

External Honing and Accessories

O.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

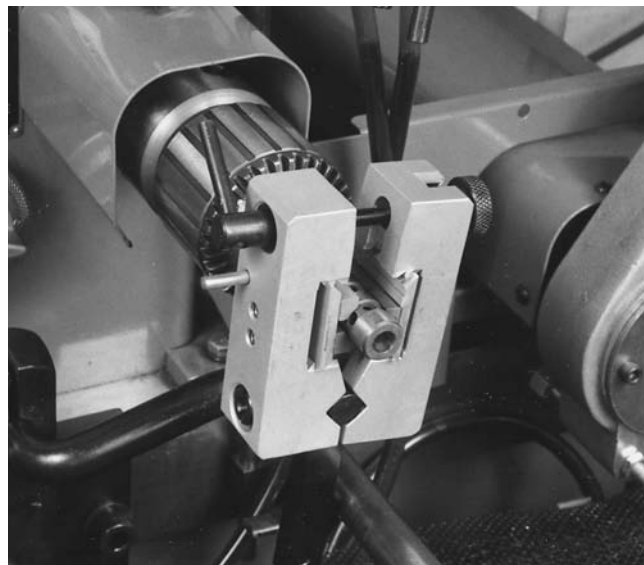


MB-750

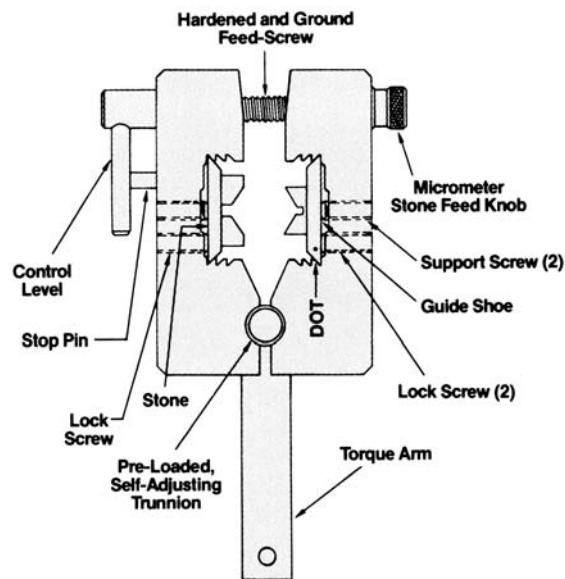


MB-770

Part Number	Diameter Range	
	mm	in
MB-748	0 - 10	0 - 3/8
MB-750	5 - 19	3/16 - 3/4
MB-770	3 - 127	1/8 - 5



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



Typical External Hone Body with stone & shoe inserted

ADAPTERS & OTHER
ABRASIVES & TOOLING

MACHINE
ACCESSORIES

GAGING

FILTERS

HONING FLUIDS
& COOLANTS

TECHNICAL DATA

External Honers and Accessories

Tooling Selection

O.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.

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		
			FFA4-B*	FFA4-BB*		25	1		
6-8	.240-.300		FA8-B	FA8-BB		19	3/4		
8-10	.300-.400	FA10-B	FA10-BB	25		1			
10-15	.400-.580	FB-E Wt: ,9 kg (2 lbs)	FB13-B	FB13-BB		25	1		
15-20	.580-.800		FB19-B	FB19-BB		38	1-1/2		
20-28	.800-1.100	FC-E Wt: 2,5 kg (5.5 lbs)	FC26-B*	FC26-BB*		51	2		
			FFC26-B*	FFC26-BB*		102	4		
28-38	1.100-1.500	FD-E Wt: 4,7 kg (10.3 lbs)	FC36-B	FC36-BB		64	2-1/2		
38-51	1.500-2.000		FD48-B	FD48-BB		76	3		
51-70	2.000-2.750	FD-E-N88X Wt: 4,8 kg (10.5 lbs)	FD64-B	FD64-BB	102	4			
70-115	2.750-4.500		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.

O.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.

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			Max. Qty.	For use with all metals	For use with Diamond or CBN/Borazon Stones only	Max. Qty.	mm	in
3-6	.120-.240	FB-E	FB-FA	5	FA4-B**	FA4-BB**	5	64	2-1/2
				3	FFA4-B**	FFA4-BB**	3	76	3
6-8	.240-.300			4	FA8-B	FA8-BB	4	76	3
8-10	.300-.400	FC-E	FC-FB	3	FA10-B	FA10-BB	3	76	3
10-15	.400-.580			4	FB13-B	FB13-BB	4	102	4
15-20	.580-.800			3	FB19-B	FB19-BB	3	114	4-1/2
20-28	.800-1.100	FD-E	FD-FC	4	FC26-B**	FC26-BB**	4	203	8
				2	FFC26-B**	FFC26-BB**	2	203	8
28-38	1.100-1.500			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.

External Honing Stones and Accessories

Abrasives Selection

External Honing Stones				Grit Size						
Diameter Range		Hone Body with Multiple Holders	Hone Body	150	220	280	320	400	500	600
mm	in			Aluminum Oxide (AA) - 2 per box						
3-6	.120-.240	FB-E with FB-FA	FA-E	Single Length			FA4-AA75		FA4-AA93	FA4-AA95
				Double Length			FFA4-AA73+		FFA4-AA93+	FFA4-AA95
6-8	.240-.300						FA8-AA73+		FA8-AA95	
8-10	.300-.400						FA10-AA75		FA10-AA95	
10-15	.400-.580	FC-E with FC-FB	FB-E				FB13-AA73		FB13-AA93	FB13-AA95
15-20	.580-.800						FB19-AA73		FB19-AA93	FB19-AA95
20-28	.800-1.100	FD-E with FD-FC	FC-E	Single Length			FC26-AA73		FC26-AA93+	
				Double Length			FFC26-AA73+		FFC26-AA95+	
28-38	1.100-1.500						FC36-AA75		FC36-AA95+	
38-51	1.500-2.000	N/A	FD-E				FD48-AA73		FD48-AA93	
51-70	2.000-2.750									
70-115	2.750-4.500	N/A	FD-E N88X		FD64-AA45		FD64-AA73+		FD64-AA93+	FD64-AA95+
				Silicon Carbide (JJ/CC) - 2 per box						
3-6	.120-.240	FB-E with FB-FA	FA-E	Single Length						
				Double Length						FFA4-CC05+
6-8	.240-.300							FA8-JJ95+	FA8-CC05+	
8-10	.300-.400							FA10-JJ95+	FA10-CC05+	
10-15	.400-.580	FC-E with FC-FB	FB-E				FB13-JJ63		FB13-JJ95+	FB13-CC05+
15-20	.580-.800								FB19-JJ95+	FB19-CC05+
20-28	.800-1.100	FD-E with FD-FC	FC-E	Single Length					FC26-JJ93+	FC26-CC05+
				Double Length						FFC26-CC05+
28-38	1.100-1.500						FC36-JJ93+	FC36-CC05+		
38-51	1.500-2.000	N/A	FD-E						FD48-JJ93+	FD48-CC05+
51-70	2.000-2.750								FD64-JJ93+	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.

+ Special Order - Contact Customer Service

External Honing and Accessories

Abrasives Selection

ADAPTERS & OTHER
ABRASIVES & TOOLING

Superabrasive Diamond and CBN

Superabrasive Diamond and 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			
3-6	.120-.240			
6-8	.240-.300			
8-10	.300-.400		FA10-DV87 ⁺	FA10-DV07
10-15	.400-.580	FB13-DV57 ⁺		FB13-DV07
15-20	.580-.800			FB19-DV07
20-28	.800-1.000	FC26-DV57 ⁺		FC26-DV07 ⁺
20-28	.800-1.000			
28-38	1.100-1.500			FC36-DV07
38-51	1.500-2.000	FD48-DV57 ⁺	FD48-DV87 ⁺	FD48-DV07 ⁺
51-115	2.000-4.500	FD64-DV57 ⁺		FD64-DV07

⁺ Special Order - Contact Customer Service

MACHINE
ACCESSORIES

GAGING

FILTERS

HONING FLUIDS
& COOLANTS

TECHNICAL DATA

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	CBN Metal Bond				
		NM55 ⁺ NM57 ⁺	NM85 ⁺	NM05 ⁺	NM005 ⁺
H---S	Diamond Metal Bond				
	DM45 ⁺	DM55 ⁺	DM85	DM05 ⁺ DM07 ⁺	DM005 ⁺ DM007 ⁺
H---S	CBN/Borazon Resin Bond				
		NR53 ⁺	NR83 ⁺		
H---S	Diamond Resin Bond				
					DR007 ⁺

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

Recommended Stones

Material	Stone to Use	Approximate Ra Surface Finish	
		µm	µin
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	AA95	0,30	12
Brass, Soft	AA95	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*	AA95	0,03	1
Steel, Hardened**	NR83†	0,18	7

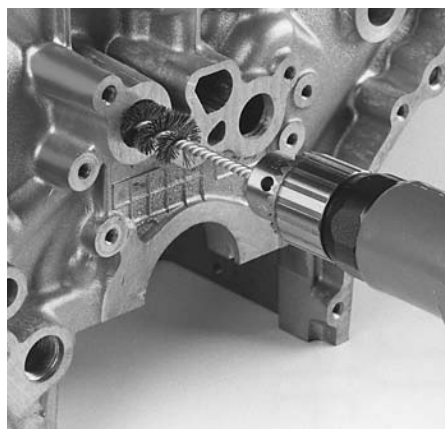
† Available on special order

NOTE: Some recommended stones are special orders. Please contact Sunnen for availability.

"Micro" Deburring Brushes

Workpiece Minimum Inside Diameter		Part Number	Deburring Brush					
mm	inches		A Brush Diameter		B Brush Length		C Overall Length	
			mm	in	mm	in	mm	in
.762	.030	DB-032	.813	.032	12,7	.50	101,6	4.0
1,143	.045	DB-047	1,194	.047	12,7	.50	101,6	4.0
1,575	.062	DB-064	1,626	.064	19,05	.75	101,6	4.0
1,981	.078	DB-080	2,032	.080	19,05	.75	101,6	4.0
2,388	.094	DB-096	2,438	.096	19,05	.75	101,6	4.0
2,769	.109	DB-111	2,819	.111	25,4	1.0	101,6	4.0
3,175	.125	DB-128	3,251	.128	25,4	1.0	101,6	4.0
4,013	.158	DB-159	4,039	.159	25,4	1.0	127,0	5.0
4,750	.187	DB-191	4,851	.191	25,4	1.0	127,0	5.0
5,537	.218	DB-222	5,639	.222	25,4	1.0	127,0	5.0
6,350	.250	DB-255	6,477	.255	50,8	2.0	127,0	5.0
7,137	.281	DB-288	7,315	.288	50,8	2.0	127,0	5.0
7,925	.312	DB-321	8,153	.321	50,8	2.0	127,0	5.0
8,712	.343	DB-355	9,017	.355	50,8	2.0	127,0	5.0
9,525	.375	DB-389	9,881	.389	50,8	2.0	127,0	5.0
10,31	.406	DB-422	10,72	.422	50,8	2.0	127,0	5.0
11,10	.437	DB-455	11,56	.455	50,8	2.0	127,0	5.0
11,91	.469	DB-489	12,42	.489	50,8	2.0	127,0	5.0
9,5	.375	DB-500	12,7	.500	50,8	2.0	127,0	5.0
11,1	.437	DB-563	14,3	.563	50,8	2.0	127,0	5.0
12,7	.500	DB-625	15,9	.625	50,8	2.0	127,0	5.0
13,4	.531	DB-688	17,5	.688	63,5	2.5	139,7	5.5
14,7	.578	DB-750	19,1	.750	63,5	2.5	139,7	5.5
15,5	.609	DB-813	20,6	.813	63,5	2.5	139,7	5.5
15,9	.625	DB-875	22,2	.875	63,5	2.5	139,7	5.5
16,3	.641	DB-938	23,8	.938	63,5	2.5	139,7	5.5
16,7	.656	DB-1000	25,4	1.000	63,5	2.5	139,7	5.5
18,3	.719	DB-1125	28,6	1.125	101,6	4.0	254,0	10.0
20,2	.797	DB-1250	31,8	1.250	101,6	4.0	254,0	10.0
22,2	.875	DB-1375	34,9	1.375	101,6	4.0	254,0	10.0
23,8	.938	DB-1500	38,1	1.500	101,6	4.0	254,0	10.0
24,6	.969	DB-1625	41,3	1.625	101,6	4.0	254,0	10.0
26,6	1.047	DB-1750	44,5	1.750	101,6	4.0	254,0	10.0
28,6	1.125	DB-1875	47,6	1.875	101,6	4.0	254,0	10.0
29,4	1.156	DB-2000	50,8	2.000	101,6	4.0	254,0	10.0
32,9	1.297	DB-2250	57,2	2.250	101,6	4.0	254,0	10.0
36,9	1.453	DB-2500	63,5	2.500	101,6	4.0	254,0	10.0
40,9	1.609	DB-2750	69,9	2.750	101,6	4.0	254,0	10.0

NOTE: For additional sizes larger than 63,5mm (2.5") refer to PHT brushes on page 5.16.



Selection

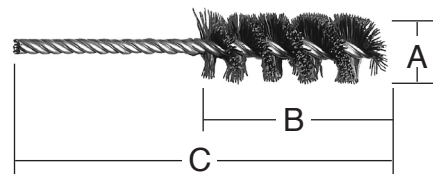
The proper brush diameter to use for a given part size depends on the purpose of the deburring operation. For general surface conditioning and edge breaking choose a brush with large interference to promote cutting on the sides of the bristles. For an application such as thread deburring, choose a brush with a small amount of interference in the part in order to cut mostly on the bristle tips. Refer to the chart at left for the proper application.

An inexpensive alternative for micro deburring of threads and bore interruptions.

Sunnen's "DB" Series Deburring Brushes can quickly debur bores from .762 to 63,5 millimeters (.030" to 2.5").

Micro deburring offers many unique advantages in machine shops, manufacturing plants, and automotive engine rebuilding shops.

- Gentle wiping action of bristles produces a slight edge radius across bore interruptions.
- Flexible, nylon bonded, silicon carbide abrasive is effective on most materials.
- Lighter cutting action of brush reduces surface stress on workpieces.
- Mounts in a hand drill or automatic machines.



Notes

ADAPTERS & OTHER ABRASIVES & TOOLING	
MACHINE ACCESSORIES	
GAGING	
FILTERS	
HONING FLUIDS & COOLANTS	
TECHNICAL DATA	