



ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing



Boring



Reaming



Burnishing



Threading



Specials



HP and Universal

▶ *DRILLING*

Replaceable Insert Drilling System

North America

Allied Machine
120 Deeds Drive
Dover, OH 44622
United States

Allied Machine
485 West 3rd Street
Dover, OH 44622
United States

ThreadMills USA™

4185 Crosstowne Ct #B
Evans, GA 30809
United States

Superion™

1285 S Patton St.
Xenia, OH 45385
United States

Europe

Allied Machine Europe
93 Vantage Point
Pensnett Estate
Kingswinford
West Midlands
DY6 7FR, United Kingdom

Wohlhaupter® GmbH

Maybachstrasse 4
Postfach 1264
72636 Frickenhausen
Germany

Asia

Wohlhaupter® India
B-23, 2nd Floor
B Block Community Centre
Janakpuri, New Delhi - 110058
India



Allied Machine & Engineering is a worldwide leader in holemaking and finishing solutions. We are committed to providing practical and dependable solutions to our customers through innovative designs and superior customer and technical support.

We continue to expand our product offering in order to provide new and different solutions. With Field Sales Engineers located around the world, we position ourselves to provide technical support on site, right at your spindle.



www.alliedmachine.com

High Performance and Universal

The Foundation

Since 1941, Allied Machine & Engineering has provided dependable and practical holemaking solutions to the world. What was once a small job shop in Ohio is now a worldwide leader in cutting tool technology. With three manufacturing facilities in Ohio, one in Georgia, another in Germany, and headquarters in both the United States and Europe, Allied Machine is positioned to bring innovative solutions and technical expertise directly to the customers' hands.



The Beginning

Harold E. Stokey founded Allied Machine & Engineering to aid the war effort, manufacturing taper bearing lock nuts for the production of M1 tanks. Years later, after a sales meeting gone wrong, Stokey possessed a warehouse stocked with spade drill inserts. He set forth into the industry that would become Allied Machine's thriving identity: holemaking.



The T-A®

When Harold's son, William H. Stokey, became the president and CEO, he developed the Throw Away, or T-A, spade drill insert system. The T-A revolutionized the holemaking industry, launching Allied Machine ahead of the competition. Since then, numerous innovations and advancements have been created from the T-A's inspiration.



The Innovation

Since the development of the T-A, Allied Machine has expanded its product offering to support a vast range of customer applications, including large diameter and deep hole drilling, boring, reaming, burnishing, porting, and threading.

The People

Allied Machine understands that high quality products are only one facet of success. Our customer support is crucial to what we do, and that's why we make sure the best engineers and customer service associates are in place to assist our customers around the world.

The Future

With over 75 years of experience, Allied Machine has encountered the challenges of growth and success. By investing in cutting edge technology and the brightest and sharpest minds, our knowledge and capabilities continue to expand and grow every day.



Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President



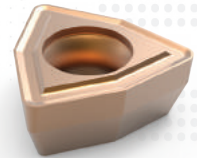
Replaceable Insert Drills

- Reduce costs by decreasing set-up time and utilizing a single holder for the lives of multiple inserts
- Provide flexibility to quickly switch between inserts with different geometries
- Products:
 - GEN3SYS® XT | GEN3SYS® XT Pro
 - Original T-A® | GEN2 T-A®
 - High Performance | Universal



Indexable Insert Drills

- Protect your investment and reduce your inventory with replaceable cartridges that allow the same holder to be used repeatedly
- Indexable inserts increase productivity and tool life while reducing costs
- Products:
 - 4TEX™ Drill
 - Revolution Drill®
 - Opening Drill®



Replaceable / Indexable Insert Drills

- Allow for higher spindle speeds and take advantage of the power curve on modern CNC machines
- Achieve maximum penetration rates in deep hole drilling applications
- Holders cover a range of sizes with the replaceable heads determining the cutting diameter
- Products:
 - APX Drill



Solid Carbide Drills

- Offer greater strength and stability when drilling tougher materials
- Available in diameters from 3mm - 20mm
- Can be made-to-order specifically for your application (Superion™ quoted specials)
 - ASC 320®
 - Superion™



Structural Steel Solutions

- Deliver outstanding performance and durability in structural steel applications
- Designed to produce optimal results in difficult-to-machine materials
- Available in multiple lengths and diameters
- T-A® style drills have different insert geometry options to improve performance depending on material
- Products:
 - Original T-A® | GEN2 T-A®
 - GEN3SYS® XT Pro



BTA (STS) Machining Solutions

- The internal ejection system flushes chips and debris from the hole with no interference to the cutting process
- Utilizes the advantages of the T-A® drill insert
- Designed to significantly increase penetration rates over brazed heads and traditional gun drills
- Products:
 - BT-A Drill



Hydraulic Port Contour Cutters

- Save significant time and money by performing four processes in one step
- Replaceable insert design reduces costs, inventory, and set-up times
- Available in 4 industry specifications:
 - Imperial: SAE J-1926
 - Metric: ISO 6149-1:2006
 - Military: SAE AS5202
 - John Deere: JDS-G173.1
- Products:
 - AccuPort 432®



Enhanced Special Drilling Capabilities

- Allied Machine Engineers are available to meet with you to evaluate your application and recommend the best solution for you
- Special drilling solutions can incorporate advanced features such as adjustable diameter locations, multiple steps, additional coolant designs, special lengths and diameters, and more
- Special drills can drastically reduce your cost-per-hole and increase your overall productivity by eliminating multiple processes and increasing tool life



WOHLHAUPTER®

High Precision Boring Systems

- Designs available for high volume applications that increase rigidity to improve performance
- Versatile boring heads that are flexible with changing applications while maintaining excellent performance
- Provides high precision with absolute repeatability to ensure every part is held to tolerance
- Offers an industry leading modular shank connection that maintains rigidity and reduces inventory on your boring system
- Available with both digital and analog settings
- Products:
 - Wohlhaupter® Boring Tools



3E TECH



CRITERION™

Modular Boring Systems

- The modular capabilities are ideal for use across multiple different projects
- Offers versatile boring heads suitable for all job shops and tooling rooms
- Provides an economical solution for low volume and/or short-term production applications
- Offers both rough and finish boring solutions
- Products:
 - Criterion™ Boring Tools

S.C.A.M.I.®

Expandable Reaming Solutions

- Expandable cutting diameters accommodate for wear, which extends tool life
- Replaceable cutting heads and rings reduce waste and improve production time versus solid high speed steel and carbide reamers
- Hold tight tolerances to ensure processes are performed to accurate specifications
- Reduce tooling costs because many items are available for recondition
- Products:
 - ALVAN® Reamers



S.C.A.M.I.®

Roller Burnishing Solutions

- Produce excellent surface finishes
- Provide accurate size control
- Increase surface hardness
- Solutions for both through hole and blind hole applications
- Products:
 - S.C.A.M.I.® Roller Burnishing Tools





Solid Carbide Thread Mills

- Available with coolant through options
- Cover a wide range of thread forms
- Provide optimal solutions for both high production projects and short-run applications
- Products
 - AccuThread™ 856
 - AccuThread™ T3
 - ThreadMills USA



Replaceable Insert Thread Mills

- 3 insert lengths are available that cover a wide range of thread forms
- Holders can utilize inserts with different pitches and thread forms
- Repeatability is achieved by both the bolt-in style and the pin style locking systems
- Increase tool life by 25 - 50% with Allied Machine's AM210® coating
- Products
 - AccuThread™ 856: Bolt-in Style
 - AccuThread™ 856: Pin Style



SPECIAL CAPABILITIES


When it comes to designing and developing special solutions for customers, Allied Machine is the top choice. If your application requires special tooling, give us a call. Our engineered specials are developed by the brightest engineers in the industry. Most of our standard tooling can be altered as specials, or we can create entirely new concepts for particularly unique applications.

One special tooling solution is Insta-Quote™, the online system that allows you to design your own special tooling 24/7. Receive a quote and drawings within minutes just by following the steps.

And with the addition of Superior™ technology and capabilities, we can customize made-to-order solid carbide tools to achieve optimal results for your applications.

Whatever your application, Allied Machine has the answer.



Insta-Quote™ 



 SUPERION™



High Performance and Universal

Replaceable Spade Drill Insert Drilling System

► Diameter Range: 0.9688" - 8.5000"



Since the Beginning

The Universal spade drill is the original design that launched Allied Machine into the holemaking industry. After the T-A® was introduced, customers who already owned the Universal style holders wanted the same benefits offered by the T-A without having to invest in an entirely new system.

The High Performance (HP) insert was created to provide similar performance as the T-A. The HP insert (along with an adapter for larger sizes) fits into existing Universal style holders.

When the customers speak, we listen.

Applicable Industries



Aerospace



Agriculture



Automotive



Energy



Firearms



General
Machining



Oil & Gas

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 hazard 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.

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

WARNING

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 personal injury.

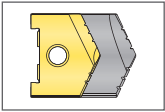
NOTE and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

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

High Performance / Universal Drilling System Contents

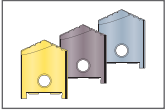
Reference Icons

The following icons will appear throughout the catalog to help you navigate between products.



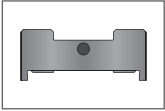
High Performance / Universal Inserts

Refers to the range of inserts that connect with the corresponding holders



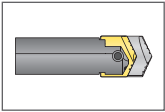
Universal Insert Coating Options

Details and overview of the different coatings available for Universal spade drill inserts



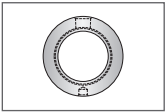
Insert Adapter Information

Detailed information regarding the corresponding adapter item



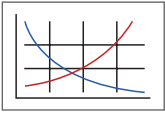
High Performance / Universal Holders

Refers to the range of holders that connect with the corresponding inserts



Rotary Coolant Adapter (RCA) Information

Detailed instructions and information regarding the corresponding RCA part



Recommended Cutting Data

Speed and feed recommendations for optimum and safe drilling

Series	Diameter Range - Imperial (in)
A	0.9688 - 1.2500
B	1.2500 - 1.7500
C	1.5000 - 2.3750
D	2.0000 - 2.8750
E	2.5000 - 3.3750
F	3.0000 - 3.8750
G	3.5000 - 4.5000
H ¹ - H ²	4.0000 - 5.0000
H ³ - H ⁹	5.1250 - 8.5000

Introduction Information

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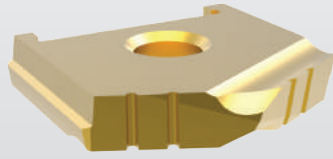
Recommended Cutting Data

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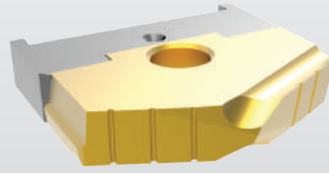
System Overview | Inserts

A
DRILLING
B
BORING
C
REAMING
D
URNISHING
E
HREADING
X
PECIALS

High Performance Inserts



A - C Series

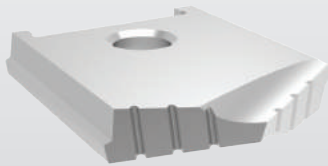


D - H Series
(adapter required)

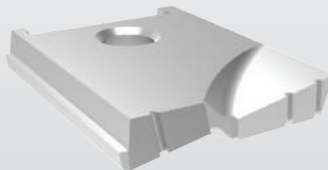
High Performance Inserts

- Increase production 100 - 500% compared to uncoated Universal spade drill inserts
- Fit into Universal style holders
- Available in TiN and TiAlN coatings
- Single-piece design (A - C series) eliminates the need for adapters, which maximizes tool performance in these smaller sizes

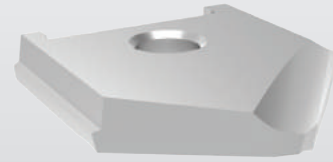
Universal Inserts



130° CPM-M4
130° CPM-T15



Flat Bottom

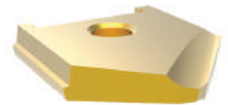
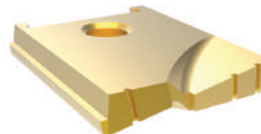
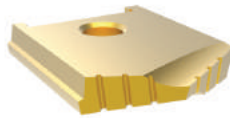


90° Spot and Chamfer

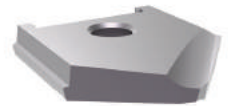
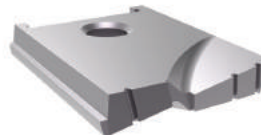
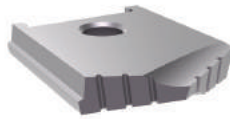
Universal Inserts

- Standard inserts stocked uncoated
- Also available in TiN, TiAlN, and TiCN coatings, which improve tool life when compared to uncoated inserts

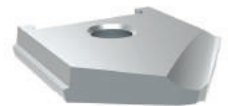
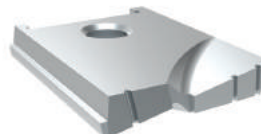
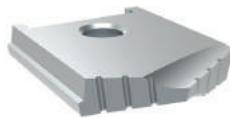
TiN Coating	
Ordering Code: T	Example: 10224-0116 T



TiAlN Coating	
Ordering Code: A	Example: 10224-0116 A



TiCN Coating	
Ordering Code: N	Example: 10224-0116 N





Straight Shank Holders

- Stub (#125)
- Short (#150)
- Short (#100)
- Standard (#200)
- Long (#250)



Taper Shank Holders

- Short (#300)
- Short (#300 TSC)
- Short (#400 SR)
- Standard (#500 SR)
- Long (#600 SR)
- XL (#700 SR)



50 NMTB Shank Holders

- Short (#300)
- Short (#400)
- Standard (#500 SR)



Adapter*

for High Performance D - H series inserts only

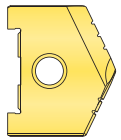


*For detailed information and set-up for adapters and Blade-Loc screw assembly, see page A40: 38

Product Nomenclature

High Performance Spade Drill Inserts

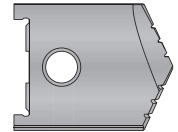
1	02	8	T	-	0406
1	2	3	4		5



1. Spade Drill Insert	2. Material	3. Series	4. Coating	5. Diameter (by 1/32")
1 = Spade drill insert	02 = High speed steel	1 = A series 2 = B series 3 = C series 4 = D series 5 = E series 6 = F series 7 = G series 8 = H series	T = TiN A = TiAlN N = TiCN	0406 = Inch 4.3593 = Decimal

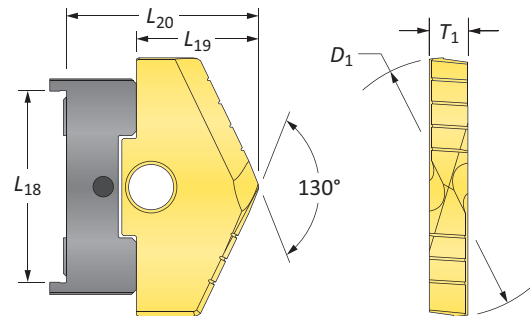
Universal Spade Drill Inserts

1	02	8	4	-	0406	T
1	2	3	4		5	6



1. Spade Drill Insert	2. Insert Style	3. Series	4. Material
1 = Spade drill insert	02 = 130° Spade 04 = Flat Bottom 12 = 90° Spot and Chamfer	1 = A series 2 = B series 3 = C series 4 = D series 5 = E series 6 = F series 7 = G series 8 = H1 - H2 series 9 = H3 - H9 series J = J series	2 = M-2 (J series only) 4 = High speed steel (SPM-M4 HSS) 5 = High speed steel (CPM-T15 HSS)*

5. Diameter (by 1/32")	6. Coating
0406 = Inch 4.3593 = Decimal	Blank = Uncoated T = TiN A = TiAlN N = TiCN



Reference Key

Symbol	Attribute
D_1	Insert diameter
L_{18}	Holder locating area
L_{19}	Reference length
L_{20}	High Performance length (with adapter)
T_1	Thickness

Product Nomenclature

High Performance / Universal Spade Drill Insert Holders

2	22	8	1	-	0006
1	2	3	4		5

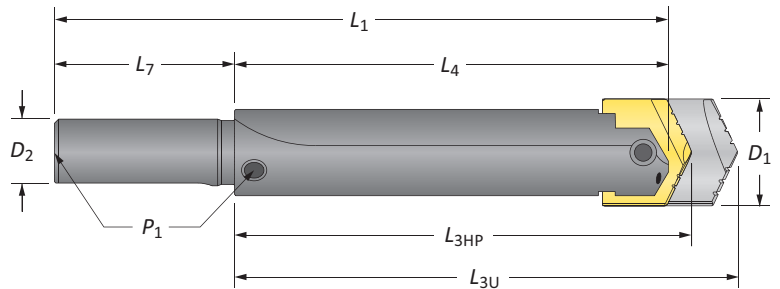


1. Holder	2. Classification	3. Series																					
2 = Drill holder	<table border="0"> <tr> <td>Straight Shank</td> <td>Taper Shank</td> <td>50 NMTB Shank</td> </tr> <tr> <td>02 = Stub #125 (NC)</td> <td>14 = Short #300 (NC)</td> <td>24 = Short #300 (NC)</td> </tr> <tr> <td>04 = Short #150 (NC)</td> <td>15 = Short #300 (TSC)</td> <td>26 = Short #400 (C)</td> </tr> <tr> <td>06 = Short #100 (C)</td> <td>16 = Short #400 SR (RCA)</td> <td>28 = Standard #500 (C)</td> </tr> <tr> <td>08 = Standard #200 (C)</td> <td>18 = Standard #500 SR (RCA)</td> <td></td> </tr> <tr> <td>10 = Long #250 (C)</td> <td>20 = Long #600 SR (RCA)</td> <td></td> </tr> <tr> <td></td> <td>22 = XL #700 SR SR (RCA)</td> <td></td> </tr> </table> <p><i>C = Coolant NC = No Coolant TSC = Through Shank Coolant RCA = Rotary Coolant Adapter</i></p>	Straight Shank	Taper Shank	50 NMTB Shank	02 = Stub #125 (NC)	14 = Short #300 (NC)	24 = Short #300 (NC)	04 = Short #150 (NC)	15 = Short #300 (TSC)	26 = Short #400 (C)	06 = Short #100 (C)	16 = Short #400 SR (RCA)	28 = Standard #500 (C)	08 = Standard #200 (C)	18 = Standard #500 SR (RCA)		10 = Long #250 (C)	20 = Long #600 SR (RCA)			22 = XL #700 SR SR (RCA)		<p>1 = A series 2 = B series 3 = C series 4 = D series 5 = E series 6 = F series 7 = G series 8 = H series</p>
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10 = Long #250 (C)	20 = Long #600 SR (RCA)																						
	22 = XL #700 SR SR (RCA)																						

4. Holder Style	5. Shank Size and Configuration																					
1 = Universal	<table border="0"> <tr> <td>Straight Shank</td> <td>Taper Shank</td> <td>NMTB Shank</td> </tr> <tr> <td>0750 = 0.750" Straight Shank</td> <td>0002 = #2 Morse Taper Shank</td> <td>0050 = 50 NMTB Shank</td> </tr> <tr> <td>1000 = 1.000" Straight Shank</td> <td>0003 = #3 Morse Taper Shank</td> <td></td> </tr> <tr> <td>1250 = 1.250" Straight Shank</td> <td>0004 = #4 Morse Taper Shank</td> <td></td> </tr> <tr> <td>1500 = 1.500" Straight Shank</td> <td>0005 = #5 Morse Taper Shank</td> <td></td> </tr> <tr> <td>2000 = 2.000" Straight Shank</td> <td>0006 = #6 Morse Taper Shank</td> <td></td> </tr> <tr> <td>3000 = 3.000" Straight Shank</td> <td></td> <td></td> </tr> </table>	Straight Shank	Taper Shank	NMTB Shank	0750 = 0.750" Straight Shank	0002 = #2 Morse Taper Shank	0050 = 50 NMTB Shank	1000 = 1.000" Straight Shank	0003 = #3 Morse Taper Shank		1250 = 1.250" Straight Shank	0004 = #4 Morse Taper Shank		1500 = 1.500" Straight Shank	0005 = #5 Morse Taper Shank		2000 = 2.000" Straight Shank	0006 = #6 Morse Taper Shank		3000 = 3.000" Straight Shank		
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Reference Key

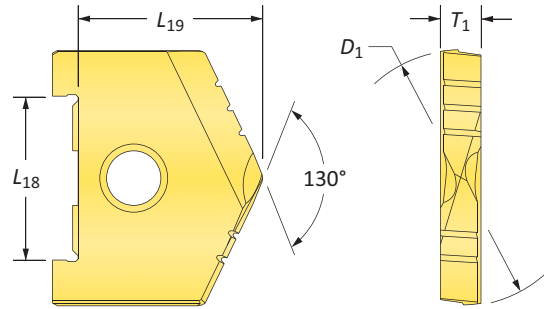
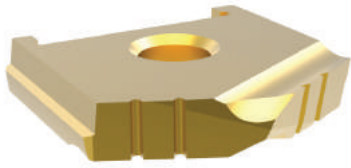
Symbol	Attribute
D_1	Insert diameter
D_2	Shank diameter
L_1	Overall length
L_{3HP}	Reference length (High Performance)
L_{3U}	Reference length (Universal)
L_4	Flute length
L_7	Shank length
P_1	Pipe tap








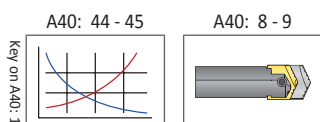
High Performance Spade Drill Inserts

A Series | Diameter Range: 0.9688" - 1.3750"



Series	D_1 inch		Inserts					
	Fraction	Decimal	L_{18}	L_{19}	T_1	TiN Part No.	TiAlN Part No.	TiCN Part No.
A	31/32	0.9688	3/4	7/8	3/16	1021T-0031	1021A-0031	1021N-0031
	1	1.0000	3/4	7/8	3/16	1021T-0100	1021A-0100	1021N-0100
	1-1/32	1.0313	3/4	7/8	3/16	1021T-0101	1021A-0101	1021N-0101
	1-1/16	1.0625	3/4	7/8	3/16	1021T-0102	1021A-0102	1021N-0102
	1-3/32	1.0938	3/4	7/8	3/16	1021T-0103	1021A-0103	1021N-0103
	1-1/8	1.1250	3/4	7/8	3/16	1021T-0104	1021A-0104	1021N-0104
	1-5/32	1.1563	3/4	7/8	3/16	1021T-0105	1021A-0105	1021N-0105
	1-3/16	1.1875	3/4	7/8	3/16	1021T-0106	1021A-0106	1021N-0106
	1-7/32	1.2188	3/4	7/8	3/16	1021T-0107	1021A-0107	1021N-0107
A Oversize	1-1/4	1.2500	3/4	7/8	3/16	1021T-0108	1021A-0108	1021N-0108
	1-9/32	1.2813	3/4	7/8	3/16	1021T-0109	1021A-0109	1021N-0109
	1-5/16	1.3125	3/4	7/8	3/16	1021T-0110	1021A-0110	1021N-0110
	1-11/32	1.3438	3/4	7/8	3/16	1021T-0111	1021A-0111	1021N-0111
	1-3/8	1.3750	3/4	7/8	3/16	1021T-0112	1021A-0112	1021N-0112

Inserts sold in multiples of 1



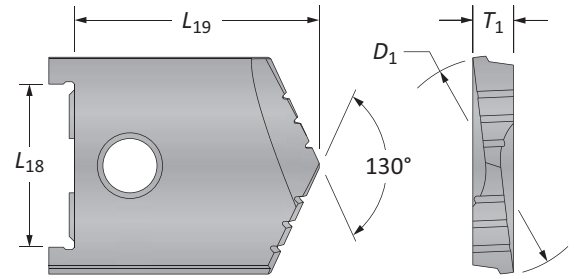
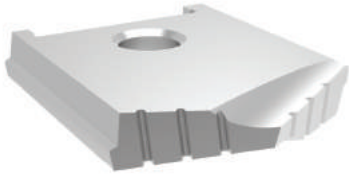
Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910



Universal Spade Drill Inserts

A Series | Diameter Range: 0.9688" - 1.3750"

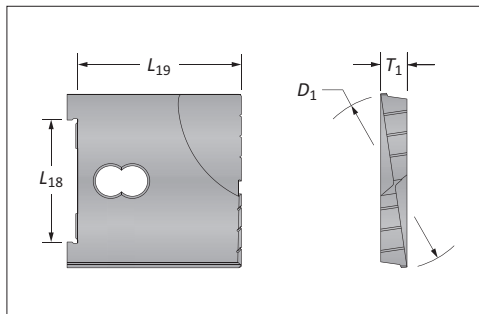


Series	D ₁ inch		Inserts						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
A	31/32	0.9688	3/4	1-5/32	3/16	10214-0031	-	-	POR
	1	1.0000	3/4	1-5/32	3/16	10214-0100	-	10414-0100	POR
	1-1/32	1.0313	3/4	1-5/32	3/16	10214-0101	-	-	POR
	1-1/16	1.0625	3/4	1-5/32	3/16	10214-0102	10215-0102	10414-0102	POR
	1-3/32	1.0938	3/4	1-5/32	3/16	10214-0103	-	-	POR
	1-1/8	1.1250	3/4	1-5/32	3/16	10214-0104	10215-0104	10414-0104	POR
	1-5/32	1.1563	3/4	1-5/32	3/16	10214-0105	-	-	POR
	1-3/16	1.1875	3/4	1-5/32	3/16	10214-0106	10215-0106	10414-0106	POR
	1-7/32	1.2188	3/4	1-5/32	3/16	10214-0107	-	-	POR
1-1/4	1.2500	3/4	1-5/32	3/16	10214-0108	-	10414-0108	11214-0108	
A Oversize	1-9/32	1.2813	3/4	1-5/32	3/16	10214-0109	-	-	-
	1-5/16	1.3125	3/4	1-5/32	3/16	10214-0110	-	-	-
	1-11/32	1.3438	3/4	1-5/32	3/16	10214-0111	-	-	-
	1-3/8	1.3750	3/4	1-5/32	3/16	10214-0112	-	-	-

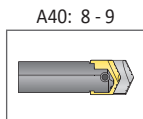
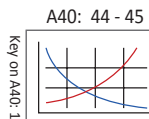
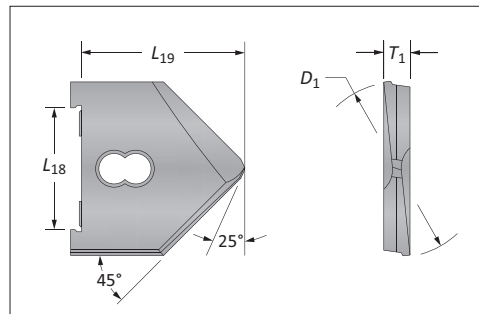
*Discontinued

NOTE: POR = Priced on request

Flat Bottom



90° Spot & Chamfer

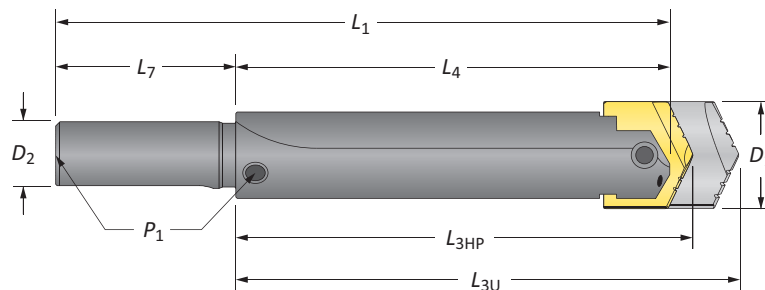


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

High Performance / Universal Spade Drill Insert Holders

A Series

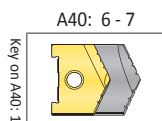


Straight Shank

Length	D_1	Holder				Shank				Part No.
		L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1	Style	
Short	31/32 - 1-3/8	3-1/4	3-17/32	3	6-1/2	3/4	3-1/2	-	#150	20411-0750
Short	31/32 - 1-3/8	3-1/4	3-17/32	3	6-1/2	1	3-1/2	-	#150	20411-1000
Short	31/32 - 1-3/8	3-1/4	3-17/32	3	6-1/2	1	3-1/2	1/8	#100	20611-1000
i Short	31/32 - 1-3/8	3-1/4	3-17/32	3	6-1/2	1-1/2	3-1/2	1/8	#100	20611-1500
Standard	31/32 - 1-3/8	8	8-9/32	7-3/4	11-1/4	3/4	3-1/2	1/8	#200	20811-0750
Standard	31/32 - 1-3/8	8	8-9/32	7-3/4	11-1/4	1	3-1/2	1/8	#200	20811-1000
Standard	31/32 - 1-3/8	8	8-9/32	7-3/4	11-1/4	1-1/2	3-1/2	1/8	#200	20811-1500
Long	31/32 - 1-3/8	15-1/4	15-17/32	15	18-1/2	1	3-1/2	1/8	#250	21011-1000

Connection Accessories

<p>Clamping Screw #10-24 x 5/8"</p>	<p>Blade-Loc Screw -</p>
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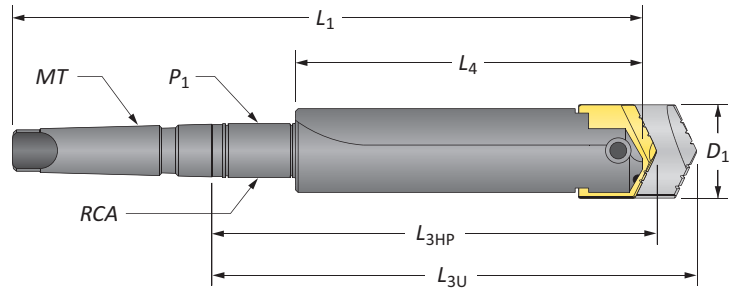


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

A Series



Taper Shank

Length	D ₁	Holder				Shank				Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	MT	P ₁	RCA	Style	
Short	31/32 - 1-3/8	3-7/16	3-23/32	3	6-7/8	#3	-	-	#300	21411-0003
Short	31/32 - 1-3/8	3-1/2	3-13/16	3	7-7/8	#4	-	-	#300	21411-0004
Short	31/32 - 1-3/8	3-7/16	3-23/32	3	6-7/8	#3	-	-	#300 TSC	21511-0003*
i Short	31/32 - 1-3/8	5-3/16	5-15/32	3	9-9/16	#4	1/4	2T-4SR	#400 SR	21611-0004
Standard	31/32 - 1-3/8	9-15/16	10-7/32	7-3/4	14-5/16	#4	1/4	2T-4SR	#500 SR	21811-0004
Long	31/32 - 1-3/8	17-3/16	17-15/32	15	21-9/16	#4	1/4	2T-4SR	#600 SR	22011-0004
XL	31/32 - 1-3/8	23-3/16	23-15/32	21	27-9/16	#4	1/4	2T-4SR	#700 SR	22211-0004

*Through shank coolant, coolant inlet diameter = 1/4"

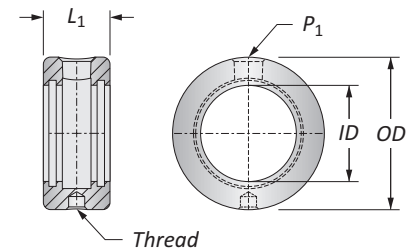
Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
i 1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	2T-4SR	2T1-4SR	2T1-4OR-10

*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

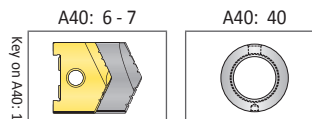
**RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

⚠ Refer to page A40: 40 for proper RCA assembly and safety information



Connection Accessories

Clamping Screw	Blade-Loc Screw
#10-24 x 5/8"	-



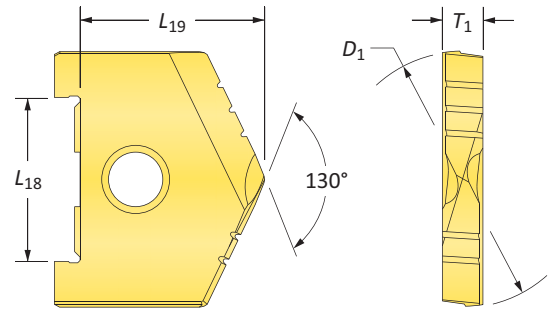
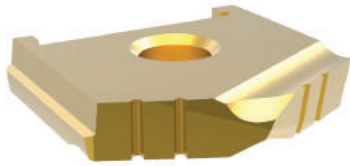
i = Imperial (in)
m = Metric (mm)
 O-rings sold in packs of 10




⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.



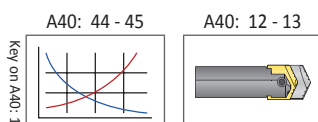
High Performance Spade Drill Inserts

B Series | Diameter Range: 1.2500" - 1.7500"



Series	D ₁ inch		Insert					
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	TiN Part No.	TiAlN Part No.	TiCN Part No.
B	1-1/4	1.2500	1-1/16	1-3/32	9/32	1022T-0108	1022A-0108	1022N-0108
	1-9/32	1.2813	1-1/16	1-3/32	9/32	1022T-0109	1022A-0109	1022N-0109
	1-5/16	1.3125	1-1/16	1-3/32	9/32	1022T-0110	1022A-0110	1022N-0110
	1-11/32	1.3438	1-1/16	1-3/32	9/32	1022T-0111	1022A-0111	1022N-0111
	1-3/8	1.3750	1-1/16	1-3/32	9/32	1022T-0112	1022A-0112	1022N-0112
	1-13/32	1.4063	1-1/16	1-3/32	9/32	1022T-0113	1022A-0113	1022N-0113
	1-7/16	1.4375	1-1/16	1-3/32	9/32	1022T-0114	1022A-0114	1022N-0114
	1-15/32	1.4688	1-1/16	1-3/32	9/32	1022T-0115	1022A-0115	1022N-0115
B Oversize	1-1/2	1.5000	1-1/16	1-3/32	9/32	1022T-0116	1022A-0116	1022N-0116
	1-17/32	1.5313	1-1/16	1-3/32	9/32	1022T-0117	1022A-0117	1022N-0117
	1-9/16	1.5625	1-1/16	1-3/32	9/32	1022T-0118	1022A-0118	1022N-0118
	1-19/32	1.5938	1-1/16	1-3/32	9/32	1022T-0119	1022A-0119	1022N-0119
	1-5/8	1.6250	1-1/16	1-3/32	9/32	1022T-0120	1022A-0120	1022N-0120
	1-21/32	1.6563	1-1/16	1-3/32	9/32	1022T-0121	1022A-0121	1022N-0121
	1-11/16	1.6875	1-1/16	1-3/32	9/32	1022T-0122	1022A-0122	1022N-0122
	1-23/32	1.7188	1-1/16	1-3/32	9/32	1022T-0123	1022A-0123	1022N-0123
	1-3/4	1.7500	1-1/16	1-3/32	9/32	1022T-0124	1022A-0124	1022N-0124

Inserts sold in multiples of 1



Sizes not shown are available upon request.

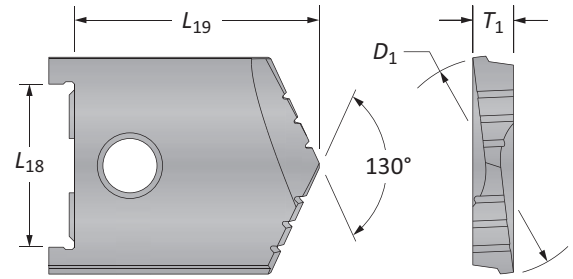
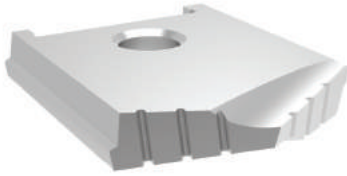
When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910



Universal Spade Drill Inserts

B Series | Diameter Range: 1.2500" - 1.7500"

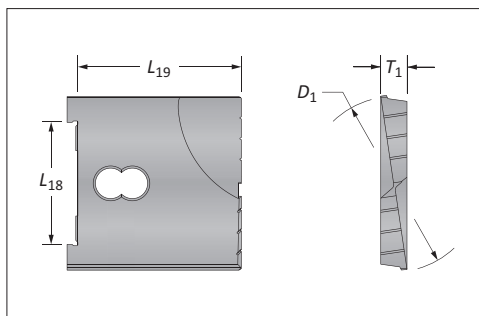


Series	D ₁ inch		Insert						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
B	1-1/4	1.2500	1-1/16	1-13/32	9/32	10224-0108	-	10424-0108	POR
	1-9/32	1.2813	1-1/16	1-13/32	9/32	10224-0109	-	-	POR
	1-5/16	1.3125	1-1/16	1-13/32	9/32	10224-0110	10225-0110	10424-0110	POR
	1-11/32	1.3438	1-1/16	1-13/32	9/32	10224-0111	-	-	POR
	1-3/8	1.3750	1-1/16	1-13/32	9/32	10224-0112	-	10424-0112	POR
	1-13/32	1.4063	1-1/16	1-13/32	9/32	10224-0113	-	-	POR
	1-7/16	1.4375	1-1/16	1-13/32	9/32	10224-0114	-	10424-0114	POR
	1-15/32	1.4688	1-1/16	1-13/32	9/32	10224-0115	-	-	POR
	1-1/2	1.5000	1-1/16	1-13/32	9/32	10224-0116	-	10424-0116	11224-0116
B Oversize	1-17/32	1.5313	1-1/16	1-13/32	9/32	10224-0117	-	-	-
	1-9/16	1.5625	1-1/16	1-13/32	9/32	10224-0118	-	-	-
	1-19/32	1.5938	1-1/16	1-13/32	9/32	10224-0119	-	-	-
	1-5/8	1.6250	1-1/16	1-13/32	9/32	10224-0120	-	-	-
	1-21/32	1.6563	1-1/16	1-13/32	9/32	10224-0121	-	-	-
	1-11/16	1.6875	1-1/16	1-13/32	9/32	10224-0122	-	-	-
	1-23/32	1.7188	1-1/16	1-13/32	9/32	10224-0123	-	-	-
	1-3/4	1.7500	1-1/16	1-13/32	9/32	10224-0124	-	-	-

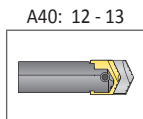
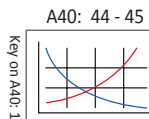
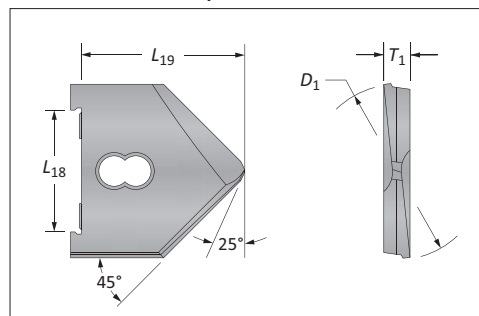
*Discontinued

NOTE: POR = Priced on request

Flat Bottom



90° Spot & Chamfer

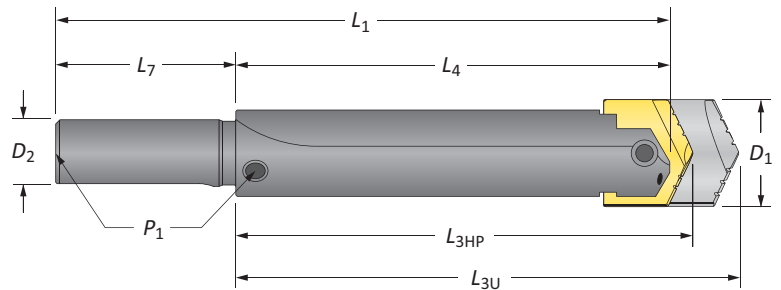


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

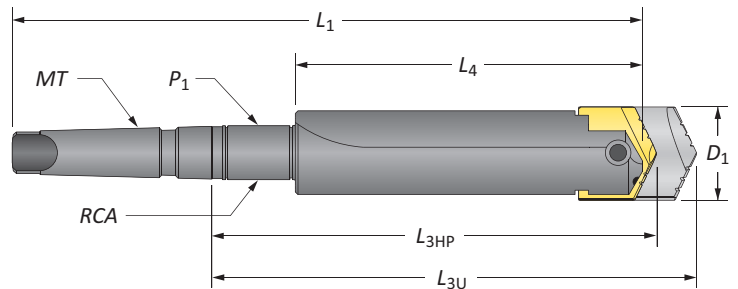
High Performance / Universal Spade Drill Insert Holders

B Series



Straight Shank

Length	D ₁ Range	Holder				Shank				Style	Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	D ₂	L ₇	P ₁			
Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1	3-1/2	-	#150	20421-1000	
Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1	3-1/2	1/4	#100	20621-1000	
Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1-1/4	3-1/2	1/4	#100	20621-1250	
i Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1-1/2	3-1/2	1/4	#100	20621-1500	
Standard	1-1/4 - 1-3/4	8-13/32	8-23/32	8-1/8	11-5/8	1	3-1/2	1/4	#200	20821-1000	
Standard	1-1/4 - 1-3/4	8-13/32	8-23/32	8-1/8	11-5/8	1-1/4	3-1/2	1/4	#200	20821-1250	
Standard	1-1/4 - 1-3/4	8-13/32	8-23/32	8-1/8	11-5/8	1-1/2	3-1/2	1/4	#200	20821-1500	
Long	1-1/4 - 1-3/4	15-9/32	15-19/32	15	18-1/2	1-1/4	3-1/2	1/4	#250	21021-1250	



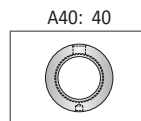
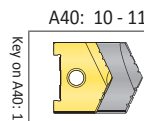
Taper Shank

Length	D ₁ Range	Holder				Shank				Style	Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	MT	P ₁	RCA			
Short	1-1/4 - 1-3/4	3-31/32	4-9/32	3-1/2	7-3/8	#3	-	-	#300	21421-0003	
Short	1-1/4 - 1-3/4	4-1/32	4-11/32	3-1/2	8-3/8	#4	-	-	#300	21421-0004	
Short	1-1/4 - 1-3/4	4-1/32	4-11/32	3-1/2	8-3/8	#4	-	-	#300 TSC	21521-0004*	
i Short	1-1/4 - 1-3/4	5-23/32	6-1/32	3-1/2	10-1/16	#4	1/4	2T-4SR	#400 SR	21621-0004	
Standard	1-1/4 - 1-3/4	10-11/32	10-21/32	8-1/8	14-11/16	#4	1/4	2T-4SR	#500 SR	21821-0004	
Long	1-1/4 - 1-3/4	17-7/32	17-17/32	15	21-9/16	#4	1/4	2T-4SR	#600 SR	22021-0004	
XL	1-1/4 - 1-3/4	24-7/32	24-17/32	22	28-9/16	#4	1/4	2T-4SR	#700 SR	22221-0004	

*Through shank coolant, coolant inlet diameter = 5/16"

Connection Accessories

<p>Clamping Screw 1/4"-20 x 7/8</p>	<p>Blade-Loc Screw -</p>
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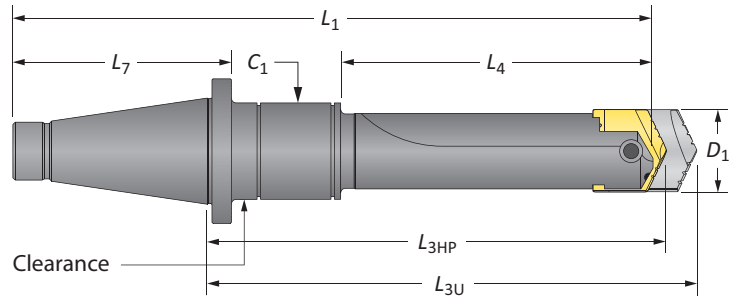


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

B Series



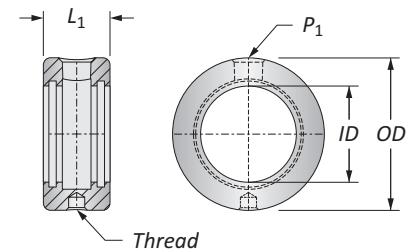
50 NMTB Shank*

Length	D ₁ Range	Holder				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	MT	L ₇	C ₁	RCA	Style	
Short	1-1/4 - 1-3/4	5-13/32	5-23/32	4	10-1/8	50	5-5/8	–	–	#300	22421-0050
Short	1-1/4 - 1-3/4	7-3/32	7-13/32	4	11-13/16	50	5-5/8	3/8	2T-5SR	#400	22621-0050
Short	1-1/4 - 1-3/4	11-19/32	11-29/32	8-1/2	16-5/16	50	5-5/8	3/8	2T-5SR	#500	22821-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.

Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	2T-4SR	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	2T-5SR	2T1-5SR	2T1-5OR-10



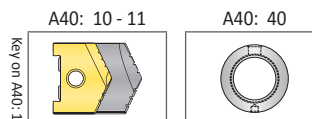
*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

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

▲ Refer to page A40: 40 for proper RCA assembly and safety information

Connection Accessories

Clamping Screw	Blade-Loc Screw
1/4"-20 x 7/8	–

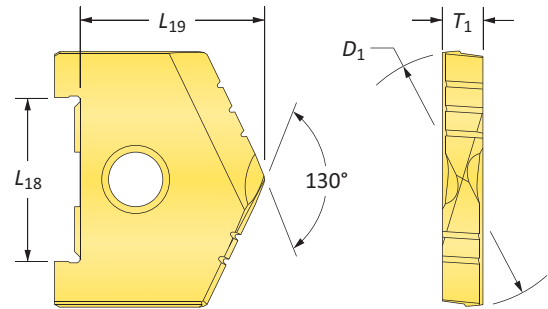
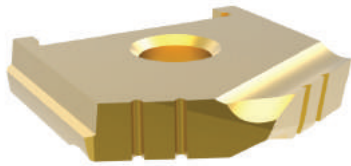


ⓘ = Imperial (in)
 ⓘ = Metric (mm)
 O-rings sold in packs of 10

⚠ 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.

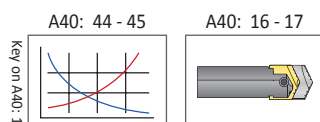
High Performance Spade Drill Inserts

C Series | Diameter Range: 1.5000" - 2.3750"



Series	D ₁ inch		Insert			TiN Part No.	TiAlN Part No.	TiCN Part No.
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁			
C	1-1/2	1.5000	1-1/4	1-19/64	5/16	1023T-0116	1023A-0116	1023N-0116
	1-17/32	1.5313	1-1/4	1-19/64	5/16	1023T-0117	1023A-0117	1023N-0117
	1-9/16	1.5625	1-1/4	1-19/64	5/16	1023T-0118	1023A-0118	1023N-0118
	1-19/32	1.5938	1-1/4	1-19/64	5/16	1023T-0119	1023A-0119	1023N-0119
	1-5/8	1.6250	1-1/4	1-19/64	5/16	1023T-0120	1023A-0120	1023N-0120
	1-21/32	1.6563	1-1/4	1-19/64	5/16	1023T-0121	1023A-0121	1023N-0121
	1-11/16	1.6875	1-1/4	1-19/64	5/16	1023T-0122	1023A-0122	1023N-0122
	1-23/32	1.7188	1-1/4	1-19/64	5/16	1023T-0123	1023A-0123	1023N-0123
	1-3/4	1.7500	1-1/4	1-19/64	5/16	1023T-0124	1023A-0124	1023N-0124
	1-25/32	1.7813	1-1/4	1-19/64	5/16	1023T-0125	1023A-0125	1023N-0125
	1-13/16	1.8125	1-1/4	1-19/64	5/16	1023T-0126	1023A-0126	1023N-0126
	1-27/32	1.8438	1-1/4	1-19/64	5/16	1023T-0127	1023A-0127	1023N-0127
	1-7/8	1.8750	1-1/4	1-19/64	5/16	1023T-0128	1023A-0128	1023N-0128
	1-29/32	1.9063	1-1/4	1-19/64	5/16	1023T-0129	1023A-0129	1023N-0129
	1-15/16	1.9375	1-1/4	1-19/64	5/16	1023T-0130	1023A-0130	1023N-0130
1-31/32	1.9688	1-1/4	1-19/64	5/16	1023T-0131	1023A-0131	1023N-0131	
2	2.0000	1-1/4	1-19/64	5/16	1023T-0200	1023A-0200	1023N-0200	
C Oversize	2-1/32	2.0313	1-1/4	1-19/64	5/16	1023T-0201	1023A-0201	1023N-0201
	2-1/16	2.0625	1-1/4	1-19/64	5/16	1023T-0202	1023A-0202	1023N-0202
	2-3/32	2.0938	1-1/4	1-19/64	5/16	1023T-0203	1023A-0203	1023N-0203
	2-1/8	2.1250	1-1/4	1-19/64	5/16	1023T-0204	1023A-0204	1023N-0204
	2-5/32	2.1563	1-1/4	1-19/64	5/16	1023T-0205	1023A-0205	1023N-0205
	2-3/16	2.1875	1-1/4	1-19/64	5/16	1023T-0206	1023A-0206	1023N-0206
	2-7/32	2.2188	1-1/4	1-19/64	5/16	1023T-0207	1023A-0207	1023N-0207
	2-1/4	2.2500	1-1/4	1-19/64	5/16	1023T-0208	1023A-0208	1023N-0208
	2-9/32	2.2813	1-1/4	1-19/64	5/16	1023T-0209	1023A-0209	1023N-0209
	2-5/16	2.3125	1-1/4	1-19/64	5/16	1023T-0210	1023A-0210	1023N-0210
	2-11/32	2.3438	1-1/4	1-19/64	5/16	1023T-0211	1023A-0211	1023N-0211
	2-3/8	2.3750	1-1/4	1-19/64	5/16	1023T-0212	1023A-0212	1023N-0212

Inserts sold in multiples of 1



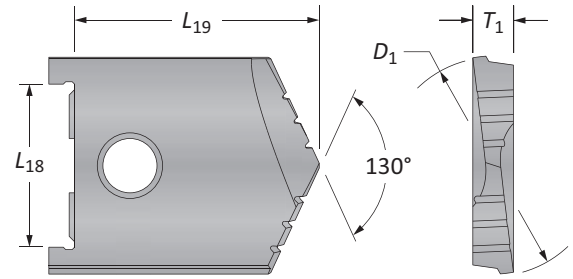
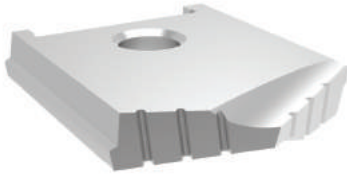
Sizes not shown are available upon request.





When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910

Universal Spade Drill Inserts

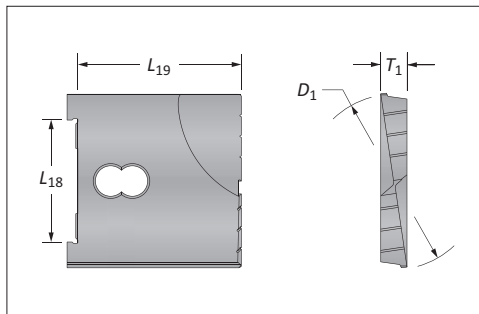
C Series | Diameter Range: 1.5000" - 2.3750"



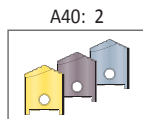
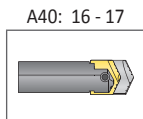
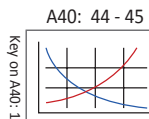
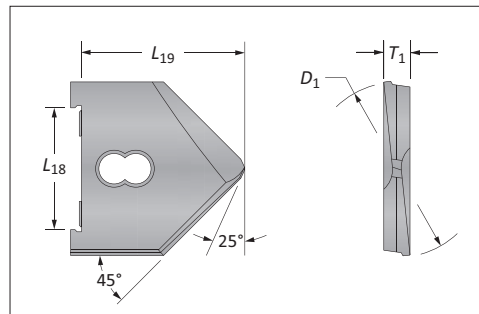
Series	D ₁ inch		Insert						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
C	1-1/2	1.5000	1-1/4	2	5/16	10234-0116	10235-0116	10434-0116	POR
	1-17/32	1.5313	1-1/4	2	5/16	10234-0117	-	-	POR
	1-9/16	1.5625	1-1/4	2	5/16	10234-0118	10235-0118	10434-0118	POR
	1-19/32	1.5938	1-1/4	2	5/16	10234-0119	-	-	POR
	1-5/8	1.6250	1-1/4	2	5/16	10234-0120	10235-0120	10434-0120	POR
	1-21/32	1.6563	1-1/4	2	5/16	10234-0121	-	-	POR
	1-11/16	1.6875	1-1/4	2	5/16	10234-0122	10235-0122	10434-0122	POR
	1-23/32	1.7188	1-1/4	2	5/16	10234-0123	-	-	POR
	1-3/4	1.7500	1-1/4	2	5/16	10234-0124	10235-0124	10434-0124	POR
	1-25/32	1.7813	1-1/4	2	5/16	10234-0125	-	-	POR
	1-13/16	1.8125	1-1/4	2	5/16	10234-0126	10235-0126	10434-0126	POR
	1-27/32	1.8438	1-1/4	2	5/16	10234-0127	-	-	POR
	1-7/8	1.8750	1-1/4	2	5/16	10234-0128	10235-0128	10434-0128	POR
	1-29/32	1.9063	1-1/4	2	5/16	10234-0129	-	-	POR
	1-15/16	1.9375	1-1/4	2	5/16	10234-0130	10235-0130	10434-0130	POR
	1-31/32	1.9688	1-1/4	2	5/16	10234-0131	-	-	POR
	2	2.0000	1-1/4	2	5/16	10234-0200	10235-0200	10434-0200	11234-0200
	C Oversize	2-1/32	2.0313	1-1/4	2	5/16	10234-0201	-	-
2-1/16		2.0625	1-1/4	2	5/16	10234-0202	-	-	-
2-3/32		2.0938	1-1/4	2	5/16	10234-0203	-	-	-
2-1/8		2.1250	1-1/4	2	5/16	10234-0204	-	-	-
2-5/32		2.1563	1-1/4	2	5/16	10234-0205	-	-	-
2-3/16		2.1875	1-1/4	2	5/16	10234-0206	-	-	-
2-7/32		2.2188	1-1/4	2	5/16	10234-0207	-	-	-
2-1/4		2.2500	1-1/4	2	5/16	10234-0208	-	-	-
2-9/32		2.2813	1-1/4	2	5/16	10234-0209	-	-	-
2-5/16		2.3125	1-1/4	2	5/16	10234-0210	-	-	-
2-11/32		2.3438	1-1/4	2	5/16	10234-0211	-	-	-
2-3/8		2.3750	1-1/4	2	5/16	10234-0212	-	-	-

*Discontinued | NOTE: POR = Priced on request

Flat Bottom



90° Spot & Chamfer



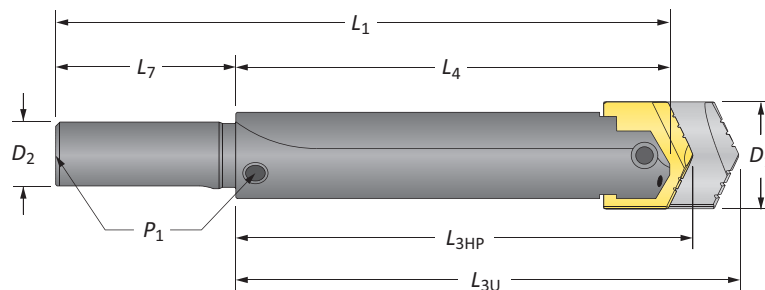
Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

A
DRILLING
B
BORING
C
REAMING
D
BURNISHING
E
THREADING
X
SPECIALS

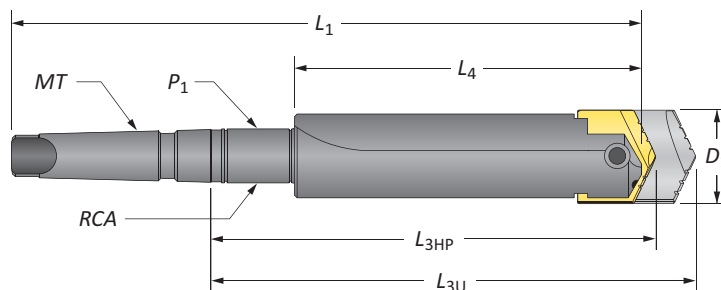
High Performance / Universal Spade Drill Insert Holders

C Series



Straight Shank

Length	D_1	Holder				Shank				Style	Part No.
		L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1			
Stub	1-1/2 - 2-3/8	2-19/64	3	2	6	1-1/2	4	–	#125	20231-1500	
Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/4	4	–	#150	20431-1250	
Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/4	4	1/4	#100	20631-1250	
i Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/2	4	1/4	#100	20631-1500	
Standard	1-1/2 - 2-3/8	8-51/64	9-1/2	8-1/2	12-1/2	1-1/4	4	1/4	#200	20831-1250	
Standard	1-1/2 - 2-3/8	8-51/64	9-1/2	8-1/2	12-1/2	1-1/2	4	1/4	#200	20831-1500	
Long	1-1/2 - 2-3/8	18-19/64	19	18	22	1-1/2	4	1/4	#250	21031-1500	



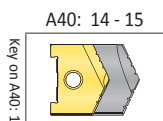
Taper Shank

Length	D_1	Holder				Shank				Style	Part No.
		L_{3HP}	L_{3U}	L_4	L_1	MT	P_1	RCA			
Short	1-1/2 - 2-3/8	4-35/64	5-1/4	4	8-7/8	#4	–	–	#300	21431-0004	
Short	1-1/2 - 2-3/8	4-35/64	5-1/4	4	8-7/8	#4	–	–	#300 TSC	21531-0004*	
Short	1-1/2 - 2-3/8	4-35/64	5-1/4	4	10-1/8	#5	–	–	#300 TSC	21531-0005*	
Short	1-1/2 - 2-3/8	6-15/64	6-15/64	4	10-9/16	#4	1/4	2T-4SR	#400 SR	21631-0004	
i Standard	1-1/2 - 2-3/8	10-47/64	11-7/16	8-1/2	15-1/16	#4	1/4	2T-4SR	#500 SR	21831-0004	
Standard	1-1/2 - 2-3/8	10-47/64	11-7/16	8-1/2	16-5/16	#5	1/4	2T-5SR	#500 SR	21831-0005	
Long	1-1/2 - 2-3/8	20-15/64	20-5/16	18	24-9/16	#4	1/4	2T-4SR	#600 SR	22031-0004	
Long	1-1/2 - 2-3/8	20-15/64	20-5/16	18	25-13/16	#5	1/4	2T-5SR	#600 SR	22031-0005	
XL	1-1/2 - 2-3/8	28-15/64	28-15/16	26	32-9/16	#4	1/4	2T-4SR	#700 SR	22231-0004	
XL	1-1/2 - 2-3/8	28-15/64	28-15/16	26	33-13/16	#5	1/4	2T-5SR	#700 SR	22231-0005	

*Through shank coolant, coolant inlet diameter = 5/16"

Connection Accessories

<p>Clamping Screw 1/4"-20 x 1</p>	<p>Blade-Loc Screw –</p>
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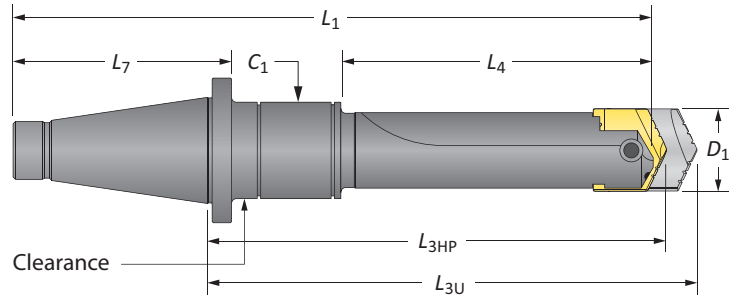


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

C Series





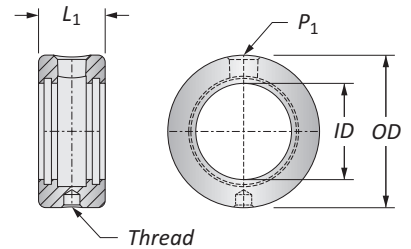
50 NMTB Shank*

Length	D ₁	Holder				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	NMTB	L ₇	C ₁	RCA	Style	
Short	1-1/2 - 2-3/8	5-27/64	6-1/8	4	10-1/8	50	5-5/8	-	-	#300	22431-0050
Short	1-1/2 - 2-3/8	7-7/64	7-13/16	4	11-13/16	50	5-5/8	3/8	2T-5SR	#400	22631-0050
Short	1-1/2 - 2-3/8	11-39/64	12-5/16	8-1/2	16-5/16	50	5-5/8	3/8	2T-5SR	#500	22831-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.


Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	RCA O-Rings		
					Part No.*	Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	 2T-4SR	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	 2T-5SR	2T1-5SR	2T1-5OR-10





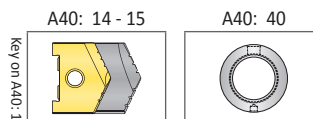
*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers



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


 Refer to page A40: 40 for proper RCA assembly and safety information

Connection Accessories

	
Clamping Screw	Blade-Loc Screw
1/4"-20 x 1	-



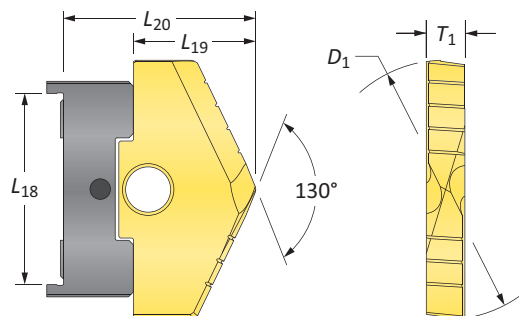
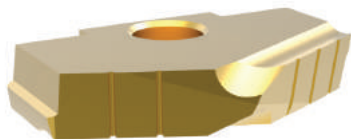
 = Imperial (in)
 = Metric (mm)
 O-rings sold in packs of 10

 **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.



High Performance Spade Drill Inserts

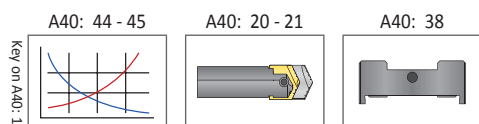
D Series | Diameter Range: 2.0000" - 2.8750"



Series	D ₁ inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L ₁₈	L ₁₉	L ₂₀	T ₁				
D	2	2.0000	1-3/4	1-3/16	1-55/64	3/8	1024T-0200	1024A-0200	1024N-0200	1024U-Adapter
	2-1/32	2.0313	1-3/4	1-3/16	1-55/64	3/8	1024T-0201	1024A-0201	1024N-0201	1024U-Adapter
	2-1/16	2.0625	1-3/4	1-3/16	1-55/64	3/8	1024T-0202	1024A-0202	1024N-0202	1024U-Adapter
	2-3/32	2.0938	1-3/4	1-3/16	1-55/64	3/8	1024T-0203	1024A-0203	1024N-0203	1024U-Adapter
	2-1/8	2.1250	1-3/4	1-3/16	1-55/64	3/8	1024T-0204	1024A-0204	1024N-0204	1024U-Adapter
	2-5/32	2.1563	1-3/4	1-3/16	1-55/64	3/8	1024T-0205	1024A-0205	1024N-0205	1024U-Adapter
	2-3/16	2.1875	1-3/4	1-3/16	1-55/64	3/8	1024T-0206	1024A-0206	1024N-0206	1024U-Adapter
	2-7/32	2.2188	1-3/4	1-3/16	1-55/64	3/8	1024T-0207	1024A-0207	1024N-0207	1024U-Adapter
	2-1/4	2.2500	1-3/4	1-3/16	1-55/64	3/8	1024T-0208	1024A-0208	1024N-0208	1024U-Adapter
	2-9/32	2.2813	1-3/4	1-3/16	1-55/64	3/8	1024T-0209	1024A-0209	1024N-0209	1024U-Adapter
	2-5/16	2.3125	1-3/4	1-3/16	1-55/64	3/8	1024T-0210	1024A-0210	1024N-0210	1024U-Adapter
	2-11/32	2.3438	1-3/4	1-3/16	1-55/64	3/8	1024T-0211	1024A-0211	1024N-0211	1024U-Adapter
	2-3/8	2.3750	1-3/4	1-3/16	1-55/64	3/8	1024T-0212	1024A-0212	1024N-0212	1024U-Adapter
	2-13/32	2.4063	1-3/4	1-3/16	1-55/64	3/8	1024T-0213	1024A-0213	1024N-0213	1024U-Adapter
	2-7/16	2.4375	1-3/4	1-3/16	1-55/64	3/8	1024T-0214	1024A-0214	1024N-0214	1024U-Adapter
	2-15/32	2.4688	1-3/4	1-3/16	1-55/64	3/8	1024T-0215	1024A-0215	1024N-0215	1024U-Adapter
2-1/2	2.5000	1-3/4	1-3/16	1-55/64	3/8	1024T-0216	1024A-0216	1024N-0216	1024U-Adapter	
D Oversize	2-17/32	2.5313	1-3/4	1-3/16	1-55/64	3/8	1024T-0217	1024A-0217	1024N-0217	1024U-Adapter
	2-9/16	2.5625	1-3/4	1-3/16	1-55/64	3/8	1024T-0218	1024A-0218	1024N-0218	1024U-Adapter
	2-19/32	2.5938	1-3/4	1-3/16	1-55/64	3/8	1024T-0219	1024A-0219	1024N-0219	1024U-Adapter
	2-5/8	2.6250	1-3/4	1-3/16	1-55/64	3/8	1024T-0220	1024A-0220	1024N-0220	1024U-Adapter
	2-21/32	2.6563	1-3/4	1-3/16	1-55/64	3/8	1024T-0221	1024A-0221	1024N-0221	1024U-Adapter
	2-11/16	2.6875	1-3/4	1-3/16	1-55/64	3/8	1024T-0222	1024A-0222	1024N-0222	1024U-Adapter
	2-23/32	6.7188	1-3/4	1-3/16	1-55/64	3/8	1024T-0223	1024A-0223	1024N-0223	1024U-Adapter
	2-3/4	6.7500	1-3/4	1-3/16	1-55/64	3/8	1024T-0224	1024A-0224	1024N-0224	1024U-Adapter
	2-25/35	6.7813	1-3/4	1-3/16	1-55/64	3/8	1024T-0225	1024A-0225	1024N-0225	1024U-Adapter
	2-13/16	2.8125	1-3/4	1-3/16	1-55/64	3/8	1024T-0226	1024A-0226	1024N-0226	1024U-Adapter
	2-27/32	2.8438	1-3/4	1-3/16	1-55/64	3/8	1024T-0227	1024A-0227	1024N-0227	1024U-Adapter
	2-7/8	2.8750	1-3/4	1-3/16	1-55/64	3/8	1024T-0228	1024A-0228	1024N-0228	1024U-Adapter

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Inserts sold in multiples of 1



Sizes not shown are available upon request.

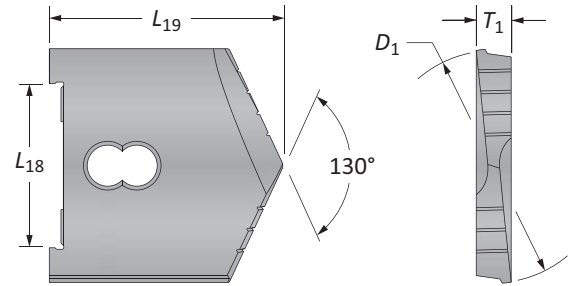
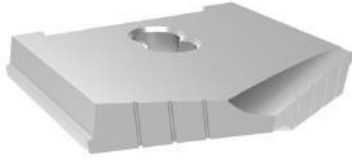
When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910



Universal Spade Drill Inserts

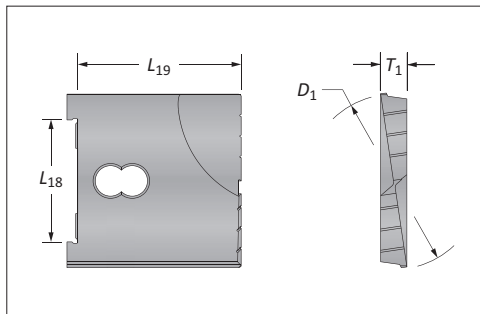
D Series | Diameter Range: 2.0000" - 2.8750"



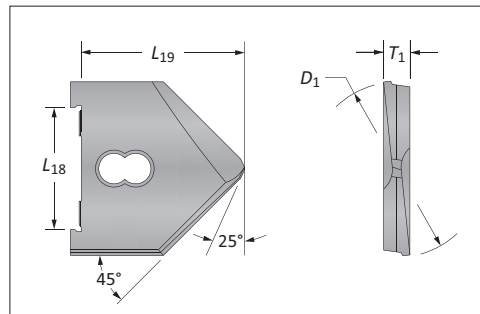
Series	D ₁ inch		Insert						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
D	2	2.0000	1-3/4	2-3/8	3/8	10244-0200	-	10444-0200	POR
	2-1/32	2.0313	1-3/4	2-3/8	3/8	10244-0201	-	-	POR
	2-1/16	2.0625	1-3/4	2-3/8	3/8	10244-0202	10245-0202	10444-0202	POR
	2-3/32	2.0938	1-3/4	2-3/8	3/8	10244-0203	-	-	POR
	2-1/8	2.1250	1-3/4	2-3/8	3/8	10244-0204	-	10444-0204	POR
	2-5/32	2.1563	1-3/4	2-3/8	3/8	10244-0205	-	-	POR
	2-3/16	2.1875	1-3/4	2-3/8	3/8	10244-0206	10245-0206	10444-0206	POR
	2-7/32	2.2188	1-3/4	2-3/8	3/8	10244-0207	-	-	POR
	2-1/4	2.2500	1-3/4	2-3/8	3/8	10244-0208	-	10444-0208	POR
	2-9/32	2.2813	1-3/4	2-3/8	3/8	10244-0209	-	-	POR
	2-5/16	2.3125	1-3/4	2-3/8	3/8	10244-0210	10245-0210	10444-0210	POR
	2-11/32	2.3438	1-3/4	2-3/8	3/8	10244-0211	-	-	POR
	2-3/8	2.3750	1-3/4	2-3/8	3/8	10244-0212	-	10444-0212	POR
	2-13/32	2.4063	1-3/4	2-3/8	3/8	10244-0213	-	-	POR
	2-7/16	2.4375	1-3/4	2-3/8	3/8	10244-0214	10245-0214	10444-0214	POR
	2-15/32	2.4688	1-3/4	2-3/8	3/8	10244-0215	-	-	POR
2-1/2	2.5000	1-3/4	2-3/8	3/8	10244-0216	-	10444-0216	11244-0216	
D Oversize	2-17/32	2.5313	1-3/4	2-3/8	3/8	10244-0217	-	-	-
	2-9/16	2.5625	1-3/4	2-3/8	3/8	10244-0218	-	-	-
	2-19/32	2.5938	1-3/4	2-3/8	3/8	10244-0219	-	-	-
	2-5/8	2.6250	1-3/4	2-3/8	3/8	10244-0220	-	-	-
	2-21/32	2.6563	1-3/4	2-3/8	3/8	10244-0221	-	-	-
	2-11/16	2.6875	1-3/4	2-3/8	3/8	10244-0222	-	-	-
	2-23/32	2.7188	1-3/4	2-3/8	3/8	10244-0223	-	-	-
	2-3/4	2.7500	1-3/4	2-3/8	3/8	10244-0224	-	-	-
	2-25/32	2.7813	1-3/4	2-3/8	3/8	10244-0225	-	-	-
	2-13/16	2.8125	1-3/4	2-3/8	3/8	10244-0226	-	-	-
	2-27/32	2.8438	1-3/4	2-3/8	3/8	10244-0227	-	-	-
	2-7/8	2.8750	1-3/4	2-3/8	3/8	10244-0228	-	-	-

*Discontinued | NOTE: POR = Priced on request

Flat Bottom



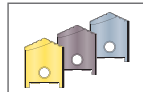
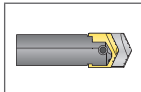
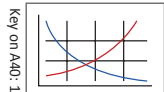
90° Spot & Chamfer



A40: 44 - 45

A40: 20 - 21

A40: 2



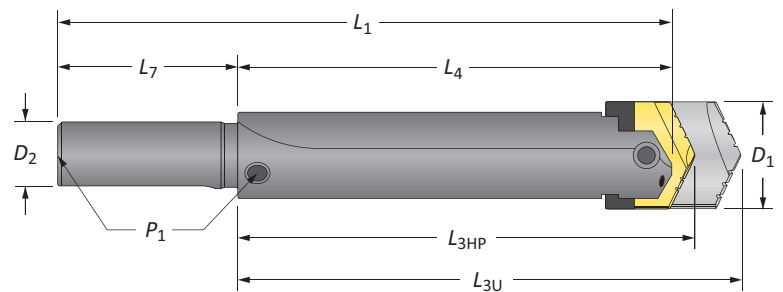
Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110



High Performance / Universal Spade Drill Insert Holders

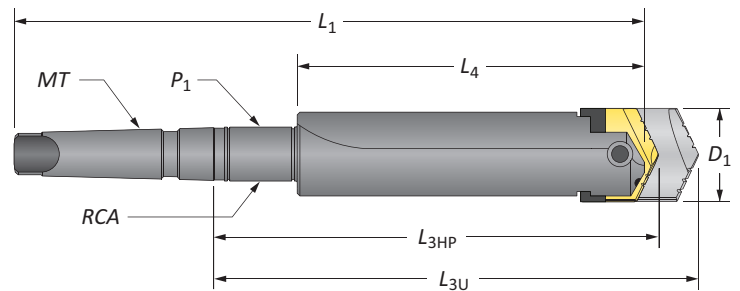
D Series



Straight Shank

Length	Holder					Shank				Part No.
	D_1	L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1	Style	
Stub	2 - 2-7/8	2-19/64	3	2	6	1-1/2	4	-	#125	20241-1500
Short	2 - 2-7/8	4-63/64	5-1/2	4-1/2	8-1/2	1-1/2	4	-	#150	20441-1500
Short	2 - 2-7/8	4-63/64	5-1/2	4-1/2	8-1/2	1-1/2	4	1/4	#100	20641-1500
Standard	2 - 2-7/8	9-31/64	10	9	13	1-1/2	4	1/4	#200	20841-1500
Long	2 - 2-7/8	18-31/64	19	18	22	1-1/2	4	1/4	#250	21041-1500

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.





Taper Shank

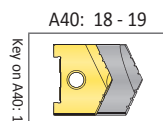
Length	Holder					Shank				Part No.
	D_1	L_{3HP}	L_{3U}	L_4	L_1	MT	P_1	RCA	Style	
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	9-3/8	#4	-	-	#300	21441-0004
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	10-5/8	#5	-	-	#300	21441-0005
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	9-3/8	#4	-	-	#300 TSC	21541-0004*
Short	2 - 2-7/8	6-59/64	7-7/16	4-1/2	11-1/16	#4	1/4	2T-4SR	#400 SR	21641-0004
Standard	2 - 2-7/8	11-27/64	11-15/16	9	15-9/16	#4	1/4	2T-4SR	#500 SR	21841-0004
Standard	2 - 2-7/8	11-27/64	11-15/16	9	16-13/16	#5	1/4	2T-5SR	#500 SR	21841-0005
Long	2 - 2-7/8	20-27/64	20-15/16	18	24-9/16	#4	1/4	2T-4SR	#600 SR	22041-0004
Long	2 - 2-7/8	20-27/64	20-15/16	18	25-13/16	#5	1/4	2T-5SR	#600 SR	22041-0005
XL	2 - 2-7/8	30-27/64	30-15/16	28	34-9/16	#4	1/4	2T-4SR	#700 SR	22241-0004
XL	2 - 2-7/8	30-27/64	30-15/16	28	35-13/16	#5	1/4	2T-5SR	#700 SR	22241-0005

*Through shank coolant, coolant inlet diameter = 5/16"

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Connection Accessories

	
Clamping Screw	Blade-Loc Screw
3/8"-16 x 1-1/4"	5/16"-18 x 1/2"

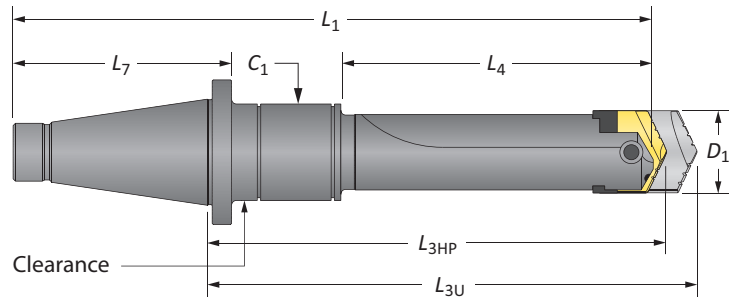


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

D Series






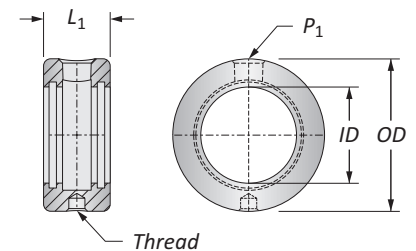
50 NMTB Shank*

Length	D ₁	Holder				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	NMTB	L ₇	C ₁	RCA	Style	
Short	2 - 2-7/8	9-27/64	9-15/16	5-1/2	13-15/16	50	5-5/8	3/8	2T-55SR	#400	22641-0050
	2 - 2-7/8	15-27/64	15-15/16	11-1/2	19-15/16	50	5-5/8	3/8	2T-55SR	#500	22841-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.


Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	 2T-4SR	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	 2T-5SR	2T1-5SR	2T1-5OR-10
2-1/2	4	1-3/4	1/2 - NC	1/2	 2T-55SR	2T1-55SR	2T1-55OR-10





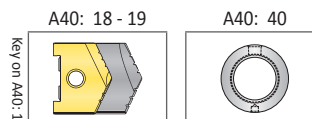
*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers



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

 Refer to page A40: 40 for proper RCA assembly and safety information

Connection Accessories

	
Clamping Screw	Blade-Loc Screw
3/8"-16 x 1-1/4"	5/16"-18 x 1/2"

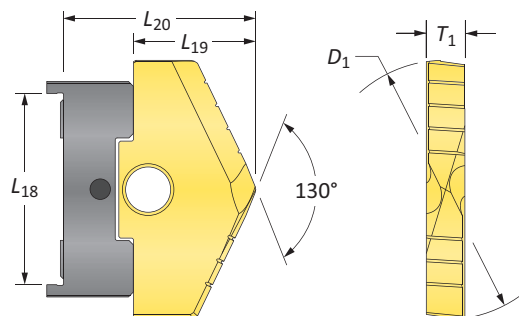
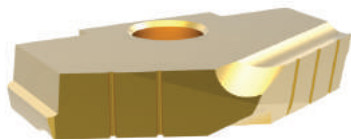


 = Imperial (in)
 = Metric (mm)
 O-rings sold in packs of 10

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.

High Performance Spade Drill Inserts

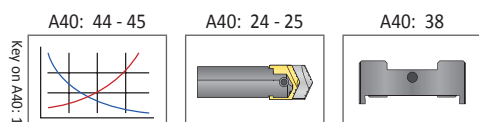
E Series | Diameter Range: 2.5000" - 3.3750"



Series	D ₁ inch		Inserts				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L ₁₈	L ₁₉	L ₂₀	T ₁				
E	2-1/2	2.5000	2-1/16	1-7/16	2-3/32	7/16	1025T-0216	1025A-0216	1025N-0216	1025U-Adapter
	2-17/32	2.5313	2-1/16	1-7/16	2-3/32	7/16	1025T-0217	1025A-0217	1025N-0217	1025U-Adapter
	2-9/16	2.5625	2-1/16	1-7/16	2-3/32	7/16	1025T-0218	1025A-0218	1025N-0218	1025U-Adapter
	2-19/32	2.5938	2-1/16	1-7/16	2-3/32	7/16	1025T-0219	1025A-0219	1025N-0219	1025U-Adapter
	2-5/8	2.6250	2-1/16	1-7/16	2-3/32	7/16	1025T-0220	1025A-0220	1025N-0220	1025U-Adapter
	2-21/32	2.6563	2-1/16	1-7/16	2-3/32	7/16	1025T-0221	1025A-0221	1025N-0221	1025U-Adapter
	2-11/16	2.6875	2-1/16	1-7/16	2-3/32	7/16	1025T-0222	1025A-0222	1025N-0222	1025U-Adapter
	2-23/32	2.7188	2-1/16	1-7/16	2-3/32	7/16	1025T-0223	1025A-0223	1025N-0223	1025U-Adapter
	2-3/4	2.7500	2-1/16	1-7/16	2-3/32	7/16	1025T-0224	1025A-0224	1025N-0224	1025U-Adapter
	2-25/32	2.7813	2-1/16	1-7/16	2-3/32	7/16	1025T-0225	1025A-0225	1025N-0225	1025U-Adapter
	2-13/16	2.8125	2-1/16	1-7/16	2-3/32	7/16	1025T-0226	1025A-0226	1025N-0226	1025U-Adapter
	2-27/32	2.8438	2-1/16	1-7/16	2-3/32	7/16	1025T-0227	1025A-0227	1025N-0227	1025U-Adapter
	2-7/8	2.8750	2-1/16	1-7/16	2-3/32	7/16	1025T-0228	1025A-0228	1025N-0228	1025U-Adapter
	2-29/32	2.9063	2-1/16	1-7/16	2-3/32	7/16	1025T-0229	1025A-0229	1025N-0229	1025U-Adapter
	2-15/16	2.9375	2-1/16	1-7/16	2-3/32	7/16	1025T-0230	1025A-0230	1025N-0230	1025U-Adapter
2-31/32	2.9688	2-1/16	1-7/16	2-3/32	7/16	1025T-0231	1025A-0231	1025N-0231	1025U-Adapter	
3	3.0000	2-1/16	1-7/16	2-3/32	7/16	1025T-0300	1025A-0300	1025N-0300	1025U-Adapter	
E Oversize	3-1/32	3.0313	2-1/16	1-7/16	2-3/32	7/16	1025T-0301	1025A-0301	1025N-0301	1025U-Adapter
	3-1/16	3.0625	2-1/16	1-7/16	2-3/32	7/16	1025T-0302	1025A-0302	1025N-0302	1025U-Adapter
	3-3/32	3.0938	2-1/16	1-7/16	2-3/32	7/16	1025T-0303	1025A-0303	1025N-0303	1025U-Adapter
	3-1/8	3.1250	2-1/16	1-7/16	2-3/32	7/16	1025T-0304	1025A-0304	1025N-0304	1025U-Adapter
	3-5/32	3.1563	2-1/16	1-7/16	2-3/32	7/16	1025T-0305	1025A-0305	1025N-0305	1025U-Adapter
	3-3/16	3.1875	2-1/16	1-7/16	2-3/32	7/16	1025T-0306	1025A-0306	1025N-0306	1025U-Adapter
	3-7/32	3.2188	2-1/16	1-7/16	2-3/32	7/16	1025T-0307	1025A-0307	1025N-0307	1025U-Adapter
	3-1/4	3.2500	2-1/16	1-7/16	2-3/32	7/16	1025T-0308	1025A-0308	1025N-0308	1025U-Adapter
	3-9/32	3.2813	2-1/16	1-7/16	2-3/32	7/16	1025T-0309	1025A-0309	1025N-0309	1025U-Adapter
	3-5/16	3.3125	2-1/16	1-7/16	2-3/32	7/16	1025T-0310	1025A-0310	1025N-0310	1025U-Adapter
	3-11/32	3.3438	2-1/16	1-7/16	2-3/32	7/16	1025T-0311	1025A-0311	1025N-0311	1025U-Adapter
	3-3/8	3.3750	2-1/16	1-7/16	2-3/32	7/16	1025T-0312	1025A-0312	1025N-0312	1025U-Adapter

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Inserts sold in multiples of 1



Sizes not shown are available upon request.

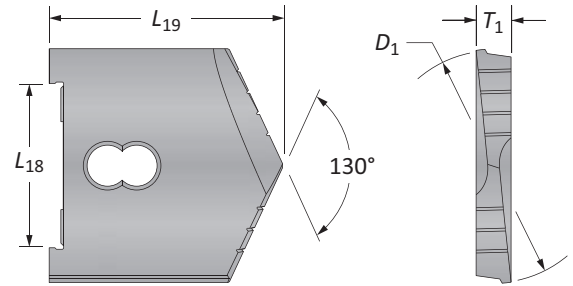
When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910



Universal Spade Drill Inserts

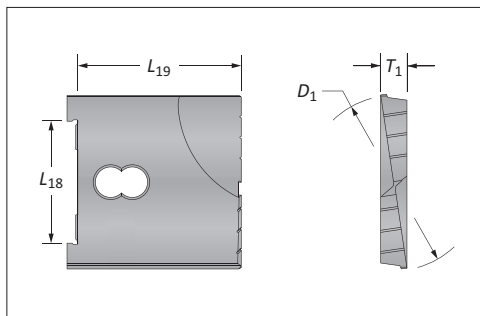
E Series | Diameter Range: 2.5000" - 3.3750"



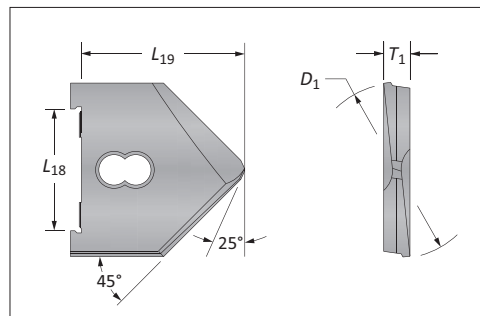
Series	D ₁ inch		Inserts						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
E	2-1/2	2.5000	2-1/16	2-5/8	7/16	10254-0216	10255-0216	10454-0216	POR
	2-17/32	2.5313	2-1/16	2-5/8	7/16	10254-0217	-	-	POR
	2-9/16	2.5625	2-1/16	2-5/8	7/16	10254-0218	10255-0218	10454-0218	POR
	2-19/32	2.5938	2-1/16	2-5/8	7/16	10254-0219	-	-	POR
	2-5/8	2.6250	2-1/16	2-5/8	7/16	10254-0220	10255-0220	10454-0220	POR
	2-21/32	2.6563	2-1/16	2-5/8	7/16	10254-0221	-	-	POR
	2-11/16	2.6875	2-1/16	2-5/8	7/16	10254-0222	10255-0222	10454-0222	POR
	2-23/32	2.7188	2-1/16	2-5/8	7/16	10254-0223	-	-	POR
	2-3/4	2.7500	2-1/16	2-5/8	7/16	10254-0224	10255-0224	10454-0224	POR
	2-25/32	2.7813	2-1/16	2-5/8	7/16	10254-0225	-	-	POR
	2-13/16	2.8125	2-1/16	2-5/8	7/16	10254-0226	10255-0226	10454-0226	POR
	2-27/32	2.8438	2-1/16	2-5/8	7/16	10254-0227	-	-	POR
	2-7/8	2.8750	2-1/16	2-5/8	7/16	10254-0228	10255-0228	10454-0228	POR
	2-29/32	2.9063	2-1/16	2-5/8	7/16	10254-0229	-	-	POR
	2-15/16	2.9375	2-1/16	2-5/8	7/16	10254-0230	10255-0230	10454-0230	POR
	2-31/32	2.9688	2-1/16	2-5/8	7/16	10254-0231	-	-	POR
3	3.0000	2-1/16	2-5/8	7/16	10254-0300	10255-0300	10454-0300	11254-0300	
E Oversize	3-1/32	3.0313	2-1/16	2-5/8	7/16	10254-0301	-	-	-
	3-1/16	3.0625	2-1/16	2-5/8	7/16	10254-0302	-	-	-
	3-3/32	3.0938	2-1/16	2-5/8	7/16	10254-0303	-	-	-
	3-1/8	3.1250	2-1/16	2-5/8	7/16	10254-0304	-	-	-
	3-5/32	3.1563	2-1/16	2-5/8	7/16	10254-0305	-	-	-
	3-3/16	3.1875	2-1/16	2-5/8	7/16	10254-0306	-	-	-
	3-7/32	3.2188	2-1/16	2-5/8	7/16	10254-0307	-	-	-
	3-1/4	3.2500	2-1/16	2-5/8	7/16	10254-0308	-	-	-
	3-9/32	3.2813	2-1/16	2-5/8	7/16	10254-0309	-	-	-
	3-5/16	3.3125	2-1/16	2-5/8	7/16	10254-0310	-	-	-
	3-11/32	3.3438	2-1/16	2-5/8	7/16	10254-0311	-	-	-
	3-3/8	3.3750	2-1/16	2-5/8	7/16	10254-0312	-	-	-

*Discontinued | NOTE: POR = Priced on request

Flat Bottom



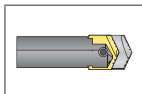
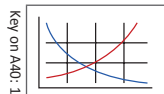
90° Spot & Chamfer



A40: 44 - 45

A40: 24 - 25

A40: 2

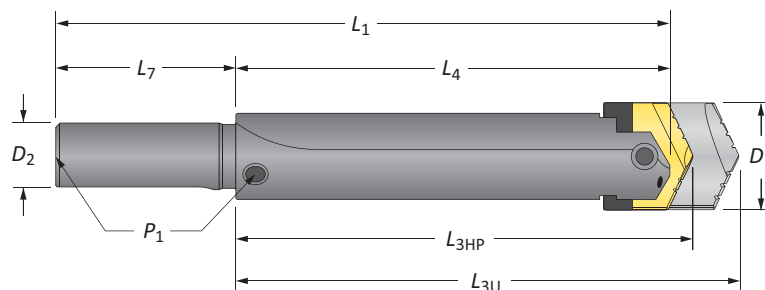


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

High Performance / Universal Spade Drill Insert Holders

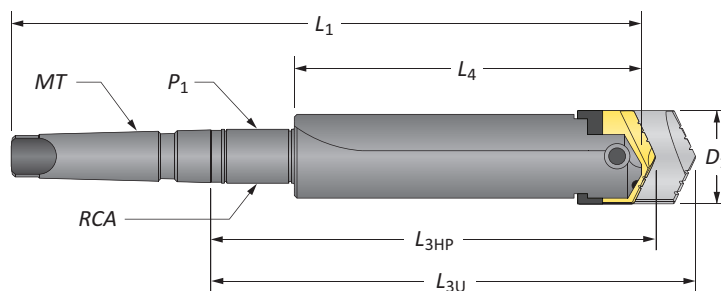
E Series



Straight Shank

Length	D_1	Insert				Shank				Part No.
		L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1	Style	
Stub	2-1/2 - 3-3/8	3-1/32	3-9/16	2-1/2	6-1/2	2	4	–	#125	20251-2000
Short	2-1/2 - 3-3/8	5-17/32	6-1/16	5	9	1-3/4	4	–	#150	20451-1750
i Short	2-1/2 - 3-3/8	5-17/32	6-1/16	5	9	1-3/4	4	1/2	#100	20651-1750
Standard	2-1/2 - 3-3/8	10-17/32	11-1/16	10	14	2	4	1/2	#200	20851-2000
Long	2-1/2 - 3-3/8	20-17/32	21-1/16	20	24	2	4	1/2	#250	21051-2000

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.



Taper Shank

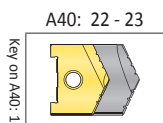
Length	D_1	Holder				Shank				Part No.
		L_{3HP}	L_{3U}	L_4	L_1	MT	P_1	RCA	Style	
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	9-7/8	#4	–	–	#300	21451-0004
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	11-1/8	#5	–	–	#300	21451-0005
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	11-1/8	#5	–	–	#300 TSC	21551-0005*
i Short	2-1/2 - 3-3/8	8-3/32	8-5/8	5	13-7/16	#5	1/2	2T-6SR	#400 SR	21651-0005
Standard	2-1/2 - 3-3/8	13-3/32	13-5/8	10	18-7/16	#5	1/2	2T-6SR	#500 SR	21851-0005
Long	2-1/2 - 3-3/8	23-3/32	23-5/8	20	28-7/16	#5	1/2	2T-6SR	#600 SR	22051-0005
XL	2-1/2 - 3-3/8	33-3/32	33-5/8	30	38-7/16	#5	1/2	2T-6SR	#700 SR	22251-0005

*Through shank coolant, coolant inlet diameter = 3/8"

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Connection Accessories

<p>Clamping Screw 1/2"-13 x 1-3/4"</p>	<p>Blade-Loc Screw 5/16"-18 x 1/2"</p>
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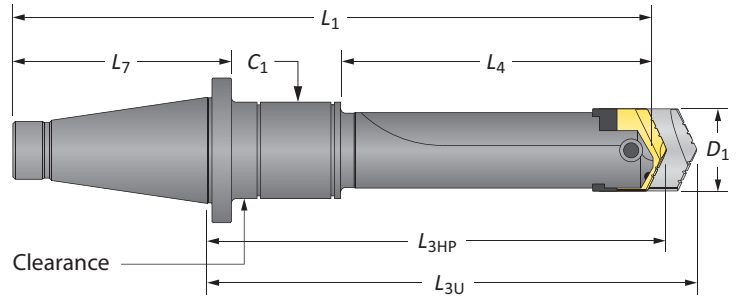


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

E Series



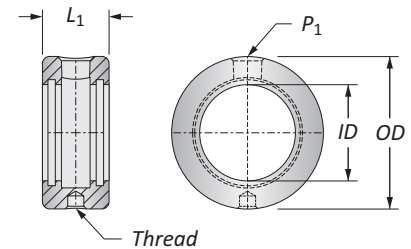
50 NMTB Shank*

Length	D ₁	Holders				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	NMTB	L ₇	C ₁	RCA	Style	
i Short	2-1/2 - 3-3/8	9-15/32	10	5-1/2	13-15/16	50	5-5/8	5/8	2T-55SR	#400	22651-0050
Short	2-1/2 - 3-3/8	15-15/32	16	11-1/2	19-15/16	50	5-5/8	5/8	2T-55SR	#500	22851-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.

Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
i 2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	▲ 2T-6SR	2T1-6SR	2T1-6OR-10
2-1/2	4	1-3/4	1/2 - NC	1/2	▲ 2T-55SR	2T1-55SR	2T1-55OR-10





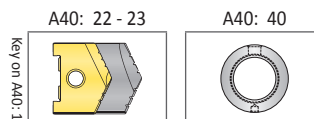
*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

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

▲ Refer to page A40: 40 for proper RCA assembly and safety information

Connection Accessories

	
Clamping Screw	Blade-Loc Screw
1/2"-13 x 1-3/4"	5/16"-18 x 1/2"

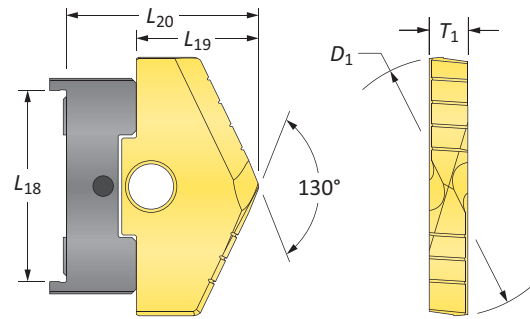
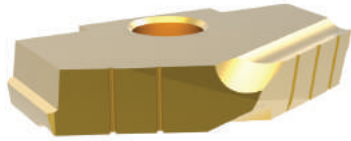


i = Imperial (in)
m = Metric (mm)
 O-rings sold in packs of 10

! 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.

High Performance Spade Drill Inserts

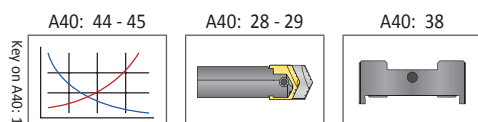
F Series | Diameter Range: 3.0000" - 3.8750"



Series	D ₁ inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L ₁₈	L ₁₉	L ₂₀	T ₁				
F	3	3.0000	2-5/8	1-13/16	2-17/32	1/2	1026T-0300	1026A-0300	1026N-0300	1026U-Adapter
	3-1/32	3.0313	2-5/8	1-13/16	2-17/32	1/2	1026T-0301	1026A-0301	1026N-0301	1026U-Adapter
	3-1/16	3.0625	2-5/8	1-13/16	2-17/32	1/2	1026T-0302	1026A-0302	1026N-0302	1026U-Adapter
	3-3/32	3.0938	2-5/8	1-13/16	2-17/32	1/2	1026T-0303	1026A-0303	1026N-0303	1026U-Adapter
	3-1/8	3.1250	2-5/8	1-13/16	2-17/32	1/2	1026T-0304	1026A-0304	1026N-0304	1026U-Adapter
	3-5/32	3.1563	2-5/8	1-13/16	2-17/32	1/2	1026T-0305	1026A-0305	1026N-0305	1026U-Adapter
	3-3/16	3.1875	2-5/8	1-13/16	2-17/32	1/2	1026T-0306	1026A-0306	1026N-0306	1026U-Adapter
	3-7/32	3.2188	2-5/8	1-13/16	2-17/32	1/2	1026T-0307	1026A-0307	1026N-0307	1026U-Adapter
	3-1/4	3.2500	2-5/8	1-13/16	2-17/32	1/2	1026T-0308	1026A-0308	1026N-0308	1026U-Adapter
	3-9/32	3.2813	2-5/8	1-13/16	2-17/32	1/2	1026T-0309	1026A-0309	1026N-0309	1026U-Adapter
	3-5/16	3.3125	2-5/8	1-13/16	2-17/32	1/2	1026T-0310	1026A-0310	1026N-0310	1026U-Adapter
	3-11/32	3.3438	2-5/8	1-13/16	2-17/32	1/2	1026T-0311	1026A-0311	1026N-0311	1026U-Adapter
	3-3/8	3.3750	2-5/8	1-13/16	2-17/32	1/2	1026T-0312	1026A-0312	1026N-0312	1026U-Adapter
	3-13/32	3.4063	2-5/8	1-13/16	2-17/32	1/2	1026T-0313	1026A-0313	1026N-0313	1026U-Adapter
	3-7/16	3.4375	2-5/8	1-13/16	2-17/32	1/2	1026T-0314	1026A-0314	1026N-0314	1026U-Adapter
	3-15/32	3.4688	2-5/8	1-13/16	2-17/32	1/2	1026T-0315	1026A-0315	1026N-0315	1026U-Adapter
3-1/2	3.5000	2-5/8	1-13/16	2-17/32	1/2	1026T-0316	1026A-0316	1026N-0316	1026U-Adapter	
F Oversize	3-17/32	3.5313	2-5/8	1-13/16	2-17/32	1/2	1026T-0317	1026A-0317	1026N-0317	1026U-Adapter
	3-9/16	3.5625	2-5/8	1-13/16	2-17/32	1/2	1026T-0318	1026A-0318	1026N-0318	1026U-Adapter
	3-19/32	3.5938	2-5/8	1-13/16	2-17/32	1/2	1026T-0319	1026A-0319	1026N-0319	1026U-Adapter
	3-5/8	3.6250	2-5/8	1-13/16	2-17/32	1/2	1026T-0320	1026A-0320	1026N-0320	1026U-Adapter
	3-21/32	3.6563	2-5/8	1-13/16	2-17/32	1/2	1026T-0321	1026A-0321	1026N-0321	1026U-Adapter
	3-11/16	3.6875	2-5/8	1-13/16	2-17/32	1/2	1026T-0322	1026A-0322	1026N-0322	1026U-Adapter
	3-23/32	3.7188	2-5/8	1-13/16	2-17/32	1/2	1026T-0323	1026A-0323	1026N-0323	1026U-Adapter
	3-3/4	3.7500	2-5/8	1-13/16	2-17/32	1/2	1026T-0324	1026A-0324	1026N-0324	1026U-Adapter
	3-25/32	3.7813	2-5/8	1-13/16	2-17/32	1/2	1026T-0325	1026A-0325	1026N-0325	1026U-Adapter
	3-13/16	3.8125	2-5/8	1-13/16	2-17/32	1/2	1026T-0326	1026A-0326	1026N-0326	1026U-Adapter
	3-27/32	3.8438	2-5/8	1-13/16	2-17/32	1/2	1026T-0327	1026A-0327	1026N-0327	1026U-Adapter
	3-7/8	3.8750	2-5/8	1-13/16	2-17/32	1/2	1026T-0328	1026A-0328	1026N-0328	1026U-Adapter

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Inserts sold in multiples of 1



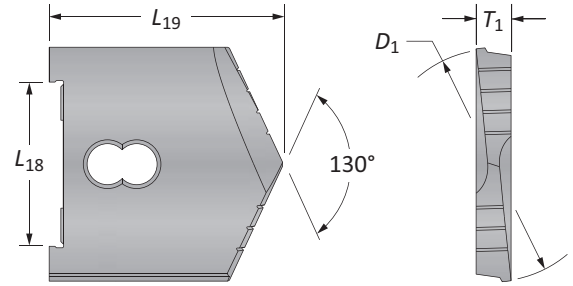
Sizes not shown are available upon request.





When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910

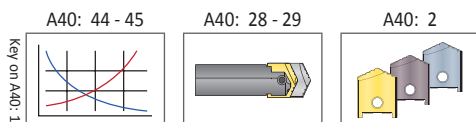
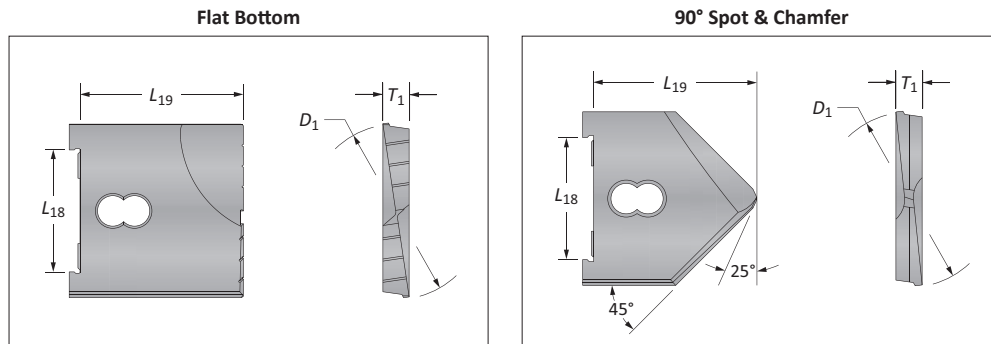
Universal Spade Drill Inserts

F Series | Diameter Range: 3.0000" - 3.8750"



Series	D ₁ inch		Insert						
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom	90° Spot & Chamfer
F	3	3.0000	2-5/8	3-1/8	1/2	10264-0300	10265-0300	10464-0300	POR
	3-1/32	3.0313	2-5/8	3-1/8	1/2	10264-0301	-	-	POR
	3-1/16	3.0625	2-5/8	3-1/8	1/2	10264-0302	10265-0302	10464-0302	POR
	3-3/32	3.0938	2-5/8	3-1/8	1/2	10264-0303	-	-	POR
	3-1/8	3.1250	2-5/8	3-1/8	1/2	10264-0304	10265-0304	10464-0304	POR
	3-5/32	3.1563	2-5/8	3-1/8	1/2	10264-0305	-	-	POR
	3-3/16	3.1875	2-5/8	3-1/8	1/2	10264-0306	10265-0306	10464-0306	POR
	3-7/32	3.2188	2-5/8	3-1/8	1/2	10264-0307	-	-	POR
	3-1/4	3.2500	2-5/8	3-1/8	1/2	10264-0308	-	-	POR
	3-9/32	3.2813	2-5/8	3-1/8	1/2	10264-0309	-	-	POR
	3-5/16	3.3125	2-5/8	3-1/8	1/2	10264-0310	10265-0310	10464-0310	POR
	3-11/32	3.3438	2-5/8	3-1/8	1/2	10264-0311	-	-	POR
	3-3/8	3.3750	2-5/8	3-1/8	1/2	10264-0312	-	-	POR
	3-13/32	3.4063	2-5/8	3-1/8	1/2	10264-0313	-	-	POR
	3-7/16	3.4375	2-5/8	3-1/8	1/2	10264-0314	10265-0314	10464-0314	POR
	3-15/32	3.4688	2-5/8	3-1/8	1/2	10264-0315	-	-	POR
3-1/2	3.5000	2-5/8	3-1/8	1/2	10264-0316	-	10464-0316	11264-0316	
F Oversize	3-17/32	3.5313	2-5/8	3-1/8	1/2	10264-0317	-	-	-
	3-9/16	3.5625	2-5/8	3-1/8	1/2	10264-0318	-	-	-
	3-19/32	3.5938	2-5/8	3-1/8	1/2	10264-0319	-	-	-
	3-5/8	3.6250	2-5/8	3-1/8	1/2	10264-0320	-	-	-
	3-21/32	3.6563	2-5/8	3-1/8	1/2	10264-0321	-	-	-
	3-11/16	3.6875	2-5/8	3-1/8	1/2	10264-0322	-	-	-
	3-23/32	3.7188	2-5/8	3-1/8	1/2	10264-0323	-	-	-
	3-3/4	3.7500	2-5/8	3-1/8	1/2	10264-0324	-	-	-
	3-25/32	3.7813	2-5/8	3-1/8	1/2	10264-0325	-	-	-
	3-13/16	3.8125	2-5/8	3-1/8	1/2	10264-0326	-	-	-
	3-27/32	3.8438	2-5/8	3-1/8	1/2	10264-0327	-	-	-
	3-7/8	3.8750	2-5/8	3-1/8	1/2	10264-0328	-	-	-

*Discontinued | NOTE: POR = Priced on request

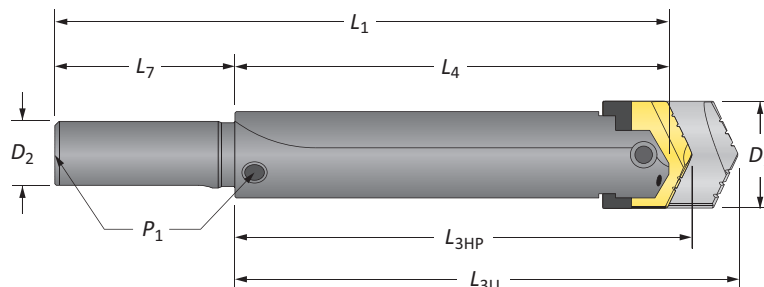


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

High Performance / Universal Spade Drill Insert Holders

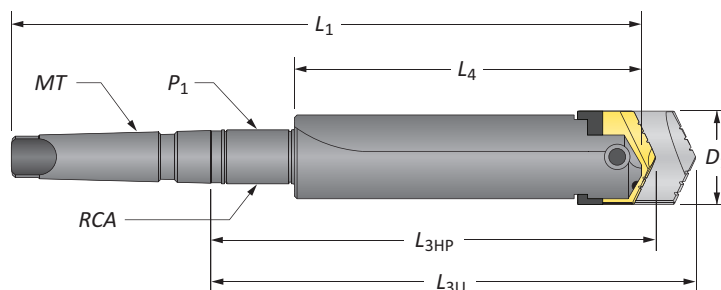
F Series



Straight Shank

Length	D_1	Holder				Shank				Style	Part No.
		L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1			
Stub	3 - 3-7/8	3-13/32	4	2-3/4	6-3/4	2-1/2	4	-	#125	20261-2500	
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2	4	-	#150	20461-2000	
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2	4	1/2	#100	20661-2000	
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2-1/2	4	1/2	#100	20661-2500	
Standard	3 - 3-7/8	12-5/32	12-3/4	11-1/2	15-1/2	2	4	1/2	#200	20861-2000	
Long	3 - 3-7/8	20-21/32	21-1/4	20	24	2-1/2	4	1/2	#250	21061-2500	

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.



Taper Shank

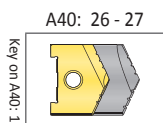
Length	D_1	Holder				Shank				Style	Part No.
		L_{3HP}	L_{3U}	L_4	L_1	MT	P_1	RCA			
Short	3 - 3-7/8	6-13/32	7	5-1/2	11-5/8	#5	-	-	#300	21461-0005	
Short	3 - 3-7/8	6-13/32	7	5-1/2	11-5/8	#5	-	-	#300 TSC	21561-0005*	
Short	3 - 3-7/8	8-23/32	9-5/16	5-1/2	13-15/16	#5	1/2	2T-6SR	#400 SR	21661-0005	
Standard	3 - 3-7/8	14-23/32	15-5/16	11-1/2	19-15/16	#5	1/2	2T-6SR	#500 SR	21861-0005	
Long	3 - 3-7/8	23-7/32	23-13/16	20	28-7/16	#5	1/2	2T-6SR	#600 SR	22061-0005	
XL	3 - 3-7/8	36-7/32	36-13/16	33	41-7/16	#5	1/2	2T-6SR	#700 SR	22261-0005	

*Through shank coolant, coolant inlet diameter = 3/8"

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Connection Accessories

<p>Clamping Screw 1/2"-13 x 1-3/4"</p>	<p>Blade-Loc Screw 5/16"-18 x 1/2"</p>
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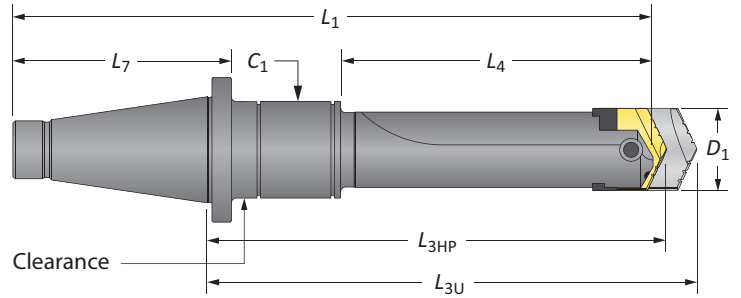


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

F Series



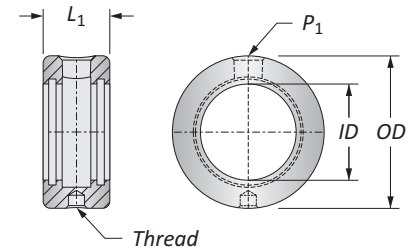
50 NMTB Shank*

Length	D ₁	Holder				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	NMTB	L ₇	C ₁	RCA	Style	
Short	3 - 3-7/8	7-9/32	7-7/8	5-1/2	11-5/8	50	5-5/8	—	—	#300	22461-0050
Short	3 - 3-7/8	9-19/32	10-3/16	5-1/2	13-15/16	50	5-5/8	5/8	2T-60SR	#400	22661-0050
Short	3 - 3-7/8	15-19/32	16-3/16	11-1/2	19-15/16	50	5-5/8	5/8	2T-60SR	#500	22861-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.

Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	2T-6SR	2T1-6SR	2T1-6OR-10
3	4-1/2	1-3/4	1/2 - NC	1/2	2T-6OSR	2T1-6OSR	2T1-6OOR-10





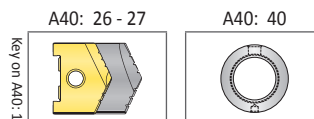
*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

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

▲ Refer to page A40: 40 for proper RCA assembly and safety information

Connection Accessories

	
Clamping Screw	Blade-Loc Screw
1/2"-13 x 1-3/4"	5/16"-18 x 1/2"

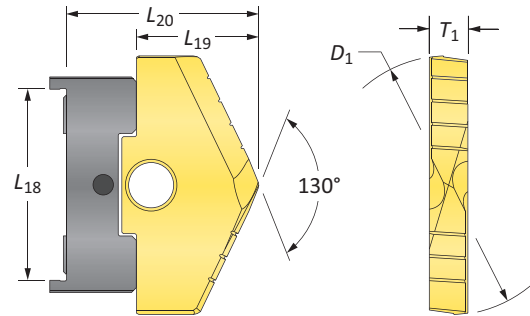
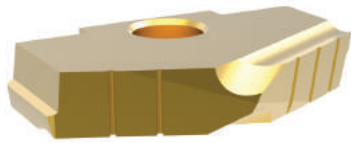


ⓘ = Imperial (in)
 ⓘ = Metric (mm)
 O-rings sold in packs of 10

⚠ 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.

High Performance Spade Drill Inserts

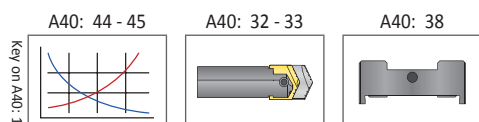
G Series | Diameter Range: 3.5000" - 4.5000"



Series	D ₁ inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L ₁₈	L ₁₉	L ₂₀	T ₁				
G	3-1/2	3.5000	3-1/16	1-15/16	2-23/32	5/8	1027T-0316	1027A-0316	1027N-0316	1027U-Adapter
	3-17/32	3.5313	3-1/16	1-15/16	2-23/32	5/8	1027T-0317	1027A-0317	1027N-0317	1027U-Adapter
	3-9/16	3.5625	3-1/16	1-15/16	2-23/32	5/8	1027T-0318	1027A-0318	1027N-0318	1027U-Adapter
	3-19/32	3.5938	3-1/16	1-15/16	2-23/32	5/8	1027T-0319	1027A-0319	1027N-0319	1027U-Adapter
	3-5/8	3.6250	3-1/16	1-15/16	2-23/32	5/8	1027T-0320	1027A-0320	1027N-0320	1027U-Adapter
	3-21/32	3.6563	3-1/16	1-15/16	2-23/32	5/8	1027T-0321	1027A-0321	1027N-0321	1027U-Adapter
	3-11/16	3.6875	3-1/16	1-15/16	2-23/32	5/8	1027T-0322	1027A-0322	1027N-0322	1027U-Adapter
	3-23/32	3.7188	3-1/16	1-15/16	2-23/32	5/8	1027T-0323	1027A-0323	1027N-0323	1027U-Adapter
	3-3/4	3.7500	3-1/16	1-15/16	2-23/32	5/8	1027T-0324	1027A-0324	1027N-0324	1027U-Adapter
	3-25/32	3.7813	3-1/16	1-15/16	2-23/32	5/8	1027T-0325	1027A-0325	1027N-0325	1027U-Adapter
	3-13/16	3.8125	3-1/16	1-15/16	2-23/32	5/8	1027T-0326	1027A-0326	1027N-0326	1027U-Adapter
	3-27/32	3.8438	3-1/16	1-15/16	2-23/32	5/8	1027T-0327	1027A-0327	1027N-0327	1027U-Adapter
	3-7/8	3.8750	3-1/16	1-15/16	2-23/32	5/8	1027T-0328	1027A-0328	1027N-0328	1027U-Adapter
	3-29/32	3.9063	3-1/16	1-15/16	2-23/32	5/8	1027T-0329	1027A-0329	1027N-0329	1027U-Adapter
	3-15/16	3.9375	3-1/16	1-15/16	2-23/32	5/8	1027T-0330	1027A-0330	1027N-0330	1027U-Adapter
3-31/32	3.9688	3-1/16	1-15/16	2-23/32	5/8	1027T-0331	1027A-0331	1027N-0331	1027U-Adapter	
4	4.0000	3-1/16	1-15/16	2-23/32	5/8	1027T-0400	1027A-0400	1027N-0400	1027U-Adapter	
G Oversize	4-1/16	4.0625	3-1/16	1-15/16	2-23/32	5/8	1027T-0402	1027A-0402	1027N-0402	1027U-Adapter
	4-1/8	4.1250	3-1/16	1-15/16	2-23/32	5/8	1027T-0404	1027A-0404	1027N-0404	1027U-Adapter
	4-3/16	4.1875	3-1/16	1-15/16	2-23/32	5/8	1027T-0406	1027A-0406	1027N-0406	1027U-Adapter
	4-1/4	4.2500	3-1/16	1-15/16	2-23/32	5/8	1027T-0408	1027A-0408	1027N-0408	1027U-Adapter
	4-5/16	4.3125	3-1/16	1-15/16	2-23/32	5/8	1027T-0410	1027A-0410	1027N-0410	1027U-Adapter
	4-3/8	4.3750	3-1/16	1-15/16	2-23/32	5/8	1027T-0412	1027A-0412	1027N-0412	1027U-Adapter
	4-7/16	4.4375	3-1/16	1-15/16	2-23/32	5/8	1027T-0414	1027A-0414	1027N-0414	1027U-Adapter
4-1/2	4.5000	3-1/16	1-15/16	2-23/32	5/8	1027T-0416	1027A-0416	1027N-0416	1027U-Adapter	

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Inserts sold in multiples of 1



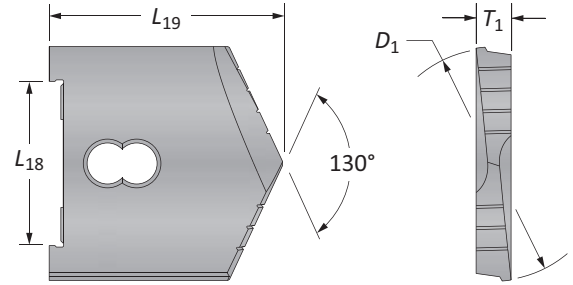
Sizes not shown are available upon request.




When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910

Universal Spade Drill Inserts

G Series | Diameter Range: 3.5000" - 4.5000"



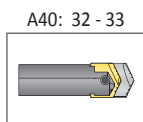
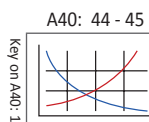
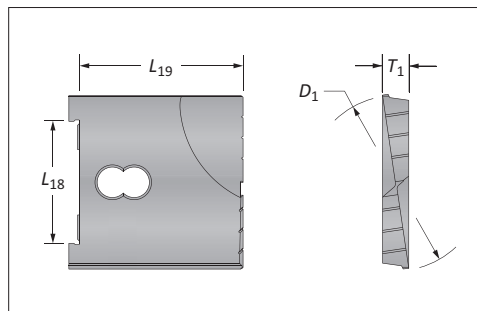
Series	D ₁ inch		Insert					
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom
G	3-1/2	3.5000	3-1/16	3-3/8	5/8	10274-0316	10275-0316	10474-0316
	3-17/32	3.5313	3-1/16	3-3/8	5/8	10274-0317	-	-
	3-9/16	3.5625	3-1/16	3-3/8	5/8	10274-0318	10275-0318	10474-0318
	3-19/32	3.5938	3-1/16	3-3/8	5/8	10274-0319	-	-
	3-5/8	3.6250	3-1/16	3-3/8	5/8	10274-0320	10275-0320	10474-0320
	3-21/32	3.6563	3-1/16	3-3/8	5/8	10274-0321	-	-
	3-11/16	3.6875	3-1/16	3-3/8	5/8	10274-0322	10275-0322	10474-0322
	3-23/32	3.7188	3-1/16	3-3/8	5/8	10274-0323	-	-
	3-3/4	3.7500	3-1/16	3-3/8	5/8	10274-0324	10275-0324	10474-0324
	3-25/32	3.7813	3-1/16	3-3/8	5/8	10274-0325	-	-
	3-13/16	3.8125	3-1/16	3-3/8	5/8	10274-0326	10275-0326	10474-0326
	3-27/32	3.8438	3-1/16	3-3/8	5/8	10274-0327	-	-
	3-7/8	3.8750	3-1/16	3-3/8	5/8	10274-0328	10275-0328	10474-0328
	3-29/32	3.9063	3-1/16	3-3/8	5/8	10274-0329	-	-
	3-15/16	3.9375	3-1/16	3-3/8	5/8	10274-0330	10275-0330	10474-0330
3-31/32	3.9688	3-1/16	3-3/8	5/8	10274-0331	-	-	
4	4.0000	3-1/16	3-3/8	5/8	10274-0400	10275-0400	10474-0400	
G Oversize	4-1/16	4.0625	3-1/16	3-3/8	5/8	10274-0402	-	-
	4-1/8	4.1250	3-1/16	3-3/8	5/8	10274-0404	-	-
	4-3/16	4.1875	3-1/16	3-3/8	5/8	10274-0406	-	-
	4-1/4	4.2500	3-1/16	3-3/8	5/8	10274-0408	-	-
	4-5/16	4.3125	3-1/16	3-3/8	5/8	10274-0410	-	-
	4-3/8	4.3750	3-1/16	3-3/8	5/8	10274-0412	-	-
	4-7/16	4.4375	3-1/16	3-3/8	5/8	10274-0414	-	-
4-1/2	4.5000	3-1/16	3-3/8	5/8	10274-0416	-	-	

*Discontinued

Inserts sold in multiples of 1

NOTE: POR = Priced on request

Flat Bottom

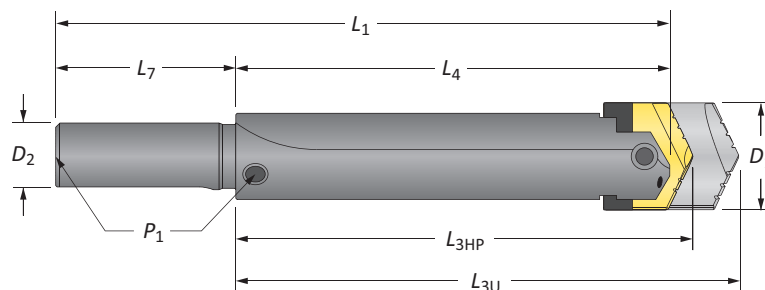


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

High Performance / Universal Spade Drill Insert Holders

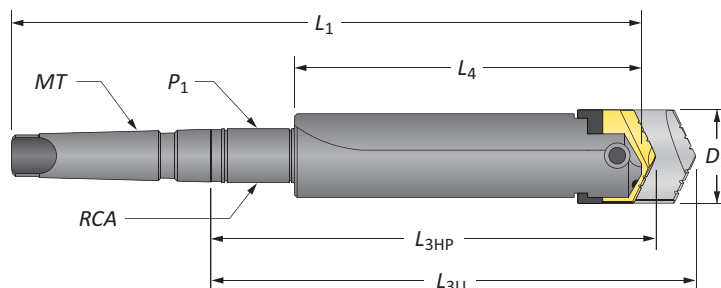
G Series



Straight Shank

	Length	Holder				Shank				Part No.	
		D_1	L_{3HP}	L_{3U}	L_4	L_1	D_2	L_7	P_1		Style
i	Short	3-1/2 - 4-1/2	6-25/32	7-7/16	6	11	2-1/2	5	1/2	#100	20671-2500
	Standard	3-1/2 - 4-1/2	13-25/32	14-7/16	13	18	2-1/2	5	1/2	#200	20871-2500

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.



Taper Shank

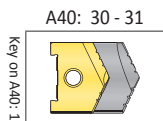
	Length	Holder				Shank				Part No.	
		D_1	L_{3HP}	L_{3U}	L_4	L_1	MT	P_1	RCA		Style
i	Short	3-1/2 - 4-1/2	7-1/32	7-11/16	6	12-1/8	#5	-	-	#300	21471-0005
	Short	3-1/2 - 4-1/2	7-1/32	7-11/16	6	12-1/8	#5	-	-	#300 TSC	21571-0005*
	Short	3-1/2 - 4-1/2	9-11/32	10	6	14-7/16	#5	1/2	2T-6SR	#400 SR	21671-0005
	Standard	3-1/2 - 4-1/2	16-11/32	17	13	21-7/16	#5	1/2	2T-6SR	#500 SR	21871-0005
	Long	3-1/2 - 4-1/2	27-11/32	28	24	32-7/16	#5	1/2	2T-6SR	#600 SR	22071-0005
	XL	3-1/2 - 4-1/2	40-11/32	41	37	45-7/16	#5	1/2	2T-6SR	#700 SR	22271-0005

*Through shank coolant, coolant inlet diameter = 3/8"

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Connection Accessories

<p>Clamping Screw 3/4"-10 x 2-1/2"</p>	<p>Blade-Loc Screw 5/16"-18 x 1/2"</p>
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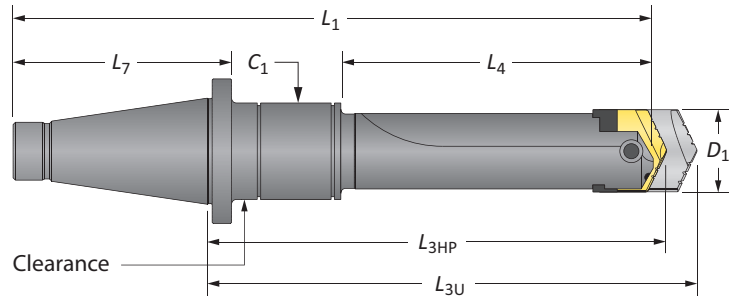


i = Imperial (in)
m = Metric (mm)

WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance / Universal Spade Drill Insert Holders

G Series



50 NMTB Shank*

Length	D ₁	Holder				Shank					Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	NMTB	L ₇	C ₁	RCA	Style	
Short	3-1/2 - 4-1/2	8-29/32	9-9/16	7	13-1/8	50	5-5/8	-	-	#300	22471-0050
Short	3-1/2 - 4-1/2	11-7/32	11-7/8	7	15-7/16	50	5-5/8	5/8	2T-65SR	#400	22671-0050
Short	3-1/2 - 4-1/2	19-13/32	20	15	23-7/16	50	5-5/8	5/8	2T-65SR	#500	22881-0050

*All NMTB shank holders are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted. Once stock is depleted, items are available as quoted specials only.

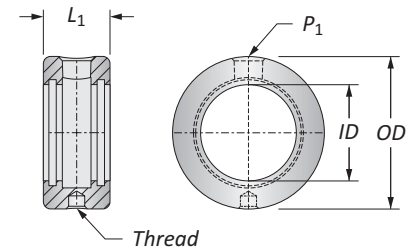
Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	RCA O-Rings		
					Part No.*	Kit Part No.**	Replacements
2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	2T-6SR	2T1-6SR	2T1-6OR-10
3-3/4	5-1/2	1-3/4	1/2 - NC	1/2	2T-65SR	2T1-65SR	2T1-65OR-10



*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

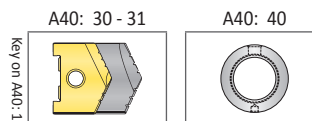
**RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

▲ Refer to page A40: 40 for proper RCA assembly and safety information



Connection Accessories

	
Clamping Screw	Blade-Loc Screw
3/4"-10 x 2-1/2"	5/16"-18 x 1/2"

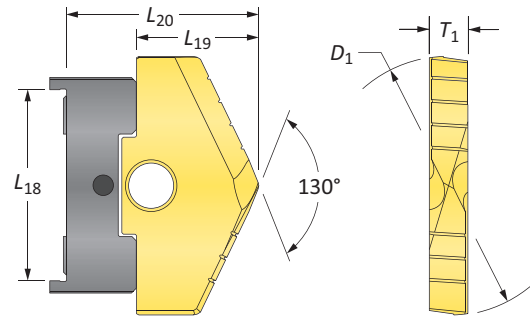
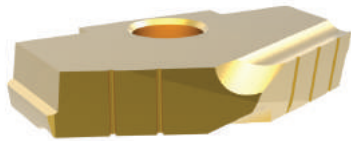


ⓘ = Imperial (in)
 ⓘ = Metric (mm)
 O-rings sold in packs of 10

⚠ 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.

High Performance Spade Drill Inserts

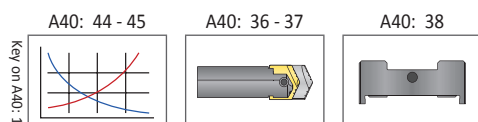
H Series | Diameter Range: 4.0000" - 5.0000"



Series	D ₁ inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L ₁₈	L ₁₉	L ₂₀	T ₁				
H ¹	4	4.0000	3-1/2	2-3/16	3-3/32	11/16	1028T-0400	1028A-0400	1028N-0400	1028U-Adapter
	4-1/16	4.0625	3-1/2	2-3/16	3-3/32	11/16	1028T-0402	1028A-0402	1028N-0402	1028U-Adapter
	4-1/8	4.1250	3-1/2	2-3/16	3-3/32	11/16	1028T-0404	1028A-0404	1028N-0404	1028U-Adapter
	4-3/16	4.1875	3-1/2	2-3/16	3-3/32	11/16	1028T-0406	1028A-0406	1028N-0406	1028U-Adapter
	4-1/4	4.2500	3-1/2	2-3/16	3-3/32	11/16	1028T-0408	1028A-0408	1028N-0408	1028U-Adapter
	4-5/16	4.3125	3-1/2	2-3/16	3-3/32	11/16	1028T-0410	1028A-0410	1028N-0410	1028U-Adapter
	4-3/8	4.3750	3-1/2	2-3/16	3-3/32	11/16	1028T-0412	1028A-0412	1028N-0412	1028U-Adapter
	4-7/16	4.4375	3-1/2	2-3/16	3-3/32	11/16	1028T-0414	1028A-0414	1028N-0414	1028U-Adapter
H ²	4-1/2	4.5000	3-1/2	2-3/16	3-3/32	11/16	1028T-0416	1028A-0416	1028N-0416	1028U-Adapter
	4-9/16	4.5625	3-1/2	2-3/16	3-3/32	11/16	1028T-0418	1028A-0418	1028N-0418	1028U-Adapter
	4-5/8	4.6250	3-1/2	2-3/16	3-3/32	11/16	1028T-0420	1028A-0420	1028N-0420	1028U-Adapter
	4-11/16	4.6875	3-1/2	2-3/16	3-3/32	11/16	1028T-0422	1028A-0422	1028N-0422	1028U-Adapter
	4-3/4	4.7500	3-1/2	2-3/16	3-3/32	11/16	1028T-0424	1028A-0424	1028N-0424	1028U-Adapter
	4-13/16	4.8125	3-1/2	2-3/16	3-3/32	11/16	1028T-0426	1028A-0426	1028N-0426	1028U-Adapter
	4-7/8	4.8750	3-1/2	2-3/16	3-3/32	11/16	1028T-0428	1028A-0428	1028N-0428	1028U-Adapter
	4-15/16	4.9375	3-1/2	2-3/16	3-3/32	11/16	1028T-0430	1028A-0430	1028N-0430	1028U-Adapter
5	5.0000	3-1/2	2-3/16	3-3/32	11/16	1028T-0500	1028A-0500	1028N-0500	1028U-Adapter	

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

Inserts sold in multiples of 1



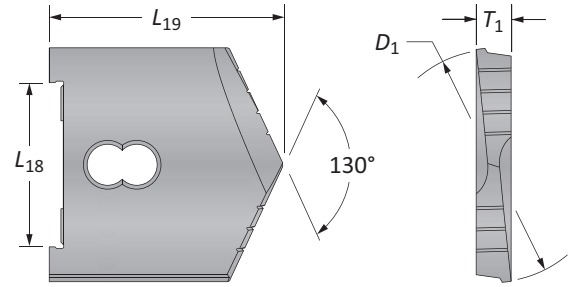
Sizes not shown are available upon request.




When ordering, please follow the example below:

Inch:	7-63/64", 130° CPM-M4 (H8 series) = use Part No. 10294-7.9843
Decimal:	6.391", 130° CPM-M4 (H5 series) = use Part No. 10294-6.3910

Universal Spade Drill Inserts

H¹ - H² Series | Diameter Range: 4.0000" - 8.5000"



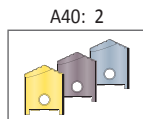
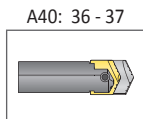
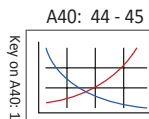
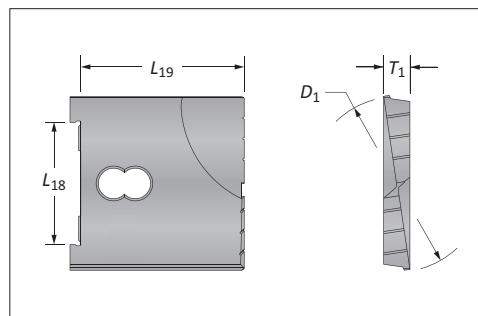
Series	D ₁ inch		Insert					
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	130° CPM-M4	130° CPM-T15*	Flat Bottom
H ¹	4	4.0000	3-1/2	3-11/16	11/16	10284-0400	10285-0400	10484-0400
	4-1/16	4.0625	3-1/2	3-11/16	11/16	10284-0402	-	-
	4-1/8	4.1250	3-1/2	3-11/16	11/16	10284-0404	10285-0404	10484-0404
	4-3/16	4.1875	3-1/2	3-11/16	11/16	10284-0406	-	-
	4-1/4	4.2500	3-1/2	3-11/16	11/16	10284-0408	-	10484-0408
	4-5/16	4.3125	3-1/2	3-11/16	11/16	10284-0410	-	-
	4-3/8	4.3750	3-1/2	3-11/16	11/16	10284-0412	-	10484-0412
	4-7/16	4.4375	3-1/2	3-11/16	11/16	10284-0414	-	-
H ²	4-1/2	4.5000	3-1/2	3-11/16	11/16	10284-0416	10285-0416	10484-0416
	4-9/16	4.5625	3-1/2	3-11/16	11/16	10284-0418	-	-
	4-5/8	4.6250	3-1/2	3-11/16	11/16	10284-0420	-	10484-0420
	4-11/16	4.6875	3-1/2	3-11/16	11/16	10284-0422	-	-
	4-3/4	4.7500	3-1/2	3-11/16	11/16	10284-0424	-	10484-0424
	4-13/16	4.8125	3-1/2	3-11/16	11/16	10284-0426	-	-
	4-7/8	4.8750	3-1/2	3-11/16	11/16	10284-0428	-	10484-0428
	4-15/16	4.9375	3-1/2	3-11/16	11/16	10284-0430	-	-
	5	5.0000	3-1/2	3-11/16	11/16	10284-0500	10285-0500	10484-0500

*Discontinued

Inserts sold in multiples of 1

NOTE: POR = Priced on request

Flat Bottom

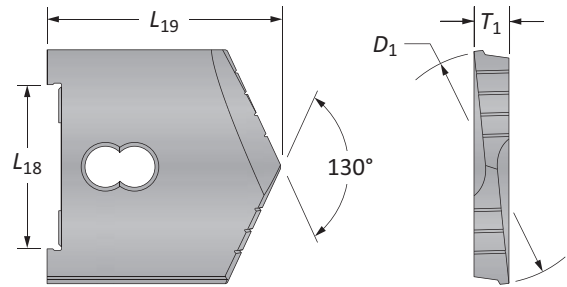


Sizes not shown are available upon request.
When ordering, please follow the example below:

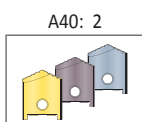
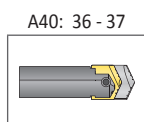
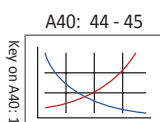
Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

Universal Spade Drill Inserts

H³ - H⁹ Series | Diameter Range: 5.1250" - 8.5000"



Series	D ₁ inch		Insert			 130° CPM-M4
	Fraction	Decimal	L ₁₈	L ₁₉	T ₁	
H ³	5-1/8	5.1250	3-1/2	3-11/16	11/16	10294-0504
	5-1/4	5.2500	3-1/2	3-11/16	11/16	10294-0508
	5-3/8	5.3750	3-1/2	3-11/16	11/16	10294-0512
	5-1/2	5.5000	3-1/2	3-11/16	11/16	10294-0516
H ⁴	5-5/8	5.6250	3-1/2	3-11/16	11/16	10294-0520
	5-3/4	5.7500	3-1/2	3-11/16	11/16	10294-0524
	5-7/8	5.8750	3-1/2	3-11/16	11/16	10294-0528
	6	6.0000	3-1/2	3-11/16	11/16	10294-0600
H ⁵	6-1/8	6.1250	3-1/2	3-11/16	11/16	10294-0604
	6-1/4	6.2500	3-1/2	3-11/16	11/16	10294-0608
	6-3/8	6.3750	3-1/2	3-11/16	11/16	10294-0612
	6-1/2	6.5000	3-1/2	3-11/16	11/16	10294-0616
H ⁶	6-5/8	6.6250	3-1/2	3-11/16	11/16	10294-0620
	6-3/4	6.7500	3-1/2	3-11/16	11/16	10294-0624
	6-7/8	6.8750	3-1/2	3-11/16	11/16	10294-0628
	7	7.0000	3-1/2	3-11/16	11/16	10294-0700
H ⁷	7-1/8	7.1250	3-1/2	3-11/16	11/16	10294-0704
	7-1/4	7.2500	3-1/2	3-11/16	11/16	10294-0708
	7-3/8	7.3750	3-1/2	3-11/16	11/16	10294-0712
	7-1/2	7.5000	3-1/2	3-11/16	11/16	10294-0716
H ⁸	7-5/8	7.6250	3-1/2	3-11/16	11/16	10294-0720
	7-3/4	7.7500	3-1/2	3-11/16	11/16	10294-0724
	7-7/8	7.8750	3-1/2	3-11/16	11/16	10294-0728
	8	8.0000	3-1/2	3-11/16	11/16	10294-0800
H ⁹	8-1/8	8.1250	3-1/2	3-11/16	11/16	10294-0804
	8-1/4	8.2500	3-1/2	3-11/16	11/16	10294-0808
	8-3/8	8.3750	3-1/2	3-11/16	11/16	10294-0812
	8-1/2	8.5000	3-1/2	3-11/16	11/16	10294-0816

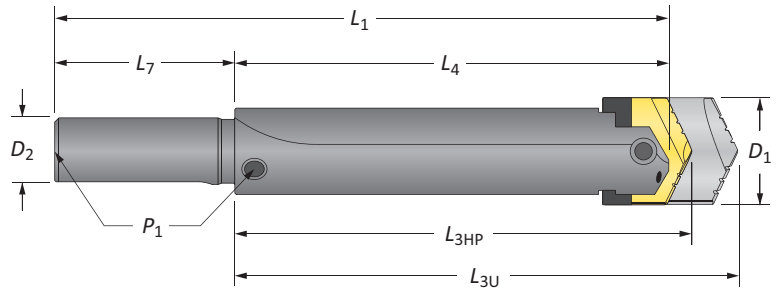


Sizes not shown are available upon request.
When ordering, please follow the example below:

Inch:	1-17/64", 130° CPM-M4 (B series) = use Part No. 10224-1.2656
Decimal:	1.5110", 130° Flat Bottom (C series) = use Part No. 10434-1.5110

High Performance / Universal Spade Drill Insert Holders

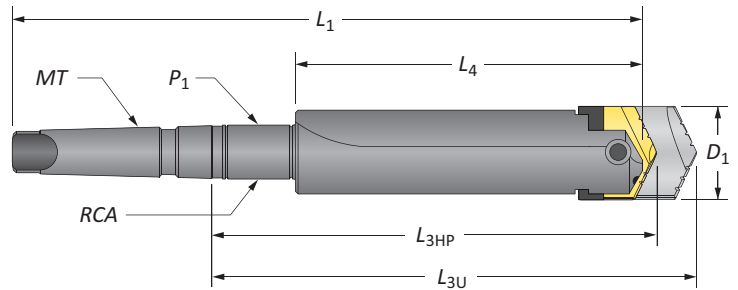
H Series



Straight Shank

Length	D ₁	Holder				Shank				Style	Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁	D ₂	L ₇	P ₁			
Short	4 - 8-1/2	7-31/32	8-9/16	7	13	2-1/2	6	1/2	#100	20681-2500	
Standard	4 - 8-1/2	15-31/32	16-9/16	15	21	2-1/2	6	1/2	#200	20881-2500	

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.



Taper Shank

Length	D ₁	Holder				MT	P ₁	RCA	Style	Part No.
		L _{3HP}	L _{3U}	L ₄	L ₁					
Short	4 - 8-1/2	8-7/32	8-13/16	7	13-1/8	#5	-	-	#300	21481-0005
Short	4 - 8-1/2	10-17/32	11-1/8	7	15-7/16	#5	1/2	2T-6SR	#400 SR	21681-0005
Standard	4 - 8-1/2	18-17/32	19-1/8	15	23-7/16	#5	1/2	2T-6SR	#500 SR	21881-0005
Standard	4 - 8-1/2	18-17/32	19-1/8	15	25-7/8	#6	1/2	2T-55SR	#500 SR	21881-0006
Long	4 - 8-1/2	27-19/32	28-3/16	24	34-7/8	#6	1/2	2T-55SR	#600 SR	22081-0006
XL	4 - 8-1/2	43-19/32	44-3/16	40	50-7/8	#6	1/2	2T-55SR	#700 SR	22281-0006

NOTE: Adapter is required for D-H series High Performance spade drills. Adapters sold separately.

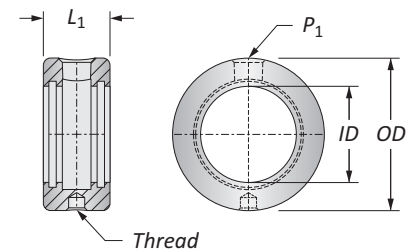
Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	2T-6SR	2T1-6SR	2T1-6OR-10
2-1/2	4	1-3/4	1/2 - NC	1/2	2T-55SR	2T1-55SR	2T1-55OR-10



*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

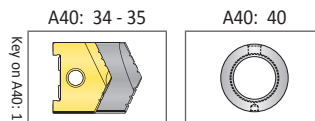
**RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

▲ Refer to page A40: 40 for proper RCA assembly and safety information



Connection Accessories

	
Clamping Screw	Blade-Loc Screw
3/4"-10 x 2-1/2"	3/8"-16 x 3/4"

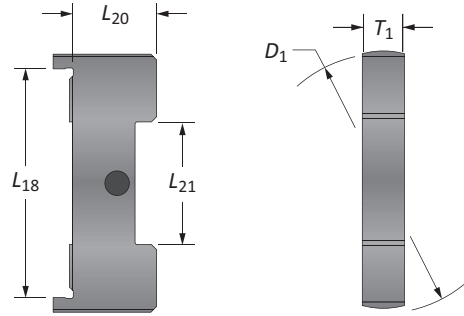


ⓘ = Imperial (in)
 ⓘ = Metric (mm)
 O-rings sold in packs of 10

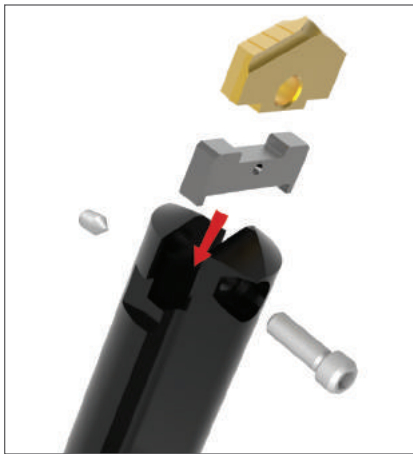
WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

High Performance Spade Drill Insert Adapters

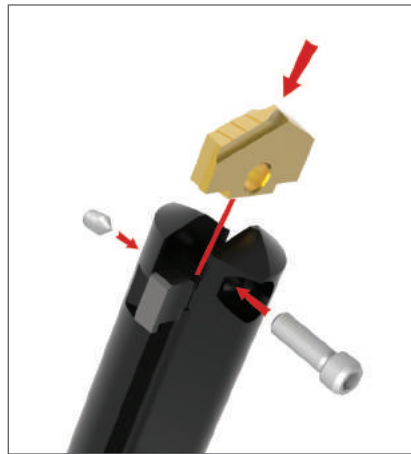
D - H Series



Series	D_1	Adapter				Part No.
		L_{18}	L_{20}	L_{21}	T_1	
D	1.995	1-3/4	43/64	15/16	3/8	1024U-Adapter
E	2.495	2-1/16	21/32	1-3/16	7/16	1025U-Adapter
F	2.995	2-5/8	23/32	1-1/4	1/2	1026U-Adapter
G	3.495	3-1/16	25/32	1-13/16	5/8	1027U-Adapter
H	3.995	3-1/2	29/32	2-1/4	11/16	1028U-Adapter



Step 1:
Position the adapter into the holder.



Step 2:
Slide the insert into the adapter inside the holder.



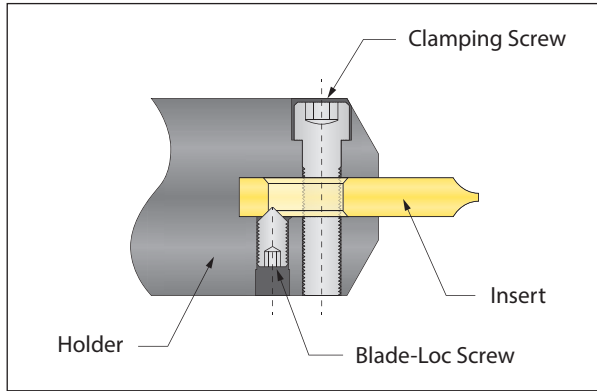
Step 3:
Insert and tighten both the clamping screw and Blade-Loc screw to secure the insert and adapter into position.

Adapter Interchangeability

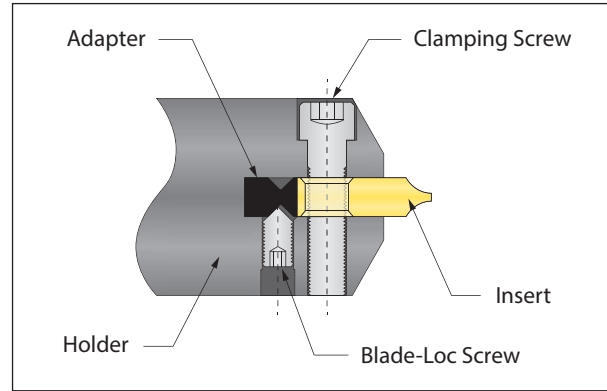
- Adapters allow the use of complete spade drill insert range
- Needed for D - H series (not required for A - C series)
- Adapter + High Performance insert combination can be interchanged with Universal insert and/or other holders
- Manufactured to ANSI B94.49-1975 TYPE I specifications

Blade-Loc Drill Insert Holders

D - H Series



Universal Spade Drill Insert





High Performance Spade Drill Insert

Blade-Loc Drill Holders - Universal

- Helps align the spade drill while locking it in place
- Protects against tool movement during the drilling cycle and when the tool is being retracted from the hole
- Standard feature in D - H series holders

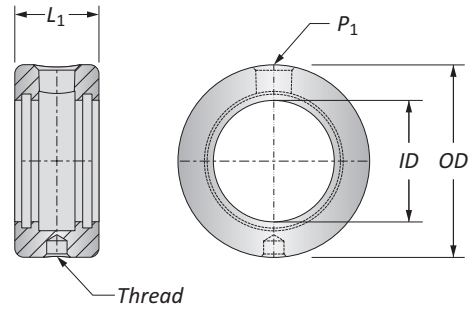
Blade-Loc Drill Holders - High Performance

- Secures the adapter to the holder
- Allows inserts to be exchanged without any need to remove, clean, and re-insert the adapter

Series	 Clamping Screw	 Blade-Loc Screw
A	#10-24 x 5/8	-
B	1/4"-20 x 7/8	-
C	1/4"-20 x 1	-
D	3/8"-16 x 1-1/4"	5/16"-18 x 1/2"
E	1/2"-13 x 1-3/4"	5/16"-18 x 1/2"
F	5/8"-10 x 2	5/16"-18 x 1/2"
G	3/4"-10 x 2-1/2	5/16"-18 x 1/2"
H	3/4"-10 x 2-1/2	3/8"-16 x 3/4"

Rotary Coolant Adapters (RCA)

Morse Taper Shanks



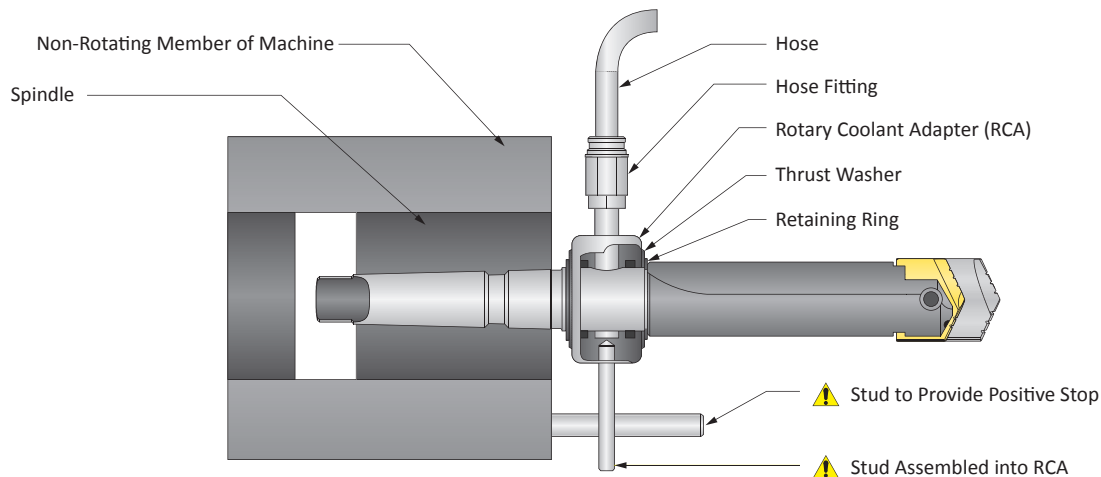
Holder Series	ID	OD	L ₁	Driving Rod Thread	P ₁	Part No.*	Max Recommended RPM	RCA O-Rings	
								Kit Part No.**	Replacements
A, B, C, D	1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	⚠ 2T-4SR	2000	2T1-4SR	2T1-4OR-10
B, C, D	1-3/4	3	1-3/8	3/8 - NC	1/4	⚠ 2T-5SR	1500	2T1-5SR	2T1-5OR-10
E, F, G, H	2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	⚠ 2T-6SR	1100	2T1-6SR	2T1-6OR-10
D, E, H	2-1/2	4	1-3/4	1/2 - NC	1/2	⚠ 2T-55SR	1100	2T1-55SR	2T1-55OR-10
F	3	4-1/2	1-3/4	1/2 - NC	1/2	⚠ 2T-60SR	900	2T1-60SR	2T1-60OR-10
G	3-3/4	5-1/2	1-3/4	1/2 - NC	1/2	⚠ 2T-65SR	700	2T1-65SR	2T1-65OR-10

*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

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

NOTE: Max recommended pressure is 600 PSI (42 bar)

NOTE: Recommendations above are based on water and oil based coolants



i = Imperial (in)

m = Metric (mm)

O-rings sold in packs of 10

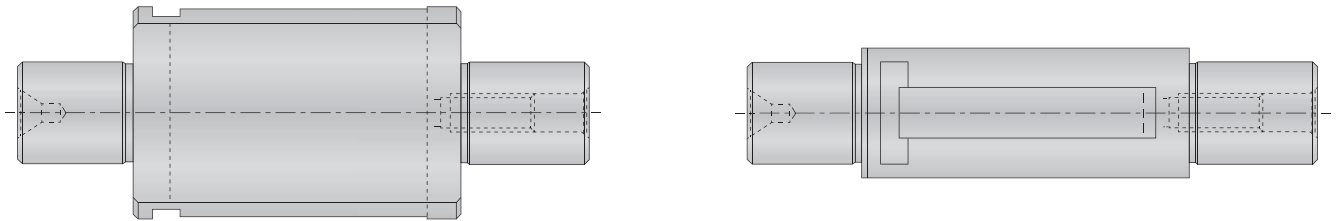
⚠ WARNING RCA rotation during drilling can cause hose and/or hose fitting failure, machinery damage, and/or serious injury. To prevent, use RCA and positive stop studs when drilling. Factory technical assistance is also available for your specific applications.

Accessories



Top Mounting Plate

Part No.	Description
25000-2505	Top mounting plate only. It is available for those who already have a Universal grinding fixture or may wish to adapt it to some other device. The plate comes complete with all the hardware required to locate and clamp any series Universal style spade drill to the plate.



Cylindrical Grinding Fixture

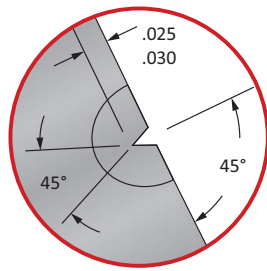
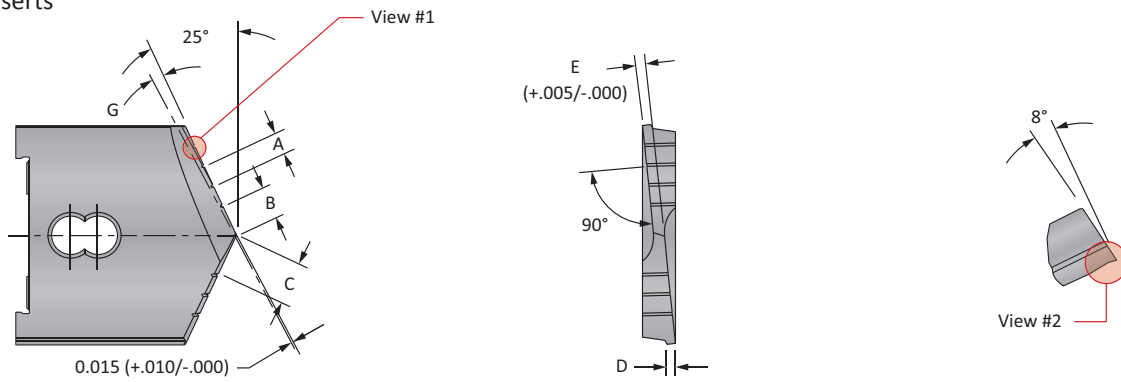
Series	Diameter Range	Part No.
A	15/16 - 1-3/8	24410-2560
B	1-1/4 - 1-3/4	24420-2565
C	1-1/2 - 2-3/8	24430-2570
D	2 - 2-7/8	24440-2575
E	2-1/2 - 3-3/8	24450-2580
F	3 - 3-7/8	24460-2585
G	3-1/2 - 4-1/2	24470-2590
H*	4 - 8-1/2	24480-2595

Items included with the Cylindrical Grinding Fixture: (1) set screw, (1) slip pin

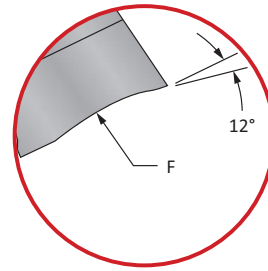
*Applies to drills with a reference length of 3-11/16". Cylindrical Grinding Fixtures for drills with a 4-11/16" reference length will be quoted upon request

Regrind Charts

Universal Inserts



View #1



View #2

Universal (130°) Spade Drill Inserts

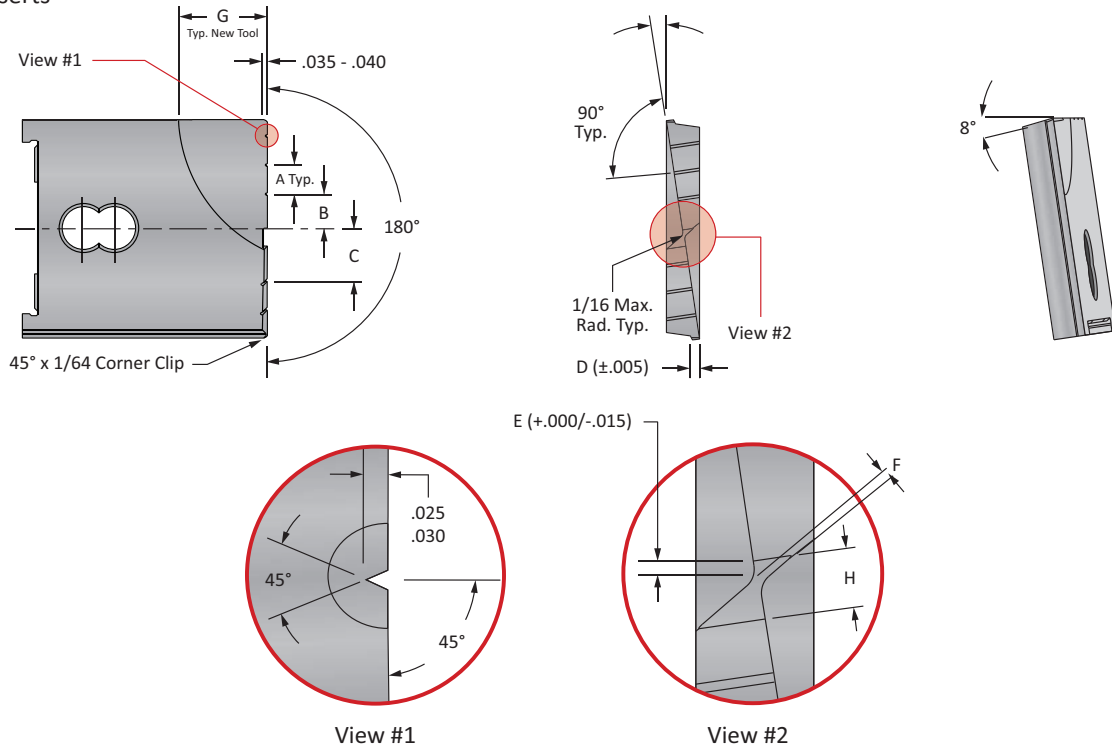
Series	Insert Thickness	Size Range	A	B	C	D	E	F	G
AA	1/4	1 - 1-3/8	0.125	0.156	0.218	0.065	0.070	1/4	3°
A	3/16	31/32 - 1-3/8	0.125	0.156	0.218	0.065	0.065	1/4	3°
B	9/32	1-1/4 - 1-3/4	0.150	0.250	0.325	0.070	0.090	5/16	3°
C	5/16	1-1/2 - 2-3/8	0.200	0.250	0.350	0.080	0.100	5/16	3°
D	3/8	2 - 2-7/8	0.250	0.375	0.500	0.100	0.120	3/8	3°
E	7/16	2-1/2 - 3-3/8	0.300	0.437	0.587	0.100	0.140	3/8	3°
F	1/2	3 - 3-7/8	0.350	0.437	0.612	0.125	0.170	3/8	3°
G	5/8	3-1/2 - 4-1/2	0.350	0.500	0.675	0.140	0.200	3/8	3°
H ¹ - H ²	11/16	4 - 5	0.400	0.500	0.700	0.165	0.225	1/2	3°
H ³	11/16	5-1/8 - 5-1/2	0.500	0.500	0.750	0.185	0.250	1/2	3°
H ⁴ - H ⁹	11/16	5-5/8 - 8-1/2	0.500	0.500	0.750	0.185	0.250	1/2	2°

NOTE: Maintain cutting edges of the tool within 0.001" T.I.R.

High Performance Regrinds: High Performance inserts should be reground and coated by Allied Machine before returning them to production. The real economy of High Performance spade inserts is their improved production rates (100% and 500%) and increased tool life (3 to 20 times). Factory regrounding and coating provides like-new tool performance. Our factory service reduces your total cost-per-hole.

Regrind Charts

Universal Inserts



Flat Bottom Spade Drill Inserts




Series	Insert Thickness	Size Range	A	B	C	D	E	F	G	H
AA	1/4	1 - 1-3/8	0.150	0.250	0.325	0.065	1/64 - 1/32	0.075	7/16	1/8
A	3/16	31/32 - 1-3/8	0.150	0.250	0.325	0.065	1/64 - 1/32	0.075	7/16	1/8
B	9/32	1-1/4 - 1-3/4	0.200	0.250	0.350	0.070	1/64 - 1/32	0.075	1/2	1/8
C	5/16	1-1/2 - 2-3/8	0.200	0.250	0.350	0.080	1/32 - 3/64	0.075	5/8	1/8
D	3/8	2 - 2-7/8	0.300	0.375	0.525	0.100	1/32 - 3/64	0.129	7/8	3/16
E	7/16	2-1/2 - 3-3/8	0.300	0.375	0.525	0.100	1/32 - 1/16	0.129	1-1/8	3/16
F	1/2	3 - 3-7/8	0.300	0.500	0.650	0.125	1/32 - 1/16	0.156	1-1/4	1/4
G	5/8	3-1/2 - 4-1/2	0.400	0.500	0.700	0.140	1/32 - 1/16	0.156	1-1/2	1/4
H ¹ - H ²	11/16	4 - 5	0.500	0.500	0.750	0.165	1/32 - 1/16	0.156	1-1/2	1/4

NOTE: Grind cutting edge 0.005" above center line at the center of the new tool

NOTE: Maintain flatness and height across the cutting edges of the tool within 0.001" T.I.R.

Recommended Cutting Data | Imperial (inch)

High Performance Spade Inserts

ISO	Material	Hardness (BHN)	 TiN SFM	 TiAlN SFM	 TiCN SFM	Feed Rate (IPR) by Diameter			
						1 - 1-1/4	1-1/4 - 2	2 - 3	3 - 5
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	200	280	260	.016	.020	.023	0.28
		150 - 200	180	260	235	.016	.020	.023	.028
		200 - 250	160	240	210	.016	.020	.023	.028
P	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	170	250	220	.015	.019	.023	.027
		125 - 175	160	240	210	.015	.019	.023	.027
		175 - 225	150	225	195	.014	.018	.021	.024
		225 - 275	140	210	180	.014	.018	.021	.024
P	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	160	240	210	.015	.019	.023	.027
		175 - 225	150	225	195	.014	.018	.021	.024
		225 - 275	140	210	180	.014	.018	.021	.024
		275 - 325	130	195	170	.012	.016	.019	.022
P	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	150	210	195	.014	.017	.019	.022
		175 - 225	140	195	180	.014	.017	.019	.022
		225 - 275	130	180	170	.014	.017	.019	.022
		275 - 325	120	170	155	.012	.015	.017	.020
		325 - 375	110	155	145	.012	.015	.017	.020
P	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	80	110	100	.010	.014	.017	.020
		300 - 350	60	85	80	.010	.014	.017	.020
		350 - 400	50	70	65	.009	.012	.015	.018
P	Structural Steel A36, A285, A516, etc.	100 - 150	140	200	180	.014	.018	.021	.026
		150 - 250	120	170	155	.012	.016	.019	.024
		250 - 350	100	140	130	.010	.014	.017	.020
P	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	80	110	105	.010	.012	.015	.017
		200 - 250	60	90	85	.010	.012	.015	.017
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 220	30	40	35	.010	.012	.015	-
		220 - 310	25	35	30	.008	.010	.012	-
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	75	105	95	.011	.014	.016	.020
		185 - 275	60	90	80	.010	.012	.014	.018
K	Cast Iron	120 - 150	170	250	220	.020	.024	.027	.030
		150 - 200	150	225	195	.018	.022	.025	.028
		200 - 220	130	195	170	.016	.018	.021	.024
		220 - 260	110	165	145	.012	.014	.017	.020
		260 - 320	90	135	120	.009	.012	.014	.016
N	Aluminum	30	600	850	750	.020	.022	.025	.025
		180	300	450	400	.018	.022	.025	.025

Deep Hole Drilling Speed and Feed Adjustment

	Holder Length	
	Long	XL
Speed	0.90	0.80
Feed	-	0.90

Recommended Speed and Feed Example

If the recommended speed and feed is 200 SFM and 0.016 IPR for a standard length holder, then the speed and feed using an XL holder in the same application would be 160 SFM and 0.014 IPR.

$200 \cdot 0.80 = 160 \text{ SFM}$	$0.016 \cdot 0.90 = 0.014 \text{ IPR}$
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⚠ WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short length 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 the workpiece or fixture.

Refer to page A40: 48 for Deep Hole Drilling Guidelines. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation chart for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is available through our Application Engineering department. See adjustment examples on the following page.

Coolant Recommendations | Imperial (inch)

High Performance Spade Inserts

ISO	Material	Data Metrics	Data by Diameter			
			1 - 1-1/4	1-1/4 - 2	2 - 3	3 - 5
P	Free Machining Steel 1118, 1215, 12L14, etc.	Hardness (BHN)	100 - 250	100 - 250	100 - 250	100 - 250
		Coolant Pressure (PSI)	105 - 150	55 - 75	45 - 60	35 - 45
		Coolant Volumetric Flow Rate (GPM)	6.3 - 7.6	15 - 18	31 - 36	47 - 53
	Low Carbon Steel	Hardness (BHN)	85 - 275	85 - 275	85 - 275	85 - 275
		Coolant Pressure (PSI)	80 - 115	45 - 55	35 - 45	30 - 35
		Coolant Volumetric Flow Rate (GPM)	5.5 - 6.6	14 - 15	28 - 31	43 - 46
	Medium Carbon Steel	Hardness (BHN)	125 - 325	125 - 325	125 - 325	125 - 325
		Coolant Pressure (PSI)	70 - 100	40 - 50	35 - 40	30 - 35
		Coolant Volumetric Flow Rate (GPM)	5.2 - 6.2	13 - 15	28 - 30	43 - 46
	Alloy Steel	Hardness (BHN)	125 - 375	125 - 375	125 - 375	125 - 375
		Coolant Pressure (PSI)	60 - 85	30 - 40	30 - 35	25 - 30
		Coolant Volumetric Flow Rate (GPM)	4.8 - 5.7	11 - 13	26 - 28	39 - 43
	High Strength Alloy 4340, 4330V, 300M, etc.	Hardness (BHN)	225 - 400	225 - 400	225 - 400	225 - 400
		Coolant Pressure (PSI)	25 - 30	20 - 25	20 - 25	20 - 25
		Coolant Volumetric Flow Rate (GPM)	3.1 - 3.4	9 - 10	21 - 23	35 - 39
	Structural Steel A36, A285, A516, etc.	Hardness (BHN)	100 - 350	100 - 350	100 - 350	100 - 350
		Coolant Pressure (PSI)	50 - 70	30 - 35	25 - 30	25 - 30
		Coolant Volumetric Flow Rate (GPM)	4.4 - 5.2	11 - 12	23 - 26	39 - 43
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	Hardness (BHN)	150 - 250	150 - 250	150 - 250	150 - 250	
	Coolant Pressure (PSI)	25 - 30	20 - 25	20 - 25	20 - 25	
	Coolant Volumetric Flow Rate (GPM)	3.1 - 3.4	9 - 10	21 - 23	35 - 43	
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	Hardness (BHN)	140 - 310	140 - 310	140 - 310	140 - 310
		Coolant Pressure (PSI)	35 - 40	25 - 30	25 - 30	-
		Coolant Volumetric Flow Rate (GPM)	3.6 - 3.9	10 - 11	23 - 26	-
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	Hardness (BHN)	135 - 275	135 - 275	135 - 275	135 - 275
		Coolant Pressure (PSI)	50 - 65	30 - 35	25 - 30	25 - 30
		Coolant Volumetric Flow Rate (GPM)	4.4 - 5.0	11 - 12	23 - 26	39 - 43
K	Cast Iron	Hardness (BHN)	120 - 320	120 - 320	120 - 320	120 - 320
		Coolant Pressure (PSI)	40 - 50	25 - 30	25 - 30	20 - 25
		Coolant Volumetric Flow Rate (GPM)	3.9 - 4.4	10 - 11	23 - 26	35 - 43
N	Aluminum	Hardness (BHN)	30 - 180	30 - 180	30 - 180	30 - 180
		Coolant Pressure (PSI)	150 - 220	80 - 115	60 - 80	55 - 70
		Coolant Volumetric Flow Rate (GPM)	7.6 - 9.1	19 - 22	36 - 42	59 - 66

Deep Hole Drilling Speed and Feed Adjustment

Pressure and Flow	Holder Length	
	Long	XL
	1.3	2

Recommended Speed and Feed Example

If the recommended pressure and flow is 150 PSI and 6.3 GPM for a standard length holder, then the adjusted pressure and flow using an XL holder in the same application would be 300 PSI and 12.6 GPM.

$$150 \cdot 2 = 300 \text{ PSI}$$

$$6.3 \cdot 2 = 12.6 \text{ GPM}$$

⚠ WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short length 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 the workpiece or fixture.

Refer to page A40: 48 for Deep Hole Drilling Guidelines. Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at the recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the HP/Universal drilling system will still function at reduced penetration rates. Contact our Application Engineering department for more specific recommendations of coolant requirements and/or speeds and feeds.

Recommended Cutting Data | Imperial (inch)

Universal Spade Inserts

ISO	Material	Hardness (BHN)	SFM	Feed Rate (IPR) by Diameter			
				1 - 1-1/4	1-1/4 - 2	2 - 3	3 - 5
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	100	.014	.016	.020	.024
		150 - 200	90	.013	.015	.019	.022
		200 - 250	80	.012	.014	.018	.020
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	80	.012	.015	.018	.020
		125 - 175	75	.012	.014	.017	.020
		175 - 225	60	.010	.014	.016	.018
		225 - 275	55	.010	.013	.016	.018
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	65	.010	.014	.018	.020
		175 - 225	60	.010	.014	.016	.020
		225 - 275	50	.008	.013	.016	.018
		275 - 325	45	.008	.012	.014	.016
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	60	.010	.014	.018	.020
175 - 225		55	.010	.014	.016	.020	
225 - 275		45	.008	.013	.016	.018	
275 - 325		35	.008	.012	.014	.016	
High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	40	.008	.012	.014	.016	
	300 - 350	30	.006	.010	.014	.016	
	350 - 400	25	.006	.008	.014	.016	
Structural Steel A36, A285, A516, etc.	100 - 150	70	.012	.016	.018	.020	
	150 - 250	60	.010	.014	.016	.018	
	250 - 350	50	.008	.012	.014	.016	
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	50	.009	.011	.014	.016	
	200 - 250	40	.008	.010	.013	.015	
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 220	20	.008	.010	.012	-
		220 - 310	15	.007	.009	.011	-
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	45	.008	.012	.015	.018
		185 - 275	35	.007	.010	.013	.016
K	Cast Iron	120 - 150	100	.016	.020	.022	.025
		150 - 200	80	.015	.018	.020	.022
		200 - 220	70	.011	.014	.018	.020
		220 - 260	60	.008	.012	.015	.017
		260 - 320	45	.008	.010	.012	.014
N	Aluminum	30	275	.018	.026	.032	.042
		180	200	.018	.026	.032	.042

Deep Hole Drilling Speed and Feed Adjustment

	Holder Length	
	Long	XL
Speed	0.90	0.80
Feed	-	0.90

Recommended Speed and Feed Example

If the recommended speed and feed is 100 SFM and 0.016 IPR for a standard length holder, then the speed and feed using an XL holder in the same application would be 80 SFM and 0.014 IPR.

$100 \cdot 0.80 = 80 \text{ SFM}$	$0.016 \cdot 0.90 = 0.014 \text{ IPR}$
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⚠️ WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short length 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 the workpiece or fixture.

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IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation chart for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is available through our Application Engineering department. See adjustment examples on the following page.

Coolant Recommendations | Imperial (inch)

Universal Spade Inserts

ISO	Material	Data Metrics	Data by Diameter			
			1 - 1-1/4	1-1/4 - 2	2 - 3	3 - 5
P	Free Machining Steel 1118, 1215, 12L14, etc.	Hardness (BHN)	100 - 250	100 - 250	100 - 250	100 - 250
		Coolant Pressure (PSI)	40	25	25	20
		Coolant Volumetric Flow Rate (GPM)	3.9	10	23	35
	Low Carbon Steel	Hardness (BHN)	85 - 275	85 - 275	85 - 275	85 - 275
		Coolant Pressure (PSI)	30	20	20	20
		Coolant Volumetric Flow Rate (GPM)	3.4	9	21	35
	Medium Carbon Steel	Hardness (BHN)	125 - 325	125 - 325	125 - 325	125 - 325
		Coolant Pressure (PSI)	25	20	20	20
		Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35
	Alloy Steel	Hardness (BHN)	125 - 375	125 - 375	125 - 375	125 - 375
		Coolant Pressure (PSI)	20	20	20	20
		Coolant Volumetric Flow Rate (GPM)	2.8	9	21	35
High Strength Alloy 4340, 4330V, 300M, etc.	Hardness (BHN)	225 - 400	225 - 400	225 - 400	225 - 400	
	Coolant Pressure (PSI)	25	20	20	20	
	Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35	
Structural Steel A36, A285, A516, etc.	Hardness (BHN)	100 - 350	100 - 350	100 - 350	100 - 350	
	Coolant Pressure (PSI)	25	20	20	20	
	Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35	
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	Hardness (BHN)	150 - 250	150 - 250	150 - 250	150 - 250	
	Coolant Pressure (PSI)	25	20	20	20	
	Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35	
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	Hardness (BHN)	140 - 310	140 - 310	140 - 310	140 - 310
		Coolant Pressure (PSI)	25	20	20	20
		Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	Hardness (BHN)	135 - 275	135 - 275	135 - 275	135 - 275
		Coolant Pressure (PSI)	25	25	20	20
		Coolant Volumetric Flow Rate (GPM)	3.1	10	21	35
K	Cast Iron	Hardness (BHN)	120 - 320	120 - 320	120 - 320	120 - 320
		Coolant Pressure (PSI)	25	20	20	20
		Coolant Volumetric Flow Rate (GPM)	3.1	9	21	35
N	Aluminum	Hardness (BHN)	30 - 180	30 - 180	30 - 180	30 - 180
		Coolant Pressure (PSI)	55	35	30	30
		Coolant Volumetric Flow Rate (GPM)	4.6	12	26	40

Deep Hole Drilling Speed and Feed Adjustment

	Holder Length	
	Long	XL
Pressure and Flow	1.3	2

Recommended Speed and Feed Example

If the recommended pressure and flow is 150 PSI and 6.3 GPM for a standard length holder, then the adjusted pressure and flow using an XL holder in the same application would be 300 PSI and 12.6 GPM.

$150 \cdot 2 = 300 \text{ PSI}$	$6.3 \cdot 2 = 12.6 \text{ GPM}$
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⚠ WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short length 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 the workpiece or fixture.

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IMPORTANT: The coolant pressure and flow rate recommendation below represents a good approximation to obtain optimum tool life and chip evacuation at the recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the HP/Universal drilling system will still function at reduced penetration rates. Contact our Application Engineering department for more specific recommendations of coolant requirements and/or speeds and feeds.

A
DRILLING
B
BORING
C
REAMING
D
BURNISHING
E
THREADING
X
SPECIALS



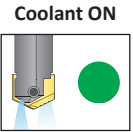
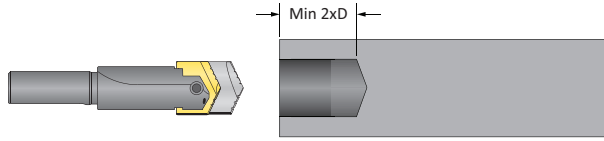
Deep Hole Drilling Guidelines

A

DRILLING

- 1. Pilot Hole**
 100% RPM
 100% IPR (mm/rev)

Establish the pilot hole using the same diameter short drill to a depth of 2xD minimum. Utilize a pilot drill with the same or larger included point angle.

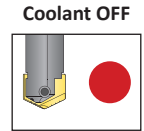
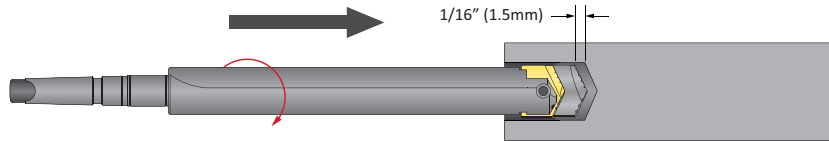


B

BORING

- 2. Feed-in**
 50 RPM max
 12 IPM (300 mm/min)

Feed the longer drill within 1/16" (1.5mm) short of the established pilot hole bottom at a **maximum of 50 RPM** and 12 IPM (300 mm/min) feed rate.

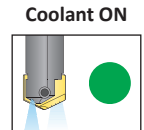
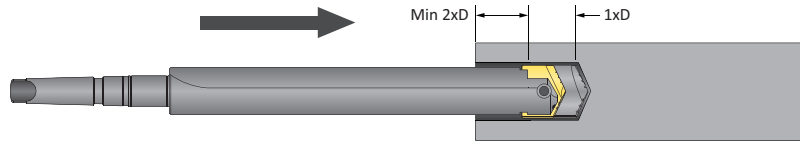


C

REAMING

- 3. Deep Hole Transition Drilling**
 50% RPM
 75% IPR (mm/rev)

Drill additional 1xD past the bottom of the pilot hole at 50% reduction of recommended speed and 25% reduction of recommended feed. Minimum of 1 second dwell is required to meet full speed before feeding.

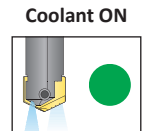
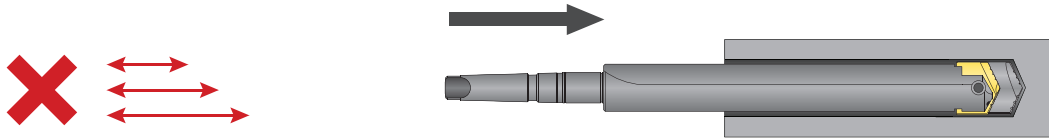


D

BURNISHING

- 4. Deep Hole Drilling - Blind**
 100% RPM
 100% IPR (mm/rev)

Drill to full depth at recommended speed and feed for longer drill according to Allied speed and feed charts. **No peck cycle recommended.**

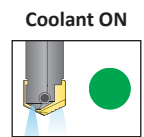
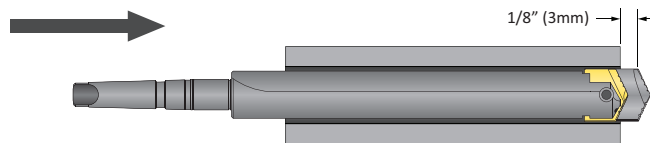


E

THREADING

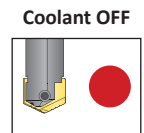
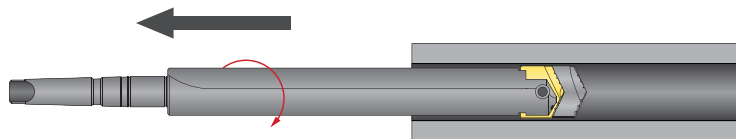
- 5. Deep Hole Drilling - at Breakout**
 50% RPM
 75% IPR (mm/rev)

For through holes only: Reduce speed by 50% and feed by 25% prior to breakout. Do not break out more than 1/8" (3mm) past the full diameter of the drill.



- 6. Drill Retract**
 50 RPM max

Reduce speed to a **maximum of 50 RPM** before retracting from the hole.



X

SPECIALS

1. WARNING Tool failure can cause serious injury. To prevent:

- When using holders without support bushing, use a short length 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 the workpiece or fixture.

Visit www.alliedmachine.com/DeepHoleGuidelines for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering Team.

Guaranteed Test / Demo Application Form

Distributor PO # _____

The following must be filled out completely before your test will be considered

Distributor Information

Company Name: _____
 Contact: _____
 Account Number: _____
 Phone: _____
 Email: _____

End User Information

Company Name: _____
 Contact: _____
 Industry: _____
 Phone: _____
 Email: _____

Current Process List all tooling, coatings, substrates, speeds and feeds, tool life, and any problems you are experiencing

Test Objective List what would make this a successful test (i.e. penetration rate, finish, tool life, hole size, etc.)

Application Information

Hole Diameter: _____ in/mm	Tolerance: _____	Material: _____ (4150 / A36 / Cast Iron / etc.)
Pre-existing Diameter: _____ in/mm	Depth of Cut: _____ in/mm	Hardness: _____ (BHN / Rc)
Required Finish: _____ RMS	State: _____	(Casting / Hot rolled / Forging)

Machine Information

Machine Type: _____ (Lathe / Screw machine / Machine center / etc.)	Builder: _____ (Haas, Mori Seiki, etc.)	Model #: _____
Shank Required: _____ (CAT50 / Morse taper, etc.)		Power: _____ HP/KW
Rigidity: _____	Orientation: _____	Tool Rotating: _____
<input type="checkbox"/> Excellent	<input type="checkbox"/> Vertical	<input type="checkbox"/> Yes
<input type="checkbox"/> Good	<input type="checkbox"/> Horizontal	<input type="checkbox"/> No
<input type="checkbox"/> Poor		Thrust: _____ lbs/N

Coolant Information

Coolant Delivery: _____ (Through tool / Flood)	Coolant Pressure: _____ PSI / bar
Coolant Type: _____ (Air mist, oil, synthetic, water soluble, etc.)	Coolant Volume: _____ GPM / LPM

Requested Tooling

QTY	Item Number	QTY	Item Number



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Warranty Information



Allied Machine & Engineering 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 Machine'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 Machine representative and which upon inspection is determined by Allied Machine to be defective in materials or workmanship.

Complete information as to operating conditions, machine, set-up, and application of cutting fluid should accompany any product returned for inspection. The provisions of this warranty shall not apply to any Allied Machine products which have been subjected to misuse, improper operating conditions, machine set-up or application of cutting fluid or which have been repaired or altered if such repair or alteration in the judgment of Allied Machine would adversely affect performance of the product.

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