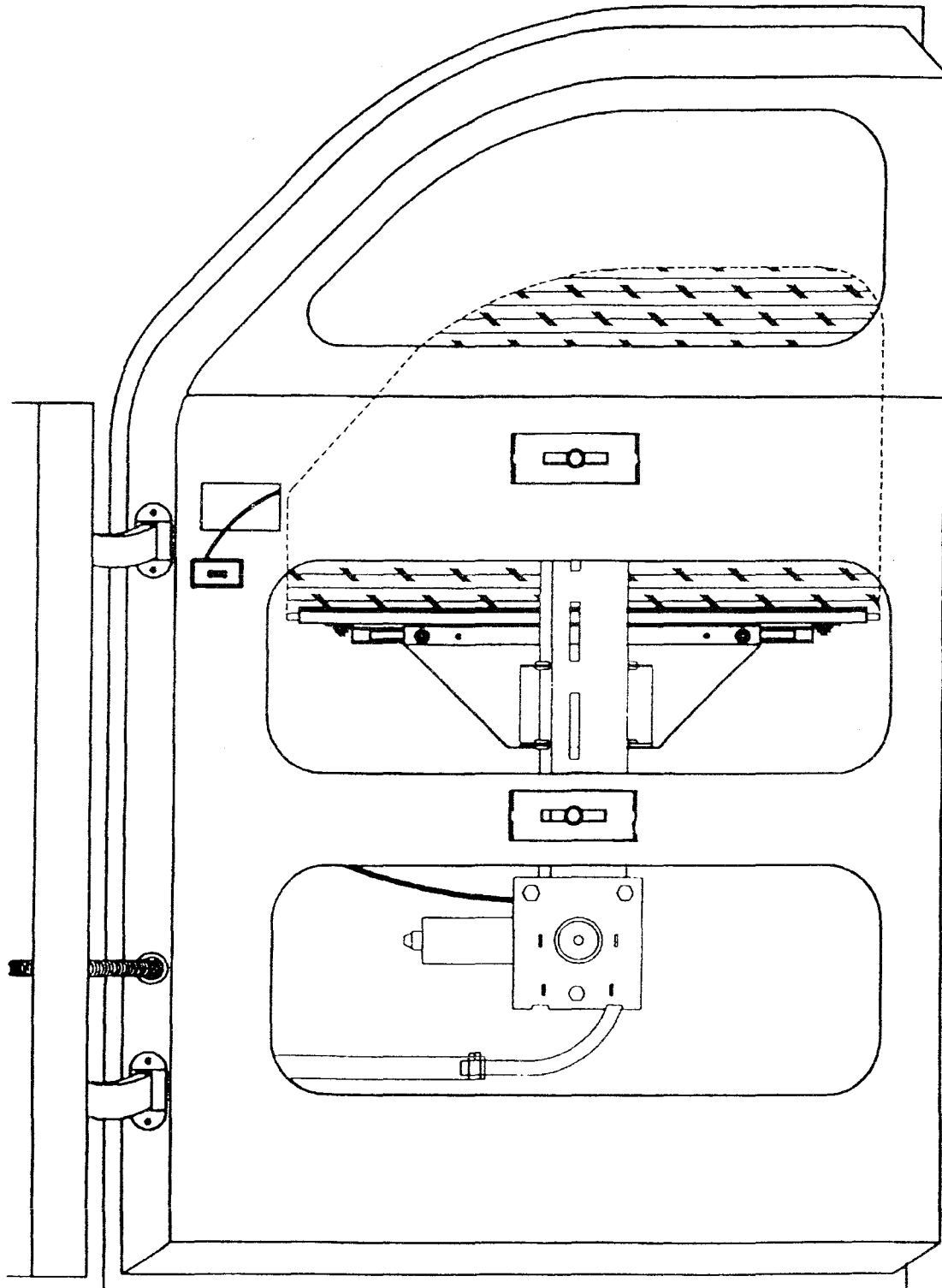




Specialty Power Windows®

POWER WONDER LIFT™ INSTALLATION INSTRUCTIONS



*****IMPORTANT*****
READ CAREFULLY

READ THE INSTRUCTION BOOK CAREFULLY before trying to assemble and install your Power Wonder Lift window kit. Should you encounter any difficulty in the installation and or operation of your unit, please re-read the instruction book and watch the shop installation video. Pay close attention to section 2 and 10. You must have proper fitting glass and properly aligned run channels. Make sure that all electrical connections are solid. You must have a good electrical ground.

**WE CANNOT ACCEPT THE RETURN OF ANY PRODUCT WITHOUT
A RETURN GOODS AUTHORIZATION ISSUED BY US.
CONTACT OUR TECH HELP / WARRANTY DEPARTMENT
AT 478-994-9248 1:30-4:30 PM EASTERN.**

FOR PROPER INSTALLATION, PLEASE READ AND UNDERSTAND INSTRUCTIONS
BEFORE STARTING INSTALLATION.
ILLUSTRATIONS ARE NOT TO SCALE.

1. Remove door upholstery/trim panel. Remove manual window regulator and lower glass stop.

2. Make sure you have good felt run channels. Check to be sure the window glass fits the window opening properly. The most common problem with poor window operation is poor fitting glass. The run channels at each end of the door glass must be parallel and the glass must fit between the run channels with no measurable movement front to rear. With the glass in the 1/2 or 3/4 up position, stand at the end of the door and sandwich the glass between your hands and push and pull the glass front to rear. You should have no noticeable movement. If measurable movement is noticed here, your glass is cut too short (front to rear) or your run channels need adjusting. If you do not have adjustable run channels and your glass is too short, you will have to make a new glass template and have a new glass cut to the correct size. If your glass seems to fit too tight in the felt run channels, check to see if the run channels are parallel. If the run channels are parallel then try working some powdered graphite into the felt run channels. ****NOTE**** Never use wet lubricants because they will attack the adhesive holding the felt and will attract and hold dirt. If your glass is too wide take it to a glass shop and have them run the front and rear edge of the glass across their belt sander. Be careful not to overdo this.

3. After the glass fits properly in the run channels, position the glass in the down position. Then make a mark at the bottom of the glass on the inner door panel as shown in (Fig 1) or (Fig 1-A). Remove door glass after making these marks.

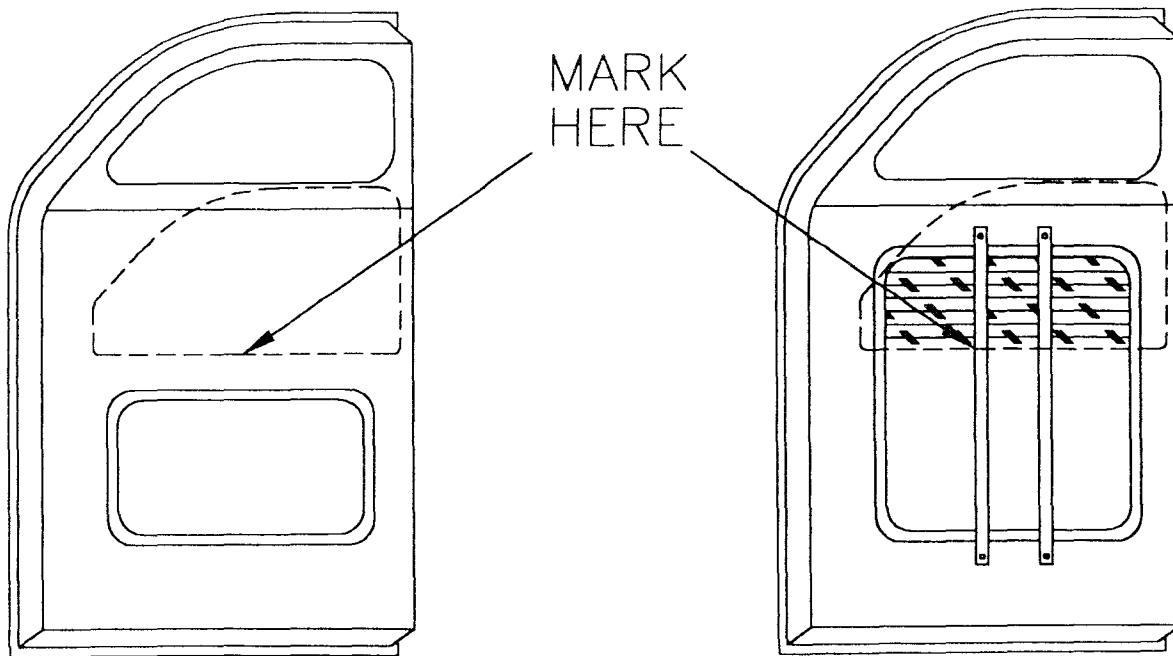
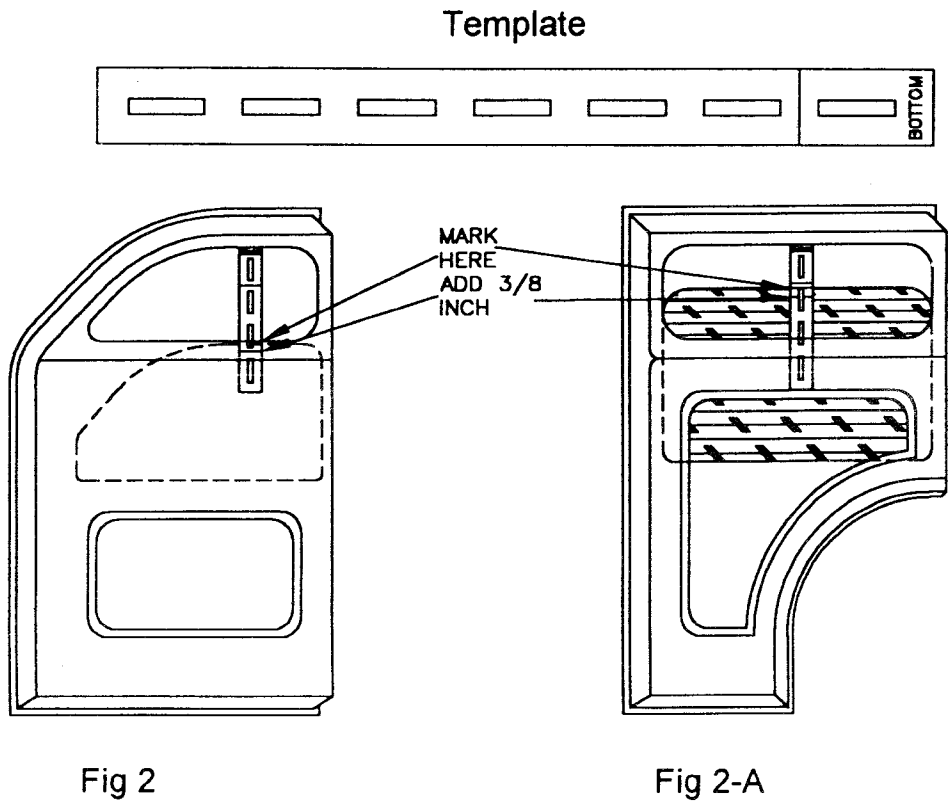


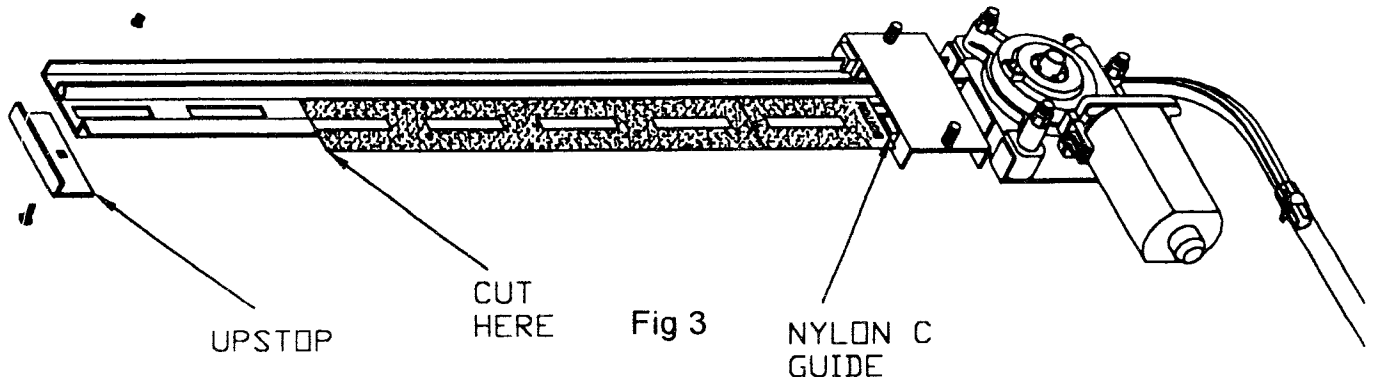
Fig 1

Fig 1-A

4. Remove the template from the PWL Kit. Insert bottom of template into upper glass felt run channel. Mark template where the edge of the door crosses the template, then add 3/8" for vertical adjustment of the regulator. (Fig 2) Shows how to mark the template for determining lift on vehicles where the window goes all the way down. (Fig 2-A) Shows how to mark the template where the window only goes part way down. After adding the 3/8", draw a line across the template and cut the template to this length.



5. The regulators must be cut to the proper length for your vehicle. Place the template on top of the regulator nylon guide as shown in (Fig 3). The regulator must be in the fully down position before cutting to the correct length. Cut straight across the regulator on the end of the template. Remove end cap/up stop and reinstall on the new end of the regulator. This may require drilling if the stop carriage bolt does not align with a pre cut slot.



6. (Fig 4) Shows how the cut template is used to determine the best location for upper and lower mounting points. Make sure measurements are made in the center of the glass opening, you don't have to be precise since there are vertical and horizontal adjustments. The template has a mark that is approximately 3 1/2" from the bottom of the template. Place this mark on the previously marked bottom of glass location in (Fig 1).

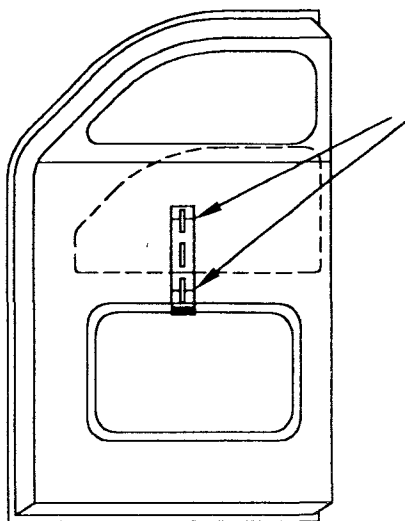


Fig 4

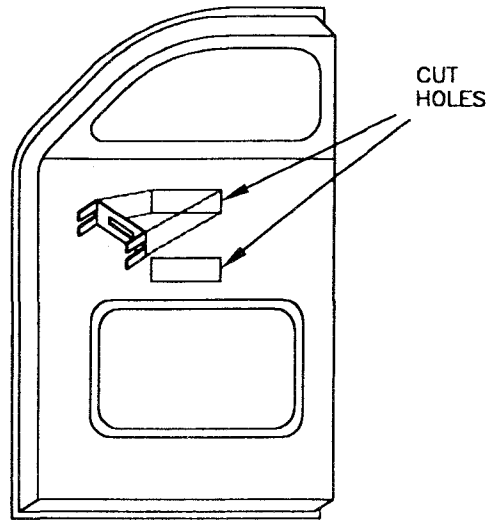


Fig 5

7. Use adjustable mounting bracket as a guide to mark on inner door, then cut holes in inner door to fit adjustable mounting brackets as shown in (Fig 5). (Fig 1-A) Shows how to use two pieces of flat stock to provide a suitable mounting surface for lower universal mounting bracket in a door that has a big opening. (Fig 6) Shows alternative lower mount that is easily made (not provided).

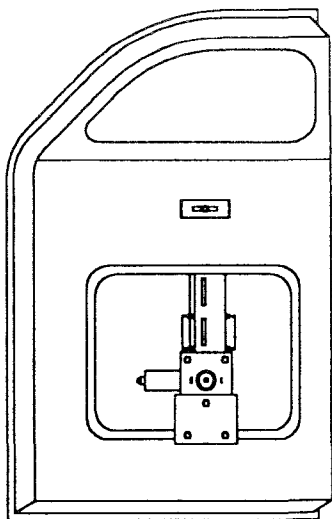


Fig 6

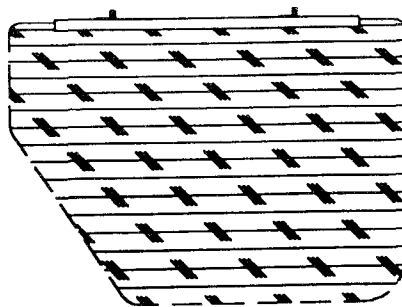


Fig 7

8. Using glass setting tape provided, install new bottom glass channel (provided) as shown in (Fig 7). Install channel close to center. Reinstall the glass in the door and hold it in the up position by either scotching it with a piece of rubber hose wedged between the glass and inner panel or have someone hold it.

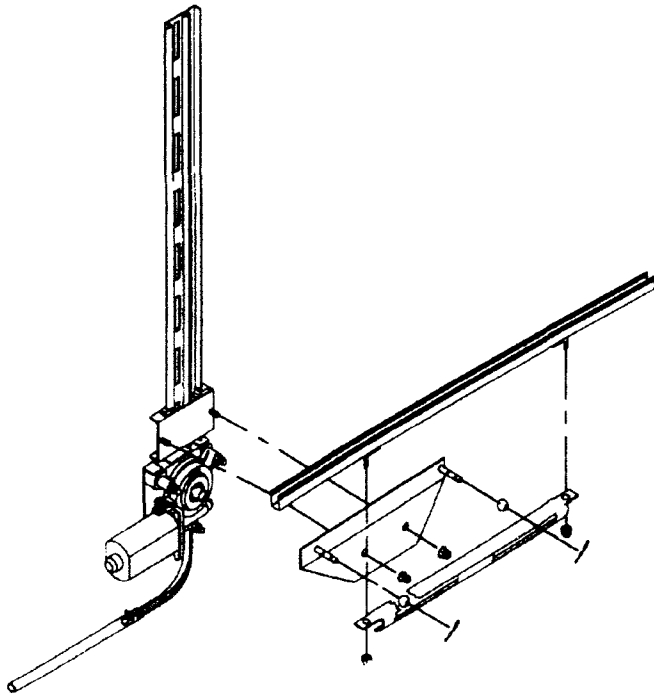


Fig 8

9. Before installing regulator assembly, using a light to medium lithium grease, lubricate all pivot points, rollers, and slide channels. Attach lift bar and slotted tube to the regulator. See (Fig 8). Mount assembly in the door and bolt to the mounting brackets. Mount glass to the lift assembly. On cabriolets and convertibles you may need to drill a hole in shoulder pin closer to the tube for the hairpin. This gives the glass less movement. If the pin has an inboard groove use it. All others should use outer groove for hairpin.

10. Temporary wiring should be used at this point. Use motor test lead (provided) and a temporary 12VDC power source (NOT A Battery Charger) to finish installation. After connecting motor test lead to the motor, place white wire to -12V and black wire to

+12V. This should make window go up. Do this slowly by touching the black wire momentarily to +12V. Watch window regulator clearance as window goes to the fully closed position into the top window felt. With window in fully closed position, tack weld the top mounting bracket. Always protect glass while welding. Now reverse the black and white wires for the window to go in the down position. In the down position, tack weld lower mounting bracket, if used. See (Fig 9). If you don't have a welder or if you have fiberglass doors, upper and lower mounting brackets must be bent and bolted or fiber glassed as shown in (Fig 9-A). After all adjustments have been made, make sure all hardware is tight. Window should go up and down smoothly.

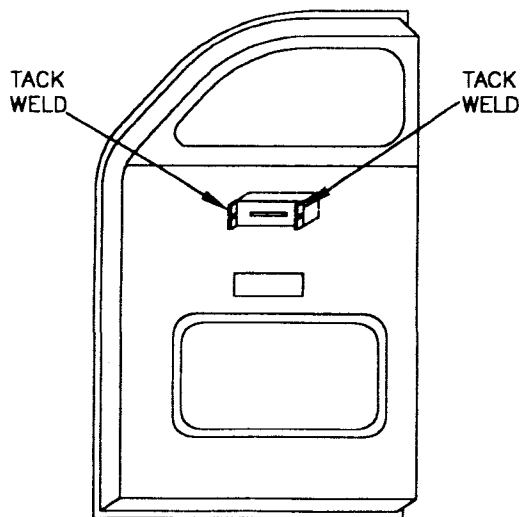


Fig 9

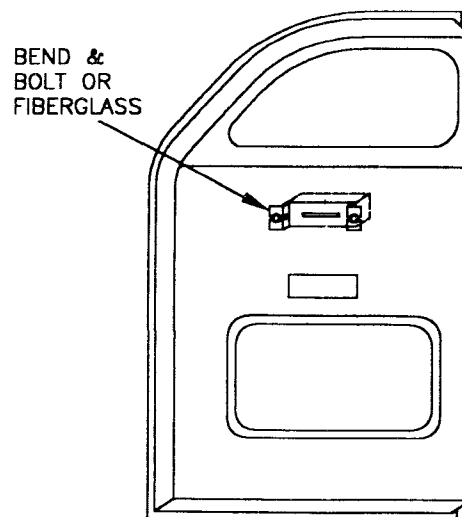


Fig 9-A

Flexible Wire Conduit (FWC) Installation

11. Wiring harness is now ready for routing into inside of vehicle. "Specialty Power Windows" also provides a Flexible Wire Conduit (FWC) in the PWL kit for a safe and clean looking route for wiring into almost any door.

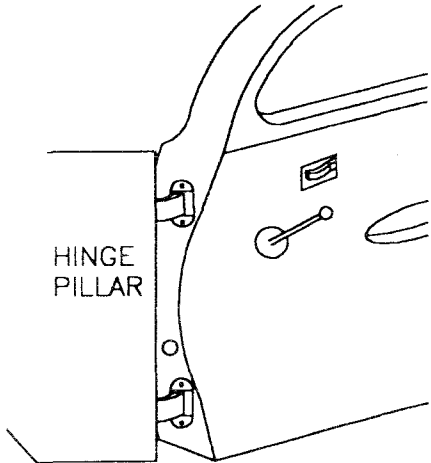


Fig 10

12. To install the flexible wire conduit in the passenger's side of vehicle, open both right and left doors all the way. Visually look across front edge of door pillar from drivers side. Notice widest point visible on opposite door. This will be the location for the FWC installation. This is usually just above the lower door hinge. Mark a position where the entire grommet or bushing can be placed in this area as close to the inside edge of the door and hinge pillar as possible, without interfering with the door or hinge pillar reinforcements. See (Fig 10). Use the same procedure for the driver's side installation. The FWC must slide into either the door or the hinge pillar. There must be sufficient room to allow free movement so the wiring can be safely routed inside the door and hinge pillar. Decide now

whether the conduit will slide into the door or hinge pillar. In most cases, sliding into the door works best. See (Fig 11) and (Fig 11-A). Holes must align straight across from each other for proper operation.

PREFERRED
INSTALLATION

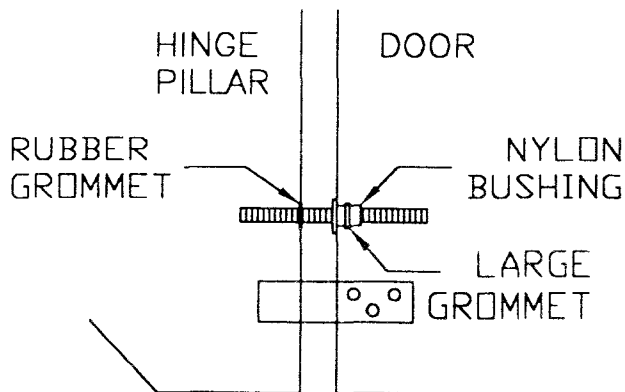


Fig 11

ALTERNATIVE
INSTALLATION

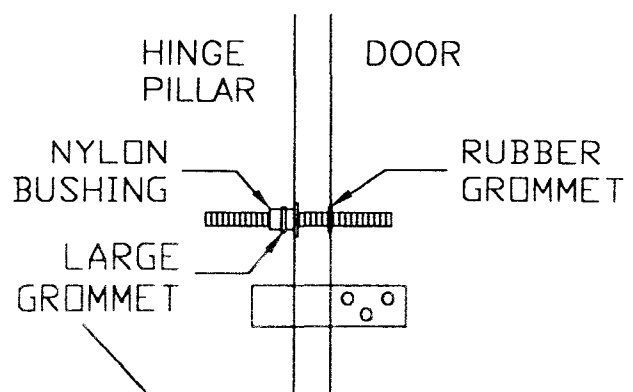


Fig 11-A

One way to do this is to drill a 1/8" hole centered in the FWC location on the door jamb (Fig 12). Close the door and reach inside the door panel with a scribe or nail and place into 1/8" hole. Make a mark on the hinge pillar. Open door and use a hole saw to cut proper holes for the nylon bushing and rubber grommet. Use 3/4" hole saw for the rubber grommet. Use 15/16" hole saw for the nylon bushing. De-burr holes with round file or de-burring tool. Install the rubber grommet and nylon bushing into the proper holes (Fig 13).

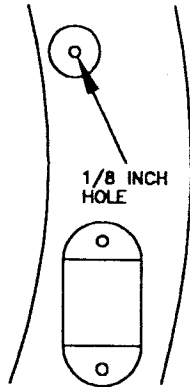


Fig 12

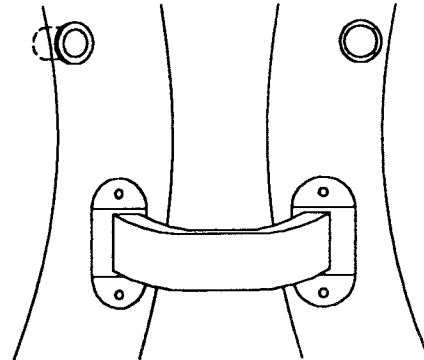


Fig 13

A second larger rubber grommet is supplied that slips over the nylon bushing from the backside to retain the bushing and to prevent rattles (Fig 11). You may have to use adhesive in some applications. For extra strength in wood framed doors you may use a sheet metal screw to pin the nylon bushing from the side. Drill a pilot hole before inserting screw and counter sink the hole into the side of the bushing. Be careful not to run the screw through the bushing or distort it. Install the stainless steel flexible conduit into the rubber grommet first. Use a little soapy water to ease installation. Twist the conduit and use pressure to pass the conduit fully through the grommet (about 1"). Bend flexible conduit until it slides in to the nylon bushing. The conduit should be fully inserted into the nylon bushing when the door is wide open. Using the wiring diagram, slide wires through the conduit and make sure they are not going to rub or pinch. Use wire ties to keep wires in place. The finished operation should look good and operate without kinking or binding (Fig 14). No lubrication is required.

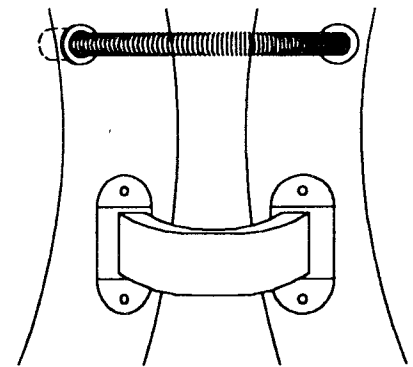


Fig 14

Now locate a suitable place for the power window switch. If using the same upholstery/trim panel, you may want to place the switch in the hole where the window handle used to be located. Cut a hole in the metal inner door large enough to clear the switch, approximately 2" X 3". Use the plastic edge guard provided on the edge of the cut-out to prevent chafing or possible shorting of wiring harness (Fig 15). Remove and keep the motor test lead. Connect switches and motors to the wiring harness. Connect sections of wiring harness per enclosed wiring diagram. Use wire ties to secure the harness from interfering with window operation. Be sure to get a good chassis ground and make all connections solid. This completes installation.

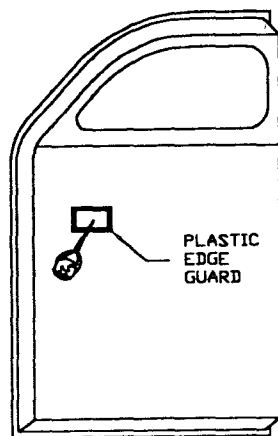


Fig 15



Specialty Power Windows

FOR TECHNICAL HELP CALL:
478-994-9248
1:30PM - 4:30PM EASTERN



SPECIALTY POWER WINDOWS®

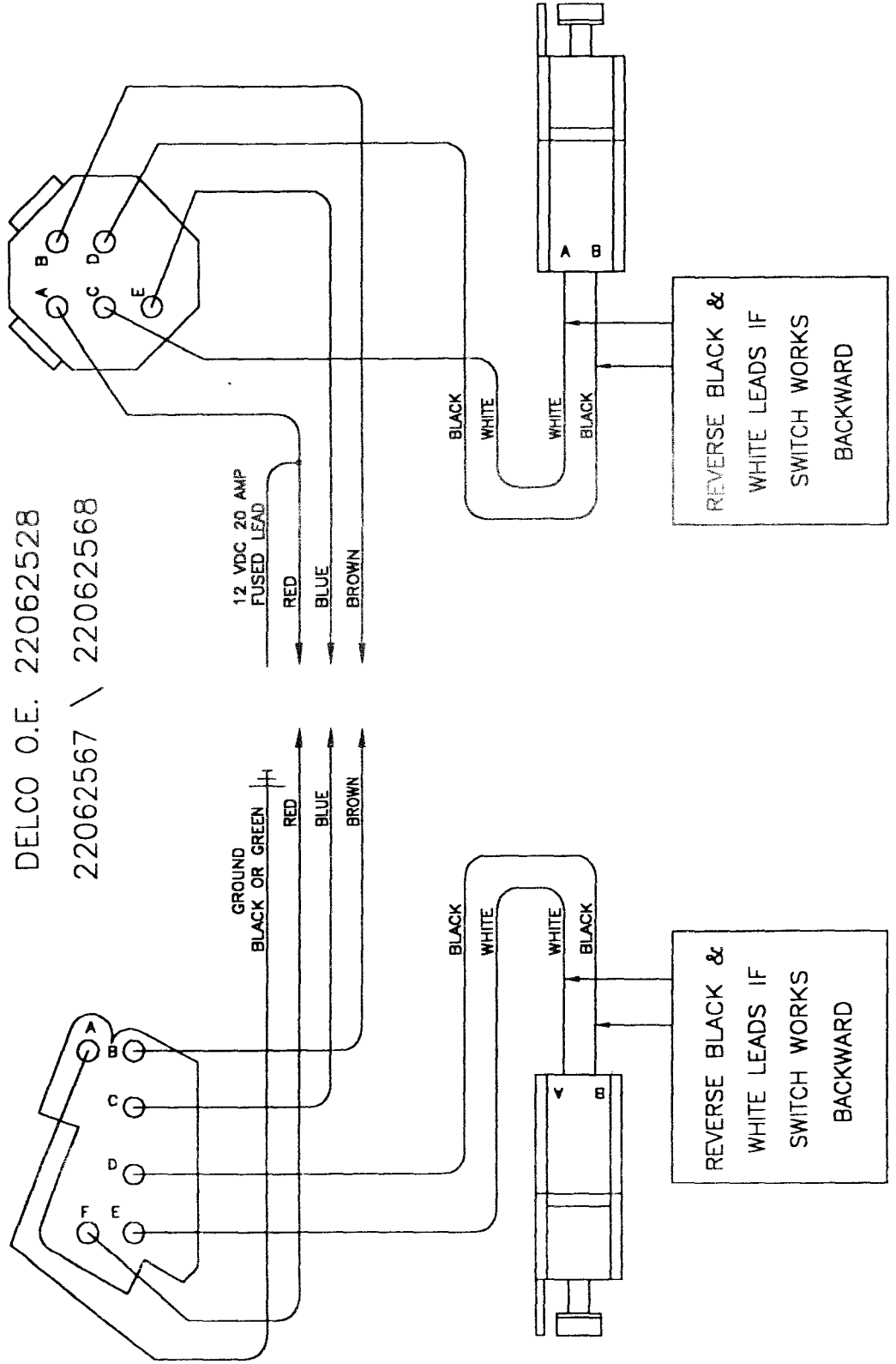
WIRING FOR TWO WINDOWS

LEFT FRONT

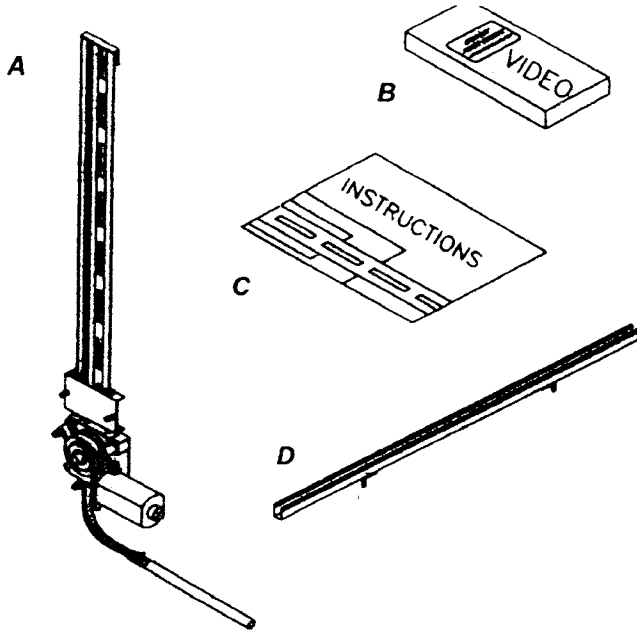
WINDOW LIFT MOTORS

RIGHT FRONT

DELCO O.E. 22062528
22062567 \ 22062568



PWL-2C(POWER WONDER LIFT 2 WINDOW KIT COMPLETE)



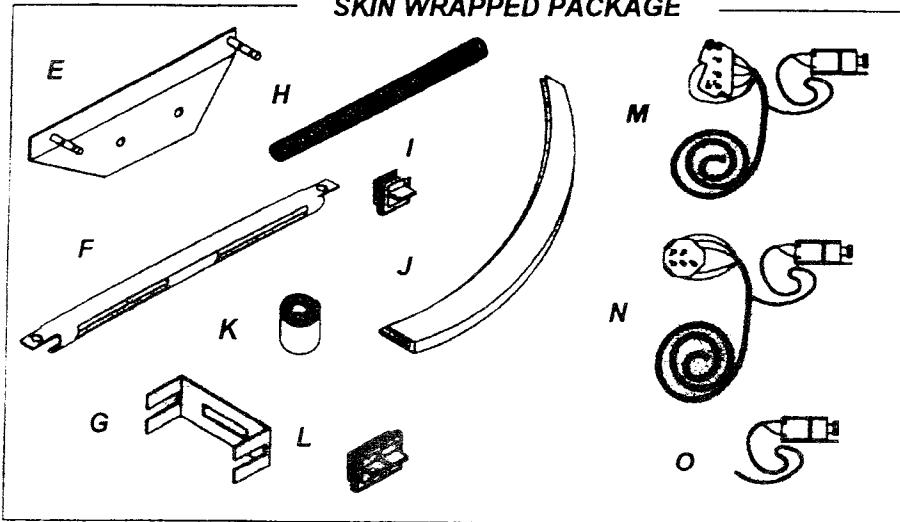
A.) 2 - PWL REGULATORS - 1 LEFT & 1 RIGHT

B.) 1 - VIDEO

C.) 1- SET WRITTEN INSTUCTIONS & TEMPLATE

D.) 2 - BOTTOM GLASS CHANNELS

SKIN WRAPPED PACKAGE



E.) 2 - PWL LIFTBARS

F.) 2 - 13" COINED SLOTTED TUBES

G.) 4 - SQUARE U-SHAPED BRACKETS

H.) 2 - S/S FLEXIBLE WIRE CONDUITS

I.) 1 - SINGLE BUTTON SWITCH

J.) 24"- EDGE GUARD PROTECTOR

K.) 48"- ROLL GLASS CHANNEL FELT

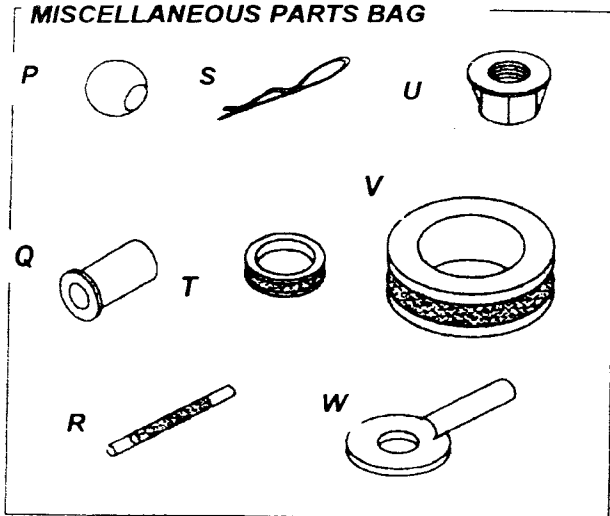
L.) 1 - DOUBLE BUTTON SWITCH

M.) 1 - LH SIDE OF 2-1 WIRE HARNESS

N.) 1 - RH SIDE OF 2-1 WIRE HARNESS

O.) 1 - MOTOR TEST LEAD

MISCELLANEOUS PARTS BAG



P.) 4 - NYLON BALLS

Q.) 2 - SMALL FWC NYLON BUSHINGS

R.) 4 - STANDARD BUTT CONNECTORS

S.) 5 - HAIRPIN COTTERS

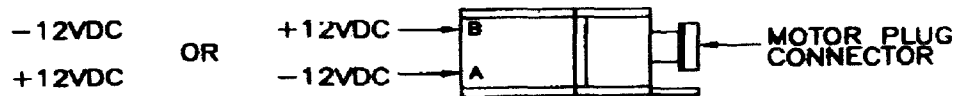
T.) 2 - SMALL FWC RUBBER GROMMETS

U.) 5 - 1/4-20 SERRATED FLANGE NUTS

**V.) 2 - XXL FWC NYLON BUSHING
RETAINING RUBBER GROMMETS**

W.) 1 - RING TERMINAL

TESTING POWER WINDOW MOTOR (SPECIALITY POWER WINDOWS MOTOR: OEM GM / DELCO TYPE)



These power window motors are not housing grounded. They require +12VDC to one motor pin and -12VDC to the other motor pin. The polarity is reversed to change the direction of the motor.

To test the motor, apply 12VDC directly to the motor. Use the motor test lead supplied with your kit. Use either a 12 volt power supply unit or a fully charged 12 volt battery. Do not use a battery charger.

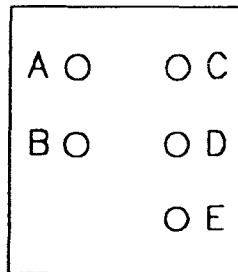
If your motor runs properly and lifts the window properly with this test but does not run or lift properly when connected to the wiring harness check the following:

- 1) Switches, per the switch test guide provided in your kit.
- 2) All wiring connections, including ground wires.
- 3) Automobile's voltage output. Must be at least 12VDC at power window motor connection when window motor is under load.

If your window does not lift properly with the motor test, check for proper glass fit and glass run channel alignment. This is the most common problem. When the glass is in the half way up position there should not be any noticeable glass movement from front to rear. With the glass disconnected from the window regulator you should be able to lift the glass smoothly by grasping it in the middle at the bottom and pushing upwards.

TESTING POWER WINDOW SWITCHES (SPECIALTY POWER WINDOW AND LATE MODEL GM SWITCHES)

SINGLE BUTTON



REAR OF SWITCH

The switch should be disconnected from the wiring harness before testing.

Testing

should be done with a continuity tester or with an ohm meter.

The switch should be viewed from the back per the above drawing.

1) Switch paddle in neutral (center) position:

Continuity between pins A, B.

Continuity between pins D, E.

2) Paddle in up position (viewed from back):

Continuity between pins D, E.

Continuity between pins B, C.

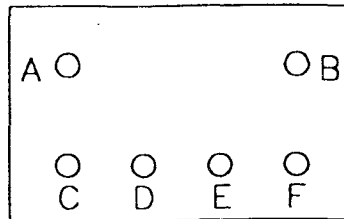
3) Paddle in down position:

Continuity between pins A, B.

Continuity between pins C, D.

TESTING POWER WINDOW SWITCHES (SPECIALTY POWER WINDOW AND LATE MODEL GM SWITCHES)

TWO BUTTON SWITCH



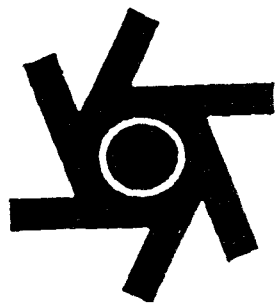
REAR OF SWITCH

The switch should be disconnected from the wiring harness before testing.
Testing should be done with a continuity tester or with an ohm meter.

The switch should be viewed from the back per the above drawing.

- 1) Both switch paddles in neutral (center) position:
Continuity between pins A, C, D, E, F.
- 2) Left paddle in up position (viewed from back):
Continuity between pins A, D, E, F.
Continuity between pins B, C.
- 3) Left paddle in down position:
Continuity between pins A, C, E, F.
Continuity between pins B, D.
- 4) Right paddle in up position:
Continuity between pins A, C, D, F.
Continuity between pins B, E.
- 5) Right paddle in down position:
Continuity between pins A, C, D, E.
Continuity between pins B, F.





**Specialty
Power
Windows®**

**LIFETIME
LIMITED WARRANTY**

From the date of original purchase, Specialty Power Windows will either repair or replace, at its option, free of charge F.O.B. factory, any part or parts found to be defective in materials or workmanship. Transportation charges under this warranty must be paid by the purchaser.

The warranty will be considered void on any part which has become inoperative due to misuse, accidents, alterations (other than according to our instructions) or if the unit has not been installed in accordance with instructions.

All warranties or returns must be directed to:



Specialty Power Windows

140 Industrial Park Drive

P. O. Box 1486

Forsyth, GA 31029

(478) 994-9248

All returns must have a Return Goods Authorization Number.

Call 478-994-9248 for RGA # prior to returning item.