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Paving Breaker

**Models PB35A, PB35AS, PB50A and PB50AS
(With/Without Flex Handles)**

Maintenance Information



Save These Instructions

 **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).

Maintenance

To ensure maximum life and top performance of the equipment, it is necessary that the maintenance be made before serious damage occurs. It is important to be cautious when performing any service work. A general knowledge of the system and/or components is important before the removal or disassembly of any components. The following is a list of basic precautions that must always be observed:

1. Never attempt major maintenance of the Paving Breaker on the job; always send the Paving Breaker to a repair shop.
2. Clean the exterior of the Paving Breaker before disassembly.
3. Provide a clean work area for disassembling the Paving Breaker.
4. Handle parts carefully. Hardened parts might chip or break if dropped on a hard surface.

5. Place small parts in a clean box to prevent loss.
 6. Keep your hands and the Paving Breaker clean and free of dirt, while assembling.
 7. Wipe a film of clean oil over the working parts as they are assembled.
 8. Do not allow dirt or chips from soft drifts and hammers to enter the Paving Breaker.
 9. With the exception of pressed-in parts, all the parts should fit together easily. If excessive force is required, the part is probably cocked and should be removed and realigned.
 10. If necessary, use a rubber mallet to loosen the fronthead and backhead.
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Disassembly

1. If equipped with a Muffler, remove Screws (43, 44), Washers (41) and Nuts (42); then remove Muffler Halves (45, 46).
2. Place the Paving Breaker in a vise with the fronthead up.

CAUTION

Clamp the Paving Breaker housing in the area of the handles. Clamp it firmly but carefully. The handle can be squeezed out-of-round or cracked if the vise is overtightened.

3. Remove the Nut (19), Washer (35) and Bolt (18).
4. Pull the fronthead assembly (20) up to re-move it from the Housing (11).

NOTICE

The fronthead assembly is a tight fit in the Housing Bore. It may be necessary to drive a wedge into the housing slot to open the housing bore enough to allow the fronthead assembly to be removed.

5. Remove the Paving Breaker from the vise and mount it with the handle up.
6. Remove the two Roll Pins (3, 5) which retain the Throttle Lever (2).
7. The Throttle Lever (2) can now be used to unscrew the Housing Plug (37) from the Housing.

CAUTION

The oiler plate can be re-moved from the housing plug by filling the housing plug chamber full of oil and installing the oiler fill plug. Pressure in the chamber will be generated when the oiler fill plug is tightened causing the oiler plate to be pushed out of the housing plug.

8. Remove the O-ring (7), Oiler fill Plug (40), and Oiler Plate (6) from the Housing Plug (37).
9. Remove the O-ring (39) from the Oiler Plate (6). It is not necessary to replace the filter in the oiler plate unless it is damaged or dirty.

NOTICE

It is not necessary to replace the filter in the oiler plate unless it is damaged or dirty.

10. Remove the Valve Chest (8) by screwing a piece of 1/2- 13 UNC-2B threaded rod into the top of the Valve Chest. Pull out the three Washers (4) and Valve Chest (8).
11. If it is necessary to remove any of the air connection parts, unscrew the air Connection Cap (29) and the Air Connection (27), Throttle Pin (34), Valve (32) and Spring (31) will drop out.
12. Loosen vise so breaker can be rotated so the Valve (9), Valve Cover (10) and Piston (17) fall out.

CAUTION

When loosening the vise, make sure the Paving Breaker is supported to prevent it from falling.

13. If it is necessary to remove any of the latch parts, drive out the Roll Pins (25, 26), then remove the Lever (22), Plunger (24) and Spring (23) from the Fronthead (20).
14. If the Fronthead Bushing (21) should require removal from the Fronthead (20), make a tool from an old moil point:
 - a. Cut off the tip of the moil, making sure it is square.
 - b. Leave about 8 in. (203 mm) of steel be-low the moil collar.
 - c. Insert the fabricated tool (short end first) in the sleeve end of the Fronthead (20), and with a Hydraulic Press, drive out the Fronthead Bushing (21).

Inspection and Repair

WARNING

When using any solvent to clean parts, make sure that it meets current safety and health standards and that it is used in an area that is adequately ventilated.

1. Clean all parts in a suitable solvent.
2. All parts in the Housing (11), including the Valve Chest (8) and

Assembly

1. If it was removed, reassemble the steel retaining lever:
 - a. Insert the Spring (23) then the Plunger (24) into the Fronthead (20).
 - b. Fit the Lever (22) to the fronthead, then secure the lever with the Pins (25, 26).

CAUTION

Clamp the housing firmly but carefully. The housing can be cracked if the vise is over tightened.

2. Secure the Housing (11) in a vise with soft jaws. Position the Housing with the handle up.
3. Check the Housing Bore to make sure it is clean. If necessary, use a clean soft rag to wipe out any dirt or chips.
4. Drop the Piston (17) into the Housing (11) [Shank end towards the fronthead end].
5. Install a new O-ring (36) on the Valve Cover (10).
6. Install a new O-ring (36) on the Valve Chest (8).
7. Install the Valve Cover (10) and Valve (9) into the Housing Bore.
8. Use a piece of 1/2-13 UNC-2B threaded rod to screw into the top of the Valve Chest (8). Hold the end of the rod and install the Valve Chest into the Housing Bore, being careful that it doesn't get cocked.
9. Install the three Washers (4) as shown in the Figure.



Valve Chest Washer

CAUTION

Before installing the housing plug, make sure the valve parts are properly assembled in the housing. If they are misaligned, they may be permanently damaged and the Paving Breaker will not run.

10. Install a new O-ring (7) in its groove in the Housing Plug (37).
11. Install a new O-ring (39) on the Oiler Plate (6).
12. Install the Oiler Plate (6) into the Housing Plug (37).
13. Install the Housing Plug (37) in the Housing. Using the Throttle Lever (2), tighten the plug until the Plug fully collapses the three Washers, then loosen 1/8 to 1/2 turn until the slot in the plug allows assembly of the Throttle Lever.

Performance Testing

A reconditioned Paving Breaker should be tested before it is sent back to the job. Before connecting the air hose, check to see that the lubricator used with the breaker is filled with the proper lubricating oil. Refer to Product Information Manual 51956043, for the correct lubricating oil specifications.

With the breaker against the work surface, the breaker should start with less than 20 psi (1.4 bar) air pressure and with the Piston reciprocating smoothly. Let the breaker run in slowly at reduced pressure long enough to see that it is in good working order. If the breaker stalls, turn off the air immediately. Stalling indicates binding caused by tight fits. After a short period of operation, a

Valve Cover (10) must be examined, and all dust or dirt particles removed. Check the valve (9) for cracks or chipping. If damaged, replace it.

3. Replace the Piston (17) when a .007 in. (.178mm) Feeler Gauge can be inserted between the Piston and the Housing Bore.
4. Check the Throttle Valve (32) and O-ring (33) for wear, and make certain that the Throttle Pin (34) is free to slide in the handle.

14. Position the Throttle Lever (2) in the Housing Plug (37) Slot, and drive in the two roll pins (3, 5) through the Housing and Throttle Lever to secure.
15. If the filter was damaged, the Oiler Plate (6) must be replaced.
16. Install Oiler fill Plug (40) into the top of the Housing Plug (37).
17. Loosen the vise and position the Paving Breaker so the air connection parts can be easily installed.
18. Insert the Throttle Pin (34), Throttle Valve (32), and Throttle Spring (31) into the Housing (11).

NOTICE

The Throttle Pin must move freely in its Bore.

19. Install a new O-ring (30) into the groove on the Air Connection Cap (29).
20. Install a new O-ring (28) in the groove on the Air Connection (27) and install the Air Connection through the Air Connection Cap (29). Secure the air connection parts with the air connection cap.
21. If the Fronthead Bushing (21) was removed from the Fronthead (20), an assembly tool should be made from an old moil point to assist in reassembling the bushing in the Fronthead. Refer to Step 13 for instructions on fabricating this tool.

NOTICE

Make sure the bushing is aligned in the Fronthead so that chisel points, asphalt cutters, and other bladed tools will have the blade parallel to the Paving Breaker T-handle.

The fronthead assembly is a tight fit in the Housing Bore. It may be necessary to drive a wedge into the housing slot to open the Housing Bore enough to allow the Fronthead assembly to be easily replaced.

22. Using the fabricated assembly tool, press the Fronthead Bushing (21) into the front end (steel end) of the Fronthead (20) until bottomed.
23. Install the Fronthead (20) into Housing (11) with the steel retainer latch on the same side as the Air Connection. Line up the slot in the Fronthead with Hole in the Housing. Insert Bolt (18), Washer (35) and Nut (19). **Lubricate the Bolt Threads and torque the bolt to 280 lb-ft (380 Mm).**
24. If removed, install the Muffler.

definite rhythm should develop and an even exhaust note will be heard. The breaker may become warm, but should not overheat. If erratic operation continues or stalling persists, disassemble the breaker and check for binding of parts.

After an initial period of low pressure operation, check the performance of a reconditioned breaker with that of a new one by comparing both under similar conditions and with normal air pressure. Once testing is completed, place plastic Caps or Plugs in all parts to keep out dirt until the breaker is put back into service.

Troubleshooting Guide

Trouble	Probable Cause	Solution
Paving Breaker will not start.	Plugged Exhaust Port or air passages caused by dirt or hose particles.	Dismantle breaker, clean out all ports and air passages. Keep the air hose in good condition; never use a soft deteriorated Hose.
	Stuck valve due to gummy oil or incorrect assembly.	Remove valve chest parts from the breaker. Clean parts. Never use dirty oil or oil that does not conform to the recommended specifications.
	Frozen piston due to improper lubrication.	Dismantle breaker to remove Piston. Repair Piston by placing in a high speed lathe and dressing with fine emery cloth. Never run breaker without the proper lubricating oil in the lubricating oil reservoir.
Paving Breaker loses power rapidly.	Restriction in air supply line.	Never allow the air supply to kink or make sharp bends.
	Air supply line too long.	As a general rule keep the air supply line under 50 ft. (15 m).
	Diameter of air supply line too small.	A 3/4 in. (19.1 mm) diameter air supply is recommended for the breaker.
Freezing at Exhaust Ports.	Excessive moisture in the air supply line.	Install moisture traps in the air supply line or add anti-freeze lubricant directly through the air inlet. Use "KILFROST" anti-freeze lubricant or equivalent.
Paving Breaker lacks power.	Low air supply pressure.	The air supply pressure at the tool should be 90 to 100 psi (6.2 to 6.9 bar).
	Running on fronthead cushion.	Keep shank fed-up to the work. Always maintain a constant pressure when operating the breaker.
	Plugged air passages.	Dismantle the breaker and clean out all ports and passages.
	Lack of lubricating oil.	Maintain the proper oil level in the lubricating oil reservoir. Steel shank must show a film of oil.
	Sticking Valve.	Remove valve chest parts from the breaker. Clean parts. Never use dirty oil or oil that does not conform to the recommended specifications.
Overheating of the Piston seat on a new machine.	Breaker not properly broken in.	Stop operating the breaker and perform initial servicing. Never run a new breaker at full throttle until a proper break-in period has been completed.
Overheating of the Paving Breaker after break-in period.	Running on fronthead cushion.	Keep shank fed-up to work. Always maintain constant pressure when operating the breaker.
	Piston not hitting the Shank because of short Shank.	Remove shank piece from breaker.
	Pulling steel at full throttle.	When pulling steels, always use minimum throttle.
	Lack of lubrication or improper lubricating oil.	Before operating the breaker make sure the lubricating oil reservoir is full of proper lubricant.
Erratic or sluggish operation.	Lubricating oil too heavy, slowing down valve action.	Use only the recommended lubricating oil.
	Gummed oil or dirt in operating parts.	Dismantle breaker and clean out dirt and gummy residue. Service the breaker with clean oil. Protect the tool from dirt when idle.
Fogging.	Excessive moisture in the air supply line.	Blow out air lines. If moisture traps are installed in the air supply line, drain the moisture.
	Over lubrication.	Clean lubricating oil reservoir and adjust for proper rate of feed.

Related Documentation

For additional information refer to:

Product Safety Information Manual 04581450.

Product Information Manual 51956043.

Parts Information Manual 51956035.

Manuals can be downloaded from ingersollrandproducts.com

Notes:

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