

## CHRYSLER CORP.

### DESCRIPTION

Windshield wiper motors are either two or three speed design. Two speed systems park wiper blades in non-concealed or concealed (depressed park) positions depending on body style. All three speed systems park wiper blades in concealed position. Two speed motors are controlled by a third brush and resistor for low and high speed operation. Three speed motors are series-shunt wound for speed control. High and medium speed resistors are mounted in wiper switch.

LeBaron and Diplomat models have a two-speed intermittent wiper as optional equipment which has a delay mode. The delay mode has a range of 2 to 15 seconds and is accomplished by a variable resistor in the panel switch controlled electrically by a relay. System provides an extra wipe after wash during delay mode, and an anti-streak park system.

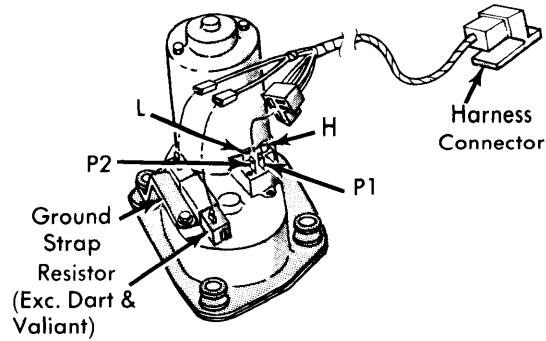


Fig. 1. 2-Speed Standard Motor Terminal Identification

### TESTING

#### 2-SPEED SYSTEM TESTS (INCLUDING INTERMITTENT MOTOR)

If wipers will not work in any switch position, turn switch to low speed and listen to the motor. If motor is running, check output shaft. If shaft is not turning, replace gearbox. If it is turning, check linkage connections. Replace any worn or damaged parts. If motor is not running, use a voltmeter or test lamp and check for 12 volts between motor terminal "L" and ground.

1) If voltage is present and panel switch circuit breaker is not cycling, check for an open circuit at the following locations. On Dart, Valiant, Aspen and Volare, insure ground strap connections are good. On all other models, connect a jumper between terminal P2 and ground. If motor runs, panel switch is faulty or wiring to switch is open. Problem may also be poor contact of commom brush to commutator, or an open circuit in armature.

2) If test lamp lights or 12 volts is present only part of the time, the circuit breaker is cycling. Problem may be a faulty circuit breaker or a short in the wiring, motor, or switch panel. Check these conditions with an ammeter and with wiper arms and blades removed. Disconnect harness connector at motor and connect ammeter between battery and terminal "L". Also on all models except Dart, Valiant, Aspen, and Volare, connect a jumper wire between terminal P2 and ground. If motor runs with average ammeter reading below six amperes, motor is good and trouble is in switch panel or wiring. If motor does not run and draw is more than six amperes, check wiper linkage for binding. Disconnect drive link from motor. If motor runs and draws less than three amperes, repair linkage. If motor fails to run or draws more than three amperes, check motor and gearbox for internal jamming. If no internal jamming exists, check motor for brush leads shorting to housing or armature for burned or blackened windings which could indicate an internal short.

3) If after several minutes test light or voltage do not appear at terminal "L", and circuit breaker is not cycling, disconnect harness and connect jumper from battery to terminal "L". On all models except Dart, Valiant, Aspen, and Volare, also connect a jumper between P2 and ground. If motor now runs, wiring or switch panel are faulty.

#### 2-SPEED SYSTEM TESTS (INTERMITTENT ONLY)

1) If wipers run without delay and switch is in delay position check continuity between switch terminal and ground. Constant continuity or constant open, replace gear box assembly.

2) If wipers will not run with switch in delay position, disconnect connector from intermittent wipe control unit. Place switch in maximum delay and check voltage between positions "4" and "6" in terminal junctions. If voltage reads zero check panel switch and wiring. If reading is 10 to 15 volts replace control unit. If wipers operate, but will not operate after placing switch in delay position, check voltage between positions "4" and "8" and follow same procedures as above. If wipers fail to operate continually when wash control is operated during delay mode, check voltage between positions "4" and "7" and follow same procedures as above.

#### 2-SPEED SWITCH PANEL TESTS

Remove switch from vehicle and using a continuity tester or ohmmeter, test continuity between terminals as indicated in table. For test purposes use the switch case for ground, the first position for OFF, the first detent past off for LOW, and the second detent past off for HIGH.

#### 2-Speed Switch Panel Continuity

Switch Position	Test Connections	
	Non-Concealed Wipers	Concealed Wipers
Off	B to B/U	B to P
	B to P1	A to Ground
	A to P2	F2 Open
	H Open	H Open
Low	B to B/U	B to A
	B to P1	F2 to Ground
	B to A	P Open
	P2 Open	H Open
High	H Open	
	B to B/U	B to H
	B to P1	F2 to Ground
	B to H	P Open
	P2 Open	A Open
	A Open	

## CHRYSLER CORP. (Cont.)

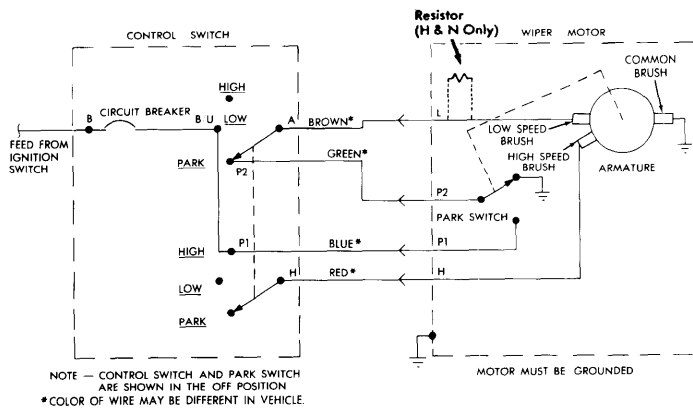


Fig. 2 Chrysler 2-Speed Non-Concealed Wiper Motor Wiring Diagram

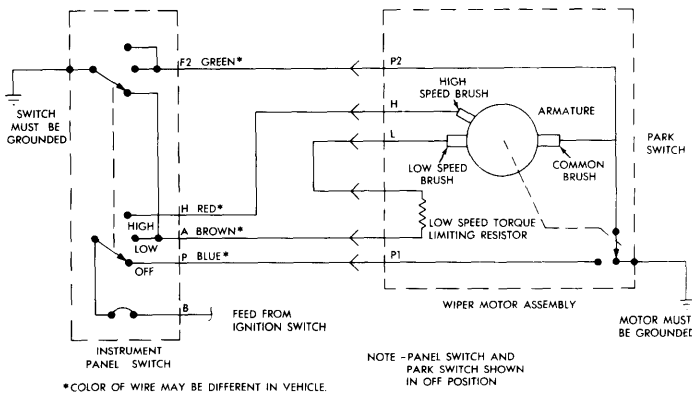


Fig. 3 Chrysler 2-Speed Concealed Wiper Motor Wiring Diagram

### 2-SPEED SWITCH PANEL TESTS (INTERMITTENT)

Remove switch from vehicle and using an ohmmeter test for continuity between terminals as indicated in chart. Battery is not required, ground is case of switch.

2-Speed Intermittent Switch Panel Continuity Chart			
Off	Delay	Low	High
B-P1 A-G	B-L1 ①R-Through variable Resistor 11 P2-G	B-A P2-G	B-A ②P2-Through Diode-G H-G

- ① - Resistance at maximum delay position should be between 270,000 and 330,000 ohms.
- ② - Resistance at minimum delay position with ohmmeter set on the high scale and positive of ohmmeter connected to "P2" and negative connected to "G" should show low or zero resistance. Reverse ohmmeter leads and an open circuit or very high resistance should be indicated. Same reading in both tests indicates a defective switch.

### 3-SPEED MOTOR VOLTAGE TESTS

Remove blade and arm assemblies, then with motor running, measure voltages at four motor terminals at bulkhead connector. Voltages should be as specified in chart.

#### 3-Speed System Voltage

Switch Position	A	F1	F2	P	Battery
Low	12	12	0	10-12	12
Medium	12	5	0	10-12	12
High	12	2.5	0	10-12	12
Off (While Parking)	10-12	0	10-12	12	12
Off (Parked)	0	0	0	12	12

- 1) Below 10 volts at P during run, or a cycling circuit breaker indicates excessive current draw. Check linkage for binding and motor for excessive current draw. Check armature current in A to determine if circuit breaker can continuously carry an average current of 9 amperes (7.5 amperes Dart and Valiant).
- 2) In Low, Medium or High, a zero volt reading at P indicates faulty park switch or series field circuit is open or shorted.
- 3) A 12 volt reading at F1 in Medium or High indicates shunt field circuit is open. A 12 volt reading at F2 indicates field circuit is open between connector and switch panel, a defective switch panel or switch panel not grounded. Motor is usually damaged.
- 4) Zero voltage at F1 in Low, Medium or High indicates an open circuit between connector and switch panel or a defective switch panel.
- 5) If voltage remains at A after motor has parked, a stall condition exists. If circuit breaker fails to cycle, replace switch panel and motor. If circuit breaker does cycle, check switch panel or park switch.

### 3-SPEED SWITCH PANEL TESTS

Remove switch from vehicle and using a continuity tester or ohmmeter, test continuity between terminals as indicated in table. For test purposes, use case switch for ground, the first position for OFF and PARK, the first detent past off for LOW, and the second detent past off for MEDIUM, and the extreme switch position for HIGH.

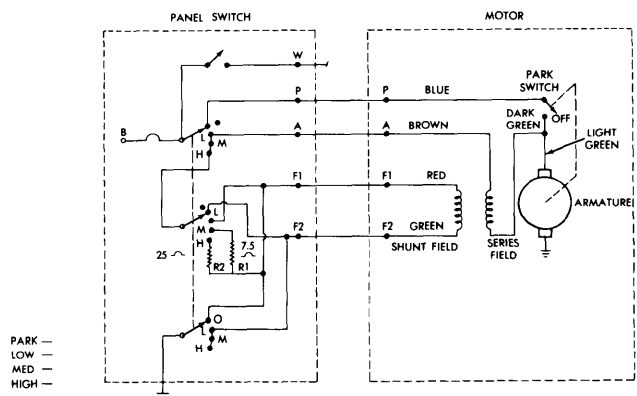


Fig. 4 Chrysler 3-Speed Wiper Motor Wiring Diagram

# Wiper/Washer Systems

## CHRYSLER CORP (Cont.)

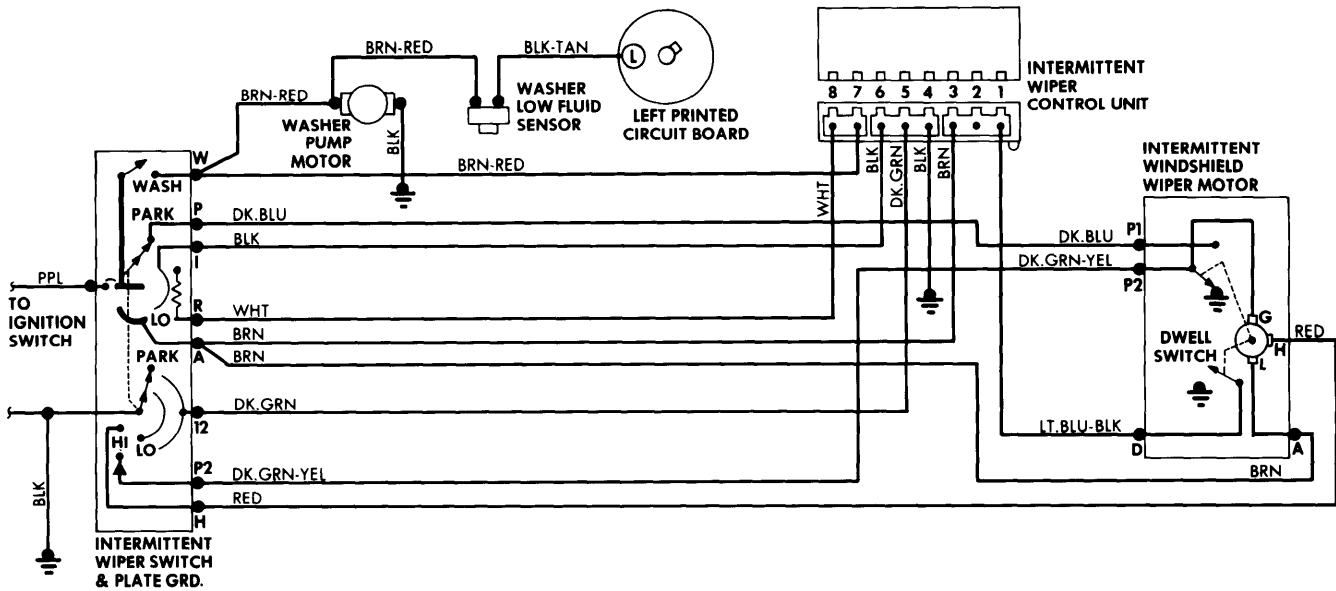


Fig. 5 Chrysler 2-Speed Motor Intermittent Wiper System Wiring Diagram

### 3-Speed Switch Panel Continuity

Switch Position	Test Connections
Off	B to P A to F2 F1 to Ground
Low	B to A A to F1 F2 to Ground P Open
Medium	B to A A through resistor to F1 F2 to Ground P Open
High	B to A A through resistor to F1 F2 to Ground P Open

### 3-SPEED MOTOR TESTS

**Motor Run Test 1)** — Disconnect motor leads at bulkhead connector. Connect jumper between F2 and ground, and a second jumper between battery positive terminal and A and F1. Insure good ground at motor ground strap. If motor runs continuously, disconnect jumpers.

2) If motor does not run and ground is good, disconnect jumpers to battery. Remove drive crank arm from motor and reconnect battery jumpers to A and F1. If motor runs, check linkage for binding.

3) If motor still does not run, disconnect battery jumpers and remove switch cover plate and check gear and latch assembly

for binding. Pull gear and latch out of gear housing. Touch jumper to battery and if motor runs, replace gear and latch. If motor does not run, replace motor.

**Park Switch Test 1)** With all previous jumpers disconnected, connect jumpers between F2 and A, between F1 and ground and between P and battery positive terminal. Connect voltmeter between A and ground. Wiper should run to park position and stop.

2) If motor does not run but did in Motor Run Test, park switch is open. Clean switch contacts and retest. When wiper arm reaches park position voltage should be zero.

3) If voltage remains at A with wipers parked, remove wiper arms and blades. If voltage drops to zero, arms and blades were improperly installed. If voltage still remains, switch contacts or gear and latch assembly are defective.

**Motor Resistance Test** — Using ohmmeter, check for correct resistances given in table. If resistance is higher or lower than specified or if continuity exists where it should not, replace motor. Check resistance values at terminal connector.

### 3-Speed Motor Resistance (Ohms)

Terminals	All Models
F1 to F2	4-5
A to Motor Ground	0.4-0.8
F1 to Motor Ground	No Continuity
F2 to Motor Ground	No Continuity

## CHRYSLER CORP (Cont.)

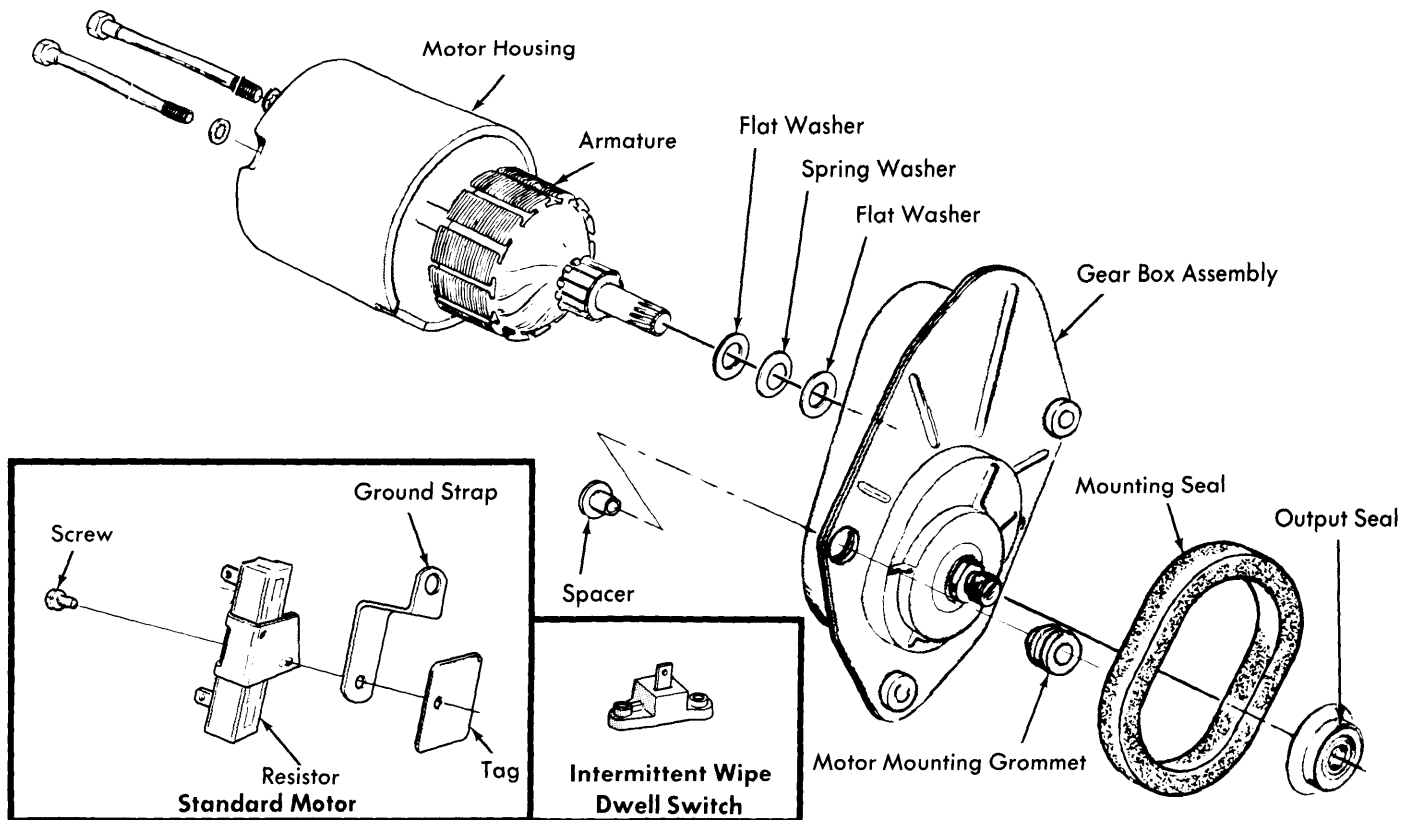


Fig. 6 2-Speed Wiper Motor (exploded view)

### REMOVAL & INSTALLATION

#### 2-SPEED MOTOR (NON-CONCEALED WIPERS)

**Removal** — Disconnect battery ground cable and motor wiring harness. Remove motor mounting nuts. On vehicles without air conditioning, remove crank arm nut and crank arm from under instrument panel. On vehicles with air conditioning, work motor off mounting studs enough to gain access to crank arm mounting nut. **NOTE** — Do not force motor from mounting studs or drive link may be damaged. Hold motor crank with wrench while removing crank arm nut from crank, then pry crank arm from shaft. Remove motor.

**Installation** — Reverse removal procedure and note the following: Ensure three spacers are inserted in motor grommets

and that crank arm is held with a wrench while tightening crank arm nut to 95 INCH lbs.

#### 2-SPEED & 3-SPEED MOTOR (CONCEALED AND INTERMITTENT WIPERS)

**Removal** — Disconnect battery ground cable, wiper arm and blade assemblies and cowl screen. Hold motor crank with wrench, remove crank arm nut and crank arm from motor. Disconnect wiring harness and remove motor mounting nuts and motor.

**Installation** — Reverse removal procedure and note the following: Insure rubber gasket and spacers between dash and motor are properly positioned. Hold crank arm with wrench while tightening crank arm nut to 95 INCH lbs.