ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

Boring

Reaming

Burnishing

Threading

Specials

AccuPort 432®

PORTING

Hydraulic Port Contour Cutters

North America

Allied Machine
120 Deeds Drive
Dover, OH 44622
United States

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

ThreadMills USA™
4185 Crosstowne Ct #B
Evans, GA 30809
United States

Superion™
1285 S Patton St.
Xenia, OH 45385
United States

Europe

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

Wohlhaupter® GmbH
Maybachstrasse 4
Postfach 1264
72636 Frickenhausen
Germany

Asia

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

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

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

ALLIED MACHINE & ENGINEERING®

www.alliedmachine.com

ALLIED MACHINE & ENGINEERING

Holemaking Solutions for Today's Manufacturing

AccuPort 432®

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®

ThreadMills USA®

SUPERION™

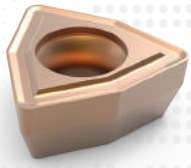
CRITERION™

Replaceable Insert Drills

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

Indexable Insert Drills

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



Replaceable / Indexable Insert Drills

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

Solid Carbide Drills

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

Structural Steel Solutions

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

BTA (STS) Machining Solutions

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

Hydraulic Port Contour Cutters

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

4 IN 1

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**

CRITERION®
Modular Boring Systems

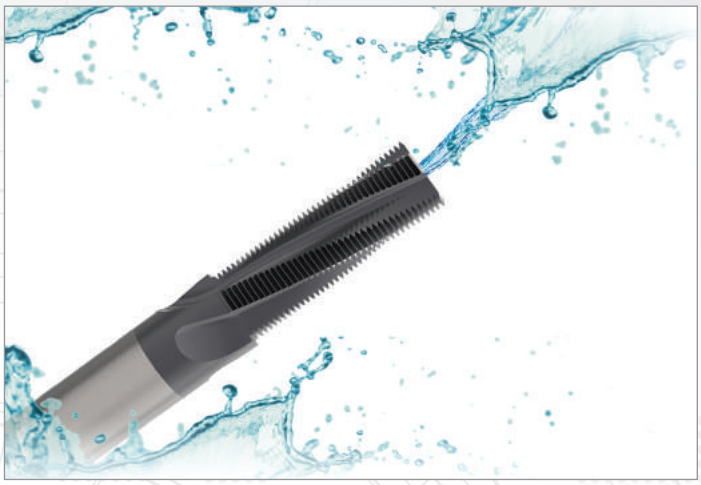
- The modular capabilities are ideal for use across multiple different projects
- Offers versatile boring heads suitable for all job shops and tooling rooms
- Provides an economical solution for low volume and/or short-term production applications
- Offers both rough and finish boring solutions
- Products: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

S.C.A.M.I.®
Expandable Reaming Solutions

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

S.C.A.M.I.®
Roller Burnishing Solutions

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



Solid Carbide Thread Mills

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

Replaceable Insert Thread Mills

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

SPECIAL CAPABILITIES

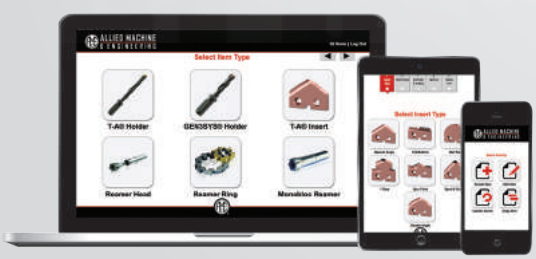
When it comes to designing and developing special solutions for customers, Allied Machine is the top choice. If your application requires special tooling, give us a call. Our engineered specials are developed by the brightest engineers in the industry. Most of our standard tooling can be altered as specials,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

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

And with the addition of Superion™ 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.

- Offers 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® Tool-Architect

Find the right Wohlhaupter® solution for your application.

- Configure your complete tool assembly
- Compile an order list to be quoted
- Search and quickly find components using various criteria
- Adjust your language and measurement preferences

tool-architect.com

Insta-Quote®

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

- Design and quote your own tooling
- Guides you through steps to generate the solution you need
- Features the following products
  - **T-A® Inserts**
  - **T-A® Holders**
  - **GEN3SYS® XT Holders**
  - **ALVAN® Reamers**

iq.alliedmachine.com

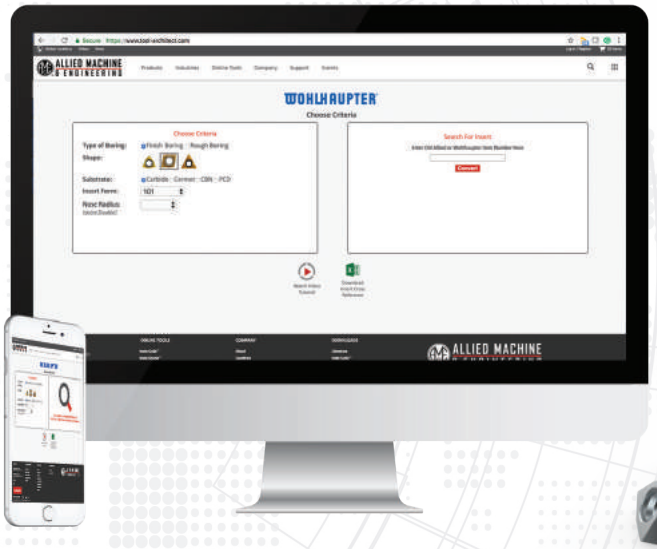
Insta-Code®

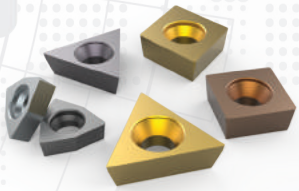
Eliminate the wait. Get your program now.

- 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





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
- Easily order by adding the item to your cart

www.alliedmachine.com/bis

Product Selector

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

- Guides you through steps to generate the right tool for your application
- Learn about your recommended tool and how to maximize its performance

www.alliedmachine.com/productselector

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

ANDROID APP ON Google play

Available on the App Store

AccuPort 432®

Replaceable Insert Port Contour Cutters | J1926 | ISO6149 | AS5202 | JDG173.1

High Performance Multi-Step Action

Durable and precise, the AccuPort 432 holders provide a strong and rigid platform for the drilling of hydraulic ports. The precision ground insert location on each holder ensures total repeatability and simple, uncomplicated changing of the replaceable inserts.

With the AccuPort technology, you can drill and finish port forms in ***ONE*** operation. Save time and money with AccuPort.

Single operation hydraulic port cutting system	No pre-drilling required	Replaceable inserts eliminate regrinding and resetting

Applicable Industries

Aerospace | Agriculture | Automotive | Marine / Shipbuilding

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.

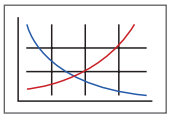
NOTICE means that failure to follow the precautions in this message could result in damage to the tool or machine but not result in personal injury.

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

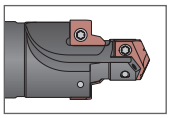
Visit www.alliedmachine.com for the most up-to-date information and procedures.

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



Accuport 432 Holders
Refers to the full details of the holder items included in each kit

Port and Thread Finishing Kits
Lists the available kits complete with AccuPort tool and AccuThread™ solid carbide thread mill

AccuPort 432® Contents

Product Overview

ONE TOOL | **FOUR** OPERATIONS

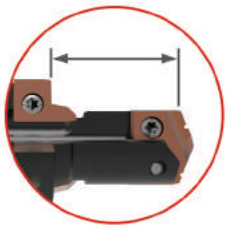
4 IN 1

Advanced Solutions, Outstanding Results

As designers and manufacturing engineers push the limits of production technology to improve productivity and performance, Allied Machine has continued to innovate and develop new solutions like the unique AccuPort 432 hydraulic port contour cutter system. Every product in the AccuPort system is designed to deliver maximum performance in a diverse range of hydraulic port cutting applications and demanding manufacturing environments.

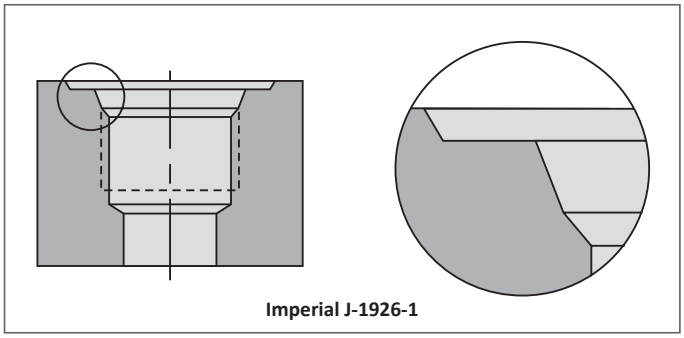
Using precision replaceable inserts for both the drilling and port forming operations, AccuPort eliminates the need for tool regrinding and enables absolute repeatability, excellent surface finish, and reduced cost-per-hole. The AccuPort drills, forms, and precision-finishes the hydraulic port in **one** pass. This replaces up to three separate cutting operations in a single tool to deliver outstanding improvements in productivity, accuracy, and repeatability.

Hydraulic systems are present in an incredibly diverse range of industries. Anywhere a hydraulic port is required, AccuPort can provide a more cost effective and higher performance solution in a fraction of the time taken for traditional methods using separate drills, special forming tools, and spot facers.

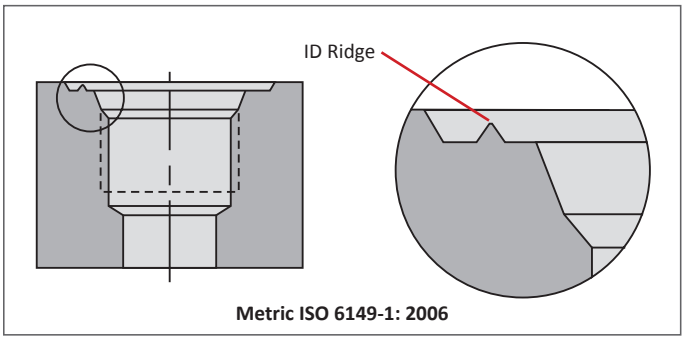
Port Specification		Notes	
Imperial SAE J-1926 ISO 11926-1 MS-16142		Extended minor diameter length option also available	
Metric ISO 6149-1:2006 SAE J-2244/1		Holders made with ID ridge Utilizes inserts with or without ID ridge ID ridge No ID ridge	
John Deere JDS-G173.1		Adheres to John Deere port standards	
Military SAE AS5202		Also conforms to AND10050 specification by using an alternate tap drill size for a UN thread	

Choosing the Right System

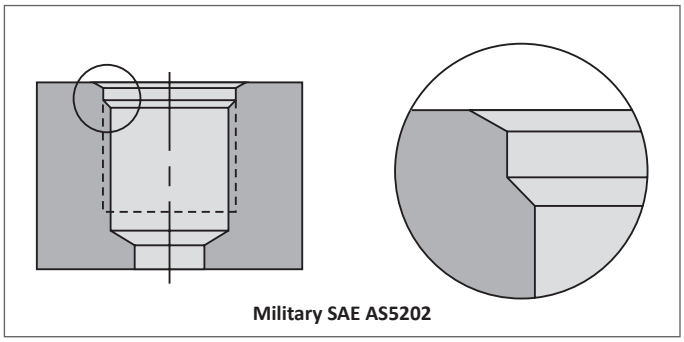
Every product in the AccuPort 432 product line is designed to deliver maximum performance in a diverse range of hydraulic port cutting applications and demanding manufacturing environments. The innovative design delivers the best possible range of benefits in terms of productivity, cost-per-hole, and tool life.



Imperial J-1926-1



Metric ISO 6149-1: 2006



Military SAE AS5202

Common Industry Sectors and Components

Aerospace
Pumps
Landing Gear
Brake Cylinders
Manifolds

Agriculture
Pumps
Manifolds
Cylinders and Rams
Gear Pumps

Automotive
Motor Valves
Relief Valves
Brake Cylinders
Power Steering Pumps

Marine / Shipbuilding
Pumps
Cylinders and Rams
Motors
Manifolds

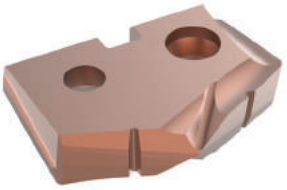
The Complete Package

Producing fully finished threaded hydraulic ports has never been easier. The Port and Thread Finishing Kit includes the AccuPort 432 contour cutter with a dedicated AccuThread™ solid carbide threadmill in a single kit. You also receive the T-A® inserts and port form inserts needed to complete the assembly.

Port kits incorporate the AccuThread solid carbide threadmills to increase the manufacturing flexibility by allowing hydraulic ports to be produced in just two operations. In addition, where a unique port profile is required, Allied Machine provides a dedicated special tooling solution using our extensive tool design and manufacturing experience to meet precise specifications.

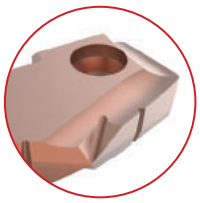
Replaceable Inserts Overview

T-A® Drill Insert Grades			
HSS Super Cobalt (Original T-A® / GEN2 T-A®) Suited for good to rigid machining applications, used for drilling exotic and high alloy materials, or general use when surface speed needs to be increased for use in material hardness up to 350 BHN 121kg.	**Carbide C5 (P40)** (Original T-A® only) Excellent for drilling free machining steel, low/medium carbon steels, alloy steels, high strength steels, tool steels, and hardened steels.	**Carbide C1 (K10)** (GEN2 T-A® only) Excellent for drilling free machining steel, low/medium carbon steels, alloy steels, high strength steels, tool steels, and hardened steels.	**Carbide C3 (K35)** (Original T-A® only) Designed for drilling grey/white cast irons. The special geometry offers substantial increases in penetration rates and provides exceptional edge strength and tool life.

Port Form Inserts	GEN2 T-A Inserts	Original T-A Inserts
 AM200® TiAlN	 AM200®	 TiN

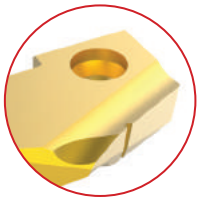
GEN2 T-A Standard Geometry

- Designed for rigid machining applications, primarily used for drilling exotic and high alloy materials
- Ideal for general use when the surface speed needs to be increased



Original T-A Standard Geometry

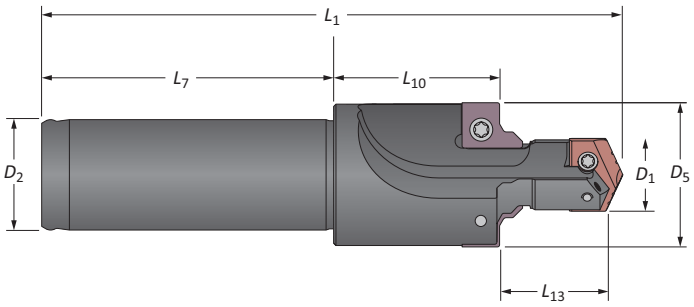
- First choice for machining aluminum
- Enhanced geometry improves chip formation and hole quality
- TiN coating improves heat resistance and extends tool life



Made-to-Order Tool Specifications

Scan and email a copy of the table below to Allied's Application Engineering Department to receive pricing for a made-to-order AccuPort 432 Port Contour Cutter.

Send emails to appeng@alliedmachine.com



Tube Dash No.	Specification	Port Thread Size	D_1	L_{13}	D_5	L_{10}	L_1	D_2	L_7
	☐ J1926 ☐ ISO 6149 ☐ ISO 6149 (no ridge) ☐ JDS-G173.1 ☐ AS5202								

Company Name

Contact Name

Phone

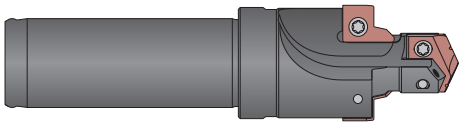
Distributor Name

Fax

Product Nomenclature

AccuPort 432 Holders

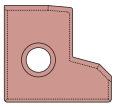
J1926	–	04	Y	–	063F
1		2	3		4



1. Port Specifications	2. Port Tube Dash No.		3. T-A® Insert Series	4. Shank Configuration	
				Imperial	**Metric**
J1926 = Imperial - J1926-1	**04**	**14**	**Y** = Y series	**063F** = 5/8" flanged	**16FM** = 16mm flanged
X1926 = Imperial - J1926-1 (extended minor length)	**05**	**16**	**Z** = Z series	**075F** = 3/4" flanged	**20FM** = 20mm flanged
	06	**18**	**0** = 0 series	**100F** = 1" flanged	**25FM** = 25mm flanged
I6149 = Metric (ISO) - 6149-1	**08**	**20**	**1** = 1 series	**125F** = 1-1/4" flanged	**32FM** = 32mm flanged
G1731 = John Deere - G173.1	**10**	**24**	**2** = 2 series	**150F** = 1-1/2" flanged	
AS5202 = Military - AS5202	**12**	**32**	**3** = 3 series		
			4 = 4 series		

AccuPort 432 Port Form Inserts

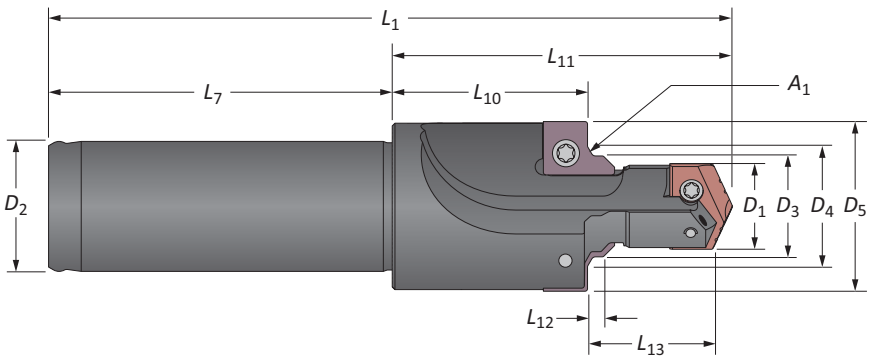
J1926	–	02	R	–	C5	A
1		2	3		4	5



1. Port Specifications	2. Insert Size		3. Port Specifications	4. Substrate	5. Coating
J1926 = Imperial	**02**	**10**	**Blank** = No ID ridge	**C5** = C5 carbide	**A** = TiAlN
I6149 = Metric (ISO)	**03**	**11**	**R** = ID ridge	**C3** = C3 carbide	**H** = AM200®
G1731 = John Deere	**04**	**12**			
AS5202 = Military	**05**	**14**			
	06	**16**			
	07	**20**			
	08	**24**			
	09	**32**			

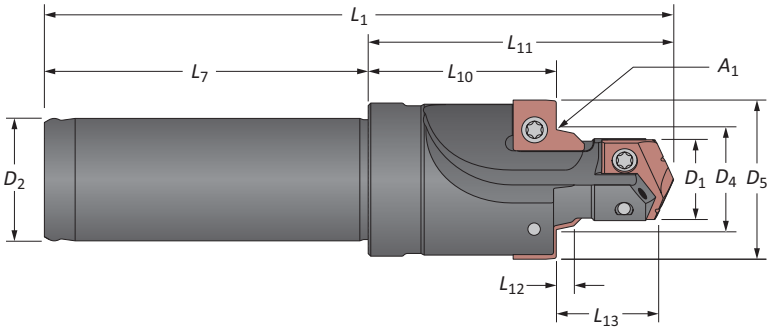
Reference Key

Symbol	Attribute
A_1	Seal angle
D_1	Minor diameter
D_2	Shank diameter
D_3	Pilot diameter
D_4	Seal angle diameter
D_5	Spot face diameter
L_1	Overall length
L_7	Shank length
L_{10}	Spot face to shoulder length
L_{11}	Total head length
L_{12}	Seal angle length
L_{13}	Minor diameter length



SAE J-1926 / ISO 11926-1 / MS-16142

Imperial Shank Holders



	Tube Dash No.	Cutting D_1	Cutting L_{13}*	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Part No.
	-4	0.386	0.551	0.840	12°	0.490	0.106	1.527	0.896	3.402	1.875	0.625	7/16-20 UNF-2B	**J1926-04Y-063F**
	-5	0.453	0.551	0.926	12°	0.553	0.106	1.527	0.885	3.402	1.875	0.625	1/2-20 UNF-2B	**J1926-05Z-063F**
	-6	0.512	0.610	0.989	12°	0.618	0.106	1.857	1.144	3.826	1.969	0.750	9/16-18 UNF-2B	**J1926-060-075F**
	-8	0.689	0.689	1.206	15°	0.813	0.106	1.982	1.150	3.951	1.969	0.750	3/4-16 UNF-2B	**J1926-080-075F**
	-10	0.807	0.787	1.344	15°	0.945	0.106	2.140	1.185	4.421	2.281	1.000	7/8-14 UNF-2B	**J1926-101-100F**
ⓘ	-12	0.984	0.906	1.655	15°	1.150	0.138	2.640	1.530	4.921	2.281	1.250	1 1/16-12 UN-2B	**J1926-122-125F**
	-14	1.102	0.906	1.781	15°	1.276	0.138	2.640	1.504	4.921	2.281	1.250	1 3/16-12 UN-2B	**J1926-142-125F**
	-16	1.231	0.906	1.934	15°	1.400	0.138	2.640	1.477	4.921	2.281	1.250	1 5/16-12 UN-2B	**J1926-162-125F**
	-20	1.535	0.906	2.306	15°	1.715	0.138	3.062	1.835	5.750	2.688	1.500	1 5/8-12 UN-2B	**J1926-203-150F**
	-24	1.791	0.906	2.564	15°	1.965	0.138	3.062	1.778	5.750	2.688	1.500	1 7/8-12 UN-2B	**J1926-243-150F**
	-32	2.421	0.906	3.470	15°	2.589	0.138	3.812	2.393	6.500	2.688	1.500	2 1/2-12 UN-2B	**J1926-324-150F**
	-4	9.80	14.00	21.30	12°	12.50	2.70	38.80	22.80	86.40	47.60	15.90	7/16-20 UNF-2B	**J1926-04Y-063F**
	-5	11.50	14.00	23.50	12°	14.10	2.70	38.80	22.50	86.40	47.60	15.90	1/2-20 UNF-2B	**J1926-05Z-063F**
	-6	13.00	15.50	25.10	12°	15.70	2.70	47.20	29.00	97.20	50.00	19.10	9/16-18 UNF-2B	**J1926-060-075F**
	-8	17.50	17.50	30.60	15°	20.70	2.70	50.30	29.20	100.40	50.00	19.10	3/4-16 UNF-2B	**J1926-080-075F**
	-10	20.50	20.00	34.10	15°	24.00	2.70	54.40	30.10	112.30	57.90	25.40	7/8-14 UNF-2B	**J1926-101-100F**
ⓜ	-12	25.00	23.00	42.00	15°	29.20	3.50	67.10	38.90	125.00	57.90	31.80	1 1/16-12 UN-2B	**J1926-122-125F**
	-14	28.00	23.00	45.20	15°	32.40	3.50	67.10	38.20	125.00	57.90	31.80	1 3/16-12 UN-2B	**J1926-142-125F**
	-16	31.20	23.00	49.10	15°	35.60	3.50	67.10	37.50	125.00	57.90	31.80	1 5/16-12 UN-2B	**J1926-162-125F**
	-20	39.00	23.00	58.50	15°	43.60	3.50	77.80	46.60	146.00	68.30	38.10	1 5/8-12 UN-2B	**J1926-203-150F**
	-24	45.50	23.00	65.10	15°	49.90	3.50	77.80	45.20	146.00	68.30	38.10	1 7/8-12 UN-2B	**J1926-243-150F**
	-32	61.50	23.00	88.10	15°	65.80	3.50	96.80	60.80	165.10	68.30	38.10	2 1/2-12 UN-2B	**J1926-324-150F**

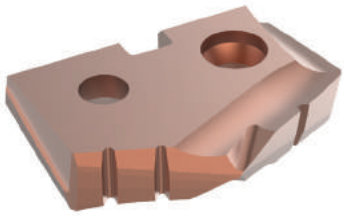
*Port contour cutters are available with extended pilot length (**L_{13}**). See pages A92: 10-11 for items.

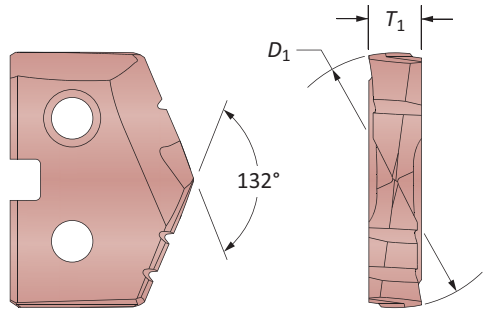
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 18 - 21

ⓘ = Imperial (in)
ⓜ = Metric (mm)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts





See section A3 for complete T-A insert details

Original T-A® / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt	Part No. Carbide	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	J1926-04Y-063F	Y	**45YH-.386**	**4C1YH-.386**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	J1926-05Z-063F	Z	**45ZH-11.5**	**4C1ZH-11.5**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	J1926-060-075F	0	**450H-13**	**4C10H-13**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	J1926-080-075F	0	**450H-0022**	**4C10H-0022**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	J1926-101-100F	1	**451H-20.5**	**4C11H-20.5**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	J1926-122-125F	2	**452H-25**	**4C12H-25**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	J1926-142-125F	2	**452H-28**	**4C12H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	J1926-162-125F	2	**452H-1.231**	**4C12H-1.231**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	J1926-203-150F	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	J1926-243-150F	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	J1926-324-150F	4	**454H-61.5**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)

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

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	J1926-04Y-063F	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	J1926-05Z-063F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	J1926-060-075F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	J1926-080-075F	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	J1926-101-100F	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-12	J1926-122-125F	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-14	J1926-142-125F	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-16	J1926-162-125F	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-20	J1926-203-150F	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-24	J1926-243-150F	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-32	J1926-324-150F	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)

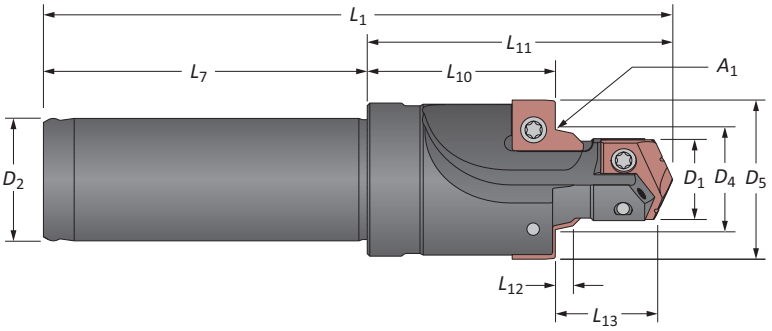
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37
A92: 2 - 4
A92: 18 - 21
Key on A92: 1

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE J-1926 / ISO 11926-1 / MS-16142

Metric Shank Holders



	Tube Dash No.	Cutting			Seal Angle			Holder			Shank		Port Thread Size	Part No.
		D_1	L_{13}	D_5	A_1	D_4	L_{12}	L_{11}	L_{10}	L_1	L_7	D_2		
	-4	0.386	0.551	0.840	12°	0.490	0.106	1.527	0.896	3.180	1.650	0.630	7/16-20 UNF-2B	**J1926-04Y-16FM**
	-5	0.453	0.551	0.926	12°	0.553	0.106	1.527	0.885	3.650	1.650	0.630	1/2-20 UNF-2B	**J1926-05Z-16FM**
	-6	0.512	0.610	0.989	12°	0.618	0.106	1.857	1.144	3.510	1.650	0.787	9/16-18 UNF-2B	**J1926-060-20FM**
	-8	0.689	0.689	1.206	15°	0.813	0.106	1.982	1.150	3.630	1.650	0.787	3/4-16 UNF-2B	**J1926-080-20FM**
	-10	0.807	0.787	1.344	15°	0.945	0.106	2.140	1.185	4.230	2.091	0.984	7/8-14 UNF-2B	**J1926-101-25FM**
ⓘ	-12	0.984	0.906	1.655	15°	1.150	0.138	2.640	1.530	4.920	2.280	1.260	1 1/16-12 UN-2B	**J1926-122-32FM**
	-14	1.102	0.906	1.781	15°	1.276	0.138	2.640	1.504	4.920	2.280	1.260	1 3/16-12 UN-2B	**J1926-142-32FM**
	-16	1.231	0.906	1.934	15°	1.400	0.138	2.640	1.477	4.920	2.280	1.260	1 5/16-12 UN-2B	**J1926-162-32FM**
	-20	1.535	0.906	2.306	15°	1.715	0.138	3.062	1.835	5.640	2.580	1.260	1 5/8-12 UN-2B	**J1926-203-32FM***
	-24	1.791	0.906	2.564	15°	1.965	0.138	3.062	1.778	5.640	2.580	1.260	1 7/8-12 UN-2B	**J1926-243-32FM***
	-32	2.421	0.906	3.470	15°	2.589	0.138	3.812	2.393	6.390	2.580	1.260	2 1/2-12 UN-2B	**J1926-324-32FM***
	-4	9.80	14.00	21.30	12°	12.50	2.70	38.80	22.80	80.70	41.90	16.00	7/16-20 UNF-2B	**J1926-04Y-16FM**
	-5	11.50	14.00	23.50	12°	14.10	2.70	38.80	22.50	92.80	41.90	16.00	1/2-20 UNF-2B	**J1926-05Z-16FM**
	-6	13.00	15.50	25.10	12°	15.70	2.70	47.20	29.00	89.10	41.90	20.00	9/16-18 UNF-2B	**J1926-060-20FM**
	-8	17.50	17.50	30.60	15°	20.70	2.70	50.30	29.20	92.30	41.90	20.00	3/4-16 UNF-2B	**J1926-080-20FM**
	-10	20.50	20.00	34.10	15°	24.00	2.70	54.40	30.10	107.40	53.10	25.00	7/8-14 UNF-2B	**J1926-101-25FM**
ⓜ	-12	25.00	23.00	42.00	15°	29.20	3.50	67.10	38.90	125.00	57.90	32.00	1 1/16-12 UN-2B	**J1926-122-32FM**
	-14	28.00	23.00	45.20	15°	32.40	3.50	67.10	38.20	125.00	57.90	32.00	1 3/16-12 UN-2B	**J1926-142-32FM**
	-16	31.20	23.00	49.10	15°	35.60	3.50	67.10	37.50	125.00	57.90	32.00	1 5/16-12 UN-2B	**J1926-162-32FM**
	-20	39.00	23.00	58.50	15°	43.60	3.50	77.80	46.60	143.30	65.50	32.00	1 5/8-12 UN-2B	**J1926-203-32FM***
	-24	45.50	23.00	65.10	15°	49.90	3.50	77.80	45.20	143.30	65.50	32.00	1 7/8-12 UN-2B	**J1926-243-32FM***
	-32	61.50	23.00	88.10	15°	65.80	3.50	96.80	60.80	162.30	65.50	32.00	2 1/2-12 UN-2B	**J1926-324-32FM***

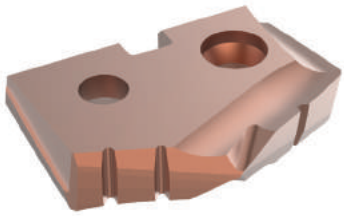
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.

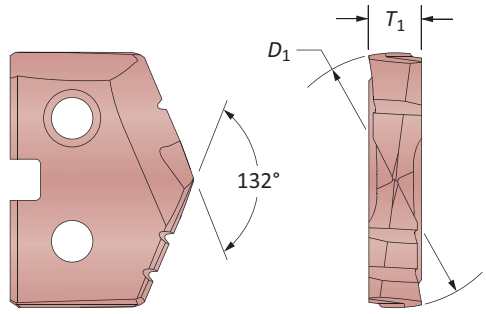
A92: 30 - 37 (Key on A92: 1)
A92: 2 - 4
A92: 18 - 21

ⓘ = Imperial (in)
ⓜ = Metric (mm)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts





See section A3 for complete T-A insert details

Original T-A® / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt	Part No. Carbide	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	J1926-04Y-16FM	Y	**45YH-.386**	**4C1YH-.386**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	J1926-05Z-16FM	Z	**45ZH-11.5**	**4C1ZH-11.5**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	J1926-060-20FM	0	**450H-13**	**4C10H-13**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	J1926-080-20FM	0	**450H-0022**	**4C10H-0022**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	J1926-101-25FM	1	**451H-20.5**	**4C11H-20.5**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	J1926-122-32FM	2	**452H-25**	**4C12H-25**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	J1926-142-32FM	2	**452H-28**	**4C12H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	J1926-162-32FM	2	**452H-1.231**	**4C12H-1.231**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	J1926-203-32FM*	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	J1926-243-32FM*	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	J1926-324-32FM*	4	**454H-61.5**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	J1926-04Y-16FM	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	J1926-05Z-16FM	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	J1926-060-20FM	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	J1926-080-20FM	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	J1926-101-25FM	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-12	J1926-122-32FM	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-14	J1926-142-32FM	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-16	J1926-162-32FM	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-20	J1926-203-32FM*	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-24	J1926-243-32FM*	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-32	J1926-324-32FM*	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)

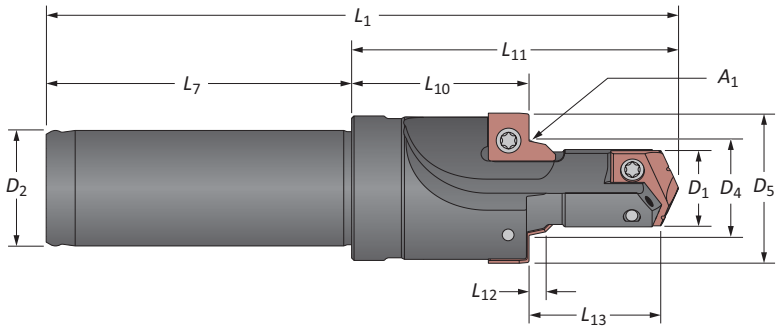
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37
A92: 2 - 4
A92: 18 - 21
Key on A92: 1

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE J-1926 / ISO 11926-1 / MS-16142

Imperial Shank Holders | Extended Minor Diameter Lengths (L_{13})



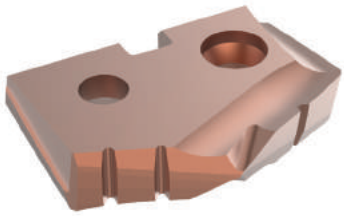
	Tube Dash No.	Cutting			Seal Angle			Holder			Shank		Port Thread Size	Part No.
		D_1	L_{13}	D_5	A_1	D_4	L_{12}	L_{11}	L_{10}	L_1	L_7	D_2		
	-4	0.386	0.801	0.840	12°	0.490	0.106	1.777	0.896	3.650	1.875	0.625	7/16-20 UNF-2B	**X1926-04Y-063F**
	-5	0.453	0.801	0.926	12°	0.553	0.106	1.777	0.885	3.650	1.875	0.625	1/2-20 UNF-2B	**X1926-05Z-063F**
	-6	0.512	0.860	0.989	12°	0.618	0.106	2.107	1.144	4.070	1.969	0.750	9/16-18 UNF-2B	**X1926-060-075F**
	-8	0.689	0.939	1.206	15°	0.813	0.106	2.232	1.150	4.200	1.969	0.750	3/4-16 UNF-2B	**X1926-080-075F**
	-10	0.807	1.037	1.344	15°	0.945	0.106	2.390	1.185	4.670	2.281	1.000	7/8-14 UNF-2B	**X1926-101-100F**
ⓘ	-12	0.984	1.156	1.655	15°	1.150	0.138	2.890	1.530	5.170	2.281	1.250	1 1/16-12 UN-2B	**X1926-122-125F**
	-14	1.102	1.156	1.781	15°	1.276	0.138	2.890	1.504	5.170	2.281	1.250	1 3/16-12 UN-2B	**X1926-142-125F**
	-16	1.231	1.156	1.934	15°	1.400	0.138	2.890	1.477	5.170	2.281	1.250	1 5/16-12 UN-2B	**X1926-162-125F**
	-20	1.535	1.156	2.306	15°	1.715	0.138	3.312	1.835	6.000	2.688	1.500	1 5/8-12 UN-2B	**X1926-203-150F**
	-24	1.791	1.156	2.564	15°	1.965	0.138	3.312	1.778	6.000	2.688	1.500	1 7/8-12 UN-2B	**X1926-243-150F**
	-32	2.421	1.156	3.470	15°	2.589	0.138	4.062	2.393	6.750	2.688	1.500	2 1/2-12 UN-2B	**X1926-324-150F**
	-4	9.80	20.30	21.30	12°	12.50	2.70	45.10	22.80	92.80	47.60	15.90	7/16-20 UNF-2B	**X1926-04Y-063F**
	-5	11.50	20.30	23.50	12°	14.10	2.70	45.10	22.50	92.80	47.60	15.90	1/2-20 UNF-2B	**X1926-05Z-063F**
	-6	13.00	21.80	25.10	12°	15.70	2.70	53.50	29.00	103.50	50.00	19.10	9/16-18 UNF-2B	**X1926-060-075F**
	-8	17.50	23.80	30.60	15°	20.70	2.70	56.70	29.20	106.70	50.00	19.10	3/4-16 UNF-2B	**X1926-080-075F**
	-10	20.50	26.30	34.10	15°	24.00	2.70	60.70	30.10	118.60	57.90	25.40	7/8-14 UNF-2B	**X1926-101-100F**
ⓜ	-12	25.00	29.30	42.00	15°	29.20	3.50	73.40	38.90	131.30	57.90	31.80	1 1/16-12 UN-2B	**X1926-122-125F**
	-14	28.00	29.30	45.20	15°	32.40	3.50	73.40	38.20	131.30	57.90	31.80	1 3/16-12 UN-2B	**X1926-142-125F**
	-16	31.20	29.30	49.10	15°	35.60	3.50	73.40	37.50	131.30	57.90	31.80	1 5/16-12 UN-2B	**X1926-162-125F**
	-20	39.00	29.30	58.50	15°	43.60	3.50	84.10	46.60	152.40	68.30	38.10	1 5/8-12 UN-2B	**X1926-203-150F**
	-24	45.50	29.30	65.10	15°	49.90	3.50	84.10	45.20	152.40	68.30	38.10	1 7/8-12 UN-2B	**X1926-243-150F**
	-32	61.50	29.30	88.10	15°	65.80	3.50	103.20	60.80	171.40	68.30	38.10	2 1/2-12 UN-2B	**X1926-324-150F**

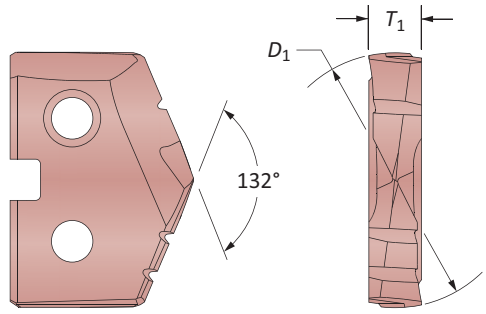
A92: 30 - 37 (Key on A92: 1)
A92: 2 - 4
A92: 18 - 21

ⓘ = Imperial (in)
ⓜ = Metric (mm)

SAE J-1926 / ISO 11926-1 / MS-16142

Inserts





See section A3 for complete T-A insert details

Original T-A® / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt	Part No. Carbide	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	X1926-04Y-063F	Y	**45YH-.386**	**4C1YH-.386**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	X1926-05Z-063F	Z	**45ZH-11.5**	**4C1ZH-11.5**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	X1926-060-075F	0	**450H-13**	**4C10H-13**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	X1926-080-075F	0	**450H-0022**	**4C10H-0022**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	X1926-101-100F	1	**451H-20.5**	**4C11H-20.5**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	X1926-122-125F	2	**452H-25**	**4C12H-25**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	X1926-142-125F	2	**452H-28**	**4C12H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	X1926-162-125F	2	**452H-1.231**	**4C12H-1.231**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	X1926-203-150F	3	**453H-39**	**1C53A-39**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	X1926-243-150F	3	**453H-45.5**	**1C53A-45.5**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	X1926-324-150F	4	**454H-61.5**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)

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

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. C3 Carbide (AM200®)	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	X1926-04Y-063F	**J1926-02-C3H**	**J1926-02-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	X1926-05Z-063F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	X1926-060-075F	**J1926-03-C3H**	**J1926-03-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	X1926-080-075F	**J1926-07-C3H**	**J1926-07-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	X1926-101-100F	**J1926-04-C3H**	**J1926-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-12	X1926-122-125F	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-14	X1926-142-125F	**J1926-08-C3H**	**J1926-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-16	X1926-162-125F	**J1926-09-C3H**	**J1926-09-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-20	X1926-203-150F	**J1926-10-C3H**	**J1926-10-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-24	X1926-243-150F	**J1926-11-C3H**	**J1926-11-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-32	X1926-324-150F	**J1926-12-C3H**	**J1926-12-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)

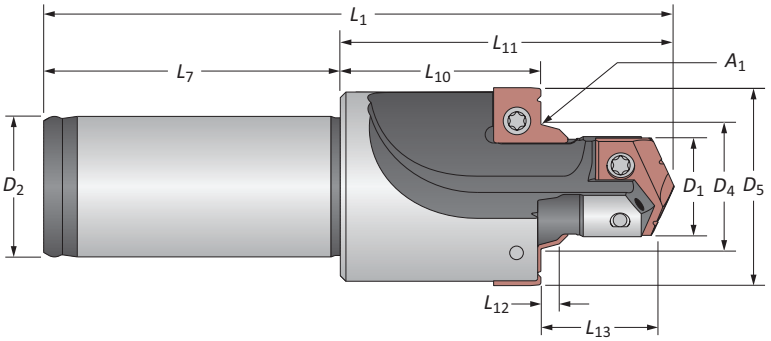
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37
A92: 2 - 4
A92: 18 - 21
Key on A92: 1

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

ISO 6149-1:2006 / SAE J-2244/1

Metric Shank Holders



Tube Dash No.		Cutting			Seal Angle			Holder			Shank		Port Thread Size	Part No.
		D_1	L_{13}	D_5	A_1	D_4	L_{12}	L_{11}	L_{10}	L_1	L_7	D_2		
	-4	0.413	0.556	0.945	15°	0.544	0.102	1.527	0.876	3.180	1.650	0.630	M12 X 1.5	**I6149-04RY-16FM**
	-5	0.492	0.556	1.024	15°	0.623	0.102	1.527	0.858	3.180	1.650	0.630	M14 X 1.5	**I6149-05RZ-16FM**
	-6	0.571	0.615	1.102	15°	0.702	0.102	1.857	1.116	3.510	1.650	0.787	M16 X 1.5	**I6149-06R0-20FM**
	-8	0.650	0.674	1.181	15°	0.781	0.102	1.982	1.164	3.630	1.650	0.787	M18 X 1.5	**I6149-08R0-20FM**
	-10	0.807	0.717	1.339	15°	0.938	0.102	2.140	1.246	4.230	2.091	0.984	M22 X 1.5	**I6149-10R1-25FM**
ⓘ	-12	0.984	0.874	1.575	15°	1.159	0.130	2.640	1.552	4.920	2.280	1.260	M27 X 2	**I6149-12R2-32FM**
	-14	1.102	0.874	1.733	15°	1.277	0.130	2.640	1.526	4.920	2.280	1.260	M30 X 2	**I6149-14R2-32FM**
	-16	1.220	0.874	1.929	15°	1.395	0.130	2.640	1.499	4.920	2.280	1.260	M33 X 2	**I6149-16R2-32FM**
	-20	1.575	0.895	2.362	15°	1.749	0.130	3.062	1.828	5.640	2.580	1.260	M42 X 2	**I6149-20R3-32FM***
	-24	1.811	0.993	2.602	15°	1.985	0.130	3.062	1.676	5.640	2.580	1.260	M48 X 2	**I6149-24R3-32FM***
	-32	2.283	1.092	2.992	15°	2.458	0.130	3.812	2.228	6.390	2.580	1.260	M60 X 2	**I6149-32R4-32FM***
	-4	10.50	14.10	24.00	15°	13.81	2.60	38.80	22.20	80.70	41.90	16.00	M12 X 1.5	**I6149-04RY-16FM**
	-5	12.50	14.10	26.00	15°	15.80	2.60	38.80	21.80	80.70	41.90	16.00	M14 X 1.5	**I6149-05RZ-16FM**
	-6	14.50	15.60	28.00	15°	17.80	2.60	47.20	28.30	89.10	41.90	20.00	M16 X 1.5	**I6149-06R0-20FM**
	-8	16.50	17.10	30.00	15°	19.80	2.60	50.30	29.60	92.20	41.90	20.00	M18 X 1.5	**I6149-08R0-20FM**
	-10	20.50	18.20	34.00	15°	23.80	2.60	54.40	31.60	107.50	53.10	25.00	M22 X 1.5	**I6149-10R1-25FM**
ⓜ	-12	25.00	22.20	40.00	15°	29.40	3.30	67.10	39.40	125.00	57.90	32.00	M27 X 2	**I6149-12R2-32FM**
	-14	28.00	22.20	44.00	15°	32.40	3.30	67.10	38.80	125.00	57.90	32.00	M30 X 2	**I6149-14R2-32FM**
	-16	31.00	22.20	49.00	15°	35.40	3.30	67.10	38.10	125.00	57.90	32.00	M33 X 2	**I6149-16R2-32FM**
	-20	40.00	22.70	60.00	15°	44.40	3.30	77.80	46.40	143.30	65.50	32.00	M42 X 2	**I6149-20R3-32FM***
	-24	46.00	25.20	66.10	15°	50.40	3.30	77.80	42.60	143.30	65.50	32.00	M48 X 2	**I6149-24R3-32FM***
	-32	58.00	27.70	76.00	15°	62.40	3.30	96.80	56.60	162.30	65.50	32.00	M60 X 2	**I6149-32R4-32FM***

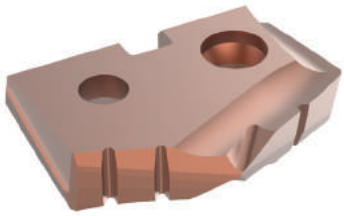
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.

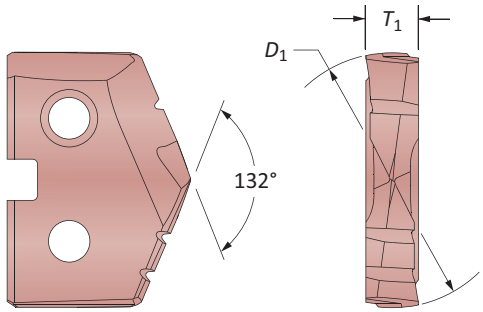
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 22 - 25

ⓘ = Imperial (in)
ⓜ = Metric (mm)

ISO 6149-1:2006 / SAE J-2244/1

Inserts





See section A3 for complete T-A insert details

Original T-A® / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt	Part No. Carbide	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	I6149-04RY-16FM	Y	**45YH-10.5**	**4C1YH-10.5**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	I6149-05RZ-16FM	Z	**45ZH-12.5**	**4C1ZH-12.5**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	I6149-06R0-20FM	0	**450H-14.5**	**4C10H-14.5**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	I6149-08R0-20FM	0	**450H-16.5**	**4C10H-16.5**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	I6149-10R1-25FM	1	**451H-20.5**	**4C11H-20.5**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	I6149-12R2-32FM	2	**452H-25**	**4C12H-25**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	I6149-14R2-32FM	2	**452H-28**	**4C12H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	I6149-16R2-32FM	2	**452H-31**	**4C12H-31**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	I6149-20R3-32FM*	3	**453H-40**	**1C53A-40**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	I6149-24R3-32FM*	3	**453H-46**	**1C53A-46**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	I6149-32R4-32FM*	4	**454H-58**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. - C3 Carbide (AM200®) ID Ridge	Part No. - C3 Carbide (AM200®) No ID Ridge	Part No. - C5 Carbide (TiAlN) ID Ridge	Part No. - C5 Carbide (TiAlN) No ID Ridge	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	I6149-04RY-16FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	I6149-05RZ-16FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	I6149-06R0-20FM	**I6149-06R-C3H**	**I6149-06-C3H**	**I6149-06R-C5A**	**I6149-06-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	I6149-08R0-20FM	**I6149-06R-C3H**	**I6149-06-C3H**	**I6149-06R-C5A**	**I6149-06-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	I6149-10R1-25FM	**I6149-04R-C3H**	**I6149-04-C3H**	**I6149-04R-C5A**	**I6149-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-12	I6149-12R2-32FM	**I6149-12R-C3H**	**I6149-12-C3H**	**I6149-12R-C5A**	**I6149-12-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-14	I6149-14R2-32FM	**I6149-14R-C3H**	**I6149-14-C3H**	**I6149-14R-C5A**	**I6149-14-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-16	I6149-16R2-32FM	**I6149-16R-C3H**	**I6149-16-C3H**	**I6149-16R-C5A**	**I6149-16-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-20	I6149-20R3-32FM*	**I6149-20R-C3H**	**I6149-20-C3H**	**I6149-20R-C5A**	**I6149-20-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-24	I6149-24R3-32FM*	**I6149-24R-C3H**	**I6149-24-C3H**	**I6149-24R-C5A**	**I6149-24-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-32	I6149-32R4-32FM*	**I6149-32R-C3H**	**I6149-32-C3H**	**I6149-32R-C5A**	**I6149-32-C5A**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)

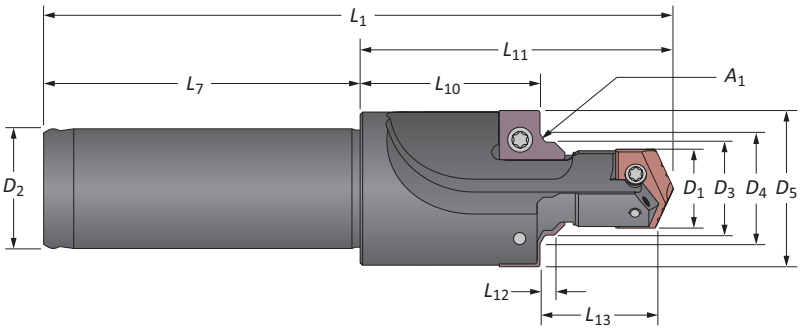
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 22 - 25

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

SAE AS5202 / AND10050

Imperial Shank Holders



	Tube Dash No.	Cutting D_1	Cutting D_1*	Cutting L_{13}	Cutting D_5	Seal Angle A_1	Seal Angle D_4	Seal Angle L_{12}	Holder D_3	Holder L_{11}	Holder L_{10}	Holder L_1	Shank L_7	Shank D_2	Port Thread Size	Port Thread Size*	Part No.
	-4	0.390	0.386	0.661	0.875	60°	0.564	0.083	0.454	1.637	0.896	3.510	1.875	0.625	7/16-20 UNJF-3B	7/16-20 UNF-3B	AS5202-04Y-063F
	-5	0.453	0.451	0.661	0.916	60°	0.625	0.083	0.517	1.637	0.882	3.510	1.875	0.625	1/2-20 UNJF-3B	1/2-20 UNF-3B	AS5202-05Z-063F
	-6	0.510	0.506	0.714	0.979	60°	0.688	0.083	0.580	1.940	1.119	3.910	1.969	0.750	9/16-18 UNJF-3B	9/16-18 UNF-3B	AS5202-06Z-075F
	-8	0.689	0.688	0.839	1.198	60°	0.875	0.094	0.769	2.107	1.125	4.080	1.969	0.750	3/4-16 UNJF-3B	3/4-16 UNF-3B	AS5202-080-075F
	-10	0.807	0.801	0.935	1.354	60°	1.002	0.107	0.896	2.290	1.189	4.570	2.281	1.000	7/8-14 UNJF-3B	7/8-14 UNF-3B	AS5202-101-100F
ⓘ	-12	0.984	0.976	1.069	1.635	60°	1.237	0.125	1.086	2.765	1.494	5.050	2.281	1.250	1 1/16-12 UNJ-3B	1 1/16-12 UN-3B	AS5202-122-125F
	-14	1.109	1.102	1.069	1.775	60°	1.363	0.125	1.211	2.765	1.465	5.050	2.281	1.250	1 3/16-12 UNJ-3B	1 3/16-12 UN-3B	AS5202-142-125F
	-16	1.234	1.226	1.069	1.920	60°	1.487	0.125	1.336	2.765	1.437	5.050	2.281	1.250	1 5/16-12 UNJ-3B	1 5/16-12 UN-3B	AS5202-162-125F
	-20	1.547	1.535	1.121	2.280	60°	1.799	0.125	1.648	3.187	1.745	5.880	2.688	1.500	1 5/8-12 UNJ-3B	1 5/8-12 UN-3B	AS5202-203-150F
	-24	1.797	1.791	1.132	2.570	60°	2.050	0.125	1.898	3.187	1.676	5.880	2.688	1.500	1 7/8-12 UNJ-3B	1 7/8-12 UN-3B	AS5202-243-150F
	-32	2.421	2.413	1.373	3.490	60°	2.676	0.125	2.524	3.687	1.802	6.380	2.688	1.500	2 1/2-12 UNJ-3B	2 1/2-12 UN-3B	AS5202-324-150F
	-4	9.90	9.80	16.79	22.23	60°	14.34	2.11	11.53	41.58	22.76	89.20	47.63	15.88	7/16-20 UNJF-3B	7/16-20 UNF-3B	AS5202-04Y-063F
	-5	11.50	11.45	16.79	23.27	60°	15.88	2.11	13.13	41.58	22.39	89.20	47.63	15.88	1/2-20 UNJF-3B	1/2-20 UNF-3B	AS5202-05Z-063F
	-6	12.95	12.85	18.14	24.87	60°	17.46	2.11	14.73	49.28	28.43	99.29	50.01	19.05	9/16-18 UNJF-3B	9/16-18 UNF-3B	AS5202-06Z-075F
	-8	17.50	17.46	21.31	30.43	60°	22.23	2.39	19.53	53.52	28.57	103.53	50.01	19.05	3/4-16 UNJF-3B	3/4-16 UNF-3B	AS5202-080-075F
	-10	20.50	20.35	23.75	34.39	60°	25.46	2.72	22.76	58.17	30.19	116.10	57.94	25.40	7/8-14 UNJF-3B	7/8-14 UNF-3B	AS5202-101-100F
ⓜ	-12	25.00	24.80	27.15	41.53	60°	31.42	3.18	27.58	70.23	37.94	128.17	57.94	31.75	1 1/16-12 UNJ-3B	1 1/16-12 UN-3B	AS5202-122-125F
	-14	28.17	28.00	27.15	45.09	60°	34.61	3.18	30.76	70.23	37.22	128.17	57.94	31.75	1 3/16-12 UNJ-3B	1 3/16-12 UN-3B	AS5202-142-125F
	-16	31.34	31.15	27.15	48.77	60°	37.77	3.18	33.93	70.23	36.51	128.17	57.94	31.75	1 5/16-12 UNJ-3B	1 5/16-12 UN-3B	AS5202-162-125F
	-20	39.29	39.00	28.47	57.91	60°	45.69	3.18	41.86	80.95	44.32	149.23	68.28	38.10	1 5/8-12 UNJ-3B	1 5/8-12 UN-3B	AS5202-203-150F
	-24	45.64	45.50	28.75	65.28	60°	52.07	3.18	48.21	80.95	42.58	149.23	68.28	38.10	1 7/8-12 UNJ-3B	1 7/8-12 UN-3B	AS5202-243-150F
	-32	61.49	61.30	34.87	88.65	60°	67.97	3.18	64.11	93.65	45.78	161.93	68.28	38.10	2 1/2-12 UNJ-3B	2 1/2-12 UN-3B	AS5202-324-150F

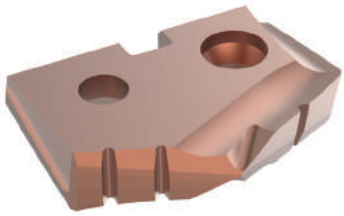
*AND10050 specifications shown in red

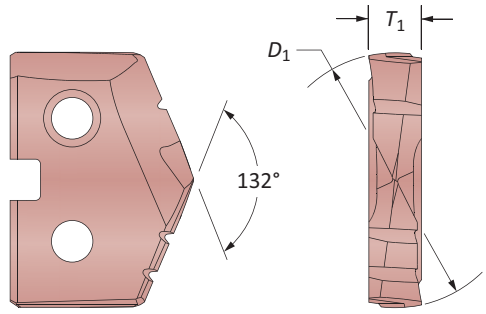
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 26 - 27

ⓘ = Imperial (in)
ⓜ = Metric (mm)

SAE AS5202 / AND10050

Inserts





See section A3 for complete T-A insert details

Original T-A® / GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt		Part No. Carbide		Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	AS5202-04Y-063F	Y	**45YH-.390**	**45YH-.386**	**4C1YH-.390**	**4C1YH-.386**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	AS5202-05Z-063F	Z	**45ZH-11.5**	**45ZH-.451**	**4C1ZH-11.5**	**4C1ZH-.451**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	AS5202-06Z-075F	Z	**45ZH-.510**	**45ZH-.506**	**4C1ZH-.510**	**4C1ZH-.506**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	AS5202-080-075F	0	**450H-17.5**	**450H-0022**	**4C10H-17.5**	**4C10H-0022**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	AS5202-101-100F	1	**451H-20.5**	**451H-.801**	**4C11H-20.5**	**4C11H-.801**	739-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	AS5202-122-125F	2	**452H-25**	**452H-.976**	**4C12H-25**	**4C12H-.976**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	AS5202-142-125F	2	**452H-1.109**	**452H-28**	**4C12H-1.109**	**4C12H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	AS5202-162-125F	2	**452H-1.234**	**452H-1.226**	**4C12H-1.234**	**4C12H-1.226**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	AS5202-203-150F	3	**453H-1.547**	**453H-39**	**1C53A-1.547**	**1C53A-39**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	AS5202-243-150F	3	**453H-1.797**	**453H-45.5**	**1C53A-1.797**	**1C53A-45.5**	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	AS5202-324-150F	4	**454H-2.421**	**454H-2.413**	–	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)

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

NOTE: AND10050 specifications shown in red

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. C5 Carbide (TiAlN)	Insert Screw	Insert Driver	Admissible Tightening Torque*
-4	AS5202-04Y-063F	**AS5202-04-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	AS5202-05Z-063F	**AS5202-05-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	AS5202-06Z-075F	**AS5202-06-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	AS5202-080-075F	**AS5202-08-C5A**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	AS5202-101-100F	**AS5202-10-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-12	AS5202-122-125F	**AS5202-12-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	AS5202-142-125F	**AS5202-14-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	AS5202-162-125F	**AS5202-16-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-20	AS5202-203-150F	**AS5202-20-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-24	AS5202-243-150F	**AS5202-24-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-32	AS5202-324-150F	**AS5202-32-C5A**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)

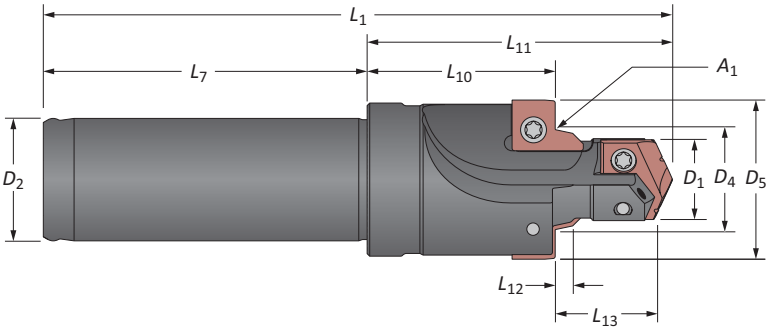
*Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength

A92: 30 - 37
A92: 2 - 4
A92: 26 - 27
Key on A92: 1

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

JDS-G173.1

Metric Shank Holders



	Tube Dash No.	Cutting			Seal Angle			Holder			Shank		Port Thread Size	Part No.
		D_1	L_{13}	D_5	A_1	D_4	L_{12}	L_{11}	L_{10}	L_1	L_7	D_2		
	-4	0.413	0.709	0.945	15°	0.547	0.104	1.670	0.875	3.320	1.650	0.630	M12 X 1.5	**G1731-04Y-16FM**
	-5	0.492	0.709	1.024	15°	0.626	0.104	1.670	0.858	3.320	1.650	0.630	M14 X 1.5	**G1731-05Z-16FM**
	-6	0.571	0.748	1.142	15°	0.705	0.104	1.977	1.117	3.630	1.650	0.787	M16 X 1.5	**G1731-060-20FM**
	-8	0.650	0.827	1.220	15°	0.783	0.104	2.127	1.161	3.770	1.650	0.787	M18 X 1.5	**G1731-080-20FM**
	-10	0.807	0.866	1.378	15°	0.941	0.104	2.280	1.246	4.370	2.090	0.984	M22 X 1.5	**G1731-101-25FM**
	-12	0.984	1.063	1.614	15°	1.161	0.132	2.820	1.553	5.100	2.280	1.260	M27 X 2	**G1731-122-32FM**
ⓘ	-14	1.102	1.063	1.732	15°	1.280	0.132	2.820	1.526	5.100	2.280	1.260	M30 X 2	**G1731-142-32FM**
	-16	1.221	1.063	1.969	15°	1.398	0.132	2.820	1.500	5.100	2.280	1.260	M33 X 2	**G1731-162-32FM**
	-18	1.417	1.063	2.165	15°	1.594	0.132	3.207	1.844	5.780	2.580	1.260	M38 X 2	**G1731-183-32FM***
	-20	1.575	1.063	2.402	15°	1.752	0.132	3.207	1.809	5.780	2.580	1.260	M42 X 2	**G1731-203-32FM***
	-24	1.811	1.142	2.638	15°	1.988	0.132	3.207	1.687	5.780	2.580	1.260	M48 X 2	**G1731-243-32FM***
	-32	2.284	1.260	3.031	15°	2.461	0.132	3.967	2.300	6.550	2.580	1.260	M60 X 2	**G1731-324-32FM***
	C**	0.728	0.787	1.299	15°	0.862	0.104	2.140	1.281	4.230	2.090	0.984	M20 X 1.5	**G1731-CV1-25FM**
	-4	10.50	18.00	24.00	15°	13.90	2.65	42.42	22.20	84.50	41.90	16.00	M12 X 1.5	**G1731-04Y-16FM**
	-5	12.50	18.00	26.00	15°	15.90	2.65	42.42	21.80	84.50	41.90	16.00	M14 X 1.5	**G1731-05Z-16FM**
	-6	14.50	19.00	29.00	15°	17.90	2.65	50.22	28.40	92.20	41.90	20.00	M16 X 1.5	**G1731-060-20FM**
	-8	16.50	21.00	31.00	15°	19.90	2.65	54.03	29.50	95.80	41.90	20.00	M18 X 1.5	**G1731-080-20FM**
	-10	20.50	22.00	35.00	15°	23.90	2.65	57.91	31.60	111.00	53.10	25.00	M22 X 1.5	**G1731-101-25FM**
	-12	25.00	27.00	41.00	15°	29.50	3.35	71.63	39.40	129.60	57.90	32.00	M27 X 2	**G1731-122-32FM**
ⓜ	-14	28.00	27.00	44.00	15°	32.50	3.35	71.63	39.70	129.60	57.90	32.00	M30 X 2	**G1731-142-32FM**
	-16	31.00	27.00	50.00	15°	35.50	3.35	71.63	38.10	129.60	57.90	32.00	M33 X 2	**G1731-162-32FM**
	-18	36.00	27.00	55.00	15°	40.50	3.35	81.46	46.80	146.80	65.50	32.00	M38 X 2	**G1731-183-32FM***
	-20	40.00	27.00	61.00	15°	44.50	3.35	81.46	45.90	146.80	65.50	32.00	M42 X 2	**G1731-203-32FM***
	-24	46.00	29.00	67.00	15°	50.50	3.35	81.46	42.80	146.80	65.50	32.00	M48 X 2	**G1731-243-32FM***
	-32	58.00	32.00	77.00	15°	62.50	3.35	100.76	58.40	166.40	65.50	32.00	M60 X 2	**G1731-324-32FM***
	C**	18.50	20.00	33.00	15°	21.90	2.65	54.36	32.50	107.40	53.10	25.00	M20 X 1.5	**G1731-CV1-25FM**

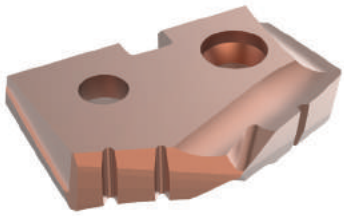
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Cartridge cavity

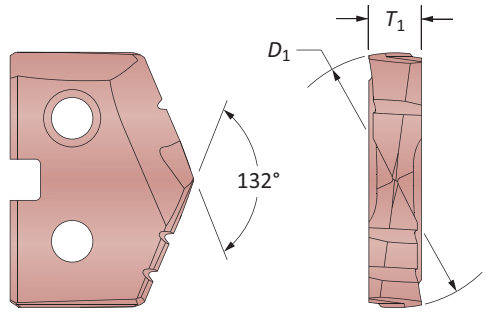
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 28

ⓘ = Imperial (in)
ⓜ = Metric (mm)

JDS-G173.1

Inserts





See section A3 for complete T-A insert details

GEN2 T-A® Drill Inserts

Tube Dash No.	AccuPort Part No.	T-A® Insert Series	Part No. Super Cobalt	Part No. Carbide	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	G1731-04Y-16FM	Y	**45YH-10.5**	**4C2YH-10.5**	724-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-5	G1731-05Z-16FM	Z	**45ZH-12.5**	**4C2ZH-12.5**	7247-IP7-1	8IP-7	7.4 in/lbs (84 N-cm)
-6	G1731-060-20FM	0	**450H-14.5**	**4C20H-14.5**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	G1731-080-20FM	0	**450H-16.5**	**4C20H-16.5**	72567-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	G1731-101-25FM	1	**451H-20.5**	**4C21H-20.5**	739-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-12	G1731-122-32FM	2	**452H-25**	**4C22H-25**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-14	G1731-142-32FM	2	**452H-28**	**4C22H-28**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-16	G1731-162-32FM	2	**452H-31**	**4C22H-31**	7495-IP15-1	8IP-15	61.0 in/lbs (690 N-cm)
-18	G1731-183-32FM*	3	**453H-36**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-20	G1731-203-32FM*	3	**453H-40**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-24	G1731-243-32FM*	3	**453H-46**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
-32	G1731-324-32FM*	4	**454H-58**	–	7514-IP20-1	8IP-20	121.3 in/lbs (1370 N-cm)
C***	G1731-CV1-25FM	1	**451H-18.5**	**4C21H-18.5**	739-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)

***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength
***Cartridge cavity

Port Form Drill Inserts

Tube Dash No.	AccuPort Part No.	Part No. C3 Carbide (AM200®)	Insert Screw	Insert Driver	Admissible Tightening Torque**
-4	G1731-04Y-16FM	**G1731-01-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-5	G1731-05Z-16FM	**G1731-01-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-6	G1731-060-20FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-8	G1731-080-20FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-10	G1731-101-25FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-12	G1731-122-32FM	**G1731-03-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-14	G1731-142-32FM	**G1731-03-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)
-16	G1731-162-32FM	**G1731-04-C3H**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-18	G1731-183-32FM*	**G1731-04-C3H**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-20	G1731-203-32FM*	**G1731-05-C3H**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-24	G1731-243-32FM*	**G1731-05-C3H**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
-32	G1731-324-32FM*	**G1731-06-C3H**	7375-IP9-1	8IP-9	27.0 in/lbs (305 N-cm)
C***	G1731-CV1-25FM	**G1731-02-C3H**	72556-IP8-1	8IP-8	15.5 in/lbs (175 N-cm)

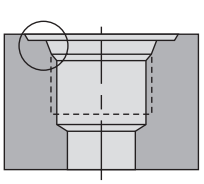
***NOTICE:** Due to the cutting forces generated by this tool, a mechanical chuck is required. Please contact Application Engineering with any questions.
**Tightening torques are calculated with a friction coefficient of μ = 0.14 and develop 90% of ultimate yield strength
***Cartridge cavity

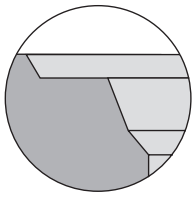
A92: 30 - 37 A92: 2 - 4 A92: 28
Key on A92: 1

Y - 2 series T-A inserts sold in multiples of 2
3 - 4 series T-A inserts sold in multiples of 1
Port form inserts sold in multiples of 2
Insert screws sold in multiples of 10

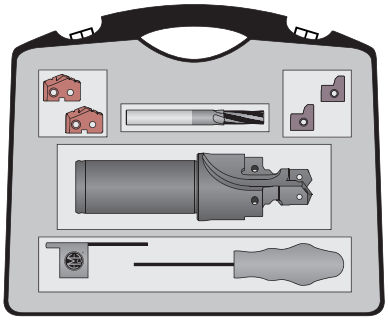
Port and Thread Finishing Kits

J1926 | Imperial | Ferrous Materials



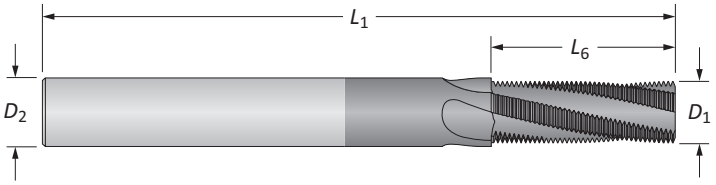


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-063F	7/16-20 UNF-2B	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20	1	**ATKK04-1926**
-5	J1926-05Z-063F	1/2-20 UNF-2B	1	45ZH-11.5	2	J1926-03-C5A	2	TMAK0438-20	1	**ATKK05-1926**
-6	J1926-060-075F	9/16-18 UNF-2B	1	450H-13	2	J1926-03-C5A	2	TMAK0563-18	1	**ATKK06-1926**
-8	J1926-080-075F	3/4-16 UNF-2B	1	450H-0022	2	J1926-07-C5A	2	TMAK0750-16	1	**ATKK08-1926**
-10	J1926-101-100F	7/8-14 UNF-2B	1	451H-20.5	2	J1926-04-C5A	2	TMAK0875-14	1	**ATKK10-1926**
-12	J1926-122-125F	1-1/16-12 UN-2B	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12	1	**ATKK12-1926**
-14	J1926-142-125F	1-3/16-12 UN-2B	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12	1	**ATKK14-1926**
-16	J1926-162-125F	1-5/16-12 UN-2B	1	452H-1.231	2	J1926-09-C5A	2	TMAK1063-12	1	**ATKK16-1926**
-20	J1926-203-150F	1-5/8-12 UN-2B	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12	1	**ATKK20-1926**
-24	J1926-243-150F	1-7/8-12 UN-2B	1	453H-45.5	1	J1926-11-C5A	2	TMAK1063-12	1	**ATKK24-1926**
-32	J1926-324-150F	2-1/2-12 UN-2B	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12	1	**ATKK32-1926**



AccuThread™ Port Specific Solid Carbide Thread Mills

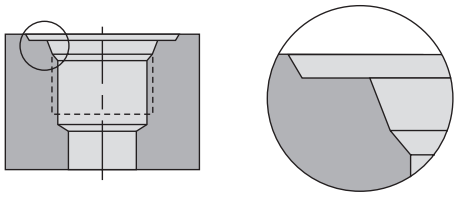
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAK0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAK0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAK0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAK0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAK1063-12**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

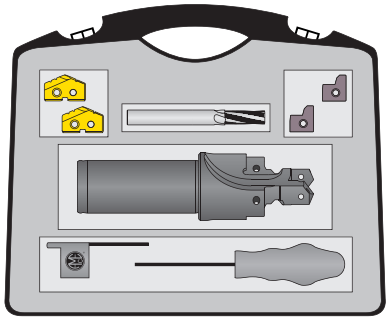
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 6 - 7

Port and Thread Finishing Kits

J1926 | Imperial | Non-Ferrous Materials

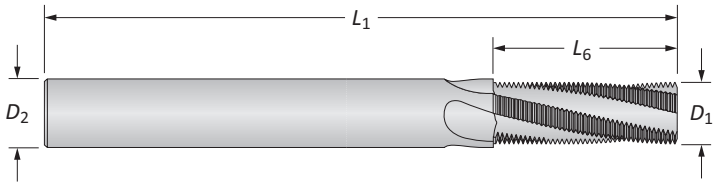


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	Original T-A® Insert Super Cobalt (TiN)	Original T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (Uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-063F	7/16-20 UNF-2B	1	15YT-.386	2	J1926-02-C5A	2	TMAU0438-20	1	**ATKU04-1926**
-5	J1926-05Z-063F	1/2-20 UNF-2B	1	15ZT-11.5	2	J1926-03-C5A	2	TMAU0438-20	1	**ATKU05-1926**
-6	J1926-060-075F	9/16-18 UNF-2B	1	150T-13	2	J1926-03-C5A	2	TMAU0563-18	1	**ATKU06-1926**
-8	J1926-080-075F	3/4-16 UNF-2B	1	150T-0022	2	J1926-07-C5A	2	TMAU0750-16	1	**ATKU08-1926**
-10	J1926-101-100F	7/8-14 UNF-2B	1	151T-20.5	2	J1926-04-C5A	2	TMAU0875-14	1	**ATKU10-1926**
-12	J1926-122-125F	1-1/16-12 UN-2B	1	152T-25	2	J1926-08-C5A	2	TMAU1063-12	1	**ATKU12-1926**
-14	J1926-142-125F	1-3/16-12 UN-2B	1	152T-28	2	J1926-08-C5A	2	TMAU1063-12	1	**ATKU14-1926**
-16	J1926-162-125F	1-5/16-12 UN-2B	1	152T-1.231	2	J1926-09-C5A	2	TMAU1063-12	1	**ATKU16-1926**
-20	J1926-203-150F	1-5/8-12 UN-2B	1	453T-39	1	J1926-10-C5A	2	TMAU1063-12	1	**ATKU20-1926**
-24	J1926-243-150F	1-7/8-12 UN-2B	1	453T-45.5	1	J1926-11-C5A	2	TMAU1063-12	1	**ATKU24-1926**
-32	J1926-324-150F	2-1/2-12 UN-2B	1	454T-61.5	1	J1926-12-C5A	2	TMAU1063-12	1	**ATKU32-1926**



AccuThread™ Port Specific Solid Carbide Thread Mills

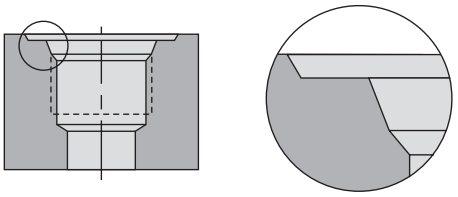
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAU0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAU0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAU0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAU0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAU1063-12**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

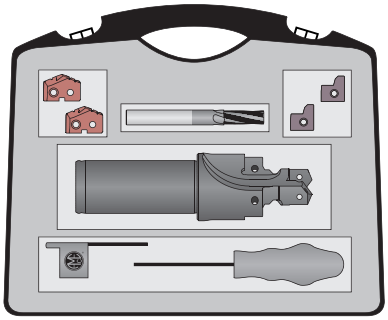
A92: 30 - 37
A92: 2 - 4
A92: 6 - 7
Key on A92: 1

Port and Thread Finishing Kits

J1926 | Metric | Ferrous Materials

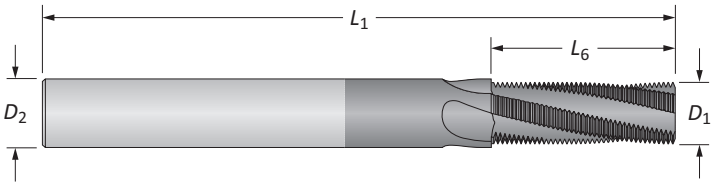


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-16FM	7/16-20 UNF-2B	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20M	1	**ATKK04-1926M**
-5	J1926-05Z-16FM	1/2-20 UNF-2B	1	45ZH-11.5	2	J1926-03-C5A	2	TMAK0438-20M	1	**ATKK05-1926M**
-6	J1926-060-20FM	9/16-18 UNF-2B	1	450H-13	2	J1926-03-C5A	2	TMAK0563-18M	1	**ATKK06-1926M**
-8	J1926-080-20FM	3/4-16 UNF-2B	1	450H-0022	2	J1926-07-C5A	2	TMAK0750-16M	1	**ATKK08-1926M**
-10	J1926-101-25FM	7/8-14 UNF-2B	1	451H-20.5	2	J1926-04-C5A	2	TMAK0875-14M	1	**ATKK10-1926M**
-12	J1926-122-32FM	1-1/16-12 UN-2B	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12M	1	**ATKK12-1926M**
-14	J1926-142-32FM	1-3/16-12 UN-2B	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12M	1	**ATKK14-1926M**
-16	J1926-162-32FM	1-5/16-12 UN-2B	1	452H-1.231	2	J1926-09-C5A	2	TMAK1063-12M	1	**ATKK16-1926M**
-20	J1926-203-32FM	1-5/8-12 UN-2B	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12M	1	**ATKK20-1926M**
-24	J1926-243-32FM	1-7/8-12 UN-2B	1	453H-45.5	1	J1926-11-C5A	2	TMAK1063-12M	1	**ATKK24-1926M**
-32	J1926-324-32FM	2-1/2-12 UN-2B	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12M	1	**ATKK32-1926M**



AccuThread™ Port Specific Solid Carbide Thread Mills

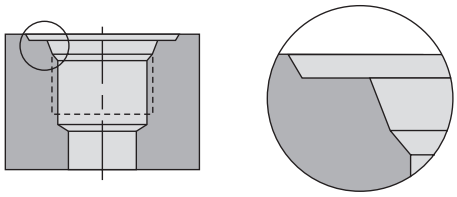
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	8.51	15.24	10.00	73.00	4	**TMAK0438-20M**
-6	18	9.40	16.92	10.00	73.00	4	**TMAK0563-18M**
-8	16	11.94	19.05	12.00	84.00	4	**TMAK0750-16M**
-10	14	11.94	21.77	12.00	84.00	4	**TMAK0875-14M**
-12 to -32	12	11.94	23.29	12.00	84.00	4	**TMAK1063-12M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

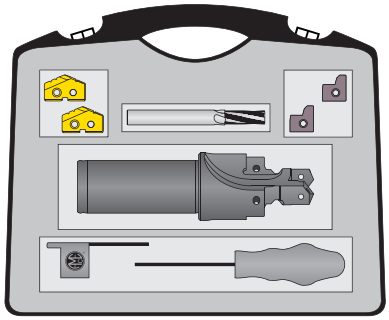
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 8 - 9

Port and Thread Finishing Kits

J1926 | Metric | Non-Ferrous Materials

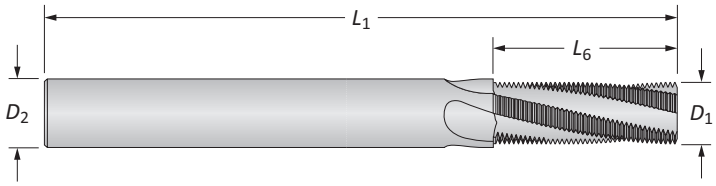


SAE J-1926-1 / ISO 11926-1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	Original T-A® Insert Super Cobalt (TiN)	Original T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (Uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	J1926-04Y-16FM	7/16-20 UNF-2B	1	15YT-.386	2	J1926-02-C5A	2	TMAU0438-20M	1	**ATKU04-1926M**
-5	J1926-05Z-16FM	1/2-20 UNF-2B	1	15ZT-11.5	2	J1926-03-C5A	2	TMAU0438-20M	1	**ATKU05-1926M**
-6	J1926-060-20FM	9/16-18 UNF-2B	1	150T-13	2	J1926-03-C5A	2	TMAU0563-18M	1	**ATKU06-1926M**
-8	J1926-080-20FM	3/4-16 UNF-2B	1	150T-0022	2	J1926-07-C5A	2	TMAU0750-16M	1	**ATKU08-1926M**
-10	J1926-101-25FM	7/8-14 UNF-2B	1	151T-20.5	2	J1926-04-C5A	2	TMAU0875-14M	1	**ATKU10-1926M**
-12	J1926-122-32FM	1-1/16-12 UN-2B	1	152T-25	2	J1926-08-C5A	2	TMAU1063-12M	1	**ATKU12-1926M**
-14	J1926-142-32FM	1-3/16-12 UN-2B	1	152T-28	2	J1926-08-C5A	2	TMAU1063-12M	1	**ATKU14-1926M**
-16	J1926-162-32FM	1-5/16-12 UN-2B	1	152T-1.231	2	J1926-09-C5A	2	TMAU1063-12M	1	**ATKU16-1926M**
-20	J1926-203-32FM	1-5/8-12 UN-2B	1	453T-39	1	J1926-10-C5A	2	TMAU1063-12M	1	**ATKU20-1926M**
-24	J1926-243-32FM	1-7/8-12 UN-2B	1	453T-45.5	1	J1926-11-C5A	2	TMAU1063-12M	1	**ATKU24-1926M**
-32	J1926-324-32FM	2-1/2-12 UN-2B	1	454T-61.5	1	J1926-12-C5A	2	TMAU1063-12M	1	**ATKU32-1926M**



AccuThread™ Port Specific Solid Carbide Thread Mills

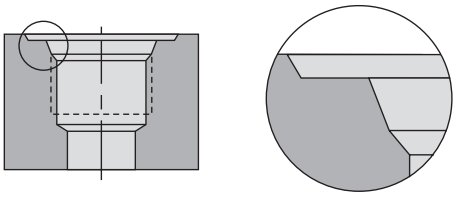
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	8.51	15.24	10.00	73.00	4	**TMAU0438-20M**
-6	18	9.40	16.92	10.00	73.00	4	**TMAU0563-18M**
-8	16	11.94	19.05	12.00	84.00	4	**TMAU0750-16M**
-10	14	11.94	21.77	12.00	84.00	4	**TMAU0875-14M**
-12 to -32	12	11.94	23.29	12.00	84.00	4	**TMAU1063-12M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

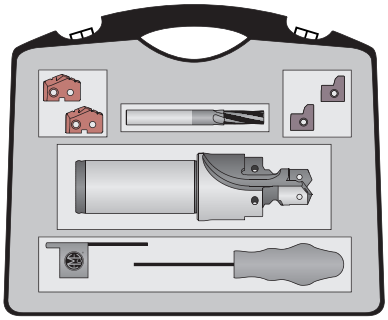
A92: 30 - 37
A92: 2 - 4
A92: 8 - 9
Key on A92: 1

Port and Thread Finishing Kits

I6149 | No ID Ridge | Ferrous Materials

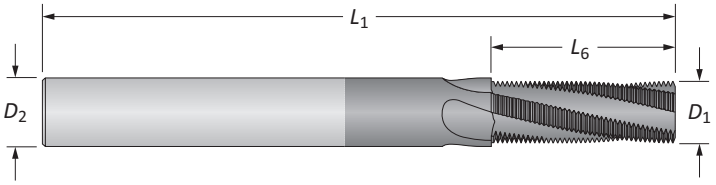


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	45YH-10.5	2	I6149-04-C5A	2	TMMK1000-150M	1	**ATKK04-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	45ZH-12.5	2	I6149-04-C5A	2	TMMK1400-150M	1	**ATKK05-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	450H-14.5	2	I6149-06-C5A	2	TMMK1400-150M	1	**ATKK06-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	450H-16.5	2	I6149-06-C5A	2	TMMK1800-150M	1	**ATKK08-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	451H-20.5	2	I6149-04-C5A	2	TMMK1800-150M	1	**ATKK10-6149**
-12	I6149-12R2-32FM	M27 X 2	1	452H-25	2	I6149-12-C5A	2	TMMK2000-200M	1	**ATKK12-6149**
-14	I6149-14R2-32FM	M30 X 2	1	452H-28	2	I6149-14-C5A	2	TMMK2000-200M	1	**ATKK14-6149**
-16	I6149-16R2-32FM	M33 X 2	1	452H-31	2	I6149-16-C5A	2	TMMK2000-200M	1	**ATKK16-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453H-40	1	I6149-20-C5A	2	TMMK2000-200M	1	**ATKK20-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453H-46	1	I6149-24-C5A	2	TMMK2000-200M	1	**ATKK24-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454H-58	1	I6149-32-C5A	2	TMMK2000-200M	1	**ATKK32-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

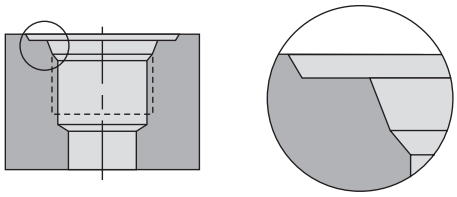
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

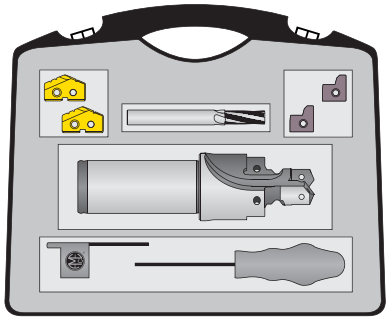
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 12 - 13

Port and Thread Finishing Kits

I6149 | No ID Ridge | Non-Ferrous Materials

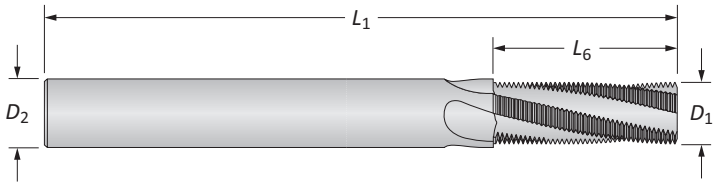


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	Original T-A® Insert Super Cobalt (TiN)	Original T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (Uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	15YT-10.5	2	I6149-04-C5A	2	TMMU1000-150M	1	**ATKU04-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	15ZT-12.5	2	I6149-04-C5A	2	TMMU1400-150M	1	**ATKU05-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	150T-14.5	2	I6149-06-C5A	2	TMMU1400-150M	1	**ATKU06-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	150T-16.5	2	I6149-06-C5A	2	TMMU1800-150M	1	**ATKU08-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	151T-20.5	2	I6149-04-C5A	2	TMMU1800-150M	1	**ATKU10-6149**
-12	I6149-12R2-32FM	M27 X 2	1	152T-25	2	I6149-12-C5A	2	TMMU2000-200M	1	**ATKU12-6149**
-14	I6149-14R2-32FM	M30 X 2	1	152T-28	2	I6149-14-C5A	2	TMMU2000-200M	1	**ATKU14-6149**
-16	I6149-16R2-32FM	M33 X 2	1	152T-31	2	I6149-16-C5A	2	TMMU2000-200M	1	**ATKU16-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453T-40	1	I6149-20-C5A	2	TMMU2000-200M	1	**ATKU20-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453T-46	1	I6149-24-C5A	2	TMMU2000-200M	1	**ATKU24-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454T-58	1	I6149-32-C5A	2	TMMU2000-200M	1	**ATKU32-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

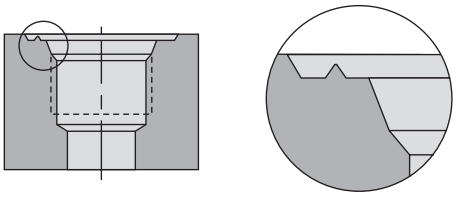
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMU1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMU1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMU1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMU2000-200M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

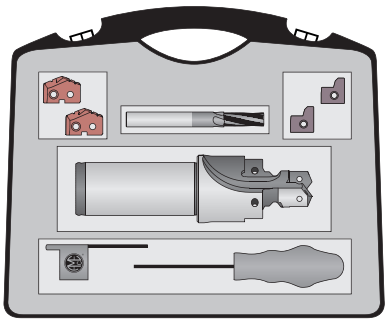
A92: 30 - 37
A92: 2 - 4
A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

I6149 | ID Ridge | Ferrous Materials

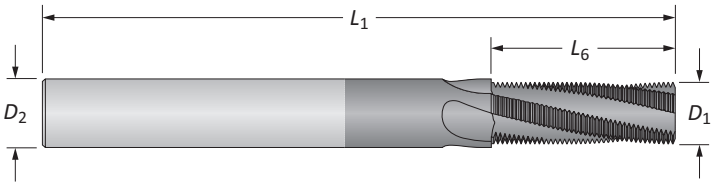


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	45YH-10.5	2	I6149-04R-C5A	2	TMMK1000-150M	1	**ATKK04R-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	45ZH-12.5	2	I6149-04R-C5A	2	TMMK1400-150M	1	**ATKK05R-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	450H-14.5	2	I6149-06R-C5A	2	TMMK1400-150M	1	**ATKK06R-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	450H-16.5	2	I6149-06R-C5A	2	TMMK1800-150M	1	**ATKK08R-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	451H-20.5	2	I6149-04R-C5A	2	TMMK1800-150M	1	**ATKK10R-6149**
-12	I6149-12R2-32FM	M27 X 2	1	452H-25	2	I6149-12R-C5A	2	TMMK2000-200M	1	**ATKK12R-6149**
-14	I6149-14R2-32FM	M30 X 2	1	452H-28	2	I6149-14R-C5A	2	TMMK2000-200M	1	**ATKK14R-6149**
-16	I6149-16R2-32FM	M33 X 2	1	452H-31	2	I6149-16R-C5A	2	TMMK2000-200M	1	**ATKK16R-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453H-40	1	I6149-20R-C5A	2	TMMK2000-200M	1	**ATKK20R-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453H-46	1	I6149-24R-C5A	2	TMMK2000-200M	1	**ATKK24R-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454H-58	1	I6149-32R-C5A	2	TMMK2000-200M	1	**ATKK32R-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

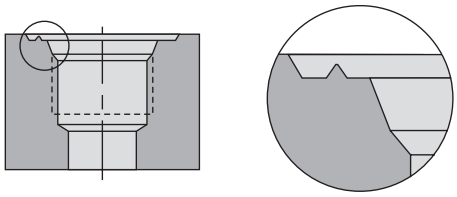
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

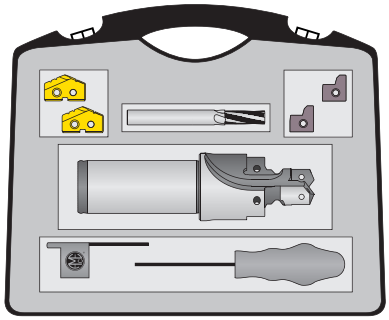
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 12 - 13

Port and Thread Finishing Kits

I6149 | ID Ridge | Non-Ferrous Materials

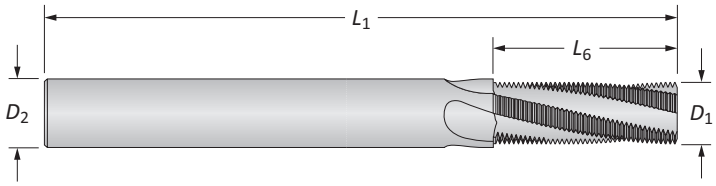


ISO 6149-1:2006 / SAE J-2244/1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	Original T-A® Insert Super Cobalt (TiN)	Original T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (Uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	I6149-04RY-16FM	M12 X 1.5	1	15YT-10.5	2	I6149-04R-C5A	2	TMMU1000-150M	1	**ATKU04R-6149**
-5	I6149-05RZ-16FM	M14 X 1.5	1	15ZT-12.5	2	I6149-04R-C5A	2	TMMU1400-150M	1	**ATKU05R-6149**
-6	I6149-06R0-20FM	M16 X 1.5	1	150T-14.5	2	I6149-06R-C5A	2	TMMU1400-150M	1	**ATKU06R-6149**
-8	I6149-08R0-20FM	M18 X 1.5	1	150T-16.5	2	I6149-06R-C5A	2	TMMU1800-150M	1	**ATKU08R-6149**
-10	I6149-10R1-25FM	M22 X 1.5	1	151T-20.5	2	I6149-04R-C5A	2	TMMU1800-150M	1	**ATKU10R-6149**
-12	I6149-12R2-32FM	M27 X 2	1	152T-25	2	I6149-12R-C5A	2	TMMU2000-200M	1	**ATKU12R-6149**
-14	I6149-14R2-32FM	M30 X 2	1	152T-28	2	I6149-14R-C5A	2	TMMU2000-200M	1	**ATKU14R-6149**
-16	I6149-16R2-32FM	M33 X 2	1	152T-31	2	I6149-16R-C5A	2	TMMU2000-200M	1	**ATKU16R-6149**
-20	I6149-20R3-32FM	M42 X 2	1	453T-40	1	I6149-20R-C5A	2	TMMU2000-200M	1	**ATKU20R-6149**
-24	I6149-24R3-32FM	M48 X 2	1	453T-46	1	I6149-24R-C5A	2	TMMU2000-200M	1	**ATKU24R-6149**
-32	I6149-32R4-32FM	M60 X 2	1	454T-58	1	I6149-32R-C5A	2	TMMU2000-200M	1	**ATKU32R-6149**



AccuThread™ Port Specific Solid Carbide Thread Mills

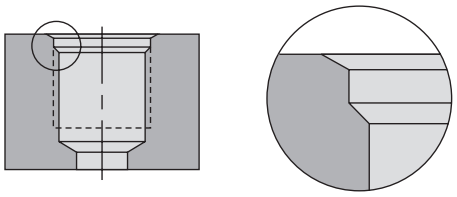
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMU1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMU1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMU1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMU2000-200M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

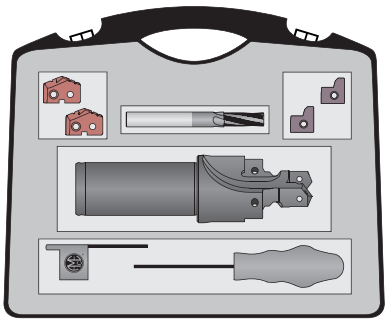
A92: 30 - 37
A92: 2 - 4
A92: 12 - 13
Key on A92: 1

Port and Thread Finishing Kits

AS5202 | Ferrous Materials

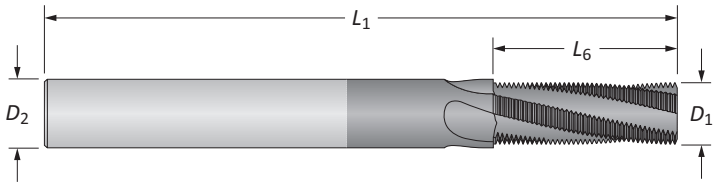


SAE AS5202



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	AS5202-04Y-063F	7/16-20 UNJF-3B	1	45YH-.390	2	AS5202-04-C5A	2	TMAK0438-20	1	**ATKK04-5202**
-5	AS5202-05Z-063F	1/2-20 UNJF-3B	1	45ZH-11.5	2	AS5202-05-C5A	2	TMAK0438-20	1	**ATKK05-5202**
-6	AS5202-06Z-075F	9/16-18 UNJF-3B	1	45ZH-.510	2	AS5202-06-C5A	2	TMAK0563-18	1	**ATKK06-5202**
-8	AS5202-080-075F	3/4-16 UNJF-3B	1	450H-17.5	2	AS5202-08-C5A	2	TMAK0750-16	1	**ATKK08-5202**
-10	AS5202-101-100F	7/8-14 UNJF-3B	1	451H-20.5	2	AS5202-10-C5A	2	TMAK0875-14	1	**ATKK10-5202**
-12	AS5202-122-125F	1-1/16-12 UNJ-3B	1	452H-25	2	AS5202-12-C5A	2	TMAK1063-12	1	**ATKK12-5202**
-14	AS5202-142-125F	1-3/16-12 UNJ-3B	1	452H-1.109	2	AS5202-14-C5A	2	TMAK1063-12	1	**ATKK14-5202**
-16	AS5202-162-125F	1-5/16-12 UNJ-3B	1	452H-1.234	2	AS5202-16-C5A	2	TMAK1063-12	1	**ATKK16-5202**
-20	AS5202-203-150F	1-5/8-12 UNJ-3B	1	453H-1.547	1	AS5202-20-C5A	2	TMAK1063-12	1	**ATKK20-5202**
-24	AS5202-243-150F	1-7/8-12 UNJ-3B	1	453H-1.797	1	AS5202-24-C5A	2	TMAK1063-12	1	**ATKK24-5202**
-32	AS5202-324-150F	2-1/2-12 UNJ-3B	1	454H-61.5	1	AS5202-32-C5A	2	TMAK1063-12	1	**ATKK32-5202**



AccuThread™ Port Specific Solid Carbide Thread Mills

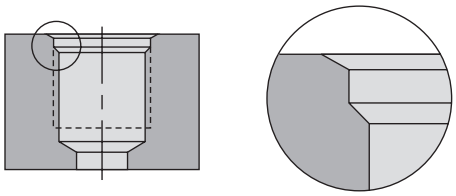
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAK0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAK0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAK0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAK0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAK1063-12**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms. The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

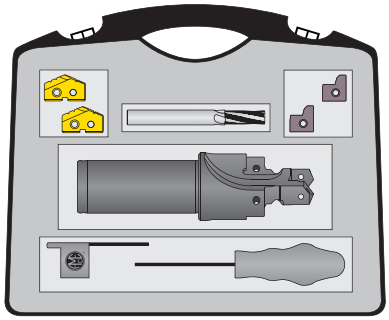
A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 14 - 15

Port and Thread Finishing Kits

AS5202 | Non-Ferrous Materials

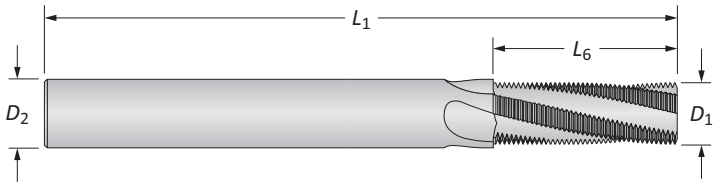


SAE AS5202



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	Original T-A® Insert Super Cobalt (TiN)	Original T-A® Insert Qty	Port Form Insert C5 Carbide (TiAlN)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (Uncoated)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	AS5202-04Y-063F	7/16-20 UNJF-3B	1	15YT-.390	2	AS5202-04-C5A	2	TMAU0438-20	1	**ATKU04-5202**
-5	AS5202-05Z-063F	1/2-20 UNJF-3B	1	15ZT-11.5	2	AS5202-05-C5A	2	TMAU0438-20	1	**ATKU05-5202**
-6	AS5202-06Z-075F	9/16-18 UNJF-3B	1	15ZT-.510	2	AS5202-06-C5A	2	TMAU0563-18	1	**ATKU06-5202**
-8	AS5202-080-075F	3/4-16 UNJF-3B	1	150T-17.5	2	AS5202-08-C5A	2	TMAU0750-16	1	**ATKU08-5202**
-10	AS5202-101-100F	7/8-14 UNJF-3B	1	151T-20.5	2	AS5202-10-C5A	2	TMAU0875-14	1	**ATKU10-5202**
-12	AS5202-122-125F	1-1/16-12 UNJ-3B	1	152T-25	2	AS5202-12-C5A	2	TMAU1063-12	1	**ATKU12-5202**
-14	AS5202-142-125F	1-3/16-12 UNJ-3B	1	152T-1.109	2	AS5202-14-C5A	2	TMAU1063-12	1	**ATKU14-5202**
-16	AS5202-162-125F	1-5/16-12 UNJ-3B	1	152T-1.234	2	AS5202-16-C5A	2	TMAU1063-12	1	**ATKU16-5202**
-20	AS5202-203-150F	1-5/8-12 UNJ-3B	1	453T-1.547	1	AS5202-20-C5A	2	TMAU1063-12	1	**ATKU20-5202**
-24	AS5202-243-150F	1-7/8-12 UNJ-3B	1	453T-1.797	1	AS5202-24-C5A	2	TMAU1063-12	1	**ATKU24-5202**
-32	AS5202-324-150F	2-1/2-12 UNJ-3B	1	454T-61.5	1	AS5202-32-C5A	2	TMAU1063-12	1	**ATKU32-5202**



AccuThread™ Port Specific Solid Carbide Thread Mills

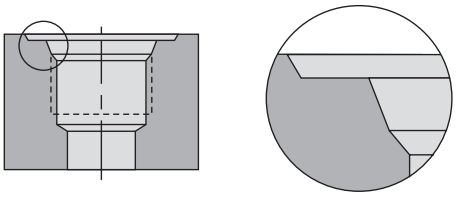
Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4 to -5	20	0.335	0.600	0.375	3.5	4	**TMAU0438-20**
-6	18	0.370	0.666	0.375	3.5	4	**TMAU0563-18**
-8	16	0.495	0.750	0.500	3.5	4	**TMAU0750-16**
-10	14	0.495	0.857	0.500	3.5	4	**TMAU0875-14**
-12 to -32	12	0.495	0.917	0.500	3.5	4	**TMAU1063-12**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

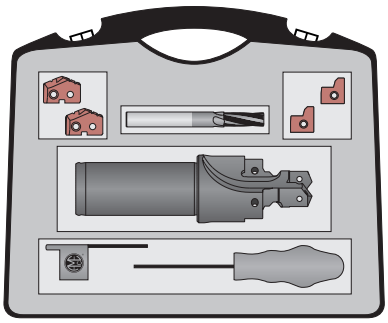
A92: 30 - 37
A92: 2 - 4
A92: 14 - 15
Key on A92: 1

Port and Thread Finishing Kits

G1731 | Ferrous Materials

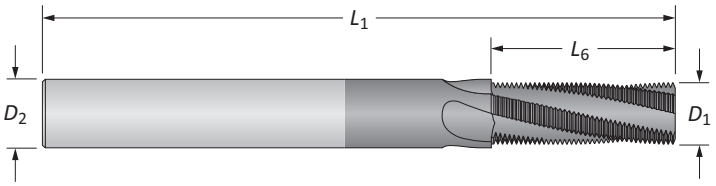


JDS-G173.1



Port and Thread Finishing Kits

Tube Dash No.	AccuPort 432 Part No.	AccuPort 432 Port Thread Size	AccuPort 432 Qty	GEN2 T-A® Insert Super Cobalt (AM200®)	GEN2 T-A® Insert Qty	Port Form Insert C3 Carbide (AM200®)	Port Form Insert Qty	AccuThread™ Thread Mill Part No. (AM210®)	AccuThread™ Thread Mill Qty	Kit Part No.
-4	G1731-04Y-16FM	M12 X 1.5	1	45YH-10.5	2	G1731-01-C3H	2	TMMK1000-150M	1	**ATKK04-G1731**
-5	G1731-05Z-16FM	M14 X 1.5	1	45ZH-12.5	2	G1731-01-C3H	2	TMMK1400-150M	1	**ATKK05-G1731**
-6	G1731-060-20FM	M16 X 1.5	1	450H-14.5	2	G1731-02-C3H	2	TMMK1400-150M	1	**ATKK06-G1731**
-8	G1731-080-20FM	M18 X 1.5	1	450H-16.5	2	G1731-02-C3H	2	TMMK1800-150M	1	**ATKK08-G1731**
-10	G1731-101-25FM	M22 X 1.5	1	451H-20.5	2	G1731-02-C3H	2	TMMK1800-150M	1	**ATKK10-G1731**
-12	G1731-122-32FM	M27 X 2	1	452H-25	2	G1731-03-C3H	2	TMMK2000-200M	1	**ATKK12-G1731**
-14	G1731-142-32FM	M30 X 2	1	452H-28	2	G1731-03-C3H	2	TMMK2000-200M	1	**ATKK14-G1731**
-16	G1731-162-32FM	M33 X 2	1	452H-31	2	G1731-04-C3H	2	TMMK2000-200M	1	**ATKK16-G1731**
-18	G1731-183-32FM	M38 X 2	1	453H-36	1	G1731-04-C3H	2	TMMK2000-200M	2	**ATKK18-G1731**
-20	G1731-203-32FM	M42 X 2	1	453H-40	1	G1731-05-C3H	2	TMMK2000-200M	1	**ATKK20-G1731**
-24	G1731-243-32FM	M48 X 2	1	453H-46	1	G1731-05-C3H	2	TMMK2000-200M	1	**ATKK24-G1731**
-32	G1731-324-32FM	M60 X 2	1	454H-58	1	G1731-06-C3H	2	TMMK2000-200M	1	**ATKK32-G1731**



AccuThread™ Port Specific Solid Carbide Thread Mills

Port Size	Pitch	Thread Mill D_1	Thread Mill L_6	Thread Mill D_2	Thread Mill L_1	Flutes	Part No.
-4	1.50	7.40	19.50	8.00	64.00	4	**TMMK1000-150M**
-5 to -6	1.50	10.90	27.00	12.00	84.00	4	**TMMK1400-150M**
-8 to -10	1.50	11.90	31.50	12.00	84.00	4	**TMMK1800-150M**
-12 to -32	2.00	11.95	30.00	12.00	84.00	4	**TMMK2000-200M**

AccuPort 432 specific thread mills - International Unified Series (UN) manufactured specifically for use with AccuPort 432 hydraulic port forms.
The length of cut allows full thread with one pass. Conforms with J1926 and SAE AS5202 port form specifications.

A92: 30 - 37
Key on A92: 1
A92: 2 - 4
A92: 16 - 17

Notes

Recommended Drilling Data | Imperial (inch)

HSS

ISO	Material	Hardness (BHN)	Grade	Speed (SFM) TiN	TiAlN	TiCN	AM200®	Feed Rate (IPR) by Tube Size and T-A® Insert Series: Tube No. 4 - 5, T-A Series Y - Z	Tube No. 6 - 8, T-A Series 0	Tube No. 10, T-A Series 1	Tube No. 12 - 16, T-A Series 2	Tube No. 20 - 24, T-A Series 3	Tube No. 32, T-A Series 4
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	200	280	260	325	0.007	0.010	0.013	0.016	0.020	0.023
		150 - 200	HSS	180	260	235	300	0.007	0.010	0.013	0.016	0.020	0.023
		200 - 250	HSS	160	240	210	280	0.006	0.010	0.013	0.016	0.020	0.023
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	170	250	220	290	0.006 ❖	0.009	0.012	0.015	0.019	0.023
		125 - 175	HSS	160	240	210	275	0.006 ❖	0.009	0.012	0.015	0.019	0.023
		175 - 225	HSS	150	225	195	260	0.005 ❖	0.008	0.010	0.014	0.018	0.021
		225 - 275	HSS	140	210	180	240	0.005 ❖	0.008	0.010	0.014	0.018	0.021
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	160	240	210	275	0.006	0.009	0.012	0.015	0.019	0.023
		175 - 225	HSS	150	225	195	260	0.005	0.008	0.010	0.014	0.018	0.021
		225 - 275	HSS	140	210	180	240	0.005	0.008	0.010	0.014	0.018	0.021
		275 - 325	SC	130	195	170	225	0.004	0.007	0.009	0.012	0.016	0.019
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	150	210	195	240	0.006	0.008	0.010	0.014	0.017	0.019
		175 - 225	HSS	140	195	180	225	0.005	0.008	0.010	0.014	0.017	0.019
		225 - 275	HSS	130	180	170	210	0.005	0.007	0.010	0.014	0.017	0.019
		275 - 325	SC	120	170	155	195	0.004	0.006	0.009	0.012	0.015	0.017
		325 - 375	SC	110	155	145	180	0.003	0.006	0.009	0.012	0.015	0.017
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	80	110	100	125	0.005 ❖	0.007	0.009	0.010	0.014	0.017
		300 - 350	SC	60	85	80	100	0.004 ❖	0.007	0.009	0.010	0.014	0.017
		350 - 400	SC	50	70	65	80	0.003 ❖	0.006	0.008	0.009	0.012	0.015
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	140	200	180	235	0.006 ❖	0.010	0.012	0.014	0.018	0.021
		150 - 250	HSS	120	170	155	190	0.005 ❖	0.009	0.010	0.012	0.016	0.019
		250 - 350	SC	100	140	130	160	0.004 ❖	0.009	0.009	0.010	0.014	0.017
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	SC	80	110	105	125	0.004 ❖	0.006	0.008	0.010	0.014	0.015
		200 - 250	SC	60	90	85	105	0.004 ❖	0.006	0.008	0.010	0.012	0.015
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	SC	30	40	35	45	0.003 ❖	0.007	0.008	0.010	0.012	0.015
		220 - 310	SC	25	35	30	40	0.003 ❖	0.006	0.007	0.008	0.010	0.012
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	SC	75	105	95	110	0.006 ❖	0.008	0.009	0.011	0.012	0.016
		275 - 350	SC	60	90	80	100	0.005 ❖	0.007	0.008	0.010	0.012	0.014
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	HSS	170	250	220	290	0.007	0.012	0.016	0.020	0.024	0.027
		150 - 200	HSS	150	225	195	260	0.006	0.011	0.014	0.018	0.022	0.025
		200 - 220	HSS	130	195	170	225	0.006	0.009	0.012	0.016	0.018	0.021
		220 - 260	SC	110	165	145	190	0.005	0.007	0.009	0.012	0.014	0.017
		260 - 320	SC	90	135	120	155	0.004	0.006	0.007	0.009	0.012	0.014
N	**Aluminum**	30	HSS	600	850	750	–	0.008	0.013	0.016	0.020	0.022	0.025
		180	HSS	300	450	400	–	0.008	0.013	0.016	0.018	0.022	0.025

Formulas

1. **RPM = (3.82 • SFM) / DIA**

where:

RPM = revolutions per minute (rev/min)
SFM = speed (ft/min)
DIA = finish diameter of drill (inch)

2. **SFM = RPM • 0.262 • DIA**

where:

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

3. **IPM = RPM • IPR**

where:

IPM = Feed rate
RPM = revolutions per minute (rev/min)
IPR = feed rate (in/rev)

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IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Imperial (inch)

HSS

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3	Tube No. 32 T-A Series 4
P	**Free Machining Steel**	PSI	175 - 185	100 - 120	105 - 140	80 - 115	75 - 100	40 - 50
	1118, 1215, 12L14, etc.	GPM	2.5 - 2.6	2.8 - 3.0	4.4 - 5.2	7 - 8	12 - 14	30 - 33
	Low Carbon Steel	PSI	165 - 170	75 - 90	75 - 95	60 - 80	55 - 75	30 - 40
	1010, 1020, 1025, 1522, 1144, etc.	GPM	2.4 - 2.5	2.4 - 2.6	3.7 - 4.2	6 - 7	11 - 12	26 - 30
	Medium Carbon Steel	PSI	160 - 165	70 - 85	70 - 90	55 - 75	50 - 70	30 - 40
	1030, 1040, 1050, 1527, 1140, 1151, etc.	GPM	2.3 - 2.4	2.3 - 2.6	3.7 - 4.2	5 - 6	10 - 12	26 - 30
	Alloy Steel	PSI	160 - 165	65 - 75	65 - 80	50 - 70	45 - 60	30 - 35
	4140, 5140, 8640, etc.	GPM	2.3 - 2.4	2.2 - 2.4	3.5 - 3.9	5 - 6	10 - 11	26 - 28
	High Strength Alloy	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25
	4340, 4330V, 300M, etc.	GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23
	Structural Steel	PSI	160 - 165	75 - 85	65 - 80	40 - 55	40 - 50	25 - 30
	A36, A285, A516, etc.	GPM	2.3 - 2.4	2.4 - 2.6	3.5 - 3.9	5 - 6	9 - 10	23 - 26
	Tool Steel	PSI	150 - 155	55 - 60	45 - 50	25 - 30	25 - 30	20 - 25
	H-13, H-21, A-4, 0-2, S-3, etc.	GPM	2.3 - 2.4	2.1 - 2.2	2.9 - 3.1	4 - 5	7 - 8	21 - 23
S	**High Temp Alloy**	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30	25 - 30
	Hastelloy B, Inconel 600, etc.	GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8	23 - 26
M	**Stainless Steel 400 Series**	PSI	171	86	75	55	51	29
	416, 420, 303, etc.	GPM	3	3	4	6	10	26
K	**Nodular, Grey, Ductile Cast Iron**	PSI	160	65	61	41	35	29
		GPM	2	2	3	5	9	26
N	**Aluminum**	PSI	210	180	230	159	125	51
		GPM	3	4	6	9	16	33

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432 Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Imperial (inch)

Carbide

ISO	Material	Hardness (BHN)	Grade	Speed (SFM) TiN	TiAlN	AM200®	Feed Rate (IPR) by Tube Size and T-A® Insert Series: Tube No. 4 - 5, T-A Series Y - Z	Tube No. 6 - 8, T-A Series 0	Tube No. 10, T-A Series 1	Tube No. 12 - 16, T-A Series 2	Tube No. 20 - 24, T-A Series 3
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	C1, C5	320	420	480	0.008	0.012	0.015	0.018	0.021
		150 - 200	C1, C5	280	360	415	0.007	0.011	0.014	0.016	0.019
		200 - 250	C1, C5	260	340	390	0.006	0.010	0.013	0.015	0.017
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	C1, C5	300	390	450	0.008 ❖	0.010	0.013	0.017	0.019
		125 - 175	C1, C5	260	340	390	0.007 ❖	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	240	310	355	0.006 ❖	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.005 ❖	0.009	0.012	0.015	0.017
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	C1, C5	260	340	390	0.007	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	240	310	355	0.006	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.006	0.009	0.012	0.015	0.017
		275 - 325	C1, C5	180	230	265	0.005	0.008	0.011	0.014	0.016
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	C1, C5	250	325	375	0.007	0.010	0.013	0.016	0.018
		175 - 225	C1, C5	230	300	345	0.006	0.009	0.012	0.015	0.017
		225 - 275	C1, C5	210	270	310	0.006	0.009	0.012	0.015	0.017
		275 - 325	C1, C5	200	250	285	0.005	0.008	0.011	0.014	0.016
		325 - 375	C1, C5	170	220	255	0.004	0.007	0.010	0.013	0.015
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	C1, C5	160	200	230	0.006 ❖	0.009	0.010	0.012	0.015
		300 - 350	C1, C5	140	180	205	0.005 ❖	0.008	0.009	0.011	0.014
		350 - 400	C1, C5	120	160	185	0.004 ❖	0.007	0.008	0.010	0.012
	Structural Steel A36, A285, A516, etc.	100 - 150	C1, C5	240	310	355	0.008 ❖	0.011	0.014	0.016	0.018
		150 - 250	C1, C5	200	250	285	0.006 ❖	0.010	0.012	0.014	0.016
		250 - 350	C1, C5	180	230	265	0.005 ❖	0.009	0.011	0.012	0.014
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	C1, C5	160	220	255	0.004 ❖	0.007	0.009	0.011	0.013
		200 - 250	C1, C5	120	170	195	0.004 ❖	0.007	0.009	0.011	0.013
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	C2	80	105	120	0.004 ❖	0.007	0.009	0.011	0.013
		220 - 310	C2	60	85	95	0.004 ❖	0.006	0.008	0.010	0.012
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	C2	160	210	240	0.007 ❖	0.009	0.012	0.014	0.016
		275 - 350	C2	120	160	185	0.006 ❖	0.008	0.011	0.012	0.014
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	C2, C3	320	460	500	0.008	0.012	0.015	0.019	0.023
		150 - 200	C2, C3	270	400	480	0.007	0.011	0.013	0.017	0.021
		200 - 220	C2, C3	240	360	430	0.006	0.009	0.012	0.015	0.018
		220 - 260	C2, C3	210	310	370	0.005	0.008	0.011	0.013	0.015
		260 - 320	C2, C3	180	270	335	0.005	0.007	0.010	0.011	0.013
N	**Aluminum**	30	C2	1200	1500	–	0.010	0.015	0.018	0.020	0.022
		180	C2	800	1000	–	0.009	0.013	0.016	0.018	0.020

Formulas

1. **RPM = (3.82 • SFM) / DIA**

where:

RPM = revolutions per minute (rev/min)
SFM = speed (ft/min)
DIA = finish diameter of drill (inch)

2. **SFM = RPM • 0.262 • DIA**

where:

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

3. **IPM = RPM • IPR**

where:

IPM = Feed rate
RPM = revolutions per minute (rev/min)
IPR = feed rate (in/rev)

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IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Imperial (inch)

Carbide

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3
P	**Free Machining Steel**	PSI	195	140	160	140	155
	1118, 1215, 12L14, etc.	GPM	2.6	3.3	5.5	9	18
	Low Carbon Steel	PSI	180	105	105	110	115
	1010, 1020, 1025, 1522, 1144, etc.	GPM	2.5	2.9	4.4	8	15
	Medium Carbon Steel	PSI	175	100	90	100	75
	1030, 1040, 1050, 1527, 1140, 1151, etc.	GPM	2.5	2.8	4.1	7	13
	Alloy Steel	PSI	165	85	100	75	70
	4140, 5140, 8640, etc.	GPM	2.4	2.6	4.3	6	12
	High Strength Alloy	PSI	160	65	55	40	35
	4340, 4330V, 300M, etc.	GPM	2.4	2.3	3.2	5	8
	Structural Steel	PSI	175	115	105	75	70
	A36, A285, A516, etc.	GPM	2.5	3	4.4	6	12
	Tool Steel	PSI	155	60	55	40	35
	H-13, H-21, A-4, 0-2, S-3, etc.	GPM	2.4	2.2	3.2	5	8
S	**High Temp Alloy**	PSI	150 - 155	60 - 65	50 - 55	30 - 35	25 - 30
	Hastelloy B, Inconel 600, etc.	GPM	2.3 - 2.4	2.2 - 2.3	3.1 - 3.2	4 - 5	7 - 8
M	**Stainless Steel 400 Series**	PSI	329	239	260	250	190
	416, 420, 303, etc.	GPM	3	4	7	12	20
K	**Nodular, Grey, Ductile Cast Iron**	PSI	225	104	90	90	80
		GPM	3	3	4	7	13
N	**Aluminum**	PSI	350	319	315	284	200
		GPM	4	5	8	12	20

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432 Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Metric (mm)

HSS

ISO	Material	Hardness (BHN)	Grade	Speed (M/min) TiN	TiAlN	TiCN	AM200®	Feed Rate (mm/rev) by Tube Size and T-A® Insert Series: Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3	Tube No. 32 T-A Series 4
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	HSS	61	85	79	92	0.18	0.25	0.33	0.41	0.51	0.58
		150 - 200	HSS	55	79	72	87	0.18	0.25	0.33	0.41	0.51	0.58
		200 - 250	HSS	49	73	64	81	0.15	0.25	0.33	0.41	0.51	0.58
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	HSS	52	76	67	84	0.15 ❖	0.23	0.30	0.38	0.48	0.58
		125 - 175	HSS	49	73	64	81	0.15 ❖	0.23	0.30	0.38	0.48	0.58
		175 - 225	HSS	46	69	59	76	0.13 ❖	0.20	0.25	0.36	0.46	0.53
		225 - 275	HSS	43	64	55	70	0.13 ❖	0.20	0.25	0.36	0.46	0.53
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	HSS	49	73	64	79	0.15	0.23	0.30	0.38	0.48	0.58
		175 - 225	HSS	46	69	59	75	0.13	0.20	0.25	0.36	0.46	0.53
		225 - 275	HSS	43	64	55	70	0.13	0.20	0.25	0.36	0.46	0.53
		275 - 325	SC	40	59	52	66	0.10	0.18	0.23	0.30	0.41	0.48
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	HSS	46	64	59	69	0.15	0.20	0.25	0.36	0.43	0.48
		175 - 225	HSS	43	59	55	66	0.13	0.20	0.25	0.36	0.43	0.48
		225 - 275	HSS	40	55	52	60	0.13	0.18	0.25	0.36	0.43	0.48
		275 - 325	SC	37	52	47	56	0.10	0.15	0.23	0.30	0.38	0.43
		325 - 375	SC	34	47	44	55	0.08	0.15	0.23	0.30	0.38	0.43
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	SC	24	34	30	37	0.13 ❖	0.18	0.23	0.25	0.36	0.43
		300 - 350	SC	18	26	24	27	0.10 ❖	0.18	0.23	0.25	0.36	0.43
		350 - 400	SC	15	21	20	23	0.08 ❖	0.15	0.20	0.23	0.30	0.38
	Structural Steel A36, A285, A516, etc.	100 - 150	HSS	43	61	55	67	0.15 ❖	0.25	0.30	0.36	0.46	0.53
		150 - 250	HSS	37	52	47	56	0.13 ❖	0.23	0.25	0.30	0.41	0.48
		250 - 350	SC	30	43	40	47	0.10 ❖	0.20	0.23	0.25	0.36	0.43
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	SC	24	34	32	37	0.10	0.15	0.20	0.25	0.30	0.38
		200 - 250	SC	18	27	26	31	0.10	0.15	0.20	0.25	0.30	0.38
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	SC	30	40	35	45	0.08 ❖	0.18	0.20	0.25	0.30	0.38
		220 - 310	SC	25	35	30	40	0.08 ❖	0.15	0.18	0.20	0.25	0.30
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	SC	23	32	29	33	0.15 ❖	0.20	0.23	0.28	0.36	0.41
		275 - 350	SC	18	27	24	29	0.13 ❖	0.18	0.20	0.25	0.30	0.36
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	HSS	52	76	67	82	0.18	0.30	0.41	0.51	0.61	0.69
		150 - 200	HSS	46	69	59	75	0.15	0.28	0.36	0.46	0.56	0.64
		200 - 220	HSS	40	59	52	66	0.15	0.23	0.30	0.41	0.46	0.53
		220 - 260	SC	34	50	44	55	0.13	0.18	0.23	0.30	0.36	0.43
		260 - 320	SC	27	41	37	44	0.10	0.15	0.18	0.23	0.30	0.36
N	**Aluminum**	30	HSS	183	259	229	–	0.20	0.33	0.41	0.51	0.56	0.64
		180	HSS	91	137	122	–	0.20	0.33	0.41	0.46	0.56	0.64

Formulas

1. **RPM = (318.47 • M/min) / DIA**
   where:
   RPM = revolutions per minute (rev/min)
   M/min = speed (M/min)
   DIA = finish diameter of drill (mm)

2. **M/min = RPM • 0.003 • DIA**
   where:
   M/min = speed (M/min)
   RPM = revolutions per minute (rev/min)
   DIA = diameter of drill (mm)

3. **IPM = RPM • mm/rev**
   where:
   IPM = feed rate
   RPM = revolutions per minute (rev/min)
   mm/rev = feed rate (mm/rev)

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

IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Metric (mm)

HSS

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3	Tube No. 32 T-A Series 4
P	**Free Machining Steel**	BAR	12 - 13	7 - 8	7 - 10	6 - 8	6 - 7	3 - 4
	1118, 1215, 12L14, etc.	LPM	9.5 - 9.8	10.6 - 11.4	16.7 - 19.7	26.5 - 30.3	45.4 - 53.0	114 - 125
	Low Carbon Steel	BAR	11 - 12	5 - 6	5 - 7	4 - 6	4 - 5	2 - 3
	1010, 1020, 1025, 1522, 1144, etc.	LPM	9.1 - 9.5	9.1 - 9.8	14.0 - 15.9	22.7 - 26.5	41.6 - 45.4	98 - 114
	Medium Carbon Steel	BAR	11	5 - 6	5 - 6	4 - 5	3 - 5	2 - 3
	1030, 1040, 1050, 1527, 1140, 1151, etc.	LPM	8.7 - 9.1	8.7 - 9.8	13.6 - 15.5	18.9 - 22.7	37.9 - 45.4	98 - 114
	Alloy Steel	BAR	11	5 - 6	5	3 - 5	3 - 4	2
	4140, 5140, 8640, etc.	LPM	8.7 - 9.1	13.2 - 14.8	8.3 - 9.1	18.9 - 22.7	34.1 - 37.9	87 - 98
	High Strength Alloy	BAR	10 - 11	4 - 5	3 - 4	2	2	2
	4340, 4330V, 300M, etc.	LPM	8.7 - 9.1	7.9 - 8.3	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87
	Structural Steel	BAR	11	5 - 6	5 - 6	3 - 4	3	2
	A36, A285, A516, etc.	LPM	8.7 - 9.1	9.1 - 9.8	13.2 - 14.8	18.9 - 22.7	34.1 - 37.9	87 - 98
	Tool Steel	BAR	4	10 - 11	3	2	2	1 - 2
	H-13, H-21, A-4, 0-2, S-3, etc.	LPM	7.9 - 8.3	8.7 - 9.1	11.0 - 11.7	15.1 - 18.9	26.5 - 30.3	79 - 87
S	**High Temp Alloy**	BAR	10 - 11	4 - 5	3 - 4	2	2	2
	Hastelloy B, Inconel 600, etc.	LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.1	15.1 - 18.9	26.5 - 30.3	87 - 98
M	**Stainless Steel 400 Series**	BAR	11.4 - 11.7	4.8 - 5.8	4.5 - 5.2	2.7 - 3.8	2.7 - 3.4	1.7 - 2
	416, 420, 303, etc.	LPM	9.1 - 9.5	8.7 - 9.8	13.2 - 14	18.9 - 22.7	34.1 - 37.9	87 - 98
K	**Nodular, Grey, Ductile Cast Iron**	BAR	10.7 - 11.0	4.1 - 4.5	3.4 - 4.1	2 - 2.7	2 - 2.4	1.7 - 2
		LPM	8.7 - 9.1	8.3 - 8.7	11.7 - 12.5	15.1 - 18.9	30.3 - 34.1	87 - 98
N	**Aluminum**	BAR	13.1 - 14.5	9.6 - 12.4	10.3 - 15.8	7.9 - 11	6.2 - 8.6	2.7 - 3.4
		LPM	9.8 - 10.2	12.5 - 14	20.1 - 23.1	30.3 - 34.1	53 - 60.6	114 - 125

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432 Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Recommended Drilling Data | Metric (mm)

Carbide

ISO	Material	Hardness (BHN)	Grade	Speed (M/min)			Feed Rate (mm/rev) by Tube Size and T-A® Insert Series				
				TiN	TiAlN	AM200®	Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3
P	**Free Machining Steel** 1118, 1215, 12L14, etc.	100 - 150	K35, P40	98	128	146	0.020	0.30	0.38	0.46	0.53
		150 - 200	K35, P40	85	110	126	0.18	0.28	0.36	0.41	0.48
		200 - 250	K35, P40	79	104	119	0.15	0.25	0.33	0.38	0.43
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	K35, P40	91	119	137	0.20 ❖	0.25	0.33	0.43	0.48
		125 - 175	K35, P40	79	104	119	0.18 ❖	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	73	94	108	0.15 ❖	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.13 ❖	0.23	0.30	0.38	0.43
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	K35, P40	79	104	119	0.18	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	73	94	108	0.15	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
		275 - 325	K35, P40	55	70	81	0.13	0.20	0.28	0.36	0.41
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	K35, P40	76	99	114	0.18	0.25	0.33	0.41	0.46
		175 - 225	K35, P40	70	91	105	0.15	0.23	0.30	0.38	0.43
		225 - 275	K35, P40	64	82	94	0.15	0.23	0.30	0.38	0.43
		275 - 325	K35, P40	61	76	87	0.13	0.20	0.28	0.36	0.41
		325 - 375	K35, P40	52	67	78	0.10	0.18	0.25	0.33	0.38
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	K35, P40	49	61	73	0.15 ❖	0.23	0.25	0.30	0.38
		300 - 350	K35, P40	43	55	62	0.13 ❖	0.20	0.23	0.28	0.36
		350 - 400	K35, P40	37	49	56	0.10 ❖	0.18	0.20	0.25	0.30
	Structural Steel A36, A285, A516, etc.	100 - 150	K35, P40	73	94	108	0.20 ❖	0.28	0.36	0.41	0.46
		150 - 250	K35, P40	61	76	87	0.15 ❖	0.25	0.30	0.36	0.41
		250 - 350	K35, P40	55	70	81	0.13 ❖	0.23	0.28	0.30	0.36
	Tool Steel H-13, H-21, A-4, 0-2, S-3, etc.	150 - 200	K35, P40	49	67	78	0.10 ❖	0.18	0.23	0.28	0.33
		200 - 250	K35, P40	37	52	59	0.10 ❖	0.18	0.23	0.28	0.33
S	**High Temp Alloy** Hastelloy B, Inconel 600, etc.	140 - 220	K20	24	32	36	0.10 ❖	0.18	0.23	0.28	0.33
		220 - 310	K20	18	26	29	0.10 ❖	0.15	0.20	0.25	0.30
M	**Stainless Steel 400 Series** 416, 420, 303, etc.	185 - 275	K20	49	64	73	0.18 ❖	0.23	0.30	0.36	0.41
		275 - 350	K20	37	49	46	0.15 ❖	0.20	0.28	0.30	0.36
K	**Nodular, Grey, Ductile Cast Iron**	120 - 150	K20, K10	98	140	152	0.20	0.30	0.38	0.48	0.58
		150 - 200	K20, K10	82	122	146	0.18	0.28	0.33	0.43	0.53
		200 - 220	K20, K10	73	110	131	0.15	0.23	0.30	0.38	0.46
		220 - 260	K20, K10	64	94	113	0.13	0.20	0.28	0.33	0.38
		260 - 320	K20, K10	55	82	102	0.13	0.18	0.25	0.28	0.33
N	**Aluminum**	30	K20	366	457	–	0.25	0.38	0.46	0.51	0.56
		180	K20	244	305	–	0.23	0.33	0.41	0.46	0.51

Formulas

1. **RPM = (318.47 • M/min) / DIA**

where:

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

2. **M/min = RPM • 0.003 • DIA**

where:

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

3. **IPM = RPM • mm/rev**

where:

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

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IMPORTANT: The speeds and feeds listed above are a general starting point for all applications. Refer to the Coolant Recommendation charts for coolant requirements to run at the recommended speeds and feeds. Factory technical assistance is also available through our Application Engineering Team. Due to potential chip formation issues, contact our Application Engineering Team for assistance machining materials marked with a ❖.

Coolant Recommendations | Metric (mm)

Carbide

ISO	Material	Pressure / Flow Rate	Tube No. 4 - 5 T-A Series Y - Z	Tube No. 6 - 8 T-A Series 0	Tube No. 10 T-A Series 1	Tube No. 12 - 16 T-A Series 2	Tube No. 20 - 24 T-A Series 3
P	**Free Machining Steel**	BAR	20	16	17	15	12
	1118, 1215, 12L14, etc.	LPM	12.2	16.3	25.3	41.5	71.9
	Low Carbon Steel	BAR	11.4	13.3	20.6	36.5	62
	1010, 1020, 1025, 1522, 1144, etc.	LPM	17	10	10	10	8
	Medium Carbon Steel	BAR	17	9	10	8	7
	1030, 1040, 1050, 1527, 1140, 1151, etc.	LPM	11.1	12.3	19.3	30	55.8
	Alloy Steel	BAR	10.4	9.1	12.6	18.8	33.6
	4140, 5140, 8640, etc.	LPM	16	9	8	7	5
	High Strength Alloy	BAR	15	5	5	3	3
	4340, 4330V, 300M, etc.	LPM	10.4	9.1	13.6	19.7	36.5
	Structural Steel	BAR	16	9	8	7	5
	A36, A285, A516, etc.	LPM	10.8	12	17.5	27.8	47.1
	Tool Steel	BAR	15	5	5	3	3
	H-13, H-21, A-4, 0-2, S-3, etc.	LPM	10.4	9.1	13.6	19.7	36.5
S	**High Temp Alloy**	BAR	17	11.4	12.4	11	9
	Hastelloy B, Inconel 600, etc.	LPM	11.1	13.5	21.9	35.4	62
M	**Stainless Steel 400 Series**	BAR	22.7	16.5	17.9	17.2	13.1
	416, 420, 303, etc.	LPM	13	16.3	26.3	44.2	75
K	**Nodular, Grey, Ductile Cast Iron**	BAR	15.5	7.2	6.2	6.2	5.5
		LPM	10.7	10.8	15.4	26.5	48.7
N	**Aluminum**	BAR	24.1	22	21.7	19.6	13.8
		LPM	13.4	18.8	29	47.2	77

IMPORTANT: The coolant pressure and flow rate recommendations above represent a good approximation to obtain optimum tool life and chip evacuation at Allied's recommended speeds and feeds. If lower coolant capabilities exist in a drilling application, the AccuPort 432 Port Contour Cutter will still function at reduced penetration rates. Contact our Application Engineering Department for a more specific recommendation of coolant requirements and/or speeds and feeds.

Notes

Notes

Guaranteed Test / Demo Application Form

Distributor PO #	

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

Distributor Information

Company Name: _____

Contact: _____

Account Number: _____

Phone: _____

Email: _____

End User Information

Company Name: _____

Contact: _____

Industry: _____

Phone: _____

Email: _____

Current Process

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

_____

_____

Test Objective

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

_____

_____

Application Information

Hole Diameter: _____ in/mm

Tolerance: _____

Material: _____
(4150 / A36 / Cast Iron / etc.)

Pre-existing Diameter: _____ in/mm

Depth of Cut: _____ in/mm

Hardness: _____
(BHN / Rc)

Required Finish: _____ RMS

State: _____
(Casting / Hot rolled / Forging)

Machine Information

Machine Type: _____
(Lathe / Screw machine / Machine center / etc.)

Builder: _____
(Haas, Mori Seiki, etc.)

Model #: _____

Shank Required: _____
(CAT50 / Morse taper, etc.)

Power: _____ HP/KW

Rigidity:
- ☐ Excellent
- ☐ Good
- ☐ Poor

Orientation:
- ☐ Vertical
- ☐ Horizontal

Tool Rotating:
- ☐ Yes
- ☐ No

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

ALLIED MACHINE & ENGINEERING

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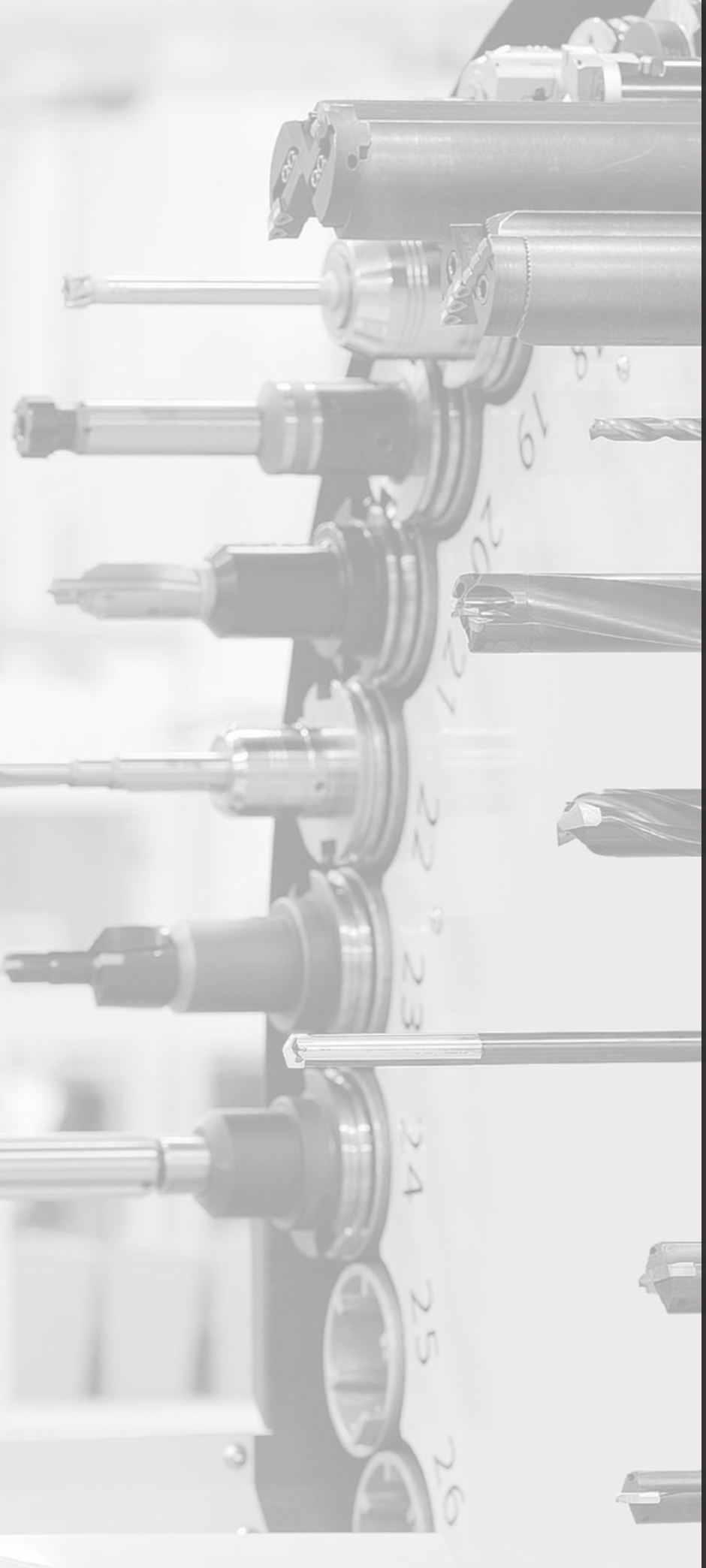

ALLIED MACHINE & ENGINEERING

Warranty Information

Allied Machine & Engineering warrants to original equipment manufacturers, distributors, industrial and commercial users of its products that each new product manufactured or supplied by Allied Machine shall be free from defects in material and workmanship.

Allied Machine's obligation under this warranty is limited to furnishing without additional charge a replacement or, at its option repairing or issuing credit for any product which shall within one year from the date of sale be returned freight prepaid to the plant designated by an Allied Machine representative and which upon inspection is determined by Allied Machine to be defective in materials or workmanship.

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

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 on any claim of any kind, whether in contract, tort or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of any product sold hereunder, in excess of the cost of replacement or repair as provided herein.

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