



ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing



Boring



Reaming



Burnishing



Threading



Specials



4TEX[®] Drill

► *DRILLING*

Indexable Carbide Insert Drilling System

North America

Allied Machine
120 Deeds Drive
Dover, OH 44622
United States

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

ThreadMills USA™

4185 Crosstowne Ct #B
Evans, GA 30809
United States

Superior®

1285 S Patton St.
Xenia, OH 45385
United States

Europe

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

Wohlhaupter™ GmbH

Maybachstrasse 4
Postfach 1264
72636 Frickenhausen
Germany

Asia

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



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

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



www.alliedmachine.com



ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

4TEX® Drill

The Foundation

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



The Beginning

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



The T-A®

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



The Innovation

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

The People

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

The Future

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



Steve Stokey
Executive Vice President

William H. Stokey
President and CEO

Mike Stokey
Executive Vice President



WOHLHAUPTER®



SUPERION®

CRITERION®

Replaceable Insert Drills

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



Indexable Insert Drills

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



Replaceable / Indexable Insert Drills

- Drill large diameter holes and maximize penetration rates even on low horsepower machines
- Delivers strength and versatility needed for any deep hole drilling application
- Holders cover a range of sizes with the replaceable heads determining the cutting diameter
- Products:
 - APX™ Drill



Solid Carbide Drills

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





Structural Steel Solutions

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

BTA (STS) Machining Solutions

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



Hydraulic Port Contour Cutters

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



Enhanced Special Drilling Capabilities

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



WOHLHAUPTER®

High Precision Boring Systems

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



NOTE: Adjustment accuracy of 0.0001" or 0.002mm on diameter



CRITERION®

Modular Boring Systems

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

S.C.A.M.I.®

Expandable Reaming Solutions

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



S.C.A.M.I.®

Roller Burnishing Solutions

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





Solid Carbide Thread Mills

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



Replaceable Insert Thread Mills

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



SPECIAL CAPABILITIES


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

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

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

Whatever your application, Allied Machine has the answer.



Insta-Quote® 



 SUPERION®



ToolMD™



Increase the production and success of your applications today.

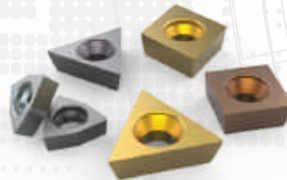
- Direct access to 2D drawings and 3D models
- Assemble and view tool images in your browser
- Download drawings for use in most machining software programs
- Browse products, search item numbers, and save assemblies for future use

toolmd.com

WOHLHAUPTER® Boring Insert Selector

Find the best insert for your application.

- Generate the correct boring insert for your job in just six easy steps
- Choose type, shape, substrate, insert form, nose radius, and material
- Order easily by adding the item to your cart



alliedmachine.com/bis

Product Selector

Use the product selector to find the right tool for your application.

- Follow guided steps to generate the right tool for your application
- Learn about your recommended tool and how to maximize its performance



alliedmachine.com/productselector

Insta-Code®

Eliminate the wait. Get your program now.

- Choose the best thread mill for your application
- Create program code for your machine
- Available as a PC download app (that can be used offline)
- Website app available 24/7



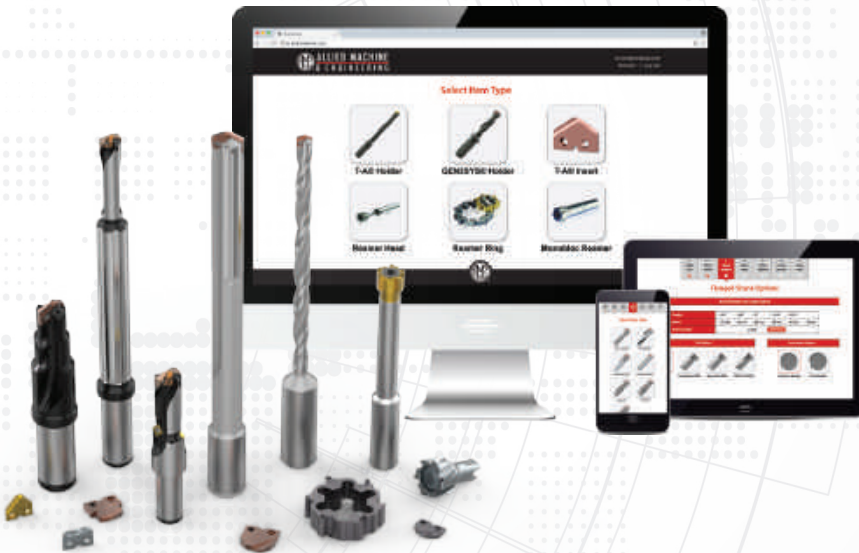
Insta-Code also has a
Cycle Time Calculator

alliedmachine.com/InstaCode

Insta-Quote®

Design your custom tooling and receive a drawing and quote...all within minutes.

- Design and quote your own tooling
- Generate the solution you need in just a few steps
- Features the following products
 - T-A® Inserts
 - T-A® Holders
 - GEN3SYS® XT Holders
 - ALVAN® Reamers



iq.alliedmachine.com

Solution Hub App

All Allied all the time.

- Quickly look up product information
- Links to our free online tools
- Locate distributors
- Stay up to date on news and events



Machinist Tool App

Quickly convert cutting tool parameters for the machine inputs you need.

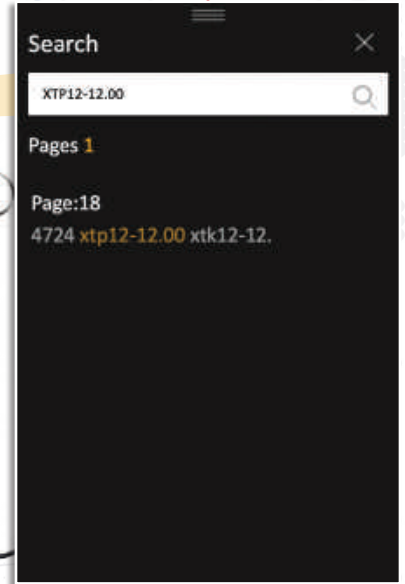
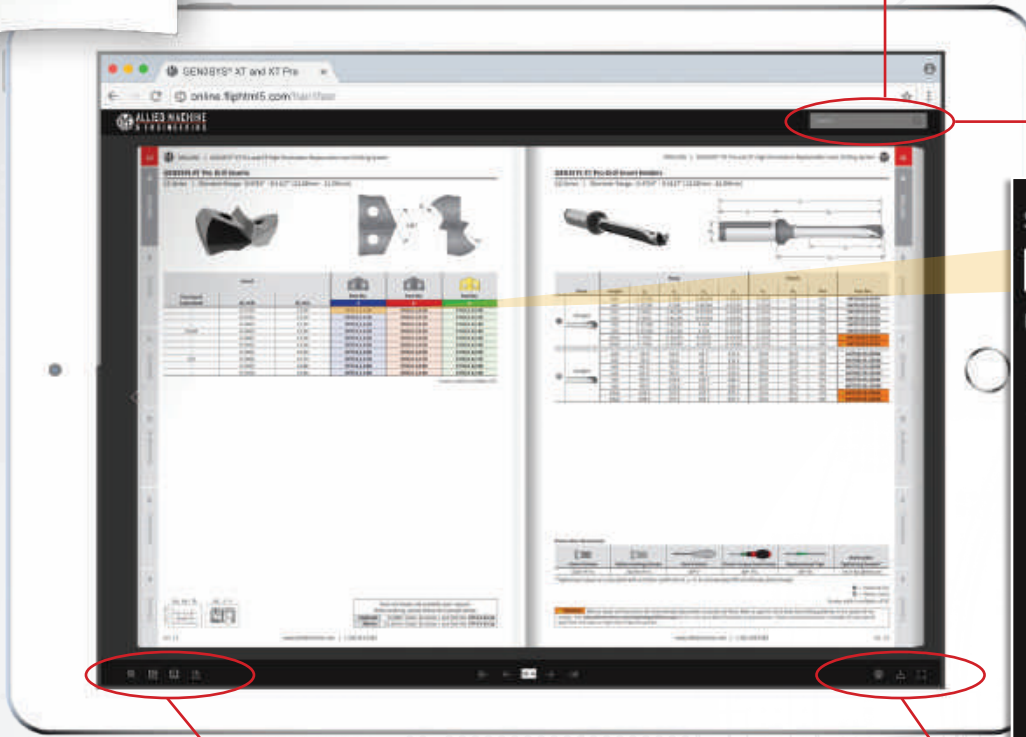
- Input data to calculate the RPM and speed and feed rates
- Also features the Boring Insert Selector
- Access product literature right at your fingertips





Find what you need. Now.

Flipbook gives you the ability to search for a specific item number and find the page(s) where it's located. Save time searching the catalog by hand if you already know what item number you need. Visit the Flipbooks now at alliedmachine.com/support/literature.



Zoom in for a closer look.

Set the catalog to auto flip.

Scroll through the pages in thumbnail view.

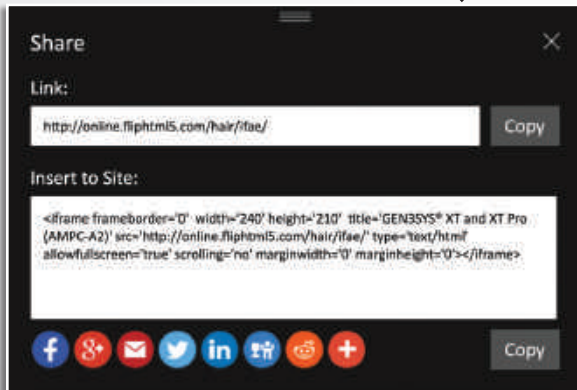
Share the Flipbook with others.



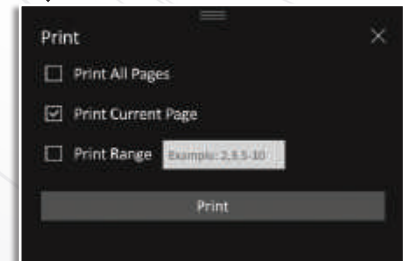
Print the full catalog or specific pages.

View in full screen mode.

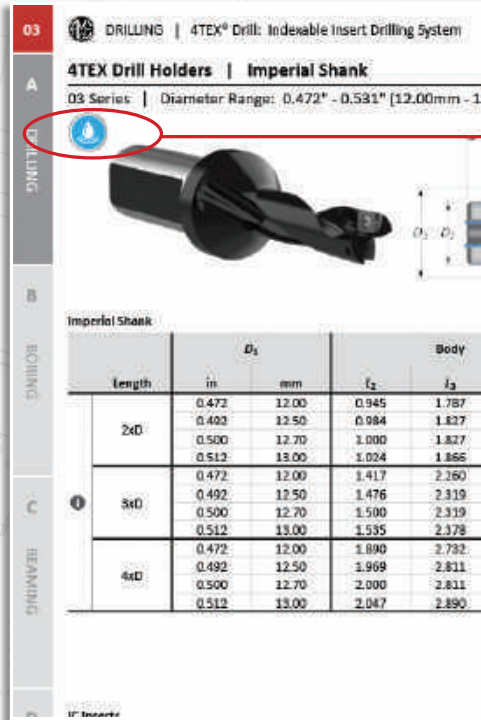
Download the catalog PDF.



Share the link to each Flipbook via email and social media.



Icon Reference Guide



Navigate with ease.

The following icons will appear throughout the catalog to help you navigate between products and find the best solution quickly.

Coating Options



AM200 Coating



AM300 Coating



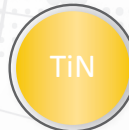
AM210 Coating



AM420 Coating



TiCN Coating



TiN Coating



TiAlN Coating

Tool Options



Straight Shank



Morse Taper Shank



Coolant Through

4TEX[®] Drill

Indexable Carbide Insert Drilling System

► **Diameter Range:** 0.472" - 1.850" (12.00mm - 47.00mm)



Don't Let Your Machine Slow You Down

The 4TEX indexable carbide drill provides increased penetration rates on light duty machines due to the single effective design. With twisted coolant outlets and increased core strength, the design provides improved hole size and finish.

The 4 sided 4TEX inserts are designed to use 2 sides in the center pocket and 2 sides in the periphery pocket for an improved cost-per-hole. With insert geometries available for all ISO material classes and a robust body design, the 4TEX is suited for your difficult applications.

Improved hole size and finish	Superior chip evacuation	Increased penetration rates
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Applicable Industries



Aerospace



Agriculture



Automotive



Firearms



General Machining



Oil & Gas



Renewable Energy

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



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

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

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

WARNING

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

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

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

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

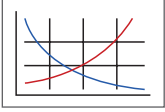
Reference Icons

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



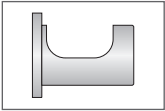
Setup / Assembly Information

Detailed instructions and information regarding the corresponding part(s)



Recommended Cutting Data

Speed and feed recommendations for optimum and safe drilling



Eccentric Sleeves

Refers to the corresponding eccentric sleeve for the holder

Series	Diameter Range	
	Imperial (inch)	Metric (mm)
03	0.472 - 0.531	12.00 - 13.49
04	0.532 - 0.610	13.50 - 15.49
05	0.611 - 0.728	15.50 - 18.49
06	0.729 - 0.866	18.50 - 21.99
07	0.867 - 1.043	22.00 - 26.49
09	1.044 - 1.259	26.50 - 31.99
11	1.260 - 1.535	32.00 - 38.99
14	1.536 - 1.850	39.00 - 47.00

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Safety Information



Mechanical / Physical Hazards

Operating cutting tools may present both mechanical and physical hazards. These hazards can result in serious injury to workers or those near machines and damage to machines and the cutting tools. Cutting tools and/or assemblies may break or come loose when in operation causing projectile metal fragments. Metal chips produced by cutting tools have sharp edges and may be very hot. To minimize the risk of mechanical or physical hazards:

- Always secure all components of the cutting tool assembly before operating.
- Wear cut resistant gloves when handling cutting tool components and assemblies.
- Do not touch metal chips produced by the cutting tools with your hands.
- Always wear appropriate personal protective equipment including safety goggles or glasses with side shields.
- Immediately discontinue use of damaged cutting tools.
- To avoid machine tool damage, make sure the machine has adequate power and torque for the cutting tool when operating. See catalog for power and torque requirements.
- Operating long cutting tools at high spindle speeds can result in a high risk of tool failure and serious injury. Visit www.alliedmachine.com/DeepHoleGuidelines to read guidelines specific for deep hole drilling.

Dust and Fume Hazards

Grinding, welding, cutting or burning hard metals such as high-speed steel, cobalt or carbides produces hazardous dust and/or fumes. Continued long-term exposure to hazardous dust and fumes can cause serious health issues. To minimize the risk of dust and fume hazards:

- Do not regrind or sharpen cutting tools without using adequate ventilation.
- Use appropriate personal protective equipment such as approved respirator to avoid inhalation, swallowing, or skin contact with the hazardous dust and/or fumes.
- Do not eat, drink, or smoke in the machine operation area. Always wash skin prior to eating, drinking, or smoking to avoid hazardous ingestion.

Sensitizing Hazards

Components of an assembled cutting tool are made from a variety of metal elements that may cause allergic skin reactions with prolonged skin contact. To minimize the risk of allergic skin reactions:

- Avoid skin contact with cutting tools.
- Wear appropriate gloves and protective clothing.
- Wash skin and launder clothing after handling cutting tools to reduce the risk of skin allergies.

Preventive Safety Measure Applicable to all Hazards

- Prior to using cutting tools, always read Allied Machine's Safety Data Sheets, product catalog, and product labels for additional warnings for the Allied Machine product being used.
- For machining safety, only operate equipment when all necessary guards, interlocks and other safety devices are in place and functional. Use all appropriate safety guards or machine encapsulations to securely collect particles such as chips or cutting elements that may become projectiles.

Through Hole

- With through holes, a **sharp-edged disk** is created as tool break-out occurs.
 - Proper personal protective equipment must be used to prevent injury (e.g. wear cut-resistant gloves).



Case Study

Do you need performance in extreme machining conditions?

Tooling is only a sliver of the pie when it comes to productivity. It doesn't matter what your tooling is capable of if your machine conditions restrict those capabilities. Our customer, who drills holes for machine gun bolt switches, utilizes a machine with oil coolant that creates more extreme drilling conditions than water-based coolant.



Because oil coolant doesn't dissipate heat fast enough, the customer's tooling only lasted for 160 holes per insert, and the tool experienced sporadic failure. They also needed to run a peck cycle for chip control.

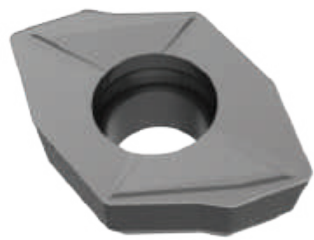
The customer decided to test the **4TEX Indexable Carbide Drill** using the "P" geometry with AM480 coating designed specifically for wear-resistance in steel material applications. The 4TEX "P" geometry allowed for the speed and feed to be altered and accommodated the machine's oil coolant. The 4TEX penetration rate was able to decrease cycle time and also double the tool life to 320 holes per insert. The 4TEX geometry also improved chip formation and eliminated the peck cycle.

The 4TEX provided the stable and repeatable process the customer was looking for while increasing tool life by 100%. With all their objectives met, the customer was thrilled with the solution that optimized their machine's limitations. **Are you using the solution that best optimizes your machine's limitations?**

Product:	4TEX® Drill	Measure	Competitor IC Drill	4TEX® Drill
Objectives:	(1) Exceed 160 holes per insert (2) Eliminate peck cycle (3) Provide stable/repeatable process	RPM	2075	1223
		Speed Rate	509 SFM	300 SFM
		Feed Rate	0.0015 IPR	0.003 IPR
Industry:	Firearms	Penetration Rate	3.11 IPM	3.67 IPM
Part:	Machine gun bolt switch hole	Peck Cycle	Yes	No
Material:	4340 steel	Cycle Time	16 sec	9 sec
Hole Ø:	0.937"	Tool Life	160 holes per insert	320 holes per insert
Hole Depth:	0.590"			

- ▶ 4TEX Drill holder
2xD length
Item No. D20709371-100F
- ▶ 4TEX Drill inserts
P geometry (steel)
Item No. 4T-070305-P

*100%
tool life increase*



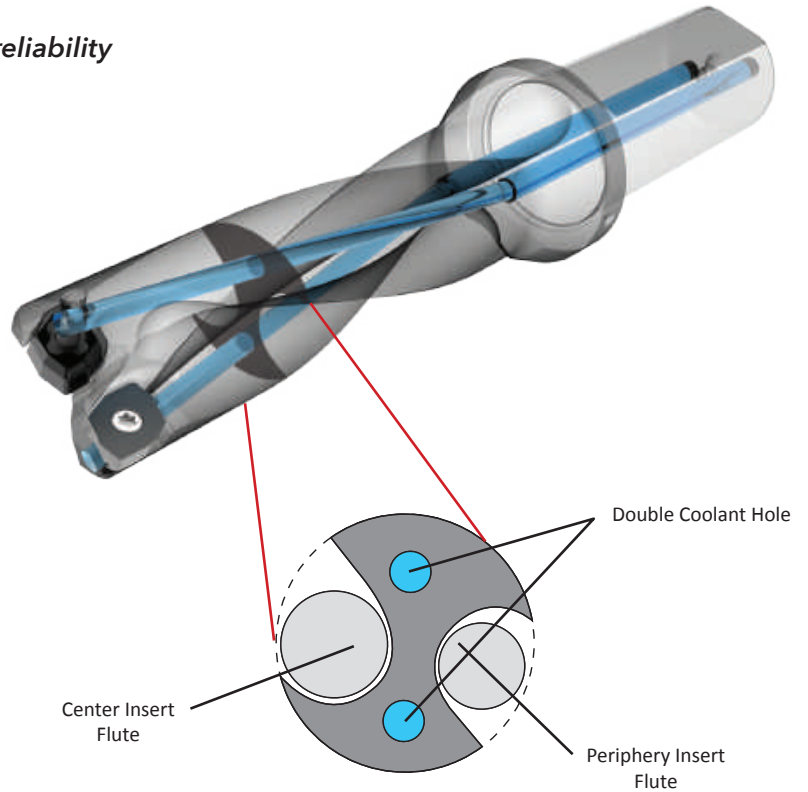
The 4-sided indexable inserts with wear-resistant coating provided:

- ✓ Increased tool life
- ✓ Decreased cycle time
- ✓ Worry-free machining

Product Overview

4TEX Drill *Advantages*

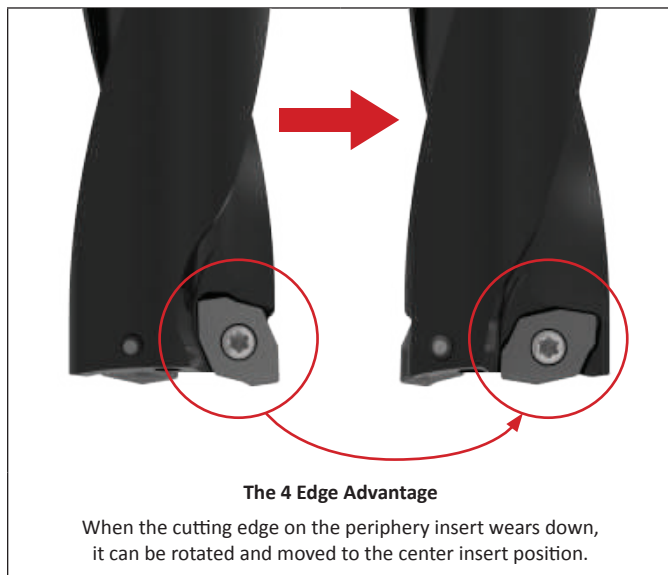
- ✓ **Improved tool holder rigidity and increased reliability**
provided by the stronger core
- ✓ **Superior chip evacuation**
provided by the 2 twisted coolant holes
- ✓ **Improved hole size**
from the stronger core and increased coolant volume
- ✓ **Longer tool life**
provided by the 4-sided insert design
- ✓ **Simplified tooling selection**
with ISO-specific insert geometry/coating combinations
- ✓ **Increased penetration rates**
due to single effective cutting on light duty machines



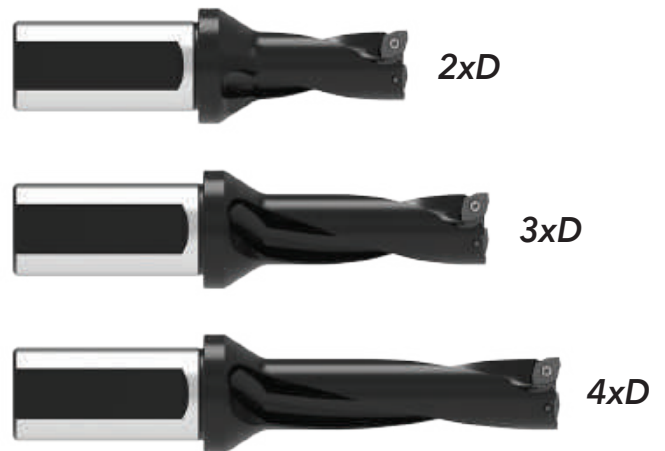
STABLE & EFFICIENT

- The 2 twisted coolant holes allow the core to remain intact, making the core thicker and stronger.
- The dual coolant outlets increase the coolant volume, which improves the chip evacuation and improves the hole size.
- The flute space of the internal cutting edge side (where chips get stuck most often) is 1.6x larger than typical IC drills.

LONGER TOOL LIFE



AVAILABLE LENGTHS

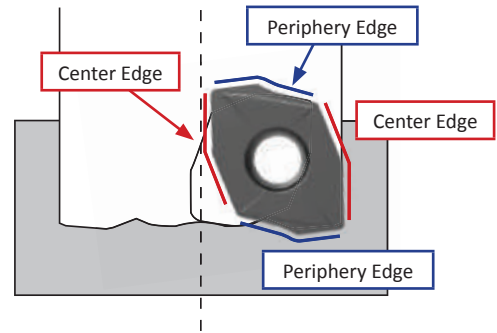


A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Insert Information

4 CUTTING EDGES

- Each insert has 2 inner cutting edges and 2 outer cutting edges
- Economical solution that increases tool life because of the rotation ability of the inserts
- Available in ISO material-specific geometry/coating combinations



Periphery Insert



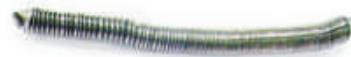
Periphery edge chip formation:



Center Insert






Center edge chip formation:



ISO Material	Geometry	Coating	Description
P	General Rake	AM480	A general purpose geometry that provides excellent chip formation in most steels including free machining, medium and high carbon steels. A P30 carbide substrate for improved toughness and AM480 coating, a proprietary wear resistant multi-layer PVD coating to improve tool life.
S M	High Rake	AM485	A higher rake geometry that provides excellent chip formation in both stainless steels and high temperature alloys. A tough M25 carbide substrate coated with AM485, a high heat resistance proprietary multi-layer PVD coating.
H	Low Rake	AM480	A low rake geometry to improve edge strength in both hardened tool steels and high strength alloys. With a P30 carbide substrate for improved toughness and coated with AM480, a proprietary multi-layer PVD coating to improve resistance against tool wear.
K	General Rake	AM480	With a general purpose geometry, the K inserts can be used in grey cast irons as well as ductile irons. A high wear resistant K10 carbide substrate to improve tool life and coated with AM480, a proprietary multi-layer PVD coating to improve resistance against tool wear.
N	High Rake	TiCN	A higher rake cutting geometry provides excellent chip formation in non-ferrous materials. An M15/K15 carbide substrate paired with TiCN coating for improved lubricity to resist build-up-material, increasing tool life and maintaining chip formation.

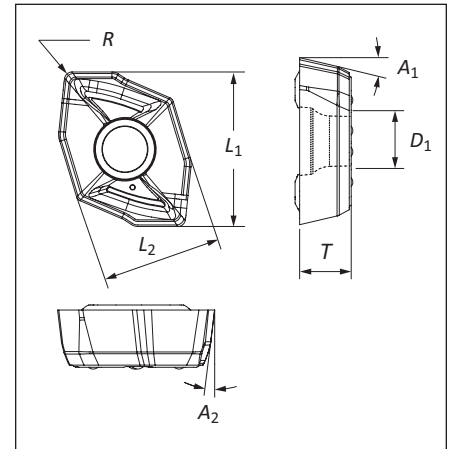
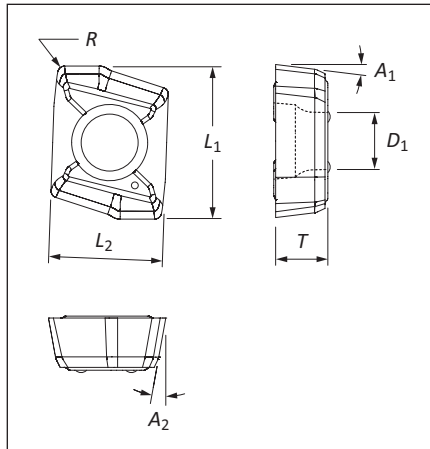
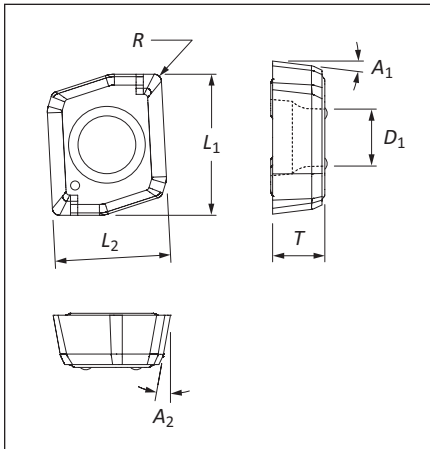
Insert Information

Series	Insert Prefix	Dimension (mm)					Angle		Shape
		L_1	L_2	T	D_1	R	A_1	A_2	
03	4T-030203C-x	5.9	4.8	2.30	2.4	0.3	7°	10°	 Style 1
	4T-030203P-x	6.5	4.8	2.30	2.4	0.3	7°	10°	 Style 2
04	4T-040203-x	6.2	5.1	2.60	2.4	0.3	13°	10°	 Style 3
05	4T-05T203-x	7.3	5.5	2.74	2.5	0.3	13°	7°	
06	4T-06T204-x	8.6	6.4	2.89	2.8	0.4	13°	7°	
07	4T-070305-x	10.2	8.0	3.24	3.0	0.5	13°	7°	
09	4T-09T306-x	12.2	9.6	4.03	3.6	0.6	13°	7°	
11	4T-11T306-x	14.5	11.6	4.06	4.6	0.6	13°	7°	
14	4T-140408-x	18.0	14.4	4.88	5.7	0.8	13°	7°	

Style 1

Style 2

Style 3

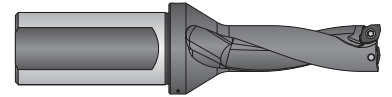


A DRILLING
B BORING
C REAMING
D BURNISHING
E THREADING
X SPECIALS

Product Nomenclature

4TEX Drill Holders

D4	03	1200	M	-	075	F
1	2	3*	4		5	6



1. Length to Diameter Ratio
D2 = 2xD
D3 = 3xD
D4 = 4xD

2. Series	
03 = 03 series	07 = 07 series
04 = 04 series	09 = 09 series
05 = 05 series	11 = 11 series
06 = 06 series	14 = 14 series

3. Diameter*
0750 = .075"
1200 = 12mm

4. Diameter Style
I = Imperial
M = Metric

5. Shank Diameter	
Imperial	Metric
075 = .075"	20 = 20mm
100 = 1.000"	25 = 25mm
125 = 1.250"	32 = 32mm
150 = 1.500"	40 = 40mm

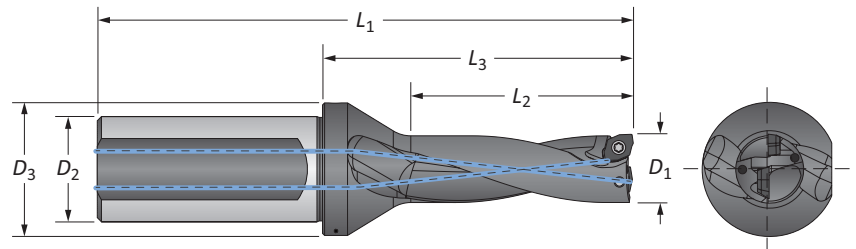
6. Shank Style
F = Imperial flanged shank
FM = Metric flanged shank

***Ordering Non-Stocked Diameters:**
 Non-stocked diameters are available upon request. Please refer to price list for applicable process fees.

Ordering example:
 Inch: 03 Series (∅ .480") = D2030480I-075F
 Metric: 03 Series (12.65mm) = D2031265M-20FM

Reference Key

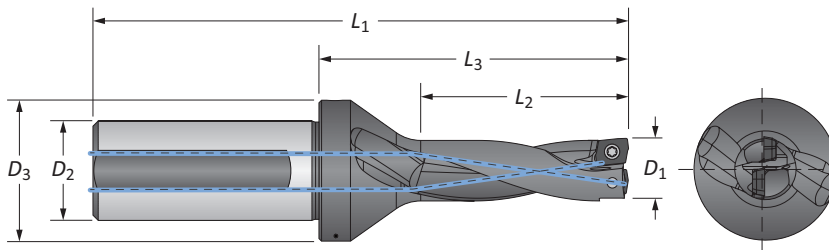
Symbol	Attribute
D₁	Drill diameter
D₂	Shank diameter
D₃	Flange diameter
L₁	Assembled overall length
L₂	Drill depth
L₃	Reference length



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

4TEX Drill Holders | Imperial Shank

03 Series | Diameter Range: 0.472" - 0.531" (12.00mm - 13.49mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.472	12.00	0.945	1.787	3.480	0.750	1.063	0.020	D2031200M-075F
	0.492	12.50	0.984	1.827	3.520	0.750	1.063	0.016	D2031250M-075F
	0.500	12.70	1.000	1.827	3.520	0.750	1.063	0.014	D2030500I-075F
	0.512	13.00	1.024	1.866	3.559	0.750	1.063	0.012	D2031300M-075F
3xD	0.472	12.00	1.417	2.260	3.953	0.750	1.063	0.020	D3031200M-075F
	0.492	12.50	1.476	2.319	4.012	0.750	1.063	0.016	D3031250M-075F
	0.500	12.70	1.500	2.319	4.012	0.750	1.063	0.014	D3030500I-075F
	0.512	13.00	1.535	2.378	4.071	0.750	1.063	0.012	D3031300M-075F
4xD	0.472	12.00	1.890	2.732	4.425	0.750	1.063	0.020	D4031200M-075F
	0.492	12.50	1.969	2.811	4.504	0.750	1.063	0.016	D4031250M-075F
	0.500	12.70	2.000	2.811	4.504	0.750	1.063	0.014	D4030500I-075F
	0.512	13.00	2.047	2.890	4.583	0.750	1.063	0.012	D4031300M-075F

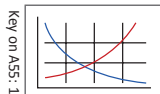
IC Inserts

ISO Material	Style	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	Center	4T-030203C-P	7241-T6-1	8T-6	4.4 in-lbs (0.5 N-m)
	Periphery	4T-030203P-P			
S M	Center	4T-030203C-M			
	Periphery	4T-030203P-M			
H	Center	4T-030203C-H			
	Periphery	4T-030203P-H			
K	Center	4T-030203C-K			
	Periphery	4T-030203P-K			
N	Center	4T-030203C-N			
	Periphery	4T-030203P-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

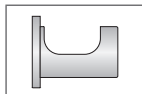
A55: 26 - 27



A55: 23 - 25



A55: 22



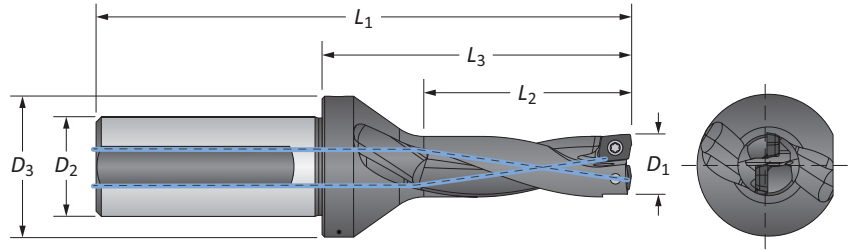
ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

03 Series | Diameter Range: 0.472" - 0.531" (12.00mm - 13.49mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.472	12.00	24.00	45.40	88.40	20.00	27.00	0.50	D2031200M-20FM
	0.492	12.50	25.00	46.40	89.40	20.00	27.00	0.40	D2031250M-20FM
	0.500	12.70	25.40	46.40	89.40	20.00	27.00	0.35	D2030500I-20FM
	0.512	13.00	26.00	47.40	90.40	20.00	27.00	0.30	D2031300M-20FM
3xD	0.472	12.00	36.00	57.40	100.40	20.00	27.00	0.50	D3031200M-20FM
	0.492	12.50	37.50	58.90	101.90	20.00	27.00	0.40	D3031250M-20FM
	0.500	12.70	38.10	58.90	101.90	20.00	27.00	0.35	D3030500I-20FM
	0.512	13.00	39.00	60.40	103.40	20.00	27.00	0.30	D3031300M-20FM
4xD	0.472	12.00	48.00	69.40	112.40	20.00	27.00	0.50	D4031200M-20FM
	0.492	12.50	50.00	71.40	114.40	20.00	27.00	0.40	D4031250M-20FM
	0.500	12.70	50.80	71.40	114.40	20.00	27.00	0.35	D4030500I-20FM
	0.512	13.00	52.00	73.40	116.40	20.00	27.00	0.30	D4031300M-20FM

IC Inserts

ISO Material	Style	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	Center	4T-030203C-P	7241-T6-1	8T-6	4.4 in-lbs (0.5 N-m)
	Periphery	4T-030203P-P			
S M	Center	4T-030203C-M			
	Periphery	4T-030203P-M			
H	Center	4T-030203C-H			
	Periphery	4T-030203P-H			
K	Center	4T-030203C-K			
	Periphery	4T-030203P-K			
N	Center	4T-030203C-N			
	Periphery	4T-030203P-N			

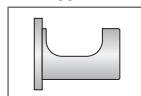
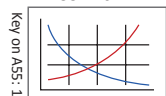
Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

A55: 26 - 27

A55: 23 - 25

A55: 22



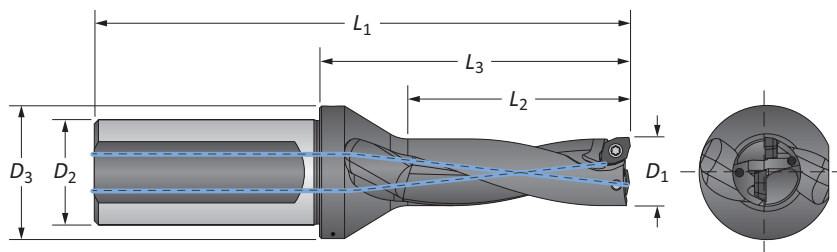
Key on A55: 1

ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Imperial Shank



04 Series | Diameter Range: 0.532" - 0.610" (13.50mm - 15.49mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.531	13.50	1.063	1.906	3.598	0.750	1.063	0.020	D2041350M-075F
	0.551	14.00	1.102	1.945	3.638	0.750	1.063	0.016	D2041400M-075F
	0.563	14.29	1.124	1.945	3.638	0.750	1.063	0.013	D2040562I-075F
	0.571	14.50	1.142	1.984	3.677	0.750	1.063	0.012	D2041450M-075F
	0.591	15.00	1.181	2.024	3.717	0.750	1.063	0.008	D2041500M-075F
3xD	0.531	13.50	1.594	2.437	4.130	0.750	1.063	0.020	D3041350M-075F
	0.551	14.00	1.654	2.496	4.189	0.750	1.063	0.016	D3041400M-075F
	0.563	14.29	1.686	2.496	4.189	0.750	1.063	0.013	D3040562I-075F
	0.571	14.50	1.713	2.555	4.248	0.750	1.063	0.012	D3041450M-075F
	0.591	15.00	1.772	2.614	4.307	0.750	1.063	0.008	D3041500M-075F
4xD	0.531	13.50	2.126	2.969	4.661	0.750	1.063	0.020	D4041350M-075F
	0.551	14.00	2.205	3.047	4.740	0.750	1.063	0.016	D4041400M-075F
	0.563	14.29	2.248	3.047	4.740	0.750	1.063	0.013	D4040562I-075F
	0.571	14.50	2.283	3.126	4.819	0.750	1.063	0.012	D4041450M-075F
	0.591	15.00	2.362	3.205	4.898	0.750	1.063	0.008	D4041500M-075F

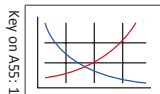
IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-040203-P	 7241-T6-1	 8T-6	4.4 in-lbs (0.5 N-m)
S	4T-040203-M			
H	4T-040203-H			
K	4T-040203-K			
N	4T-040203-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

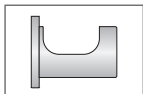
A55: 26 - 27



A55: 23 - 25



A55: 22



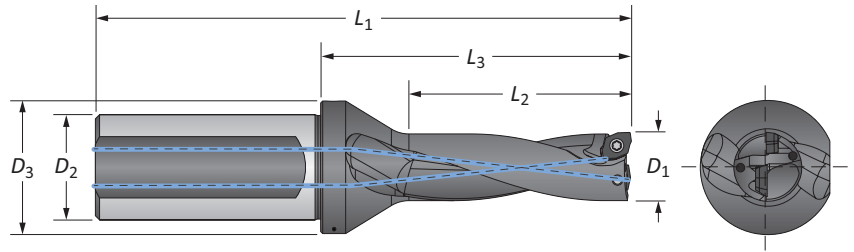
ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

04 Series | Diameter Range: 0.532" - 0.610" (13.50mm - 15.49mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.531	13.50	27.00	48.40	91.40	20.00	27.00	0.50	D2041350M-20FM
	0.551	14.00	28.00	49.40	92.40	20.00	27.00	0.40	D2041400M-20FM
	0.563	14.29	28.55	49.40	92.40	20.00	27.00	0.30	D2040562I-20FM
	0.571	14.50	29.00	50.40	93.40	20.00	27.00	0.30	D2041450M-20FM
	0.591	15.00	30.00	51.40	94.40	20.00	27.00	0.20	D2041500M-20FM
3xD	0.531	13.50	40.50	61.90	104.90	20.00	27.00	0.50	D3041350M-20FM
	0.551	14.00	42.00	63.40	106.40	20.00	27.00	0.40	D3041400M-20FM
	0.563	14.29	42.82	63.40	106.40	20.00	27.00	0.30	D3040562I-20FM
	0.571	14.50	43.50	64.90	107.90	20.00	27.00	0.30	D3041450M-20FM
	0.591	15.00	45.00	66.40	109.40	20.00	27.00	0.20	D3041500M-20FM
4xD	0.531	13.50	54.00	75.40	118.40	20.00	27.00	0.50	D4041350M-20FM
	0.551	14.00	56.00	77.40	120.40	20.00	27.00	0.40	D4041400M-20FM
	0.563	14.29	57.10	77.40	120.40	20.00	27.00	0.30	D4040562I-20FM
	0.571	14.50	58.00	79.40	122.40	20.00	27.00	0.30	D4041450M-20FM
	0.591	15.00	60.00	81.40	124.40	20.00	27.00	0.20	D4041500M-20FM

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-040203-P	7241-T6-1	8T-6	4.4 in-lbs (0.5 N-m)
S	4T-040203-M			
H	4T-040203-H			
K	4T-040203-K			
N	4T-040203-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

Key on ASS: 1

A55: 26 - 27

A55: 23 - 25

A55: 22

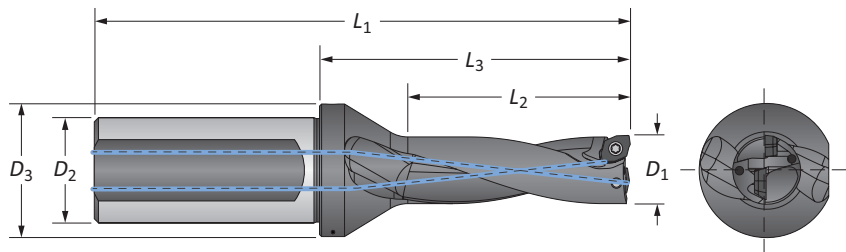
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10

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

4TEX Drill Holders | Imperial Shank

05 Series | Diameter Range: 0.611" - 0.728" (15.50mm - 18.49mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.610	15.50	1.220	2.146	4.272	1.000	1.260	0.031	D2051550M-100F
	0.625	15.88	1.250	2.146	4.272	1.000	1.260	0.029	D2050625I-100F
	0.630	16.00	1.260	2.185	4.311	1.000	1.260	0.028	D2051600M-100F
	0.650	16.50	1.299	2.224	4.350	1.000	1.260	0.020	D2051650M-100F
	0.656	16.66	1.312	2.224	4.350	1.000	1.260	0.016	D2050656I-100F
	0.669	17.00	1.339	2.264	4.390	1.000	1.260	0.016	D2051700M-100F
	0.687	17.46	1.374	2.264	4.390	1.000	1.260	0.012	D2050687I-100F
	0.689	17.50	1.378	2.303	4.429	1.000	1.260	0.012	D2051750M-100F
	0.709	18.00	1.417	2.343	4.469	1.000	1.260	0.008	D2051800M-100F
0.718	18.24	1.436	2.343	4.469	1.000	1.260	0.006	D2050718I-100F	
3xD	0.610	15.50	1.831	2.756	4.882	1.000	1.260	0.031	D3051550M-100F
	0.625	15.88	1.875	2.756	4.882	1.000	1.260	0.029	D3050625I-100F
	0.630	16.00	1.890	2.815	4.941	1.000	1.260	0.028	D3051600M-100F
	0.650	16.50	1.949	2.874	5.000	1.000	1.260	0.020	D3051650M-100F
	0.656	16.66	1.968	2.784	5.000	1.000	1.260	0.016	D3050656I-100F
	0.669	17.00	2.008	2.933	5.059	1.000	1.260	0.016	D3051700M-100F
	0.687	17.46	2.061	2.933	5.059	1.000	1.260	0.012	D3050687I-100F
	0.689	17.50	2.067	2.992	5.118	1.000	1.260	0.012	D3051750M-100F
	0.709	18.00	2.126	3.051	5.177	1.000	1.260	0.008	D3051800M-100F
0.718	18.24	2.154	3.051	5.177	1.000	1.260	0.006	D3050718I-100F	
4xD	0.610	15.50	2.441	3.366	5.492	1.000	1.260	0.031	D4051550M-100F
	0.625	15.88	2.500	3.366	5.492	1.000	1.260	0.029	D4050625I-100F
	0.630	16.00	2.520	3.445	5.571	1.000	1.260	0.028	D4051600M-100F
	0.650	16.50	2.598	3.524	5.650	1.000	1.260	0.020	D4051650M-100F
	0.656	16.66	2.624	3.524	5.650	1.000	1.260	0.016	D4050656I-100F
	0.669	17.00	2.677	3.602	5.728	1.000	1.260	0.016	D4051700M-100F
	0.687	17.46	2.748	3.602	5.728	1.000	1.260	0.012	D4050687I-100F
	0.689	17.50	2.756	3.681	5.807	1.000	1.260	0.012	D4051750M-100F
	0.709	18.00	2.835	3.760	5.886	1.000	1.260	0.008	D4051800M-100F
0.718	18.24	2.872	3.760	5.886	1.000	1.260	0.006	D4050718I-100F	

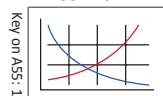
IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-05T203-P	7243-T6-1	8T-6	4.4 in-lbs (0.5 N-m)
S	4T-05T203-M			
M	4T-05T203-M			
H	4T-05T203-H			
K	4T-05T203-K			
N	4T-05T203-N			

Expected Hole Tolerances

Length	in	mm
2xD	-0.004 / +0.008	-0.10 / +0.20
3xD	-0.004 / +0.008	-0.10 / +0.20
4xD	-0.004 / +0.010	-0.10 / +0.25

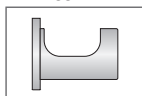
A55: 26 - 27



A55: 23 - 25



A55: 22

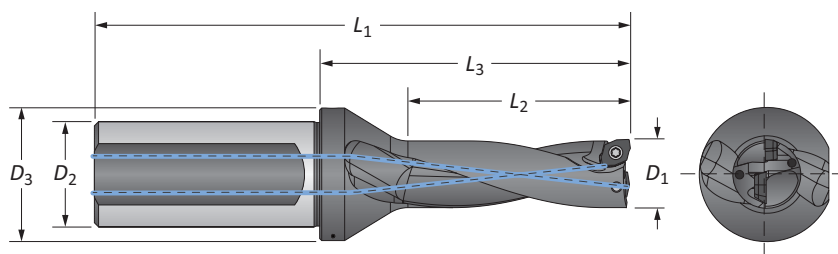


ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Metric Shank

05 Series | Diameter Range: 0.611" - 0.728" (15.50mm - 18.49mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.610	15.50	31.00	54.50	108.50	25.00	32.00	0.80	D2051550M-25FM
	0.625	15.88	31.75	54.50	108.50	25.00	32.00	0.70	D2050625I-25FM
	0.630	16.00	32.00	55.50	109.50	25.00	32.00	0.70	D2051600M-25FM
	0.650	16.50	33.00	56.50	110.50	25.00	32.00	0.50	D2051650M-25FM
	0.656	16.66	33.32	56.49	110.50	25.00	32.00	0.40	D2050656I-25FM
	0.669	17.00	34.00	57.50	111.50	25.00	32.00	0.40	D2051700M-25FM
	0.687	17.46	34.90	57.50	111.50	25.00	32.00	0.30	D2050687I-25FM
	0.689	17.50	35.00	58.50	112.50	25.00	32.00	0.30	D2051750M-25FM
	0.709	18.00	36.00	59.50	113.50	25.00	32.00	0.20	D2051800M-25FM
0.718	18.24	36.47	59.51	113.51	25.00	32.00	0.15	D2050718I-25FM	
3xD	0.610	15.50	46.50	70.00	124.00	25.00	32.00	0.80	D3051550M-25FM
	0.625	15.88	47.63	70.00	124.00	25.00	32.00	0.70	D3050625I-25FM
	0.630	16.00	48.00	71.50	125.50	25.00	32.00	0.70	D3051600M-25FM
	0.650	16.50	49.50	73.00	127.00	25.00	32.00	0.50	D3051650M-25FM
	0.656	16.66	49.98	73.00	127.00	25.00	32.00	0.40	D3050656I-25FM
	0.669	17.00	51.00	74.50	128.50	25.00	32.00	0.40	D3051700M-25FM
	0.687	17.46	52.35	74.50	128.50	25.00	32.00	0.30	D3050687I-25FM
	0.689	17.50	52.50	76.00	130.00	25.00	32.00	0.30	D3051750M-25FM
	0.709	18.00	54.00	77.50	131.50	25.00	32.00	0.20	D3051800M-25FM
0.718	18.24	54.71	77.50	131.50	58.00	32.00	0.15	D3050718I-25FM	
4xD	0.610	15.50	62.00	85.50	139.50	25.00	32.00	0.80	D4051550M-25FM
	0.625	15.88	63.50	85.50	139.50	25.00	32.00	0.70	D4050625I-25FM
	0.630	16.00	64.00	87.50	141.50	25.00	32.00	0.70	D4051600M-25FM
	0.650	16.50	66.00	89.50	143.50	25.00	32.00	0.50	D4051650M-25FM
	0.656	16.66	66.64	89.51	143.51	25.00	32.00	0.40	D4050656I-25FM
	0.669	17.00	68.00	91.50	145.50	25.00	32.00	0.40	D4051700M-25FM
	0.687	17.46	69.80	91.50	145.50	25.00	32.00	0.30	D4050687I-25FM
	0.689	17.50	70.00	93.50	147.50	25.00	32.00	0.30	D4051750M-25FM
	0.709	18.00	72.00	95.50	149.50	25.00	32.00	0.20	D4051800M-25FM
0.718	18.24	72.95	95.50	149.50	25.00	32.00	0.15	D4050718I-25FM	

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-05T203-P	7243-T6-1	8T-6	4.4 in-lbs (0.5 N-m)
S M	4T-05T203-M			
H	4T-05T203-H			
K	4T-05T203-K			
N	4T-05T203-N			

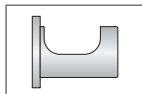
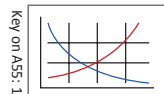
Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

A55: 26 - 27

A55: 23 - 25

A55: 22

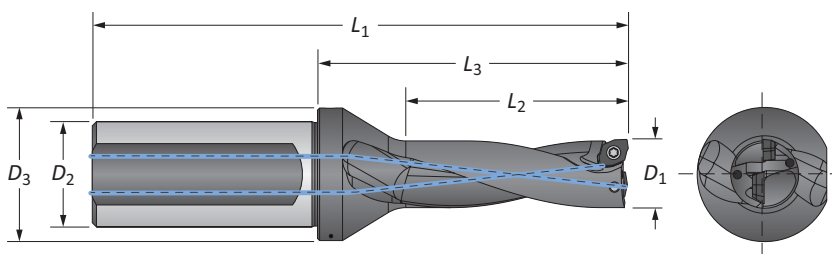


I = Imperial (in)
M = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Imperial Shank

06 Series | Diameter Range: 0.729" - 0.866" (18.50mm - 21.99mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.728	18.50	1.457	2.299	4.425	1.000	1.260	0.035	D2061850M-100F
	0.748	19.00	1.496	2.339	4.465	1.000	1.260	0.031	D2061900M-100F
	0.750	19.05	1.500	2.339	4.465	1.000	1.260	0.031	D2060750I-100F
	0.765	19.43	1.530	2.339	4.465	1.000	1.260	0.028	D2060765I-100F
	0.768	19.50	1.535	2.378	4.504	1.000	1.260	0.028	D2061950M-100F
	0.787	20.00	1.575	2.417	4.543	1.000	1.260	0.020	D2062000M-100F
	0.807	20.50	1.614	2.457	4.583	1.000	1.260	0.016	D2062050M-100F
	0.813	20.64	1.624	2.457	4.583	1.000	1.260	0.015	D2060812I-100F
	0.827	21.00	1.654	2.496	4.622	1.000	1.260	0.012	D2062100M-100F
3xD	0.846	21.50	1.693	2.535	4.661	1.000	1.260	0.008	D2062150M-100F
	0.728	18.50	2.165	3.028	5.154	1.000	1.260	0.035	D3061850M-100F
	0.748	19.00	2.244	3.087	5.213	1.000	1.260	0.031	D3061900M-100F
	0.750	19.05	2.250	3.087	5.213	1.000	1.260	0.031	D3060750I-100F
	0.765	19.43	2.295	3.087	5.213	1.000	1.260	0.028	D3060765I-100F
	0.768	19.50	2.303	3.146	5.272	1.000	1.260	0.028	D3061950M-100F
	0.787	20.00	2.362	3.205	5.331	1.000	1.260	0.020	D3062000M-100F
	0.807	20.50	2.421	3.264	5.390	1.000	1.260	0.016	D3062050M-100F
	0.813	20.64	2.436	3.264	5.390	1.000	1.260	0.015	D3060812I-100F
4xD	0.827	21.00	2.480	3.323	5.449	1.000	1.260	0.012	D3062100M-100F
	0.846	21.50	2.539	3.382	5.508	1.000	1.260	0.008	D3062150M-100F
	0.728	18.50	2.913	3.756	5.882	1.000	1.260	0.035	D4061850M-100F
	0.748	19.00	2.992	3.835	5.961	1.000	1.260	0.031	D4061900M-100F
	0.750	19.05	3.000	3.835	5.961	1.000	1.260	0.031	D4060750I-100F
	0.765	19.43	3.060	3.835	5.961	1.000	1.260	0.028	D4060765I-100F
	0.768	19.50	3.071	3.913	6.039	1.000	1.260	0.028	D4061950M-100F
	0.787	20.00	3.150	3.992	6.118	1.000	1.260	0.020	D4062000M-100F
	0.807	20.50	3.228	4.071	6.197	1.000	1.260	0.016	D4062050M-100F
F	0.813	20.64	3.248	4.071	6.197	1.000	1.260	0.015	D4060812I-100F
	0.827	21.00	3.307	4.150	6.276	1.000	1.260	0.012	D4062100M-100F
	0.846	21.50	3.386	4.228	6.354	1.000	1.260	0.008	D4062150M-100F

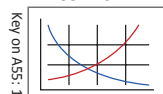
IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-06T204-P	72251-T7-1	8T-7	7.1 in-lbs (0.8 N-m)
S M	4T-06T204-M			
H	4T-06T204-H			
K	4T-06T204-K			
N	4T-06T204-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

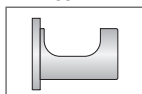
A55: 26 - 27



A55: 23 - 25



A55: 22



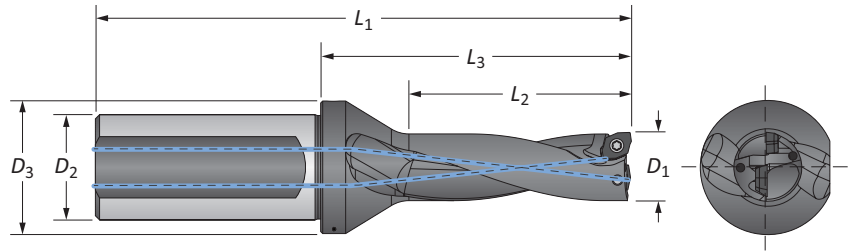
ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

06 Series | Diameter Range: 0.729" - 0.866" (18.50mm - 21.99mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.728	18.50	37.00	58.40	112.40	25.00	32.00	0.90	D2061850M-25FM
	0.748	19.00	38.00	59.40	113.40	25.00	32.00	0.80	D2061900M-25FM
	0.750	19.05	38.10	59.40	113.40	25.00	32.00	0.80	D2060750I-25FM
	0.765	19.43	38.86	59.41	113.41	25.00	32.00	0.70	D2060765I-25FM
	0.768	19.50	39.00	60.40	114.40	25.00	32.00	0.70	D2061950M-25FM
	0.787	20.00	40.00	61.40	115.40	25.00	32.00	0.50	D2062000M-25FM
	0.807	20.50	41.00	62.40	116.40	25.00	32.00	0.40	D2062050M-25FM
	0.813	20.64	41.25	62.40	116.40	25.00	32.00	0.40	D2060812I-25FM
	0.827	21.00	42.00	63.40	117.40	25.00	32.00	0.30	D2062100M-25FM
0.846	21.50	43.00	64.40	118.40	25.00	32.00	0.20	D2062150M-25FM	
3xD	0.728	18.50	55.00	76.90	130.90	25.00	32.00	0.90	D3061850M-25FM
	0.748	19.00	57.00	78.40	132.40	25.00	32.00	0.80	D3061900M-25FM
	0.750	19.05	57.15	78.40	132.40	25.00	32.00	0.80	D3060750I-25FM
	0.765	19.43	58.29	78.41	132.41	25.00	32.00	0.70	D3060765I-25FM
	0.768	19.50	58.50	79.90	133.90	25.00	32.00	0.70	D3061950M-25FM
	0.787	20.00	60.00	81.40	135.40	25.00	32.00	0.50	D3062000M-25FM
	0.807	20.50	61.50	82.90	136.90	25.00	32.00	0.40	D3062050M-25FM
	0.813	20.64	61.87	82.90	136.90	25.00	32.00	0.40	D3060812I-25FM
	0.827	21.00	63.00	84.40	138.40	25.00	32.00	0.30	D3062100M-25FM
0.846	21.50	64.50	85.90	139.90	25.00	32.00	0.20	D3062150M-25FM	
4xD	0.728	18.50	74.00	95.40	149.40	25.00	32.00	0.90	D4061850M-25FM
	0.748	19.00	76.00	97.40	151.40	25.00	32.00	0.80	D4061900M-25FM
	0.750	19.05	76.20	97.40	151.40	25.00	32.00	0.80	D4060750I-25FM
	0.765	19.43	77.72	97.41	151.41	25.00	32.00	0.70	D4060765I-25FM
	0.768	19.50	78.00	99.40	153.40	25.00	32.00	0.70	D4061950M-25FM
	0.787	20.00	80.00	101.40	155.40	25.00	32.00	0.50	D4062000M-25FM
	0.807	20.50	82.00	103.40	157.40	25.00	32.00	0.40	D4062050M-25FM
	0.813	20.64	82.49	103.40	157.40	25.00	32.00	0.40	D4060812I-25FM
	0.827	21.00	84.00	105.40	159.40	25.00	32.00	0.30	D4062100M-25FM
0.846	21.50	86.00	107.40	161.40	25.00	32.00	0.20	D4062150M-25FM	

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-06T204-P	72251-T7-1	8T-7	7.1 in-lbs (0.8 N-m)
S	4T-06T204-M			
H	4T-06T204-H			
K	4T-06T204-K			
N	4T-06T204-N			

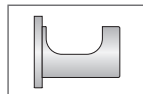
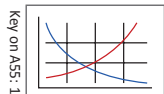
Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

A55: 26 - 27

A55: 23 - 25

A55: 22



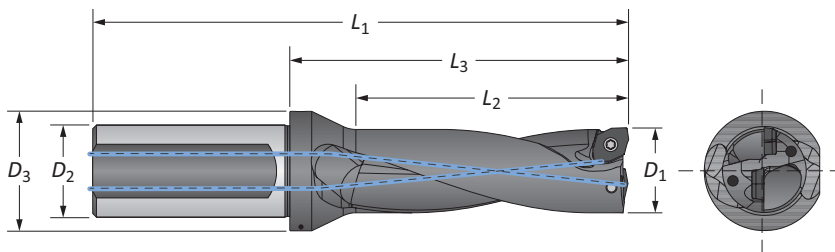
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10

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

4TEX Drill Holders | Imperial Shank

07 Series | Diameter Range: 0.867" - 1.043" (22.00mm - 26.49mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.866	22.00	1.732	2.555	4.681	1.000	1.299	0.047	D2072200M-100F
	0.875	22.22	1.750	2.555	4.681	1.000	1.299	0.043	D2070875I-100F
	0.886	22.50	1.772	2.594	4.720	1.000	1.299	0.039	D2072250M-100F
	0.906	23.00	1.811	2.634	4.760	1.000	1.299	0.035	D2072300M-100F
	0.925	23.50	1.850	2.673	4.799	1.000	1.299	0.031	D2072350M-100F
	0.937	23.81	1.874	2.673	4.799	1.000	1.299	0.292	D2070937I-100F
	0.945	24.00	1.890	2.713	4.839	1.000	1.299	0.028	D2072400M-100F
	0.965	24.50	1.929	2.752	4.878	1.000	1.299	0.020	D2072450M-100F
	0.984	25.00	1.969	2.791	4.917	1.000	1.299	0.016	D2072500M-100F
	1.000	25.40	2.000	2.791	4.917	1.000	1.299	0.013	D2071000I-100F
3xD	1.004	25.50	2.008	2.831	4.957	1.000	1.299	0.012	D2072550M-100F
	1.024	26.00	2.047	2.870	4.996	1.000	1.299	0.008	D2072600M-100F
	0.866	22.00	2.598	3.421	5.547	1.000	1.299	0.047	D3072200M-100F
	0.875	22.22	2.625	3.421	5.547	1.000	1.299	0.043	D3070875I-100F
	0.886	22.50	2.657	3.480	5.606	1.000	1.299	0.039	D3072250M-100F
	0.906	23.00	2.717	3.539	5.665	1.000	1.299	0.035	D3072300M-100F
	0.925	23.50	2.776	3.598	5.724	1.000	1.299	0.031	D3072350M-100F
	0.937	23.81	2.811	3.598	5.724	1.000	1.299	0.292	D3070937I-100F
	0.945	24.00	2.835	3.657	5.783	1.000	1.299	0.028	D3072400M-100F
	0.965	24.50	2.894	3.717	5.843	1.000	1.299	0.020	D3072450M-100F
4xD	0.984	25.00	2.953	3.776	5.902	1.000	1.299	0.016	D3072500M-100F
	1.000	25.40	3.000	3.776	5.902	1.000	1.299	0.013	D3071000I-100F
	1.004	25.50	3.012	3.835	5.961	1.000	1.299	0.012	D3072550M-100F
	1.024	26.00	3.071	3.894	6.020	1.000	1.299	0.008	D3072600M-100F
	0.866	22.00	3.465	4.287	6.413	1.000	1.299	0.047	D4072200M-100F
	0.875	22.22	3.500	4.287	6.413	1.000	1.299	0.043	D4070875I-100F
	0.886	22.50	3.543	4.366	6.492	1.000	1.299	0.039	D4072250M-100F
	0.906	23.00	3.622	4.445	6.571	1.000	1.299	0.035	D4072300M-100F
	0.925	23.50	3.701	4.524	6.650	1.000	1.299	0.031	D4072350M-100F
	0.937	23.81	3.748	4.524	6.650	1.000	1.299	0.292	D4070937I-100F
4xD	0.945	24.00	3.780	4.602	6.728	1.000	1.299	0.028	D4072400M-100F
	0.965	24.50	3.858	4.681	6.807	1.000	1.299	0.020	D4072450M-100F
	0.984	25.00	3.937	4.760	6.886	1.000	1.299	0.016	D4072500M-100F
	1.000	25.40	4.000	4.760	6.886	1.000	1.299	0.013	D4071000I-100F
	1.004	25.50	4.016	4.839	6.965	1.000	1.299	0.012	D4072550M-100F
	1.024	26.00	4.094	4.917	7.043	1.000	1.299	0.008	D4072600M-100F

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-070305-P	72568-T8-1	8T-8	10.6 in-lbs (1.2 N-m)
S M	4T-070305-M			
H	4T-070305-H			
K	4T-070305-K			
N	4T-070305-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

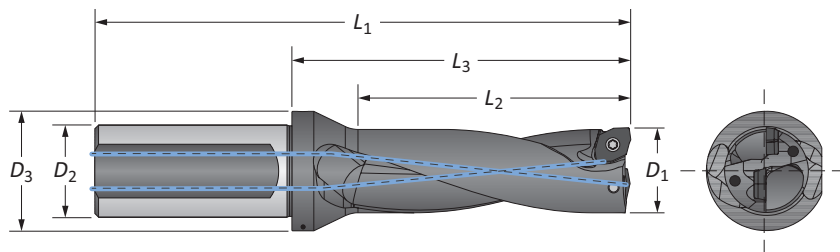
A55: 26 - 27 A55: 23 - 25 A55: 22

ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Metric Shank

07 Series | Diameter Range: 0.867" - 1.043" (22.00mm - 26.49mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	0.866	22.00	44.00	64.90	118.90	25.00	33.00	1.20	D2072200M-25FM
	0.875	22.22	44.45	64.90	118.90	25.00	33.00	1.10	D2070875I-25FM
	0.886	22.50	45.00	65.90	119.90	25.00	33.00	1.00	D2072250M-25FM
	0.906	23.00	46.00	66.90	120.90	25.00	33.00	0.90	D2072300M-25FM
	0.925	23.50	47.00	67.90	121.90	25.00	33.00	0.80	D2072350M-25FM
	0.937	23.81	47.60	67.90	121.90	25.00	33.00	7.40	D2070937I-25FM
	0.945	24.00	48.00	68.90	122.90	25.00	33.00	0.70	D2072400M-25FM
	0.965	24.50	49.00	69.90	123.90	25.00	33.00	0.50	D2072450M-25FM
	0.984	25.00	50.00	70.90	124.90	25.00	33.00	0.40	D2072500M-25FM
	1.000	25.40	50.80	70.90	124.90	25.00	33.00	0.30	D2071000I-25FM
3xD	1.004	25.50	51.00	71.90	125.90	25.00	33.00	0.30	D2072550M-25FM
	1.024	26.00	52.00	72.90	126.90	25.00	33.00	0.20	D2072600M-25FM
	0.866	22.00	66.00	86.90	140.90	25.00	33.00	1.20	D3072200M-25FM
	0.875	22.22	66.68	86.90	140.90	25.00	33.00	1.10	D3070875I-25FM
	0.886	22.50	67.50	88.40	142.40	25.00	33.00	1.00	D3072250M-25FM
	0.906	23.00	69.00	89.90	143.90	25.00	33.00	0.90	D3072300M-25FM
	0.925	23.50	70.50	91.40	145.40	25.00	33.00	0.80	D3072350M-25FM
	0.937	23.81	71.40	91.40	145.40	25.00	33.00	7.40	D3070937I-25FM
	0.945	24.00	72.00	92.90	146.90	25.00	33.00	0.70	D3072400M-25FM
	0.965	24.50	73.50	94.40	148.40	25.00	33.00	0.50	D3072450M-25FM
4xD	0.984	25.00	75.00	95.90	149.90	25.00	33.00	0.40	D3072500M-25FM
	1.000	25.40	76.20	95.90	149.90	25.00	33.00	0.30	D3071000I-25FM
	1.004	25.50	76.50	97.00	151.00	25.00	33.00	0.30	D3072550M-25FM
	1.024	26.00	78.00	99.00	153.00	25.00	33.00	0.20	D3072600M-25FM
	0.866	22.00	88.00	109.00	163.00	25.00	33.00	1.20	D4072200M-25FM
	0.875	22.22	88.90	108.90	162.90	25.00	33.00	1.10	D4070875I-25FM
	0.886	22.50	90.00	111.00	165.00	25.00	33.00	1.00	D4072250M-25FM
	0.906	23.00	92.00	113.00	167.00	25.00	33.00	0.90	D4072300M-25FM
	0.925	23.50	94.00	115.00	169.00	25.00	33.00	0.80	D4072350M-25FM
	0.937	23.81	95.20	114.90	168.90	25.00	33.00	7.40	D4070937I-25FM
4xD	0.945	24.00	96.00	117.00	171.00	25.00	33.00	0.70	D4072400M-25FM
	0.965	24.50	98.00	119.00	173.00	25.00	33.00	0.50	D4072450M-25FM
	0.984	25.00	100.00	121.00	175.00	25.00	33.00	0.40	D4072500M-25FM
	1.000	25.40	101.60	120.90	174.90	25.00	33.00	0.30	D4071000I-25FM
	1.004	25.50	102.00	123.00	177.00	25.00	33.00	0.30	D4072550M-25FM
	1.024	26.00	104.00	125.00	179.00	25.00	33.00	0.20	D4072600M-25FM

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-070305-P	72568-T8-1	8T-8	10.6 in-lbs (1.2 N-m)
S M	4T-070305-M			
H	4T-070305-H			
K	4T-070305-K			
N	4T-070305-N			

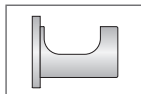
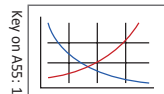
Expected Hole Tolerances

Length	in	mm
2xD	-.004 / +.008	-.10 / +.20
3xD	-.004 / +.008	-.10 / +.20
4xD	-.004 / +.010	-.10 / +.25

A55: 26 - 27

A55: 23 - 25

A55: 22

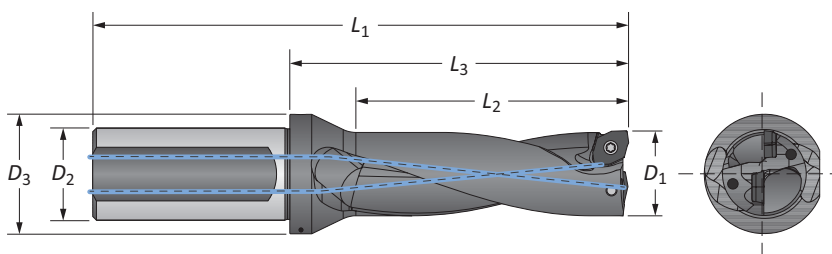


ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Imperial Shank



09 Series | Diameter Range: 1.044" - 1.259" (26.50mm - 31.99mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.063	27.00	2.126	3.020	5.343	1.250	1.614	0.063	D2092700M-125F
	1.102	28.00	2.205	3.098	5.421	1.250	1.614	0.051	D2092800M-125F
	1.125	28.58	2.250	3.138	5.461	1.250	1.614	0.046	D2091125I-125F
	1.142	29.00	2.283	3.177	5.500	1.250	1.614	0.043	D2092900M-125F
	1.181	30.00	2.362	3.256	5.579	1.250	1.693	0.031	D2093000M-125F
	1.220	31.00	2.441	3.335	5.657	1.250	1.693	0.024	D2093100M-125F
	1.250	31.75	2.500	3.374	5.697	1.250	1.693	0.019	D2091250I-125F
3xD	1.063	27.00	3.189	4.083	6.406	1.250	1.614	0.063	D3092700M-125F
	1.102	28.00	3.307	4.201	6.524	1.250	1.614	0.051	D3092800M-125F
	1.125	28.58	3.375	4.260	6.583	1.250	1.614	0.046	D3091125I-125F
	1.142	29.00	3.425	4.319	6.642	1.250	1.614	0.043	D3092900M-125F
	1.181	30.00	3.543	4.437	6.760	1.250	1.693	0.031	D3093000M-125F
	1.220	31.00	3.661	4.555	6.878	1.250	1.693	0.024	D3093100M-125F
	1.250	31.75	3.750	4.614	6.937	1.250	1.693	0.019	D3091250I-125F
4xD	1.063	27.00	4.252	5.146	7.469	1.250	1.614	0.063	D4092700M-125F
	1.102	28.00	4.409	5.303	7.626	1.250	1.614	0.051	D4092800M-125F
	1.125	28.58	4.500	5.382	7.705	1.250	1.614	0.046	D4091125I-125F
	1.142	29.00	4.567	5.461	7.783	1.250	1.614	0.043	D4092900M-125F
	1.181	30.00	4.724	5.618	7.941	1.250	1.693	0.031	D4093000M-125F
	1.220	31.00	4.882	5.776	8.098	1.250	1.693	0.024	D4093100M-125F
	1.250	31.75	5.000	5.854	8.177	1.250	1.693	0.019	D4091250I-125F

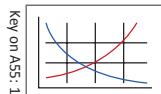
IC Inserts

ISO Material	Part No.	 Insert Screw	 Torx® Driver	Admissible Tightening Torque
P	4T-09T306-P	738-T10-1	8T-10	17.7 in-lbs (2.0 N-m)
S	4T-09T306-M			
H	4T-09T306-H			
K	4T-09T306-K			
N	4T-09T306-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.006 / +.010	-.15 / +.25
3xD	-.006 / +.010	-.15 / +.25
4xD	-.006 / +.012	-.15 / +.30

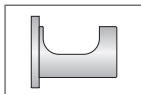
A55: 26 - 27



A55: 23 - 25



A55: 22



Key on A55: 1

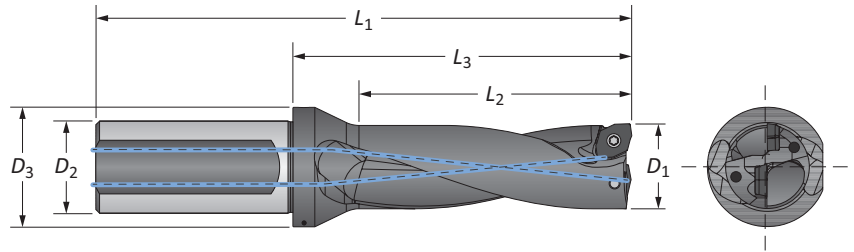
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

09 Series | Diameter Range: 1.044" - 1.259" (26.50mm - 31.99mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.063	27.00	54.00	76.70	135.70	32.00	41.00	1.60	D2092700M-32FM
	1.102	28.00	56.00	78.70	137.70	32.00	41.00	1.30	D2092800M-32FM
	1.125	28.58	57.15	79.70	138.70	32.00	41.00	1.20	D2091125I-32FM
	1.142	29.00	58.00	80.70	139.70	32.00	41.00	1.10	D2092900M-32FM
	1.181	30.00	60.00	82.70	141.70	32.00	43.00	0.80	D2093000M-32FM
	1.220	31.00	62.00	84.70	143.70	32.00	43.00	0.60	D2093100M-32FM
	1.250	31.75	63.50	85.70	144.70	32.00	43.00	0.50	D2091250I-32FM
3xD	1.063	27.00	81.00	103.70	162.70	32.00	41.00	1.60	D3092700M-32FM
	1.102	28.00	84.00	106.70	165.70	32.00	41.00	1.30	D3092800M-32FM
	1.125	28.58	85.73	108.20	167.20	32.00	41.00	1.20	D3091125I-32FM
	1.142	29.00	87.00	109.70	168.70	32.00	41.00	1.10	D3092900M-32FM
	1.181	30.00	90.00	112.70	171.70	32.00	43.00	0.80	D3093000M-32FM
	1.220	31.00	93.00	115.70	174.70	32.00	43.00	0.60	D3093100M-32FM
	1.250	31.75	95.25	117.20	176.20	32.00	43.00	0.50	D3091250I-32FM
4xD	1.063	27.00	108.00	130.70	189.70	32.00	41.00	1.60	D4092700M-32FM
	1.102	28.00	112.00	134.70	193.70	32.00	41.00	1.30	D4092800M-32FM
	1.125	28.58	114.30	136.70	195.70	32.00	41.00	1.20	D4091125I-32FM
	1.142	29.00	116.00	138.70	197.70	32.00	41.00	1.10	D4092900M-32FM
	1.181	30.00	120.00	142.70	201.70	32.00	43.00	0.80	D4093000M-32FM
	1.220	31.00	124.00	146.70	205.70	32.00	43.00	0.60	D4093100M-32FM
	1.250	31.75	127.00	148.70	207.70	32.00	43.00	0.50	D4091250I-32FM

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-09T306-P	738-T10-1	8T-10	17.7 in-lbs (2.0 N-m)
S M	4T-09T306-M			
H	4T-09T306-H			
K	4T-09T306-K			
N	4T-09T306-N			

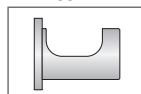
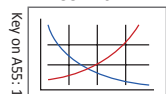
Expected Hole Tolerances

Length	in	mm
2xD	-.006 / +.010	-.15 / +.25
3xD	-.006 / +.010	-.15 / +.25
4xD	-.006 / +.012	-.15 / +.30

A55: 26 - 27

A55: 23 - 25

A55: 22



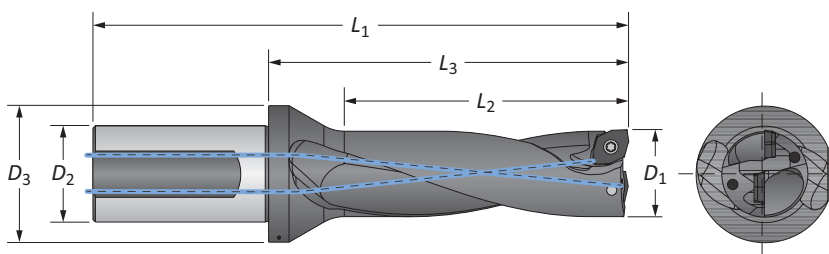
Key on ASS: 1

ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10

4TEX Drill Holders | Imperial Shank

11 Series | Diameter Range: 1.260" - 1.535" (32.00mm - 38.99mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.260	32.00	2.520	3.953	6.669	1.500	2.126	0.087	D2113200M-150F
	1.299	33.00	2.598	4.031	6.748	1.500	2.126	0.075	D2113300M-150F
	1.339	34.00	2.677	4.110	6.827	1.500	2.126	0.067	D2113400M-150F
	1.375	34.92	2.750	4.110	6.827	1.500	2.126	0.056	D2111375I-150F
	1.378	35.00	2.756	4.189	6.906	1.500	2.126	0.055	D2113500M-150F
	1.417	36.00	2.835	4.268	6.984	1.500	2.126	0.047	D2113600M-150F
	1.457	37.00	2.913	4.346	7.063	1.500	2.126	0.035	D2113700M-150F
	1.496	38.00	2.992	4.425	7.142	1.500	2.126	0.028	D2113800M-150F
	1.500	38.10	3.000	4.425	7.142	1.500	2.126	0.027	D2111500I-150F
3xD	1.260	32.00	3.780	5.213	7.929	1.500	2.126	0.087	D3113200M-150F
	1.299	33.00	3.898	5.331	8.047	1.500	2.126	0.075	D3113300M-150F
	1.339	34.00	4.016	5.449	8.165	1.500	2.126	0.067	D3113400M-150F
	1.375	34.92	4.125	5.449	8.165	1.500	2.126	0.056	D3111375I-150F
	1.378	35.00	4.134	5.567	8.283	1.500	2.126	0.055	D3113500M-150F
	1.417	36.00	4.252	5.685	8.402	1.500	2.126	0.047	D3113600M-150F
	1.457	37.00	4.370	5.803	8.520	1.500	2.126	0.035	D3113700M-150F
	1.496	38.00	4.488	5.921	8.638	1.500	2.126	0.028	D3113800M-150F
	1.500	38.10	4.500	5.921	8.638	1.500	2.126	0.027	D3111500I-150F
4xD	1.260	32.00	5.039	6.079	8.795	1.500	2.126	0.087	D4113200M-150F
	1.299	33.00	5.197	6.236	8.953	1.500	2.126	0.075	D4113300M-150F
	1.339	34.00	5.354	6.394	9.110	1.500	2.126	0.067	D4113400M-150F
	1.375	34.92	5.500	6.394	9.110	1.500	2.126	0.056	D4111375I-150F
	1.378	35.00	5.512	6.551	9.268	1.500	2.126	0.055	D4113500M-150F
	1.417	36.00	5.669	6.709	9.425	1.500	2.126	0.047	D4113600M-150F
	1.457	37.00	5.827	6.866	9.583	1.500	2.126	0.035	D4113700M-150F
	1.496	38.00	5.984	7.024	9.740	1.500	2.126	0.028	D4113800M-150F
	1.500	38.10	6.000	7.024	9.740	1.500	2.126	0.027	D4111500I-150F

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-11T306-P	7488-T15-1	8T-15	30.9 in-lbs (3.5 N-m)
S	4T-11T306-M			
M	4T-11T306-H			
H	4T-11T306-K			
K	4T-11T306-N			
N	4T-11T306-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.006 / +.010	-.15 / +.25
3xD	-.006 / +.010	-.15 / +.25
4xD	-.006 / +.012	-.15 / +.30

A55: 26 - 27

A55: 23 - 25

A55: 22

Key on A55: 1

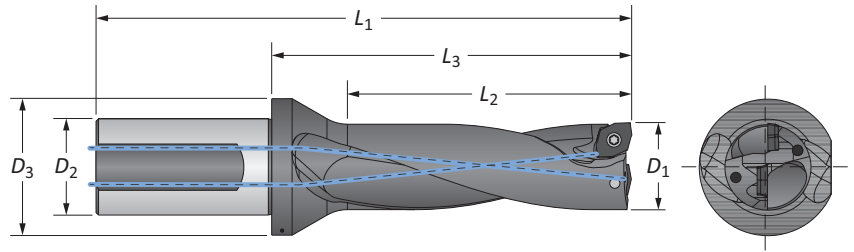
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

11 Series | Diameter Range: 1.260" - 1.535" (32.00mm - 38.99mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.260	32.00	64.00	100.40	169.40	40.00	54.00	2.20	D2113200M-40FM
	1.299	33.00	66.00	102.40	171.40	40.00	54.00	1.90	D2113300M-40FM
	1.339	34.00	68.00	104.40	173.40	40.00	54.00	1.70	D2113400M-40FM
	1.375	34.92	69.85	104.40	173.40	40.00	54.00	1.42	D211375I-40FM
	1.378	35.00	70.00	106.40	175.40	40.00	54.00	1.40	D2113500M-40FM
	1.417	36.00	72.00	108.40	177.40	40.00	54.00	1.20	D2113600M-40FM
	1.457	37.00	74.00	110.40	179.40	40.00	54.00	0.90	D2113700M-40FM
	1.496	38.00	76.00	112.40	181.40	40.00	54.00	0.70	D2113800M-40FM
3xD	1.260	32.00	96.00	132.40	201.40	40.00	54.00	2.20	D3113200M-40FM
	1.299	33.00	99.00	135.40	204.40	40.00	54.00	1.90	D3113300M-40FM
	1.339	34.00	102.00	138.40	207.40	40.00	54.00	1.70	D3113400M-40FM
	1.375	34.92	104.78	138.40	207.40	40.00	54.00	1.42	D311375I-40FM
	1.378	35.00	105.00	141.40	210.40	40.00	54.00	1.40	D3113500M-40FM
	1.417	36.00	108.00	144.40	213.40	40.00	54.00	1.20	D3113600M-40FM
	1.457	37.00	111.00	147.40	216.40	40.00	54.00	0.90	D3113700M-40FM
	1.496	38.00	114.00	150.40	219.40	40.00	54.00	0.70	D3113800M-40FM
4xD	1.260	32.00	128.00	154.40	223.40	40.00	54.00	2.20	D4113200M-40FM
	1.299	33.00	132.00	158.40	227.40	40.00	54.00	1.90	D4113300M-40FM
	1.339	34.00	136.00	162.40	231.40	40.00	54.00	1.70	D4113400M-40FM
	1.375	34.92	139.70	162.40	231.40	40.00	54.00	1.42	D411375I-40FM
	1.378	35.00	140.00	166.40	235.40	40.00	54.00	1.40	D4113500M-40FM
	1.417	36.00	144.00	170.40	239.40	40.00	54.00	1.20	D4113600M-40FM
	1.457	37.00	148.00	174.40	243.40	40.00	54.00	0.90	D4113700M-40FM
	1.496	38.00	152.00	178.40	247.40	40.00	54.00	0.70	D4113800M-40FM
	1.500	38.10	152.40	178.40	247.40	40.00	54.00	0.69	D4111500I-40FM

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-11T306-P	7488-T15-1	8T-15	30.9 in-lbs (3.5 N-m)
S	4T-11T306-M			
H	4T-11T306-H			
K	4T-11T306-K			
N	4T-11T306-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.006 / +.010	-.15 / +.25
3xD	-.006 / +.010	-.15 / +.25
4xD	-.006 / +.012	-.15 / +.30

Key on ASS: 1

A55: 26 - 27

A55: 23 - 25

A55: 22

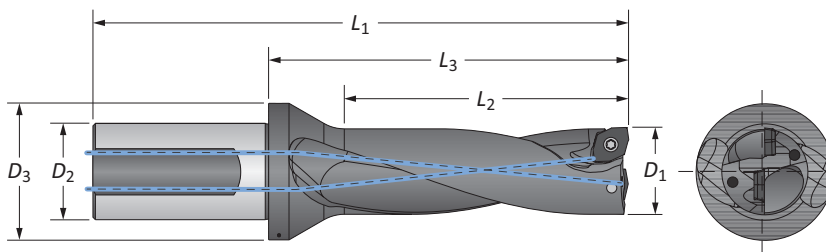
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10

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

4TEX Drill Holders | Imperial Shank

14 Series | Diameter Range: 1.536" - 1.850" (39.00mm - 47.00mm)



Imperial Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.535	39.00	3.071	4.346	7.063	1.500	2.126	0.110	D2143900M-150F
	1.575	40.00	3.150	4.425	7.142	1.500	2.126	0.098	D2144000M-150F
	1.614	41.00	3.228	4.504	7.220	1.500	2.126	0.091	D2144100M-150F
	1.625	41.28	3.250	4.504	7.220	1.500	2.126	0.088	D2141625I-150F
	1.654	42.00	3.307	4.583	7.299	1.500	2.126	0.079	D2144200M-150F
	1.693	43.00	3.386	4.661	7.378	1.500	2.323	0.071	D2144300M-150F
	1.732	44.00	3.465	4.740	7.457	1.500	2.323	0.059	D2144400M-150F
	1.750	44.45	3.500	4.740	7.457	1.500	2.323	0.055	D2141750I-150F
	1.772	45.00	3.543	4.819	7.535	1.500	2.323	0.051	D2144500M-150F
	1.811	46.00	3.622	4.898	7.614	1.500	2.323	0.039	D2144600M-150F
1.850	47.00	3.701	4.976	7.693	1.500	2.323	0.031	D2144700M-150F	
3xD	1.535	39.00	4.606	5.882	8.598	1.500	2.126	0.110	D3143900M-150F
	1.575	40.00	4.724	6.000	8.717	1.500	2.126	0.098	D3144000M-150F
	1.614	41.00	4.843	6.118	8.835	1.500	2.126	0.091	D3144100M-150F
	1.625	41.28	4.875	6.118	8.835	1.500	2.126	0.088	D3141625I-150F
	1.654	42.00	4.961	6.236	8.953	1.500	2.126	0.079	D3144200M-150F
	1.693	43.00	5.079	6.354	9.071	1.500	2.323	0.071	D3144300M-150F
	1.732	44.00	5.197	6.472	9.189	1.500	2.323	0.059	D3144400M-150F
	1.750	44.45	5.250	6.472	9.189	1.500	2.323	0.055	D3141750I-150F
	1.772	45.00	5.315	6.591	9.307	1.500	2.323	0.051	D3144500M-150F
	1.811	46.00	5.433	6.709	9.425	1.500	2.323	0.039	D3144600M-150F
1.850	47.00	5.551	6.827	9.543	1.500	2.323	0.031	D3144700M-150F	
4xD	1.535	39.00	6.142	7.417	10.134	1.500	2.126	0.110	D4143900M-150F
	1.575	40.00	6.299	7.575	10.291	1.500	2.126	0.098	D4144000M-150F
	1.614	41.00	6.457	7.732	10.449	1.500	2.126	0.091	D4144100M-150F
	1.625	41.28	6.500	7.732	10.449	1.500	2.126	0.088	D4141625I-150F
	1.654	42.00	6.614	7.890	10.606	1.500	2.126	0.079	D4144200M-150F
	1.693	43.00	6.772	8.047	10.764	1.500	2.323	0.071	D4144300M-150F
	1.732	44.00	6.929	8.205	10.921	1.500	2.323	0.059	D4144400M-150F
	1.750	44.45	7.000	8.205	10.921	1.500	2.323	0.055	D4141750I-150F
	1.772	45.00	7.087	8.362	11.079	1.500	2.323	0.051	D4144500M-150F
	1.811	46.00	7.244	8.520	11.236	1.500	2.323	0.039	D4144600M-150F
1.850	47.00	7.402	8.677	11.394	1.500	2.323	0.031	D4144700M-150F	

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-140408-P	7595-T20-1	8T-20	39.8 in-lbs (4.5 N-m)
S M	4T-140408-M			
H	4T-140408-H			
K	4T-140408-K			
N	4T-140408-N			

Expected Hole Tolerances

Length	in	mm
2xD	-.008 / +.012	-.20 / +.30
3xD	-.008 / +.012	-.20 / +.30
4xD	-.008 / +.014	-.20 / +.35

A55: 26 - 27 A55: 23 - 25 A55: 22

Key on A55: 1

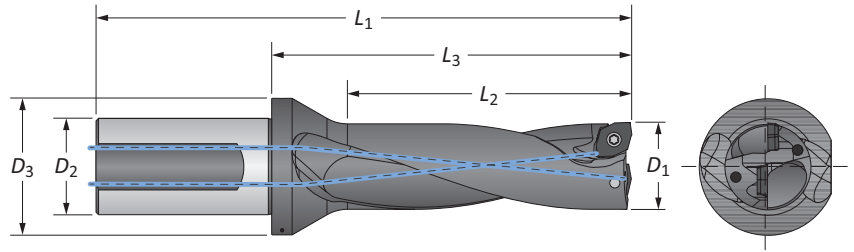
ⓘ = Imperial (in)
Ⓜ = Metric (mm)

IC inserts sold in quantities of 10
Insert screws sold in quantities of 10



4TEX Drill Holders | Metric Shank

14 Series | Diameter Range: 1.536" - 1.850" (39.00mm - 47.00mm)



Metric Shank

Length	D ₁		Body			Shank		Max Offset	Part No.
	in	mm	L ₂	L ₃	L ₁	D ₂	D ₃		
2xD	1.535	39.00	78.00	110.40	179.40	40.00	54.00	2.80	D2143900M-40FM
	1.575	40.00	80.00	112.40	181.40	40.00	54.00	2.50	D2144000M-40FM
	1.614	41.00	82.00	114.40	183.40	40.00	54.00	2.30	D2144100M-40FM
	1.625	41.28	82.55	114.40	183.40	40.00	54.00	2.23	D2141625I-40FM
	1.654	42.00	84.00	116.40	185.40	40.00	54.00	2.00	D2144200M-40FM
	1.693	43.00	86.00	118.40	187.40	40.00	59.00	1.80	D2144300M-40FM
	1.732	44.00	88.00	120.40	189.40	40.00	59.00	1.50	D2144400M-40FM
	1.750	44.45	88.90	120.40	189.40	40.00	59.00	1.41	D2141750I-40FM
	1.772	45.00	90.00	122.40	191.40	40.00	59.00	1.30	D2144500M-40FM
	1.811	46.00	92.00	124.40	193.40	40.00	59.00	1.00	D2144600M-40FM
1.850	47.00	94.00	126.40	195.40	40.00	59.00	0.80	D2144700M-40FM	
3xD	1.535	39.00	117.00	149.40	218.40	40.00	54.00	2.80	D3143900M-40FM
	1.575	40.00	120.00	152.40	221.40	40.00	54.00	2.50	D3144000M-40FM
	1.614	41.00	123.00	155.40	224.40	40.00	54.00	2.30	D3144100M-40FM
	1.625	41.28	123.83	155.40	224.40	40.00	54.00	2.23	D3141625I-40FM
	1.654	42.00	126.00	158.40	227.40	40.00	54.00	2.00	D3144200M-40FM
	1.693	43.00	129.00	161.40	230.40	40.00	59.00	1.80	D3144300M-40FM
	1.732	44.00	132.00	164.40	233.40	40.00	59.00	1.50	D3144400M-40FM
	1.750	44.45	133.35	164.40	233.40	40.00	59.00	1.41	D3141750I-40FM
	1.772	45.00	135.00	167.40	236.40	40.00	59.00	1.30	D3144500M-40FM
	1.811	46.00	138.00	170.40	239.40	40.00	59.00	1.00	D3144600M-40FM
1.850	47.00	141.00	173.40	242.40	40.00	59.00	0.80	D3144700M-40FM	
4xD	1.535	39.00	156.00	188.40	257.40	40.00	54.00	2.80	D4143900M-40FM
	1.575	40.00	160.00	192.40	261.40	40.00	54.00	2.50	D4144000M-40FM
	1.614	41.00	164.00	196.40	265.40	40.00	54.00	2.30	D4144100M-40FM
	1.625	41.28	165.10	196.40	265.40	40.00	54.00	2.23	D4141625I-40FM
	1.654	42.00	168.00	200.40	269.40	40.00	54.00	2.00	D4144200M-40FM
	1.693	43.00	172.00	204.40	273.40	40.00	59.00	1.80	D4144300M-40FM
	1.732	44.00	176.00	208.40	277.40	40.00	59.00	1.50	D4144400M-40FM
	1.750	44.45	177.80	208.40	277.40	40.00	59.00	1.41	D4141750I-40FM
	1.772	45.00	180.00	212.40	281.40	40.00	59.00	1.30	D4144500M-40FM
	1.811	46.00	184.00	216.40	285.40	40.00	59.00	1.00	D4144600M-40FM
1.850	47.00	188.00	220.40	289.40	40.00	59.00	0.80	D4144700M-40FM	

IC Inserts

ISO Material	Part No.	Insert Screw	Torx® Driver	Admissible Tightening Torque
P	4T-140408-P	7595-T20-1	8T-20	39.8 in-lbs (4.5 N-m)
S	4T-140408-M			
H	4T-140408-H			
K	4T-140408-K			
N	4T-140408-N			

Expected Hole Tolerances

Length	in	mm
2xD	-0.008 / +0.012	-.20 / +.30
3xD	-0.008 / +0.012	-.20 / +.30
4xD	-0.008 / +0.014	-.20 / +.35

Key on ASS-1

A55: 26 - 27

A55: 23 - 25

A55: 22

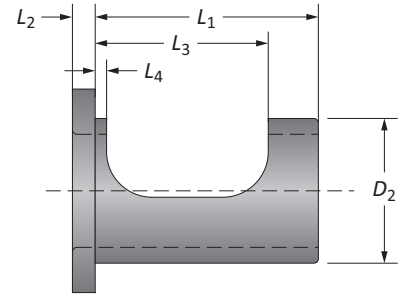
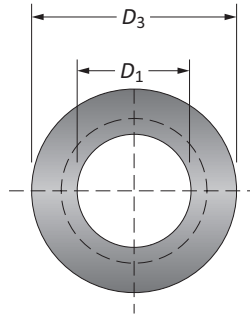
ⓘ = Imperial (in)
 ⓘ = Metric (mm)

IC inserts sold in quantities of 10
 Insert screws sold in quantities of 10

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

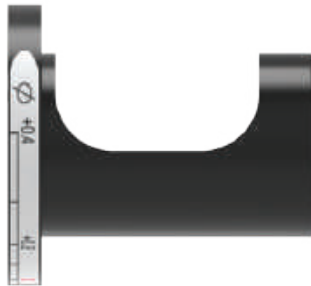
Eccentric Sleeves

For Cutting Diameter / Center Height Adjustment

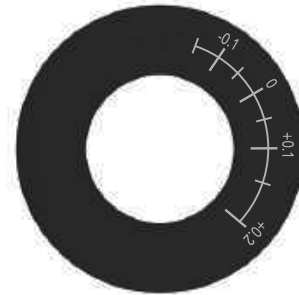


Sleeve Dimensions							Adjustment Range		
D_1	D_2	D_3	L_2	L_3	L_4	L_1	Part No.	Diameter*	Center Height
0.750	1.000	1.614	0.157	1.417	0.118	1.536	SLEEVE-075F	-0.008 to +0.016	-0.006 to +0.008
1.000	1.250	1.929	0.236	1.496	0.098	1.890	SLEEVE-100F	-0.008 to +0.016	-0.006 to +0.008
1.250	1.500	2.283	0.236	1.693	0.098	2.087	SLEEVE-125F	-0.008 to +0.016	-0.006 to +0.008
1.500	2.000	2.913	0.236	1.929	0.118	2.481	SLEEVE-150F	-0.008 to +0.024	-0.008 to +0.012
<hr/>									
25.00	32.00	49.00	6.00	38.00	2.50	48.00	SLEEVE-25FM	-0.20 to +0.40	-0.15 to +0.20
32.00	40.00	58.00	6.00	43.00	2.50	53.00	SLEEVE-32FM	-0.20 to +0.40	-0.15 to +0.20
40.00	50.00	74.00	6.00	49.00	3.00	63.00	SLEEVE-40FM	-0.20 to +0.40	-0.20 to +0.30

*Diameter adjustment range refers to the cutting diameter.



Milling Applications
Peripheral Adjustment Position

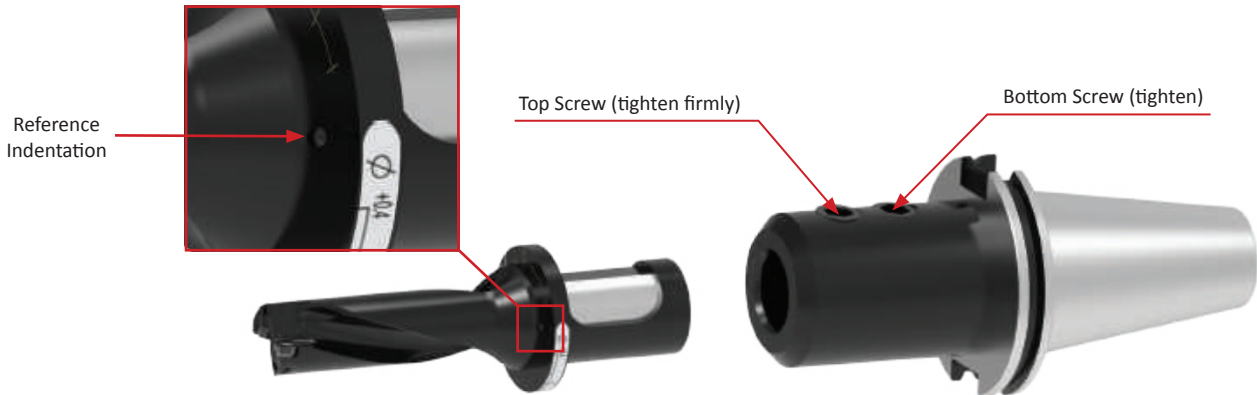


Lathe Applications
Front Adjustment Position

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

Diameter Adjustment

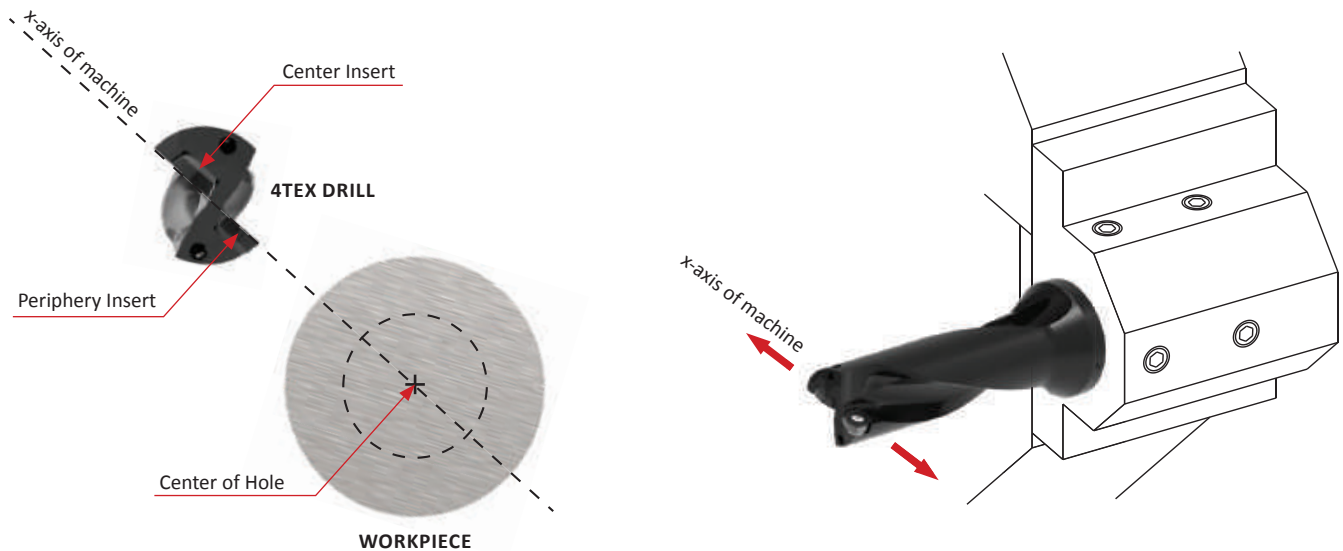
Milling and Lathe Applications



For Milling Applications

1. Assemble the 4TEX Drill, eccentric sleeve, and tool holder. Do not tighten the tool holder set screws.
2. Using the peripheral marks for milling machines, align the reference indentation on the holder with the 0 (zero) mark on the eccentric sleeve to have no offset.
3. Rotate the sleeve in the (+) or (-) direction to increase or decrease the nominal diameter.
4. Once the drill has arrived at the desired diameter, firmly tighten the top set screw first and then tighten the bottom set screw.

NOTICE: Eccentric sleeves are to be used with side-locking tool holders only. Damage may result with other styles of tool holders.



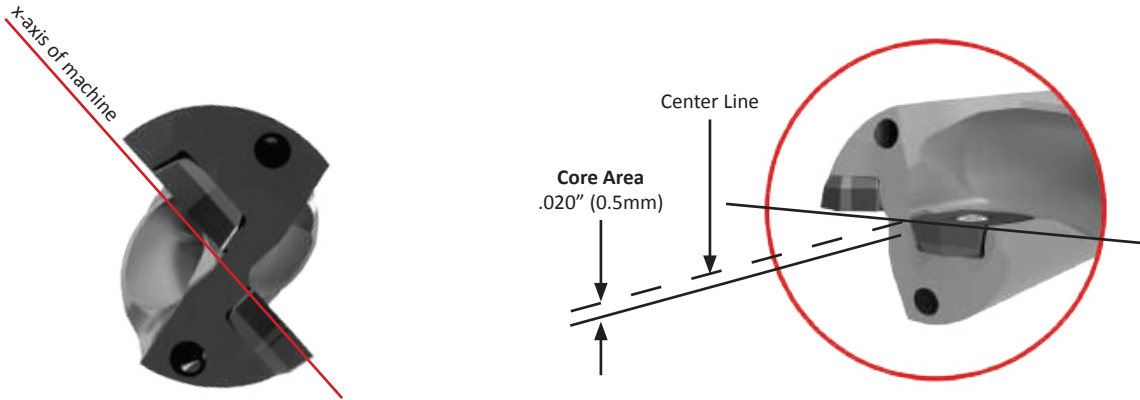
For Lathe Applications

1. Assemble the 4TEX Drill into the lathe turret with the top face of the inserts parallel to the x-axis of the machine. This will allow for the diameter offsets to be made using the lathe's x-axis.
2. To increase the nominal diameter, offset the x-axis so the periphery insert moves away from the center of the hole.
3. To decrease the nominal diameter, offset the x-axis so the periphery insert moves toward the center of the hole.

NOTE: Eccentric sleeve is not required when adjusting the diameter of the hole on a lathe.

Center Height Alignment

Proper Center Line Position



A
DRILLING

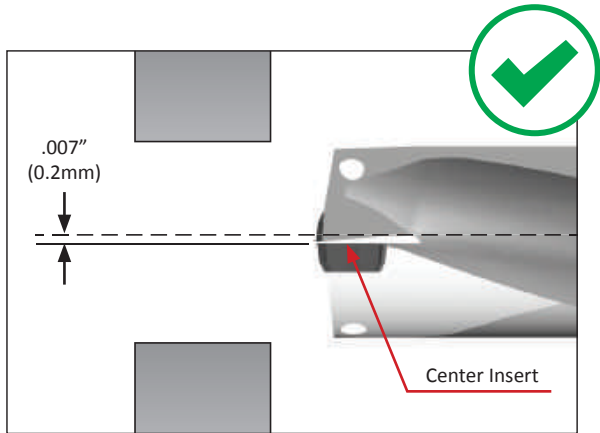
B
BORING

C
REAMING

D
URNISHING

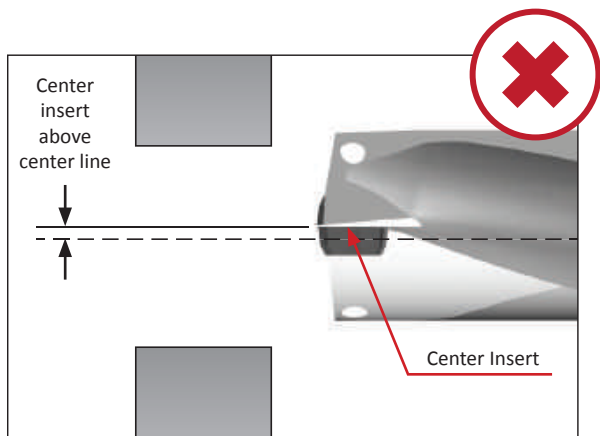
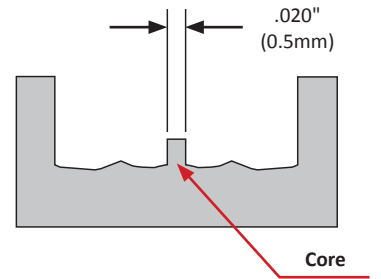
F
HREADING

X
PECIALS



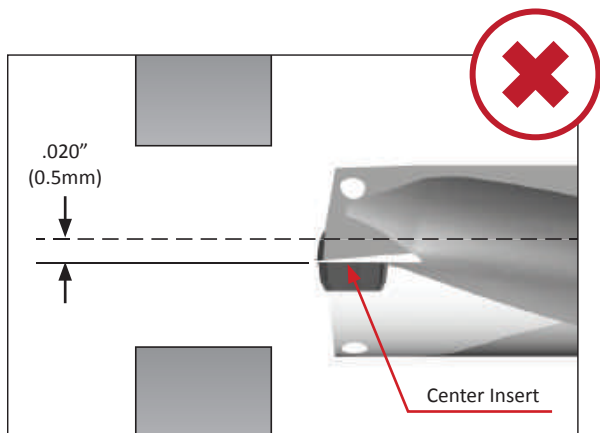
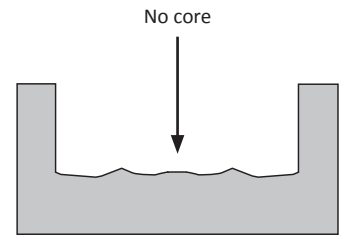
Proper Center Height Alignment

- The correct center height alignment will position the center insert .007" (0.2mm) below the center line.



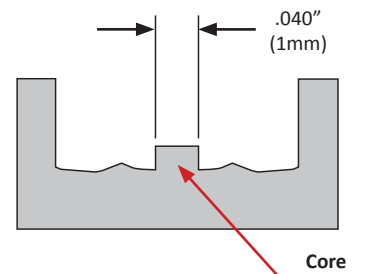
Center Insert Above the Center Line

- This will cause fracturing of the center insert
- Requires center height adjustment



Center Insert Too Far Below Center Line

- This will cause the drill to interfere with the drilled hole
- This will impede chip evacuation on the periphery insert
- Requires center height adjustment



Center Height Alignment

How to Correct Issues

A

DRILLING

B

BORING

C

REAMING

D

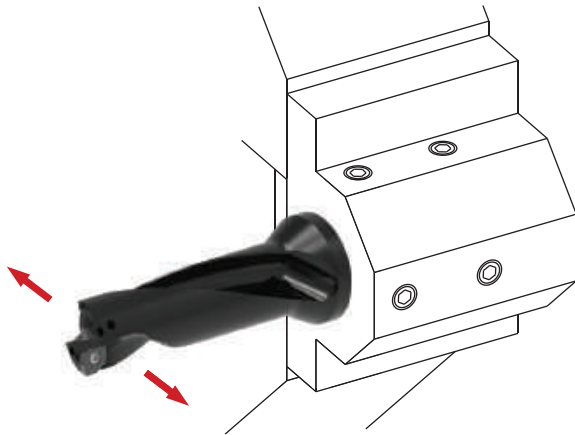
BURNISHING

E

THREADING

X

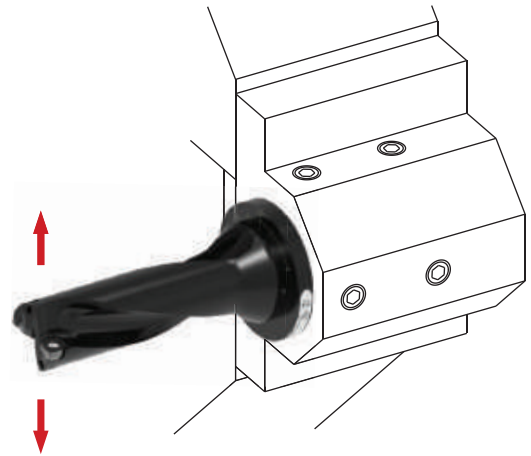
SPECIALS



Method 1: Adjustment with X-Axis

1. Rotate the drill body so the position of the center line of the inserts is perpendicular to the lathe's x-axis.
2. Use the x-axis to offset the position of the center line in a (+) or (-) direction to increase or decrease the center core diameter at the bottom of the hole.

NOTE: This method does not allow diameter adjustments using the x-axis.



Method 2: Adjustment with Eccentric Sleeve

1. Assemble the drill to the turret using the eccentric sleeve, positioning the center line of the inserts parallel to the x-axis.
2. Align the reference indentation on the drill to the "0" setting on the flange face.
3. Rotate the sleeve (+) or (-) to increase or decrease the center height of the inserts in order to increase or decrease the core diameter at the bottom of the hole.

NOTE: This method still allows diameter adjustments using the x-axis.

NOTE (applies to both methods): Adjusting the center line of the inserts may affect the hole diameter produced. Method 2 is preferred to make center height adjustments and compensate for hole diameter with the x-axis.

Recommended Drilling Data | Imperial (inch)

ISO	Material	Hardness (BHN)	Speed (SFM)				Feed Rate (IPR) by Diameter - 2xD, 3xD**				
			P	K	H	M	N	03, 04 Series	05 Series	06, 07 Series	09, 11, 14 Series
			AM480	AM485	TiCN			Ø .472 - .609	Ø .610 - .728	Ø .729 - 1.043	Ø 1.044 - 1.850
P	Free Machining Steel 1118, 1215, 12L14, etc.	100-150	400 - 1200	400 - 1200	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
		150-200	400 - 1000	400 - 1000	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
		200-250	400 - 800	400 - 800	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85-125	400 - 1000	400 - 1000	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
		125-175	400 - 1000	400 - 1000	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
		175-225	400 - 800	400 - 800	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	225-275	400 - 800	400 - 800	-	.0025 - .004	.0025 - .005	.003 - .0055	.003 - .0055		
		125-175	330 - 800	330 - 800	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		175-225	330 - 800	330 - 800	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
	Alloy Steel 4140, 5140, 8640, etc.	225-275	330 - 800	330 - 800	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		275-325	330 - 600	330 - 600	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		325-375	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
	High Strength Alloy 4340, 4330V, 300M, etc.	125-175	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		175-225	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		225-275	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
	Structural Steel A36, A285, A516, etc.	275-325	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		325-375	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
		375-425	330 - 800	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008		
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	100-150	330 - 600	330 - 600	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008			
	150-200	330 - 600	330 - 600	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008			
	200-250	330 - 600	-	-	.0015 - .0055	.0025 - .0065	.003 - .008	.003 - .008			
S	High Temp Alloy* Hastelloy B, Inconel 600, etc.	150-200	270 - 600	270 - 600	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
		200-250	270 - 600	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
	Titanium Alloy*	140 - 220	100 - 250	100 - 250	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
		220 - 310	100 - 200	100 - 200	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
	Aerospace Alloy* S82	140 - 220	140 - 500	140 - 500	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
		220 - 310	140 - 300	140 - 300	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
M	Stainless Steel 400 Series 416, 420, etc.	185 - 275	100 - 250	100 - 250	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
		275 - 350	100 - 200	100 - 200	-	.002 - .003	.002 - .003	.0025 - .004	.0025 - .004		
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	185 - 275	240 - 600	240 - 700	-	.0015 - .004	.0025 - .005	.0025 - .0055	.0025 - .0055		
		275 - 350	240 - 470	240 - 500	-	.0015 - .004	.0025 - .005	.0025 - .0055	.0025 - .0055		
	Super Duplex Stainless Steel	135 - 185	240 - 600	240 - 700	-	.0015 - .004	.0025 - .005	.0025 - .0055	.0025 - .0055		
		185 - 275	240 - 470	240 - 500	-	.0015 - .004	.0025 - .005	.0025 - .0055	.0025 - .0055		
H	Wear Plate Hardox, AR400, T-1, etc.	400	100 - 200	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
		500	100 - 200	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
		600	100 - 200	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
	Hardened Steel	300 - 400	100 - 300	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006		
400 - 500		100 - 200	-	-	.0015 - .003	.0025 - .005	.003 - .006	.003 - .006			
K	Nodular, Grey, Ductile Cast Iron	120 - 150	300 - 800	-	-	.003 - .0055	.003 - .007	.003 - .008	.003 - .008		
		150 - 200	300 - 800	-	-	.003 - .0055	.003 - .007	.003 - .008	.003 - .008		
		200 - 220	300 - 500	-	-	.003 - .0055	.003 - .007	.003 - .008	.003 - .008		
		220 - 260	270 - 400	-	-	.003 - .0055	.003 - .007	.003 - .008	.003 - .008		
		260 - 320	270 - 400	-	-	.003 - .0055	.003 - .007	.003 - .008	.003 - .008		
N	Cast Aluminum	30	-	-	800 - 2000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
		180	-	-	800 - 2000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
	Wrought Aluminum	30	-	-	800 - 2000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
		180	-	-	800 - 2000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
	Aluminum Bronze	100 - 200	500 - 1000	-	500 - 1000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
		200 - 250	500 - 1000	-	500 - 1000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
	Brass	100	500 - 1000	-	500 - 1000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008		
Copper	60	-	-	500 - 1000	.0025 - .005	.003 - .0055	.003 - .0065	.003 - .008			

*For high temp materials, 1000 PSI is recommended as well as a quality synthetic coolant at approximately 10% emulsion.

**For 4xD tools, begin at low end of feed recommendation.

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

Recommended Drilling Data | Metric (mm)

ISO	Material	Hardness (BHN)	Speed (M/min)				Feed Rate (mm/rev) by Diameter - 2xD, 3xD**				
			P	K	H	M	N	03, 04 Series	05 Series	06, 07 Series	09, 11, 14 Series
			AM480	AM485	TiCN			Ø 12.00 - 15.49	Ø 15.50 - 18.49	Ø 18.50 - 26.49	Ø 26.50 - 47.00
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	125 - 365	125 - 365	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
		150 - 200	125 - 305	125 - 305	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
		200 - 250	125 - 245	125 - 245	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	125 - 305	125 - 305	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
		125 - 175	125 - 305	125 - 305	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
		175 - 225	125 - 245	125 - 245	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
		225 - 275	125 - 245	125 - 245	-	0.07 - 0.1	0.07 - 0.12	0.08 - 0.14	0.08 - 0.14		
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	100 - 245	100 - 245	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		175 - 225	100 - 245	100 - 245	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		225 - 275	100 - 245	100 - 245	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		275 - 325	100 - 245	100 - 185	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	100 - 245	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		175 - 225	100 - 245	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		225 - 275	100 - 245	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		275 - 325	100 - 245	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		325 - 375	100 - 245	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	100 - 165	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
		300 - 350	100 - 185	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21		
350 - 400		100 - 185	-	-	0.05 - 0.14	0.07 - 0.17	0.08 - 0.21	0.08 - 0.21			
Structural Steel A36, A285, A516, etc.	100 - 150	100 - 185	100 - 185	-	0.05 - 0.13	0.07 - 0.13	0.08 - 0.13	0.08 - 0.13			
	150 - 250	100 - 185	100 - 185	-	0.05 - 0.13	0.07 - 0.13	0.08 - 0.13	0.08 - 0.13			
	250 - 350	100 - 185	-	-	0.05 - 0.13	0.07 - 0.13	0.08 - 0.13	0.08 - 0.13			
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	85 - 185	85 - 185	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15			
	200 - 250	85 - 185	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15			
S	High Temp Alloy* Hastelloy B, Inconel 600, etc.	140 - 220	30 - 80	30 - 80	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1		
		220 - 310	30 - 60	30 - 60	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1		
	Titanium Alloy*	140 - 220	40 - 155	40 - 155	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1		
		220 - 310	40 - 90	40 - 90	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1		
	Aerospace Alloy* S82	185 - 275	30 - 80	30 - 80	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1		
275 - 350		30 - 60	31 - 60	-	0.06 - 0.08	0.06 - 0.08	0.07 - 0.1	0.07 - 0.1			
M	Stainless Steel 400 Series 416, 420, etc.	185 - 275	75 - 185	75 - 215	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14		
		275 - 350	75 - 145	75 - 155	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14		
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	75 - 185	75 - 215	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14		
		185 - 275	75 - 145	75 - 155	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14		
	Super Duplex Stainless Steel	135 - 185	75 - 185	75 - 215	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14		
185 - 275		75 - 145	75 - 155	-	0.05 - 0.1	0.07 - 0.12	0.07 - 0.14	0.07 - 0.14			
H	Wear Plate Hardox, AR400, T-1, etc.	400	30 - 60	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15		
		500	30 - 60	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15		
		600	30 - 60	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15		
	Hardened Steel	300 - 400	30 - 90	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15		
400 - 500		30 - 60	-	-	0.05 - 0.08	0.07 - 0.12	0.08 - 0.15	0.08 - 0.15			
K	Nodular, Grey, Ductile Cast Iron	120 - 150	90 - 245	-	-	0.08 - 0.14	0.08 - 0.19	0.08 - 0.21	0.08 - 0.21		
		150 - 200	90 - 245	-	-	0.08 - 0.14	0.08 - 0.19	0.08 - 0.21	0.08 - 0.21		
		200 - 220	90 - 155	-	-	0.08 - 0.14	0.08 - 0.19	0.08 - 0.21	0.08 - 0.21		
		220 - 260	80 - 125	-	-	0.08 - 0.14	0.08 - 0.19	0.08 - 0.21	0.08 - 0.21		
		260 - 320	80 - 125	-	-	0.08 - 0.14	0.08 - 0.19	0.08 - 0.21	0.08 - 0.21		
N	Cast Aluminum	30	-	-	245 - 610	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
		180	-	-	245 - 610	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
	Wrought Aluminum	30	-	-	245 - 610	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
		180	-	-	245 - 610	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
	Aluminum Bronze	100 - 200	150 - 305	-	150 - 305	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
		200 - 250	150 - 305	-	150 - 305	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
	Brass	100	150 - 305	-	150 - 305	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		
	Copper	60	-	-	150 - 305	0.07 - 0.12	0.08 - 0.14	0.08 - 0.17	0.08 - 0.21		

*For high temp materials, 70 bar is recommended as well as a quality synthetic coolant at approximately 10% emulsion.

**For 4xD tools, begin at low end of feed recommendation.

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

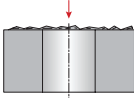
A
DRILLING
B
BORING
C
REAMING
D
BURNISHING
E
THREADING
X
SPECIALS




Insert Geometry Recommendations

ISO	Material	Hardness (BHN)	Geometry				
			P	M	K	N	H
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	○	●			
		150 - 200	●	○			
		200 - 250	●	○			
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	○	●			
		125 - 175	○	●			
		175 - 225	○	●			
		225 - 275	●	○			
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	○	●			
		175 - 225	○	●			
		225 - 275	●	○			
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	○	●			
		175 - 225	●	○			
		225 - 275	●				○
		275 - 325	●				○
		325 - 375	○				●
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	●				
		300 - 350	○				●
		350 - 400	○				●
Structural Steel A36, A285, A516, etc.	100 - 150	○	●				
	150 - 250	○	●				
	250 - 350	●				○	
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	●	○				
	200 - 250	●				○	
S	High Temp Alloy* Hastelloy B, Inconel 600, etc.	140 - 220	○	●			
		220 - 310	○	●			
	Titanium Alloy*	140 - 220	○	●			
		220 - 310	○	●			
	Aerospace Alloy* S82	185 - 275	○	●			
275 - 350		○	●				
M	Stainless Steel 400 Series 416, 420, etc.	185 - 275	○	●			
		275 - 350	○	●			
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	○	●			
		185 - 275	○	●			
	Super Duplex Stainless Steel		○	●			
	135 - 275	○	●				
H	Wear Plate Hardox, AR400, T-1, etc.	400	○				●
		500	○				●
		600	○				●
	Hardened Steel	300 - 400	○				●
		400 - 500	○				●
K	Nodular, Ductile Cast Iron	120 - 150	●	○			
		150 - 200	●	○			
		200 - 220	●	○			
		220 - 260					○
		260 - 320			●		○
	Grey / White Iron	120 - 150				●	○
		150 - 200				●	○
		200 - 220				●	
		220 - 260				●	
		260 - 320				●	
N	Cast Aluminum	30				●	
		180				●	
	Wrought Aluminum	30				●	
		180				●	
	Aluminum Bronze	100 - 200	○			●	
		200 - 250	○			●	
Brass	100	○			●		
Copper	60				●		

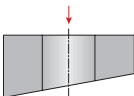
Troubleshooting

1.  **Starting on Uneven Surfaces**

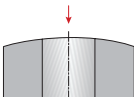
 - Reduce entry feed by 50% if necessary

2.  **Starting on Angled Surfaces**

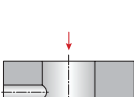
 - Reduce entry feed by 20 - 50%
 - Use lower rake geometry if insert chipping occurs

3.  **Angled Bore Exit**

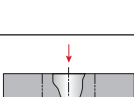
 - Reduce entry feed by 50% on breakout
 - Use tough insert and stable corner radius

4.  **Starting on Convex Surfaces**


 - Reduce entry feed by 50%
 - Use lower rake geometry if insert chipping occurs

5.  **Drilling through a Cross Hole**

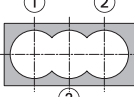
 - Reduce feed rate 50% if necessary
 - Use good coolant flow and monitor chip packing
 - Use lower rake geometry if insert chipping occurs

6.  **Drilling on a Groove or Large Centering Box**

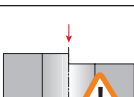
 - Reduce entry feed
 - Use lower rake geometry for center insert

7.  **Chain Drilling**

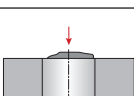
 - Use good coolant flow
 - Reduce feed rate by 50% for interrupted cut
 - Use lower rake geometry if insert chipping occurs

8.  **Starting on an Edge**

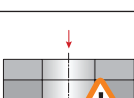
 - Reduce entry feed rate by 50%
 - Use lower rake geometry if insert chipping occurs

9.  **Starting on a Welded Seam**

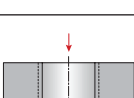
 - Reduce entry feed rate by 50%
 - Use lower rake geometry if insert chipping occurs

10.  **Drilling through Stacked Plates**

 - Not recommended

11.  **Opening an Existing Hole**

 - Use flood coolant

12.  **Adjustable**

 - For mills, use eccentric sleeve with end mill holder
 - For lathes, use x-axis to adjust offset ϕ

NOTE: Refer to maximum offset ϕ in data tables

A

DRILLING

B

BORING

C

REAMING

D

BURNISHING

E

THREADING

X

SPECIALS

Guaranteed Test / Demo Application Form

Distributor PO # _____

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

IMPORTANT: For processing, send Purchase Order to your Allied Field Sales Engineer (FSE). Please clearly mark the paperwork as "Test Order."

Distributor Information

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

End User Information

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

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

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

Application Information

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

Machine Information

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

Coolant Information

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

Requested Tooling

QTY	Item Number	QTY	Item Number



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Warranty Information



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

Allied Machine's sole and exclusive obligation under this warranty is limited to, at its option, without additional charge, replacing or repairing this product or issuing a credit. For this warranty to be applied, the product must be returned freight prepaid to the plant designated by an Allied Machine representative and which, upon inspection, is determined by Allied Machine to be defective in material and workmanship.

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

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Allied Machine shall have no liability or responsibility for any claim, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein.

Allied Machine shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for economic losses of any kind or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform this agreement.

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