

WIPER/WASHER SYSTEM

1993 Nissan Sentra

1993 ACCESSORIES/SAFETY EQUIPMENT
Nissan Wiper/Washer Systems

Sentra

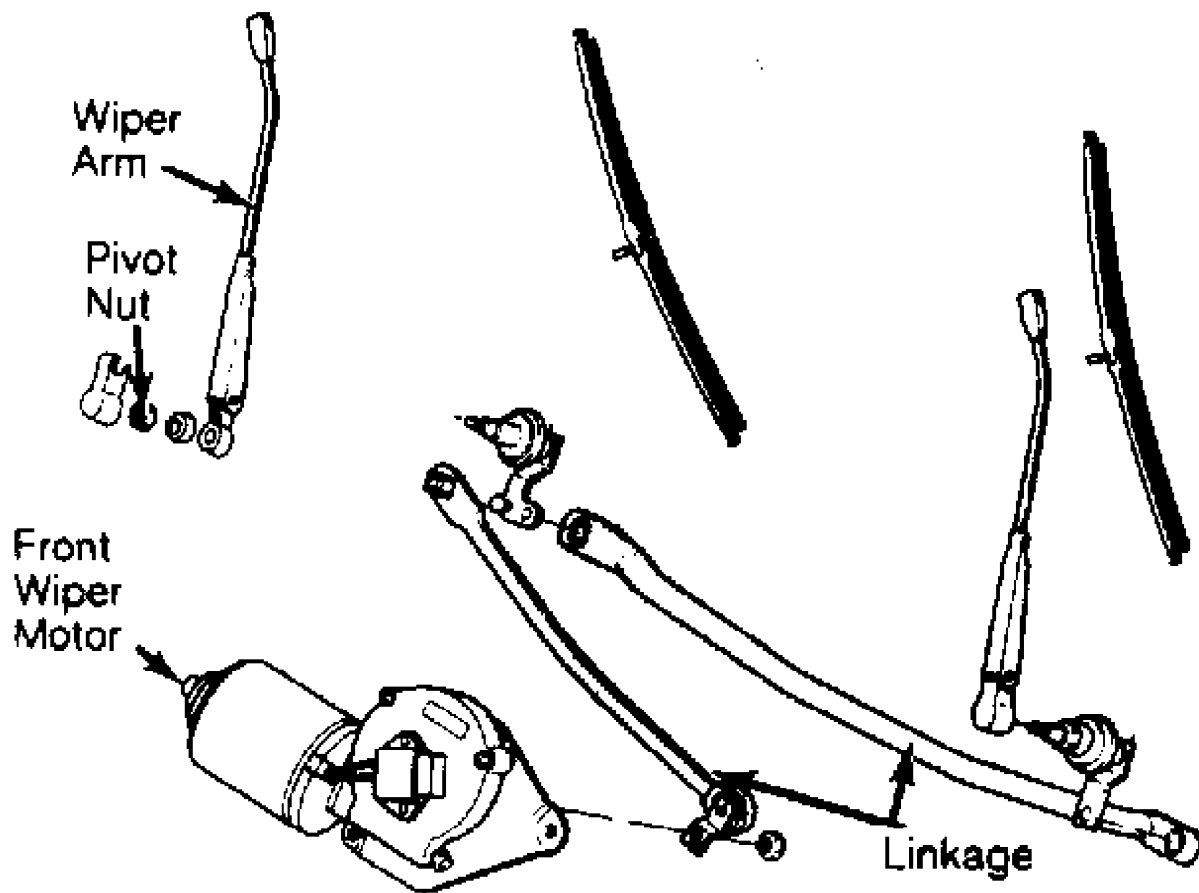
DESCRIPTION & OPERATION

FRONT WIPER

System uses a 2-speed wiper motor with a park switch inside the motor housing. See Fig. 1. Intermittent (time delay) wiper function is controlled by:

- * Wiper amplifier

Time control unit controls other time-delayed circuits such as clock, turn signals, hazard flasher and seat belt warning chime.



Courtesy of Nissan Motor Co., U.S.A.

Fig. 1: Typical Front Wiper Components
Courtesy of Nissan Motor Co., U.S.A.

WASHER

NOTE: Washer line between reservoir tank and nozzle contains a check valve that must be installed with arrow toward nozzle.

Front and rear washers use separate pumps. Both washer systems share a common reservoir.

ELECTRICAL COMPONENT LOCATIONS TABLE

Component	Location
Wiper Amplifier (Front)	 Integral Part Of Wiper Switch On Combination Switch

ADJUSTMENTS

WIPER ARM ADJUSTMENT

1) On front wipers, install wiper arm so distance from wiper blade centerline to bottom edge of glass is as specified in WIPER BLADE CLEARANCE table.

WIPER BLADE CLEARANCE TABLE

Application	Clearance - In. (mm)
Front	
Left	 1.0-1.4 (25-35)
Right	 0.8-1.2 (20-30)
Rear	 4.1-4.5 (105-115)

TESTING

TIME CONTROL UNIT

NOTE: Except for POWER & GROUND CIRCUITS test, the following procedures check only those Time Control Unit (TCU) functions that are related to wiper delay operation. During testing, leave TCU connector plugged in and backprobe TCU connector terminals with a Digital Volt-Ohmmeter (DVOM) unless specified otherwise.

Power & Ground Circuits

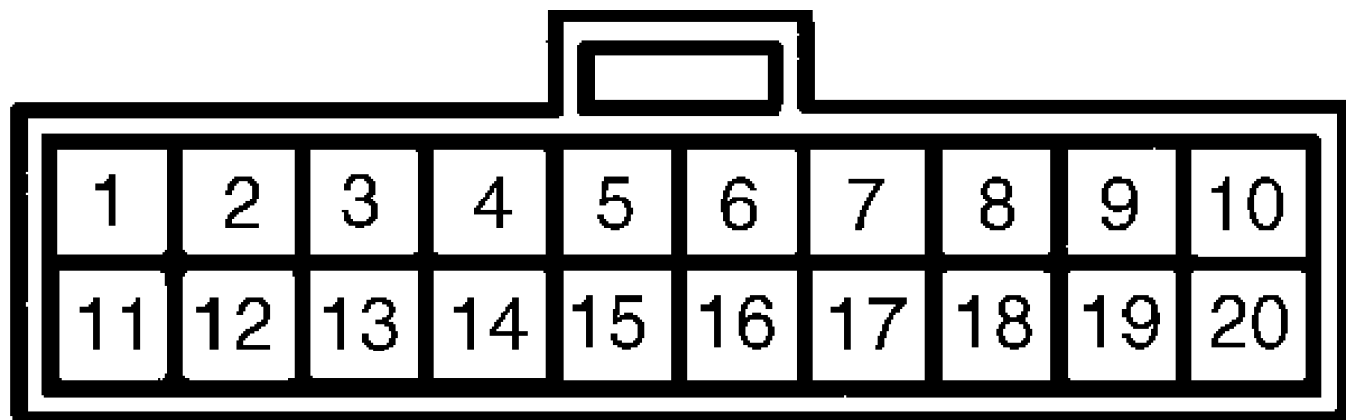
1) If time control function for ignition key warning or seat belt warning operates, TCU power and ground circuits are okay. If time control function for these systems is inoperative, turn ignition off.

2) Check continuity between ground and TCU connector terminal No. 15. See Fig. 2. If there is no continuity, repair ground circuit. If there is continuity, check voltage between TCU connector terminal No. 15 and terminal specified in TIME CONTROL UNIT POWER CIRCUIT TEST table. If voltage is not as specified, repair appropriate circuit.

TIME CONTROL UNIT POWER CIRCUIT TEST TABLE

Terminal Number	Ignition Switch Position	Volts
2	OFF	0
	ACC	Battery
	ON	Battery

5		OFF		0
		ACC		0
		ON		Battery
9		OFF		Battery
		ACC		Battery
		ON		Battery



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Fig. 2: Time Control Unit Connector Terminal ID
Courtesy of Nissan Motor Co., U.S.A.

Intermittent Wiper Does Not Operate

1) Leave TCU harness connector connected. Turn ignition switch to ACC position. With wiper switch in INT or OFF position, measure voltage between TCU connector terminals No. 1 and 15. See Fig. 2.

2) With wiper switch in OFF position, about 12 volts should be present.

3) If voltage is not as specified, go to next step. If voltage is as specified, check wiper amplifier. See WIPER AMPLIFIER or WIPER RELAY under TESTING. If wiper amplifier or wiper relay is okay, repair wiring harness.

4) With wiper switch in INT or OFF position, measure voltage between TCU connector terminals No. 12 and 15. With wiper switch in OFF position, about 12 volts should be present. With wiper switch in INT position, no voltage should be present.

5) If voltages are as specified, replace TCU. If voltages are not as specified, check wiper switch. See STEERING COLUMN SWITCHES article in the ACCESSORIES/SAFETY EQUIPMENT section. If wiper switch is okay, repair wiring harness between TCU and wiper switch.

Intermittent Time Of Wiper Cannot Be Adjusted

1) Leave TCU harness connector connected. Turn ignition off. Measure resistance between TCU connector terminals No. 14 and 15 while turning intermittent wiper switch. See Fig. 2.

2) With switch in "S" position, resistance should be zero ohms. With switch in "L" position, resistance should be about 1000 ohms. If resistances are as specified, replace TCU. If resistances are not as specified, check intermittent wiper volume switch and wiring harness.

Wiper & Washer Activate Individually But Not In Combination

1) Leave TCU connector connected. Turn ignition switch to ACC position. Measure voltage between TCU connector terminals No. 13 and 15. See Fig. 2. With washer switch in OFF position, about 12 volts

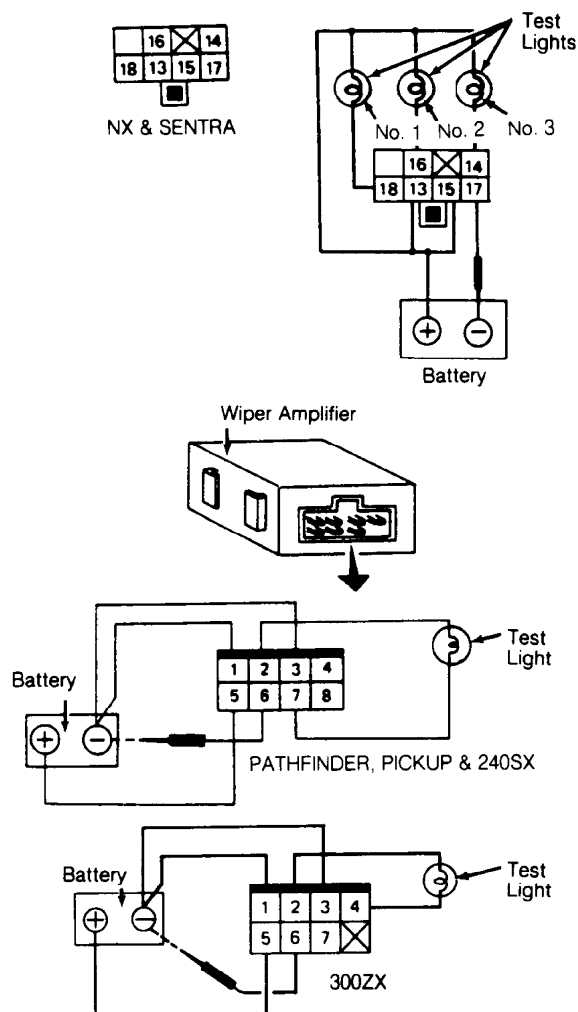
should be present. With washer switch in ON position, no voltage should be present. If voltages are not as specified, repair wiring harness between TCU and wiper switch.

2) If voltages are as specified, measure voltage between TCU connector terminals No. 1 and 15 after operating washer switch. Voltmeter should indicate zero volts for about 3 seconds after washer has operated. If voltage is as specified, replace wiper relay. If voltage is not as specified, replace TCU.

WIPER AMPLIFIER

CAUTION: In the following procedure, carefully connect test leads to wiper amplifier connector to prevent damaging amplifier.

Disconnect amplifier connector. Connect test leads with test light(s) between 12-volt battery and amplifier connector terminals. See Fig. 3.

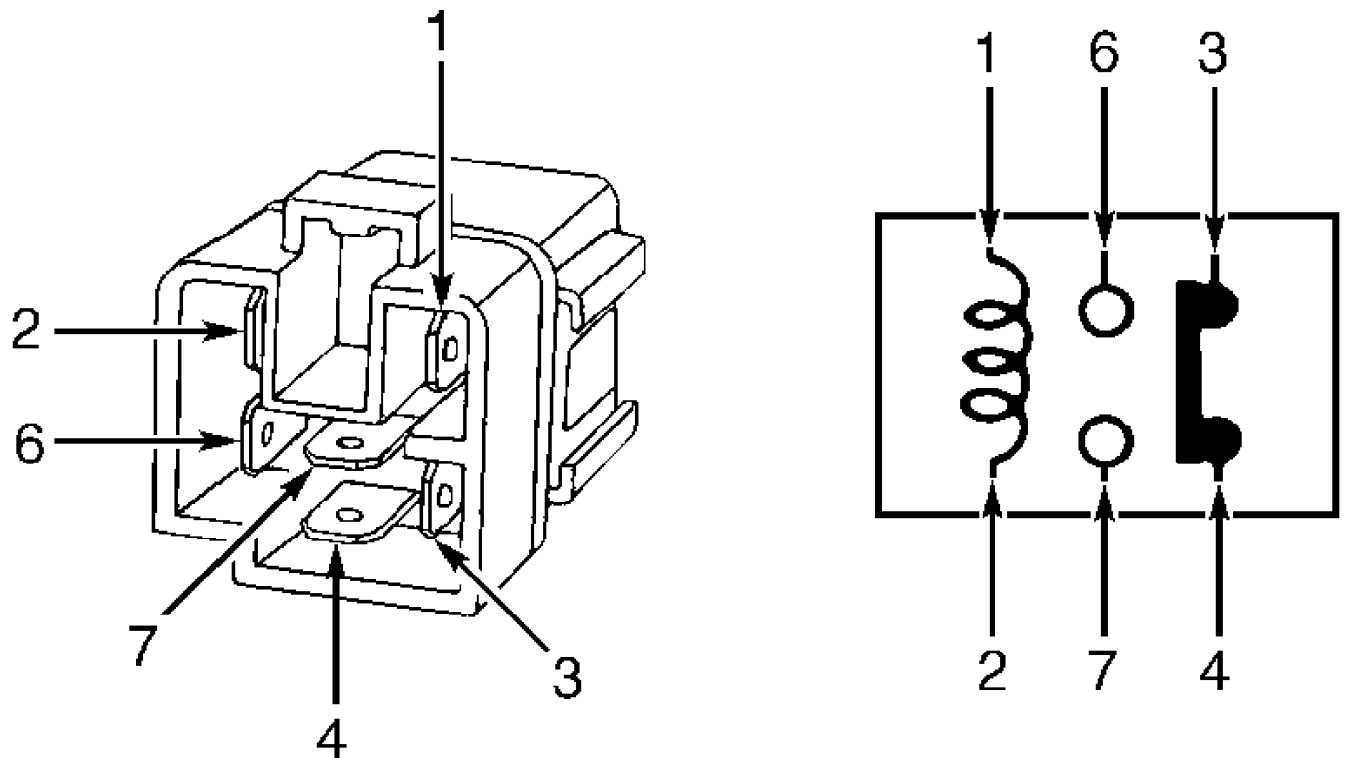


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Fig. 3: Testing Wiper Amplifier
Courtesy of Nissan Motor Co., U.S.A.

WIPER RELAY

Remove relay. There should be continuity between terminals No. 3 and 4, and no continuity between terminals No. 6 and 7. See Fig. 4. Apply battery voltage across terminals No. 1 and 2. There should now be no continuity between terminals No. 3 and 4, and continuity between terminals No. 6 and 7. If continuity is not as specified, replace relay.



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Fig. 4: Testing Wiper Relay
Courtesy of Nissan Motor Co., U.S.A.

WIPER SWITCH

See STEERING COLUMN SWITCHES article in the ACCESSORIES/SAFETY EQUIPMENT section.

REMOVAL & INSTALLATION

WIPER MOTOR

NOTE: Before installing wiper arm(s), ensure wiper motor is in park position. See WIPER ARM ADJUSTMENT under ADJUSTMENTS.

TORQUE SPECIFICATIONS

WIPER ARM TORQUE SPECIFICATIONS TABLE

Application	Ft. Lbs. (N.m)
Front	12-17 (16-23)

Rear 10-13 (14-18)

WIRING DIAGRAMS

Proceed to chassis WIRING DIAGRAMS article in WIRING DIAGRAMS section.