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# WIPER SYSTEMS



## TECHNICAL SPECIFICATIONS

### 12V and 14V Windscreen wiper - Model 14W

#### 1. Application

Model 14W rack-operated windscreen wiper is intended for use on cars and light commercial vehicles having fixed windcreens.

By employing different armature winding specifications, three categories of power output are produced as stated in para. 2.2. Each power output is available in single or two speed form. The two-speed motor incorporates a third brush, to which the positive supply is switched when the second (higher) speed is required.

Screen wiping angles ranging from 56 ° to 130 ° are available. In general, as arm and/or blade length is increased, so some corresponding reduction in the angle of wipe becomes necessary.

The power unit required to drive any specific installation will depend upon the size, shape and profile of the screen area to be wiped, blade loading etc.

#### 2. Description

The power unit is a permanent-magnet field electric motor with integral gearbox. A single-stage worm reduction gear is employed and the rotation of the output gearwheel is converted to reciprocating motion being transmitted to two wheelboxes (and hence the wiper arms) through a flexible wire rack running in suitably formed rigid tubing. The amplitude of the reciprocating motion is determined by the radial positioning of a crankpin carried on the gearwheel.

Associated with the terminal assembly is a self-switching arrangement. Two-stage contacts inside the switch are operated by a plunger, which in turn is actuated by a cam on the underside of the gearwheel inside the gearbox. When the manually operated control is



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switched off, the motor continues to operate under the automatic control of the cam-operated switch. As the wiper blades approach the parked position the first-stage contacts open and the motor is switched off. A momentary period follows during which no contact is made by the switch, then the second-stage contacts close, causing regenerative braking of the armature to maintain consistent parking of the blades.

### 2.1 Polarity:

Suitable for either positive or negative earth, subject to correct wiring connections

### 2.2 Output Torque (according to armature winding specification):

1500 ozf in  
1100 ozf in  
900 ozf in

### 2.3 Current Consumption:

1500 ozf in motor	1.5 to 3.5A
1100 ozf in and 900 ozf in motors	1.5 to 2.5A

### 2.4 Nominal Wiping Speeds

Single speed:	45 cycles per min.
Two speed:	45 & 70 cycles per min.
Minimum speed differential:	15 cycles per min.

### 2.5 Wheelboxes:

The wheelbox houses a gearwheel driven by the flexible rack. Integral with the gearwheel is the shaft to which the wiper arm is fitted. Wheelboxes are available designated either 2WB (with a 32-tooth gearwheel) or 3WB (40-tooth gearwheel). The latter is recommended when longer arms and/or blades are to be employed with a reduced angle of wipe.

### 2.6 Angles of Wipe:

70° to 130° in increments of 5° when used with 2WB

### 2.7 Operating Temperature Range:

Will operate over an ambient temperature range of -30°C to 93°C. The wiper will function normally at temperatures down to -18°C. Between this temperature and -30°C, speeds may be temporarily reduced due to the high viscosity of the screenwiper lubricants

### 2.8 Routine Servicing:

Routine servicing is not required on the motor, gearbox assembly or transmission. Wiper arms require periodic replacement with blades being renewed at least once every twelve months

