



ALLIED MACHINE & ENGINEERING

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Drilling



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Specials



Wohlhaupter®

► *BORING*

UPA Facing and Boring Heads

WOHLHAUPTER®

SECTION

B10-J

UPA Versatile Boring Heads

Wohlhaupter® UPA Versatile Boring Heads

UPA 3 | UPA 4 | UPA 5-S 6

▶ Diameter Range: 0.000" - 24.409" (0.00 mm - 620.00 mm)



Operation Facing and Boring

In 1936, the first model of the Wohlhaupter Universal Facing and Boring head was developed to launch the start of Wohlhaupter boring products. It became a staple to the boring industry.

Universal Facing and Boring heads are used on universal milling and boring machines, boring mills, and jig boring machines for machining stationary workpieces in individual and batch productions.

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.

Applicable Industries



Aerospace



Agriculture



Automotive



Firearms



General
Machining



Oil & Gas



Renewable
Energy

Universal Versatile Boring Heads Table of Contents

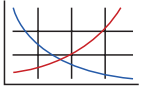
Reference Icons

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

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Series	Diameter Range	
	Imperial (inch)	Metric (mm)
UPA 3	0.000 - 10.236	0.00 - 260.00
UPA 4	0.000 - 15.748	0.00 - 400.00
UPA 5-S 6	0.000 - 24.409	0.00 - 620.00

UPA Product Overview



UPA Boring Head FACING AND BORING

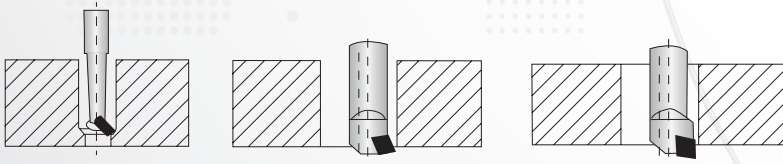
Universal Facing and Boring Heads

The versatile Wohlhaupter UPA boring heads can be used for facing, boring, and taper turning. They can also be used for right- or left-handed turning.

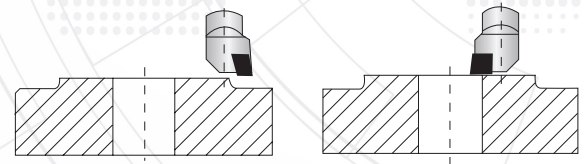
Precise and *versatile* boring heads.

- Diameter range: 0.000" - 24.409" (0.00 mm - 620.00 mm)
- Slide adjustment up to 4.410" (112.00 mm)
- Can be used in a variety of operations

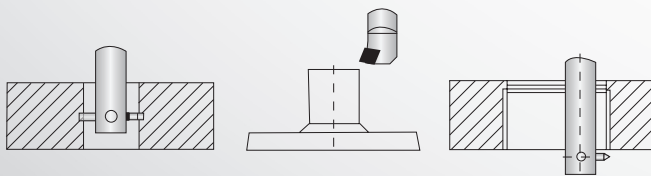
UNIVERSAL FACING & BORING Applications



Boring with different tools



Facing
From inside outward From outside inward



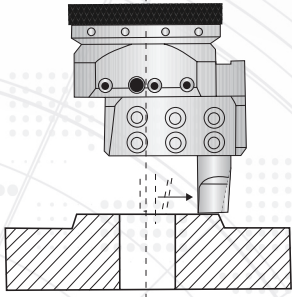
Recessing Outside Turning Thread Cutting



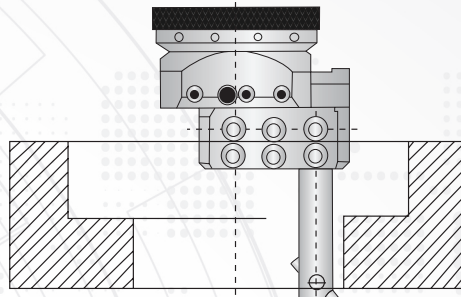
Taper Turning

UNIVERSAL

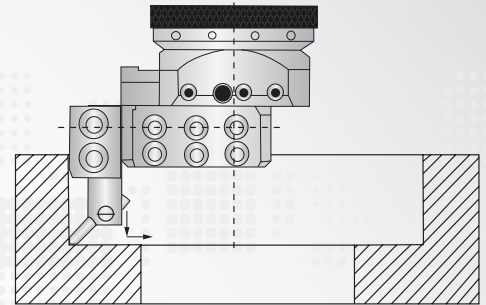
FACING & BORING Application Examples



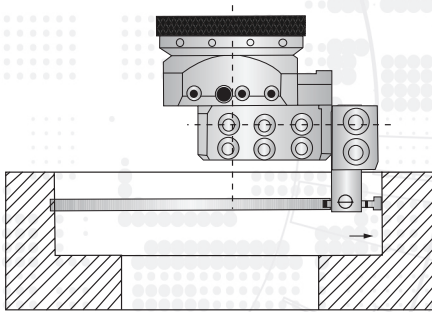
Facing with boring bar directly in slide



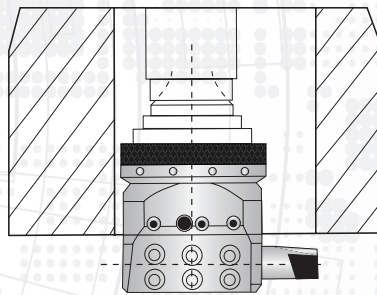
Boring with long boring bar



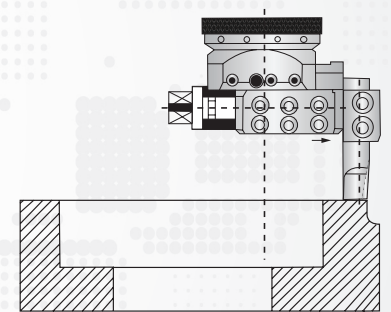
Boring and facing with short boring bar holder and a boring bar



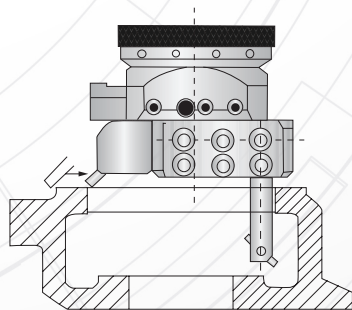
Recessing with short boring bar holder and a boring bar



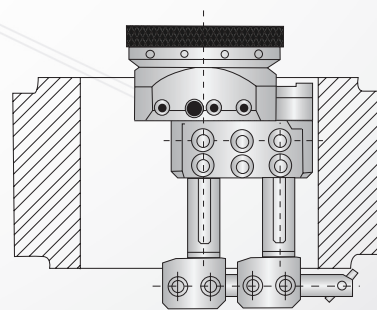
Deep hole boring with boring bar directly in slide



Large diameter facing with a long boring bar holder



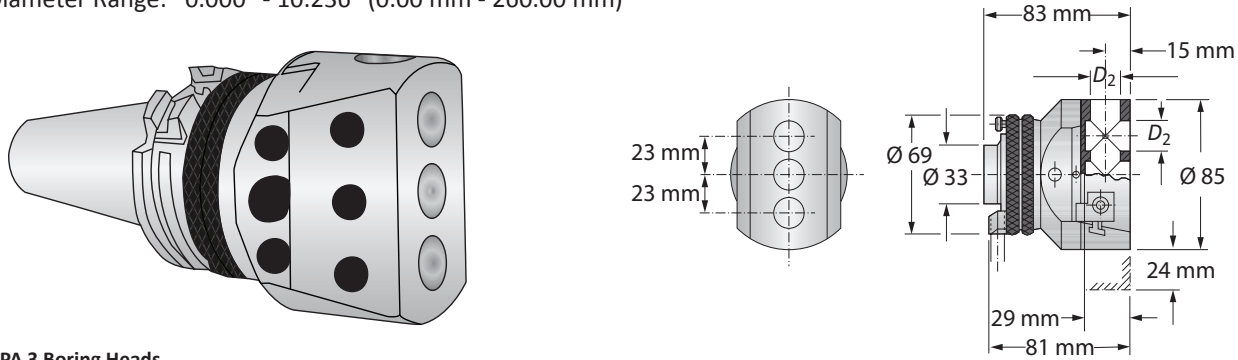
Facing in two areas with one boring bar and a boring bar holder



Facing the reverse side by using boring bar holders contained in attachment

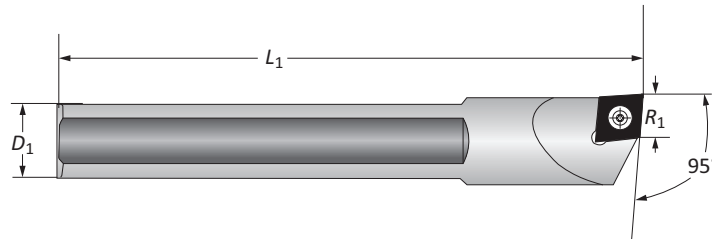
UPA 3 Boring Heads and Accessories

Diameter Range: 0.000" - 10.236" (0.00 mm - 260.00 mm)



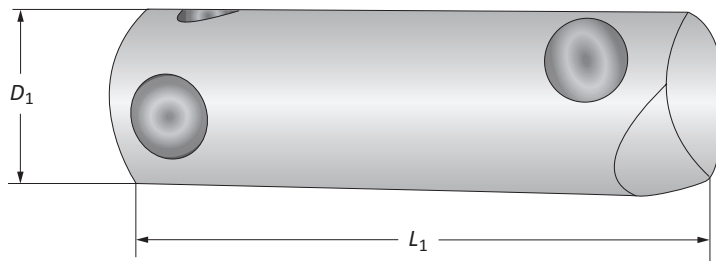
UPA 3 Boring Heads

		Boring Head		
	Boring Range	D_2	Weight	Part No.
i	0.000 - 10.234	0.750	4.629 (lbs)	006020
m	0.00 - 260.00	18.00	2.10 (kg)	005020



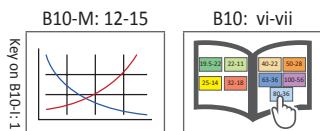
UPA 3 Boring Bars

		Boring Bar					
	D_1	L_1	R_1	Weight	Cutting Direction	Insert Form	Part No.
i	0.750	3.149	0.531	0.220 (lbs)	R	103	0750BFBR
	0.750	3.149	0.531	0.220 (lbs)	L	103	0750BFBL
m	18.00	80.00	13.50	0.10 (kg)	R	103	081087
	18.00	80.00	13.50	0.10 (kg)	L	103	218088



UPA 3 Boring Bars

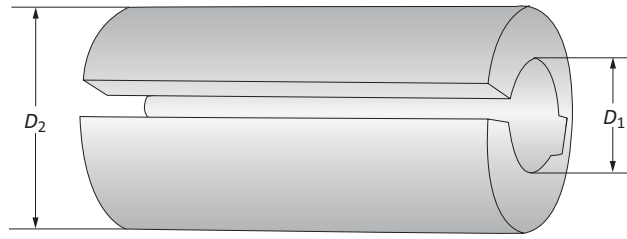
		Boring Bar			
	D_1	L_1	Boring Depth	Designation	Part No.
i	0.750	2.362	1.181	B 306	074003
	0.750	3.543	2.362	B 309	074004
	0.750	4.724	3.543	B 312	074005
m	18.00	60.00	30.00	B 306	073003
	18.00	90.00	60.00	B 309	073004
	18.00	120.00	90.00	B 312	073005



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

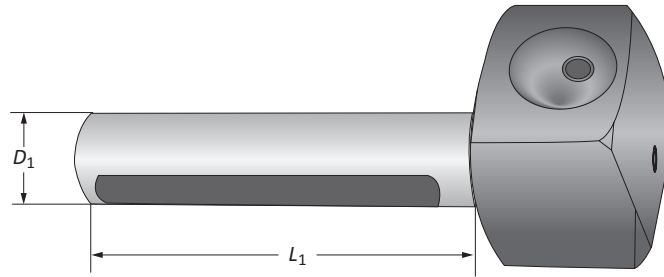
UPA 3 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 3 Reducing Sleeves

Reducing Sleeve				
	D_2	D_1	Weight	Part No.
i	0.750	0.313	0.220 (lbs)	072104
	0.750	0.375	0.220 (lbs)	072105
	0.750	0.500	0.220 (lbs)	072106
	0.750	0.625	0.220 (lbs)	072107
m	18.00	8.00	0.10 (kg)	071103
	18.00	10.00	0.10 (kg)	071104
	18.00	12.00	0.10 (kg)	071105
	18.00	14.00	0.10 (kg)	071106

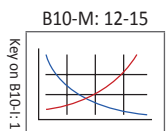
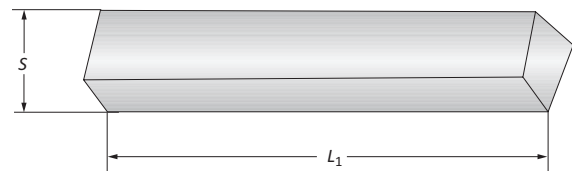


UPA 3 Boring Bar Holders

Boring Bar Holder					
	D_1	L_1	Working Diameter Range	Designation	Part No.
i	0.750	3.228	3.346 - 7.480	BH 308	076001
	0.750	4.724	6.299 - 10.236	BH 312	076002
m	18.00	82.00	85.00 - 190.00	BH 308	075001
	18.00	120.00	160.00 - 260.00	BH 312	075002

UPA 3 Square Turning Bit

Square Turning Bit				
	D_1	L_1	Weight	Part No.
i	0.236	1.574	0.035 (oz)	089001
m	6.00	40.00	11 (g)	089001

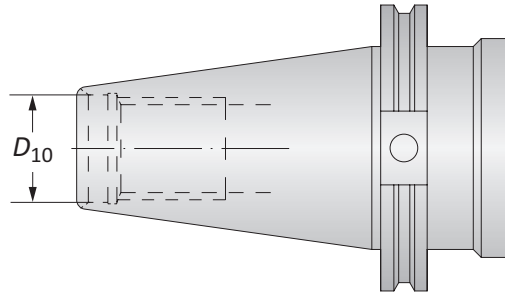


i = Imperial (in)
m = Metric (mm)

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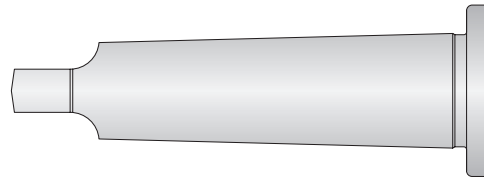
UPA 3 Master Shanks

CAT 40/50 | Morse Taper 40/50



CAT 40/50 Shanks

		Shank			
		Style	D_{10}	Weight	Part No.
i		CAT 40	$\frac{5}{8}$ - 11	2.336 (lbs)	130001T013939
		CAT 50	1 - 8	7.054 (lbs)	130001T011624
m		CAT 40	M16 x 2	1.06 (kg)	130001T016960
		CAT 50	M24 x 3	3.20 (kg)	130001T016962

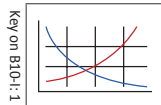


Morse Taper Shanks

		Shank		
		Style	Weight	Part No.
i		MT 3	0.661 (lbs)	130001T004509
		MT 4	1.212 (lbs)	130001T003590
		MT 5	2.976 (lbs)	130001T003920
m		MT 3	0.30 (kg)	130001T004509
		MT 4	0.55 (kg)	130001T003590
		MT 5	1.35 (kg)	130001T003920

B10-M: 12-15

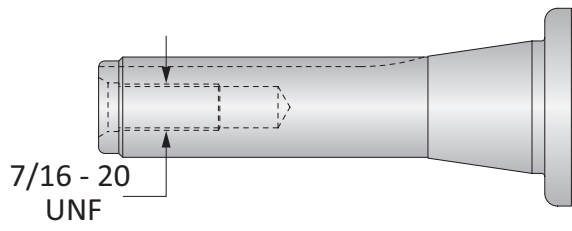
B10: vi-vii



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

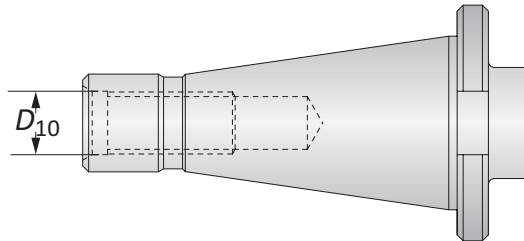
UPA 3 Master Shanks

R-8 | NMTB 40/50



R-8 Shanks

	Shank	Part No.
i	Weight 1.058 (lbs)	130001T007166
m	0.48 (kg)	130001T007166

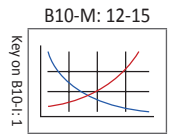


NMTB 40/50 Shanks

	Style	Shank D_{10}	Weight	Part No.
i	NMTB40	$\frac{5}{8}$ - 11	1.984 (lbs)	130001T004498
	NMTB50	1 - 8	5.798 (lbs)	130001T004480
m	NMTB40	$\frac{5}{8}$ - 11	0.90 (kg)	130001T004498
	NMTB50	1 - 8	2.63 (kg)	130001T004480

Differential Screw

	Thread	Weight	Part No.
i	M16 x 2	0.066 (lbs)	KW9208
m	M16 x 2	0.03 (lbs)	KW9208

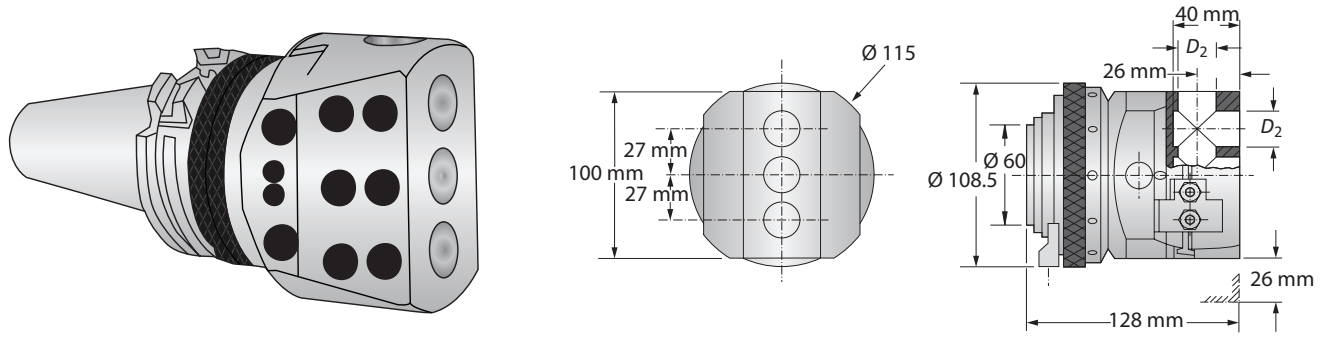


i = Imperial (in)
m = Metric (mm)

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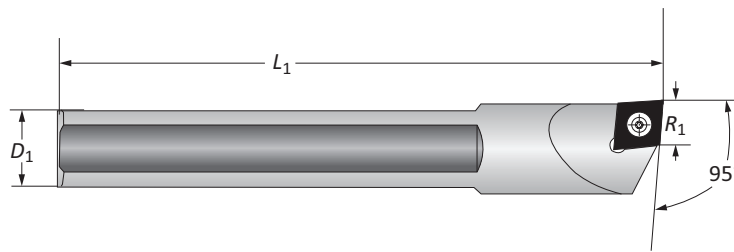
UPA 4 Boring Heads and Accessories

Diameter Range: 0.000" - 15.748" (0.00 mm - 400.00 mm)



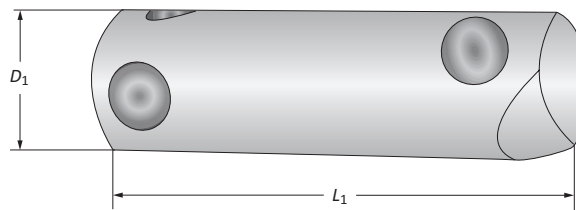
UPA 4 Boring Heads

		Boring Head		
	Boring Range	D ₂	Weight	Part No.
i	0.000 - 15.748	0.875	14.330 (lbs)	008020
m	0.00 - 400.00	22.00	6.50 (kg)	007020



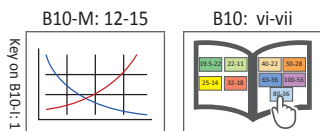
UPA 4 Boring Bars

		Boring Bar					
	D ₁	L ₁	R ₁	Weight	Cutting Direction	Insert Form	Part No.
i	0.875	3.937	0.531	0.220 (lbs)	R	103	0875BFBR
	0.875	3.937	0.531	0.220 (lbs)	L	103	0875BFBL
m	22.00	100.00	13.50	0.10 (kg)	R	103	081092
	22.00	100.00	13.50	0.10 (kg)	L	103	218089



UPA 4 Boring Bars

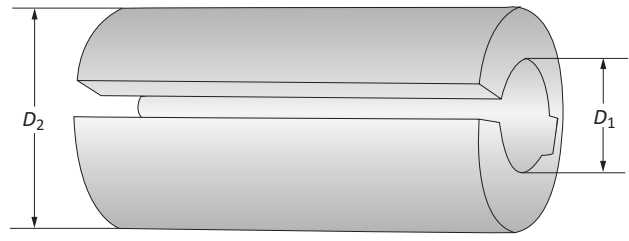
		Boring Bar			
	D ₁	L ₁	Boring Depth	Designation	Part No.
i	0.875	3.346	1.771	B 408	074006
	0.875	4.921	3.346	B 412	074007
	0.875	6.496	4.921	B 416	074008
m	22.00	85.00	45.00	B 408	073006
	22.00	125.00	85.00	B 412	073007
	22.00	165.00	125.00	B 416	073008



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

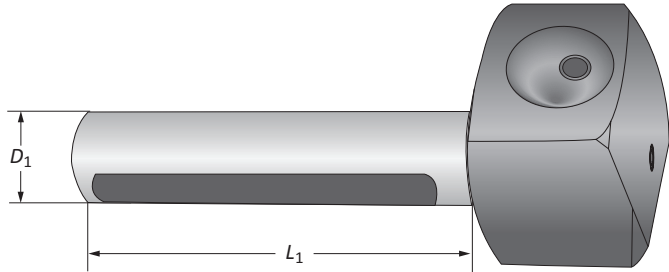
UPA 4 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 4 Reducing Sleeves

		Reducing Sleeve			
		D_2	D_1	Weight	Part No.
i		0.875	0.312	0.220 (lbs)	072108
		0.875	0.375	0.220 (lbs)	072109
		0.875	0.500	0.220 (lbs)	072110
		0.875	0.625	0.176 (lbs)	072111
		0.875	0.750	0.176 (lbs)	072112
m		22.00	8.00	0.10 (kg)	071107
		22.00	10.00	0.10 (kg)	071108
		22.00	12.00	0.10 (kg)	071109
		22.00	14.00	0.08 (kg)	071110
		22.00	18.00	0.08 (kg)	071111

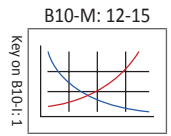
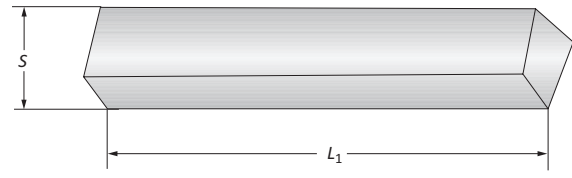


UPA 4 Boring Bar Holders

		Boring Bar Holder			
		D_1	L_1	Designation	Working Diameter Range
i		0.875	3.858	BH 410	4.527 - 9.448
		0.875	7.086	BH 418	8.661 - 15.748
m		22.00	98.00	BH 410	115.00 - 240.00
		22.00	180.00	BH 418	220.00 - 400.00

UPA 4 Square Turning Bit

		Square Turning Bit			
		D_1	L_1	Weight	Part No.
i		0.236	1.574	0.035 (oz)	089001
m		6.00	40.00	11 (g)	089001

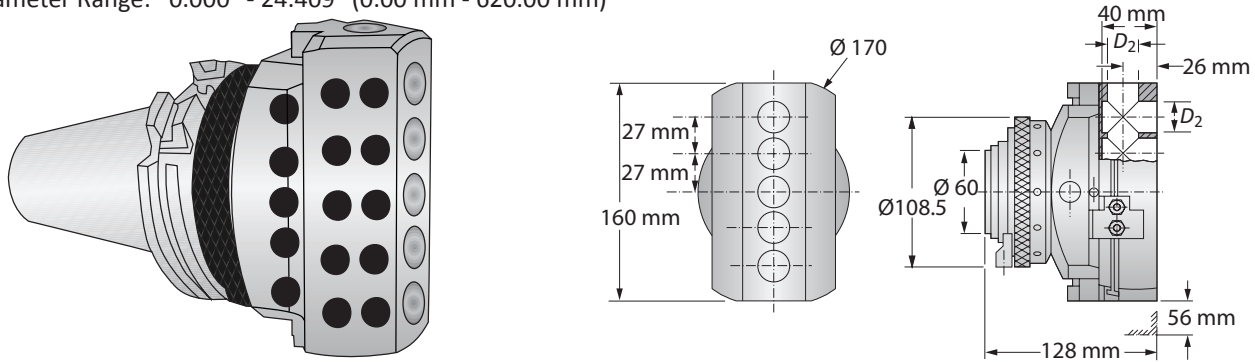


i = Imperial (in)
m = Metric (mm)

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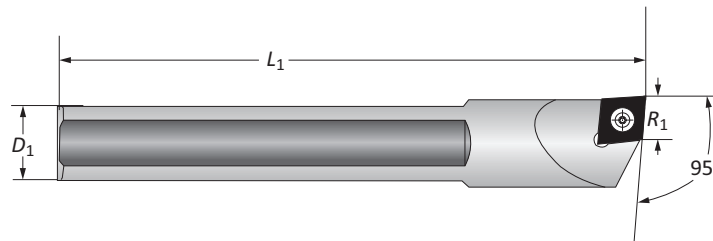
UPA 5-S 6 Boring Heads and Accessories

Diameter Range: 0.000" - 24.409" (0.00 mm - 620.00 mm)



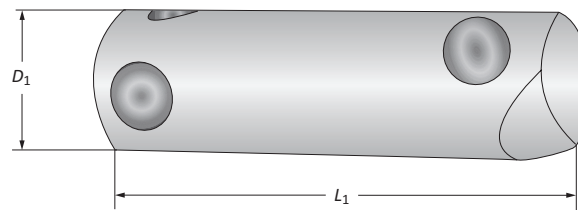
UPA 5-S 6 Boring Heads

		Boring Head		
	Boring Range	D ₂	Weight	Part No.
i	0.000 - 24.409	0.875	17.416 (lbs)	014020
m	0.00 - 620.00	22.00	7.90 (kg)	013020



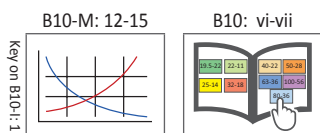
UPA 5-S 6 Boring Bars

		Boring Bar					
	D ₁	L ₁	R ₁	Weight	Cutting Direction	Insert Form	Part No.
i	0.875	3.937	0.531	0.220 (lbs)	R	103	0875BFBR
	0.875	3.937	0.531	0.220 (lbs)	L	103	0875BFBL
m	22.00	100.00	13.50	0.10 (kg)	R	103	081092
	22.00	100.00	13.50	0.10 (kg)	L	103	218089



UPA 5-S 6 Boring Bars

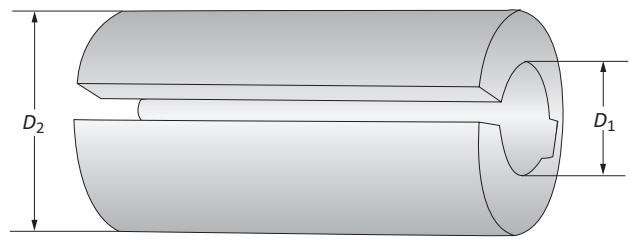
		Boring Bar			
	D ₁	L ₁	Boring Depth	Designation	Part No.
i	0.875	3.346	1.771	B 408	074006
	0.875	4.921	3.346	B 412	074007
	0.875	6.496	4.921	B 416	074008
m	22.00	85.00	45.00	B 408	073006
	22.00	125.00	85.00	B 412	073007
	22.00	165.00	125.00	B 416	073008



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

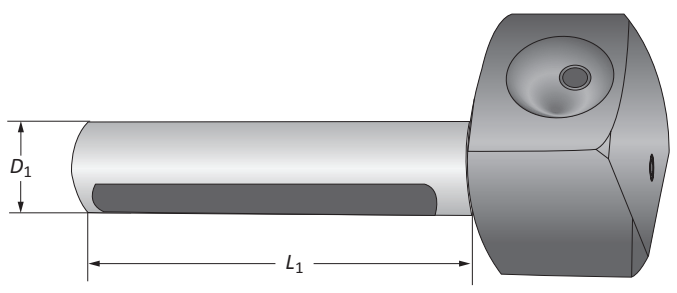
UPA 5-S 6 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 5-S 6 Reducing Sleeves

		Reducing Sleeve		
	D_2	D_1	Weight	Part No.
i	0.875	0.312	0.220 (lbs)	072108
	0.875	0.375	0.220 (lbs)	072109
	0.875	0.500	0.220 (lbs)	072110
	0.875	0.625	0.176 (lbs)	072111
	0.875	0.750	0.176 (lbs)	072112
m	22.00	8.00	0.10 (kg)	071107
	22.00	10.00	0.10 (kg)	071108
	22.00	12.00	0.10 (kg)	071109
	22.00	14.00	0.08 (kg)	071110
	22.00	18.00	0.08 (kg)	071111

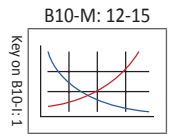
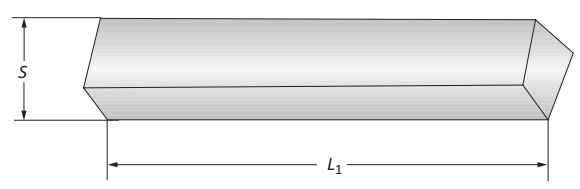


UPA 5-S 6 Boring Bar Holders

		Boring Bar Holder			
	D_1	L_1	Designation	Working Diameter Range	Part No.
i	0.875	5.039	BH 513	4.724 - 15.748	076003
	0.875	9.055	BH 523	10.630 - 24.408	076004
m	22.00	228.00	BH 513	120.00 - 400.00	075003
	22.00	230.00	BH 523	270.00 - 620.00	075004

UPA 5-S 6 Square Turning Bit

		Square Turning Bit		
	D_1	L_1	Weight	Part No.
i	0.236	1.574	0.035 (oz)	089001
m	6.00	40.00	11 (g)	089001



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

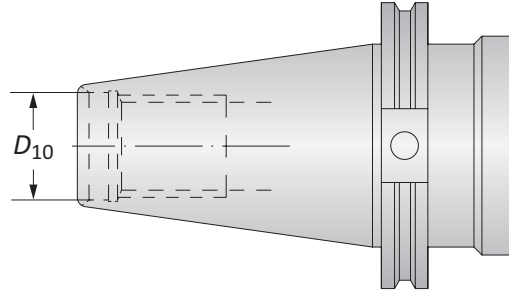
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UPA 4 and 5-S 6 Master Shanks

CAT 40/50 | Morse Taper | NMTB 40/50

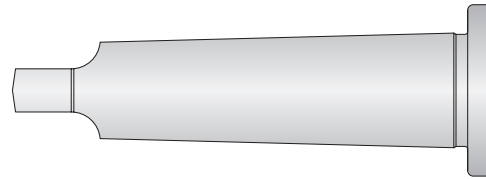
CAT 40/50 Shanks

Shank			
Style	D_{10}	Weight	Part No.
i CAT 40	$\frac{5}{8}$ - 11	3.196 (lbs)	130005T013939
i CAT 50	1 - 8	7.054 (lbs)	130005T011624
m CAT 40	M16 x 2	1.45 (kg)	130005T016960
m CAT 50	M24 x 3	3.20 (kg)	130005T016962



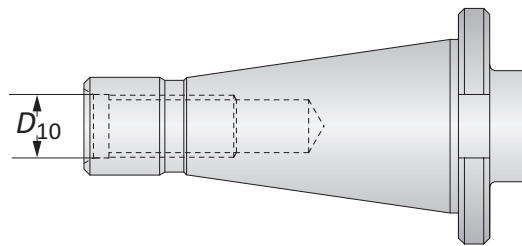
Morse Taper Shanks

Shank			
Style	Weight	Part No.	
i MT 4	1.895 (lbs)	130005T003590	
i MT 5	3.639 (lbs)	130005T003920	
m MT 4	0.86 (kg)	130005T003590	
m MT 5	1.65 (kg)	130005T003920	



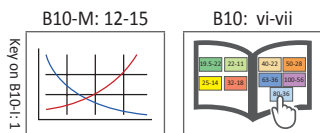
NMTB 40/50 Shanks

Shank			
Style	D_{10}	Weight	Part No.
i NMTB40	$\frac{5}{8}$ - 11	2.866 (lbs)	130005T004498
i NMTB50	1 - 8	6.393 (lbs)	130005T004480
m NMTB40	$\frac{5}{8}$ - 11	1.30 (kg)	130005T004498
m NMTB50	1 - 8	2.90 (kg)	130005T004480



Differential Screw


Thread	Weight	Part No.
i M20 x 2.5	0.154 (lbs)	KW9209
m M20 x 2.5	0.07 (lbs)	KW9209

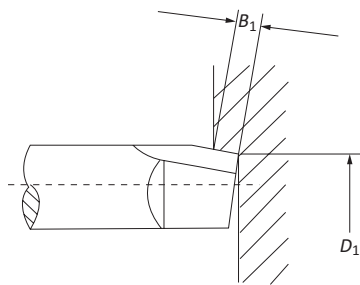


i = Imperial (in)
m = Metric (mm)


Technical Information | Chip Production Values

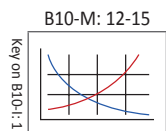
Technical Data

Type	UPA 3	UPA 4	UPA 5-S 6
Working accuracy	±0.005	±0.005	±0.005
Diameter range	25.00	35.00	45.00
MT shank	3.00	4.00	5.00
ISO shank	30.00	40.00	40.00
Facing and boring range	0.00 - 260.00	0.00 - 400.00	0.00 - 620.00
Adjustment of slide (max)	48.00	52.00	112.00
Self-activated feed of slide per revolution	0.05	0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.14, 0.16, 0.18, 0.20, 0.22, 0.24	0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.14, 0.16, 0.18, 0.20, 0.22, 0.24
 Fine adjustment of one division	0.01	0.01	0.01
Fine adjustment of one revolution	1.00	0.40	0.40
Rapid return per revolution	1.00	–	–
Rapid return setting per revolution	–	6.00	6.00
Largest diameter of slide	85.00	115.00	170.00
Height of boring head without shank	81.00	128.00	128.00
Tool locations in slide	18.00	22.00	22.00
Max permissible revolutions	1000	600	600
End cut off accuracy	±0.05	±0.05	±0.05



Chip Production Values

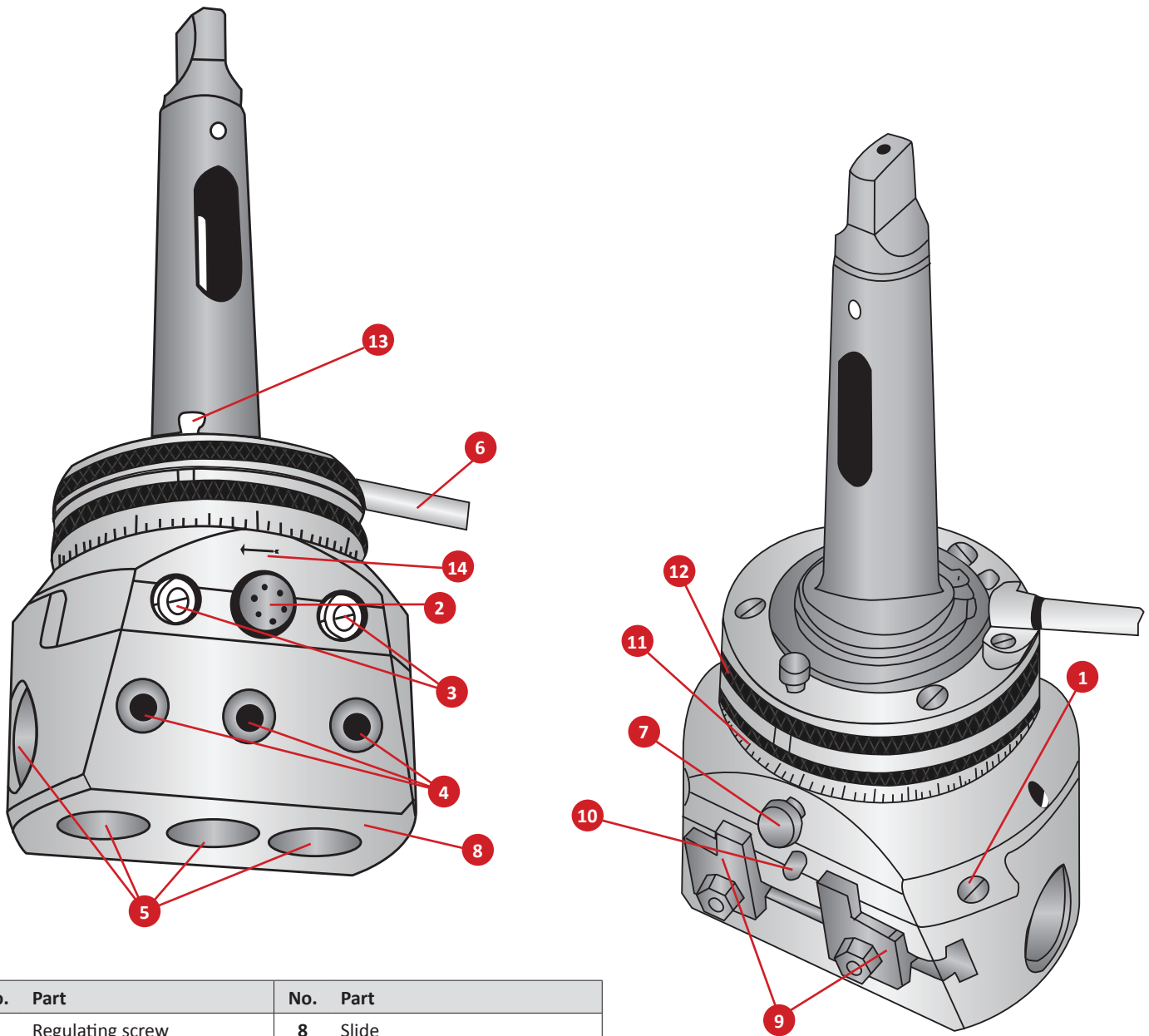
Chip Cutting Guide	Type	UPA 3	UPA 4	UPA 5-S 6
Max load	KW	2.50	7.00	9.50
With slide feed	mm/rev.	0.050	0.08, 0.12, 0.24	0.08, 0.12, 0.24
For smaller working \varnothing	D_1	60.00	150.00	200.00
 Maximum width of chip	B_1	4.00	7.00, 6.00, 4.00	8.00, 7.00, 5.00
Maximum working \varnothing	D_1	260.00	400.00	500.00 / 620.00
Without reinforcement rings	B_1	2.00	2.20, 2.00, 1.50	2.50, 2.00, 1.50
With reinforcement rings	B_1	–	4.50, 4.00, 3.00	5.00, 4.00, 3.00



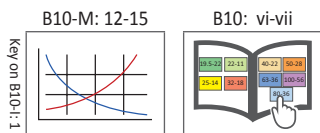
 = Imperial (in)
 = Metric (mm)

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UPA 3 Boring Head Diagram



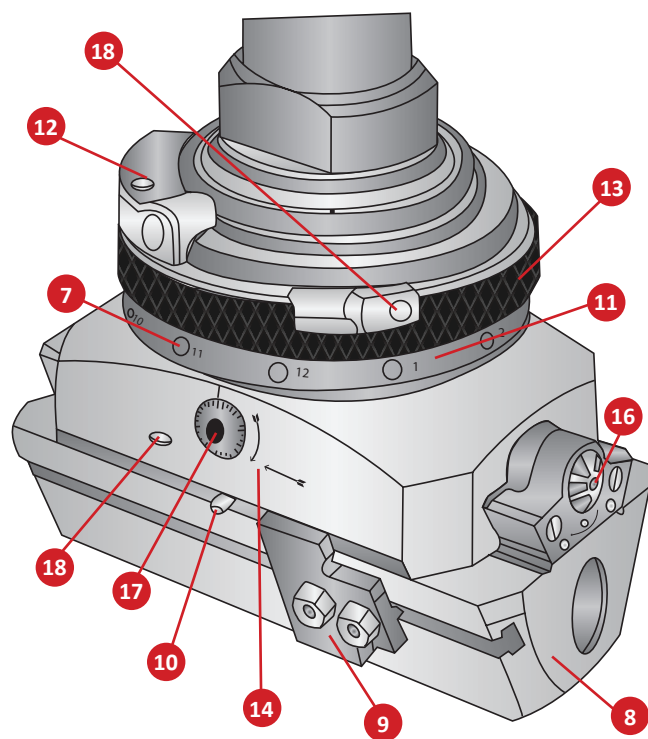
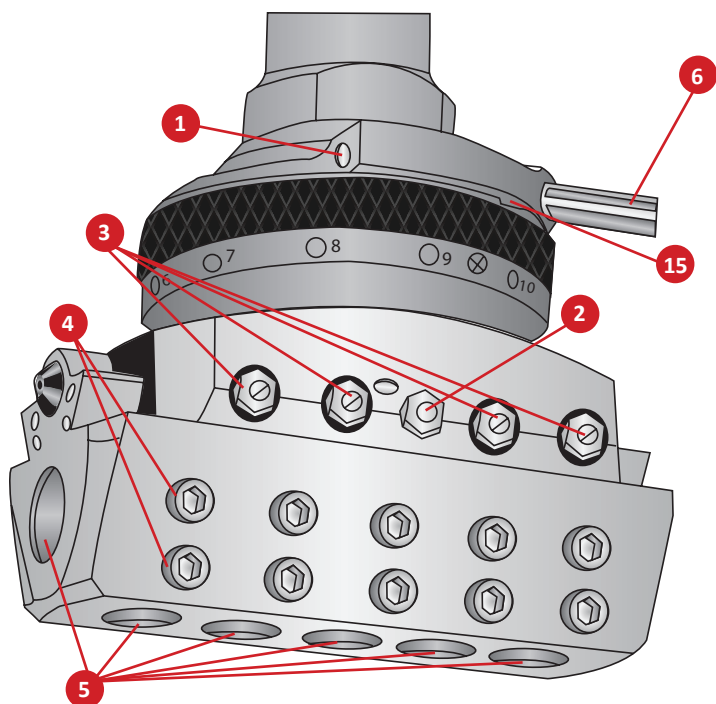
No.	Part	No.	Part
1	Regulating screw	8	Slide
2	Locking screw	9	Stop
3	Setting screws	10	Fixed pin
4	Fastening screw	11	Scale ring
5	Tool post holes	12	Holding ring
6	Stop rod	13	Button for return movement
7	Feed button	14	Arrow



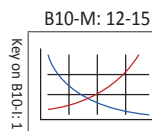
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UPA 4 / 5-S 6 Boring Heads Diagram



No.	Part	No.	Part
1	Regulating screw	10	Fixed pin
2	Locking screw	11	Scale ring
3	Setting screws	12	Retaining ring
4	Fastening screws	13	Feed ring
5	Tool post holes	14	Arrow
6	Stop rod	15	Recess
7	Feed buttons	16	Quick setting dial
8	Slide with rotation bores	17	Fine setting dial
9	Stop	18	Release ring



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Guaranteed Test / Demo Application Form

Distributor PO # _____

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

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

Distributor Information

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

End User Information

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

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

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

Application Information

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

Machine Information

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

Coolant Information

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

Requested Tooling

QTY	Item Number

QTY	Item Number



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

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

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

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