



16574246
Edition 2
May 2014

Air Percussive Chipping Hammer

“A” Series and “W” Series

Maintenance Information



Save These Instructions

IR *Ingersoll Rand*

Product Safety Information

WARNING

- Failure to observe the following warnings, and to avoid these potentially hazardous situations, could result in death or serious injury.
- Read and understand this and all other supplied manuals before installing, operating, repairing, maintaining, changing accessories on, or working near this product.
- Always wear eye protection when operating or performing maintenance on this tool. The grade of protection required should be assessed for each use and may include impact-resistant glasses with side shields, goggles, or a full face shield over those glasses.
- Always turn off the air supply, bleed the air pressure and disconnect the air supply hose when not in use, before installing, removing or adjusting any accessory on this tool, or before performing any maintenance on this tool or any accessory.

Note: When reading the instructions, refer to exploded diagrams in parts Information Manuals when applicable (see under Related Documentation for form numbers).

Lubrication

Each time a "A" Series or "W" Series Chipper is disassembled for maintenance and repair or replacement of parts, pour about 3 cc of **Ingersoll Rand** No. 10 Oil in the air inlet and operate the tool for 5 seconds to coat the internal parts with oil.

Weekly, flush the Tool and lubricate immediately afterwards as instructed in PLACING THE TOOL IN SERVICE.

Loss of power and excessive air consumption may be due to

wear on the Piston (22) and the bore of the Barrel (23). This can be determined by checking the Piston diameter at each end and in the center with a micrometer. If the diameter at the center is .003" greater than the diameter at either end, it is proof that the Piston and Barrel are worn. To correct, lap the Barrel and install an oversize Piston as instructed below, under Installation of Oversize Piston.

Oversize Parts

The Piston (22), Nozzle (24) and Inlet bushing (11) can be furnished oversize as well as standard size. When properly installed, oversize parts renew the efficiency of the Chipper as well as lengthen its life. See Installation of Oversize Piston, Nozzle, and Inlet Bushing on Page 22.

If examination of the Handle (1) indicates that it is not seating squarely on the Valve Cap (17), reface the handle seat. Coat the barrel threads with graphite grease or other rust resisting compound before screwing on the Handle.

Disassembly

General Instructions

1. Do not disassemble the tool any further than necessary to replace or repair damaged parts.
2. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws to protect the surface of the part and help prevent distortion. This is particularly true of threaded members and housings.
3. Do not remove any part which is a press fit in or on a subassembly unless the removal of that part is necessary for repairs or replacement.
4. Do not disassemble the tools unless you have a complete set of new gaskets and O-rings for replacement.

- Spring (8), Throttle Valve Ball (5) and Throttle Valve Plunger (6).
5. To remove the Throttle Valve Bushing (7), tap the Bushing to a 9/16"-12 thread. Thread a 9/16"-12 thread cap screw into the Bushing, grasp the head of the screw in a vise and pull the Bushing from the Handle.
6. Unscrew and remove the Inlet bushing (11).

Disassembly of the Barrel, Piston and Nozzle

1. Using the No. 34SR-54 Exhaust Deflector Pliers, Spread apart the Exhaust Deflector (21) and let it slide down the Barrel.
2. Using a screwdriver and hammer, tap Lock Ring (20) until it disengages from the castellations on the Handle and slides free of the splines on the Barrel.
3. Unscrew the Handle using a wrench at least 30" (760 mm) long.
4. Remove Valve Assembly from top of Barrel and disassemble by removing Dowel Pins (19).
5. Remove Barrel from vise, remove Deflector and Ring from Barrel and while holding it over a bench, tip large end down to allow Piston (22) to slide out.
6. To remove Nozzle (24), use the No. H02-119 Nozzle Ejection Arbor, support the end of the Barrel and press out old Nozzle.

Disassembly of Handle and Throttle Mechanism

1. Remove the Lock Spring (33A) or Flat Spring and Pin (33B) and Retainer (33).
2. Using a vise with leather-covered or copper-covered jaws, clamp the Chipper by the Barrel (23) with the Handle (1) up.
3. Using a pin punch, drive the Throttle Lever Pin (3) from the Handle. Remove the Throttle Lever (2).
4. Unscrew the Throttle Valve Cap (9) and remove the Throttle Valve

Assembly

General Instructions

1. Whenever grasping a tool or part in a vise, always use leather-covered or copper-covered vise jaws. Take extra care with threaded parts and housings.
2. Always clean every part and wipe every part with a thin film of oil before installation.
3. Apply a film of O-ring lubricant to all O-rings before final assembly.

3. Assemble Valve components in the following sequence: Valve Seat (16), Valve (15), Valve Spacer (18) and Valve Cap (17). Align holes in Valve, Valve Seat and Valve Cap and install Dowel Pins (19).
4. Place assembled Valve components on large or threaded end of Barrel with Valve Seat down.
5. Install Handle (1) and tighten to 180 ft-lb (244 Nm)
6. torque.

Assembly of the Barrel, Piston and Valve

1. Secure the Barrel (23) in a vise with leather-covered or copper-covered jaws with large or threaded end up.
2. Install Piston (22), small end first, in Barrel.

Assembly of the Handle, Throttle Mechanism and Nozzle

1. Install the Air Strainer Body (11) in the Handle.
2. Slide the new Throttle Valve Plunger Bushing (7) over a plunger

bushing arbor and insert it into the Handle through the threaded opening at the base of the grip.

3. Press the Bushing until its trailing face is 1-21/32" (42.06 mm) below the face of the throttle valve cap boss on the Handle.
4. Using a plunger bushing reamer guide and a throttle valve plunger bushing reamer, ream the Throttle Valve Plunger Bushing to size.
5. Install Throttle Valve Plunger (6), Throttle Valve Ball (5), Throttle Valve Spring (8) and Throttle Valve Cap (9).
6. Align Throttle Lever (2) in Handle and drive in Throttle Lever Pin (3).
7. Reposition the tool in a vise with leather-covered or copper-covered jaws by clamping the Handle across the Throttle Lever Pin with the Barrel up.
8. Slide Locking Ring (20) over splines on Barrel, aligning castellations on Locking Ring with castellations in Handle. Tap Locking Ring lightly in several places to secure in position.
9. Spread apart and install the Exhaust Deflector (21).
10. Install new Nozzle (24) after Tool has been assembled. Using a soft hammer, start new Nozzle, externally beveled end first, squarely into Barrel bore.

NOTICE

Installation of a Hexagon Nozzle requires a 50 ton press.

For Hexagon Nozzles, position a flat of the Nozzle at the top so that the chisel blade will be installed in the correct operating position. Support the Handle directly beneath the Barrel and using a 50 ton press, press in the new Nozzle until it seats.

11. Install Retainer (33) on front of Barrel and secure with Lock Spring (33A) or Flat Spring and Pin (33B).

Installation of Oversize Piston

NOTICE

Do not install an oversize Piston without first lapping the Barrel.

Greater wear occurs near the center of the barrel bore than at either end. To obtain full benefit from an oversize Piston (22), it is necessary to lap the Barrel (23) until the bore is of uniform size for its entire length. Select and install the proper size Piston after truing up the Barrel bore. Pistons are furnished .004", .008" or .012" oversize.

Installation of Oversize Nozzle

Steel hexagon or round nozzles are furnished with outside diameters of .0005" oversize.

The Nozzle must be a tight press fit in the front of the Barrel (23). After the Nozzle has been replaced a few times, the Barrel may become enlarged to the extent that the Nozzle is no longer tight. If this condition is noted, an oversize Nozzle should be used. The oversize Nozzle is plainly etched with the amount of oversize; a standard Nozzle is unmarked. Examine a Nozzle that can be pressed easily from the Barrel. If it is unmarked, use the .0005" oversize when reassembling the Chipper. See MAINTENANCE TOOLS for Nozzle removal tool.

Installation of Oversize Inlet Bushing

This part is available .012" oversize. It should be used only in cases where the threads in the Handle have become worn to the extent that air leakage is noted. A special tap must be used to oversize the threads in the Handle before the oversize Bushing can be installed. Replacement of Throttle Valve Guide (8) in Handle. (For "A" Series and "W" Series Chipping Hammers with first two letters of serial number SA through SP).

1. Tap the worn Throttle Valve Guide (8) to a 9/16"-12 thread.
2. Thread a 9/16"-12 thread Cap Screw into the Guide, grasp the head of the Cap Screw in a vise and pull the Guide from the Handle (1).
3. Using the No. HH-607 Throttle Valve Guide Inserting Tool, press the new Throttle Valve Guide into the Handle until the shoulder on the Inserting Tool contacts the face of the throttle valve cap boss on the Handle. If a piloted arbor is used instead of the Inserting Tool, press the Throttle Valve Guide into the Handle until its trailing face is 37/64" (14.68 mm) below the face of the throttle valve cap boss.

Installation of Throttle Valve Plunger Bushing (7) in Handle (For "A" Series and "W" Series Chipping Hammers with first two letters of serial number SA through SP)

1. Slide the new Throttle Valve Plunger Bushing (7) over a plunger bushing arbor and insert it into the Handle through the threaded opening at the base of the grip.
2. Press in the Bushing until its trailing face is 1-21/32" (42.06 mm) below the face of the throttle valve cap boss on the Handle.
3. Using a plunger bushing reamer guide and a throttle valve plunger bushing reamer, ream the Throttle Valve Plunger Bushing to size.

Trouble Shooting Guide

Trouble	Probable Cause	Solution
Sluggish operation	Dirt or oil gum accumulation on internal parts	Pour about 3 cc of a clean, suitable, cleaning solution into the air inlet and operate for 30 seconds. After flushing, pour about 3 cc of oil into the air inlet and operate the tool for 5 seconds to coat the internal parts with oil.
Loss of power	Worn Valve	Replace the Valve.
Loss of efficiency	Worn Piston and/or accessory	Replace Piston and or accessory.

Related Documentation

For additional information refer to:

Air Percussive Chipping Hammer Product Safety Information Manual 04581450.

Air Percussive Chipping Hammer Product Information Manual 16574162.

Air Percussive Chipping Hammer Parts Information Manual 16574329.

Manuals can be downloaded from ingersollrandproducts.com

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