T-A Drilling System Overview

Technical Details

Next Level Solutions: GEN2 T-A®

What takes a solution to the next level? When you make innovative designs and enhancements to a product that already achieves high performance results, you push the boundaries of what is known. And when you push the known boundaries, the unknown becomes the next level.

After all, everything begins as unknown.



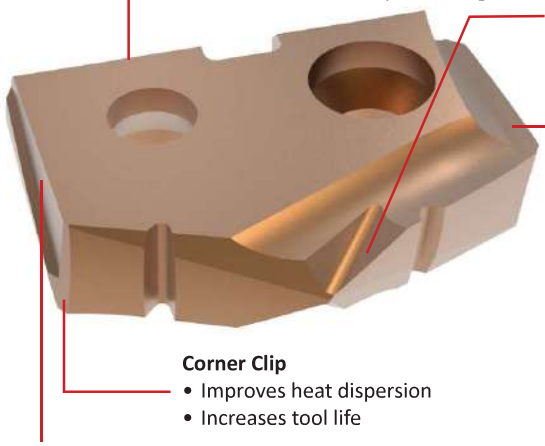
AM300® Coating

- ***Provides superior tool life*** at high penetration rates.
- ***Improves heat resistance*** over AM200® coating.
- ***Increases tool life*** up to 20% over AM200 coating.



AM200® Coating

- ***Improves heat resistance*** over TiN, TiCN, and TiAlN with improved wear capabilities.
- ***Increases penetration rates.***
- ***Increases tool life*** more than 20% over TiAlN coating.



Ground Back Location
- Ensures accurate positioning

Notch Point® Geometry
- Improves stability and hole straightness
- Reduces thrust

Curved Cutting Edge (not all series)
- Enhances chip formation

Corner Clip
- Improves heat dispersion
- Increases tool life

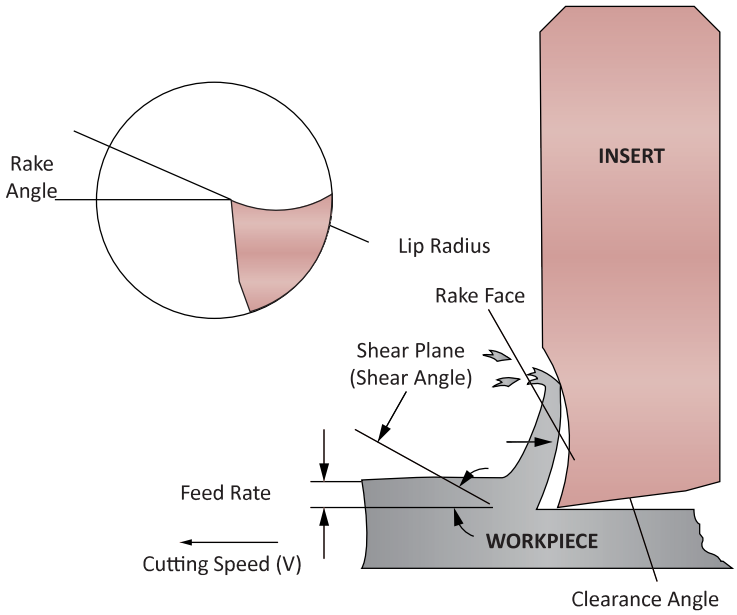
Helical Margin (not all series)
- Increases drill stability



Improving Chip Formation

Achieving optimal chip formation is crucial. The quality of the chips being produced directly affects everything in the entire process: the cycle time, the tool life, the scrap rate, and the quality and condition of the final machined hole.

We know how important chip formation is. That's why we constantly improve and develop new geometries to create a better, more productive T-A product.



Setting Up New Applications

- Check coolant flows adequately through the tool before beginning.
- Drill a short hole 1xD deep initially.
- The chips produced should be short in length and material colored, not straw or blue.
- Measure the hole produced to check that it is within the desired tolerance.
- If all is correct, continue to machine the remainder of the hole.
- Ensure the drilling process is quiet and smooth with no chip packing.

T-A Drilling System Overview

Technical Details

Wear vs Toughness

When selecting a grade of cutting tool material for your application, both wear resistance and grade toughness should be considered. The greater the wear resistance a cutting tool material exhibits, the more likely chipping or fracture is to occur. This requires more rigid machining conditions.

On the other hand, to effectively machine some materials, cobalt or carbide grades of cutting tool material may be required. The graph will aid you in the selection of a cutting tool material with the right combination of wear resistance and toughness to make your application both efficient and cost-effective.



AM300®



AM200®



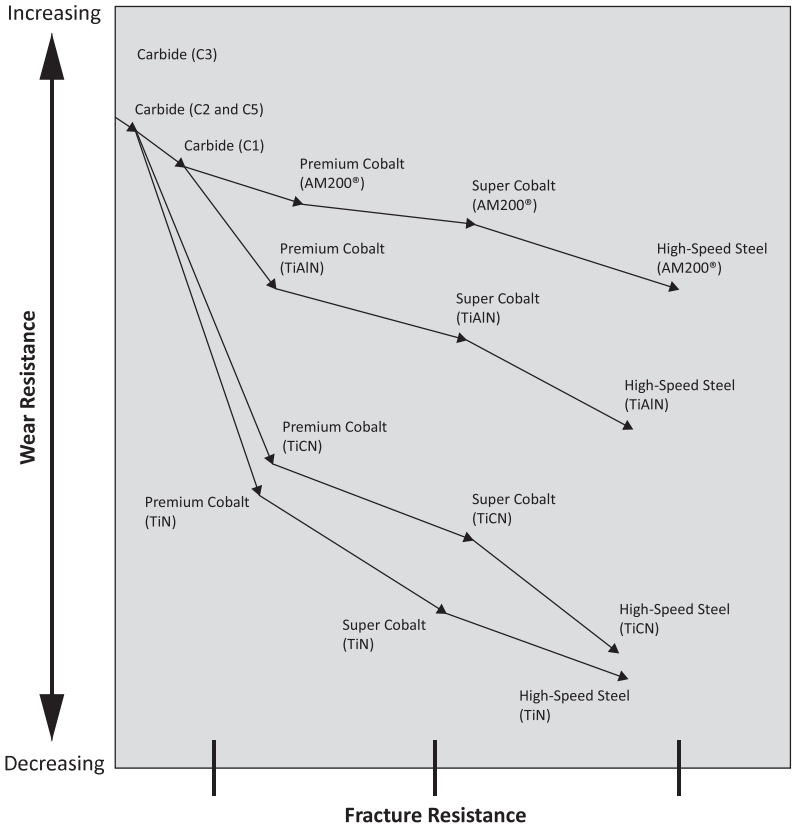
TiN



TiAlN



TiCN



T-A System Guidelines for Use

- Select the shortest holder possible for the application.
- Ensure the T-A holder is held securely and is within 0.08 mm (0.003") of center line.
- The T-A insert should be installed in the slot of the holder using the TORX® Plus screws provided. These should be tightened to the values listed on the T-A holder pages.
- The holder slot should be clean from dirt or debris.
- Check that the insert outer diameter is a minimum of 0.30 mm (0.012") larger than the holder body diameter.
- Use the recommended cutting data section for guidance when selecting correct insert grades, along with speeds and feeds.
- **NOTE:** These cutting parameters are starting conditions only and make no allowance for machine or component rigidity.



Product Nomenclature

T-A Drill Inserts

4	5		3		H	–	0115	-TC
Insert	**Material**		**Series**		**Coating**		**Diameter**	**Geometry**
1 = T-A®	**3** = HSS	**C1** =K35 (C1) carbide	**Y**	**4**	**P** = AM300®		**13** = Metric (mm)	**Blank** = Standard
4 = GEN2 T-A®	**5** = Super cobalt	**C2** = K20 (C2) carbide	**Z**	**5**	**H** = AM200®		**.515** = Decimal (in)	**-TC** = Tiny Chip
	8 = Premium cobalt	**C3** = K10 (C3) carbide	**0**	**6**	**A** = TiAlN		**0017** = Fractional (in)	See pgs. **5 - 6** for a complete list of geometries.
		C5 = P40 (C5) carbide	**1**	**7**	**N** = TiCN			
			2	**8**	**T** = TiN			
			3					

Ordering Instructions

► **Standard Items:**

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

► **Nonstandard Sizes and Geometries:**

Nonstandard diameter — Substitute the required diameter in place of the standard diameter.

Ex:	Standard item number	**132T-0101**
	Nonstandard diameter with standard geometry (inch)	**132T-1.0200** (Note: 4 decimal places)
	Nonstandard diameter with standard geometry (metric)	**132T-34.20** (Note: 2 decimal places)

Special geometry — Add the special geometry code at the end of the standard item number.

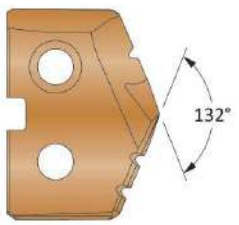
Ex:	Standard item number	**132T-0101**
	Standard diameter with special geometry (inch)	**132T-0101-SK**

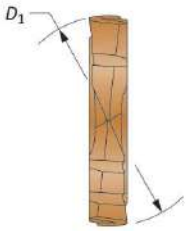
Nonstandard diameter with special geometry — Replace the standard diameter and add the special geometry code.

Ex:	Standard item number	**132T-0101**
	Nonstandard diameter with special geometry (inch)	**132T-1.0200-SK** (Note: 4 decimal places)

Reference Key

Symbol	Attribute
D_1	Insert diameter





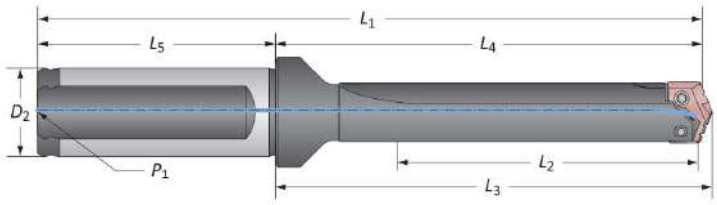
Product Nomenclature

T-A Drill Holders

2	30	20	S	–	004			I
	Drill Length	Series	Flute		Shank Designator			Shank Code
					Metric	Imperial	Morse Taper	
	10 = Stub	**Y0** = Y	**S** = Straight		**16** = 16 mm	**063** = 0.625"	**002** = 2MT	**I** = Imperial Morse taper
	20 = Short	**Z0** = Z	**H** = Helical		**20** = 20 mm	**075** = 0.750"	**003** = 3MT	**M** = Metric Morse taper
	30 = Intermediate	**00** = 0			**25** = 25 mm	**100** = 1.000"	**004** = 4MT	**L** = Lathe shank
	40 = Standard	**05** = 0.5			**32** = 32 mm	**125** = 1.250"	**005** = 5MT	**F** = Flanged shank
	45 = Standard Plus ⚠	**10** = 1			**40** = 40 mm	**150** = 1.500"		**FM** = Flanged metric shank
	50 = Extended ⚠	**15** = 1.5			**50** = 50 mm	**175** = 1.750"		**ER** = ER collet (Y - 0)
	60 = Long ⚠	**20** = 2				**200** = 2.000"		
	65 = Long Plus ⚠	**25** = 2.5				**300** = 3.000"		
	70 = XL ⚠	**30** = 3						
	90 = 3XL ⚠	**40** = 4						
		50 = 5/6						
		70 = 7/8						

Reference Key

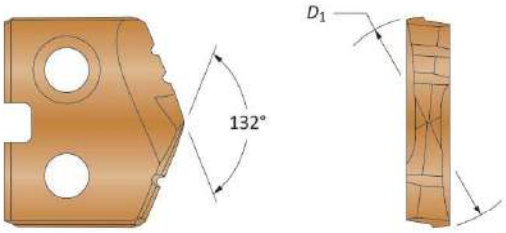
Symbol	Attribute
D_2	Shank diameter
L_1	Overall length
L_2	Drill depth
L_3	Holder reference length
L_4	Holder length
L_5	Shank length
P_1	Rear pipe tap
P_2	Side pipe tap
RCA	Corresponding RCA item number
MT	Morse taper size
ER	ER collet size

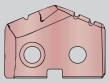
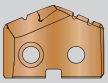
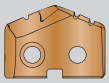


Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

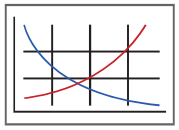
GEN2 T-A® Drill Inserts





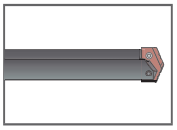
Insert			HSS: Super Cobalt	Carbide: K35 (C1)	Carbide: K20 (C2)
					
			Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	AM200®	AM300®	AM300®
9.50	0.3740	—	45YH-9.5	4C1YP-9.5	4C2YP-9.5
9.53	0.3750	3/8	45YH-0012	4C1YP-0012	4C2YP-0012
9.80	0.3860	—	45YH-.386	4C1YP-.386	4C2YP-.386
9.92	0.3906	25/64	45YH-.390	4C1YP-.390	4C2YP-.390
10.00	0.3937	—	45YH-10	4C1YP-10	4C2YP-10
10.20	0.4016	—	45YH-10.2	4C1YP-10.2	4C2YP-10.2
10.32	0.4063	13/32	45YH-0013	4C1YP-0013	4C2YP-0013
10.50	0.4134	—	45YH-10.5	4C1YP-10.5	4C2YP-10.5
10.72	0.4219	27/64	45YH-.421	4C1YP-.421	4C2YP-.421
10.80	0.4252	—	45YH-10.8	4C1YP-10.8	4C2YP-10.8
11.00	0.4331	—	45YH-11	4C1YP-11	4C2YP-11

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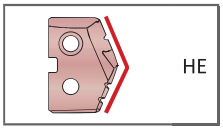


Key on A30: 2

A30: 19 - 21



A30: 5 - 6



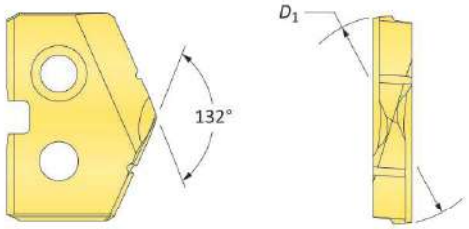
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

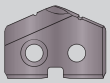
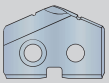
Inserts sold in quantities of 2.

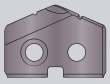
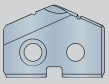
Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Inserts



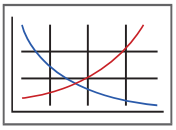


Insert			HSS: Super Cobalt		
			 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
9.50	0.3740	—	**15YT-9.5**	**15YA-9.5**	**15YN-9.5**
9.53	0.3750	3/8	**15YT-0012**	**15YA-0012**	**15YN-0012**
9.80	0.3860	—	**15YT-.386**	**15YA-.386**	**15YN-.386**
9.92	0.3906	25/64	**15YT-.390**	**15YA-.390**	**15YN-.390**
10.00	0.3937	—	**15YT-10**	**15YA-10**	**15YN-10**
10.20	0.4016	—	**15YT-10.2**	**15YA-10.2**	**15YN-10.2**
10.32	0.4063	13/32	**15YT-0013**	**15YA-0013**	**15YN-0013**
10.50	0.4134	—	**15YT-10.5**	**15YA-10.5**	**15YN-10.5**
10.72	0.4219	27/64	**15YT-.421**	**15YA-.421**	**15YN-.421**
10.80	0.4252	—	**15YT-10.8**	**15YA-10.8**	**15YN-10.8**
11.00	0.4331	—	**15YT-11**	**15YA-11**	**15YN-11**

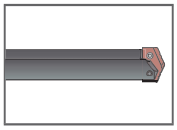
Insert			HSS: Premium Cobalt		
			 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
9.50	0.3740	—	**18YT-9.5**	**18YA-9.5**	**18YN-9.5**
9.53	0.3750	3/8	**18YT-0012**	**18YA-0012**	**18YN-0012**
9.80	0.3860	—	**18YT-.386**	**18YA-.386**	**18YN-.386**
9.92	0.3906	25/64	**18YT-.390**	**18YA-.390**	**18YN-.390**
10.00	0.3937	—	**18YT-10**	**18YA-10**	**18YN-10**
10.20	0.4016	—	**18YT-10.2**	**18YA-10.2**	**18YN-10.2**
10.32	0.4063	13/32	**18YT-0013**	**18YA-0013**	**18YN-0013**
10.50	0.4134	—	**18YT-10.5**	**18YA-10.5**	**18YN-10.5**
10.72	0.4219	27/64	**18YT-.421**	**18YA-.421**	**18YN-.421**
10.80	0.4252	—	**18YT-10.8**	**18YA-10.8**	**18YN-10.8**
11.00	0.4331	—	**18YT-11**	**18YA-11**	**18YN-11**

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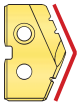
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A30: 19 - 21



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

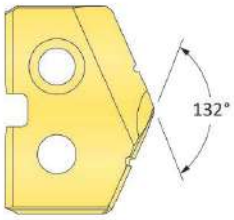
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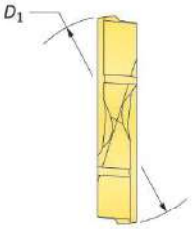
Inserts sold in quantities of 2.

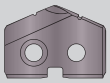
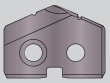
Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Inserts



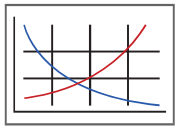




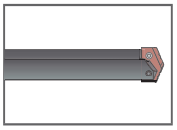
Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
			 Part No.	 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiN	TiAlN
9.50	0.3740	—	**1C5YT-9.5**	**1C5YA-9.5**	**1C2YT-9.5**	**1C2YA-9.5**
9.53	0.3750	3/8	**1C5YT-0012**	**1C5YA-0012**	**1C2YT-0012**	**1C2YA-0012**
9.80	0.3860	—	**1C5YT-.386**	**1C5YA-.386**	**1C2YT-.386**	**1C2YA-.386**
9.92	0.3906	25/64	**1C5YT-.390**	**1C5YA-.390**	**1C2YT-.390**	**1C2YA-.390**
10.00	0.3937	—	**1C5YT-10**	**1C5YA-10**	**1C2YT-10**	**1C2YA-10**
10.20	0.4016	—	**1C5YT-10.2**	**1C5YA-10.2**	**1C2YT-10.2**	**1C2YA-10.2**
10.32	0.4063	13/32	**1C5YT-0013**	**1C5YA-0013**	**1C2YT-0013**	**1C2YA-0013**
10.50	0.4134	—	**1C5YT-10.5**	**1C5YA-10.5**	**1C2YT-10.5**	**1C2YA-10.5**
10.72	0.4219	27/64	**1C5YT-.421**	**1C5YA-.421**	**1C2YT-.421**	**1C2YA-.421**
10.80	0.4252	—	**1C5YT-10.8**	**1C5YA-10.8**	**1C2YT-10.8**	**1C2YA-10.8**
11.00	0.4331	—	**1C5YT-11**	**1C5YA-11**	**1C2YT-11**	**1C2YA-11**

A30: 113 - 139

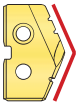
Key on A30: 2



A30: 19 - 21



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

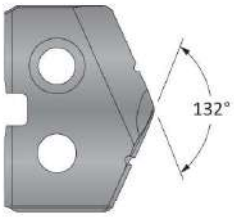
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

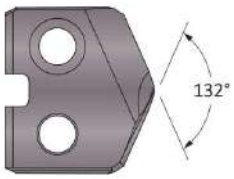
T-A® Drill Inserts

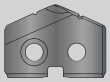
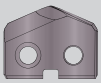






Cast Iron Geometry

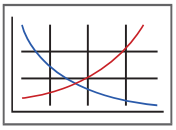


Insert			Carbide: N2	Cast Iron Geometry Carbide: K10 (C3)
				
D_1 mm	D_1 inch	Fractional Equivalent	Part No. Diamond Film*	Part No. TiAlN
9.50	0.3740	—	**1N2YD-9.5**	**1C3YA-9.5-CI**
9.53	0.3750	3/8	**1N2YD-0012**	**1C3YA-0012-CI**
9.80	0.3860	—	**1N2YD-.386**	**1C3YA-.386-CI**
9.92	0.3906	25/64	**1N2YD-.390**	**1C3YA-.390-CI**
10.00	0.3937	—	**1N2YD-10**	**1C3YA-10-CI**
10.20	0.4016	—	**1N2YD-10.2**	**1C3YA-10.2-CI**
10.32	0.4063	13/32	**1N2YD-0013**	**1C3YA-0013-CI**
10.50	0.4134	—	**1N2YD-10.5**	**1C3YA-10.5-CI**
10.72	0.4219	27/64	**1N2YD-.421**	**1C3YA-.421-CI**
10.80	0.4252	—	**1N2YD-10.8**	**1C3YA-10.8-CI**
11.00	0.4331	—	**1N2YD-11**	**1C3YA-11-CI**

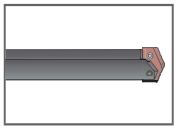
*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

Key on A30: 2

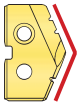
A30: 113 - 139



A30: 19 - 21



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

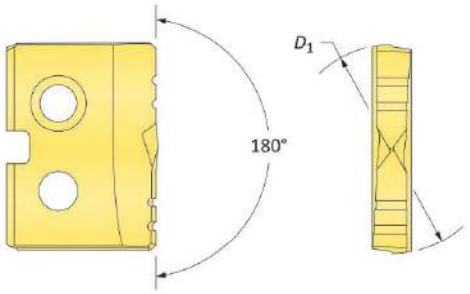
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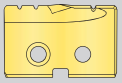
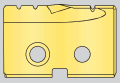
Inserts sold in quantities of 2.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Inserts



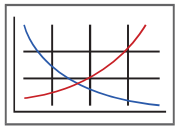


Insert			Flat Bottom Geometry	
			HSS: Super Cobalt	Carbide: K20 (C2)
				
			Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiN*
9.50	0.3740	—	**15YT-9.5-FB**	**15YT-9.5-FB**
9.53	0.3750	3/8	**15YT-0012-FB**	**15YT-0012-FB**
9.80	0.3860	—	**15YT-.386-FB**	**15YT-.386-FB**
9.92	0.3906	25/64	**15YT-.390-FB**	**15YT-.390-FB**
10.00	0.3937	—	**15YT-10-FB**	**15YT-10-FB**
10.20	0.4016	—	**15YT-10.2-FB**	**15YT-10.2-FB**
10.32	0.4063	13/32	**15YT-0013-FB**	**15YT-0013-FB**
10.50	0.4134	—	**15YT-10.5-FB**	**15YT-10.5-FB**
10.72	0.4219	27/64	**15YT-.421-FB**	**15YT-.421-FB**
10.80	0.4252	—	**15YT-10.8-FB**	**15YT-10.8-FB**
11.00	0.4331	—	**15YT-11-FB**	**15YT-11-FB**

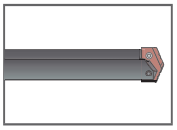
* Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

A30: 113 - 139

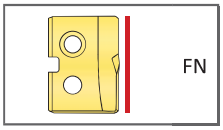
Key on A30: 2



A30: 19 - 21



A30: 5 - 6



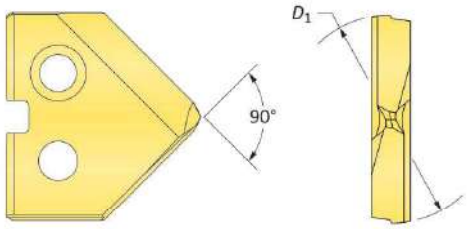
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Inserts

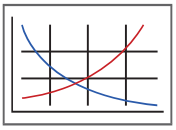




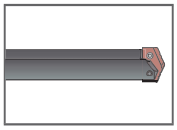
Insert			90° Spot & Chamfer Geometry HSS: Super Cobalt		
			Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
9.50	0.3740	—	15YT-9.5-SP	15YA-9.5-SP	15YN-9.5-SP
9.53	0.3750	3/8	15YT-0012-SP	15YA-0012-SP	15YN-0012-SP
9.80	0.3860	—	15YT-.386-SP	15YA-.386-SP	15YN-.386-SP
9.92	0.3906	25/64	15YT-.390-SP	15YA-.390-SP	15YN-.390-SP
10.00	0.3937	—	15YT-10-SP	15YA-10-SP	15YN-10-SP
10.20	0.4016	—	15YT-10.2-SP	15YA-10.2-SP	15YN-10.2-SP
10.32	0.4063	13/32	15YT-0013-SP	15YA-0013-SP	15YN-0013-SP
10.50	0.4134	—	15YT-10.5-SP	15YA-10.5-SP	15YN-10.5-SP
10.72	0.4219	27/64	15YT-.421-SP	15YA-.421-SP	15YN-.421-SP
10.80	0.4252	—	15YT-10.8-SP	15YA-10.8-SP	15YN-10.8-SP
11.00	0.4331	—	15YT-11-SP	15YA-11-SP	15YN-11-SP

A30: 113 - 139

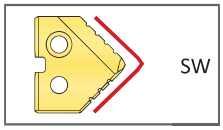
Key on A30: 2



A30: 19 - 21



A30: 5 - 6



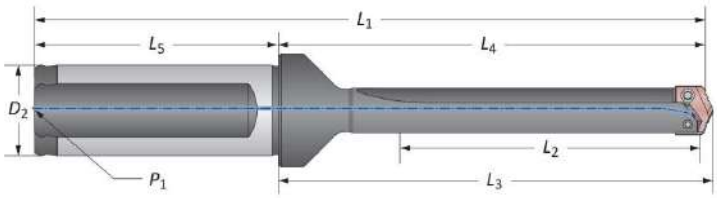
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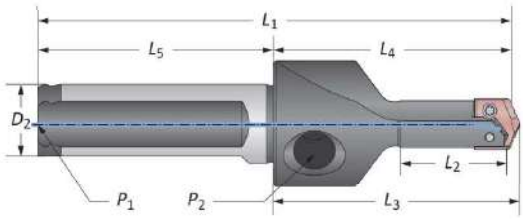
Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Holders









Stub Length

Flange Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Stub	21.9	47.6	49.9	95.6	48.0	16	1/16 BSPT	210Y0S-16FM
	Short	28.9	61.1	63.4	111.1	50.0	20	1/8 BSPT	220Y0S-20FM
	Standard	57.6	89.7	92.0	139.7	50.0	20	1/8 BSPT	240Y0S-20FM
	Extended	108.4	140.5	142.8	190.5	50.0	20	1/8 BSPT	⚠ 250Y0S-20FM
	XL	219.4	251.6	253.9	301.6	50.0	20	1/8 BSPT	⚠ 270Y0S-20FM
	3XL	287.6	319.9	322.1	369.9	50.0	20	1/8 BSPT	⚠ 290Y0S-20FM
Helical	Standard	72.6	89.7	92.0	139.7	50.0	20	1/8 BSPT	240Y0H-20FM
	Standard Plus	98.3	115.4	117.7	165.4	50.0	20	1/8 BSPT	⚠ 245Y0H-20FM
	Extended	123.4	140.5	142.8	190.5	50.0	20	1/8 BSPT	⚠ 250Y0H-20FM
Straight	Stub	0.861	1.875	1.965	3.750	1.875	5/8	1/16 NPT	210Y0S-063F
	Short	1.141	2.406	2.496	4.436	2.030	3/4	1/8 NPT	220Y0S-075F
	Standard	2.266	3.531	3.621	5.561	2.030	3/4	1/8 NPT	240Y0S-075F
	Extended	4.266	5.531	5.621	7.561	2.030	3/4	1/8 NPT	⚠ 250Y0S-075F
Helical	Standard	2.860	3.531	3.621	5.561	2.030	3/4	1/8 NPT	240Y0H-075F
	Standard Plus	3.872	4.543	4.633	6.573	2.030	3/4	1/8 NPT	245Y0H-075F
	Extended	4.860	5.531	5.621	7.561	2.030	3/4	1/8 NPT	⚠ 250Y0H-075F

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

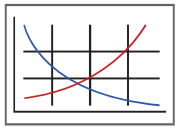
Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
724-IP7-1	724N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

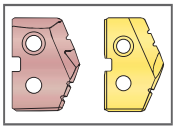
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 13 - 18

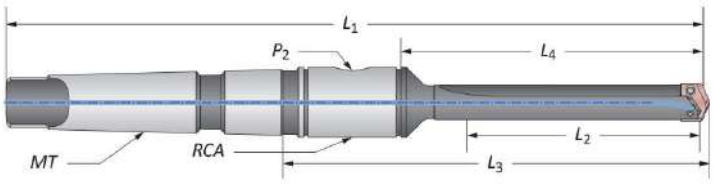


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Holders





Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
m	Straight	Short	27.3	51.6	88.0	160.3	#2 MT ISO	1/16 BSPT	2T-2SRM	220Y0S-002M
m	Helical	Standard	69.1	80.2	116.6	188.9	#2 MT ISO	1/16 BSPT	2T-2SRM	240Y0H-002M
m	Helical	Extended	119.9	131.0	167.4	239.7	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ 250Y0H-002M
i	Straight	Short	1.075	2.031	3.464	6.312	#2 MT	1/16 NPT	2T-2SR	220Y0S-002I
i	Straight	Standard	2.200	3.156	4.589	7.437	#2 MT	1/16 NPT	2T-2SR	240Y0S-002I
i	Straight	Extended	4.200	5.156	6.589	9.437	#2 MT	1/16 NPT	2T-2SR	⚠ 250Y0S-002I
i	Helical	Standard	2.719	3.156	4.589	7.437	#2 MT	1/16 NPT	2T-2SR	240Y0H-002I
i	Helical	Extended	4.719	5.156	6.589	9.437	#2 MT	1/16 NPT	2T-2SR	⚠ 250Y0H-002I

*MT ISO 296 type BEK.

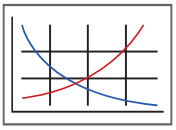
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
724-IP7-1	724N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

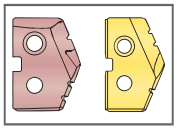
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A30: 113 - 139

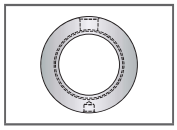


Key on A30: 2

A30: 13 - 18



A30: 22 & 111

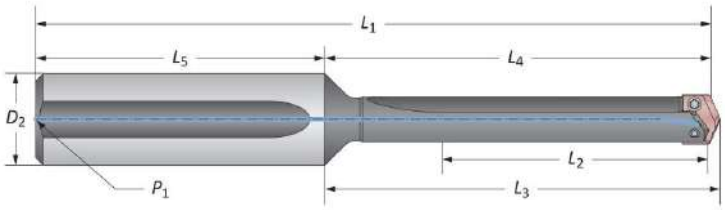


ⓜ = Metric (mm)
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Screws sold in multiples of 10.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Holders

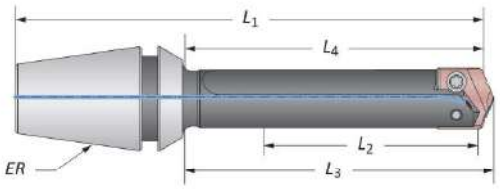




Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	1.080	2.031	2.121	4.406	2.375	3/4	1/8 NPT	**220Y0S-075L**
	Standard	2.205	3.156	3.246	5.531	2.375	3/4	1/8 NPT	**240Y0S-075L**
	Extended	4.205	5.156	5.246	7.531	2.375	3/4	1/8 NPT	⚠ **250Y0S-075L**
	XL	8.580	9.531	9.621	11.906	2.375	3/4	1/8 NPT	⚠ **270Y0S-075L**
	3XL	11.267	12.218	12.308	14.593	2.375	3/4	1/8 NPT	⚠ **290Y0S-075L**





ER Collet Holders

Flute	Body L_2	Body L_4	Body L_3	Body L_1	Body *ER*	Part No.	Collet Nut without Retaining Ring
Straight	42.5	48.5	50.8	75.8	ER-16	**210Y0S-16ER**	ER-16N
	42.5	48.5	50.8	79.8	ER-20	**210Y0S-20ER**	ER-20N

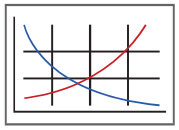
Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
724-IP7-1	724N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

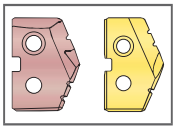
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Key on A30: 2

A30: 13 - 18

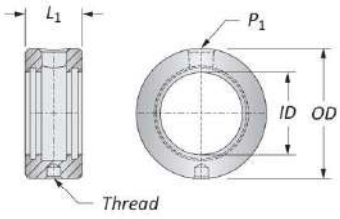


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

Y Series: 9.50 mm - 11.09 mm (0.3740" - 0.4369")

T-A® Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings	
							Kit Part No.*	Replacements
ⓜ	19.1	44.5	22.2	M8 x 1.25	1/8 BSPT	⚠ 2T-2SRM	2T1-2SR	2T1-2OR-10
ⓘ	0.750	1.750	0.875	5/16" - 18	1/8 NPT	⚠ 2T-2SR	2T1-2SR	2T1-2OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information. 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.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

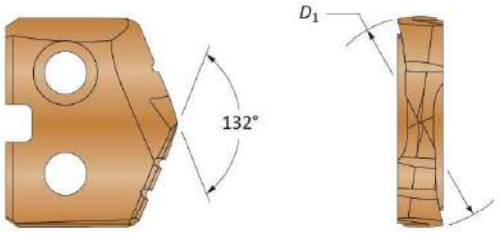
A30: 113 - 139
Key on A30: 2

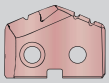
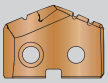
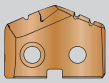
ⓜ = Metric (mm)
ⓘ = Imperial (in)
O-rings sold in packs of 10.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

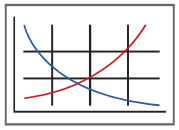
GEN2 T-A® Drill Inserts





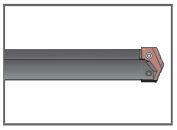
Insert			HSS: Super Cobalt	Carbide: K35 (C1)	Carbide: K20 (C2)
					
			Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	AM200®	AM300®	AM300®
11.11	0.4375	7/16	45ZH-0014	4C1ZP-0014	4C2ZP-0014
11.46	0.4510	—	45ZH-.451	4C1ZP-.451	4C2ZP-.451
11.50	0.4528	—	45ZH-11.5	4C1ZP-11.5	4C2ZP-11.5
11.51	0.4531	29/64	45ZH-.453	4C1ZP-.453	4C2ZP-.453
11.91	0.4688	15/32	45ZH-0015	4C1ZP-0015	4C2ZP-0015
12.00	0.4724	—	45ZH-12	4C1ZP-12	4C2ZP-12
12.30	0.4844	31/64	45ZH-.484	4C1ZP-.484	4C2ZP-.484
12.50	0.4921	—	45ZH-12.5	4C1ZP-12.5	4C2ZP-12.5
12.70	0.5000	1/2	45ZH-0016	4C1ZP-0016	4C2ZP-0016
12.85	0.5060	—	45ZH-.506	4C1ZP-.506	4C2ZP-.506
12.95	0.5100	—	45ZH-.510	4C1ZP-.510	4C2ZP-.510

A30: 113 - 139

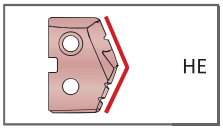


Key on A30: 2

A30: 29 - 31



A30: 5 - 6



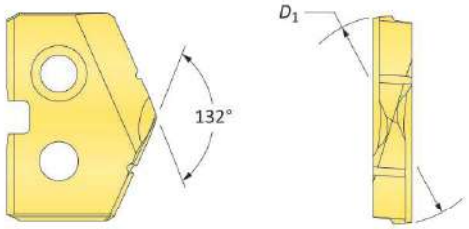
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

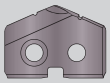
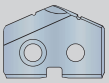
Inserts sold in quantities of 2.

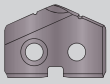
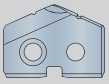
Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Inserts



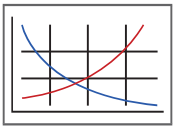


Insert			HSS: Super Cobalt		
			 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
11.11	0.4375	7/16	**15ZT-0014**	**15ZA-0014**	**15ZN-0014**
11.46	0.4510	—	**15ZT-.451**	**15ZA-.451**	**15ZN-.451**
11.50	0.4528	—	**15ZT-11.5**	**15ZA-11.5**	**15ZN-11.5**
11.51	0.4531	29/64	**15ZT-.453**	**15ZA-.453**	**15ZN-.453**
11.91	0.4688	15/32	**15ZT-0015**	**15ZA-0015**	**15ZN-0015**
12.00	0.4724	—	**15ZT-12**	**15ZA-12**	**15ZN-12**
12.30	0.4844	31/64	**15ZT-.484**	**15ZA-.484**	**15ZN-.484**
12.50	0.4921	—	**15ZT-12.5**	**15ZA-12.5**	**15ZN-12.5**
12.70	0.5000	1/2	**15ZT-0016**	**15ZA-0016**	**15ZN-0016**
12.85	0.5060	—	**15ZT-.506**	**15ZA-.506**	**15ZN-.506**
12.95	0.5100	—	**15ZT-.510**	**15ZA-.510**	**15ZN-.510**

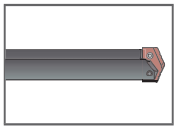
Insert			HSS: Premium Cobalt		
			 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
11.11	0.4375	7/16	**18ZT-0014**	**18ZA-0014**	**18ZN-0014**
11.46	0.4510	—	**18ZT-.451**	**18ZA-.451**	**18ZN-.451**
11.50	0.4528	—	**18ZT-11.5**	**18ZA-11.5**	**18ZN-11.5**
11.51	0.4531	29/64	**18ZT-.453**	**18ZA-.453**	**18ZN-.453**
11.91	0.4688	15/32	**18ZT-0015**	**18ZA-0015**	**18ZN-0015**
12.00	0.4724	—	**18ZT-12**	**18ZA-12**	**18ZN-12**
12.30	0.4844	31/64	**18ZT-.484**	**18ZA-.484**	**18ZN-.484**
12.50	0.4921	—	**18ZT-12.5**	**18ZA-12.5**	**18ZN-12.5**
12.70	0.5000	1/2	**18ZT-0016**	**18ZA-0016**	**18ZN-0016**
12.85	0.5060	—	**18ZT-.506**	**18ZA-.506**	**18ZN-.506**
12.95	0.5100	—	**18ZT-.510**	**18ZA-.510**	**18ZN-.510**

A30: 113 - 139

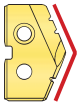
Key on A30: 2



A30: 29 - 31



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

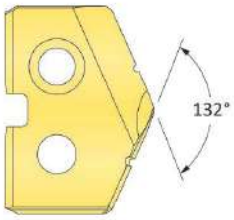
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

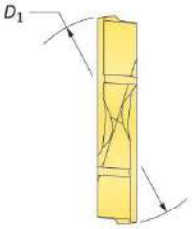
Inserts sold in quantities of 2.

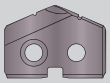
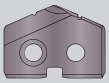
Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Inserts



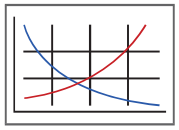




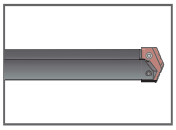
Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
						
			Part No.	Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiN	TiAlN
11.11	0.4375	7/16	**1C5ZT-0014**	**1C5ZA-0014**	**1C2ZT-0014**	**1C2ZA-0014**
11.46	0.4510	—	**1C5ZT-.451**	**1C5ZA-.451**	**1C2ZT-.451**	**1C2ZA-.451**
11.50	0.4528	—	**1C5ZT-11.5**	**1C5ZA-11.5**	**1C2ZT-11.5**	**1C2ZA-11.5**
11.51	0.4531	29/64	**1C5ZT-.453**	**1C5ZA-.453**	**1C2ZT-.453**	**1C2ZA-.453**
11.91	0.4688	15/32	**1C5ZT-0015**	**1C5ZA-0015**	**1C2ZT-0015**	**1C2ZA-0015**
12.00	0.4724	—	**1C5ZT-12**	**1C5ZA-12**	**1C2ZT-12**	**1C2ZA-12**
12.30	0.4844	31/64	**1C5ZT-.484**	**1C5ZA-.484**	**1C2ZT-.484**	**1C2ZA-.484**
12.50	0.4921	—	**1C5ZT-12.5**	**1C5ZA-12.5**	**1C2ZT-12.5**	**1C2ZA-12.5**
12.70	0.5000	1/2	**1C5ZT-0016**	**1C5ZA-0016**	**1C2ZT-0016**	**1C2ZA-0016**
12.85	0.5060	—	**1C5ZT-.506**	**1C5ZA-.506**	**1C2ZT-.506**	**1C2ZA-.506**
12.95	0.5100	—	**1C5ZT-.510**	**1C5ZA-.510**	**1C2ZT-.510**	**1C2ZA-.510**

A30: 113 - 139

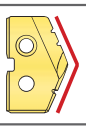
Key on A30: 2



A30: 29 - 31



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

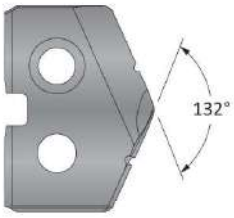
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

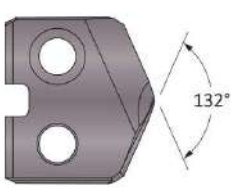
T-A® Drill Inserts

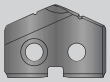
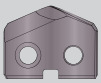






Cast Iron Geometry

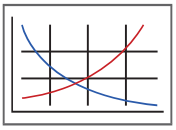


Insert			Carbide: N2	Cast Iron Geometry Carbide: K10 (C3)
				
D_1 mm	D_1 inch	Fractional Equivalent	Part No. Diamond Film	Part No. TiAlN
11.11	0.4375	7/16	**1N2ZD-0014**	**1C3ZA-0014-CI**
11.46	0.4510	—	**1N2ZD-.451**	**1C3ZA-.451-CI**
11.50	0.4528	—	**1N2ZD-11.5**	**1C3ZA-11.5-CI**
11.51	0.4531	29/64	**1N2ZD-.453**	**1C3ZA-.453-CI**
11.91	0.4688	15/32	**1N2ZD-0015**	**1C3ZA-0015-CI**
12.00	0.4724	—	**1N2ZD-12**	**1C3ZA-12-CI**
12.30	0.4844	31/64	**1N2ZD-.484**	**1C3ZA-.484-CI**
12.50	0.4921	—	**1N2ZD-12.5**	**1C3ZA-12.5-CI**
12.70	0.5000	1/2	**1N2ZD-0016**	**1C3ZA-0016-CI**
12.85	0.5060	—	**1N2ZD-.506**	**1C3ZA-.506-CI**
12.95	0.5100	—	**1N2ZD-.510**	**1C3ZA-.510-CI**

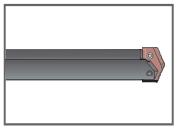
*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

Key on A30: 2

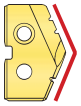
A30: 113 - 139



A30: 29 - 31



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

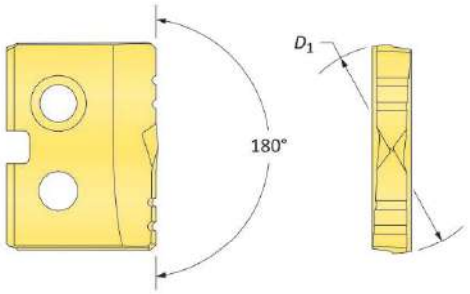
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

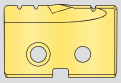
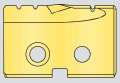
Inserts sold in quantities of 2.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Inserts



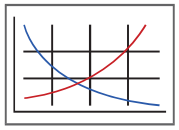


Insert			Flat Bottom Geometry	
			HSS: Super Cobalt	Carbide: K20 (C2)
				
			Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiN*
11.11	0.4375	7/16	**15ZT-0014-FB**	**1C2ZT-0014-FB**
11.46	0.4510	—	**15ZT-.451-FB**	**1C2ZT-.451-FB**
11.50	0.4528	—	**15ZT-11.5-FB**	**1C2ZT-11.5-FB**
11.51	0.4531	29/64	**15ZT-.453-FB**	**1C2ZT-.453-FB**
11.91	0.4688	15/32	**15ZT-0015-FB**	**1C2ZT-0015-FB**
12.00	0.4724	—	**15ZT-12-FB**	**1C2ZT-12-FB**
12.30	0.4844	31/64	**15ZT-.484-FB**	**1C2ZT-.484-FB**
12.50	0.4921	—	**15ZT-12.5-FB**	**1C2ZT-12.5-FB**
12.70	0.5000	1/2	**15ZT-0016-FB**	**1C2ZT-0016-FB**
12.85	0.5060	—	**15ZT-.506-FB**	**1C2ZT-.506-FB**
12.95	0.5100	—	**15ZT-.510-FB**	**1C2ZT-.510-FB**

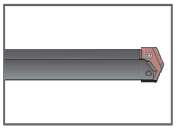
*Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

A30: 113 - 139

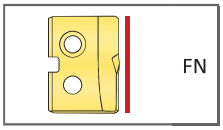
Key on A30: 2



A30: 29 - 31



A30: 5 - 6



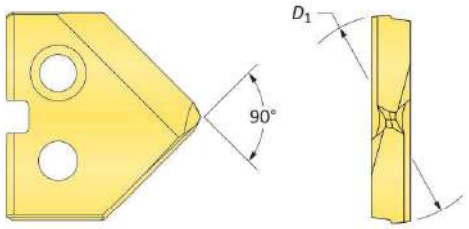
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Inserts





Insert			90° Spot & Chamfer Geometry HSS: Super Cobalt		
			Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
11.11	0.4375	7/16	15ZT-0014-SP	15ZA-0014-SP	15ZN-0014-SP
11.46	0.4510	—	15ZT-.451-SP	15ZA-.451-SP	15ZN-.451-SP
11.50	0.4528	—	15ZT-11.5-SP	15ZA-11.5-SP	15ZN-11.5-SP
11.51	0.4531	29/64	15ZT-.453-SP	15ZA-.453-SP	15ZN-.453-SP
11.91	0.4688	15/32	15ZT-0015-SP	15ZA-0015-SP	15ZN-0015-SP
12.00	0.4724	—	15ZT-12-SP	15ZA-12-SP	15ZN-12-SP
12.30	0.4844	31/64	15ZT-.484-SP	15ZA-.484-SP	15ZN-.484-SP
12.50	0.4921	—	15ZT-12.5-SP	15ZA-12.5-SP	15ZN-12.5-SP
12.70	0.5000	1/2	15ZT-0016-SP	15ZA-0016-SP	15ZN-0016-SP
12.85	0.5060	—	15ZT-.506-SP	15ZA-.506-SP	15ZN-.506-SP
12.95	0.5100	—	15ZT-.510-SP	15ZA-.510-SP	15ZN-.510-SP

A30: 113 - 139
Key on A30: 2
A30: 29 - 31
A30: 5 - 6
SW

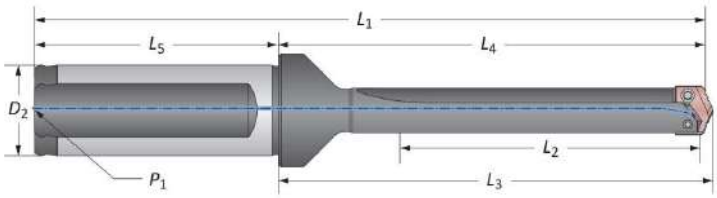
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

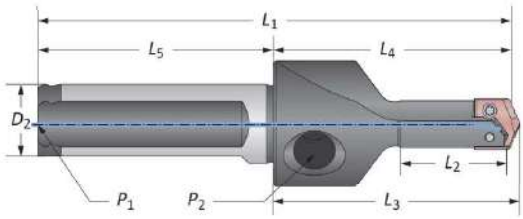
Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Holders









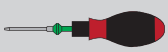
Stub Length

Flange Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Stub	20.4	45.6	47.9	93.6	48.0	16	1/16 BSPT	210Z0S-16FM
	Short	29.1	61.1	63.4	111.1	50.0	20	1/8 BSPT	220Z0S-20FM
	Standard	57.6	89.7	92.0	139.7	50.0	20	1/8 BSPT	240Z0S-20FM
	Extended	108.4	140.5	142.8	190.5	50.0	20	1/8 BSPT	⚠ 250Z0S-20FM
	XL	219.6	251.6	253.9	301.6	50.0	20	1/8 BSPT	⚠ 270Z0S-20FM
	3XL	287.9	319.9	322.1	369.9	50.0	20	1/8 BSPT	⚠ 290Z0S-20FM
Helical	Standard	73.0	89.7	92.0	139.7	50.0	20	1/8 BSPT	240Z0H-20FM
	Standard Plus	98.7	115.4	117.7	165.4	50.0	20	1/8 BSPT	⚠ 245Z0H-20FM
	Extended	123.8	140.5	142.8	190.5	50.0	20	1/8 BSPT	⚠ 250Z0H-20FM
	Long	192.7	209.4	211.7	259.4	50.0	20	1/8 BSPT	⚠ 260Z0H-20FM
Straight	Stub	0.805	1.797	1.887	3.672	1.875	5/8	1/16 NPT	210Z0S-063F
	Short	1.142	2.406	2.496	4.436	2.030	3/4	1/8 NPT	220Z0S-075F
	Standard	2.267	3.531	3.621	5.561	2.030	3/4	1/8 NPT	240Z0S-075F
	Extended	4.267	5.531	5.621	7.561	2.030	3/4	1/8 NPT	⚠ 250Z0S-075F
Helical	Standard	2.874	3.531	3.621	5.561	2.030	3/4	1/8 NPT	240Z0H-075F
	Standard Plus	3.886	4.543	4.633	6.573	2.030	3/4	1/8 NPT	⚠ 245Z0H-075F
	Extended	4.874	5.531	5.621	7.561	2.030	3/4	1/8 NPT	⚠ 250Z0H-075F
	Long	7.586	8.244	8.334	10.274	2.030	3/4	1/8 NPT	⚠ 260Z0H-075F

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

Connection Accessories

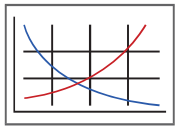
 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

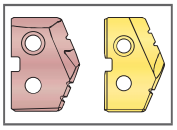
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

Key on A30: 2



A30: 23 - 28

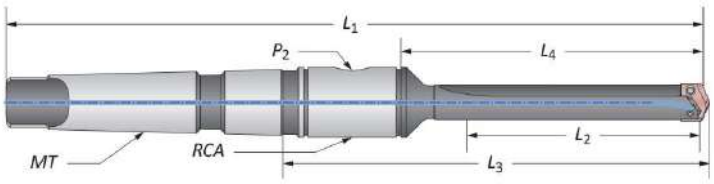


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Holders





Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
m	Straight	Short	27.3	51.6	88.0	160.3	#2 MT ISO	1/16 BSPT	2T-2SRM	**220Z0S-002M**
m	Helical	Standard	69.4	80.2	116.6	188.9	#2 MT ISO	1/16 BSPT	2T-2SRM	**240Z0H-002M**
m	Helical	Extended	120.2	131.0	167.4	239.7	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ **250Z0H-002M**
i	Straight	Short	1.074	2.031	3.464	6.312	#2 MT	1/16 NPT	2T-2SR	**220Z0S-002I**
i	Straight	Standard	2.199	3.156	4.589	7.437	#2 MT	1/16 NPT	2T-2SR	**240Z0S-002I**
i	Straight	Extended	4.199	5.156	6.589	9.437	#2 MT	1/16 NPT	2T-2SR	⚠ **250Z0S-002I**
i	Helical	Standard	2.733	3.156	4.589	7.437	#2 MT	1/16 NPT	2T-2SR	**240Z0H-002I**
i	Helical	Extended	4.733	5.156	6.589	9.437	#2 MT	1/16 NPT	2T-2SR	⚠ **250Z0H-002I**

*MT ISO 296 type BEK.

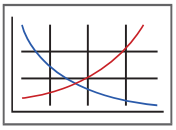
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

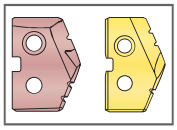
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

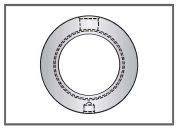


Key on A30: 2

A30: 23 - 28



A30: 32 & 111

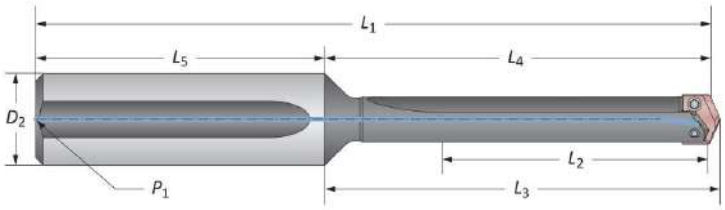


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A® Drill Holders

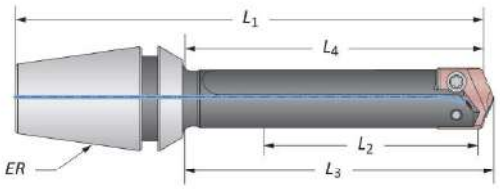




Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	1.079	2.031	2.121	4.406	2.375	3/4	1/8 NPT	**220Z0S-075L**
	Standard	2.204	3.156	3.246	5.531	2.375	3/4	1/8 NPT	**240Z0S-075L**
	Extended	4.204	5.156	5.246	7.531	2.375	3/4	1/8 NPT	⚠ **250Z0S-075L**
	XL	8.579	9.531	9.621	11.906	2.375	3/4	1/8 NPT	⚠ **270Z0S-075L**
	3XL	11.266	12.218	12.308	14.593	2.375	3/4	1/8 NPT	⚠ **290Z0S-075L**





ER Collet Holders

Flute	Body L_2	Body L_4	Body L_3	Body L_1	ER	Part No.	Collet Nut without Retaining Ring
Straight	42.1	48.5	50.8	75.8	ER-16	**210Z0S-16ER**	ER-16N
	42.1	48.5	50.8	79.8	ER-20	**210Z0S-20ER**	ER-20N

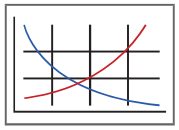
Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7247-IP7-1	7247N-IP7-1	8IP-7	8IP-7TL	8IP-7B	84 N-cm (7.4 in-lbs)

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

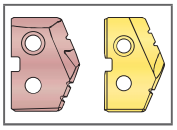
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 23 - 28

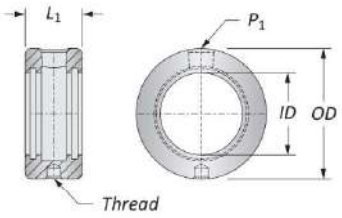


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

Z Series: 11.10 mm - 12.97 mm (0.4370" - 0.5109")

T-A Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings	
							Kit Part No.*	Replacements
m	19.1	44.5	22.2	M8 x 1.25	1/8 BSPT	⚠ 2T-2SRM	2T1-2SR	2T1-2OR-10
i	0.750	1.750	0.875	5/16" - 18	1/8 NPT	⚠ 2T-2SR	2T1-2SR	2T1-2OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information. 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.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

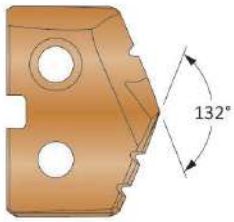
A30: 113 - 139
Key on A30: 2

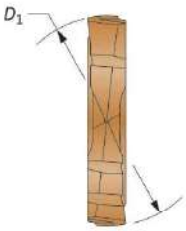
m = Metric (mm)
i = Imperial (in)
O-rings sold in packs of 10.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

GEN2 T-A® Drill Inserts



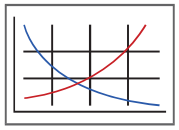




Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt Part No. AM200®	Carbide: K35 (C1) Part No. AM300®	Carbide: K20 (C2) Part No. AM300®
0	13.00	0.5118	—	450H-13	4C20P-13	4C10P-13
	13.10	0.5156	33/64	450H-.515	4C20P-.515	4C10P-.515
	13.50	0.5313	17/32	450H-0017	4C20P-0017	4C10P-0017
	13.50	0.5315	—	450H-13.5	4C20P-13.5	4C10P-13.5
	13.89	0.5469	35/64	450H-.546	4C20P-.546	4C10P-.546
	14.00	0.5512	—	450H-14	4C20P-14	4C10P-14
	14.29	0.5625	9/16	450H-0018	4C20P-0018	4C10P-0018
	14.50	0.5709	—	450H-14.5	4C20P-14.5	4C10P-14.5
	14.68	0.5781	37/64	450H-.578	4C20P-.578	4C10P-.578
	15.00	0.5906	—	450H-15	4C20P-15	4C10P-15
	15.08	0.5938	19/32	450H-0019	4C20P-0019	4C10P-0019
0.5	15.48	0.6094	39/64	450H-.609	4C20P-.609	4C10P-.609
	15.50	0.6102	—	450H-15.5	4C20P-15.5	4C10P-15.5
	15.88	0.6250	5/8	450H-0020	4C20P-0020	4C10P-0020
	16.00	0.6299	—	450H-16	4C20P-16	4C10P-16
	16.27	0.6406	41/64	450H-.640	4C20P-.640	4C10P-.640
	16.50	0.6496	—	450H-16.5	4C20P-16.5	4C10P-16.5
	16.67	0.6563	21/32	450H-0021	4C20P-0021	4C10P-0021
	17.00	0.6693	—	450H-17	4C20P-17	4C10P-17
	17.07	0.6719	43/64	450H-.671	4C20P-.671	4C10P-.671
	17.46	0.6875	11/16	450H-0022	4C20P-0022	4C10P-0022
	17.50	0.6890	—	450H-17.5	4C20P-17.5	4C10P-17.5

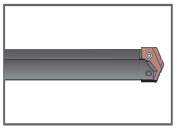
NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

A30: 113 - 139

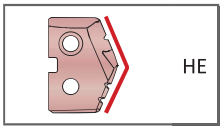


Key on A30: 2

A30: 41 - 45



A30: 5 - 6



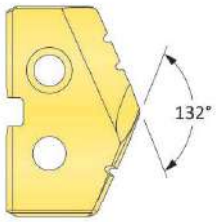
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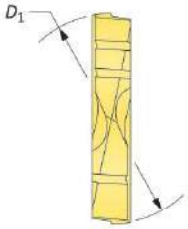
Inserts sold in quantities of 2.

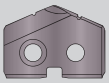
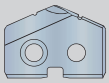
0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts

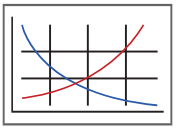


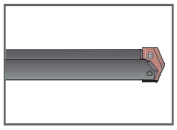


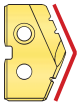


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt  Part No. TiN	 Part No. TiAlN	 Part No. TiCN
0	13.00	0.5118	—	**150T-13**	**150A-13**	**150N-13**
	13.10	0.5156	33/64	**150T-.515**	**150A-.515**	**150N-.515**
	13.50	0.5313	17/32	**150T-0017**	**150A-0017**	**150N-0017**
	13.50	0.5315	—	**150T-13.5**	**150A-13.5**	**150N-13.5**
	13.89	0.5469	35/64	**150T-.546**	**150A-.546**	**150N-.546**
	14.00	0.5512	—	**150T-14**	**150A-14**	**150N-14**
	14.29	0.5625	9/16	**150T-0018**	**150A-0018**	**150N-0018**
	14.50	0.5709	—	**150T-14.5**	**150A-14.5**	**150N-14.5**
	14.68	0.5781	37/64	**150T-.578**	**150A-.578**	**150N-.578**
	15.00	0.5906	—	**150T-15**	**150A-15**	**150N-15**
	15.08	0.5938	19/32	**150T-0019**	**150A-0019**	**150N-0019**
0.5	15.48	0.6094	39/64	**150T-.609**	**150A-.609**	**150N-.609**
	15.50	0.6102	—	**150T-15.5**	**150A-15.5**	**150N-15.5**
	15.88	0.6250	5/8	**150T-0020**	**150A-0020**	**150N-0020**
	16.00	0.6299	—	**150T-16**	**150A-16**	**150N-16**
	16.27	0.6406	41/64	**150T-.640**	**150A-.640**	**150N-.640**
	16.50	0.6496	—	**150T-16.5**	**150A-16.5**	**150N-16.5**
	16.67	0.6563	21/32	**150T-0021**	**150A-0021**	**150N-0021**
	17.00	0.6693	—	**150T-17**	**150A-17**	**150N-17**
	17.07	0.6719	43/64	**150T-.671**	**150A-.671**	**150N-.671**
	17.46	0.6875	11/16	**150T-0022**	**150A-0022**	**150N-0022**
	17.50	0.6890	—	**150T-17.5**	**150A-17.5**	**150N-17.5**

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

A30: 113 - 139
Key on A30: 2


A30: 41 - 45


A30: 5 - 6

HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

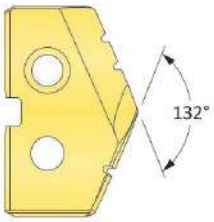
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

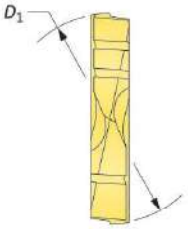
Inserts sold in quantities of 2.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts





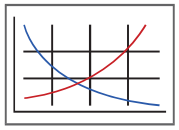


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Premium Cobalt Part No. TiN	Part No. TiAlN	Part No. TiCN
0	13.00	0.5118	—	**180T-13**	**180A-13**	**180N-13**
	13.10	0.5156	33/64	**180T-.515**	**180A-.515**	**180N-.515**
	13.50	0.5313	17/32	**180T-0017**	**180A-0017**	**180N-0017**
	13.50	0.5315	—	**180T-13.5**	**180A-13.5**	**180N-13.5**
	13.89	0.5469	35/64	**180T-.546**	**180A-.546**	**180N-.546**
	14.00	0.5512	—	**180T-14**	**180A-14**	**180N-14**
	14.29	0.5625	9/16	**180T-0018**	**180A-0018**	**180N-0018**
	14.50	0.5709	—	**180T-14.5**	**180A-14.5**	**180N-14.5**
	14.68	0.5781	37/64	**180T-.578**	**180A-.578**	**180N-.578**
	15.00	0.5906	—	**180T-15**	**180A-15**	**180N-15**
	15.08	0.5938	19/32	**180T-0019**	**180A-0019**	**180N-0019**
0.5	15.48	0.6094	39/64	**180T-.609**	**180A-.609**	**180N-.609**
	15.50	0.6102	—	**180T-15.5**	**180A-15.5**	**180N-15.5**
	15.88	0.6250	5/8	**180T-0020**	**180A-0020**	**180N-0020**
	16.00	0.6299	—	**180T-16**	**180A-16**	**180N-16**
	16.27	0.6406	41/64	**180T-.640**	**180A-.640**	**180N-.640**
	16.50	0.6496	—	**180T-16.5**	**180A-16.5**	**180N-16.5**
	16.67	0.6563	21/32	**180T-0021**	**180A-0021**	**180N-0021**
	17.00	0.6693	—	**180T-17**	**180A-17**	**180N-17**
	17.07	0.6719	43/64	**180T-.671**	**180A-.671**	**180N-.671**
	17.46	0.6875	11/16	**180T-0022**	**180A-0022**	**180N-0022**
	17.50	0.6890	—	**180T-17.5**	**180A-17.5**	**180N-17.5**

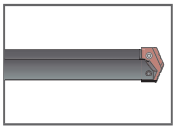
NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

A30: 113 - 139

Key on A30: 2



A30: 41 - 45



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

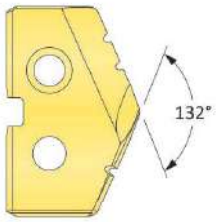
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

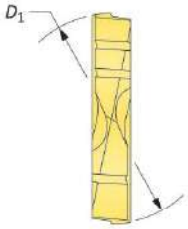
Inserts sold in quantities of 2.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts



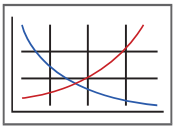




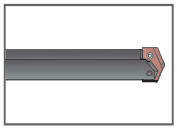
Series	Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
	D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. TiAlN	Part No. TiN	Part No. TiAlN
0	13.00	0.5118	—	1C50T-13	1C50A-13	1C20T-13	1C20A-13
	13.10	0.5156	33/64	1C50T-.515	1C50A-.515	1C20T-.515	1C20A-.515
	13.50	0.5313	17/32	1C50T-0017	1C50A-0017	1C20T-0017	1C20A-0017
	13.50	0.5315	—	1C50T-13.5	1C50A-13.5	1C20T-13.5	1C20A-13.5
	13.89	0.5469	35/64	1C50T-.546	1C50A-.546	1C20T-.546	1C20A-.546
	14.00	0.5512	—	1C50T-14	1C50A-14	1C20T-14	1C20A-14
	14.29	0.5625	9/16	1C50T-0018	1C50A-0018	1C20T-0018	1C20A-0018
	14.50	0.5709	—	1C50T-14.5	1C50A-14.5	1C20T-14.5	1C20A-14.5
	14.68	0.5781	37/64	1C50T-.578	1C50A-.578	1C20T-.578	1C20A-.578
	15.00	0.5906	—	1C50T-15	1C50A-15	1C20T-15	1C20A-15
	15.08	0.5938	19/32	1C50T-0019	1C50A-0019	1C20T-0019	1C20A-0019
0.5	15.48	0.6094	39/64	1C50T-.609	1C50A-.609	1C20T-.609	1C20A-.609
	15.50	0.6102	—	1C50T-15.5	1C50A-15.5	1C20T-15.5	1C20A-15.5
	15.88	0.6250	5/8	1C50T-0020	1C50A-0020	1C20T-0020	1C20A-0020
	16.00	0.6299	—	1C50T-16	1C50A-16	1C20T-16	1C20A-16
	16.27	0.6406	41/64	1C50T-.640	1C50A-.640	1C20T-.640	1C20A-.640
	16.50	0.6496	—	1C50T-16.5	1C50A-16.5	1C20T-16.5	1C20A-16.5
	16.67	0.6563	21/32	1C50T-0021	1C50A-0021	1C20T-0021	1C20A-0021
	17.00	0.6693	—	1C50T-17	1C50A-17	1C20T-17	1C20A-17
	17.07	0.6719	43/64	1C50T-.671	1C50A-.671	1C20T-.671	1C20A-.671
	17.46	0.6875	11/16	1C50T-0022	1C50A-0022	1C20T-0022	1C20A-0022
	17.50	0.6890	—	1C50T-17.5	1C50A-17.5	1C20T-17.5	1C20A-17.5

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

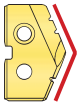
A30: 113 - 139
Key on A30: 2



A30: 41 - 45



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

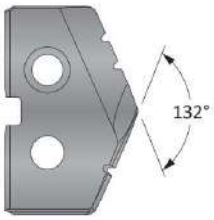
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

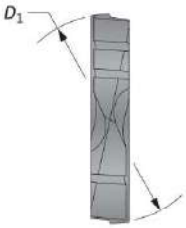
Inserts sold in quantities of 2.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts

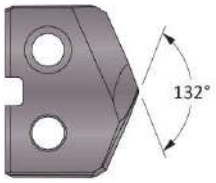


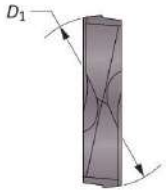






Cast Iron Geometry





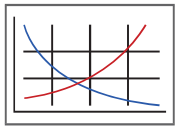
Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	Carbide: N2 Part No. Diamond Film*	Cast Iron Geometry Carbide: K10 (C3) Part No. TiAlN
0	13.00	0.5118	—	1N20D-13	1C30A-13-CI
	13.10	0.5156	33/64	1N20D-.515	1C30A-.515-CI
	13.50	0.5313	17/32	1N20D-0017	1C30A-0017-CI
	13.50	0.5315	—	1N20D-13.5	1C30A-13.5-CI
	13.89	0.5469	35/64	1N20D-.546	1C30A-.546-CI
	14.00	0.5512	—	1N20D-14	1C30A-14-CI
	14.29	0.5625	9/16	1N20D-0018	1C30A-0018-CI
	14.50	0.5709	—	1N20D-14.5	1C30A-14.5-CI
	14.68	0.5781	37/64	1N20D-.578	1C30A-.578-CI
	15.00	0.5906	—	1N20D-15	1C30A-15-CI
	15.08	0.5938	19/32	1N20D-0019	1C30A-0019-CI
0.5	15.48	0.6094	39/64	1N20D-.609	1C30A-.609-CI
	15.50	0.6102	—	1N20D-15.5	1C30A-15.5-CI
	15.88	0.6250	5/8	1N20D-0020	1C30A-0020-CI
	16.00	0.6299	—	1N20D-16	1C30A-16-CI
	16.27	0.6406	41/64	1N20D-.640	1C30A-.640-CI
	16.50	0.6496	—	1N20D-16.5	1C30A-16.5-CI
	16.67	0.6563	21/32	1N20D-0021	1C30A-0021-CI
	17.00	0.6693	—	1N20D-17	1C30A-17-CI
	17.07	0.6719	43/64	1N20D-.671	1C30A-.671-CI
	17.46	0.6875	11/16	1N20D-0022	1C30A-0022-CI
	17.50	0.6890	—	1N20D-17.5	1C30A-17.5-CI

*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

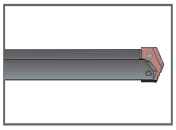
NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

A30: 113 - 139

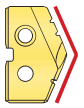
Key on A30: 2



A30: 41 - 45



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

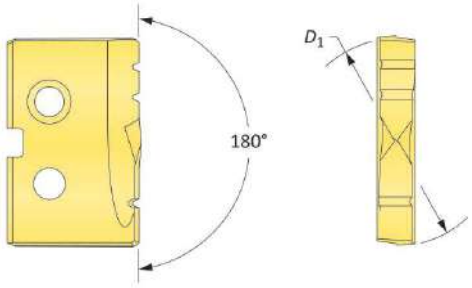
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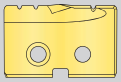
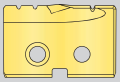
Inserts sold in quantities of 2.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts





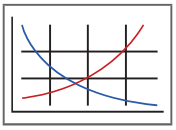
	Insert			Flat Bottom Geometry	
				HSS: Super Cobalt	Carbide: K20 (C2)
					
				Part No.	Part No.
Series	D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiN*
0	13.00	0.5118	—	**150T-13-FB**	**1C20T-13-FB**
	13.10	0.5156	33/64	**150T-.515-FB**	**1C20T-.515-FB**
	13.50	0.5313	17/32	**150T-0017-FB**	**1C20T-0017-FB**
	13.50	0.5315	—	**150T-13.5-FB**	**1C20T-13.5-FB**
	13.89	0.5469	35/64	**150T-.546-FB**	**1C20T-.546-FB**
	14.00	0.5512	—	**150T-14-FB**	**1C20T-14-FB**
	14.29	0.5625	9/16	**150T-0018-FB**	**1C20T-0018-FB**
	14.50	0.5709	—	**150T-14.5-FB**	**1C20T-14.5-FB**
	14.68	0.5781	37/64	**150T-.578-FB**	**1C20T-.578-FB**
	15.00	0.5906	—	**150T-15-FB**	**1C20T-15-FB**
	15.08	0.5938	19/32	**150T-0019-FB**	**1C20T-0019-FB**
0.5	15.48	0.6094	39/64	**150T-.609-FB**	**1C20T-.609-FB**
	15.50	0.6102	—	**150T-15.5-FB**	**1C20T-15.5-FB**
	15.88	0.6250	5/8	**150T-0020-FB**	**1C20T-0020-FB**
	16.00	0.6299	—	**150T-16-FB**	**1C20T-16-FB**
	16.27	0.6406	41/64	**150T-.640-FB**	**1C20T-.640-FB**
	16.50	0.6496	—	**150T-16.5-FB**	**1C20T-16.5-FB**
	16.67	0.6563	21/32	**150T-0021-FB**	**1C20T-0021-FB**
	17.00	0.6693	—	**150T-17-FB**	**1C20T-17-FB**
	17.07	0.6719	43/64	**150T-.671-FB**	**1C20T-.671-FB**
	17.46	0.6875	11/16	**150T-0022-FB**	**1C20T-0022-FB**
	17.50	0.6890	—	**150T-17.5-FB**	**1C20T-17.5-FB**

*Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

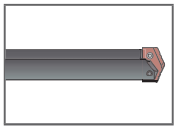
NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

A30: 113 - 139

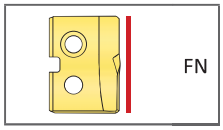
Key on A30: 2



A30: 41 - 45



A30: 5 - 6



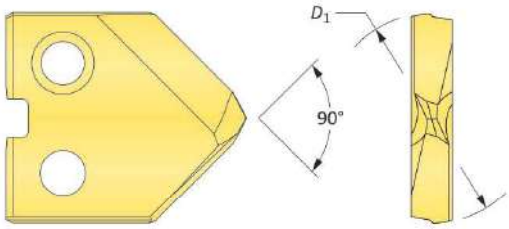
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Inserts

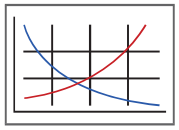




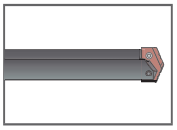
	Insert			90° Spot & Chamfer Geometry		
				HSS: Super Cobalt		
						
Series	D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. TiAlN	Part No. TiCN
0	13.00	0.5118	—	**150T-13-SP**	**150A-13-SP**	**150N-13-SP**
	13.10	0.5156	33/64	**150T-.515-SP**	**150A-.515-SP**	**150N-.515-SP**
	13.50	0.5313	17/32	**150T-0017-SP**	**150A-0017-SP**	**150N-0017-SP**
	13.50	0.5315	—	**150T-13.5-SP**	**150A-13.5-SP**	**150N-13.5-SP**
	13.89	0.5469	35/64	**150T-.546-SP**	**150A-.546-SP**	**150N-.546-SP**
	14.00	0.5512	—	**150T-14-SP**	**150A-14-SP**	**150N-14-SP**
	14.29	0.5625	9/16	**150T-0018-SP**	**150A-0018-SP**	**150N-0018-SP**
	14.50	0.5709	—	**150T-14.5-SP**	**150A-14.5-SP**	**150N-14.5-SP**
	14.68	0.5781	37/64	**150T-.578-SP**	**150A-.578-SP**	**150N-.578-SP**
	15.00	0.5906	—	**150T-15-SP**	**150A-15-SP**	**150N-15-SP**
	15.08	0.5938	19/32	**150T-0019-SP**	**150A-0019-SP**	**150N-0019-SP**
0.5	15.48	0.6094	39/64	**150T-.609-SP**	**150A-.609-SP**	**150N-.609-SP**
	15.50	0.6102	—	**150T-15.5-SP**	**150A-15.5-SP**	**150N-15.5-SP**
	15.88	0.6250	5/8	**150T-0020-SP**	**150A-0020-SP**	**150N-0020-SP**
	16.00	0.6299	—	**150T-16-SP**	**150A-16-SP**	**150N-16-SP**
	16.27	0.6406	41/64	**150T-.640-SP**	**150A-.640-SP**	**150N-.640-SP**
	16.50	0.6496	—	**150T-16.5-SP**	**150A-16.5-SP**	**150N-16.5-SP**
	16.67	0.6563	21/32	**150T-0021-SP**	**150A-0021-SP**	**150N-0021-SP**
	17.00	0.6693	—	**150T-17-SP**	**150A-17-SP**	**150N-17-SP**
	17.07	0.6719	43/64	**150T-.671-SP**	**150A-.671-SP**	**150N-.671-SP**
	17.46	0.6875	11/16	**150T-0022-SP**	**150A-0022-SP**	**150N-0022-SP**
	17.50	0.6890	—	**150T-17.5-SP**	**150A-17.5-SP**	**150N-17.5-SP**

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

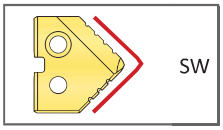
A30: 113 - 139
Key on A30: 2



A30: 41 - 45



A30: 5 - 6



Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

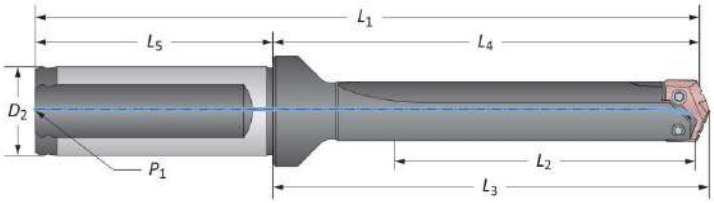
Inserts sold in quantities of 2.

Notes

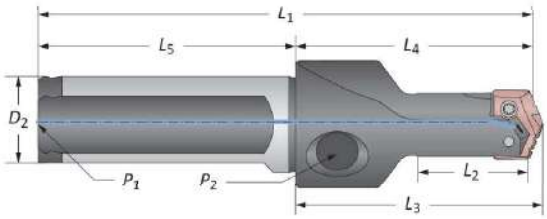
0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Holders









Stub Length

Metric Flange Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	0	Stub	23.1	47.6	50.3	97.6	50.0	20	1/8 BSPT	21000S-20FM
		Short	30.9	63.5	66.2	113.5	50.0	20	1/8 BSPT	22000S-20FM
		Standard	59.6	92.1	94.8	142.1	50.0	20	1/8 BSPT	24000S-20FM
		Extended	110.4	142.9	145.6	192.9	50.0	20	1/8 BSPT	⚠ 25000S-20FM
		XL	291.3	323.9	326.6	373.9	50.0	20	1/8 BSPT	⚠ 27000S-20FM
		3XL	383.3	415.9	418.6	465.9	50.0	20	1/8 BSPT	⚠ 29000S-20FM
	0.5	Stub	24.0	47.6	50.3	97.6	50.0	20	1/8 BSPT	21005S-20FM
		Short	29.6	63.5	66.2	113.5	50.0	20	1/8 BSPT	22005S-20FM
		Standard	58.9	92.1	94.8	142.1	50.0	20	1/8 BSPT	24005S-20FM
		Extended	109.7	142.9	145.6	192.9	50.0	20	1/8 BSPT	⚠ 25005S-20FM
Helical	0	Standard	75.9	92.1	94.8	142.1	50.0	20	1/8 BSPT	24000H-20FM
		Standard Plus	101.4	117.6	120.3	167.6	50.0	20	1/8 BSPT	⚠ 24500H-20FM
		Extended	126.7	142.9	145.6	192.9	50.0	20	1/8 BSPT	⚠ 25000H-20FM
		Long	190.2	206.4	209.1	256.4	50.0	20	1/8 BSPT	⚠ 26000H-20FM
		Long Plus	252.4	268.6	271.3	318.6	50.0	20	1/8 BSPT	⚠ 26500H-20FM
	0.5	Standard	77.1	92.1	94.8	142.1	50.0	20	1/8 BSPT	24005H-20FM
		Extended	127.9	142.9	145.6	192.9	50.0	20	1/8 BSPT	⚠ 25005H-20FM
		Long	191.4	206.4	209.1	256.4	50.0	20	1/8 BSPT	⚠ 26005H-20FM

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).
NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

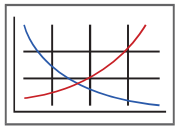
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

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

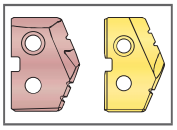
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

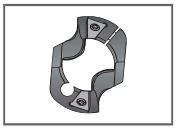


Key on A30: 2

A30: 33 - 39



A30: 46 & 112

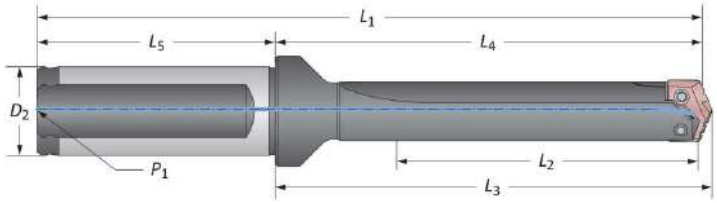


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

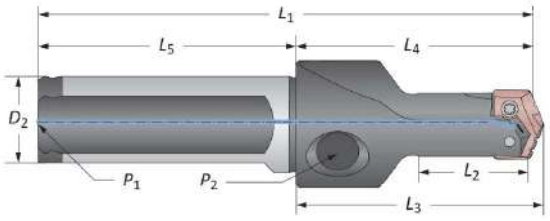
0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Holders









Stub Length

Imperial Flange Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	0	Stub	0.910	1.875	1.982	3.905	2.030	3/4	1/8 NPT	21000S-075F
		Short	1.220	2.500	2.607	4.530	2.030	3/4	1/8 NPT	22000S-075F
		Standard	2.345	3.625	3.732	5.655	2.030	3/4	1/8 NPT	24000S-075F
		Extended	4.345	5.625	5.732	7.655	2.030	3/4	1/8 NPT	⚠ 25000S-075F
	0.5	Stub	0.945	1.875	1.982	3.905	2.030	3/4	1/8 NPT	21005S-075F
		Short	1.195	2.500	2.607	4.530	2.030	3/4	1/8 NPT	22005S-075F
		Standard	2.320	3.625	3.732	5.655	2.030	3/4	1/8 NPT	24005S-075F
		Extended	4.320	5.625	5.732	7.655	2.030	3/4	1/8 NPT	⚠ 25005S-075F
Helical	0	Standard	2.987	3.625	3.732	5.655	2.030	3/4	1/8 NPT	24000H-075F
		Standard Plus	3.992	4.630	4.737	6.660	2.030	3/4	1/8 NPT	⚠ 24500H-075F
		Extended	4.987	5.625	5.732	7.655	2.030	3/4	1/8 NPT	⚠ 25000H-075F
		Long	7.487	8.125	8.232	10.155	2.030	3/4	1/8 NPT	⚠ 26000H-075F
		Long Plus	9.937	10.575	10.682	12.605	2.030	3/4	1/8 NPT	⚠ 26500H-075F
	0.5	Standard	3.034	3.625	3.732	5.655	2.030	3/4	1/8 NPT	24005H-075F
		Extended	5.034	5.625	5.732	7.655	2.030	3/4	1/8 NPT	⚠ 25005H-075F
		Long	7.534	8.125	8.232	10.155	2.030	3/4	1/8 NPT	⚠ 26005H-075F

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

Connection Accessories

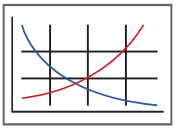
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

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

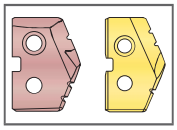
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

Key on A30: 2

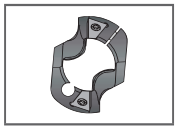
A30: 113 - 139



A30: 33 - 39



A30: 46 & 112

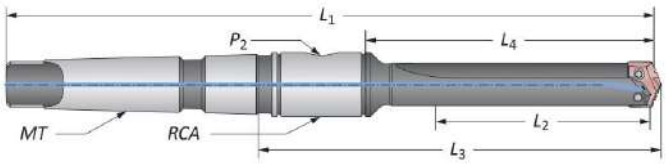


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Holders





Metric Taper Shank Holders

Flute	Series	Body Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
Straight	0	Short	30.8	55.6	92.4	164.3	#2 MT ISO	1/16 BSPT	2T-2SRM	**22000S-002M**
Straight	0.5	Short	30.2	55.6	92.4	164.3	#2 MT ISO	1/16 BSPT	2T-2SRM	**22005S-002M**
Helical	0	Standard	73.9	84.2	121.0	192.9	#2 MT ISO	1/16 BSPT	2T-2SRM	**24000H-002M**
Helical	0	Extended	124.7	135.0	171.8	243.7	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ **25000H-002M**
Helical	0	Long	188.2	198.5	235.3	307.2	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ **26000H-002M**
Helical	0.5	Standard	75.1	84.2	121.0	192.9	#2 MT ISO	1/16 BSPT	2T-2SRM	**24005H-002M**
Helical	0.5	Extended	125.9	135.0	171.8	243.7	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ **25005H-002M**
Helical	0.5	Long	189.4	198.5	235.3	307.2	#2 MT ISO	1/16 BSPT	2T-2SRM	⚠ **26005H-002M**

*MT ISO 296 type BEK.

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

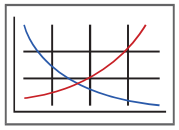
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

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

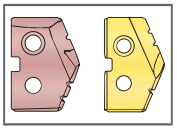
⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

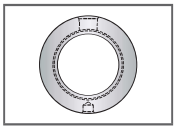


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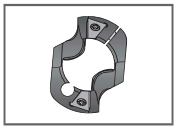
A30: 33 - 39



A30: 46 & 111



A30: 46 & 112

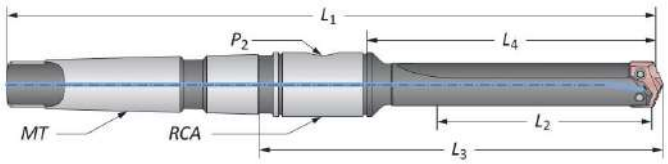


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Holders





Imperial Taper Shank Holders

Flute	Series	Body Length	L_2	L_4	L_3	L_1	Shank MT	P_2	RCA	Part No.
Straight	0	Short	1.213	2.188	3.638	6.469	#2 MT	1/16 NPT	2T-2SR	22000S-002I
		Standard	2.338	3.313	4.763	7.594	#2 MT	1/16 NPT	2T-2SR	24000S-002I
		Extended	4.338	5.313	6.763	9.594	#2 MT	1/16 NPT	2T-2SR	⚠ 25000S-002I
	0.5	Short	1.188	2.188	3.638	6.469	#2 MT	1/16 NPT	2T-2SR	22005S-002I
		Standard	2.313	3.313	4.763	7.594	#2 MT	1/16 NPT	2T-2SR	24005S-002I
		Extended	4.313	5.313	6.763	9.594	#2 MT	1/16 NPT	2T-2SR	⚠ 25005S-002I
Helical	0	Standard	2.909	3.313	4.763	7.594	#2 MT	1/16 NPT	2T-2SR	24000H-002I
		Extended	4.909	5.313	6.763	9.594	#2 MT	1/16 NPT	2T-2SR	⚠ 25000H-002I
		Long	7.409	7.813	9.263	12.094	#2 MT	1/16 NPT	2T-2SR	⚠ 26000H-002I
	0.5	Standard	2.956	3.313	4.763	7.594	#2 MT	1/16 NPT	2T-2SR	24005H-002I
		Extended	4.956	5.313	6.763	9.594	#2 MT	1/16 NPT	2T-2SR	⚠ 25005H-002I
		Long	7.456	7.813	9.263	12.094	#2 MT	1/16 NPT	2T-2SR	⚠ 26005H-002I

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

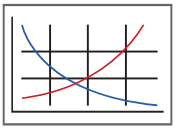
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

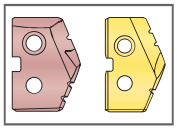
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

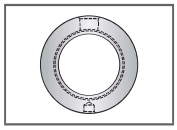
A30: 113 - 139



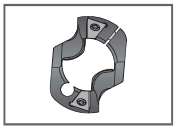
A30: 33 - 39



A30: 46 & 111



A30: 46 & 112



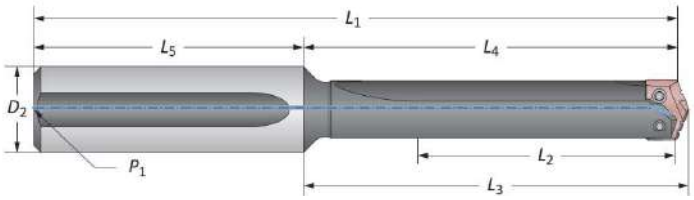
Key on A30: 2

ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Holders



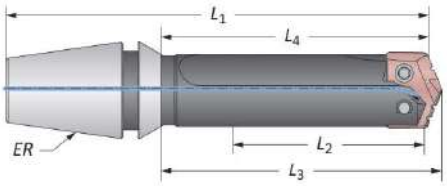


Straight Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	0	Short	1.218	2.188	2.295	4.563	2.375	3/4	1/8 NPT	**22000S-075L**
		Standard	2.343	3.313	3.420	5.688	2.375	3/4	1/8 NPT	**24000S-075L**
		Extended	4.343	5.313	5.420	7.688	2.375	3/4	1/8 NPT	⚠ **25000S-075L**
		Long	6.843	7.813	7.920	10.188	2.375	3/4	1/8 NPT	⚠ **26000S-075L**
		XL	11.468	12.438	12.545	14.813	2.375	3/4	1/8 NPT	⚠ **27000S-075L**
		3XL	15.093	16.063	16.170	18.438	2.375	3/4	1/8 NPT	⚠ **29000S-075L**
	0.5	Short	1.194	2.188	2.295	4.563	2.375	3/4	1/8 NPT	**22005S-075L**
		Standard	2.319	3.313	3.420	5.688	2.375	3/4	1/8 NPT	**24005S-075L**
		Extended	4.319	5.313	5.420	7.688	2.375	3/4	1/8 NPT	⚠ **25005S-075L**
		Long	6.819	7.813	7.920	10.188	2.375	3/4	1/8 NPT	⚠ **26005S-075L**

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.





ER Collet Holders

Series	Body L_2	Body L_4	Body L_3	Body L_1	ER	Part No.	Collet Nut without Retaining Ring
0	41.2	48.1	50.8	75.3	ER-16	**21000S-16ER**	ER-16N
	41.2	48.1	50.8	79.3	ER-20	**21000S-20ER**	ER-20N

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

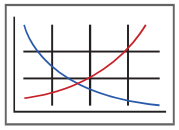
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
0	72556-IP8-1	72556N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)
0.5	72567-IP8-1	72567N-IP8-1	8IP-8	8IP-8TL	8IP-8B	175 N-cm (15.5 in-lbs)

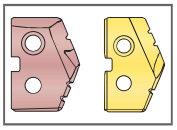
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

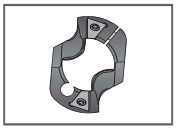
A30: 113 - 139 Key on A30: 2



A30: 33 - 39



A30: 46 & 112

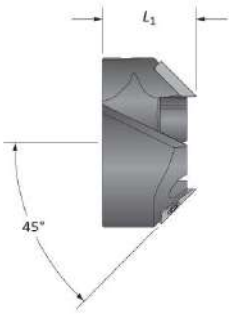


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

0 Series: 12.98 mm - 17.67 mm (0.5110" - 0.6959")

T-A® Drill Accessories



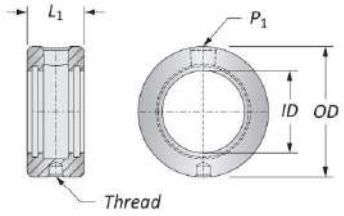




T-ACR 45 Chamfer Ring

Holder Series	D_1 Range	Chamfer Ring D_4	Chamfer Ring L_1	Part No.	Insert Part No.	Insert Screw	Insert Driver	Clamping Screw	Insert Driver
0	0.5118 - 0.6890	1.148	0.676	**T-ACR-45-0**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7375-IP9-1	8IP-9





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings Kit Part No.*	RCA O-Rings Replacements
ⓜ	19.1	44.5	22.2	M8 x 1.25	1/8 BSPT	⚠ **2T-2SRM**	2T1-2SR	2T1-2OR-10
ⓘ	0.750	1.750	0.875	5/16" - 18	1/8 NPT	⚠ **2T-2SR**	2T1-2SR	2T1-2OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139
Key on A30: 2

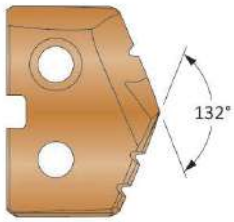
ⓜ = Metric (mm)
ⓘ = Imperial (in)

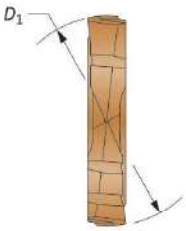
Chamfer ring inserts sold separately.
Screws sold in multiples of 10.
O-rings sold in packs of 10.

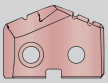
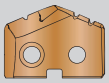
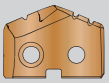
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

GEN2 T-A® Drill Inserts



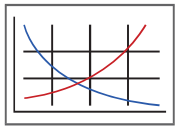




Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt  Part No. AM200®	Carbide: K35 (C1)  Part No. AM300®	Carbide: K20 (C2)  Part No. AM300®
1	17.86	0.7031	45/64	451H-.703	4C21P-.703	4C11P-.703
	18.00	0.7087	—	451H-18	4C21P-18	4C11P-18
	18.26	0.7188	23/32	451H-0023	4C21P-0023	4C11P-0023
	18.50	0.7283	—	451H-18.5	4C21P-18.5	4C11P-18.5
	18.65	0.7344	47/64	451H-.734	4C21P-.734	4C11P-.734
	19.00	0.7480	—	451H-19	4C21P-19	4C11P-19
	19.05	0.7500	3/4	451H-0024	4C21P-0024	4C11P-0024
	19.45	0.7656	49/64	451H-.765	4C21P-.765	4C11P-.765
	19.50	0.7677	—	451H-19.5	4C21P-19.5	4C11P-19.5
	19.85	0.7813	25/32	451H-0025	4C21P-0025	4C11P-0025
	20.00	0.7874	—	451H-20	4C21P-20	4C11P-20
	20.24	0.7969	51/64	451H-.796	4C21P-.796	4C11P-.796
	20.35	0.8010	—	451H-.801	4C21P-.801	4C11P-.801
	20.50	0.8071	—	451H-20.5	4C21P-20.5	4C11P-20.5
	20.64	0.8125	13/16	451H-0026	4C21P-0026	4C11P-0026
	21.00	0.8268	—	451H-21	4C21P-21	4C11P-21
	21.43	0.8438	27/32	451H-0027	4C21P-0027	4C11P-0027
	21.50	0.8465	—	451H-21.5	4C21P-21.5	4C11P-21.5
1.5	21.83	0.8594	55/64	451H-.859	4C21P-.859	4C11P-.859
	22.00	0.8661	—	451H-22	4C21P-22	4C11P-22
	22.23	0.8750	7/8	451H-0028	4C21P-0028	4C11P-0028
	22.50	0.8858	—	451H-22.5	4C21P-22.5	4C11P-22.5
	22.62	0.8906	57/64	451H-.890	4C21P-.890	4C11P-.890
	23.00	0.9055	—	451H-23	4C21P-23	4C11P-23
	23.02	0.9063	29/32	451H-0029	4C21P-0029	4C11P-0029
	23.42	0.9219	59/64	451H-.921	4C21P-.921	4C11P-.921
	23.50	0.9252	—	451H-23.5	4C21P-23.5	4C11P-23.5
	23.81	0.9375	15/16	451H-0030	4C21P-0030	4C11P-0030
	24.00	0.9449	—	451H-24	4C21P-24	4C11P-24

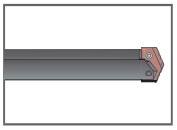
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

A30: 113 - 139

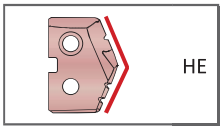


Key on A30: 2

A30: 55 - 59



A30: 5 - 6



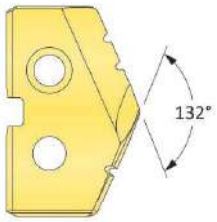
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

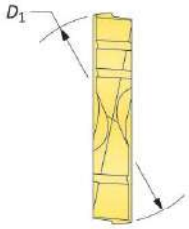
Inserts sold in quantities of 2.

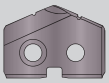
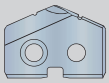
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts





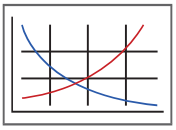


Series	Insert			HSS: High-Speed Steel		
						
	D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. TiAlN	Part No. TiCN
1	17.86	0.7031	45/64	**131T-.703**	**131A-.703**	**131N-.703**
	18.00	0.7087	—	**131T-18**	**131A-18**	**131N-18**
	18.26	0.7188	23/32	**131T-0023**	**131A-0023**	**131N-0023**
	18.50	0.7283	—	**131T-18.5**	**131A-18.5**	**131N-18.5**
	18.65	0.7344	47/64	**131T-.734**	**131A-.734**	**131N-.734**
	19.00	0.7480	—	**131T-19**	**131A-19**	**131N-19**
	19.05	0.7500	3/4	**131T-0024**	**131A-0024**	**131N-0024**
	19.45	0.7656	49/64	**131T-.765**	**131A-.765**	**131N-.765**
	19.50	0.7677	—	**131T-19.5**	**131A-19.5**	**131N-19.5**
	19.85	0.7813	25/32	**131T-0025**	**131A-0025**	**131N-0025**
	20.00	0.7874	—	**131T-20**	**131A-20**	**131N-20**
	20.24	0.7969	51/64	**131T-.796**	**131A-.796**	**131N-.796**
	20.35	0.8010	—	**131T-.801**	**131A-.801**	**131N-.801**
	20.50	0.8071	—	**131T-20.5**	**131A-20.5**	**131N-20.5**
	20.64	0.8125	13/16	**131T-0026**	**131A-0026**	**131N-0026**
	21.00	0.8268	—	**131T-21**	**131A-21**	**131N-21**
	21.43	0.8438	27/32	**131T-0027**	**131A-0027**	**131N-0027**
	21.50	0.8465	—	**131T-21.5**	**131A-21.5**	**131N-21.5**
1.5	21.83	0.8594	55/64	**131T-.859**	**131A-.859**	**131N-.859**
	22.00	0.8661	—	**131T-22**	**131A-22**	**131N-22**
	22.23	0.8750	7/8	**131T-0028**	**131A-0028**	**131N-0028**
	22.50	0.8858	—	**131T-22.5**	**131A-22.5**	**131N-22.5**
	22.62	0.8906	57/64	**131T-.890**	**131A-.890**	**131N-.890**
	23.00	0.9055	—	**131T-23**	**131A-23**	**131N-23**
	23.02	0.9063	29/32	**131T-0029**	**131A-0029**	**131N-0029**
	23.42	0.9219	59/64	**131T-.921**	**131A-.921**	**131N-.921**
	23.50	0.9252	—	**131T-23.5**	**131A-23.5**	**131N-23.5**
	23.81	0.9375	15/16	**131T-0030**	**131A-0030**	**131N-0030**
	24.00	0.9449	—	**131T-24**	**131A-24**	**131N-24**

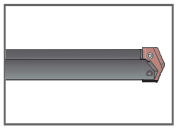
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

A30: 113 - 139

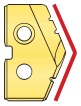
Key on A30: 2



A30: 55 - 59



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

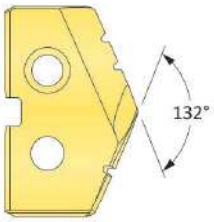
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

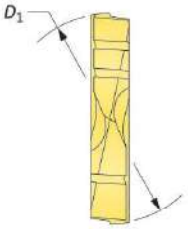
Inserts sold in quantities of 2.

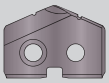
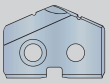
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts



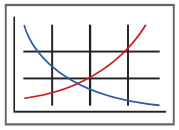




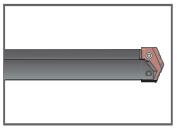
Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt  Part No. TiN	 Part No. TiAlN	 Part No. TiCN
1	17.86	0.7031	45/64	**151T-.703**	**151A-.703**	**151N-.703**
	18.00	0.7087	—	**151T-18**	**151A-18**	**151N-18**
	18.26	0.7188	23/32	**151T-0023**	**151A-0023**	**151N-0023**
	18.50	0.7283	—	**151T-18.5**	**151A-18.5**	**151N-18.5**
	18.65	0.7344	47/64	**151T-.734**	**151A-.734**	**151N-.734**
	19.00	0.7480	—	**151T-19**	**151A-19**	**151N-19**
	19.05	0.7500	3/4	**151T-0024**	**151A-0024**	**151N-0024**
	19.45	0.7656	49/64	**151T-.765**	**151A-.765**	**151N-.765**
	19.50	0.7677	—	**151T-19.5**	**151A-19.5**	**151N-19.5**
	19.85	0.7813	25/32	**151T-0025**	**151A-0025**	**151N-0025**
	20.00	0.7874	—	**151T-20**	**151A-20**	**151N-20**
	20.24	0.7969	51/64	**151T-.796**	**151A-.796**	**151N-.796**
	20.35	0.8010	—	**151T-.801**	**151A-.801**	**151N-.801**
	20.50	0.8071	—	**151T-20.5**	**151A-20.5**	**151N-20.5**
	20.64	0.8125	13/16	**151T-0026**	**151A-0026**	**151N-0026**
	21.00	0.8268	—	**151T-21**	**151A-21**	**151N-21**
	21.43	0.8438	27/32	**151T-0027**	**151A-0027**	**151N-0027**
	21.50	0.8465	—	**151T-21.5**	**151A-21.5**	**151N-21.5**
1.5	21.83	0.8594	55/64	**151T-.859**	**151A-.859**	**151N-.859**
	22.00	0.8661	—	**151T-22**	**151A-22**	**151N-22**
	22.23	0.8750	7/8	**151T-0028**	**151A-0028**	**151N-0028**
	22.50	0.8858	—	**151T-22.5**	**151A-22.5**	**151N-22.5**
	22.62	0.8906	57/64	**151T-.890**	**151A-.890**	**151N-.890**
	23.00	0.9055	—	**151T-23**	**151A-23**	**151N-23**
	23.02	0.9063	29/32	**151T-0029**	**151A-0029**	**151N-0029**
	23.42	0.9219	59/64	**151T-.921**	**151A-.921**	**151N-.921**
	23.50	0.9252	—	**151T-23.5**	**151A-23.5**	**151N-23.5**
	23.81	0.9375	15/16	**151T-0030**	**151A-0030**	**151N-0030**
	24.00	0.9449	—	**151T-24**	**151A-24**	**151N-24**

NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

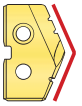
A30: 113 - 139
Key on A30: 2



A30: 55 - 59



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

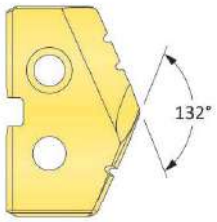
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

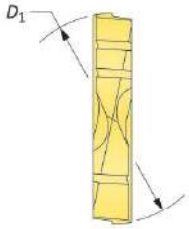
Inserts sold in quantities of 2.

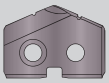
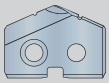
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts





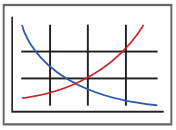


Series	Insert			HSS: Premium Cobalt		
						
	D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. TiAlN	Part No. TiCN
1	17.86	0.7031	45/64	**181T-.703**	**181A-.703**	**181N-.703**
	18.00	0.7087	—	**181T-18**	**181A-18**	**181N-18**
	18.26	0.7188	23/32	**181T-0023**	**181A-0023**	**181N-0023**
	18.50	0.7283	—	**181T-18.5**	**181A-18.5**	**181N-18.5**
	18.65	0.7344	47/64	**181T-.734**	**181A-.734**	**181N-.734**
	19.00	0.7480	—	**181T-19**	**181A-19**	**181N-19**
	19.05	0.7500	3/4	**181T-0024**	**181A-0024**	**181N-0024**
	19.45	0.7656	49/64	**181T-.765**	**181A-.765**	**181N-.765**
	19.50	0.7677	—	**181T-19.5**	**181A-19.5**	**181N-19.5**
	19.85	0.7813	25/32	**181T-0025**	**181A-0025**	**181N-0025**
	20.00	0.7874	—	**181T-20**	**181A-20**	**181N-20**
	20.24	0.7969	51/64	**181T-.796**	**181A-.796**	**181N-.796**
	20.35	0.8010	—	**181T-.801**	**181A-.801**	**181N-.801**
	20.50	0.8071	—	**181T-20.5**	**181A-20.5**	**181N-20.5**
	20.64	0.8125	13/16	**181T-0026**	**181A-0026**	**181N-0026**
	21.00	0.8268	—	**181T-21**	**181A-21**	**181N-21**
	21.43	0.8438	27/32	**181T-0027**	**181A-0027**	**181N-0027**
	21.50	0.8465	—	**181T-21.5**	**181A-21.5**	**181N-21.5**
1.5	21.83	0.8594	55/64	**181T-.859**	**181A-.859**	**181N-.859**
	22.00	0.8661	—	**181T-22**	**181A-22**	**181N-22**
	22.23	0.8750	7/8	**181T-0028**	**181A-0028**	**181N-0028**
	22.50	0.8858	—	**181T-22.5**	**181A-22.5**	**181N-22.5**
	22.62	0.8906	57/64	**181T-.890**	**181A-.890**	**181N-.890**
	23.00	0.9055	—	**181T-23**	**181A-23**	**181N-23**
	23.02	0.9063	29/32	**181T-0029**	**181A-0029**	**181N-0029**
	23.42	0.9219	59/64	**181T-.921**	**181A-.921**	**181N-.921**
	23.50	0.9252	—	**181T-23.5**	**181A-23.5**	**181N-23.5**
	23.81	0.9375	15/16	**181T-0030**	**181A-0030**	**181N-0030**
	24.00	0.9449	—	**181T-24**	**181A-24**	**181N-24**

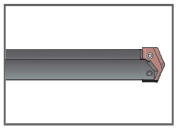
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A30: 113 - 139

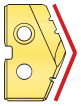
Key on A30: 2



A30: 55 - 59



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

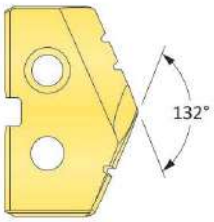
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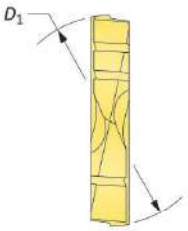
Inserts sold in quantities of 2.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts



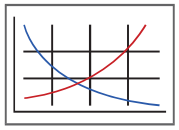




Series	Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
	D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. TiAlN	Part No. TiN	Part No. TiAlN
1	17.86	0.7031	45/64	1C51T-.703	1C51A-.703	1C21T-.703	1C21A-.703
	18.00	0.7087	—	1C51T-18	1C51A-18	1C21T-18	1C21A-18
	18.26	0.7188	23/32	1C51T-0023	1C51A-0023	1C21T-0023	1C21A-0023
	18.50	0.7283	—	1C51T-18.5	1C51A-18.5	1C21T-18.5	1C21A-18.5
	18.65	0.7344	47/64	1C51T-.734	1C51A-.734	1C21T-.734	1C21A-.734
	19.00	0.7480	—	1C51T-19	1C51A-19	1C21T-19	1C21A-19
	19.05	0.7500	3/4	1C51T-0024	1C51A-0024	1C21T-0024	1C21A-0024
	19.45	0.7656	49/64	1C51T-.765	1C51A-.765	1C21T-.765	1C21A-.765
	19.50	0.7677	—	1C51T-19.5	1C51A-19.5	1C21T-19.5	1C21A-19.5
	19.85	0.7813	25/32	1C51T-0025	1C51A-0025	1C21T-0025	1C21A-0025
	20.00	0.7874	—	1C51T-20	1C51A-20	1C21T-20	1C21A-20
	20.24	0.7969	51/64	1C51T-.796	1C51A-.796	1C21T-.796	1C21A-.796
	20.35	0.8010	—	1C51T-.801	1C51A-.801	1C21T-.801	1C21A-.801
	20.50	0.8071	—	1C51T-20.5	1C51A-20.5	1C21T-20.5	1C21A-20.5
	20.64	0.8125	13/16	1C51T-0026	1C51A-0026	1C21T-0026	1C21A-0026
	21.00	0.8268	—	1C51T-21	1C51A-21	1C21T-21	1C21A-21
	21.43	0.8438	27/32	1C51T-0027	1C51A-0027	1C21T-0027	1C21A-0027
	21.50	0.8465	—	1C51T-21.5	1C51A-21.5	1C21T-21.5	1C21A-21.5
1.5	21.83	0.8594	55/64	1C51T-.859	1C51A-.859	1C21T-.859	1C21A-.859
	22.00	0.8661	—	1C51T-22	1C51A-22	1C21T-22	1C21A-22
	22.23	0.8750	7/8	1C51T-0028	1C51A-0028	1C21T-0028	1C21A-0028
	22.50	0.8858	—	1C51T-22.5	1C51A-22.5	1C21T-22.5	1C21A-22.5
	22.62	0.8906	57/64	1C51T-.890	1C51A-.890	1C21T-.890	1C21A-.890
	23.00	0.9055	—	1C51T-23	1C51A-23	1C21T-23	1C21A-23
	23.02	0.9063	29/32	1C51T-0029	1C51A-0029	1C21T-0029	1C21A-0029
	23.42	0.9219	59/64	1C51T-.921	1C51A-.921	1C21T-.921	1C21A-.921
	23.50	0.9252	—	1C51T-23.5	1C51A-23.5	1C21T-23.5	1C21A-23.5
	23.81	0.9375	15/16	1C51T-0030	1C51A-0030	1C21T-0030	1C21A-0030
	24.00	0.9449	—	1C51T-24	1C51A-24	1C21T-24	1C21A-24

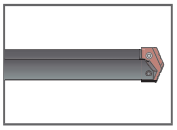
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A30: 113 - 139

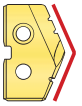


Key on A30: 2

A30: 55 - 59



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

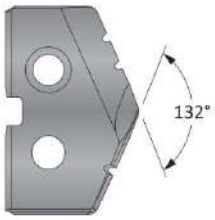
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

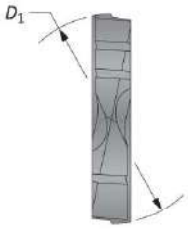
Inserts sold in quantities of 2.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts

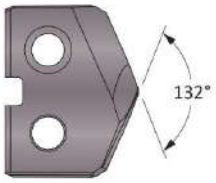


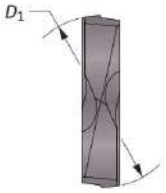






Cast Iron Geometry





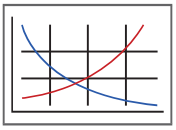
Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	Carbide: N2 Part No. Diamond Film*	Cast Iron Geometry Carbide: K10 (C3) Part No. TiAlN
1	17.86	0.7031	45/64	1N21D-.703	1C31A-.703-CI
	18.00	0.7087	—	1N21D-18	1C31A-18-CI
	18.26	0.7188	23/32	1N21D-0023	1C31A-0023-CI
	18.50	0.7283	—	1N21D-18.5	1C31A-18.5-CI
	18.65	0.7344	47/64	1N21D-.734	1C31A-.734-CI
	19.00	0.7480	—	1N21D-19	1C31A-19-CI
	19.05	0.7500	3/4	1N21D-0024	1C31A-0024-CI
	19.45	0.7656	49/64	1N21D-.765	1C31A-.765-CI
	19.50	0.7677	—	1N21D-19.5	1C31A-19.5-CI
	19.85	0.7813	25/32	1N21D-0025	1C31A-0025-CI
	20.00	0.7874	—	1N21D-20	1C31A-20-CI
	20.24	0.7969	51/64	1N21D-.796	1C31A-.796-CI
	20.35	0.8010	—	1N21D-.801	1C31A-.801-CI
	20.50	0.8071	—	1N21D-20.5	1C31A-20.5-CI
	20.64	0.8125	13/16	1N21D-0026	1C31A-0026-CI
	21.00	0.8268	—	1N21D-21	1C31A-21-CI
	21.43	0.8438	27/32	1N21D-0027	1C31A-0027-CI
	21.50	0.8465	—	1N21D-21.5	1C31A-21.5-CI
1.5	21.83	0.8594	55/64	1N21D-.859	1C31A-.859-CI
	22.00	0.8661	—	1N21D-22	1C31A-22-CI
	22.23	0.8750	7/8	1N21D-0028	1C31A-0028-CI
	22.50	0.8858	—	1N21D-22.5	1C31A-22.5-CI
	22.62	0.8906	57/64	1N21D-.890	1C31A-.890-CI
	23.00	0.9055	—	1N21D-23	1C31A-23-CI
	23.02	0.9063	29/32	1N21D-0029	1C31A-0029-CI
	23.42	0.9219	59/64	1N21D-.921	1C31A-.921-CI
	23.50	0.9252	—	1N21D-23.5	1C31A-23.5-CI
	23.81	0.9375	15/16	1N21D-0030	1C31A-0030-CI
	24.00	0.9449	—	1N21D-24	1C31A-24-CI

*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

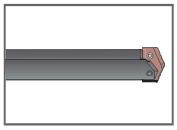
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

A30: 113 - 139

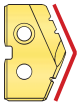
Key on A30: 2



A30: 55 - 59



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

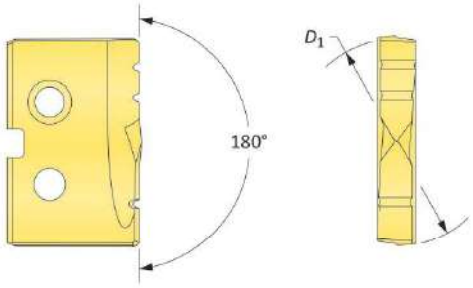
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

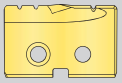
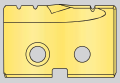
Inserts sold in quantities of 2.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts



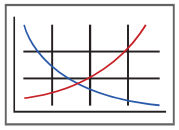


	Insert			Flat Bottom Geometry	
				HSS: Super Cobalt	Carbide: K20 (C2)
					
				Part No.	Part No.
Series	D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiN*
1	17.86	0.7031	45/64	**151T-.703-FB**	**1C21T-.703-FB**
	18.00	0.7087	—	**151T-18-FB**	**1C21T-18-FB**
	18.26	0.7188	23/32	**151T-0023-FB**	**1C21T-0023-FB**
	18.50	0.7283	—	**151T-18.5-FB**	**1C21T-18.5-FB**
	18.65	0.7344	47/64	**151T-.734-FB**	**1C21T-.734-FB**
	19.00	0.7480	—	**151T-19-FB**	**1C21T-19-FB**
	19.05	0.7500	3/4	**151T-0024-FB**	**1C21T-0024-FB**
	19.45	0.7656	49/64	**151T-.765-FB**	**1C21T-.765-FB**
	19.50	0.7677	—	**151T-19.5-FB**	**1C21T-19.5-FB**
	19.85	0.7813	25/32	**151T-0025-FB**	**1C21T-0025-FB**
	20.00	0.7874	—	**151T-20-FB**	**1C21T-20-FB**
	20.24	0.7969	51/64	**151T-.796-FB**	**1C21T-.796-FB**
	20.35	0.8010	—	**151T-.801-FB**	**1C21T-.801-FB**
	20.50	0.8071	—	**151T-20.5-FB**	**1C21T-20.5-FB**
	20.64	0.8125	13/16	**151T-0026-FB**	**1C21T-0026-FB**
	21.00	0.8268	—	**151T-21-FB**	**1C21T-21-FB**
	21.43	0.8438	27/32	**151T-0027-FB**	**1C21T-0027-FB**
	21.50	0.8465	—	**151T-21.5-FB**	**1C21T-21.5-FB**
1.5	21.83	0.8594	55/64	**151T-.859-FB**	**1C21T-.859-FB**
	22.00	0.8661	—	**151T-22-FB**	**1C21T-22-FB**
	22.23	0.8750	7/8	**151T-0028-FB**	**1C21T-0028-FB**
	22.50	0.8858	—	**151T-22.5-FB**	**1C21T-22.5-FB**
	22.62	0.8906	57/64	**151T-.890-FB**	**1C21T-.890-FB**
	23.00	0.9055	—	**151T-23-FB**	**1C21T-23-FB**
	23.02	0.9063	29/32	**151T-0029-FB**	**1C21T-0029-FB**
	23.42	0.9219	59/64	**151T-.921-FB**	**1C21T-.921-FB**
	23.50	0.9252	—	**151T-23.5-FB**	**1C21T-23.5-FB**
	23.81	0.9375	15/16	**151T-0030-FB**	**1C21T-0030-FB**
	24.00	0.9449	—	**151T-24-FB**	**1C21T-24-FB**

*Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

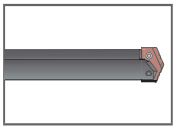
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

A30: 113 - 139

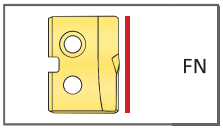


Key on A30: 2

A30: 55 - 59



A30: 5 - 6



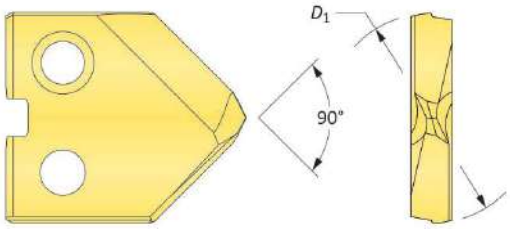
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Inserts

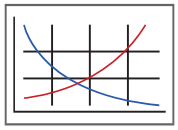




Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	90° Spot & Chamfer Geometry HSS: Super Cobalt Part No. TiN	Part No. TiAlN	Part No. TiCN
1	17.86	0.7031	45/64	151T-.703-SP	151A-.703-SP	151N-.703-SP
	18.00	0.7087	—	151T-18-SP	151A-18-SP	151N-18-SP
	18.26	0.7188	23/32	151T-0023-SP	151A-0023-SP	151N-0023-SP
	18.50	0.7283	—	151T-18.5-SP	151A-18.5-SP	151N-18.5-SP
	18.65	0.7344	47/64	151T-.734-SP	151A-.734-SP	151N-.734-SP
	19.00	0.7480	—	151T-19-SP	151A-19-SP	151N-19-SP
	19.05	0.7500	3/4	151T-0024-SP	151A-0024-SP	151N-0024-SP
	19.45	0.7656	49/64	151T-.765-SP	151A-.765-SP	151N-.765-SP
	19.50	0.7677	—	151T-19.5-SP	151A-19.5-SP	151N-19.5-SP
	19.85	0.7813	25/32	151T-0025-SP	151A-0025-SP	151N-0025-SP
	20.00	0.7874	—	151T-20-SP	151A-20-SP	151N-20-SP
	20.24	0.7969	51/64	151T-.796-SP	151A-.796-SP	151N-.796-SP
	20.35	0.8010	—	151T-.801-SP	151A-.801-SP	151N-.801-SP
	20.50	0.8071	—	151T-20.5-SP	151A-20.5-SP	151N-20.5-SP
	20.64	0.8125	13/16	151T-0026-SP	151A-0026-SP	151N-0026-SP
	21.00	0.8268	—	151T-21-SP	151A-21-SP	151N-21-SP
	21.43	0.8438	27/32	151T-0027-SP	151A-0027-SP	151N-0027-SP
	21.50	0.8465	—	151T-21.5-SP	151A-21.5-SP	151N-21.5-SP
1.5	21.83	0.8594	55/64	151T-.859-SP	151A-.859-SP	151N-.859-SP
	22.00	0.8661	—	151T-22-SP	151A-22-SP	151N-22-SP
	22.23	0.8750	7/8	151T-0028-SP	151A-0028-SP	151N-0028-SP
	22.50	0.8858	—	151T-22.5-SP	151A-22.5-SP	151N-22.5-SP
	22.62	0.8906	57/64	151T-.890-SP	151A-.890-SP	151N-.890-SP
	23.00	0.9055	—	151T-23-SP	151A-23-SP	151N-23-SP
	23.02	0.9063	29/32	151T-0029-SP	151A-0029-SP	151N-0029-SP
	23.42	0.9219	59/64	151T-.921-SP	151A-.921-SP	151N-.921-SP
	23.50	0.9252	—	151T-23.5-SP	151A-23.5-SP	151N-23.5-SP
	23.81	0.9375	15/16	151T-0030-SP	151A-0030-SP	151N-0030-SP
	24.00	0.9449	—	151T-24-SP	151A-24-SP	151N-24-SP

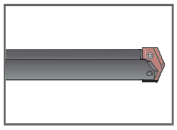
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

A30: 113 - 139

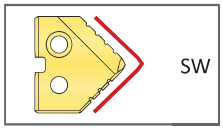


Key on A30: 2

A30: 55 - 59



A30: 5 - 6



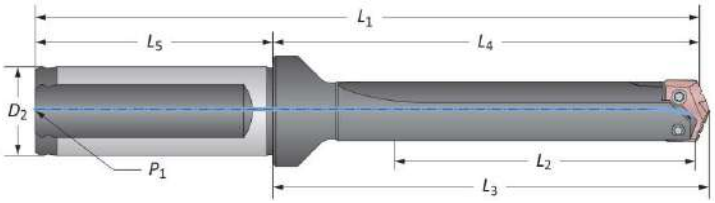
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

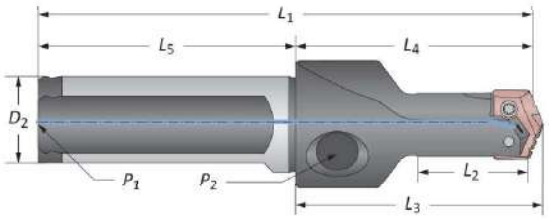
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Holders









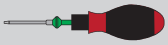
Stub Length

Metric Flange Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	1	Stub	50.6	75.8	79.3	131.8	56.0	25	1/8 BSPT	**21010S-25FM**
		Short	66.8	107.2	110.7	163.2	56.0	25	1/8 BSPT	**22010S-25FM**
		Intermediate	114.8	154.8	158.3	210.8	56.0	25	1/8 BSPT	**23010S-25FM**
		Standard	165.6	205.6	209.1	261.6	56.0	25	1/8 BSPT	**24010S-25FM**
		Extended	267.2	307.2	310.7	363.2	56.0	25	1/8 BSPT	⚠ **25010S-25FM**
		XL	454.2	494.5	498.1	550.5	56.0	25	1/8 BSPT	⚠ **27010S-25FM**
		3XL	562.1	602.5	606.0	658.5	56.0	25	1/8 BSPT	⚠ **29010S-25FM**
	1.5	Stub	64.9	88.5	92.0	144.5	56.0	25	1/8 BSPT	**21015S-25FM**
		Short	66.1	107.2	110.7	163.2	56.0	25	1/8 BSPT	**22015S-25FM**
		Intermediate	113.8	154.8	158.3	210.8	56.0	25	1/8 BSPT	**23015S-25FM**
		Standard	164.6	205.6	209.1	261.6	56.0	25	1/8 BSPT	**24015S-25FM**
		Extended	266.2	307.2	310.7	363.2	56.0	25	1/8 BSPT	⚠ **25015S-25FM**
Helical	1	Intermediate	132.8	154.8	158.3	210.8	56.0	25	1/8 BSPT	**23010H-25FM**
		Standard	183.6	205.6	209.1	261.6	56.0	25	1/8 BSPT	**24010H-25FM**
		Standard Plus	234.3	256.3	259.9	312.3	56.0	25	1/8 BSPT	⚠ **24510H-25FM**
		Extended	285.2	307.2	310.7	363.2	56.0	25	1/8 BSPT	⚠ **25010H-25FM**
		Long	380.3	402.3	405.9	458.3	56.0	25	1/8 BSPT	⚠ **26010H-25FM**
	1.5	Intermediate	134.4	154.8	158.3	210.8	56.0	25	1/8 BSPT	**23015H-25FM**
		Standard	185.2	205.6	209.1	261.6	56.0	25	1/8 BSPT	**24015H-25FM**
		Extended	286.8	307.2	310.7	363.2	56.0	25	1/8 BSPT	⚠ **25015H-25FM**

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).
NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

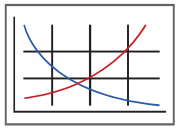
Connection Accessories

Series	 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

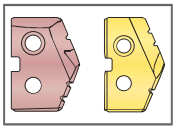
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

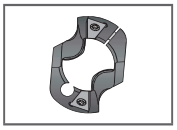


Key on A30: 2

A30: 47 - 54



A30: 60 & 112

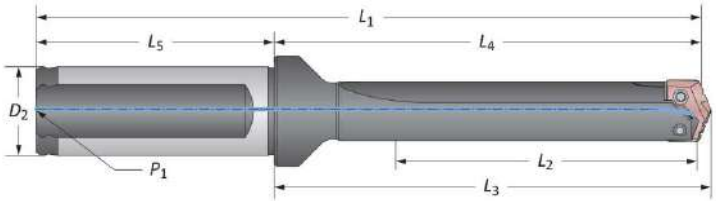


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

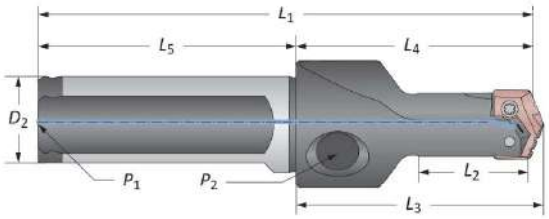
1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Holders









Stub Length

Imperial Flange Shank Holders

Flute	Series	Body Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	1	Stub	1.992	2.984	3.124	5.264	2.280	1	1/8 NPT	21010S-100F
		Short	2.643	4.219	4.359	6.499	2.280	1	1/8 NPT	22010S-100F
		Intermediate	4.518	6.094	6.234	8.374	2.280	1	1/8 NPT	23010S-100F
		Standard	6.518	8.094	8.234	10.374	2.280	1	1/8 NPT	24010S-100F
		Extended	10.518	12.094	12.234	14.374	2.280	1	1/8 NPT	⚠ 25010S-100F
	1.5	Stub	2.554	3.484	3.624	5.764	2.280	1	1/8 NPT	21015S-100F
		Short	2.607	4.219	4.359	6.499	2.280	1	1/8 NPT	22015S-100F
		Intermediate	4.482	6.094	6.234	8.374	2.280	1	1/8 NPT	23015S-100F
		Standard	6.482	8.094	8.234	10.374	2.280	1	1/8 NPT	24015S-100F
		Extended	10.482	12.094	12.234	14.374	2.280	1	1/8 NPT	⚠ 25015S-100F
Helical	1	Intermediate	5.229	6.094	6.234	8.374	2.280	1	1/8 NPT	23010H-100F
		Standard	7.229	8.094	8.234	10.374	2.280	1	1/8 NPT	24010H-100F
		Standard Plus	9.226	10.091	10.231	12.371	2.280	1	1/8 NPT	⚠ 24510H-100F
		Extended	11.229	12.094	12.234	14.374	2.280	1	1/8 NPT	⚠ 25010H-100F
		Long	14.974	15.839	15.979	18.119	2.280	1	1/8 NPT	⚠ 26010H-100F
	1.5	Intermediate	5.291	6.094	6.234	8.374	2.280	1	1/8 NPT	23015H-100F
		Standard	7.291	8.094	8.234	10.374	2.280	1	1/8 NPT	24015H-100F
		Extended	11.291	12.094	12.234	14.374	2.280	1	1/8 NPT	⚠ 25015H-100F

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

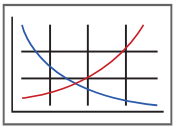
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

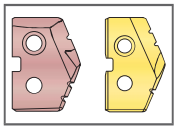
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

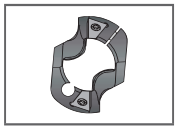


Key on A30: 2

A30: 47 - 54



A30: 60 & 112

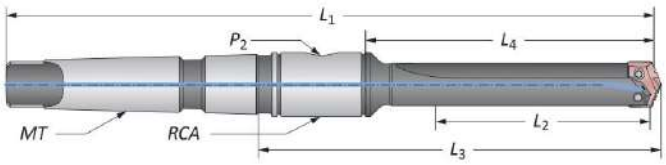


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Holders





Metric Taper Shank Holders

Flute	Series	Body Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
Straight	1	Short	66.8	98.4	142.4	232.6	#3 MT ISO	1/8 BSPT	2T-3SRM	**22010S-003M**
Straight	1.5	Short	63.0	98.4	142.4	232.6	#3 MT ISO	1/8 BSPT	2T-3SRM	**22015S-003M**
Helical	1	Intermediate	133.0	149.2	193.2	283.4	#3 MT ISO	1/8 BSPT	2T-3SRM	**23010H-003M**
Helical	1	Standard	183.8	200.0	244.0	334.2	#3 MT ISO	1/8 BSPT	2T-3SRM	**24010H-003M**
Helical	1	Extended	285.4	301.6	345.6	435.8	#3 MT ISO	1/8 BSPT	2T-3SRM	⚠ **25010H-003M**
Helical	1.5	Intermediate	132.6	149.2	193.2	283.4	#3 MT ISO	1/8 BSPT	2T-3SRM	**23015H-003M**
Helical	1.5	Standard	183.4	200.0	244.0	334.2	#3 MT ISO	1/8 BSPT	2T-3SRM	**24015H-003M**
Helical	1.5	Extended	285.0	301.6	345.6	435.8	#3 MT ISO	1/8 BSPT	2T-3SRM	⚠ **25015H-003M**

*MT ISO 296 type BEK.

NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

Connection Accessories

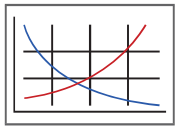
Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

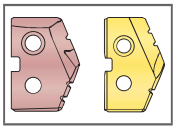
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

Key on A30: 2

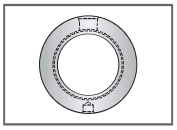
A30: 113 - 139



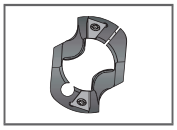
A30: 47 - 54



A30: 60 & 111



A30: 60 & 112

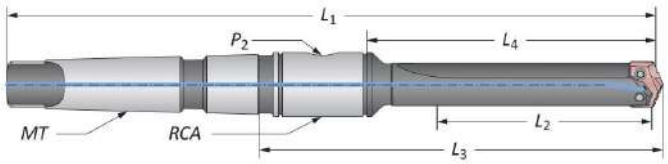


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Holders





Imperial Taper Shank Holders

Flute	Series	Body Length	L_2	L_4	L_3	L_1	Shank MT	P_2	RCA	Part No.
Straight	1	Short	2.631	3.875	5.608	9.156	#3 MT	1/8 NPT	2T-3SR	22010S-003I
		Short	2.631	3.875	5.671	10.156	#4 MT	1/8 NPT	2T-3SR	22010S-004I
		Intermediate	4.631	5.875	7.608	11.156	#3 MT	1/8 NPT	2T-3SR	23010S-003I
		Standard	6.631	7.875	9.608	13.156	#3 MT	1/8 NPT	2T-3SR	24010S-003I
		Standard	6.631	7.875	9.671	14.156	#4 MT	1/8 NPT	2T-3SR	24010S-004I
		Extended	10.631	11.875	13.608	17.156	#3 MT	1/8 NPT	2T-3SR	⚠ 25010S-003I
	1.5	Short	2.482	3.875	5.608	9.156	#3 MT	1/8 NPT	2T-3SR	22015S-003I
		Short	2.483	3.875	5.671	10.156	#4 MT	1/8 NPT	2T-3SR	22015S-004I
		Intermediate	4.482	5.875	7.608	11.156	#3 MT	1/8 NPT	2T-3SR	23015S-003I
		Standard	6.482	7.875	9.608	13.156	#3 MT	1/8 NPT	2T-3SR	24015S-003I
		Standard	6.483	7.875	9.671	14.156	#4 MT	1/8 NPT	2T-3SR	24015S-004I
		Extended	10.482	11.875	13.608	17.156	#3 MT	1/8 NPT	2T-3SR	⚠ 25015S-003I
Helical	1	Intermediate	5.236	5.875	7.608	11.156	#3 MT	1/8 NPT	2T-3SR	23010H-003I
		Standard	7.236	7.875	9.608	13.156	#3 MT	1/8 NPT	2T-3SR	24010H-003I
		Standard	7.236	7.875	9.671	14.156	#4 MT	1/8 NPT	2T-3SR	24010H-004I
		Extended	11.236	11.875	13.608	17.156	#3 MT	1/8 NPT	2T-3SR	⚠ 25010H-003I
	1.5	Intermediate	5.219	5.875	7.608	11.156	#3 MT	1/8 NPT	2T-3SR	23015H-003I
		Standard	7.219	7.875	9.608	13.156	#3 MT	1/8 NPT	2T-3SR	24015H-003I
		Standard	7.219	7.875	9.671	14.156	#4 MT	1/8 NPT	2T-3SR	24015H-004I
		Extended	11.219	11.875	13.608	17.156	#3 MT	1/8 NPT	2T-3SR	⚠ 25015H-003I

NOTE: 0.5 series inserts fit into both 0 and 0.5 series holders. However, 0 series inserts ONLY fit into 0 series holders. See page A30: 7 for visual.

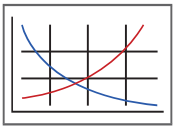
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

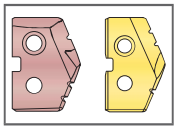
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A30: 113 - 139

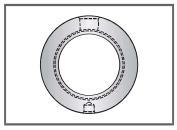


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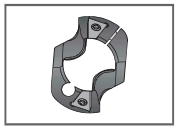
A30: 47 - 54



A30: 60 & 111



A30: 60 & 112

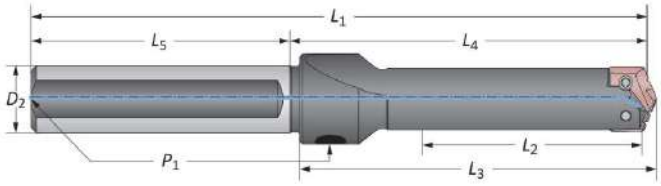


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Holders





Straight Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	1	Short	2.619	3.875	4.015	6.875	3.000	3/4	1/8 NPT	**22010S-075L**
		Short	2.647	3.875	4.015	6.875	3.000	1	1/8 NPT	**22010S-100L**
		Intermediate	4.647	5.875	6.015	8.875	3.000	1	1/8 NPT	**23010S-100L**
		Standard	6.619	7.875	8.015	10.875	3.000	3/4	1/8 NPT	**24010S-075L**
		Standard	6.647	7.875	8.015	10.875	3.000	1	1/8 NPT	**24010S-100L**
		Extended	10.647	11.875	12.015	14.875	3.000	1	1/8 NPT	⚠ **25010S-100L**
		XL	18.022	19.250	19.390	22.250	3.000	1	1/8 NPT	⚠ **27010S-100L**
		3XL	22.272	23.500	23.640	26.500	3.000	1	1/8 NPT	⚠ **29010S-100L**
	1.5	Short	2.649	3.875	4.015	6.875	3.000	3/4	1/8 NPT	**22015S-075L**
		Short	2.661	3.875	4.015	6.875	3.000	1	1/8 NPT	**22015S-100L**
		Intermediate	4.661	5.875	6.015	8.875	3.000	1	1/8 NPT	**23015S-100L**
		Standard	6.649	7.875	8.015	10.875	3.000	3/4	1/8 NPT	**24015S-075L**
		Standard	6.661	7.875	8.015	10.875	3.000	1	1/8 NPT	**24015S-100L**
		Extended	10.661	11.875	12.015	14.875	3.000	1	1/8 NPT	⚠ **25015S-100L**

NOTE: 1.5 series inserts fit into both 1 and 1.5 series holders. However, 1 series inserts ONLY fit into 1 series holders. See page A30: 7 for visual.

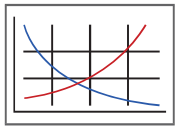
Connection Accessories

Series	Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
1	7375-IP9-1	7375N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)
1.5	739-IP9-1	739N-IP9-1	8IP-9	8IP-9TL	8IP-9B	305 N-cm (27.0 in-lbs)

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

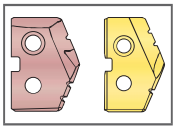
⚠ **WARNING** Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

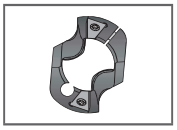


Key on A30: 2

A30: 47 - 54



A30: 60 & 112

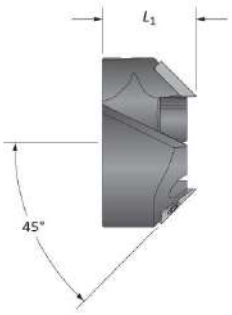


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

1 Series: 17.53 mm - 24.40 mm (0.6900" - 0.9609")

T-A® Drill Accessories



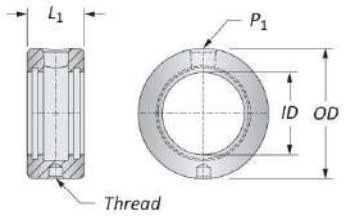




T-ACR 45 Chamfer Rings

Holder Series	D_1 Range	Chamfer Ring D_4	Chamfer Ring L_1	Part No.	Insert Part No.	Insert Screw	Insert Driver	Clamping Screw	Insert Driver
1	0.6900 - 0.8540	1.330	0.797	**T-ACR-45-1**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7495-IP15-1	8IP-15
1.5	0.8540 - 0.9600	1.493	0.891	**T-ACR-45-1.5**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7495-IP15-1	8IP-15





Rotary Coolant Adapters (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings Kit Part No.*	RCA O-Rings Replacements
m	25.4	54.0	28.6	M8 x 1.25	1/8 BSPT	⚠ **2T-3SRM**	2T1-3SR	2T1-3OR-10
i	1.000	2.125	1.125	5/16" - 18	1/8 NPT	⚠ **2T-3SR**	2T1-3SR	2T1-3OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139
Key on A30: 2

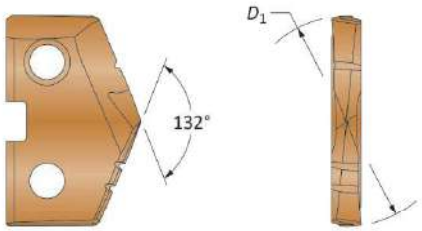
m = Metric (mm)
i = Imperial (in)

Chamfer ring inserts sold separately.
Screws sold in multiples of 10.
O-rings sold in packs of 10.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

GEN2 T-A® Drill Inserts



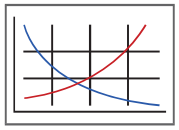


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt Part No. AM200®	Carbide: K35 (C1) Part No. AM300®	Carbide: K20 (C2) Part No. AM300®
2	24.50	0.9646	—	452H-24.5	4C22P-24.5	4C12P-24.5
	24.61	0.9688	31/32	452H-0031	4C22P-0031	4C12P-0031
	24.79	0.9760	—	452H-.976	4C22P-.976	4C12P-.976
	25.00	0.9843	63/64	452H-25	4C22P-25	4C12P-25
	25.40	1.0000	1	452H-0100	4C22P-0100	4C12P-0100
	25.50	1.0039	—	452H-25.5	4C22P-25.5	4C12P-25.5
	25.80	1.0156	1-1/64	452H-1.015	4C22P-1.015	4C12P-1.015
	26.00	1.0236	—	452H-26	4C22P-26	4C12P-26
	26.20	1.0313	1-1/32	452H-0101	4C22P-0101	4C12P-0101
	26.50	1.0433	—	452H-26.5	4C22P-26.5	4C12P-26.5
	26.59	1.0469	1-3/64	452H-1.046	4C22P-1.046	4C12P-1.046
	26.99	1.0625	1-1/16	452H-0102	4C22P-0102	4C12P-0102
	27.00	1.0630	—	452H-27	4C22P-27	4C12P-27
	27.50	1.0827	—	452H-27.5	4C22P-27.5	4C12P-27.5
	27.78	1.0938	1-3/32	452H-0103	4C22P-0103	4C12P-0103
	28.00	1.1024	—	452H-28	4C22P-28	4C12P-28
	28.18	1.1094	1-7/64	452H-1.109	4C22P-1.109	4C12P-1.109
	28.50	1.1220	—	452H-28.5	4C22P-28.5	4C12P-28.5
	28.58	1.1250	1-1/8	452H-0104	4C22P-0104	4C12P-0104
	29.00	1.1417	—	452H-29	4C22P-29	4C12P-29
	29.37	1.1563	1-5/32	452H-0105	4C22P-0105	4C12P-0105
	29.50	1.1614	—	452H-29.5	4C22P-29.5	4C12P-29.5
	30.00	1.1811	—	452H-30	4C22P-30	4C12P-30

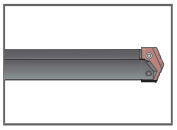
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

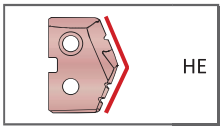
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



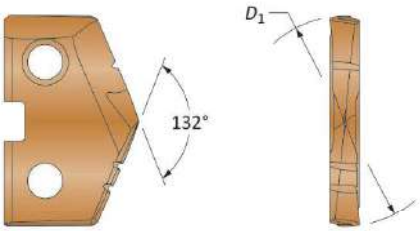
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

GEN2 T-A® Drill Inserts





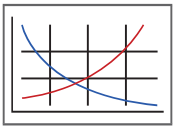
Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt Part No. AM200®	Carbide: K35 (C1) Part No. AM300®	Carbide: K20 (C2) Part No. AM300®
2.5	30.16	1.1875	1-3/16	452H-0106	4C22P-0106	4C12P-0106
	30.50	1.2008	—	452H-30.5	4C22P-30.5	4C12P-30.5
	30.96	1.2188	1-7/32	452H-0107	4C22P-0107	4C12P-0107
	31.00	1.2205	—	452H-31	4C22P-31	4C12P-31
	31.14	1.2260	—	452H-1.226	4C22P-1.226	4C12P-1.226
	31.27	1.2310	—	452H-1.231	4C22P-1.231	4C12P-1.231
	31.35	1.2344	1-15/64	452H-1.234	4C22P-1.234	4C12P-1.234
	31.50	1.2402	—	452H-31.5	4C22P-31.5	4C12P-31.5
	31.75	1.2500	1-1/4	452H-0108	4C22P-0108	4C12P-0108
	32.00	1.2598	—	452H-32	4C22P-32	4C12P-32
	32.50	1.2795	—	452H-32.5	4C22P-32.5	4C12P-32.5
	32.55	1.2813	1-9/32	452H-0109	4C22P-0109	4C12P-0109
	33.00	1.2992	—	452H-33	4C22P-33	4C12P-33
	33.34	1.3125	1-5/16	452H-0110	4C22P-0110	4C12P-0110
	33.50	1.3189	—	452H-33.5	4C22P-33.5	4C12P-33.5
	34.00	1.3386	—	452H-34	4C22P-34	4C12P-34
	34.13	1.3438	1-11/32	452H-0111	4C22P-0111	4C12P-0111
	34.50	1.3583	—	452H-34.5	4C22P-34.5	4C12P-34.5
	34.93	1.3750	1-3/8	452H-0112	4C22P-0112	4C12P-0112
	35.00	1.3780	—	452H-35	4C22P-35	4C12P-35

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

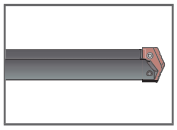
A30

A30: 113 - 139

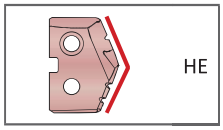
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



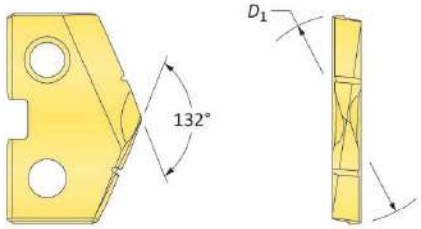
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



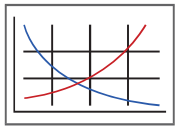


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: High-Speed Steel Part No. TiN	Part No. TiAlN	Part No. TiCN
2	24.50	0.9646	—	132T-24.5	132A-24.5	132N-24.5
	24.61	0.9688	31/32	132T-0031	132A-0031	132N-0031
	24.79	0.9760	—	132T-.976	132A-.976	132N-.976
	25.00	0.9843	63/64	132T-25	132A-25	132N-25
	25.40	1.0000	1	132T-0100	132A-0100	132N-0100
	25.50	1.0039	—	132T-25.5	132A-25.5	132N-25.5
	25.80	1.0156	1-1/64	132T-1.015	132A-1.015	132N-1.015
	26.00	1.0236	—	132T-26	132A-26	132N-26
	26.20	1.0313	1-1/32	132T-0101	132A-0101	132N-0101
	26.50	1.0433	—	132T-26.5	132A-26.5	132N-26.5
	26.59	1.0469	1-3/64	132T-1.046	132A-1.046	132N-1.046
	26.99	1.0625	1-1/16	132T-0102	132A-0102	132N-0102
	27.00	1.0630	—	132T-27	132A-27	132N-27
	27.50	1.0827	—	132T-27.5	132A-27.5	132N-27.5
	27.78	1.0938	1-3/32	132T-0103	132A-0103	132N-0103
	28.00	1.1024	—	132T-28	132A-28	132N-28
	28.18	1.1094	1-7/64	132T-1.109	132A-1.109	132N-1.109
	28.50	1.1220	—	132T-28.5	132A-28.5	132N-28.5
	28.58	1.1250	1-1/8	132T-0104	132A-0104	132N-0104
	29.00	1.1417	—	132T-29	132A-29	132N-29
	29.37	1.1563	1-5/32	132T-0105	132A-0105	132N-0105
	29.50	1.1614	—	132T-29.5	132A-29.5	132N-29.5
	30.00	1.1811	—	132T-30	132A-30	132N-30
2.5	30.16	1.1875	1-3/16	132T-0106	132A-0106	132N-0106
	30.50	1.2008	—	132T-30.5	132A-30.5	132N-30.5
	30.96	1.2188	1-7/32	132T-0107	132A-0107	132N-0107
	31.00	1.2205	—	132T-31	132A-31	132N-31
	31.14	1.2260	—	132T-1.226	132A-1.226	132N-1.226
	31.27	1.2310	—	132T-1.231	132A-1.231	132N-1.231
	31.35	1.2344	1-15/64	132T-1.234	132A-1.234	132N-1.234
	31.50	1.2402	—	132T-31.5	132A-31.5	132N-31.5
	31.75	1.2500	1-1/4	132T-0108	132A-0108	132N-0108
	32.00	1.2598	—	132T-32	132A-32	132N-32
	32.50	1.2795	—	132T-32.5	132A-32.5	132N-32.5
	32.55	1.2813	1-9/32	132T-0109	132A-0109	132N-0109
	33.00	1.2992	—	132T-33	132A-33	132N-33
	33.34	1.3125	1-5/16	132T-0110	132A-0110	132N-0110
	33.50	1.3189	—	132T-33.5	132A-33.5	132N-33.5
	34.00	1.3386	—	132T-34	132A-34	132N-34
	34.13	1.3438	1-11/32	132T-0111	132A-0111	132N-0111
	34.50	1.3583	—	132T-34.5	132A-34.5	132N-34.5
	34.93	1.3750	1-3/8	132T-0112	132A-0112	132N-0112
	35.00	1.3780	—	132T-35	132A-35	132N-35

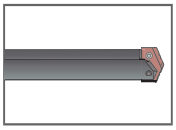
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

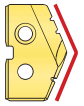
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

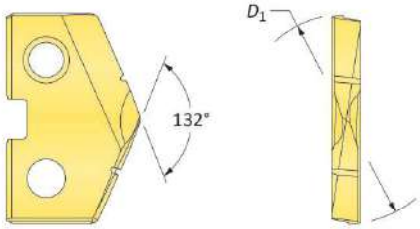
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



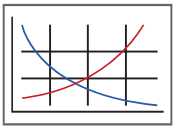


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Super Cobalt Part No. TiN	Part No. TiAlN	Part No. TiCN
2	24.50	0.9646	—	152T-24.5	152A-24.5	152N-24.5
	24.61	0.9688	31/32	152T-0031	152A-0031	152N-0031
	24.79	0.9760	—	152T-.976	152A-.976	152N-.976
	25.00	0.9843	63/64	152T-25	152A-25	152N-25
	25.40	1.0000	1	152T-0100	152A-0100	152N-0100
	25.50	1.0039	—	152T-25.5	152A-25.5	152N-25.5
	25.80	1.0156	1-1/64	152T-1.015	152A-1.015	152N-1.015
	26.00	1.0236	—	152T-26	152A-26	152N-26
	26.20	1.0313	1-1/32	152T-0101	152A-0101	152N-0101
	26.50	1.0433	—	152T-26.5	152A-26.5	152N-26.5
	26.59	1.0469	1-3/64	152T-1.046	152A-1.046	152N-1.046
	26.99	1.0625	1-1/16	152T-0102	152A-0102	152N-0102
	27.00	1.0630	—	152T-27	152A-27	152N-27
	27.50	1.0827	—	152T-27.5	152A-27.5	152N-27.5
	27.78	1.0938	1-3/32	152T-0103	152A-0103	152N-0103
	28.00	1.1024	—	152T-28	152A-28	152N-28
	28.18	1.1094	1-7/64	152T-1.109	152A-1.109	152N-1.109
	28.50	1.1220	—	152T-28.5	152A-28.5	152N-28.5
	28.58	1.1250	1-1/8	152T-0104	152A-0104	152N-0104
	29.00	1.1417	—	152T-29	152A-29	152N-29
	29.37	1.1563	1-5/32	152T-0105	152A-0105	152N-0105
	29.50	1.1614	—	152T-29.5	152A-29.5	152N-29.5
	30.00	1.1811	—	152T-30	152A-30	152N-30
2.5	30.16	1.1875	1-3/16	152T-0106	152A-0106	152N-0106
	30.50	1.2008	—	152T-30.5	152A-30.5	152N-30.5
	30.96	1.2188	1-7/32	152T-0107	152A-0107	152N-0107
	31.00	1.2205	—	152T-31	152A-31	152N-31
	31.14	1.2260	—	152T-1.226	152A-1.226	152N-1.226
	31.27	1.2310	—	152T-1.231	152A-1.231	152N-1.231
	31.35	1.2344	1-15/64	152T-1.234	152A-1.234	152N-1.234
	31.50	1.2402	—	152T-31.5	152A-31.5	152N-31.5
	31.75	1.2500	1-1/4	152T-0108	152A-0108	152N-0108
	32.00	1.2598	—	152T-32	152A-32	152N-32
	32.50	1.2795	—	152T-32.5	152A-32.5	152N-32.5
	32.55	1.2813	1-9/32	152T-0109	152A-0109	152N-0109
	33.00	1.2992	—	152T-33	152A-33	152N-33
	33.34	1.3125	1-5/16	152T-0110	152A-0110	152N-0110
	33.50	1.3189	—	152T-33.5	152A-33.5	152N-33.5
	34.00	1.3386	—	152T-34	152A-34	152N-34
	34.13	1.3438	1-11/32	152T-0111	152A-0111	152N-0111
	34.50	1.3583	—	152T-34.5	152A-34.5	152N-34.5
	34.93	1.3750	1-3/8	152T-0112	152A-0112	152N-0112
	35.00	1.3780	—	152T-35	152A-35	152N-35

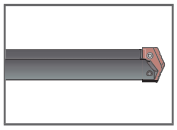
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

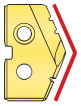
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

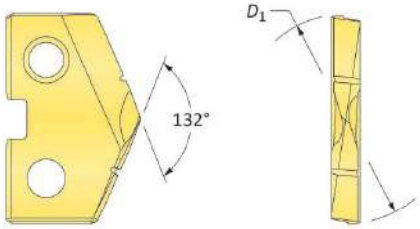
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Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



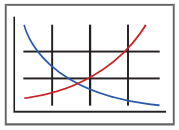


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	HSS: Premiuim Cobalt Part No. TiN	Part No. TiAlN	Part No. TiCN
2	24.50	0.9646	—	**182T-24.5**	**182A-24.5**	**182N-24.5**
	24.61	0.9688	31/32	**182T-0031**	**182A-0031**	**182N-0031**
	24.79	0.9760	—	**182T-.976**	**182A-.976**	**182N-.976**
	25.00	0.9843	63/64	**182T-25**	**182A-25**	**182N-25**
	25.40	1.0000	1	**182T-0100**	**182A-0100**	**182N-0100**
	25.50	1.0039	—	**182T-25.5**	**182A-25.5**	**182N-25.5**
	25.80	1.0156	1-1/64	**182T-1.015**	**182A-1.015**	**182N-1.015**
	26.00	1.0236	—	**182T-26**	**182A-26**	**182N-26**
	26.20	1.0313	1-1/32	**182T-0101**	**182A-0101**	**182N-0101**
	26.50	1.0433	—	**182T-26.5**	**182A-26.5**	**182N-26.5**
	26.59	1.0469	1-3/64	**182T-1.046**	**182A-1.046**	**182N-1.046**
	26.99	1.0625	1-1/16	**182T-0102**	**182A-0102**	**182N-0102**
	27.00	1.0630	—	**182T-27**	**182A-27**	**182N-27**
	27.50	1.0827	—	**182T-27.5**	**182A-27.5**	**182N-27.5**
	27.78	1.0938	1-3/32	**182T-0103**	**182A-0103**	**182N-0103**
	28.00	1.1024	—	**182T-28**	**182A-28**	**182N-28**
	28.18	1.1094	1-7/64	**182T-1.109**	**182A-1.109**	**182N-1.109**
	28.50	1.1220	—	**182T-28.5**	**182A-28.5**	**182N-28.5**
	28.58	1.1250	1-1/8	**182T-0104**	**182A-0104**	**182N-0104**
	29.00	1.1417	—	**182T-29**	**182A-29**	**182N-29**
	29.37	1.1563	1-5/32	**182T-0105**	**182A-0105**	**182N-0105**
	29.50	1.1614	—	**182T-29.5**	**182A-29.5**	**182N-29.5**
	30.00	1.1811	—	**182T-30**	**182A-30**	**182N-30**
2.5	30.16	1.1875	1-3/16	**182T-0106**	**182A-0106**	**182N-0106**
	30.50	1.2008	—	**182T-30.5**	**182A-30.5**	**182N-30.5**
	30.96	1.2188	1-7/32	**182T-0107**	**182A-0107**	**182N-0107**
	31.00	1.2205	—	**182T-31**	**182A-31**	**182N-31**
	31.14	1.2260	—	**182T-1.226**	**182A-1.226**	**182N-1.226**
	31.27	1.2310	—	**182T-1.231**	**182A-1.231**	**182N-1.231**
	31.35	1.2344	1-15/64	**182T-1.234**	**182A-1.234**	**182N-1.234**
	31.50	1.2402	—	**182T-31.5**	**182A-31.5**	**182N-31.5**
	31.75	1.2500	1-1/4	**182T-0108**	**182A-0108**	**182N-0108**
	32.00	1.2598	—	**182T-32**	**182A-32**	**182N-32**
	32.50	1.2795	—	**182T-32.5**	**182A-32.5**	**182N-32.5**
	32.55	1.2813	1-9/32	**182T-0109**	**182A-0109**	**182N-0109**
	33.00	1.2992	—	**182T-33**	**182A-33**	**182N-33**
	33.34	1.3125	1-5/16	**182T-0110**	**182A-0110**	**182N-0110**
	33.50	1.3189	—	**182T-33.5**	**182A-33.5**	**182N-33.5**
	34.00	1.3386	—	**182T-34**	**182A-34**	**182N-34**
	34.13	1.3438	1-11/32	**182T-0111**	**182A-0111**	**182N-0111**
	34.50	1.3583	—	**182T-34.5**	**182A-34.5**	**182N-34.5**
	34.93	1.3750	1-3/8	**182T-0112**	**182A-0112**	**182N-0112**
	35.00	1.3780	—	**182T-35**	**182A-35**	**182N-35**

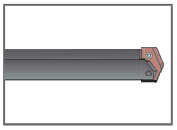
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

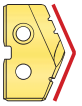
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC

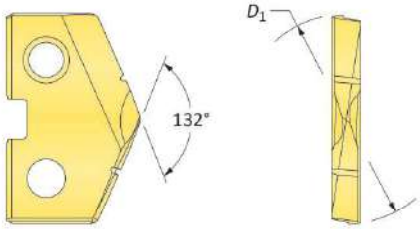
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

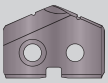
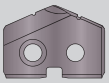
Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



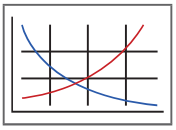


Series	Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
				 Part No.	 Part No.	 Part No.	 Part No.
	D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiN	TiAlN
2	24.50	0.9646	—	1C52T-24.5	1C52A-24.5	1C22T-24.5	1C22A-24.5
	24.61	0.9688	31/32	1C52T-0031	1C52A-0031	1C22T-0031	1C22A-0031
	24.79	0.9760	—	1C52T-.976	1C52A-.976	1C22T-.976	1C22A-.976
	25.00	0.9843	63/64	1C52T-25	1C52A-25	1C22T-25	1C22A-25
	25.40	1.0000	1	1C52T-0100	1C52A-0100	1C22T-0100	1C22A-0100
	25.50	1.0039	—	1C52T-25.5	1C52A-25.5	1C22T-25.5	1C22A-25.5
	25.80	1.0156	1-1/64	1C52T-1.015	1C52A-1.015	1C22T-1.015	1C22A-1.015
	26.00	1.0236	—	1C52T-26	1C52A-26	1C22T-26	1C22A-26
	26.20	1.0313	1-1/32	1C52T-0101	1C52A-0101	1C22T-0101	1C22A-0101
	26.50	1.0433	—	1C52T-26.5	1C52A-26.5	1C22T-26.5	1C22A-26.5
	26.59	1.0469	1-3/64	1C52T-1.046	1C52A-1.046	1C22T-1.046	1C22A-1.046
	26.99	1.0625	1-1/16	1C52T-0102	1C52A-0102	1C22T-0102	1C22A-0102
	27.00	1.0630	—	1C52T-27	1C52A-27	1C22T-27	1C22A-27
	27.50	1.0827	—	1C52T-27.5	1C52A-27.5	1C22T-27.5	1C22A-27.5
	27.78	1.0938	1-3/32	1C52T-0103	1C52A-0103	1C22T-0103	1C22A-0103
	28.00	1.1024	—	1C52T-28	1C52A-28	1C22T-28	1C22A-28
	28.18	1.1094	1-7/64	1C52T-1.109	1C52A-1.109	1C22T-1.109	1C22A-1.109
	28.50	1.1220	—	1C52T-28.5	1C52A-28.5	1C22T-28.5	1C22A-28.5
	28.58	1.1250	1-1/8	1C52T-0104	1C52A-0104	1C22T-0104	1C22A-0104
	29.00	1.1417	—	1C52T-29	1C52A-29	1C22T-29	1C22A-29
	29.37	1.1563	1-5/32	1C52T-0105	1C52A-0105	1C22T-0105	1C22A-0105
	29.50	1.1614	—	1C52T-29.5	1C52A-29.5	1C22T-29.5	1C22A-29.5
	30.00	1.1811	—	1C52T-30	1C52A-30	1C22T-30	1C22A-30
2.5	30.16	1.1875	1-3/16	1C52T-0106	1C52A-0106	1C22T-0106	1C22A-0106
	30.50	1.2008	—	1C52T-30.5	1C52A-30.5	1C22T-30.5	1C22A-30.5
	30.96	1.2188	1-7/32	1C52T-0107	1C52A-0107	1C22T-0107	1C22A-0107
	31.00	1.2205	—	1C52T-31	1C52A-31	1C22T-31	1C22A-31
	31.14	1.2260	—	1C52T-1.226	1C52A-1.226	1C22T-1.226	1C22A-1.226
	31.27	1.2310	—	1C52T-1.231	1C52A-1.231	1C22T-1.231	1C22A-1.231
	31.35	1.2344	1-15/64	1C52T-1.234	1C52A-1.234	1C22T-1.234	1C22A-1.234
	31.50	1.2402	—	1C52T-31.5	1C52A-31.5	1C22T-31.5	1C22A-31.5
	31.75	1.2500	1-1/4	1C52T-0108	1C52A-0108	1C22T-0108	1C22A-0108
	32.00	1.2598	—	1C52T-32	1C52A-32	1C22T-32	1C22A-32
	32.50	1.2795	—	1C52T-32.5	1C52A-32.5	1C22T-32.5	1C22A-32.5
	32.55	1.2813	1-9/32	1C52T-0109	1C52A-0109	1C22T-0109	1C22A-0109
	33.00	1.2992	—	1C52T-33	1C52A-33	1C22T-33	1C22A-33
	33.34	1.3125	1-5/16	1C52T-0110	1C52A-0110	1C22T-0110	1C22A-0110
	33.50	1.3189	—	1C52T-33.5	1C52A-33.5	1C22T-33.5	1C22A-33.5
	34.00	1.3386	—	1C52T-34	1C52A-34	1C22T-34	1C22A-34
	34.13	1.3438	1-11/32	1C52T-0111	1C52A-0111	1C22T-0111	1C22A-0111
	34.50	1.3583	—	1C52T-34.5	1C52A-34.5	1C22T-34.5	1C22A-34.5
	34.93	1.3750	1-3/8	1C52T-0112	1C52A-0112	1C22T-0112	1C22A-0112
	35.00	1.3780	—	1C52T-35	1C52A-35	1C22T-35	1C22A-35

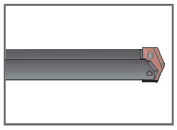
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

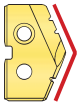
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

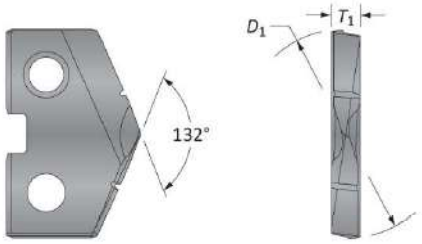
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

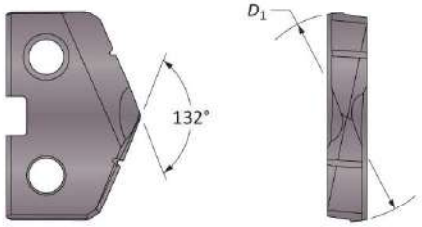
T-A® Drill Inserts

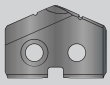
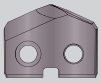






Cast Iron Geometry



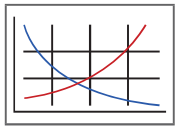
	Insert			Carbide: N2	Cast Iron Geometry Carbide: K10 (C3)
					
Series	D_1 mm	D_1 inch	Fractional Equivalent	Part No. Diamond Film*	Part No. TiAlN
2	24.50	0.9646	—	**1N22D-24.5**	**1C32A-24.5-CI**
	24.61	0.9688	31/32	**1N22D-0031**	**1C32A-0031-CI**
	24.79	0.9760	—	**1N22D-.976**	**1C32A-.976-CI**
	25.00	0.9843	63/64	**1N22D-25**	**1C32A-25-CI**
	25.40	1.0000	1	**1N22D-0100**	**1C32A-0100-CI**
	25.50	1.0039	—	**1N22D-25.5**	**1C32A-25.5-CI**
	25.80	1.0156	1-1/64	**1N22D-1.015**	**1C32A-1.015-CI**
	26.00	1.0236	—	**1N22D-26**	**1C32A-26-CI**
	26.20	1.0313	1-1/32	**1N22D-0101**	**1C32A-0101-CI**
	26.50	1.0433	—	**1N22D-26.5**	**1C32A-26.5-CI**
	26.59	1.0469	1-3/64	**1N22D-1.046**	**1C32A-1.046-CI**
	26.99	1.0625	1-1/16	**1N22D-0102**	**1C32A-0102-CI**
	27.00	1.0630	—	**1N22D-27**	**1C32A-27-CI**
	27.50	1.0827	—	**1N22D-27.5**	**1C32A-27.5-CI**
	27.78	1.0938	1-3/32	**1N22D-0103**	**1C32A-0103-CI**
	28.00	1.1024	—	**1N22D-28**	**1C32A-28-CI**
	28.18	1.1094	1-7/64	**1N22D-1.109**	**1C32A-1.109-CI**
	28.50	1.1220	—	**1N22D-28.5**	**1C32A-28.5-CI**
	28.58	1.1250	1-1/8	**1N22D-0104**	**1C32A-0104-CI**
	29.00	1.1417	—	**1N22D-29**	**1C32A-29-CI**
	29.37	1.1563	1-5/32	**1N22D-0105**	**1C32A-0105-CI**
	29.50	1.1614	—	**1N22D-29.5**	**1C32A-29.5-CI**
	30.00	1.1811	—	**1N22D-30**	**1C32A-30-CI**

*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

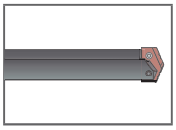
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

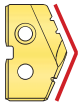
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

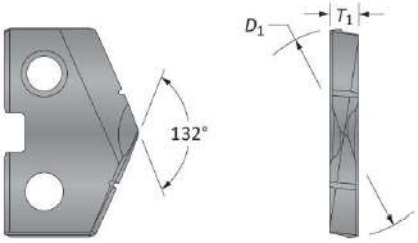
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

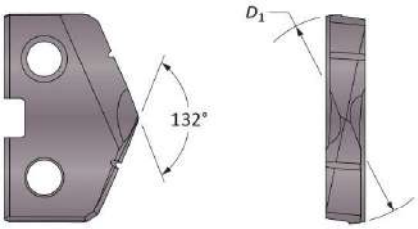
T-A® Drill Inserts

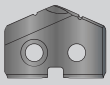
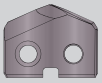






Cast Iron Geometry

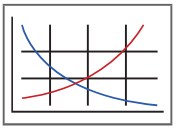


	Insert			Carbide: N2	Cast Iron Geometry Carbide: K10 (C3)
					
Series	D_1 mm	D_1 inch	Fractional Equivalent	Part No. Diamond Film*	Part No. TiAlN
2.5	30.16	1.1875	1-3/16	**1N22D-0106**	**1C32A-0106-CI**
	30.50	1.2008	—	**1N22D-30.5**	**1C32A-30.5-CI**
	30.96	1.2188	1-7/32	**1N22D-0107**	**1C32A-0107-CI**
	31.00	1.2205	—	**1N22D-31**	**1C32A-31-CI**
	31.14	1.2260	—	**1N22D-1.226**	**1C32A-1.226-CI**
	31.27	1.2310	—	**1N22D-1.231**	**1C32A-1.231-CI**
	31.35	1.2344	1-15/64	**1N22D-1.234**	**1C32A-1.234-CI**
	31.50	1.2402	—	**1N22D-31.5**	**1C32A-31.5-CI**
	31.75	1.2500	1-1/4	**1N22D-0108**	**1C32A-0108-CI**
	32.00	1.2598	—	**1N22D-32**	**1C32A-32-CI**
	32.50	1.2795	—	**1N22D-32.5**	**1C32A-32.5-CI**
	32.55	1.2813	1-9/32	**1N22D-0109**	**1C32A-0109-CI**
	33.00	1.2992	—	**1N22D-33**	**1C32A-33-CI**
	33.34	1.3125	1-5/16	**1N22D-0110**	**1C32A-0110-CI**
	33.50	1.3189	—	**1N22D-33.5**	**1C32A-33.5-CI**
	34.00	1.3386	—	**1N22D-34**	**1C32A-34-CI**
	34.13	1.3438	1-11/32	**1N22D-0111**	**1C32A-0111-CI**
	34.50	1.3583	—	**1N22D-34.5**	**1C32A-34.5-CI**
	34.93	1.3750	1-3/8	**1N22D-0112**	**1C32A-0112-CI**
	35.00	1.3780	—	**1N22D-35**	**1C32A-35-CI**

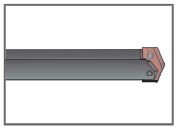
*Diamond film coated items are nonstocked standard and only available in standard geometry. For additional geometries, please contact Application Engineering. Process fees apply.

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

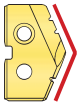
A30: 113 - 139
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



HI, HR, CR, TC, SK, NP, IN, RN, CN, AN, BR, CI, CP, NC, WC, BT

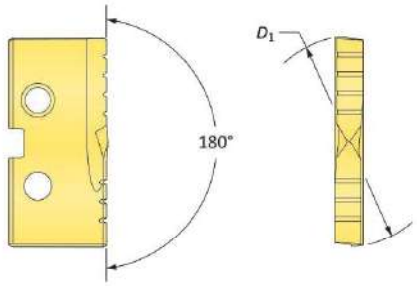
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Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



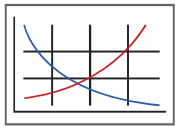


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	Flat Bottom Geometry HSS: Super Cobalt Part No. TiN	Flat Bottom Geometry Carbide: K20 (C2) Part No. TiN
2	24.50	0.9646	—	**152T-24.5-FB**	**1C22T-24.5-FB**
	24.61	0.9688	31/32	**152T-0031-FB**	**1C22T-0031-FB**
	24.79	0.9760	—	**152T-.976-FB**	**1C22T-.976-FB**
	25.00	0.9843	63/64	**152T-25-FB**	**1C22T-25-FB**
	25.40	1.0000	1	**152T-0100-FB**	**1C22T-0100-FB**
	25.50	1.0039	—	**152T-25.5-FB**	**1C22T-25.5-FB**
	25.80	1.0156	1-1/64	**152T-1.015-FB**	**1C22T-1.015-FB**
	26.00	1.0236	—	**152T-26-FB**	**1C22T-26-FB**
	26.20	1.0313	1-1/32	**152T-0101-FB**	**1C22T-0101-FB**
	26.50	1.0433	—	**152T-26.5-FB**	**1C22T-26.5-FB**
	26.59	1.0469	1-3/64	**152T-1.046-FB**	**1C22T-1.046-FB**
	26.99	1.0625	1-1/16	**152T-0102-FB**	**1C22T-0102-FB**
	27.00	1.0630	—	**152T-27-FB**	**1C22T-27-FB**
	27.50	1.0827	—	**152T-27.5-FB**	**1C22T-27.5-FB**
	27.78	1.0938	1-3/64	**152T-0103-FB**	**1C22T-0103-FB**
	28.00	1.1024	—	**152T-28-FB**	**1C22T-28-FB**
	28.18	1.1094	1-7/64	**152T-1.109-FB**	**1C22T-1.109-FB**
	28.50	1.1220	—	**152T-28.5-FB**	**1C22T-28.5-FB**
	28.58	1.1250	1-1/8	**152T-0104-FB**	**1C22T-0104-FB**
	29.00	1.1417	—	**152T-29-FB**	**1C22T-29-FB**
	29.37	1.1563	1-5/32	**152T-0105-FB**	**1C22T-0105-FB**
	29.50	1.1614	—	**152T-29.5-FB**	**1C22T-29.5-FB**
	30.00	1.1811	—	**152T-30-FB**	**1C22T-30-FB**

NOTE: *Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

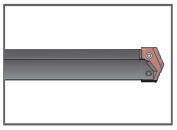
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

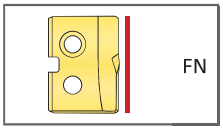


Key on A30: 2

A30: 73 - 77



A30: 5 - 6



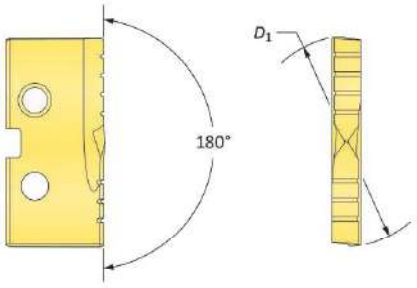
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



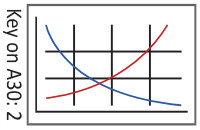


Series	Insert D_1 mm	Insert D_1 inch	Insert Fractional Equivalent	Flat Bottom Geometry HSS: Super Cobalt Part No. TiN	Flat Bottom Geometry Carbide: K20 (C2) Part No. TiN
2.5	30.16	1.1875	1-3/16	**152T-0106-FB**	**1C22T-0106-FB**
	30.50	1.2008	—	**152T-30.5-FB**	**1C22T-30.5-FB**
	30.96	1.2188	1-7/32	**152T-0107-FB**	**1C22T-0107-FB**
	31.00	1.2205	—	**152T-31-FB**	**1C22T-31-FB**
	31.14	1.2260	—	**152T-1.226-FB**	**1C22T-1.226-FB**
	31.27	1.2310	—	**152T-1.231-FB**	**1C22T-1.231-FB**
	31.35	1.2344	1-15/64	**152T-1.234-FB**	**1C22T-1.234-FB**
	31.50	1.2402	—	**152T-31.5-FB**	**1C22T-31.5-FB**
	31.75	1.2500	1-1/4	**152T-0108-FB**	**1C22T-0108-FB**
	32.00	1.2598	—	**152T-32-FB**	**1C22T-32-FB**
	32.50	1.2795	—	**152T-32.5-FB**	**1C22T-32.5-FB**
	32.55	1.2813	1-9/32	**152T-0109-FB**	**1C22T-0109-FB**
	33.00	1.2992	—	**152T-33-FB**	**1C22T-33-FB**
	33.34	1.3125	1-5/16	**152T-0110-FB**	**1C22T-0110-FB**
	33.50	1.3189	—	**152T-33.5-FB**	**1C22T-33.5-FB**
	34.00	1.3386	—	**152T-34-FB**	**1C22T-34-FB**
	34.13	1.3438	1-11/32	**152T-0111-FB**	**1C22T-0111-FB**
	34.50	1.3583	—	**152T-34.5-FB**	**1C22T-34.5-FB**
	34.93	1.3750	1-3/8	**152T-0112-FB**	**1C22T-0112-FB**
	35.00	1.3780	—	**152T-35-FB**	**1C22T-35-FB**

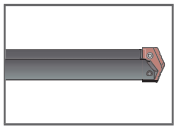
NOTE: *Carbide: K20 (C2) inserts with flat bottom geometry are nonstocked standard items. Process fees apply.

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

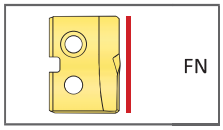
A30: 113 - 139
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



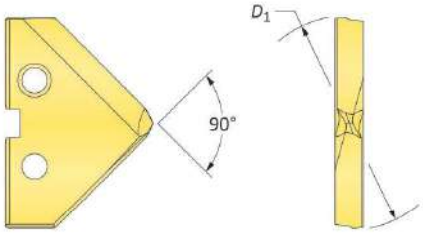
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



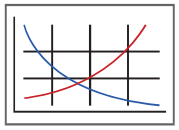


	Insert			90° Spot & Chamfer Geometry		
				HSS: Super Cobalt		
				Part No.	Part No.	Part No.
Series	D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
2	24.50	0.9646	—	**152T-24.5-SP**	**152A-24.5-SP**	**152N-24.5-SP**
	24.61	0.9688	31/32	**152T-0031-SP**	**152A-0031-SP**	**152N-0031-SP**
	24.79	0.9760	—	**152T-.976-SP**	**152A-.976-SP**	**152N-.976-SP**
	25.00	0.9843	63/64	**152T-25-SP**	**152A-25-SP**	**152N-25-SP**
	25.40	1.0000	1	**152T-0100-SP**	**152A-0100-SP**	**152N-0100-SP**
	25.50	1.0039	—	**152T-25.5-SP**	**152A-25.5-SP**	**152N-25.5-SP**
	25.80	1.0156	1-1/64	**152T-1.015-SP**	**152A-1.015-SP**	**152N-1.015-SP**
	26.00	1.0236	—	**152T-26-SP**	**152A-26-SP**	**152N-26-SP**
	26.20	1.0313	1-1/32	**152T-0101-SP**	**152A-0101-SP**	**152N-0101-SP**
	26.50	1.0433	—	**152T-26.5-SP**	**152A-26.5-SP**	**152N-26.5-SP**
	26.59	1.0469	1-3/64	**152T-1.046-SP**	**152A-1.046-SP**	**152N-1.046-SP**
	26.99	1.0625	1-1/16	**152T-0102-SP**	**152A-0102-SP**	**152N-0102-SP**
	27.00	1.0630	—	**152T-27-SP**	**152A-27-SP**	**152N-27-SP**
	27.50	1.0827	—	**152T-27.5-SP**	**152A-27.5-SP**	**152N-27.5-SP**
	27.78	1.0938	1-3/32	**152T-0103-SP**	**152A-0103-SP**	**152N-0103-SP**
	28.00	1.1024	—	**152T-28-SP**	**152A-28-SP**	**152N-28-SP**
	28.18	1.1094	1-7/64	**152T-1.109-SP**	**152A-1.109-SP**	**152N-1.109-SP**
	28.50	1.1220	—	**152T-28.5-SP**	**152A-28.5-SP**	**152N-28.5-SP**
	28.58	1.1250	1-1/8	**152T-0104-SP**	**152A-0104-SP**	**152N-0104-SP**
	29.00	1.1417	—	**152T-29-SP**	**152A-29-SP**	**152N-29-SP**
	29.37	1.1563	1-5/32	**152T-0105-SP**	**152A-0105-SP**	**152N-0105-SP**
	29.50	1.1614	—	**152T-29.5-SP**	**152A-29.5-SP**	**152N-29.5-SP**
	30.00	1.1811	—	**152T-30-SP**	**152A-30-SP**	**152N-30-SP**

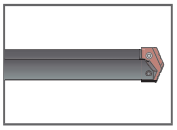
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

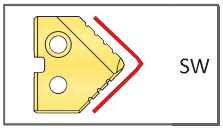
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



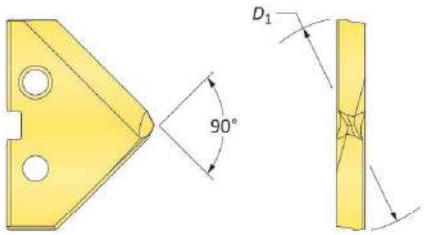
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Inserts



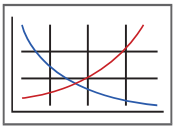


	Insert			90° Spot & Chamfer Geometry		
				HSS: Super Cobalt		
						
				Part No.	Part No.	Part No.
Series	D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
2.5	30.16	1.1875	1-3/16	**152T-0106-SP**	**152A-0106-SP**	**152N-0106-SP**
	30.50	1.2008	—	**152T-30.5-SP**	**152A-30.5-SP**	**152N-30.5-SP**
	30.96	1.2188	1-7/32	**152T-0107-SP**	**152A-0107-SP**	**152N-0107-SP**
	31.00	1.2205	—	**152T-31-SP**	**152A-31-SP**	**152N-31-SP**
	31.27	1.2310	—	**152T-1.226-SP**	**152A-1.226-SP**	**152N-1.226-SP**
	31.35	1.2344	1-15/64	**152T-1.231-SP**	**152A-1.231-SP**	**152N-1.231-SP**
	31.35	1.2344	1-15/64	**152T-1.234-SP**	**152A-1.234-SP**	**152N-1.234-SP**
	31.50	1.2402	—	**152T-31.5-SP**	**152A-31.5-SP**	**152N-31.5-SP**
	31.75	1.2500	1-1/4	**152T-0108-SP**	**152A-0108-SP**	**152N-0108-SP**
	32.00	1.2598	—	**152T-32-SP**	**152A-32-SP**	**152N-32-SP**
	32.50	1.2795	—	**152T-32.5-SP**	**152A-32.5-SP**	**152N-32.5-SP**
	32.55	1.2813	1-9/32	**152T-0109-SP**	**152A-0109-SP**	**152N-0109-SP**
	33.00	1.2992	—	**152T-33-SP**	**152A-33-SP**	**152N-33-SP**
	33.34	1.3125	1-5/16	**152T-0110-SP**	**152A-0110-SP**	**152N-0110-SP**
	33.50	1.3189	—	**152T-33.5-SP**	**152A-33.5-SP**	**152N-33.5-SP**
	34.00	1.3386	—	**152T-34-SP**	**152A-34-SP**	**152N-34-SP**
	34.13	1.3438	1-11/32	**152T-0111-SP**	**152A-0111-SP**	**152N-0111-SP**
	34.50	1.3583	—	**152T-34.5-SP**	**152A-34.5-SP**	**152N-34.5-SP**
	34.93	1.3750	1-3/8	**152T-0112-SP**	**152A-0112-SP**	**152N-0112-SP**
	35.00	1.3780	—	**152T-35-SP**	**152A-35-SP**	**152N-35-SP**

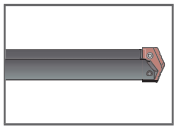
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

A30: 113 - 139

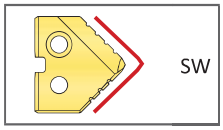
Key on A30: 2



A30: 73 - 77



A30: 5 - 6



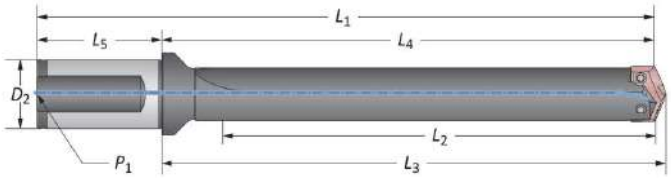
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

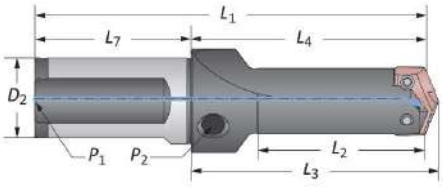
2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Holders









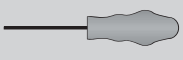
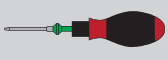
Stub Length

Metric Flange Shank Holders

Flute	Series	Body Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	2	Stub	63.5	88.5	92.0	148.5	60.0	32	1/4 BSPT	21020S-32FM
		Short	86.1	128.6	132.2	188.6	60.0	32	1/4 BSPT	22020S-32FM
		Intermediate	136.9	179.4	183.0	239.4	60.0	32	1/4 BSPT	23020S-32FM
		Standard	187.7	230.2	233.8	290.2	60.0	32	1/4 BSPT	24020S-32FM
		Extended	289.3	331.8	335.4	391.8	60.0	32	1/4 BSPT	⚠ 25020S-32FM
		XL	511.6	554.1	557.6	614.0	60.0	32	1/4 BSPT	⚠ 27020S-32FM
		3XL	692.6	735.0	738.6	795.0	60.0	32	1/4 BSPT	⚠ 29020S-32FM
	2.5	Stub	100.6	123.4	127.0	183.4	60.0	32	1/4 BSPT	21025S-32FM
		Short	84.7	128.6	132.2	188.6	60.0	32	1/4 BSPT	22025S-32FM
		Intermediate	135.5	179.4	183.0	239.4	60.0	32	1/4 BSPT	23025S-32FM
		Standard	186.3	230.2	233.8	290.2	60.0	32	1/4 BSPT	24025S-32FM
		Extended	287.9	331.8	335.4	391.8	60.0	32	1/4 BSPT	⚠ 25025S-32FM
Helical	2	Intermediate	154.8	179.4	183.0	239.4	60.0	32	1/4 BSPT	23020H-32FM
		Standard	205.6	230.2	233.8	290.2	60.0	32	1/4 BSPT	24020H-32FM
		Standard Plus	256.3	280.9	284.5	340.9	60.0	32	1/4 BSPT	⚠ 24520H-32FM
		Extended	307.2	331.8	335.4	391.8	60.0	32	1/4 BSPT	⚠ 25020H-32FM
		Long	428.3	452.9	456.5	512.9	60.0	32	1/4 BSPT	⚠ 26020H-32FM
	2.5	Intermediate	156.8	179.4	183.0	239.4	60.0	32	1/4 BSPT	23025H-32FM
		Standard	207.6	230.2	233.8	290.2	60.0	32	1/4 BSPT	24025H-32FM
		Extended	309.2	331.8	335.4	391.8	60.0	32	1/4 BSPT	⚠ 25025H-32FM

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

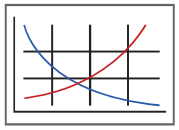
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

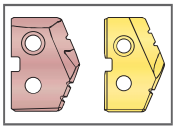
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

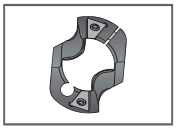
A30: 113 - 139 Key on A30: 2



A30: 61 - 72



A30: 78 & 112

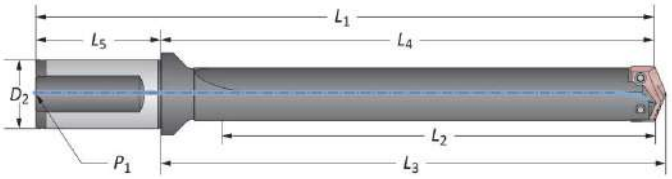


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

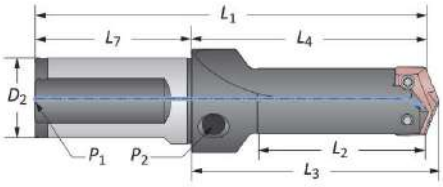
2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Holders









Stub Length

Imperial Flange Shank Holders

Flute	Series	Body Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	2	Stub	2.500	3.484	3.624	5.764	2.280	1-1/4	1/4 NPT	21020S-125F
		Short	3.391	5.063	5.203	7.343	2.280	1-1/4	1/4 NPT	22020S-125F
		Intermediate	5.391	7.063	7.203	9.343	2.280	1-1/4	1/4 NPT	23020S-125F
		Standard	7.391	9.063	9.203	11.343	2.280	1-1/4	1/4 NPT	24020S-125F
		Extended	11.391	13.063	13.203	15.343	2.280	1-1/4	1/4 NPT	⚠ 25020S-125F
	2.5	Stub	3.959	4.859	4.999	7.139	2.280	1-1/4	1/4 NPT	21025S-125F
		Short	3.334	5.063	5.203	7.343	2.280	1-1/4	1/4 NPT	22025S-125F
		Intermediate	5.334	7.063	7.203	9.343	2.280	1-1/4	1/4 NPT	23025S-125F
		Standard	7.334	9.063	9.203	11.343	2.280	1-1/4	1/4 NPT	24025S-125F
		Extended	11.334	13.063	13.203	15.343	2.280	1-1/4	1/4 NPT	⚠ 25025S-125F
Helical	2	Intermediate	6.093	7.063	7.203	9.343	2.280	1-1/4	1/4 NPT	23020H-125F
		Standard	8.093	9.063	9.203	11.343	2.280	1-1/4	1/4 NPT	24020H-125F
		Standard Plus	10.089	11.059	11.199	13.339	2.280	1-1/4	1/4 NPT	⚠ 24520H-125F
		Extended	12.093	13.063	13.203	15.343	2.280	1-1/4	1/4 NPT	⚠ 25020H-125F
		Long	16.861	17.831	17.971	20.111	2.280	1-1/4	1/4 NPT	⚠ 26020H-125F
	2.5	Intermediate	6.172	7.063	7.203	9.343	2.280	1-1/4	1/4 NPT	23025H-125F
		Standard	8.172	9.063	9.203	11.343	2.280	1-1/4	1/4 NPT	24025H-125F
		Extended	12.172	13.063	13.203	15.343	2.280	1-1/4	1/4 NPT	⚠ 25025H-125F

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).
NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

Connection Accessories

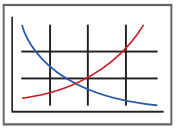
Insert Screws	Nylon Locking Screws	Insert Driver	Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

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

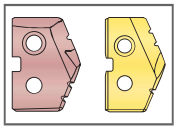
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

Key on A30: 2

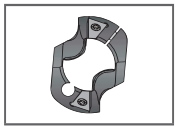
A30: 113 - 139



A30: 61 - 72



A30: 78 & 112

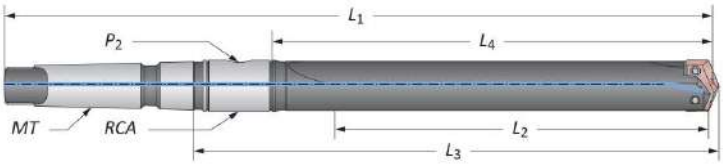


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Holders





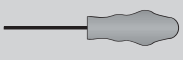
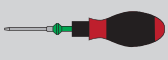
Metric Taper Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
Straight	2	Short	82.0	114.3	159.9	273.8	#4 MT ISO	1/8 BSPT	2T-3SRM	**22020S-004M**
Straight	2.5	Short	76.5	114.3	167.1	281.0	#4 MT ISO	1/4 BSPT	2T-4SRM	**22025S-004M**
Helical	2	Intermediate	148.6	165.1	210.7	324.6	#4 MT ISO	1/8 BSPT	2T-3SRM	**23020H-004M**
Helical	2	Standard	199.4	215.9	261.5	375.4	#4 MT ISO	1/8 BSPT	2T-3SRM	**24020H-004M**
Helical	2	Extended	301.0	317.5	363.1	477.0	#4 MT ISO	1/8 BSPT	2T-3SRM	⚠ **25020H-004M**
Helical	2.5	Intermediate	146.8	165.1	217.9	331.8	#4 MT ISO	1/4 BSPT	2T-4SRM	**23025H-004M**
Helical	2.5	Standard	197.6	215.9	268.7	382.6	#4 MT ISO	1/4 BSPT	2T-4SRM	**24025H-004M**
Helical	2.5	Extended	299.2	317.5	370.3	484.2	#4 MT ISO	1/4 BSPT	2T-4SRM	⚠ **25025H-004M**

*MT ISO 296 type BEK.

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

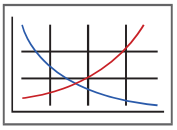
Connection Accessories

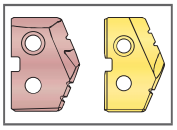
 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

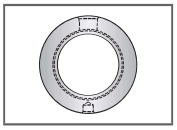
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

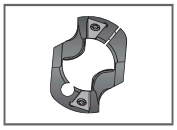
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

Key on A30: 2

A30: 113 - 139 

A30: 61 - 72 

A30: 78 & 111 

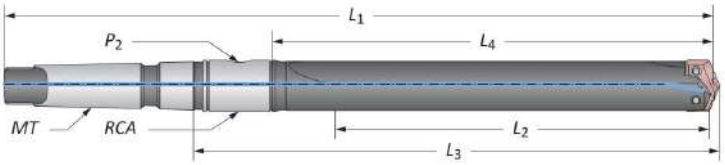
A30: 78 & 112 

ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Holders



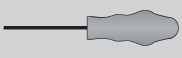
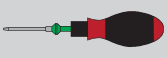


Imperial Taper Shank Holders

Flute	Series	Body Length	L_2	L_4	L_3	L_1	Shank MT	P_2	RCA	Part No.
Straight	2	Short	3.229	4.500	6.233	9.781	#3 MT	1/8 NPT	2T-3SR	**22020S-003I**
		Short	3.229	4.500	6.296	10.781	#4 MT	1/8 NPT	2T-3SR	**22020S-004I**
		Intermediate	5.229	6.500	8.296	12.781	#4 MT	1/8 NPT	2T-3SR	**23020S-004I**
		Standard	7.229	8.500	10.233	13.781	#3 MT	1/8 NPT	2T-3SR	**24020S-003I**
		Standard	7.229	8.500	10.296	14.781	#4 MT	1/8 NPT	2T-3SR	**24020S-004I**
		Extended	11.229	12.500	14.296	18.781	#4 MT	1/8 NPT	2T-3SR	⚠ **25020S-004I**
	2.5	Short	3.380	4.500	6.233	9.781	#3 MT	1/8 NPT	2T-3SR	**22025S-003I**
		Short	3.013	4.500	6.577	11.062	#4 MT	1/4 NPT	2T-4SR	**22025S-004I**
		Intermediate	5.013	6.500	8.577	13.062	#4 MT	1/4 NPT	2T-4SR	**23025S-004I**
		Standard	7.380	8.500	10.233	13.781	#3 MT	1/8 NPT	2T-3SR	**24025S-003I**
		Standard	7.013	8.500	10.577	15.062	#4 MT	1/4 NPT	2T-4SR	**24025S-004I**
		Extended	11.013	12.500	14.577	19.062	#4 MT	1/4 NPT	2T-4SR	⚠ **25025S-004I**
Helical	2	Intermediate	5.850	6.500	8.296	12.781	#4 MT	1/8 NPT	2T-3SR	**23020H-004I**
		Standard	7.850	8.500	10.233	13.781	#3 MT	1/8 NPT	2T-3SR	**24020H-003I**
		Standard	7.850	8.500	10.296	14.781	#4 MT	1/8 NPT	2T-3SR	**24020H-004I**
		Extended	11.850	12.500	14.296	18.781	#4 MT	1/8 NPT	2T-3SR	⚠ **25020H-004I**
	2.5	Intermediate	5.781	6.500	8.577	13.062	#4 MT	1/4 NPT	2T-4SR	**23025H-004I**
		Standard	8.016	8.500	10.233	13.781	#3 MT	1/8 NPT	2T-3SR	**24025H-003I**
		Standard	7.781	8.500	10.577	15.062	#4 MT	1/4 NPT	2T-4SR	**24025H-004I**
		Extended	11.781	12.500	14.577	19.062	#4 MT	1/4 NPT	2T-4SR	⚠ **25025H-004I**

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

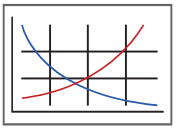
Connection Accessories

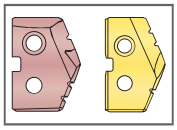
 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

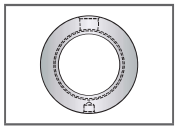
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength.

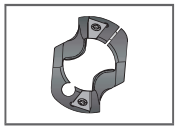
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

Key on A30: 2

A30: 113 - 139 

A30: 61 - 72 

A30: 78 & 111 

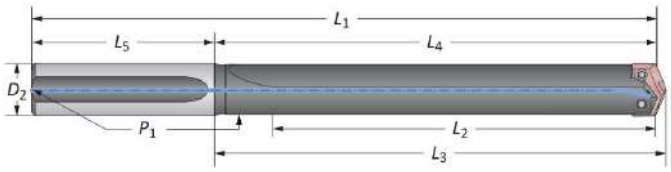
A30: 78 & 112 

ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Holders



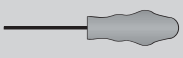
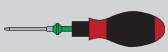


Straight Shank Holders

Flute	Series	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	2	Short	3.226	4.500	4.640	8.000	3.5000	1	1/8 NPT	**22020S-100L**
		Short	3.119	4.500	4.640	8.000	3.5000	1-1/4	1/8 NPT	**22020S-125L**
		Intermediate	5.119	6.500	6.640	10.000	3.5000	1-1/4	1/8 NPT	**23020S-125L**
		Standard	7.226	8.500	8.640	12.000	3.5000	1	1/8 NPT	**24020S-100L**
		Standard	7.119	8.500	8.640	12.000	3.5000	1-1/4	1/8 NPT	**24020S-125L**
		Extended	11.119	12.500	12.640	16.000	3.5000	1-1/4	1/8 NPT	⚠ **25020S-125L**
		XL	19.869	21.250	21.390	24.750	3.5000	1-1/4	1/8 NPT	⚠ **27020S-125L**
		3XL	26.994	28.375	28.515	31.875	3.5000	1-1/4	1/8 NPT	⚠ **29020S-125L**
	2.5	Short	3.395	4.500	4.640	8.000	3.5000	1	1/8 NPT	**22025S-100L**
		Short	3.015	4.500	4.640	8.000	3.5000	1-1/4	1/8 NPT	**22025S-125L**
		Intermediate	5.015	6.500	6.640	10.000	3.5000	1-1/4	1/8 NPT	**23025S-125L**
		Standard	7.395	8.500	8.640	12.000	3.5000	1	1/8 NPT	**24025S-100L**
		Standard	7.015	8.500	8.640	12.000	3.5000	1-1/4	1/8 NPT	**24025S-125L**
		Extended	11.015	12.500	12.640	16.000	3.5000	1-1/4	1/8 NPT	⚠ **25025S-125L**

NOTE: 2.5 series inserts fit into both 2 and 2.5 series holders. However, 2 series inserts ONLY fit into 2 series holders. See page A30: 7 for visual.

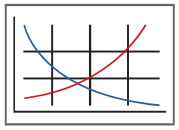
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	 Preset Torque Hand Driver	Replacement Tips	Admissible Tightening Torque*
7495-IP15-1	7495N-IP15-1	8IP-15	8IP-15TL	8IP-15B	690 N-cm (61.0 in-lbs)

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

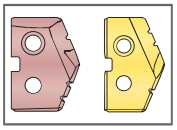
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

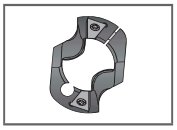


Key on A30: 2

A30: 61 - 72



A30: 78 & 112

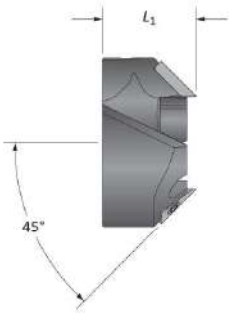


Ⓜ = Metric (mm)
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Screws sold in multiples of 10.

2 Series: 24.41 mm - 35.06 mm (0.9610" - 1.3809")

T-A® Drill Accessories



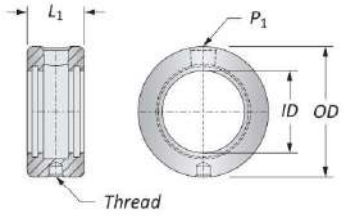




T-ACR 45 Chamfer Ring

Holder Series	D_1 Range	Chamfer Ring D_4	Chamfer Ring L_1	Part No.	Insert Part No.	Insert Screw	Insert Driver	Clamping Screw	Insert Driver
2	0.9610 - 1.3800	1.598	1.000	**T-ACR-45-2**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7514-IP20-1	8IP-20





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings Kit Part No.*	RCA O-Rings Replacements
m	25.4	54.0	28.6	M8 x 1.25	1/8 BSPT	⚠ **2T-3SRM**	2T1-3SR	2T1-3OR-10
m	31.8	63.5	34.9	M10 x 1.50	1/4 BSPT	⚠ **2T-4SRM**	2T1-4SR	2T1-4OR-10
i	1.000	2.125	1.125	5/16" - 18	1/8 NPT	⚠ **2T-3SR**	2T1-3SR	2T1-3OR-10
i	1.250	2.500	1.375	3/8" - 16	1/4 NPT	⚠ **2T-4SR**	2T1-4SR	2T1-4OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139
Key on A30: 2

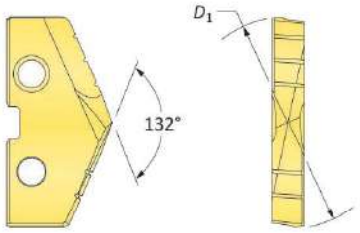
m = Metric (mm)
i = Imperial (in)

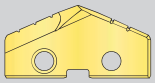
Chamfer ring inserts sold separately.
Screws sold in multiples of 10.
O-rings sold in packs of 10.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

GEN2 T-A® Drill Inserts

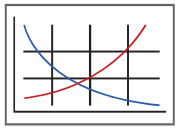




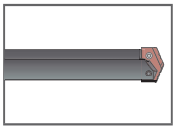
Insert			HSS: High-Speed Steel
			
D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN
35.72	1.4063	1-13/32	**433T-0113**
36.00	1.4173	—	**433T-36**
36.51	1.4375	1-7/16	**433T-0114**
37.00	1.4567	—	**433T-37**
37.31	1.4688	1-15/32	**433T-0115**
38.00	1.4961	—	**433T-38**
38.10	1.5000	1-1/2	**433T-0116**
38.90	1.5313	1-17/32	**433T-0117**
39.00	1.5354	—	**433T-39**
39.29	1.5470	—	**433T-1.547**
39.69	1.5625	1-9/16	**433T-0118**
40.00	1.5748	—	**433T-40**
40.48	1.5938	1-19/32	**433T-0119**
41.00	1.6142	—	**433T-41**
41.28	1.6250	1-5/8	**433T-0120**
42.00	1.6535	—	**433T-42**
42.07	1.6563	1-21/32	**433T-0121**
42.86	1.6875	1-11/16	**433T-0122**
43.00	1.6929	—	**433T-43**
43.66	1.7188	1-23/32	**433T-0123**
44.00	1.7323	—	**433T-44**
44.45	1.7500	1-3/4	**433T-0124**
45.00	1.7717	—	**433T-45**
45.25	1.7813	1-25/32	**433T-0125**
45.50	1.7913	—	**433T-45.5**
45.64	1.7970	—	**433T-1.797**
46.00	1.8110	—	**433T-46**
46.04	1.8125	1-13/16	**433T-0126**
46.83	1.8438	1-27/32	**433T-0127**
47.00	1.8504	—	**433T-47**
47.63	1.8750	1-7/8	**433T-0128**

A30: 113 - 139

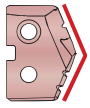
Key on A30: 2



A30: 85 - 87



A30: 5 - 6



HE, HI, HR, CR, SK, BR, CI, NC, WC

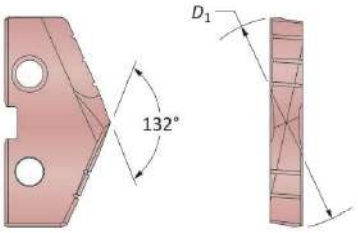
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

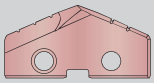
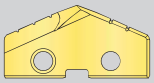
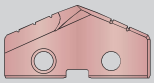
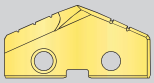
Inserts sold in quantities of 1.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

GEN2 T-A® Drill Inserts

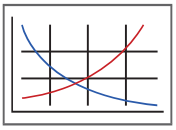




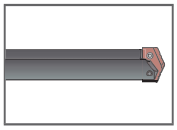
Insert			HSS: Super Cobalt		HSS: Premium Cobalt	
			 Part No.	 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	AM200®	TiN	AM200®	TiN
35.72	1.4063	1-13/32	**453H-0113**	**453T-0113**	**483H-0113**	**483T-0113**
36.00	1.4173	—	**453H-36**	**453T-36**	**483H-36**	**483T-36**
36.51	1.4375	1-7/16	**453H-0114**	**453T-0114**	**483H-0114**	**483T-0114**
37.00	1.4567	—	**453H-37**	**453T-37**	**483H-37**	**483T-37**
37.31	1.4688	1-15/32	**453H-0115**	**453T-0115**	**483H-0115**	**483T-0115**
38.00	1.4961	—	**453H-38**	**453T-38**	**483H-38**	**483T-38**
38.10	1.5000	1-1/2	**453H-0116**	**453T-0116**	**483H-0116**	**483T-0116**
38.90	1.5313	1-17/32	**453H-0117**	**453T-0117**	**483H-0117**	**483T-0117**
39.00	1.5354	—	**453H-39**	**453T-39**	**483H-39**	**483T-39**
39.29	1.5470	—	**453H-1.547**	**453T-1.547**	**483H-1.547**	**483T-1.547**
39.69	1.5625	1-9/16	**453H-0118**	**453T-0118**	**483H-0118**	**483T-0118**
40.00	1.5748	—	**453H-40**	**453T-40**	**483H-40**	**483T-40**
40.48	1.5938	1-19/32	**453H-0119**	**453T-0119**	**483H-0119**	**483T-0119**
41.00	1.6142	—	**453H-41**	**453T-41**	**483H-41**	**483T-41**
41.28	1.6250	1-5/8	**453H-0120**	**453T-0120**	**483H-0120**	**483T-0120**
42.00	1.6535	—	**453H-42**	**453T-42**	**483H-42**	**483T-42**
42.07	1.6563	1-21/32	**453H-0121**	**453T-0121**	**483H-0121**	**483T-0121**
42.86	1.6875	1-11/16	**453H-0122**	**453T-0122**	**483H-0122**	**483T-0122**
43.00	1.6929	—	**453H-43**	**453T-43**	**483H-43**	**483T-43**
43.66	1.7188	1-23/32	**453H-0123**	**453T-0123**	**483H-0123**	**483T-0123**
44.00	1.7323	—	**453H-44**	**453T-44**	**483H-44**	**483T-44**
44.45	1.7500	1-3/4	**453H-0124**	**453T-0124**	**483H-0124**	**483T-0124**
45.00	1.7717	—	**453H-45**	**453T-45**	**483H-45**	**483T-45**
45.25	1.7813	1-25/32	**453H-0125**	**453T-0125**	**483H-0125**	**483T-0125**
45.50	1.7913	—	**453H-45.5**	**453T-45.5**	**483H-45.5**	**483T-45.5**
45.64	1.7970	—	**453H-1.797**	**453T-1.797**	**483H-1.797**	**483T-1.797**
46.00	1.8110	—	**453H-46**	**453T-46**	**483H-46**	**483T-46**
46.04	1.8125	1-13/16	**453H-0126**	**453T-0126**	**483H-0126**	**483T-0126**
46.83	1.8438	1-27/32	**453H-0127**	**453T-0127**	**483H-0127**	**483T-0127**
47.00	1.8504	—	**453H-47**	**453T-47**	**483H-47**	**483T-47**
47.63	1.8750	1-7/8	**453H-0128**	**453T-0128**	**483H-0128**	**483T-0128**

A30: 113 - 139

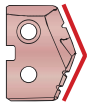
Key on A30: 2



A30: 85 - 87



A30: 5 - 6



HE, HI, HR, CR, SK, BR, CI, NC, WC

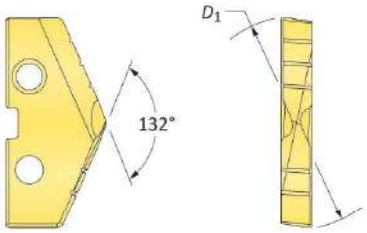
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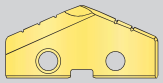
Inserts sold in quantities of 1.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A® Drill Inserts

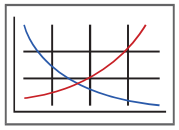




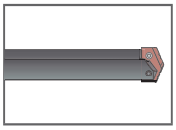
Insert			HSS: Super Cobalt
			
			Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN
35.72	1.4063	1-13/32	**153T-0113**
36.00	1.4173	—	**153T-36**
36.51	1.4375	1-7/16	**153T-0114**
37.00	1.4567	—	**153T-37**
37.31	1.4688	1-15/32	**153T-0115**
38.00	1.4961	—	**153T-38**
38.10	1.5000	1-1/2	**153T-0116**
38.90	1.5313	1-17/32	**153T-0117**
39.00	1.5354	—	**153T-39**
39.29	1.5470	—	**153T-1.547**
39.69	1.5625	1-9/16	**153T-0118**
40.00	1.5748	—	**153T-40**
40.48	1.5938	1-19/32	**153T-0119**
41.00	1.6142	—	**153T-41**
41.28	1.6250	1-5/8	**153T-0120**
42.00	1.6535	—	**153T-42**
42.07	1.6563	1-21/32	**153T-0121**
42.86	1.6875	1-11/16	**153T-0122**
43.00	1.6929	—	**153T-43**
43.66	1.7188	1-23/32	**153T-0123**
44.00	1.7323	—	**153T-44**
44.45	1.7500	1-3/4	**153T-0124**
45.00	1.7717	—	**153T-45**
45.25	1.7813	1-25/32	**153T-0125**
45.50	1.7913	—	**153T-45.5**
45.64	1.7970	—	**153T-1.797**
46.00	1.8110	—	**153T-46**
46.04	1.8125	1-13/16	**153T-0126**
46.83	1.8438	1-27/32	**153T-0127**
47.00	1.8504	—	**153T-47**
47.63	1.8750	1-7/8	**153T-0128**

A30: 113 - 139

Key on A30: 2



A30: 85 - 87



A30: 5 - 6



HI, HR, CR, SK, BR, CI, NC, WC, TC, CN, IN, NP, RN

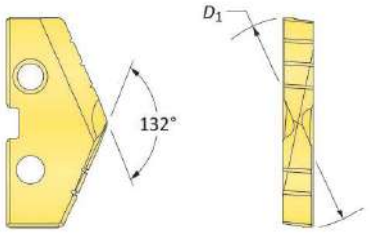
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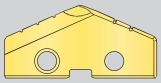
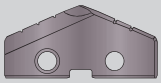
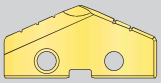
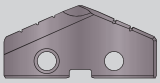
Inserts sold in quantities of 1.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

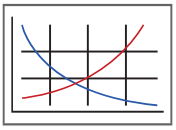
T-A® Drill Inserts





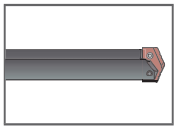
Insert			Carbide: P40 (C5)		Carbide: K20 (C2)	
			 Part No.	 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiN	TiAlN
35.72	1.4063	1-13/32	**1C53T-0113**	**1C53A-0113**	**1C23T-0113**	**1C23A-0113**
36.00	1.4173	—	**1C53T-36**	**1C53A-36**	**1C23T-36**	**1C23A-36**
36.51	1.4375	1-7/16	**1C53T-0114**	**1C53A-0114**	**1C23T-0114**	**1C23A-0114**
37.00	1.4567	—	**1C53T-37**	**1C53A-37**	**1C23T-37**	**1C23A-37**
37.31	1.4688	1-15/32	**1C53T-0115**	**1C53A-0115**	**1C23T-0115**	**1C23A-0115**
38.00	1.4961	—	**1C53T-38**	**1C53A-38**	**1C23T-38**	**1C23A-38**
38.10	1.5000	1-1/2	**1C53T-0116**	**1C53A-0116**	**1C23T-0116**	**1C23A-0116**
38.90	1.5313	1-17/32	**1C53T-0117**	**1C53A-0117**	**1C23T-0117**	**1C23A-0117**
39.00	1.5354	—	**1C53T-39**	**1C53A-39**	**1C23T-39**	**1C23A-39**
39.29	1.5470	—	**1C53T-1.547**	**1C53A-1.547**	**1C23T-1.547**	**1C23A-1.547**
39.69	1.5625	1-9/16	**1C53T-0118**	**1C53A-0118**	**1C23T-0118**	**1C23A-0118**
40.00	1.5748	—	**1C53T-40**	**1C53A-40**	**1C23T-40**	**1C23A-40**
40.48	1.5938	1-19/32	**1C53T-0119**	**1C53A-0119**	**1C23T-0119**	**1C23A-0119**
41.00	1.6142	—	**1C53T-41**	**1C53A-41**	**1C23T-41**	**1C23A-41**
41.28	1.6250	1-5/8	**1C53T-0120**	**1C53A-0120**	**1C23T-0120**	**1C23A-0120**
42.00	1.6535	—	**1C53T-42**	**1C53A-42**	**1C23T-42**	**1C23A-42**
42.07	1.6563	1-21/32	**1C53T-0121**	**1C53A-0121**	**1C23T-0121**	**1C23A-0121**
42.86	1.6875	1-11/16	**1C53T-0122**	**1C53A-0122**	**1C23T-0122**	**1C23A-0122**
43.00	1.6929	—	**1C53T-43**	**1C53A-43**	**1C23T-43**	**1C23A-43**
43.66	1.7188	1-23/32	**1C53T-0123**	**1C53A-0123**	**1C23T-0123**	**1C23A-0123**
44.00	1.7323	—	**1C53T-44**	**1C53A-44**	**1C23T-44**	**1C23A-44**
44.45	1.7500	1-3/4	**1C53T-0124**	**1C53A-0124**	**1C23T-0124**	**1C23A-0124**
45.00	1.7717	—	**1C53T-45**	**1C53A-45**	**1C23T-45**	**1C23A-45**
45.25	1.7813	1-25/32	**1C53T-0125**	**1C53A-0125**	**1C23T-0125**	**1C23A-0125**
45.50	1.7913	—	**1C53T-45.5**	**1C53A-45.5**	**1C23T-45.5**	**1C23A-45.5**
45.64	1.7970	—	**1C53T-1.797**	**1C53A-1.797**	**1C23T-1.797**	**1C23A-1.797**
46.00	1.8110	—	**1C53T-46**	**1C53A-46**	**1C23T-46**	**1C23A-46**
46.04	1.8125	1-13/16	**1C53T-0126**	**1C53A-0126**	**1C23T-0126**	**1C23A-0126**
46.83	1.8438	1-27/32	**1C53T-0127**	**1C53A-0127**	**1C23T-0127**	**1C23A-0127**
47.00	1.8504	—	**1C53T-47**	**1C53A-47**	**1C23T-47**	**1C23A-47**
47.63	1.8750	1-7/8	**1C53T-0128**	**1C53A-0128**	**1C23T-0128**	**1C23A-0128**

A30: 113 - 139

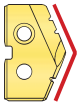


Key on A30: 2

A30: 85 - 87



A30: 5 - 6



HI, HR, CR, SK, NP, IN, RN, CN, BR, NC, WC, TC, BT

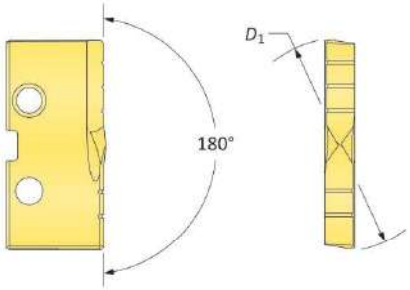
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

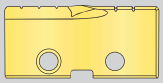
Inserts sold in quantities of 1.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

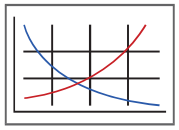
T-A® Drill Inserts





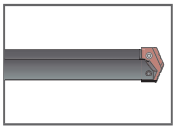
Insert			Flat Bottom Geometry HSS: Super Cobalt  Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN
35.72	1.4063	1-13/32	**153T-0113-FB**
36.00	1.4173	—	**153T-36-FB**
36.51	1.4375	1-7/16	**153T-0114-FB**
37.00	1.4567	—	**153T-37-FB**
37.31	1.4688	1-15/32	**153T-0115-FB**
38.00	1.4961	—	**153T-38-FB**
38.10	1.5000	1-1/2	**153T-0116-FB**
38.90	1.5313	1-17/32	**153T-0117-FB**
39.00	1.5354	—	**153T-39-FB**
39.29	1.5470	—	**153T-1.547-FB**
39.69	1.5625	1-9/16	**153T-0118-FB**
40.00	1.5748	—	**153T-40-FB**
40.48	1.5938	1-19/32	**153T-0119-FB**
41.00	1.6142	—	**153T-41-FB**
41.28	1.6250	1-5/8	**153T-0120-FB**
42.00	1.6535	—	**153T-42-FB**
42.07	1.6563	1-21/32	**153T-0121-FB**
42.86	1.6875	1-11/16	**153T-0122-FB**
43.00	1.6929	—	**153T-43-FB**
43.66	1.7188	1-23/32	**153T-0123-FB**
44.00	1.7323	—	**153T-44-FB**
44.45	1.7500	1-3/4	**153T-0124-FB**
45.00	1.7717	—	**153T-45-FB**
45.25	1.7813	1-25/32	**153T-0125-FB**
45.50	1.7913	—	**153T-45.5-FB**
45.64	1.7970	—	**153T-1.797-FB**
46.00	1.8110	—	**153T-46-FB**
46.04	1.8125	1-13/16	**153T-0126-FB**
46.83	1.8438	1-27/32	**153T-0127-FB**
47.00	1.8504	—	**153T-47-FB**
47.63	1.8750	1-7/8	**153T-0128-FB**

A30: 113 - 139

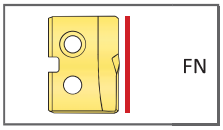


Key on A30: 2

A30: 85 - 87



A30: 5 - 6



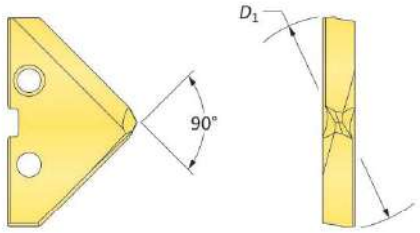
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

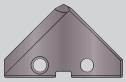
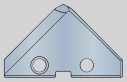
Inserts sold in quantities of 1.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A® Drill Inserts

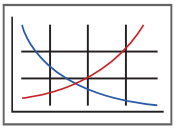




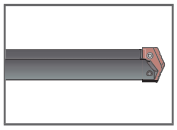
Insert			90° Spot & Chamfer Geometry		
			HSS: Super Cobalt		
			 Part No.	 Part No.	 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	TiAlN	TiCN
35.72	1.4063	1-13/32	**153T-0113-SP**	**153A-0113-SP**	**153N-0113-SP**
36.00	1.4173	—	**153T-36-SP**	**153A-36-SP**	**153N-36-SP**
36.51	1.4375	1-7/16	**153T-0114-SP**	**153A-0114-SP**	**153N-0114-SP**
37.00	1.4567	—	**153T-37-SP**	**153A-37-SP**	**153N-37-SP**
37.31	1.4688	1-15/32	**153T-0115-SP**	**153A-0115-SP**	**153N-0115-SP**
38.00	1.4961	—	**153T-38-SP**	**153A-38-SP**	**153N-38-SP**
38.10	1.5000	1-1/2	**153T-0116-SP**	**153A-0116-SP**	**153N-0116-SP**
38.90	1.5313	1-17/32	**153T-0117-SP**	**153A-0117-SP**	**153N-0117-SP**
39.00	1.5354	—	**153T-39-SP**	**153A-39-SP**	**153N-39-SP**
39.29	1.5470	—	**153T-1.547-SP**	**153A-1.547-SP**	**153N-1.547-SP**
39.69	1.5625	1-9/16	**153T-0118-SP**	**153A-0118-SP**	**153N-0118-SP**
40.00	1.5748	—	**153T-40-SP**	**153A-40-SP**	**153N-40-SP**
40.48	1.5938	1-19/32	**153T-0119-SP**	**153A-0119-SP**	**153N-0119-SP**
41.00	1.6142	—	**153T-41-SP**	**153A-41-SP**	**153N-41-SP**
41.28	1.6250	1-5/8	**153T-0120-SP**	**153A-0120-SP**	**153N-0120-SP**
42.00	1.6535	—	**153T-42-SP**	**153A-42-SP**	**153N-42-SP**
42.07	1.6563	1-21/32	**153T-0121-SP**	**153A-0121-SP**	**153N-0121-SP**
42.86	1.6875	1-11/16	**153T-0122-SP**	**153A-0122-SP**	**153N-0122-SP**
43.00	1.6929	—	**153T-43-SP**	**153A-43-SP**	**153N-43-SP**
43.66	1.7188	1-23/32	**153T-0123-SP**	**153A-0123-SP**	**153N-0123-SP**
44.00	1.7323	—	**153T-44-SP**	**153A-44-SP**	**153N-44-SP**
44.45	1.7500	1-3/4	**153T-0124-SP**	**153A-0124-SP**	**153N-0124-SP**
45.00	1.7717	—	**153T-45-SP**	**153A-45-SP**	**153N-45-SP**
45.25	1.7813	1-25/32	**153T-0125-SP**	**153A-0125-SP**	**153N-0125-SP**
45.50	1.7913	—	**153T-45.5-SP**	**153A-45.5-SP**	**153N-45.5-SP**
45.64	1.7970	—	**153T-1.797-SP**	**153A-1.797-SP**	**153N-1.797-SP**
46.00	1.8110	—	**153T-46-SP**	**153A-46-SP**	**153N-46-SP**
46.04	1.8125	1-13/16	**153T-0126-SP**	**153A-0126-SP**	**153N-0126-SP**
46.83	1.8438	1-27/32	**153T-0127-SP**	**153A-0127-SP**	**153N-0127-SP**
47.00	1.8504	—	**153T-47-SP**	**153A-47-SP**	**153N-47-SP**
47.63	1.8750	1-7/8	**153T-0128-SP**	**153A-0128-SP**	**153N-0128-SP**

A30: 113 - 139

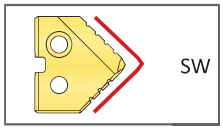
Key on A30: 2



A30: 85 - 87



A30: 5 - 6



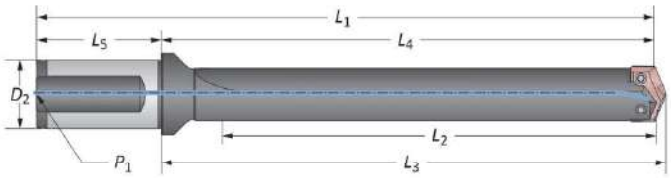
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 1.

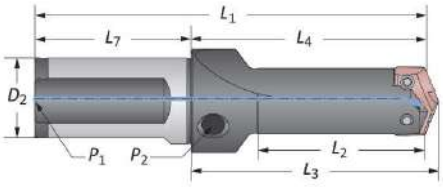
3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A® Drill Holders









Flange Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Stub	97.7	125.0	129.8	195.0	70.0	40	1/4 BSPT	**21030S-40FM**
	Short	114.6	173.1	177.8	243.1	70.0	40	1/4 BSPT	**22030S-40FM**
	Intermediate	159.1	217.5	222.3	287.5	70.0	40	1/4 BSPT	**23030S-40FM**
	Standard	203.5	262.0	266.7	332.0	70.0	40	1/4 BSPT	**24030S-40FM**
	Extended	343.2	401.7	406.4	471.7	70.0	40	1/4 BSPT	⚠ **25030S-40FM**
	XL	552.8	611.2	616.0	681.2	70.0	40	1/4 BSPT	⚠ **27030S-40FM**
	3XL	781.4	839.8	844.6	909.8	70.0	40	1/4 BSPT	⚠ **29030S-40FM**
Helical	Intermediate	185.7	217.5	222.3	287.5	70.0	40	1/4 BSPT	**23030H-40FM**
	Standard	230.2	262.0	266.7	332.0	70.0	40	1/4 BSPT	**24030H-40FM**
Straight	Stub	3.846	4.922	5.109	7.610	2.688	1-1/2	1/4 NPT	**21030S-150F**
	Short	4.512	6.813	7.000	9.501	2.688	1-1/2	1/4 NPT	**22030S-150F**
	Intermediate	6.262	8.563	8.750	11.251	2.688	1-1/2	1/4 NPT	**23030S-150F**
	Standard	8.012	10.313	10.500	13.001	2.688	1-1/2	1/4 NPT	**24030S-150F**
Helical	Intermediate	7.312	8.563	8.750	11.251	2.688	1-1/2	1/4 NPT	**23030H-150F**
	Standard	9.062	10.313	10.500	13.001	2.688	1-1/2	1/4 NPT	**24030H-150F**

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

Connection Accessories

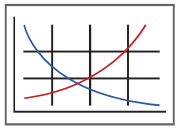
 Insert Screws	 Nylon Locking Screws	 Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

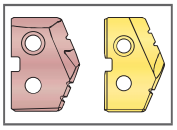
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

Key on A30: 2



A30: 79 - 84

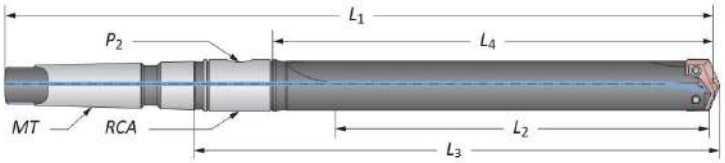


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A® Drill Holders





Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
m	Straight	Short	110.0	152.4	206.3	319.1	#4 MT ISO	1/4 BSPT	2T-4SRM	22030S-004M
		Extended	338.6	381.0	434.9	547.7	#4 MT ISO	1/4 BSPT	2T-4SRM	⚠ 25030S-004M
		XL	548.1	590.6	644.5	757.2	#4 MT ISO	1/4 BSPT	2T-4SRM	⚠ 27030S-004M
		3XL	776.7	819.2	873.1	985.8	#4 MT ISO	1/4 BSPT	2T-4SRM	⚠ 29030S-004M
	Helical	Intermediate	179.8	196.9	250.8	363.5	#4 MT ISO	1/4 BSPT	2T-4SRM	23030H-004M
		Standard	224.3	241.3	295.2	408.0	#4 MT ISO	1/4 BSPT	2T-4SRM	24030H-004M
i	Straight	Short	4.391	6.000	8.124	12.562	#4 MT	1/4 NPT	2T-4SR	22030S-004I
		Short	4.048	6.000	8.124	13.812	#5 MT	1/4 NPT	2T-5SR	22030S-005I
		Intermediate	6.141	7.750	9.874	14.312	#4 MT	1/4 NPT	2T-4SR	23030S-004I
		Standard	7.891	9.500	11.624	16.062	#4 MT	1/4 NPT	2T-4SR	24030S-004I
		Standard	7.548	9.500	11.624	17.312	#5 MT	1/4 NPT	2T-5SR	24030S-005I
		Extended	13.391	15.000	17.124	21.562	#4 MT	1/4 NPT	2T-4SR	⚠ 25030S-004I
		XL	21.641	23.250	25.374	29.812	#4 MT	1/4 NPT	2T-4SR	⚠ 27030S-004I
		3XL	30.641	32.250	34.374	38.812	#4 MT	1/4 NPT	2T-4SR	⚠ 29030S-004I

*MT ISO 296 type BEK.

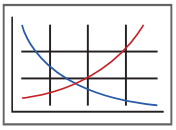
Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

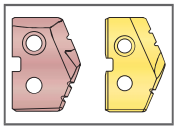
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

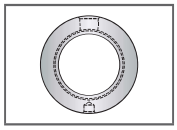


Key on A30: 2

A30: 79 - 84



A30: 88 & 111

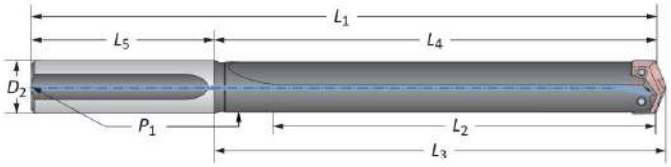


m = Metric (mm)
i = Imperial (in)
Screws sold in multiples of 10.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A® Drill Holders





Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	4.320	6.000	6.187	10.000	4.000	1-1/4	1/4 NPT	**22030S-125L**
	Short	3.838	6.000	6.187	10.000	4.000	1-1/2	1/4 NPT	**22030S-150L**
	Intermediate	5.798	7.750	7.937	11.750	4.000	1-1/2	1/4 NPT	**23030S-150L**
	Standard	7.820	9.500	9.687	13.500	4.000	1-1/4	1/4 NPT	**24030S-125L**
	Standard	7.548	9.500	9.687	13.500	4.000	1-1/2	1/4 NPT	**24030S-150L**
	Extended	13.320	15.000	15.187	19.000	4.000	1-1/4	1/4 NPT	⚠ **25030S-125L**
	XL	21.088	23.250	23.437	27.250	4.000	1-1/2	1/4 NPT	⚠ **27030S-150L**
	3XL	30.088	32.250	32.437	36.250	4.000	1-1/2	1/4 NPT	⚠ **29030S-150L**

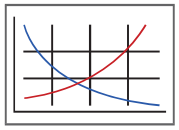
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

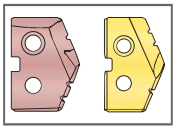
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 79 - 84

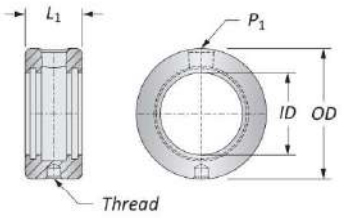


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

3 Series: 34.37 mm - 47.82 mm (1.3530" - 1.8829")

T-A Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings	
							Kit Part No.*	Replacements
m	31.8	63.5	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-4SRM	2T1-4SR	2T1-4OR-10
	44.5	76.2	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-5SRM	2T1-5SR	2T1-5OR-10
i	1.250	2.500	1.375	3/8" - 16	1/4 NPT	⚠ 2T-4SR	2T1-4SR	2T1-4OR-10
	1.750	3.000	1.375	3/8" - 16	1/4 NPT	⚠ 2T-5SR	2T1-5SR	2T1-5OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

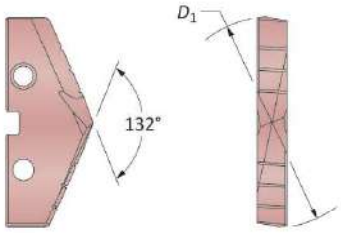
A30: 113 - 139
Key on A30: 2

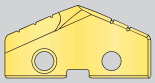
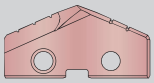
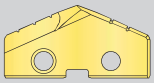
m = Metric (mm)
i = Imperial (in)
O-rings sold in packs of 10.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

GEN2 T-A® Drill Inserts

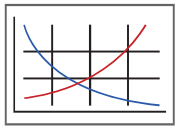




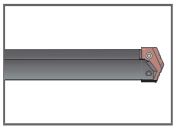
Insert			HSS: High-Speed Steel	HSS: Super Cobalt	
					
D_1 mm	D_1 inch	Fractional Equivalent	Part No. TiN	Part No. AM200®	Part No. TiN
48.00	1.8898	—	434T-48	454H-48	454T-48
48.42	1.9063	1-29/32	434T-0129	454H-0129	454T-0129
49.00	1.9291	—	434T-49	454H-49	454T-49
49.21	1.9375	1-15/16	434T-0130	454H-0130	454T-0130
50.00	1.9685	—	434T-50	454H-50	454T-50
50.01	1.9688	1-31/32	434T-0131	454H-0131	454T-0131
50.80	2.0000	2	434T-0200	454H-0200	454T-0200
51.00	2.0079	—	434T-51	454H-51	454T-51
51.60	2.0313	2-1/32	434T-0201	454H-0201	454T-0201
52.00	2.0472	2-3/64	434T-52	454H-52	454T-52
52.39	2.0625	2-1/16	434T-0202	454H-0202	454T-0202
53.00	2.0866	—	434T-53	454H-53	454T-53
53.18	2.0938	2-3/32	434T-0203	454H-0203	454T-0203
53.98	2.1250	2-1/8	434T-0204	454H-0204	454T-0204
54.00	2.1260	—	434T-54	454H-54	454T-54
54.77	2.1563	2-5/32	434T-0205	454H-0205	454T-0205
55.00	2.1654	—	434T-55	454H-55	454T-55
55.56	2.1875	2-3/16	434T-0206	454H-0206	454T-0206
56.00	2.2047	—	434T-56	454H-56	454T-56
56.36	2.2188	2-7/32	434T-0207	454H-0207	454T-0207
57.00	2.2441	—	434T-57	454H-57	454T-57
57.15	2.2500	2-1/4	434T-0208	454H-0208	454T-0208
57.95	2.2813	2-9/32	434T-0209	454H-0209	454T-0209
58.00	2.2835	—	434T-58	454H-58	454T-58
58.74	2.3125	2-5/16	434T-0210	454H-0210	454T-0210
59.00	2.3228	—	434T-59	454H-59	454T-59
59.53	2.3438	2-11/32	434T-0211	454H-0211	454T-0211
60.00	2.3622	—	434T-60	454H-60	454T-60
60.33	2.3750	2-3/8	434T-0212	454H-0212	454T-0212
61.00	2.4016	—	434T-61	454H-61	454T-61
61.12	2.4063	2-13/32	434T-0213	454H-0213	454T-0213
61.91	2.4375	2-7/16	434T-0214	454H-0214	454T-0214
62.00	2.4409	—	434T-62	454H-62	454T-62
62.71	2.4688	2-15/32	434T-0215	454H-0215	454T-0215
63.00	2.4803	—	434T-63	454H-63	454T-63
63.50	2.5000	2-1/2	434T-0216	454H-0216	454T-0216
64.00	2.5197	—	434T-64	454H-64	454T-64
64.30	2.5313	2-17/32	434T-0217	454H-0217	454T-0217
65.00	2.5591	—	434T-65	454H-65	454T-65
65.09	2.5625	2-9/16	434T-0218	454H-0218	454T-0218

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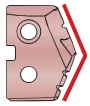
Key on A30: 2



A30: 93 - 95



A30: 5 - 6



HE, HI, HR, CR, SK, BR, CI, NC, WC

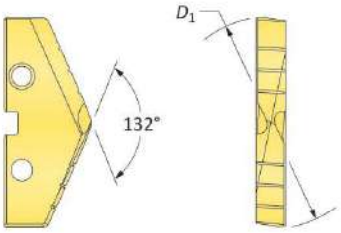
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

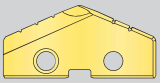
Inserts sold in quantities of 1.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A® Drill Inserts

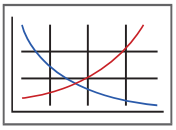




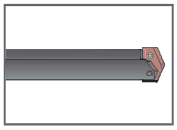
Insert			HSS: Super Cobalt
			 Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN
48.00	1.8898	—	**154T-48**
48.42	1.9063	1-29/32	**154T-0129**
49.00	1.9291	—	**154T-49**
49.21	1.9375	1-15/16	**154T-0130**
50.00	1.9685	—	**154T-50**
50.01	1.9688	1-31/32	**154T-0131**
50.80	2.0000	2	**154T-0200**
51.00	2.0079	—	**154T-51**
51.60	2.0313	2-1/32	**154T-0201**
52.00	2.0472	2-3/64	**154T-52**
52.39	2.0625	2-1/16	**154T-0202**
53.00	2.0866	—	**154T-53**
53.18	2.0938	2-3/32	**154T-0203**
53.98	2.1250	2-1/8	**154T-0204**
54.00	2.1260	—	**154T-54**
54.77	2.1563	2-5/32	**154T-0205**
55.00	2.1654	—	**154T-55**
55.56	2.1875	2-3/16	**154T-0206**
56.00	2.2047	—	**154T-56**
56.36	2.2188	2-7/32	**154T-0207**
57.00	2.2441	—	**154T-57**
57.15	2.2500	2-1/4	**154T-0208**
57.95	2.2813	2-9/32	**154T-0209**
58.00	2.2835	—	**154T-58**
58.74	2.3125	2-5/16	**154T-0210**
59.00	2.3228	—	**154T-59**
59.53	2.3438	2-11/32	**154T-0211**
60.00	2.3622	—	**154T-60**
60.33	2.3750	2-3/8	**154T-0212**
61.00	2.4016	—	**154T-61**
61.12	2.4063	2-13/32	**154T-0213**
61.91	2.4375	2-7/16	**154T-0214**
62.00	2.4409	—	**154T-62**
62.71	2.4688	2-15/32	**154T-0215**
63.00	2.4803	—	**154T-63**
63.50	2.5000	2-1/2	**154T-0216**
64.00	2.5197	—	**154T-64**
64.30	2.5313	2-17/32	**154T-0217**
65.00	2.5591	—	**154T-65**
65.09	2.5625	2-9/16	**154T-0218**

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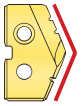
Key on A30: 2



A30: 93 - 95



A30: 5 - 6



HI, HR, CR, SK,
BR, CI, NC, WC, TC

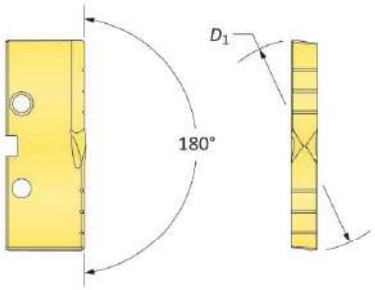
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

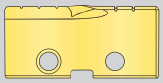
Inserts sold in quantities of 1.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A® Drill Inserts

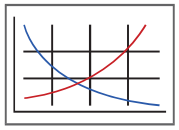




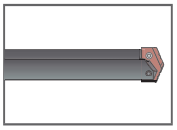
Insert			Flat Bottom Geometry HSS: Super Cobalt  Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN
48.00	1.8898	—	**154T-48-FB**
48.42	1.9063	1-29/32	**154T-0129-FB**
49.00	1.9291	—	**154T-49-FB**
49.21	1.9375	1-15/16	**154T-0130-FB**
50.00	1.9685	—	**154T-50-FB**
50.01	1.9688	1-31/32	**154T-0131-FB**
50.80	2.0000	2	**154T-0200-FB**
51.00	2.0079	—	**154T-51-FB**
51.60	2.0313	2-1/32	**154T-0201-FB**
52.00	2.0472	2-3/64	**154T-52-FB**
52.39	2.0625	2-1/16	**154T-0202-FB**
53.00	2.0866	—	**154T-53-FB**
53.18	2.0938	2-3/32	**154T-0203-FB**
53.98	2.1250	2-1/8	**154T-0204-FB**
54.00	2.1260	—	**154T-54-FB**
54.77	2.1563	2-5/32	**154T-0205-FB**
55.00	2.1654	—	**154T-55-FB**
55.56	2.1875	2-3/16	**154T-0206-FB**
56.00	2.2047	—	**154T-56-FB**
56.36	2.2188	2-7/32	**154T-0207-FB**
57.00	2.2441	—	**154T-57-FB**
57.15	2.2500	2-1/4	**154T-0208-FB**
57.95	2.2813	2-9/32	**154T-0209-FB**
58.00	2.2835	—	**154T-58-FB**
58.74	2.3125	2-5/16	**154T-0210-FB**
59.00	2.3228	—	**154T-59-FB**
59.53	2.3438	2-11/32	**154T-0211-FB**
60.00	2.3622	—	**154T-60-FB**
60.33	2.3750	2-3/8	**154T-0212-FB**
61.00	2.4016	—	**154T-61-FB**
61.12	2.4063	2-13/32	**154T-0213-FB**
61.91	2.4375	2-7/16	**154T-0214-FB**
62.00	2.4409	—	**154T-62-FB**
62.71	2.4688	2-15/32	**154T-0215-FB**
63.00	2.4803	—	**154T-63-FB**
63.50	2.5000	2-1/2	**154T-0216-FB**
64.00	2.5197	—	**154T-64-FB**
64.30	2.5313	2-17/32	**154T-0217-FB**
65.00	2.5591	—	**154T-65-FB**
65.09	2.5625	2-9/16	**154T-0218-FB**

A30: 113 - 139

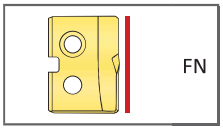
Key on A30: 2



A30: 93 - 95



A30: 5 - 6



Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

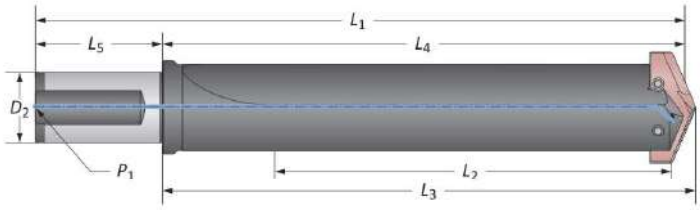
Inserts sold in quantities of 1.

Notes

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A® Drill Holders





Flange Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
m	Straight	Short	121.9	179.4	184.2	249.4	70.0	40	1/4 BSPT	**22040S-40FM**
		Standard	223.5	281.0	285.8	351.0	70.0	40	1/4 BSPT	**24040S-40FM**
		Extended	414.0	471.5	476.3	541.5	70.0	40	1/4 BSPT	⚠ **25040S-40FM**
		XL	617.2	674.7	679.5	744.7	70.0	40	1/4 BSPT	⚠ **27040S-40FM**
		3XL	871.2	928.7	933.5	998.7	70.0	40	1/4 BSPT	⚠ **29040S-40FM**
	Helical	Standard	252.7	281.0	285.8	351.0	70.0	40	1/4 BSPT	**24040H-40FM**
i	Straight	Short	4.798	7.063	7.250	9.751	2.688	1-1/2	1/4 NPT	**22040S-150F**
		Standard	8.798	11.063	11.250	13.751	2.688	1-1/2	1/4 NPT	**24040S-150F**
	Helical	Standard	9.949	11.063	11.250	13.751	2.688	1-1/2	1/4 NPT	**24040H-150F**

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

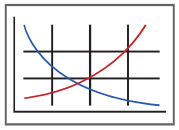
Connection Accessories

Insert Screws	Nylon Locking Screws	Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

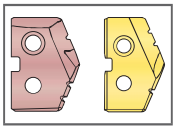
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 89 - 91

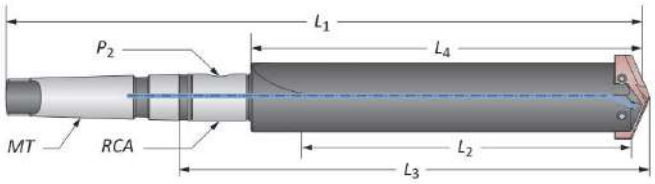


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A® Drill Holders





Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
ⓜ	Straight	Short	117.3	165.1	219.0	363.5	#5 MT ISO	1/4 BSPT	2T-5SRM	**22040S-005M**
		Extended	409.4	457.2	511.1	655.6	#5 MT ISO	1/4 BSPT	2T-5SRM	⚠ **25040S-005M**
		XL	622.1	660.4	714.3	858.8	#5 MT ISO	1/4 BSPT	2T-5SRM	⚠ **27040S-005M**
		3XL	876.1	914.4	968.3	1112.8	#5 MT ISO	1/4 BSPT	2T-5SRM	⚠ **29040S-005M**
	Helical	Standard	246.3	266.7	320.6	465.1	#5 MT ISO	1/4 BSPT	2T-5SRM	**24040H-005M**
ⓘ	Straight	Short	5.139	6.500	8.624	13.062	#4 MT	1/4 NPT	2T-4SR	**22040S-004I**
		Short	4.537	6.500	8.624	14.312	#5 MT	1/4 NPT	2T-5SR	**22040S-005I**
		Standard	9.139	10.500	12.624	17.062	#4 MT	1/4 NPT	2T-4SR	**24040S-004I**
		Standard	8.537	10.500	12.624	18.312	#5 MT	1/4 NPT	2T-5SR	**24040S-005I**
		Extended	16.037	18.000	20.124	25.812	#5 MT	1/4 NPT	2T-5SR	⚠ **25040S-005I**
		XL	24.037	26.000	28.124	33.812	#5 MT	1/4 NPT	2T-5SR	⚠ **27040S-005I**
		3XL	34.037	36.000	38.124	43.812	#5 MT	1/4 NPT	2T-5SR	⚠ **29040S-005I**

*MT ISO 296 type BEK.

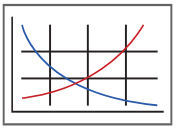
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

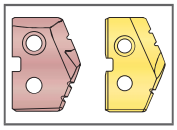
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

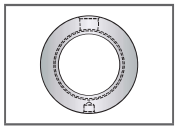


Key on A30: 2

A30: 89 - 91



A30: 96 & 111

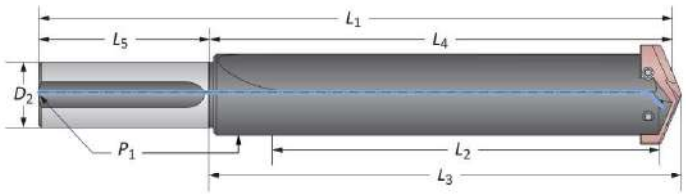


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A® Drill Holders

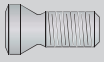
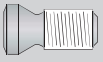
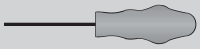




Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	4.320	6.000	6.187	10.000	4.000	1-1/4	1/4 NPT	**22030S-125L**
	Short	3.838	6.000	6.187	10.000	4.000	1-1/2	1/4 NPT	**22030S-150L**
	Intermediate	5.798	7.750	7.937	11.750	4.000	1-1/2	1/4 NPT	**23030S-150L**
	Standard	7.820	9.500	9.687	13.500	4.000	1-1/4	1/4 NPT	**24030S-125L**
	Standard	7.548	9.500	9.687	13.500	4.000	1-1/2	1/4 NPT	**24030S-150L**
	Extended	13.320	15.000	15.187	19.000	4.000	1-1/4	1/4 NPT	⚠ **25030S-125L**
	XL	21.088	23.250	23.437	27.250	4.000	1-1/2	1/4 NPT	⚠ **27030S-150L**
	3XL	30.088	32.250	32.437	36.250	4.000	1-1/2	1/4 NPT	⚠ **29030S-150L**

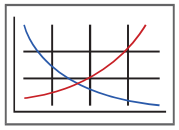
Connection Accessories

 Insert Screws	 Nylon Locking Screws	 Insert Driver	Admissible Tightening Torque*
7514-IP20-1	7514N-IP20-1	8IP-20	1370 N-cm (121.3 in-lbs)

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

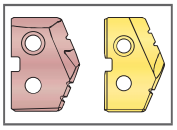
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 89 - 91

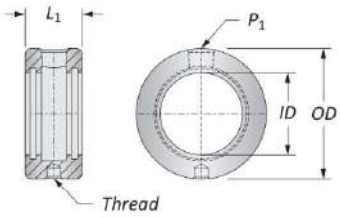


Ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

4 Series: 46.99 mm - 65.30 mm (1.8500" - 2.5709")

T-A Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings Kit Part No.*	RCA O-Rings Replacements
m	31.8	63.5	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-4SRM	2T1-4SR	2T1-4OR-10
	44.5	76.2	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-5SRM	2T1-5SR	2T1-5OR-10
i	1.250	2.500	1.375	3/8" - 16	1/4 NPT	⚠ 2T-4SR	2T1-4SR	2T1-4OR-10
	1.750	3.000	1.375	3/8" - 16	1/4 NPT	⚠ 2T-5SR	2T1-5SR	2T1-5OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information. 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.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139
Key on A30: 2

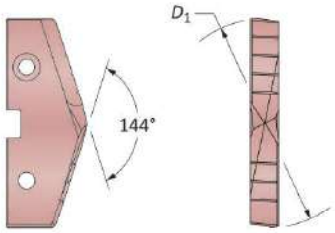
m = Metric (mm)
i = Imperial (in)
O-rings sold in packs of 10.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

5 Series Replaceable Inserts

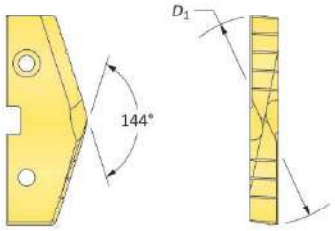


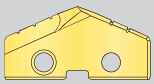
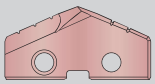
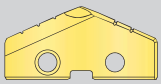
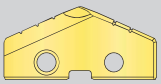
GEN2 T-A





T-A

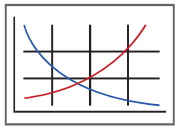


Insert			GEN2 T-A Inserts		T-A Inserts	
			HSS: High-Speed Steel	HSS: Super Cobalt	HSS: High-Speed Steel	HSS: Super Cobalt
						
			Part No.	Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	AM200®	TiN	TiN*
63.50	2.5000	2-1/2	435T-0216	455H-0216	135T-0216	155T-0216
64.00	2.5197	—	435T-64	455H-64	135T-64	155T-64
64.30	2.5313	2-17/32	435T-0217	455H-0217	135T-0217	155T-0217
65.09	2.5625	2-9/16	435T-0218	455H-0218	135T-0218	155T-0218
65.88	2.5938	2-19/32	435T-0219	455H-0219	135T-0219	155T-0219
66.00	2.5984	—	435T-66	455H-66	135T-66	155T-66
66.68	2.6250	2-5/8	435T-0220	455H-0220	135T-0220	155T-0220
67.47	2.6563	2-21/32	435T-0221	455H-0221	135T-0221	155T-0221
68.00	2.6772	—	435T-68	455H-68	135T-68	155T-68
68.26	2.6875	2-11/16	435T-0222	455H-0222	135T-0222	155T-0222
69.06	2.7188	2-23/32	435T-0223	455H-0223	135T-0223	155T-0223
69.85	2.7500	2-3/4	435T-0224	455H-0224	135T-0224	155T-0224
70.00	2.7559	—	435T-70	455H-70	135T-70	155T-70
70.65	2.7813	2-25/32	435T-0225	455H-0225	135T-0225	155T-0225
71.44	2.8125	2-13/16	435T-0226	455H-0226	135T-0226	155T-0226
72.00	2.8346	—	435T-72	455H-72	135T-72	155T-72
72.23	2.8438	2-27/32	435T-0227	455H-0227	135T-0227	155T-0227
73.03	2.8750	2-7/8	435T-0228	455H-0228	135T-0228	155T-0228
73.82	2.9063	2-29/32	435T-0229	455H-0229	135T-0229	155T-0229
74.00	2.9134	—	435T-74	455H-74	135T-74	155T-74
74.61	2.9375	2-15/16	435T-0230	455H-0230	135T-0230	155T-0230
75.41	2.9688	2-31/32	435T-0231	455H-0231	135T-0231	155T-0231
76.00	2.9921	—	435T-76	455H-76	135T-76	155T-76
76.20	3.0000	3	435T-0300	455H-0300	135T-0300	155T-0300

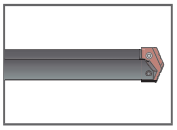
*Super cobalt T-A inserts with TiN are available as nonstocked standards. Process fees apply.

A30: 113 - 139

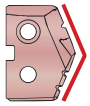
Key on A30: 2



A30: 99 - 101



A30: 5 - 6



GEN2 T-A:
HI, HR, CR, SK, BR, NC, WC

A30: 5 - 6



T-A:
DW, HI, HR, CR, SK, BR, NC, WC, TC

Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

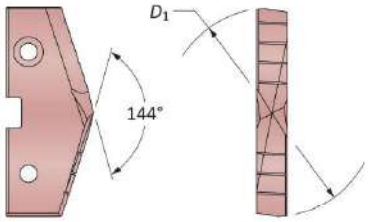
Inserts sold in quantities of 2.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

6 Series Replaceable Inserts
(for use with 5 series holders)

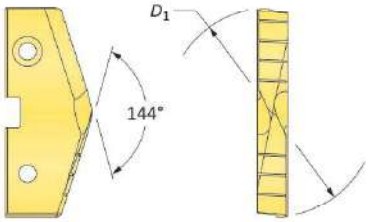


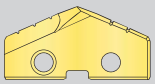
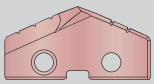
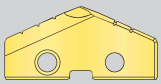
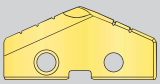
GEN2 T-A





T-A

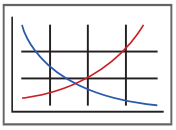


Insert			GEN2 T-A Inserts		T-A Inserts	
			HSS: High-Speed Steel	HSS: Super Cobalt	HSS: High-Speed Steel	HSS: Super Cobalt
						
			Part No.	Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	AM200®	TiN	TiN*
77.00	3.0313	3-1/32	436T-0301	456H-0301	136T-0301	156T-0301
77.79	3.0625	3-1/16	436T-0302	456H-0302	136T-0302	156T-0302
78.00	3.0709	—	436T-78	456H-78	136T-78	156T-78
78.58	3.0938	3-3/32	436T-0303	456H-0303	136T-0303	156T-0303
79.38	3.1250	3-1/8	436T-0304	456H-0304	136T-0304	156T-0304
80.00	3.1496	—	436T-80	456H-80	136T-80	156T-80
80.17	3.1563	3-5/32	436T-0305	456H-0305	136T-0305	156T-0305
80.96	3.1875	3-3/16	436T-0306	456H-0306	136T-0306	156T-0306
81.76	3.2188	3-7/32	436T-0307	456H-0307	136T-0307	156T-0307
82.00	3.2283	—	436T-82	456H-82	136T-82	156T-82
82.55	3.2500	3-1/4	436T-0308	456H-0308	136T-0308	156T-0308
83.35	3.2813	3-9/32	436T-0309	456H-0309	136T-0309	156T-0309
84.00	3.3071	—	436T-84	456H-84	136T-84	156T-84
84.14	3.3125	3-5/16	436T-0310	456H-0310	136T-0310	156T-0310
84.93	3.3438	3-11/32	436T-0311	456H-0311	136T-0311	156T-0311
85.73	3.3750	3-3/8	436T-0312	456H-0312	136T-0312	156T-0312
86.00	3.3858	—	436T-86	456H-86	136T-86	156T-86
86.52	3.4063	3-13/32	436T-0313	456H-0313	136T-0313	156T-0313
87.31	3.4375	3-7/16	436T-0314	456H-0314	136T-0314	156T-0314
88.00	3.4646	—	436T-88	456H-88	136T-88	156T-88
88.11	3.4688	3-15/32	436T-0315	456H-0315	136T-0315	156T-0315
88.90	3.5000	3-1/2	436T-0316	456H-0316	136T-0316	156T-0316

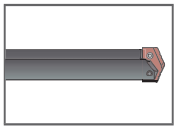
*Super cobalt T-A inserts with TiN are available as nonstocked standards. Process fees apply.

Key on A30: 2

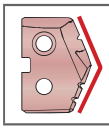
A30: 113 - 139



A30: 99 - 101

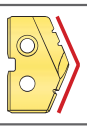


A30: 5 - 6



GEN2 T-A:
HI, HR, CR, SK, BR, NC, WC

A30: 5 - 6



T-A:
DW, HI, HR, CR, SK, BR, NC, WC, TC

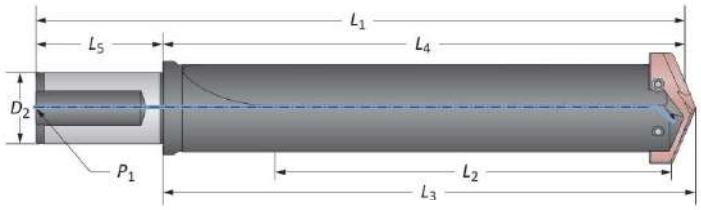
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

Inserts sold in quantities of 2.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

T-A® Drill Holders



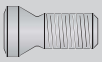
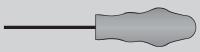


Flange Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	165.7	215.9	222.3	295.9	80.0	50	1/2 BSPT	**22050S-50FM**
Straight	Extended	457.8	508.0	514.4	588.0	80.0	50	1/2 BSPT	⚠ **25050S-50FM**
Helical	Standard	277.3	317.5	323.9	397.5	80.0	50	1/2 BSPT	**24050H-50FM**
Straight	Short	6.523	8.500	8.750	13.000	4.500	2	1/2 NPT	**22050S-200F**
Straight	Extended	18.023	20.000	20.250	24.500	4.500	2	1/2 NPT	⚠ **25050S-200F**
Helical	Standard	10.918	12.500	12.750	17.000	4.500	2	1/2 NPT	**24050H-200F**

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

Connection Accessories

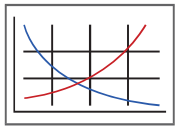
 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

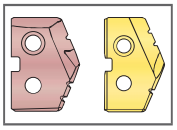
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

Key on A30: 2



A30: 97 - 98

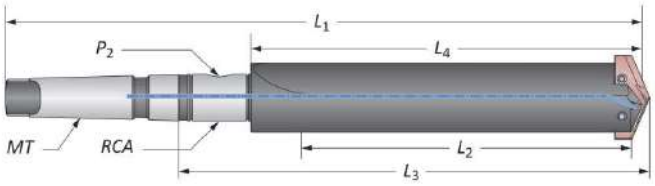


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

T-A® Drill Holders



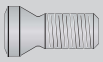
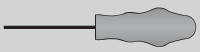


Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
ⓜ	Straight	Short	163.5	215.9	287.3	430.2	#5 MT ISO	1/2 BSPT	2T-6SRM	**22050S-005M**
		Extended	455.6	508.0	579.4	722.3	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **25050S-005M**
		XL	652.4	704.9	776.3	919.1	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **27050S-005M**
		3XL	881.0	933.5	1004.9	1147.7	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **29050S-005M**
	Helical	Standard	286.3	317.5	388.9	531.8	#5 MT ISO	1/2 BSPT	2T-6SRM	**24050H-005M**
ⓘ	Straight	Short	6.438	8.500	11.312	16.937	#5 MT	1/2 NPT	2T-6SR	**22050S-005I**
		Standard	10.438	12.500	15.312	20.937	#5 MT	1/2 NPT	2T-6SR	**24050S-005I**
		Extended	17.938	20.000	22.812	28.437	#5 MT	1/2 NPT	2T-6SR	⚠ **25050S-005I**
		XL	25.688	27.750	30.562	36.187	#5 MT	1/2 NPT	2T-6SR	⚠ **27050S-005I**
		3XL	34.688	36.750	39.562	45.187	#5 MT	1/2 NPT	2T-6SR	⚠ **29050S-005I**

*MT ISO 296 type BEK.

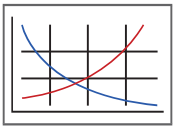
Connection Accessories

 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

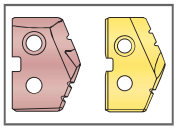
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

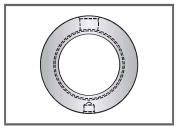


Key on A30: 2

A30: 97 - 98



A30: 102 & 111

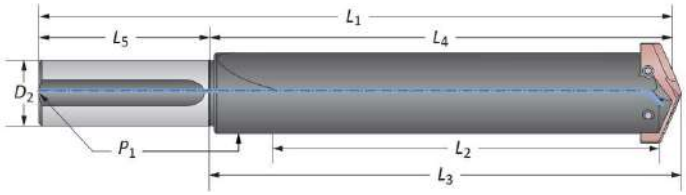


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

T-A® Drill Holders

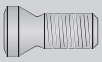
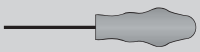




Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	6.353	8.500	8.750	12.500	4.000	2	1/2 NPT	**22050S-200L**
	Standard	10.353	12.500	12.750	16.500	4.000	2	1/2 NPT	**24050S-200L**
	Extended	17.850	20.000	20.250	24.000	4.000	2	1/2 NPT	⚠ **25050S-200L**
	XL	25.603	27.750	28.000	31.750	4.000	2	1/2 NPT	⚠ **27050S-200L**
	3XL	34.603	36.750	37.000	40.750	4.000	2	1/2 NPT	⚠ **29050S-200L**

Connection Accessories

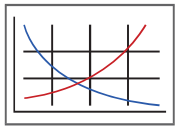
 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

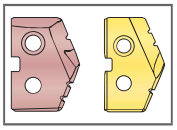
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

Key on A30: 2



A30: 97 - 98

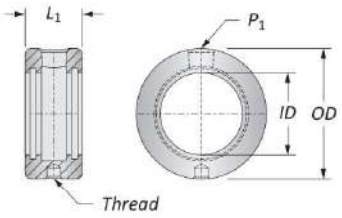


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

5/6 Series: 62.38 mm - 89.09 mm (2.4560" - 3.5079")

T-A Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings	
							Kit Part No.*	Replacements
m	57.2	95.3	44.5	M10 x 1.50	1/2 BSPT	⚠ 2T-6SRM	2T1-6SR	2T1-6OR-10
i	2.250	3.750	1.750	1/2" - 13	1/2 NPT	⚠ 2T-6SR	2T1-6SR	2T1-6OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

A30

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139
Key on A30: 2

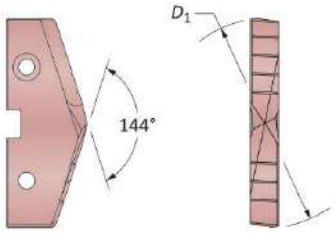
m = Metric (mm)
i = Imperial (in)
O-rings sold in packs of 10.

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

7 Series Replaceable Inserts

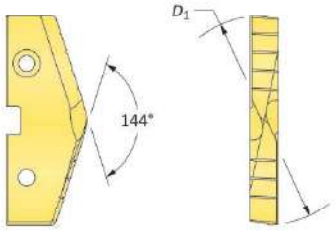


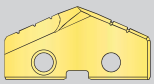
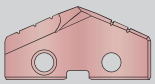
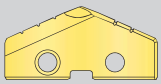
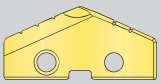
GEN2 T-A





T-A

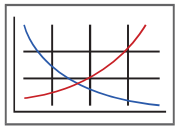


Insert			GEN2 T-A Inserts		T-A Inserts	
			HSS: High-Speed Steel	HSS: Super Cobalt	HSS: High-Speed Steel	HSS: Super Cobalt
						
			Part No.	Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	AM200®	TiN	TiN*
89.70	3.5313	3-17/32	**437T-0317**	**457H-0317**	**137T-0317**	**157T-0317**
90.00	3.5433	—	**437T-90**	**457H-90**	**137T-90**	**157T-90**
90.49	3.5625	3-9/16	**437T-0318**	**457H-0318**	**137T-0318**	**157T-0318**
91.28	3.5938	3-19/32	**437T-0319**	**457H-0319**	**137T-0319**	**157T-0319**
92.00	3.6220	—	**437T-92**	**457H-92**	**137T-92**	**157T-92**
92.08	3.6250	3-5/8	**437T-0320**	**457H-0320**	**137T-0320**	**157T-0320**
92.87	3.6563	3-21/32	**437T-0321**	**457H-0321**	**137T-0321**	**157T-0321**
93.66	3.6875	3-11/16	**437T-0322**	**457H-0322**	**137T-0322**	**157T-0322**
94.00	3.7008	—	**437T-94**	**457H-94**	**137T-94**	**157T-94**
94.46	3.7188	3-23/32	**437T-0323**	**457H-0323**	**137T-0323**	**157T-0323**
95.25	3.7500	3-3/4	**437T-0324**	**457H-0324**	**137T-0324**	**157T-0324**
96.00	3.7795	—	**437T-96**	**457H-96**	**137T-96**	**157T-96**
96.05	3.7813	3-25/32	**437T-0325**	**457H-0325**	**137T-0325**	**157T-0325**
96.84	3.8125	3-13/16	**437T-0326**	**457H-0326**	**137T-0326**	**157T-0326**
97.63	3.8438	3-27/32	**437T-0327**	**457H-0327**	**137T-0327**	**157T-0327**
98.00	3.8583	—	**437T-98**	**457H-98**	**137T-98**	**157T-98**
98.43	3.8750	3-7/8	**437T-0328**	**457H-0328**	**137T-0328**	**157T-0328**
99.22	3.9063	3-29/32	**437T-0329**	**457H-0329**	**137T-0329**	**157T-0329**
100.00	3.9370	—	**437T-100**	**457H-100**	**137T-100**	**157T-100**
100.01	3.9375	3-15/16	**437T-0330**	**457H-0330**	**137T-0330**	**157T-0330**
100.81	3.9688	3-31/32	**437T-0331**	**457H-0331**	**137T-0331**	**157T-0331**
101.60	4.0000	4	**437T-0400**	**457H-0400**	**137T-0400**	**157T-0400**

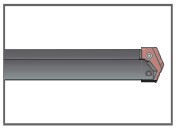
*Super cobalt T-A inserts with TiN are available as nonstocked standards. Process fees apply.

A30: 113 - 139

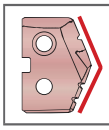
Key on A30: 2



A30: 107 - 109

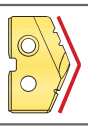


A30: 5 - 6



GEN2 T-A:
HI, HR, CR, SK, BR, NC, WC

A30: 5 - 6



T-A:
DW, HI, HR, CR, SK, BR, NC, WC, TC

Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

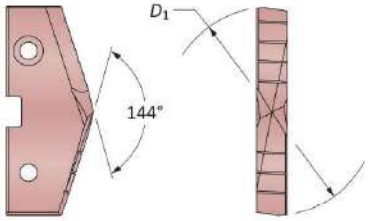
Inserts sold in quantities of 1.

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

8 Series Replaceable Inserts
(for use with 7 series holders)

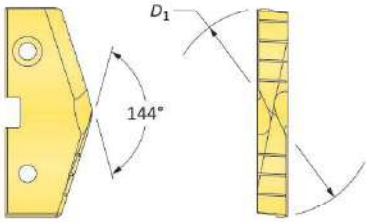


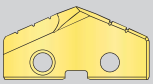
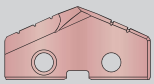
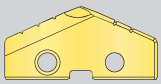
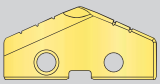
GEN2 T-A





T-A

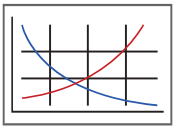


Insert			GEN2 T-A Inserts		T-A Inserts	
			HSS: High-Speed Steel	HSS: Super Cobalt	HSS: High-Speed Steel	HSS: Super Cobalt
						
			Part No.	Part No.	Part No.	Part No.
D_1 mm	D_1 inch	Fractional Equivalent	TiN	AM200®	TiN	TiN*
102.00	4.0157	4-1/64	**438T-102**	**458H-102**	**138T-102**	**158T-102**
103.19	4.0625	4-1/16	**438T-0402**	**458H-0402**	**138T-0402**	**158T-0402**
104.00	4.0945	—	**438T-104**	**458H-104**	**138T-104**	**158T-104**
104.78	4.1250	4-1/8	**438T-0404**	**458H-0404**	**138T-0404**	**158T-0404**
106.00	4.1732	—	**438T-106**	**458H-106**	**138T-106**	**158T-106**
106.36	4.1875	4-3/16	**438T-0406**	**458H-0406**	**138T-0406**	**158T-0406**
107.95	4.2500	4-1/4	**438T-0408**	**458H-0408**	**138T-0408**	**158T-0408**
108.00	4.2520	—	**438T-108**	**458H-108**	**138T-108**	**158T-108**
109.54	4.3125	4-5/16	**438T-0410**	**458H-0410**	**138T-0410**	**158T-0410**
110.00	4.3307	—	**438T-110**	**458H-110**	**138T-110**	**158T-110**
111.13	4.3750	4-3/8	**438T-0412**	**458H-0412**	**138T-0412**	**158T-0412**
112.00	4.4094	—	**438T-112**	**458H-112**	**138T-112**	**158T-112**
112.71	4.4375	4-7/16	**438T-0414**	**458H-0414**	**138T-0414**	**158T-0414**
114.00	4.4882	—	**438T-114**	**458H-114**	**138T-114**	**158T-114**
114.30	4.5000	4-1/2	**438T-0416**	**458H-0416**	**138T-0416**	**158T-0416**

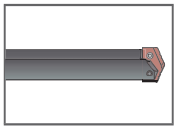
*Super cobalt T-A inserts with TiN are available as nonstocked standards. Process fees apply.

A30: 113 - 139

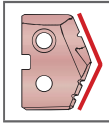
Key on A30: 2



A30: 107 - 109

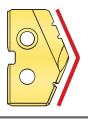


A30: 5 - 6



GEN2 T-A:
HI, HR, CR, SK, BR, NC, WC

A30: 5 - 6



T-A:
DW, HI, HR, CR, SK, BR, NC, WC, TC

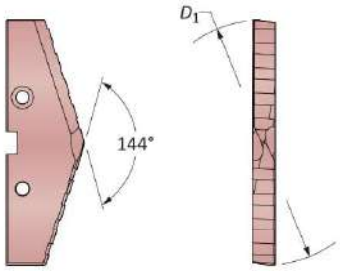
Coatings not listed above can be supplied as nonstocked standards. Process fees apply.

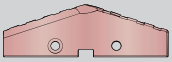
Inserts sold in quantities of 1.

Oversize: 110.00 mm - 152.40 mm (4.3307" - 6.0000")

8 Series Replaceable Inserts
(for use with 7 series holders)



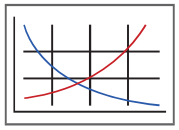


Insert			Double Wide Chip Splitter HSS: Super Cobalt  Part No.
D_1 mm	D_1 inch	Fractional Equivalent	AM200®
110.00	4.3307	—	**158H-110-DW**
114.30	4.5000	4-1/2	**158H-0416-DW**
115.00	4.5276	—	**158H-115-DW**
120.00	4.7244	—	**158H-120-DW**
120.65	4.7500	4-3/4	**158H-0424-DW**
125.00	4.9213	—	**158H-125-DW**
127.00	5.0000	5	**158H-0500-DW**
130.00	5.1181	—	**158H-130-DW**
133.35	5.2500	5-1/4	**158H-0508-DW**
135.00	5.3150	—	**158H-135-DW**
139.70	5.5000	5-1/2	**158H-0516-DW**
140.00	5.5118	—	**158H-140-DW**
145.00	5.7087	—	**158H-145-DW**
146.05	5.7500	5-3/4	**158H-0524-DW**
150.00	5.9055	—	**158H-150-DW**
152.40	6.0000	6	**158H-0600-DW**

Diameters available up to 200.00 mm (7.8740") upon request.
NOTE: 120.00 mm (4.7244") maximum for stainless steel applications.

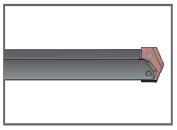
Minimum order quantity of 1.

A30: 113 - 139



Key on A30: 2

A30: 107 - 109



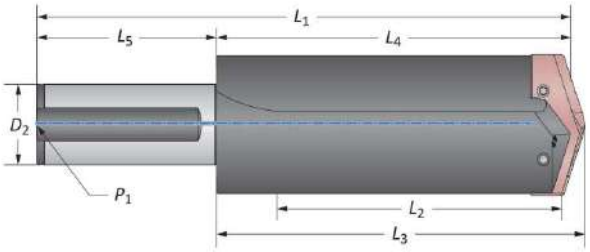
Inserts sold in quantities of 1.

Notes

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

T-A® Drill Holders



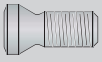
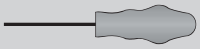


Flange Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
m	Straight	Short	178.9	225.4	231.8	305.4	80.0	50	1/2 BSPT	**22070S-50FM**
m	Straight	Extended	558.4	606.9	613.3	686.9	80.0	50	1/2 BSPT	⚠ **25070S-50FM**
m	Helical	Standard	283.5	327.0	333.4	407.0	80.0	50	1/2 BSPT	**24070H-50FM**
i	Straight	Short	6.042	8.875	9.125	13.375	4.500	2	1/2 NPT	**22070S-200F**
i	Straight	Extended	21.986	23.894	24.144	28.394	4.500	2	1/2 NPT	⚠ **25070S-200F**
i	Helical	Standard	11.161	12.875	13.125	17.375	4.500	2	1/2 NPT	**24070H-200F**

NOTE: Stub length holders have a 3.175 mm (1/8") side pipe tap (P_2).

Connection Accessories

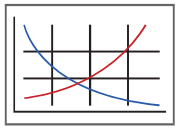
 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

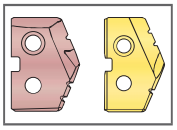
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

Key on A30: 2



A30: 103 - 105

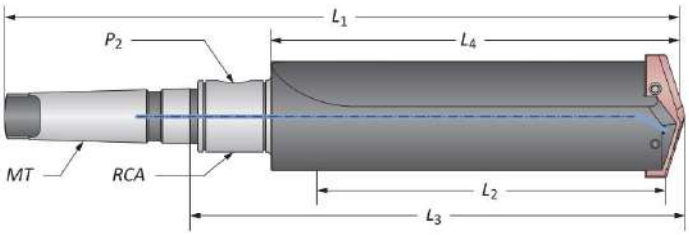


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

T-A® Drill Holders



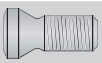
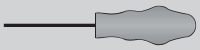


Taper Shank Holders

	Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank MT*	Shank P_2	Shank RCA	Part No.
ⓜ	Straight	Short	177.2	225.4	296.8	439.7	#5 MT ISO	1/2 BSPT	2T-6SRM	**22070S-005M**
		Extended	561.3	609.6	681.0	823.9	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **25070S-005M**
		XL	691.5	739.8	811.2	954.1	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **27070S-005M**
		3XL	945.5	993.8	1065.2	1208.1	#5 MT ISO	1/2 BSPT	2T-6SRM	⚠ **29070S-005M**
	Helical	Standard	290.5	327.0	398.4	541.3	#5 MT ISO	1/2 BSPT	2T-6SRM	**24070H-005M**
ⓘ	Straight	Short	6.979	8.875	11.687	17.312	#5 MT	1/2 NPT	2T-6SR	**22070S-005I**
		Standard	10.979	12.875	15.687	21.312	#5 MT	1/2 NPT	2T-6SR	**24070S-005I**
		Extended	22.104	24.000	26.812	32.437	#5 MT	1/2 NPT	2T-6SR	⚠ **25070S-005I**
		XL	27.229	29.125	31.937	37.562	#5 MT	1/2 NPT	2T-6SR	⚠ **27070S-005I**
		3XL	37.229	39.125	41.937	47.562	#5 MT	1/2 NPT	2T-6SR	⚠ **29070S-005I**

*MT ISO 296 type BEK.

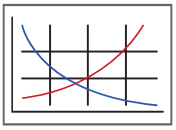
Connection Accessories

 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

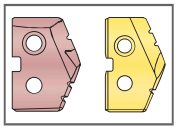
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139

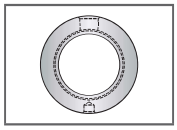


Key on A30: 2

A30: 103 - 105



A30: 108 & 111

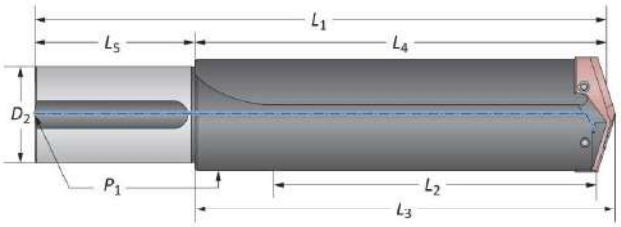


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

T-A® Drill Holders

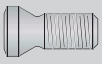
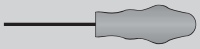




Straight Shank Holders

Flute	Length	Body L_2	Body L_4	Body L_3	Body L_1	Shank L_5	Shank D_2	Shank P_1	Part No.
Straight	Short	6.217	8.875	9.125	13.875	5.000	3	1/2 NPT	22070S-300L
	Standard	10.217	12.875	13.125	17.875	5.000	3	1/2 NPT	24070S-300L
	Extended	21.342	24.000	24.250	29.000	5.000	3	1/2 NPT	⚠ 25070S-300L
	XL	26.467	29.125	29.375	34.125	5.000	3	1/2 NPT	⚠ 27070S-300L
	3XL	36.467	39.125	39.375	44.125	5.000	3	1/2 NPT	⚠ 29070S-300L

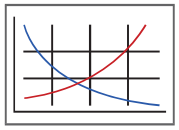
Connection Accessories

 Insert Screws	 Insert Driver	Admissible Tightening Torque*
7619-IP25-1	8IP-25	1750 N-cm (155.0 in-lbs)

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

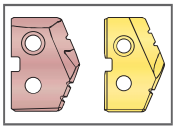
⚠ WARNING Refer to Speed and Feed charts for recommended adjustments to speeds and feeds. Refer to page **A30: 146** for deep hole drilling guidelines in this section of the catalog. Visit ***www.alliedmachine.com/DeepHoleGuidelines*** for the most up-to-date information and procedures. Factory technical assistance is available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com.**

A30: 113 - 139



Key on A30: 2

A30: 103 - 105

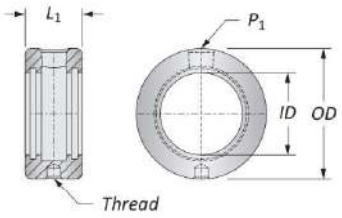


ⓜ = Metric (mm)
ⓘ = Imperial (in)
Screws sold in multiples of 10.

7/8 Series: 89.10 mm - 114.48 mm (3.5080" - 4.5070")

T-A Drill Accessories





Rotary Coolant Adapter (RCA) and Accessories

	ID	*OD*	L_1	Driving Rod Thread	P_1	Part No.	RCA O-Rings	
							Kit Part No.*	Replacements
ⓜ	57.2	95.3	44.5	M10 x 1.50	1/2 BSPT	⚠ **2T-6SRM**	2T1-6SR	2T1-6OR-10
ⓘ	2.250	3.750	1.750	1/2" - 13	1/2 NPT	⚠ **2T-6SR**	2T1-6SR	2T1-6OR-10

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

⚠ Refer to page A30: 111 for proper RCA assembly and safety information.

⚠ 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 through our Application Engineering department: **appeng@alliedmachine.com**

A30: 113 - 139

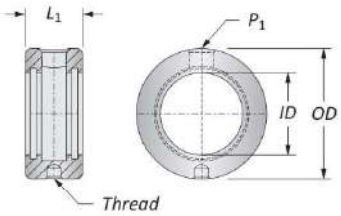
Key on A30: 2

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

Rotary Coolant Adapters (RCA)

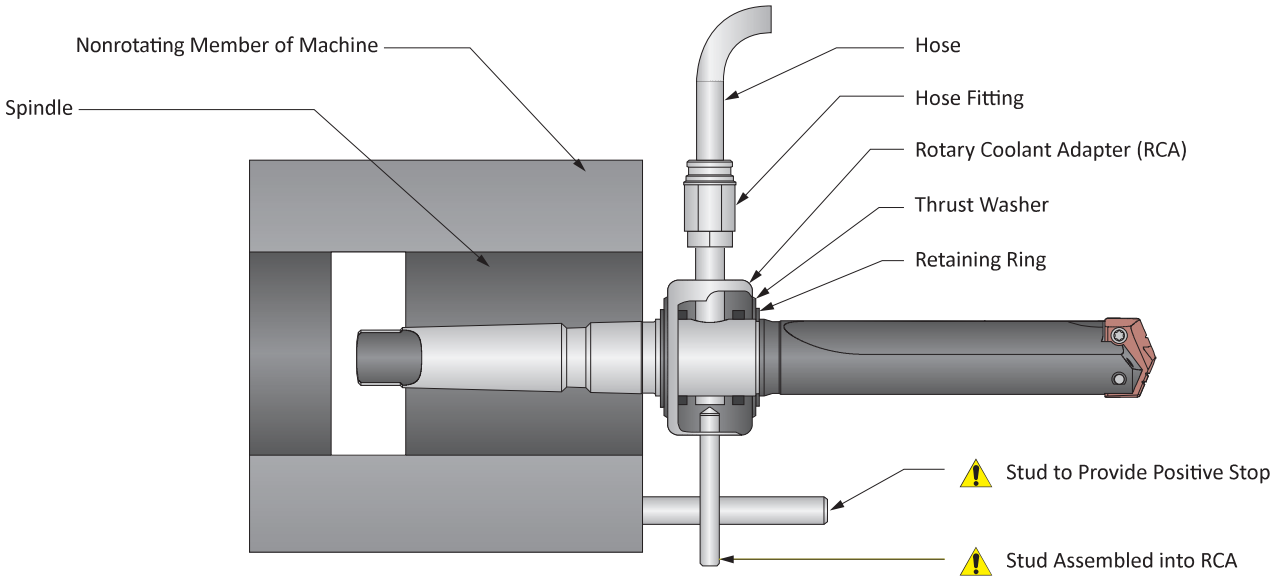
Morse Taper Shanks





	Holder Series	ID	OD	L_1	Driving Rod Thread	P_1	Part No.	Max Recommended RPM	RCA O-Rings Kit Part No.*	RCA O-Rings Replacements
	Y, Z, 0	0.750	1.750	0.875	5/16" - 18	1/8 NPT	⚠ 2T-2SR	3500	2T1-2SR	2T1-2OR-10
	1, 2	1.000	2.125	1.125	5/16" - 18	1/8 NPT	⚠ 2T-3SR	2500	2T1-3SR	2T1-3OR-10
(i)	2, 3, 4	1.250	2.500	1.375	3/8" - 16	1/4 NPT	⚠ 2T-4SR	2000	2T1-4SR	2T1-4OR-10
	3, 4	1.750	3.000	1.375	3/8" - 16	1/4 NPT	⚠ 2T-5SR	1500	2T1-5SR	2T1-5OR-10
	5, 7	2.250	3.750	1.750	1/2" - 13	1/2 NPT	⚠ 2T-6SR	1100	2T1-6SR	2T1-6OR-10
	Y, Z, 0	19.1	44.5	22.2	M8 x 1.25	1/8 BSPT	⚠ 2T-2SRM	3500	2T1-2SR	2T1-2OR-10
	1, 2	25.4	54.0	28.6	M8 x 1.25	1/8 BSPT	⚠ 2T-3SRM	2500	2T1-3SR	2T1-3OR-10
(m)	2, 3, 4	31.8	63.5	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-4SRM	2000	2T1-4SR	2T1-4OR-10
	3, 4	44.5	76.2	34.9	M10 x 1.50	1/4 BSPT	⚠ 2T-5SRM	1500	2T1-5SR	2T1-5OR-10
	5, 7	57.2	95.3	44.5	M10 x 1.50	1/2 BSPT	⚠ 2T-6SRM	1100	2T1-6SR	2T1-6OR-10

*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.

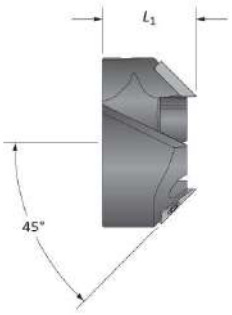


⚠ WARNING RCA rotation during drilling can cause hose and/or hose fitting failure, machinery damage, and/or serious injury. To prevent, use RCA and positive stop studs when drilling. Factory technical assistance is also available for your specific applications through our Application Engineering department: **appeng@alliedmachine.com**

T-ACR 45 Chamfer Rings

Straight Flute Holders







Holder Series	D_1 Range	Chamfer Ring D_4	Chamfer Ring L_1	Part No.	Insert Part No.	Insert Screw	Insert Driver	Clamping Screw	Insert Driver
0	0.5118 - 0.6890	1.148	0.676	**T-ACR-45-0**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7375-IP9-1	8IP-9
1	0.6900 - 0.8540	1.330	0.797	**T-ACR-45-1**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7495-IP15-1	8IP-15
1.5	0.8540 - 0.9600	1.493	0.891	**T-ACR-45-1.5**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7495-IP15-1	8IP-15
2	0.9610 - 1.3800	1.598	1.000	**T-ACR-45-2**	T-ACRI-45-B-C5A	7255-IP8-1	8IP-8	7514-IP20-1	8IP-20



Highlights and Other Information

- Produces a 45° chamfer only.
- Clamping screw allows for setting at any length along the flute.
- Double effective cutting with face mounted inserts provides increased feed rates and greater insert strength.
- The ring is balanced to match the holder center of gravity to ensure stability.
- Inserts only available in C5 carbide and TiAlN coating.
- Ideal for short-run or time-sensitive jobs that require quick delivery.







IMPORTANT: T-A chamfer rings can only be used with straight flute T-A holders.

Inserts sold in quantities of 2.
Screws sold in quantities of 10.

Recommended Drilling Data | Metric (mm)

GEN2 T-A | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (m/min) TiN	Speed (m/min) AM200®	Feed Rate (mm/rev) by Diameter Y/Z Series 9.50 mm - 12.97 mm	Feed Rate (mm/rev) by Diameter 0 Series 12.98 mm - 17.67 mm
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	61	99	0.20	0.30
		150 - 200	HSS	55	91	0.18	0.28
		200 - 250	HSS	49	85	0.15	0.25
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	52	88	0.20 ❖	0.25
		125 - 175	HSS	49	83	0.18 ❖	0.25
		175 - 225	HSS	46	79	0.15 ❖	0.23
		225 - 275	HSS	43	73	0.13 ❖	0.23
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	49	83	0.18	0.25
		175 - 225	HSS	46	79	0.15	0.23
		225 - 275	HSS	43	73	0.15	0.23
		275 - 325	SC, PC	40	68	0.13	0.20
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	46	73	0.18	0.25
		175 - 225	HSS	43	68	0.15	0.23
		225 - 275	HSS	40	64	0.15	0.23
		275 - 325	SC, PC	37	59	0.13	0.20
		325 - 375	SC, PC	34	54	0.10	0.18
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC, PC	24	38	0.15 ❖	0.23
		300 - 350	SC, PC	18	30	0.13 ❖	0.20
		350 - 400	PC	15	24	0.10 ❖	0.18
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	43	71	0.20 ❖	0.28
		150 - 250	HSS	37	57	0.15 ❖	0.25
		250 - 350	SC, PC	30	48	0.13 ❖	0.23
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	24	38	0.10	0.18
		200 - 250	SC, PC	18	32	0.10	0.18
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC, PC	23	35	0.15 ❖	0.20
		275 - 350	SC, PC	18	31	0.13 ❖	0.18
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC, PC	23	35	0.08 ❖	0.18
		185 - 275	SC, PC	18	31	0.08 ❖	0.15
	Super Duplex Stainless Steel	135 - 185	SC, PC	18	26	0.08 ❖	0.18
		185 - 275	SC, PC	15	22	0.08 ❖	0.15
K	**SG / Nodular Cast Iron**	120 - 150	HSS	52	84	0.20	0.30
		150 - 200	HSS	46	79	0.18	0.28
		200 - 220	HSS	40	68	0.15	0.23
		220 - 260	SC, PC	34	57	0.13	0.20
		260 - 320	SC, PC	27	47	0.13	0.18
N	**Cast Aluminum**	30	HSS	183	—	0.23	0.38
		180	HSS	91	—	0.20	0.33
	Wrought Aluminum	30	HSS	183	280	0.12	0.33
		180	HSS	91	200	0.12	0.18
	Aluminum Bronze	100 - 200	SC	52	82	0.15	0.24
		200 - 250	SC	40	65	0.12	0.18
	Brass	100	HSS	91	144	0.18	0.27
	Copper	60	SC	40	58	0.07 ❖	0.10
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC, PC	9	13	0.10 ❖	0.18
		220 - 310	PC	8	12	0.10 ❖	0.15
	Titanium Alloy	140 - 220	SC, PC	11	16	0.10 ❖	0.18
		220 - 310	PC	10	15	0.08 ❖	0.15
	Aerospace Alloy S82	185 - 275	SC, PC	23	35	0.15 ❖	0.20
		275 - 350	SC, PC	18	31	0.13 ❖	0.18
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC, PC	14	21	0.08 ❖	0.15
		500	PC	10	14	0.05 ❖	0.12
		600	N/A	—	—	—	—
	Hardened Steel	300 - 400	PC	15	29	0.10 ❖	0.15
		400 - 500	PC	10	14	0.06 ❖	0.12

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

GEN2 T-A | HIGH-SPEED STEEL

Feed Rate (mm/rev) by Diameter				
1 Series 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm	**3 Series** 34.37 mm - 47.82 mm	**4 Series** 46.99 mm - 65.30 mm	**5 - 8 Series** 62.38 mm - 114.48 mm
0.41	0.48	0.51	0.58	0.71
0.38	0.43	0.51	0.58	0.71
0.36	0.41	0.51	0.58	0.71
0.36	0.46	0.48	0.58	0.69
0.36	0.43	0.48	0.58	0.69
0.33	0.41	0.46	0.53	0.61
0.33	0.41	0.46	0.53	0.61
0.36	0.43	0.48	0.58	0.69
0.33	0.41	0.46	0.53	0.61
0.33	0.41	0.46	0.53	0.61
0.30	0.38	0.41	0.48	0.56
0.36	0.43	0.43	0.48	0.56
0.33	0.41	0.43	0.48	0.56
0.33	0.41	0.43	0.48	0.56
0.30	0.38	0.38	0.43	0.51
0.28	0.36	0.38	0.43	0.51
0.28	0.33	0.36	0.43	0.51
0.25	0.30	0.36	0.43	0.51
0.23	0.28	0.30	0.41	0.46
0.38	0.43	0.46	0.53	0.66
0.33	0.38	0.41	0.48	0.61
0.30	0.33	0.36	0.43	0.51
0.25	0.30	0.30	0.38	0.43
0.25	0.30	0.30	0.38	0.43
0.23	0.28	0.36	0.41	0.51
0.20	0.25	0.30	0.36	0.46
0.20	0.28	0.36	0.41	0.51
0.18	0.25	0.30	0.36	0.46
0.20	0.28	0.36	0.41	0.51
0.18	0.25	0.30	0.36	0.46
0.41	0.51	0.61	0.69	0.76
0.38	0.48	0.56	0.64	0.71
0.33	0.43	0.46	0.53	0.61
0.28	0.36	0.36	0.43	0.51
0.25	0.28	0.28	0.36	0.41
0.46	0.58	0.56	0.64	0.64
0.40	0.50	0.56	0.64	0.64
0.40	0.50	0.56	0.64	0.64
0.30	0.35	0.56	0.64	0.64
0.30	0.38	0.43	0.48	0.53
0.23	0.28	0.36	0.40	0.46
0.33	0.45	0.47	0.53	0.58
0.18	0.26	0.23	0.27	0.31
0.23	0.28	0.30	0.38	—
0.20	0.25	0.25	0.30	—
0.21	0.27	0.30	0.38	—
0.18	0.23	0.25	0.30	—
0.23	0.28	0.36	0.41	0.51
0.20	0.25	0.30	0.36	0.46
0.20	0.23	0.30	0.41	0.46
0.18	0.20	0.25	0.30	0.40
—	—	—	—	—
0.23	0.27	0.30	0.41	0.46
0.18	0.24	0.25	0.30	0.40

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Recommended Drilling Data | Metric (mm)

GEN2 T-A | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (m/min) AM300®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K35 (C1)	146
		150 - 200	K35 (C1)	126
		200 - 250	K35 (C1)	119
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K35 (C1)	137
		125 - 175	K35 (C1)	119
		175 - 225	K35 (C1)	108
		225 - 275	K35 (C1)	95
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K35 (C1)	119
		175 - 225	K35 (C1)	108
		225 - 275	K35 (C1)	95
		275 - 325	K35 (C1)	80
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K35 (C1)	115
		175 - 225	K35 (C1)	105
		225 - 275	K35 (C1)	95
		275 - 325	K35 (C1)	87
		325 - 375	K35 (C1)	78
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K35 (C1)	70
		300 - 350	K35 (C1)	63
		350 - 400	K35 (C1)	56
	Structural Steel A36, A285, A516, etc.	100 - 150	K35 (C1)	108
		150 - 250	K35 (C1)	87
		250 - 350	K35 (C1)	80
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	K35 (C1)	78
		200 - 250	K35 (C1)	59
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	73
		275 - 350	K20 (C2)	56
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	73
		185 - 275	K20 (C2)	56
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	38
		185 - 275	K20 (C2)	30
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2)	152
		150 - 200	K20 (C2)	146
		200 - 220	K20 (C2)	131
		220 - 260	K20 (C2)	113
		260 - 320	K20 (C2)	102
N	**Cast Aluminum**	30	K20 (C2)	300
		180	K20 (C2)	225
	Wrought Aluminum	30	K20 (C2)	426
		180	K20 (C2)	300
	Aluminum Bronze	100 - 200	K20 (C2)	110
		200 - 250	K20 (C2)	90
	Brass	100	K20 (C2)	200
	Copper	60	K20 (C2)	130
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	37
		220 - 310	K20 (C2)	29
	Titanium Alloy	140 - 220	K20 (C2)	42
		220 - 310	K20 (C2)	33
	Aerospace Alloy S82	185 - 275	K20 (C2)	73
		275 - 350	K20 (C2)	56
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	K20 (C2)	45
		500	K20 (C2)	37
		600	K20 (C2)	30
	Hardened Steel	300 - 400	K35 (C1)	47
		400 - 500	K35 (C1)	37

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

GEN2 T-A | CARBIDE

Feed Rate (mm/rev) by Diameter			
Y/Z Series 9.50 mm - 12.97 mm	**0 Series** 12.98 mm - 17.67 mm	**1 Series** 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm
0.20	0.30	0.41	0.48
0.18	0.28	0.38	0.43
0.15	0.25	0.36	0.41
0.20 ❖	0.25	0.36	0.46
0.18 ❖	0.25	0.36	0.43
0.15 ❖	0.23	0.33	0.41
0.13 ❖	0.23	0.33	0.41
0.18	0.25	0.36	0.43
0.15	0.23	0.33	0.41
0.15	0.23	0.33	0.41
0.13	0.20	0.30	0.38
0.18	0.25	0.36	0.43
0.15	0.23	0.33	0.43
0.15	0.23	0.33	0.41
0.13	0.20	0.30	0.38
0.10	0.18	0.28	0.36
0.15 ❖	0.23	0.28	0.33
0.13 ❖	0.20	0.25	0.30
0.10 ❖	0.18	0.23	0.28
0.20 ❖	0.28	0.38	0.43
0.15 ❖	0.25	0.33	0.38
0.13 ❖	0.23	0.30	0.33
0.10	0.18	0.25	0.30
0.10	0.18	0.25	0.30
0.18 ❖	0.23	0.30	0.36
0.15 ❖	0.20	0.28	0.30
0.14 ❖	0.18	0.24	0.29
0.12 ❖	0.16	0.22	0.24
0.12 ❖	0.17	0.22	0.26
0.10 ❖	0.15	0.18	0.22
0.20	0.30	0.38	0.48
0.18	0.28	0.33	0.43
0.15	0.23	0.30	0.38
0.13	0.20	0.28	0.33
0.13	0.18	0.25	0.28
0.23	0.38	0.46	0.58
0.20	0.33	0.40	0.50
0.12	0.33	0.40	0.50
0.12	0.18	0.30	0.35
0.15	0.24	0.30	0.38
0.12	0.18	0.23	0.28
0.18	0.27	0.33	0.45
0.07 ❖	0.10	0.18	0.26
0.10 ❖	0.18	0.23	0.28
0.10 ❖	0.15	0.20	0.25
0.10 ❖	0.18	0.21	0.27
0.08 ❖	0.15	0.18	0.23
0.12 ❖	0.16	0.18	0.22
0.10 ❖	0.14	0.16	0.19
0.07 ❖	0.12	0.20	0.25
0.05 ❖	0.10	0.15	0.20
0.04 ❖	0.08	0.12	0.16
0.10 ❖	0.18	0.23	0.27
0.06 ❖	0.12	0.18	0.24

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Recommended Drilling Data | Metric (mm)

T-A | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (m/min) TiN	TiAlN	TiCN	Feed Rate (mm/rev) by Diameter Y/Z Series 9.50 mm - 12.97 mm	0 Series 12.98 mm - 17.67 mm
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	61	85	79	0.18	0.25
		150 - 200	HSS	55	79	72	0.18	0.25
		200 - 250	HSS	49	73	64	0.15	0.25
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	52	76	67	0.15 ❖	0.23
		125 - 175	HSS	49	73	64	0.15 ❖	0.23
		175 - 225	HSS	46	69	59	0.13 ❖	0.20
		225 - 275	HSS	43	64	55	0.13 ❖	0.20
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	49	73	64	0.15	0.23
		175 - 225	HSS	46	69	59	0.13	0.20
		225 - 275	HSS	43	64	55	0.13	0.20
		275 - 325	SC, PC	40	59	52	0.10	0.18
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	46	64	59	0.15	0.20
		175 - 225	HSS	43	59	55	0.13	0.20
		225 - 275	HSS	40	55	52	0.13	0.18
		275 - 325	SC, PC	37	52	47	0.10	0.15
		325 - 375	SC, PC	34	47	44	0.08	0.15
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC, PC	24	34	30	0.13 ❖	0.18
		300 - 350	SC, PC	18	26	24	0.10 ❖	0.18
		350 - 400	PC	15	21	20	0.08 ❖	0.15
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	43	61	55	0.15 ❖	0.25
		150 - 250	HSS	37	52	47	0.13 ❖	0.23
		250 - 350	SC, PC	30	43	40	0.10 ❖	0.20
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	24	34	32	0.10	0.15
		200 - 250	SC, PC	18	27	26	0.10	0.15
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC, PC	23	32	29	0.15 ❖	0.20
		275 - 350	SC, PC	18	27	24	0.13 ❖	0.18
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC, PC	23	32	29	0.08 ❖	0.18
		185 - 275	SC, PC	18	27	24	0.08 ❖	0.15
	Super Duplex Stainless Steel	135 - 185	SC, PC	18	24	21	0.08 ❖	0.18
		185 - 275	SC, PC	15	20	18	0.08 ❖	0.15
K	**SG / Nodular Cast Iron**	120 - 150	HSS	52	76	67	0.18	0.30
		150 - 200	HSS	46	69	59	0.15	0.28
		200 - 220	HSS	40	59	52	0.15	0.23
		220 - 260	SC, PC	34	50	44	0.13	0.18
		260 - 320	SC, PC	27	41	37	0.10	0.15
N	**Cast Aluminum**	30	HSS	183	259	229	0.20	0.33
		180	HSS	91	137	122	0.20	0.33
	Wrought Aluminum	30	HSS	183	259	229	0.10	0.15
		180	HSS	91	137	122	0.20	0.33
	Aluminum Bronze	100 - 200	SC	52	76	67	0.15	0.28
		200 - 250	SC	40	58	52	0.13	0.18
	Brass	100	HSS	91	136	122	0.18	0.30
	Copper	60	SC	40	50	46	0.05 ❖	0.08
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC, PC	9	12	11	0.08 ❖	0.18
		220 - 310	PC	8	11	9	0.08 ❖	0.15
	Titanium Alloy	140 - 220	SC, PC	11	15	14	0.08 ❖	0.18
		220 - 310	PC	9	14	11	0.08 ❖	0.15
	Aerospace Alloy S82	185 - 275	SC, PC	23	32	29	0.15 ❖	0.20
		275 - 350	SC, PC	18	27	24	0.13 ❖	0.18
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC, PC	14	21	17	0.08 ❖	0.15
		500	PC	11	14	12	0.05 ❖	0.13
		600	N/A	—	—	—	—	—
	Hardened Steel	300 - 400	PC	15	29	21	0.08 ❖	0.15
		400 - 500	PC	11	14	12	0.05 ❖	0.13

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

T-A | HIGH-SPEED STEEL

Feed Rate (mm/rev) by Diameter				
1 Series 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm	**3 Series** 34.37 mm - 47.82 mm	**4 Series** 46.99 mm - 65.30 mm	**5 - 8 Series** 62.38 mm - 114.48 mm
0.41	0.48	0.51	0.58	0.71
0.38	0.43	0.51	0.58	0.71
0.36	0.41	0.51	0.58	0.71
0.36	0.46	0.48	0.58	0.69
0.36	0.43	0.48	0.58	0.69
0.33	0.41	0.46	0.53	0.61
0.33	0.41	0.46	0.53	0.61
0.36	0.43	0.48	0.58	0.69
0.33	0.41	0.46	0.53	0.61
0.33	0.41	0.46	0.53	0.61
0.30	0.38	0.41	0.48	0.56
0.36	0.43	0.43	0.48	0.56
0.33	0.41	0.43	0.48	0.56
0.33	0.41	0.43	0.48	0.56
0.30	0.38	0.38	0.43	0.51
0.28	0.36	0.38	0.43	0.51
0.28	0.33	0.36	0.43	0.51
0.25	0.30	0.36	0.43	0.51
0.23	0.28	0.30	0.41	0.46
0.38	0.43	0.46	0.53	0.66
0.33	0.38	0.41	0.48	0.61
0.30	0.33	0.36	0.43	0.51
0.25	0.30	0.30	0.38	0.43
0.25	0.30	0.30	0.38	0.43
0.23	0.28	0.36	0.41	0.51
0.20	0.25	0.30	0.36	0.46
0.20	0.28	0.36	0.41	0.51
0.18	0.25	0.30	0.36	0.46
0.20	0.28	0.36	0.41	0.51
0.18	0.25	0.30	0.36	0.46
0.41	0.51	0.61	0.69	0.76
0.38	0.48	0.56	0.64	0.71
0.33	0.43	0.46	0.53	0.61
0.28	0.36	0.36	0.43	0.51
0.25	0.28	0.28	0.36	0.41
0.46	0.58	0.56	0.64	0.64
0.40	0.50	0.56	0.64	0.64
0.40	0.50	0.56	0.64	0.64
0.30	0.35	0.56	0.64	0.64
0.30	0.38	0.43	0.48	0.53
0.23	0.28	0.36	0.40	0.46
0.33	0.45	0.47	0.53	0.58
0.18	0.26	0.23	0.27	0.31
0.23	0.28	0.30	0.38	—
0.20	0.25	0.25	0.30	—
0.21	0.27	0.30	0.38	—
0.18	0.23	0.25	0.30	—
0.23	0.28	0.36	0.41	0.51
0.20	0.25	0.30	0.36	0.46
0.20	0.23	0.30	0.41	0.46
0.18	0.20	0.25	0.30	0.40
—	—	—	—	—
0.23	0.27	0.30	0.41	0.46
0.18	0.24	0.25	0.30	0.40

NOTE: For diameters over 114.48 mm please reach out to our application engineering department.

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Recommended Drilling Data | Metric (mm)

T-A | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (m/min) TiN	TiAlN	TiCN
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	P40 (C5)	96	128	115
		150 - 200	P40 (C5)	85	110	100
		200 - 250	P40 (C5)	79	104	90
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	P40 (C5)	91	119	110
		125 - 175	P40 (C5)	79	104	90
		175 - 225	P40 (C5)	73	95	82
		225 - 275	P40 (C5)	64	83	75
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	P40 (C5)	79	104	90
		175 - 225	P40 (C5)	73	95	84
		225 - 275	P40 (C5)	67	83	72
		275 - 325	P40 (C5)	55	70	62
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	P40 (C5)	76	99	87
		175 - 225	P40 (C5)	70	92	80
		225 - 275	P40 (C5)	64	83	72
		275 - 325	P40 (C5)	61	76	68
		325 - 375	P40 (C5)	52	67	60
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	P40 (C5)	49	61	55
		300 - 350	P40 (C5)	43	55	49
		350 - 400	P40 (C5)	37	49	43
	Structural Steel A36, A285, A516, etc.	100 - 150	P40 (C5)	73	95	84
		150 - 250	P40 (C5)	61	76	68
		250 - 350	P40 (C5)	55	70	62
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	P40 (C5)	49	67	58
		200 - 250	P40 (C5)	37	52	45
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	49	64	57
		275 - 350	K20 (C2)	37	49	43
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	49	64	57
		185 - 275	K20 (C2)	37	49	43
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	25	33	29
		185 - 275	K20 (C2)	19	25	22
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2), C3 (K10)	98	141	127
		150 - 200	K20 (C2), C3 (K10)	82	122	102
		200 - 220	K20 (C2), C3 (K10)	73	110	93
		220 - 260	K20 (C2), C3 (K10)	64	95	79
		260 - 320	K20 (C2), C3 (K10)	55	83	69
N	**Cast Aluminum**	30	K20 (C2)	366	460	410
		180	K20 (C2)	244	306	275
	Wrought Aluminum	30	K20 (C2)	366	460	410
		180	K20 (C2)	244	306	275
	Aluminum Bronze	100 - 200	K20 (C2)	85	110	100
		200 - 250	K20 (C2)	64	94	79
	Brass	100	K20 (C2)	130	184	160
	Copper	60	K20 (C2)	80	120	100
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	24	32	28
		220 - 310	K20 (C2)	18	26	22
	Titanium Alloy	140 - 220	K20 (C2)	30	38	32
		220 - 310	K20 (C2)	24	33	28
	Aerospace Alloy S82	185 - 275	K20 (C2)	49	64	57
		275 - 350	K20 (C2)	37	49	43
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	P40 (C5)	23	35	30
		500	P40 (C5)	15	26	21
		600	P40 (C5)	11	22	16
	Hardened Steel	300 - 400	P40 (C5)	34	43	39
		400 - 500	P40 (C5)	20	25	23

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

T-A | CARBIDE

Feed Rate (mm/rev) by Diameter				
Y/Z Series 9.50 mm - 12.97 mm	**0 Series** 12.98 mm - 17.67 mm	**1 Series** 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm	**3 Series** 34.37 mm - 47.82 mm
0.20	0.30	0.38	0.45	0.53
0.18	0.28	0.35	0.40	0.48
0.15	0.25	0.33	0.38	0.43
0.20 ❖	0.25	0.33	0.43	0.48
0.18 ❖	0.25	0.33	0.40	0.45
0.15 ❖	0.23	0.30	0.38	0.43
0.13 ❖	0.23	0.30	0.38	0.43
0.18	0.25	0.33	0.40	0.45
0.15	0.23	0.30	0.38	0.43
0.15	0.23	0.30	0.38	0.43
0.13	0.20	0.28	0.35	0.40
0.18	0.25	0.33	0.40	0.45
0.15	0.23	0.30	0.38	0.43
0.15	0.23	0.30	0.38	0.43
0.13	0.20	0.28	0.35	0.40
0.10	0.18	0.25	0.33	0.38
0.15 ❖	0.23	0.25	0.30	0.38
0.13 ❖	0.20	0.23	0.28	0.35
0.10 ❖	0.18	0.20	0.25	0.30
0.20 ❖	0.28	0.35	0.40	0.45
0.15 ❖	0.25	0.30	0.35	0.40
0.13 ❖	0.23	0.28	0.30	0.35
0.10	0.18	0.23	0.28	0.33
0.10	0.18	0.23	0.28	0.33
0.17 ❖	0.22	0.29	0.35	0.40
0.14 ❖	0.19	0.27	0.30	0.35
0.13 ❖	0.17	0.22	0.26	0.30
0.11 ❖	0.14	0.20	0.22	0.25
0.11 ❖	0.15	0.19	0.23	0.27
0.09 ❖	0.13	0.18	0.20	0.23
0.20	0.30	0.38	0.48	0.58
0.18	0.28	0.33	0.43	0.53
0.15	0.23	0.30	0.38	0.45
0.13	0.20	0.28	0.33	0.38
0.13	0.18	0.25	0.28	0.33
0.25	0.38	0.45	0.50	0.55
0.23	0.33	0.40	0.45	0.50
0.10	0.15	0.25	0.30	0.36
0.20	0.28	0.36	0.45	0.50
0.13	0.20	0.25	0.36	0.42
0.10	0.15	0.18	0.25	0.33
0.15	0.23	0.28	0.38	0.45
0.05 ❖	0.08	0.10	0.15	0.25
0.10 ❖	0.18	0.23	0.28	0.33
0.10 ❖	0.15	0.20	0.25	0.30
0.10 ❖	0.18	0.23	0.28	0.33
0.10 ❖	0.15	0.20	0.25	0.30
0.17 ❖	0.22	0.29	0.35	0.40
0.14 ❖	0.19	0.27	0.30	0.35
0.07	0.12	0.20	0.25	0.30
0.05	0.10	0.15	0.20	0.25
0.04	0.08	0.12	0.16	0.20
0.10 ❖	0.18	0.23	0.28	0.33
0.08 ❖	0.15	0.20	0.23	0.28

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Recommended Drilling Data | Metric (mm)

T-A FLAT BOTTOM | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (m/min) TiN	TiAlN	TiCN	AM200®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	52	76	70	88
		150 - 200	HSS	47	70	62	81
		200 - 250	HSS	43	64	56	74
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	46	67	59	77
		125 - 175	HSS	43	64	56	74
		175 - 225	HSS	40	59	53	68
		225 - 275	HSS	37	56	47	65
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	43	64	56	74
		175 - 225	HSS	40	59	53	68
		225 - 275	HSS	37	56	47	65
		275 - 325	SC	34	53	46	61
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	40	56	53	65
		175 - 225	HSS	37	53	47	61
		225 - 275	HSS	34	47	44	54
		275 - 325	SC	32	44	41	51
		325 - 375	SC	29	41	38	47
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	21	29	26	33
		300 - 350	SC	15	23	21	27
		350 - 400	SC	13	20	18	23
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	36	52	47	60
		150 - 250	HSS	32	44	41	51
		250 - 350	SC	26	37	34	43
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	21	29	27	33
		200 - 250	SC	15	24	23	28
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC	20	27	26	34
		275 - 350	SC	15	24	21	28
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC	20	27	26	34
		185 - 275	SC	15	24	21	28
	Super Duplex Stainless Steel	135 - 185	SC	20	27	26	34
		185 - 275	SC	15	24	21	28
K	**SG / Nodular Cast Iron**	120 - 150	HSS	46	67	59	77
		150 - 200	HSS	40	59	53	68
		200 - 220	HSS	34	53	46	61
		220 - 260	SC	29	46	38	53
		260 - 320	SC	24	37	32	43
N	**Cast Aluminum**	30	HSS	160	228	198	-
		180	HSS	79	122	107	-
	Wrought Aluminum	30	HSS	160	228	198	261
		180	HSS	79	122	107	141
	Aluminum Bronze	100 - 200	SC	40	59	53	70
		200 - 250	SC	29	46	38	50
	Brass	100	HSS	46	67	59	78
	Copper	60	SC	35	45	40	53
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC	7	10	9	13
		220 - 310	SC	6	9	7	10
	Titanium Alloy	140 - 220	SC	10	14	12	16
		220 - 310	SC	8	12	11	14
	Aerospace Alloy S82	185 - 275	SC	20	27	26	34
		275 - 350	SC	15	24	21	28
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC	—	—	—	—
		500	SC	—	—	—	—
		600	N/A	—	—	—	—
	Hardened Steel	300 - 400	SC	13	20	18	24
		400 - 500	SC	8	12	10	13

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

T-A FLAT BOTTOM | HIGH-SPEED STEEL

Feed Rate (mm/rev) by Diameter					
Y/Z Series 9.50 mm - 12.97 mm	**0 Series** 12.98 mm - 17.67 mm	**1 Series** 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm	**3 Series** 34.37 mm - 47.82 mm	**4 Series** 46.99 mm - 65.30 mm
0.15	0.23	0.28	0.35	0.41	0.46
0.15	0.23	0.28	0.35	0.41	0.46
0.13	0.23	0.28	0.35	0.38	0.43
0.13 ❖	0.20	0.25	0.33	0.38	0.43
0.13 ❖	0.20	0.25	0.33	0.38	0.41
0.10 ❖	0.18	0.23	0.30	0.36	0.41
0.10 ❖	0.18	0.23	0.30	0.36	0.38
0.13	0.20	0.25	0.33	0.38	0.46
0.10	0.18	0.23	0.30	0.36	0.43
0.10	0.18	0.23	0.30	0.36	0.43
0.10	0.15	0.20	0.25	0.33	0.38
0.13	0.18	0.23	0.30	0.33	0.41
0.10	0.18	0.23	0.30	0.33	0.41
0.10	0.15	0.23	0.30	0.33	0.41
0.10	0.13	0.20	0.25	0.30	0.38
0.08	0.13	0.20	0.25	0.30	0.36
0.10 ❖	0.15	0.20	0.23	0.25	0.30
0.08 ❖	0.15	0.20	0.23	0.25	0.30
0.08 ❖	0.13	0.18	0.20	0.23	0.28
0.13 ❖	0.23	0.25	0.30	0.38	0.43
0.10 ❖	0.20	0.23	0.25	0.33	0.41
0.10 ❖	0.18	0.20	0.23	0.30	0.38
0.10	0.13	0.18	0.23	0.25	0.30
0.10	0.13	0.18	0.23	0.23	0.28
0.13 ❖	0.18	0.20	0.25	0.30	0.36
0.10 ❖	0.15	0.18	0.23	0.25	0.28
0.13 ❖	0.18	0.20	0.25	0.30	0.36
0.10 ❖	0.15	0.18	0.23	0.25	0.28
0.13 ❖	0.18	0.20	0.25	0.30	0.36
0.10 ❖	0.15	0.18	0.23	0.25	0.28
0.15	0.25	0.36	0.43	0.48	0.51
0.13	0.23	0.30	0.41	0.46	0.48
0.13	0.20	0.25	0.36	0.41	0.43
0.10	0.15	0.20	0.25	0.33	0.33
0.10	0.13	0.15	0.20	0.25	0.25
0.18	0.28	0.36	0.43	0.46	0.48
0.18	0.28	0.36	0.41	0.43	0.48
0.18	0.28	0.36	0.43	0.46	0.48
0.18	0.28	0.36	0.41	0.43	0.48
0.13	0.23	0.30	0.41	0.51	0.61
0.10	0.15	0.20	0.25	0.31	0.38
0.15	0.25	0.36	0.43	0.53	0.63
0.05 ❖	0.08	0.15	0.20	0.25	0.35
0.08 ❖	0.15	0.18	0.23	0.25	0.30
0.08 ❖	0.13	0.15	0.18	0.20	0.25
0.08 ❖	0.15	0.18	0.23	0.25	0.30
0.08 ❖	0.13	0.15	0.18	0.20	0.25
0.13 ❖	0.18	0.20	0.25	0.30	0.38
0.10 ❖	0.15	0.18	0.23	0.25	0.30
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
0.08 ❖	0.13	0.18	0.20	0.27	0.38
0.06 ❖	0.10	0.15	0.18	0.23	0.28

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Recommended Drilling Data | Metric (mm)

T-A FLAT BOTTOM | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (m/min) TiN	TiAlN	TiCN	AM200®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K20 (C2)	82	110	98	126
		150 - 200	K20 (C2)	73	94	85	110
		200 - 250	K20 (C2)	67	88	76	102
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K20 (C2)	79	102	94	117
		125 - 175	K20 (C2)	67	88	76	102
		175 - 225	K20 (C2)	61	81	70	93
		225 - 275	K20 (C2)	55	70	64	81
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K20 (C2)	67	88	76	102
		175 - 225	K20 (C2)	61	81	72	93
		225 - 275	K20 (C2)	55	70	61	81
		275 - 325	K20 (C2)	46	61	53	70
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K20 (C2)	64	85	75	99
		175 - 225	K20 (C2)	59	79	67	91
		225 - 275	K20 (C2)	55	70	61	81
		275 - 325	K20 (C2)	52	66	58	76
		325 - 375	K20 (C2)	44	58	50	67
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K20 (C2)	41	52	47	59
		300 - 350	K20 (C2)	37	47	41	55
		350 - 400	K20 (C2)	30	41	37	47
	Structural Steel A36, A285, A516, etc.	100 - 150	K20 (C2)	62	81	72	93
		150 - 250	K20 (C2)	52	66	58	76
		250 - 350	K20 (C2)	47	61	53	70
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	K20 (C2)	41	58	49	67
		200 - 250	K20 (C2)	30	44	37	50
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	43	56	50	64
		275 - 350	K20 (C2)	33	43	38	49
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	28	37	33	40
		185 - 275	K20 (C2)	21	28	25	32
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	22	29	26	33
		185 - 275	K20 (C2)	17	22	19	26
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2)	82	120	108	137
		150 - 200	K20 (C2)	70	104	87	119
		200 - 220	K20 (C2)	61	94	79	108
		220 - 260	K20 (C2)	55	81	67	93
		260 - 320	K20 (C2)	47	70	58	81
N	**Cast Aluminum**	30	K20 (C2)	160	228	198	-
		180	K20 (C2)	79	122	107	-
	Wrought Aluminum	30	K20 (C2)	292	368	328	390
		180	K20 (C2)	195	245	220	260
	Aluminum Bronze	100 - 200	K20 (C2)	73	95	85	105
		200 - 250	K20 (C2)	55	81	68	87
	Brass	100	K20 (C2)	112	160	138	185
	Copper	60	K20 (C2)	68	105	85	117
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	21	27	23	32
		220 - 310	K20 (C2)	15	21	18	24
	Titanium Alloy	140 - 220	K20 (C2)	26	33	28	40
		220 - 310	K20 (C2)	21	29	25	30
	Aerospace Alloy S82	185 - 275	K20 (C2)	43	37	50	40
		275 - 350	K20 (C2)	33	28	38	32
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	K20 (C2)	20	31	26	39
		500	K20 (C2)	13	23	18	31
		600	K20 (C2)	10	19	14	25
	Hardened Steel	300 - 400	K20 (C2)	30	38	34	41
		400 - 500	K20 (C2)	18	22	20	33

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

Recommended Drilling Data | Metric (mm)

T-A FLAT BOTTOM | CARBIDE

Feed Rate (mm/rev) by Diameter			
Y/Z Series 9.50 mm - 12.97 mm	**0 Series** 12.98 mm - 17.67 mm	**1 Series** 17.53 mm - 24.40 mm	**2 Series** 24.41 mm - 35.06 mm
0.17	0.26	0.32	0.39
0.15	0.24	0.30	0.35
0.13	0.22	0.28	0.32
0.17 ❖	0.22	0.28	0.37
0.15 ❖	0.22	0.28	0.35
0.13 ❖	0.19	0.26	0.32
0.11 ❖	0.19	0.26	0.32
0.15	0.22	0.28	0.35
0.13	0.19	0.26	0.32
0.13	0.19	0.26	0.32
0.11	0.17	0.24	0.30
0.15	0.22	0.28	0.35
0.13	0.19	0.26	0.32
0.13	0.19	0.26	0.32
0.11	0.17	0.24	0.30
0.09	0.15	0.22	0.28
0.13 ❖	0.19	0.22	0.26
0.11 ❖	0.17	0.19	0.24
0.09 ❖	0.15	0.17	0.22
0.17 ❖	0.24	0.30	0.35
0.13 ❖	0.22	0.28	0.30
0.11 ❖	0.19	0.25	0.26
0.09	0.15	0.19	0.24
0.09	0.15	0.19	0.24
0.15 ❖	0.20	0.25	0.30
0.13 ❖	0.18	0.23	0.25
0.13 ❖	0.17	0.21	0.25
0.11 ❖	0.15	0.19	0.21
0.10 ❖	0.14	0.17	0.20
0.08 ❖	0.12	0.15	0.17
0.17	0.26	0.32	0.41
0.15	0.24	0.28	0.38
0.13	0.19	0.26	0.32
0.11	0.17	0.24	0.28
0.11	0.15	0.22	0.24
0.22	0.32	0.41	0.43
0.19	0.28	0.35	0.39
0.12	0.18	0.23	0.25
0.10	0.16	0.20	0.22
0.10	0.16	0.20	0.29
0.08	0.12	0.14	0.20
0.12	0.18	0.22	0.30
0.04 ❖	0.06	0.08	0.12
0.09 ❖	0.15	0.19	0.24
0.09 ❖	0.13	0.17	0.22
0.08 ❖	0.14	0.17	0.20
0.08 ❖	0.12	0.15	0.18
0.15 ❖	0.17	0.25	0.30
0.13 ❖	0.15	0.23	0.25
0.06 ❖	0.10	0.16	0.20
0.04 ❖	0.08	0.12	0.16
0.03 ❖	0.06	0.10	0.13
0.08 ❖	0.14	0.18	0.22
0.06 ❖	0.12	0.16	0.18

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Recommended Drilling Data | Metric (mm)

T-A DIAMOND COATED | CARBIDE

ISO	Material	Carbide Grade	Speed (m/min) Diamond Coating	Feed Rate (mm/rev) by Diameter			
				Y/Z Series 9.50 mm - 12.97 mm	0 Series 12.98 mm - 17.67 mm	1 Series 17.53 mm - 24.40 mm	2 Series 24.41 mm - 35.06 mm
Polymer Matrix Composites	Carbon (hard)	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Carbon Fiber	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Carbon / Glass Fiber	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Fiberglass	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Graphite	N2	305 - 450	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Plastics	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Epoxy Resin	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Bismaleimide Resin	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Polyester Resin	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Phenolic Resin	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Rubber	N2	76 - 305	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
Metal Matrix Composites	Aluminum	N2	305	0.20	0.33	0.41	0.51
	Si < 10%	N2	305	0.20	0.33	0.41	0.51
	10% < Si < 15%	N2	259 - 305	0.20	0.33	0.41	0.51
	15% < SI < 20%	N2	198 - 259	0.20	0.33	0.41	0.51
	20% < Si < 25%	N2	152 - 198	0.20	0.33	0.41	0.51
	25% < Si	N2	61 - 152	0.20	0.33	0.41	0.51
	Brass	N2	76 - 152	0.20	0.33	0.41	0.51
	Bronze	N2	76 - 152	0.20	0.33	0.41	0.51
	Copper	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Copper Alloys	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Lead Alloys	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Magnesium Alloys	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Precious Metals	N2	30 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
Ceramic Matrix Composites	Carbide (green)	N2	15 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Ceramic (green)	N2	15 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36
	Ceramic (pre-sintered)	N2	15 - 76	0.10 - 0.15	0.20 - 0.25	0.25 - 0.30	0.30 - 0.36

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Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	50 m/min	•	0.75	=	37.5 m/min
Feed	0.20 mm/rev	•	0.90	=	0.18 mm/rev

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

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Notes

Recommended Drilling Data | Imperial (in)

GEN2 T-A | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (SFM) TiN	Speed (SFM) AM200®	Feed Rate (IPR) by Diameter Y/Z Series 0.3740" - 0.5109"	Feed Rate (IPR) by Diameter 0 Series 0.5110" - 0.6959"
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	200	325	0.008	0.012
		150 - 200	HSS	180	300	0.007	0.011
		200 - 250	HSS	160	280	0.006	0.010
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	170	290	0.008 ❖	0.010
		125 - 175	HSS	160	275	0.007 ❖	0.010
		175 - 225	HSS	150	260	0.006 ❖	0.009
		225 - 275	HSS	140	240	0.005 ❖	0.009
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	160	275	0.007	0.010
		175 - 225	HSS	150	260	0.006	0.009
		225 - 275	HSS	140	240	0.006	0.009
		275 - 325	SC	130	225	0.005	0.008
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	150	240	0.007	0.010
		175 - 225	HSS	140	225	0.006	0.009
		225 - 275	HSS	130	210	0.006	0.009
		275 - 325	SC	120	195	0.005	0.008
		325 - 375	SC	110	180	0.004	0.007
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	80	125	0.006 ❖	0.009
		300 - 350	SC	60	100	0.005 ❖	0.008
		350 - 400	SC	50	80	0.004 ❖	0.007
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	140	235	0.008 ❖	0.011
		150 - 250	HSS	120	190	0.006 ❖	0.010
		250 - 350	SC	100	160	0.005 ❖	0.009
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	80	125	0.004	0.007
		200 - 250	SC	60	105	0.004	0.007
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC	75	110	0.006 ❖	0.008
		275 - 350	SC	60	100	0.005 ❖	0.007
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC	75	110	0.003 ❖	0.007
		185 - 275	SC	60	100	0.003 ❖	0.006
	Super Duplex Stainless Steel	135 - 185	SC	60	85	0.003 ❖	0.007
		185 - 275	SC	50	70	0.003 ❖	0.006
K	**SG / Nodular Cast Iron**	120 - 150	HSS	170	290	0.008	0.012
		150 - 200	HSS	150	260	0.007	0.011
		200 - 220	HSS	130	225	0.006	0.009
		220 - 260	SC	110	190	0.005	0.008
		260 - 320	SC	90	155	0.005	0.007
N	**Cast Aluminum**	30	HSS	600	—	0.009	0.015
		180	HSS	300	—	0.008	0.013
	Wrought Aluminum	30	HSS	600	900	0.005	0.013
		180	HSS	300	650	0.005	0.007
	Aluminum Bronze	100 - 200	SC	170	270	0.006	0.009
		200 - 250	SC	130	210	0.005	0.007
	Brass	100	HSS	300	470	0.007	0.011
	Copper	60	SC	130	190	0.003 ❖	0.004
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC	30	45	0.004 ❖	0.007
		220 - 310	SC	25	40	0.004 ❖	0.006
	Titanium Alloy	140 - 220	SC	35	55	0.004 ❖	0.007
		220 - 310	SC	30	50	0.003 ❖	0.006
	Aerospace Alloy S82	185 - 275	SC	75	110	0.006 ❖	0.008
		275 - 350	SC	60	100	0.005 ❖	0.007
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC	45	70	0.003 ❖	0.006
		500	SC	35	45	0.002 ❖	0.005
		600	—	—	—	0.004 ❖	0.006
	Hardened Steel	300 - 400	SC	50	95	—	—
		400 - 500	SC	35	45	0.002 ❖	0.005

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

Recommended Drilling Data | Imperial (in)

GEN2 T-A | HIGH-SPEED STEEL

Feed Rate (IPR) by Diameter				
1 Series 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"	**3 Series** 1.3530" - 1.8829"	**4 Series** 1.8500" - 2.5709"	**5 - 8 Series** 2.4560" - 4.5070"
0.016	0.019	0.020	0.023	0.028
0.015	0.017	0.020	0.023	0.028
0.014	0.016	0.020	0.023	0.028
0.014	0.018	0.019	0.023	0.027
0.014	0.017	0.019	0.023	0.027
0.013	0.016	0.018	0.021	0.024
0.013	0.016	0.018	0.021	0.024
0.014	0.017	0.019	0.023	0.027
0.013	0.016	0.018	0.021	0.024
0.013	0.016	0.018	0.021	0.024
0.012	0.015	0.016	0.019	0.022
0.014	0.017	0.017	0.019	0.022
0.013	0.016	0.017	0.019	0.022
0.013	0.016	0.017	0.019	0.022
0.012	0.015	0.015	0.017	0.020
0.011	0.014	0.015	0.017	0.020
0.011	0.013	0.014	0.017	0.020
0.010	0.012	0.014	0.017	0.020
0.009	0.011	0.012	0.015	0.018
0.015	0.017	0.018	0.021	0.026
0.013	0.015	0.016	0.019	0.024
0.012	0.013	0.014	0.017	0.020
0.010	0.012	0.012	0.015	0.017
0.010	0.012	0.012	0.015	0.017
0.009	0.011	0.014	0.016	0.020
0.008	0.010	0.012	0.014	0.018
0.008	0.011	0.014	0.016	0.020
0.007	0.010	0.012	0.014	0.018
0.008	0.011	0.014	0.016	0.020
0.007	0.010	0.012	0.014	0.018
0.016	0.020	0.024	0.027	0.030
0.015	0.019	0.022	0.025	0.028
0.013	0.017	0.018	0.021	0.024
0.011	0.014	0.014	0.017	0.020
0.010	0.012	0.012	0.014	0.016
0.018	0.023	0.022	0.025	0.025
0.016	0.020	0.022	0.025	0.025
0.016	0.020	0.022	0.025	0.025
0.012	0.014	0.022	0.025	0.025
0.012	0.015	0.017	0.019	0.021
0.009	0.011	0.014	0.016	0.018
0.013	0.018	0.019	0.021	0.023
0.007	0.010	0.009	0.011	0.012
0.009	0.011	0.012	0.015	0.017
0.008	0.010	0.010	0.012	0.014
0.008	0.010	0.012	0.015	0.017
0.007	0.009	0.010	0.012	0.014
0.009	0.011	0.014	0.016	0.020
0.008	0.010	0.012	0.014	0.018
0.008	0.009	0.012	0.016	0.018
0.007	0.008	0.010	0.012	0.016
0.009	0.011	0.012	0.016	0.018
—	—	—	—	—
0.007	0.009	0.010	0.012	0.016

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Recommended Drilling Data | Imperial (in)

GEN2 T-A | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (SFM) AM300®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K35 (C1)	480
		150 - 200	K35 (C1)	415
		200 - 250	K35 (C1)	390
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K35 (C1)	450
		125 - 175	K35 (C1)	390
		175 - 225	K35 (C1)	355
		225 - 275	K35 (C1)	310
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K35 (C1)	390
		175 - 225	K35 (C1)	355
		225 - 275	K35 (C1)	310
		275 - 325	K35 (C1)	265
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K35 (C1)	375
		175 - 225	K35 (C1)	345
		225 - 275	K35 (C1)	310
		275 - 325	K35 (C1)	285
		325 - 375	K35 (C1)	255
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K35 (C1)	230
		300 - 350	K35 (C1)	205
		350 - 400	K35 (C1)	185
	Structural Steel A36, A285, A516, etc.	100 - 150	K35 (C1)	355
		150 - 250	K35 (C1)	285
		250 - 350	K35 (C1)	265
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	K35 (C1)	255
		200 - 250	K35 (C1)	195
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	240
		275 - 350	K20 (C2)	180
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	240
		185 - 275	K20 (C2)	180
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	125
		185 - 275	K20 (C2)	100
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2)	500
		150 - 200	K20 (C2)	480
		200 - 220	K20 (C2)	430
		220 - 260	K20 (C2)	370
		260 - 320	K20 (C2)	335
N	**Cast Aluminum**	30	K20 (C2)	975
		180	K20 (C2)	730
	Wrought Aluminum	30	K20 (C2)	1385
		180	K20 (C2)	975
	Aluminum Bronze	100 - 200	K20 (C2)	360
		200 - 250	K20 (C2)	300
	Brass	100	K20 (C2)	650
	Copper	60	K20 (C2)	420
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	120
		220 - 310	K20 (C2)	95
	Titanium Alloy	140 - 220	K20 (C2)	140
		220 - 310	K20 (C2)	110
	Aerospace Alloy S82	185 - 275	K20 (C2)	240
		275 - 350	K20 (C2)	180
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	K20 (C2)	150
		500	K20 (C2)	120
		600	K20 (C2)	100
	Hardened Steel	300 - 400	K35 (C1)	150
		400 - 500	K35 (C1)	120

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

Recommended Drilling Data | Imperial (in)

GEN2 T-A | CARBIDE

Feed Rate (IPR) by Diameter			
Y/Z Series 0.3740" - 0.5109"	**0 Series** 0.5110" - 0.6959"	**1 Series** 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"
0.008	0.012	0.016	0.019
0.007	0.011	0.015	0.017
0.006	0.010	0.014	0.016
0.008 ❖	0.010	0.014	0.018
0.007 ❖	0.010	0.014	0.017
0.006 ❖	0.009	0.013	0.016
0.005 ❖	0.009	0.013	0.016
0.007	0.010	0.014	0.017
0.006	0.009	0.013	0.016
0.006	0.009	0.013	0.016
0.005	0.008	0.012	0.015
0.007	0.010	0.014	0.017
0.006	0.009	0.013	0.016
0.006	0.009	0.013	0.016
0.005	0.008	0.012	0.015
0.004	0.007	0.011	0.014
0.006 ❖	0.009	0.011	0.013
0.005 ❖	0.008	0.010	0.012
0.004 ❖	0.007	0.009	0.011
0.008 ❖	0.011	0.015	0.017
0.006 ❖	0.010	0.013	0.015
0.005 ❖	0.009	0.012	0.013
0.007	0.007	0.010	0.012
0.007	0.007	0.010	0.012
0.007 ❖	0.009	0.012	0.014
0.006 ❖	0.008	0.011	0.012
0.006 ❖	0.007	0.009	0.012
0.005 ❖	0.006	0.008	0.009
0.005 ❖	0.007	0.008	0.010
0.004 ❖	0.006	0.007	0.009
0.008	0.012	0.015	0.019
0.007	0.011	0.013	0.017
0.006	0.009	0.012	0.015
0.005	0.008	0.011	0.013
0.005	0.007	0.010	0.011
0.009	0.015	0.018	0.023
0.008	0.013	0.016	0.020
0.005	0.013	0.016	0.020
0.005	0.007	0.012	0.014
0.006	0.009	0.012	0.015
0.005	0.007	0.009	0.011
0.007	0.011	0.013	0.018
0.003 ❖	0.004	0.007	0.010
0.004 ❖	0.007	0.009	0.011
0.004 ❖	0.006	0.008	0.010
0.004 ❖	0.007	0.008	0.011
0.003 ❖	0.006	0.007	0.009
0.005 ❖	0.006	0.007	0.009
0.004 ❖	0.005	0.006	0.008
0.003 ❖	0.005	0.008	0.010
0.002 ❖	0.004	0.006	0.008
0.001 ❖	0.003	0.005	0.006
0.004 ❖	0.006	0.009	0.011
0.003 ❖	0.005	0.008	0.010

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

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Recommended Drilling Data | Imperial (in)

T-A | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (SFM) TiN	TiAlN	TiCN	Feed Rate (IPR) by Diameter Y/Z Series 0.3740" - 0.5109"	0 Series 0.5110" - 0.6959"
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	200	280	260	0.007	0.010
		150 - 200	HSS	180	260	235	0.007	0.010
		200 - 250	HSS	160	240	210	0.006	0.010
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	170	250	220	0.006 ❖	0.009
		125 - 175	HSS	160	240	210	0.006 ❖	0.009
		175 - 225	HSS	150	225	195	0.005 ❖	0.008
		225 - 275	HSS	140	210	180	0.005 ❖	0.008
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	160	240	210	0.006	0.009
		175 - 225	HSS	150	225	195	0.005	0.008
		225 - 275	HSS	140	210	180	0.005	0.008
		275 - 325	SC, PC	130	195	170	0.004	0.007
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	150	210	195	0.006	0.008
		175 - 225	HSS	140	195	180	0.005	0.008
		225 - 275	HSS	130	180	170	0.005	0.007
		275 - 325	SC, PC	120	170	155	0.004	0.006
		325 - 375	SC, PC	110	155	145	0.003	0.006
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC, PC	80	110	100	0.005 ❖	0.007
		300 - 350	SC, PC	60	85	80	0.004 ❖	0.007
		350 - 400	PC	50	70	65	0.003 ❖	0.006
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	140	200	180	0.006 ❖	0.010
		150 - 250	HSS	120	170	155	0.005 ❖	0.009
		250 - 350	SC, PC	100	140	130	0.003 ❖	0.008
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	80	110	105	0.004	0.006
		200 - 250	SC, PC	60	90	85	0.004	0.006
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC, PC	75	105	95	0.009	0.010
		275 - 350	SC, PC	60	90	80	0.008	0.009
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC, PC	75	105	95	0.007	0.007
		185 - 275	SC, PC	60	90	80	0.006	0.006
	Super Duplex Stainless Steel	135 - 185	SC, PC	60	80	70	0.005	0.005
		185 - 275	SC, PC	50	65	60	0.004	0.005
K	**SG / Nodular Cast Iron**	120 - 150	HSS	170	250	220	0.007	0.012
		150 - 200	HSS	150	225	195	0.006	0.011
		200 - 220	HSS	130	195	170	0.006	0.009
		220 - 260	SC, PC	110	165	145	0.005	0.007
		260 - 320	SC, PC	90	135	120	0.004	0.006
N	**Cast Aluminum**	30	HSS	600	850	750	0.008	0.013
		180	HSS	300	450	400	0.008	0.013
	Wrought Aluminum	30	HSS	600	850	750	0.004	0.006
		180	HSS	300	450	400	0.008	0.013
	Aluminum Bronze	100 - 200	SC	170	250	220	0.006	0.011
		200 - 250	SC	130	190	170	0.005	0.007
	Brass	100	HSS	300	445	400	0.007	0.012
	Copper	60	SC	130	165	150	0.002 ❖	0.003
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC, PC	30	40	35	0.003 ❖	0.007
		220 - 310	PC	25	35	30	0.003 ❖	0.006
	Titanium Alloy	140 - 220	SC, PC	35	50	45	0.003 ❖	0.007
		220 - 310	PC	30	45	35	0.003 ❖	0.006
	Aerospace Alloy S82	185 - 275	SC, PC	75	105	95	0.006 ❖	0.008
		275 - 350	SC, PC	60	90	80	0.005 ❖	0.007
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC, PC	45	70	55	0.003 ❖	0.006
		500	PC	35	45	40	0.002 ❖	0.005
		600	N/A	—	—	—	—	—
	Hardened Steel	300 - 400	PC	50	95	70	0.003 ❖	0.006
		400 - 500	PC	35	45	40	0.002 ❖	0.005

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

Recommended Drilling Data | Imperial (in)

T-A | HIGH-SPEED STEEL

Feed Rate (IPR) by Diameter				
1 Series 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"	**3 Series** 1.3530" - 1.8829"	**4 Series** 1.8500" - 2.5709"	**5 - 8 Series** 2.4560" - 4.5070"
0.013	0.016	0.020	0.023	0.028
0.013	0.016	0.020	0.023	0.028
0.013	0.016	0.020	0.023	0.028
0.012	0.015	0.019	0.023	0.027
0.012	0.015	0.019	0.023	0.027
0.010	0.014	0.018	0.021	0.024
0.010	0.014	0.018	0.021	0.024
0.012	0.015	0.019	0.023	0.027
0.010	0.014	0.018	0.021	0.024
0.010	0.014	0.018	0.021	0.024
0.009	0.012	0.016	0.019	0.022
0.010	0.014	0.017	0.019	0.022
0.010	0.014	0.017	0.019	0.022
0.010	0.014	0.017	0.019	0.022
0.009	0.012	0.015	0.017	0.020
0.009	0.012	0.015	0.017	0.020
0.009	0.010	0.014	0.017	0.020
0.009	0.010	0.014	0.017	0.020
0.008	0.009	0.012	0.015	0.018
0.012	0.014	0.018	0.021	0.026
0.010	0.012	0.016	0.019	0.024
0.009	0.010	0.014	0.017	0.020
0.008	0.010	0.012	0.015	0.017
0.008	0.010	0.012	0.015	0.017
0.011	0.012	0.013	0.014	0.015
0.010	0.011	0.012	0.013	0.014
0.008	0.008	0.009	0.009	0.010
0.007	0.007	0.008	0.008	0.009
0.006	0.006	0.007	0.008	0.008
0.005	0.006	0.006	0.007	0.007
0.016	0.020	0.024	0.027	0.030
0.014	0.018	0.022	0.025	0.028
0.012	0.016	0.018	0.021	0.024
0.009	0.012	0.014	0.017	0.020
0.007	0.009	0.012	0.014	0.016
0.016	0.020	0.022	0.025	0.025
0.016	0.018	0.022	0.025	0.025
0.010	0.012	0.022	0.025	0.025
0.016	0.018	0.022	0.025	0.025
0.014	0.018	0.022	0.026	0.028
0.009	0.012	0.014	0.017	0.020
0.016	0.020	0.024	0.028	0.030
0.006	0.008	0.012	0.014	0.016
0.008	0.010	0.012	0.015	—
0.007	0.008	0.010	0.012	—
0.008	0.010	0.012	0.015	—
0.007	0.008	0.010	0.012	—
0.009	0.010	0.014	0.016	0.020
0.008	0.008	0.012	0.014	0.018
0.008	0.009	0.012	0.016	0.018
0.007	0.008	0.010	0.012	0.016
—	—	—	—	—
0.008	0.009	0.012	0.016	0.018
0.007	0.008	0.010	0.012	0.016

NOTE: For diameters over 4.5070" please reach out to our application engineering department.

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Recommended Drilling Data | Imperial (in)

T-A | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (SFM) TiN	TiAlN	TiCN
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	P40 (C5)	320	420	375
		150 - 200	P40 (C5)	280	360	325
		200 - 250	P40 (C5)	260	340	295
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	P40 (C5)	300	390	360
		125 - 175	P40 (C5)	260	340	295
		175 - 225	P40 (C5)	240	310	270
		225 - 275	P40 (C5)	210	270	245
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	P40 (C5)	260	340	295
		175 - 225	P40 (C5)	240	310	275
		225 - 275	P40 (C5)	210	270	235
		275 - 325	P40 (C5)	180	230	205
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	P40 (C5)	250	325	285
		175 - 225	P40 (C5)	230	300	260
		225 - 275	P40 (C5)	210	270	235
		275 - 325	P40 (C5)	200	250	225
		325 - 375	P40 (C5)	170	220	195
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	P40 (C5)	160	200	180
		300 - 350	P40 (C5)	140	180	160
		350 - 400	P40 (C5)	120	160	140
	Structural Steel A36, A285, A516, etc.	100 - 150	P40 (C5)	240	310	275
		150 - 250	P40 (C5)	200	250	225
		250 - 350	P40 (C5)	180	230	205
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	P40 (C5)	160	220	190
		200 - 250	P40 (C5)	120	170	145
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	160	210	185
		275 - 350	K20 (C2)	120	160	140
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	160	210	185
		185 - 275	K20 (C2)	120	160	140
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	80	110	95
		185 - 275	K20 (C2)	60	80	70
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2), K10 (C3)	320	460	415
		150 - 200	K20 (C2), K10 (C3)	270	400	335
		200 - 220	K20 (C2), K10 (C3)	240	360	305
		220 - 260	K20 (C2), K10 (C3)	210	310	260
		260 - 320	K20 (C2), K10 (C3)	180	270	225
N	**Cast Aluminum**	30	K20 (C2)	1200	1500	1330
		180	K20 (C2)	800	1000	900
	Wrought Aluminum	30	K20 (C2)	1200	1500	1330
		180	K20 (C2)	800	1000	900
	Aluminum Bronze	100 - 200	K20 (C2)	275	360	325
		200 - 250	K20 (C2)	210	305	260
	Brass	100	K20 (C2)	425	600	520
	Copper	60	K20 (C2)	260	390	325
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	80	105	90
		220 - 310	K20 (C2)	60	85	70
	Titanium Alloy	140 - 220	K20 (C2)	100	125	105
		220 - 310	K20 (C2)	80	110	90
	Aerospace Alloy S82	185 - 275	K20 (C2)	160	210	185
		275 - 350	K20 (C2)	120	160	140
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	P40 (C5)	75	115	100
		500	P40 (C5)	50	85	70
		600	P40 (C5)	35	75	55
	Hardened Steel	300 - 400	P40 (C5)	110	140	130
		400 - 500	P40 (C5)	65	85	75

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

T-A | CARBIDE

Feed Rate (IPR) by Diameter				
Y/Z Series 0.3740" - 0.5109"	**0 Series** 0.5110" - 0.6959"	**1 Series** 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"	**3 Series** 1.3530" - 1.8829"
0.008	0.012	0.015	0.018	0.021
0.007	0.011	0.014	0.016	0.019
0.006	0.010	0.013	0.015	0.017
0.008 ❖	0.010	0.013	0.017	0.019
0.007 ❖	0.010	0.013	0.016	0.018
0.006 ❖	0.009	0.012	0.015	0.017
0.005 ❖	0.009	0.012	0.015	0.017
0.007	0.010	0.013	0.016	0.018
0.006	0.009	0.012	0.015	0.017
0.006	0.009	0.012	0.015	0.017
0.005	0.008	0.011	0.014	0.016
0.007	0.010	0.013	0.016	0.018
0.006	0.009	0.012	0.015	0.017
0.006	0.009	0.012	0.015	0.017
0.005	0.008	0.011	0.014	0.016
0.004	0.007	0.010	0.013	0.015
0.006 ❖	0.009	0.010	0.012	0.015
0.005 ❖	0.008	0.009	0.011	0.014
0.004 ❖	0.007	0.008	0.010	0.012
0.008 ❖	0.011	0.014	0.016	0.018
0.006 ❖	0.010	0.012	0.014	0.016
0.005 ❖	0.009	0.011	0.012	0.014
0.004	0.007	0.009	0.011	0.013
0.004	0.007	0.009	0.011	0.013
0.007 ❖	0.008	0.011	0.014	0.016
0.006 ❖	0.007	0.010	0.012	0.014
0.005 ❖	0.007	0.009	0.010	0.012
0.004 ❖	0.006	0.008	0.009	0.010
0.004 ❖	0.007	0.008	0.009	0.011
0.003 ❖	0.006	0.007	0.008	0.009
0.008	0.012	0.015	0.019	0.023
0.007	0.011	0.013	0.017	0.021
0.006	0.009	0.012	0.015	0.018
0.005	0.008	0.011	0.013	0.015
0.005	0.007	0.010	0.011	0.013
0.010	0.013	0.018	0.020	0.022
0.009	0.013	0.016	0.018	0.020
0.004	0.006	0.010	0.012	0.014
0.008	0.013	0.014	0.018	0.020
0.005	0.008	0.010	0.014	0.017
0.004	0.007	0.007	0.010	0.013
0.006	0.009	0.011	0.015	0.018
0.002 ❖	0.003	0.004	0.006	0.010
0.004 ❖	0.007	0.009	0.011	0.013
0.004 ❖	0.006	0.008	0.010	0.012
0.004 ❖	0.007	0.009	0.011	0.013
0.004 ❖	0.006	0.008	0.010	0.012
0.007 ❖	0.006	0.011	0.014	0.016
0.006 ❖	0.008	0.010	0.012	0.014
0.003 ❖	0.006	0.008	0.010	0.012
0.002 ❖	0.005	0.006	0.008	0.010
0.001 ❖	0.004	0.005	0.006	0.008
0.004 ❖	0.006	0.009	0.011	0.013
0.003 ❖	0.005	0.008	0.009	0.011

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Recommended Drilling Data | Imperial (in)

T-A FLAT BOTTOM | HIGH-SPEED STEEL

ISO	Material	Hardness (BHN)	HSS Grade	Speed (SFM) TiN	TiAlN	TiCN	AM200®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	170	250	230	290
		150 - 200	HSS	155	230	205	265
		200 - 250	HSS	140	210	185	245
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	150	220	195	255
		125 - 175	HSS	140	210	185	245
		175 - 225	HSS	130	195	175	225
		225 - 275	HSS	120	185	155	215
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	140	210	185	245
		175 - 225	HSS	130	195	175	225
		225 - 275	HSS	120	185	155	215
		275 - 325	SC	110	175	150	205
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	130	185	175	215
		175 - 225	HSS	120	175	155	205
		225 - 275	HSS	110	155	145	180
		275 - 325	SC	105	145	135	170
		325 - 375	SC	95	135	125	155
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	70	95	85	110
		300 - 350	SC	50	75	70	90
		350 - 400	SC	45	65	60	75
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	120	170	155	195
		150 - 250	HSS	105	145	135	170
		250 - 350	SC	85	120	110	140
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	SC	70	95	90	110
		200 - 250	SC	50	80	75	95
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	SC	65	90	85	110
		275 - 350	SC	50	80	70	90
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	SC	65	90	85	110
		185 - 275	SC	50	80	70	90
	Super Duplex Stainless Steel	135 - 185	SC	65	90	85	110
		185 - 275	SC	50	80	70	90
K	**SG / Nodular Cast Iron**	120 - 150	HSS	150	220	195	255
		150 - 200	HSS	130	195	175	225
		200 - 220	HSS	110	175	150	205
		220 - 260	SC	95	150	125	175
		260 - 320	SC	80	120	105	140
N	**Cast Aluminum**	30	HSS	520	750	650	-
		180	HSS	260	400	350	-
	Wrought Aluminum	30	HSS	520	750	650	850
		180	HSS	260	400	350	450
	Aluminum Bronze	100 - 200	SC	130	190	175	230
		200 - 250	SC	95	150	125	165
	Brass	100	HSS	150	220	190	250
	Copper	60	SC	115	150	130	170
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	SC	25	35	30	40
		220 - 310	SC	20	30	25	35
	Titanium Alloy	140 - 220	SC	35	45	40	50
		220 - 310	SC	26	40	35	45
	Aerospace Alloy S82	185 - 275	SC	65	90	85	110
		275 - 350	SC	50	80	70	90
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	SC	—	—	—	—
		500	SC	—	—	—	—
		600	N/A	—	—	—	—
	Hardened Steel	300 - 400	SC	45	65	60	80
		400 - 500	SC	25	40	35	45

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

T-A FLAT BOTTOM | HIGH-SPEED STEEL

Feed Rate (mm/rev) by Diameter					
Y/Z Series 0.3740" - 0.5109"	**0 Series** 0.5110" - 0.6959"	**1 Series** 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"	**3 Series** 1.3530" - 1.8829"	**4 Series** 1.8500" - 2.5709"
0.006	0.009	0.011	0.014	0.016	0.018
0.006	0.009	0.011	0.014	0.016	0.018
0.005	0.009	0.011	0.014	0.015	0.017
0.005 ❖	0.008	0.010	0.013	0.015	0.017
0.005 ❖	0.008	0.010	0.013	0.015	0.016
0.004 ❖	0.007	0.009	0.012	0.014	0.016
0.004 ❖	0.007	0.009	0.012	0.014	0.015
0.005	0.008	0.010	0.013	0.015	0.018
0.004	0.007	0.009	0.012	0.014	0.017
0.004	0.007	0.009	0.012	0.014	0.017
0.004	0.006	0.008	0.010	0.013	0.015
0.005	0.007	0.009	0.012	0.013	0.016
0.004	0.007	0.009	0.012	0.013	0.016
0.004	0.006	0.009	0.012	0.013	0.016
0.004	0.005	0.008	0.010	0.012	0.015
0.003	0.005	0.008	0.010	0.012	0.014
0.004 ❖	0.006	0.008	0.009	0.010	0.012
0.003 ❖	0.006	0.008	0.009	0.010	0.012
0.003 ❖	0.005	0.007	0.008	0.009	0.011
0.005 ❖	0.009	0.010	0.012	0.015	0.017
0.004 ❖	0.008	0.009	0.010	0.013	0.016
0.004 ❖	0.007	0.008	0.009	0.012	0.015
0.004	0.005	0.007	0.009	0.010	0.012
0.004	0.005	0.007	0.009	0.009	0.011
0.005 ❖	0.007	0.008	0.010	0.012	0.014
0.004 ❖	0.006	0.007	0.009	0.010	0.011
0.005 ❖	0.007	0.008	0.010	0.012	0.014
0.004 ❖	0.006	0.007	0.009	0.010	0.011
0.005 ❖	0.007	0.008	0.010	0.012	0.014
0.004 ❖	0.006	0.007	0.009	0.010	0.011
0.007	0.012	0.016	0.020	0.024	0.027
0.006	0.011	0.014	0.018	0.022	0.025
0.006	0.009	0.012	0.016	0.018	0.021
0.005	0.007	0.009	0.012	0.014	0.017
0.004	0.006	0.007	0.009	0.012	0.014
0.007	0.011	0.014	0.017	0.018	0.019
0.007	0.011	0.014	0.016	0.017	0.019
0.007	0.011	0.014	0.017	0.018	0.019
0.007	0.011	0.014	0.016	0.017	0.019
0.005	0.009	0.012	0.016	0.020	0.024
0.004	0.006	0.008	0.010	0.012	0.015
0.006	0.010	0.014	0.017	0.021	0.025
0.002 ❖	0.003	0.006	0.008	0.010	0.014
0.003 ❖	0.006	0.007	0.009	0.010	0.012
0.003 ❖	0.005	0.006	0.007	0.008	0.010
0.003 ❖	0.006	0.007	0.009	0.010	0.012
0.003 ❖	0.005	0.006	0.007	0.008	0.010
0.005 ❖	0.007	0.008	0.010	0.012	0.015
0.004 ❖	0.006	0.007	0.009	0.010	0.012
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
0.003 ❖	0.005	0.007	0.008	0.011	0.015
0.002 ❖	0.004	0.006	0.007	0.009	0.011

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

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Recommended Drilling Data | Imperial (in)

T-A FLAT BOTTOM | CARBIDE

ISO	Material	Hardness (BHN)	Carbide Grade	Speed (SFM) TiN	TiAlN	TiCN	AM200®
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K20 (C2)	270	380	325	425
		150 - 200	K20 (C2)	240	320	280	375
		200 - 250	K20 (C2)	220	300	260	350
	Low-Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K20 (C2)	260	345	315	410
		125 - 175	K20 (C2)	220	300	260	350
		175 - 225	K20 (C2)	200	280	235	320
		225 - 275	K20 (C2)	180	240	215	285
	Medium-Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K20 (C2)	220	300	260	350
		175 - 225	K20 (C2)	200	280	240	320
		225 - 275	K20 (C2)	180	240	210	285
		275 - 325	K20 (C2)	150	210	180	240
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K20 (C2)	215	290	250	340
		175 - 225	K20 (C2)	200	270	230	320
		225 - 275	K20 (C2)	180	230	205	290
		275 - 325	K20 (C2)	175	215	190	280
		325 - 375	K20 (C2)	145	190	170	230
	High-Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K20 (C2)	140	170	160	220
		300 - 350	K20 (C2)	120	160	140	190
		350 - 400	K20 (C2)	100	145	120	160
	Structural Steel A36, A285, A516, etc.	100 - 150	K20 (C2)	205	265	240	325
		150 - 250	K20 (C2)	170	215	200	270
		250 - 350	K20 (C2)	155	200	180	240
	Tool Steel H-13, H-21, A-4, S-3, etc.	150 - 200	K20 (C2)	140	190	160	220
		200 - 250	K20 (C2)	100	150	120	160
M	**Stainless Steel 400 Series** 416, 420, etc.	185 - 275	K20 (C2)	140	180	165	210
		275 - 350	K20 (C2)	110	140	125	160
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	K20 (C2)	90	120	110	130
		185 - 275	K20 (C2)	70	90	80	105
	Super Duplex Stainless Steel	135 - 185	K20 (C2)	70	95	85	110
		185 - 275	K20 (C2)	55	70	60	85
K	**SG / Nodular Cast Iron**	120 - 150	K20 (C2)	270	405	360	450
		150 - 200	K20 (C2)	230	350	290	390
		200 - 220	K20 (C2)	200	320	260	350
		220 - 260	K20 (C2)	180	270	220	300
		260 - 320	K20 (C2)	160	240	200	265
N	**Cast Aluminum**	30	K20 (C2)	520	750	650	—
		180	K20 (C2)	260	400	350	—
	Wrought Aluminum	30	K20 (C2)	950	1200	1070	1270
		180	K20 (C2)	630	800	715	850
	Aluminum Bronze	100 - 200	K20 (C2)	240	310	280	340
		200 - 250	K20 (C2)	180	265	220	285
	Brass	100	K20 (C2)	370	520	450	600
	Copper	60	K20 (C2)	220	345	280	380
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	140 - 220	K20 (C2)	70	90	80	110
		220 - 310	K20 (C2)	50	70	60	80
	Titanium Alloy	140 - 220	K20 (C2)	85	110	90	130
		220 - 310	K20 (C2)	70	95	80	100
	Aerospace Alloy S82	185 - 275	K20 (C2)	140	120	165	130
		275 - 350	K20 (C2)	110	90	125	105
H	**Wear Plate** Hardox®, AR400, T-1, etc.	400	K20 (C2)	65	100	85	130
		500	K20 (C2)	45	75	60	100
		600	K20 (C2)	35	65	45	80
	Hardened Steel	300 - 400	K20 (C2)	100	125	110	135
		400 - 500	K20 (C2)	60	75	65	110

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment Values

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example (3XL)

	Data	•	Adjustment Value	=	Recommendation for Deep Holes
Speed	200 SFM	•	0.75	=	150 SFM
Feed	0.008 IPR	•	0.90	=	0.007 IPR

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

T-A FLAT BOTTOM | CARBIDE

Feed Rate (IPR) by Diameter			
Y/Z Series 0.3740" - 0.5109"	**0 Series** 0.5110" - 0.6959"	**1 Series** 0.6900" - 0.9609"	**2 Series** 0.9610" - 1.3809"
0.007	0.010	0.013	0.015
0.006	0.009	0.012	0.014
0.005	0.009	0.011	0.013
0.007 ❖	0.009	0.011	0.014
0.006 ❖	0.009	0.011	0.014
0.005 ❖	0.008	0.010	0.013
0.004 ❖	0.008	0.010	0.013
0.006	0.009	0.011	0.014
0.005	0.008	0.010	0.013
0.005	0.008	0.010	0.013
0.004	0.007	0.009	0.012
0.006	0.009	0.011	0.014
0.005	0.008	0.010	0.013
0.005	0.008	0.010	0.013
0.004	0.007	0.009	0.012
0.003	0.006	0.009	0.011
0.005 ❖	0.008	0.009	0.010
0.004 ❖	0.007	0.008	0.009
0.003 ❖	0.006	0.007	0.009
0.007 ❖	0.009	0.012	0.014
0.005 ❖	0.009	0.010	0.012
0.004 ❖	0.008	0.009	0.010
0.003	0.006	0.008	0.009
0.003	0.006	0.008	0.009
0.006 ❖	0.008	0.010	0.012
0.005 ❖	0.007	0.009	0.010
0.005 ❖	0.007	0.008	0.010
0.004 ❖	0.006	0.007	0.009
0.004 ❖	0.006	0.007	0.008
0.003 ❖	0.005	0.006	0.007
0.007	0.010	0.013	0.016
0.006	0.009	0.011	0.014
0.005	0.008	0.010	0.013
0.004	0.007	0.009	0.011
0.004	0.006	0.009	0.009
0.009	0.013	0.016	0.017
0.008	0.012	0.014	0.015
0.005	0.007	0.009	0.010
0.004	0.006	0.008	0.009
0.004	0.006	0.008	0.011
0.003	0.005	0.006	0.008
0.005	0.006	0.008	0.012
0.002 ❖	0.002	0.003	0.005
0.003 ❖	0.006	0.008	0.009
0.003 ❖	0.005	0.007	0.009
0.003 ❖	0.005	0.006	0.008
0.003 ❖	0.004	0.005	0.007
0.006 ❖	0.006	0.010	0.012
0.005 ❖	0.005	0.009	0.010
0.003 ❖	0.004	0.006	0.008
0.002 ❖	0.003	0.005	0.006
0.001 ❖	0.002	0.004	0.005
0.004 ❖	0.006	0.007	0.009
0.003 ❖	0.005	0.006	0.007

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Recommended Drilling Data | Imperial (in)

T-A DIAMOND COATED | CARBIDE

ISO	Material	Carbide Grade	Speed (SFM) Diamond Coating	Feed Rate (IPR) by Diameter			
				Y/Z Series 0.3740" - 0.5109"	0 Series 0.5110" - 0.6959"	1 Series 0.6900" - 0.9609"	2 Series 0.9610" - 1.3809"
Polymer Matrix Composites	Carbon (hard)	N2	1000 - 1500	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Carbon Fiber	N2	1000 - 1500	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Carbon / Glass Fiber	N2	1000 - 1500	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Fiberglass	N2	1000 - 1500	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Graphite	N2	1000 - 1500	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Plastics	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Epoxy Resin	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Bismaleimide Resin	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Polyester Resin	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Phenolic Resin	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Rubber	N2	250 - 1000	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
Metal Matrix Composites	Aluminum	N2	1000	0.008	0.013	0.016	0.020
	Si < 10%	N2	1000	0.008	0.013	0.016	0.020
	10% < Si < 15%	N2	850 - 1000	0.008	0.013	0.016	0.020
	15% < SI < 20%	N2	650 - 850	0.008	0.013	0.016	0.020
	20% < Si < 25%	N2	500 - 650	0.008	0.013	0.016	0.020
	25% < Si	N2	200 - 500	0.008	0.013	0.016	0.020
	Brass	N2	250 - 500	0.008	0.013	0.016	0.020
	Bronze	N2	250 - 500	0.008	0.013	0.016	0.020
	Copper	N2	100 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Copper Alloys	N2	100 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Lead Alloys	N2	100 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Magnesium Alloys	N2	100 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Precious Metals	N2	100 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
Ceramic Matrix Composites	Carbide (green)	N2	50 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Ceramic (green)	N2	50 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014
	Ceramic (pre-sintered)	N2	50 - 250	0.004 - 0.006	0.008 - 0.010	0.010 - 0.012	0.012 - 0.014

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Speed and Feed Adjustment

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Speed	0.90	0.85	0.80	0.80	0.75
Feed	–	0.95	0.90	0.90	0.90

Recommended Speed and Feed Example

If the recommended speed and feed is 200 SFM and 0.008 IPR for a standard length holder, then the speed and feed using a 3XL holder in the same application would be 150 SFM and 0.007 IPR.

200 • 0.75 = 150 SFM	0.008 • 0.90 = 0.007 IPR

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

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Notes

Coolant Recommendations | Metric (mm)

T-A | HIGH-SPEED STEEL

ISO	Material	Pressure or Flow Rate	Y/Z Series 9.50 mm - 12.97 mm	0 Series 12.98 mm - 17.67 mm	1 Series 17.53 mm - 24.40 mm	2 Series 24.41 mm - 35.06 mm	3 Series 34.37 mm - 47.82 mm	4 Series 46.99 mm - 65.30 mm	5 - 8 Series 62.38 mm - 114.48 mm
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	BAR	12 - 13	7 - 8	7 - 10	6 - 8	5 - 7	4	5 - 6
		LPM	9.5 - 9.8	10.6 - 11.4	16.7 - 19.7	26.5 - 30.3	45.4 - 53.0	114 - 125	144 - 167
	Low-Carbon Steel 1010, 1020, 1025, 1522, etc.	BAR	11 - 12	5 - 6	5 - 7	4 - 6	4 - 5	2 - 3	3 - 5
		LPM	9.1 - 9.5	9.1 - 9.8	14.0 - 15.9	22.7 - 26.5	41.6 - 45.4	98 - 114	125 - 144
	Medium-Carbon Steel 1030, 1040, 1050, 1527, etc.	BAR	11	5 - 6	5 - 6	4 - 5	3 - 5	2 - 3	3 - 5
		LPM	8.7 - 9.1	8.7 - 9.8	13.6 - 15.5	18.9 - 22.7	37.9 - 45.4	98 - 114	125 - 144
	Alloy Steel 4140, 5140, 8640, etc.	BAR	11	5	5 - 6	3 - 5	3 - 4	2	3
		LPM	8.7 - 9.1	8.3 - 9.1	13.2 - 14.8	18.9 - 22.7	31.9 - 41.6	98 - 106	114 - 125
	High-Strength Alloy 4340, 4330V, 300M, etc.	BAR	10 - 11	4	3	2	2	1 - 2	2
		LPM	8.7 - 9.1	7.9 - 8.3	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87	87 - 98
	Structural Steel A36, A285, A516, etc.	BAR	11	5 - 6	5 - 6	3 - 4	3	2	3
		LPM	8.7 - 9.1	9.1 - 9.8	13.2 - 14.8	18.9 - 22.7	34.1 - 37.9	87 - 98	114 - 125
	Tool Steel H-13, H-21, A-4, S-3, etc.	BAR	10 - 11	4	3	2	2	1 - 2	2
		LPM	8.7 - 9.1	7.9 - 8.3	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87	87 - 98
M	**Stainless Steel 400 Series** 416, 420, etc.	BAR	11.8	5.9	5.2	3.8	3.5	2	3.1
		LPM	9.5	9.8	14	23	38	98	117
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	BAR	11.8	5.9	5.2	3.8	3.5	2	3.1
		LPM	9.5	9.8	14	23	38	98	117
	Super Duplex Stainless Steel	BAR	11.8	5.9	5.2	3.8	3.5	2	3.1
		LPM	9.5	9.8	14	23	38	98	117
K	**SG / Nodular Cast Iron**	BAR	11	4.5	4.2	2.8	2.4	2	2.4
		LPM	9.1	8.7	12.5	19	34	98	106
	Grey / White Iron	BAR	11	4.5	4.2	2.8	2.4	2	2.4
		LPM	9.1	8.7	12.5	19	34	98	106
N	**Cast Aluminum**	BAR	14.5	12.4	15.8	11	8.6	3.5	5.5
		LPM	10	14	23	34	61	125	159
	Wrought Aluminum	BAR	14.5	12.4	15.8	11	8.6	3.5	5.5
		LPM	10	14	23	34	61	125	159
	Aluminum Bronze	BAR	12.8	8.3	9.65	7.95	6.9	3.5	6.2
		LPM	9.6	11.4	19.7	30.3	53	125	167
	Brass	BAR	11	4.5	4.2	2.8	2.4	2	2.4
		LPM	9.1	8.7	12.5	19	34	98	106
	Copper	BAR	12.8	8.3	9.65	7.95	6.9	3.5	6.2
		LPM	9.6	11.4	19.7	30.3	53	125	167
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	BAR	10 - 11	4 - 5	3 - 4	2	2	2	3
		LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.1	15.1 - 18.9	26.5 - 30.3	87 - 98	125
	Titanium Alloy	BAR	10 - 11	4 - 5	3 - 4	2	2	2	3
		LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.1	15.1 - 18.9	26.5 - 30.3	87 - 98	125
	Aerospace Alloy S82	BAR	10 - 11	4 - 5	3 - 4	2	2	2	3
		LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.1	15.1 - 18.9	26.5 - 30.3	87 - 98	125
H	**Wear Plate** Hardox®, AR400, T-1, etc.	BAR	10.7	4.2	3.5	2	2	1.7	2
		LPM	9.1	8.3	11.7	19	30	87	98
	Hardened Steel	BAR	10.7	4.2	3.5	2	2	1.7	2
		LPM	9.1	8.3	11.7	19	30	87	98

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Coolant Adjustment

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Pressure and Flow	1.3	1.5	2	2	3

Recommended Coolant Example

If the recommended pressure and flow is 12 bar and 22 LPM for a standard length holder, then the adjusted pressure and flow for a 3XL holder would be 36 bar and 66 LPM.

12 • 3 = 36 bar	22 • 3 = 66 LPM

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

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Coolant Recommendations | Metric (mm)

T-A | CARBIDE

ISO	Material	Pressure or Flow Rate	Y/Z Series 9.50 mm - 12.97 mm	0 Series 12.98 mm - 17.67 mm	1 Series 17.53 mm - 24.40 mm	2 Series 24.41 mm - 35.06 mm	3 Series 34.37 mm - 47.82 mm
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	BAR	17 - 20	17	15	15	20
		LPM	12.2	16.3	25.2	41.5	71.9
	Low-Carbon Steel 1010, 1020, 1025, 1522, etc.	BAR	18	11	11	12	9
		LPM	11.4	13.3	20.6	36.5	62.0
	Medium-Carbon Steel 1030, 1040, 1050, 1527, etc.	BAR	17	10	10	10	8
		LPM	11.3	12.5	20.0	33.8	57.0
	Alloy Steel 4140, 5140, 8640, etc.	BAR	17	9	10	8	7
		LPM	11.1	12.3	19.3	30.0	55.8
	High-Strength Alloy 4340, 4330V, 300M, etc.	BAR	15	5	4	3	3
		LPM	10.4	9.1	12.6	18.8	33.6
	Structural Steel A36, A285, A516, etc.	BAR	16	9	8	7	5
		LPM	10.8	12.0	17.5	27.8	47.1
	Tool Steel H-13, H-21, A-4, S-3, etc.	BAR	15	5	5	3	3
		LPM	10.4	9.1	13.6	19.7	36.5
M	**Stainless Steel 400 Series** 416, 420, etc.	BAR	22.7	16.5	17.9	17.2	13.1
		LPM	13	16.3	26.3	44.2	75
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	BAR	22.7	16.5	17.9	17.2	13.1
		LPM	13	16.3	26.3	44.2	75
	Super Duplex Stainless Steel	BAR	22.7	16.5	17.9	17.2	13.1
		LPM	13	16.3	26.3	44.2	75
K	**SG / Nodular Cast Iron**	BAR	15.5	7.2	6.2	6.2	5.5
		LPM	10.7	10.8	15.4	26.5	48.7
	Grey / White Iron	BAR	15.5	7.2	6.2	6.2	5.5
		LPM	10.7	10.8	15.4	26.5	48.7
N	**Cast Aluminum**	BAR	24.1	22	21.7	19.6	13.8
		LPM	13.4	18.8	29	47.2	77
	Wrought Aluminum	BAR	24.1	22	21.7	19.6	13.8
		LPM	13.4	18.8	29	47.2	77
	Aluminum Bronze	BAR	20	16.5	16.5	15.2	12
		LPM	12.2	16.3	25.2	41.5	71.9
	Brass	BAR	24.1	22	21.7	19.6	13.8
		LPM	13.4	18.8	29	47.2	77
	Copper	BAR	20	16.5	16.5	15.2	12
		LPM	12.2	16.3	25.2	41.5	71.9
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	BAR	17	11	12	11	9
		LPM	11.1	13.5	21.9	35.4	62.0
	Titanium Alloy	BAR	17	11	12	11	9
		LPM	11.1	13.5	21.9	35.4	62.0
	Aerospace Alloy S82	BAR	17	11	12	11	9
		LPM	11.1	13.5	21.9	35.4	62.0
H	**Wear Plate** Hardox®, AR400, T-1, etc.	BAR	14.5	5.2	4.8	3.4	3.1
		LPM	10.4	9.1	13.6	19.7	36.5
	Hardened Steel	BAR	14.5	5.2	4.8	3.4	3.1
		LPM	10.4	9.1	13.6	19.7	36.5

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Coolant Adjustment

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Pressure and Flow	1.3	1.5	2	2	3

Recommended Coolant Example

If the recommended pressure and flow is 12 bar and 22 LPM for a standard length holder, then the adjusted pressure and flow for a 3XL holder would be 36 bar and 66 LPM.

12 • 3 = 36 bar	22 • 3 = 66 LPM

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

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- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
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Coolant Recommendations | Imperial (in)

T-A | HIGH-SPEED STEEL

ISO	Material	Pressure or Flow Rate	Y/Z Series 0.3740" - 0.5109"	0 Series 0.5110" - 0.6959"	1 Series 0.6900" - 0.9609"	2 Series 0.9610" - 1.3809"	3 Series 1.3530" - 1.8829"	4 Series 1.8500" - 2.5709"	5 - 8 Series 2.4560" - 4.5070"
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	PSI	175 - 185	100 - 120	105 - 140	80 - 115	75 - 100	40 - 50	65 - 90
		GPM	2.5 - 2.6	2.8 - 3.0	4.4 - 5.2	7 - 8	12 - 14	30 - 33	38 - 44
	Low-Carbon Steel 1010, 1020, 1025, 1522, etc.	PSI	165 - 170	75 - 90	75 - 95	60 - 80	55 - 75	30 - 40	50 - 65
		GPM	2.4 - 2.5	2.4 - 2.6	3.7 - 4.2	6 - 7	11 - 12	26 - 30	33 - 38
	Medium-Carbon Steel 1030, 1040, 1050, 1527, etc.	PSI	160 - 165	70 - 85	70 - 90	55 - 75	50 - 70	30 - 40	50 - 65
		GPM	2.3 - 2.4	2.3 - 2.6	3.7 - 4.2	5 - 6	10 - 12	26 - 30	33 - 38
	Alloy Steel 4140, 5140, 8640, etc.	PSI	160 - 165	65 - 75	65 - 80	50 - 70	45 - 60	30 - 35	40 - 50
		GPM	2.3 - 2.4	2.2 - 2.4	3.5 - 3.9	5 - 6	10 - 11	26 - 28	30 - 33
	High-Strength Alloy 4340, 4330V, 300M, etc.	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25	40 - 50
		GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23	23 - 26
	Structural Steel A36, A285, A516, etc.	PSI	160 - 165	75 - 85	65 - 80	40 - 55	40 - 50	25 - 30	40 - 50
		GPM	2.3 - 2.4	2.4 - 2.6	3.5 - 3.9	5 - 6	9 - 10	23 - 26	30 - 33
	Tool Steel H-13, H-21, A-4, S-3, etc.	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25	25 - 30
		GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23	23 - 26
M	**Stainless Steel 400 Series** 416, 420, etc.	PSI	171	86	75	55	51	29	45
		GPM	3	3	4	6	10	26	31
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	PSI	171	86	75	55	51	29	45
		GPM	3	3	4	6	10	26	31
	Super Duplex Stainless Steel	PSI	171	86	75	55	51	29	45
		GPM	3	3	4	6	10	26	31
K	**SG / Nodular Cast Iron**	PSI	160	65	61	41	35	29	35
		GPM	2	2	3	5	9	26	28
	Grey / White Iron	PSI	160	65	61	41	35	29	35
		GPM	2	2	3	5	9	26	28
N	**Cast Aluminum**	PSI	210	180	230	159	125	51	80
		GPM	3	4	6	9	16	33	42
	Wrought Aluminum	PSI	210	180	230	159	125	51	80
		GPM	3	4	6	9	16	33	42
	Aluminum Bronze	PSI	186	120	140	115	100	51	90
		GPM	2.5	3	5	8	14	33	44
	Brass	PSI	159	65	61	41	35	29	35
		GPM	2	2	3	5	9	26	28
	Copper	PSI	186	120	140	115	100	51	90
		GPM	2.5	3	5	8	14	33	44
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30	25 - 30	44
		GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8	23 - 26	33
	Titanium Alloy	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30	25 - 30	44
		GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8	23 - 26	33
	Aerospace Alloy S82	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30	25 - 30	44
		GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8	23 - 26	33
H	**Wear Plate** Hardox®, AR400, T-1, etc.	PSI	155	61	51	29	29	25	29
		GPM	2	2	3	5	8	23	26
	Hardened Steel	PSI	155	61	51	29	29	25	29
		GPM	2	2	3	5	8	23	26

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Coolant Adjustment

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Pressure and Flow	1.3	1.5	2	2	3

Recommended Coolant Example

If the recommended pressure and flow is 150 PSI and 2.4 GPM for a standard length holder, then the adjusted pressure and flow for a 3XL holder would be 450 PSI and 7.2 GPM.

150 • 3 = 450 PSI	2.4 • 3 = 7.2 GPM

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

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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Coolant Recommendations | Imperial (in)

T-A | CARBIDE

ISO	Material	Pressure or Flow Rate	Y/Z Series 0.3740" - 0.5109"	0 Series 0.5110" - 0.6959"	1 Series 0.6900" - 0.9609"	2 Series 0.9610" - 1.3809"	3 Series 1.3530" - 1.8829"
P	**Free-Machining Steel** 1118, 1215, 12L14, etc.	PSI	195	140	160	140	155
		GPM	2.6	3.3	5.5	9	18
	Low-Carbon Steel 1010, 1020, 1025, 1522, etc.	PSI	180	105	105	110	115
		GPM	2.5	2.9	4.4	8	15
	Medium-Carbon Steel 1030, 1040, 1050, 1527, etc.	PSI	175	100	90	70	75
		GPM	2.5	2.8	4.1	7	13
	Alloy Steel 4140, 5140, 8640, etc.	PSI	165	85	100	75	70
		GPM	2.4	2.6	4.3	6	12
	High-Strength Alloy 4340, 4330V, 300M, etc.	PSI	175	115	105	75	70
		GPM	2.4	2.3	3.2	5	8
	Structural Steel A36, A285, A516, etc.	PSI	175	115	105	75	70
		GPM	2.5	3.0	4.4	6	12
	Tool Steel H-13, H-21, A-4, S-3, etc.	PSI	155	60	55	40	35
		GPM	2.4	2.2	3.2	5	8
M	**Stainless Steel 400 Series** 416, 420, etc.	PSI	329	239	260	250	190
		GPM	3	4	7	12	20
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	PSI	329	239	260	250	190
		GPM	3	4	7	12	20
	Super Duplex Stainless Steel	PSI	329	239	260	250	190
		GPM	3	4	7	12	20
K	**SG / Nodular Cast Iron**	PSI	225	104	90	90	80
		GPM	3	3	4	7	13
	Grey / White Iron	PSI	225	104	90	90	80
		GPM	3	3	4	7	13
N	**Cast Aluminum**	PSI	350	319	315	284	200
		GPM	4	5	8	12	20
	Wrought Aluminum	PSI	350	319	315	284	200
		GPM	4	5	8	12	20
	Aluminum Bronze	PSI	290	239	239	220	174
		GPM	3	4	7	11	19
	Brass	PSI	350	319	315	284	200
		GPM	4	5	7	12	20
	Copper	PSI	290	239	239	220	174
		GPM	3	4	7	11	19
S	**High-Temp Alloy** Hastelloy® B, Inconel® 600, etc.	PSI	247	160	174	160	130
		GPM	3	4	6	9	16
	Titanium Alloy	PSI	247	160	174	160	130
		GPM	3	4	6	9	16
	Aerospace Alloy S82	PSI	247	160	174	160	130
		GPM	3	4	6	9	16
H	**Wear Plate** Hardox®, AR400, T-1, etc.	PSI	210	75	70	49	45
		GPM	3	2	4	5	10
	Hardened Steel	PSI	210	75	70	49	45
		GPM	3	2	4	5	10

❖ Contact our Application Engineering department for assistance when machining these materials.

Deep Hole Drilling Coolant Adjustment

	⚠ Holder Length				
	Extended	Long	Long Plus	XL	3XL
Pressure and Flow	1.3	1.5	2	2	3

Recommended Coolant Example

If the recommended pressure and flow is 150 PSI and 2.4 GPM for a standard length holder, then the adjusted pressure and flow for a 3XL holder would be 450 PSI and 7.2 GPM.

150 • 3 = 450 PSI	2.4 • 3 = 7.2 GPM

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

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Technical Formulas

Formulas

1.	**RPM**	**= (3.82 • SFM) / DIA**
	where:	
	RPM	= revolutions per minute (rev/min)
	SFM	= speed (ft/min)
	DIA	= diameter of drill (inch)
2.	**IPM**	**= RPM • IPR**
	where:	
	IPM	= inches per minute (in/min)
	RPM	= revolutions per minute (rev/min)
	IPR	= feed rate (in/rev)
3.	**SFM**	**= RPM • 0.262 • DIA**
	where:	
	SFM	= speed (ft/min)
	RPM	= revolutions per minute (rev/min)
	DIA	= diameter of drill (inch)
4.	**Thrust**	**= 153,700 • IPR • DIA • K_m**
	where:	
	Thrust	= axial thrust (lbs)
	IPR	= feed rate (in/rev)
	DIA	= diameter of drill (inch)
	K_m	= specific cutting energy (lbs/in^2)
5.	**Tool Power**	**= .6991 • IPR • RPM • K_m • DIA^2**
	where:	
	Tool Power	= tool power (HP)
	IPR	= feed rate (in/rev)
	RPM	= revolutions per minute (rev/min)
	K_m	= specific cutting energy (lbs/in^2)
	DIA	= diameter of drill (inch)

Material Constants

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

Formulas

1.	**RPM**	**= (318.47 • m/min) / DIA**
	where:	
	RPM	= revolutions per minute (rev/min)
	m/min	= speed (m/min)
	DIA	= diameter of drill (mm)
2.	**mm/min**	**= RPM • mm/rev**
	where:	
	mm/min	= mm per minute (mm/min)
	RPM	= revolutions per minute (rev/min)
	mm/rev	= feed rate (mm/rev)
3.	**m/min**	**= RPM • 0.003 • DIA**
	where:	
	m/min	= speed (m/min)
	RPM	= revolutions per minute (rev/min)
	DIA	= diameter of drill (mm)
4.	**Thrust**	**= 154 • (mm/rev) • DIA • K_m**
	where:	
	Thrust	= axial thrust (N)
	mm/rev	= feed rate (mm/rev)
	DIA	= diameter of drill (mm)
	K_m	= specific cutting energy (kPa)
5.	**Tool Power**	**= ((mm/rev) • RPM • K_m • DIA^2)/218604.8**
	where:	
	Tool Power	= tool power (HP)
	mm/rev	= feed rate (mm/rev)
	RPM	= revolutions per minute (rev/min)
	K_m	= specific cutting energy (kPa)
	DIA	= diameter of drill (mm)

Material Constants

Type of Material	Hardness	K_m (kPa)
Plain Carbon and Alloy Steel	85 - 200 BHN	5.45
	200 - 275 BHN	6.48
	275 - 375 BHN	6.89
	375 - 425 BHN	7.93
Stainless Steels	135 - 275 BHN	6.48
	30 - 45 RC	7.45
Cast Iron	100 - 200 BHN	3.45
	200 - 300 BHN	7.45
Copper Alloy	20 - 80 RB	2.96
	80 - 100 RB	4.96
Aluminum Alloy	–	1.52
Magnesium Alloy	–	1.10
High-Temperature Alloys	–	9.93
Titanium Alloy	–	4.96

The table and equations on this page are found in the “Machinery’s Handbook.” Permission to simplify and print the equations is granted by the Editor of the “Machinery’s Handbook.”

Deep Hole Drilling Guidelines

For Lengths Greater Than 9xD (Standard Plus, Extended, Long, Long Plus, XL, 3XL, and Special Lengths)

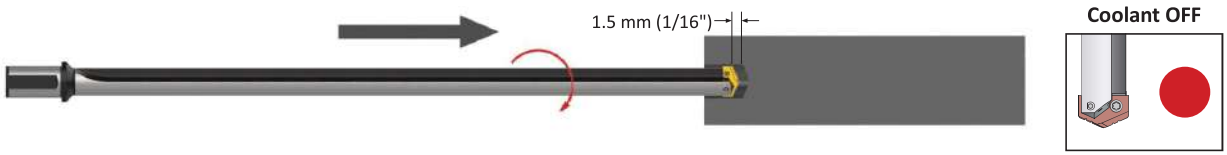
1. Pilot Hole
100% RPM
100% mm/rev (IPR)

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.



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

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



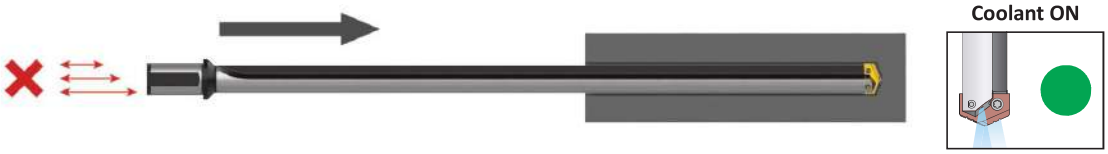
3. Deep Hole Transition Drilling
50% RPM
75% mm/rev (IPR)

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



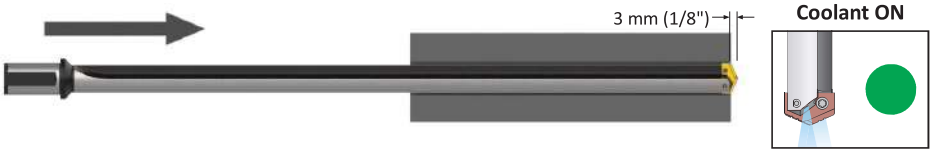
4. Deep Hole Drilling - Blind
100% RPM
100% mm/rev (IPR)

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



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

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



6. Drill Retract
⚠ 50 RPM max

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



⚠ WARNING **Tool failure can cause serious injury. To prevent:**
- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Troubleshooting Guide

	Potential Problem																					
	Accelerated corner wear	Barber pole	Bell-mouthed hole	Insert chipping	Blue chips	Built-up Edge (BUE)	Chatter	Chip packing	Chipping of point	Damaged or broken tools	Excessive margin wear	High flank wear	Hole lead off	Hole out of position	Hole out of round	Notching of insert	Oversize hole	Poor hole finish	Poor tool life	Power spikes - Load meter	Step burned on insert	
Setup Condition	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	**Possible Solutions**
⚠ Use of Standard, Standard Plus, Extended, Long, Long Plus, XL, and 3XL holders See page 146 for Deep Hole Drilling guidelines		**2**	**3**				**7**		**9**				**13**	**14**			**17**					• Start with short holder and drill a minimum depth equal to 2xD (see page A30: 146 for instructions). • Spot hole with stub tool of same or greater included angle as T-A® drill insert. • Decrease feed a minimum of 50% until establishing full diameter. • Use special holder with wear pads or chrome bearing area to work with drill bushings.
Starting on an inclined surface		**2**					**7**		**9**	**10**	**11**		**13**		**15**							• Spot face surface to provide a flat entry surface. • Spot hole with stub tool of same or greater included angle as T-A® drill insert. • Decrease feed a minimum of 50% until establishing full diameter. • Use special holder with wear pads or chrome bearing area to work with drill bushings.
Worn or misaligned spindle (lathe, screw machine, chucker)	**1**	**2**	**3**				**7**		**9**	**10**	**11**		**13**				**17**	**18**				• Align spindle and turret or tailstock. • Repair spindle. • Spot hole with stub tool of same or greater included angle as T-A® drill insert.
Use of low rigidity machine tools (radial drills, multi-spindle drill press, etc.)		**2**	**3**	**4**			**7**		**9**	**10**			**13**	**14**								• Spot hole with stub tool of same or greater included angle as T-A® drill insert. • Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** Do not reduce feed below threshold of good chip formation). • Use special holder with wear pads or chrome bearing area to work with drill bushings. • Use tougher tool steel grades with high wear-resistant coatings.
Poor workpiece support.		**2**		**4**			**7**			**10**	**11**				**15**			**18**				• Provide additional support for the workpiece. Reduce penetration rate to fall within the physical limits of the machine or setup (**NOTICE:** Do not reduce feed below threshold of good chip formation). • Use tougher tool steel grades with high wear-resistant coatings.
Flood coolant, low coolant pressure or low coolant volume	**1**				**5**	**6**		**8**		**10**		**12**					**17**	**18**	**19**	**20**	**21**	• Run coolant through tool holder when drilling greater than one times diameter. • Increase coolant pressure and volume through the tool holder. • Reduce penetration rate to fall within the coolant limitations (**NOTICE:** Do not reduce feed below threshold of good chip formation). • Add a peck cycle to help clear chips.

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

- When using holders without support bushing, use a short T-A holder to establish an initial hole that is a minimum of 2 diameters deep.
- Do not rotate tool holders more than 50 RPM unless it is engaged with the workpiece or fixture.

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

Troubleshooting Guide

	Potential Problem																					
	Accelerated corner wear	Barber pole	Bell-mouthed hole	Insert chipping	Blue chips	Built-up Edge (BUE)	Chatter	Chip packing	Chipping of point	Damaged or broken tools	Excessive margin wear	High flank wear	Hole lead off	Hole out of position	Hole out of round	Notching of insert	Oversize hole	Poor hole finish	Poor tool life	Power spikes - Load meter	Step burned on insert	
Setup Condition	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	**Possible Solutions**
Interrupted cuts. Entry or exit surfaces that are not perpendicular to the spindle (draft angles, stepped surfaces, cross holes, and cast or forged surfaces)				4			7		9	10	11		13	14	15		17	18	19			• Premill (spot face) entry or exit surface to remove interruption. • Spot hole with stub tool of same or greater included angle as T-A® drill insert. • Decrease feed as much as 50% through entry or exit interruption. • Use short holders in low impact entry cuts.
Material harder than expected or running tools beyond recommended speeds	1				5	6				10		12							19		21	• Reduce speed if a step is worn in the insert, calculate SFM at the worn diameter. Reduce this value by 10% and apply this new value to the original tool diameter. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance. • Select an insert grade (premium, super cobalt, or carbide) or coating (TiAlN, TiCN, or AM200®) that is more wear- and heat-resistant.
Poor material microstructure or foreign particles (forgings and castings that have not been normalized or annealed, poorly prepared steel, flame cut parts and sand casting)				4		6				10		12	13			16			19			• Compare performance of other tools for similar wear problems, which may indicate poor microstructure. Anneal or normalize parts to improve microstructure for machining. • To improve tool life in materials with poor microstructure, try carbide grades. • For hard spots or inclusions, use the tougher insert steel grade with high wear-resistant coatings (TiAlN, TiCN, AM200®). • Reduce feeds (**NOTICE:** Do not reduce feed below threshold of good chip formation).
Poor chip control								8		10	11		13				17	18	19	20		• Increase feed to recommended levels. Contact Allied's Application Engineering team for technical recommendations. • Increase coolant pressure and volume. • Improve coolant condition by use of quality products and regular maintenance. • See pages A30: 5 - 6 for special purpose geometries.
Spot drilled holes with included angle less than that matching T-A® or cored holes	1			4			7						13			16			19			• Spot hole with short tool of same or greater included angle as T-A® drill insert. • Reduce feed (**NOTICE:** Do not reduce feed below threshold of good chip formation) • If possible, drill from solid.
Use of high wear-resistant insert grades				4						10												• Use tougher grade of T-A® (from carbide to cobalt to HSS). See wear versus toughness chart on page A30: 10. • Increase rigidity of setup.