Henry Tools

Industrial Airtools at Work

Models
12-GHL
Series

General Safety and Maintenance Manual

THE HENRY TOOL CO., MANUFACTURED BY HENRY TOOLS
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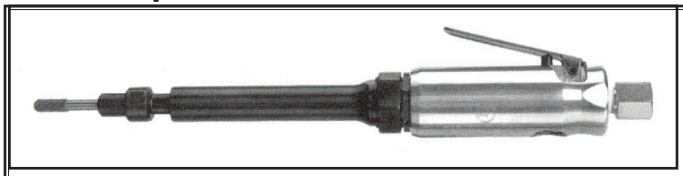

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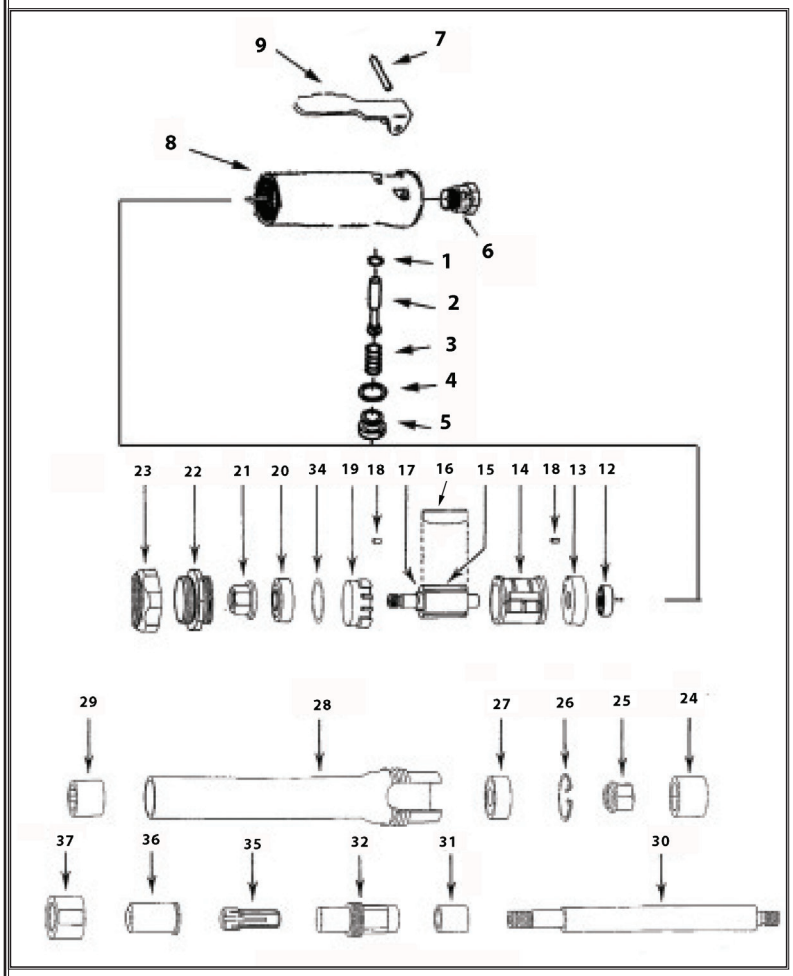

Item Number	PART NUM-BER	DESCRIPTION
1	400-G-31	O-RING
2	400-G-29	VALVE
3	832078	SPRING
4	832636	GASKET
5	869311	VALVE CAP
6	400-27	SCREEN BUSHING
7	700-37	LEVER PIN
8	HT-2012	MOTOR CASE
9	400-G-26	LEVER
12	504	BALL BEARING
13	1003	BEARING PLATE w/ Index 18
14	1002	CYLINDER
15	1005	ROTOR w/Index 17
16	1006(4)	ROTOR BLADE (4 or 5 req'd)
17	1017	SPACER
18	1041	PIN (2 req'd)
19	1064	BEARING PLATE w/ index 18
20	538	BALL BEARING
21	1708	DRIVE COUPLING
22	1043	LOCK RING
23	1032	CAP
24	02-1711	COUPLING
25	1707	COUPLING NUT
26	1098	SNAP RING
27	505	BALL BEARING
28	1736	SPINDLE HOUSING
29	1514	NEEDLE BEARING
30	1748	SPINDLE
31	1562	SLEEVE
32	1054	CHUCK BODY
34	1355	SHIM PACKET
35	308	COLLET ¼"
36	1053	NOSEPIECE
37	1058	COLLET CHUCK CAP
38		WRENCH 7/16"
		WRENCH 11/16"

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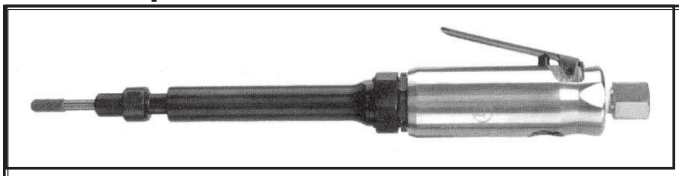

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ALWAYS COMPLY WITH:
General Industry Safety & Health Regulations, Part 1910, OSHA 2206, available from: Sup't of Documents; Government Printing Office; Washington DC 20402
Safety Code for Portable Air Tools, ANSI B186.1 available from: American National Standards Institute, inc.; 1430 Broadway; NewYork, NY 10018
State and Local regulations.
Portions of the above codes and regulations are listed below for quick reference.
THESE EXCERPTS ARE NOT INTENDED TO BE ALL INCLUSIVE - STUDY AND COMPLY WITH ALL REGULATIONS!

1. **TOOL INTENT - Tools shall be used only for purposes intended in their design (refer to product catalog).**
2. **AIR SUPPLY - Test and operate tools at 90 PSIG maximum unless tool is marked otherwise. Use recommended airline filters-regulators-lubricators.**
3. **UNUSUAL SOUND or VIBRATION - If tool vibrates or produces an unusual sound, repair immediately for correction.**
4. **OPERATOR PROTECTIVE EQUIPMENT - Wear goggles or face shield at all times tool is in operation. Other protective clothing shall be worn, if necessary. SEE REGULATIONS.**
5. **SAFETY MAINTENANCE PROGRAM - Employ a safetype program to provide inspection and maintenance of all phases of tool operation and air supply equipment in accordance with "Safety Code for Portable Air Tools."**

WARNING: The signal word 'Warning" identifies all notes on safe work practices in this operating instruction, alerting to hazards for life and health of people. Observe these notes and proceed with special care in the cases described. Pass all safety instructions on to other operators. In addition to the safety instructions in this operating instruction, the general local safety and accident prevention rules must be observed.
Important Notes
CAUTION The signal word "caution!" identifies all portions of this operating instruction meriting special attention to ensure that guidelines, rules, hints and the correct work procedures are observed; and, to prevent damage to and destruction of the machine and/or parts.
A recommended spare part (or set) for every five (5) tools. Small, low cost or easily lost parts should be stocked as 3-4 per 10 tools.
WARNING' Disconnect the air supply hose before servicing the tool.
INSTALLATION
For most efficient operation, 90 psig (620 kPa) of clean dry air is required at the tool with the tool running, with-out extreme fluctuation.
Minimum recommended hose size is 3/8" I.D. when the length of the hose is eight feet or less. An air line filter and lubricator, should be used. Hose should be blown out before attaching to the tool.
Loss of Power
A loss of power may not be related to the tool. First, check the air line pressure. It should be 90 psi at the tool while operating.
LUBRICATION
Lubricate the motor with an air line lubricator, using a light air motor oil. Adjust the lubricator to dispense one drop per cycle or three drops per minute.
CAUTION Do not use substitutes for oil and grease. This could result in damage to the tool.
MAINTENANCE

1. **Proper and continuous lubrication.**
2. **Blow out air hose to assure a clean air supply.**
3. **Be sure the air filter and line lubricator are clean.**
4. **Fill the line lubricator before operation.**
5. **Place a few drops of oil into the air inlet of the tool be-fore attaching the air line.**
6. **Use moisture separators to remove water from the air line.**
7. **CAUTION Do not use solvent on bearings or on any parts made of a synthetic material.**
8. **Do not remove bearings unless replacement is necessary; bearings are a press fit.**

DISASSEMBLY INSTRUCTIONS
Grasp the housing (HT-2012) on the flats vertically in a vise. Loosen and unscrew the angle head assembly from the tool. To remove the motor, loosen and unscrew the lock ring (01-1043) and pull the motor out. To disassemble the motor, remove the Rear Plate (part #1003) and bearing by pressing on the rear of the rotor with an arbor press. Un-thread the Pinion (part #1066 or #1187) by holding the rotor in soft, smooth vise jaws. The Front Plate (part #1064) with ball bearing can now be pressed off. Be careful not to lose the spacer on the rotor.
Disassembly of angle head:
Remove the Lock Ring (part #1025) and pull out the spindle assembly. Disassemble the spindle assembly by removing the top Ball Bearing (part #400-9) and Lubricator Disc (part #1755).
Press off the Spindle Gear (part #1188). After the Woodruff Key (part #1062) is removed, the lower Ball bearing (part #538) can be pressed off. NOTE: The gear and key must be removed before the ball bearing can be removed.
ASSEMBLY INSTRUCTIONS MOTOR
Make sure all parts are clean. Press Pins (part #1041) -if necessary- into the motor end plates. To correct for bearing tolerances, it is necessary to use shims to maintain correct clearances between the ends of the rotor and the bearing plates. Shim Packet (part #1355) contains a 0.001" shim and two 0.002" shims. Insert a 0.002" Shim in the Front Bearing Plate's pocket and install #538 Ball Bearing into the Front Plate. Slip Spacer, part #1017, onto the threaded end of the Rotor. Support the rotor on the rear end and assemble the front plate assembly onto the rotor by pressing on the bearing's inner race.
Thread the Pinion Gear (part #1187) onto the rotor tightly by holding the rotor in a soft jawed vise.
Now, hold the rotor in the left hand and the front end plate by the right hand. Apply an outward (pulling) pressure and observe the spacing between the end of the rotor and the bearing plate. This should be from flush, not rubbing, to 0.002" maximum. If the rotor rubs the bearing plate, reduce the spacing between the bearing and bearing plate by removing the 0.002" shim entirely, or by substituting the 0.001" shim for the 0.002" shim. However, if there was more than 0.002" spacing between the end of the rotor and the bearing plate, then add a 0.001" shim between the bearing and bearing plate.
Replace Cylinder, part #1002. NOTE: be sure that the cylinder is not on backwards!
The air inlet in the cylinder must line up with the air inlet in the rear plate when the plate's pin is engaged in the mating slot in the cylinder. Insert the rotor blades into the rotor. Support this assembly on the face of the pinion. Assemble Rear Ball Bearing (part #400-9) into Rear Bearing Plate (part #1003)by pressing only on Bearing's outer race. Then, press the Rear Bearing Plate/Bearing Assembly onto the rotor by pressing on bearing's inner-race only. Press just enough to bring the bearing plate against the cylinder. There should be a slight drag between the bearing plate and the cylinder when these are moved with the fingers. Position the cylinder until the motor turns finger-free. Insert motor into
housing and screw in the Lock Ring until tight. Check the assembly by spinning the pinion; it must be free.
ANGLE HEAD
When assembling Spindle, slip Lock Ring (part #1025) onto spindle as far as possible, spanner slots towards threads. With the lock ring in position, press Bearing (part #538) against spindle's shoulder. Be sure to press only on inner race of bearing.
Insert Key (part #1062) in slot of shaft. Align keyway of gear with key and press gear onto shaft until it seats on inner race of bearing only. Place Lubricator Disc (part #1755) onto spindle. Check orientation of Lube Disc: be sure flat side is facing towards pinion when assembled in angle housing. Complete the assembly bythreading in Lock Ring (part #1025) until tight.
Shimming of Angle Head Gearing:
There should be a "backlash" of 0.002" to 0.003"between the two angle head gears.
After the anglehead and motor have been assembled and before any
lubricant has been applied to the gears, slowly rotate the angle head spindle back-and-forth a few degrees with the fingers checking for backlash.
If the gears are in mesh but no backlash is felt, remove angle head from the motor assembly. Remove angle head's spindle assembly and place a 0.002" shim against the bearing shoulder in the housing and reassemble, taking care to keep the shim flat on shoulder of housing.
Reassemble and again follow above procedure. If there is still not sufficient backlash, add another shim.

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