# SCREENJET MODEL 5SJ

## 1. DESCRIPTION

Model 5SJ ScreenJet is an electrically operated unit comprising a small permanent-magnet motor driving a centrifugal pump through a 3-piece Oldham type coupling. The motor is remote controlled from a pushbutton and is energised for as long as the push-button is depressed. The general construction can be seen in Fig. 1 where the unit is shown dismantled.

## 2. ROUTINE MAINTENANCE

When the water level falls to the top of the pump unit, refill the container with clean water up to the base of the filler neck. One measure (10 cc) of Lucas "Crystal Clear" ScreenJet fluid may be added to help dissolve greasy smears and to remove insect deposits from the windscreen.

Keep the container free from sediment and occasionally clean the gauze filter fitted to the underside of the impeller housing. For this purpose turn and lift the cover and pump assembly to detach it from the container. Keep also the jet nozzles clear.

## 3. TECHNICAL DATA

| | | |
|---|---|---|
| (a) Nominal voltage of unit | 12 | 24 |
| (b) Maximum current consumption | 2.0 amp | 1.25 amp |
| (c) Resistance between commutator segments | 2.8–3.1 ohms | 10.6–11.7 ohms |
| (d) Minimum water delivery pressure | 4.5 lbf/in$^2$ (0.32 kgf/cm$^2$) | 4.5 lbf/in$^2$ (0.32 kgf/cm$^2$) |
| (e) Minimum water delivery per sec | 3.5 cc | 3.5 cc |
| (f) Container capacity | 1.1 litres | 1.1 litres |
| (g) Diameter of nozzle orifice | .025″–.028″ | .025″–.028″ |

## 4. SERVICING

### (a) Testing the ScreenJet in position

If the ScreenJet operates unsatisfactorily (despite the supply voltage to the terminals being adequate) check first that there is sufficient water in the container and then, that water is ejected from the tube connector with the external tubing disconnected and the push-button operated. If the unit performs satisfactorily when so tested, check the external tubing and nozzles for damage or blockage. Otherwise, the ScreenJet must be dismantled for detailed examination.

### (b) Dismantling

Disconnect the external tubing and electrical connections and remove the cover and pump assembly from the container.

Remove the self-tapping screw which secures the motor to the cover, and pull away the motor unit, taking care not to lose the intermediate coupling which connects the armature coupling to the pump spindle coupling.

Remove the armature coupling from the armature shaft by holding the armature shaft firmly with a pair of snipe-nosed pliers and using a second pair of pliers to draw off the armature coupling.

Remove the two self-tapping screws from the bearing plate. The bearing plate and rubber gasket can now be removed.

Remove the two terminal screws.

The terminal nuts and brushes can be removed and the armature withdrawn.

Take care not to lose the bearing washer which fits loosely onto the armature shaft.

The pole assembly should not normally be disturbed. If, however, its removal is necessary, make careful note of its position relative to the motor housing. The narrower pole piece is adjacent to the terminal locations.

Also, the position of the pole clamping member should be observed. When fitted correctly, it locates on both pole pieces. If fitted incorrectly, pressure is applied to one pole piece only.

### (c) Bench Testing

If the motor has been overheated, or if any part of the motor housing is damaged a replacement motor unit must be fitted.

If the armature is damaged, or if the windings are loose or badly discoloured, a replacement armature must be fitted.

The commutator must be cleaned with a fluffless, petrol-moistened cloth or, if necessary, by polishing it with a strip of very fine glasspaper.

The resistance of the armature winding should be checked with an ohmmeter. The resistance between commutator segments should be in accordance with the appropriate value given in 3(c).

Brushes worn to less than $\frac{1}{16}$″ (1.6 mm) in length must be renewed.

Check that the brushes bear firmly against the commutator.

### (d) Reassembly

Reassembly of the unit is the reversal of the dismantling procedure.

The following points should be observed :

(i) Make sure that the bearing recess in the motor housing is filled with Rocol Molypad molybdenised grease. Remove excessive grease from the face of the bearing boss.

(ii) Check that the pole piece assembly does not rock and that the pole pieces are firmly located on the circular spigot. Ensure that both the pole piece assembly and the clamping member are the right way round, see 4(b).

(iii) Before replacing the motor unit on the cover, ensure that the armature coupling is pushed fully home. Also check that the intermediate coupling is in place.

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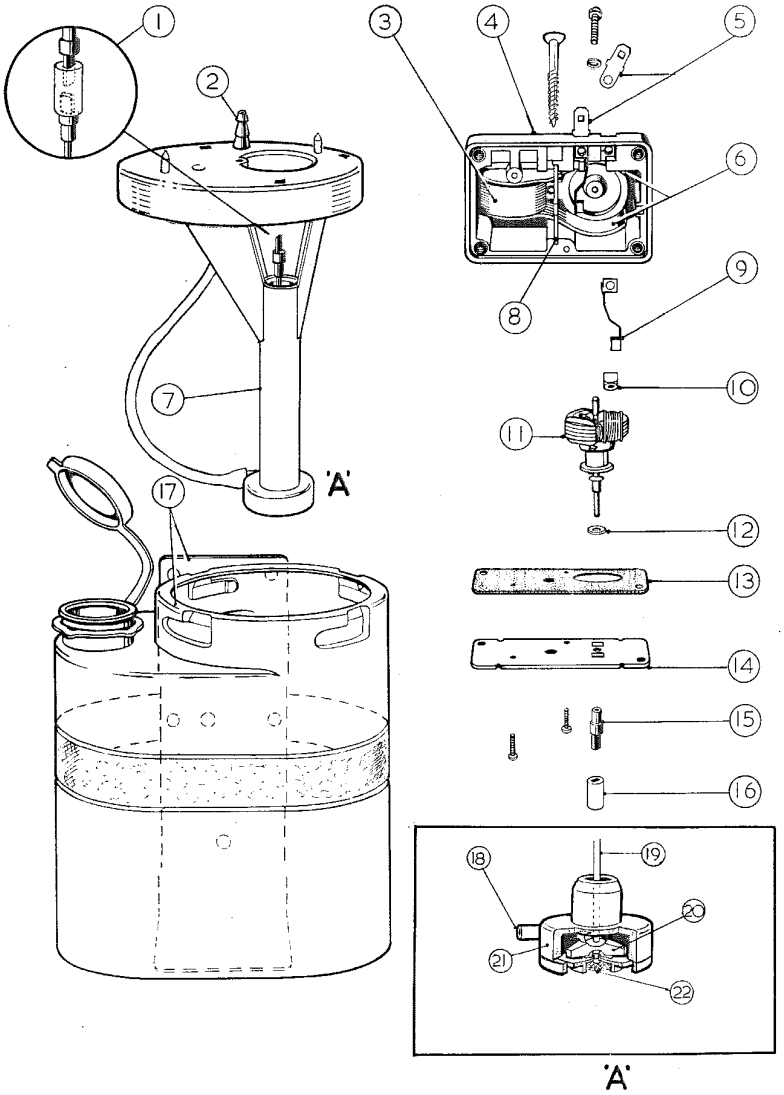


1 Detail of pump coupling
2 Tube connector
3 Permanent magnet
4 Motor casing
5 Terminals
6 Pole pieces
7 Cover & pump
8 Pole piece clamping member
9 Brush
10 Terminal & brush retaining nut
11 Armature
12 Bearing washer
13 Rubber gasket
14 Bearing plate
15 Armature coupling
16 Intermediate (loose) coupling
17 Jar bracket & strap assembly
18 Delivery outlet
19 Spindle
20 Impeller
21 Housing
22 Gauze

**Fig. 1 ScreenJet Model 5 SJ dismantled**