POWER WINDOWS

CONTENTS

DESCRIPTION

All XJ vehicles, equipped with power windows, have a cable driven window regulator system. A permanent magnet motor moves each power window. Each motor raises or lowers the glass when voltage is supplied to the motor. The direction the motor turns depends on the polarity of the supply voltage. The control switches control the supply voltage polarity.

With the ignition switch in the ON position voltage from the 60 amp fuse in the Power Distribution Center is applied through the power window circuit breaker. Power then goes to the master switch terminal BY and to the passenger's window switches.

When the driver's window switch is moved UP, the contacts close a current path to:

- terminal DV
- driver's side front window motor
- terminal CV
- the DOWN contact of the driver's side front window to ground.

The motor then moves the glass up.

Current flows in a similar way when the UP contact in one of the passenger's window switches is closed. Current flow through the passenger's window motors must go through the driver's and the passenger's window switches before it reaches ground.

Each motor is protected by a built-in circuit breaker. If a window switch is held on too long with the window obstructed or after the window is fully up or down, the circuit breaker opens the circuit. The circuit breaker resets automatically as it cools. Do not allow frequent or consecutive resetting of the circuit breaker to continue.

DIAGNOSIS (Figs. 1 and 2)

For information concerning wiring or connectors, refer to Group 8W - Wiring Diagrams.

NO WINDOWS OPERATE

- Measure voltage at power window feed connector at fuse panel. Meter should read battery voltage. If not, replace 60 amp fuse in Power Distribution Center.
- Turn ignition switch to OFF and measure resistance from side of cigar lighter socket to ground. Meter should read zero ohms. If not, repair open to ground.
- Remove master door lock/power window switch assembly mounting screws. Measure resistance at BLK wire (terminal DX) at driver's side switch. Meter should read zero ohms. If not, repair open to ground splice of instrument panel harness.
- Turn ignition switch to ON and measure voltage at terminal BY at driver's side switch. Meter should read battery voltage. If not, repair open to circuit breaker.
- Operate window switch. If the windows move up and down go to Switch Testing.
- Perform Switch Test Driver's Door. If switch passes test, replace defective motors.

ONE WINDOW OPERATES

Remove door panel of inoperative window, probe harness side of unplugged motor connector.

- Measure voltage at terminal A of connector, holding switch in the DOWN position. Meter should read battery voltage. If not, repair open back to master switch. If additional switch is in circuit (not driver's side motor), refer to Switch Testing.
- Measure resistance at terminal B of connector, holding switch in the DOWN position. Meter should read zero ohms. Caution, maintain DOWN position while meter lead is attached. If not, repair open back to master switch. If additional switch is in circuit (not driver's side motor), refer to Switch Testing. If both tests are OK, replace regulator.

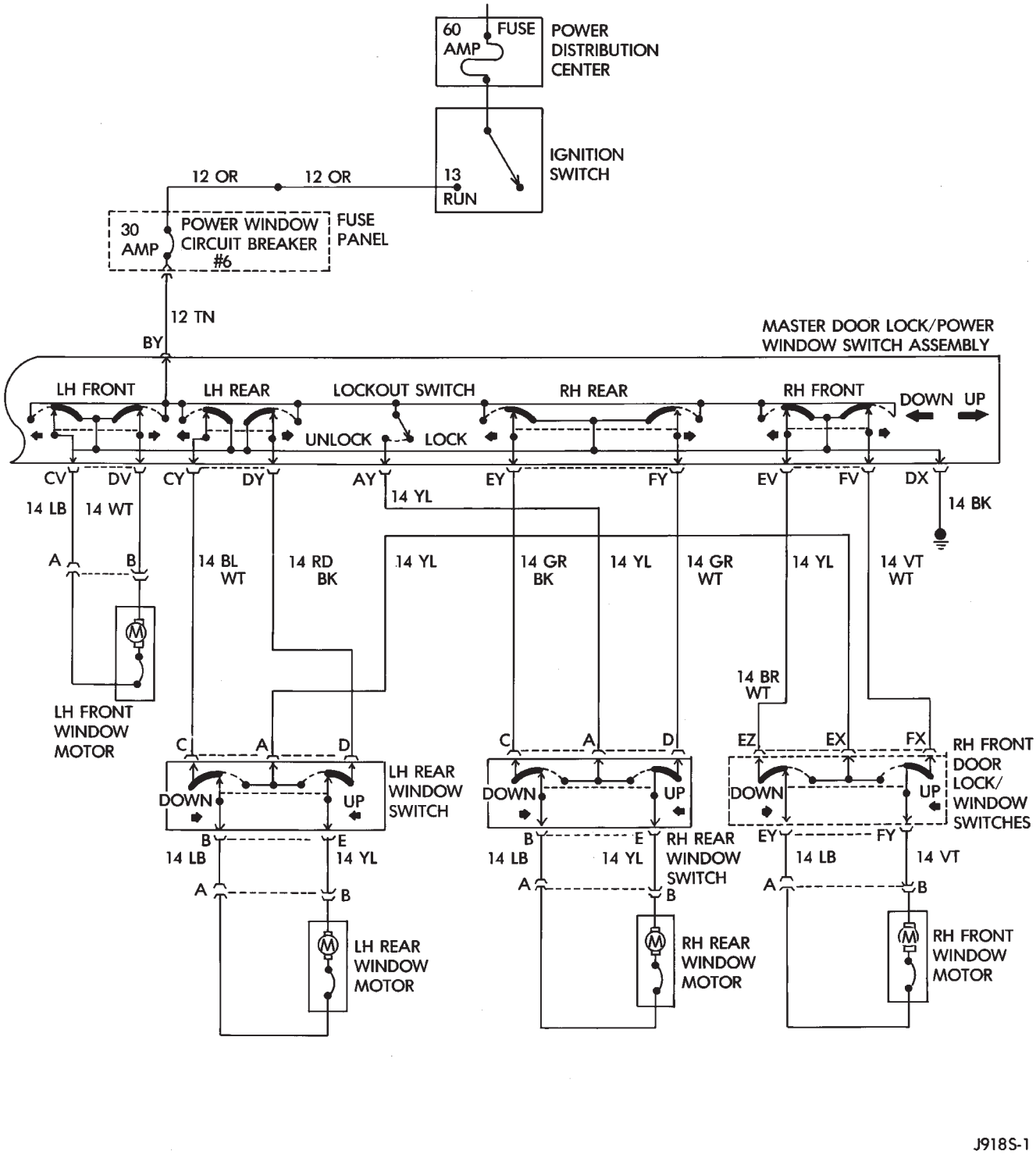


Fig. 1 Power Windows 4-Door—XJ

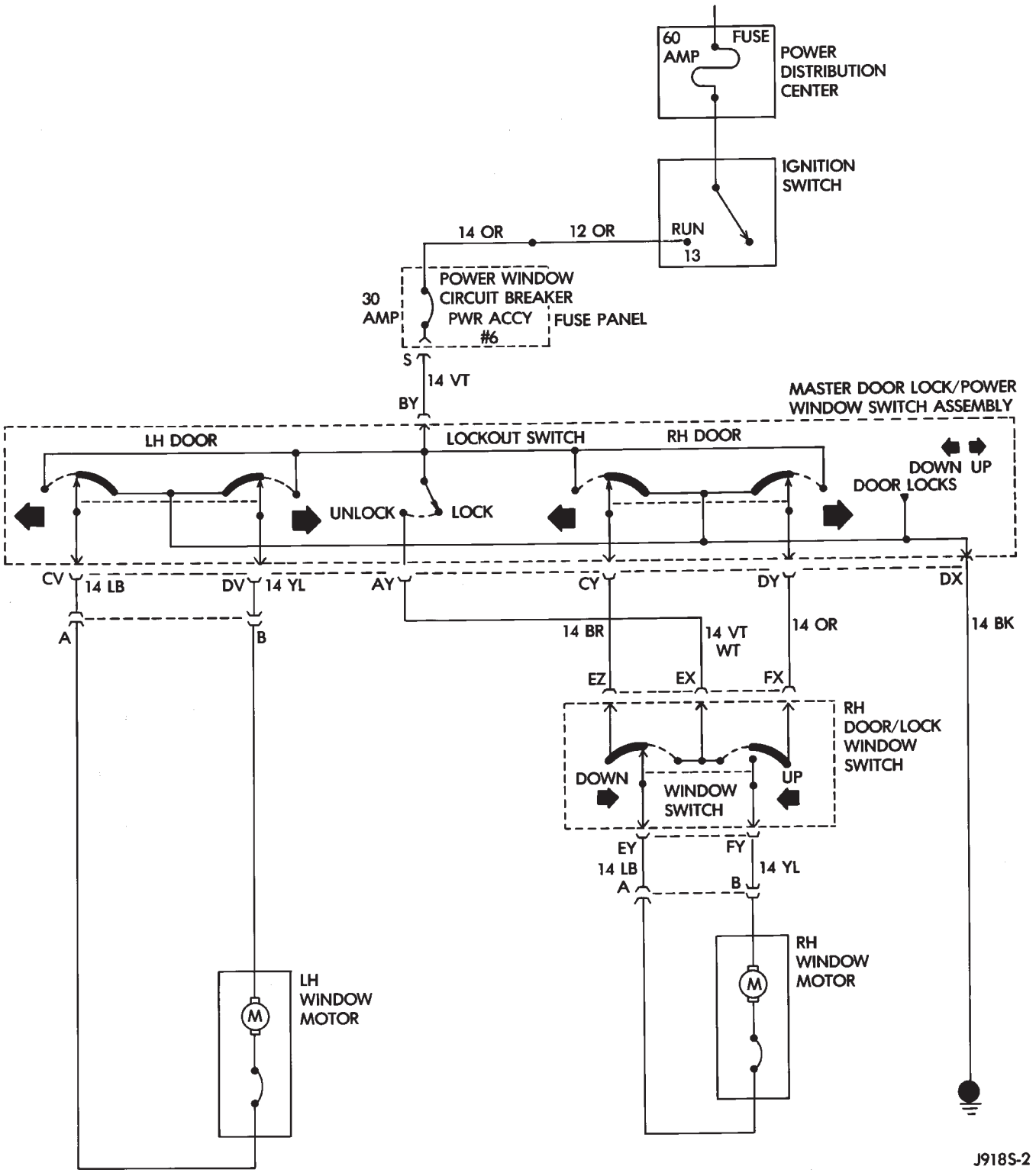


Fig. 2 Power Windows 2-Door—XJ LEFT HAND DRIVE

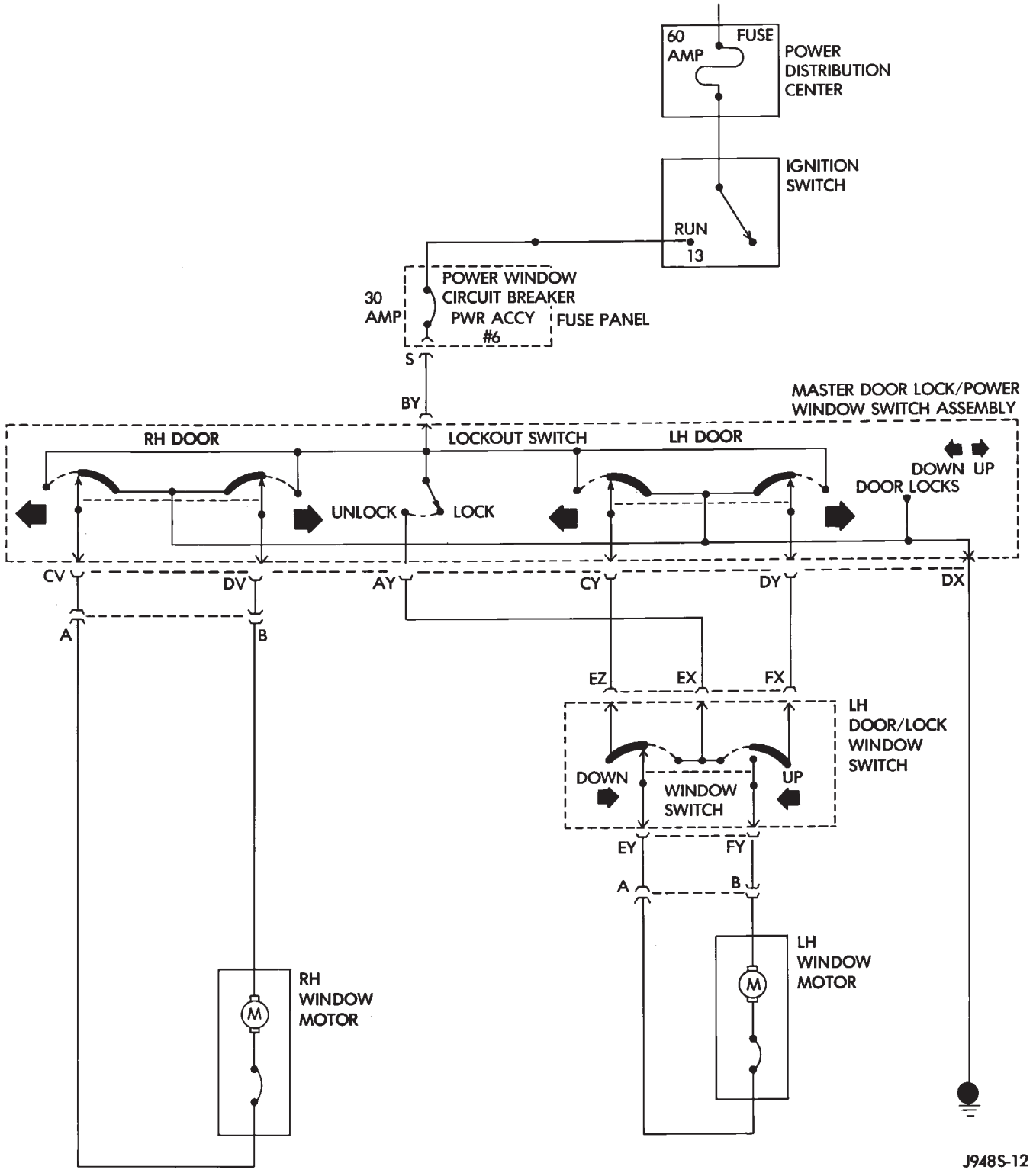
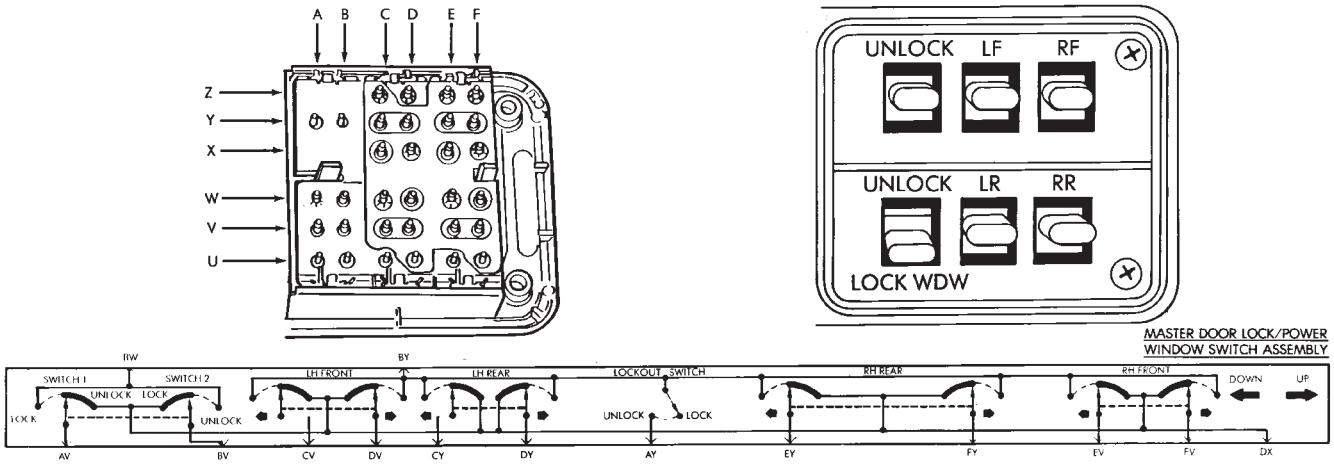


Fig. 3 Power Windows 2-Door—XJ RIGHT HAND DRIVE

SWITCH TESTING

DRIVERS DOOR 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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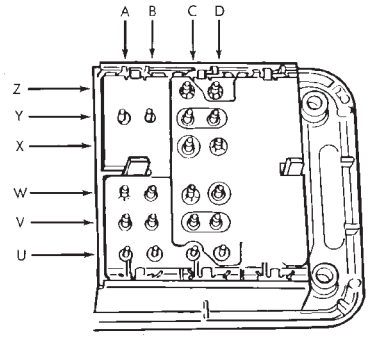
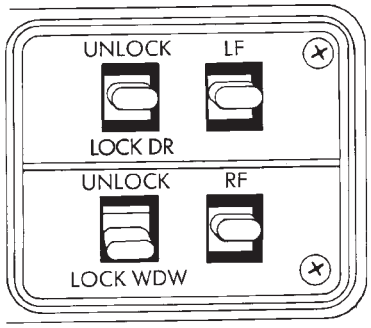
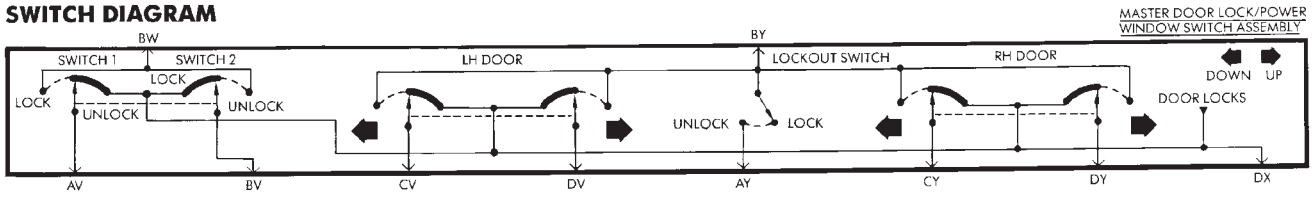
DRIVERS DOOR POWER WINDOW SWITCH—2-DOOR LEFT HAND DRIVE





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

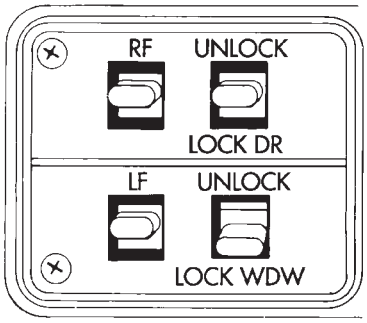
SWITCH TEST
RH Door

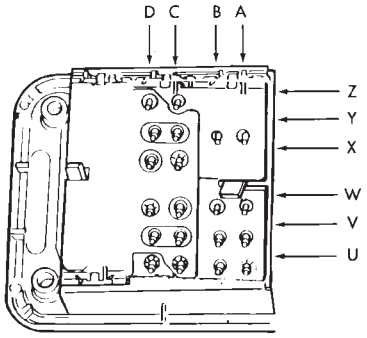
SWITCH POSITION	TERMINALS	ZERO OHMS
Up	BY and DY	Yes
Down	BY and CY	Yes

SWITCH TEST
Lockout Switch

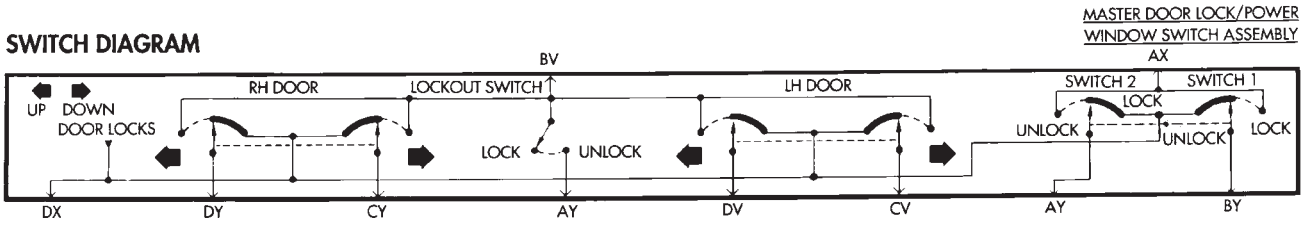
SWITCH POSITION	TERMINALS	ZERO OHMS
Up (Unlock)	AY and BY	Yes
Down (Lock)	AY and BY	No

DRIVERS DOOR POWER WINDOW SWITCH—2-DOOR RIGHT HAND DRIVE





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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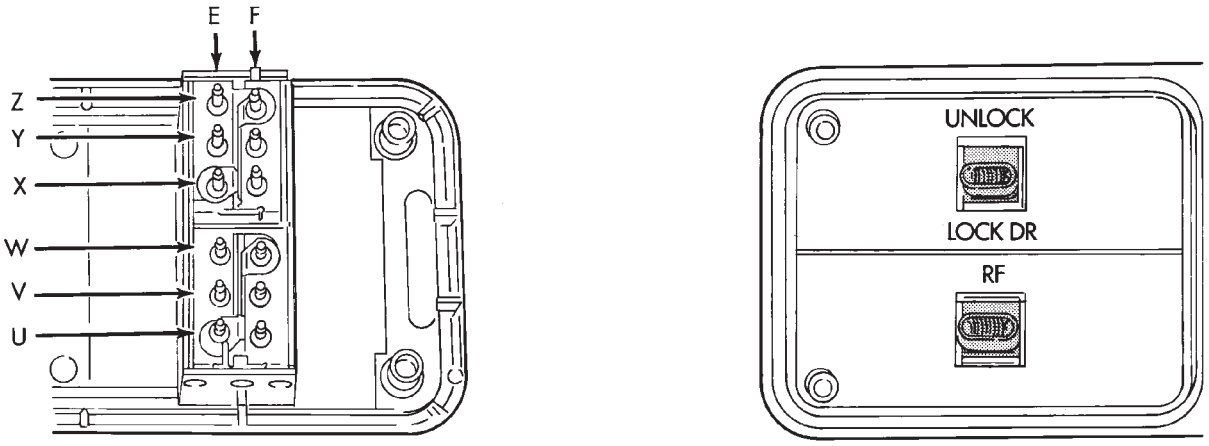
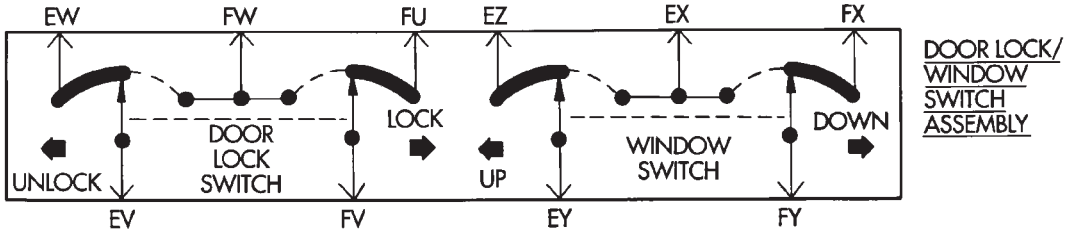
PASSENGER DOOR WINDOW SWITCH



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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WINDOW REGULATOR REPLACEMENT

REMOVAL

(1) Remove the interior door latch release assembly and control panel retaining screws (Fig. 4).

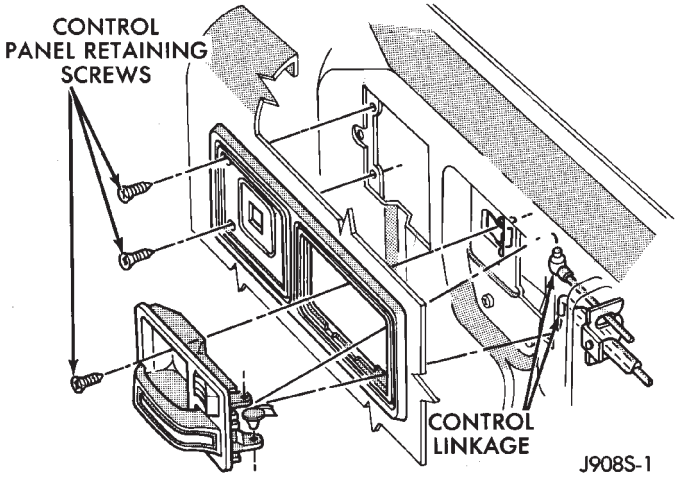

Fig. 4 Power Window Control Panel Removal/ Installation

(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. 5).

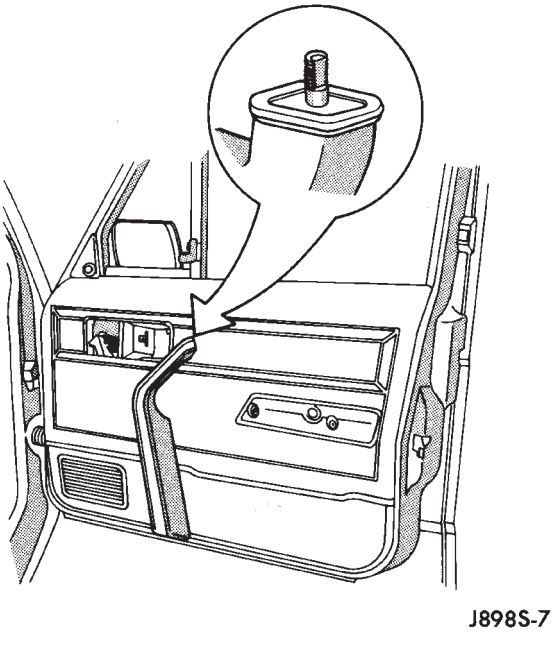

Fig. 5 Armrest Retainer Clip

(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 blade tool (Fig. 6).

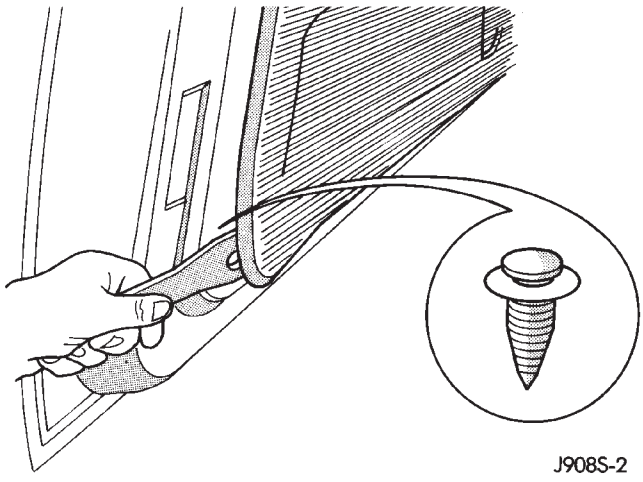

Fig. 6 Trim Panel Removal

(8) Remove the plastic water dam sheet.

(9) Grind the heads off 2 rivets holding reinforcement to door (Fig. 8). Knock rivets out with a hammer and punch.

(10) Adjust window to allow access to Torx head screw (Fig. 7).

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

(12) Remove door glass attaching Torx head screw (Fig. 7).

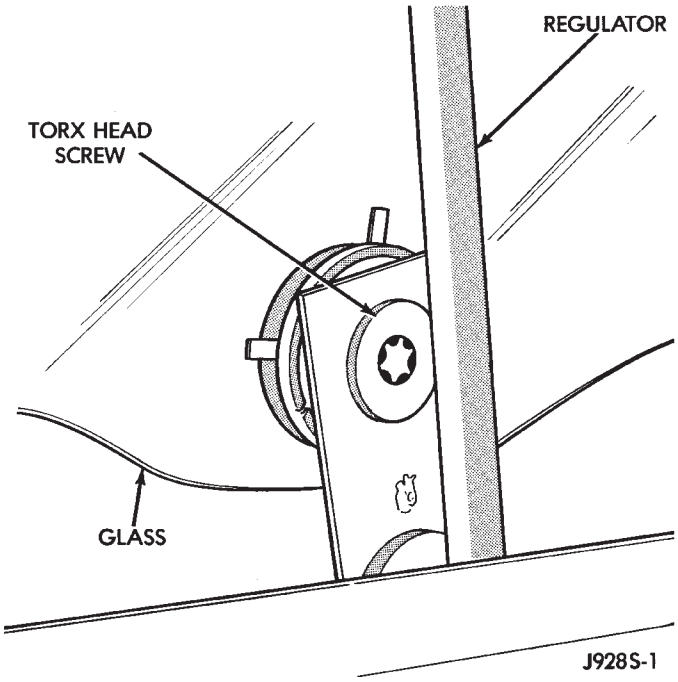

Fig. 7 Remove/Install Glass Attaching Screw

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

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

(15) Remove remaining window regulator attaching screws (Fig. 8).

(16) Remove window regulator.

INSTALLATION

(1) Place regulator inside door.

(2) 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.

(3) Connect wire harness connector to regulator.

(4) Attach door glass with Torx head screw (Fig. 7). Tighten door glass screw to 3.3 N·m (30 in. lbs.) torque.

(5) Install the last 2 screws.

(6) Using 3M 08044 or 3M 08041 adhesive/sealant, install plastic water dam sheet.

(7) Place trim panel in the installation position and press in nylon retainers.

(8) Install the armrest.

(9) Install latch release assembly and control panel.

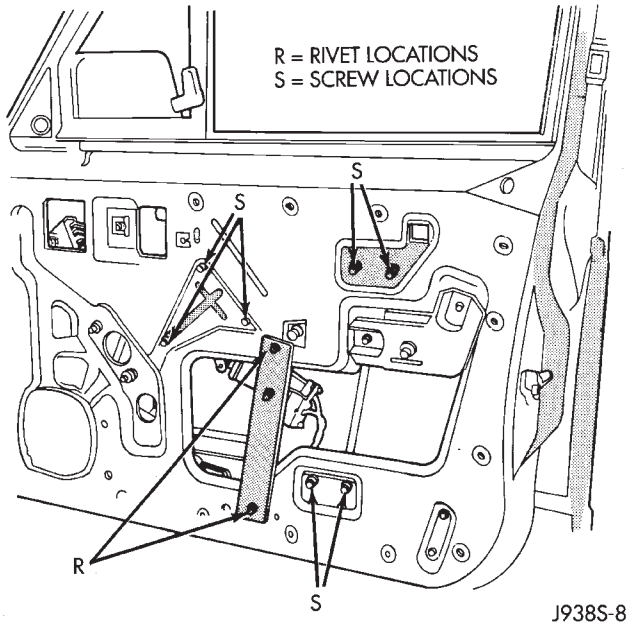

Fig. 8 Window Regulator Removal