

# Wiper/Washer Systems

## DATSUN

200SX  
210  
280ZX  
310

510  
810  
Pickup

### INTERMITTENT AMPLIFIER

All models except 810 use an intermittent amplifier to control the delayed wiper cycle. The amplifier is a solid-state unit which interrupts current flow to the motor. The time delay is either fixed or adjustable with a knob at the end of the wiper stalk.

All 810 models have a Time Control Unit which controls the delayed wiper cycle. This unit also operates the clock, turn and hazard flashers, seat belt chimes and other circuits.

### DESCRIPTION & OPERATION

All models are equipped with either 2-speed or intermittent wipers. Hatchback and station wagon models have a rear wiper/washer system, operated by a dashboard mounted switch. All front wiper/washer systems are operated by a steering column lever.

### WIPER MOTOR

All wiper motors include an integral park switch inside the motor housing. The motor cover can be removed and the switch adjusted if wipers do not park correctly. Some models have a circuit breaker (mounted externally) to protect the wiper motor.

### WASHER

All models have washer systems. A separate pump is used for the rear washer. A rear-mounted reservoir is used on 510 models. All others share a common reservoir for both washer systems.

### DATSUN WIPER SYSTEM COMPONENT LOCATIONS

Model & Component	Connector	Location
200SX Intermittent Amplifier Ignition/Accessory Relay Circuit Breaker Rear Washer Motor	8-pin 6-pin & 1-pin 2-wire 2-pin	Rear of relay bracket at right front corner engine compartment Right kick panel Wiper motor connector at cowl Right front shock tower
210 Intermittent Amplifier Rear Washer Motor	6-pin 2-pin	Brake pedal bracket Behind right front shock tower
280ZX Intermittent Amplifier Accessory Relay Rear Washer Motor	6-pin 5-pin 2-wire	Brake pedal bracket Right kick panel top rear Left front shock tower
310 Intermittent Amplifier	7-pin	Front of relay bracket at right front corner engine compartment
510 Intermittent Amplifier Rear Washer Motor	7-pin 2-wire	Relay bracket at right front corner engine compartment Left rear corner of car
810 Time Control Unit Wiper Relay Accessory Relay	8-pin & 11 pin 5-pin 4-pin	Right kick panel at top Rear outside corner of relay bracket at right front corner engine compartment Front outside corner of relay bracket
Pickup Intermittent Amplifier	5-pin	Steering column bracket

## DATSUN (Cont.)

FRONT WIPER MOTOR TESTING				
Model	Continuity (Motor Off)	Slow Speed Connections	High Speed Connections	Park Switch (On-Off with Motor Running)
200SX	B & L, B & H	B +12v L Gnd	B +12v H Gnd	P & E
210	1 & 2, 2 & 3, 2 & 4,	2 + 12v 3 Gnd	2 +12v 4 Gnd	1 & 5
280ZX	1 & 4, 1 & 5	1 +12v 4 Gnd	1 +12v 5 Gnd	2 & 3, 2 & 6, 7 & 8
310 & Pickup	1 & 4 1 & 5	1 +12v 4 Gnd	1 +12v 5 Gnd	2 & 3
510	1 & 2, 2 & 3, 2 & 4	2 +12v 3 Gnd	2 +12v 4 Gnd	1 & 5
810	B & L B & H	B +12v L Gnd	B +12v H Gnd	P & E

REAR WIPER MOTOR TESTING			
Model	Continuity (Motor Off)	Motor Connections	Park Switch (On-Off with Motor Running)
200SX & 810	B & S	B +12v S Gnd	P & E
210 & 510	P & E, S & E	S +12V E Gnd	P & B
280ZX	1 & 4	1 +12v 4 Gnd	2 & 3, 2 & 4
310	1 & 4	4 +12v 1 Gnd	2 & 3, 2 & 4

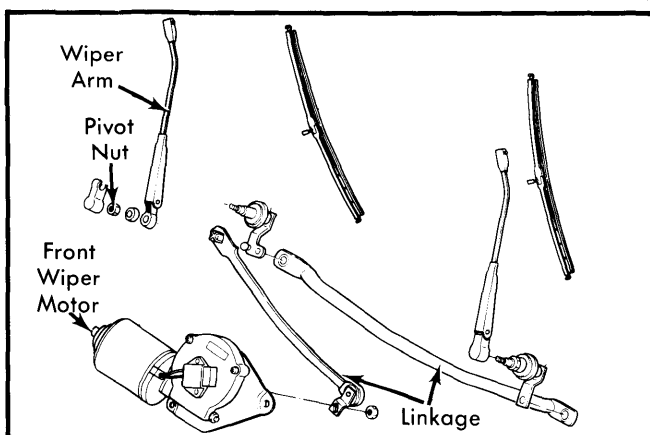


Fig. 1 Typical Datsun Wiper/Washer Components

### TESTING

#### FRONT WIPER MOTOR

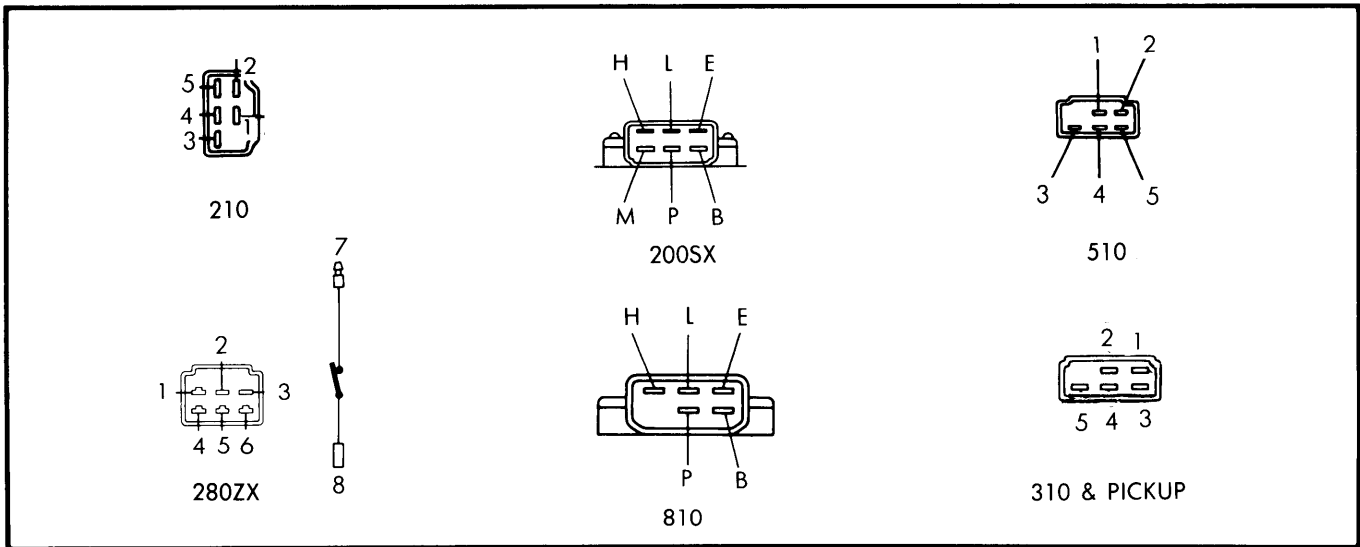
Motor can be tested on the car. Unplug connector and use ohmmeter to check continuity with motor stopped. Using jumper wires, test both motor speeds by applying voltage to terminals shown in "Front Wiper Motor Testing" chart. Finally, check park switch operation by connecting ohmmeter across park terminals while motor is running. Switch should open and close. See Fig. 2.

#### REAR WIPER MOTOR

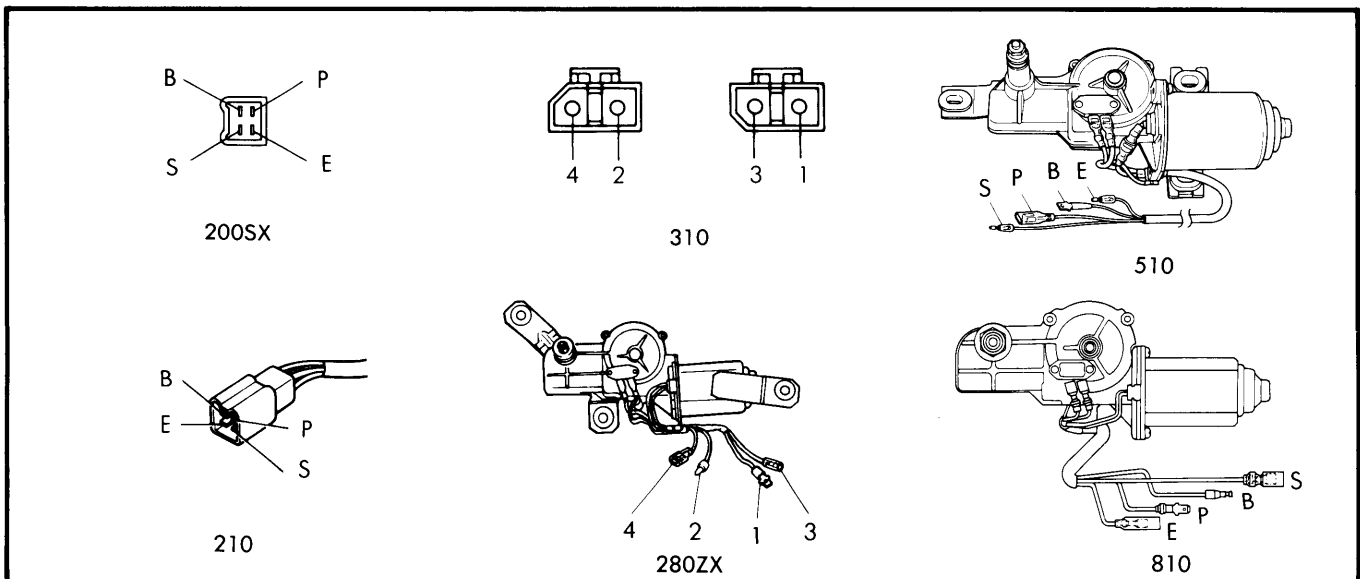
Motor can be tested on the car. Unplug wiring and use ohmmeter to check continuity with motor stopped. Use jumper wires to operate motor by applying voltage to terminals shown in "Rear Wiper Motor Testing" chart. Check park switch operation by connecting ohmmeter across park terminals while motor is running. Switch should open and close. See Fig. 3.

# Wiper/Washer Systems

## DATSUN (Cont.)



**Fig. 2 Terminal Identification for Testing Front Wiper Motor**



**Fig. 3 Terminal Identification for Testing Rear Wiper Motor**

### INTERMITTENT AMPLIFIER

Remove amplifier from vehicle or position so jumper wires can be connected to terminals. Use care to prevent improper connections since amplifier can be ruined. Connect test lamp and battery as shown in Figs. 4, 5, 6 & 7. Be sure to use correct test procedures for the vehicle being tested.

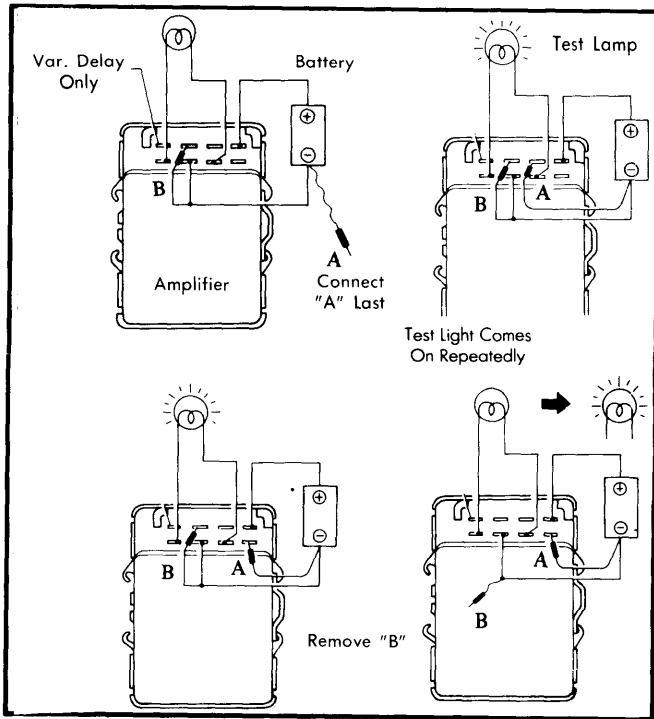
**200SX & 280ZX** — Connect jumper wires to amplifier. See Fig. 4. When wire "A" is connected, test lamp should come on. Disconnect wire "B". Test lamp should go off, then come back on after a few seconds. If not, replace amplifier.

**210** — 1) Connect jumper wires as shown for first test. See Fig. 5. Test lamp should come on for 1 second and go off for 6 seconds.

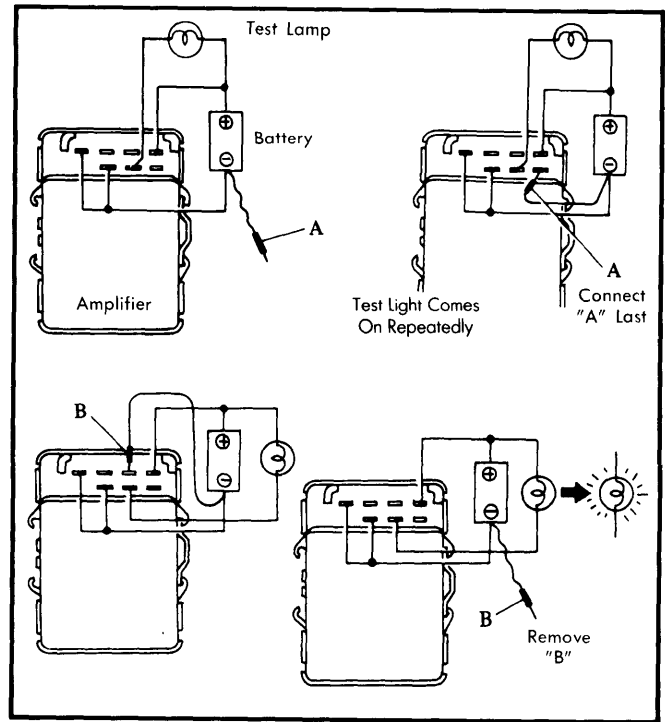
2) Connect wires for second test. Test lamp should come on about 1 second after jumper wire is connected to pin 2. Leave jumper connected for about 5 seconds, then remove it. Test lamp should come on for about 3 seconds.

3) If amplifier fails either test, replace it. Check system operation in all models.

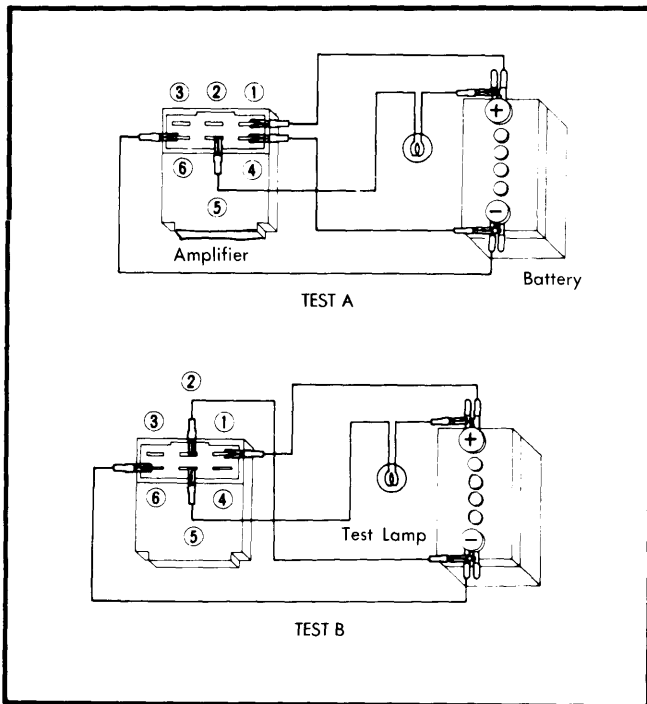
## DATSUN (Cont.)



**Fig. 4 Jumper Wire Connections for Testing 200SX & 280ZX Intermittent Amplifier**

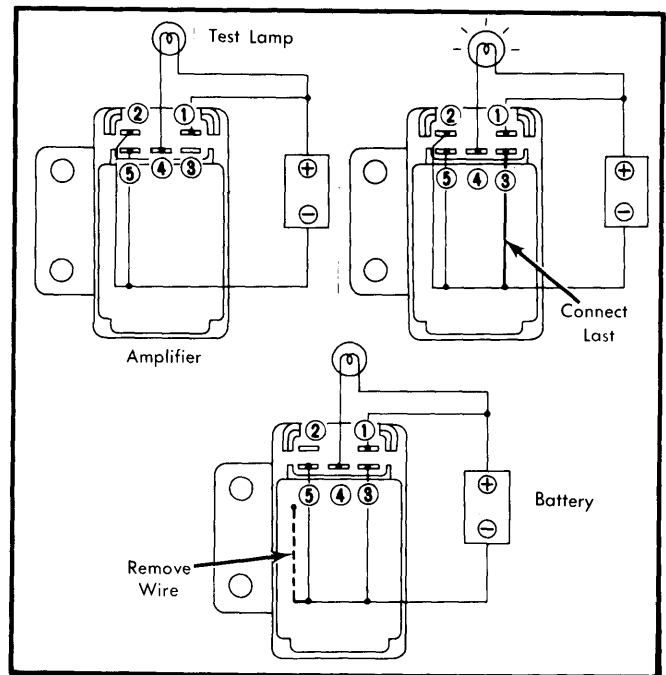


**Fig. 6 Jumper Wire Connections for Testing 310 & 510 Intermittent Amplifier**



**Fig. 5 Jumper Wire Connections for Testing 210 Intermittent Amplifier**

**Pickup** — Connect jumper wires to amplifier. See Fig. 7. Test lamp should come on when wire is connected to pin 3. Disconnect jumper wire from pin 2. Test lamp should go off, then come back on after 6 seconds. If not, replace amplifier.



**Fig. 7 Jumper Wire Connections for Testing Pickup Intermittent Amplifier**

**310 & 510** — Connect jumper wires to amplifier. See Fig. 6. When wire "A" is connected, test lamp should come on. Disconnect wire "B". Test lamp should go off, then come back on after a few seconds. If not, replace amplifier.

## DATSUN (Cont.)

## TIME CONTROL UNIT (810 ONLY)

**NOTE** — Time Control Unit operates many systems in vehicle. The following tests only check the circuits that control wiper delay operation.

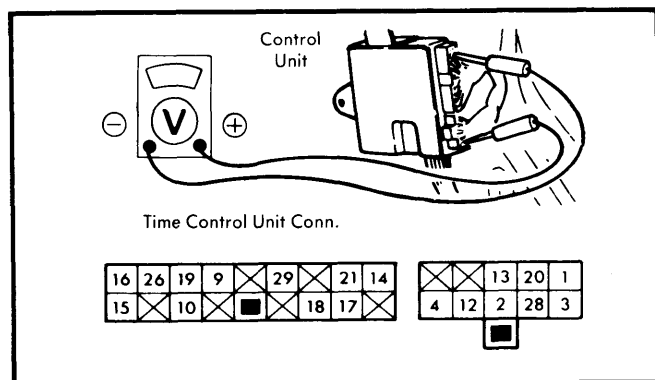
All tests are made using a voltmeter. Insert voltmeter probes into the REAR of connectors while they are still plugged into control unit. Ensure ignition key is in correct position while testing each circuit. Perform tests in order listed.

**Power Circuit** — Connect negative lead of voltmeter to pin 2 and positive lead to pin 26. Battery voltage should be present with ignition in "ACC" position. If not, check wiring.

**Intermittent Circuit** — 1) Connect negative lead of voltmeter to pin 2. Connect positive lead to pin 12. Turn ignition "OFF" and set wiper switch to "OFF". Battery voltage should be present. Turn wiper switch to "INT". No voltage should be read. If readings are incorrect, check harness and wiper switch.

2) Connect negative lead of voltmeter to pin 15 and positive lead to pin 1. Turn ignition to "ACC" and wiper switch to "INT". Voltage should jump from 0-12 volts and back every couple seconds. If so, check wiper relay and wiring for problems. If amplifier does not operate as described, replace it.

3) Connect negative lead of voltmeter to pin 2 and positive lead to pin 16. Turn ignition to "ACC" and wiper switch "ON". Rotate delay adjustment knob at end of wiper lever. Voltage should vary from 0 (short delay) to 8 volts (long delay). If wiper delay cannot be adjusted, but voltage is as described, replace amplifier. If voltage readings are incorrect, check harness and wiper switch.



**Fig. 8 Time Control Unit Connector Pin Locations for Testing Intermittent Wiper/Washer Operation on 810**

**Washer Circuit** — 1) Connect negative voltmeter lead to pin 2 and positive lead to pin 14. Turn ignition to "ACC" and pull lever to washer position. Battery voltage should be present with washer off, and no voltage present with washer lever pulled. If not, check washer switch and wiring.

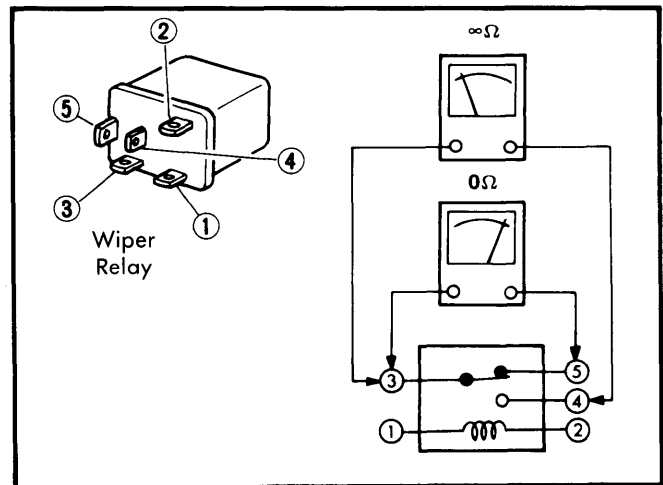
2) Connect negative lead of voltmeter to pin 2 and positive lead to pin 26. Battery voltage should be present with ignition in "ACC" position. If not, check wiring.

3) Connect negative lead of voltmeter to pin 15 and positive lead to pin 1. Rotate lever switch fully counterclockwise, with ignition switch at "ACC" position. Battery voltage should be

present briefly every 3 seconds. If not replace amplifier. If amplifier tests okay, problem is in wiper relay.

## WIPER RELAY (810 ONLY)

Continuity should be present across terminals 3 and 5. With battery voltage applied to 1 and 2, continuity should be present across terminals 3 and 4. See Fig. 9.



**Fig. 9 Wiper Relay Terminal Identification for Testing (810 Only)**

## REMOVAL &amp; INSTALLATION

## FRONT WIPER MOTOR &amp; LINKAGE

**Removal (All Models)** — 1) Disconnect battery ground cable and motor wiring. Remove motor bolts. Remove nut and clip holding linkage arm to motor shaft. Remove motor.

2) Remove wiper arm cap and nut. Remove wiper arm and wiper shaft nut. Remove inspection cover (if equipped) and remove linkage.

**Installation** — To install, reverse removal procedure. Install arms so parked position is .8" (20 mm) from bottom of windshield.

## REAR WIPER MOTOR

**Removal (All Models)** — Remove wiper shaft nut and wiper arm. Open hatch or tailgate and remove inner panel. Disconnect wiring from motor. Remove wiper motor.

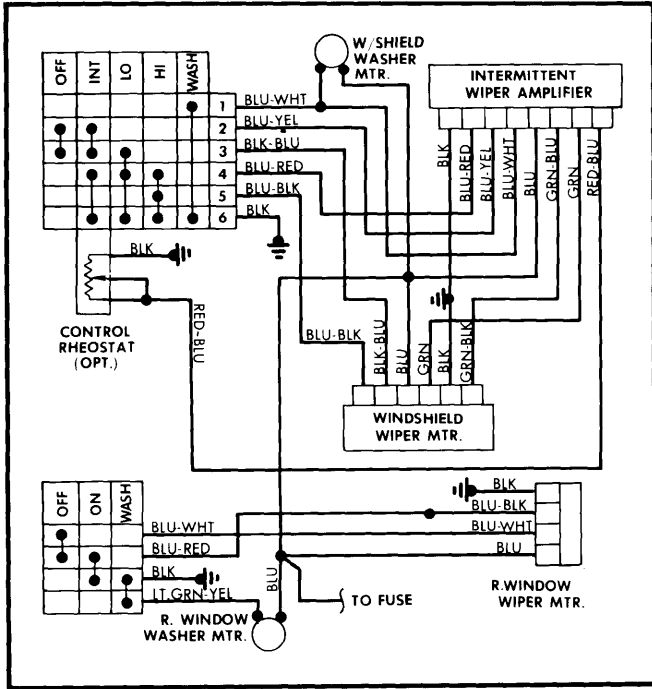
**Installation** — To install, reverse removal procedure. Install wiper arm so blade is .6-.8" (15-20 mm) from edge of glass when wiper is parked.

## COMBINATION SWITCH

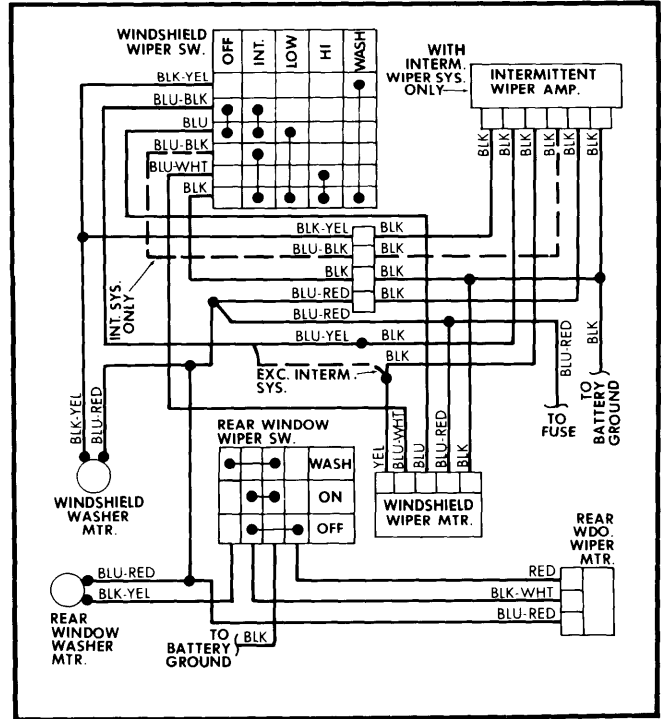
**Removal (All Models)** — Remove steering wheel pad and steering wheel. Disconnect all wiring. Remove retaining screw and pull switch off column.

**Installation** — To install, reverse removal procedure. Align tab on switch with hole in column.

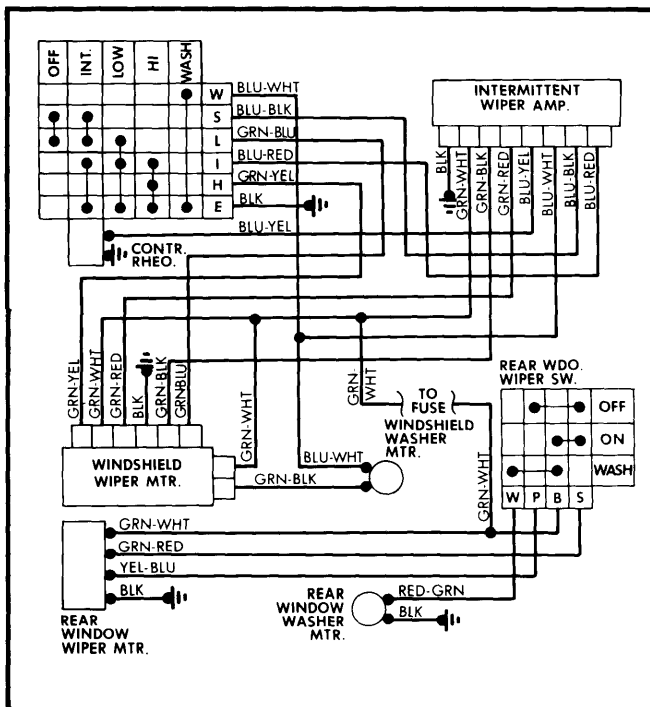
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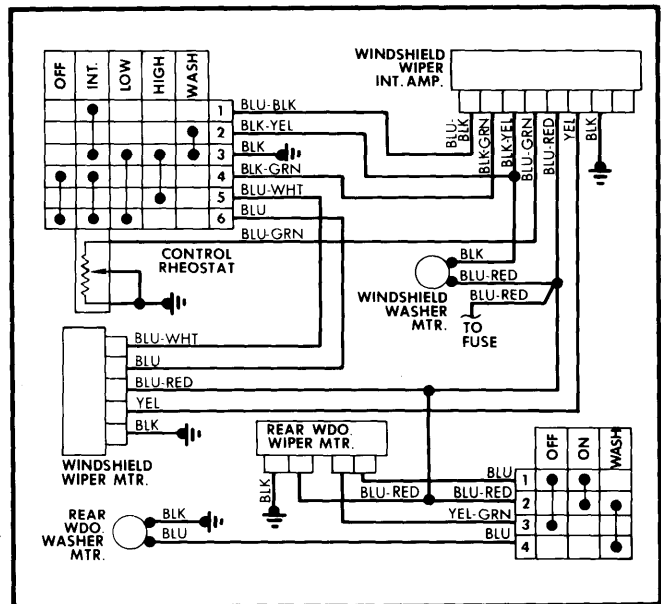
**Fig. 10 Datsun 200SX Wiper/Washer System Wiring Diagram**



**Fig. 11 Datsun 210 Wiper/Washer System Wiring Diagram**



**Fig. 12 Datsun 280ZX Wiper/Washer System Wiring Diagram**



**Fig. 13 Datsun 310 Wiper/Washer System Wiring Diagram**

