

# Ground MILLHOG®

Right Angle I.D. Clamping  
Tube and Pipe Beveling Tool  
0.5" I.D. to 2.25" O.D.  
12.7 mm I.D. to 57.15 mm O.D.

## Key Features

- Narrow body 1.5in (38.1 mm) wide for beveling a single tube in a waterwall
- Three interchangeable motor choices, pneumatic, electric and battery
- Rugged steel housing for lasting durability
- Patented clamping system permits the clamps to release as easily as they tighten, no hammer needed!
- Permanently attached wrenches keep the operating essentials at the operator's finger tips
- Dual opposed ball bearing supported gear drive design
- Proprietary EscoLock blade holding system minimizes vibration and maximizes tube and pipe bevels per blade

## Popular tube and pipe beveling applications

- Bevel, face and bore
- "J" prep for orbital welding
- Tube to tube sheet weld removal and tube sheet weld preparation
- Boiler tube membrane removal
- Boiler tube overlay and cladding removal
- Boiler tube waterwall single tube replacement
- Reface fin fan tube seat surfaces

## Designed for limited access boiler tube beveling

The ESCO Ground MILLHOG® is a right angle I.D. clamping tube beveling tool that is only 1.5in (38.1mm) wide and fits between boiler waterwall tubes for beveling a single tube and other boiler tube applications with restricted access. The tool is made of heat treated steel for durability and proprietary bearings support heavy duty gears for smooth operation and long durability on the toughest boiler applications.

The patented pull-push clamp and release system with permanently attached wrenches and clamps eliminate the possibility of loose parts falling down the tubes. This high performance tool utilizes the EscoLock wedge style blade lock system and TiN coated blades for chatter-free beveling.

Power choices include pneumatic, electric and battery. All motors are easy to switch and deliver optimum torque and speed that reduces bevel time by pulling a thick chip on the toughest boiler tube alloys, without cutting fluids.

### Pneumatic Standard

Works well on all tube and pipe alloys including stainless steel.



### Pneumatic Air Clamp

Quickly clamps and releases, reduces cycle between bevels.



### Electric

Reliable plug in power, high torque and low rpm. Superior performance on all alloys including membrane and overlay removal.

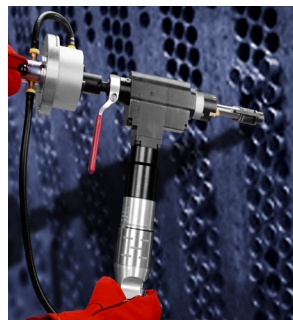


### Battery

Excellent for beveling all alloys including overlay and membrane removal. Best of all it's hose and cord free.



Only 1.5" wide for single boiler tube beveling



The air clamp increases production and minimizes operator fatigue



Remove membrane from between tubes



Remove membrane and overlay/cladding from between tubes

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## Ground Clamp Rib Selector and corresponding spares Mandrel, Draw Rod, Actuator, Retention Bands and Springs

Clamp Rib Set	I.D. Range				Mandrel		Draw Rod	Actuator	Roll Pin	Retention	
	in	mm	Part #	Size (in)	Part #	Size (in)				Band	Spring
G-01A	.500	.655	12.7	16.6	G-204	.500	G-18A	G-17A	G-15A	G-14E	
G-02A	.625	.780	15.9	19.8	G-204	.500	G-18A	G-16A	G-15A	G-14F	
G-02A	.625	.780	15.9	19.8	G-20	.625	G-18	G-16	G-15	G-14F	
G-03A	.750	.905	19.1	22.9	G-20	.625	G-18	G-17	G-15	G-14F	
G-04	.875	1.030	22.3	26.1	G-20	.625	G-18	G-17	G-15		G-14
G-05	1.00	1.155	25.4	29.3	G-20	.625	G-18	G-17	G-15		G-14
G-06	1.125	1.280	28.6	32.5	G-20	.625	G-18	G-17	G-15		G-14
G-07	1.250	1.405	31.8	35.6	G-20	.625	G-18	G-17	G-15		G-14
G-08	1.395	1.530	35.0	38.8	G-20	.625	G-18	G-17	G-15		G-14
G-09	1.500	1.655	38.1	42.0	G-20	.625	G-18	G-17	G-15		G-14
G-10	1.625	1.780	41.3	45.2	G-20	.625	G-18	G-17	G-15		G-14
G-11	1.750	1.905	44.5	48.3	G-20	.625	G-18	G-17	G-15		G-14
G-12	1.875	2.030	47.7	51.5	G-20	.625	G-18	G-17	G-15		G-14
G-13	2.000	2.155	51.0	54.7	G-20	.625	G-18	G-17	G-15		G-14



Roll Pin & Actuator  
G-15A, G-17A & G-16A

0.500" Mandrel & Draw Rod  
G-204 & G-18A (Used with G-01A & G-02A Clamp Rib Set)

Roll Pin & Actuator  
G-15, G-16 & G-17

0.625" Mandrel & Draw Rod  
G-20 & G-18 (Used with G-02A - G-13 Clamp Rib Set)

## Ground Cutterhead Blade Lock and Screw

Cutterhead Part #	Cutterhead Size	Mandrel		Blade Lock		Lock Screw	
		Part #	Size	Part #	Per Head	Part #	Per Lock
G-206	1.500	G-204	.500"	G-22	2	G-21	1
G-23	1.500	G-20	.625"	G-22	2	G-21	1
G-24	2.000	G-20	.625"	G-22A	2	G-21	1
G-25	2.250	G-20	.625"	G-22	4	G-21	1



Cutterheads feature the EscoLock Blade Lock System that hold the Cutter Blade rigidly, reduce vibration and heat resulting in superior Cutter Blade life without cutting oils.

Blade Locks and Screw  
G-22, G-22A & G-21

## Ground Membrane Removal Heads

Membrane Head		Base Head	Inserts	
Size	Part #	Part#	Part #	Qty
.875	MO-100	GB-100	MRB-8	3
1.000	MO-101	GB-101	MRB-8	4
1.125	MO-102	GB-102	MRB-8	4
1.187	MO-103	GB-103	MRB-8	4
1.250	MO-104	GB-102	MRB-8	4



Membrane removal heads fit over the tube O.D. and remove the membrane from between boiler waterwall tubes while not derogating the tube O.D.

The ESCO patented Membrane and Overlay Removal Heads use round inserts with a tapered shank that install with a tap from a hammer. They easily remove and rotate for extended use.

## Ground Overlay Removal Heads

Overlay Head		Base Head	Inserts	
Size	Part #	Part#	Part #	Qty
.875	MO-200	GB-100	MRB-8	3
1.000	MO-201	GB-101	MRB-8	4
1.125	MO-202	GB-102	MRB-8	4
1.187	MO-203	GB-103	MRB-8	4
1.250	MO-204	GB-102	MRB-8	4



Both Membrane and Membrane/Overlay heads are mounted to a Base Head that can also hold a bevel blade.



Membrane/Overlay Heads remove membrane from between tubes and also weld overlay from the tube O.D.



## Specifications: Ground MILLHOG®

Working Range	.5in (12.7 mm) I.D. to 2.25in (57.15 mm) O.D.			
Motor	Pneumatic	Air Clamp	Electric	Battery / *Charger
	1.07 hp (800 W) 90 psi (6.2 bar) 35 cfm (990 lt/min)	1.07 hp (800 W) 90 psi 6.2 bar 35 cfm 990 lt/min	120 V 8.5 A 50/60 Hz 950 W, or 220 - 240 V 4.4 A 50/60 Hz 950 W	18V Li-Ion - up to 5.2 Ah *115V / 60 Hz, or *220 - 240 V 50-60 Hz
Speed	125 rpm	125 rpm	12 rpm - 63 rpm	49 rpm
Minimum Width Clearance				
With 1.5in Cutterhead	1.5in (38.1 mm)	3.625in (92.1 mm)	1.5in (38.1 mm)	1.5in (38.1 mm)
Membrane and Overlay heads	1.875in (47.6 mm)	3.625in (92.1 mm)	1.875in (47.6 mm)	1.875in (47.6 mm)
Head Length	14in (355.6 mm)	16in (406.4 mm)	14in (355.6 mm)	14in (355.6 mm)
Working Weight	12.7 lbs (5.8 kg)	15.05 lbs (6.8 kg)	14.1 lbs (6.4 kg)	14.6 lbs (6.6 kg)
Shipping Weight	40 lbs (18.1 kg)	45 lbs (20.1 kg)	42 lbs (19.1 kg)	42 lbs (19.1 kg)
Shipping Dimensions	20in x 18in x 5 in 508 mm x 457 mm x 127 mm	24in x 20in x 7in 610 mm x 508 mm x 178 mm	24in x 20in x 6in 610 mm x 508 mm x 152 mm	24in x 20in x 6in 610 mm x 508 mm x 152 mm

Formed Cutter Blades are made from T-15 Tool steel and are available in many sizes and for all pipe and tube bevel angles.

