.008	0.013	0.016	0.02
	25%<Si	N2	200-500	0.008	0.013	0.016	0.02
	Brass	N2	250-500	0.008	0.013	0.016	0.02
	Bronze						
	Copper	N2	100-250	0.004-0.006	0.008-0.010	0.010-0.012	0.012-0.014
	Copper Alloys						
	Lead Alloys						
	Magnesium Alloys						
	Precious Metals						
Ceramic Matrix Composites	Carbide (Green)	N2	50-250	0.004-0.006	0.008-0.010	0.010-0.012	0.012-0.014
	Ceramic (Green)						
	Ceramic (Pre-Sintered)						

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

SPEED AND FEED RECOMMENDATION EXAMPLE: If recommended speed and feed is 200 SFM and 0.008 IPR for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • .75 = 150 SFM **.008 • 0.90 = .007 IPR**

Coolant Recommendations
T-A® Drill Inserts (Inch)

IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the TA drilling system will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Material	Coolant Pressure (PSI) / Coolant Volumetric Flow Rate (GPM)											
	HSS							Carbide				
	3/8" to 1/2"	33/64" to 11/16"	23/32" to 1"	1" to 1-1/4"	1-1/4" to 2"	2" to 3"	3" to 4"	3/8" to 1/2"	33/64" to 11/16"	23/32" to 1"	1" to 1-3/8"	1-13/32" to 1-7/8"
Free Machining Steel 1118, 1215, 12L14, etc.	175-185	100-120	105-140	80-115	75-100	40-50	65-90	195	140	160	140	155
	2.5-2.6	2.8-3.0	4.4-5.2	7-8	12-14	30-33	38-44	2.6	3.3	5.5	9	18
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	165-170	75-90	75-95	60-80	55-75	30-40	50-65	180	105	105	110	115
	2.4-2.5	2.4-2.6	3.7-4.2	6-7	11-12	26-30	33-38	2.5	2.9	4.4	8	15
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	160-165	70-85	70-90	55-75	50-70	30-40	50-65	175	100	90	700	75
	2.3-2.4	2.3-2.6	3.7-4.2	5-6	10-12	26-30	33-38	2.5	2.8	4.1	7	13
Alloy Steel 4140, 5140, 8640, etc.	160-165	65-75	65-80	50-70	45-60	30-35	40-50	165	85	100	75	70
	2.3-2.4	2.2-2.4	3.5-3.9	5-6	10-11	26-28	30-33	2.4	2.6	4.3	6	12
High Strength Alloy 4340, 4330V, 300M, etc.	150-155	55-60	45-50	25-30	25-30	20-25	40-50	175	115	105	75	70
	2.3-2.4	2.1-2.2	2.9-3.1	4-5	7-8	21-23	23-26	2.4	2.3	3.2	5	8
Structural Steel A36, A285, A516, etc.	160-165	75-85	65-80	40-55	40-50	25-30	40-50	175	115	105	75	70
	2.3-2.4	2.4-2.6	3.5-3.9	5-6	9-10	23-26	30-33	2.5	3.0	4.4	6	12
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-155	55-60	45-50	25-30	25-30	20-25	25-30	155	60	55	40	35
	2.3-2.4	2.1-2.2	2.9-3.1	4-5	7-8	21-23	23-26	2.4	2.2	3.2	5	8
High Temp. Alloy Hastelloy B, Inconel 600, etc.	150-155	60-65	50-55	30-35	25-30	25-30	44	247	160	174	160	130
	2.3-2.4	2.2-2.3	3.1-3.2	4-5	7-8	23-26	33	3	4	6	9	16
Titanium Alloy	150-155	60-65	50-55	30-35	25-30	25-30	44	247	160	174	160	130
	2.3-2.4	2.2-2.3	3.1-3.2	4-5	7-8	23-26	33	3	4	6	9	16
Aerospace Alloy S82	150-155	60-65	50-55	30-35	25-30	25-30	44	247	160	174	160	130
	2.3-2.4	2.2-2.3	3.1-3.2	4-5	7-8	23-26	33	3	4	6	9	16
Stainless Steel 400 Series 416, 420, 303, etc.	171	86	75	55	51	29	45	329	239	260	250	190
	3	3	4	6	10	26	31	3	4	7	12	20
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	171	86	75	55	51	29	45	329	239	260	250	190
	3	3	4	6	10	26	31	3	4	7	12	20
Super Duplex Stainless Steel	171	86	75	55	51	29	45	329	239	260	250	190
	3	3	4	6	10	26	31	3	4	7	12	20
Wear Plate Hardox, AR400, T-1, etc.	155	61	51	29	29	25	29	210	75	70	49	45
	2	2	3	5	8	23	26	3	2	4	5	10
Hardened Steel	155	61	51	29	29	25	29	210	75	70	49	45
	2	2	3	5	8	23	26	3	2	4	5	10
SG / Nodular Cast Iron	160	65	61	41	35	29	35	225	104	90	90	80
	2	2	3	5	9	26	28	3	3	4	7	13
Grey / White Iron	160	65	61	41	35	29	35	225	104	90	90	80
	2	2	3	5	9	26	28	3	3	4	7	13
Cast Aluminum	210	180	230	159	125	51	80	350	319	315	284	200
	3	4	6	9	16	33	42	4	5	8	12	20
Wrought Aluminum	210	180	230	159	125	51	80	350	319	315	284	200
	3	4	6	9	16	33	42	4	5	8	12	20
Aluminum Bronze	186	120	140	115	100	51	90	290	239	239	220	174
	2.5	3	5	8	14	33	44	3	4	7	11	19
Brass	159	65	61	41	35	29	35	350	319	315	284	200
	2	2	3	5	9	26	28	4	5	8	12	20
Copper	186	120	140	115	100	51	90	290	239	239	220	174
	2.5	3	5	8	14	33	44	3	4	7	11	19

Deep Hole Drilling Coolant Adjustment

Holder	Extended	Long	XL	3XL
Pressure & Flow	1.3	1.5	2	3

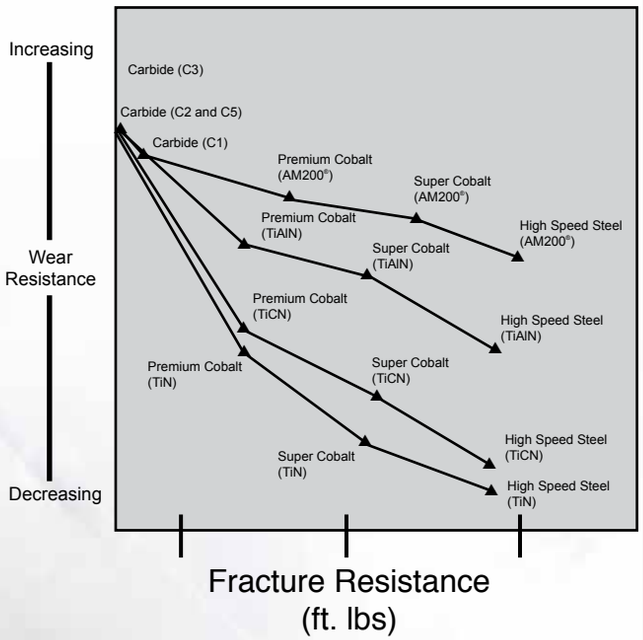
COOLANT RECOMMENDATION EXAMPLE: If the recommended pressure and flow is 150 PSI and 2.4 GPM for a standard length holder, the adjusted pressure and flow would be 450 PSI and 7.2 GPM respectively for the 3XL holder.

150 • 3 = 450 PSI **2.4 • 3 = 7.2 GPM**

Technical Information
T-A® Drill Inserts (Inch)

WEAR versus TOUGHNESS

When selecting a grade of cutting tool material for your application, both wear resistance and grade toughness should be considered. The higher the wear resistance a cutting tool material exhibits, the more likely chipping or fracture is to occur, thus requires more RIGID machining conditions. On the other hand, to effectively machine some materials, cobalt or carbide grades of cutting tool material may be required. The graph below will aid you in the selection of a cutting tool material with the right combination of wear resistance and toughness to make your application both efficient and cost effective.



TAP DRILL INFORMATION

AMERICAN - Unified Inch Screw Thread

Tap Size	Tap Drill Size	Decimal Equivolent	*Theo% Thread	Prob Mean Oversize	Prob Hole Size	**Prob% Thread
7/16 - 20	W 25/64	.3860" .3906"	79% 72%	.003" .003"	.3890" .3936"	75% 68%
1/2 - 13	10.5mm 27/64 7/16	.4134" .4219" .4375"	87% 78% 63%	.003" .003" .003"	.4164" .4249" .4405"	84% 75% 60%
1/2 - 20	29/64	.4531"	72%	.003"	.4561"	68%
9/16 - 12	15/32 12.0mm 31/64	.4688" .4724" .4844"	87% 72% 83%	.003" .003" .003"	.4718" .4874" .4754"	84% 69% 80%
9/16 - 18	1/2 13.0mm 31/64	.5000" .5118" .5156"	87% 70% 65%	.003" .003" .003"	.5030" .5148" .5186"	82% 66% 61%
2/8 - 11	17/32	.5313"	79%	.003"	.5343"	77%
5/8 - 12	35/64	.5469"	72%	.003"	.5499"	69%
5/8 - 18	9/16 14.5mm 37/64	.5625" .5709" .5781"	87% 75% 65%	.003" .003" .003"	.5655" .5739" .5811"	82% 71% 61%
11/16 - 12	39/64	.6094"	72%	.003"	.6124"	69%
3/4 - 10	41/64 16.5mm 21/32	.6406" .6496" .6563"	84% 77% 72%	.003" .003" .003"	.6436" .6526" .6593"	82% 75% 70%
3/4 - 12	43/64	.6719"	72%	.003"	.6749"	69%
3/4 - 16	11/16 17.5mm	.6875" .6890"	77% 75%	.003" .003"	.6905" .6920"	73% 71%
7/8 - 9	49/64 25/32	.7656" .7813"	76% 65%	.003" .003"	.7686" .7843"	74% 63%
7/8 - 14	51/64 13/16	.7969" .8125"	84% 67%	.003" .003"	.7999" .8155"	81% 64%
15/16 - 12	55/64	.8594"	72%	.003"	.8624"	69%
15/16 - 20	57/64	.8906"	72%	.003"	.8936"	68%
1 - 8	22.0mm 7/8 57/64	.8661" .8750" .8906"	82% 77% 67%	.003" .003" .003"	.8691" .8780" .8936"	81% 75% 65%
1 - 12	29/32 59/64	.9063" .9219"	87% 72%	.003" .003"	.9093" .9249"	84% 69%
1 - 14	15/16	.9375"	67%	.003"	.9405"	64%
1-1/8 - 12	1-1/32 1-3/64	1.0313" 1.0469"	87% 72%	.003" .003"	1.0343" 1.0499"	84% 69%
1-1/4 - 7	1-7/64	1.1094"	76%	.003"	1.1124"	74%

*Based on nominal tap drill diameter. **Based on .003" probable mean oversize.
To calculate percentage of full thread for a given hole diameter:

$$\% \text{ Thread} = \#\text{ of Threads per Inch} * \left(\frac{\text{Basic Major Diameter of thread (inch)} - \text{Drill Hole Size (inch)}}{.0130} \right)$$

Taper Pipe Thread (NPT)

Tap Size	Tap Drill Size	Decimal Equivolent	*Theo% Thread	Prob Mean Oversize	Prob Hole Size	**Prob% Thread
1/4 - 18 3/8 - 18 1/2 - 14 3/4 - 14	7/16 9/16 45/64 29/32	.4375" .5625" .7031" .9063"	N/A N/A N/A N/A	.003" .003" .003" .003"	.4405" .5655" .7061" .9093"	N/A N/A N/A N/A

The above tap drill information represents probable thread percentages for the standard tap drills stocked at AMEC. Special blade diameters may be required in order to meet a user specific percentage of thread requirements.

The .003" probable mean oversize hole condition is based on optimum cutting conditions. Probable % of full thread may vary based on less ideal cutting conditions.

Formulas

1. $\text{RPM} = \frac{3.82 \cdot \text{SFM}}{\text{DIA}}$

where:
RPM = revolutions per minute (rev/min)
SFM = surface feet per minute (ft/min)
DIA = diameter of drill (in)

2. IPM = RPM • IPR
where:
IPM = inches per minute (in/min)
RPM = revolutions per minute (rev/min)
IPR = feed rate (in/rev)

3. SFM = RPM • 0.262• DIA
where:
SFM = speed (ft/min)
RPM = revolutions per minute (rev/min)
DIA = diameter of drill (in)

4. Thrust = (133,650) • (IPR) • (DIA) • (Km)
where:
Thrust = axial thrust (lbs)
IPR = feed rate (in/rev)
DIA = diameter of drill (in)
Km = specific cutting energy (lbs/in^2)

5. Tool Power = .6911 • IPR • RPM • Km • DIA^2
where:
Tool Power = tool power (HP)
IPR = feed rate (in/rev)
RPM = revolutions per minute (rev/min)
Km = specific cutting energy (lbs/in^2)
DIA = diameter of drill (in)

Type of Material	Km (lbs/in^2)
Plain Carbon and Alloy Steel	
85 - 200 BHN	0.79
200 - 275 BHN	0.94
275 - 375 BHN	1.00
375 - 425 BHN	1.15
High Temperature Alloys	1.44
Stainless Steel:	
135-275 BHN	0.94
30 - 45 RC	1.08
Copper Alloy	
20 - 80 RB	0.43
80 - 100 RB	0.72
Titanium Alloy	0.72
Aluminum Alloy	0.22
Magnesium Alloy	0.16
Cast Iron	
100 - 200 BHN	0.50
200 - 300 BHN	1.08

Note: The above table and equations are found in the Machinery's Handbook. Permission to simplify and print the equations is granted by the Editor of the Machinery's Handbook.

Recommended Speeds and Feeds - T-A® HSS Drill Inserts (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	SPEED			FEED (mm/rev)						
		TiN M/min	TiAlN M/min	TiCN M/min	9.5 to 12.95	12.98 to 17.52	17.53 to 24.38	24.41 to 35.00	35.01 to 47.80	47.85 to 65.99	66.00 to 114.48
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	52	76	70	0.15	0.23	0.28	0.35	0.41	0.46	0.71
	150-200	47	70	62	0.15	0.23	0.28	0.35	0.41	0.46	0.71
	200-250	43	64	56	0.13	0.23	0.28	0.35	0.38	0.43	0.71
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	46	67	59	0.13 ❖	0.20	0.25	0.33	0.38	0.43	0.69
	125-175	43	64	56	0.13 ❖	0.20	0.25	0.33	0.38	0.41	0.69
	175-225	40	59	53	0.10 ❖	0.18	0.23	0.30	0.36	0.41	0.61
	225-275	37	56	47	0.10 ❖	0.18	0.23	0.30	0.36	0.38	0.61
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	43	64	56	0.13	0.20	0.25	0.33	0.38	0.46	0.69
	175-225	40	59	53	0.10	0.18	0.23	0.30	0.36	0.43	0.61
	225-275	37	56	47	0.10	0.18	0.23	0.30	0.36	0.43	0.61
	275-325	34	53	46	0.10	0.15	0.20	0.25	0.33	0.38	0.56
Alloy Steel 4140, 5140, 8640, etc.	125-175	40	56	53	0.13	0.18	0.23	0.30	0.33	0.41	0.56
	175-225	37	53	47	0.10	0.18	0.23	0.30	0.33	0.41	0.56
	225-275	34	47	44	0.10	0.15	0.23	0.30	0.33	0.41	0.56
	275-325	32	44	41	0.10	0.13	0.20	0.25	0.30	0.38	0.51
	325-375	29	41	38	0.08	0.13	0.20	0.25	0.30	0.36	0.51
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	21	29	26	0.10 ❖	0.15	0.20	0.23	0.25	0.30	0.51
	300-350	15	23	21	0.08 ❖	0.15	0.20	0.23	0.25	0.30	0.51
	350-400	13	20	18	0.08 ❖	0.13	0.18	0.20	0.23	0.28	0.46
Structural Steel A36, A285, A516, etc.	100-150	36	52	47	0.13 ❖	0.23	0.25	0.30	0.38	0.43	0.66
	150-250	32	44	41	0.10 ❖	0.20	0.23	0.25	0.33	0.41	0.61
	250-350	26	37	34	0.10 ❖	0.18	0.20	0.23	0.30	0.38	0.51
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	21	29	27	0.10	0.13	0.18	0.23	0.25	0.30	0.43
	200-250	15	24	23	0.10	0.13	0.18	0.23	0.23	0.28	0.43
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	7	10	9	0.08 ❖	0.15	0.18	0.23	0.25	0.30	-
	220-310	6	9	7	0.08 ❖	0.13	0.15	0.18	0.20	0.25	-
Titanium Alloy	140-220	10	14	12	0.08 ❖	0.15	0.18	0.23	0.25	0.30	-
	220-310	8	12	11	0.08 ❖	0.13	0.15	0.18	0.20	0.25	-
Aerospace Alloy S82	185-275	20	27	26	0.13 ❖	0.18	0.20	0.25	0.30	0.38	0.51
	275-350	15	24	21	0.10 ❖	0.15	0.18	0.23	0.25	0.30	0.46
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	20	27	26	0.13 ❖	0.18	0.20	0.25	0.30	0.36	0.51
	275-350	15	24	21	0.10 ❖	0.15	0.18	0.23	0.25	0.28	0.46
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	20	27	26	0.13 ❖	0.18	0.20	0.25	0.30	0.36	0.51
	185-275	15	24	21	0.10 ❖	0.15	0.18	0.23	0.25	0.28	0.46
Super Duplex Stainless Steel	135-185	20	27	26	0.13 ❖	0.18	0.20	0.25	0.30	0.36	0.51
	185-275	15	24	21	0.10 ❖	0.15	0.18	0.23	0.25	0.28	0.46
Wear Plate Hardox, AR400, T-1, etc.	400	14	21	17	0.08	0.15	0.20	0.23	0.30	0.41	0.46
	500	11	14	12	0.05	0.12	0.18	0.20	0.25	0.30	0.41
	600	-	-	-	-	-	-	-	-	-	-
Hardened Steel	300-400	13	20	18	0.08 ❖	0.13	0.18	0.20	0.27	0.38	0.46
	400-500	8	12	10	0.06 ❖	0.10	0.15	0.18	0.23	0.28	0.41
Nodular, Grey, Ductile Cast Iron	120-150	46	67	59	0.15	0.25	0.36	0.43	0.48	0.51	0.76
	150-200	40	59	53	0.13	0.23	0.30	0.41	0.46	0.48	0.71
	200-220	34	53	46	0.13	0.20	0.25	0.36	0.41	0.43	0.61
	220-260	29	46	38	0.10	0.15	0.20	0.25	0.33	0.33	0.51
	260-320	24	37	32	0.10	0.13	0.15	0.20	0.25	0.25	0.41
Cast Aluminum	30	160	228	198	0.18	0.28	0.36	0.43	0.46	0.48	0.64
	180	79	122	107	0.18	0.28	0.36	0.41	0.43	0.48	0.64
Wrought Aluminum	30	160	228	198	0.18	0.28	0.36	0.43	0.46	0.48	0.64
	180	79	122	107	0.18	0.28	0.36	0.41	0.43	0.48	0.64
Aluminum Bronze	100-200	40	59	53	0.13	0.23	0.30	0.41	0.51	0.61	0.71
	200-250	29	46	38	0.10	0.15	0.20	0.25	0.31	0.38	0.51
Brass	100	46	67	59	0.15	0.25	0.36	0.43	0.53	0.63	0.76
Copper	60	35	45	40	0.05 ❖	0.08	0.15	0.20	0.25	0.35	0.41

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Recommended Speeds and Feeds - T-A® Carbide Drill Inserts (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED			FEED (mm/rev)				
			TiN M/min	TiAlN M/min	TiCN M/min	9.50 to 12.95	12.98 to 17.52	17.53 to 24.38	24.41 to 35.00	35.01 to 47.80
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C5	96	128	115	0.20	0.30	0.38	0.45	0.53
	150-200	C5	85	110	100	0.18	0.28	0.35	0.40	0.48
	200-250	C5	79	104	90	0.15	0.25	0.33	0.38	0.43
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C5	91	119	110	0.20 ❖	0.25	0.33	0.43	0.48
	125-175	C5	79	104	90	0.18 ❖	0.25	0.33	0.40	0.45
	175-225	C5	73	95	82	0.15 ❖	0.23	0.30	0.38	0.43
	225-275	C5	64	83	75	0.13 ❖	0.23	0.30	0.38	0.43
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C5	79	104	90	0.18	0.25	0.33	0.40	0.45
	175-225	C5	73	95	84	0.15	0.23	0.30	0.38	0.43
	225-275	C5	67	83	72	0.15	0.23	0.30	0.38	0.43
	275-325	C5	55	70	62	0.13	0.20	0.28	0.35	0.40
Alloy Steel 4140, 5140, 8640, etc.	125-175	C5	76	99	87	0.18	0.25	0.33	0.40	0.45
	175-225	C5	70	92	80	0.15	0.23	0.30	0.38	0.43
	225-275	C5	64	83	72	0.15	0.23	0.30	0.38	0.43
	275-325	C5	61	76	68	0.13	0.20	0.28	0.35	0.40
	325-375	C5	52	67	60	0.10	0.18	0.25	0.33	0.38
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C5	49	61	55	0.15 ❖	0.23	0.25	0.30	0.38
	300-350	C5	43	55	49	0.13 ❖	0.20	0.23	0.28	0.35
	350-400	C5	37	49	43	0.10 ❖	0.18	0.20	0.25	0.30
Structural Steel A36, A285, A516, etc.	100-150	C5	73	95	84	0.20 ❖	0.28	0.35	0.40	0.45
	150-250	C5	61	76	68	0.15 ❖	0.25	0.30	0.35	0.40
	250-350	C5	55	70	62	0.13 ❖	0.23	0.28	0.30	0.35
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C5	49	67	58	0.10	0.18	0.23	0.28	0.33
	200-250	C5	37	52	45	0.10	0.18	0.23	0.28	0.33
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	24	32	28	0.10 ❖	0.18	0.23	0.28	0.33
	220-310	C2	18	26	22	0.10 ❖	0.15	0.20	0.25	0.30
Titanium Alloy	140-220	C2	30	38	32	0.10 ❖	0.18	0.23	0.28	0.33
	220-310	C2	24	33	28	0.10 ❖	0.15	0.20	0.25	0.30
Aerospace Alloy S82	185-275	C2	49	64	57	0.17 ❖	0.22	0.29	0.35	0.40
	275-350	C2	37	49	43	0.14 ❖	0.19	0.27	0.30	0.35
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	49	64	57	0.17 ❖	0.22	0.29	0.35	0.40
	275-350	C2	37	49	43	0.14 ❖	0.19	0.27	0.30	0.35
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C2	49	64	57	0.13 ❖	0.17	0.22	0.26	0.30
	185-275	C2	37	49	43	0.11 ❖	0.14	0.20	0.22	0.25
Super Duplex Stainless Steel	135-185	C2	25	33	29	0.11 ❖	0.15	0.19	0.23	0.27
	185-275	C2	19	25	22	0.09 ❖	0.13	0.18	0.20	0.23
Wear Plate Hardox, AR400, T-1, etc.	400	C5	23	35	30	0.07	0.12	0.20	0.25	0.30
	500	C5	15	26	21	0.05	0.10	0.15	0.20	0.25
	600	C5	11	22	16	0.04	0.08	0.12	0.16	0.20
Hardened Steel	300-400	C5	34	43	39	0.10 ❖	0.18	0.23	0.28	0.33
	400-500	C5	20	25	23	0.08 ❖	0.15	0.20	0.23	0.28
Nodular, Grey, Ductile Cast Iron	120-150	C2, C3	98	141	127	0.20	0.30	0.38	0.48	0.58
	150-200	C2, C3	82	122	102	0.18	0.28	0.33	0.43	0.53
	200-220	C2, C3	73	110	93	0.15	0.23	0.30	0.38	0.45
	220-260	C2, C3	64	95	79	0.13	0.20	0.28	0.33	0.38
	260-320	C2, C3	55	83	69	0.13	0.18	0.25	0.28	0.33
Cast Aluminum	30	C2	366	460	410	0.25	0.38	0.45	0.50	0.55
	180	C2	244	306	275	0.23	0.33	0.40	0.45	0.50
Wrought Aluminum	30	C2	366	460	410	0.10	0.15	0.25	0.30	0.36
	180	C2	244	306	275	0.20	0.28	0.36	0.45	0.50
Aluminum Bronze	100-200	C2	85	110	100	0.13	0.20	0.25	0.36	0.42
	200-250	C2	64	94	79	0.10	0.15	0.18	0.25	0.33
Brass	100	C2	130	184	160	0.15	0.23	0.28	0.38	0.45
Copper	60	C2	80	120	100	0.05 ❖	0.08	0.10	0.15	0.25

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Recommended Speeds and Feeds - GEN2 T-A® HSS (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED		FEED (mm/min)						
			TiN M/min	AM200® M/min	9.5 to 12.95	12.98 to 17.53	17.53 to 24.38	24.41 to 35.00	35.01 to 47.80	47.85 to 65.99	66.00 to 114.48
Free Machining Steel 1118, 1215, 12L14, etc.	**100-150**	HSS	61	99	0.20	0.30	0.41	0.48	0.51	0.58	0.71
	150-200	HSS	55	91	0.18	0.28	0.38	0.43	0.51	0.58	0.71
	200-250	HSS	49	85	0.15	0.25	0.36	0.41	0.51	0.58	0.71
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	HSS	52	88	0.20 ❖	0.25	0.36	0.46	0.48	0.58	0.69
	125-175	HSS	49	83	0.18 ❖	0.25	0.36	0.43	0.48	0.58	0.69
	175-225	HSS	46	79	0.15 ❖	0.23	0.33	0.41	0.46	0.53	0.61
	225-275	HSS	43	73	0.13 ❖	0.23	0.33	0.41	0.46	0.53	0.61
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	HSS	49	83	0.18	0.25	0.36	0.43	0.48	0.58	0.69
	175-225	HSS	46	79	0.15	0.23	0.33	0.41	0.46	0.53	0.61
	225-275	HSS	43	73	0.15	0.23	0.33	0.41	0.46	0.53	0.61
	275-325	SC, PC	40	68	0.13	0.20	0.30	0.38	0.41	0.48	0.56
Alloy Steel 4140, 5140, 8640, etc.	125-175	HSS	46	73	0.18	0.25	0.36	0.43	0.43	0.48	0.56
	175-225	HSS	43	68	0.15	0.23	0.33	0.41	0.43	0.48	0.56
	225-275	HSS	40	64	0.15	0.23	0.33	0.41	0.43	0.48	0.56
	275-325	SC, PC	37	59	0.13	0.20	0.30	0.38	0.38	0.43	0.51
	325-375	SC, PC	34	54	0.10	0.18	0.28	0.36	0.38	0.43	0.51
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	SC, PC	24	38	0.15 ❖	0.23	0.28	0.33	0.36	0.43	0.51
	300-350	SC, PC	18	30	0.13 ❖	0.20	0.25	0.30	0.36	0.43	0.51
	350-400	PC	15	24	0.10 ❖	0.18	0.23	0.28	0.30	0.41	0.46
Structural Steel A36, A285, A516, etc.	100-150	HSS	43	71	0.20 ❖	0.28	0.38	0.43	0.46	0.53	0.66
	150-250	HSS	37	57	0.15 ❖	0.25	0.33	0.38	0.41	0.48	0.61
	250-350	SC, PC	30	48	0.13 ❖	0.23	0.30	0.33	0.36	0.43	0.51
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	SC	24	38	0.10	0.18	0.25	0.30	0.30	0.38	0.43
	200-250	SC, PC	18	32	0.10	0.18	0.25	0.30	0.30	0.38	0.43
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	SC, PC	9	13	0.10 ❖	0.18	0.23	0.28	0.30	0.38	-
	220-310	PC	8	12	0.10 ❖	0.15	0.20	0.25	0.25	0.30	-
Titanium Alloy	140-220	SC, PC	11	16	0.10 ❖	0.18	0.21	0.27	0.30	0.38	-
	220-310	PC	10	15	0.08 ❖	0.15	0.18	0.23	0.25	0.30	-
Aerospace Alloy S82	185-275	SC, PC	23	35	0.15 ❖	0.20	0.23	0.28	0.36	0.41	0.51
	275-350	SC, PC	18	31	0.13 ❖	0.18	0.20	0.25	0.30	0.36	0.46
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	SC, PC	23	35	0.15 ❖	0.20	0.23	0.28	0.36	0.41	0.51
	275-350	SC, PC	18	31	0.13 ❖	0.18	0.20	0.25	0.30	0.36	0.46
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	SC, PC	23	35	0.08 ❖	0.18	0.20	0.28	0.36	0.41	0.51
	185-275	SC, PC	18	31	0.08 ❖	0.15	0.18	0.25	0.30	0.36	0.46
Super Duplex Stainless Steel	135-185	SC, PC	18	26	0.08 ❖	0.18	0.20	0.28	0.36	0.41	0.51
	185-275	SC, PC	15	22	0.08 ❖	0.15	0.18	0.25	0.30	0.36	0.46
Wear Plate Hardox, AR400, T-1, etc.	400	SC, PC	14	21	0.08 ❖	0.15	0.20	0.23	0.30	0.41	0.46
	500	PC	10	14	0.05 ❖	0.12	0.18	0.20	0.25	0.30	0.40
	600	N/A	-	-	-	-	-	-	-	-	-
Hardened Steel	300-400	PC	15	29	0.10 ❖	0.15	0.23	0.27	0.30	0.41	0.46
	400-500	PC	10	14	0.06 ❖	0.12	0.18	0.24	0.25	0.30	0.40
Nodular, Grey, Ductile Cast Iron	120-150	HSS	52	84	0.20	0.30	0.41	0.51	0.61	0.69	0.76
	150-200	HSS	46	79	0.18	0.28	0.38	0.48	0.56	0.64	0.71
	200-220	HSS	40	68	0.15	0.23	0.33	0.43	0.46	0.53	0.61
	220-260	SC, PC	34	57	0.13	0.20	0.28	0.36	0.36	0.43	0.51
	260-320	SC, PC	27	47	0.13	0.18	0.25	0.28	0.28	0.36	0.41
Cast Aluminum	30	HSS	183	-	0.23	0.38	0.46	0.58	0.56	0.64	0.64
	180	HSS	91	-	0.20	0.33	0.40	0.50	0.56	0.64	0.64
Wrought Aluminum	30	HSS	183	280	0.12	0.33	0.40	0.50	0.56	0.64	0.64
	180	HSS	91	200	0.12	0.18	0.30	0.35	0.56	0.64	0.64
Aluminum Bronze	100-200	SC	52	82	0.15	0.24	0.30	0.38	0.43	0.48	0.53
	200-250	SC	40	65	0.12	0.18	0.23	0.28	0.36	0.40	0.46
Brass	100	HSS	91	144	0.18	0.27	0.33	0.45	0.47	0.53	0.58
Copper	60	SC	40	58	0.07 ❖	0.10	0.18	0.26	0.23	0.27	0.31

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Recommended Speeds and Feeds - GEN2 T-A® Carbide (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED	FEED (mm/rev)			
			AM200® m/Min	9.50 to 12.95	12.98 to 17.53	17.54 to 24.38	24.41 to 35.00
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	C1	146	0.20	0.30	0.41	0.48
	150-200	C1	126	0.18	0.28	0.38	0.43
	200-250	C1	119	0.15	0.25	0.36	0.41
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	C1	137	0.20 ❖	0.25	0.36	0.46
	125-175	C1	119	0.18 ❖	0.25	0.36	0.43
	175-225	C1	108	0.15 ❖	0.23	0.33	0.41
	225-275	C1	95	0.13 ❖	0.23	0.33	0.41
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	C1	119	0.18	0.25	0.36	0.43
	175-225	C1	108	0.15	0.23	0.33	0.41
	225-275	C1	95	0.15	0.23	0.33	0.41
	275-325	C1	80	0.13	0.20	0.30	0.38
Alloy Steel 4140, 5140, 8640, etc.	125-175	C1	115	0.18	0.25	0.36	0.43
	175-225	C1	105	0.15	0.23	0.33	0.43
	225-275	C1	95	0.15	0.23	0.33	0.41
	275-325	C1	87	0.13	0.20	0.30	0.38
	325-375	C1	78	0.10	0.18	0.28	0.36
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	C1	70	0.15 ❖	0.23	0.28	0.33
	300-350	C1	63	0.13 ❖	0.20	0.25	0.30
	350-400	C1	56	0.10 ❖	0.18	0.23	0.28
Structural Steel A36, A285, A516, etc.	100-150	C1	108	0.20 ❖	0.28	0.38	0.43
	150-250	C1	87	0.15 ❖	0.25	0.33	0.38
	250-350	C1	80	0.13 ❖	0.23	0.30	0.33
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	C1	78	0.10	0.18	0.25	0.30
	200-250	C1	59	0.10	0.18	0.25	0.30
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	C2	37	0.10 ❖	0.18	0.23	0.28
	220-310	C2	29	0.10 ❖	0.15	0.20	0.25
Titanium Alloy	140-220	C2	42	0.10 ❖	0.18	0.21	0.27
	220-310	C2	33	0.08 ❖	0.15	0.18	0.23
Aerospace Alloy S82	185-275	C2	73	0.12 ❖	0.16	0.18	0.22
	275-350	C2	56	0.10 ❖	0.14	0.16	0.19
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	C2	73	0.18 ❖	0.23	0.30	0.36
	275-350	C2	56	0.15 ❖	0.20	0.28	0.30
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	C2	73	0.14 ❖	0.18	0.24	0.29
	185-275	C2	56	0.12 ❖	0.16	0.22	0.24
Super Duplex Stainless Steel	135-185	C2	38	0.12 ❖	0.17	0.22	0.26
	185-275	C2	30	0.10 ❖	0.15	0.18	0.22
Wear Plate Hardox, AR400, T-1, etc.	400	C2	45	0.07 ❖	0.12	0.20	0.25
	500	C2	37	0.05 ❖	0.10	0.15	0.20
	600	C2	30	0.04 ❖	0.08	0.12	0.16
Hardened Steel	300-400	C1	47	0.10 ❖	0.18	0.23	0.27
	400-500	C1	37	0.06 ❖	0.12	0.18	0.24
Nodular, Grey, Ductile Cast Iron	120-150	C2	152	0.20	0.30	0.38	0.48
	150-200	C2	146	0.18	0.28	0.33	0.43
	200-220	C2	131	0.15	0.23	0.30	0.38
	220-260	C2	113	0.13	0.20	0.28	0.33
	260-320	C2	102	0.13	0.18	0.25	0.28
Cast Aluminum	30	C2	300	0.23	0.38	0.46	0.58
	180	C2	225	0.20	0.33	0.40	0.50
Wrought Aluminum	30	C2	426	0.12	0.33	0.40	0.50
	180	C2	300	0.12	0.18	0.30	0.35
Aluminum Bronze	100-200	C2	110	0.15	0.24	0.30	0.38
	200-250	C2	90	0.12	0.18	0.23	0.28
Brass	100	C2	200	0.18	0.27	0.33	0.45
Copper	60	C2	130	0.07 ❖	0.10	0.18	0.26

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Recommended Speeds and Feeds - HSS and Carbide Flat Botton T-A® Drill Inserts (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	SPEED				FEED (mm/rev) - HSS						Grade	SPEED				FEED (mm/rev) - Carbide			
		TiN M/min	TiAlN M/min	TiCN M/min	AM200® M/min	9.5 to 12.95	12.98 to 17.53	17.53 to 24.38	24.41 to 35.00	35.01 to 47.80	47.85 to 65.99		TiN M/min	TiAlN M/min	TiCN M/min	AM200® M/min	9.50 to 12.95	12.98 to 17.53	17.54 to 24.38	24.41 to 35.00
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	52	76	70	88	0.15	0.23	0.28	0.35	0.41	0.46	C2	82	110	98	126	0.17	0.26	0.32	0.39
	150-200	47	70	62	81	0.15	0.23	0.28	0.35	0.41	0.46	C2	73	94	85	110	0.15	0.24	0.30	0.35
	200-250	43	64	56	74	0.13	0.23	0.28	0.35	0.38	0.43	C2	67	88	76	102	0.13	0.22	0.28	0.32
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	46	67	59	77	0.13 ❖	0.20	0.25	0.33	0.38	0.43	C2	79	102	94	117	0.17 ❖	0.22	0.28	0.37
	125-175	43	64	56	74	0.13 ❖	0.20	0.25	0.33	0.38	0.41	C2	67	88	76	102	0.15 ❖	0.22	0.28	0.35
	175-225	40	59	53	68	0.10 ❖	0.18	0.23	0.30	0.36	0.41	C2	61	81	70	93	0.13 ❖	0.19	0.26	0.32
	225-275	37	56	47	65	0.10 ❖	0.18	0.23	0.30	0.36	0.38	C2	55	70	64	81	0.11 ❖	0.19	0.26	0.32
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	43	64	56	74	0.13	0.20	0.25	0.33	0.38	0.46	C2	67	88	76	102	0.15	0.22	0.28	0.35
	175-225	40	59	53	68	0.10	0.18	0.23	0.30	0.36	0.43	C2	61	81	72	93	0.13	0.19	0.26	0.32
	225-275	37	56	47	65	0.10	0.18	0.23	0.30	0.36	0.43	C2	55	70	61	81	0.13	0.19	0.26	0.32
	275-325	34	53	46	61	0.10	0.15	0.20	0.25	0.33	0.38	C2	46	61	53	70	0.11	0.17	0.24	0.30
Alloy Steel 4140, 5140, 8640, etc.	125-175	40	56	53	65	0.13	0.18	0.23	0.30	0.33	0.41	C2	64	85	75	99	0.15	0.22	0.28	0.35
	175-225	37	53	47	61	0.10	0.18	0.23	0.30	0.33	0.41	C2	59	79	67	91	0.13	0.19	0.26	0.32
	225-275	34	47	44	54	0.10	0.15	0.23	0.30	0.33	0.41	C2	55	70	61	81	0.13	0.19	0.26	0.32
	275-325	32	44	41	51	0.10	0.13	0.20	0.25	0.30	0.38	C2	52	66	58	76	0.11	0.17	0.24	0.30
	325-375	29	41	38	47	0.08	0.13	0.20	0.25	0.30	0.36	C2	44	58	50	67	0.09	0.15	0.22	0.28
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	21	29	26	33	0.10 ❖	0.15	0.20	0.23	0.25	0.30	C2	41	52	47	59	0.13 ❖	0.19	0.22	0.26
	300-350	15	23	21	27	0.08 ❖	0.15	0.20	0.23	0.25	0.30	C2	37	47	41	55	0.11 ❖	0.17	0.19	0.24
	350-400	13	20	18	23	0.08 ❖	0.13	0.18	0.20	0.23	0.28	C2	30	41	37	47	0.09 ❖	0.15	0.17	0.22
Structural Steel A36, A285, A516, etc.	100-150	36	52	47	60	0.13 ❖	0.23	0.25	0.30	0.38	0.43	C2	62	81	72	93	0.17 ❖	0.24	0.30	0.35
	150-250	32	44	41	51	0.10 ❖	0.20	0.23	0.25	0.33	0.41	C2	52	66	58	76	0.13 ❖	0.22	0.28	0.30
	250-350	26	37	34	43	0.10 ❖	0.18	0.20	0.23	0.30	0.38	C2	47	61	53	70	0.11 ❖	0.19	0.25	0.26
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	21	29	27	33	0.10	0.13	0.18	0.23	0.25	0.30	C2	41	58	49	67	0.09	0.15	0.19	0.24
	200-250	15	24	23	28	0.10	0.13	0.18	0.23	0.23	0.28	C2	30	44	37	50	0.09	0.15	0.19	0.24
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	7	10	9	13	0.08 ❖	0.15	0.18	0.23	0.25	0.30	C2	21	27	23	32	0.09 ❖	0.15	0.19	0.24
	220-310	6	9	7	10	0.08 ❖	0.13	0.15	0.18	0.20	0.25	C2	15	21	18	24	0.09 ❖	0.13	0.17	0.22
Titanium Alloy	140-220	10	14	12	16	0.08 ❖	0.15	0.18	0.23	0.25	0.30	C2	26	33	28	40	0.08 ❖	0.14	0.17	0.20
	220-310	8	12	11	14	0.08 ❖	0.13	0.15	0.18	0.20	0.25	C2	21	29	25	30	0.08 ❖	0.12	0.15	0.18
Aerospace Alloy S82	185-275	20	27	26	34	0.13 ❖	0.18	0.20	0.25	0.30	0.38	C2	43	37	50	40	0.15 ❖	0.17	0.25	0.30
	275-350	15	24	21	28	0.10 ❖	0.15	0.18	0.23	0.25	0.30	C2	33	28	38	32	0.13 ❖	0.15	0.23	0.25
Stainless Steel 400 Series 416, 420, 303, etc.	185-275	20	27	26	34	0.13 ❖	0.18	0.20	0.25	0.30	0.36	C2	43	56	50	64	0.15 ❖	0.20	0.25	0.30
	275-350	15	24	21	28	0.10 ❖	0.15	0.18	0.23	0.25	0.28	C2	33	43	38	49	0.13 ❖	0.18	0.23	0.25
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135-185	20	27	26	34	0.13 ❖	0.18	0.20	0.25	0.30	0.36	C2	28	37	33	40	0.13 ❖	0.17	0.21	0.25
	185-275	15	24	21	28	0.10 ❖	0.15	0.18	0.23	0.25	0.28	C2	21	28	25	32	0.11 ❖	0.15	0.19	0.21
Super Duplex Stainless Steel	135-185	20	27	26	34	0.13 ❖	0.18	0.20	0.25	0.30	0.36	C2	22	29	26	33	0.10 ❖	0.14	0.17	0.20
	185-275	15	24	21	28	0.10 ❖	0.15	0.18	0.23	0.25	0.28	C2	17	22	19	26	0.08 ❖	0.12	0.15	0.17
Wear Plate Hardox, AR400, T-1, etc.	400	-	-	-	-	-	-	-	-	-	-	C2	20	31	26	39	0.06 ❖	0.10	0.16	0.20
	500	-	-	-	-	-	-	-	-	-	-	C2	13	23	18	31	0.04 ❖	0.08	0.12	0.16
	600	-	-	-	-	-	-	-	-	-	-	C2	10	19	14	25	0.03 ❖	0.06	0.10	0.13
Hardened Steel	300-400	13	20	18	24	0.08 ❖	0.13	0.18	0.20	0.27	0.38	C2	30	38	34	41	0.08 ❖	0.14	0.18	0.22
	400-500	8	12	10	13	0.06 ❖	0.10	0.15	0.18	0.23	0.28	C2	18	22	20	33	0.06 ❖	0.12	0.16	0.18
Nodular, Grey, Ductile Cast Iron	120-150	46	67	59	77	0.15	0.25	0.36	0.43	0.48	0.51	C2	82	120	108	137	0.17	0.26	0.32	0.41
	150-200	40	59	53	68	0.13	0.23	0.30	0.41	0.46	0.48	C2	70	104	87	119	0.15	0.24	0.28	0.38
	200-220	34	53	46	61	0.13	0.20	0.25	0.36	0.41	0.43	C2	61	94	79	108	0.13	0.19	0.26	0.32
	220-260	29	46	38	53	0.10	0.15	0.20	0.25	0.33	0.33	C2	55	81	67	93	0.11	0.17	0.24	0.28
	260-320	24	37	32	43	0.10	0.13	0.15	0.20	0.25	0.25	C2	47	70	58	81	0.11	0.15	0.22	0.24
Cast Aluminum	30	160	228	198	-	0.18	0.28	0.36	0.43	0.46	0.48	C2	160	228	198	-	0.22	0.32	0.41	0.43
	180	79	122	107	-	0.18	0.28	0.36	0.41	0.43	0.48	C2	79	122	107	-	0.19	0.28	0.35	0.39
Wrought Aluminum	30	160	228	198	261	0.18	0.28	0.36	0.43	0.46	0.48	C2	292	368	328	390	0.12	0.18	0.23	0.25
	180	79	122	107	141	0.18	0.28	0.36	0.41	0.43	0.48	C2	195	245	220	260	0.10	0.16	0.20	0.22
Aluminum Bronze	100-200	40	59	53	70	0.13	0.23	0.30	0.41	0.51	0.61	C2	73	95	85	105	0.10	0.16	0.20	0.29
	200-250	29	46	38	50	0.10	0.15	0.20	0.25	0.31	0.38	C2	55	81	68	87	0.08	0.12	0.14	0.20
Brass	100	46	67	59	78	0.15	0.25	0.36	0.43	0.53	0.63	C2	112	160	138	185	0.12	0.18	0.22	0.30
Copper	60	35	45	40	53	0.05 ❖	0.08	0.15	0.20	0.25	0.35	C2	68	105	85	117	0.04 ❖	0.06	0.08	0.12

Tool failure can cause serious injury. To prevent: ⚠ **WARNING**

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

RECOMMENDED SPEED AND FEED EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Recommended Speeds and Feeds

Diamond Coated T-A® Carbide Drill Inserts - Metric

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. See adjustment examples at bottom of Speed & Feed charts.

MATERIAL		CARBIDE					
			Speed (M/min)	Feed (mm/rev)			
		GRADE	CVD Diamond	9,5 to 12,5	13 to 17,5	18 to 24	25 to 35
Polymer Matrix Composites	Carbon (Hard)	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Carbon Fiber						
	Carbon/Glass Fiber						
	Fiberglass						
	Graphite						
	Plastics	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Epoxy Resin						
	Bismaleimide Resin						
	Polyester Resin						
	Phenolic Resin						
	Rubber						
Metal Matrix Composites	Aluminum Si<10%	N2	305	0.20	0.33	0.41	0.51
	10%<Si<15%	N2	259 - 305	0.20	0.33	0.41	0.51
	15%<Si<20%	N2	198 - 259	0.20	0.33	0.41	0.51
	20%<Si<25%	N2	152 - 198	0.20	0.33	0.41	0.51
	25%<Si	N2	61 - 152	0.20	0.33	0.41	0.51
	Brass	N2	76 - 152	0.20	0.33	0.41	0.51
	Bronze						
	Copper	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Copper Alloys						
	Lead Alloys						
	Magnesium Alloys						
	Precious Metals						
Ceramic Matrix Composites	Carbide (Green)	N2	15 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Ceramic (Green)						
	Ceramic (Pre-Sintered)						

⚠ WARNING

Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Refer to page C109 for Deep hole Drilling Guidelines in Technical Reference section of catalog. Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.

Deep Hole Drilling Speed & Feed Adjustment

Holder	Extended	Long	XL	3XL
SPEED	⚠ 0.90	⚠ 0.85	⚠ 0.80	⚠ 0.75
FEED	-	⚠ 0.95	⚠ 0.90	⚠ 0.90

SPEED AND FEED RECOMMENDATION EXAMPLE: If recommended speed and feed is 50 M/min and 0.20 mm/min for a Standard length holder, then the speed and feed using a 3XL holder in the same application would be 37.5 M/min and 0.18 mm/min.

50 • .75 = 37.5 M/min **0.20 • 0.90 = .018 mm/min**

Coolant Recommendations
T-A® Drill Inserts (Metric)

IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the TA drilling system will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

	Coolant Pressure (bar)											
	Coolant Volumetric Flow Rate (LPM)											
	HSS							Carbide				
Material	9.5 to 12.5	13 to 17	18 to 24	25 to 35	36 to 50	51 to 76	76 to 102	9.5 to 12.5	13 to 17	18 to 24	25 to 35	36 to 47
Free Machining Steel 1118, 1215, 12L14, etc.	12-13	7-8	7-10	6-8	5-7	4	5-6	17-20	17	15	15	20
	9.5-9.8	10.6-11.4	16.7-19.7	26.5-30.3	45.4-53.0	114-125	144-167	12.2	16.3	25.2	41.5	71.9
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	11-12	5-6	5-7	4-6	4-5	2-3	3-5	18	11	11	12	9
	9.1-9.5	9.1-9.8	14.0-15.9	22.7-26.5	41.6-45.4	98-114	125-144	11.4	13.3	20.6	36.5	62.0
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	11	5-6	5-6	4-5	3-5	2-3	3-5	17	10	10	10	8
	8.7-9.1	8.7-9.8	13.6-15.5	18.9-22.7	37.9-45.4	98-114	125-144	11.3	12.5	20.0	33.8	57.0
Alloy Steel 4140, 5140, 8640, etc.	11	5	5-6	3-5	3-4	2	3	17	9	10	8	7
	8.7-9.1	8.3-9.1	13.2-14.8	18.9-22.7	31.9-41.6	98-106	114-125	11.1	12.3	19.3	30.0	55.8
High Strength Alloy 4340, 4330V, 300M, etc.	10-11	4	3	2	2	1-2	2	15	5	4	3	3
	8.7-9.1	7.9-8.3	11.0-11.7	15.1-18.9	26.5-30.3	79-87	87-98	10.4	9.1	12.6	18.8	33.6
Structural Steel A36, A285, A516, etc.	11	5-6	5-6	3-4	3	2	3	16	9	8	7	5
	8.7-9.1	9.1-9.8	13.2-14.8	18.9-22.7	34.1-37.9	87-98	114-125	10.8	12.0	17.5	27.8	47.1
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	10-11	4	3	2	2	1-2	2	15	5	5	3	3
	8.7-9.1	7.9-8.3	11.0-11.7	15.1-18.9	26.5-30.3	79-87	87-98	10.4	9.1	13.6	19.7	36.5
High Temp. Alloy Hastelloy B, Inconel 600, etc.	10-11	4-5	3-4	2	2	2	3	17	11	12	11	9
	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	125	11.1	13.5	21.9	35.4	62.0
Titanium Alloy	10-11	4-5	3-4	2	2	2	3	17	11	12	11	9
	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	125	11.1	13.5	21.9	35.4	62.0
Aerospace Alloy S82	10-11	4-5	3-4	2	2	2	3	17	11	12	11	9
	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	125	11.1	13.5	21.9	35.4	62.0
Stainless Steel 400 Series 416, 420, 303, etc.	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
Stainless Steel 300 Series 304, 316, 17-4PH, etc.	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
Super Duplex Stainless Steel	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
Wear Plate Hardox, AR400, T-1, etc.	10.7	4.2	3.5	2	2	1.7	2	14.5	5.2	4.8	3.4	3.1
	9.1	8.3	11.7	19	30	87	98	10.4	9.1	13.6	19.7	36.5
Hardened Steel	10.7	4.2	3.5	2	2	1.7	2	14.5	5.2	4.8	3.4	3.1
	9.1	8.3	11.7	19	30	87	98	10.4	9.1	13.6	19.7	36.5
SG / Nodular Cast Iron	11	4.5	4.2	2.8	2.4	2	2.4	15.5	7.2	6.2	6.2	5.5
	9.1	8.7	12.5	19	34	98	106	10.7	10.8	15.4	26.5	48.7
Grey / White Iron	11	4.5	4.2	2.8	2.4	2	2.4	15.5	7.2	6.2	6.2	5.5
	9.1	8.7	12.5	19	34	98	106	10.7	10.8	15.4	26.5	48.7
Cast Aluminum	14.5	12.4	15.8	11	8.6	3.5	5.5	24.1	22	21.7	19.6	13.8
	10	14	23	34	61	125	159	13.4	18.8	29	47.2	77
Wrought Aluminum	14.5	12.4	15.8	11	8.6	3.5	5.5	24.1	22	21.7	19.6	13.8
	10	14	23	34	61	125	159	13.4	18.8	29	47.2	77
Aluminum Bronze	12.8	8.3	9.65	7.95	6.9	3.5	6.2	20	16.5	16.5	15.2	12
	9.6	11.4	19.7	30.3	53	125	167	12.2	16.3	25.2	41.5	71.9
Brass	11	4.5	4.2	2.8	2.4	2	2.4	24.1	22	21.7	19.6	13.8
	9.1	8.7	12.5	19	34	98	106	13.4	18.8	29	47.2	77
Copper	12.8	8.3	9.65	7.95	6.9	3.5	6.2	20	16.5	16.5	15.2	12
	9.6	11.4	19.7	30.3	53	125	167	12.2	16.3	25.2	41.5	71.9

Deep Hole Drilling Coolant Adjustment

Holder	Extended	Long	XL	3XL
Pressure & Flow	1.3	1.5	2	3

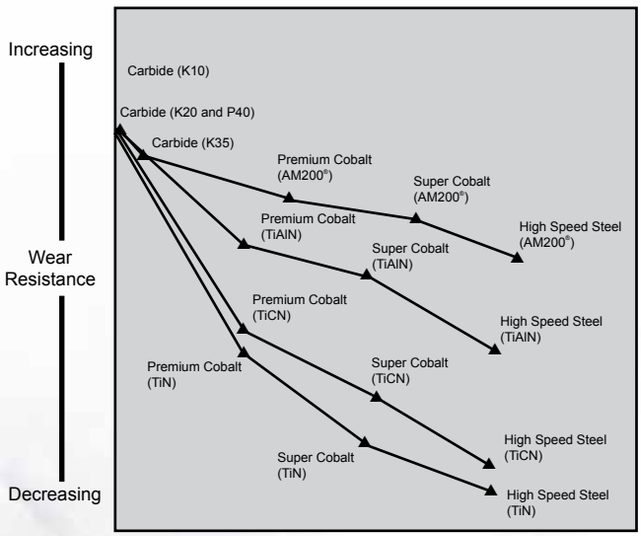
COOLANT RECOMMENDATION EXAMPLE: If the recommended pressure and flow is 12 bar and 22 LPM for a standard length holder, the adjusted pressure and flow would be 36 bar and 66 LPM respectively for the 3XL holder.

12 • 3 = 36 bar **22 • 3 = 66 LPM**

Technical Information
T-A® Drill Inserts
Metric

WEAR versus TOUGHNESS

When selecting a grade of cutting tool material for your application, both wear resistance and grade toughness should be considered. The higher the wear resistance a cutting tool material exhibits, the more likely chipping or fracture is to occur, thus requires more RIGID machining conditions. On the other hand, to effectively machine some materials, cobalt or carbide grades of cutting tool material may be required. The graph below will aid you in the selection of a cutting tool material with the right combination of wear resistance and toughness to make your application both efficient and cost effective.



Fracture Resistance

TAP DRILL INFORMATION

METRIC Profile Screw Thread

Tap Size	Tap Drill Size	Decimal Equivalent	*Theo% Thread	Prob Mean Oversize	Prob Hole Size	**Prob% Thread
12 X 1,75	10,2mm 13/32	.4016" .4063"	79% 74%	0,075mm 0,075mm	10,28mm 10,40mm	76% 71%
12 X 1,25	27/64 10,8mm	.4219" .4252"	79% 74%	0,075mm 0,075mm	10,79mm 10,88mm	74% 69%
14 X 2,0	15/32 12,0mm	.4688" .4724"	81% 77%	0,075mm 0,075mm	11,98mm 12,08mm	78% 74%
14 X 1,5	12,5mm	.4921"	77%	0,075mm	12,58mm	73%
16 X 2,0	14,0mm	.5512"	77%	0,075mm	14,08mm	74%
16 X 1,5	14,5mm 37/64	.5709" .5781"	77% 68%	0,075mm 0,075mm	14,58mm 14,76mm	73% 64%
18 X 2,5	15,5mm	.6102"	77%	0,075mm	15,58mm	75%
18 X 1,5	16,5mm 21/32	.6496" .6563"	77% 68%	0,075mm 0,075mm	16,58mm 16,75mm	73% 64%
20 X 2,5	11/16 17,5mm	.6875" .6890"	78% 77%	0,075mm 0,075mm	17,54mm 17,58mm	76% 74%
20 X 1,5	18,5mm 47/64	.7283" .7344"	77% 69%	0,075mm 0,075mm	18,58mm 18,66mm	73% 65%
22 X 2,5	49/64 19,5mm	.7656" .7677"	79% 77%	0,075mm 0,075mm	19,52mm 19,58mm	76% 75%
22 X 1,5	20,5mm 13/16	.8071" .8125"	77% 70%	0,075mm 0,075mm	20,58mm 20,71mm	73% 66%
24 X 3	13/16 21,0mm	.8125" .8268"	86% 76%	0,075mm 0,075mm	20,71mm 21,08mm	84% 75%
24 X 2	22,0mm 7/8	.8661" .8750"	77% 68%	0,075mm 0,075mm	22,08mm 22,30mm	74% 65%
27 X 3	24,0mm	.9449"	77%	0,075mm	24,08mm	75%

*Based on nominal tap drill diameter.
**Based on 0.075 mm probable mean oversize.

To calculate percentage of full thread for a given hole diameter:

$$\% \text{ Thread} = \frac{76{,}93}{\text{Pitch (mm)}} * \left(\text{Basic Major Diameter of thread (mm)} - \text{Drill Hole Size (mm)}\right)$$

Taper Pipe Thread (BSP & ISO 7-1)

Tap Size	Tap Drill Size	Decimal Equivolent	*Theo% Thread	Prob Mean Oversize	Prob Hole Size	**Prob% Thread
1/4-19	7/16	.4325"	N/A	0,075mm	11,19mm	N/A
3/8-19	37/64	.5781"	N/A	0,075mm	14,76mm	N/A
1/2-14	23/32	.7188"	N/A	0,075mm	18,33mm	N/A
3/4-14	15/16	.9375"	N/A	0,075mm	23,89mm	N/A

The above tap drill information represents probable thread percentages for the standard tap drills stocked at Allied. Special blade diameters may be required in order to meet a user specific percentage of thread requirements.

The 0,075mm probable mean oversize hole condition is based on optimum cutting conditions. Probable % of full thread may vary based on less ideal cutting conditions.

Formulas

1. $\text{RPM} = \frac{318{,}47 \cdot \text{M/min}}{\text{DIA}}$

where:
RPM = revolutions per minute (rev/min)
M/min = speed (M/min)
DIA = diameter of drill (mm)

2. mm/min = RPM • mm/rev
where:
mm/min = mm per minute (mm/min)
RPM = revolutions per minute (rev/min)
mm/rev = feed rate (mm/rev)

3. M/min = = RPM • 0,003 • DIA
where:
M/min = speed (M/min)
RPM = revolutions per minute (rev/min)
DIA = diameter of drill (mm)

4. Thrust $(133{,}9) \cdot (\text{mm/rev}) \cdot (\text{DIA}) \cdot \text{Km}$
where:
Thrust =Axial thrust in newtons (N)
mm/rev =feed rate (mm/rev)
DIA =diameter of drill (mm)
Km =specific cutting energy (kPa)

5. Tool Power $= \frac{(\text{mm/rev}) \cdot (\text{RPM}) \cdot (\text{Km}) \cdot (\text{DIA}^2)}{240442{,}4}$

where:
Tool Power =tool power (KW)
mm/rev =feedrate (mm/rev)
RPM =revolutions per minute (rev/min)
Km =specific cutting energy (kPa)
DIA =diameter of drill (mm)

MATERIAL CONSTRANTS

Type of Material	Km (KPa)
Plain Carbon and Alloy Steel	
85-200 BHN	5,45
200-275 BHN	6,48
275-375 BHN	6,89
375-425 BHN	7,93
High Temperature Alloys	9,93
Stainless Steel	
135-275 BHN	6,48
30-45 RC	7,45
Copper Alloy	
20-80 RB	2,96
80-100 RB	4,96
Titanium Alloy	4,96
Aluminum Alloy	1,52
Magnesium Alloy	1,10
Cast Irion	
100-200 BHN	3,45
200-300 BHN	7,45

Special Geometry and Grades

Standard Geometry

Allied's Standard T-A® Geometry is an excellent choice for general purpose use. The design provides fast penetration rates that produce good hole size and finish. Standard Geometry combines highly efficient stable, cutting action to minimize power consumption. Recommended for use in most steels, cast irons, high temperature alloys and aluminum alloys. Available in the Y through 8 Series.
Grades: HSS, Super Cobalt, Premium Cobalt, Carbide inch (C2 and C5) metric (K20 and P40)
Sample Item Number: 132A-0112

Flat Bottom (FB) Geometry

Flat Bottom Drill Inserts Made Under U.S. Patent No. 6,135,681 Euro Patent No.: 1 210 196 DE,GB,IT,FR Canadian Patent No: 2,341,367 Other International Patents Pending

Allied's Flat Bottom geometry is used to flatten, or square, the bottom of pre-existing holes. Tools with this geometry are normally sized the same diameter as the hole. However, this style tool (when used with short length holders) may also be used to counter bore holes smaller than the tool diameter. The patented geometry provides efficient and stable cutting action. For a Flat Bottom Drill Insert without chipbreakers, please specify using -FN. Available in the Y through 4 series.
Grades: Super Cobalt, C2 Carbide
Sample Item Number: 152T-0112-FB

Cast Iron (CI) Geometry

Allied's cast iron geometry is specifically designed for use in grey and white cast irons. This special geometry provides exceptional edge strength and tool life. Includes Allied's SK2 corner preparation. TiAlN coating is recommended. Available in the Y through 4 series.
Grades: Stocked in C3 Carbide with TiAlN coating.
Sample Item Number: 1C32A-0112-CI

90º Spot and Chamfer (SP) Geometry

90º Spot and Chamfer Inserts Made Under U.S. Patent No.: 6,848,869

Allied's highly efficient 90º Spot and Chamfer Drill Insert geometry is combined with a center cutting web designed to improve stability and strength. The primary use is to spot and chamfer, eliminating the need for secondary chamfering operations. *One tool will cover a wide application range* by simply adjusting the depth. By listing the item number with a SW, the 90º Spot and Chamfer Drill Insert will be supplied with chipbreakers. Available in the Y through 3 Series.
Grades: Super Cobalt
Sample Item Number: 152A-0112-SP, 152T-0112-SW 90º Spot and Chamfer with chipbreakers.

SK2 (SK) Geometry

Allied's special corner preparation is designed to increase tool life by providing effecient, uniform heat dispersion at the insert corners. Ideal for all materials. Available in the Y through 8 Series.
Sample Item Number: 132A-0112-SK

Corner Radius (CR) Geometry

Allied's special corner preparation is designed to increase tool life, improve surface finish, and minimize exit burrs. Provides excellent heat dispersion at the insert corners. Available in the Y through 8 series.
Sample Item Number: 132A-0112-CR

High Impact (HI) Geometry

Allied's high impact geometry is specifically designed to enhance chip formation in materials with high elasticity/ductility, and poor chip forming characteristics. Includes Allied's SK2 corner preparation for increased tool life. Effective at improving chip formation in structural, cast, and forged steels, plus, cast stainless steel and high temperature alloys, particularly in materials above 200 BHN. Available in the Y through 8 Series. Sample Item Number: 132A-0112-HI

High Rake (HR) Geometry

Allied's high rake geometry is specifically designed to improve chip formation in materials with very high elasticity, extremely poor chip forming characteristics, and low material hardness. This special geometry shortens chip length, improving chip control and evacuation from the hole. Includes Allied's SK2 corner preparation for increased tool life. Recommended for use in most soft gummy steels, steel castings, and steel forgings under a material hardness of 200 BRN. Available in the Y through 8 Series.
Sample Item Number: 132A-0112-HR.

Brass (BR) Geometry

Allied's brass geometry is specifically designed for efficient drilling in brass. Our specialized geometry and edge preparation provides excellent tool life and eliminates the tendency of the tool to self feed, as well as drill windup, in soft brass materials. Available in the Y Through 2 Series.
Sample Item Number: 132A-0112-BR

Aluminum (AN) Geometry

Notch Point® Drill Inserts Made Under U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035 Euro Patent No.: 1 372 894 DE,GB,IT,FR Other U.S. & International patents pending

Allied's Aluminum Geometry is specifically designed to maximize tool life and chip formation capabilities in materials such as 6061 or wrought aluminums. The Aluminum geometry also features Allied's exclusive Notch Point® Geometry for increased stability and lower drilling forces. Available in the Y through 2 series.
Sample Item Number: 1C22T-0102-AN

Cam Point (CP) Geometry

Allied's special cam ground point geometry is designed to provide excellent self-centering characteristics. The helical cam ground point provides efficient chisel edge cutting action to produce outstanding drill stability. Recommended for use with standard and extended length T-A® Holders on all materials, especially steels and cast irons, castings and forgings. Available in the Y through 2 series.
Sample Item Number: 132A-0112-CP

Notch Point® (NP) Geometry

Notch Point® Drill Inserts Made Under U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 & 7,371,035 Euro Patent No.: 1 372 894 DE,GB,IT,FR Other U.S. & International patents pending

Allied's patented Notch Point® geometry provides an excellent solution for reducing bell mouth and tool lead off. In addition, the Notch Point® geometry significantly reduces thrust while providing improved chip control. This new geometry may be applied to all standard T-A® drill inserts and provides excellent stability for deep hole drilling applications. This geometry can also be utilized in combination with other geometries including Cast Iron, High Rake and High Impact. (See sample item numbers below.) Available in the Y through 2 series, and is a standard feature on GEN2 T-A® 3 through 8 series drill inserts.
Sample Item Number: 132A-0112-NP
Combination Geometry Item Numbers: Cast Iron Notch Point®: 1C32A-0103-CN, High Rake Notch Point®: 132A-0112-RN.
High Impact Notch Point®: 132A-0112-IN

Tiny Chip (TC) Geometry

Allied's Tiny Chip geometry is an excellent choice for applications that are running at lighter feed rates, or require a more manageable chip. It may be beneficial in deep hole applications by providing better chip formation that is more readily evacuated. Recommended for use in low carbon steels, soft alloy steels, and other long chipping materials. Available in Y-2 series. Grades: HSS, SC, PC, C2, C5 carbide.
Sample item number: 1C21A-0024-TC

Thin Wall (TW)

Geometry Thin Wall Drill Inserts Made Under U.S. Patent Number: 7,147,414

Allied's patent pending Thin Wall Geometry is designed for I-beam and steel plate applications less than 7/16" thick. The Thin Wall geometry provides better hole tolerance and improved hole roundness. Thin Wall inserts are made from Super Cobalt for excellent wear resistance and coated with TiAlN for improved tool life. Available in select diameters in the 0 through 3 series.
Sample Item Number: 151A-0030-TW

Structural Steel 150º (SS) Geometry

Structural Steel 150º Drill Inserts Made Under U.S. Patent No.: 6,685,402 & 6,986,628 & 7,114,893 Euro Patent No.: 1 372 894 DE,GB,IT,FR Other U.S. & International patents pending

Allied's 150º Structural Steel Geometry is designed for I-Beam and steel plate applications over 7/16" thick. The 150º Structural Steel Geometry provides reduced exit burrs, eliminating secondary operations. 150º Structural Steel Inserts feature patented Notch Point® geometry for increased stability and lower drilling forces. These inserts are made from Super Cobalt for excellent wear resistance and coated with TiAlN for improved tool life. Available in select diameters in the 0 through 3 series.

High Efficiency (HE) Geometry

U.S. Patent No.: 6,685,402 & 6,986,628 & 7,011,478 & 7,018,145 & 7,144,893 & 7,371,035 Euro Patent No.: 1 372 894 DE, GB, IT, FR Other U.S. & International Patents Pending

Allied's GEN2 T-A® -HE Geometry is designed for improved chip formation in elastic materials like low carbon steels. -HE Geometry combined with the other advanced features of the GEN2 T-A®, allows for maximum performance and increased value. This Geometry is available on Y-4 Series GEN2 T-A® Drill Inserts.
Sample Item Number: 4C11H-0024-HE

Optional Features: NC- No Chipbreakers WC- Without Corner Clips

T-A® Insert System Guidelines

T-A® Insert System Guidelines for Use

- Select the shortest holder possible for the application.
- Use the 'T-A® Technical Information' (C90-C111) section for guidance in selecting correct insert grades, along with speed and feed information.

  These cutting parameters are starting conditions only and make no allowance for machine or component rigidity.

  Factory Assistance is available at (800) 321-5537, or (330) 343-4283 outside the US and Canada.

- Ensure the T-A® holder is held securely and is within 0.003" of centerline.

- The T-A® insert should be installed in the slot of the holder using the TORX Plus screws provided which should be tightened to the values listed on the T-A® Holder / Accessory pages. The holder slot should be clean from dirt or debris.

- Check that the insert outer diameter is a minimum 0.012" larger than the holder body diameter.

- When setting up new applications, check coolant flows adequately through the tool before commencing machining. It is best practice to:
  - Drill a short hole 1 x diameter deep initially.
  - The chips produced should be short in length and material colored, not straw or blue.
  - Measure the hole produced to check that it is within the desired tolerance.
  - If all is correct, continue to machine the remainder of the hole.
  - Ensure the drilling process is quiet and smooth with no chip packing.

Spot and Chamfer Inserts - SP

Use cutting data as per standard T-A® HSS Drill Inserts, in stub or short length holders. Speed should be calculated for the required spot or chamfer diameter.

Flat Bottom Inserts - FB

For cutting data, please refer to catalog pages C95 and C103. Please contact Allied's Application Engineers for advice when attempting to drill from solid.

0.5, 1.5, and 2.5 Holders

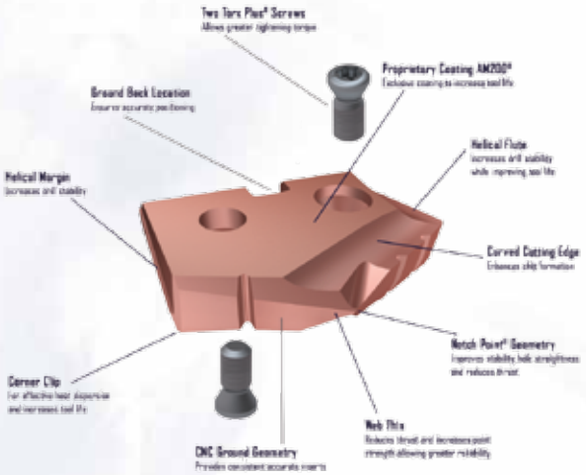
Allied recommends the use of 0.5, 1.5, or 2.5 series holders when running carbide inserts towards the upper end of each series' drill range, as well as in tougher applications requiring more insert support and holder strength.

Extended and Long Structural Steel Holders

When utilizing structural Extended & Long Length holders in applications other than structural steel:

- Refer to Allied's standard speed and feed charts for recommended speeds and feeds, along with the associated reductions in speed and feed and Allied's Deep Hole Drilling Guidelines on the next page.

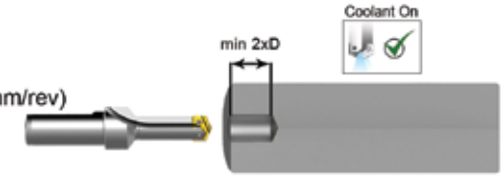
GEN2 T-A® pictured



Deep Hole Drilling Guidelines

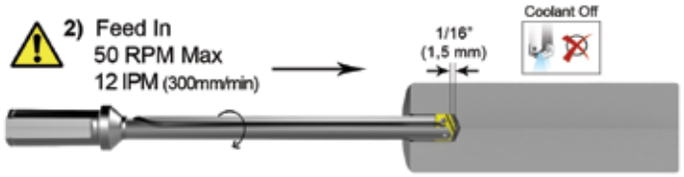
For use with AMEC Drills greater than 9xD (Depths to Diameter), including Extended, Long, XL, 3XL, and Special Length

1) Pilot Hole
100% RPM
100% IPR (mm/rev)



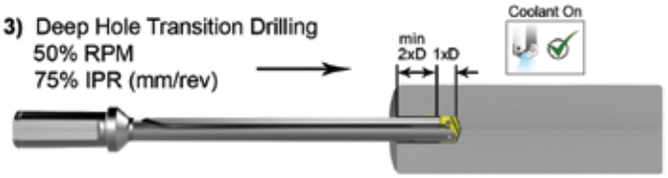
- Establish the pilot hole using the same diameter short drill to a depth of a 2xD minimum
- Utilize a pilot drill with the same or larger included point angle

2) Feed In
50 RPM Max
12 IPM (300mm/min)



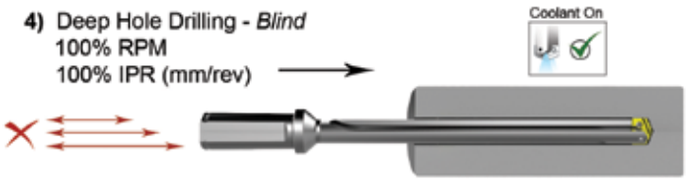
- Feed the longer drill within 1/16" (1,5 mm) short of the established pilot hole bottom at a **maximum of 50 RPM** and 12 IPM (300 mm/min) feed rate

3) Deep Hole Transition Drilling
50% RPM
75% IPR (mm/rev)



- Drill additional 1xD passed bottom of pilot hole at 50% reduction of recommended speed and 25% reduction of recommend feed
- Minimum of 1 second dwell is required to meet full speed before feeding

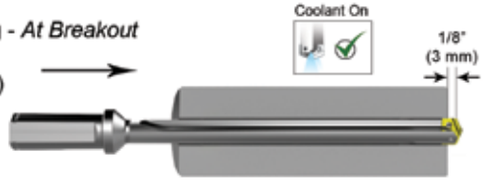
4) Deep Hole Drilling - *Blind*
100% RPM
100% IPR (mm/rev)



- Drill to full depth at recommended speed and feed for longer drills, according to Allied speed and feed charts

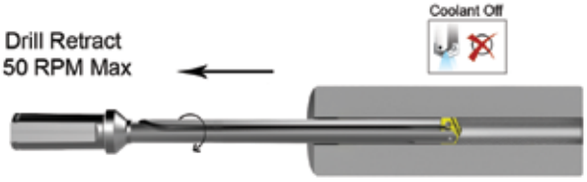
No peck cycle recommended

5) Deep Hole Drilling - *At Breakout*
50% RPM
75% IPR (mm/rev)



For Through Holes Only
- Reduce speed by 50% and feed by 25% prior to break out
- Do not break out more than 1/8" (3 mm) past the full diameter of drill

6) Drill Retract
50 RPM Max

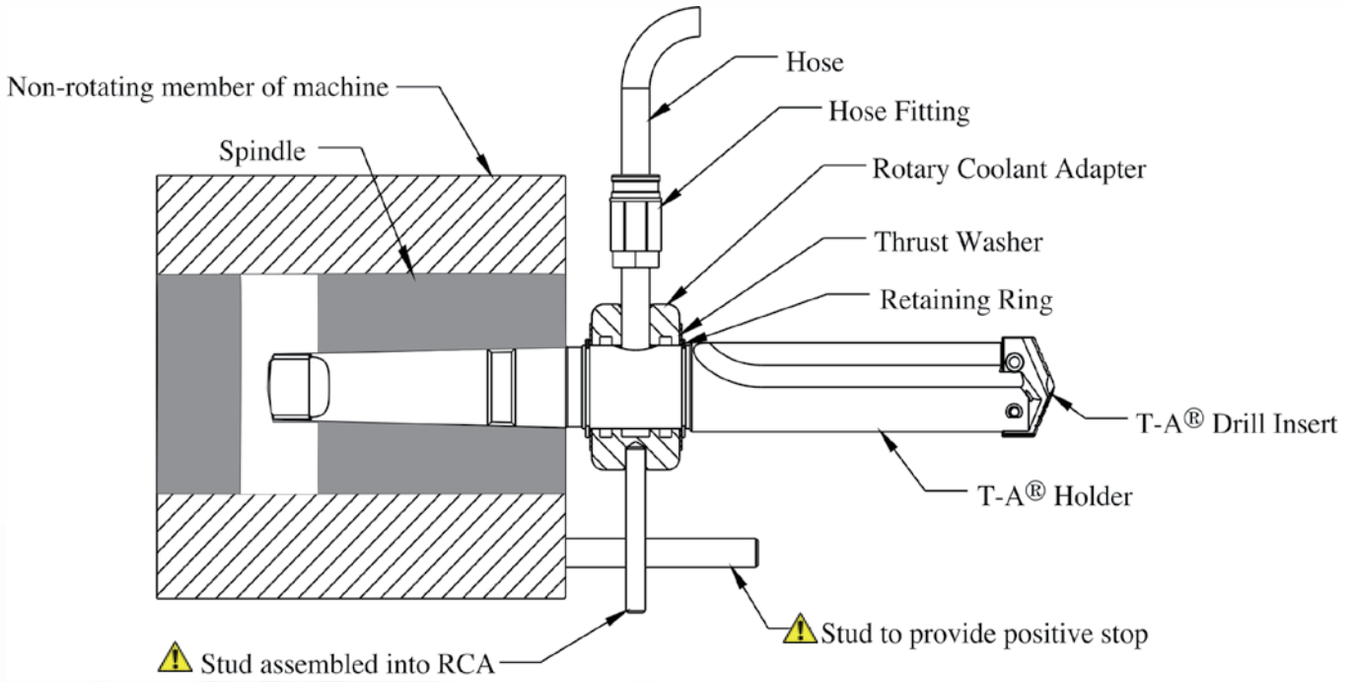


Reduce speed to **maximum of 50 RPM** before retracting from hole

⚠ WARNING

Tool failure can cause serious injury. To prevent:
- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with workpiece or fixture

Visit *www.alliedmachine.com/deepholeguidelines.aspx* for the most up-to-date information and procedures. Factory technical assistance is also available for your specific applications.



⚠ WARNING

RCA rotation during drilling can cause hose and/or hose fitting failure, machinery damage and/or serious injury. To prevent, use RCA and positive stop studs when drilling.

Factory technical assistance is also available for your specific applications.

Max Recommended RCA Speed

RCA	Max Recommended RPM
2SR / 2SRM	3500
3SR / 3SRM	2500
4SR / 4SRM	2000
5SR / 5SRM	1500
6SR / 6SRM	1100
55SR	1100
60SR	900
65SR	700

NOTE: Max recommended pressure is 600 PSI (42 bar)
NOTE: Recommendations above are based on water and oil based coolants

Troubleshooting Guide
T-A® Drills Potential Problem

Setup Condition	1 Accelerated corner wear	2 Barber pole	3 Bell mouth hole	4 Blade chipping	5 Blue chips	6 Build up Edge (BUE)	7 Chatter	8 Chip packing	9 Chipping of blade point	10 Damaged or broken tools	11 Excessive margin wear	12 High Flank wear	13 Hole lead off	14 Hole out of position	15 Hole out of round	16 Notching of blade	17 Oversized hole	18 Poor hole finish	19 Poor tool life	20 Power spikes - Load meter	21 Retract spiral	22 Step burned on blade	Possible Solutions
⚠ Use of Standard, Extended, Long, XL, and 3XL holders See pg C109 for Deep Hole Drilling Guidelines		2	3				7		9				13	14			17				21		• Start with short holder and drill a minimum depth equal to 2 x Diameter (Refer to C109 for detailed instructions) • Spot hole with stub tool of same or greater included angle as T-A® Drill Insert. • Decrease feed a minimum of 50% until establishing full diameter. • Use a special holder with wear pads or chrome bearing area to work with drill bushings.
Starting on an inclined surface							7		9	10	11		13		15						21		• Spot face surface to provide a flat entry surface. • Spot hole with stub tool of same or greater included angle as T-A® Drill Insert. • Decrease feed a minimum of 50% until establishing full diameter. • Use a special holder with wear pads or chrome bearing area to work with drill bushings.
Worn or mis-aligned spindle (lathe, screw machine, chucker)	1		3				7		9	10	11		13				17	18			21		• Align spindle and turret tailstock. • Repair spindle. • Spot hole with stub tool of same or greater included angle as T-A® Drill Insert.
Use of low rigidity machine tools (radial drills, multi-spindle drill press, etc.)		2	3	4			7		9	10			13	14							21		• Spot hole with stub tool of same or greater included angle as T-A® Drill Insert. • Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** do not reduce feed below threshold of good chip formation.) • Use a special holder with wear pads or chrome bearing area to work with drill bushings. • Use tougher tool steel grades with high wear resistant coatings.
Poor work piece support		2		4			7			10	11				15			18			21		• Provide additional support for the work piece. • Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** do not reduce feed below threshold of good chip formation.) • Use tougher tool steel grades with high wear resistant coatings.
Flood coolant, low coolant pressure or low coolant volume	1				5	6		8		10		12					17	18	19	20		22	• Run coolant through tool holder when drilling greater than one times diameter. • Increase coolant pressure and volume through the tool holder. • Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** do not reduce feed below threshold of good chip formation.) • Add a peck cycle to help clear chips.
Interrupted cuts. Entry or exit surfaces that are not perpendicular to the spindle. (draft angles, stepped surfaces, cross holes and cast or forged surfaces).				4			7		9	10	11		13	14	15		17	18	19				• Pre-mill (spot face) entry or exit surface to remove interuption. • Spot hole with stub tool of same or greater included angle as T-A® Drill Insert . • Decrease feed as much as 50% through entry or exit interuption. • Use short holders in low impact entry cuts.
Material harder than expected or running tools beyond recommended speeds.	1				5	6				10		12							19			22	• Reduce speed If a step is worn in the blade, calculate SFM at the worn diameter. Reduce this value by 10% and apply this new value to the original tool diameter. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance. • Select a tool grade (premium, super cobalt, or carbide) or coating (TiAlN, TiCN, or AM200®) that is more wear and heat resistant.
Poor material micro-structure or foriegn particles: (forgings and castings that have not been normalized or annealed, poorly prepared steel, flame cut parts and sand castings				4		6				10		12	13			16			19				• Compare the performance of other tools for similar wear problems, which may indicate poor microstructure. Anneal or normalize parts to improve micro-structure for machining. • To improve tool life in materials with poor micro-structure try carbide grades. • For hard spots or inclusions use the tougher tool steel grade with high wear resistant coatings (TiAlN, TiCN, AM200®) • Reduce Feeds (**NOTICE:** do not reduce feed below threshold of good chip formation.)
Poor Chip Control								8		10	11		13				17	18	19	20			• Increase feed to recommended levels. Contact Allied Application Engineering Group for technical recommendations. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance. • See page C107 for special purpose geometries.
Spot drilled holes with included angle less than that matching T-A® or cored holes.	1			4			7						13			16			19				• Spot hole with stub tool of same or greater included angle as T-A® Drill Insert . • Reduce Feeds (**NOTICE:** do not reduce feed below threshold of good chip formation. • If possible, drill from solid
Use of high wear resistant tool grades.				4						10													• Use tougher grade of T-A® (from carbide to cobalt to HSS). See wear versus toughness chart in this catalog. • Increase rigidity of setup.

International Patents

AccuPort 432®	Canadian Patent: 2,494,383; 2,658,202
	Mexican Patent: 263564
ASC 320®	Canadian Patent: 2,471,799
Flat Bottom T-A® Inserts	Canadian Patent: 2,341,367
	European Patent: 1 210 196 (Denmark, Great Britain, Italy, France)
	German Patent: 669 27 417.6-08
Thin Wall Structural Steel	Canadian Patent: 2,490,052
	Mexican Patent: 251369
GEN2 T-A® (Y-2 Series only)	Canadian Patent: 2,542,814; 2,542,815
	Chinese Patent: ZL200480032635.4; ZL200480032788.9
	Indian Patent: 227218; 228015
	Mexican Patent: 253703; 274461
	South Korea: 795598; 764146; 764140
GEN2 T-A® (Every Series)	Canadian Patent: 2,647,787; 2,678,238
	European Patent: 1 372 894 (Denmark, Great Britain, Italy, France)
	German Patent: 202 20 642.4; 602 04 550.9-08
GEN3SYS®	Canadian Patent: 2,546,058
	Chinese Patent: ZL2004800377821.7
	Indian Patent: 240639
	Mexican Patent: 274461

AccuPort 432®

AccuPort 432® Reference

AccuPort 432® Holder Item Number

J1926 - 04Y - 063F

Port Specification	Port Tube Dash Number		Corresponding T-A Series		Shank Configuration	
AS5202	04	14	Y	2	063F	16FM
J1926	05	16	Z	3	075F	20FM
X1926	06	20	0	4	100F	25FM
I6149	08	24	1		125F	32FM
	10	32			150F	40FM
	12					

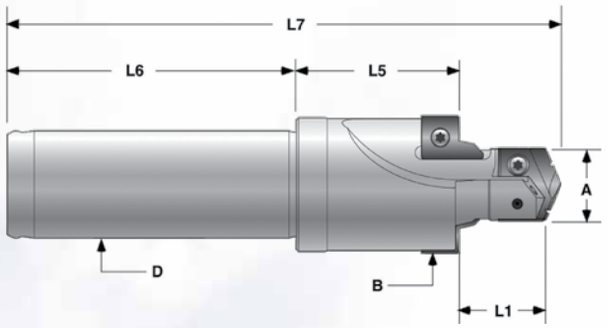
AccuPort 432® Port Form Insert Item Number

J1926 - 04 - C5 - A

Port Specification	Insert Size	Substrate	Coating
AS5202		C5	A - TiAlN
J1926		C3	H - AM200®
I6149			

Made to order tool specifications - Priced on Request

Fax or mail a copy of the table below to Allied's Application Engineering Department (330) 364-7666 to receive pricing for a made-to-order AccuPort 432® Port Contour Cutter.



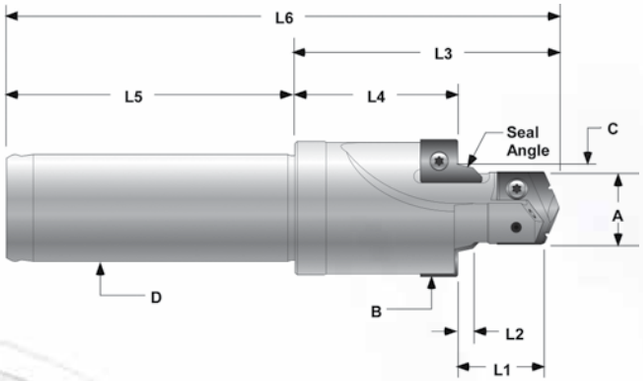
			A	L1	B	L5	D	L6	L7
Tube Dash Number	Specification	Port Thread Size	Minor Dia.	Minor Dia. Length	Spotface Dia.	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
	☐ J1926 ☐ ISO 6149 ☐ AS5202 ☐ ISO 6149 (without ridge)								
Company Name		Contact Name				Telephone			
Distributor Name						Fax			

Port Standards: SAE J-1926-1 / ISO 11926-1, and MS-16142

Item Numbers

Inserts sold separately.

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	T-A® Drill Item Numbers				Port Form Insert Item Numbers			
			Super Cobalt GEN2 T-A® (AM200®)*	Carbide GEN2 T-A® (AM200®)*	Torx Plus® Screw	Torx Plus® Driver	C5 Carbide (TiAlN)	C3 Carbide (AM200®)	Torx Plus® Screw	Torx Plus® Driver
- 4	J1926-04Y-063F	7/16-20 UNF-2B	45YH-.386	4C1YH-.386	724-IP7	8IP-7	J1926-02-C5A	J1926-02-C3H	72556-IP8	8IP-8
- 5	J1926-05Z-063F	1/2-20 UNF-2B	45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7	J1926-02-C5A	J1926-02-C3H	72556-IP8	8IP-8
- 6	J1926-060-075F	9/16-18 UNF-2B	450H-13	4C10H-13	72556-IP8	8IP-8	J1926-02-C5A	J1926-02-C3H	72556-IP8	8IP-8
- 8	J1926-080-075F	3/4-16 UNF-2B	450H-0022	4C10H-0022	72567-IP8	8IP-8	J1926-07-C5A	J1926-07-C3H	72556-IP8	8IP-8
-10	J1926-101-100F	7/8-14 UNF-2B	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	J1926-07-C5A	J1926-07-C3H	72556-IP8	8IP-8
-12	J1926-122-125F	1 1/16-12 UN-2B	452H-25	4C12H-25	7495-IP15	8IP-15	J1926-08-C5A	J1926-08-C3H	7375-IP9	8IP-9
-14	J1926-142-125F	1 3/16-12 UN-2B	452H-28	4C12H-28	7495-IP15	8IP-15	J1926-08-C5A	J1926-08-C3H	7375-IP9	8IP-9
-16	J1926-162-125F	1 5/16-12 UN-2B	452H-1.231	4C12H-1.231	7495-IP15	8IP-15	J1926-08-C5A	J1926-08-C3H	7375-IP9	8IP-9
-20	J1926-203-150F	1 5/8-12 UN-2B	453H-39	1C53A-39	7514-IP20	8IP-20	J1926-10-C5A	J1926-10-C3H	7375-IP9	8IP-9
-24	J1926-243-150F	1 7/8-12 UN-2B	453H-45.5	1C53A-45.5	7514-IP20	8IP-20	J1926-10-C5A	J1926-10-C3H	7375-IP9	8IP-9
-32	J1926-324-150F	2 1/2-12 UN-2B	454H-61.5	N/A	7514-IP20	8IP-20	J1926-12-C5A	J1926-12-C3H	7375-IP9	8IP-9



Indicates metric dimension

US Patent #6,984,094, #7,632,050, # 7,942,616
Other International Patents Pending

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	❶	A	**L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia.	Minor Dia. Length	Spotface Dia.		Seal Angle Dia.	Seal Angle Length	Total Head Length	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
- 4	J1926-04Y-063F	7/16-20 UNF-2B	❍	9,8	14,0	21,4	12°	12,5	2,7	38,8	22,8	15,9	47,6	86,4
				0.386	0.551	0.841	12°	0.490	0.106	1.527	0.896	0.625	1.875	3.402
- 5	J1926-05Z-063F	1/2-20 UNF-2B	❍	11,5	14,0	23,0	12°	14,1	2,7	38,8	22,4	15,9	47,6	86,4
				0.453	0.551	0.904	12°	0.553	0.106	1.527	0.881	0.625	1.875	3.402
- 6	J1926-060-075F	9/16-18 UNF-2B	❍	13,0	15,5	24,6	12°	15,7	2,7	47,2	29,0	19,1	50	97,2
				0.512	0.610	0.969	12°	0.618	0.106	1.857	1.144	0.750	1.969	3.826
- 8	J1926-080-075F	3/4-16 UNF-2B	❍	17,5	17,5	30,7	15°	20,7	2,7	50,3	29,2	19,1	50	100,4
				0.688	0.689	1.207	15°	0.813	0.106	1.982	1.150	0.750	1.969	3.951
-10	J1926-101-100F	7/8-14 UNF-2B	❍	20,5	20,0	34,0	15°	24,0	2,7	54,4	30,1	25,4	57,9	112,3
				0.807	0.787	1.339	15°	0.945	0.106	2.140	1.185	1.000	2.281	4.421
-12	J1926-122-125F	1 1/16-12 UN-2B	❍	25,0	23,0	42,1	15°	29,2	3,5	67,1	38,9	31,8	57,9	125,0
				0.984	0.906	1.657	15°	1.150	0.138	2.640	1.530	1.250	2.281	4.921
-14	J1926-142-125F	1 3/16-12 UN-2B	❍	28,0	23,0	45,3	15°	32,4	3,5	67,1	38,2	31,8	57,9	125,0
				1.102	0.906	1.783	15°	1.276	0.138	2.640	1.504	1.250	2.281	4.921
-16	J1926-162-125F	1 5/16-12 UN-2B	❍	31,2	23,0	48,5	15°	35,6	3,5	67,1	37,5	31,8	57,9	125,0
				1.231	0.906	1.907	15°	1.400	0.138	2.640	1.477	1.250	2.281	4.921
-20	J1926-203-150F	1 5/8-12 UN-2B	❍	39,0	23,0	58,7	15°	43,6	3,5	77,8	46,6	38,1	68,3	146,0
				1.535	0.906	2.309	15°	1.715	0.138	3.062	1.835	1.500	2.688	5.750
-24	J1926-243-150F	1 7/8-12 UN-2B	❍	45,5	23,0	65,0	15°	49,9	3,5	77,8	45,2	38,1	68,3	146,0
				1.791	0.906	2.559	15°	1.965	0.138	3.062	1.778	1.500	2.688	5.750
-32	J1926-324-150F	2 1/2-12 UN-2B	❍	61,5	23,0	88,0	15°	65,8	3,5	96,8	60,8	38,1	68,3	165,1
				2.421	0.906	3.465	15°	2.589	0.138	3.812	2.393	1.500	2.688	6.500

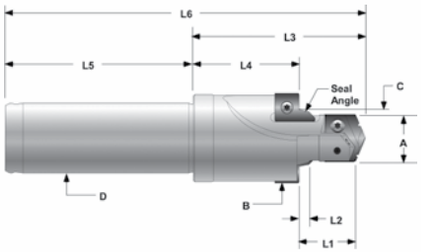
**** AccuPort 432® Port Contour Cutters are available with extended pilot (L1). Please see page D4.**

For tools made to your requirements see page D2 for details.

❶ Availability Codes
❍ Stocked. Subject to prior sale.
▲ Non-stocked standard delivery

AccuPort 432®

Port Standards: SAE J-1926-1 / ISO 11926-1, and MS-16142 with metric shank

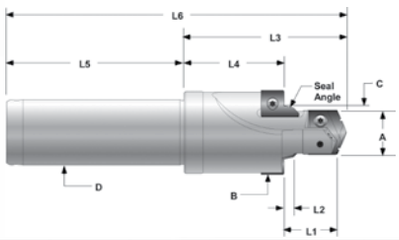


Indicates metric dimension

US Patent #6,984,094, #7,632,050, #7,942,616
Other International Patents Pending

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	❶	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia.	Minor Dia. Length	Spotface Dia.		Seal Angle Dia.	Seal Angle Length	Total Head Length	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
- 4	J1926-04Y-16FM	7/16-20 UNF-2B	❍	9,8	20.3	21,4	12°	12,5	2,7	45,1	22,8	16,0	41,9	80,7
				0.386	0.801	0.841	12°	0.490	0.106	1.777	0.896	0,630	1,650	3,177
- 5	J1926-05Z-16FM	1/2-20 UNF-2B	❍	11,5	20.3	23,0	12°	14,1	2,7	45,1	22,4	16,0	41,9	80,7
				0.453	0.801	0.904	12°	0.553	0.106	1.777	0.881	0,630	1,650	3,177
- 6	J1926-060-20FM	9/16-18 UNF-2B	❍	13,0	15,5	24,6	12°	15,7	2,7	47,2	29,0	20,0	41,9	89,1
				0.512	0.610	0.969	12°	0.618	0.106	1.857	1.144	0.787	1.650	3.508
- 8	J1926-080-20FM	3/4-16 UNF-2B	❍	17,5	17,5	30,7	15°	20,7	2,7	50,3	29,2	20,0	41,9	92,2
				0.688	0.689	1.207	15°	0.813	0.106	1.982	1.150	0.787	1.650	3.630
-10	J1926-101-25FM	7/8-14 UNF-2B	❍	20,5	20,0	34,0	15°	24,0	2,7	54,4	30,1	25,0	53,1	107,5
				0.807	0.787	1.339	15°	0.945	0.106	2.140	1.185	0.984	2.091	4.232
-12	J1926-122-32FM	1 1/16-12 UN-2B	❍	25,0	23,0	42,1	15°	29,2	3,5	67,1	38,9	32,0	57,9	125,0
				0.984	0.906	1.657	15°	1.150	0.138	2.640	1.530	1.260	2.280	4.921
-14	J1926-142-32FM	1 3/16-12 UN-2B	❍	28,0	23,0	45,3	15°	32,4	3,5	67,1	38,2	32,0	57,9	125,0
				1.102	0.906	1.783	15°	1.276	0.138	2.640	1.504	1.260	2.280	4.921
-16	J1926-162-32FM	1 5/16-12 UN-2B	❍	31,2	23,0	48,5	15°	35,6	3,5	67,1	37,5	32,0	57,9	125,0
				1.231	0.906	1.907	15°	1.400	0.138	2.640	1.477	1.260	2.280	4.921
-20	J1926-203-40FM	1 5/8-12 UN-2B	❍	39,0	23,0	58,7	15°	43,6	3,5	77,8	46,6	40,0	70,1	147,9
				1.535	0.906	2.309	15°	1.715	0.138	3.062	1.835	1.575	2.760	5.823
-24	J1926-243-40FM	1 7/8-12 UN-2B	❍	45,5	23,0	65,0	15°	49,9	3,5	77,8	45,2	40,0	70,1	147,9
				1.791	0.906	2.559	15°	1.965	0.138	3.062	1.778	1.575	2.760	5.823
-32	J1926-324-40FM	2 1/2-12 UN-2B	❍	61,5	23,0	88,0	15°	65,8	3,5	96,8	60,8	40,0	70,1	166,9
				2.421	0.906	3.465	15°	2.589	0.138	3.812	2.393	1.575	2.760	6.571

Port Standards: SAE J-1926-1 / ISO 11926-1, and MS-16142 with extended minor diameter lengths (LI)



Indicates metric dimension

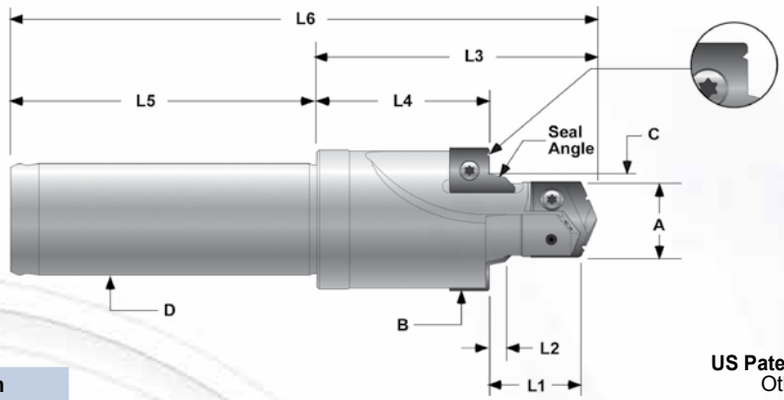
US Patent #6,984,094, #7,632,050, #7,942,616
Other International Patents Pending

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	❶	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia.	Minor Dia. Length	Spotface Dia.		Seal Angle Dia.	Seal Angle Length	Total Head Length	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
- 4	X1926-04Y-063F	7/16-20 UNF-2B	❍	9,8	20.3	21,4	12°	12,5	2,7	45,1	22,8	15,9	47,6	92,8
				0.386	0.801	0.841	12°	0.490	0.106	1.777	0.896	0.625	1.875	3.652
- 5	X1926-05Z-063F	1/2-20 UNF-2B	❍	11,5	20.3	23,0	12°	14,1	2,7	45,1	22,4	15,9	47,6	92,8
				0.453	0.801	0.904	12°	0.553	0.106	1.777	0.881	0.625	1.875	3.652
- 6	X1926-060-075F	9/16-18 UNF-2B	❍	13,0	21.8	24,6	12°	15,7	2,7	53,5	29,0	19,1	50	103,5
				0.512	0.860	0.969	12°	0.618	0.106	2.107	1.144	0.750	1.969	4.067
- 8	X1926-080-075F	3/4-16 UNF-2B	❍	17,5	23.8	30,7	15°	20,7	2,7	56,7	29,2	19,1	50	106,7
				0.688	0.939	1.207	15°	0.813	0.106	2.232	1.150	0.750	1.969	4.201
-10	X1926-101-100F	7/8-14 UNF-2B	❍	20,5	26.3	34,0	15°	24,0	2,7	60,7	30,1	25,4	57,9	118,6
				0.807	1.037	1.339	15°	0.945	0.106	2.390	1.185	1.000	2.281	4.671
-12	X1926-122-125F	1 1/16-12 UN-2B	❍	25,0	29.3	42,1	15°	29,2	3,5	73,4	38,9	31,8	57,9	131,3
				0.984	1.156	1.657	15°	1.150	0.138	2.890	1.530	1.250	2.281	5.171
-14	X1926-142-125F	1 3/16-12 UN-2B	❍	28,0	29.3	45,3	15°	32,4	3,5	73,4	38,2	31,8	57,9	131,3
				1.102	1.156	1.783	15°	1.276	0.138	2.890	1.504	1.250	2.281	5.171
-16	X1926-162-125F	1 5/16-12 UN-2B	❍	31,0	29.3	48,5	15°	35,6	3,5	73,4	37,5	31,8	57,9	131,3
				1.221	1.156	1.907	15°	1.400	0.138	2.890	1.477	1.250	2.281	5.171
-20	X1926-203-150F	1 5/8-12 UN-2B	❍	39,0	29.3	58,7	15°	43,6	3,5	84,1	46,6	38,1	68,3	152,4
				1.535	1.156	2.309	15°	1.715	0.138	3.312	1.835	1.500	2.688	6.000
-24	X1926-243-150F	1 7/8-12 UN-2B	❍	45,5	29.3	65,0	15°	49,9	3,5	84,1	45,2	38,1	68,3	152,4
				1.791	1.156	2.559	15°	1.965	0.138	3.312	1.778	1.500	2.688	6.000
-32	X1926-324-150F	2 1/2-12 UN-2B	❍	61,5	29.3	88,0	15°	65,8	3,5	103,2	60,8	38,1	68,3	171,4
				2.421	1.156	3.465	15°	2.589	0.138	4.062	2.393	1.500	2.688	6.750

Port Standards: ISO 6149-1:1993, SAE J-2244/1

Inserts sold separately.

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	T-A® Drill Item Numbers				Port Form Insert Item Numbers					
			GEN2 T-A® Super Cobalt (AM200®)	GEN2 T-A® Carbide (AM200®)	Torx Plus® Screw	Torx Plus® Driver	C5 Carbide (TiAlN) with ID ridge	C5 Carbide (TiAlN) without ID ridge	C3 Carbide (TiAlN) with ID ridge	C3 Carbide (TiAlN) without ID ridge	Torx Plus® Screw	Torx Plus® Driver
-4	I6149-04RY-16FM	M12 X 1.5	45YH-10.5	4C1YH-10.5	724-IP7	8IP-7	I6149-04R-C5A	I6149-04-C5A	I6149-04R-C3H	I6149-04-C3H	72556-IP8	8IP-8
-5	I6149-05RZ-16FM	M14 X 1.5	45ZH-12.5	4C1ZH-12.5	7247-IP7	8IP-7	I6149-04R-C5A	I6149-04-C5A	I6149-04R-C3H	I6149-04-C3H	72556-IP8	8IP-8
-6	I6149-06R0-20FM	M16 X 1.5	450H-14.5	4C10H-14.5	72567-IP8	8IP-8	I6149-06R-C5A	I6149-06-C5A	I6149-06R-C3H	I6149-06-C3H	72556-IP8	8IP-8
-8	I6149-08R0-20FM	M18 X 1.5	450H-16.5	4C10H-16.5	72567-IP8	8IP-8	I6149-06R-C5A	I6149-06-C5A	I6149-06R-C3H	I6149-06-C3H	72556-IP8	8IP-8
-10	I6149-10R1-25FM	M22 X 1.5	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	I6149-04R-C5A	I6149-04-C5A	I6149-04R-C3H	I6149-04-C3H	72556-IP8	8IP-8
-12	I6149-12R2-32FM	M27 X 2	452H-25	4C12H-25	7495-IP15	8IP-15	I6149-12R-C5A	I6149-12-C5A	I6149-12R-C3H	I6149-12-C3H	72556-IP8	8IP-8
-14	I6149-14R2-32FM	M30 X 2	452H-28	4C12H-28	7495-IP15	8IP-15	I6149-14R-C5A	I6149-14-C5A	I6149-14R-C3H	I6149-14-C3H	72556-IP8	8IP-8
-16	I6149-16R2-32FM	M33 X 2	452H-31	4C12H-31	7495-IP15	8IP-15	I6149-16R-C5A	I6149-16-C5A	I6149-16R-C3H	I6149-16-C3H	7375-IP9	8IP-9
-20	I6149-20R3-40FM	M42 X 2	453H-40	1C53A-40	7514-IP20	8IP-20	I6149-20R-C5A	I6149-20-C5A	I6149-20R-C3H	I6149-20-C3H	7375-IP9	8IP-9
-24	I6149-24R3-40FM	M48 X 2	453H-46	1C53A-46	7514-IP20	8IP-20	I6149-24R-C5A	I6149-24-C5A	I6149-24R-C3H	I6149-24-C3H	7375-IP9	8IP-9
-32	I6149-32R4-40FM	M60 X 2	454H-58	N/A	7514-IP20	8IP-20	I6149-32R-C5A	I6149-32-C5A	I6149-32R-C3H	I6149-32-C3H	7375-IP9	8IP-9



US Patent #6,984,094, #7,632,050, #7,942,616
Other International Patents Pending

Indicates metric dimension

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	❶	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia.	Minor Dia. Length	Spotface Dia. w/ridge		Seal Angle Dia.	Seal Angle Length	Total Head Length	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
- 4	I6149-04RY-16FM	M12 X 1.5	❍	10,5	14,1	24,0	15°	13,81	2,6	38,8	22,2	16,0	41,9	80,7
				0.413	0.556	0.945	15°	0.544	0.102	1.527	0.876	0.630	1.650	3.177
- 5	I6149-05RZ-16FM	M14 X 1.5	❍	12,5	14,1	26,0	15°	15,8	2,6	38,8	21,8	16,0	41,9	80,7
				0.492	0.556	1.024	15°	0.623	0.102	1.527	0.858	0.630	1.650	3.177
- 6	I6149-06R0-20FM	M16 X 1.5	❍	14,5	15,6	28,0	15°	17,8	2,6	47,2	28,3	20,0	41,9	89,1
				0.571	0.615	1.102	15°	0.702	0.102	1.857	1.116	0.787	1.650	3.507
- 8	I6149-08R0-20FM	M18 X 1.5	❍	16,5	17,1	30,0	15°	19,8	2,6	50,3	29,6	20,0	41,9	92,2
				0.650	0.674	1.181	15°	0.781	0.102	1.982	1.164	0.787	1.650	3.632
-10	I6149-10R1-25FM	M22 X 1.5	❍	20,5	18,2	34,0	15°	23,8	2,6	54,4	31,6	25,0	53,1	107,5
				0.807	0.717	1.339	15°	0.938	0.102	2.140	1.246	0.984	2.091	4.231
-12	I6149-12R2-32FM	M27 X 2	❍	25,0	22,2	40,0	15°	29,4	3,3	67,1	39,4	32,0	57,9	125,0
				0.984	0.874	1.575	15°	1.159	0.130	2.640	1.552	1.260	2.280	4.920
-14	I6149-14R2-32FM	M30 X 2	❍	28,0	22,2	43,0	15°	32,4	3,3	67,1	38,8	32,0	57,9	125,0
				1.102	0.874	1.693	15°	1.277	0.130	2.640	1.526	1.260	2.280	4.920
-16	I6149-16R2-32FM	M33 X 2	❍	31,0	22,2	49,0	15°	35,4	3,3	67,1	38,1	32,0	57,9	125,0
				1.220	0.874	1.929	15°	1.395	0.130	2.640	1.499	1.260	2.280	4.920
-20	I6149-20R3-40FM	M42 X 2	❍	40,0	22,7	60,0	15°	44,4	3,3	77,8	46,4	40,0	70,1	147,9
				1.575	0.895	2.362	15°	1.749	0.130	3.062	1.828	1.575	2.760	5.822
-24	I6149-24R3-40FM	M48 X 2	❍	46,0	25,2	66,1	15°	50,4	3,3	77,8	42,6	40,0	70,1	147,9
				1.811	0.993	2.602	15°	1.985	0.130	3.062	1.676	1.575	2.760	5.822
-32	I6149-32R4-40FM	M60 X 2	❍	58,0	27,7	76,0	15°	62,4	3,3	96,8	56,6	40,0	70,1	166,9
				2.283	1.092	2.992	15°	2.458	0.130	3.812	2.228	1.575	2.760	6.572

AccuPort 432® Port Contour Cutters without identification ridge use same holder.
For tools made to your requirements see page D2 for details.

❶ Availability Codes
❍ Stocked. Subject to prior sale.
▲ Non-stocked standard delivery

AccuPort 432®

Port Standards: SAE AS5202 (Formerly MilSpec MS-33649)

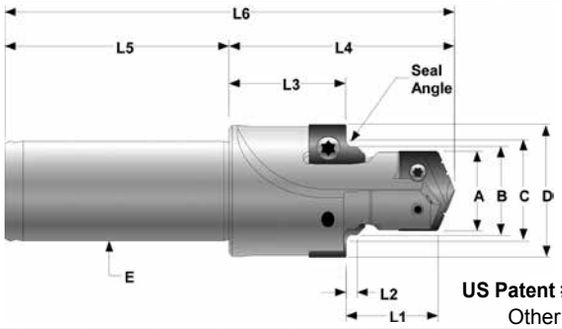
Also Conforms to AND10050 Using Alternate Tap Drill Diameter (shown in red)

Item Number

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	Super Cobalt GEN2 T-A® (AM200®)*	Carbide GEN2 T-A® (AM200®)*	Torx Plus® Screw	Torx Plus® Driver	C5 Carbide (TiAlN)	Torx Plus® Screw	Torx Plus® Driver
- 4	AS5202-04Y-063F	7/16-20 UNJF-3B	45YH-.390	4C1YH-.390	724-IP7	8IP-7	AS5202-04-C5A	72556-IP8	8IP-8
		7/16-20 UNF-3B	45YH-.386	4C1YH-.386					
- 5	AS5202-05Z-063F	1/2-20 UNJF-3B	45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7	AS5202-05-C5A	72556-IP8	8IP-8
		1/2-20 UNF-3B	45ZH-.451	4C1ZH-.451					
- 6	AS5202-06Z-075F	9/16-18 UNJF-3B	45ZH-.510	4C1ZH-.510	7247-IP7	8IP-7	AS5202-06-C5A	72556-IP8	8IP-8
		9/16-18 UNF-3B	45ZH-.506	4C1ZH-.506					
- 8	AS5202-080-075F	3/4-16 UNJF-3B	450H-17.5	4C10H-17.5	72567-IP8	8IP-8	AS5202-08-C5A	72556-IP8	8IP-8
		3/4-16 UNF-3B	450H-0022	4C10H-0022					
-10	AS5202-101-100F	7/8-14 UNJF-3B	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15
		7/8-14 UNF-3B	451H-.801	4C11H-.801					
-12	AS5202-122-125F	1 1/16-12 UNJ-3B	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15
		1 1/16-12 UN-3B	452H-.976	4C12H-.976					
-14	AS5202-142-125F	1 3/16-12 UNJ-3B	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15
		1 3/16-12 UN-3B	452H-28	4C12H-28					
-16	AS5202-162-125F	1 5/16-12 UNJ-3B	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15
		1 5/16-12 UN-3B	452H-1.226	4C12H-1.226					
-20	AS5202-203-150F	1 5/8-12 UNJ-3B	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15
		1 5/8-12 UN-3B	453H-39	1C53A-39					
-24	AS5202-243-150F	1 7/8-12 UNJ-3B	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15
		1 7/8-12 UN-3B	453H-45.5	1C53A-45.5					
-32	AS5202-324-150F	2 1/2-12 UNJ-3B	454H-2.421	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15
		2 1/2-12 UN-3B	454H-2.413	N/A					

A1 = AND10050 Specifications (shown in red)

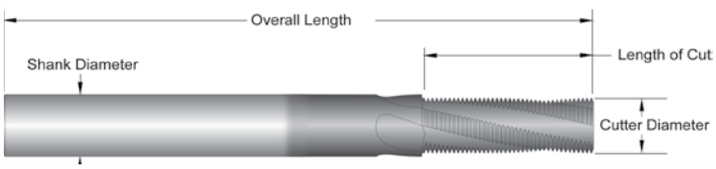
A2 = SAE AS5202 Specifications

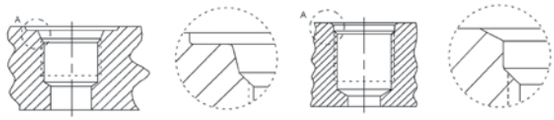


US Patent #6,984,094, #7,632,050, #7,942,616
Other International Patents Pending

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	❶	A1 Dia.	A2 Dia.	L1 Minor Dia. Length	B Pilot Dia.	L2 Pilot Length	Seal Angle	C Seal Angle Dia.	D Spotface Dia.	L3 Spotface to Shoulder Length	L4 Total Head Length	E Shank Dia.	L5 Shank Length	L6 OAL
- 4	AS5202-04Y-063F	7/16-20 UNJF-3B	❍	9,8	9,9	16,79	11,53	2,11	60°	14,34	22,23	22,76	41,58	15,88	47,63	89,20
				0.386	0.390	0.661	0.454	0.083	60°	0.564	0.875	0.896	1.637	0.625	1.875	3.512
- 5	AS5202-05Z-063F	1/2-20 UNJF-3B	❍	11,45	11,5	16,79	13,13	2,11	60°	15,88	23,27	22,39	41,58	15,88	47,63	89,20
				0.451	0.453	0.661	0.517	0.083	60°	0.625	0.916	0.882	1.637	0.625	1.875	3.512
- 6	AS5202-06Z-075F	9/16-18 UNJF-3B	❍	12,85	12,95	18,14	14,73	2,11	60°	17,46	24,87	28,43	49,28	19,05	50,01	99,29
				0.506	0.510	0.714	0.580	0.083	60°	0.688	0.979	1.119	1.940	0.750	1.969	3.909
- 8	AS5202-080-075F	3/4-16 UNJF-3B	❍	17,46	17,5	21,31	19,53	2,39	60°	22,23	30,43	28,57	53,52	19,05	50,01	103,53
				0.688	0.689	0.839	0.769	0.094	60°	0.875	1.198	1.125	2.107	0.750	1.969	4.076
-10	AS5202-101-100F	7/8-14 UNJF-3B	❍	20,35	20,5	23,75	22,76	2,72	60°	25,46	34,39	30,19	58,17	25,40	57,94	116,10
				0.801	0.807	0.935	0.896	0.107	60°	1.002	1.354	1.189	2.290	1.000	2.281	4.571
-12	AS5202-122-125F	1 1/16-12 UNJ-3B	❍	24,8	25,0	27,15	27,58	3,18	60°	31,42	41,53	37,94	70,23	31,75	57,94	128,17
				0.976	0.984	1.069	1.086	0.125	60°	1.237	1.635	1.494	2.765	1.250	2.281	5.046
-14	AS5202-142-125F	1 3/16-12 UNJ-3B	▲	28,0	28,17	27,15	30,76	3,18	60°	34,61	45,09	37,22	70,23	31,75	57,94	128,17
				1.102	1.109	1.069	1.211	0.125	60°	1.363	1.775	1.465	2.765	1.250	2.281	5.046
-16	AS5202-162-125F	1 5/16-12 UNJ-3B	❍	31,15	31,34	27,15	33,93	3,18	60°	37,77	48,77	36,51	70,23	31,75	57,94	128,17
				1.226	1.234	1.069	1.336	0.125	60°	1.487	1.920	1.437	2.765	1.250	2.281	5.046
-20	AS5202-203-150F	1 5/8-12 UNJ-3B	❍	39,0	39,29	28,47	41,86	3,18	60°	45,69	57,91	44,32	80,95	38,10	68,28	149,23
				1.535	1.547	1.121	1.648	0.125	60°	1.799	2.280	1.745	3.187	1.500	2.688	5.875
-24	AS5202-243-150F	1 7/8-12 UNJ-3B	▲	45,5	45,64	28,75	48,21	3,18	60°	52,07	65,28	42,58	80,95	38,10	68,28	149,23
				1.791	1.797	1.132	1.898	0.125	60°	2.050	2.570	1.676	3.187	1.500	2.688	5.875
-32	AS5202-324-150F	2 1/2-12 UNJ-3B	▲	61,3	61,49	34,87	64,11	3,18	60°	67,97	88,65	45,78	93,65	38,10	68,28	161,93
				2.413	2.421	1.373	2.524	0.125	60°	2.676	3.490	1.802	3.687	1.500	2.688	6.375

For tools made to your requirements see page D2 for details.





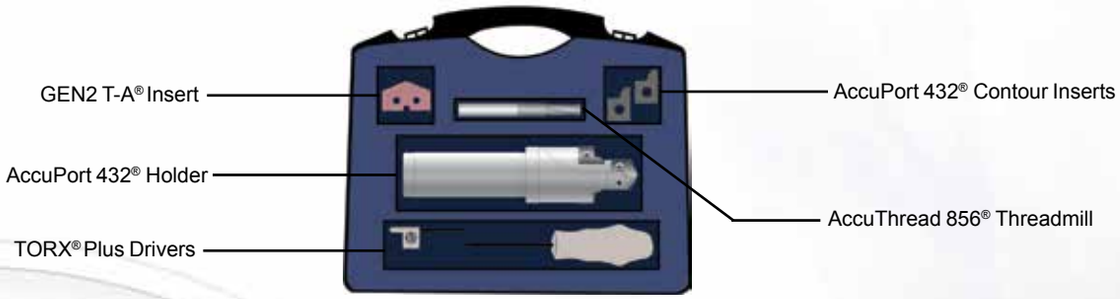
SAE J-1926-1/ISO 11926-1 SAE AS5202

Accuport Specific - International Unified Series (UN) manufactured specifically for use with AccuPort 432® hydraulic port forms. The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form spec.

AccuPort 432® Specific Thread Mills (For use with AccuPort 432® Port Contour Cutter)

Port Size	Pitch	Item Number	Flutes	Cutter Diameter	Shank Diameter	Length of Cut	Overall Length	*AM210™ ❶
-4 to -5	20	TMAK0438-20	4	0.335	0.375	0.600	3.5	❍
-6	18	TMAK0563-18	4	0.370	0.375	0.666	3.5	❍
-8	16	TMAK0750-16	4	0.495	0.500	0.750	3.5	❍
-10	14	TMAK0875-14	4	0.495	0.500	0.857	3.5	❍
-12 to -32	12	TMAK1063-12	4	0.495	0.500	0.917	3.5	❍

***All other coatings are non-stocked standards 10 to 15 day delivery.**



AccuPort 432® AccuThread 856® Ferrous Material Kit

Tube Dash Number	Port Thread Size	Port Contour Cutter Number	QTY	T-A® Drill Item Numbers		Port Form Insert Item Numbers		AccuThread 856® Item Numbers		Kit Item Number
				Super Cobalt (AM200®)	QTY	C5 Carbide (TiAlN)	QTY	Solid Carbide * (AM210®)	QTY	
- 4	7/16-20 UNF-2B	J1926-04Y-063F	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20	1	ATK-K-04
- 5	1/2-20 UNF-2B	J1926-05Z-063F	1	45ZH-11.5	2	J1926-02-C5A	2	TMAK0438-20	1	ATK-K-05
- 6	9/16-18 UNF-2B	J1926-060-075F	1	450H-13	2	J1926-02-C5A	2	TMAK0563-18	1	ATK-K-06
- 8	3/4-16 UNF-2B	J1926-080-075F	1	450H-0022	2	J1926-07-C5A	2	TMAK0750-16	1	ATK-K-08
-10	7/8-14 UNF-2B	J1926-101-100F	1	451H-20.5	2	J1926-07-C5A	2	TMAK0875-14	1	ATK-K-10
-12	1 1/16-12 UN-2B	J1926-122-125F	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12	1	ATK-K-12
-14	1 3/16-12 UN-2B	J1926-142-125F	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12	1	ATK-K-14
-16	1 5/16-12 UN-2B	J1926-162-125F	1	452H-1.231	2	J1926-08-C5A	2	TMAK1063-12	1	ATK-K-16
-20	1 5/8-12 UN-2B	J1926-203-150F	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12	1	ATK-K-20
-24	1 7/8-12 UN-2B	J1926-243-150F	1	453H-45.5	1	J1926-10-C5A	2	TMAK1063-12	1	ATK-K-24
-32	2 1/2-12 UN-2B	J1926-324-150F	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12	1	ATK-K-32

***All other coatings are non-stocked standards 10 to 15 day delivery.**

AccuPort 432® AccuThread 856® Non-ferrous Material Kit

Tube Dash Number	Port Thread Size	Port Contour Cutter Number	QTY	T-A® Drill Item Numbers		Port Form Insert Item Numbers		AccuThread 856® Item Numbers		Kit Item Number
				Super Cobalt (TiN)	QTY	C5 Carbide (TiAlN)	QTY	Solid Carbide (Uncoated)	QTY	
- 4	7/16-20 UNF-2B	J1926-04Y-063F	1	15YT-.386	2	J1926-02-C5A	2	TMAU0438-20	1	ATK-U-04
- 5	1/2-20 UNF-2B	J1926-05Z-063F	1	15ZT-11.5	2	J1926-02-C5A	2	TMAU0438-20	1	ATK-U-05
- 6	9/16-18 UNF-2B	J1926-060-075F	1	150T-13	2	J1926-02-C5A	2	TMAU0563-18	1	ATK-U-06
- 8	3/4-16 UNF-2B	J1926-080-075F	1	150T-0022	2	J1926-07-C5A	2	TMAU0750-16	1	ATK-U-08
-10	7/8-14 UNF-2B	J1926-101-100F	1	151T-20.5	2	J1926-07-C5A	2	TMAU0875-14	1	ATK-U-10
-12	1 1/16-12 UN-2B	J1926-122-125F	1	152T-25	2	J1926-08-C5A	2	TMAU1063-12	1	ATK-U-12
-14	1 3/16-12 UN-2B	J1926-142-125F	1	152T-28	2	J1926-08-C5A	2	TMAU1063-12	1	ATK-U-14
-16	1 5/16-12 UN-2B	J1926-162-125F	1	152T-1.231	2	J1926-08-C5A	2	TMAU1063-12	1	ATK-U-16
-20	1 5/8-12 UN-2B	J1926-203-150F	1	453T-39	1	J1926-10-C5A	2	TMAU1063-12	1	ATK-U-20
-24	1 7/8-12 UN-2B	J1926-243-150F	1	453T-45.5	1	J1926-10-C5A	2	TMAU1063-12	1	ATK-U-24
-32	2 1/2-12 UN-2B	J1926-324-150F	1	454T-61.5	1	J1926-12-C5A	2	TMAU1063-12	1	ATK-U-32

AccuPort 432® Port Contour Cutters

Recommended Speeds and Feeds (Inch)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Material	Material Hardness (BHN)	Grade	SPEED				FEED (IPR) - HSS						SPEED				FEED (IPR) - Carbide				
			TiN SFM	TiAlN SFM	TiCN SFM	AM200® SFM	Tube # 4-5 Series Y-Z	Tube # 6-8 Series 0	Tube # 10 Series 1	Tube # 12-16 Series 2	Tube # 20-24 Series 3	Tube # 32 Series 4	Grade	TiN SFM	TiAlN SFM	AM200® SFM	Tube # 4-5 Series Y-Z	Tube # 6-8 Series 0	Tube # 10 Series 1	Tube # 12-16 Series 2	Tube # 20-24 Series 3
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	HSS	200	260	280	325	0.007	0.010	0.013	0.016	0.020	0.023	C1,C5	320	420	480	0.008	0.012	0.015	0.018	0.021
	150-200	HSS	180	235	260	300	0.007	0.010	0.013	0.016	0.020	0.023	C1,C5	280	360	415	0.007	0.011	0.014	0.016	0.019
	200-250	HSS	160	210	240	280	0.006	0.010	0.013	0.016	0.020	0.023	C1,C5	260	340	390	0.006	0.010	0.013	0.015	0.017
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	HSS	170	220	250	290	0.006 ❖	0.009	0.012	0.015	0.019	0.023	C1,C5	300	390	450	0.008 ❖	0.010	0.013	0.017	0.019
	125-175	HSS	160	210	240	275	0.006 ❖	0.009	0.012	0.015	0.019	0.023	C1,C5	260	340	390	0.007 ❖	0.010	0.013	0.016	0.018
	175-225	HSS	150	195	225	260	0.005 ❖	0.008	0.010	0.014	0.018	0.021	C1,C5	240	310	355	0.006 ❖	0.009	0.012	0.015	0.017
	225-275	HSS	140	180	210	240	0.005 ❖	0.008	0.010	0.014	0.018	0.021	C1,C5	210	270	310	0.005 ❖	0.009	0.012	0.015	0.017
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	HSS	160	210	240	275	0.006	0.009	0.012	0.015	0.019	0.023	C1,C5	260	340	390	0.007	0.010	0.013	0.016	0.018
	175-225	HSS	150	195	225	260	0.005	0.008	0.010	0.014	0.018	0.021	C1,C5	240	310	355	0.006	0.009	0.012	0.015	0.017
	225-275	HSS	140	180	210	240	0.005	0.008	0.010	0.014	0.018	0.021	C1,C5	210	270	310	0.006	0.009	0.012	0.015	0.017
	275-325	SC	130	170	195	225	0.004	0.007	0.009	0.012	0.016	0.019	C1,C5	180	230	265	0.005	0.008	0.011	0.014	0.016
Alloy Steel 4140, 5140, 8640, etc.	125-175	HSS	150	195	210	240	0.006	0.008	0.010	0.014	0.017	0.019	C1,C5	250	325	375	0.007	0.010	0.013	0.016	0.018
	175-225	HSS	140	180	195	225	0.005	0.008	0.010	0.014	0.017	0.019	C1,C5	230	300	345	0.006	0.009	0.012	0.015	0.017
	225-275	HSS	130	170	180	210	0.005	0.007	0.010	0.014	0.017	0.019	C1,C5	210	270	310	0.006	0.009	0.012	0.015	0.017
	275-325	SC	120	155	170	195	0.004	0.006	0.009	0.012	0.015	0.017	C1,C5	200	250	285	0.005	0.008	0.011	0.014	0.016
	325-375	SC	110	145	155	180	0.003	0.006	0.009	0.012	0.015	0.017	C1,C5	170	220	255	0.004	0.007	0.010	0.013	0.015
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	SC	80	100	110	125	0.005 ❖	0.007	0.009	0.010	0.014	0.017	C1,C5	160	200	230	0.006 ❖	0.009	0.010	0.012	0.015
	300-350	SC	60	80	85	100	0.004 ❖	0.007	0.009	0.010	0.014	0.017	C1,C5	140	180	205	0.005 ❖	0.008	0.009	0.011	0.014
	350-400	SC	50	65	70	80	0.003 ❖	0.006	0.008	0.009	0.012	0.015	C1,C5	120	160	185	0.004 ❖	0.007	0.008	0.010	0.012
Structural Steel A36, A285, A516, etc.	100-150	HSS	140	180	200	235	0.006 ❖	0.010	0.012	0.014	0.018	0.021	C1,C5	240	310	355	0.008 ❖	0.011	0.014	0.016	0.018
	150-250	HSS	120	155	170	190	0.005 ❖	0.009	0.010	0.012	0.016	0.019	C1,C5	200	250	285	0.006 ❖	0.010	0.012	0.014	0.016
	250-350	SC	100	130	140	160	0.004 ❖	0.009	0.009	0.010	0.014	0.017	C1,C5	180	230	265	0.005 ❖	0.009	0.011	0.012	0.014
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	SC	80	105	110	125	0.004 ❖	0.006	0.008	0.010	0.014	0.015	C1,C5	160	220	255	0.004 ❖	0.007	0.009	0.011	0.013
	200-250	SC	60	85	90	105	0.004 ❖	0.006	0.008	0.010	0.012	0.015	C1,C5	120	170	195	0.004 ❖	0.007	0.009	0.011	0.013
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	SC	30	35	40	45	0.003 ❖	0.007	0.008	0.010	0.012	0.015	C2	80	105	120	0.004 ❖	0.007	0.009	0.011	0.013
	220-310	SC	25	30	35	40	0.003 ❖	0.006	0.007	0.008	0.010	0.012	C2	60	85	95	0.004 ❖	0.006	0.008	0.010	0.012
Stainless Steel 416, 420, 303, etc.	185-275	SC	75	95	105	110	0.006 ❖	0.008	0.009	0.011	0.012	0.016	C2	160	210	240	0.007 ❖	0.009	0.012	0.014	0.016
	275-350	SC	60	80	90	100	0.005 ❖	0.007	0.008	0.010	0.012	0.014	C2	120	160	185	0.006 ❖	0.008	0.011	0.012	0.014
Nodular, Grey, Ductile Cast Iron	120-150	HSS	170	220	250	290	0.007	0.012	0.016	0.020	0.024	0.027	C2, C3	320	460	500	0.008	0.012	0.015	0.019	0.023
	150-200	HSS	150	195	225	260	0.006	0.011	0.014	0.018	0.022	0.025	C2, C3	270	400	480	0.007	0.011	0.013	0.017	0.021
	200-220	HSS	130	170	195	225	0.006	0.009	0.012	0.016	0.018	0.021	C2, C3	240	360	430	0.006	0.009	0.012	0.015	0.018
	220-260	SC	110	145	165	190	0.005	0.007	0.009	0.012	0.014	0.017	C2, C3	210	310	370	0.005	0.008	0.011	0.013	0.015
	260-320	SC	90	120	135	155	0.004	0.006	0.007	0.009	0.012	0.014	C2, C3	180	270	335	0.005	0.007	0.010	0.011	0.013
Aluminum	30	HSS	600	750	850	-	0.008	0.013	0.016	0.020	0.022	0.025	C2	1200	1500	-	0.010	0.015	0.018	0.020	0.022
	180	HSS	300	400	450	-	0.008	0.013	0.016	0.018	0.022	0.025	C2	800	1000	-	0.009	0.013	0.016	0.018	0.020

Formulas: IPM = (RPM) (IPR) **SFM = RPM • 0.262 • DIA** **RPM = SFM • 3.82 / DIA**

AccuPort 432® Port Contour Cutters

Recommended Speeds and Feeds (Metric)

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

			SPEED				FEED (mm/rev) - HSS							SPEED			FEED (mm/rev) - Carbide				
							Tube # 4-5	Tube # 6-8	Tube # 10	Tube # 12-16	Tube # 20-24	Tube # 32					Tube # 4-5	Tube # 6-8	Tube # 10	Tube # 12-16	Tube # 20-24
Material	Material Hardness (BHN)	Grade	TiN SFM	TiCN SFM	TiAlN SFM	AM200® SFM	Series Y-Z	Series 0	Series 1	Series 2	Series 3	Series 4	Grade	TiN SFM	TiAlN SFM	AM200® SFM	Series Y-Z	Series 0	Series 1	Series 2	Series 3
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	HSS	61	79	85	92	0.18	0.25	0.33	0.41	0.51	0.58	K35, P40	98	128	146	0.02	0.30	0.38	0.46	0.53
	150-200	HSS	55	72	79	87	0.18	0.25	0.33	0.41	0.51	0.58	K35, P40	85	110	126	0.18	0.28	0.36	0.41	0.48
	200-250	HSS	49	64	73	81	0.15	0.25	0.33	0.41	0.51	0.58	K35, P40	79	104	119	0.15	0.25	0.33	0.38	0.43
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	HSS	52	67	76	84	0.15 ❖	0.23	0.30	0.38	0.48	0.58	K35, P40	91	119	137	0.20 ❖	0.25	0.33	0.43	0.48
	125-175	HSS	49	64	73	81	0.15 ❖	0.23	0.30	0.38	0.48	0.58	K35, P40	79	104	119	0.18 ❖	0.25	0.33	0.41	0.46
	175-225	HSS	46	59	69	76	0.13 ❖	0.20	0.25	0.36	0.46	0.53	K35, P40	73	94	108	0.15 ❖	0.23	0.30	0.38	0.43
	225-275	HSS	43	55	64	70	0.13 ❖	0.20	0.25	0.36	0.46	0.53	K35, P40	64	82	94	0.13 ❖	0.23	0.30	0.38	0.43
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	HSS	49	64	73	79	0.15	0.23	0.30	0.38	0.48	0.58	K35, P40	79	104	119	0.18	0.25	0.33	0.41	0.46
	175-225	HSS	46	59	69	75	0.13	0.20	0.25	0.36	0.46	0.53	K35, P40	73	94	108	0.15	0.23	0.30	0.38	0.43
	225-275	HSS	43	55	64	70	0.13	0.20	0.25	0.36	0.46	0.53	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
	275-325	SC	40	52	59	66	0.10	0.18	0.23	0.30	0.41	0.48	K35, P40	55	70	81	0.13	0.20	0.28	0.36	0.41
Alloy Steel 4140, 5140, 8640, etc.	125-175	HSS	46	59	64	69	0.15	0.20	0.25	0.36	0.43	0.48	K35, P40	76	99	114	0.18	0.25	0.33	0.41	0.46
	175-225	HSS	43	55	59	66	0.13	0.20	0.25	0.36	0.43	0.48	K35, P40	70	91	105	0.15	0.23	0.30	0.38	0.43
	225-275	HSS	40	52	55	60	0.13	0.18	0.25	0.36	0.43	0.48	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
	275-325	SC	37	47	52	56	0.10	0.15	0.23	0.30	0.38	0.43	K35, P40	61	76	87	0.13	0.20	0.28	0.36	0.41
	325-375	SC	34	44	47	55	0.08	0.15	0.23	0.30	0.38	0.43	K35, P40	52	67	78	0.10	0.18	0.25	0.33	0.38
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	SC	24	30	34	37	0.13 ❖	0.18	0.23	0.25	0.36	0.43	K35, P40	49	61	73	0.15 ❖	0.23	0.25	0.30	0.38
	300-350	SC	18	24	26	27	0.10 ❖	0.18	0.23	0.25	0.36	0.43	K35, P40	43	55	62	0.13 ❖	0.20	0.23	0.28	0.36
	350-400	SC	15	20	21	23	0.08 ❖	0.15	0.20	0.23	0.30	0.38	K35, P40	37	49	56	0.10 ❖	0.18	0.20	0.25	0.30
Structural Steel A36, A285, A516, etc.	100-150	HSS	43	55	61	67	0.15 ❖	0.25	0.30	0.36	0.46	0.53	K35, P40	73	94	108	0.20 ❖	0.28	0.36	0.41	0.46
	150-250	HSS	37	47	52	56	0.13 ❖	0.23	0.25	0.30	0.41	0.48	K35, P40	61	76	87	0.15 ❖	0.25	0.30	0.36	0.41
	250-350	SC	30	40	43	47	0.10 ❖	0.20	0.23	0.25	0.36	0.43	K35, P40	55	70	81	0.13 ❖	0.23	0.28	0.30	0.36
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-200	SC	24	32	34	37	0.10	0.15	0.20	0.25	0.30	0.38	K35, P40	49	67	78	0.10 ❖	0.18	0.23	0.28	0.33
	200-250	SC	18	26	27	31	0.10	0.15	0.20	0.25	0.30	0.38	K35, P40	37	52	59	0.10 ❖	0.18	0.23	0.28	0.33
High Temp. Alloy Hastelloy B, Inconel 600, etc.	140-220	SC	9	11	12	14	0.08 ❖	0.18	0.20	0.25	0.30	0.38	K20	24	32	36	0.10 ❖	0.18	0.23	0.28	0.33
	220-310	SC	8	9	11	12	0.08 ❖	0.15	0.18	0.20	0.25	0.30	K20	18	26	29	0.10 ❖	0.15	0.20	0.25	0.30
Stainless Steel 416, 420, 303, etc.	185-275	SC	23	29	32	33	0.15 ❖	0.20	0.23	0.28	0.36	0.41	K20	49	64	73	0.18 ❖	0.23	0.30	0.36	0.41
	275-350	SC	18	24	27	29	0.13 ❖	0.18	0.20	0.25	0.30	0.36	K20	37	49	46	0.15 ❖	0.20	0.28	0.30	0.36
Nodular, Grey, Ductile Cast Iron	120-150	HSS	52	67	76	82	0.18	0.30	0.41	0.51	0.61	0.69	K20, K10	98	140	152	0.20	0.30	0.38	0.48	0.58
	150-200	HSS	46	59	69	75	0.15	0.28	0.36	0.46	0.56	0.64	K20, K10	82	122	146	0.18	0.28	0.33	0.43	0.53
	200-220	HSS	40	52	59	66	0.15	0.23	0.30	0.41	0.46	0.53	K20, K10	73	110	131	0.15	0.23	0.30	0.38	0.46
	220-260	SC	34	44	50	55	0.13	0.18	0.23	0.30	0.36	0.43	K20, K10	64	94	113	0.13	0.20	0.28	0.33	0.38
	260-320	SC	27	37	41	44	0.10	0.15	0.18	0.23	0.30	0.36	K20, K10	55	82	102	0.13	0.18	0.25	0.28	0.33
Aluminum	30	HSS	183	229	259	-	0.20	0.33	0.41	0.51	0.56	0.64	K20	366	457	-	0.25	0.38	0.46	0.51	0.56
	180	HSS	91	122	137	-	0.20	0.33	0.41	0.46	0.56	0.64	K20	244	305	-	0.23	0.33	0.41	0.46	0.51

Formulas: IPM = (RPM) (mm/rev) **M/min = RPM • 0.003 • DIA** **RPM = M/min • 318.47 / DIA**

AccuPort 432®

AccuPort 432® Port Contour Cutters

Coolant Recommendations (Inch)

IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

	Coolant Pressure (PSI)										
	Coolant Volumetric Flow Rate (GPM)										
Material	**Tube Number 4 - 5 T-A® Series Y - Z**	**Tube Number 6 - 8 T-A® Series 0**	**Tube Number 10 T-A® Series 1**	**Tube Number 12-16 T-A® Series 2**	**Tube Number 20-24 T-A® Series 3**	**Tube Number 32 T-A® Series 4**	**Tube Number 4 - 5 T-A® Series Y - Z**	**Tube Number 6 - 8 T-A® Series 0**	**Tube Number 10 T-A® Series 1**	**Tube Number 12-16 T-A® Series 2**	**Tube Number 20-32 T-A® Series 3-4**
Free Machining Steel 1118, 1215, 12L14, etc.	175-185	100-120	105-140	80-115	75-100	40-50	195	140	160	140	155
	2.5-2.6	2.8-3.0	4.4-5.2	7-8	12-14	30-33	2.6	3.3	5.5	9	18
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	165-170	75-90	75-95	60-80	55-75	30-40	180	105	105	110	115
	2.4-2.5	2.4-2.6	3.7-4.2	6-7	11-12	26-30	2.5	2.9	4.4	8	15
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	160-165	70-85	70-90	55-75	50-70	30-40	175	100	90	100	75
	2.3-2.4	2.3-2.6	3.7-4.2	5-6	10-12	26-30	2.5	2.8	4.1	7	13
Alloy Steel 4140, 5140, 8640, etc.	160-165	65-75	65-80	50-70	45-60	30-35	165	85	100	75	70
	2.3-2.4	2.2-2.4	3.5-3.9	5-6	10-11	26-28	2.4	2.6	4.3	6	12
High Strength Alloy 4340, 4330V, 300M, etc.	150-155	55-60	45-50	25-30	25-30	20-25	160	65	55	40	35
	2.3-2.4	2.1-2.2	2.9-3.1	4-5	7-8	21-23	2.4	2.3	3.2	5	8
Structural Steel A36, A285, A516, etc.	160-165	75-85	65-80	40-55	40-50	25-30	175	115	105	75	70
	2.3-2.4	2.4-2.6	3.5-3.9	5-6	9-10	23-26	2.5	3	4.4	6	12
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150-155	55-60	45-50	25-30	25-30	20-25	155	60	55	40	35
	2.3-2.4	2.1-2.2	2.9-3.1	4-5	7-8	21-23	2.4	2.2	3.2	5	8
High Temp. Alloy Hastelloy B, Inconel 600, etc.	150-155	60-65	50-55	30-35	25-30	25-30	239	165	180	159	130
	2.3-2.4	2.2-2.3	3.1-3.2	4-5	7-8	23-26	3	4	6	9	16
Stainless Steel 416, 420, 303, etc.	171	86	75	55	51	29	329	239	260	250	190
	3	3	4	6	10	26	3	4	7	12	20
Nodular, Grey, Ductile Cast Iron	160	65	61	41	35	29	225	104	90	90	80
	2	2	3	5	9	26	3	3	4	7	13
Aluminum	210	180	230	159	125	51	350	319	315	284	200
	3	4	6	9	16	33	4	5	8	12	20

AccuPort 432® Port Contour Cutters

Coolant Recommendations (Metric)

IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432® Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Material	Coolant Pressure (bar) / Coolant Volumetric Flow Rate (LPM)										
	Tube Number 4 - 5 T-A® Series Y - Z	Tube Number 6 - 8 T-A® Series 0	Tube Number 10 T-A® Series 1	Tube Number 12-16 T-A® Series 2	Tube Number 20-24 T-A® Series 3	Tube Number 32 T-A® Series 4	Tube Number 4 - 5 T-A® Series Y - Z	Tube Number 6 - 8 T-A® Series 0	Tube Number 10 T-A® Series 1	Tube Number 12-16 T-A® Series 2	Tube Number 20-32 T-A® Series 3-4
Free Machining Steel 1118, 1215, 12L14, etc.	12-13	7-8	7-10	6-8	5-7	3-4	20	16	17	15	12
	9.5-9.8	10.6-11.4	16.7-19.7	26.5-30.3	45.4-53.0	114-125	12.2	16.3	25.3	41.5	71.9
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	11-12	5-6	5-7	4-6	4-5	2-3	18	11	11	12	9
	9.1-9.5	9.1-9.8	14.0-15.9	22.7-26.5	41.6-45.4	98-114	11.4	13.3	20.6	36.5	62.0
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	11	5-6	5-6	4-5	3-5	2-3	17	10	10	10	8
	8.7-9.1	8.7-9.8	13.6-15.5	18.9-22.7	37.9-45.4	98-114	11.3	12.5	20.0	33.8	57.0
Alloy Steel 4140, 5140, 8640, etc.	11	5-6	5	3-5	3-4	2	17	9	10	8	7
	8.7-9.1	13.2-14.8	8.3-9.1	18.9-22.7	34.1-37.9	87-98	11.1	12.3	19.3	30.0	55.8
High Strength Alloy 4340, 4330V, 300M, etc.	10-11	4-5	3-4	2	2	2	15	5	4	3	3
	8.7-9.1	7.9-8.3	11.0-11.7	15.1-18.9	26.5-30.3	79-87	10.4	9.1	12.6	18.8	33.6
Structural Steel A36, A285, A516, etc.	11	5-6	5-6	3-4	3	2	16	9	8	7	5
	8.7-9.1	9.1-9.8	13.2-14.8	18.9-22.7	34.1-37.9	87-98	10.8	12.0	17.5	27.8	47.1
Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	4	10-11	3	2	2	1-2	15	5	5	3	3
	7.9-8.3	8.7-9.1	11.0-11.7	15.1-18.9	26.5-30.3	79-87	10.4	9.1	13.6	19.7	36.5
High Temp. Alloy Hastelloy B, Inconel 600, etc.	10-11	4-5	3-4	2	2	2	17	11.4	12.4	11	9
	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	11.1	13.5	21.9	35.4	62.0
Stainless Steel 416, 420, 303, etc.	11.4 - 11.7	4.8 - 5.8	4.5 - 5.2	2.7 - 3.8	2.7 - 3.4	1.7 - 2	22.7	16.5	17.9	17.2	13.1
	9.1 - 9.5	8.7 - 9.8	13.2 - 14	18.9 - 22.7	34.1 - 37.9	87 - 98	13	16.3	26.3	44.2	75
Nodular, Grey, Ductile Cast Iron	10.7 - 11.0	4.1 - 4.5	3.4 - 4.1	2 - 2.7	2 - 2.4	1.7 - 2	15.5	7.2	6.2	6.2	5.5
	8.7 - 9.1	8.3 - 8.7	11.7 - 12.5	15.1 - 18.9	30.3 - 34.1	87 - 98	10.7	10.8	15.4	26.5	48.7
Aluminum	13.1 - 14.5	9.6 - 12.4	10.3 - 15.8	7.9 - 11	6.2 - 8.6	2.7 - 3.4	24.1	22	21.7	19.6	13.8
	9.8 - 10.2	12.5 - 14	20.1 - 23.1	30.3 - 34.1	53 - 60.6	114 - 125	13.4	18.8	29	47.2	77

Notes

ASC 320®

ASC 320® Reference

3	60	M	07500	-	A21	M
Designates as ASC 320®	**Length**	**Style**	**Diameter**		**Substrate Geometry**	**Multi-Layer Coating**
	3.5 - 35 6.0 - 60 9.0 - 90	M - Metric E - English				

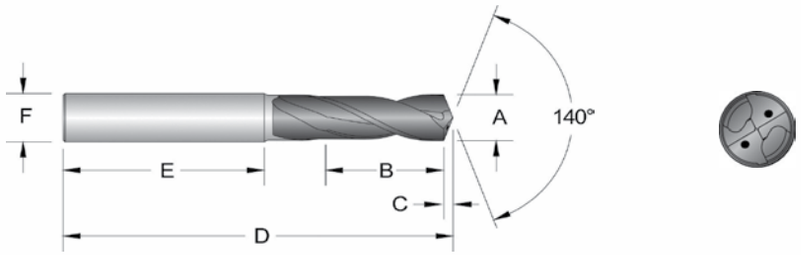
Regrinding and Recoating

The ASC 320® Drills are reground and recoated by Allied to maintain the high level of performance achieved with these tools. Allied is the only company that has the experience, knowledge, equipment and inspection process to manage a regrind program for you. Using our services assures that the best tool performance is maintained in your production process.

When returning tools for regrinding, please package tools carefully to avoid damage during shipment! Returning drills for regrinding in their original packaging will help avoid damage during shipment. ASC 320® Drills reground by Allied are repackaged and clearly identified “Allied Regrind” to avoid any confusion with new tools.

ASC 320® Solid Carbide High Penetration Drills

3.5 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
335E01250A21M	1/8”	3.17	0.1250		14	0.551	0.5	0.02	62.7	2.47	36	4	❍
335M04000A21M		4.00	0.1575		14	0.551	0.6	0.03	62.7	2.47	36	4	❍
335M04200A21M		4.20	0.1654	M5x0.8	21	0.827	0.7	0.03	67.1	2.64	36	6	❍
335E01719A21M	11/64”	4.37	0.1719		21	0.827	0.7	0.03	67.1	2.64	36	6	❍
335M04500A21M	#16	4.50	0.1772	#12-24	21	0.827	0.7	0.03	67.1	2.64	36	6	❍
335M04600A21M		4.60	0.1811	#12-28	21	0.827	0.7	0.03	67.1	2.64	36	6	▲
335E01875A21M	3/16”	4.76	0.1875		21	0.827	0.8	0.03	67.1	2.64	36	6	❍
335M05000A21M		5.00	0.1969	M6x1	21	0.827	0.8	0.03	67.1	2.64	36	6	❍
335E02031A21M	13/64”	5.16	0.2031		21	0.827	0.8	0.03	67.1	2.64	36	6	❍
335E02188A21M	7/32”	5.56	0.2188		21	0.827	0.9	0.04	67.1	2.64	36	6	❍
335E02280A21M	#1	5.79	0.2280		21	0.827	0.9	0.04	67.1	2.64	36	6	▲
335E02344A21M	15/64”	5.95	0.2344		21	0.827	1.0	0.04	67.1	2.64	36	6	▲
335M06000A21M		6.00	0.2362	M7x1	21	0.827	1.0	0.04	67.1	2.64	36	6	❍
335E02500A21M	1/4”	6.35	0.2500		28	1.102	1.0	0.04	79.4	3.13	36	8	❍
335M06500A21M		6.50	0.2559		28	1.102	1.1	0.04	79.4	3.13	36	8	❍
335E02656A21M	17/64”	6.75	0.2656	M8x1.25	28	1.102	1.1	0.04	79.4	3.13	36	8	❍
335M07000A21M		7.00	0.2756	M8x1	28	1.102	1.1	0.04	79.4	3.13	36	8	❍
335E02812A21M	9/32”	7.14	0.2812		28	1.102	1.2	0.05	79.4	3.13	36	8	❍
335M07300A21M		7.30	0.2874		28	1.102	1.2	0.05	79.4	3.13	36	8	▲
335M07500A21M		7.50	0.2953		28	1.102	1.2	0.05	79.4	3.13	36	8	❍
335E02969A21M	19/64”	7.54	0.2969		28	1.102	1.2	0.05	79.4	3.13	36	8	▲
335M07800A21M		7.80	0.3071		28	1.102	1.3	0.05	79.4	3.13	36	8	▲
335E03125A21M	5/16”	7.94	0.3125	3/8-16	28	1.102	1.3	0.05	79.4	3.13	36	8	❍
335M08000A21M		8.00	0.3150		28	1.102	1.3	0.05	79.4	3.13	36	8	❍
335E03281A21M	21/64”	8.33	0.3281		35	1.378	1.4	0.05	90.7	3.57	40	10	❍
335E03320A21M	Q	8.43	0.3320	3/8-24	35	1.378	1.4	0.05	90.7	3.57	40	10	❍
335M08500A21M		8.50	0.3346	M10.1.5	35	1.378	1.4	0.05	90.7	3.57	40	10	❍
335E03438A21M	11/32”	8.73	0.3438		35	1.378	1.4	0.06	90.7	3.57	40	10	❍
335M08800A21M		8.80	0.3465		35	1.378	1.4	0.06	90.7	3.57	40	10	▲
335M09000A21M		9.00	0.3543		35	1.378	1.5	0.06	90.7	3.57	40	10	❍
335E03594A21M	23/64”	9.13	0.3594		35	1.378	1.5	0.06	90.7	3.57	40	10	▲
335E03680A21M	U	9.35	0.3680	7/16-14	35	1.378	1.5	0.06	90.7	3.57	40	10	▲
335M09500A21M		9.50	0.3740		35	1.378	1.5	0.06	90.7	3.57	40	10	❍
335E03750A21M	3/8”	9.53	0.3750		35	1.378	1.5	0.06	90.7	3.57	40	10	❍
335E03858A21M		9.80	0.3858		35	1.378	1.6	0.06	90.7	3.57	40	10	▲
335E03906A21M	25/64”	9.92	0.3906	7/16-20	35	1.378	1.6	0.06	90.7	3.57	40	10	❍
335M10000A21M		10.00	0.3937		35	1.378	1.6	0.06	90.7	3.57	40	10	❍
335M10200A21M		10.20	0.4016	M12x1.75	42	1.654	1.7	0.07	106.1	4.18	45	12	▲
335E04062A21M	13/32”	10.32	0.4062		42	1.378	1.7	0.07	106.1	4.18	45	12	❍
335M10500A21M		10.50	0.4134		42	1.378	1.7	0.07	106.1	4.18	45	12	❍

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

❶ Availability Codes

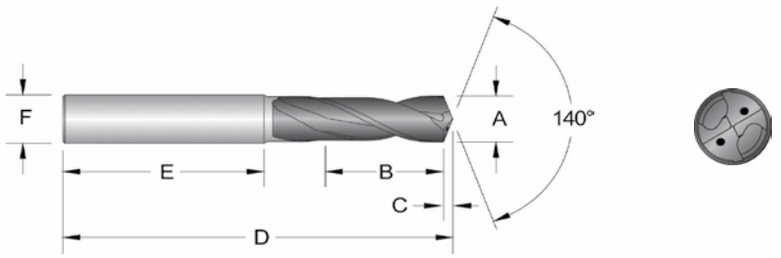
❍ Stocked

▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.3450	=335E03450A21M
Metric	=7.250mm	=335M07250A21M

ASC 320® Solid Carbide High Penetration Drills
3.5 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
335E04219A21M	27/64”	10.72	0.4219	1/2-13	42	1.654	1.7	0.07	106.1	4.18	45	12	❍
335M11000A21M		11.00	0.4331		42	1.654	1.8	0.07	106.1	4.18	45	12	❍
335E04375A21M	7/16”	11.11	0.4375		42	1.654	1.8	0.07	106.1	4.18	45	12	❍
335M11500A21M		11.50	0.4528		42	1.654	1.9	0.07	106.1	4.18	45	12	❍
335E04531A21M	29/64”	11.51	0.4531	1/2-20	42	1.654	1.9	0.07	106.1	4.18	45	12	▲
335E04688A21M	15/32”	11.91	0.4688		42	1.654	1.9	0.08	106.1	4.18	45	12	▲
335M12000A21M		12.00	0.4724	M14Xx2	42	1.654	1.9	0.08	106.1	4.18	45	12	❍
335E04844A21M	31/64”	12.30	0.4844	9/16-12	49	1.929	2.0	0.08	115.6	4.55	45	14	▲
335M12500A21M		12.50	0.4921	M14x1.5	49	1.929	2.0	0.08	115.6	4.55	45	14	❍
335E05000A21M	1/2”	12.70	0.5000		49	1.929	2.1	0.08	115.6	4.55	45	14	❍
335M13000A21M		13.00	0.5118		49	1.929	2.1	0.08	115.6	4.55	45	14	❍
335E05156A21M	33/64”	13.10	0.5156	9/16-18	49	1.929	2.1	0.08	115.6	4.55	45	14	▲
335E05312A21M	17/32”	13.49	0.5312	5/8-11	49	1.929	2.2	0.09	115.6	4.55	45	14	❍
335M13500A21M		13.50	0.5315		49	1.929	2.2	0.09	115.6	4.55	45	14	▲
335M13700A21M		13.70	0.5394		49	1.929	2.2	0.09	115.6	4.55	45	14	▲
335E05469A21M	35/64”	13.89	0.5469	5/8-12	49	1.929	2.3	0.09	115.6	4.55	45	14	▲
335M14000A21M		14.00	0.5512	M16x2	49	1.929	2.4	0.09	115.6	4.55	45	14	❍
335E05625A21M	9/16”	14.29	0.5625		56	2.205	2.4	0.09	128.8	5.07	48	16	❍
335M14500A21M		14.50	0.5709	M16x1.5	56	2.205	2.4	0.09	128.8	5.07	48	16	❍
335E05781A21M	37/64”	14.68	0.5781	5/8-18	56	2.205	2.4	0.09	128.8	5.07	48	16	▲
335M15000A21M		15.00	0.5906		56	2.205	2.4	0.10	128.8	5.07	48	16	❍
335E05938A21M	19/32”	15.08	0.5938		56	2.205	2.5	0.10	128.8	5.07	48	16	▲
335E06094A21M	39/64”	15.48	0.6094	11/16-12	56	2.205	2.5	0.10	128.8	5.07	48	16	▲
335M15500A21M		15.50	0.6102	M18x2.5	56	2.205	2.5	0.10	128.8	5.07	48	16	❍
335E06250A21M	5/8”	15.88	0.6250		56	2.205	2.6	0.10	128.8	5.07	48	16	❍
335M16000A21M		16.00	0.6299		56	2.205	2.6	0.10	128.8	5.07	48	16	❍
335M16500A21M		16.50	0.6496	M18x1.5	63	2.480	2.7	0.11	138.2	5.44	48	18	❍
335E06563A21M	21/32”	16.67	0.6563	3/4-10	63	2.480	2.7	0.11	138.2	5.44	48	18	▲
335M17000A21M		17.00	0.6693		63	2.480	2.8	0.11	138.2	5.44	48	18	❍
335E06719A21M	43/64”	17.07	0.6719	3/4-12	63	2.480	2.8	0.11	138.2	5.44	48	18	▲
335E06875A21M	11/16”	17.46	0.6875	3/4-16	63	2.480	2.8	0.11	138.2	5.44	48	18	▲
335M17500A21M		17.50	0.6890	M20x2.5	63	2.480	2.8	0.11	138.2	5.44	48	18	❍
335E07031A21M	45/64”	17.86	0.7031		63	2.480	2.9	0.11	138.2	5.44	48	18	▲
335M18000A21M		18.00	0.7087		63	2.480	2.9	0.12	138.2	5.44	48	18	❍
335M18500A21M		18.50	0.7283	M20x1.5	70	2.756	3.0	0.12	149.5	5.89	50	20	▲
335E07344A21M	47/64”	18.65	0.7344		70	2.756	3.0	0.12	149.5	5.89	50	20	▲
335M19000A21M		19.00	0.7480		70	2.756	3.1	0.12	149.5	5.89	50	20	❍
335E07580A21M		19.25	0.7580		70	2.756	3.1	0.12	149.5	5.89	50	20	❍
335M19500A21M		19.50	0.7677	M22x2.5	70	2.756	3.2	0.12	149.5	5.89	50	20	▲
335E07813A21M	25/32”	19.84	0.7813		70	2.756	3.2	0.13	149.5	5.89	50	20	▲
335M20000A21M		20.00	0.7874		70	2.756	3.2	0.13	149.5	5.89	50	20	▲

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

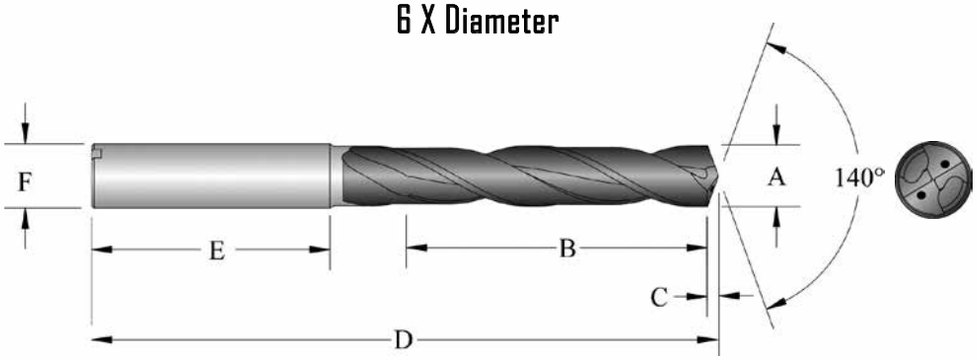
❶ Availability Codes
❍ Stocked
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.6200	=335E06200A21M
Metric	=13.25mm	=335M13250A21M

ASC 320® Solid Carbide High Penetration Drills

6 X Diameter



Item Number	A Drill Diameter	(mm)	Decimal Equivalent	Tap Size*	B Drill Depth (mm)	B Drill Depth (inch)	C Point Length (mm)	C Point Length (inch)	D Overall Length (mm)	D Overall Length (inch)	E Shank Length (mm)	F Shank Diameter (mm)	❶
360M03000A21M		3.00	0.1181		24	0.945	0.5	0.02	72.7	2.86	36	4	▲
360E01250A21M	1/8”	3.18	0.1250		24	0.945	0.5	0.02	72.7	2.86	36	4	❍
360M03200A21M		3.20	0.1260		24	0.945	0.5	0.02	72.7	2.86	36	4	▲
360M03300A21M		3.30	0.1299	M4X0.7	24	0.945	0.5	0.02	72.7	2.86	36	4	❍
360M03500A21M		3.50	0.1378		24	0.945	0.6	0.02	72.7	2.86	36	4	❍
360E01406A21M	9/64”	3.57	0.1406		24	0.945	0.6	0.02	72.7	2.86	36	4	▲
360M03800A21M	#25	3.80	0.1496	#10-24	24	0.945	0.6	0.02	72.7	2.86	36	4	▲
360E01563A21M	5/32”	3.97	0.1563		24	0.945	0.6	0.03	72.7	2.86	36	4	❍
360M04000A21M		4.00	0.1575		24	0.945	0.6	0.03	72.7	2.86	36	4	❍
360M04200A21M		4.20	0.1654	M5X0.8	36	1.1417	0.7	0.03	83.1	3.27	36	6	▲
360E01719A21M	11/64”	4.37	0.1719		36	1.1417	0.7	0.03	83.1	3.27	36	6	❍
360M04500A21M	#16	4.50	0.1772	#12-24	36	1.1417	0.7	0.03	83.1	3.27	36	6	❍
360M04600A21M		4.60	0.1811	#12-28	36	1.1417	0.7	0.03	83.1	3.27	36	6	▲
360M04650A21M		4.65	0.1831		36	1.1417	0.8	0.03	83.1	3.27	36	6	▲
360E01875A21M	3/16”	4.76	0.1875		36	1.1417	0.8	0.03	83.1	3.27	36	6	❍
360M04950A21M		4.95	0.1950		36	1.1417	0.8	0.03	83.1	3.27	36	6	▲
360M05000A21M		5.00	0.1969	M6X1	36	1.1417	0.8	0.03	83.1	3.27	36	6	❍
360E01990A21M	#8	5.05	0.1990		36	1.1417	0.8	0.03	83.1	3.27	36	6	▲
360E02010A21M	#7	5.11	0.2010	1/4-20	36	1.1417	0.8	0.03	83.1	3.27	36	6	❍
360E02031A21M	13/64”	5.16	0.2031		36	1.1417	0.8	0.03	83.1	3.27	36	6	❍
360M05330A21M		5.33	0.2098		36	1.1417	0.9	0.03	83.1	3.27	36	6	▲
360E02130A21M	#3	5.41	0.2130	1/4-28	36	1.1417	0.9	0.03	83.1	3.27	36	6	▲
360M05500A21M		5.50	0.2165		36	1.1417	0.9	0.04	83.1	3.27	36	6	❍
360E02188A21M	7/32”	5.56	0.2188		36	1.1417	0.9	0.04	83.1	3.27	36	6	❍
360E02280A21M	#1	5.79	0.2280		36	1.1417	0.9	0.04	83.1	3.27	36	6	❍
360M05840A21M		5.84	0.2299		36	1.1417	0.9	0.04	83.1	3.27	36	6	▲
360E02344A21M	15/64”	5.95	0.2344		36	1.1417	1.0	0.04	83.1	3.27	36	6	❍
360M06000A21M		6.00	0.2362	M7X1	36	1.1417	1.0	0.04	83.1	3.27	36	6	❍
360M06090A21M		6.09	0.2398		48	1.890	1.0	0.04	109.4	4.31	36	8	▲
360E02460A21M	D	6.25	0.2460		48	1.890	1.0	0.04	109.4	4.31	36	8	▲
360E02500A21M	1/4”	6.35	0.2500		48	1.890	1.0	0.04	109.4	4.31	36	8	❍
360M06500A21M		6.50	0.2559		48	1.890	1.1	0.04	109.4	4.31	36	8	❍
360E02570A21M	F	6.53	0.2570	5/16-18	48	1.890	1.1	0.04	109.4	4.31	36	8	❍
360E02656A21M	17/64”	6.75	0.2656	M8X1.25	48	1.890	1.1	0.04	109.4	4.31	36	8	❍
360M06800A21M		6.80	0.2677		48	1.890	1.1	0.04	109.4	4.31	36	8	▲
360E02720A21M	I	6.91	0.2720	5/16-24	48	1.890	1.1	0.04	109.4	4.31	36	8	❍
360M07000A21M		7.00	0.2756	M8X1	48	1.890	1.1	0.04	109.4	4.31	36	8	❍
360M07100A21M		7.10	0.2795		48	1.890	1.3	0.05	109.4	4.31	36	8	▲
360E02812A21M	9/32”	7.14	0.2812		48	1.890	1.3	0.05	109.4	4.31	36	8	❍
360M07300A21M		7.30	0.2874		48	1.890	1.3	0.05	109.4	4.31	36	8	▲
360M07400A21M		7.40	0.2913		48	1.890	1.3	0.05	109.4	4.31	36	8	▲

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

❶ Availability Codes

❍ Stocked

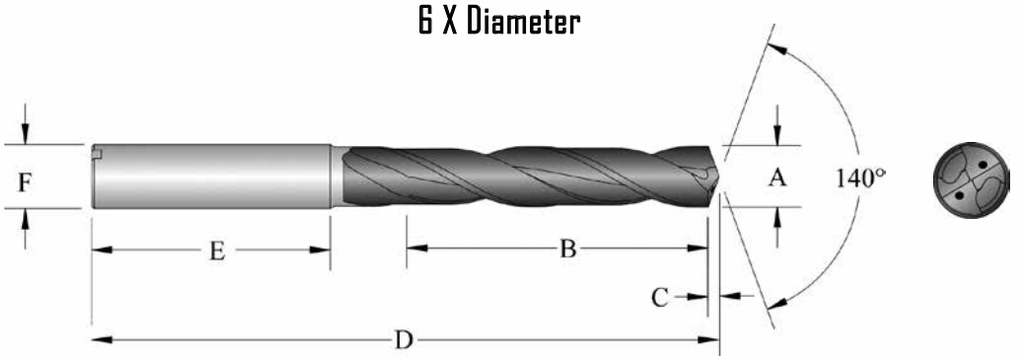
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.2525	=360E02525A21M
Metric	=5.250 mm	=360M05250A21M

ASC 320® Solid Carbide High Penetration Drills

6 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
360M07500A21M		7.50	0.2953		48	1.890	1.2	0.05	109.4	4.31	36	8	❍
360E02969A21M	19/64"	7.54	0.2969		48	1.890	1.2	0.05	109.4	4.31	36	8	❍
360E03125A21M	5/16"	7.94	0.3125	3/8-16	48	1.890	1.3	0.05	109.4	4.31	36	8	❍
360M08000A21M		8.00	0.3150		48	1.890	1.3	0.05	109.4	4.31	36	8	❍
360E03281A21M	21/64"	8.33	0.3281		60	2.362	1.4	0.05	115.4	4.56	40	10	▲
360M08430A21M	Q	8.43	0.3320	3/8-24	60	2.362	1.4	0.05	115.4	4.56	40	10	▲
360M08500A21M		8.50	0.3346	M10x1.5	60	2.362	1.4	0.05	115.4	4.56	40	10	❍
360M08600A21M		8.60	0.3386		60	2.362	1.4	0.06	115.4	4.56	40	10	▲
360E03438A21M	11/32"	8.73	0.3438		60	2.362	1.4	0.06	115.4	4.56	40	10	❍
360M08800A21M		8.80	0.3465		60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360M09000A21M		9.00	0.3543		60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360E03594A21M	23/64"	9.13	0.3594		60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360M09200A21M		9.20	0.3622		60	2.362	1.5	0.06	115.4	4.56	40	10	▲
360E03680A21M	U	9.35	0.3680	7/16-14	60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360M09470A21M		9.47	0.3730		60	2.362	1.5	0.06	115.4	4.56	40	10	▲
360M09500A21M		9.50	0.3740		60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360E03750A21M	3/8"	9.53	0.3750		60	2.362	1.5	0.06	115.4	4.56	40	10	❍
360M09600A21M		9.60	0.3780		60	2.362	1.6	0.06	115.4	4.56	40	10	❍
360M09700A21M		9.70	0.3820		60	2.362	1.6	0.06	115.4	4.56	40	10	▲
360E03906A21M	25/64"	9.92	0.3906	7/16-20	60	2.362	1.6	0.06	115.4	4.56	40	10	❍
360M10000A21M		10.00	0.3937		60	2.362	1.6	0.06	115.4	4.56	40	10	❍
360M10200A21M		10.20	0.4016	M12x1.75	72	2.835	1.7	0.07	136.2	5.36	45	12	❍
360E04040A21M	Y	10.31	0.4040		72	2.835	1.7	0.07	136.2	5.36	45	12	▲
360E04062A21M	13/32"	10.32	0.4062		72	2.835	1.7	0.07	136.2	5.36	45	12	❍
360M10500A21M		10.50	0.4134		72	2.835	1.7	0.07	136.2	5.36	45	12	❍
360E04219A21M	27/64"	10.72	0.4219	1/2-13	72	2.835	1.7	0.07	136.2	5.36	45	12	❍
360M10800A21M		10.80	0.4252	M12x4.25	72	2.835	1.8	0.07	136.2	5.36	45	12	▲
360M10900A21M		10.90	0.4290		72	2.835	1.8	0.07	136.2	5.36	45	12	▲
360M11000A21M		11.00	0.4331		72	2.835	1.8	0.07	136.2	5.36	45	12	❍
360E04375A21M	7/16"	11.11	0.4375		72	2.835	1.8	0.07	136.2	5.36	45	12	❍
360M11200A21M		11.20	0.4409		72	2.835	1.8	0.07	136.2	5.36	45	12	▲
360M11500A21M		11.50	0.4528		72	2.835	1.9	0.08	136.2	5.36	45	12	❍
360E04531A21M	29/64"	11.51	0.4531	1/2-20	72	2.835	1.9	0.08	136.2	5.36	45	12	❍
360M11800A21M		11.80	0.4646		72	2.835	1.9	0.08	136.2	5.36	45	12	▲
360E04688A21M	15/32"	11.91	0.4688		72	2.835	1.9	0.08	136.2	5.36	45	12	❍
360M12000A21M		12.00	0.4724	M14x2	72	2.835	1.9	0.08	136.2	5.36	45	12	❍
360E04844A21M	31/64"	12.30	0.4844	9/16-12	84	3.307	2.0	0.08	150.5	5.93	45	14	❍
360M12500A21M		12.50	0.4921	M14x1.5	84	3.307	2.0	0.08	150.5	5.93	45	14	❍
360E05000A21M	1/2"	12.70	0.5000		84	3.307	2.1	0.08	150.5	5.93	45	14	❍
360M12950A21M		12.95	0.5100		84	3.307	2.1	0.08	150.5	5.93	45	14	▲
360M13000A21M		13.00	0.5118		84	3.307	2.1	0.08	150.5	5.93	45	14	❍
360E05156A21M	33/64"	13.10	0.5156	9/16-18	84	3.307	2.1	0.08	150.5	5.93	45	14	❍
360M13200A21M		13.20	0.5197		84	3.307	2.1	0.08	150.5	5.93	45	14	▲

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

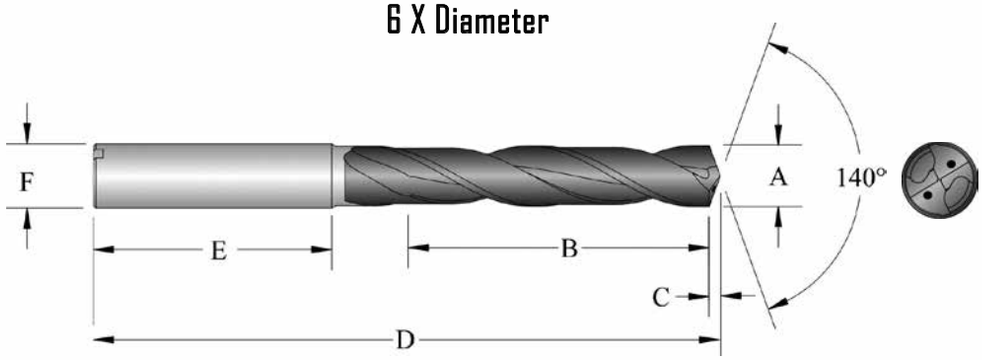
❶ Availability Codes
❍ Stocked
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=.3800	=360E03800A21M
Metric	=11.35mm	=360M11350A21M

ASC 320® Solid Carbide High Penetration Drills

6 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
360E05312A21M	17/32”	13.49	0.5312	5/8-11	84	3.307	2.2	0.09	150.5	5.93	45	14	❍
360M13500A21M		13.50	0.5315		84	3.307	2.2	0.09	150.5	5.93	45	14	❍
360M13800A21M		13.80	0.5433		84	3.307	2.2	0.09	150.5	5.93	45	14	▲
360E05469A21M	35/64”	13.89	0.5469	5/8-12	84	3.307	2.3	0.09	150.5	5.93	45	14	❍
360M14000A21M		14.00	0.5512	M16x2	84	3.307	2.3	0.09	150.5	5.93	45	14	❍
360E05625A21M	9/16”	14.29	0.5625		96	3.780	2.3	0.09	168.9	6.65	48	16	❍
360M14500A21M		14.50	0.5709	M16x1.5	96	3.780	2.3	0.09	168.9	6.65	48	16	❍
360E05781A21M	37/64”	14.68	0.5781	5/8-18	96	3.780	2.4	0.09	168.9	6.65	48	16	❍
360M15000A21M		15.00	0.5906		96	3.780	2.4	0.10	168.9	6.65	48	16	❍
360E05938A21M	19/32”	15.08	0.5938		96	3.780	2.5	0.10	168.9	6.65	48	16	▲
360E06094A21M	39/64”	15.48	0.6094	11/16-12	96	3.780	2.5	0.10	168.9	6.65	48	16	❍
360M15500A21M		15.50	0.6102	M18x2.5	96	3.780	2.5	0.10	168.9	6.65	48	16	❍
360E06250A21M	5/8”	15.88	0.6250		96	3.780	2.6	0.10	168.9	6.65	48	16	❍
360M16000A21M		16.00	0.6299		96	3.780	2.6	0.10	168.9	6.65	48	16	❍
360M16020A21M		16.02	0.6307		108	4.252	2.6	0.10	183.3	7.22	48	18	▲
360M16080A21M		16.08	0.6331		108	4.252	2.6	0.10	183.3	7.22	48	18	▲
360M16200A21M		16.20	0.6378		108	4.252	2.6	0.10	183.3	7.22	48	18	▲
360E06406A21M	41/64”	16.27	0.6406		108	4.252	2.6	0.10	183.3	7.22	48	18	▲
360M16500A21M		16.50	0.6496	M18x1.5	108	4.252	2.7	0.11	183.3	7.22	48	18	❍
360E06563A21M	21/32”	16.67	0.6563	3/4-10	108	4.252	2.7	0.11	183.3	7.22	48	18	❍
360M17000A21M		17.00	0.6693		108	4.252	2.8	0.11	183.3	7.22	48	18	❍
360E06719A21M	43/64”	17.07	0.6719	3/4-12	108	4.252	2.8	0.11	183.3	7.22	48	18	❍
360E06875A21M	11/16”	17.46	0.6875	3/4-16	108	4.252	2.8	0.11	183.3	7.22	48	18	❍
360M17500A21M		17.50	0.6890	M20x2.5	108	4.252	2.8	0.11	183.3	7.22	48	18	❍
360E07031A21M	45/64”	17.86	0.7031		108	4.252	2.9	0.11	183.3	7.22	48	18	▲
360M18000A21M		18.00	0.7087		108	4.252	2.9	0.11	183.3	7.22	48	18	▲
360M18030A21M		18.03	0.7098		120	4.724	2.9	0.12	199.6	7.86	50	20	▲
360E07188A21M	23/32”	18.26	0.7188		120	4.724	3.0	0.12	199.6	7.86	50	20	❍
360M18500A21M		18.50	0.7283	M20x1.5	120	4.724	3.0	0.12	199.6	7.86	50	20	▲
360E07344A21M	47/64”	18.65	0.7344		120	4.724	3.0	0.12	199.6	7.86	50	20	▲
360M19000A21M		19.00	0.7480		120	4.724	3.1	0.12	199.6	7.86	50	20	❍
360E07500A21M	3/4”	19.05	0.7500		120	4.724	3.1	0.12	199.6	7.86	50	20	❍
360M19100A21M		19.10	0.7520		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360M19140A21M		19.14	0.7535		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360M19160A21M		19.16	0.7543		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360M19200A21M		19.20	0.7559		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360E07580A21M		19.25	0.7580		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360M19300A21M		19.30	0.7598		120	4.724	3.1	0.12	199.6	7.86	50	20	▲
360E07656A21M	49/64”	19.45	0.7656	7/8-9	120	4.724	3.2	0.12	199.6	7.86	50	20	▲
360M19500A21M		19.50	0.7677	M22x2.5	120	4.724	3.2	0.12	199.6	7.86	50	20	❍
360E07813A21M	25/32”	19.84	0.7813		120	4.724	3.2	0.13	199.6	7.86	50	20	▲
360M20000A21M		20.00	0.7874		120	4.724	3.2	0.13	199.6	7.86	50	20	❍

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

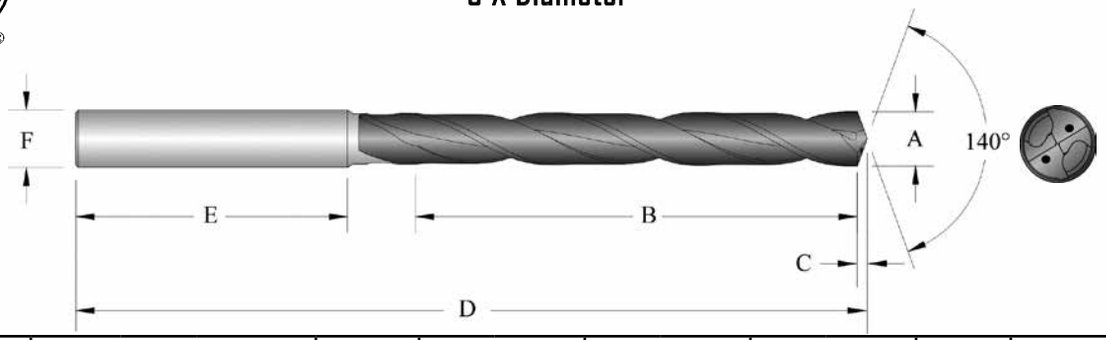
❶ Availability Codes
❍ Stocked
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.6500	=360E06500A21M
Metric	=18.50mm	=360M18500A21M

ASC 320® Solid Carbide High Penetration Drills

9 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
390M05000A21M		5.00	0.1969	M6X1	54	2.126	0.8	0.03	101.1	3.98	36	6	❍
390M06000A21M		6.00	0.2362	M7X1	54	2.126	1.0	0.04	101.1	3.98	36	6	❍
390E02461A21M	D	6.25	0.2461		72	2.835	1.0	0.04	123.4	4.86	36	8	▲
390E02500A21M	1/4”	6.35	0.2500		72	2.835	1.0	0.04	123.4	4.86	36	8	❍
390M06500A21M		6.50	0.2559		72	2.835	1.1	0.04	123.4	4.86	36	8	▲
390E02656A21M	17/64”	6.75	0.2656	M8X1.25	72	2.835	1.1	0.04	123.4	4.86	36	8	❍
390E02720A21M	I	6.91	0.2720	5/16-24	72	2.835	1.1	0.04	123.4	4.86	36	8	❍
390M07000A21M		7.00	0.2756	M8X1	72	2.835	1.1	0.04	123.4	4.86	36	8	❍
390M07500A21M		7.50	0.2953		72	2.835	1.3	0.05	123.4	4.86	36	8	▲
390E02969A21M	19/64”	7.54	0.2969		72	2.835	1.3	0.05	123.4	4.86	36	8	❍
390E03125A21M	5/16”	7.94	0.3125	3/8-16	72	2.835	1.3	0.05	123.4	4.86	36	8	❍
390M08000A21M		8.00	0.3150		72	2.835	1.3	0.05	123.4	4.86	36	8	❍
390E03281A21M	21/64”	8.33	0.3281		90	3.543	1.3	0.05	145.8	5.74	40	10	▲
390M08430A21M	Q	8.43	0.3319	3/8-24	90	3.543	1.3	0.05	145.8	5.74	40	10	▲
390M08500A21M		8.50	0.3346	M10X1.5	90	3.543	1.3	0.05	145.8	5.74	40	10	▲
390M08600A21M		8.60	0.3386		90	3.543	1.3	0.05	145.8	5.74	40	10	❍
390E03438A21M	11/32”	8.73	0.3438		90	3.543	1.4	0.06	145.8	5.74	40	10	❍
390M08800A21M		8.80	0.3465		90	3.543	1.4	0.06	145.8	5.74	40	10	▲
390M09000A21M		9.00	0.3543		90	3.543	1.5	0.06	145.8	5.74	40	10	❍
390E03594A21M	23/64”	9.13	0.3594		90	3.543	1.5	0.06	145.8	5.74	40	10	❍
390E03680A21M	U	9.35	0.3680	7/16-14	90	3.543	1.5	0.06	145.8	5.74	40	10	▲
390M09500A21M		9.50	0.3740		90	3.543	1.5	0.06	145.8	5.74	40	10	▲
390E03750A21M	3/8”	9.53	0.3750		90	3.543	1.5	0.06	145.8	5.74	40	10	❍
390M09600A21M		9.60	0.3780		90	3.543	1.6	0.06	145.8	5.74	40	10	❍
390E03906A21M	25/64”	9.92	0.3906	7/16-20	90	3.543	1.6	0.06	145.8	5.74	40	10	▲
390M10000A21M		10.00	0.3937		90	3.543	1.6	0.06	145.8	5.74	40	10	❍
390M10200A21M		10.20	0.4016	M12x1.75	108	4.252	1.7	0.07	172.2	6.78	45	12	❍
390E04040A21M		10.26	0.4040		108	4.252	1.7	0.07	172.2	6.78	45	12	▲
390E04062A21M	13/32”	10.32	0.4062		108	4.252	1.7	0.07	172.2	6.78	45	12	❍
390M10500A21M		10.50	0.4134		108	4.252	1.7	0.07	172.2	6.78	45	12	▲
390E04219A21M	27/64”	10.72	0.4219	1/2-13	108	4.252	1.7	0.07	172.2	6.78	45	12	❍
390M11000A21M		11.00	0.4331		108	4.252	1.8	0.07	172.2	6.78	45	12	❍
390E04375A21M	7/16”	11.11	0.4375		108	4.252	1.8	0.07	172.2	6.78	45	12	❍
390M11500A21M		11.50	0.4528		108	4.252	1.9	0.07	172.2	6.78	45	12	▲
390E04531A21M	29/64”	11.51	0.4531	1/2-20	108	4.252	1.9	0.07	172.2	6.78	45	12	▲
390E04688A21M	15/32”	11.91	0.4688		108	4.252	1.9	0.08	172.2	6.78	45	12	❍
390M12000A21M		12.00	0.4724	M14X2	108	4.252	1.9	0.08	172.2	6.78	45	12	❍
390E04844A21M	31/64”	12.30	0.4844	9/16-12	126	4.961	2.0	0.08	192.5	7.58	45	14	▲
390M12500A21M		12.50	0.4921	M14X1.5	126	4.961	2.0	0.08	192.5	7.58	45	14	▲
390E05000A21M	1/2”	12.70	0.5000		126	4.961	2.1	0.08	192.5	7.58	45	14	❍
390M13000A21M		13.00	0.5118		126	4.961	2.1	0.08	192.5	7.58	45	14	▲
390E05156A21M	33/64”	13.10	0.5156	9/16-18	126	4.961	2.1	0.08	192.5	7.58	45	14	▲

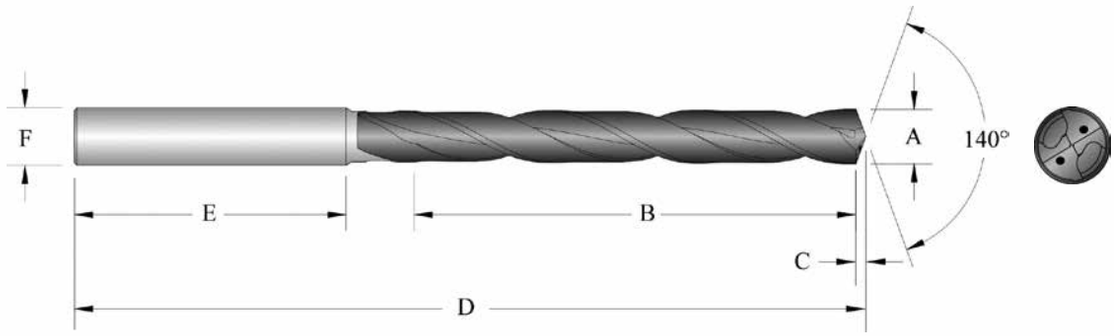
*** Tap drill diameters allow approximately 75% of full thread to be produced.**

❶ Availability Codes
❍ Stocked
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.7350	=390E07350A21M
Metric	=19.25mm	=390M19250A21M

ASC 320® Solid Carbide High Penetration Drills
9 X Diameter



Item Number	A Drill Diameter			Tap Size*	B Drill Depth		C Point Length		D Overall Length		E Shank Length (mm)	F Shank Diameter (mm)	❶
		(mm)	Decimal Equivalent		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)			
390E05312A21M	17/32”	13.49	0.5312	5/8-11	126	4.961	2.2	0.09	192.5	7.58	45	14	❍
390M13500A21M		13.50	0.5315		126	4.961	2.2	0.09	192.5	7.58	45	14	▲
390E05469A21M	35/64”	13.89	0.5469	5/8-12	126	4.961	2.3	0.09	192.5	7.58	45	14	❍
390M14000A21M		14.00	0.5512	M16X2	126	4.961	2.3	0.09	192.5	7.58	45	14	❍
390E05625A21M	9/16”	14.29	0.5625		144	5.669	2.3	0.09	216.9	8.54	48	16	❍
390M14500A21M		14.50	0.5709	M16X1.5	144	5.669	2.4	0.09	216.9	8.54	48	16	▲
390E05781A21M	37/64”	14.68	0.5781	5/8-18	144	5.669	2.4	0.09	216.9	8.54	48	16	▲
390M15000A21M		15.00	0.5906		144	5.669	2.4	0.10	216.9	8.54	48	16	▲
390E05938A21M	19/32”	15.08	0.5938		144	5.669	2.5	0.10	216.9	8.54	48	16	▲
390E06094A21M	39/64”	15.48	0.6094	11/16-12	144	5.669	2.5	0.10	216.9	8.54	48	16	❍
390M15500A21M		15.50	0.6102	M18X2.5	144	5.669	2.5	0.10	216.9	8.54	48	16	▲
390E06250A21M	5/8”	15.88	0.6250		144	5.669	2.6	0.10	216.9	8.54	48	16	❍
390M16000A21M		16.00	0.6299		144	5.669	2.6	0.10	216.9	8.54	48	16	▲
390E06406A21M	41/64”	16.27	0.6406		162	6.378	2.6	0.10	237.3	9.34	48	18	▲
390M16500A21M		16.50	0.6496	M18X1.5	162	6.378	2.7	0.11	237.3	9.34	48	18	▲
390E06563A21M	21/32”	16.67	0.6563	3/4-10	162	6.378	2.7	0.11	237.3	9.34	48	18	▲
390M17000A21M		17.00	0.6693		162	6.378	2.8	0.11	237.3	9.34	48	18	▲
390E06719A21M	43/64”	17.07	0.6719	3/4-12	162	6.378	2.8	0.11	237.3	9.34	48	18	▲
390E06875A21M	11/16”	17.46	0.6875	3/4-16	162	6.378	2.8	0.11	237.3	9.34	48	18	❍
390M17500A21M		17.50	0.6890	M20X2.5	162	6.378	2.8	0.11	237.3	9.34	48	18	▲
390E07031A21M	45/64”	17.86	0.7031		162	6.378	2.9	0.11	237.3	9.34	48	18	▲
390M18000A21M		18.00	0.7087		162	6.378	2.9	0.12	237.3	9.34	48	18	❍
390E07188A21M	23/32”	18.26	0.7188		180	7.087	3.0	0.12	259.6	10.22	50	20	▲
390M18500A21M		18.50	0.7283	M20X1.5	180	7.087	3.0	0.12	259.6	10.22	50	20	▲
390E07344A21M	47/64”	18.65	0.7344		180	7.087	3.0	0.12	259.6	10.22	50	20	▲
390M19000A21M		19.00	0.7480		180	7.087	3.1	0.12	259.6	10.22	50	20	❍
390E07500A21M	3/4”	19.05	0.7500		180	7.087	3.1	0.12	259.6	10.22	50	20	❍
390E07656A21M	49/64”	19.45	0.7656	7/8-9	180	7.087	3.2	0.12	259.6	10.22	50	20	▲
390M19500A21M		19.50	0.7677	M22X2.5	180	7.087	3.2	0.12	259.6	10.22	50	20	▲
390E07813A21M	25/32”	19.84	0.7813		180	7.087	3.2	0.13	259.6	10.22	50	20	▲
390M20000A21M		20.00	0.7874		180	7.087	3.0	0.13	259.6	10.22	50	20	▲

*** Tap drill diameters allow approximately 75% of full thread to be produced.**

❶ Availability Codes
❍ Stocked
▲ Non-stocked - 10 work days
Regrinds - 10 work days

Sizes not shown (Non-Standard Diameters) are available. When ordering, please follow the examples shown below:

Inch	=0.7350	=390E07350A21M
Metric	=19.25mm	=390M19250A21M

Recommended Speeds and Feeds
ASC 320® Solid Carbide High Penetration Drills

INCH

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team.

Material	Material Hardness (BHN)	3.5 X Diameter Solid Carbide									
		SPEED SFM	FEED (IPR)								
		TiALN	.118"-.157"	.161"-.236"	.240"-.315"	.319"-.394"	.398"-.472"	.476"-.551"	.555"-.630"	.634"-.709"	.713"-.787"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	450	0.007	0.009	0.011	0.013	0.014	0.016	0.018	0.02	0.022
	150-200	400	0.005	0.008	0.009	0.011	0.012	0.014	0.016	0.018	0.02
	200-250	375	0.004	0.006	0.007	0.009	0.01	0.012	0.014	0.016	0.018
Low Carbon Steel 1010,1020,1025,1522, 1144, etc.	85-125	425	0.007	0.009	0.011	0.013	0.015	0.017	0.019	0.019	0.021
	125-175	390	0.006	0.008	0.01	0.012	0.014	0.016	0.018	0.018	0.02
	175-225	360	0.005	0.008	0.01	0.011	0.013	0.015	0.017	0.017	0.019
	225-275	330	0.004	0.007	0.009	0.01	0.012	0.014	0.016	0.016	0.018
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	390	0.006	0.008	0.01	0.012	0.013	0.014	0.016	0.018	0.02
	175-225	360	0.005	0.007	0.01	0.012	0.012	0.013	0.015	0.017	0.019
	225-275	320	0.004	0.006	0.009	0.011	0.011	0.012	0.014	0.016	0.018
	275-325	285	0.003	0.006	0.008	0.01	0.01	0.011	0.013	0.015	0.017
Alloy Steel 4140, 5140, 8640, etc.	175-225	375	0.006	0.008	0.01	0.012	0.013	0.014	0.016	0.018	0.02
	225-275	340	0.005	0.007	0.009	0.011	0.012	0.013	0.015	0.017	0.019
	275-325	300	0.004	0.006	0.008	0.01	0.011	0.012	0.013	0.016	0.018
	325-375	275	0.003	0.005	0.007	0.009	0.01	0.01	0.012	0.014	0.016
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	260	0.005	0.007	0.008	0.011	0.011	0.012	0.013	0.014	0.016
	300-350	210	0.004	0.006	0.007	0.009	0.01	0.011	0.012	0.013	0.015
	350-400	160	0.003	0.005	0.006	0.008	0.009	0.01	0.011	0.012	0.013
Structural Steel A36, A285, A516, etc.	100-150	360	0.005	0.008	0.009	0.011	0.012	0.013	0.014	0.016	0.018
	150-250	320	0.004	0.007	0.008	0.01	0.011	0.012	0.013	0.015	0.017
	250-350	270	0.003	0.005	0.007	0.008	0.009	0.01	0.011	0.013	0.015
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150-200	260	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01	0.011
	200-250	220	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01
High Temp Alloy Hastelloy B, Inconel 600, etc.	140-220	120	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.01	0.011
	220-310	90	0.002	0.003	0.003	0.004	0.005	0.006	0.007	0.008	0.009
Stainless Steel 300 Series 304, 316, 17-4PH	135-185	200	0.004	0.005	0.006	0.007	0.008	0.009	0.011	0.012	0.013
	185-275	140	0.003	0.004	0.004	0.005	0.006	0.007	0.009	0.01	0.011
Nodular, Grey, Ductile Cast Iron	120-150	550	0.008	0.01	0.012	0.014	0.016	0.018	0.02	0.022	0.024
	150-200	500	0.008	0.01	0.012	0.014	0.016	0.018	0.02	0.022	0.024
	200-220	475	0.007	0.009	0.011	0.013	0.015	0.017	0.019	0.021	0.023
	220-260	430	0.007	0.009	0.011	0.013	0.015	0.017	0.019	0.021	0.023
	260-320	400	0.006	0.008	0.01	0.012	0.014	0.016	0.018	0.02	0.022
Cast Aluminum	30	1500	0.008	0.01	0.013	0.015	0.017	0.02	0.022	0.024	0.026
	180	1000	0.006	0.008	0.011	0.013	0.015	0.018	0.02	0.022	0.024
Wrought Aluminum	30	1500	0.008	0.01	0.013	0.015	0.017	0.02	0.022	0.024	0.026
	180	1000	0.006	0.008	0.011	0.013	0.015	0.018	0.02	0.022	0.024

Formulas: IPM = RPM • IPR **SFM = RPM • 0.262 • DIA** **RPM = SFM • 3.82/DIA**

To calculate speeds and feeds for 6 and 9 X Diameter ASC-320® Solid Carbide High Performance Drills use the following

SPEED AND FEED ADJUSTMENT		
3.5 X Diameter	6 X Diameter	9 X Diameter
See Above Chart	0.90	0.75

Recommended Speeds and Feeds
ASC 320® Solid Carbide High Penetration Drills
METRIC

IMPORTANT: The speeds and feeds listed below are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team.

Material	Material Hardness (BHN)	3.5 X Diameter Solid Carbide									
		SPEED (M/min)	FEED (mm/rev)								
		TiALN	3.00 - 4.00	4.01 - 6.00	6.01 - 8.00	8.01 - 10.00	10.01 - 12.00	12.01 - 14.00	14.01 - 16.00	16.01 - 18.00	18.01 - 20.00
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	137	0.18	0.23	0.28	0.33	0.36	0.41	0.46	0.51	0.56
	150-200	122	0.13	0.2	0.23	0.28	0.3	0.36	0.41	0.46	0.51
	200-250	114	0.1	0.15	0.18	0.23	0.25	0.3	0.36	0.41	0.46
Low Carbon Steel 1010,1020,1025,1522, 1144, etc.	85-125	130	0.18	0.23	0.28	0.33	0.38	0.43	0.48	0.48	0.53
	125-175	119	0.15	0.2	0.25	0.3	0.36	0.41	0.46	0.46	0.51
	175-225	110	0.13	0.2	0.25	0.28	0.33	0.38	0.43	0.43	0.48
	225-275	101	0.1	0.18	0.23	0.25	0.3	0.36	0.41	0.41	0.46
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125-175	119	0.15	0.2	0.25	0.3	0.33	0.36	0.41	0.46	0.51
	175-225	110	0.13	0.18	0.25	0.3	0.3	0.33	0.38	0.43	0.48
	225-275	98	0.1	0.15	0.23	0.28	0.28	0.3	0.36	0.41	0.48
	275-325	87	0.08	0.15	0.2	0.25	0.25	0.28	0.33	0.38	0.43
Alloy Steel 4140, 5140, 8640, etc.	175-225	114	0.15	0.2	0.25	0.3	0.33	0.36	0.41	0.46	0.51
	225-275	104	0.13	0.18	0.23	0.28	0.3	0.33	0.38	0.43	0.48
	275-325	91	0.1	0.15	0.2	0.25	0.28	0.3	0.33	0.41	0.46
	325-375	84	0.08	0.13	0.18	0.23	0.25	0.25	0.3	0.36	0.41
High Strength Alloy 4340, 4330V, 300M, etc.	225-300	79	0.13	0.18	0.2	0.28	0.28	0.3	0.33	0.36	0.41
	300-350	64	0.1	0.15	0.18	0.23	0.25	0.28	0.3	0.33	0.38
	350-400	49	0.08	0.13	0.15	0.2	0.23	0.25	0.28	0.3	0.33
Structural Steel A36, A285, A516, etc.	100-150	110	0.13	0.2	0.23	0.28	0.3	0.33	0.36	0.41	0.46
	150-250	98	0.1	0.18	0.2	0.25	0.28	0.3	0.33	0.38	0.43
	250-350	82	0.08	0.13	0.18	0.2	0.23	0.25	0.28	0.33	0.38
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150-200	79	0.08	0.1	0.13	0.15	0.18	0.2	0.23	0.25	0.28
	200-250	67	0.05	0.08	0.1	0.13	0.15	0.18	0.2	0.23	0.25
High Temp Alloy Hastelloy B, Inconel 600, etc.	140-220	37	0.08	0.1	0.13	0.15	0.18	0.2	0.23	0.25	0.28
	220-310	27	0.05	0.08	0.08	0.1	0.13	0.15	0.18	0.2	0.23
Stainless Steel 300 Series 304, 316, 17-4PH	135-185	61	0.1	0.13	0.15	0.18	0.2	0.23	0.28	0.3	0.33
	185-275	43	0.08	0.1	0.1	0.13	0.15	0.18	0.23	0.25	0.28
Nodular, Grey, Ductile Cast Iron	120-150	168	0.2	0.25	0.3	0.36	0.41	0.46	0.51	0.56	0.61
	150-200	152	0.2	0.25	0.3	0.36	0.41	0.46	0.51	0.56	0.61
	200-220	145	0.18	0.23	0.28	0.33	0.38	0.43	0.48	0.53	0.58
	220-260	131	0.18	0.23	0.28	0.33	0.38	0.43	0.48	0.53	0.58
	260-320	122	0.15	0.2	0.25	0.3	0.36	0.41	0.46	0.51	0.56
Cast Aluminum	30	457	0.2	0.25	0.33	0.38	0.43	0.51	0.56	0.61	0.66
	180	305	0.15	0.2	0.28	0.33	0.38	0.46	0.51	0.56	0.61
Wrought Aluminum	30	457	0.2	0.25	0.33	0.38	0.43	0.51	0.56	0.61	0.66
	180	305	0.15	0.2	0.28	0.33	0.38	0.46	0.51	0.56	0.61

Formulas: mm/min = RPM ● mm/rev M/min = RPM ● 0.003 ● DIA RPM = M/min ● 318.47/DIA

To calculate speeds and feeds for 6 and 9 X Diameter ASC-320® Solid Carbide High Performance Drills use the following:

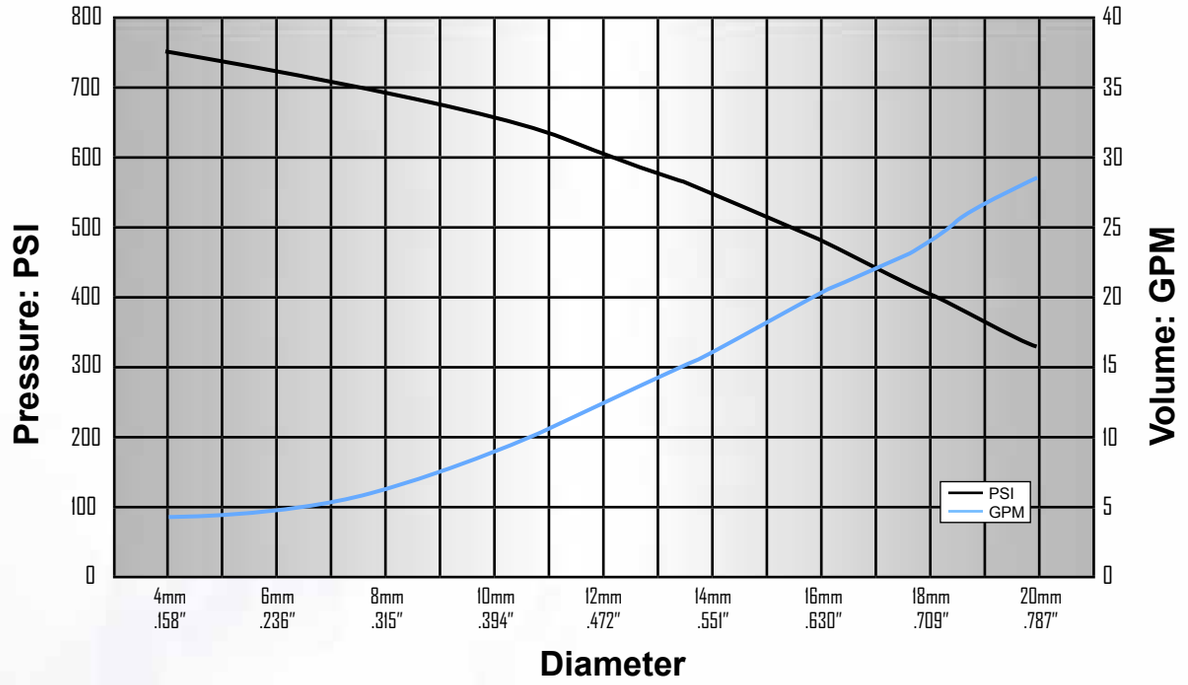
SPEED AND FEED ADJUSTMENT		
3.5 X Diameter	6 X Diameter	9 X Diameter
See Above Chart	0.90	0.75

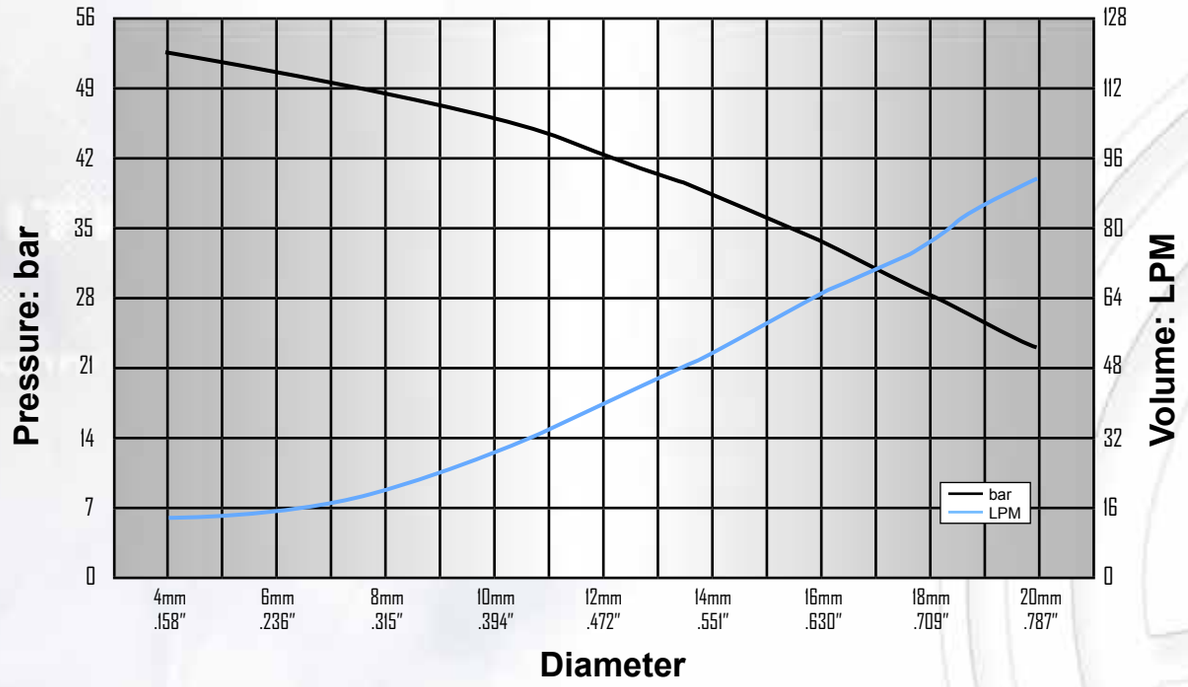
Coolant Recommendations

ASC 320® Solid Carbide High Penetration Drills

Inch and Metric

IMPORTANT: The coolant pressure and flow rate recommendations below represents a good approximation to obtain optimum tool life and chip evacuation at Allied recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the ASC 320® drilling system will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.





Coolant Adjustment

Drill Length	6xD	9xD
Pressure & Flow	1.5	2

COOLANT RECOMMENDATION EXAMPLE: If the recommended pressure and flow is 600 PSI and 12 GPM for a 3.5x Diameter ASC 320®, the adjusted pressure and flow would be 1200 PSI and 24 GPM respectively for the 9x Diameter ASC 320®.

600 • 2 = 1200 PSI **12 • 2 = 24 GPM**

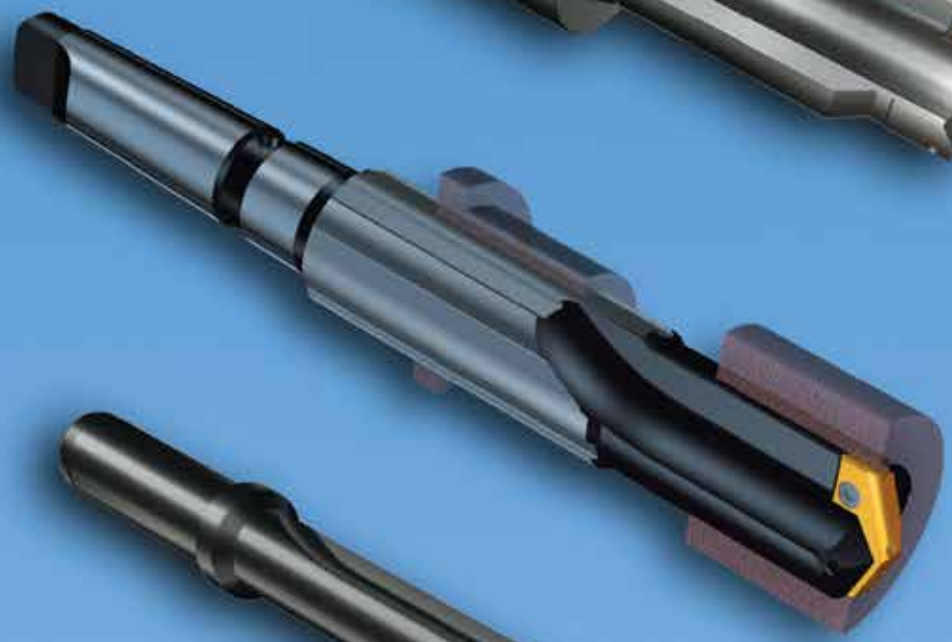
QDSI 34® and Special Tooling

Special Tools - Concept Section

The T-A® Drilling System is an excellent choice when looking for the ultimate in high-tech drilling for CNC or manual equipment. We manufacture to your drawings or offer turn key design solutions. Please use pages F4 and F5 or visit www.alliedmachine.com to develop special products for your applications.

Double Angle Drill Insert

This multi-step tool design utilizes "wrap-around" style inserts to provide finish tolerance forms in one operation.



This shallow hole design has a bushing support diameter larger than the largest drill to be used. It requires only one bushing size for a variety of drill diameters. Rapid set-up and size change is especially beneficial in multiple spindle applications.

Guided T-A® replacement style holders are designed to provide optimal hole straightness in deep-hole applications.

⚠ **Refer to page C109 for Deep Hole Drilling Guidlines**

Spot Drill & Countersink

A Combination Drill, Countersink and Counterbore tool used to complete a lug hole in one operation for the aluminum wheel industry.

Special Tools - Concept Section

The Allied T-A® Drill Insert is an excellent choice combined with indexable carbide inserts. Our T-A® Drill Insert is very forgiving and adds stability to the machining process. High production rates and exceptional tool life without any need for machine adjustment or regrinding make this product UNIQUE!

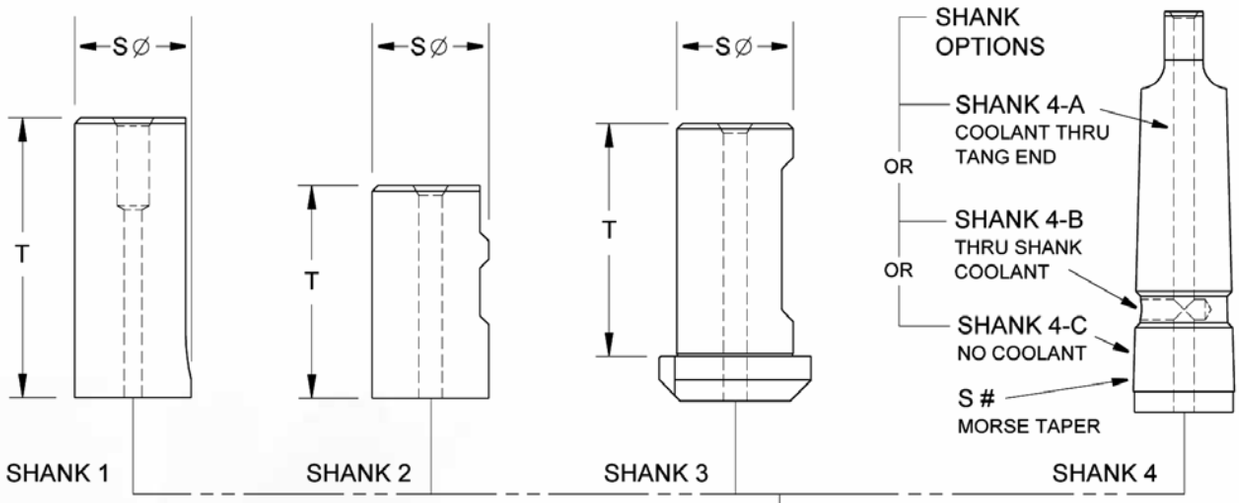
This helical gullet combination tool is for shallow holes when a drill bushing is used. The larger body allows the indexable carbide inserts to pass through a drill bushing without damaging the inserts.

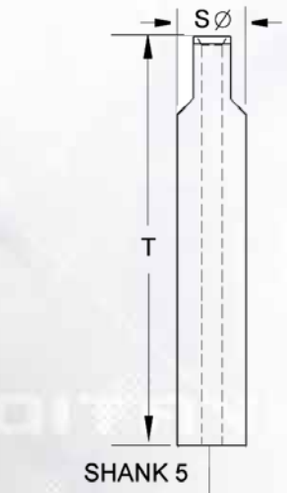
This complex Chamfer / Back Chamfer Tool provides a unique form utilizing indexable carbide inserts for the top chamfer, and a special application T-A® drill insert to circle interpolate the bottom chamfer.

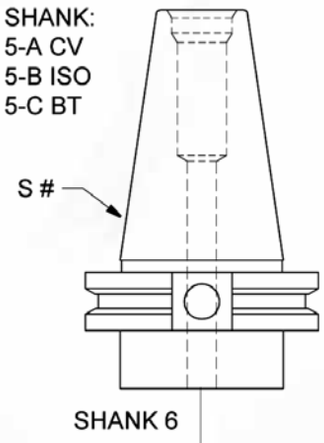
Holders with carbide wearpads can be used when necessary to drill through an interrupted cut. Wear strip holders are also used for deeper hole applications where straightness is critical.

Helical gullet holders for dedicated sizes allow the Allied T-A® drill insert to work in the same type of applications as twist drills. This replaceable tip oil hole drill offers higher production rates and longer tool life without any need to adjust machine length settings when the drill tip is changed. Replaceable drill tips, in various material grades and coatings, make this product cost effective in a wide range of applications.

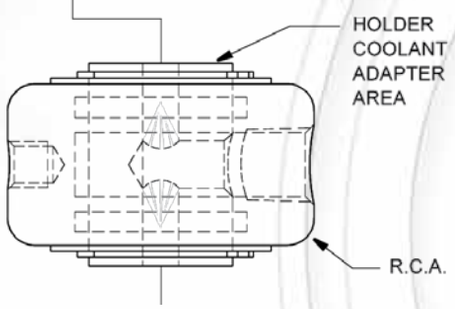
Spur Point







SHANK	S Ø	S #	T	R.C.A.
4-A		4 MT		YES / (NO)
				YES / NO
				YES / NO
				YES / NO



We have included these two pages so you may assist us with defining your special tooling requirements. Select Shanks 1-6 or define Shank 7 to be used with or without a Rotary Coolant Adapter.

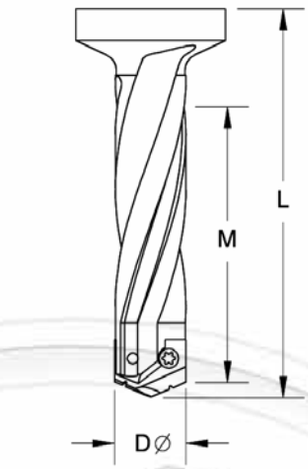
We ask that you define your hole profile and offer an example of a tool form to help us with the design process. Tools 1-5 cover only a small portion of our capability so feel free to use your own imagination. Please photocopy these pages, record your information in the boxes at the top of the page F5 and fax or email the information for our quickest response.

ITEM	TOOL	A_1	A_2	A_3	B_1	B_2	B_3	C	D∅	E∅	F∅	G	L	M
EXAMPLE	5	30°			1.00			.25	.620	1.25			4.50	3.00
Customer Signature:										Date:				

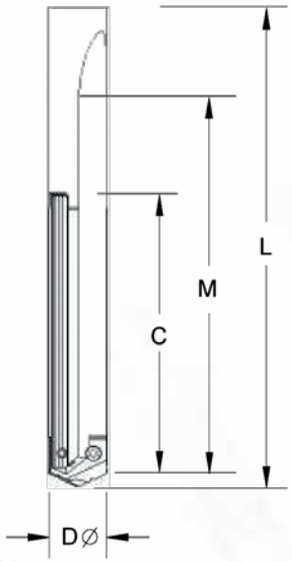
Please fax or mail to Allied Machine & Engineering *Corp.*'s Application Engineering Department.

Toll Free US & Canada: (800) 321-5537
Fax (330) 343-7666
Email aesupport@alliedmachine.com

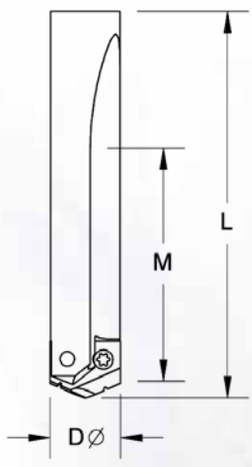
Please be sure to include shank and coolant information from page F4 when sending in special tool designs.



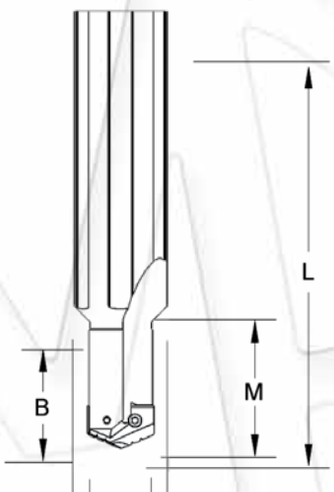
TOOL 1
☐ CARBIDE CLAD ☐ CHROME PLATE
☐ Helical ☐ Straight



TOOL 2
☐ Helical Pilot ☐ Chrome Pilot

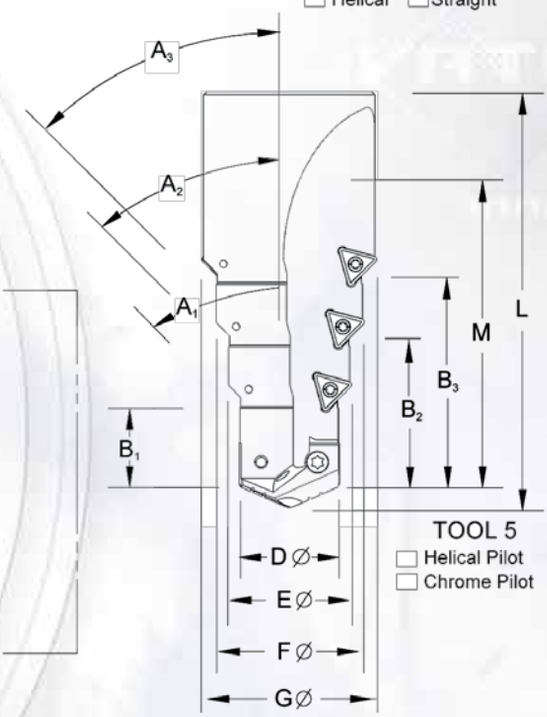


TOOL 3
SPECIAL LENGTH
☐ Helical ☐ Straight



TOOL 4
☐ Helical Pilot ☐ Chrome Pilot

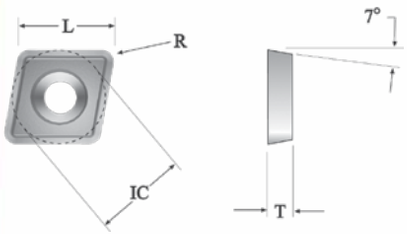
HOLE PROFILE



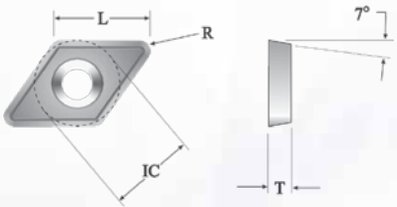
TOOL 5
☐ Helical Pilot
☐ Chrome Pilot

QDSI 34® Inserts

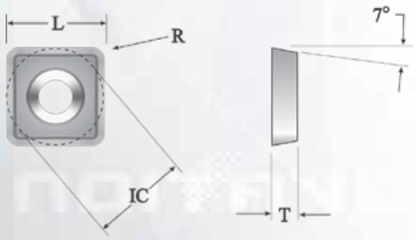
QDSI 34® Inserts are utilized only in Special ICS Holders.
Speeds and feeds for QDSI 34® Inserts are determined by drill insert.



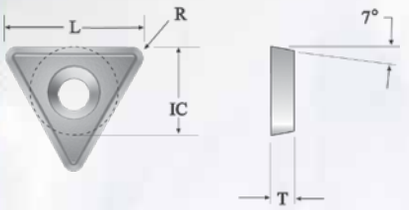
80° Diamond Inserts



55° Diamond Inserts



Square Inserts



60° Triangle Inserts

Type	Insert Item #	ANSI Designation	Indicates Metric Dimension IC	L	T	R	Screw 10 Pack Item Number and (screw size)	Torx Plus Driver Item Number
80° Diamond	CCGT-060202	CCGT 2(1.5)0.5	0.250	0.249	0.094	0.008	7256-IP8-10 (M2,5x0,45x6,0)	8IP-8
			6,35	6,32	2,39	0,20		
	CCMT-060204	CCMT 2(1.5)1	0.250	0.247	0.094	0.016		
			6,35	6,28	2,39	0,40		
	CCMT-060208	CCMT 2(1.5)2	0.250	0.244	0.094	0.031		
			6,35	6,21	2,39	0,79		
	CCGT-06T308	CCGT 2(2.5)2	0.250	0.244	0.156	0.031		
			6,35	6,21	3,96	0,79		
	CCGT-09T302	CCGT 3(2.5)0.5	0.375	0.374	0.156	0.008	7359-IP15-10 (M3,5x0,6x9,0)	8IP-15
			9,53	9,49	3,96	0,20		
	CCMT-09T304	CCMT 3(2.5)1	0.375	0.372	0.156	0.016		
			9,53	9,46	3,96	0,40		
	CCMT-09T308	CCMT 3(2.5)2	0.375	0.369	0.156	0.031		
			9,53	9,39	3,96	0,79		
	CCMT-120404	CCMT 431	0.500	0.497	0.188	0.016	745105-IP20-10 (M4,5x0,75x10,5)	8IP-20
			12,70	12,63	4,76	0,40		
	CCMT-120408	CCMT 432	0.500	0.494	0.188	0.031		
			12,70	12,56	4,76	0,79		
55° Diamond	DCGT-070202	DCGT 2(1.5)0.5	0.250	0.243	0.094	0.008	7256-IP8-10 (M2,5x0,45x6,0)	8IP-8
			6,35	6,18	2,39	0,20		
	DCMT-070204	DCMT 2(1.5)1	0.250	0.237	0.094	0.016		
			6,35	6,01	2,39	0,40		
	DCMT-070208	DCMT 2(1.5)2	0.250	0.223	0.094	0.031		
			6,35	5,67	2,39	0,79		
	DCMT-11T304	DCMT 3(2.5)1	0.375	0.362	0.156	0.016	7359-IP15-10 (M3,5x0,6x9,0)	8IP-15
			9,53	9,19	3,96	0,40		
	DCMT-11T308	DCMT 3(2.5)2	0.375	0.348	0.156	0.031		
			9,53	8,85	3,96	0,79		
Square	SCMT-09T304	SCMT 3(2.5)1	0.375	0.375	0.156	0.016	7359-IP15-10 (M3,5x0,6x9,0)	8IP-15
			9,53	9,53	3,96	0,40		
60° Triangle	TCGT-06T102	TCGT 1.2(1.2)0.5	0.156	0.259	0.078	0.008	724-IP6-10 (M2,0x0,4x4,0)	8IP-6
			3,97	6,58	1,98	0,20		
	TCGT-06T104	TCGT 1.2(1.2)1	0.156	0.248	0.078	0.016		
			3,97	6,29	1,98	0,40		
	TCGT-06T108	TCGT 1.2(1.2)2	0.156	0.225	0.078	0.031		
			3,97	5,71	1,98	0,79		
	TCGT-090202	TCGT 1.8(1.5)0.5	0.219	0.367	0.094	0.008	7225-IP7-10 (M2.2,5x0,45x5,0)	8IP-7
			5,56	9,33	2,39	0,20		
	TCGT-090204	TCGT 1.8(1.5)1	0.219	0.356	0.094	0.016		
			5,56	9,04	2,39	0,40		
	TCGT-090208	TCGT 1.8(1.5)2	0.219	0.333	0.094	0.031		
			5,56	8,46	2,39	0,79		
	TCGT-110202	TCGT 2(1.5)0.5	0.250	0.422	0.094	0.008	7256-IP8-10 (M2,5x0,45x6,0)	8IP-8
			6,35	10,71	2,39	0,20		
	TCMT-110204	TCMT 2(1.5)1	0.250	0.410	0.094	0.016		
			6,35	10,42	2,39	0,40		
	TCMT-110208	TCMT 2(1.5)2	0.250	0.387	0.094	0.031		
			6,35	9,84	2,39	0,79		
	TCMT-16T304	TCMT 3(2.5)1	0.375	0.627	0.156	0.016	7359-IP15-10 (M3,5x0,6x9,0)	8IP-15
			9,53	15,92	3,96	0,40		
	TCMT-16T308	TCMT 3(2.5)2	0.375	0.604	0.156	0.031		
			9,53	15,34	3,96	0,79		
	TCGT-220408	TCGT 432	0.500	0.820	0.188	0.031	745105-IP20-10 (M4,5x0,75x10,5)	8IP-20
			12,70	20,83	4,76	0,79		

GUARANTEED TEST/DEMO and WARRANTY INFO

T-A®, GEN2 T-A®, GEN3SYS®, GEN3SYS® XT, Opening Drill®, Revolution Drill®, AccuPort 432®, and ASC 320®

Guaranteed Test/Demo Application Form

Distributor PO # _____

The Following must be filled out completely before test will be considered

Distributor:		End User:	
Contact:		Contact:	
Account Number:		Industry:	
Phone:		Phone:	
Email:		Email:	

Test Objective

List what would make this a successful test. (i.e. Performance, Chip Control, etc.)

_____

_____

Application Information

Hole Diameter: _____ in/mm Depth of Cut: _____ in/mm Tolerance: _____

Material: _____ Hardness: _____ BHN/Rc Required Finish: _____ RMS

(4150/A36/Cast Iron, etc.)

Material State: _____

(Flat Stock/Casting/Tube Stock/Hot Rolled/Forging)

Machine Information

Machine Type: _____ Builder: _____ Model#: _____

(Lathe/Screw Machine/Machine Center, etc.) (Haas/Mori Seiki, etc.)

Power: _____ HP/KW Thrust: _____ Lbs./N Orientation: ☐ Vertical ☐ Horizontal

Shank Required: _____ Rigidity: ☐ Excellent ☐ Good ☐ Poor Tool Rotating: ☐ Yes ☐ No

(3/4" Straight/#4 Morse Taper, etc.)

Coolant Information

Coolant Delivery: _____ Coolant Pressure: _____ PSI/bar

(Through Tool/Flood)

Coolant Type: _____ Coolant Volume: _____ GPM/LPM

(Air Mist/Oil/Synthetic/Water Soluble, etc.)

Current Process

List all tooling, coatings, substrates, speeds and feeds, tool life and any problems.

_____

_____

Requested Tooling

QTY	Item Number	QTY	Item Number

Allied Machine & Engineering Corp.
Telephone: (330) 343-4283
Toll Free USA & Canada: (800) 321-5537
Fax: (330) 364-7666
Email: aesupport@alliedmachine.com

Made in the USA

Warranty

Allied Machine & Engineering Corp. warrants to original equipment manufacturers, distributors, industrial and commercial users of its products, that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied's obligation under this warranty is limited to furnishing without additional charge a replacement or, at its option repairing or issuing credit for any product which shall within one year from the date of sale be returned freight prepaid to the plant designated by an Allied representative and which upon inspection is determined by Allied to be defective in materials or workmanship.

Complete information as to operating conditions, machine setup, and application of cutting fluid should accompany any product returned for inspection. The provisions of this warranty shall not apply to any Allied product which has been subjected to misuse, improper operating conditions, machine setup or application of cutting fluid or which has been repaired or altered if such repair or alteration in the judgement of Allied would adversely affect performance of the product.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Allied shall have no liability or responsibility on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein. IN NO EVENT SHALL ALLIED MACHINE & ENGINEERING CORP. BE LIABLE FOR ANY SPECIAL INCIDENTAL OR CONSEQUENTIAL DAMAGES. Allied makes no other warranty, express or implied, except as set forth above, and Allied neither assumes nor authorizes any other person or entity to assume for it any other obligation or liability in connection with any of its products.

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Fax: **(330) 602-3400** Toll Free USA & Canada: **(800) 223-5140**
International Country Code: **01**
Website Address: **www.alliedmachine.com**
Email Address: **info@alliedmachine.com**

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DY6 7FR ENGLAND

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Fax: 011-44-1384-400105

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Registered to ISO 9001:2008
10001329

Other Product Literature:

High Performance and Universal Style

DRILLS, HOLDERS, AND ACCESSORIES

This catalog lists the widest variety of Spade Drills and Holders in our industry. Our TiN, TiAlN, and TiCN coated High Performance Spade Drills (31/32" to 5") offer a 100% to 500% increase in productivity and an extended tool life of 3 to 20 times over uncoated tools.

Literature Order Number: HPU

Structural Steel T-A® Drilling System

HIGH PERFORMANCE HOLDERS AND INSERTS

Designed specifically for use on structural steel materials, this patented system delivers outstanding performance and durability. TiAlN and AM200® insert coatings available. These coatings allow for increased tool life and better heat resistance while providing better hole tolerances. Tool holders can be used with standard T-A® Drill Inserts.

Literature Order Number: SS

AccuThread 856®

THREAD MILLING PRODUCTS

AccuThread 856® specific Thread Mills conform with J1926 and SAE AS5202. AccuThread 856® has a thicker core and a helical flute which offers increased strength and rigidity when cutting forces are applied. AccuThread 856® provides superior thread forms compared to other competitive thread mills and taps.

Literature Order Number: AT856

ALVAN® Expandable Reamers

The ALVAN® product line includes both monobloc and ring style expandable reamers, offered with carbide, cermet, PCD and CBN cutting edges and are available in sizes from 0.228 inch to 7.898 inch (5.8 mm to 200.6 mm) diameters.

Literature Order Number: ALV

i-Form

CUSTOM INDEXABLE DRILL/FORM TOOL SYSTEM

With i-Form, you can design complex forms for any style hole with increased productivity in mind. The i-Form design (blade and form inserts) provides custom engineered forms that allow for complex design, replaceable cutting edges, and improved consistency while outperforming brazed and solid carbide tools.

Literature Order Number: IFFL

BT-A

REPLACEABLE TIP SINGLE TUBE BTA TOOL & ACCESSORIES

Allied's BT-A tool offers a bearing area for improved straightness, as well as more balanced cutting forces. This tool also provides significantly increased penetration rates over brazed heads and traditional gun drills. The BT-A's pending design allows for replaceable cutting edges, eliminating the need for re-sharpening. This tool is compatible with standard BTA-STS Systems.

Literature Order Number: BTAFL

Specials

Custom Engineered Holders and Inserts

Allied offers special tooling through our Insta-Quote™ System, our i-Form product line, and Engineered Specials. Special options include Step Tooling, Chrome Bushing, and Extended lengths. As well as many other options to cover any of your drilling needs.

Literature Order Number: SPEC

Allied Machine & Engineering *Corp.*

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Dover, OH 44622-0036

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Fax: (330) 602-3400
Toll Free USA & Canada: (800) 223-5140
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