

Holemaking Solutions for Today's Manufacturing





Reaming



Burnishing



Threading





BORING

UPA Facing and Boring Heads



Specials

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













Machining





Renewable Energy

Universal Versatile Boring Heads Table of Contents

Introduction

UPA Product Overview	- 3
UPA 3 Boring System	
UPA 3 Boring Heads and Accessories	- 5
UPA 3 Shanks 6	- 7
UPA 4 and 5s6 Boring System	
UPA 4 Boring Heads and Accessories	- 9
UPA 5-S 6 Boring Heads and Accessories 10 -	11
UPA 4 and 5-S 6 Shanks	13
Technical Data	14
Chip Production Values	15
UPA Boring System Diagrams 16 -	17

	Diameter Range	
Series	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



Universal Facing and Boring Heads

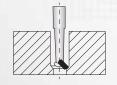
The versatile Wohlhaupter UPA boring heads can be used for facing, boring, and taper turning. They are available in right- or left-handed types.

Precise and versatile boring heads.

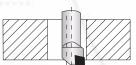
- Diameter range: 0.000" 24.409" (0.00 mm 620.00 mm).
- Slide adjustment up to 4.410" (112.00 mm).
- · Can be used in a variety of operations.

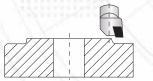
UNIVERSAL

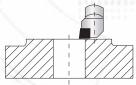
FACING and BORING Applications







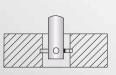




Boring with different tools

From inside outward

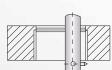
From outside inward



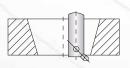
Recessing

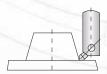










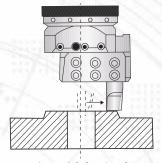


Taper Turning

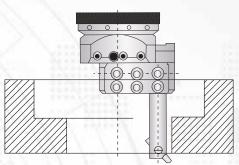
Facing

UNIVERSAL

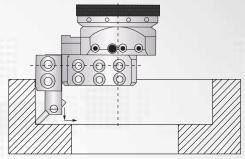
FACING and BORING Application Examples



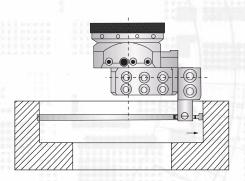
Facing with boring bar directly in slide



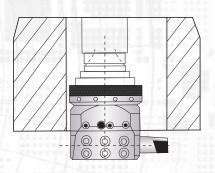
Boring with long boring bar



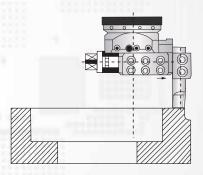
Boring and facing with short boring bar holder and a boring bar



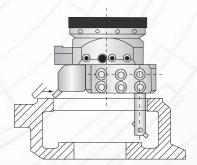
Recessing with short boring bar holder and a boring bar



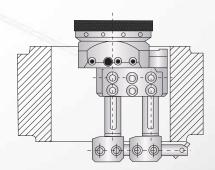
Deep hole boring with boring bar directly in slide



Large diameter facing with a long boring bar holder



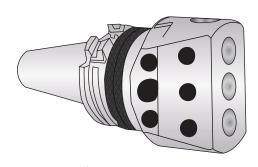
Facing in two areas with one boring bar and a boring bar holder

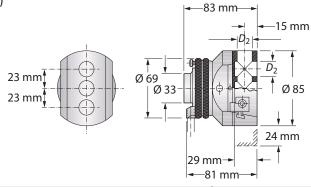


Facing the reverse side by using boring bar holders contained in attachment

UPA 3 Boring Heads and Accessories

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





UPA 3 Boring Heads

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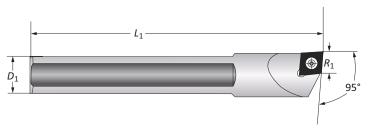
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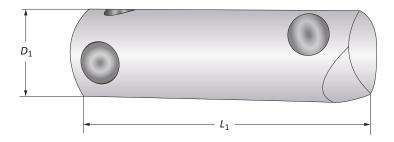
K

		Boring Head		
	Boring Range	D_2	Weight	Part No.
0	0.000 - 10.234	0.750	4.629 (lbs)	006020
0	0.00 - 260.00	18.00	2.10 (kg)	005020



UPA 3 Boring Bars

		Borin	g Bar				
	D_1	L ₁	R ₁	Weight	Туре	Insert Form	Part No.
0	0.750	3.149	0.531	0.220 (lbs)	Right	103	0750BFBR
U	0.750	3.149	0.531	0.220 (lbs)	Left	103	0750BFBL
a	18.00	80.00	13.50	0.10 (kg)	Right	103	081087
_	18.00	80.00	13.50	0.10 (kg)	Left	103	218088



UPA 3 Boring Bars

	Boring Bar				
	D_1	L ₁	Boring Depth	Designation	Part No.
	0.750	2.362	1.181	В 306	074003
0	0.750	3.543	2.362	В 309	074004
	0.750	4.724	3.543	B 312	074005
	18.00	60.00	30.00	B 306	073003
(1)	18.00	90.00	60.00	В 309	073004
	18.00	120.00	90.00	B 312	073005

1 = Imperial (in)

m = Metric (mm)



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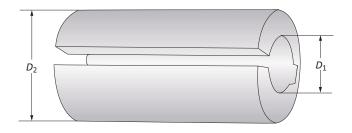
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INDEX

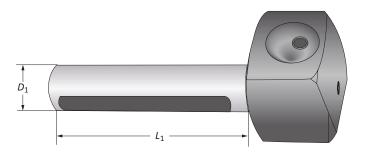
UPA 3 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 3 Reducing Sleeves

	Reducin	g Sleeve		
	D_2	D_1	Weight	Part No.
	0.750	0.313	0.220 (lbs)	072104
A	0.750	0.375	0.220 (lbs)	072105
U	0.750	0.500	0.220 (lbs)	072106
	0.750	0.625	0.220 (lbs)	072107
	18.00	8.00	0.10 (kg)	071103
@	18.00	10.00	0.10 (kg)	071104
w	18.00	12.00	0.10 (kg)	071105
	18.00	14.00	0.10 (kg)	071106

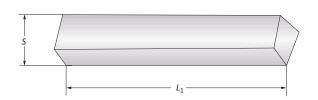


UPA 3 Boring Bar Holders

Boring Bar Holder					
	D_1	L ₁	Working Diameter Range	Designation	Part No.
•	0.750	3.228	3.346 - 7.480	BH 308	076001
U	0.750	4.724	6.299 - 10.236	BH 312	076002
(18.00	82.00	85.00 - 190.00	BH 308	075001
W	18.00	120.00	160.00 - 260.00	BH 312	075002

UPA 3 Square Turning Bit

	Square Tu	urning Bit		
	S	<i>L</i> ₁	Weight	Part No.
0	0.236	1.574	0.035 (oz)	089001
0	6.00	40.00	11 (g)	089001



UPA 3 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

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Е

G

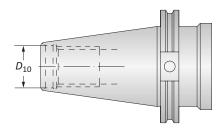
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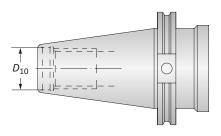
CAT Shanks

	Shank			
	Style	D ₁₀	Weight	Part No.
<u> </u>	CAT 40	5∕8 - 11	2.336 (lbs)	130001T013939
0	CAT 50	1 - 8	7.054 (lbs)	130001T011624



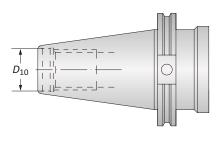
SK (DIN 69871)

	Shank			
	Style	D ₁₀	Weight	Part No.
0	ISO 40	M16	1.00 (kg)	130001T013815



DIN 2080

	Style	D ₁₀	Weight	Part No.
	ISO 30	M12	0.40 (kg)	130001T003673
	ISO 40	M16 (chucking groove)	0.80 (kg)	130001T010229
(1)	ISO 40	M16 (cap screw clamping)	1.00 (kg)	130001T003703
	ISO 50	M24	2.80 (kg)	130001T003704
	ISO 50	M24 (chucking groove)	2.80 (kg)	130001T010048



= Imperial (in) = Metric (mm)

INDEX

B10-J: 6



Α

В

C

D

Ε

G

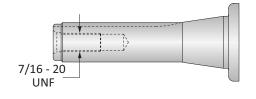
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UPA 3 Master Shanks

R-8 | NMTB | Morse Taper | Norm Taper

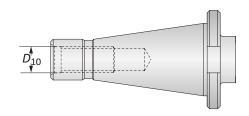
R-8 Shanks

Shank		
	Weight	Part No.
0	1.058 (lbs)	130001T007166
	0.48 (kg)	130001T007166



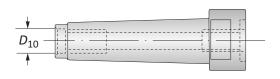
NMTB Shanks

	Style	D ₁₀	Weight	Part No.
•	NMTB 40	5⁄8 - 11	1.984 (lbs)	130001T004498
0	NMTB 50	1 - 8	5.798 (lbs)	130001T004480



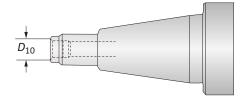
Morse Taper Shanks

	Style	Туре	D ₁₀	Weight	Part No.
	MT 3	DIN 1806	_	0.661 (lbs)	130001T004509
0	MT 4	DIN 1806	5⁄8 - 11	1.212 (lbs)	130001T003590
	MT 5	DIN 1806	1 - 8	2.976 (lbs)	130001T003920
	MT 3	DIN 1806	_	0.30 (kg)	130001T004509
0	MT 4	DIN 2207	M16	0.70 (kg)	130001T004256
	MT 4	_	M14 SIP	1.00 (kg)	130001T004255
				•	



Norm Taper

	Shar			
	Style	D ₁₀	Weight	Part No.
0	40 x S 20 x 2 with bolts DECKEL	M12 x 1	1.00 (kg)	130001T005070



Differential Screw

Thread		Weight	Part No.	
0	M16 x 2	0.066 (lbs)	KW9208	
0	M16 x 2	0.03 (kg)	KW9208	

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

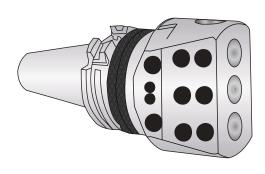
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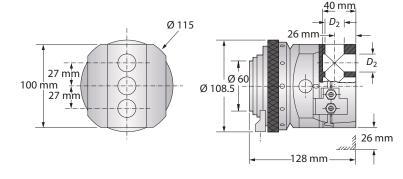
M

INDEX

UPA 4 Boring Heads and Accessories

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





UPA 4 Boring Heads

Α

В

 C

D

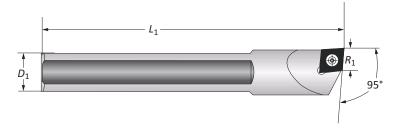
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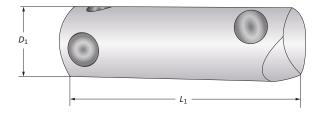
K

		Boring		
	Boring Range	D ₂	Weight	Part No.
0	0.000 - 15.748	0.875	14.330 (lbs)	008020
M	0.00 400.00	22.00	C FO (1-7)	007020
\mathbf{w}	0.00 - 400.00	22.00	6.50 (kg)	007020



UPA 4 Boring Bars

	Boring Bar						
	D_1	L ₁	R ₁	Weight	Туре	Insert Form	Part No.
0	0.875	3.937	0.531	0.220 (lbs)	Right	103	0875BFBR
_	0.875	3.937	0.531	0.220 (lbs)	Right	103	0875BFBL
	22.00	100.00	13.50	0.10 (kg)	Right	103	081092
—	22.00	100.00	13.50	0.10 (kg)	Left	103	218089



UPA 4 Boring Bars

	Boring Bar				
	D_1	L ₁	Boring Depth	Designation	Part No.
	0.875	3.346	1.771	B 408	074006
0	0.875	4.921	3.346	B 412	074007
	0.875	6.496	4.921	B 416	074008
	22.00	85.00	45.00	B 408	073006
0	22.00	125.00	85.00	B 412	073007
	22.00	165.00	125.00	B 416	073008

INDEX

B10-J: 8



Α

В

C

D

Ε

G

Н

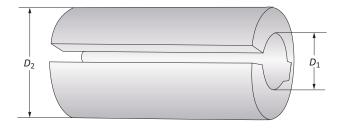
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INDEX

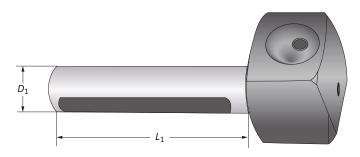
UPA 4 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 4 Reducing Sleeves

	D_2	D_1	Weight	Part No.
	0.875	0.312	0.220 (lbs)	072108
	0.875	0.375	0.220 (lbs)	072109
0	0.875	0.500	0.220 (lbs)	072110
	0.875	0.625	0.176 (lbs)	072111
	0.875	0.750	0.176 (lbs)	072112
	22.00	8.00	0.10 (kg)	071107
	22.00	10.00	0.10 (kg)	071108
(ii)	22.00	12.00	0.10 (kg)	071109
	22.00	14.00	0.08 (kg)	071110
	22.00	18.00	0.08 (kg)	071111

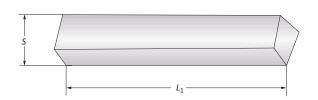


UPA 4 Boring Bar Holders

Boring Bar Holder					
	D_1	L ₁	Designation	Working Diameter Range	Part No.
<u>_</u>	0.875	3.858	BH 410	4.527 - 9.448	076003
U	0.875	7.086	BH 418	8.661 - 15.748	076004
	22.00	98.00	BH 410	115.00 - 240.00	075003
(
	22.00	180.00	BH 418	220.00 - 400.00	075004

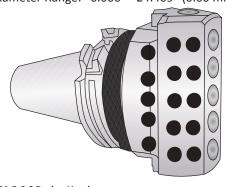
UPA 4 Square Turning Bit

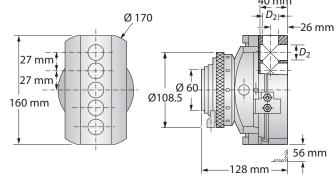
Square Turning Bit				
	S	L_1	Weight	Part No.
0	0.236	1.574	0.035 (oz)	089001
0	6.00	40.00	11 (g)	089001



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

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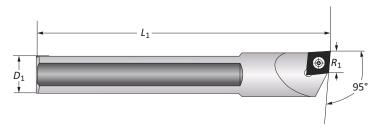
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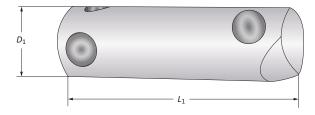
K

	Boring		
oring Range	D_2	Weight	Part No.
000 - 24.409	0.875	17.416 (lbs)	014020
00 620 00	22.00	7.90 (kg)	013020
)		ring Range D ₂ 00 - 24.409 0.875	00 - 24.409 0.875 17.416 (lbs)



UPA 5-S 6 Boring Bars

	Boring Bar						
	D_1	L ₁	R ₁	Weight	Туре	Insert Form	Part No.
0	0.875	3.937	0.531	0.220 (lbs)	Right	103	0875BFBR
U	0.875	3.937	0.531	0.220 (lbs)	Left	103	0875BFBL
m	22.00	100.00	13.50	0.10 (kg)	Right	103	081092
•	22.00	100.00	13.50	0.10 (kg)	Left	103	218089



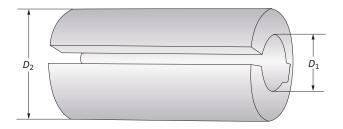
UPA 5-S 6 Boring Bars

Boring Bar					
	D_1	L ₁	Boring Depth	Designation	Part No.
	0.875	3.346	1.771	B 408	074006
0	0.875	4.921	3.346	B 412	074007
	0.875	6.496	4.921	B 416	074008
			1		
	22.00	85.00	45.00	B 408	073006
0	22.00	125.00	85.00	B 412	073007
	22.00	165.00	125.00	B 416	073008



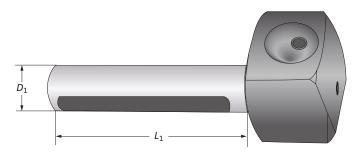
UPA 5-S 6 Accessories

Reducing Sleeves | Boring Bar Holders



UPA 5-S 6 Reducing Sleeves

	Reducing Sleeve			
	D_2	D_1	Weight	Part No.
	0.875	0.312	0.220 (lbs)	072108
	0.875	0.375	0.220 (lbs)	072109
0	0.875	0.500	0.220 (lbs)	072110
	0.875	0.625	0.176 (lbs)	072111
	0.875	0.750	0.176 (lbs)	072112
	22.00	8.00	0.10 (kg)	071107
	22.00	10.00	0.10 (kg)	071108
(ii)	22.00	12.00	0.10 (kg)	071109
	22.00	14.00	0.08 (kg)	071110
	22.00	18.00	0.08 (kg)	071111

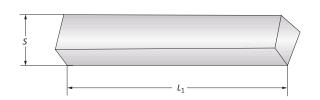


UPA 5-S 6 Boring Bar Holders

Boring Bar Holder					
	D_1	L_1	Designation	Working Diameter Range	Part No.
A	0.875	5.039	BH 513	4.724 - 15.748	076003
U	0.875	9.055	BH 523	10.630 - 24.408	076004
(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			
	S	L_1	Weight	Part No.
0	0.236	1.574	0.035 (oz)	089001
0	6.00	40.00	11 (g)	089001



B10-J: 11

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UPA 4 and 5-S 6 Master Shanks

CAT | SK (DIN 69871) | DIN 2080

CAT Shanks

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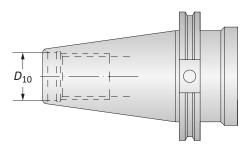
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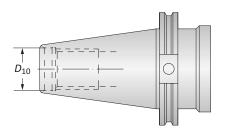
Н

	Style	D ₁₀	Weight	Part No.
0	CAT 40	5⁄8 - 11	3.196 (lbs)	130005T013939
U	CAT 50	1 - 8	7.054 (lbs)	130005T011624



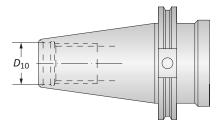
SK (DIN 69871)

	Shank			
	Style	D ₁₀	Weight	Part No.
<u> </u>	ISO 40	M16	1.60 (kg)	130005T013815
<u> </u>	ISO 40	M24	3.00 (kg)	130005T013960



DIN 2080

	Shank			
	Style	D ₁₀	Weight	Part No.
	ISO 40	M16 (cap nut clamps)	1.20 (kg)	130005T003703
0	ISO 50	M24	2.90 (kg)	130005T003704
•	ISO 40	M16 (chucking groove)	1.20 (kg)	130005T010229
	ISO 50	M24 (chucking groove)	3.00 (kg)	130005T010048



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

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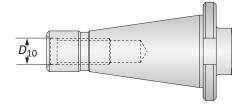
INDEX

UPA 4 and 5-S 6 Master Shanks

NMTB | Morse Taper | Norm Taper

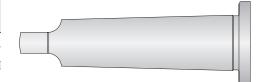
NMTB Shanks

	Style	D ₁₀	Weight	Part No.
	NMTB 40	5⁄8 - 11	2.866 (lbs)	130005T004498
0	NMTB 40	5 % - 11	2.866 (lbs)	130005T010327
	NMTB 50	1 - 8	6.393 (lbs)	130005T004480



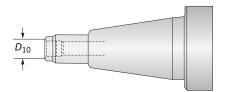
Morse Taper Shanks (DIN 1806)

Sha		
Style	Weight	Part No.
MT 4	1.895 (lbs)	130005T003590*
MT 5	3.639 (lbs)	130005T003920
MT 4	0.86 (kg)	130005T003590*
MT 5	1.65 (kg)	130005T003920
	Style MT 4 MT 5	MT 4 1.895 (lbs) MT 5 3.639 (lbs) MT 4 0.86 (kg)



Norm Taper

	Shar			
	Style	D ₁₀	Weight	Part No.
0	40 x S 20 x 2 with bolts DECKEL	M12 x 1	1.20 (kg)	130005T005070



Differential Screw

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

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

^{*}Shank can only be used with UPA 4 boring heads.

Technical Information

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Technical Data

C UPA 3 Type Working accuracy ±0.005 Diameter range 25.00 MT shank 3.00 ISO shank 30.00 D Facing and boring range 0.00 - 260.00 Adjustment of slide (max) 48.00 Self-activated feed of slide per 0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.05 revolution 0.14, 0.16, 0.18, 0.20, 0.22, 0.24 Fine adjustment of one division 0.01 Е Fine adjustment of one revolution 1.00 Rapid return per revolution 1.00

Rapid return setting per revolution	-	6.00
Largest diameter of slide	85.00	115.00
Height of boring head without shank	81.00	128.00
Tool locations in slide	18.00	22.00
Max permissible revolutions	1000	600
End cut off accuracy	±0.05	±0.05

UPA 4

±0.005

35.00

4.00

40.00

0.00 - 400.00

52.00

0.01

0.40

UPA 5-S 6

±0.005

45.00

5.00

40.00

0.00 - 620.00

112.00

0.02, 0.04, 0.06, 0.08, 0.10, 0.12,

0.14, 0.16, 0.18, 0.20, 0.22, 0.24

0.01

0.40

6.00 170.00 128.00

22.00 600

±0.05

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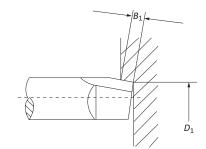
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B10-J: 14

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

Chip Production Values



Chip Production Values

	Chip Cutting Guide	Туре	UPA 3	UPA 4	UPA 5-S 6
(9)	Max load	KW	2.50	7.00	9.50
	With slide feed	mm/rev.	0.05	0.08, 0.12, 0.24	0.08, 0.12, 0.24
	For smaller working Ø	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 Ø	D_1	260.00	400.00	500.00 / 620.00
	Max width of clip without reinforcement rings	B ₁	2.00	2.20, 2.00, 1.50	2.50, 2.00, 1.50
	Max width of clip with reinforcement rings*	B ₁	-	4.50, 4.00, 3.00	5.00, 4.00, 3.00

^{*}By using the reinforcement rings contained in the normal attachment, chip cutting capacity is increased by 100%.

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

UPA 3 Boring Head Diagram

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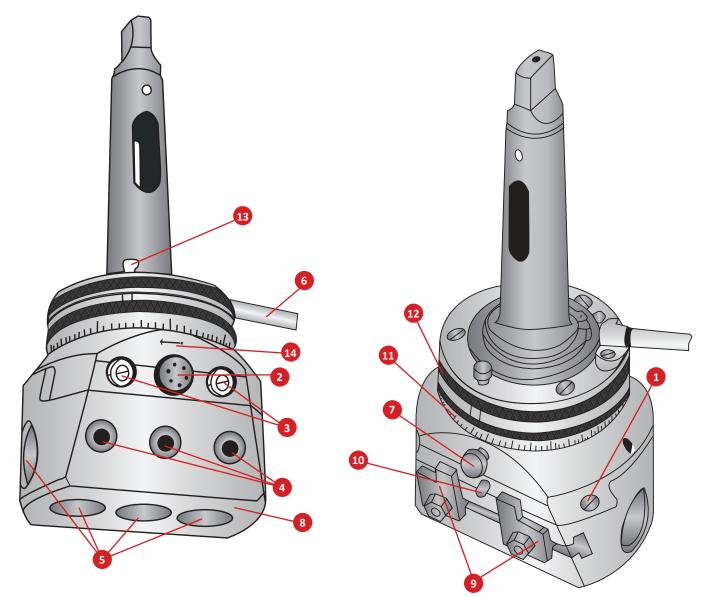
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No.	Part	No.	Part
1	Regulating screw	8	Slide
2	Locking screw	9	Stop
3	Setting screws	10	Fixed pin
4	Fastening screw	11	Scale ring
5	Tool post holes	12	Holding ring
6	Holding rod	13	Button for return movement
7	Feed button	14	Arrow

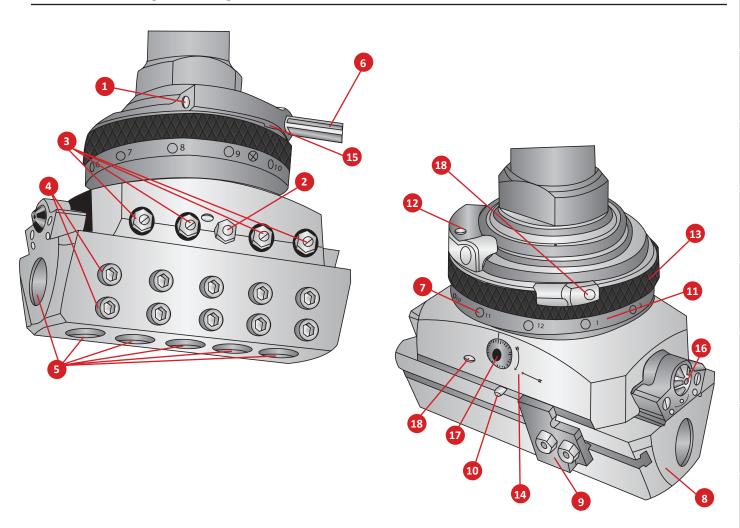
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UPA 4 / 5-S 6 Boring Heads Diagram



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

Α

В

 C

D

Ε

G

Н

K

M

INDEX

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: Current Process List all tooling, coatings, substrates, speeds and feeds, too				End User Information Company Name: Contact: Industry: Phone: Email: cool life, and any problems you are experiencing.			
Fest Objective	List what would mak	e this a successful tes	t (i.e. penetratio	n rate, finish, tool life,	hole size, etc.)		
Application Infor	rmation						
Hole Diameter:		in/mm Toleran	ce:		Material:	(4150, A36	i, cast iron, etc.)
Preexisting Diamet	er:	in/mm Depth	of Cut:	in/mm	Hardness:	(B	HN, Rc)
Required Finish:		RMS			State:		
Machine Informa						(Casting, ho	ot rolled, forging)
	ation						
Machine Type: _			Builder:			Model #:	
	(Lathe, screw machine,	machine center, etc.)		(Haas, Mori Seiki, e	etc.)		
Shank Required: _	(CAT50, Morse	taper, etc.)				Power:	HP/KW
Rigidity:	Orientation:	Tool Rotating:				Thrust:	lbs/N
☐ Excellent	☐ Vertical	☐ Yes					
Good	☐ Horizontal	☐ No					
Poor							
Coolant Informat	tion						
Coolant Delivery:				Coolant Pressure	,.		PSI / har
Esolulie Sellvery.	(*	Through tool, flood)		_ coolaile i ressure			31 / 541
Coolant Type:				Coolant Volume:			GPM / LPM
	(Air mist, oil	, synthetic, water soluble	, etc.)				

Requested Tooling

QTY	Item Number

QTY	Item Number



Allied Machine & Engineering 120 Deeds Drive Dover, OH 44622

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Toll Free USA & Canada: (800) 321-5537
Email: info@alliedmachine.com





Warranty Information

• • • • •

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

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

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

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