

External Honers and Accessories

I.D. Range:
 3 mm – 115 mm
 .120"–4.500"

Honing Tools for Finishing External Diameters

For low production — tool room — salvage — maintenance.

- Recommended for almost any material, including hardened steel, carbide, ceramic and glass.
- Removes "cloverleaf" centerless grind pattern and chatter marks.
- Corrects waviness and "rainbow" warpage, barrel, taper, and out-of-round.
- Many times faster and cleaner than lapping.

Adapter Chucks

Fit Sunnen Honing Machine spindles. Hold work being rotated for external honing operations.

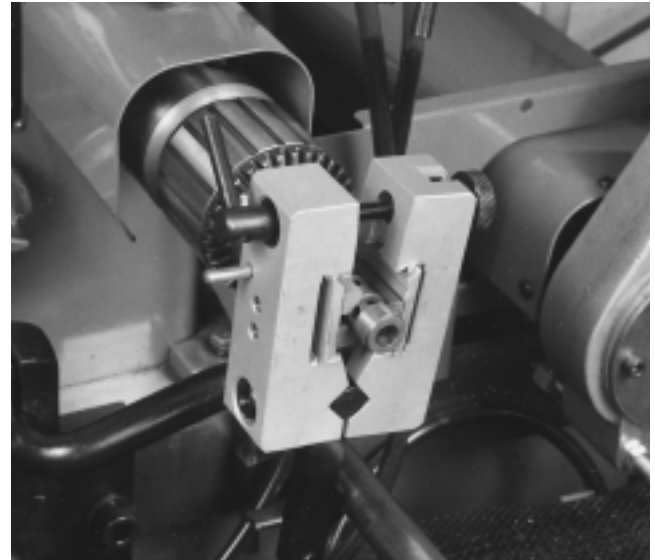


MB-748

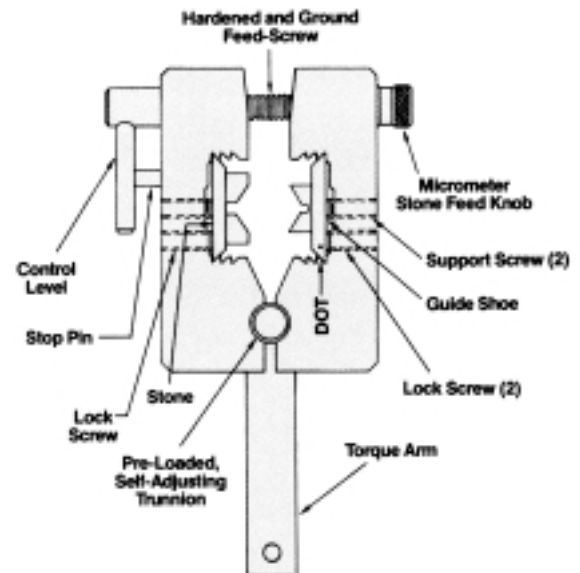
MB-750

MB-770

Part Number	Diameter Range		Shipping Weight	
	mm	in	kg	lbs
MB-748	0 - 10	0 - 3/8	1,4	3
MB-750	5 - 19	3/16 - 3/4	1,8	4
MB-770	3 - 127	1/8 - 5	6,0	13



FB-E External Hone Body with MB-750 External Adapter Chuck in MBB-1660 Horizontal Hone.



Typical External Hone Body with stone & shoe inserted

External Honing and Accessories

External Hone Tooling Selection

I.D. Range:
3 mm – 115 mm
.120"–4.5"

For Sizing and Finishing

When surface finishing or precision sizing is the reason for using the external hone, use a single stone and guide shoe in the proper hone body.

When correction of bow or waviness is the reason for external honing, select tooling from table below.

I.D. Range:
3 mm – 38 mm
.120"–1.5"

For Bow Removal and Alignment of Tandem Lands

For correction of bow or waviness, the stone and guide shoe length should be 1-1/2 times the length of the work, if possible.

Hone bodies, guide shoes, and honing stones are the same as above.

I.D. Range:
3 mm – 70 mm
.125"–2.75"

External Hone Sets

Each set contains hone body, wrench, F-700 dressing stick, and two each of stones and guide shoes needed for stock removal and surface finishing.



Order 1-3 For Sizing and Finishing							
Diameter Range 3 mm - 115 mm .120" - 4.5"		1 Hone Body	2 Guide Shoes†		3 Honing Stone	Length of Stone or Guide Shoe	
mm	in		For All Metals	For use with Diamond or CBN/Borazon Stones only		mm	inches
3-6	.120-.240	FA-E Weight: ,2 kg (.5 lb)	FA4-B*	FA4-BB*	See Stone Tables.	13	1/2
6-8	.240-.300		FFA4-B*	FFA4-BB*		25	1
8-10	.300-.400		FA8-B	FA8-BB		19	3/4
10-15	.400-.580	FB-E Wt: ,9 kg (2 lbs)	FA10-B	FA10-BB		25	1
15-20	.580-.800		FB13-B	FB13-BB		25	1
		FC-E Wt: 2,5 kg (5.5 lbs)	FB19-B	FB19-BB		38	1-1/2
20-28	.800-1.100		FC26-B*	FC26-BB*		51	2
28-38	1.100-1.500	FD-E Wt: 4,7 kg (10.3 lbs)	FFC26-B*	FFC26-BB*		102	4
38-51	1.500-2.000		FC36-B	FC36-BB		64	2-1/2
51-70	2.000-2.750	FD48-B	FD48-BB	76		3	
		FD64-B	FD64-BB	102	4		
70-115	2.750-4.500	FD-E-N88X Wt: 4,8 kg (10.5 lbs)	FD64-B	FD64-BB	102	4	

*When a choice of a stone and shoe length is available, use stone and guide shoe closest to length of part to be honed.

Order 1-4 For Bow Removal and Alignment of Tandem Lands										
Diameter Range 3 mm - 38 mm .120" - 1.5"		1 Hone Body	2 Multiple Holder (2 required)	3 Guide Shoes†		4 Honing Stone	Total Length			
mm	in			For use with all metals	For use with Diamond or CBN/Borazon Stones only		Max. Quantity Stones or Guide Shoes			
				Max. Qty.		Max. Qty.		mm	in	
3-6	.120-.240	FB-E	FB-FA	5	FA4-B**	FA4-BB**	See Stone Tables.	64	2-1/2	
6-8	.240-.300			3	FFA4-B**	FFA4-BB**		76	3	
8-10	.300-.400			4	FA8-B	FA8-BB		76	3	
10-15	.400-.580	FC-E	FC-FB	3	FA10-B	FA10-BB		76	3	
15-20	.580-.800			4	FB13-B	FB13-BB		102	4	
		FD-E	FD-FC	3	FB19-B	FB19-BB		3	114	4-1/2
20-28	.800-1.100			4	FC26-B**	FC26-BB**		4	203	8
28-38	1.100-1.500			2	FFC26-B**	FFC26-BB**		2	203	8
				3	FC36-B	FC36-BB		3	190	7-1/2

** Where a choice of stones and guide shoes can be used, the FFA4- and FFC26- are more economical.

† Note that when you use diamond stones to hone carbides, ceramics and glass, order guide shoe as listed for that application. This guide shoe is twice as wide as the regular guide shoe, for greater stability when using narrow diamond stones.

Diameter Range		Hone Body	Honing Stones				Guide Shoe (2 of each)	External Hone Set	Weight	
mm	in		For Stock Removal		For Finishing				kg	lbs.
3-10	1/8-13/32	FA-E	FA4-AA73	FA4-AA75	FA4-AA93	FA4-AA95	FA4-B	F-1	1,8	4
			FA8-AA73	FA8-AA75	FA8-AA93	FA8-AA95	FA8-B			
			FA10-AA73	FA10-AA75	FA10-AA93	FA10-AA95	FA10-B			
10-20	113/32-13/16	FB-E	FB13-AA73	FB13-AA75	FB13-AA93	FB13-AA95	FB13-B	F-2	2,3	5
			FB19-AA73	FB19-AA75	FB19-AA93	FB19-AA95	FB19-B			
20-38	13/16-1-1/2	FC-E	FC26-AA73	FC26-AA75	FC26-AA93	FC26-AA95	FC26-B	F-3	5,5	12
			FC36-AA73	FC36-AA75	FC36-AA93	FC36-AA95	FC36-B			
38-70	1-1/2-2-3/4	FD-E	FD48-AA73	FD48-AA75	FD48-AA93	FD48-AA95	FD48-B	F-4	13,6	30
			FD64-AA73	FD64-AA75	FD64-AA93	FD64-AA95	FD64-B			

External Honers

External Honing Stones

Diameter Range		Hone Body with Multiple Holders	Hone Body	Grit Size							
mm	in			150	220	280	320	400	500	600	
Aluminum Oxide (AA) - 2 per box											
3-6	.120-.240	FB-E with FB-FA	FA-E	Single Length	(FA4-AA47)			FA4-AA73 FA4-AA75		FA4-AA93 FA4-AA95	
				Double Length	(FFA4-AA47)			FFA4-AA73 FFA4-AA75		FFA4-AA93 FFA4-AA95	
6-8	.240-.300				(FA8-AA47)	(FA8-AA55)		FA8-AA73 FA8-AA75 (FA8-AA77)		FA8-AA93 FA8-AA95 (FA8-AA97)	
8-10	.300-.400				(FA10-AA47) (FA10-AA49)	(FA10-AA55)		FA10-AA73 FA10-AA75		FA10-AA93 FA10-AA95 (FA10-AA97) (FA10-AA99)	
10-15	.400-.580		FC-E with FC-FB	FB-E		(FB13-AA45) (FB13-AA47) (FB13-AA49)	(FB13-AA55)	(FB13-AA63)	FB13-AA73 FB13-AA75		FB13-AA93 FB13-AA95 FB13-AA97 (FB13-AA99)
15-20	.580-.800					(FB19-AA45)	FB19-AA57	(FB19-AA63)	FB19-AA73 FB19-AA75 (FB19-AA79)		FB19-AA93 FB19-AA95 FB19-AA97 (FB19-AA99)
20-28	.800-1.100	FD-E with FD-FC	FC-E	Single Length	FC26-AA45	(FC26-AA57)	FC26-AA63	FC26-AA73 FC26-AA75 (FC26-AA77)		FC26-AA93 FC26-AA95 (FC26-AA97)	
				Double Length		FFC26-AA55		FFC26-AA73 FFC26-AA75		FFC26-AA93 FFC26-AA95	
28-38	1.100-1.500				(FC36-AA43) (FC36-AA45)	(FC36-AA57)	(FC36-AA63)	FC36-AA73 FC36-AA75 (FC36-AA79)		FC36-AA93 FC36-AA95 (FC36-AA99)	
38-51	1.500-2.000		N/A	FD-E			(FD48-AA63)	FD48-AA73 FD48-AA75 (FD48-AA77)		FD48-AA93 FD48-AA95	
51-70	2.000-2.750					(FD64-AA45) (FD64-AA47)	(FD64-AA53)	(FD64-AA63)	FD64-AA73 FD64-AA75 (FD64-AA77)		FD64-AA93 FD64-AA95
70-115	2.750-4.500		N/A	FD-E N88X		(FD64-AA45) (FD64-AA47)	(FD64-AA53)	(FD64-AA63)	FD64-AA73 FD64-AA75 (FD64-AA77)		FD64-AA93 FD64-AA95
Silicon Carbide (JJ/CC) - 2 per box											
3-6	.120-.240	FB-E with FB-FA	FA-E	Single Length						FA4-CC05	
				Double Length							FFA4-CC05
6-8	.240-.300					(FA8-JJ61) (FA8-JJ67)		(FA8-JJ81)	(FA8-JJ95)	FA8-CC05	
8-10	.300-.400				FA10-JJ61 (FA10-JJ67)		FA10-JJ81	(FA10-JJ95)	FA10-CC05		
10-15	.400-.580		FC-E with FC-FB	FB-E			FB13-JJ61 (FB13-JJ63) FB13-JJ65		FB13-JJ81 (FB13-JJ83)	(FB13-JJ93) (FB13-JJ95)	FB13-CC05
15-20	.580-.800						(FB19-JJ63) (FB19-JJ65)		(FB19-JJ83) (FB19-JJ87)	(FB19-JJ93) (FB19-JJ95)	FB19-CC05
20-28	.800-1.100	FD-E with FD-FC	FC-E	Single Length			(FC26-JJ63) (FC26-JJ65) (FC26-JJ67)		(FC26-JJ83)	(FC26-JJ93) (FC26-JJ95)	FC26-CC05
				Double Length							FFC26-CC05
28-38	1.100-1.500					(FC36-JJ57)	(FC36-JJ65) (FC36-JJ67)		(FC36-JJ95)	FC36-CC05	
38-51	1.500-2.000		N/A	FD-E			(FD48-JJ67)		(FD48-JJ93) (FD48-JJ95)	FD48-CC05	
51-70	2.000-2.750					(FD64-JJ47)	(FD64-JJ65) (FD64-JJ67)		(FD64-JJ93) (FD64-JJ95)	FD64-CC05	
70-115	2.750-4.500		N/A	FD-E N88X							

Note: If double length stone is used (FFA4- or FFC26-), you must use guide shoes with identical prefix.
Example: Use FFA4-AA73 stone with FFA4-B shoe.

External Hones

Superabrasive Diamond and Borazon (CBN)

Superabrasive Diamond and Borazon (CBN) stones are available for honing hardened steels, carbide, ceramic, and glass.

Diameter Range		Vitrified Bond Diamond Stones		
mm	in	220	400	600
3-6	.120-.240	FA4-DV57	FA4-DV87	FA4-DV07
3-6	.120-.240	FFA4-DV57	FFA4-DV87*	FFA4-DV07
6-8	.240-.300	FA8-DV57	FA8-DV87	FA8-DV07
8-10	.300-.400	FA10-DV57	FA10-DV87	FA10-DV07
10-15	.400-.580	FB13-DV57	FB13-DV87	FB13-DV07
15-20	.580-.800	FB19-DV57	FB19-DV87	FB19-DV07
20-28	.800-1.000	FC26-DV57	FC26-DV87*	FC26-DV07
20-28	.800-1.000	FFC26-DV57*	FFC26-DV87*	FFC26-DV07*
28-38	1.100-1.500	FC36-DV57*	FC36-DV87*	FC36-DV07
38-51	1.500-2.000	FD48-DV57*	FD48-DV87*	FD48-DV07
51-115	2.000-4.500	FD64-DV57*	FD64-DV87*	FD64-DV07

All stones available from stock unless indicated by an *.
Stones marked with an * are available 2-4 weeks after receipt of order.

Additional Superabrasive Diamond and Borazon/CBN available 4 weeks after receipt of order.

FA4-____ FC26-____
 FFA4-____ FFC26-____
 FA8-____ FC36-____
 FA10-____ FD48-____
 FB13-____ FD64-____
 FB19-____

The ____ is the abrasive code desired. Select the desired stone from Superabrasive Selection Chart below.
 Example: FB19-NM45-XG12.

In some cases, stones other than the RECOMMENDED STONES may hone faster or last longer. For long or repetitive production runs, it may be economical to choose a stone slightly harder or softer, coarser or finer. As a general rule, hard materials require soft stones; soft materials require hard stones; rough holes require hard stones.

*1st choice
 **2nd choice. Use if AA73 does not cut.

*1st choice
 **2nd choice. Use if AA95 does not cut.

Superabrasive Selection Chart							
Grit Size							
		100	150	220	400	600	1200
H---S	H---S	CBN/Borazon Metal Bond					
		NM35	NM45	NM55	NM85	NM05	NM005
		NM37	NM47	NM57	NM87	NM07	NM007
		NM39	NM49	NM59	NM89	NM09	NM009
H---S	H---S	Diamond Metal Bond					
		DM35	DM45	DM55	DM85	DM05	DM005
		DM37	DM47	DM57	DM87	DM07	DM007
		DM39	DM49	DM59	DM89	DM09	DM009
H---S	H---S	CBN/Borazon Resin Bond					
				NR53	NR83		
H---S	H---S	Diamond Resin Bond					
							DR07
H---S	H---S	CBN/Borazon Vitrified Bond					
				NV59	NV89		

Note: Usually the softest grade of stone is most effective.

Recommended Stones			
Material	Stone to Use	Approximate Ra Surface Finish	
		µm	µin
Deburring: rough holes, all materials			
	AA75	—	—
Fast removal: deburred, bored, ground, reamed holes			
Aluminum	AA73	0,68	27
Brass, Soft	AA73	0,68	27
Bronze	AA75	0,68	27
Carbide	DV57	0,50	20
Cast Iron	AA75	0,50	20
Ceramic	DV57	1,00	40
Glass	DV87	1,75	70
Steel, Soft	AA75	0,63	25
Steel, Hardened*	AA73	0,45	18
Steel, Hardened**	NR53†	0,75	30
Fine finishing: previously honed holes			
Aluminum	AA93	0,30	12
Brass, Soft	AA93	0,30	12
Bronze	AA95	0,30	12
Carbide	DV07	0,08	3
Cast Iron	AA95	0,13	5
Ceramic	DV07	0,38	15
Glass	DV07	0,38	15
Steel, Soft	AA95	0,05	2
Steel, Hardened*	AA93	0,03	1
Steel, Hardened**	NR83†	0,18	7

† Available on special order