

EFFBE
Raunheim
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W-Germany

Diaphragms and Repair Kits
for all Fuel Pumps

Membranas y Juegos de reparación
para todas las bombas de gasolina

Membranes et Nécessaires de réparation
pour toutes les pompes à essence

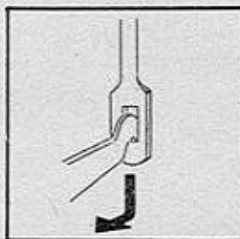
Membranen und Reparaturpackungen
für alle Kraftstoffpumpen

Repair Instructions for Fuel Pumps

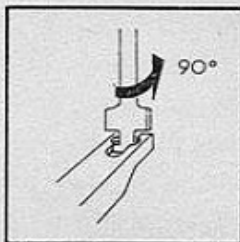
1. Dismantling

Note: Do not discard dismantled parts unless you have made sure that identical components are contained in the repair kit for replacement.

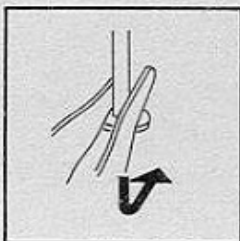
- a) Clean exterior thoroughly.
- b) Make a file mark across the flanges of the pump body to prevent wrong positioning of the upper body half when re-assembling.
- c) Position pump by clamping lower half in a vise, taking care not to damage body; attaching flange with protruding rocker arm and bore holding rocker arm pin must remain accessible.
- d) Remove fastening screws and separate body halves; set aside upper half.



- e) Remove diaphragm:
 - ◀ Slot Type: Push down and tilt to unhook

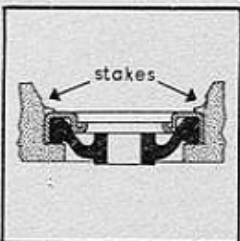


- ◀ Bayonet Type: Turn 90° to unhook



- ◀ Knob Type: Push down and tilt to unhook. If diaphragm will not come loose, proceed as per 1 g), 1 h) first to free diaphragm.

- f) Remove diaphragm spring
- g) Remove rocker arm pin
- h) Remove rocker arm, rocker arm spring, diaphragm link, and washers. (Note: On some pump types there is a forked rocker arm extension instead of a separate diaphragm link)

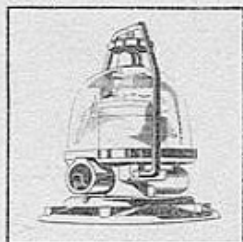


- i) Remove oil seal by first cutting away stakes with a hard and sharp instrument such as a chisel, and then pry out the retainer with any suitable tool.

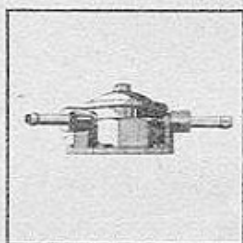
Note: There are pump types where diaphragm, diaphragm spring, oil seal, and retainer are forming a unit assembly that will come out of the pump body after the diaphragm has been unhooked from

the link. It is recommended that these are replaced by the pre-set assembly contained in the repair kit in order to ensure perfect oil seal function.

- j) Take upper body half and remove filter bowl or cap if such is present by either disconnecting bail-type retainer or loosening cap screw with gasket.



◀ Typical filter bowl with thumb screw wire bail retainer



◀ Typical screwed-on cap

- k) Remove gasket and filter unit
- l) Withdraw the valve retainer screws from inside the upper body half and remove valve retainer plate, valve cage assemblies or valves and springs, and valve gaskets.

2. Cleaning and Inspection

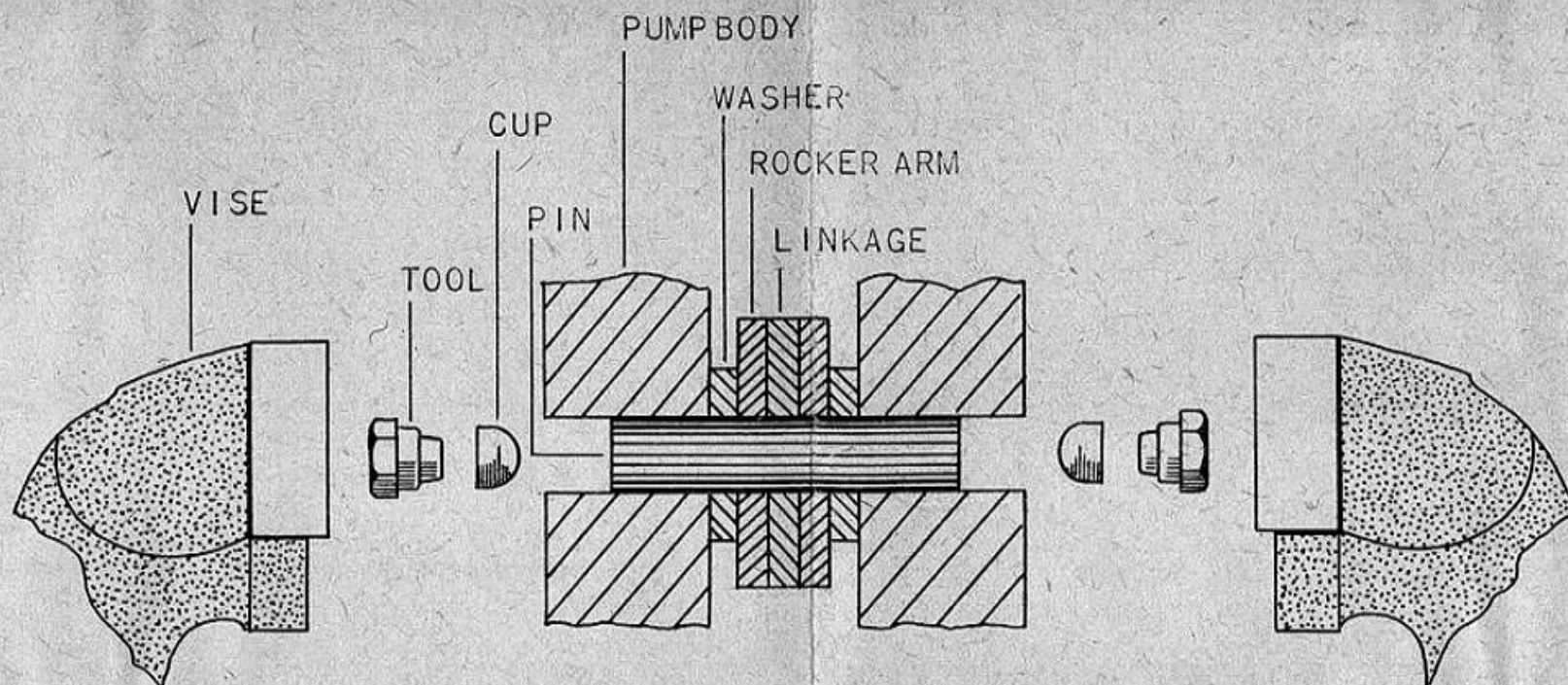
- a) Clean body parts and such components as may be re-installed after having been inspected and found serviceable. Most convenient cleaning fluid is kerosene. Gasoline or other highly inflammable solvents should not be used because of fire hazards.
- b) Examine body parts for cracks, distortion or other damage. Particular attention must be given to the diaphragm and mounting flanges. Possible distortions, burrs or scars must be thoroughly eliminated by working over the sealing surfaces to restore their original flatness. Cracked body parts should be discarded, and in such cases installation of a new pump is recommended.

3. Re-Assembly

- a) Line up the new or still serviceable component parts in the following sequence of their installation:
Valve springs, valves (or valve cage assemblies), valve gaskets, valve retainer, valve retainer screws, filter unit, bowl/cap gasket, bowl or cap, bail or cap screw with gasket, oil seal with retainer, rocker arm with link (assemble together with bushing if such is used), rocker arm washers (if used), rocker arm spring, diaphragm spring, diaphragm assembly, fastening screws with lock washers.
- b) Take upper body half first.
Unless pre-assembled valve cages are used, check valve seats (either pressed-in brass rings or seats integral with the casting of the upper body) for wear, scratches or markings. If necessary, grind seats smooth and plain with appropriate tool.



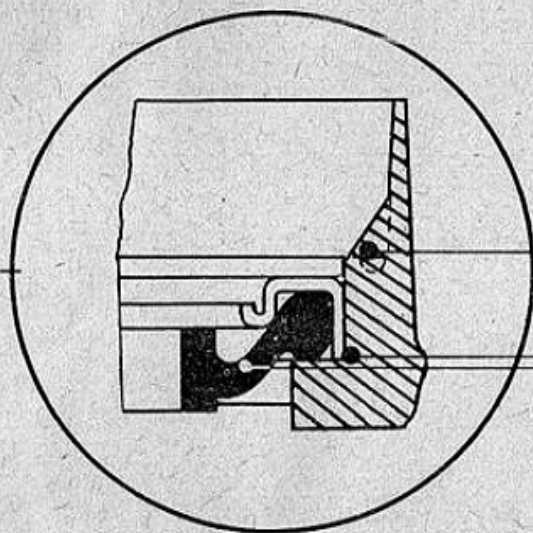
- c) Install valves with valve springs (or valve cage assemblies if used) and valve gaskets and fasten retainer with screws. Make sure that valves or springs are not stuck, and that they are free of dirt, chips or splinters. If rubber-coated valves are used, be sure to have the coated side face the seat.
- d) Insert filter unit, seat properly, put bowl gasket or cap gasket in proper position, put on bowl or cap and fasten with bail or cap screw. Don't forget cap screw gasket.
- e) Take lower body half. Install oil seal, if used, and arrest retainer by staking the edge of the pump body recess at three equally spaced points.
- f) Tilt lower body half as to allow rocker arm spring to be seated on the arresting notch in the recess on the mounting flange side.
- g) Insert rocker arm with link (or rocker arm, link and bushing assembly) in proper position, arresting rocker arm spring properly, and slide or press rocker arm pin through bores in lower body half, rocker arm and link, respectively through bushing. Fasten pin by either staking, mushrooming tapered end over washer, or attaching clips, according to type of pin used.
- h) Seat diaphragm spring on recessed oil seal retainer.
From above, insert the diaphragm stem through spring and through oil seal by pressing with both thumbs the diaphragm assembly down against the spring, fingers grabbing the diaphragm flange of the lower body half from below.
- i) For bayonet type diaphragm, take care that flat end of stem is in line with the longitudinal slot in the link, press diaphragm sufficiently down to allow the stem tabs to hook under the link by turning the diaphragm 90°.
- j) For slot type diaphragm, tilt lower body as to have diaphragm underneath, stem upwards, to allow link to fall toward diaphragm. Turn diaphragm by thumbs, keeping thumb pressure against diaphragm, to position flat end of stem at right angle against link. Wiggle stem lightly by thumb action on diaphragm to arrest link hook in stem slot.
- k) Knob type diaphragms usually incorporate diaphragm spring, oil seal and oil seal retainer in the diaphragm assembly, and there will be a rocker arm with forked extension, no separate link. Insert diaphragm assembly and press down, pushing shaft through center opening, and seat oil seal properly in recess. Then insert forked end of rocker arm allowing stem knob to arrest under prongs with stem going up in between. Insert rocker arm pin and fasten as per 3 g).
- l) Push the rocker arm in until the diaphragm is level with body flange.
- m) Place the upper half of the pump into proper position, using the flange markings as per 1 b) as a guide. Install the cover screws and lock washers and tighten until the heads of the screws just engage the washers.
- n) Before finally tightening the cover screws, the rocker arm must be held at its inward position and sufficient pressure must be applied to flex the diaphragm full stroke. With the diaphragm in fully flexed position, tighten cover screws securely, working crosswise.



* PROCEDURE FOR ASSEMBLY OF ROCKER ARM
PINS & CUPS

1. INSERT ROCKER ARM PIN IN BODY THROUGH LINKAGE & ROCKER ARM.
2. START ONE CUP ON EACH SIDE OF ROCKER ARM. PIN BY TAPPING INTO CASTING.
3. ADD CUP GREASE INTO CAVITY OF BOTH CUPS & INSERT TOOL IN EACH CUP.
4. SQUEEZE ASSEMBLY BETWEEN VISE JAWS.
5. REMOVE PUMP & PRY OUT TOOLS.

* INSTRUCTIONS APPLY ONLY TO PUMPS USING SLIP PINS & CUPS.



1. REMOVE OLD STAKING BURRS FROM SEAL CAVITY BEFORE ATTEMPTING TO ASSEMBLE NEW SEAL.

2. BE SURE TO ASSEMBLE OIL SEAL IN THIS POSITION.

3. PRESS RETAINER FIRMLY AGAINST CASTING AT THIS POINT.

4. LIGHT STAKING AT THIS POINT.

5. TAKE CARE IN PUSHING THIS PORTION OF THE STEM THROUGH THE SEAL

