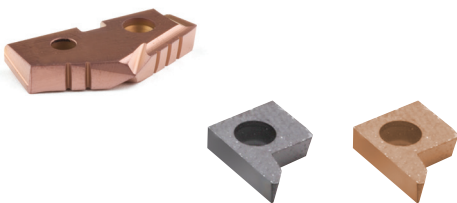




# AccuPort 432<sup>®</sup>



Durable and precise, AccuPort 432<sup>®</sup> holders provide a strong and rigid platform for the drilling of hydraulic ports. The holders' precision ground insert location surfaces ensure total repeatability and simple, uncomplicated changing of the replaceable inserts.

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## Features and Benefits

- Single operation hydraulic port cutting system
- No pre-drilling required
- Replaceable inserts eliminate regrinding and resetting
- Available in all hydraulic port standards
- Reduced cost per hole



## Advanced solutions – outstanding results

As designers and manufacturing engineers push the limits of production technology to improve productivity and performance, AMEC<sup>®</sup> has continued to innovate and develop new solutions, including the unique AccuPort 432<sup>®</sup> hydraulic port cutter system.

Every product in the AccuPort 432<sup>®</sup> 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 re-grinding and enables absolute repeatability, an excellent surface finish and a reduced cost per port to be achieved. In use, AccuPort drills, forms and precision finishes the hydraulic port in one pass, replacing 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 and wherever 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.

Whatever your drilling need, AMEC<sup>®</sup> delivers high performance tooling at the cutting edge.

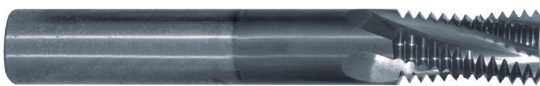


### AccuPort 432<sup>®</sup>

This innovative hydraulic port cutter uses high performance T-A<sup>®</sup> insert technology to deliver outstanding results, accuracy and productivity without the need for pilot drilling, which significantly reduces operation time and costs

#### Features and Benefits

- Drills hydraulic ports in a single pass
- No pre-drilling required
- Replaceable inserts eliminate regrinding and resetting
- Reduced cost per hole
- AccuPort kits produce finished threaded ports

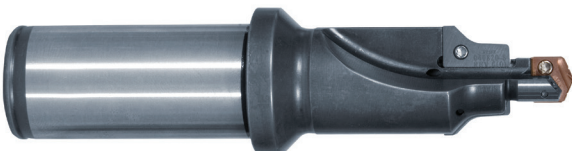


### AccuThread 856<sup>®</sup>

AMEC's extensive threadmill range is manufactured with thicker cores and helical flutes as standard, which provides significantly increased strength and rigidity. In addition to the specific forms used in port cutting, a full threadmill programme is also available.

#### Features and Benefits

- AM210<sup>®</sup> coating provides a 25-50% increase in tool life over competitor product
- AccuPort specific threadmills stocked
- Standard cutting length allows for multiple applications without the need for special tooling



### Special Port Contour Cutters

AMEC's well established and highly developed special tools programme has helped solve thousands of application problems worldwide. The design and manufacture of special port contour cutters, as part of this capability, is a key part of our operation and one that sets AMEC<sup>®</sup> apart from other suppliers. For AMEC<sup>®</sup>, special is normal.

#### Features and Benefits

- Custom designed for specific applications and requirements
- Complete control over all elements of the cutting tool design
- Eliminates expensive additional cutting operations
- Reduced cost per hole



## Choosing the right system

Every product in the AccuPort 432<sup>®</sup> programme is designed to deliver maximum performance in a diverse range of hydraulic port cutting applications and demanding manufacturing environments to ensure they deliver the best possible range of benefits in terms of productivity, cost per hole and tool life.

All hydraulic port standards are covered within the range, which also incorporates the AccuThread 856<sup>®</sup> 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, AMEC<sup>®</sup> provides a dedicated 'special tooling' solution using our extensive tool design and manufacturing experience to meet precise specifications.

## Typical components & industry sectors

### Agricultural

- Pumps
- Manifolds
- Cylinders & Rams
- Gear pumps

### Automotive

- Motor valves
- Relief valves
- Brake cylinders
- Power steering pumps

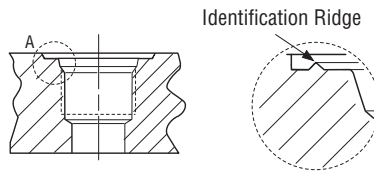
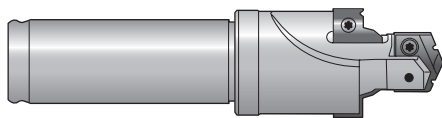
### Aerospace

- Pumps
- Landing gear
- Brake cylinders
- Manifolds

### Marine

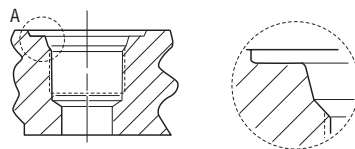
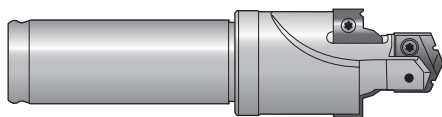
- Pumps
- Cylinders & Rams
- Motors
- Manifolds

## Hydraulic Port Standards



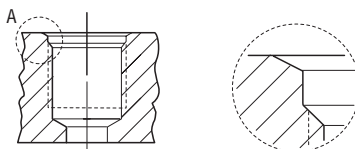
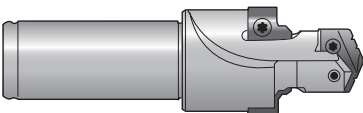
### METRIC

ISO 6149-1: 2006  
SAE J-2244-1  
(with and without ID Ridge)  
See page 208 - 209.



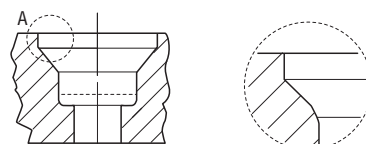
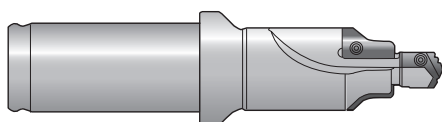
### IMPERIAL

SAE J-1926-1  
ISO 11926-1  
MS-16142  
See pages 210 - 213.



### IMPERIAL

SAE AS5202  
(Formerly UNJF-30  
Milspec MS-33649)  
UNF AND10050 (Using  
Alternate Tap Drill Diameter)  
See page 214 - 215.



### SPECIALS

Available to suit any port  
standard / dimension  
(Example shown)



# Insert Grades, Geometries and Coatings

## Grades



### HSS Super Cobalt

Particularly suited for good to rigid machining applications, primarily used for drilling exotic and high alloy materials, or general use when the m/min surface speed needs to be increased. For use in material hardness up to 350 BHN 121kg.



### P40 Carbide

Excellent choice for drilling free machining steel, low/ medium carbon steels, alloy steels, high strength steels, tool steels, hardened steels, and certain stainless steels. Please refer to technical section.



### K10 Carbide

AMEC's K10 insert is specifically designed for drilling grey/white cast irons. The special geometry offers substantial increase in penetration rates and provides exceptional edge strength and tool life.



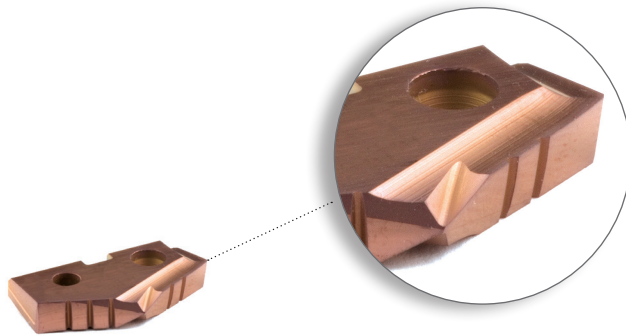
### K35 Carbide

Excellent choice for drilling free machining steel, low/ medium carbon steels, alloy steels, high strength steels, tool steels, hardened steels, and certain stainless steels. Please refer to technical section.

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

For further information on Material, Hardnesses and Cutting Data, please refer to the Technical Section from page 218.

## Geometries



### GEN2 T-A® Geometries

GEN2 T-A® geometries offer substantial increases in penetration rates and tool life. As well as improved centring, smoother break-out on through holes, increased drill stability, improved chip formation, and lower drill forces.

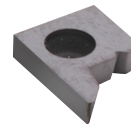
Particularly suited for good to rigid machining applications, primarily used for drilling exotic and high alloy materials, or general use when the m/min surface speed needs to be increased.

## Insert Coatings



### AM200®

- First choice for increased heat resistance over TiN, TiCN and TiAIN with improved wear capabilities.
- Allows for improved tool life and higher penetration rates
- Over 20% increased tool life over TiAIN coating
- Colour Copper / Bronze

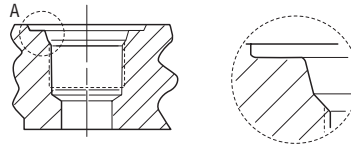


### TiAIN

- Excellent choice for wear resistance over high surface speeds
- Excellent oxidation resistance
- Maximum working temperature 800°C
- Hardness HV 3000
- Colour Violet/Grey



# AccuPort 432<sup>®</sup> & AccuThread 856<sup>®</sup> Kits



Producing fully finished threaded hydraulic ports has never been easier with the AccuPort 432<sup>®</sup> & AccuThread 856<sup>®</sup> Finishing Kit, which combines the AccuPort 432<sup>®</sup> port contour cutter with a dedicated AccuThread 856<sup>®</sup> threadmill in a single kit.

## Ferrous Material Kit

Port Standards: SAE J-1926-1/ISO 11926-1, and MS-16142

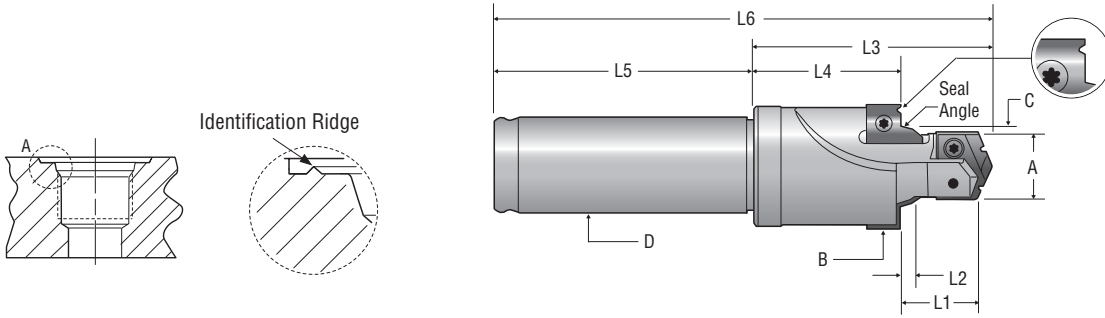
Tube Dash Number	Port Thread Size	Port Contour Cutter Number	QTY	T-A <sup>®</sup> Drill Item Number		Port Form Insert Item Numbers		AccuThread 856 <sup>®</sup> Item Numbers		Kit Item Number
				Super Cobalt (AM200 <sup>®</sup> )	QTY	C5 Carbide (TiAlN)	QTY	Solid Carbide (AM210 <sup>®</sup> )	QTY	
- 4	7/16/20 UNF-2B	J1926-04Y-16FM	1	45YH-.386	2	J1926-02-C5A	2	TMAK0438-20M	1	ATK-K-04-M
- 5	1/2-20 UNF-2B	J1926-05Z-16FM	1	45ZH-11.5	2	J1926-02-C5A	2	TMAK0438-20M	1	ATK-K-05-M
- 6	9/16-18 UNF-2B	J1926-06O-20FM	1	45OH-13	2	J1926-02-C5A	2	TMAK0563-18M	1	ATK-K-06-M
- 8	3/4-16 UNF-2B	J1926-08O-20FM	1	45OH-0022	2	J1926-07-C5A	2	TMAK0750-16M	1	ATK-K-08-M
- 10	7/8-14 UNF-2B	J1926-10I-25FM	1	45IH-20.5	2	J1926-07-C5A	2	TMAK0875-14M	1	ATK-K-10-M
- 12	1 1/16-12 UN-2B	J1926-12Z-32FM	1	452H-25	2	J1926-08-C5A	2	TMAK1063-12M	1	ATK-K-12-M
- 14	1 3/16-12 UN-2B	J1926-14Z-32FM	1	452H-28	2	J1926-08-C5A	2	TMAK1063-12M	1	ATK-K-14-M
- 16	1 5/16-12 UN-2B	J1926-16Z-32FM	1	452H-31	2	J1926-08-C5A	2	TMAK1063-12M	1	ATK-K-16-M
- 20	1 5/8-12 UN-2B	J1926-20Z-32FM	1	453H-39	1	J1926-10-C5A	2	TMAK1063-12M	1	ATK-K-20-M
- 24	1 7/8-12 UN-2B	J1926-24Z-150F	1	453H-45.5	1	J1926-10-C5A	2	TMAK1063-12M	1	ATK-K-24-M
- 32	2 1/2-12 UN-2B	J1926-32Z-150F	1	454H-61.5	1	J1926-12-C5A	2	TMAK1063-12M	1	ATK-K-32-M

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

For further information on Material, Hardness and Cutting Data, please refer to the Technical Section from page 218.



# AccuPort 432<sup>®</sup>



## Port Standards: ISO 6149-1:2006, SAE J-2244/1

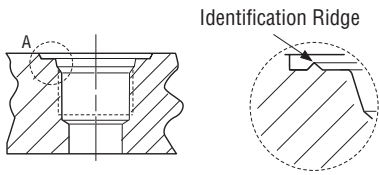
Tube Dash No.	Port Thread Size	Port Contour Cutter Number	Stk.	A		L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia. mm	Minor Dia Length mm	Spotface Dia. W/ridge mm	Seal Angle		Seal Angle Dia. mm	Seal Angle Length mm	Reference Length mm	Spot face to Shoulder Length mm	Shank Dia. mm	Shank Length mm	OAL mm
- 4	M12 x 1.5	I6149-04RY-16FM	●	10.5	14.1	24.0	15°	13.8	2.6	38.8	22.2	16.0	41.9	80.7	
- 5	M14 x 1.5	I6149-05RZ-16FM	●	12.5	14.1	26.0	15°	15.8	2.6	38.8	21.8	16.0	41.9	80.7	
- 6	M16 x 1.5	I6149-06R0-20FM	●	14.5	15.6	28.0	15°	17.8	2.6	47.2	28.3	20.0	41.9	89.1	
- 8	M18 x 1.5	I6149-08R0-20FM	●	16.5	17.1	30.0	15°	19.8	2.6	50.3	29.6	20.0	41.9	92.3	
- 10	M22 x 1.5	I6149-10R1-25FM	●	20.5	18.2	34.0	15°	23.8	2.6	54.4	31.6	25.0	53.1	107.4	
- 12	M27 x 2.0	I6149-12R2-32FM	●	25.0	22.2	40.0	15°	29.4	3.3	67.1	39.4	32.0	57.9	125.0	
- 14	M30 x 2.0	I6149-14R2-32FM	●	28.0	22.2	43.0	15°	32.4	3.3	67.1	38.8	32.0	57.9	125.0	
- 16	M33 x 2.0	I6149-16R2-32FM	●	31.0	22.2	49.0	15°	35.4	3.3	67.1	38.1	32.0	57.9	125.0	
- 20	M42 x 2.0	I6149-20R3-40FM	●	40.0	22.7	60.0	15°	44.4	3.3	77.8	46.4	40.0	70.1	147.9	
- 24	M48 x 2.0	I6149-24R3-40FM	●	46.0	25.2	66.1	15°	50.4	3.3	77.8	42.6	40.0	70.1	147.9	
- 32	M60 x 2.0	I6149-32R4-40FM	●	58.0	27.7	76.0	15°	62.4	3.3	96.8	56.6	40.0	70.1	166.9	

### Stk. - Stock Availability.

- Stock Item.
- Stocked in limited quantities, advanced planning is recommended.
- ◆ Non-stock standard. Normal delivery 15 to 20 days.

Any non-standard size available.





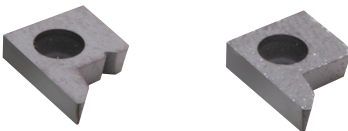
## Port Standards: ISO 6149-1:2006, SAE J-2244/1

Tube Dash No.	Port Thread Size	Port Contour Cutter Number
- 4	M12 x 1.5	I6149-04RY-16FM
- 5	M14 x 1.5	I6149-05RZ-16FM
- 6	M16 x 1.5	I6149-06R0-20FM
- 8	M18 x 1.5	I6149-08R0-20FM
- 10	M22 x 1.5	I6149-10R1-25FM
- 12	M27 x 2.0	I6149-12R2-32FM
- 14	M30 x 2.0	I6149-14R2-32FM
- 16	M33 x 2.0	I6149-16R2-32FM
- 20	M42 x 2.0	I6149-20R3-40FM
- 24	M48 x 2.0	I6149-24R3-40FM
- 32	M60 x 2.0	I6149-32R4-40FM

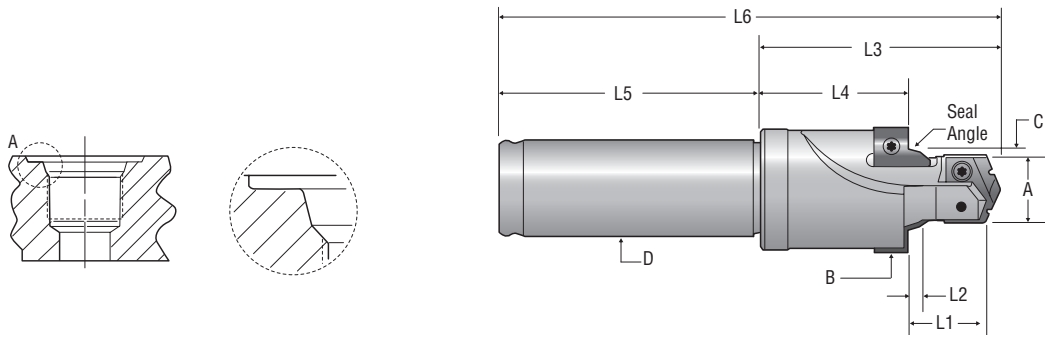
T-A <sup>®</sup> Drill Item Numbers			
Super Cobalt GENZ T-A (AM200 <sup>®</sup> )	Carbide GENZ T-A (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
45YH-10.5	4C1YH-10.5	724-IP7	8IP-7
45ZH-12.5	4C1ZH-12.5	7247-IP7	8IP-7
450H-14.5	4C10H-14.5	72567-IP8	8IP-8
450H-16.5	4C10H-16.5	72567-IP8	8IP-8
451H-20.5	4C11H-20.5	7375-IP9	8IP-9
452H-25	4C12H-25	7495-IP15	8IP-15
452H-28	4C12H-28	7495-IP15	8IP-15
452H-31	4C12H-31	7495-IP15	8IP-15
453H-40	1C53A-40	7514-IP20	8IP-20
453H-46	1C53A-46	7514-IP20	8IP-20
454H-58	N/A	7514-IP20	8IP-20

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

For further information on Material, Hardnesses and Cutting Data, please refer to the Technical Section from page 218.



Port Form Insert Item Numbers						
Tube Dash No.	P40 Carbide (TiAlN) With Identification Ridge	K10 Carbide (AM200 <sup>®</sup> ) With Identification Ridge	P40 Carbide (TiAlN) Without Identification Ridge	K10 Carbide (AM200 <sup>®</sup> ) Without Identification Ridge	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
- 4	I6149-04R-C5A	I6149-04R-C3H	I6149-04-C5A	I6149-04-C3H	72556-IP8	8IP-8
- 5	I6149-04R-C5A	I6149-04R-C3H	I6149-04-C5A	I6149-04-C3H	72556-IP8	8IP-8
- 6	I6149-06R-C5A	I6149-06R-C3H	I6149-06-C5A	I6149-06-C3H	72556-IP8	8IP-8
- 8	I6149-06R-C5A	I6149-06R-C3H	I6149-06-C5A	I6149-06-C3H	72556-IP8	8IP-8
- 10	I6149-04R-C5A	I6149-04R-C3H	I6149-04-C5A	I6149-04-C3H	72556-IP8	8IP-8
- 12	I6149-12R-C5A	I6149-12R-C3H	I6149-12-C5A	I6149-12-C3H	72556-IP8	8IP-8
- 14	I6149-14R-C5A	I6149-14R-C3H	I6149-14-C5A	I6149-14-C3H	72556-IP8	8IP-8
- 16	I6149-16R-C5A	I6149-16R-C3H	I6149-16-C5A	I6149-16-C3H	7375-IP9	8IP-9
- 20	I6149-20R-C5A	I6149-20R-C3H	I6149-20-C5A	I6149-20-C3H	7375-IP9	8IP-9
- 24	I6149-24R-C5A	I6149-24R-C3H	I6149-24-C5A	I6149-24-C3H	7375-IP9	8IP-9
- 32	I6149-32R-C5A	I6149-32R-C3H	I6149-32-C5A	I6149-32-C3H	7375-IP9	8IP-9



## Port Standards: SAE J-1926-1 / ISO 11926-1, and MS-16142

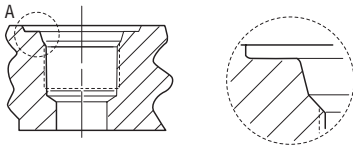
Tube Dash No.	Port Thread Size	Port Contour Cutter Number	Stk.	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia. mm	Minor Dia Length mm	Spotface Dia. W/ridge mm		Seal Angle Dia. mm	Seal Angle Length mm	Reference Length mm	Spot face to Shoulder Length mm	Shank Dia. mm	Shank Length mm	OAL mm
- 4	7/16-20 UNF-2B	J1926-04Y-16FM	●	9.8	14.0	21.4	12°	12.5	2.7	38.8	22.8	16	41.9	80.7
- 5	1/2-20 UNF-2B	J1926-05Z-16FM	●	11.5	14.0	23.0	12°	14.1	2.7	38.8	22.4	16	41.9	80.7
- 6	9/16-18 UNF-2B	J1926-060-20FM	●	13.0	15.5	24.6	12°	15.7	2.7	47.2	29.0	20	41.9	89.1
- 8	3/4-16 UNF-2B	J1926-080-20FM	●	17.5	17.5	30.7	15°	20.7	2.7	50.3	29.2	20	41.9	92.2
- 10	7/8-14 UNF-2B	J1926-101-25FM	●	20.5	20.0	34.0	15°	24.0	2.7	54.4	30.1	25	53.1	107.5
- 12	1 1/16-12 UN-2B	J1926-122-32FM	●	25.0	23.0	42.1	15°	29.2	3.5	67.1	38.9	32	57.9	125.0
- 14	1 3/16-12 UN-2B	J1926-142-32FM	●	28.0	23.0	45.3	15°	32.4	3.5	67.1	38.2	32	57.9	125.0
- 16	1 5/16-12 UN-2B	J1926-162-32FM	●	31.0	23.0	48.5	15°	35.6	3.5	67.1	37.5	32	57.9	125.0
- 20	1 5/8-12 UN-2B	J1926-203-40FM	●	39.0	23.0	58.7	15°	43.6	3.5	77.8	46.6	40.0	70.1	147.9
- 24	1 7/8-12 UN-2B	J1926-243-40FM	●	45.5	23.0	65.0	15°	49.9	3.5	77.8	45.2	40.0	70.1	147.9
- 24	1 7/8-12 UN-2B	J1926-243-150F	●	45.5	23.0	65.0	15°	49.9	3.5	77.8	45.2	38.1	68.3	146.1
- 32	2 1/2-12 UN-2B	J1926-324-40FM	●	61.5	23.0	88.0	15°	65.8	3.5	96.8	60.8	40.0	70.1	166.9
- 32	2 1/2-12 UN-2B	J1926-324-150F	●	61.5	23.0	88.0	15°	65.8	3.5	96.8	60.8	38.1	68.3	165.1

### Stk. - Stock Availability.

- Stock Item.
- Stocked in limited quantities, advanced planning is recommended.
- ◆ Non-stock standard. Normal delivery 15 to 20 days.







## Port Standards: SAE J-1926-1 / ISO 11926-1 and MS-16142

Tube Dash No.	Port Thread Size	Port Contour Cutter Number
- 4	7/16-20 UNF-2B	J1926-04Y-16FM
- 5	1/2-20 UNF-2B	J1926-05Z-16FM
- 6	9/16-18 UNF-2B	J1926-06O-20FM
- 8	3/4-16 UNF-2B	J1926-08O-20FM
- 10	7/8-14 UNF-2B	J1926-10I-25FM
- 12	1 1/16-12 UN-2B	J1926-12Z-32FM
- 14	1 3/16-12 UN-2B	J1926-14Z-32FM
- 16	1 5/16-12 UN-2B	J1926-16Z-32FM
- 20	1 5/8-12 UN-2B	J1926-20J-40FM
- 24	1 7/8-12 UN-2B	J1926-24J-40FM
- 32	2 1/2-12 UN-2B	J1926-32A-150F

T-A <sup>®</sup> Drill Item Numbers			
Super Cobalt GENZ T-A (AM200 <sup>®</sup> )	Carbide GENZ T-A (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
45YH-.386	4C1YH-.386	724-IP7	8IP-7
45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7
450H-13	4C10H-13	72556-IP8	8IP-8
450H-0022	4C10H-0022	72567-IP8	8IP-8
451H-20.5	4C11H-20.5	7375-IP9	8IP-9
452H-25	4C12H-25	7495-IP15	8IP-15
452H-28	4C12H-28	7495-IP15	8IP-15
452H-31	4C12H-31	7495-IP15	8IP-15
453H-39	1C53A-39	7514-IP20	8IP-20
453H-45.5	1C53A-45.5	7514-IP20	8IP-20
454H-61.5	N/A	7514-IP20	8IP-20

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

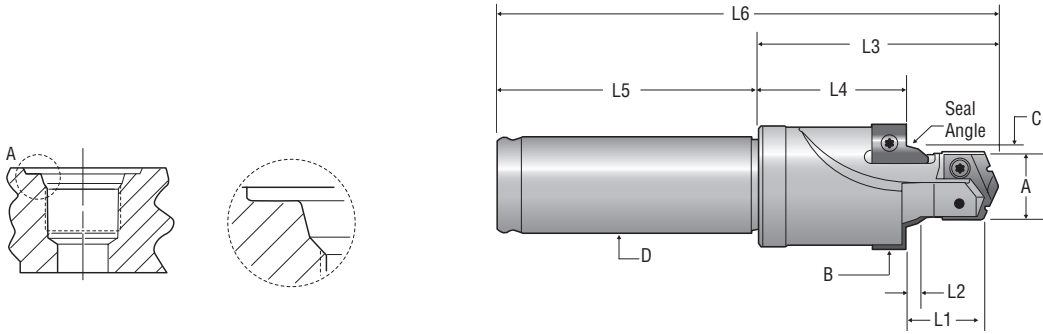
For further information on Material, Hardnesses and Cutting Data, please refer to the Technical Section from page 218.



Port Form Insert Item Numbers					
Tube Dash No.	P40 Carbide (TiAlN)	P40 Carbide (TiN)	K10 Carbide (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
- 4	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 5	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 6	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 8	J1926-07-C5A	J1926-07-C5T	J1926-07-C3H	72556-IP8	8IP-8
- 10	J1926-07-C5A	J1926-07-C5T	J1926-07-C3H	72556-IP8	8IP-8
- 12	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 14	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 16	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 20	J1926-10-C5A	J1926-10-C5T	J1926-10-C3H	7375-IP9	8IP-9
- 24	J1926-10-C5A	J1926-10-C5T	J1926-10-C3H	7375-IP9	8IP-9
- 32	J1926-12-C5A	J1926-12-C5T	J1926-12-C3H	7375-IP9	8IP-9



# AccuPort 432<sup>®</sup>



## Port Standards: SAE J-1926-1 / ISO 11926-1, and MS-16142

With extended minor diameter lengths (see column L1)

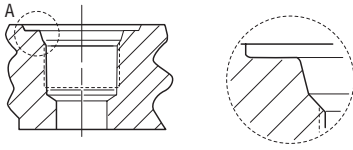
Tube Dash No.	Port Thread Size	Port Contour Cutter Number	Stk.	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Minor Dia. mm	Minor Dia Length mm	Spotface Dia. W/ridge mm		Seal Angle Dia. mm	Seal Angle Length mm	Reference Length mm	Spot face to Shoulder Length mm	Shank Dia. mm	Shank Length mm	OAL mm
- 4	7/16-20 UNF-2B	X1926-04Y-063F	○	9.8	20.3	21.4	12°	12.5	2.7	45.1	22.8	15.88	47.6	92.8
- 5	1/2-20 UNF-2B	X1926-05Z-063F	○	11.5	20.3	23.0	12°	14.1	2.7	45.1	22.4	15.88	47.6	92.8
- 6	9/16-18 UNF-2B	X1926-060-075F	○	13.0	21.8	24.6	12°	15.7	2.7	53.5	29.0	19.05	50.0	103.5
- 8	3/4-16 UNF-2B	X1926-080-075F	○	17.5	23.8	30.7	15°	20.7	2.7	56.7	29.2	19.05	50.0	106.7
- 10	7/8-14 UNF-2B	X1926-101-100F	○	20.5	26.3	34.0	15°	24.0	2.7	60.7	30.1	25.40	57.9	118.6
- 12	1 1/16-12 UN-2B	X1926-122-125F	○	25.0	29.3	42.1	15°	29.2	3.5	73.4	38.9	31.75	57.9	131.3
- 14	1 3/16-12 UN-2B	X1926-142-125F	○	28.0	29.3	45.3	15°	32.4	3.5	73.4	38.2	31.75	57.9	131.3
- 16	1 5/16-12 UN-2B	X1926-162-125F	○	31.2	29.3	48.5	15°	35.6	3.5	73.4	37.5	31.75	57.9	131.3
- 20	1 5/8-12 UN-2B	X1926-203-150F	○	39.0	29.3	58.7	15°	43.6	3.5	84.1	46.6	38.10	68.3	152.4
- 24	1 7/8-12 UN-2B	X1926-243-150F	○	45.5	29.3	65.0	15°	49.9	3.5	84.1	45.2	38.10	68.3	152.4
- 32	2 1/2-12 UN-2B	X1926-324-150F	○	61.5	29.3	88.0	15°	65.8	3.5	103.2	60.8	38.10	68.3	171.4

### Stk. - Stock Availability.

- Stock Item.
- Stocked in limited quantities, advanced planning is recommended.
- ◆ Non-stock standard. Normal delivery 15 to 20 days.

Any non-standard size available.





## Port Standards: SAE J-1926-1 / ISO 11926-1 and MS-16142

Tube Dash No.	Port Thread Size	Port Contour Cutter Number
- 4	7/16-20 UNF-2B	X1926-04Y-063F
- 5	1/2-20 UNF-2B	X1926-05Z-063F
- 6	9/16-18 UNF-2B	X1926-060-075F
- 8	3/4-16 UNF-2B	X1926-080-075F
- 10	7/8-14 UNF-2B	X1926-101-100F
- 12	1 1/16-12 UN-2B	X1926-122-125F
- 14	1 3/16-12 UN-2B	X1926-142-125F
- 16	1 5/16-12 UN-2B	X1926-162-125F
- 20	1 5/8-12 UN-2B	X1926-203-150F
- 24	1 7/8-12 UN-2B	X1926-243-150F
- 32	2 1/2-12 UN-2B	X1926-324-150F

T-A <sup>®</sup> Drill Item Numbers			
Super Cobalt GEN2 T-A (AM200 <sup>®</sup> )	Carbide GEN2 T-A (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
45YH-.386	4C1YH-.386	724-IP7	8IP-7
45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7
450H-13	4C10H-13	72556-IP8	8IP-8
450H-0022	4C10H-0022	72567-IP8	8IP-8
451H-20.5	4C11H-20.5	7375-IP9	8IP-9
452H-25	4C12H-25	7495-IP15	8IP-15
452H-28	4C12H-28	7495-IP15	8IP-15
452H-31	4C12H-31	7495-IP15	8IP-15
453H-39	1C53A-39	7514-IP20	8IP-20
453H-45.5	1C53A-45.5	7514-IP20	8IP-20
454H-61.5	N/A	7514-IP20	8IP-20

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

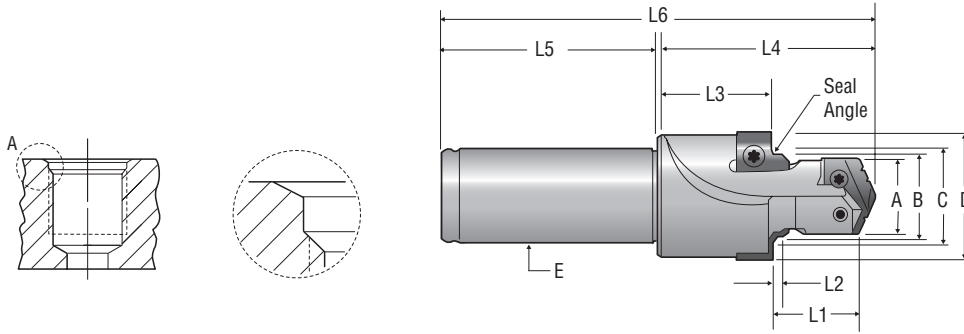
For further information on Material, Hardness and Cutting Data, please refer to the Technical Section from page 218.



Port Form Insert Item Numbers					
Tube Dash No.	P40 Carbide (TiAlN)	P40 Carbide (TiN)	K10 Carbide (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
- 4	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 5	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 6	J1926-02-C5A	J1926-02-C5T	J1926-02-C3H	72556-IP8	8IP-8
- 8	J1926-07-C5A	J1926-07-C5T	J1926-07-C3H	72556-IP8	8IP-8
- 10	J1926-07-C5A	J1926-07-C5T	J1926-07-C3H	72556-IP8	8IP-8
- 12	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 14	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 16	J1926-08-C5A	J1926-08-C5T	J1926-08-C3H	7375-IP9	8IP-9
- 20	J1926-10-C5A	J1926-10-C5T	J1926-10-C3H	7375-IP9	8IP-9
- 24	J1926-10-C5A	J1926-10-C5T	J1926-10-C3H	7375-IP9	8IP-9
- 32	J1926-12-C5A	J1926-12-C5T	J1926-12-C3H	7375-IP9	8IP-9



# AccuPort 432<sup>®</sup>



A1 = AND10050 Specifications  
A2 = SAE AS5202 Specifications

## Port Standards: SAE AS5202 (Formerly UNJF-30 MilSpec MS-33649)

Also conforms to UNF AND10050 Using Alternate Tap Drill Diameter (see column A1)

Tube Dash No.	Port Thread Size	Port Contour Cutter Number	Stk.	A1	A2	L1	B	L2	Seal Angle	C	L2	L3	L4	D	L5	L6
				Dia. mm	Dia. mm	Minor Dia. Length mm	Pilot Dia mm	Pilot Length mm		Seal Angle Dia mm	Spot-face Dia mm	Spotface to Shoulder Length mm	Total Head Length mm	Shank Dia mm	Shank Length mm	OAL mm
- 4	7/16-20 UNJF-3B	AS5202-04Y-063F	○	9.8	9.9	16.79	11.53	2.11	60°	14.34	22.23	22.76	41.58	15.88	47.63	89.20
- 5	1/2-20 UNJF-3B	AS5202-05Z-063F	○	11.45	11.5	16.79	13.13	2.11	60°	15.88	23.27	22.39	41.58	15.88	47.63	89.20
- 6	9/16-18 UNJF-3B	AS5202-06Z-075F	○	12.85	12.95	18.14	14.73	2.11	60°	17.46	24.87	28.43	49.28	19.05	50.01	99.29
- 8	3/4-16 UNJF-3B	AS5202-080-075F	○	17.46	17.5	21.31	19.53	2.39	60°	22.23	30.43	28.57	53.52	19.05	50.01	103.53
- 10	7/8-14 UNJF-3B	AS5202-101-100F	○	20.35	20.5	23.75	22.76	2.72	60°	25.46	34.39	30.19	58.17	25.40	57.94	116.10
- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	○	24.8	25.0	27.15	27.58	3.18	60°	31.42	41.53	37.94	70.23	31.75	57.94	128.17
- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	○	28.0	28.17	27.15	30.76	3.18	60°	34.61	45.09	37.22	70.23	31.75	57.94	128.17
- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	○	31.15	31.34	27.15	33.93	3.18	60°	37.77	48.77	36.51	70.23	31.75	57.94	128.17
- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	○	39.0	39.29	28.47	41.86	3.18	60°	45.69	57.91	44.32	80.95	38.10	68.28	149.23
- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	○	45.5	45.64	28.75	48.21	3.18	60°	52.07	65.28	42.58	80.95	38.10	68.28	149.23
- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	○	61.3	61.49	34.87	64.11	3.18	60°	67.97	88.65	45.78	93.65	38.10	68.28	161.93

### Stk. - Stock Availability.

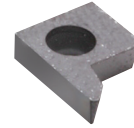
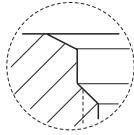
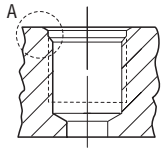
- Stock Item.
- Stocked in limited quantities, advanced planning is recommended.
- ◆ Non-stock standard. Normal delivery 15 to 20 days.

Any non-standard size available.

T-A & GENZ T-A  
GENSYS  
APX  
Revolution & Core Drill  
ASC 320 Solid Carbide  
AccuPort 432  
Criterion  
Thread Milling  
Special Tooling

## Port Standards: SAE AS5202 (Formerly UNJF-30 MilSpec MS-33649)

Also conforms to UNF AND10050 Using Alternate Tap Drill Diameter



Tube Dash No.	Port Thread Size	Port Contour Cutter Number	T-A <sup>®</sup> Drill Item Numbers				Port Form Insert Item Numbers																																																																																																																													
			Super Cobalt GEN2 T-A (AM200 <sup>®</sup> )	Carbide GEN2 T-A (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver	C5 Carbide (TiAlN)	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver																																																																																																																											
- 4	7/16-20 UNJF-3B	AS5202-04Y-063F	45YH-.390	4C1YH-.390	724-IP7	8IP-7	AS5202-04-C5A	72556-IP8	8IP-8																																																																																																																											
	7/16-20 UNF-3B		45YH-.386	4C1YH-.386						- 5	1/2-20 UNJF-3B	AS5202-05Z-063F	45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7	AS5202-05-C5A	72556-IP8	8IP-8	1/2-20 UNF-3B	45ZH-.451	4C1ZH-.451	- 6	9/16-18 UNJF-3B	AS5202-06Z-075F	45ZH-.510	4C1ZH-.510	7247-IP7	8IP-7	AS5202-06-C5A	72556-IP8	8IP-8	9/16-18 UNF-3B	45ZH-.506	4C1ZH-.506	- 8	3/4-16 UNJF-3B	AS5202-080-075F	450H-17.5	4C10H-17.5	72567-IP8	8IP-8	AS5202-08-C5A	72556-IP8	8IP-8	3/4-16 UNF-3B	450H-0022	4C10H-0022	- 10	7/8-14 UNJF-3B	AS5202-101-100F	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15	7/8-14 UNF-3B	451H-.801	4C11H-.801	- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15	1 1/16-12 UN-3B	452H-.976	4C12H-.976	- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20
- 5	1/2-20 UNJF-3B	AS5202-05Z-063F	45ZH-11.5	4C1ZH-11.5	7247-IP7	8IP-7	AS5202-05-C5A	72556-IP8	8IP-8																																																																																																																											
	1/2-20 UNF-3B		45ZH-.451	4C1ZH-.451						- 6	9/16-18 UNJF-3B	AS5202-06Z-075F	45ZH-.510	4C1ZH-.510	7247-IP7	8IP-7	AS5202-06-C5A	72556-IP8	8IP-8	9/16-18 UNF-3B	45ZH-.506	4C1ZH-.506	- 8	3/4-16 UNJF-3B	AS5202-080-075F	450H-17.5	4C10H-17.5	72567-IP8	8IP-8	AS5202-08-C5A	72556-IP8	8IP-8	3/4-16 UNF-3B	450H-0022	4C10H-0022	- 10	7/8-14 UNJF-3B	AS5202-101-100F	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15	7/8-14 UNF-3B	451H-.801	4C11H-.801	- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15	1 1/16-12 UN-3B	452H-.976	4C12H-.976	- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A						
- 6	9/16-18 UNJF-3B	AS5202-06Z-075F	45ZH-.510	4C1ZH-.510	7247-IP7	8IP-7	AS5202-06-C5A	72556-IP8	8IP-8																																																																																																																											
	9/16-18 UNF-3B		45ZH-.506	4C1ZH-.506						- 8	3/4-16 UNJF-3B	AS5202-080-075F	450H-17.5	4C10H-17.5	72567-IP8	8IP-8	AS5202-08-C5A	72556-IP8	8IP-8	3/4-16 UNF-3B	450H-0022	4C10H-0022	- 10	7/8-14 UNJF-3B	AS5202-101-100F	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15	7/8-14 UNF-3B	451H-.801	4C11H-.801	- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15	1 1/16-12 UN-3B	452H-.976	4C12H-.976	- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																			
- 8	3/4-16 UNJF-3B	AS5202-080-075F	450H-17.5	4C10H-17.5	72567-IP8	8IP-8	AS5202-08-C5A	72556-IP8	8IP-8																																																																																																																											
	3/4-16 UNF-3B		450H-0022	4C10H-0022						- 10	7/8-14 UNJF-3B	AS5202-101-100F	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15	7/8-14 UNF-3B	451H-.801	4C11H-.801	- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15	1 1/16-12 UN-3B	452H-.976	4C12H-.976	- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																
- 10	7/8-14 UNJF-3B	AS5202-101-100F	451H-20.5	4C11H-20.5	7375-IP9	8IP-9	AS5202-10-C5A	7495-IP15	8IP-15																																																																																																																											
	7/8-14 UNF-3B		451H-.801	4C11H-.801						- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15	1 1/16-12 UN-3B	452H-.976	4C12H-.976	- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																													
- 12	1 1/16-12 UNJ-3B	AS5202-122-125F	452H-25	4C12H-25	7495-IP15	8IP-15	AS5202-12-C5A	7495-IP15	8IP-15																																																																																																																											
	1 1/16-12 UN-3B		452H-.976	4C12H-.976						- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15	1 3/16-12 UN-3B	452H-28	4C12H-28	- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																																										
- 14	1 3/16-12 UNJ-3B	AS5202-142-125F	452H-1.109	4C12H-1.109	7495-IP15	8IP-15	AS5202-14-C5A	7495-IP15	8IP-15																																																																																																																											
	1 3/16-12 UN-3B		452H-28	4C12H-28						- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15	1 5/16-12 UN-3B	452H-1.226	4C12H-1.226	- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																																																							
- 16	1 5/16-12 UNJ-3B	AS5202-162-125F	452H-1.234	4C12H-1.234	7495-IP15	8IP-15	AS5202-16-C5A	7495-IP15	8IP-15																																																																																																																											
	1 5/16-12 UN-3B		452H-1.226	4C12H-1.226						- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15	1 5/8-12 UN-3B	453H-39	1C53A-39	- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																																																																				
- 20	1 5/8-12 UNJ-3B	AS5202-203-150F	453H-1.547	1C53A-1.547	7514-IP20	8IP-20	AS5202-20-C5A	7495-IP15	8IP-15																																																																																																																											
	1 5/8-12 UN-3B		453H-39	1C53A-39						- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15	1 7/8-12 UN-3B	453H-45.5	1C53A-45.5	- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																																																																																	
- 24	1 7/8-12 UNJ-3B	AS5202-243-150F	453H-1.797	1C53A-1.797	7514-IP20	8IP-20	AS5202-24-C5A	7495-IP15	8IP-15																																																																																																																											
	1 7/8-12 UN-3B		453H-45.5	1C53A-45.5						- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15	2 1/2-12 UN-3B	454H-2.413	N/A																																																																																																														
- 32	2 1/2-12 UNJ-3B	AS5202-324-150F	454H-61.5	N/A	7514-IP20	8IP-20	AS5202-32-C5A	7495-IP15	8IP-15																																																																																																																											
	2 1/2-12 UN-3B		454H-2.413	N/A																																																																																																																																

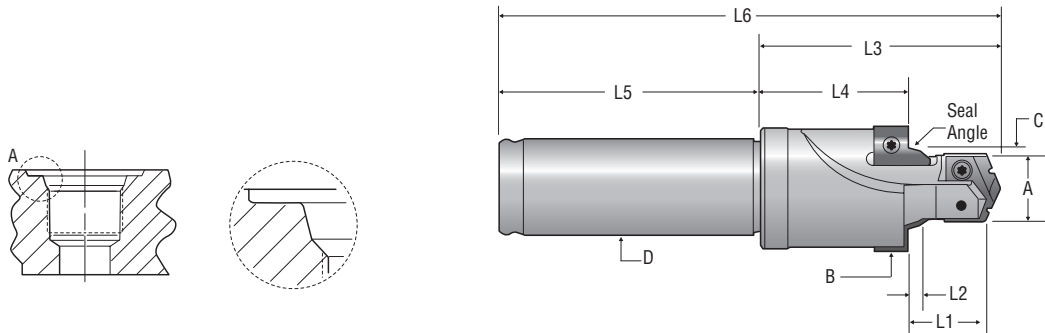
Note: Port Form Inserts are sold in 2 piece packages

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365

For further information on Material, Hardnesses and Cutting Data, please refer to the Technical Section from page 218.



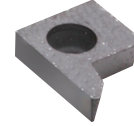
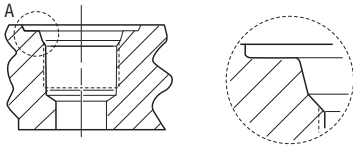
# AccuPort 432<sup>®</sup>



## **N** Port standard: JDS-G173.1

Tube Dash Number	Port Contour Cutter Number	Port Thread Size	Inch or Metric	A	L1	B	Seal Angle	C	L2	L3	L4	D	L5	L6
				Drill Dia.	Pilot Length	Spotface Dia.		Seal Angle Dia.	Seal Angle Length	Body Length	Spotface to Shoulder Length	Shank Dia.	Shank Length	OAL
-4	G1731-04Y-16FM	M12x1.5	mm	10.5	18.0	24.0	15°	13.9	2.65	40.1	22.2	16.0	41.9	84.5
			inch	0.413	0.709	0.945	15°	0.547	0.104	1.58	0.875	0.630	1.650	3.32
-5	G1731-05Z-16FM	M14x1.5	mm	12.5	18.0	26.0	15°	15.9	2.65	40.1	21.8	16.0	41.9	84.5
			inch	0.492	0.709	1.024	15°	0.626	0.104	1.58	0.858	0.630	1.650	3.32
-6	G1731-060-20FM	M16x1.5	mm	14.5	19.0	29.0	15°	17.9	2.65	47.6	28.4	20.0	41.9	92.2
			inch	0.571	0.748	1.142	15°	0.705	0.104	1.87	1.117	0.787	1.650	3.63
-8	G1731-080-20FM	M18x1.5	mm	16.5	21.0	31.0	15°	19.9	2.65	51.2	29.5	20.0	41.9	95.8
			inch	0.650	0.827	1.220	15°	0.783	0.104	2.02	1.161	0.787	1.650	3.77
-10	G1731-101-25FM	M22x1.5	mm	20.5	22.0	35.0	15°	23.9	2.65	54.4	31.6	25.0	53.1	111.0
			inch	0.807	0.866	1.378	15°	0.941	0.104	2.14	1.246	0.984	2.090	4.37
-12	G1731-122-32FM	M27x2	mm	25.0	27.0	41.0	15°	29.5	3.35	68.1	39.4	32.0	57.9	129.6
			inch	0.984	1.063	1.614	15°	1.161	0.132	2.68	1.553	1.260	2.280	5.10
-14	G1731-142-32FM	M30x2	mm	28.0	27.0	44.0	15°	32.5	3.35	68.1	39.7	32.0	57.9	129.6
			inch	1.102	1.063	1.732	15°	1.280	0.132	2.68	1.526	1.260	2.280	5.10
-16	G1731-162-32FM	M33x2	mm	31.0	27.0	50.0	15°	35.5	3.35	68.1	38.1	32.0	57.9	129.6
			inch	1.221	1.063	1.969	15°	1.398	0.132	2.68	1.500	1.260	2.280	5.10
-18	G1731-183-40FM	M38x2	mm	36.0	27.0	55.0	15°	40.5	3.35	76.6	46.8	40.0	70.1	151.5
			inch	1.417	1.063	2.165	15°	1.594	0.132	3.02	1.844	1.575	2.760	5.96
-20	G1731-203-40FM	M42x2	mm	40.0	27.0	61.0	15°	44.5	3.35	76.6	45.9	40.0	70.1	151.5
			inch	1.575	1.063	2.402	15°	1.752	0.132	3.02	1.809	1.575	2.760	5.96
-24	G1731-243-40FM	M48x2	mm	46.0	29.0	67.0	15°	50.5	3.35	76.6	42.8	40.0	70.1	151.5
			inch	1.811	1.142	2.638	15°	1.988	0.132	3.02	1.687	1.575	2.760	5.96
-32	G1731-324-40FM	M60x2	mm	58.0	32.0	77.0	15°	62.5	3.35	96.1	58.4	40.0	70.1	171.0
			inch	2.284	1.260	3.031	15°	2.461	0.132	3.78	2.300	1.575	2.760	6.73
Cartridge Cavity	G1731-CV1-25FM	M20x1.5	mm	18.5	20.0	33.0	15°	21.9	2.65	50.8	32.5	25.0	53.1	107.4
			inch	0.728	0.787	1.299	15°	0.862	0.104	2.00	1.281	0.984	2.090	4.23

**N** This symbol can be found throughout this catalogue and highlights NEW products!



## Port standard: JDS-G173.1

Tube Dash No.	Port Contour Cutter Number	Port Thread Size	T-A <sup>®</sup> Drill Item Numbers				Port Form Insert Item Numbers		
			Super Cobalt GEN2 T-A (AM200 <sup>®</sup> )	Carbide GEN2 T-A (AM200 <sup>®</sup> )	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver	C3 Carbide (AM200)	Torx Plus <sup>®</sup> Screw	Torx Plus <sup>®</sup> Driver
-4	G1731-04Y-16FM	M12x1.5	45YH-10.5	4C2YH-10.5	724-IP7-10	8IP-7	G1731-01-C3H	72556-IP8-10	8IP-8
-5	G1731-05Z-16FM	M14x1.5	45ZH-12.5	4C2ZH-12.5	7247-IP7-10	8IP-7	G1731-01-C3H	72556-IP8-10	8IP-8
-6	G1731-06O-20FM	M16x1.5	450H-14.5	4C20H-14.5	72567-IP8-10	8IP-8	G1731-02-C3H	72556-IP8-10	8IP-8
-8	G1731-08O-20FM	M18x1.5	450H-16.5	4C20H-16.5	72567-IP8-10	8IP-8	G1731-02-C3H	72556-IP8-10	8IP-8
-10	G1731-10I-25FM	M22x1.5	451H-20.5	4C21H-20.5	739-IP9-10	8IP-9	G1731-02-C3H	72556-IP8-10	8IP-8
-12	G1731-12Z-32FM	M27x2	452H-25	4C22H-25	7495-IP15-10	8IP-15	G1731-03-C3H	72556-IP8-10	8IP-8
-14	G1731-14Z-32FM	M30x2	452H-28	4C22H-28	7495-IP15-10	8IP-15	G1731-03-C3H	72556-IP8-10	8IP-8
-16	G1731-16Z-32FM	M33x2	452H-31	4C22H-31	7495-IP15-10	8IP-15	G1731-04-C3H	7375-IP9-10	8IP-9
-18	G1731-18Z-40FM	M38x2	453H-36	-	7514-IP20-10	8IP-20	G1731-04-C3H	7375-IP9-10	8IP-9
-20	G1731-20Z-40FM	M42x2	453H-40	-	7514-IP20-10	8IP-20	G1731-05-C3H	7375-IP9-10	8IP-9
-24	G1731-24Z-40FM	M48x2	453H-46	-	7514-IP20-10	8IP-20	G1731-05-C3H	7375-IP9-10	8IP-9
-32	G1731-32Z-40FM	M60x2	454H-58	-	7514-IP20-10	8IP-20	G1731-06-C3H	7375-IP9-10	8IP-9
Cartridge Cavity	G1731-CV1-25FM	M20x1.5	451H-18.5	4C21H-18.5	739-IP9-10	8IP-9	G1731-02-C3H	72556-IP8-10	8IP-8

Inserts sold separately



# Technical Section - AccuPort 432<sup>®</sup>

Recommended Cutting Data HSS – Metric

## HSS

Drilling Parameters for Port Contour Cutters  
Feed Rates (mm/rev) for Drill Insert Series

Material	Material Hardness (BHN)	Tool Steel Grade	AM200 <sup>®</sup> M/min	TiN M/min	TiAlN M/min	TiCN M/min	Tube No. 4-5	Tube No. 6-8	Tube No. 10	Tube No. 12-16	Tube No. 20-24	Tube No. 32
							T-A <sup>®</sup> Series Y - Z	T-A <sup>®</sup> Series 0	T-A <sup>®</sup> Series 1	T-A <sup>®</sup> Series 2	T-A <sup>®</sup> Series 3	T-A <sup>®</sup> Series 4
Free Machining Steel	100 – 150	HSS	92	61	85	79	0.18	0.25	0.33	0.41	0.51	0.58
	150 – 200	HSS	87	55	79	72	0.18	0.25	0.33	0.41	0.51	0.58
	200 – 250	HSS	81	49	73	64	0.15	0.25	0.33	0.41	0.51	0.58
Low Carbon Steel	85 – 125	HSS	84	52	76	67	0.15	0.23	0.30	0.38	0.48	0.58
	125 – 175	HSS	81	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58
	175 – 225	HSS	76	46	69	59	0.13	0.20	0.25	0.36	0.46	0.53
Medium Carbon Steel	225 – 275	HSS	70	43	64	55	0.13	0.20	0.25	0.36	0.46	0.53
	125 – 175	HSS	79	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58
	175 – 225	HSS	75	46	69	59	0.13	0.20	0.25	0.36	0.46	0.53
Alloy Steel	225 – 275	HSS	70	43	64	55	0.13	0.20	0.25	0.36	0.46	0.53
	275 – 325	SC, PC	66	40	59	52	0.10	0.18	0.23	0.30	0.41	0.48
	125 – 175	HSS	69	46	64	59	0.15	0.20	0.25	0.36	0.43	0.48
High Strength Alloy Steel	175 – 225	HSS	66	43	59	55	0.13	0.20	0.25	0.36	0.43	0.48
	225 – 275	HSS	60	40	55	52	0.13	0.18	0.25	0.36	0.43	0.48
	275 – 325	SC, PC	56	37	52	47	0.10	0.15	0.23	0.30	0.38	0.43
Structural Steel	325 – 375	SC, PC	55	34	47	44	0.08	0.15	0.23	0.30	0.38	0.43
	225 – 300	SC, PC	37	24	34	30	0.13	0.18	0.23	0.25	0.36	0.43
	300 – 350	SC, PC	27	18	26	24	0.10	0.18	0.23	0.25	0.36	0.43
Tool Steel	350 – 400	PC	23	15	21	20	0.08	0.15	0.20	0.23	0.30	0.38
	100 – 150	HSS	67	43	61	55	0.15	0.25	0.30	0.36	0.46	0.53
	150 – 250	HSS	56	37	52	47	0.13	0.23	0.25	0.30	0.41	0.48
High Temp Alloy	250 – 350	SC, PC	47	30	43	40	0.10	0.20	0.23	0.25	0.36	0.43
	150 – 200	SC	37	24	34	32	0.10	0.15	0.20	0.25	0.30	0.38
	200 – 250	SC, PC	31	18	27	26	0.10	0.15	0.20	0.25	0.30	0.38
Stainless Steel	140 – 220	SC	14	9	12	11	0.08	0.18	0.20	0.25	0.30	0.38
	220 – 310	SC, PC	12	8	11	9	0.08	0.15	0.18	0.20	0.25	0.30
Cast Iron	135 – 185	HSS	33	23	32	29	0.15	0.20	0.23	0.28	0.36	0.41
	185 – 275	HSS	29	18	27	24	0.13	0.18	0.20	0.25	0.30	0.36
Aluminium	120 – 150	HSS	82	52	76	67	0.18	0.30	0.41	0.51	0.61	0.69
	150 – 200	HSS	75	46	69	59	0.15	0.28	0.36	0.46	0.56	0.64
	200 – 220	HSS	66	40	59	52	0.15	0.23	0.30	0.41	0.46	0.53
	220 – 260	SC, PC	55	34	50	44	0.13	0.18	0.23	0.30	0.36	0.43
Aluminium	260 – 320	SC, PC	44	27	41	37	0.10	0.15	0.18	0.23	0.30	0.36
	30	HSS	-	183	259	229	0.20	0.33	0.41	0.51	0.56	0.64
Aluminium	180	HSS	-	91	137	122	0.20	0.33	0.41	0.46	0.56	0.64

\* Parameters shown are only starting points. Speed should be calculated using the drill diameter. Due to the short drill distance required, speed and feed rates can possibly be elevated. Coolant through the cutter is preferred. Flood, Mist or Air coolant can also be used. No spot drilling, pre-drilling, or dwell required.

Note: For Austenitic Stainless Steels contact our Application Engineering Team

Formulas:  $\text{mm/min} = \text{rev/min} \cdot \text{mm/rev}$        $\text{M/min} = \text{rev/min} \cdot 0.003 \cdot \text{DIA}$        $\text{rev/min} = \text{M/min} \cdot 318.47/\text{DIA}$

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<856	<990	<1365



# Technical Section - AccuPort 432<sup>®</sup>

Recommended Cutting Data Carbide – Metric



## Carbide

Drilling Parameters for Port Contour Cutters  
Feed Rates (mm/rev) for Drill Insert Series

Material	Material Hardness (BHN)	Tool Steel Grade	AM200 <sup>®</sup> M/min	TiN M/min	TiAlN M/min	Tube No. 4-5	Tube No. 6-8	Tube No. 10	Tube No. 12-16	Tube No. 20-24
						T-A <sup>®</sup> Series Y - Z	T-A <sup>®</sup> Series 0	T-A <sup>®</sup> Series 1	T-A <sup>®</sup> Series 2	T-A <sup>®</sup> Series 3
Free Machining Steel	100 – 150	K35, P40	146	98	128	0.20	0.30	0.38	0.46	0.53
	150 – 200	K35, P40	126	85	110	0.18	0.28	0.36	0.41	0.48
	200 – 250	K35, P40	119	79	104	0.15	0.25	0.33	0.38	0.43
Low Carbon Steel	85 – 125	K35, P40	137	91	119	0.20	0.25	0.33	0.43	0.48
	125 – 175	K35, P40	119	79	104	0.18	0.25	0.33	0.41	0.46
	175 – 225	K35, P40	108	73	94	0.15	0.23	0.30	0.38	0.43
	225 – 275	K35, P40	94	64	82	0.13	0.23	0.30	0.38	0.43
Medium Carbon Steel	125 – 175	K35, P40	119	79	104	0.18	0.25	0.33	0.41	0.46
	175 – 225	K35, P40	108	73	94	0.15	0.23	0.30	0.38	0.43
	225 – 275	K35, P40	94	64	82	0.15	0.23	0.30	0.38	0.43
	275 – 325	K35, P40	81	55	70	0.13	0.20	0.28	0.36	0.41
Alloy Steel	125 – 175	K35, P40	114	76	99	0.18	0.25	0.33	0.41	0.46
	175 – 225	K35, P40	105	70	91	0.15	0.23	0.30	0.38	0.43
	225 – 275	K35, P40	94	64	82	0.15	0.23	0.30	0.38	0.43
	275 – 325	K35, P40	87	61	76	0.13	0.20	0.28	0.36	0.41
	325 – 375	K35, P40	78	52	67	0.10	0.18	0.25	0.33	0.38
High Strength Alloy Steel	225 – 300	K35, P40	73	49	61	0.15	0.23	0.25	0.30	0.38
	300 – 350	K35, P40	62	43	55	0.13	0.20	0.23	0.28	0.36
	350 – 400	K35, P40	56	37	49	0.10	0.18	0.20	0.25	0.30
Structural Steel	100 – 150	K35, P40	108	73	94	0.20	0.28	0.36	0.41	0.46
	150 – 250	K35, P40	87	61	76	0.15	0.25	0.30	0.36	0.41
	250 – 350	K35, P40	81	55	70	0.13	0.23	0.28	0.30	0.36
Tool Steel	150 – 200	K35, P40	78	49	67	0.10	0.18	0.23	0.28	0.33
	200 – 250	K35, P40	59	37	52	0.10	0.18	0.23	0.28	0.33
High Temp Alloy	140 – 220	K20	36	24	32	0.10	0.18	0.23	0.28	0.33
	220 – 310	K20	29	18	26	0.10	0.15	0.20	0.25	0.30
Stainless Steel	138 – 185	K20	73	49	64	0.18	0.23	0.30	0.36	0.41
	185 – 275	K20	56	37	49	0.15	0.20	0.28	0.30	0.36
Cast Iron	120 – 150	K20, K10	152	98	140	0.20	0.30	0.38	0.48	0.58
	150 – 200	K20, K10	146	82	122	0.18	0.28	0.33	0.43	0.53
	200 – 220	K20, K10	131	73	110	0.15	0.23	0.30	0.38	0.46
	220 – 260	K20, K10	113	64	94	0.13	0.20	0.28	0.33	0.38
	260 – 320	K20, K10	102	55	82	0.13	0.18	0.25	0.28	0.33
Aluminium	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

\* Parameters shown are only starting points. Speed should be calculated using the drill diameter. Due to the short drill distance required, speed and feed rates can possibly be elevated. Coolant through the cutter is preferred. Flood, Mist or Air coolant can also be used. No spot drilling, pre-drilling, or dwell required.

Note: For Austenitic Stainless Steels contact our Application Engineering Team

Formulas:  $mm/min = rev/min \cdot mm/rev$        $M/min = rev/min \cdot 0.003 \cdot DIA$        $rev/min = M/min \cdot 318.47/DIA$

P	M	K	N	S	H
Steel N/mm <sup>2</sup>	Stainless Steel N/mm <sup>2</sup>	Cast and Ductile Iron N/mm <sup>2</sup>	Non-ferrous Material N/mm <sup>2</sup>	High Temperature Materials N/mm <sup>2</sup>	Hardened Materials N/mm <sup>2</sup>
<1365	<940	<1020	<855	<990	<1365



# Technical Section

Coolant Recommendations HSS & Carbide

Coolant through the cutter is preferred. Flood, Mist, Air coolant can also be used.

## HSS

Drilling Parameters for Port Contour Cutters							
Coolant Pressure (Bar)							
Coolant Volumetric Flowrate (l/min)							
Material	Material Hardness (BHN)	Tube No. 4-5	Tube No. 6-8	Tube No. 10	Tube No. 12-16	Tube No. 20-24	Tube No. 32
		T-A® Series Y-Z	T-A® Series 0	T-A® Series 1	T-A® Series 2	T-A® Series 3	T-A® Series 4
Free Machining Steel	100 – 250	12.0 – 12.7	6.9 – 8.3	7.2 – 9.6	5.5 – 7.9	5.2 – 6.9	2.7 – 3.4
		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	85 – 275	11.4 – 11.7	5.2 – 6.2	5.2 – 6.5	22.7 – 26.5	3.4 – 4.8	2.0 – 2.7
		9.1 – 9.5	9.1 – 9.8	14.0 – 15.9	3.8 – 5.2	41.6 – 45.4	98 – 114
Medium Carbon Steel	125 – 325	11.0 – 11.4	4.8 – 5.8	4.8 – 6.2	22.7 – 26.5	3.1 – 4.1	2.0 – 2.7
		8.7 – 9.1	9.1 – 9.8	14.0 – 15.9	2.7 – 3.8	2.7 – 3.4	98 – 114
Alloy Steel	125 – 375	11.0 – 11.4	4.5 – 5.2	4.5 – 5.5	18.9 – 22.7	34.1 – 37.9	2.0 – 2.4
		8.7 – 9.1	8.3 – 9.1	13.2 – 14.8	15.1 – 18.9	26.5 – 30.3	87 – 98
High Strength Steel	225 – 400	10.3 – 10.7	4.1 – 4.5	3.4 – 3.8	2.0 – 2.4	26.5 – 30.3	1.7 – 2.0
		8.7 – 9.1	7.9 – 8.3	11.0 – 11.7	15.1 – 18.9	3.8 – 5.2	79 – 87
Structural Steel	100 – 350	11.0 – 11.4	5.2 – 5.8	4.5 – 5.5	4.1 – 5.5	41.6 – 45.4	1.7 – 2.0
		8.7 – 9.1	9.1 – 9.8	13.2 – 14.8	3.4 – 4.8	34.1 – 37.9	87 – 93
Tool Steel	150 – 250	10.3 – 10.7	3.8 – 4.1	3.1 – 3.4	18.9 – 22.7	1.7 – 2.0	1.4 – 1.7
		8.7 – 9.1	7.9 – 8.3	11.0 – 11.7	2.0 – 2.4	26.5 – 30.3	79 – 87
High Temp Alloy	140 – 310	10.3 – 10.7	4.1 – 4.5	3.4 – 3.8	15.1 – 18.9	1.7 – 2.0	1.7 – 2.0
		8.7 – 9.1	8.3 – 8.7	11.7 – 12.1	1.7 – 2.0	1.7 – 2.0	87 – 98
Stainless Steel	135 – 275	11.4 – 11.7	4.8 – 5.8	4.5 – 5.2	2.7 – 3.8	2.7 – 3.4	1.7 – 2.0
		9.1 – 9.5	8.7 – 9.8	13.2 – 14.0	18.9 – 22.7	34.1 – 37.9	87 – 98
Cast Iron	120 – 320	10.7 – 11.0	4.1 – 4.5	3.4 – 4.1	2.0 – 2.7	2.0 – 2.4	1.7 – 2.0
		8.7 – 9.1	8.3 – 8.7	11.7 – 12.5	15.1 – 18.9	30.3 – 34.1	87 – 98
Aluminium	30 – 180	13.1 – 14.5	9.6 – 12.4	10.3 – 15.8	7.9 – 11.0	6.2 – 8.6	2.7 – 3.4
		9.8 – 10.2	12.5 – 14.0	20.1 – 23.1	30.3 – 34.1	53.0 – 60.6	114 – 125

## Carbide

Drilling Parameters for Port Contour Cutters						
Coolant Pressure (Bar)						
Coolant Volumetric Flowrate (l/min)						
Material	Material Hardness (BHN)	Tube No. 4-5	Tube No. 6-8	Tube No. 10	Tube No. 12-16	Tube No. 20-24
		T-A® Series Y-Z	T-A® Series 0	T-A® Series 1	T-A® Series 2	T-A® Series 3
Free Machining Steel	100 – 250	20	15.5	16.5	15.2	12
		12.2	16.3	25.3	41.5	71.9
Low Carbon Steel	85 – 275	17.5	11	11	11.8	9
		11.4	13.3	20.6	36.5	62
Medium Carbon Steel	125 – 325	17.2	9.6	10.4	10.4	7.5
		11.3	12.5	20	33.8	57
Alloy Steel	125 – 375	16.5	9.3	9.6	7.9	7.2
		11.1	12.3	19.3	30	55.8
High Strength Steel	225 – 400	14.5	5.2	4.1	3.1	2.7
		10.4	9.1	12.6	18.8	33.6
Structural Steel	100 – 350	15.8	9	7.9	6.9	5.2
		10.8	12	17.5	27.8	47.1
Tool Steel	150 – 250	14.5	5.2	4.8	3.4	3.1
		10.4	9.1	13.6	19.7	36.5
High Temp Alloy	140 – 310	16.5	11.4	12.4	11	9
		11.1	13.5	21.9	35.4	62
Stainless Steel	135 – 275	22.7	16.5	17.9	17.2	13.1
		13	16.3	26.3	44.2	75
Cast Iron	120 – 320	15.5	7.2	6.2	6.2	5.5
		10.7	10.8	15.4	26.5	48.7
Aluminium	30 – 180	24.1	22	21.7	19.6	13.8
		13.4	18.8	29	47.2	77



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