POWER WINDOWS

CONTENTS

GENERAL INFORMATION

Power door windows are optional equipment on XJ (Cherokee) models. The power windows operate only with the ignition switch in the ON position. This group covers diagnosis and service of the electrical components peculiar to the power window system. For service of mechanical components such as the regulator, lift plate or window tracks refer to Group 23 - Body Components.

Following are general descriptions of the major components in the power window system. Refer to Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

POWER WINDOW SWITCH

Both front and rear door windows can be raised or lowered electrically by operating the four two-way switches on the driver's door panel. A single two-way switch on each passenger's door panel operates only the window on that passenger's door. The switches cannot be repaired. If faulty, they must be replaced.

POWER WINDOW MOTOR

A permanent magnet reversible motor moves the window regulator through a cable and drum operating mechanism. A positive and negative battery connection to the two motor terminals will cause the motor to rotate in one direction. Reversing current through these same two connections will cause the motor to rotate in the opposite direction. In addition, each power window motor is equipped with an integral automatic re-setting circuit breaker to protect the motor from overloads. The power window motor and regulator assembly cannot be repaired. If faulty, the entire assembly must be replaced.

CIRCUIT BREAKER

An automatic re-setting circuit breaker in the fuseblock module is used to protect the power window system circuit. The circuit breaker can protect the system from a short circuit, and can also protect the system from an overload condition caused by an obstructed or stuck window glass or regulator. The circuit breaker can not be repaired. If faulty, it must be replaced.

DIAGNOSIS

It is necessary that the window be free to slide up and down for the power window system to function properly. If the window is not free to move up and down, the motor will overload and trip the circuit breaker. To determine if the glass is free, disconnect regulator plate from the glass and slide window up and down by hand.

An alternate method is to shake the glass in the door, with the glass positioned between the up and down stop positions. Check that the glass can be moved slightly from side to side, front to rear, and up and down. Then check that window is not bound tight in the tracks. If window is free, proceed with diagnosis that follows. If window is not free, refer to Group 23 - Body Components for service procedures.

CIRCUIT BREAKER

Locate correct circuit breaker in fuseblock module. Pull out slightly, but be sure that circuit breaker terminals still contact terminals in fuseblock module. Turn ignition switch to ON position. Connect ground wire of voltmeter to a good ground. With probe of voltmeter positive lead, check both terminals of circuit breaker for battery voltage. If only one terminal

has battery voltage, circuit breaker is faulty and must be replaced. If neither terminal has battery voltage, repair circuit from ignition switch as required.

POWER WINDOW SWITCH

Before you proceed with this diagnosis, confirm proper circuit breaker operation. See Circuit Breaker diagnosis.

(1) Remove switch from door trim panel. See Power Window Switch Remove/Install. Carefully separate multiple terminal block on wiring harness from switch body.

(2) Check for continuity between connector cavity for switch pin DX and a good ground. See switch continuity charts for pin identification. There should be continuity. If OK, go to next step. If not OK, repair ground circuit as required.

(3) Turn ignition switch to ON position. Check for battery voltage at connector cavity for switch pin BY. If OK, go to next step. If not OK, repair wiring to circuit breaker as required.

(4) Test switch continuity. See switch continuity charts to determine if continuity is correct in the OFF, LOCK, UP and DOWN switch positions. If OK, go to Power Window Motor diagnosis. If not OK, replace the switch.

POWER WINDOW MOTOR

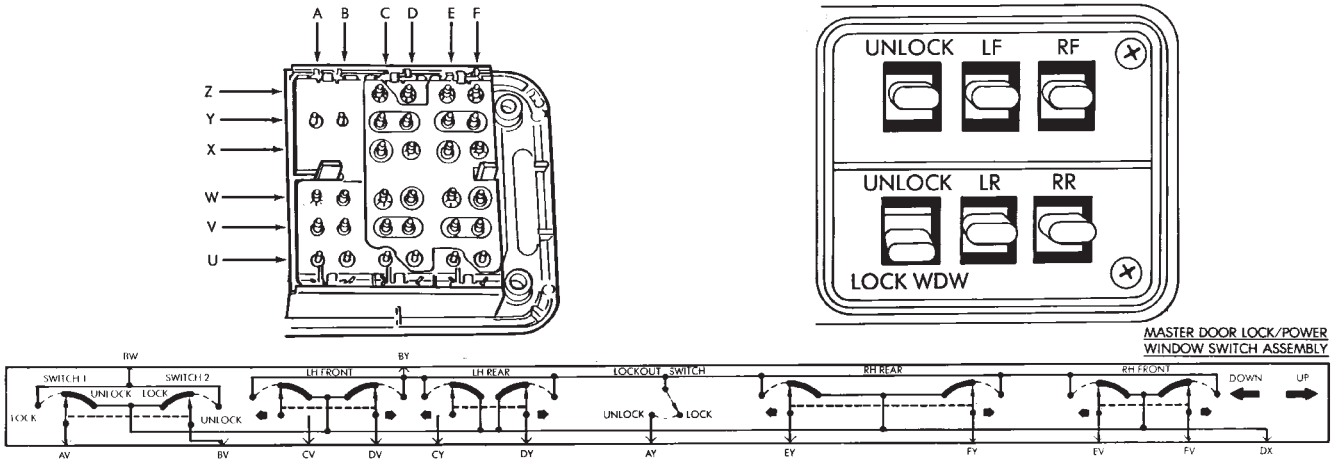
Before you proceed with this diagnosis, confirm proper switch operation. See Power Window Switch diagnosis.

(1) Remove door trim panel (see Power Window Motor Remove/Install).

(2) Disconnect motor connector. Apply 12 volts across the motor terminals to check its operation in one direction. Reverse the polarity to check the operation in the other direction. Remember, if window is in the full up or down position the motor will not operate in that direction by design. If OK, repair wire harness from the motor to the switch as required. If not OK, replace the motor.

(3) If motor operates in both directions, check operation through its complete up and down travel. If not OK, refer to Group 23 - Body Components to check window glass, tracks, and regulator for sticking, binding or improper adjustment.

DRIVER'S POWER WINDOW SWITCH—4-DOOR



SWITCH TEST
Switch Grounds

SWITCH POSITION	TERMINALS	ZERO OHMS
Off (Normal)	DX and: AV, BV, CV, DV, CY, DY, EY, FY, EV, FV	Yes
	BW and DX	No
	BY and DX	No

SWITCH TEST
LH Front

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and DV	Yes
Down	BY and CV	Yes

SWITCH TEST
LH Rear

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and DY	Yes
Down	BY and CY	Yes

SWITCH TEST
Lockout Switch

SWITCH POSITION	TERMINALS	ZERO OHMS
Up (Unlock)	AY and BY	Yes
Down (Lock)	AY and BY	No

SWITCH TEST
RH Rear

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and FY	Yes
Down	BY and EY	Yes

SWITCH TEST
RH Front

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and FV	Yes
Down	BY and EV	Yes

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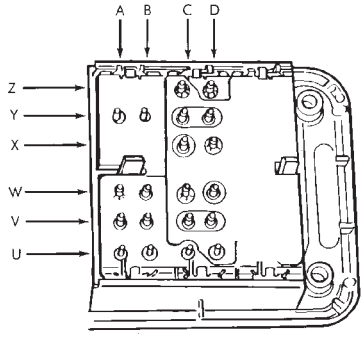
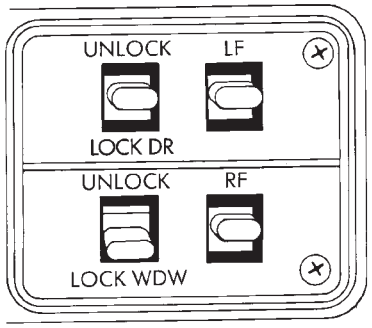
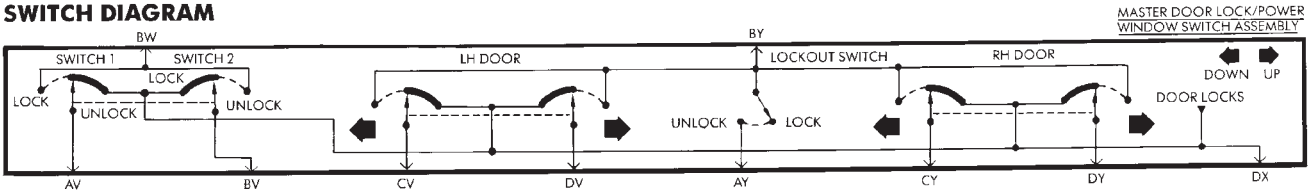
DRIVER'S POWER WINDOW SWITCH—2-DOOR (LHD)





SWITCH DIAGRAM



SWITCH TEST
Switch Grounds

SWITCH POSITION	TERMINALS	ZERO OHMS
Off (Normal)	DX and: AV, BV, CV DV, CY, DY	Yes
	BW and DX	No
	BY and DX	No

SWITCH TEST
LH Door

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and DV	Yes
Down	BY and CV	Yes

SWITCH TEST
RH Door

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and DY	Yes
Down	BY and CY	Yes

SWITCH TEST
Lockout Switch

SWITCH POSITION	TERMINALS	ZERO OHMS
Up (Unlock)	AY and BY	Yes
Down (Lock)	AY and BY	No

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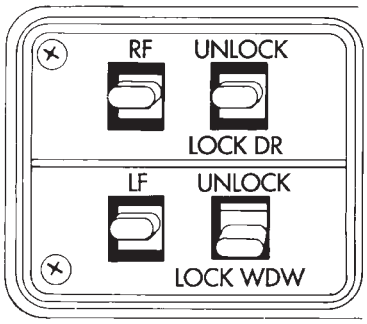
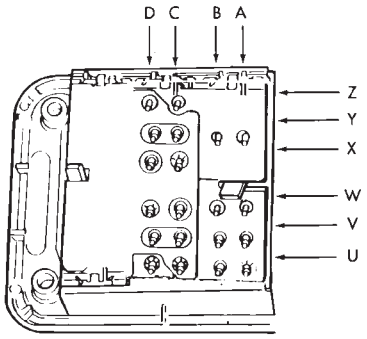
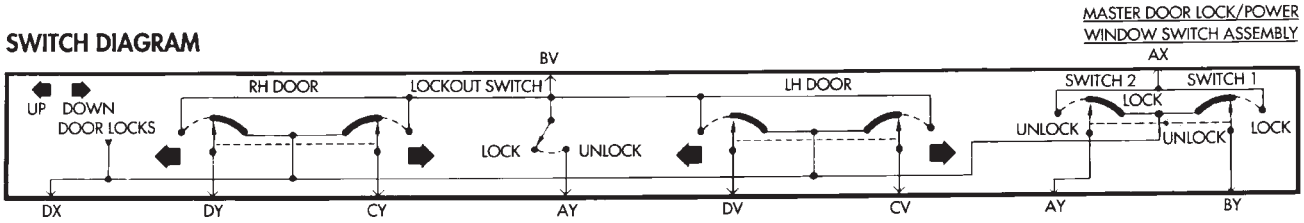
DRIVER'S POWER WINDOW SWITCH—2-DOOR (RHD)





SWITCH DIAGRAM



SWITCH TEST
Switch Grounds

SWITCH POSITION	TERMINALS	ZERO OHMS
Off (Normal)	DX and: BY, AY, CV DV, CY, DY	Yes
	AX and DX	No
	BV and DX	No

SWITCH TEST
LH Door

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BV and DV	Yes
Down	BV and CV	Yes

SWITCH TEST
RH Door

SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BV and DY	Yes
Down	BV and CY	Yes

SWITCH TEST
Lockout Switch

SWITCH POSITION	TERMINALS	ZERO OHMS
Up (Unlock)	AV and BV	Yes
Down (Lock)	AV and BV	No

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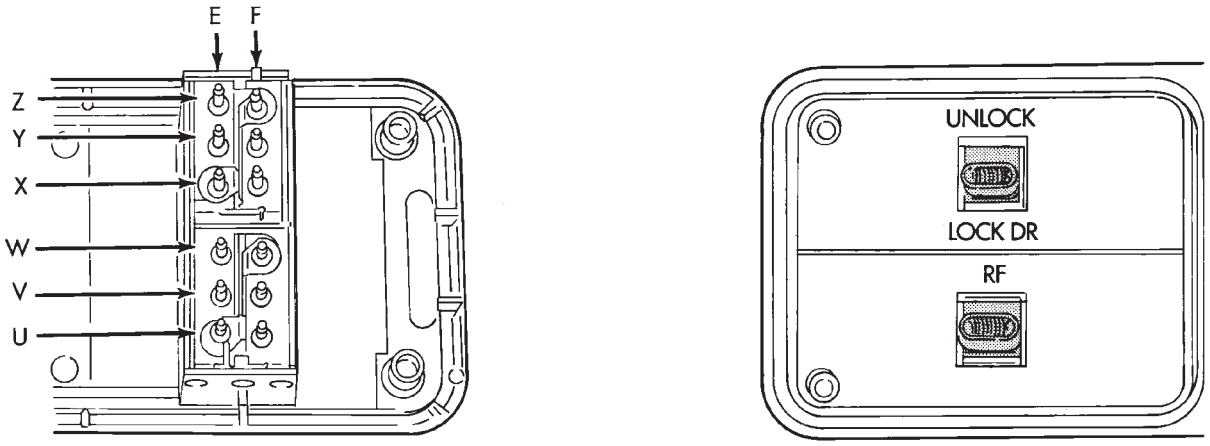
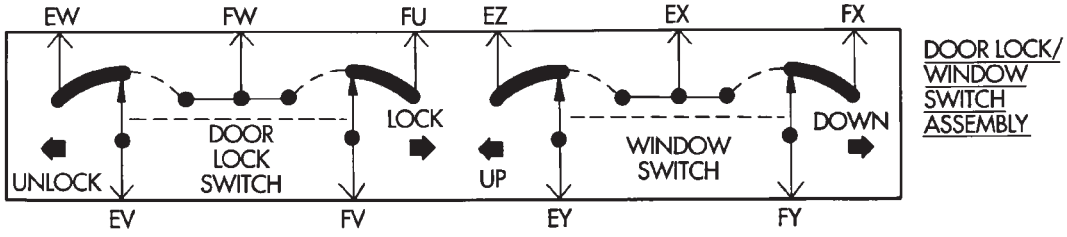
PASSENGER'S POWER WINDOW SWITCH



SWITCH DIAGRAM



SWITCH TEST
Window Switch

SWITCH POSITION	TERMINALS	ZERO OHMS
Off (Normal)	EY and EZ	Yes
	FY and FX	Yes
	All Others	No
Up	EY and EZ	Yes
	EX and FY	Yes
	All Others	No
Down	EX and EY	Yes
	FX and FY	Yes
	All Others	No

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SERVICE PROCEDURES

POWER WINDOW SWITCH REMOVE/INSTALL

(1) Remove the interior door latch release assembly and control panel retaining screws (Fig. 1).

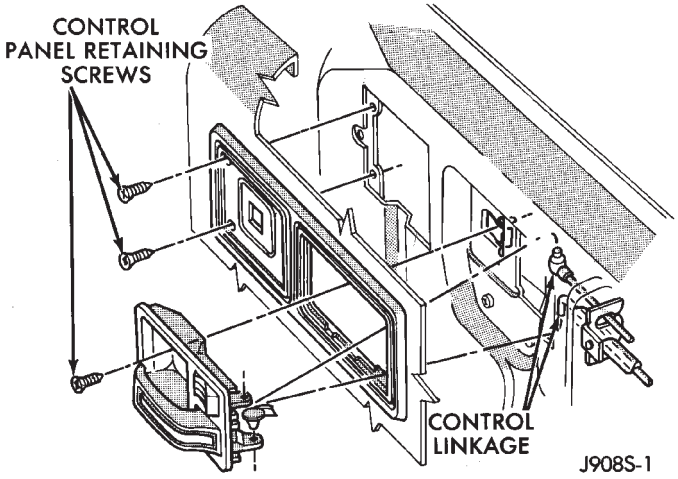

Fig. 1 Power Window/Lock Control Panel Remove/ Install

(2) Disconnect the control linkage and the wire harness connector.

(3) Remove the latch release and control panel assembly.

(4) The switch is retained to the panel with clips (Fig. 2). Push in on the retainer part of the clip and pry the clips.

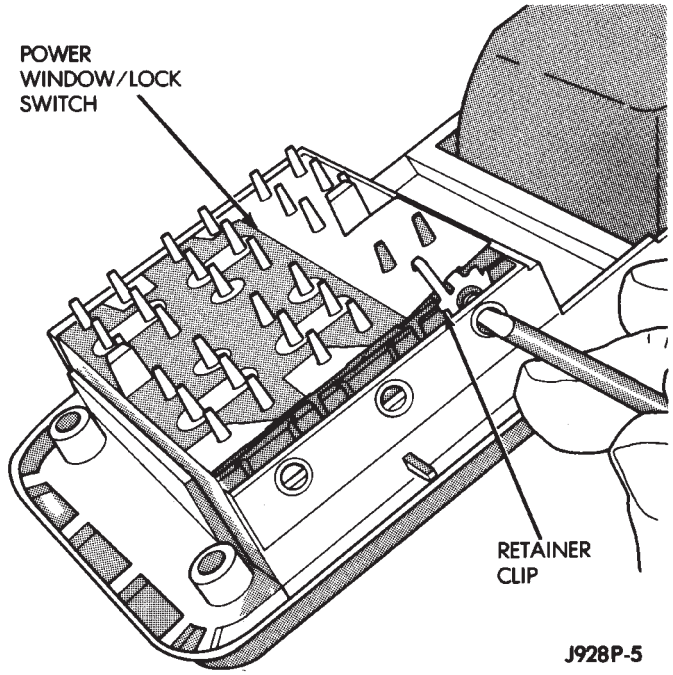

Fig. 2 Power Window Switch Remove

(5) To install switch, position switch and press in retainer clips until they snap into position. Reverse remaining removal procedures to complete installation.

POWER WINDOW MOTOR REMOVE/INSTALL

(1) Remove the interior door latch release assembly and control panel retaining screws (Fig. 1).

(2) Disconnect the control linkage and the wire harness connector.

(3) Remove the latch release and control panel assembly.

(4) Remove the armrest lower retaining screws.

(5) Swing the armrest downward to a vertical position. This is necessary to disconnect the armrest from the upper retainer clip (Fig. 3).

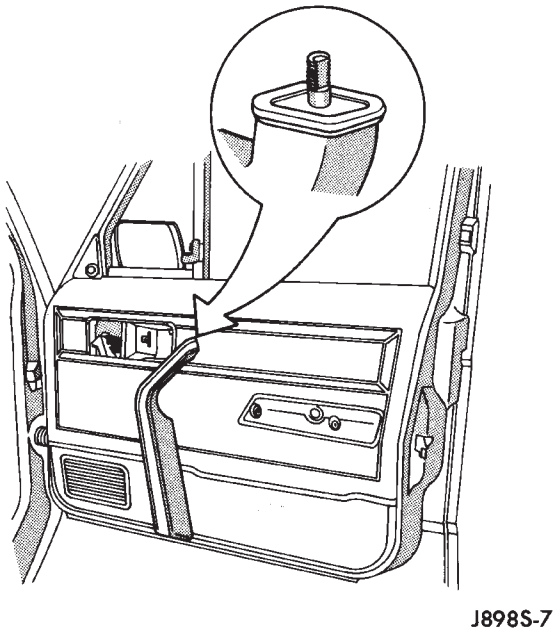

Fig. 3 Armrest Retainer Clip

(6) Pull the armrest straight out from the trim panel.

To aid in removal of the trim panel, start at the bottom of the panel.

(7) Remove the trim panel with a wide flat-bladed tool (Fig. 4).

(8) Remove the plastic water dam sheet.

(9) Grind the heads off 2 rivets holding reinforcement to door (Fig. 5). Knock rivets out with a hammer and punch.

(10) Adjust window to allow access to Torx head screw (Fig. 6).

(11) Remove 2 screws holding bottom of regulator to door.

(12) Remove door glass attaching Torx head screw (Fig. 6).

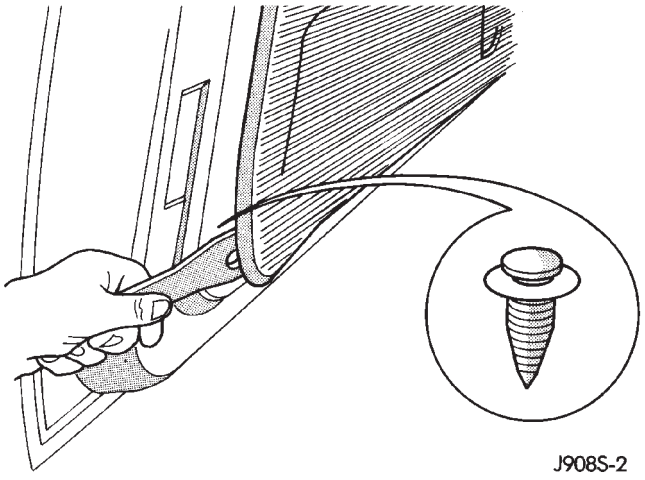

Fig. 4 Trim Panel Remove/Install

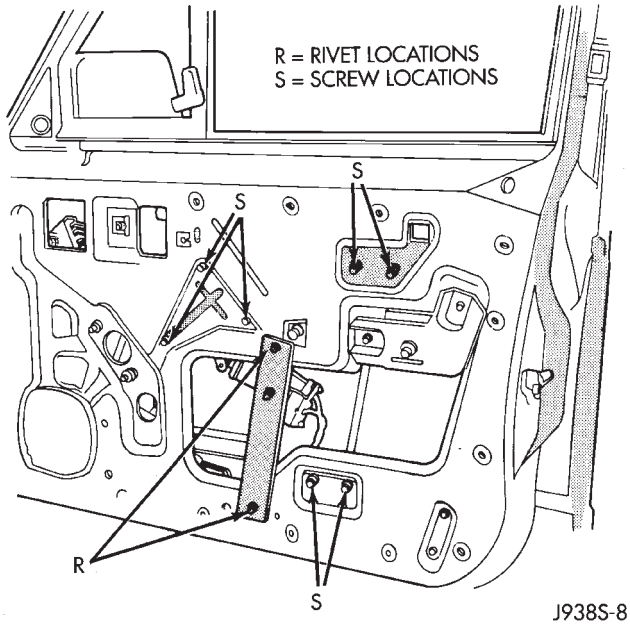

Fig. 5 Window Regulator Remove/Install

(13) Pull glass to the full up position and tape glass to door.

(14) Disconnect wire harness connector from the window regulator.

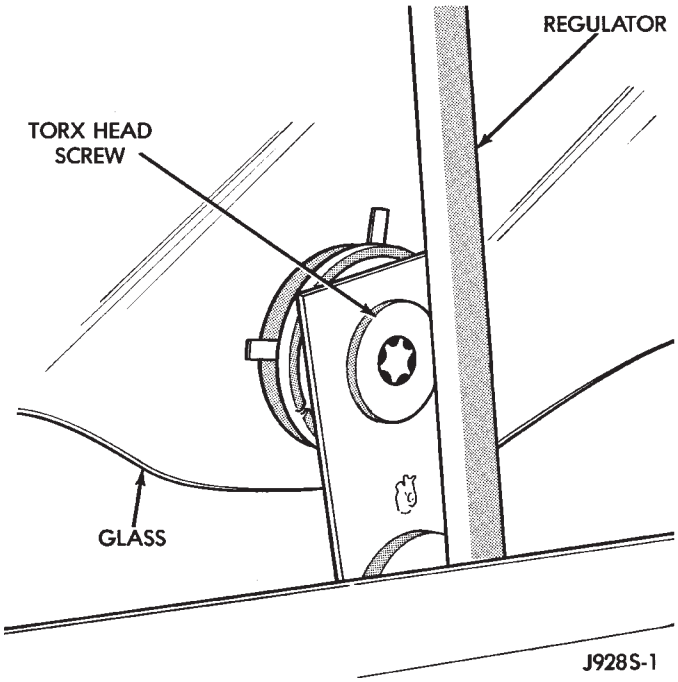

Fig. 6 Remove/Install Glass Attaching Screw

(15) Remove remaining window regulator attaching screws (Fig. 5).

(16) Remove window regulator.

(17) To install, place regulator inside door.

(18) Attach regulator to door using screws or the hardware kit supplied with a new regulator. DO NOT install the 2 screws that hold the bottom of the regulator.

(19) Connect wire harness connector to regulator.

(20) Attach door glass with Torx head screw (Fig. 6). Tighten door glass screw to 3.3 N·m (30 in. lbs.) torque.

(21) Install the last 2 screws.

(22) Use 3M 08044 or 08041 adhesive/sealant to re-install plastic water dam sheet.

(23) Reverse remaining removal procedures to complete installation.