Service
Article #30
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“The Washer Pump”

– Tony Cripps

1. Introduction

Owners of vehicles of the 1950s and 60s are no doubt familiar with the manual washer pump fitted to their car. The usual item is the Wingard pump which takes the form of a black plastic cylinder about 2 inches long and a about an inch and a quarter in diameter. Other makes from Flexdrive and Venmetal are also fitted. Although we are all used to that satisfying plunging action and the resulting copious spray of water from the washer jets, the actual innards of the pump are a bit of a mystery. Is it a piston action? A bellows? Just what’s in there?

2. Washer Pump

The BMC drawings for various pumps are shown below.

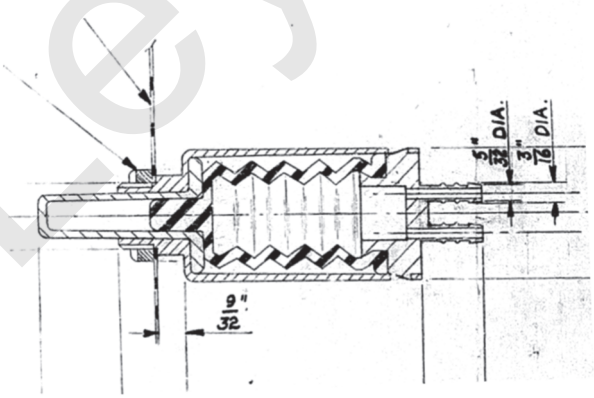

Fig. 1 Wingard washer pump 24A1386 (Mini).

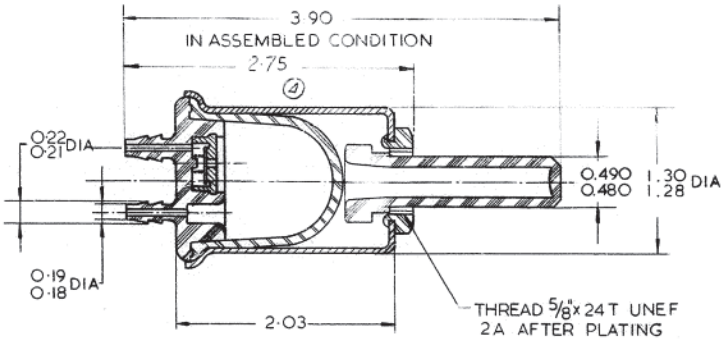

Fig. 2 Venmetal washer pump (Austin 1800)

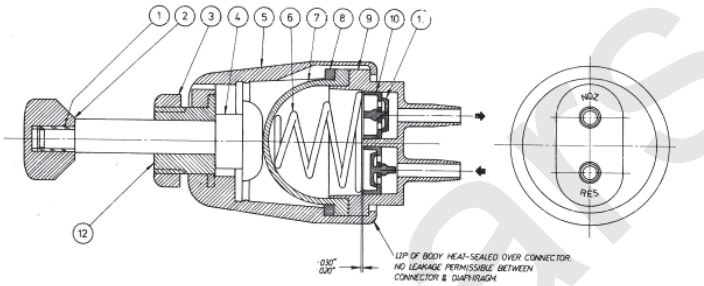

Fig. 3 Flexdrive washer pump (Moke).

The weakest part of the whole thing are the nozzles at the end where the PVC tubes are slipped over. The nozzles are easily broken off.

For the Wingard pump, one can, if one is careful, disassemble these pumps with minimum of damage. A slit is made in the edge where the tapered clip goes on each side, and the cannister part can then be removed. What is left is a rubber bellows upon which is positioned the nozzle plate and nozzles. The nozzle plate fits into the end of the bellows like a bottle-top fits over the neck of a bottle of Coca Cola. The bellows can easily be peeled off.

Fig. 4 Disassembled Pump

What is surprising is that the bellows material is actually quite thick, and the 60 year old item I was looking at was still quite pliable and uncracked.

But, you say, these things always leak. Yes, perhaps they do, but a pressure test with the cannister removed shows that the leak is actually from the fitting of the bellows on to the nozzle plate.

Because this is a cast item, there is a casting line through the centre of the whole thing and the bellows is supposed to accommodate this discontinuity and make a seal. But, under extreme pressure (by filling with water and holding one's fingers over the nozzles and compressing the bellows, it is easy to make the apparatus leak at that point.

Now the only way this would happen in practice is when the windscreen jets are blocked and you are trying to force fluid though the system.

In the Wingard pump, there are no valves inside. Two one-way valves are needed in the tubing to allow pumping action from the bottle to the jets to occurs. The locations of these vary, but one of them is always at the end of the tube as it dips into the washer bottle.

The nozzles at the end are a nominal 5/32" dia (4 mm).

The securing nut can be either plastic or "bright metal". The thread is 5/8" Whitworth.

3. Washer Tubing

The washer tubing is now impossible to find in the correct colour, and any existing ones on vehicles have the consistency of old fashioned wire clothes hangers. Despite this, they soften up nicely with a little bit of heat. Even putting a tube in one's pocket for about 10 minutes makes a marked difference to its flexibility which soon disappears once the tube gets back to room temperature. However, the above is certainly worth knowing because slipping the tubes over the nozzles is far easier and safer than dealing with them in their natural state.

The official specification for the tubing is PVC construction Chelplas type 7609 or CF31, green in colour, 0.190" OD, 0.159" (4mm) ID.

4. Conclusion

These washer pumps, simple as they are, have proven their worth over many decades of use – cleaning the windscreen of hundreds of thousands of vehicles. Those owners with cars fitted with noisy and troublesome motorised units don't know what they are missing out on.

Tony Cripps