

## WORKSHOP

### Fuel pump overhaul

# PUMP UP YOUR FUEL VOLUME

How to recondition your tired pump and restore reliability for half the cost of a new unit.

WORDS AND PHOTOGRAPHY GARY STRETTON

**W**hen you own a classic fitted with an SU electric fuel pump, it's highly probable you carry that essential tool for making them work – a hammer. A few gentle taps is usually all that's needed to jog the contact points into life and keep a classic running. Not ideal, but it works. For a while at least. Other faults include a failed diaphragm and fuel leaks.

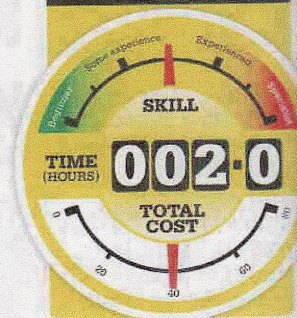
Opinions vary as to whether repairing an old SU pump is worthwhile due to reliability issues, so I thought I'd give it a go after mine began pumping fuel into the engine bay of my Morris Minor due to a leak between the pump diaphragm and the body housing.

I initially wanted to convert the unit using the electronic kit available, but first I thought I'd

see how the uprated double contacts provided in the rebuild kit fared. The cost of a new LP-type pump is about £70 plus postage. By contrast, SU experts Gower and Lee can supply an EPK 700 rebuild kit for £31.96. Jeff at Gower and Lee says they can also supply most individual components for SU pumps. Visit [www.gowerlee.dircon.co.uk](http://www.gowerlee.dircon.co.uk) or call 01923 247300.



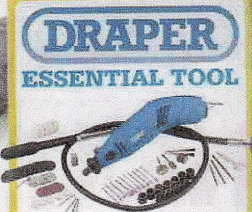
### Workgauge



### Toolbox

You will need:

- Flat-head screwdrivers
- Wire brush
- Sockets and spanners
- Wire wool
- Mini-drill with wire brush
- Paint



### 140w Multi-tool

100-piece kit with variable speeds, flexi shaft.

Item number 40967

Price £30.75

Tel 02380 494333

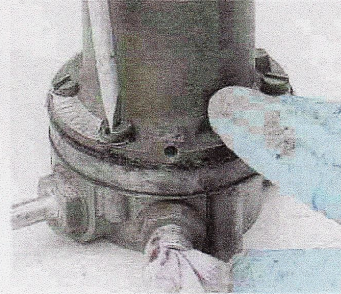
Web [www.draper.co.uk](http://www.draper.co.uk)

**Start****1 Correct pump?**

Check the pump you have fitted to your classic is the correct type before you order the rebuild kit. Check the ID tag screwed to the main body. It's not unheard of for the wrong pump to be fitted.

**2 Clean as you go**

Ensure the pump's drained of all fuel. Plug the inlet and outlet to prevent dirt entering. Clean as much loose dirt and debris off the outside. I used a wire brush, toothbrush and mini-drill. If the pump's heavily soiled, a cleaner such as Gunk is recommended.

**3 Housing screws**

Using a flat-head screwdriver, undo the screws securing the pump's alloy body to the coil housing. Separate to reveal the pump diaphragm.

**HAZARD!**

Wear gloves to protect from possible old asbestos gaskets.

**4 Body splitting**

Now separate the two halves of the alloy filter body. Remove all traces of the old gasket separating them. Remove all loose debris.

**5 Old filter**

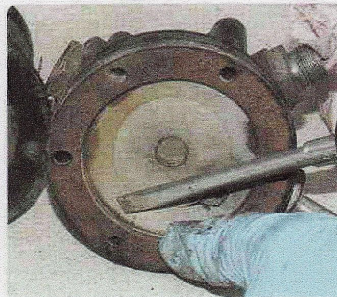
Remove the brass filter plug and fibre washer. Remove the old filter. Undo the fuel inlet and remove its old washer (not shown here).

**6 Fuel outlet union**

Remove the carb outlet and its fibre washer. Remove the brass valve cage and suction valve disc. Remove the black washer from the alloy housing. This washer looks as if it's part of the housing and is therefore easy to miss.

**7 Valve cage**

Using thin-nosed pliers, remove the spring clip holding the brass delivery valve disc in the brass valve cage.

**8 Body cleaning**

Clean any loose dirt from inside the two alloy bodies. I prefer to remove the looser dirt as I dismantle, to prevent it from being accidentally transferred into other parts of the assembly.

**9 Diaphragm out**

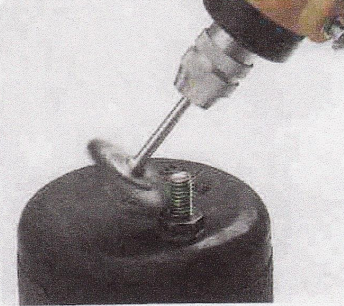
Lift and separate the old diaphragm from the main body flange. Unscrew it anti-clockwise. The brass armature guides will now fall out.

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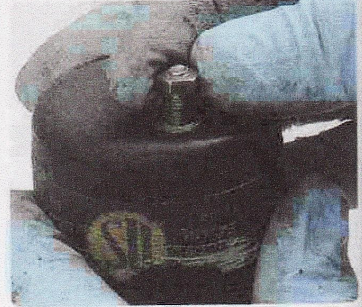
# Fuel pump overhaul



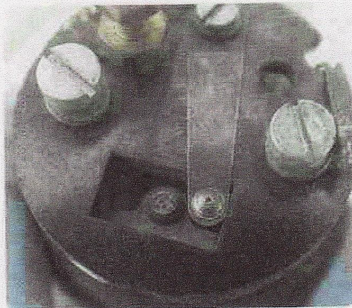
**10 Old and new**  
The old diaphragm was the cause of my fuel leak. It had badly disintegrated, allowing fuel to be pumped into the engine bay. The new item should be good for many thousands of miles.



**11 Terminal clean**  
Clean the external electrical terminal, preferably using a mini-drill mounted with a wire brush.



**12 Cover off**  
Remove the Bakelite cover nut and lift away the cover. The old SU sealing tape should peel off easily. Use white spirit or aerosol brake cleaner to remove all traces of it if any remains.



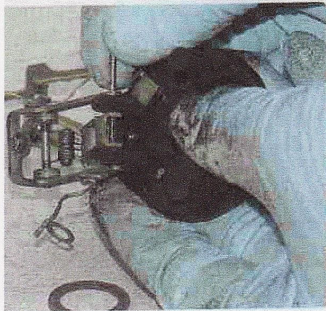
**13 Worn contacts**  
Take a good look at how the electrical contacts fit together. Familiarise yourself with how the movement of the diaphragm affects the contact breaker points. Note the state of these contacts. The pump still ran, though.



**14 Pedestal stripdown**  
Remove the feed terminal securing nut, preferably using a long-reach socket. Undo the two screws holding the Bakelite contact pedestal. Remove the wires and captive washers.



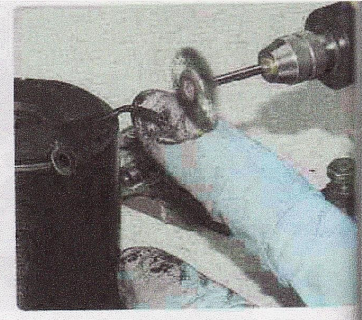
**15 Contact blade**  
Undo the upper contact screw, then remove the old contact blade and its washer and feed wire.



**Rocker removal**  
16 Push out the rocker-retaining bar and remove the remaining contact assembly. The contact pedestal can now be cleaned easily of carbon dust and dirt



**Painted housing**  
17 Refitting is the reversal of removal. I first cleaned and resprayed the main coil body, allowing it to dry thoroughly before handling it.



**Clean contacts**  
18 Begin with the electrical contacts. Clean all the wiling terminals. Fine wire wool or a wire brush mounted in a T@n!-drill is ideal.

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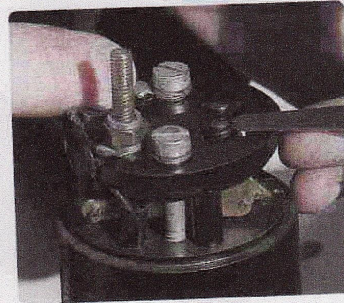
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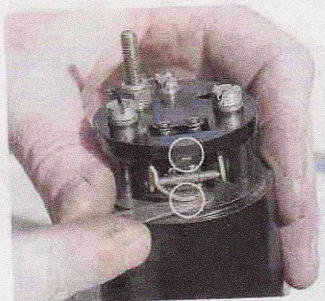
**19 New rocker fitting**  
Slide the new retaining rod through the rocker assembly holes and pedestal lugs. The diaphragm trunnion (circled) should be aligned to allow the diaphragm bar thread to catch easily. Refit the pedestal to the coil body. Do not overtighten the screws.



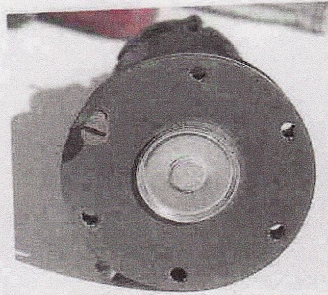
**20 Wires**  
Refit the electrical wires, making note of the correct sequence of washer fitting. The wires to the top of the mounting plate route through the cutouts in the pedestal (circled). The contacts have been updated with double points to improve reliability.



**21 Blade adjustment 1**  
Fit the new blade contact. Set the contact gap using a feeler gauge to fix the specified height of the contact blade (35 thou in this case) by bending the top adjustment lug (see step 22).



**22 Blade adjustment 2**  
Set the lower lug to its specified gap, adjusting the lug if necessary. The top lug is also circled for clarity.



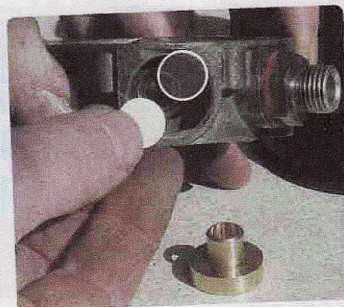
**23 Diaphragm setting**  
Screw the diaphragm with spring and impact washer into the trunnion until the contact points just 'rock over' when the diaphragm's operated. Now turn it back to align with the nearest body holes. Turn it back four more holes. Use a screw to keep this position...



**24 Armature guides**  
...before fitting the new plastic armature guides. Locate, and then press the last two guides in together. It's a tight fit and a little fiddly, but easy enough. The diaphragm should now move enough to open the contact points. If not, reset the diaphragm.



**25 New filter**  
Back to the alloy body. Fit the new filter and red fibre washer. If the filter twists and crushes when you tighten up the brass cover, it's not seated correctly.



**26 New valve cage**  
Fit the new brass suction valve and valve cage assembly, along with the easily missed thin black washer (circled), red fibre washer and outlet union. The inlet union with new fibre washer is also visible to the right.

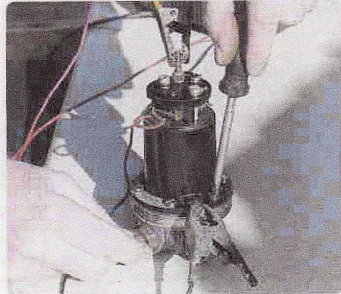


**27 Back together**  
Using new gaskets, fit the alloy body halves and coil housing together, ensuring the inlet and outlet valves are in the correct position relative to the coil housing. Do not fully tighten the housing body screws.

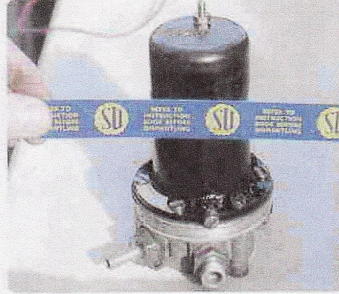


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**28 Energise the coil**  
This ensures the diaphragm's in its forward position. Insert an old fibre washer between the lower lug and coil housing. Connect 12v to pump earth and the main feed. Tighten the housing screws. Remove the fibre washer and the pump should click into life.



**29 Seal of approval**  
If it doesn't click into life, recheck the rocker contact gap settings and diaphragm if necessary. Refit the cover, noting the spacers and washers fitted. The SU sealing tape is best left off until the pump's known to be running satisfactorily on the car.



**30 It's alive!**  
One reconditioned fuel pump. If the points fail prematurely I'll consider upgrading to the electronic kit available, or replacing the pump altogether with a new no-maintenance electronic version. But for now the engine starts first time. Job done.

## Refitting checks

Your fully reconditioned fuel pump is now ready to be refitted to your classic. Before attempting to start the engine, though, switch on the ignition to power the pump until it stops clicking. This means fuel is now under pressure in the system. Check for any fuel leaks from gaskets and pipes. Now start the engine. A road test will confirm whether the pump is performing correctly under load.



**TECH TIP**  
The use of a mini-drill is invaluable for cleaning terminals and old fittings. Highly recommended.

## CM SAYS...

Take photographs or make a sketch of the rocker assembly for reference if possible. This will assist reassembly if electrics aren't your strong point or the rebuild kit instructions

**HAZARD!**  
Check for fuel leaks before starting the engine.