

HENRY TOOLS

Industrial Airtools at Work

General Safety and Maintenance Manual

MODELS
4110-GL
4110-GLS
4110-GLSK
4110-GL+6



"FRONT" EXHAUST DIE GRINDER SERIES



Front exhaust blows chips away from the operator.



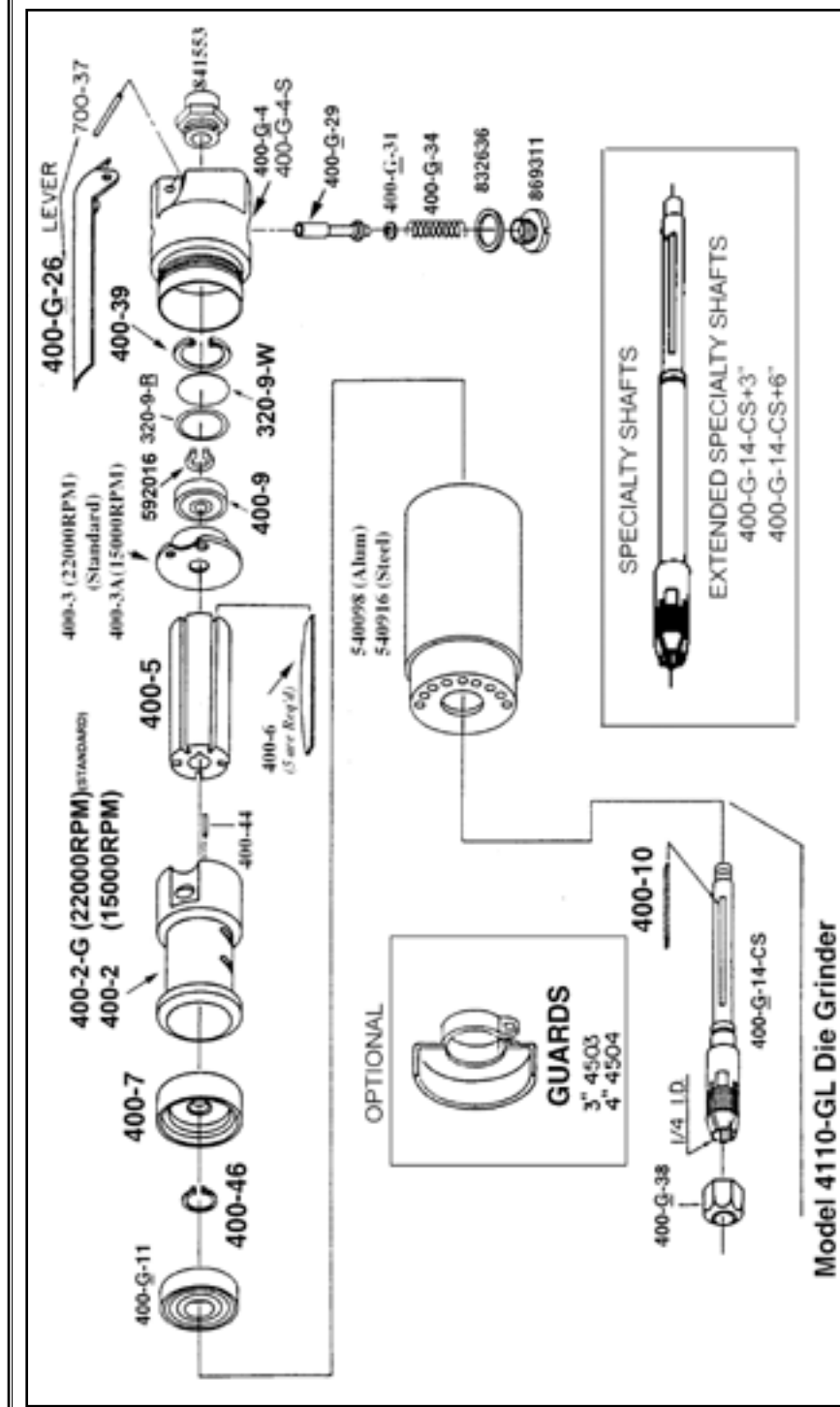
Model Number	Exhaust Direction	Throttle Type	Speed	Power Output	Case Material	Weight		Length	Diameter	Air Consumption	Collet Size
						Aluminum	Steel				
4110GL	FRONT	(L) Lever or (K) Safety Lever	15000 to 22000 R.P.M. (22000RPM is Standard)	0.9 H.P. 675 W	Alum	1.5 lb 0.7 Kg	2.0 lb/0.9 Kg	6.4 inch/ 162 mm	1.6 inches 41 mm	25cfm 11.8 L/S	3/4" built in collet
4110GLS											
4110GL+6											

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General Operators Instructions and Service Manual



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4410G Series grinder features a Front exhaust that blows chips away from the operator.

DISASSEMBLY

1. Model 4110 with collet chuck- remove collet nut (400-G-38) with 5/8" wrench and 7/16" wrench.
2. Clamp backhead [400-G-4(S)] in a vise. Using a strap wrench, unscrew case (540098/540916). Tap lightly on threaded end of spindle, this will allow the motor to drop out.
3. Remove snap ring(400-39) with type 01 pliers. Lift out wafer (320-9W) and o-ring (If Present)(320-9R). Remove snap ring (592016).
4. With brass or aluminum jawed vise, grasp the O.D. of the cylinder and end plate (400-3) firmly. Use a 3/16" punch and tap spindle out of rear bearing (400-9), being careful not to drop spindle assembly when it is free.
5. Remove the rotor (400-5), blades (400-6), key (400-10) and front thrust plate(400-7) .
6. Remove snap ring (400-46) with type 02 pliers. Place bearing and spindle assembly (threaded end down) on suitable drill block. Press spindle through the bearing with an arbor press.
7. To check throttle valve, unscrew plug (869311) and lift out valve spring (400-G-34) and plunger (400-G-29). Remove o-ring (400-G-31) and replace if cracked or worn.

REASSEMBLY

1. Support front bearing (400-G-11) on suitable drill block. Press spindle [400-G-14-CS] through bearing until it bottoms on shoulder.
2. With type 02 pliers place the snap ring (400-46) into the groove.
3. Slide on front thrust (400-7) over the arbor and on the front bearing.
4. Place the key (400-10) into the slot in the spindle. Slide rotor (400-5) over spindle, aligning the keyway in the rotor with the key in spindle.
5. Place five blades (400-6) in slots of rotor. Slip cylinder [400-2(G)] over rotor. Install rear thrust[400-3(A)]. (Carefully locate cylinder in the smaller hole of the rear thrust.)
6. Place bearing in rear thrust and tap bearing in with suitable bearing driver.
7. Place snap ring (592016) on spindle groove. If desired, drop oring(320-9R) and washer (320-9W) in rear thrust. Place snap ring(400-39) into groove.
8. Slip motor assembly in case (540098/540916.) Put backhead in vise and screw on motor housing. Tighten with a strap wrench. CAUTION: CHECK TOOL FOR SPEED WITH TACHOMETER. THE SPEED STAMPED ON TOOL MUST BE AT OR ABOVE THE ACTUAL SPEED OF THE TOOL.

Additional information on safety is available in the "American National Safety Code for Portable Air Tools" (ANSI B186.1). This bulletin is available from the American Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018.

4110GL SERVICE INSTRUCTIONS

This tool is designed to operate on 90 psig (6.2 bar) maximum air pressure with 1/4 (8 mm) hose. Do not use a grinder without recommended wheel guard. Do not

use any wheel for which the operating speed listed is lower than the actual free speed on the grinder.

SAFETY

1. Before operation check spindle speed with a tachometer. If the RPM's exceed the rated speed stamped on tool, servicing is required.
 2. Inspect grinding wheels for bends, chips, nicks, cracks or severe wear~ If the wheel has any of these, or has been soaked in liquids do not use. On brushes check for loose wires that may fly off in operation.
 3. Start new grinding wheels under a steel bench. Run at full throttle for one minute.
 4. Defective wheels usually come apart immediately.
 5. When starting a cold wheel apply to the work slowly, allow wheel to warm up gradually.
 6. The 4110 die grinders are intended for use with mounted wheels, points and carbide burrs. They are not guarded for type 1 wheels. If you have a type 1 wheel application, please purchase a wheel guard (4503,4504).
 7. At least one-half of the mandrel length (i.e. mounted wheel, burr, etc.) must be inserted into the collet. Secure collet chuck tightly.
 8. Safety levers are available from the manufacturer (402-26).
 9. Before mounting or removing a wheel disconnect grinder from air supply. The wheel should fit properly on arbor; do not use bushings or wheel flanges to adapt a wheel to any arbor unless recommended by manufacturer. (Wheel flanges should be at least 1/3 the diameter of the grinding wheel.)
 10. Wear safety goggles and other protective clothing (when necessary).(See regulations.)
 11. Properly maintained air tools are less likely to fail or cause accidents. If tool vibrates or produces an unusual sound, repair immediately.
- LUBRICATION**
1. An air line filter-regulator-lubricator should be located as closely as possible to the tool.
 2. Clean out dirt and moisture from air hoses daily. Keep screen handle bushing in tool.
 3. OIL TOOLS DAILY. Exxon's Spinesstic 10, Atlantic Richfield's Duro 55, Gulf's Gulfspin 10 or an equivalent is recommended. Pour about 1 tablespoon in air inlet and run tool to allow oil to be carried to the interior.

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Part Number	Description
400-2-G(w/400-44)	Cylinder with pin
400-3	Rear End Plate
400-5	Rotor
400-6	Blade(5 req'd)
400-7	Front Thrust
400-9	Rear Bearing
320-9-W	Rear Wafer(Optional)
320-9R	O-Ring(Optional)
400-G-4	Aluminum Backhead
400-G-4-S	Steel Backhead
400-46	Snap Ring
400-39	Snap Ring
400-10	Key
400-44	Pin
400-51	O-Ring
400-G-17	Alum.Exhst Sleeve
400-G-17-S	Steel Exhst Sleeve
400-G-11	Bearing
400-G-14-CS	Collet Shaft
400-G-14-CS+3"	Extended shaft 3"
400-G-14-CS+6"	Extended shaft 6"
400-G-38	Collet Nut
400-G-31	O-Ring
400-G-26	Valve Lever
400-G-29	Throttle Valve
400-G-34	Spring
400-S-38	Aluminum Cap
400-S-38-S	Steel Cap
700-37	Roll Pin
832636	T.V. Cap Gasket
540098	Case (aluminum)
540916	Steel Case
540129	Cap
841553	Bushing
869311	T. Valve Cap
402-126	Lever (Bare)
402-127	Pin
402-128	Latch
402-129	Spring
402-26	Entire Safety Lever Assembly

Part Number	Description
ACCESSORIES	
1100-063	5/8 Wrench
1100-044	7/16" Wrench
510075	Repair Kit(See 5000-40G Kit below)
4503	3" Guard
4504	4" Guard
REPAIR KIT	
510075	Includes
1	400-G-11 Bearing
1	400-46 Snap Ring
1	400-9 Bearing
1	400-39 Snap Ring
1	832636 Gasket
5	400-6 Rotor Blades

FAULT	CAUSE	SOLUTION
Insufficient Power	Air pressure too low	Minimum air pressure <i>should</i> be 90 PSI for maximum performance
	Restriction in air hose	Remove bends or other restrictions
	Hose I.D. is too small	Use required hose I.D.
	Worn vanes	Exchange vanes (400-6)
Machine does not start	Screen Support clogged	Clean screen support or exchange with new one
	No air, shut-off valve is closed.	Open shut-off valve
Grinder does not want to stop	Worn vanes due to lack of oil or vanes are jammed	Exchange vanes . (cylinder might also be worn out)
	Worn O-Ring	Replace o-ring in handle (844302) for example.
Spindle wobbles or vibrates.	Bearings worn out . 	Disconnect tool from the air supply. <i>Immediate</i> servicing is required.
	Danger!!	

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