Service bulletin

THE BRITISH MOTOR CORPORATION (AUSTRALIA) PTY. LIMITED

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Mini Range

Morris 1100

Austin Freeway MK II & Wolseley 24/80 MK II

FOR THE ATTENTION OF SERVICE AND PARTS MANAGERS

## INTRODUCTION OF MECHANICAL FUEL PUMPS

Mechanical fuel pumps were introduced on the following models commencing at engine No's:-

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|---|---|
| Mini Saloon and Van | 8Y/U/H.13907 |
| Mini Deluxe | 9YA/TA/H.1001 (First Production) |
| Morris 1100 | 10Y/TA/H.24578 |

Wolseley 24/80 MK II:-

| | |
|---|---|
| 24Y/A/2258 | Automatic |
| 24Y/Za/2487 | Manual |

Two types of pumps are used and their operational differences are as follows:

## TRANSVERSE ENGINE MODELS

### DESCRIPTION

The Mechanical Pump is a Goss type YD operated by an eccentric on the engine camshaft. The normal working pressure is between $1\frac{1}{2}$ and $2\frac{1}{2}$ lbs. P.S.I.

As the engine camshaft revolves, the eccentric lifts the pump rocker arm and link which moves the pull rod together with the diaphragm, downward against spring pressure, thus creating a vacuum in the pump chamber.

Petrol is drawn from the tank and enters into the sediment chamber through a gauze filter into the pump chamber. On the return stroke spring pressure pushes the diaphragm upwards, forcing petrol from the chamber to the carburetter.

TESTING

With the engine stopped and switched off, the pipe to the carburetter should be disconnected at the carburetter end. The engine can then be cranked and there should be a well defined spurt of petrol at each working stroke. Connect pressure gauge and crank engine, a pressure of 1½ to 2½ P.S.I. should be recorded. If the outlet pressure is below this figure, the pump must be removed and over-hauled.

Note: Before removing check the pump filter and sediment bowl for restrictions.

CLEANING THE FILTER GAUZE

The filter gauze and sediment chamber should be examined every 24,000 miles and thoroughly cleaned. Under extreme conditions this interval should be reduced as necessary.

Access to the filter is gained by removing the dome cover, after unscrewing the retaining screw.

Renew the synthetic rubber gasket if necessary.

When refitting the cover, make certain that the fibre washer is replaced under the head of the screw. Tighten the filter cover just sufficiently to make a petrol tight fit. Do not over-tighten.

REMOVING

Jack vehicle up at front and support on safety stands. (This will stop petrol draining when tank feed pipe to pump is disconnected).

Remove Air Cleaner, Fuel Feed and Vacuum advance pipes from the carburetter.

Remove accellerator Return Spring, flange nuts and washers on carburetter.

Remove carburetter and bracket (throttle and choke stop) from manifold. Carefully guide choke and accellerator cables with carburetter, and position it on master cylinder assemblies.

Place clean rag in throat of manifold.

Disconnect fuel inlet pipe at pump by unscrewing union from the body.

First remove nut from the stud closest to the timing cover.

Remove the remaining nut and the engine breathing pipe bracket.

Remove pump from engine block.

Remove delivery pipe from pump noting its position in relation to the pump. This will enable the pipe to be refitted to the pump before the pump is offered up to the cylinder block thus overcoming the difficulty of refitting the pipe when the pump is in position.

REPLACING

Reverse removing procedure ensuring that the rocker arm foot is in contact with the camshaft eccentric, and that the insulating block is placed between the pump and cylinder block.

DISMANTLING

Clean the exterior of the pump and suitably mark the two flanges to indicate the position of the inlet and outlet when reassembling. Separate the two main castings. The diaphragm and pull rod assembly can be withdrawn by turning it through 90°. Remove valves and rocker arm pin.

INSPECTION OF PARTS

All parts must be thoroughly cleaned to ascertain their condition.

Diaphragm and pull rod assemblies should normally be renewed, unless in entirely sound condition, without signs of cracking or hardening.

Upper and lower castings should be examined for cracks or damage and if the diaphragm or engine flanges are distorted these should be re-faced.

All worn or corroded parts should be renewed. (No more than .010" wear is permissable on the cam contact face). Rocker arm spring and all gaskets should be replaced.

REASSEMBLING

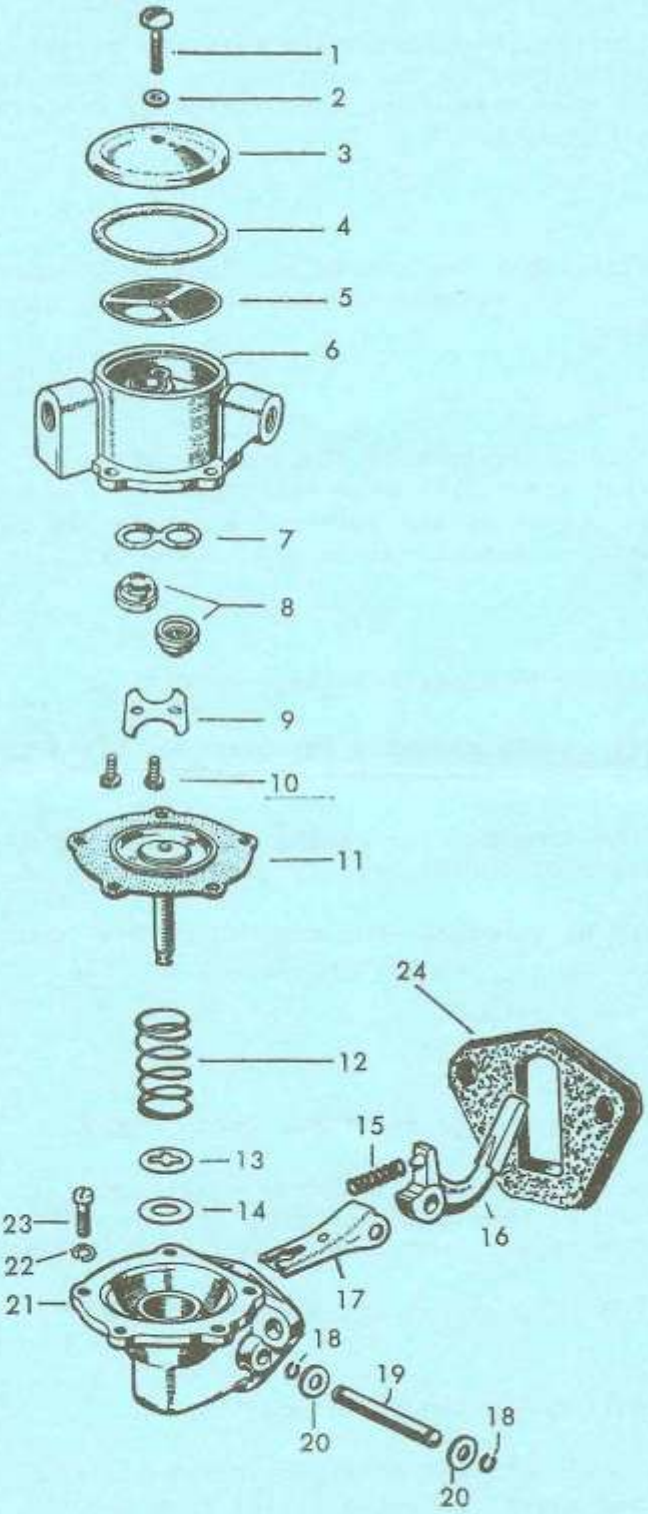
Place the valve gasket (7) in the pump upper castings. (Ref. Fig.1)

Place the valves (8) in the casting (6) in their correct positions; i.e. The inlet valve spring must protrude into the pump chamber. The outlet valve must be fitted in the reverse position to the inlet valve.

Place the valve retainer plate (9) in position and secure with two screws (10).

Place the filter gauze (5) in position on top of the casting.

Fit the cover gasket (4) filter cover (3) and retaining screw (1) and washer (2) as previously described under "Cleaning Filter".




Key to Components

1. SCREW, Filter Cover
2. GASKET, Filter Cover Screw
3. FILTER COVER
4. GASKET, Filter Cover
5. GAUZE, Filter
6. UPPER CASTING
7. GASKET, Valve & Cage
8. VALVE & CAGE ASSEMBLY
9. RETAINER, Valve & Cage
10. SCREW, Valve & Cage Retainer
11. DIAPHRAGM & PULL ROD ASSEMBLY
12. SPRING, Diaphragm
13. WASHER, Oil Seal (Metal)
14. WASHER, Oil Seal (Fabric)
15. SPRING, Rocker Arm
16. ROCKER ARM
17. LINK
18. CLIP, Rocker Arm Pin
19. PIN, Rocker Arm
20. WASHER, Rocker Arm Spacer
21. LOWER BODY
22. LOCKWASHER, Casting Screw
23. SCREW, Upper Casting
24. HEAT INSULATOR BLOCK

Fig. 1

Assemble the lower half as follows:-

Assemble link (17), spacer washers (20), rocker arm (16) and rocker arm spring (15) in the body.

Insert the rocker arm pin (19) through the hole in the body (21), at the same time engaging the packing washers (20), link (17) and rocker arm (16); then spring the retaining clips (18) into the grooves on each side of the rocker arm pin. The rocker arm pin should be a tap fit in the body, and if due to wear, it is freer than this, the ends of the holes in the body should be burred over slightly.

Place the diaphragm spring (12) over the diaphragm pull rod (11) and secure in this position by pushing the metal oil seal washer (13) over the flat on the pull rod and turning 90°. (See Figs. 2 and 3).

Place the fabric oil seal washer (14) over the flat on the pull rod so that it sits flush on the metal washer.

When first inserting the diaphragm assembly into the pump body, the locating tab "A" (Fig. 2) on the outside of the diaphragm should be at the 11 o'clock position. After turning the diaphragm assembly a quarter turn to the left, the tab should be at the 8 o'clock position "B".

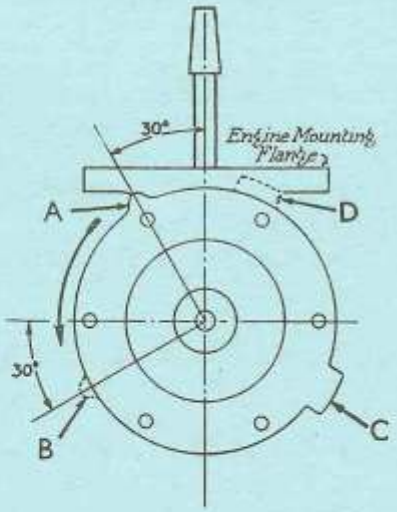
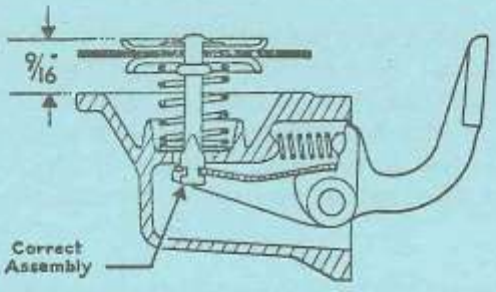



Fig. 2

Showing diaphragm positions during assembly operation.

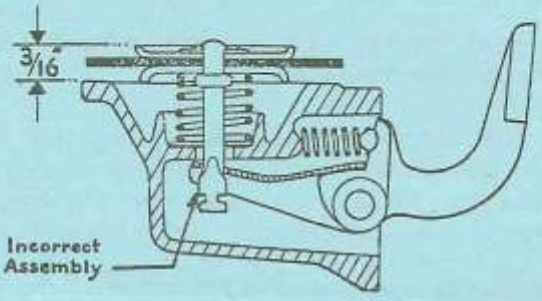
**Correct fitting of Diaphragm**

When correctly fitted, the slot in the link should engage with the two slots in the diaphragm pull rod so that when the diaphragm is subsequently turned 90° it is positively located in the link :—




**Incorrect fitting of Diaphragm**

Under some conditions it is possible to insert the diaphragm pull rod too far through the slot in the link so that the latter—instead of engaging in the two small slots in the pull rod—actually rides on the pull rod shoulder :—




**How to Check**

As indicated on the above diagrams, if the diaphragm assembly is incorrectly fitted the measurement from the top of the pump body to the upper protector is only approximately 3/16", whereas when correctly fitted this dimension is approximately 9/16". These dimensions are taken with the spring holding the diaphragm at the top of its stroke.

Fig. 3

The two sub-assemblies of the pump are now ready for fitting together:

Push the rocker arm towards the pump until the diaphragm is level with the body flanges.

Place the other half into position as shown by the mark made on the flanges before dismantling.

Install the cover screws and lockwashers and tighten until finger tight.

Release and push the rocker arm away from the pump so as to hold the diaphragm at the top of the stroke and, while so held, tighten the cover screws diagonally and securely.

WOLSELEY 24/80 MK II

DESCRIPTION

The Mechanical Pump is a Goss inverted type operated by an eccentric on the engine camshaft. The normal working pressure is between $1\frac{1}{2}$ and $2\frac{1}{2}$ lbs. P.S.I.

As the engine camshaft revolves, the eccentric pushes down the pump rocker arm and link which moves the pull rod together with the diaphragm, upward against spring pressure, thus creating a vacuum in the pump chamber.

Petrol is drawn into the pump chamber via the suction valve. On the return stroke spring pressure pushes the diaphragm downward forcing petrol through the outlet valve into the outlet chamber.

The outlet chamber is equipped with a pulsator diaphragm which dampens pulsations in the outlet and absorbs some of the pressure on the delivery stroke thereby providing the carburetter with a more constant flow of petrol.

TESTING

As previously outlined.

NOTE: (a) This pump is not equipped with a gauze filter.

(b) The sediment chamber cannot be inspected without first dismantling the pump.

REMOVING:

Disconnect the inlet pipe union and restrict fuel flow.

Remove fuel line, pump to carburetter, and the two nuts and washers retaining pump to crankcase. The pump can now be removed.

REPLACING

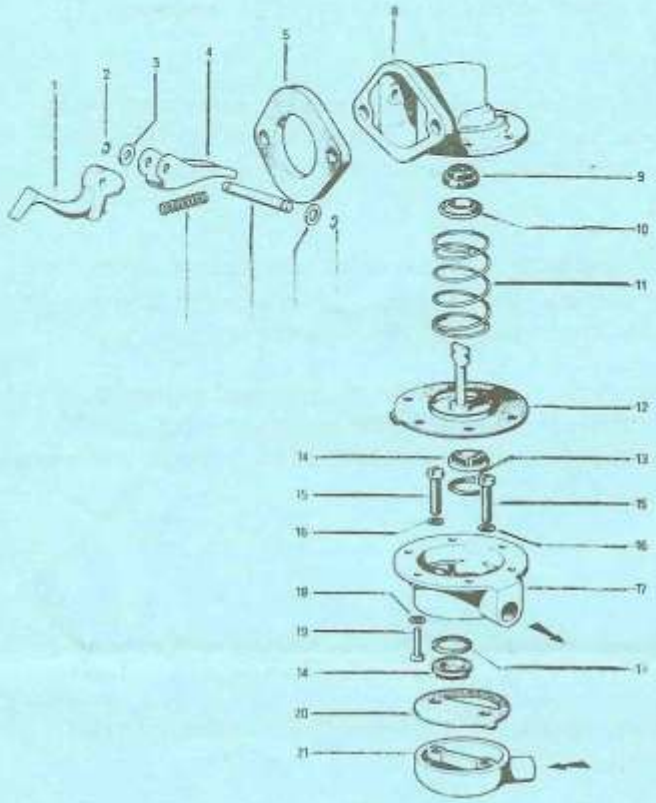
Reverse removing procedure ensuring that the rocker arm foot is in contact with the camshaft eccentric, and that the insulating block is placed between the pump and cylinder block.

DISMANTLING

Clean the exterior of the pump and suitably mark the two flanges to indicate the position of the inlet and outlet when re-assembling. Separate the two main assemblies. The diaphragm and pull rod assembly can be withdrawn by turning it through $90^{o}$. Remove rocker arm pin. Withdraw the two screws in the lower assembly and remove the cover and pulsator diaphragm. Punch out the valve assemblies which are a press fit in the body.

INSPECTION OF PARTS

As previously outlined.



1. Rocker Arm
2. Rocker Pin Clip
3. Link Spacer Washer
4. Link Assembly
5. Insulating Block
6. Rocker Pin
7. Rocker Arm Spring
8. Upper Body
9. Oil Seal
10. Oil Seal Retainer
11. Diaphragm Spring
12. Diaphragm Assembly
13. Valve Gasket
14. Valve Assembly
15. Screw - Pulsator Cover
16. Washer
17. Lower Body
18. Washer
19. Cover Screw - 6 off
20. Pulsator Diaphragm
21. Pulsator Cover

Fig. 4

REASSEMBLING

Place the valves and valve gaskets in position and press or drive into place using a suitable sleeve or punch. The body should be lightly staked in two or three places to prevent any possibility of the valves working loose.

Place the pulsator diaphragm in position on the valve chamber casting, making sure that the hole in the diaphragm is above the inlet valve. Insert the two screws with lockwashers and tighten.

To assemble the other half of the pump, proceed as follows:-

Assemble oil seal and retainer and press into body using a suitable punch. Stake body in several places to prevent seal assembly working loose.

Assemble link, spacing washers, rocker arm and rocker arm spring in the body. Insert the rocker arm pin through the hole in the body, at the same time engaging the spacing washers, link and the rocker arm. Spring the retaining clips into the grooves on each end of the rocker arm pin.

To fit the diaphragm assembly to the pump body:-

Place the diaphragm spring in position in the pump body.

Place the diaphragm assembly over the spring, the pull rod end being downwards, and centre the upper end of the spring in the lower protector plate.

Press the pull rod through the oil seal, taking care not to damage the seal, so that the slots in the pull rod will engage the fork in the link. Turn the diaphragm assembly $90^{o}$ to the left.

When first inserting the diaphragm assembly into the pump body, the locating tab "A" (Fig. 2) on the outside of the diaphragm should be at the 11 o'clock position. After turning the diaphragm assembly a quarter turn to the left, the tab should be at the 8 o'clock position, "B".

The two sub-assemblies of the pump are now ready for fitting together, and this is carried out as follows:-

Push the rocker arm towards the pump until the diaphragm is level with the body flanges.

Place the other half into the proper position as shown by the mark made on the flanges before dismantling.

Install the cover screws and lockwashers and tighten until finger tight.

Release and push the rocker arm away from the pump so as to hold the diaphragm at the top of the stroke and, while so held, tighten the cover screws diagonally and securely.

Parts and Accessories Department now have stocks of mechanical fuel pump kits under the following part numbers:-

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|---|---|
| Wolseley 24/80 MK I & II )<br>Austin Freeway MK I & II ) | HYL 3297 |
| Morris 850 Saloon )<br>Morris 850 Van ) | HYL 3310 |

These kits contain all the parts required to effect the conversion from electric to mechanical fuel pump together with fitting instructions.

SPECIAL NOTE

It is NOT intended that the mechanical pump be used as an automatic warranty replacement where the electric pump has failed. Rectification procedures for the various known faults of the S.U. Pump have been outlined in previous Service Bulletins and these should be strictly adhered to for rectification purposes.

In cases of repetative S.U. Pump failure where it is considered that a mechanical pump should be fitted as a policy measure, authority MUST be obtained from the territory Service Engineer or State Service Office prior to such action being taken under warranty.

N. Prescott S/L
Service Manager