

1965-74 JEEP 1 & 2-SPEED ELECTRIC

Jeep
All Models (1965-74)

DESCRIPTION

Single speed motor is a shunt wound type and two speed motor is a compound wound (series and shunt) type. A crank arm is attached externally to gear shaft and operates linkage which activates wiper blades. Windshield washer pump is a positive displacement type using a bellows or a piston arrangement.

TESTING & TROUBLE SHOOTING

1-SPEED WIPER (ON CAR)

Wiper Inoperative — Check fuse, proper wiring harness terminal connections, ground strap at wiper and dash switch mounting. Disconnect wiring harness from wiper and check for 12 volts at harness terminals with ignition "ON". No voltage indicates faulty wiring. **CAUTION** — Do not connect a hot line to No. 1 wiper terminal. Connect 12 volts to No. 2 terminal and a jumper wire from No. 1 terminal to ground. If wiper operates, dash switch or wiring is faulty. If wiper does not operate, disconnect transmission from crank arm. If wiper now operates, linkage or transmission is faulty. If wiper still does not operate, remove wiper and test unit. See *1-Speed Wiper (Off Car)*.

Wiper Will Not Shut Off — Disconnect wiring at dash switch, if wiper shuts off, dash switch is faulty. If wiper does not shut off, disconnect wiring from motor and connect 12 volts to No. 2 terminal. **CAUTION** — Do not connect jumper wire to No. 1 terminal. If wiper now shuts off correctly, lead between No. 1 terminal and dash switch is grounded. If wiper does not shut off, remove from vehicle and check unit. See *1-Speed Wiper (Off Car)*.

Wiper Operates Intermittently — Check for loose ground strap, loose dash switch mounting or loose connection.

Blades Fail To Return To Park Position — Check for dirty or broken park switch (remove wiper from vehicle to check). Check wiper ground strap connection to body.

1-SPEED WIPER (OFF CAR)

Wiper Inoperative — Connect a battery and ammeter to No. 2 terminal and jumper wire from No. 1 terminal to ground. If current draw is 0 amperes, check solder connection at terminal board or disassemble motor and check all splice connections. If current draw is 1-1.5 amperes, disassemble motor and check for open armature, sticking brushes, improperly positioned brush springs or faulty brush pigtail connections at splice joints. If current draw is 10-12 amperes, check for open shunt field circuit or broken gear.

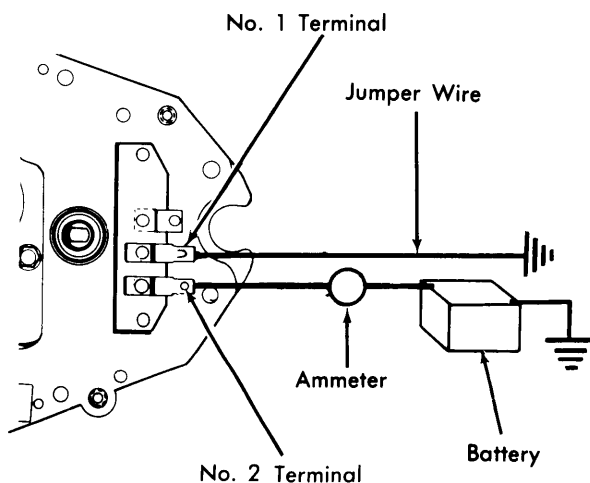
Wiper Runs Slow & Vibrates — If current draw is 7-9 amperes, check for gear train binding or shorted armature.

Wiper Shuts Off Before Crank Arm Reaches Park Position — If crank arm stops rotating when jumper wire is disconnected from No. 1 terminal, check for dirty, broken or bent park switch contacts. **NOTE** — When crank arm reaches park position, crank arm index grooves will line up approximately with ridges on gear box cover.

Wiper Will Not Shut Off — If crank arm does not stop in park position when jumper wire removed from No. 1 terminal, check that park switch contacts are opening and that there is no ground in internal motor lead to No. 1 terminal.

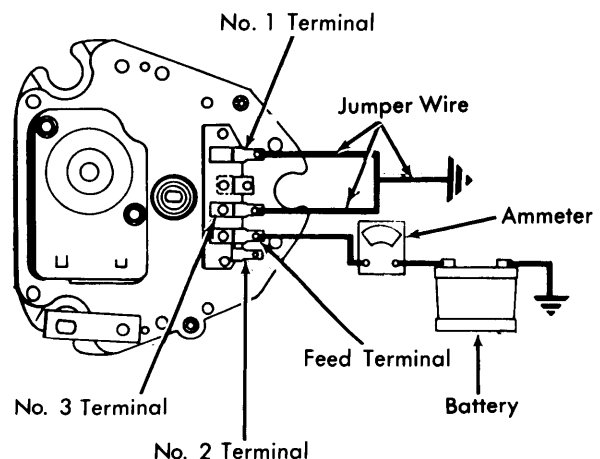
2-SPEED WIPER (ON CAR)

Wiper Inoperative — Check wiring harness, wiper ground strap and dash switch for proper connections and mounting. Check fuse. With ignition switch on, check for 12 volts at harness terminal which connects to No. 2 terminal. To by-pass switch, disconnect wiring at motor and connect jumper wire from No. 1 and 3 terminals to ground and a 12 volt source to No. 2 terminal. If wiper does not operate, disconnect transmissions from crank arm. If wiper still does not operate, remove from car and test unit. See *2-Speed Wiper (Off Car)*.



2JE01

1-SPEED WIPER TEST CONNECTIONS



2JE02

2-SPEED WIPER TEST CONNECTIONS

Windshield Wipers

1965-74 JEEP 1 & 2-SPEED ELECTRIC (Cont.)

Wiper Will Not Shut Off — Determine whether wiper has both speeds, low speed only or high speed only, then operate wiper by by-passing switch as previously outlined. See *Wiper Inoperative*. If wiper operates correctly and has both speeds, lead to switch from No. 1 terminal is grounded or switch is faulty. If wiper has low speed only, lead to switch from No. 3 terminal is grounded or switch is faulty. If wiper has high speed only, lead to switch from No. 3 terminal is open or switch is faulty. If wiper still does not operate, remove from car and test unit. See *2-Speed Wiper (Off Car)*.

Does Not Return To Park With Wiper Off — Check ground strap connection and park switch contacts may be dirty, bent or broken.

Speed Normal In Low, But Too Fast In High — Terminal board resistor may be open. Remove from car to test terminal board.

Wiper Operates Intermittently — Loose ground strap or dash switch mounting.

2-SPEED WIPER (OFF CAR)

NOTE — Use ammeter with reading of 30 amperes (minimum) in feed wire circuit.

Wiper Inoperative — Connect an ammeter and battery to No. 2 terminal and a jumper wire from No. 1 and 3 terminals to ground. Wiper should operate at low speed. If ammeter reading is 0, check for loose splice joints or loose solder connection at No. 2 terminal. If reading is 1-1.5 amperes, check for sticking brushes, open armature or loose splice joint. If reading is 11 amperes, check for broken gear or other stalling condition.

Wiper Will Not Shut Off — If wiper has both speeds, park switch contacts may not be opening or internal motor lead to No. 1 terminal is grounded. If wiper has low speed only, shunt field coil may be grounded or internal wiper lead to No. 3 terminal is grounded. If wiper has high speed only, shunt field is open or internal lead to No. 3 terminal is open.

Wiper Operates Intermittently — Check for sticking brushes, loose splice joints or other loose connections.

Operates Low Speed Only & Shuts Off With Dash Switch In High Position — Reverse harness leads connecting to No. 1 and 3 terminals.

REMOVAL & INSTALLATION

WIPER MOTOR

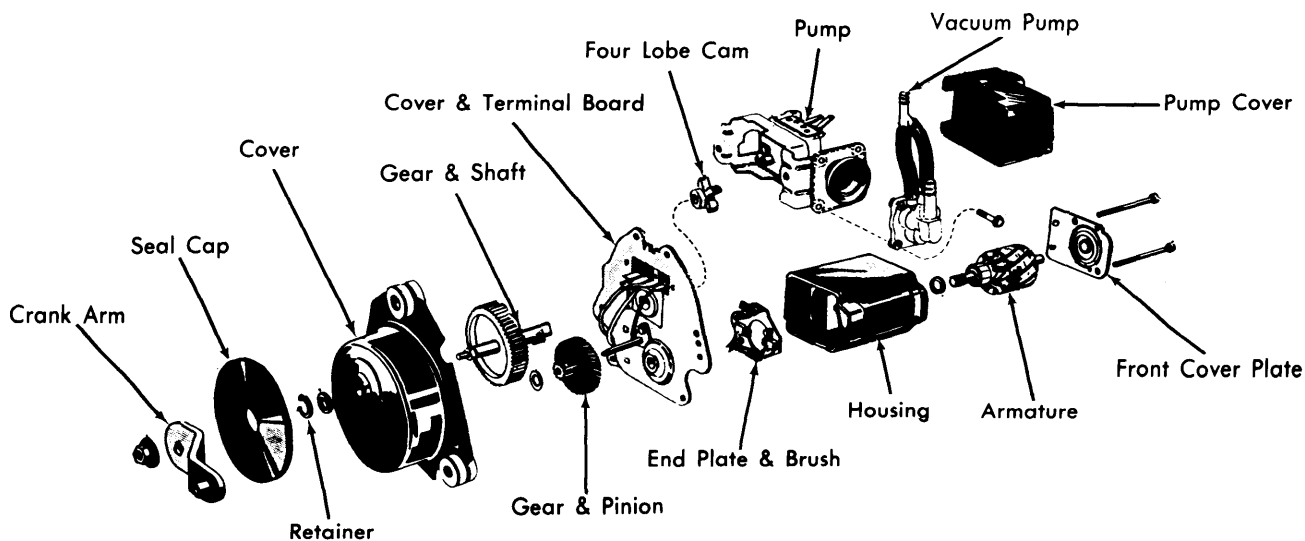
Jeepster Series (1967-71) — Disconnect electrical wiring at control switch, linkage from motor and washer pump hoses (if equipped). Remove three bolts securing motor to pedal retaining bracket and remove motor and pump assembly. To install, reverse removal procedure.

CJ & DJ Series (1971) — Remove motor cover and disconnect wiper linkage from drive arm. Disconnect electrical wiring at control switch. Remove motor retaining bolts and motor. To install, reverse removal procedure.

CJ & DJ Series (1972-74) — Remove extreme left plastic hole plug from bottom of windshield frame air duct and disconnect drive link from motor crank. Loosen wiper control switch knob set screw and remove control switch. Mark position of wires on switch housing before disconnecting. Remove motor cover and motor. To install, reverse removal procedure.

Commando (1972-73) — Disconnect wire harness plug and speedometer cable from instrument cluster. Remove instrument cluster from panel by depressing retainer springs at each corner. Remove three motor to bracket and clutch pedal mounting bracket screws. Disconnect drive linkage from motor crank and washer hoses from pump. Pivot motor assembly to right and drop below instrument panel. Mark wire locations for reassembly and disconnect wire harness from wiper motor. Remove motor and pump assembly. To install, reverse removal procedure.

Cherokee, J Series & Wagoneer (1972-74) — Disconnect wiper drive link from crank under instrument panel. Mark wire locations at motor for proper reassembly. Disconnect motor and washer pump wires at motor under hood. Remove motor to dash mounting screws and remove motor. To install, reverse removal procedure.



WIPER MOTOR ASSEMBLY (TYPICAL)

4JE03

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OVERHAUL

WIPER MOTOR

Disassembly — Remove wiper pump cover and pump (if equipped). Clamp crank arm in vise and loosen retaining nut. Remove seal cap, retaining ring and endplate washer. Punch out gear box cover rivets and remove cover from gear train. Mark ground strap location for reassembly. Remove output gear and shaft, then slide intermediate gear and pinion off shaft. Remove terminal board and park switch by unsoldering motor leads from terminals and drilling out rivets that secure terminal board and park switch ground strap to plate. Release brush spring pressure against brushes, pull brushes away from armature and slide armature out of frame and field assembly.

Pull end clamp off armature and remove end plate adjusting washers.

Reassembly — Reverse removal procedure while noting the following: Clean seal cap and repack with waterproof grease before installing. Gear box cover must be properly located over locating dowel pins. Ground strap must be installed. When reassembling crank arm, operate wiper to park position and install crank arm on output shaft so identification marks line up with marks on cover. Clamp crank arm in vise before tightening retaining nut. Lubricate armature shaft and bearings with light machine oil and all gear teeth with a suitable cam lubricant. Armature end play is automatically adjusted by proper reassembly of end play washers.