



**ALLIED MACHINE  
& ENGINEERING**



Boring



Reaming



Burnishing



Threading



Specials



## HP and Universal

▶ **DRILLING**

Replaceable Insert Drilling System



SECTION

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# A40

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High Performance / Universal

# 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.

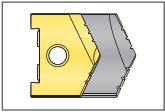
**NOTE** and **IMPORTANT** are also used. These are important that you read and follow but are not safety-related.

Visit [www.alliedmachine.com](http://www.alliedmachine.com) for the most up-to-date information and procedures.

# High Performance / Universal Drilling System Contents

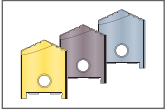
## Reference Icons

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



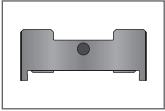
### High Performance / Universal Inserts

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



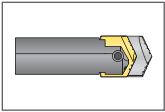
### Universal Insert Coating Options

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



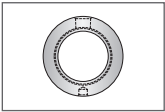
### Insert Adapter Information

Detailed information regarding the corresponding adapter item



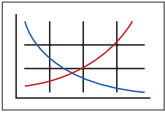
### High Performance / Universal Holders

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 <sup>1</sup> - H <sup>2</sup>	4.0000 - 5.0000
H <sup>3</sup> - H <sup>9</sup>	5.1250 - 8.5000

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## Drill Series

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## Recommended Cutting Data

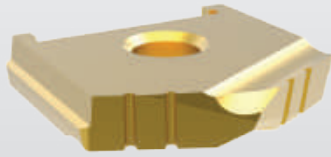
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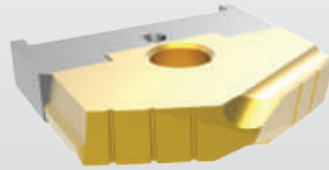
## System Overview | Inserts

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

### High Performance Inserts



A - C Series

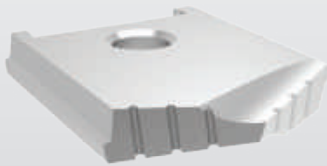


D - H Series  
(adapter required)

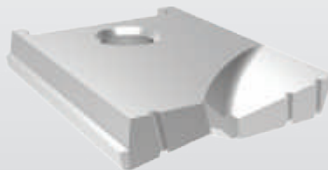
#### High Performance Inserts

- 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

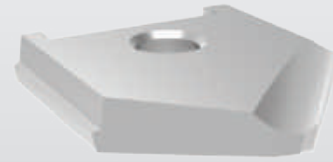
### Universal Inserts



130° CPM-M4



Flat Bottom

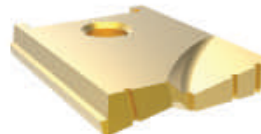
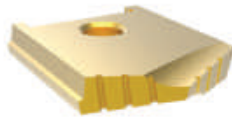


90° Spot and Chamfer

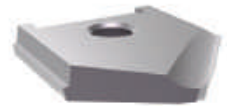
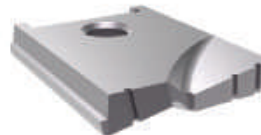
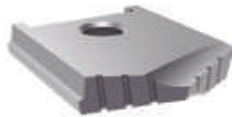
#### Universal Inserts

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

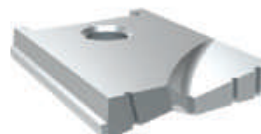
TiN Coating	
Ordering Code: T	Example: 10224-0116 <b>T</b>



TiAlN Coating	
Ordering Code: A	Example: 10224-0116 <b>A</b>



TiCN Coating	
Ordering Code: N	Example: 10224-0116 <b>N</b>





A

DRILLING



**Straight Shank Holders**

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

B

BORING



**Taper Shank Holders**

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

C

REAMING



**50 NMTB Shank Holders**

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

D

BURNISHING



**Adapter\***

for High Performance D - H series inserts only

E

THREADING



X

SPECIALS

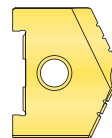
\*For detailed information and setup for adapters and Blade-Loc screw assembly, see page A40: 38



## Product Nomenclature

### High Performance Spade Drill Inserts

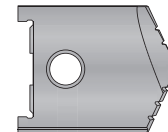
<b>1</b>	<b>02</b>	<b>8</b>	<b>T</b>	-	<b>0406</b>
1	2	3	4		5



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

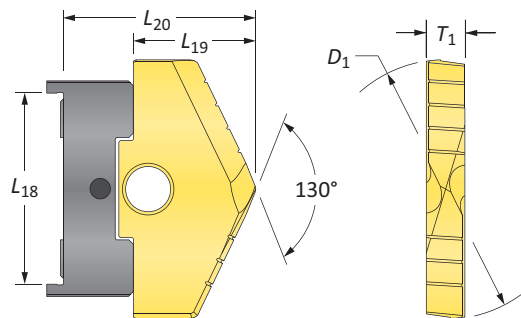
### Universal Spade Drill Inserts

<b>1</b>	<b>02</b>	<b>8</b>	<b>4</b>	-	<b>0406</b>	<b>T</b>
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. Diameter (by 1/32")	6. Coating
0406 = Inch 4.3593 = Decimal	Blank = Uncoated T = TiN A = TiAlN N = TiCN



#### Reference Key

Symbol	Attribute
D <sub>1</sub>	Insert diameter
L <sub>18</sub>	Holder locating area
L <sub>19</sub>	Reference length
L <sub>20</sub>	High Performance length (with adapter)
T <sub>1</sub>	Thickness

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



## Product Nomenclature

### High Performance / Universal Spade Drill Insert Holders

<b>2</b>	<b>22</b>	<b>8</b>	<b>1</b>	-	<b>0006</b>
1	2	3	4		5

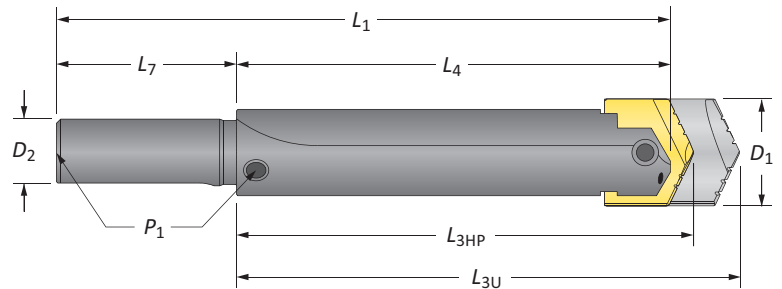


1. Holder	2. Classification	3. Series																					
2 = Drill holder	<table border="0"> <tr> <td><b>Straight Shank</b></td> <td><b>Taper Shank</b></td> <td><b>50 NMTB Shank</b></td> </tr> <tr> <td><b>02</b> = Stub #125 (NC)</td> <td><b>14</b> = Short #300 (NC)</td> <td><b>24</b> = Short #300 (NC)</td> </tr> <tr> <td><b>04</b> = Short #150 (NC)</td> <td><b>15</b> = Short #300 (TSC)</td> <td><b>26</b> = Short #400 (C)</td> </tr> <tr> <td><b>06</b> = Short #100 (C)</td> <td><b>16</b> = Short #400 SR (RCA)</td> <td><b>28</b> = Standard #500 (C)</td> </tr> <tr> <td><b>08</b> = Standard #200 (C)</td> <td><b>18</b> = Standard #500 SR (RCA)</td> <td></td> </tr> <tr> <td><b>10</b> = Long #250 (C)</td> <td><b>20</b> = Long #600 SR (RCA)</td> <td></td> </tr> <tr> <td></td> <td><b>22</b> = 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>	<b>Straight Shank</b>	<b>Taper Shank</b>	<b>50 NMTB Shank</b>	<b>02</b> = Stub #125 (NC)	<b>14</b> = Short #300 (NC)	<b>24</b> = Short #300 (NC)	<b>04</b> = Short #150 (NC)	<b>15</b> = Short #300 (TSC)	<b>26</b> = Short #400 (C)	<b>06</b> = Short #100 (C)	<b>16</b> = Short #400 SR (RCA)	<b>28</b> = Standard #500 (C)	<b>08</b> = Standard #200 (C)	<b>18</b> = Standard #500 SR (RCA)		<b>10</b> = Long #250 (C)	<b>20</b> = Long #600 SR (RCA)			<b>22</b> = XL #700 SR SR (RCA)		<p><b>1</b> = A series  <b>2</b> = B series  <b>3</b> = C series  <b>4</b> = D series  <b>5</b> = E series  <b>6</b> = F series  <b>7</b> = G series  <b>8</b> = H series</p>
<b>Straight Shank</b>	<b>Taper Shank</b>	<b>50 NMTB Shank</b>																					
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<b>10</b> = Long #250 (C)	<b>20</b> = Long #600 SR (RCA)																						
	<b>22</b> = XL #700 SR SR (RCA)																						

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

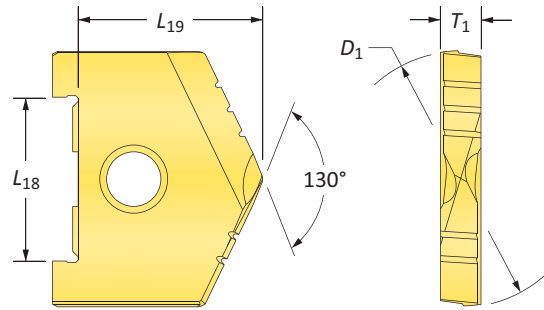
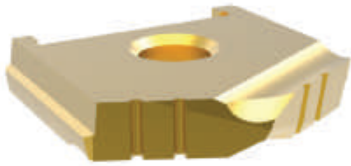
Symbol	Attribute
$D_1$	Insert diameter
$D_2$	Shank diameter
$L_1$	Overall length
$L_{3HP}$	Reference length (High Performance)
$L_{3U}$	Reference length (Universal)
$L_4$	Flute length
$L_7$	Shank length
$P_1$	Pipe tap








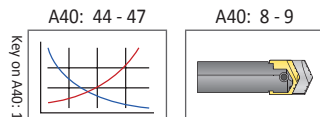
## High Performance Spade Drill Inserts

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



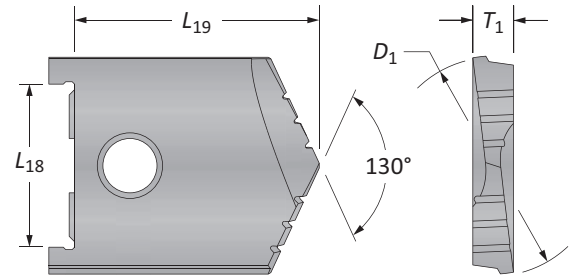
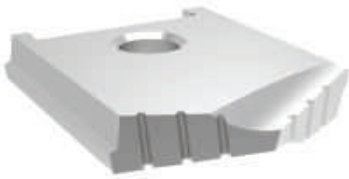
Sizes not shown are available upon request.  
When ordering, please follow the example below:

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



## Universal Spade Drill Inserts

A Series | Diameter Range: 0.9688" - 1.3750"

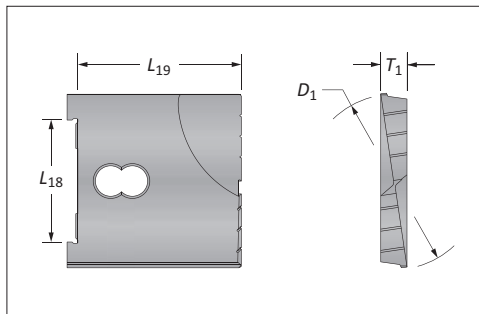


Series	D <sub>1</sub> inch		Inserts					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom	90° Spot & Chamfer
A	31/32	0.9688	3/4	1-5/32	3/16	<b>10214-0031*</b>	-	<b>POR</b>
	1	1.0000	3/4	1-5/32	3/16	<b>10214-0100*</b>	<b>10414-0100</b>	<b>POR</b>
	1-1/32	1.0313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

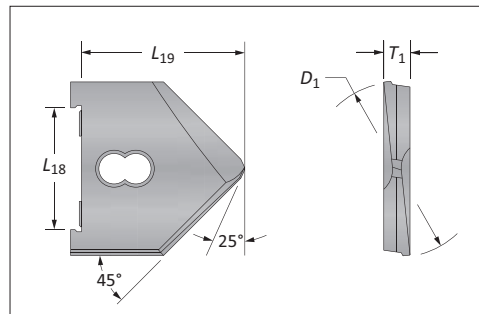
**NOTE:** POR = Priced on request

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.

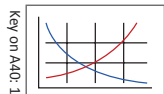
**Flat Bottom**



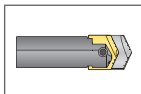
**90° Spot & Chamfer**



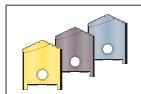
A40: 44 - 47



A40: 8 - 9



A40: 2



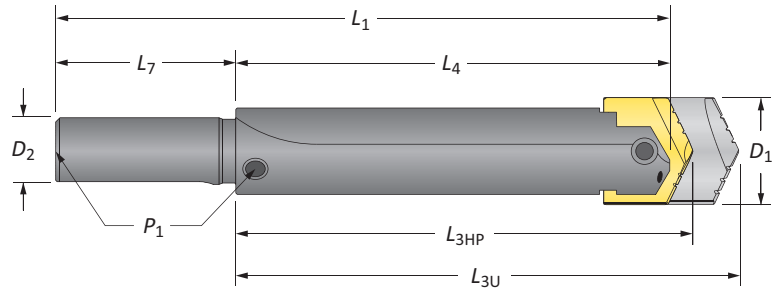
Sizes not shown are available upon request.  
When ordering, please follow the example below:

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



## High Performance / Universal Spade Drill Insert Holders

## A 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	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	
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



Clamping Screw

#10-24 x 5/8"



Blade-Loc Screw

-

A40: 6 - 7

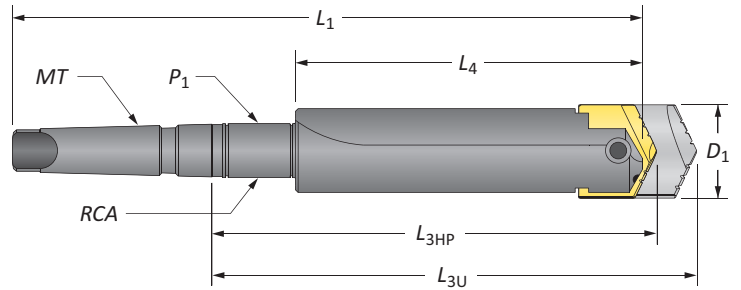


**i** = Imperial (in)  
**m** = Metric (mm)

**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](http://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 <sub>1</sub>	Holder				Shank				Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	MT	P <sub>1</sub>	RCA	Style	
Short	31/32 - 1-3/8	3-7/16	3-23/32	3	6-7/8	#3	-	-	#300	<b>21411-0003</b>
Short	31/32 - 1-3/8	3-1/2	3-13/16	3	7-7/8	#4	-	-	#300	<b>21411-0004</b>
Short	31/32 - 1-3/8	3-7/16	3-23/32	3	6-7/8	#3	-	-	#300 TSC	<b>21511-0003*</b>
Short	31/32 - 1-3/8	5-3/16	5-15/32	3	9-9/16	#4	1/4	2T-4SR	#400 SR	<b>21611-0004</b>
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	<b>21811-0004</b>
Long	31/32 - 1-3/8	17-3/16	17-15/32	15	21-9/16	#4	1/4	2T-4SR	#600 SR	<b>22011-0004</b>
XL	31/32 - 1-3/8	23-3/16	23-15/32	21	27-9/16	#4	1/4	2T-4SR	#700 SR	<b>22211-0004</b>

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

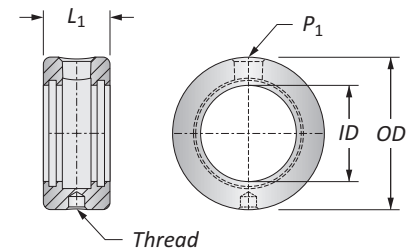
### Rotary Coolant Adapter (RCA) and Accessories

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

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

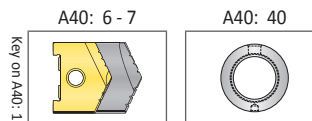
\*\*RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

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



### Connection Accessories

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



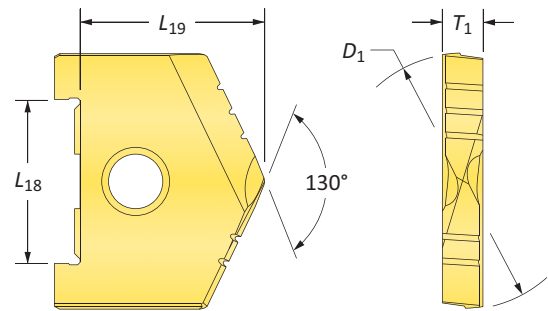
**i** = Imperial (in)  
**m** = Metric (mm)  
 O-rings sold in packs of 10




**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](http://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.



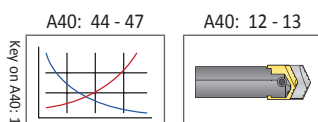
## High Performance Spade Drill Inserts

B Series | Diameter Range: 1.2500" - 1.7500"



Series	D <sub>1</sub> inch		Insert					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	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.

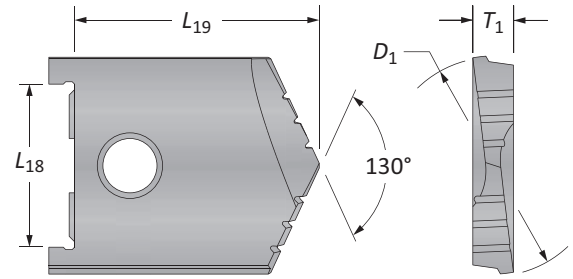
When ordering, please follow the example below:

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



### Universal Spade Drill Inserts

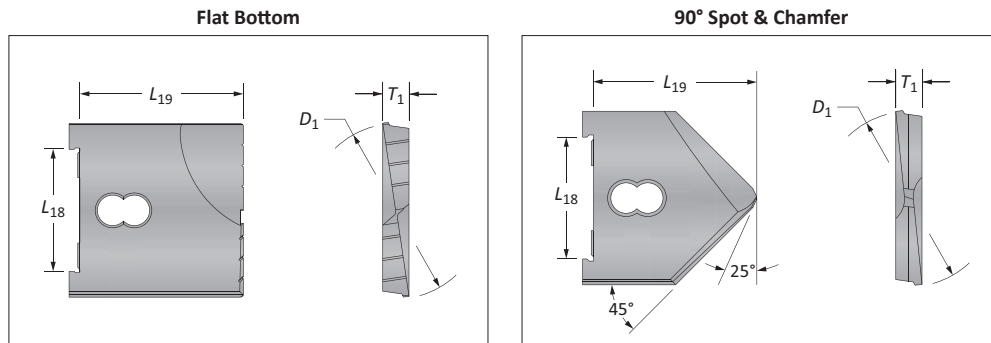
B Series | Diameter Range: 1.2500" - 1.7500"



Series	D <sub>1</sub> inch		Insert					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	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*	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
B Oversize	1-1/2	1.5000	1-1/16	1-13/32	9/32	10224-0116*	10424-0116	11224-0116
	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*	-	-

NOTE: POR = Priced on request

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.



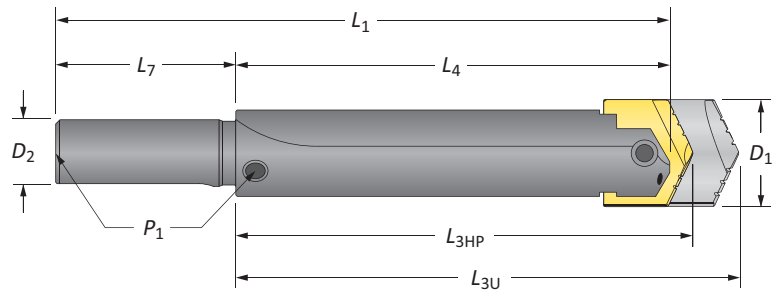
A40: 44 - 47 A40: 12 - 13 A40: 2

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

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

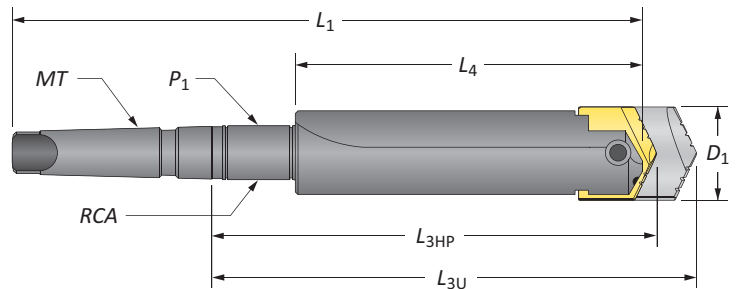
## High Performance / Universal Spade Drill Insert Holders

### B Series



#### Straight Shank

Length	D <sub>1</sub> Range	Holder				Shank				Style	Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>			
Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1	3-1/2	-	#150	<b>20421-1000</b>	
Short	1-1/4 - 1-3/4	3-25/32	4-3/32	3-1/2	7	1	3-1/2	1/4	#100	<b>20621-1000</b>	
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	<b>20621-1250</b>	
<b>i</b> 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	<b>20621-1500</b>	
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	<b>20821-1000</b>	
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	<b>20821-1250</b>	
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	<b>20821-1500</b>	
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	<b>21021-1250</b>	



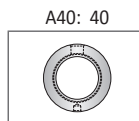
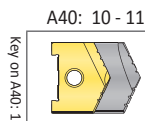
#### Taper Shank

Length	D <sub>1</sub> Range	Holder				Shank				Style	Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	MT	P <sub>1</sub>	RCA			
Short	1-1/4 - 1-3/4	3-31/32	4-9/32	3-1/2	7-3/8	#3	-	-	#300	<b>21421-0003</b>	
Short	1-1/4 - 1-3/4	4-1/32	4-11/32	3-1/2	8-3/8	#4	-	-	#300	<b>21421-0004</b>	
Short	1-1/4 - 1-3/4	4-1/32	4-11/32	3-1/2	8-3/8	#4	-	-	#300 TSC	<b>21521-0004*</b>	
<b>i</b> 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	<b>21621-0004</b>	
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	<b>21821-0004</b>	
Long	1-1/4 - 1-3/4	17-7/32	17-17/32	15	21-9/16	#4	1/4	2T-4SR	#600 SR	<b>22021-0004</b>	
XL	1-1/4 - 1-3/4	24-7/32	24-17/32	22	28-9/16	#4	1/4	2T-4SR	#700 SR	<b>22221-0004</b>	

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

#### Connection Accessories

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



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

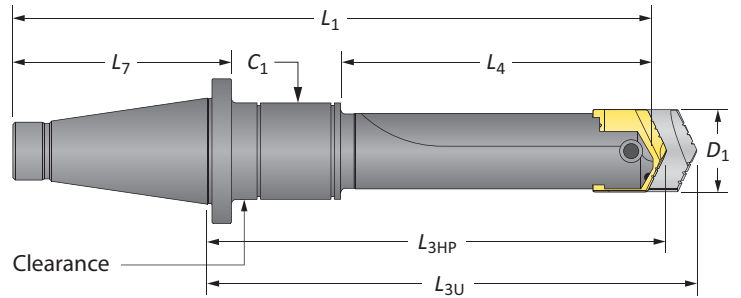
**WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit [www.alliedmachine.com/DeepHoleGuidelines](http://www.alliedmachine.com/DeepHoleGuidelines) for the most up-to-date 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



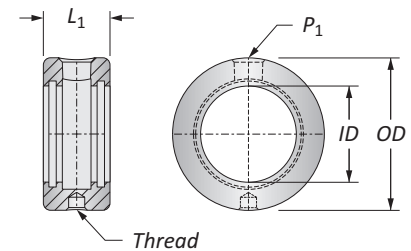
50 NMTB Shank\*

Length	D <sub>1</sub> Range	Holder				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	MT	L <sub>7</sub>	C <sub>1</sub>	RCA	Style	
Short	1-1/4 - 1-3/4	5-13/32	5-23/32	4	10-1/8	50	5-5/8	–	–	#300	<b>22421-0050</b>
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	<b>22621-0050</b>
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	<b>22821-0050</b>

\*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 <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	<b>2T-4SR</b>	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	<b>2T-5SR</b>	2T1-5SR	2T1-5OR-10



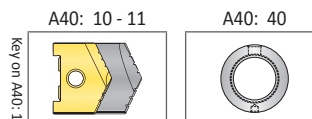
\*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

\*\*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.

C

DRILLING | High Performance and Universal Replaceable Insert Drilling System

A

High Performance Spade Drill Inserts

C Series | Diameter Range: 1.5000" - 2.3750"

DRILLING

B

BORING

Series	D <sub>1</sub> inch		Insert			TiN Part No.	TiAlN Part No.	TiCN Part No.
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>			
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

D

BURNISHING

E

THREADING

X

SPECIALS

A40: 44 - 47

A40: 16 - 17

Sizes not shown are available upon request.

When ordering, please follow the example below:

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

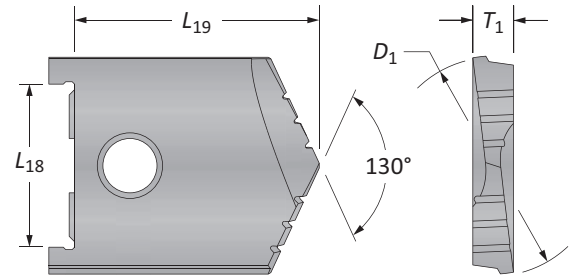
A40: 14

www.alliedmachine.com | 1.330.343.4283



## Universal Spade Drill Inserts

C Series | Diameter Range: 1.5000" - 2.3750"

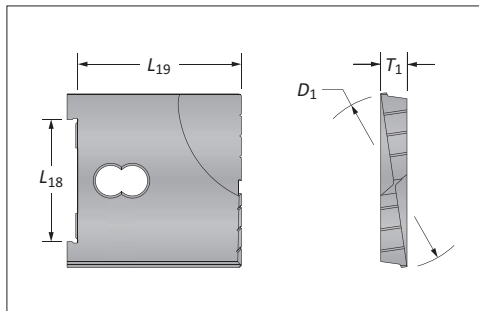


Series	D <sub>1</sub> inch		Insert					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom	90° Spot & Chamfer
C	1-1/2	1.5000	1-1/4	2	5/16	10234-0116*	10434-0116	POR
	1-17/32	1.5313	1-1/4	2	5/16	10234-0117*	-	POR
	1-9/16	1.5625	1-1/4	2	5/16	10234-0118*	10434-0118	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*	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*	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*	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*	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*	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*	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*	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*	-	-

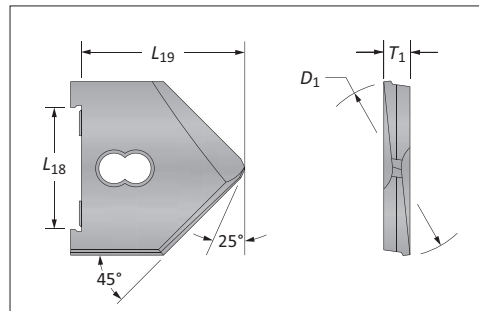
**NOTE:** POR = Priced on request

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.

**Flat Bottom**



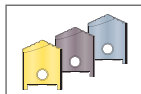
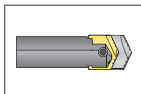
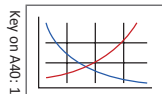
**90° Spot & Chamfer**



A40: 44 - 47

A40: 16 - 17

A40: 2



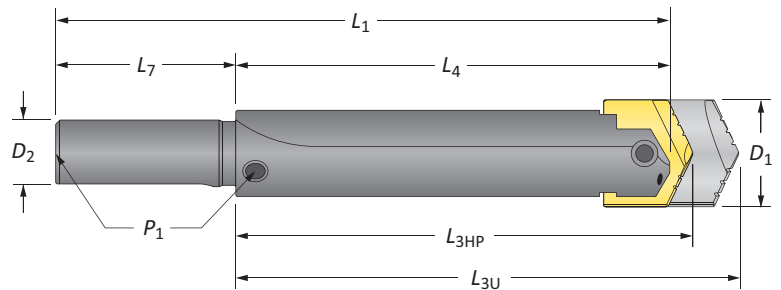
Sizes not shown are available upon request.

When ordering, please follow the example below:

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

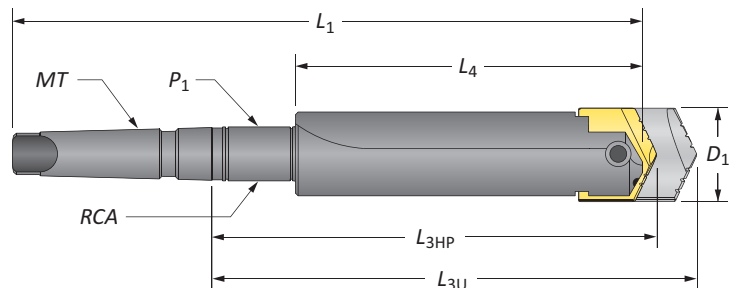
## High Performance / Universal Spade Drill Insert Holders

### 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	<b>20231-1500</b>	
Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/4	4	–	#150	<b>20431-1250</b>	
Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/4	4	1/4	#100	<b>20631-1250</b>	
<b>i</b> Short	1-1/2 - 2-3/8	4-19/64	5	4	8	1-1/2	4	1/4	#100	<b>20631-1500</b>	
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	<b>20831-1250</b>	
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	<b>20831-1500</b>	
Long	1-1/2 - 2-3/8	18-19/64	19	18	22	1-1/2	4	1/4	#250	<b>21031-1500</b>	



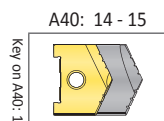
#### Taper Shank

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	<b>21431-0004</b>	
Short	1-1/2 - 2-3/8	4-35/64	5-1/4	4	8-7/8	#4	–	–	#300 TSC	<b>21531-0004*</b>	
Short	1-1/2 - 2-3/8	4-35/64	5-1/4	4	10-1/8	#5	–	–	#300 TSC	<b>21531-0005*</b>	
Short	1-1/2 - 2-3/8	6-15/64	6-15/64	4	10-9/16	#4	1/4	2T-4SR	#400 SR	<b>21631-0004</b>	
<b>i</b> 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	<b>21831-0004</b>	
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	<b>21831-0005</b>	
Long	1-1/2 - 2-3/8	20-15/64	20-5/16	18	24-9/16	#4	1/4	2T-4SR	#600 SR	<b>22031-0004</b>	
Long	1-1/2 - 2-3/8	20-15/64	20-5/16	18	25-13/16	#5	1/4	2T-5SR	#600 SR	<b>22031-0005</b>	
XL	1-1/2 - 2-3/8	28-15/64	28-15/16	26	32-9/16	#4	1/4	2T-4SR	#700 SR	<b>22231-0004</b>	
XL	1-1/2 - 2-3/8	28-15/64	28-15/16	26	33-13/16	#5	1/4	2T-5SR	#700 SR	<b>22231-0005</b>	

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

#### Connection Accessories

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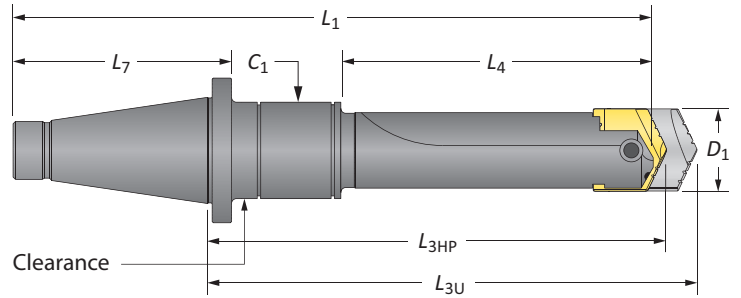


**i** = Imperial (in)  
**m** = Metric (mm)

**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](http://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



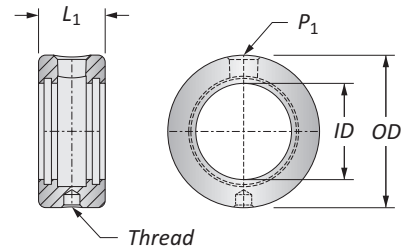
50 NMTB Shank\*

Length	D <sub>1</sub>	Holder				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	NMTB	L <sub>7</sub>	C <sub>1</sub>	RCA	Style	
Short	1-1/2 - 2-3/8	5-27/64	6-1/8	4	10-1/8	50	5-5/8	-	-	#300	<b>22431-0050</b>
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	<b>22631-0050</b>
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	<b>22831-0050</b>

\*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 <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	RCA O-Rings		
					Part No.*	Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	<b>2T-4SR</b>	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	<b>2T-5SR</b>	2T1-5SR	2T1-5OR-10





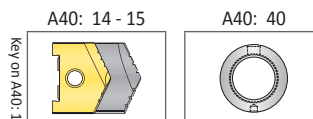
\*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

\*\*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	-



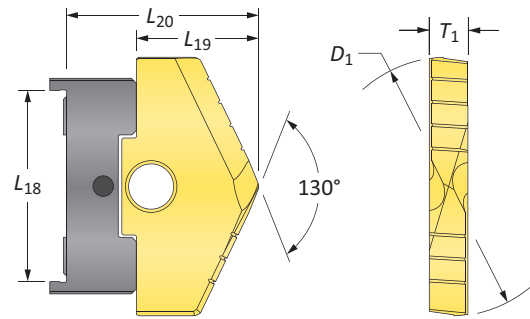
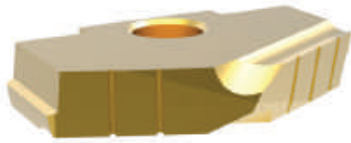
ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10

**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"



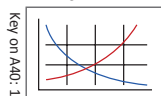
Series	D <sub>1</sub> inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	L <sub>20</sub>	T <sub>1</sub>				
D	2	2.0000	1-3/4	1-3/16	1-55/64	3/8	1024T-0200*	1024A-0200*	1024N-0200*	1024U-Adapter
	2-1/32	2.0313	1-3/4	1-3/16	1-55/64	3/8	1024T-0201*	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.

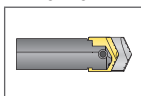
Inserts sold in multiples of 1

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.

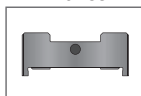
A40: 44 - 47



A40: 20 - 21



A40: 38



Sizes not shown are available upon request.

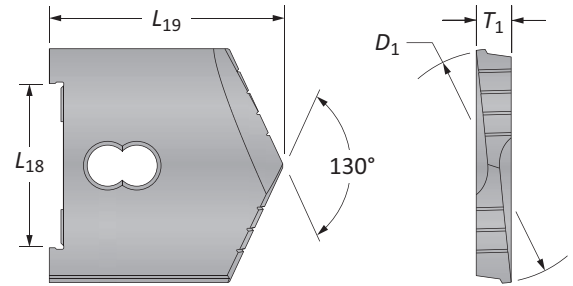
When ordering, please follow the example below:

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



## Universal Spade Drill Inserts

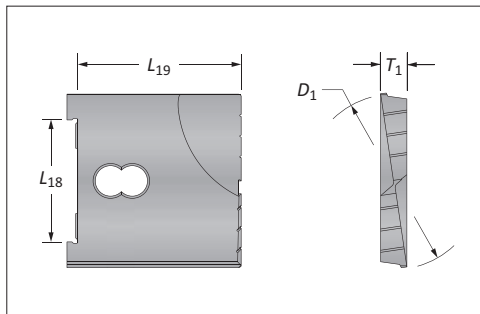
D Series | Diameter Range: 2.0000" - 2.8750"



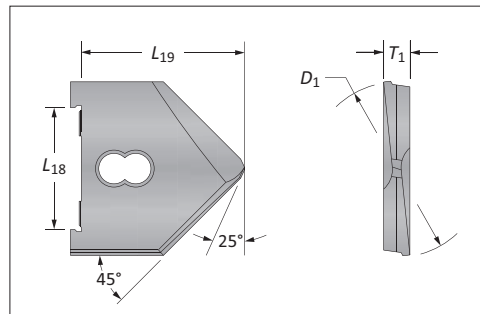
Series	D <sub>1</sub> inch		Insert					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom	90° Spot & Chamfer
D	2	2.0000	1-3/4	2-3/8	3/8	10244-0200	10444-0200	POR
	2-1/32	2.0313	1-3/4	2-3/8	3/8	10244-0201	-	POR
	2-1/16	2.0625	1-3/4	2-3/8	3/8	10244-0202	10444-0202	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	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	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	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	-	-

NOTE: POR = Priced on request

Flat Bottom



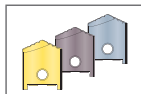
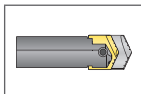
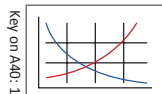
90° Spot & Chamfer



A40: 44 - 47

A40: 20 - 21

A40: 2



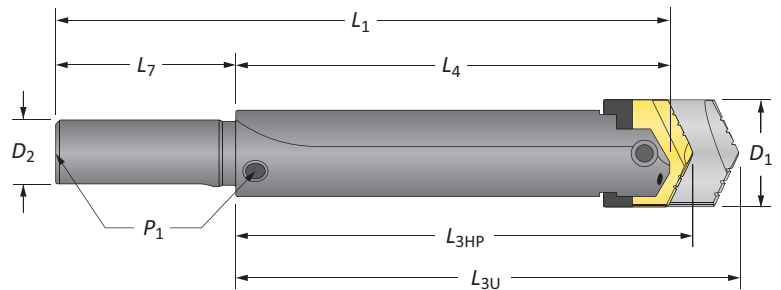
Sizes not shown are available upon request.  
When ordering, please follow the example below:

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



## High Performance / Universal Spade Drill Insert Holders

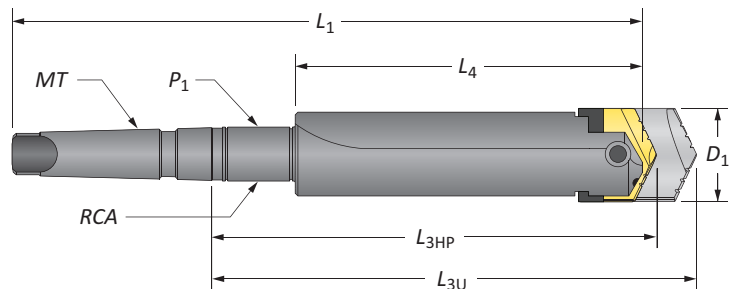
## D Series



## Straight Shank

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

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



## Taper Shank

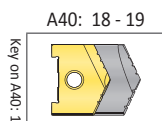
Length	$D_1$	Holder				Shank				Part No.
		$L_{3HP}$	$L_{3U}$	$L_4$	$L_1$	MT	$P_1$	RCA	Style	
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	9-3/8	#4	-	-	#300	<b>21441-0004</b>
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	10-5/8	#5	-	-	#300	<b>21441-0005</b>
Short	2 - 2-7/8	5-15/64	5-3/4	4-1/2	9-3/8	#4	-	-	#300 TSC	<b>21541-0004*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

\*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

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



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

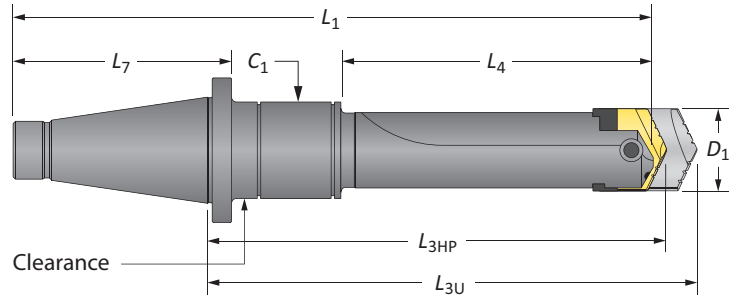
**WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit [www.alliedmachine.com/DeepHoleGuidelines](http://www.alliedmachine.com/DeepHoleGuidelines) for the most up-to-date 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



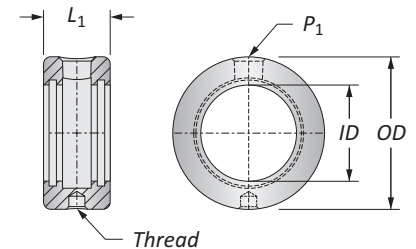
50 NMTB Shank\*

Length	D <sub>1</sub>	Holder				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	NMTB	L <sub>7</sub>	C <sub>1</sub>	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	<b>22641-0050</b>
	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	<b>22841-0050</b>

\*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 <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	<b>2T-4SR</b>	2T1-4SR	2T1-4OR-10
1-3/4	3	1-3/8	3/8 - NC	1/4	<b>2T-5SR</b>	2T1-5SR	2T1-5OR-10
2-1/2	4	1-3/4	1/2 - NC	1/2	<b>2T-55SR</b>	2T1-55SR	2T1-55OR-10





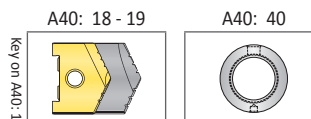
\*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

\*\*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

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



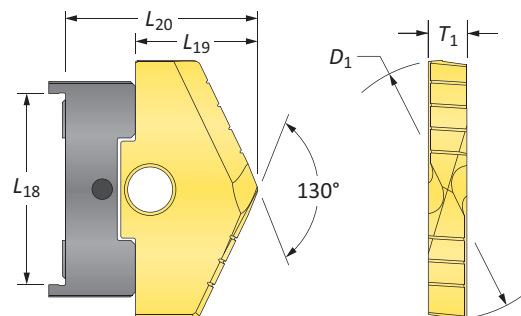
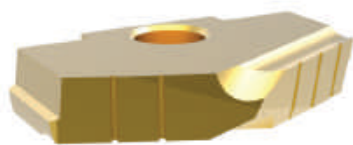
ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10




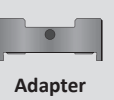
**WARNING** RCA rotation during drilling can cause hose and/or hose fitting failure, machinery damage, and/or serious injury. To prevent, use RCA and positive stop studs when drilling. Factory technical assistance is also available for your specific applications.



## High Performance Spade Drill Inserts

E Series | Diameter Range: 2.5000" - 3.3750"



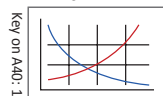
Series	D <sub>1</sub> inch		Inserts							
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	L <sub>20</sub>	T <sub>1</sub>	TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
E	2-1/2	2.5000	2-1/16	1-7/16	2-3/32	7/16	1025T-0216*	1025A-0216*	1025N-0216*	1025U-Adapter
	2-17/32	2.5313	2-1/16	1-7/16	2-3/32	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.

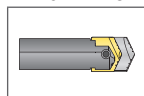
Inserts sold in multiples of 1

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.

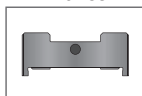
A40: 44 - 47



A40: 24 - 25



A40: 38



Sizes not shown are available upon request.

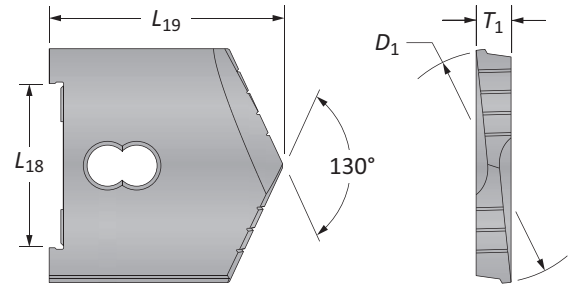
When ordering, please follow the example below:

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



## Universal Spade Drill Inserts

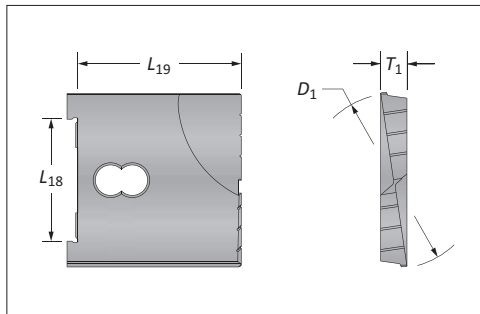
E Series | Diameter Range: 2.5000" - 3.3750"



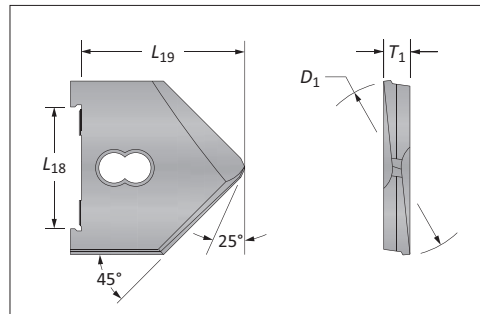
Series	D <sub>1</sub> inch		Inserts					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom	90° Spot & Chamfer
E	2-1/2	2.5000	2-1/16	2-5/8	7/16	10254-0216	10454-0216	POR
	2-17/32	2.5313	2-1/16	2-5/8	7/16	10254-0217	-	POR
	2-9/16	2.5625	2-1/16	2-5/8	7/16	10254-0218	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	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	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	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	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	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	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	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	-	-

NOTE: POR = Priced on request

Flat Bottom



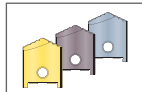
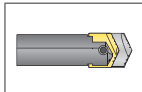
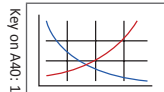
90° Spot & Chamfer



A40: 44 - 47

A40: 24 - 25

A40: 2



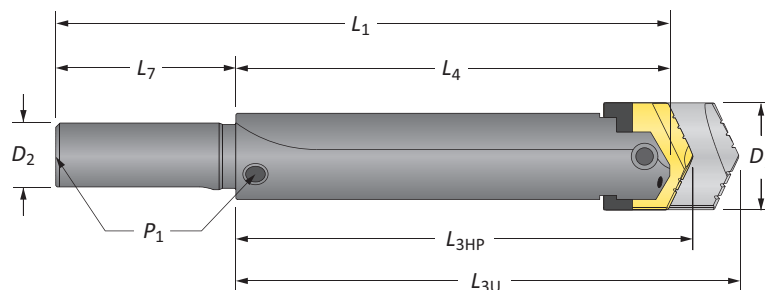
Sizes not shown are available upon request.  
When ordering, please follow the example below:

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



## High Performance / Universal Spade Drill Insert Holders

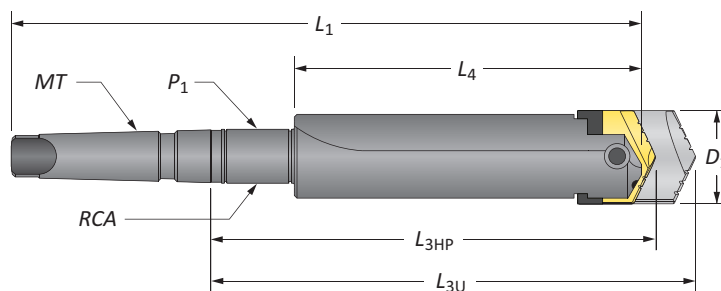
## E Series



## Straight Shank

Length	$D_1$	Insert				Shank				Style	Part No.
		$L_{3HP}$	$L_{3U}$	$L_4$	$L_1$	$D_2$	$L_7$	$P_1$			
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	
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

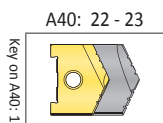
Length	$D_1$	Holder				Shank				Style	Part No.
		$L_{3HP}$	$L_{3U}$	$L_4$	$L_1$	MT	$P_1$	RCA			
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	9-7/8	#4	-	-	#300	21451-0004	
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	11-1/8	#5	-	-	#300	21451-0005	
Short	2-1/2 - 3-3/8	5-25/32	6-5/16	5	11-1/8	#5	-	-	#300 TSC	21551-0005*	
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

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



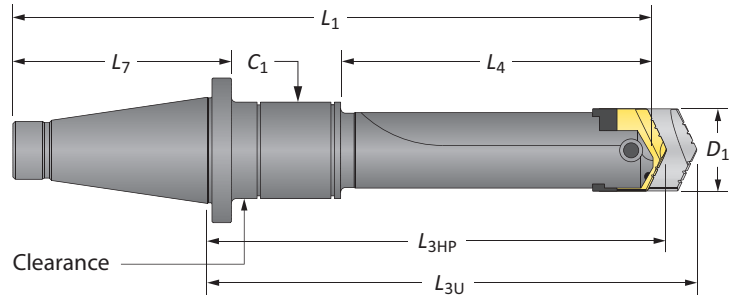
**i** = Imperial (in)  
**m** = Metric (mm)

**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](http://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



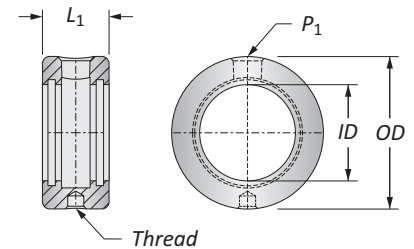
50 NMTB Shank\*

Length	D <sub>1</sub>	Holders				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	NMTB	L <sub>7</sub>	C <sub>1</sub>	RCA	Style	
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	<b>22651-0050</b>
	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	<b>22851-0050</b>

\*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 <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	▲ <b>2T-6SR</b>	2T1-6SR	2T1-6OR-10
							2T1-55SR
2-1/2	4	1-3/4	1/2 - NC	1/2	▲ <b>2T-55SR</b>	2T1-55SR	2T1-55OR-10





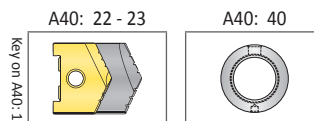
\*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

\*\*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

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

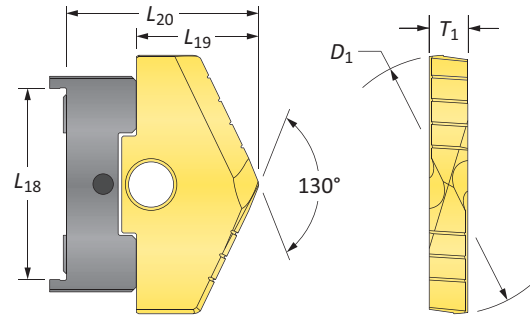
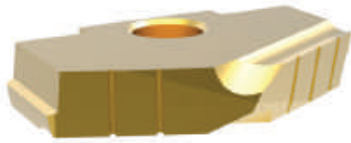


ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10

**⚠ 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

F Series | Diameter Range: 3.0000" - 3.8750"

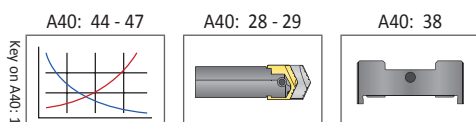


Series	D <sub>1</sub> inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	L <sub>20</sub>	T <sub>1</sub>				
F	3	3.0000	2-5/8	1-13/16	2-17/32	1/2	1026T-0300*	1026A-0300*	1026N-0300*	1026U-Adapter
	3-1/32	3.0313	2-5/8	1-13/16	2-17/32	1/2	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

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.



Sizes not shown are available upon request.

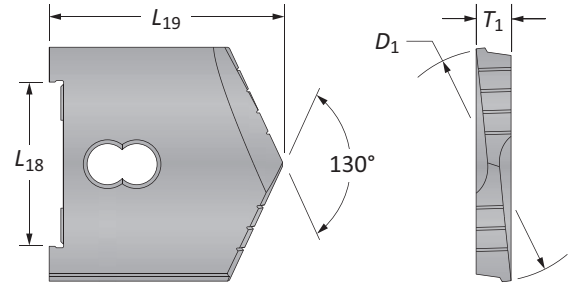
When ordering, please follow the example below:

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



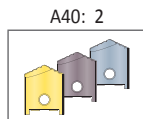
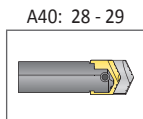
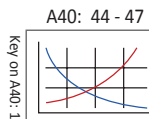
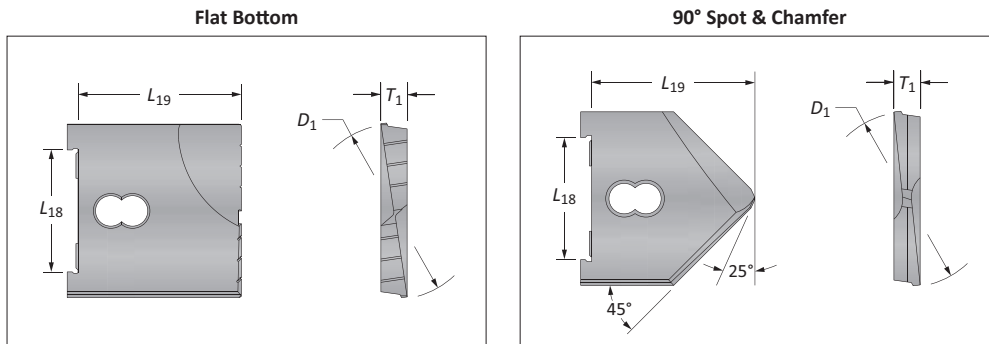
## Universal Spade Drill Inserts

F Series | Diameter Range: 3.0000" - 3.8750"



Series	D <sub>1</sub> inch		Insert					
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom	90° Spot & Chamfer
F	3	3.0000	2-5/8	3-1/8	1/2	10264-0300	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	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	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	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	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	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	-	-

NOTE: POR = Priced on request

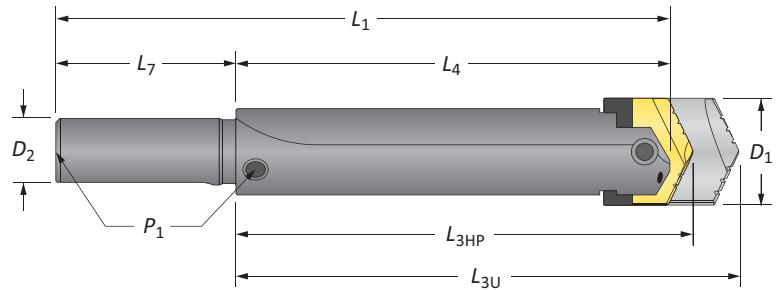


Sizes not shown are available upon request.  
When ordering, please follow the example below:

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

## High Performance / Universal Spade Drill Insert Holders

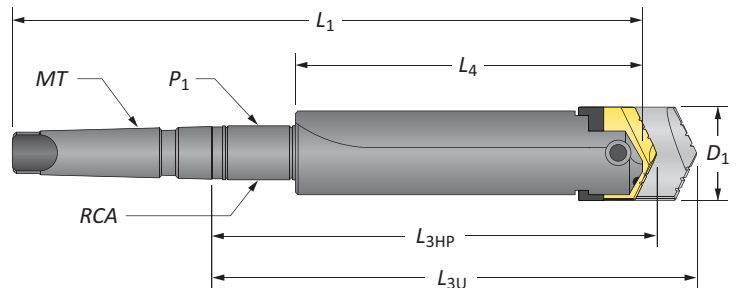
### F Series



#### 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	3 - 3-7/8	3-13/32	4	2-3/4	6-3/4	2-1/2	4	-	#125	<b>20261-2500</b>
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2	4	-	#150	<b>20461-2000</b>
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2	4	1/2	#100	<b>20661-2000</b>
Short	3 - 3-7/8	6-5/32	6-3/4	5-1/2	9-1/2	2-1/2	4	1/2	#100	<b>20661-2500</b>
Standard	3 - 3-7/8	12-5/32	12-3/4	11-1/2	15-1/2	2	4	1/2	#200	<b>20861-2000</b>
Long	3 - 3-7/8	20-21/32	21-1/4	20	24	2-1/2	4	1/2	#250	<b>21061-2500</b>

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



#### Taper Shank

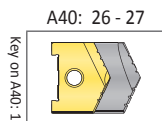
Length	Holder					Shank			Style	Part No.
	$D_1$	$L_{3HP}$	$L_{3U}$	$L_4$	$L_1$	MT	$P_1$	RCA		
Short	3 - 3-7/8	6-13/32	7	5-1/2	11-5/8	#5	-	-	#300	<b>21461-0005</b>
Short	3 - 3-7/8	6-13/32	7	5-1/2	11-5/8	#5	-	-	#300 TSC	<b>21561-0005*</b>
Short	3 - 3-7/8	8-23/32	9-5/16	5-1/2	13-15/16	#5	1/2	2T-6SR	#400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

\*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><b>Clamping Screw</b> 1/2"-13 x 1-3/4"</p>	<p><b>Blade-Loc Screw</b> 5/16"-18 x 1/2"</p>
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**i** = Imperial (in)  
**m** = Metric (mm)

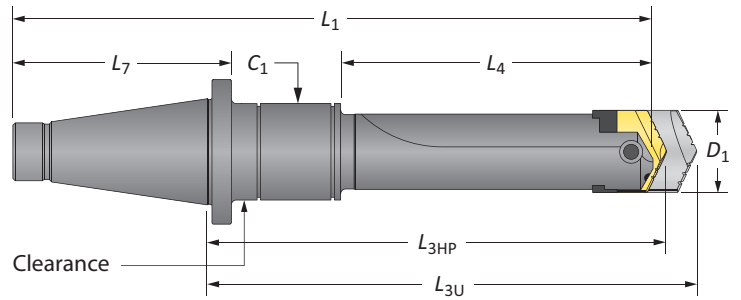
**WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page A40: 48 for deep hole drilling guidelines in this section of the catalog. Visit [www.alliedmachine.com/DeepHoleGuidelines](http://www.alliedmachine.com/DeepHoleGuidelines) for the most up-to-date 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



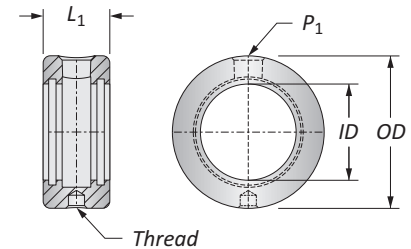
50 NMTB Shank\*

Length	D <sub>1</sub>	Holder				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	NMTB	L <sub>7</sub>	C <sub>1</sub>	RCA	Style	
Short	3 - 3-7/8	7-9/32	7-7/8	5-1/2	11-5/8	50	5-5/8	-	-	#300	<b>22461-0050</b>
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	<b>22661-0050</b>
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	<b>22861-0050</b>

\*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 <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	Part No.*	RCA O-Rings	
						Kit Part No.**	Replacements
2-1/4	3-3/4	1-3/4	1/2 - NC	1/2	<b>2T-6SR</b>	2T1-6SR	2T1-6OR-10
3	4-1/2	1-3/4	1/2 - NC	1/2	<b>2T-6OSR</b>	2T1-6OSR	2T1-6OOR-10





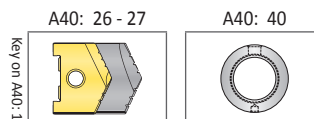
\*RCA comes complete with (1) RCA, (2) O-rings, (2) snap rings, and (2) thrust washers

\*\*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

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

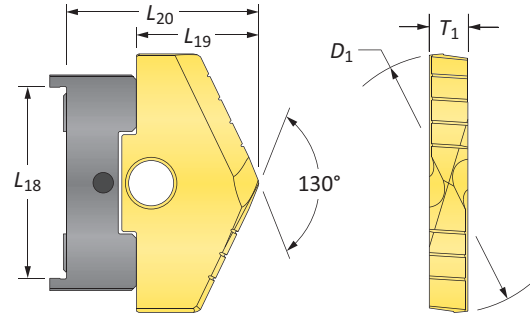


ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10

**⚠ 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"

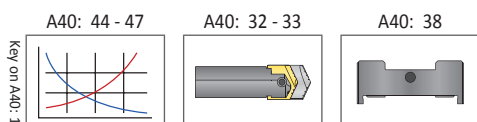


Series	D <sub>1</sub> inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	L <sub>20</sub>	T <sub>1</sub>				
G	3-1/2	3.5000	3-1/16	1-15/16	2-23/32	5/8	1027T-0316*	1027A-0316*	1027N-0316*	1027U-Adapter
	3-17/32	3.5313	3-1/16	1-15/16	2-23/32	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

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.



Sizes not shown are available upon request.

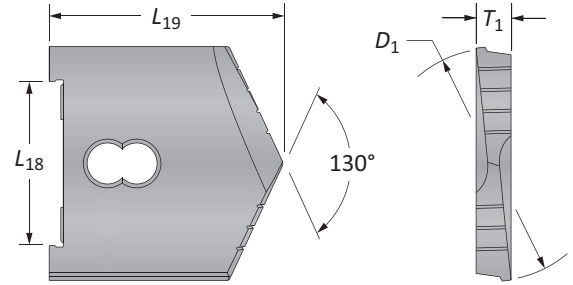
When ordering, please follow the example below:



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



### Universal Spade Drill Inserts

G Series | Diameter Range: 3.5000" - 4.5000"

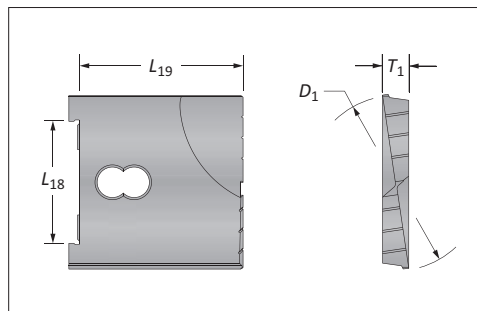


Series	D <sub>1</sub> inch		Insert				
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom
G	3-1/2	3.5000	3-1/16	3-3/8	5/8	<b>10274-0316</b>	<b>10474-0316</b>
	3-17/32	3.5313	3-1/16	3-3/8	5/8	<b>10274-0317</b>	-
	3-9/16	3.5625	3-1/16	3-3/8	5/8	<b>10274-0318</b>	<b>10474-0318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

NOTE: POR = Priced on request

Inserts sold in multiples of 1

Flat Bottom



Key on A40: 1

A40: 44 - 47

A40: 32 - 33

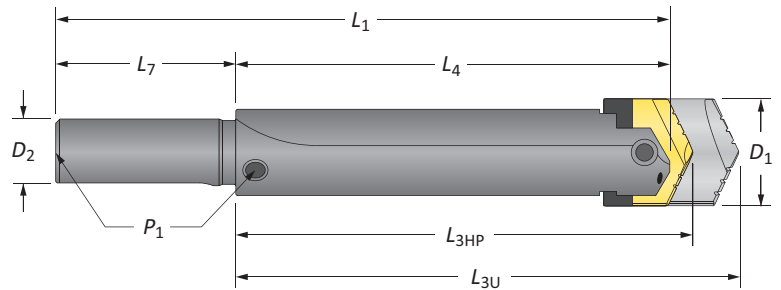
A40: 2

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

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

## High Performance / Universal Spade Drill Insert Holders

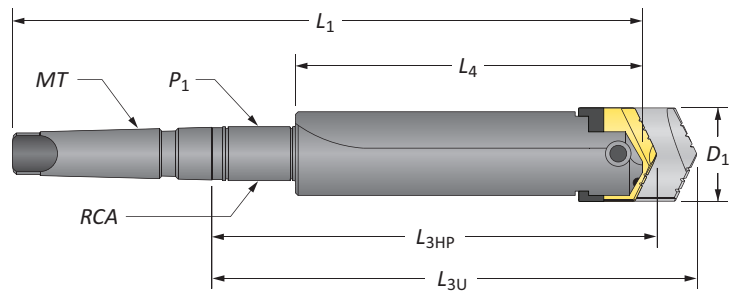
### G Series



#### Straight Shank

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

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



#### Taper Shank

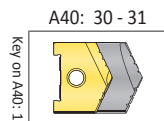
Length	$D_1$	Holder				Shank				Part No.
		$L_{3HP}$	$L_{3U}$	$L_4$	$L_1$	MT	$P_1$	RCA	Style	
Short	3-1/2 - 4-1/2	7-1/32	7-11/16	6	12-1/8	#5	-	-	#300	<b>21471-0005</b>
Short	3-1/2 - 4-1/2	7-1/32	7-11/16	6	12-1/8	#5	-	-	#300 TSC	<b>21571-0005*</b>
i Short	3-1/2 - 4-1/2	9-11/32	10	6	14-7/16	#5	1/2	2T-6SR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

\*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><b>Clamping Screw</b> 3/4"-10 x 2-1/2"</p>	<p><b>Blade-Loc Screw</b> 5/16"-18 x 1/2"</p>
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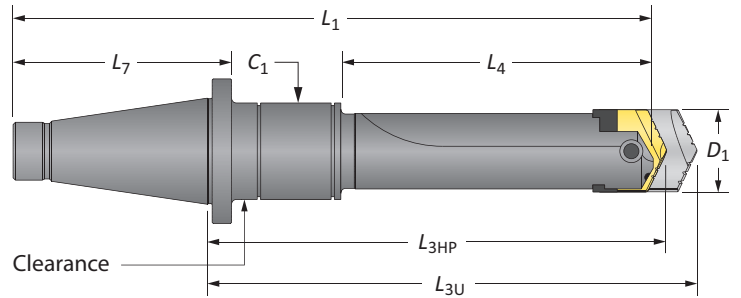
i = Imperial (in)  
m = Metric (mm)

**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](http://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 <sub>1</sub>	Holder				Shank					Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	NMTB	L <sub>7</sub>	C <sub>1</sub>	RCA	Style	
Short	3-1/2 - 4-1/2	8-29/32	9-9/16	7	13-1/8	50	5-5/8	–	–	#300	<b>22471-0050</b>
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	<b>22671-0050</b>
Short	3-1/2 - 4-1/2	19-13/32	20	15	23-7/16	50	5-5/8	5/8	2T-65SR	#500	<b>22881-0050</b>

\*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.

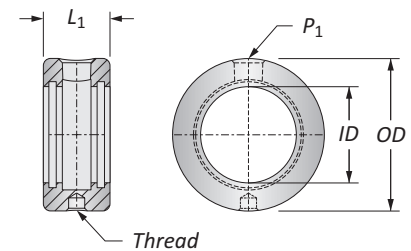
#### Rotary Coolant Adapter (RCA) and Accessories

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



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

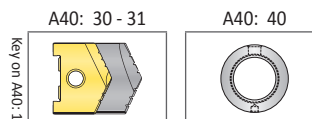
\*\*RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

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



#### Connection Accessories

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

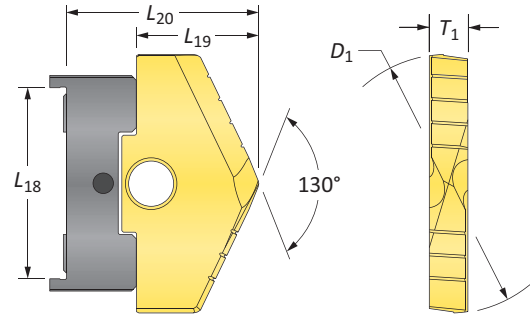


ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10

**⚠ 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"



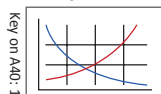
Series	D <sub>1</sub> inch		Insert				TiN Part No.	TiAlN Part No.	TiCN Part No.	Adapter
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	L <sub>20</sub>	T <sub>1</sub>				
H <sup>1</sup>	4	4.0000	3-1/2	2-3/16	3-3/32	11/16	1028T-0400*	1028A-0400*	1028N-0400*	1028U-Adapter
	4-1/16	4.0625	3-1/2	2-3/16	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
	4-1/2	4.5000	3-1/2	2-3/16	3-3/32	11/16	1028T-0416*	1028A-0416*	1028N-0416*	1028U-Adapter
H <sup>2</sup>	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.

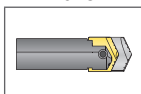
Inserts sold in multiples of 1

\*All inserts are discontinued items. Items listed are available (subject to prior sale) at list prices until stock is depleted.

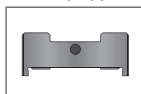
A40: 44 - 47



A40: 37



A40: 38



Sizes not shown are available upon request.

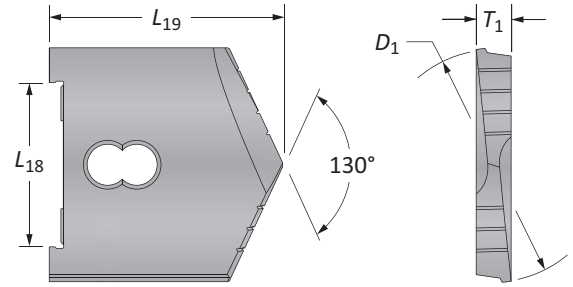
When ordering, please follow the example below:



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



## Universal Spade Drill Inserts

H<sup>1</sup> - H<sup>2</sup> Series | Diameter Range: 4.0000" - 8.5000"

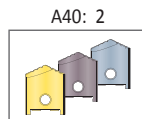
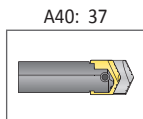
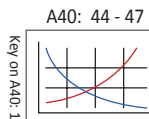
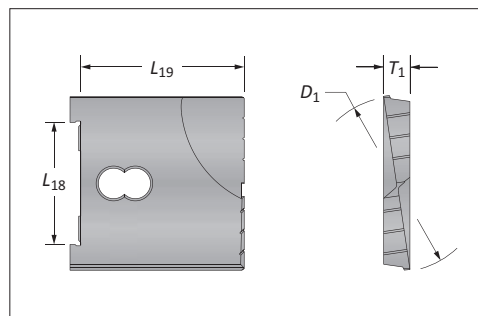


Series	D <sub>1</sub> inch		Insert				
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	130° CPM-M4	Flat Bottom
H <sup>1</sup>	4	4.0000	3-1/2	3-11/16	11/16	<b>10284-0400</b>	<b>10484-0400</b>
	4-1/16	4.0625	3-1/2	3-11/16	11/16	<b>10284-0402</b>	-
	4-1/8	4.1250	3-1/2	3-11/16	11/16	<b>10284-0404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

NOTE: POR = Priced on request

Inserts sold in multiples of 1

Flat Bottom

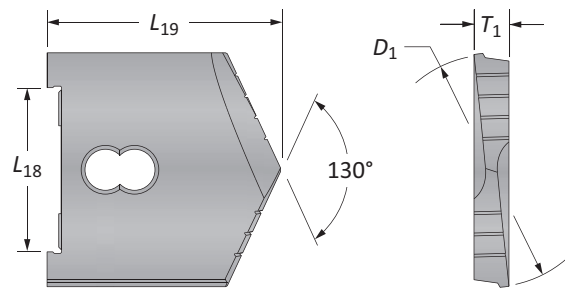


Sizes not shown are available upon request.  
When ordering, please follow the example below:

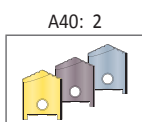
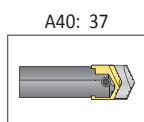
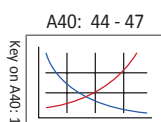
<b>Inch:</b>	1-17/64", 130° CPM-M4 (B series) = use Part No. <b>10224-1.2656</b>
<b>Decimal:</b>	1.5110", 130° Flat Bottom (C series) = use Part No. <b>10434-1.5110</b>

## Universal Spade Drill Inserts

H<sup>3</sup> - H<sup>9</sup> Series | Diameter Range: 5.1250" - 8.5000"



Series	D <sub>1</sub> inch		Insert			 130° CPM-M4
	Fraction	Decimal	L <sub>18</sub>	L <sub>19</sub>	T <sub>1</sub>	
H <sup>3</sup>	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 <sup>4</sup>	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 <sup>5</sup>	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 <sup>6</sup>	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 <sup>7</sup>	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 <sup>8</sup>	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 <sup>9</sup>	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:

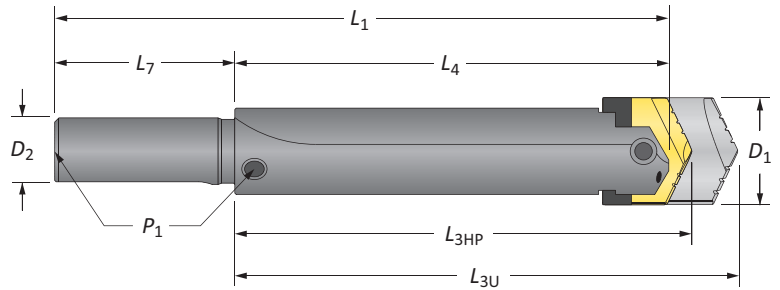
<b>Inch:</b>	1-17/64", 130° CPM-M4 (B series) = use Part No. <b>10224-1.2656</b>
<b>Decimal:</b>	1.5110", 130° Flat Bottom (C series) = use Part No. <b>10434-1.5110</b>





## High Performance / Universal Spade Drill Insert Holders

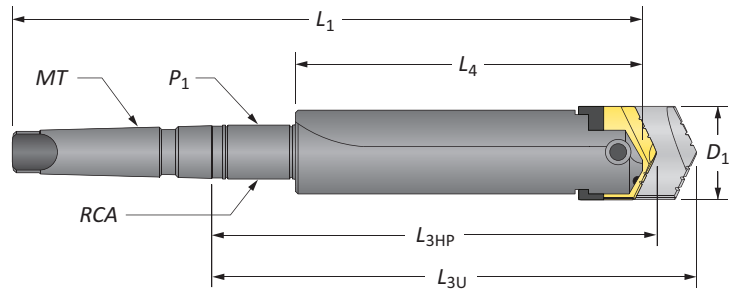
### H Series



#### Straight Shank

Length	D <sub>1</sub>	Holder				Shank				Style	Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	D <sub>2</sub>	L <sub>7</sub>	P <sub>1</sub>			
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 <sub>1</sub>	Holder				Shank				Style	Part No.
		L <sub>3HP</sub>	L <sub>3U</sub>	L <sub>4</sub>	L <sub>1</sub>	MT	P <sub>1</sub>	RCA			
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.

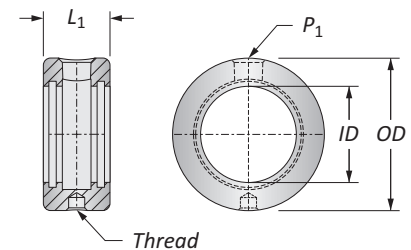
#### Rotary Coolant Adapter (RCA) and Accessories

ID	OD	L <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	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

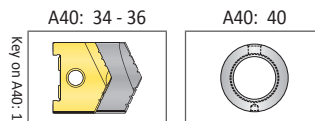
\*\*RCA Repair Kit includes (2) O-rings, (2) snap rings, and (2) thrust washers

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



#### Connection Accessories

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



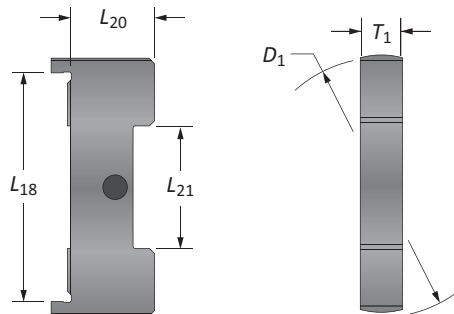
ⓘ = Imperial (in)  
 ⓘ = Metric (mm)  
 O-rings sold in packs of 10

**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](http://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

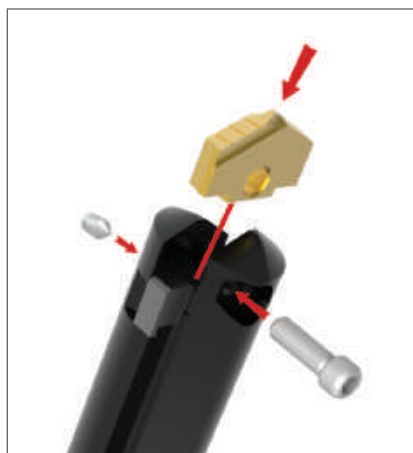
D - H Series



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.



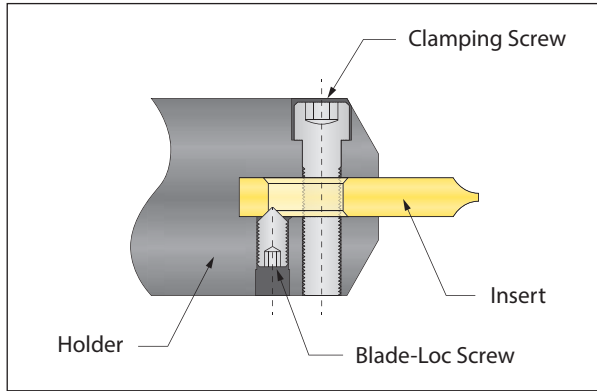
**Step 3:**  
Insert and tighten both the clamping screw and Blade-Loc screw to secure the insert and adapter into position.

### Adapter Interchangeability

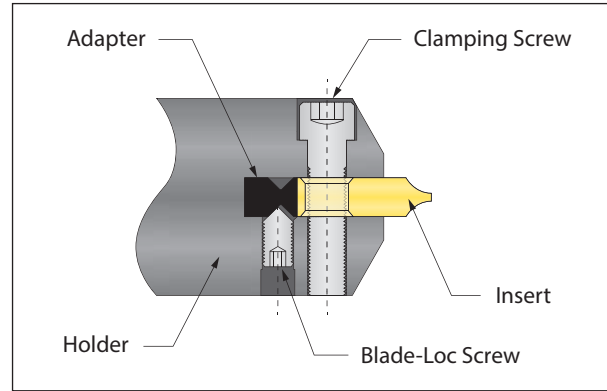
- Adapters allow the use of complete spade drill insert range
- Needed for D - H series (not required for A - C series)
- Adapter + High Performance insert combination can be interchanged with Universal insert and/or other holders
- Manufactured to ANSI B94.49-1975 TYPE I specifications

## 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

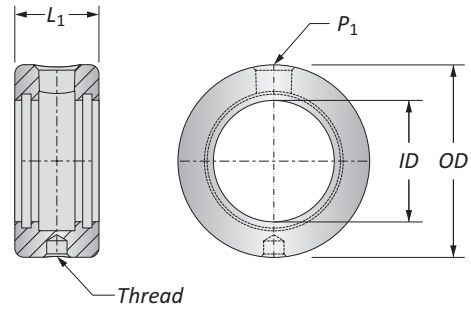
- Secures the adapter to the holder
- Allows inserts to be exchanged without any need to remove, clean, and reinsert the adapter

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



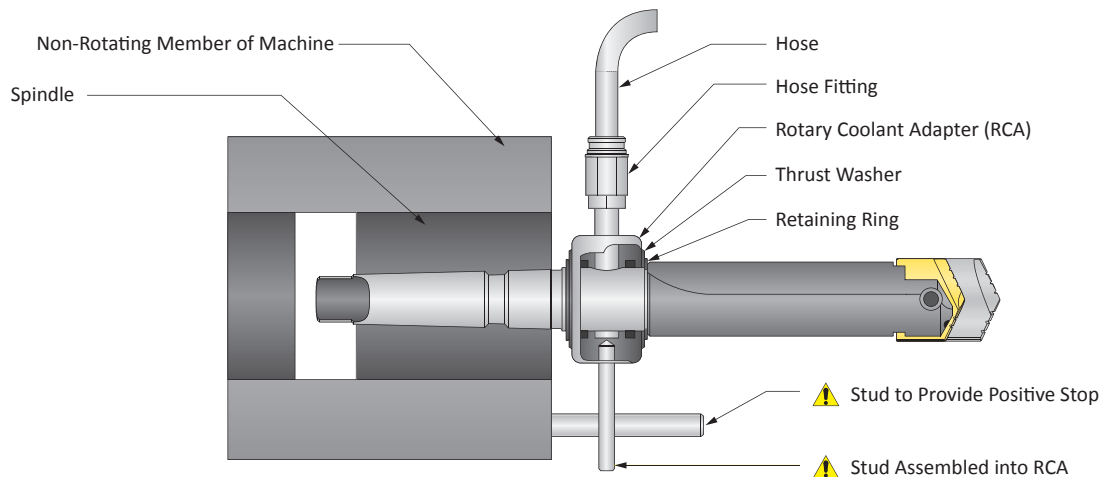
Holder Series	ID	OD	L <sub>1</sub>	Driving Rod Thread	P <sub>1</sub>	Part No.*	Max Recommended RPM	RCA O-Rings	
								Kit Part No.**	Replacements
A, B, C, D	1-1/4	2-1/2	1-3/8	3/8 - NC	1/4	<b>⚠ 2T-4SR</b>	2000	2T1-4SR	2T1-4OR-10
B, C, D	1-3/4	3	1-3/8	3/8 - NC	1/4	<b>⚠ 2T-5SR</b>	1500	2T1-5SR	2T1-5OR-10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

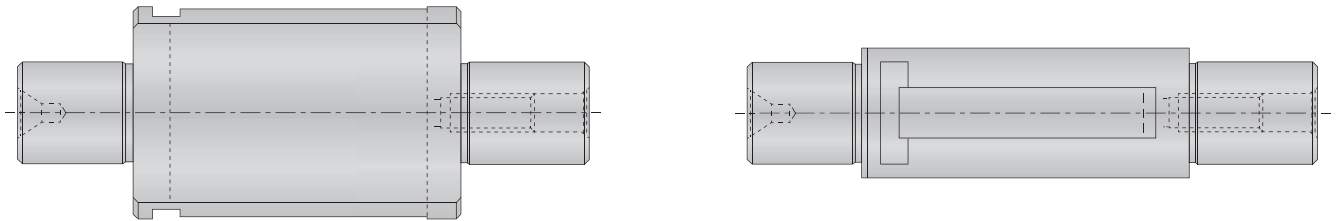
A  
DRILLING  
B  
BORING  
C  
REAMING  
D  
BURNISHING  
E  
THREADING  
X  
SPECIALS

**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

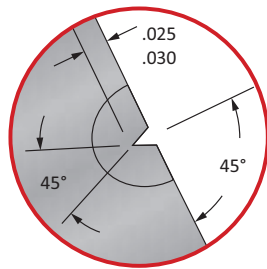
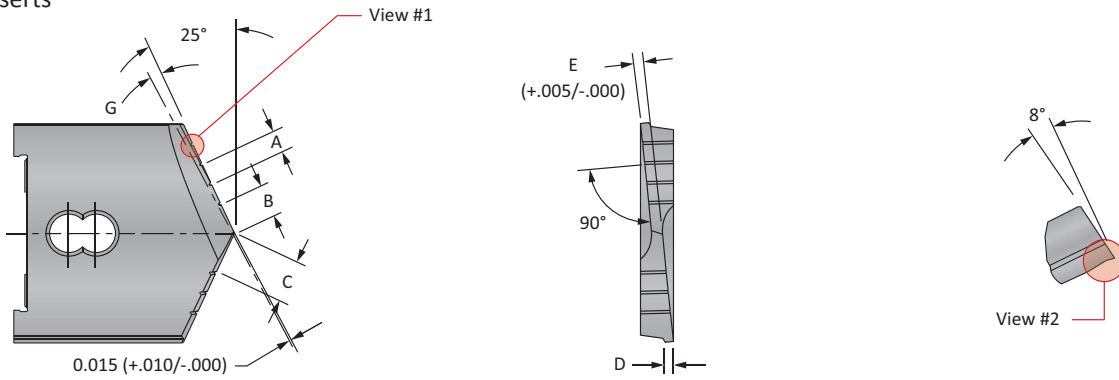
Items included with the cylindrical grinding fixture: (1) set screw, (1) slip pin

\*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

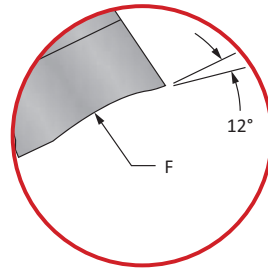


## Regrind Charts

### Universal Inserts



View #1



View #2

### Universal (130°) Spade Drill Inserts

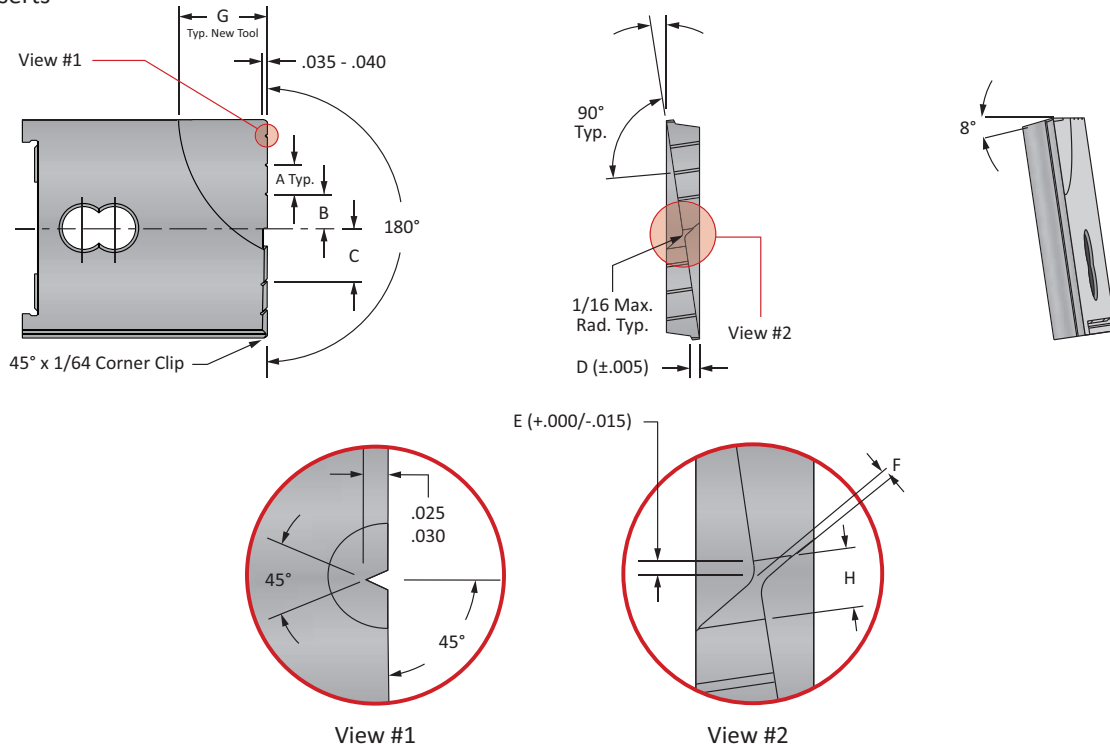
Series	Insert Thickness	Size Range	A	B	C	D	E	F	G
AA	1/4	1 - 1-3/8	0.125	0.156	0.218	0.065	0.070	1/4	3°
A	3/16	31/32 - 1-3/8	0.125	0.156	0.218	0.065	0.065	1/4	3°
B	9/32	1-1/4 - 1-3/4	0.150	0.250	0.325	0.070	0.090	5/16	3°
C	5/16	1-1/2 - 2-3/8	0.200	0.250	0.350	0.080	0.100	5/16	3°
D	3/8	2 - 2-7/8	0.250	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 <sup>1</sup> - H <sup>2</sup>	11/16	4 - 5	0.400	0.500	0.700	0.165	0.225	1/2	3°
H <sup>3</sup>	11/16	5-1/8 - 5-1/2	0.500	0.500	0.750	0.185	0.250	1/2	3°
H <sup>4</sup> - H <sup>9</sup>	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 <sup>1</sup> - H <sup>2</sup>	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	0.016	0.020	0.023	0.028
		150 - 200	180	260	235	0.016	0.020	0.023	0.028
		200 - 250	160	240	210	0.016	0.020	0.023	0.028
P	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	170	250	220	0.015	0.019	0.023	0.027
		125 - 175	160	240	210	0.015	0.019	0.023	0.027
		175 - 225	150	225	195	0.014	0.018	0.021	0.024
		225 - 275	140	210	180	0.014	0.018	0.021	0.024
P	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	160	240	210	0.015	0.019	0.023	0.027
		175 - 225	150	225	195	0.014	0.018	0.021	0.024
		225 - 275	140	210	180	0.014	0.018	0.021	0.024
		275 - 325	130	195	170	0.012	0.016	0.019	0.022
P	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	150	210	195	0.014	0.017	0.019	0.022
		175 - 225	140	195	180	0.014	0.017	0.019	0.022
		225 - 275	130	180	170	0.014	0.017	0.019	0.022
		275 - 325	120	170	155	0.012	0.015	0.017	0.020
		325 - 375	110	155	145	0.012	0.015	0.017	0.020
P	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	80	110	100	0.010	0.014	0.017	0.020
		300 - 350	60	85	80	0.010	0.014	0.017	0.020
		350 - 400	50	70	65	0.009	0.012	0.015	0.018
P	Structural Steel A36, A285, A516, etc.	100 - 150	140	200	180	0.014	0.018	0.021	0.026
		150 - 250	120	170	155	0.012	0.016	0.019	0.024
		250 - 350	100	140	130	0.010	0.014	0.017	0.020
P	Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	80	110	105	0.010	0.012	0.015	0.017
		200 - 250	60	90	85	0.010	0.012	0.015	0.017
S	High-Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 220	30	40	35	0.010	0.012	0.015	-
		220 - 310	25	35	30	0.008	0.010	0.012	-
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	75	105	95	0.011	0.014	0.016	0.020
		185 - 275	60	90	80	0.010	0.012	0.014	0.018
K	Cast Iron	120 - 150	170	250	220	0.020	0.024	0.027	0.030
		150 - 200	150	225	195	0.018	0.022	0.025	0.028
		200 - 220	130	195	170	0.016	0.018	0.021	0.024
		220 - 260	110	165	145	0.012	0.014	0.017	0.020
		260 - 320	90	135	120	0.009	0.012	0.014	0.016
N	Aluminum	30	600	850	750	0.020	0.022	0.025	0.025
		180	300	450	400	0.018	0.022	0.025	0.025

#### 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](http://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.

$150 \cdot 2 = 300 \text{ PSI}$	$6.3 \cdot 2 = 12.6 \text{ GPM}$
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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](http://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.

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



## 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	0.014	0.016	0.020	0.024
		150 - 200	90	0.013	0.015	0.019	0.022
		200 - 250	80	0.012	0.014	0.018	0.020
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	80	0.012	0.015	0.018	0.020
		125 - 175	75	0.012	0.014	0.017	0.020
		175 - 225	60	0.010	0.014	0.016	0.018
		225 - 275	55	0.010	0.013	0.016	0.018
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	65	0.010	0.014	0.018	0.020
		175 - 225	60	0.010	0.014	0.016	0.020
		225 - 275	50	0.008	0.013	0.016	0.018
		275 - 325	45	0.008	0.012	0.014	0.016
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	60	0.010	0.014	0.018	0.020
175 - 225		55	0.010	0.014	0.016	0.020	
225 - 275		45	0.008	0.013	0.016	0.018	
275 - 325		35	0.008	0.012	0.014	0.016	
325 - 375		30	0.008	0.012	0.014	0.016	
High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	40	0.008	0.012	0.014	0.016	
	300 - 350	30	0.006	0.010	0.014	0.016	
	350 - 400	25	0.006	0.008	0.014	0.016	
Structural Steel A36, A285, A516, etc.	100 - 150	70	0.012	0.016	0.018	0.020	
	150 - 250	60	0.010	0.014	0.016	0.018	
	250 - 350	50	0.008	0.012	0.014	0.016	
Tool-Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	50	0.009	0.011	0.014	0.016	
	200 - 250	40	0.008	0.010	0.013	0.015	
S	High-Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 220	20	0.008	0.010	0.012	-
		220 - 310	15	0.007	0.009	0.011	-
M	Stainless Steel 303, 416, 420, 17-4 PH, etc.	135 - 185	45	0.008	0.012	0.015	0.018
		185 - 275	35	0.007	0.010	0.013	0.016
K	Cast Iron	120 - 150	100	0.016	0.020	0.022	0.025
		150 - 200	80	0.015	0.018	0.020	0.022
		200 - 220	70	0.011	0.014	0.018	0.020
		220 - 260	60	0.008	0.012	0.015	0.017
		260 - 320	45	0.008	0.010	0.012	0.014
N	Aluminum	30	275	0.018	0.026	0.032	0.042
		180	200	0.018	0.026	0.032	0.042

#### 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.

Refer to page A40: 48 for Deep Hole Drilling Guidelines. Visit [www.alliedmachine.com/DeepHoleGuidelines](http://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)

### 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.

$150 \cdot 2 = 300 \text{ PSI}$	$6.3 \cdot 2 = 12.6 \text{ GPM}$
---------------------------------	----------------------------------

#### **⚠ 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](http://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.

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



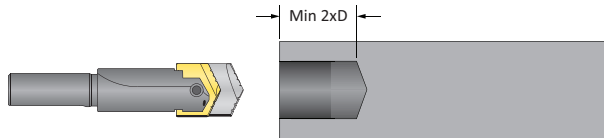
## Deep Hole Drilling Guidelines

A

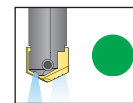
DRILLING

- 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.



Coolant ON

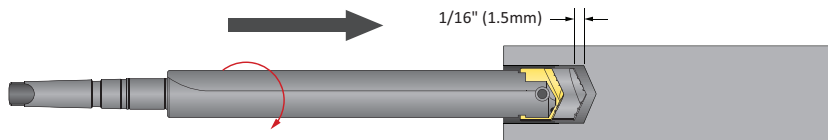


B

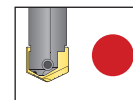
BORING

- 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.



Coolant OFF

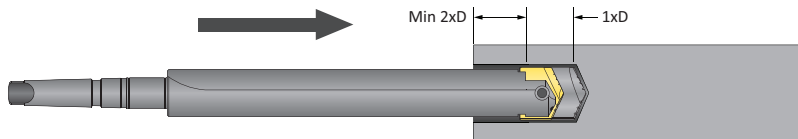


C

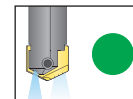
REAMING

- 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.



Coolant ON

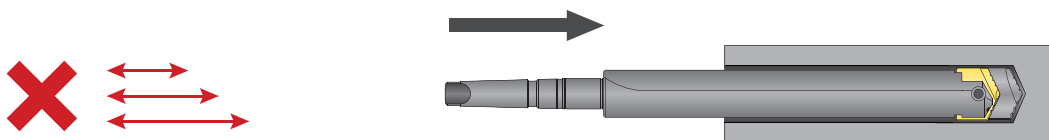


D

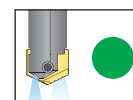
BURNISHING

- 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.**



Coolant ON

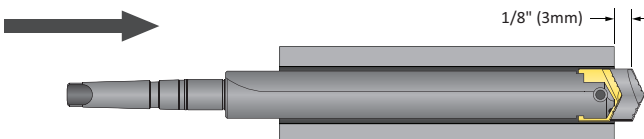


E

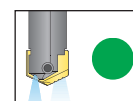
THREADING

- 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 breakout more than 1/8" (3mm) past the full diameter of the drill.



Coolant ON

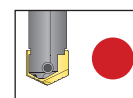


- 6. Drill Retract**  
50 RPM max

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



Coolant OFF



X

SPECIALS

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

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- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

Visit [www.alliedmachine.com/DeepHoleGuidelines](http://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.)
Preexisting 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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Allied Machine & Engineering ("Allied Machine") warrants to original equipment manufacturers, distributors, industrial and commercial users of its products for one year from the original date of sale that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's sole and exclusive obligation under this warranty is limited to, at its option, without additional charge, replacing or repairing this product or issuing a credit. For this warranty to be applied, the product must 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 material and workmanship.

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

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