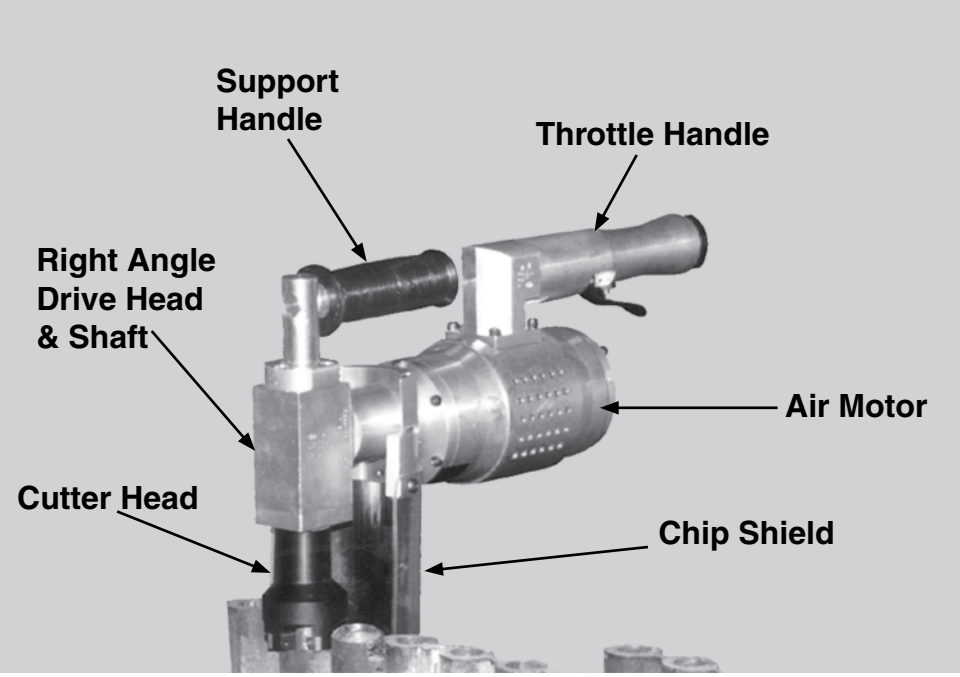
H&S TOOL, INC.

Operating and Maintenance Recommendations for Model MHS

Read Thoroughly and Understand This Publication Before Attempting to Operate the Tool

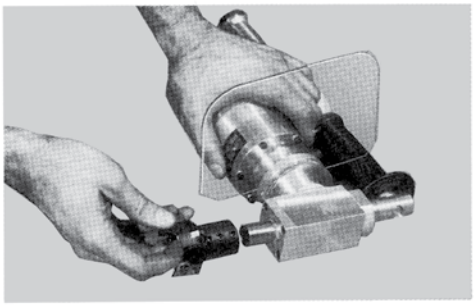
DANGER! The cutting process requires sharp, exposed cutters and blades rotating at very high speeds. Keep hands and clothing away from the rotating head and blades at all times. Hot metal chips are produced. EYE, EAR, HAND PROTECTION and other PROTECTIVE CLOTHING MUST BE WORN AT ALL TIMES.

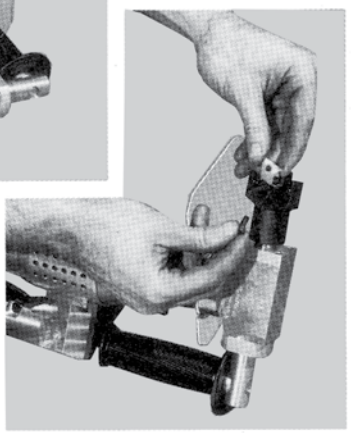


HAND HELD APPLICATIONS

Three types of tube cutters are available - O.D. beveling, water wall membrane removal and an O.D. wall cleaner. All of the cutters are available for tube sizes ranging from 1.25" to 3.0" (31 .8 mm to 76.2 mm) O.D. in .250" (6.3 mm) increments. The tube size is stamped on the cutter.

CUTTER HEAD AND CARBIDE INSERT ASSEMBLY

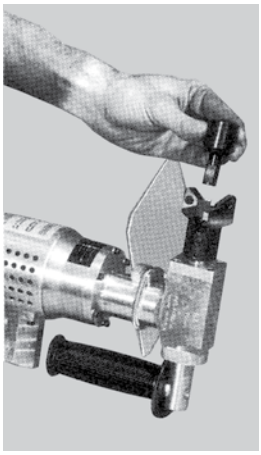




Select the appropriate type and size of cutter for the tube and application. Slide the cutter head onto the drive shaft, being careful that the rectangular keyway is in position on the shaft so there is no keyway showing above the cutter head and the shaft touches the bottom of the cutter head hole. Tighten all allen head bolts completely.

All of the high speed cutter heads use carbide inserts. Each insert has multiple cutting edges. Install the insert onto the cutter with the machined edge of the insert facing the direction of the rotation. Tighten the allen head bolts on each insert securely. WARNING: Overtightening the allen head bolts may result in cracked or weakened inserts, which may cause failure during the cutting process and potential personal injury. When the cutting edges become dull, loosen the allen head bolts and rotate the insert to a fresh edge. Re-tighten the allen head bolts, being careful not to overtighten them.

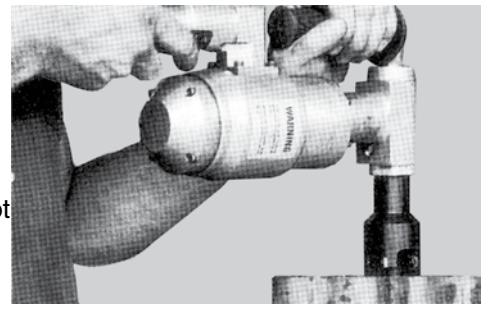
PILOT ASSEMBLY



A centering pilot must be used for both accuracy and safety. Pilots are available from .5" to 3.0" (12.7mm to 76.2 mm) diameters in .020" (.508 mm) increments. The pilot size is stamped on the end. Select a pilot size that fits comfortably inside the tube while allowing it to turn freely. Approximately .010" (.254 mm) clearance is recommended. Insert the stem into the cutter head and tighten all allen head bolts securely.

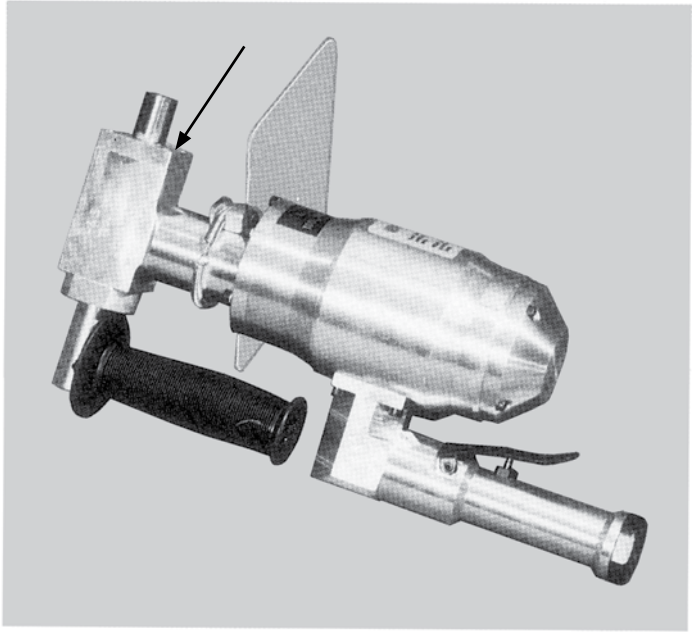
HAND HELD OPERATION

Attach a 1/2" (12.7mm) air hose to the throttle handle. An approved air lubricator and filter must be used.



Holding the too! firmly with one hand on the support handle and the other on the throttle handle, place the pilot into the tube with the inserts NOT touching the tube end. Disengage the throttle lock and squeeze the throttle fu!!y. ENTER THE WORK SLOWLY! Jamming the inserts into the tube abruptly will cause insert damage which will result in poor cutting or complete insert destruction This may also become a personal injury hazard. Once started, keep constant pressure on the cutter until the desired cut is achieved.

MAINTENANCE



The only regular maintenance required is the addition of a quality lithium based gear grease approximately every 40 hours of operation. If the cutter is still on the drive shaft, remove it. Remove the four socket head cap screws (#25 on the parts page). Remove both the bearing cap (#24) and, then, the main shaft/gear (#26). Apply a liberal amount of grease to the gear. Reassemble ensuring that the four socket head cap screws are securely tightened.

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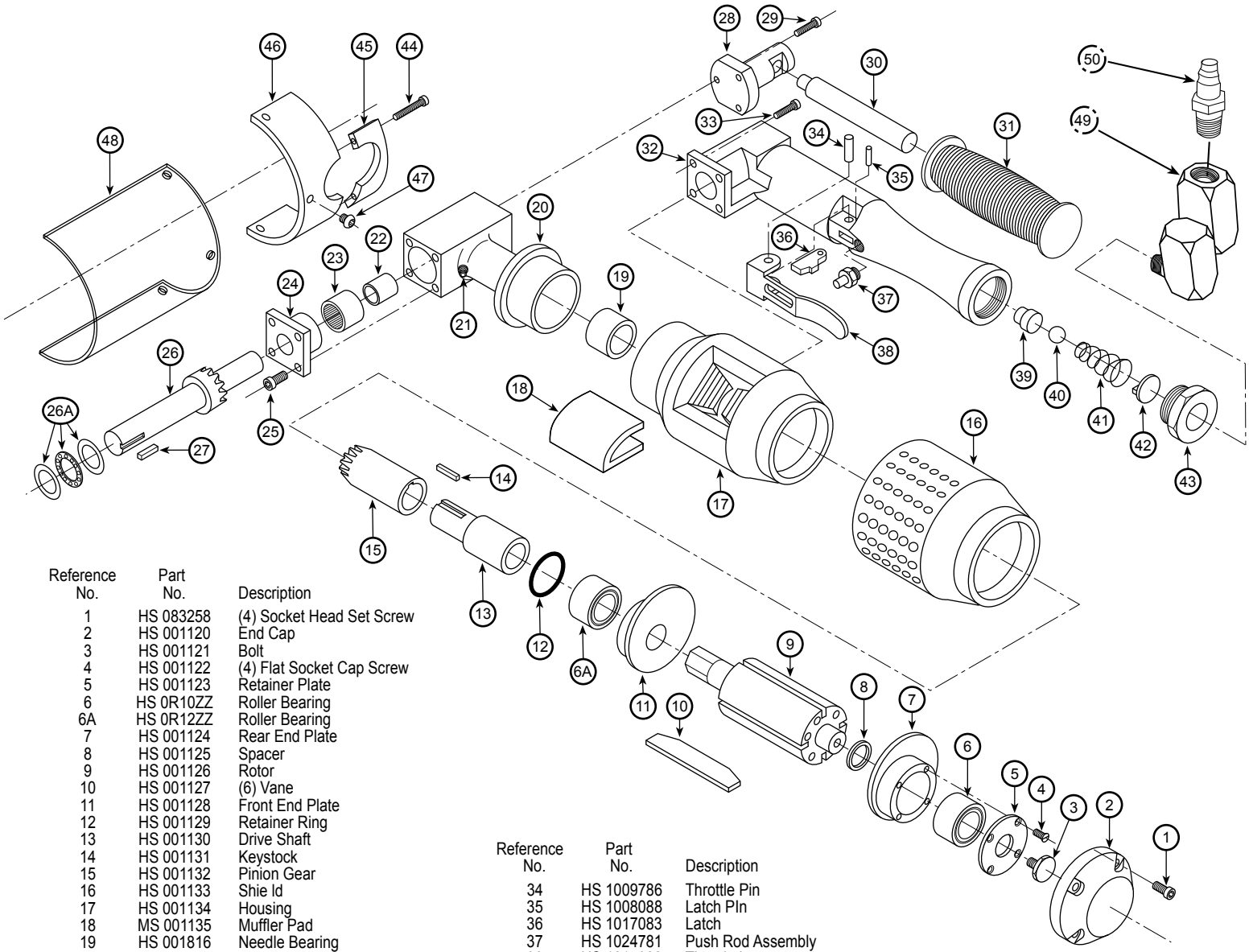
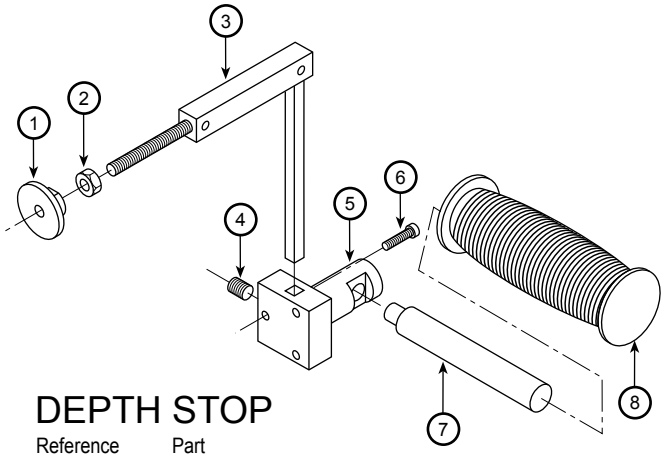
PARTS LIST
Model MHS



Reference No.	Part No.	Description
1	HS 083258	(4) Socket Head Set Screw
2	HS 001120	End Cap
3	HS 001121	Bolt
4	HS 001122	(4) Flat Socket Cap Screw
5	HS 001123	Retainer Plate
6	HS 0R10ZZ	Roller Bearing
6A	HS 0R12ZZ	Roller Bearing
7	HS 001124	Rear End Plate
8	HS 001125	Spacer
9	HS 001126	Rotor
10	HS 001127	(6) Vane
11	HS 001128	Front End Plate
12	HS 001129	Retainer Ring
13	HS 001130	Drive Shaft
14	HS 001131	Keystock
15	HS 001132	Pinion Gear
16	HS 001133	Shie ld
17	HS 001134	Housing
18	MS 001135	Muffler Pad
19	HS 001816	Needle Bearing
20	HS 001136	Gear Housing
21	HS 000400	Grease Fitting
22	HS 008101	Needle Bearing
23	HS 001212	Needle Bearing
24	HS 001137	Bearing Cap
25	HS 102458	(4) Socket Head Cap Screw
26	HS 001138	Main Gear
26A	HS 001220	Thrust Bearing
27	HS 001139	Keystock
28	HS 001140	Handle Base
29	HS 102458	(3) Socket Head Cap Screw
30	HS 001141	Handle
31	HS 001142	Rubber Grip
32	HS 001143	Throttle Handle
33	HS 102458	(4) Socket Head Cap Screw

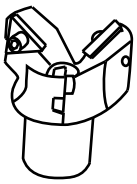
Reference No.	Part No.	Description
34	HS 1009786	Throttle Pin
35	HS 1008088	Latch Pln
36	HS 1017083	Latch
37	HS 1024781	Push Rod Assembly
38	HS 1017082	Throttle Lever
39	HS 1009039	Nozzle
40	HS 1014838	Ball
41	HS 1014687	Spring
42	HS 1005094	Screen
43	HS 1014645	Hose Adapter
44	HS 104125	(2) Socket Head Cap Screw
45	HS 001144	Chip Shield Collar
46	HS 001145	Chip Shield Base
47	HS 102412	(3) Button Head Cap Screw
48	HS 001146	Chip Shield
49	HS 001147	Swivel
50	HS 001148	Male Adapter Plug



DEPTH STOP

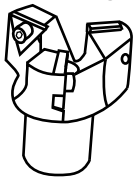
Reference No.	Part No.	Description
1	HS 001260	Stop Pad
2	HS 003824	Jam Nut
3	HS 001261	Adjustment Bracket Assembly
4	HS 561856	(2) Socket Head Set Screw
5	HS 001262	Bracket/Handle Base
6	HS 102410	Socket Head Cap Screw
7	HS 001263	Handle
8	HS 001264	Rubber Grip

Beveling



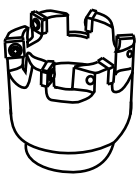
Head Size	Inches I.D. - O.D.	MM I.D. - O.D.
HS 125-3/8	.500 - 1.375	12.7 - 34.9
HS 150-3/8	.700 - 1.500	17.8 - 38.1
HS 162-1/2	.500 - 1.700	12.7 - 43.2
HS 175-1/2	.700 - 1.750	15.2 - 44.5
HS 200-1/2	.840 - 2.000	21.3 - 50.8
HS 225-1/2	1.100 -2.250	27.9 - 57.2
HS 250-1/2	1.340 - 2.500	34.0 - 63.5
HS 275-1/2	1.600 - 2.750	40.6 - 69.9
HS 300-1/2	1.840 - 3.000	46.7 - 76.2

Facing

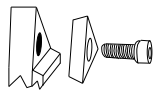


Head Size	Inches I.D. - O.D.	MM I.D. - O.D.
HSF 150-3/8	.500-1.625	12.7 - 41.3
HSF 200-1/2	.500 - 2.000	12.7 - 50.8
HSF 250-1/2	1.040 - 2.500	26.4 - 63.5
HSF 300-1/2	1.500 - 3.000	38.1 - 76.2

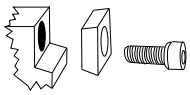
Membrane Removal



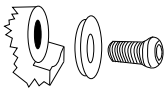
Head Size	Inches I.D. - O.D.	MM I.D. - O.D.
HSM .875	.875	22.2
HSM 1.000	1.000	25.4
HSM 1.125	1.125	28.6
HSM 1.250	1.250	31.8
HSM 1.375	1.375	34.9
HSM 1.500	1.500	38.1
HSM 1.750	1.750	44.5
HSM 2.000	2.000	50.8
HSM 2.125	2.125	54.0
HSM 2.250	2.250	57.2
HSM 2.375	2.375	60.3
HSM 2.500	2.500	63.5
HSM 2.750	2.750	69.9
HSM 3.000	3.000	76.2



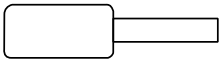
3 Side Insert



4 Side Inset



Round Insert



Pilot

Pilot O.D.

Inches	mm	Inches	mm
.500	12.7	1.660	42.2
.520	13.2	1.680	42.7
.540	13.7	1.700	43.2
.560	14.2	1.720	43.7
.580	14.7	1.740	44.2
.600	15.2	1.760	44.7
.620	15.7	1.780	45.2
.640	16.3	1.800	45.7
.660	16.8	1.820	46.2
.680	17.2	1.840	46.7
.700	17.8	1.860	47.2
.720	18.3	1.880	47.8
.740	18.8	1.900	48.3
.760	19.3	1.920	48.8
.780	19.8	1.940	49.3
.800	20.3	1.960	49.8
.820	20.8	1.980	50.3
.840	21.3	2.000	50.8
.860	21.8	2.020	51.3
.880	22.4	2.040	51.8
.900	22.9	2.060	52.3
.920	23.2	2.080	52.8
.940	23.9	2.100	53.3
.960	24.4	2.120	53.8
.980	24.9	2.140	54.4
1.000	25.4	2.160	54.9
1.020	25.9	2.180	55.4
1.040	26.4	2.200	55.9
1.060	26.9	2.220	56.4
1.080	27.4	2.240	56.9
1.100	27.9	2.260	57.4
1.120	28.5	2.280	57.9
1.140	29.0	2.300	58.4
1.160	29.5	2.320	58.9
1.180	30.0	2.340	59.4
1.200	30.5	2.360	59.9
1.220	31.0	2.380	60.5
1.240	31.5	2.400	61.0
1.260	32.0	2.420	61.5
1.280	32.5	2.440	62.0
1.300	33.0	2.460	62.5
1.320	33.5	2.480	63.0
1.340	34.0	2.500	63.5
1.360	34.5	2.520	64.0
1.380	35.1	2.540	64.5
1.400	35.6	2.560	65.0
1.420	36.1	2.580	65.5
1.440	36.6	2.600	66.0
1.460	37.1	2.620	66.5
1.480	37.6	2.640	67.1
1.500	38.1	2.660	67.6
1.520	38.6	2.680	68.1
1.540	39.1	2.700	68.6
1.560	39.6	2.720	69.1
1.580	40.1	2.740	69.6
1.600	40.6	2.760	70.1
1.620	41.1	2.780	70.6
		2.800	71.1

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