



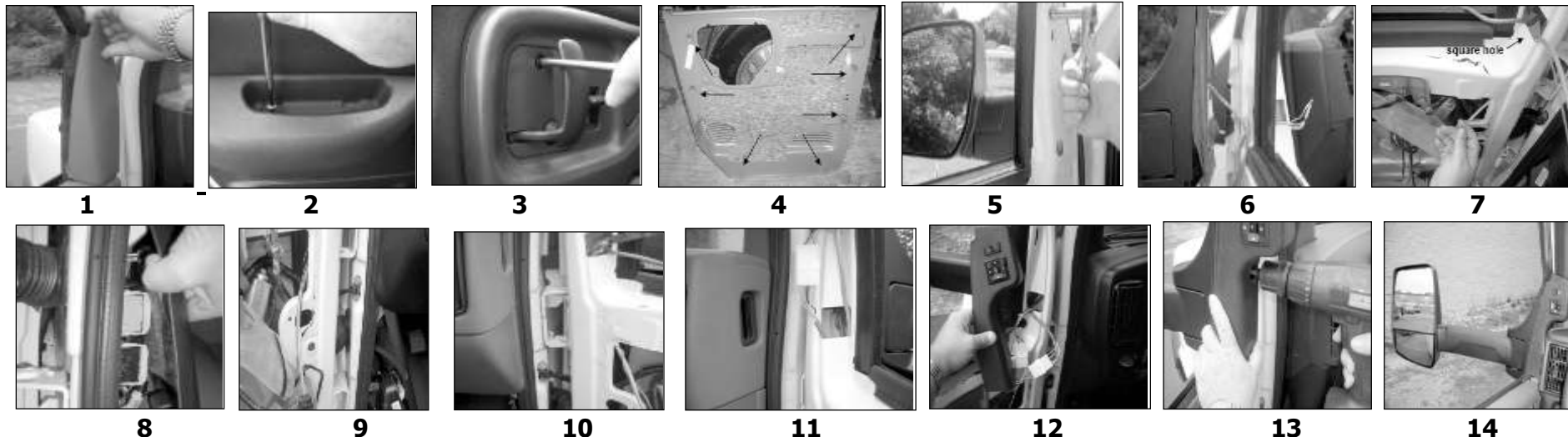
2020 SS Shuttle Bus Mirror Information Instruction sheet #7185012

Read all instructions before proceeding with mirror installation.

2004 (& newer) GM/Chevrolet Driver's Side Door Mirror Installation Instructions

Tools Needed for Manual Installation: 7/16 Deep Well Socket (magnetic preferred), Socket Driver

For Electric Include: # 2 Phillips Screwdriver, Flathead Screwdriver, Volt Meter, Drill with 3/32 Bit, TX20 Torx Screwdriver



IMPORTANT NOTE: The remote control/heater switch kit will be provided with wiring instructions. Use these in addition to the instructions shown below.

***Manual Mirror Installations need to only use steps 1, 5, 6**

Steps correspond to photos above

(1) Pry off the interior sale molding as shown. **(2)** Remove the arm rest. **(3)** Remove the screw and trim piece behind the door handle. Lift the cover plate away from the door. **(4)** Carefully pull up on the door panel. Do not damage the 7 mounting clips. **(5)** Using a 7/16" deep well socket wrench remove the original mirrors. Do not discard the mounting nuts. **(6)** Attach the original mounting gasket to the new base. Feed the wire harness through the door (if electric). Mount the mirror and tighten the nuts to 75-100 in-lbs. **Caution: Mirror must fit flush against the door, and wire harness cannot be pinched or kinked.** Close the door and pivot the mirror assembly forward and backward to insure that the mirror is seated properly, then recheck the fastener torque. (if manual install the sale moldings) **(7)** Route the interior wire harness from the square hole into the door. **(8)** Remove side kick panels. **(9&10)** Run wire harness through the door and into the vehicle through the rubber boot. Route the wires under the dash using wire ties (not supplied). **(11)** Install male and female plug housings (see wire switch drawing) for both driver and passenger sides. **(12)** Connect harness to switch assembly. **(13)** Use new switch plate molding as a template to mark mounting screw location. Mount switch plate using screw included. **Caution: Do not damage wiring when drilling hole.** **(14)** Replace door panel and kick panels. See the last page for mirror head/glass adjustment information

Ford Driver's Side Door Mirror Installation Instruction Photos



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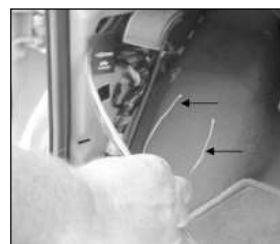
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2008 (& newer) Ford Driver's Side Door Mirror Installation Instructions

Read all instructions before proceeding with mirror installation.

Tools Needed for Manual Installation: 7/16 Deep Well Socket (magnetic preferred), Socket Driver

For Electric Include: # 2 Phillips Screwdriver, Flathead Screwdriver, Volt Meter, Drill with 3/32 Bit, TX20 Torx Screwdriver

IMPORTANT NOTE: The remote control/heater switch kit will be provided with wiring instructions. Use these in addition to the instructions shown below.

***Manual Mirror Installations need to only use steps 1, 2, 12, 13, 14**

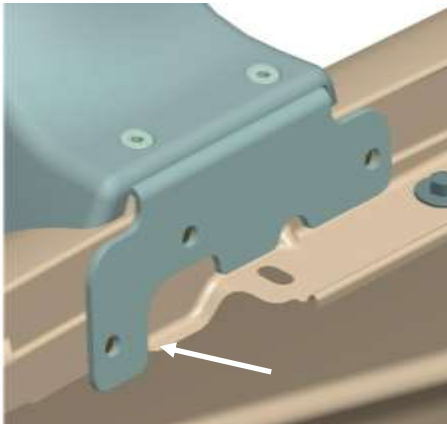
Steps correspond to photos on page 2

(1) Pry off the interior sale molding as shown. **(2)** Remove the Phillips screw at top of door panel. **(3)** Remove cap and Phillips screw from the lower corner of the door. **(4)** Remove the Phillips screw from door handle. **(5)** Remove the door handle trim piece using a flathead screwdriver. **(6)** Remove the Phillips screw as shown. **(7)** If vehicle has manual windows remove window crank handle by prying off outer molding and removing Torx screw. **(8)** If vehicle has power windows pry up and remove the window and lock panel using a flathead screwdriver. **(9)** Remove the Phillips screw as shown and remove the door panel by lifting up and out. **(10)** Use the Torx screwdriver to remove the 4 speaker screws. **(11)** Unplug the original mirror. **(12)** Using the socket wrench remove the original mirrors. **Note: Do not discard the mounting nuts!** **(13)** Position the gasket. **(14)** Fasten the mirror to the door, 75-100 in-lbs. of torque on the mounting nuts. **Caution: Mirror must fit flush against the door, and wire harness cannot be pinched or kinked.** Close the door and pivot the mirror assembly forward and backward to insure that the mirror is seated properly, then recheck the fastener torque. (if manual install the sale moldings) **(15)** Route mirror head wires through hole in door. **(16)** Route wires in front of window track for clearance. **(17)** Rout the wire harness inside the rubber boot from door into body. **(18)** Remove the hood release panel. **(19)** Remove the side kick panel cover and feed the harness through the hole. (Driver Side) Separate green wire with yellow stripe (power) and black (ground) wire from harness. Route and attach power wire to a 12 volt DC power source using a 10 amp fuse. Route and attach the ground wire. **(20)** Remove the vehicle engine cover and feed the wire harness toward passenger side along the top of the engine compartment. Replace engine cover. **(21)** Use new switch plate molding as a template to mark mounting screw location. Plug in both wire harness mount switch plate. **Caution: do not damage wiring when replacing fastener for sail molding.** Replace kick panel and door panes in reverse procedure as removed. Snap on interior sale molding.

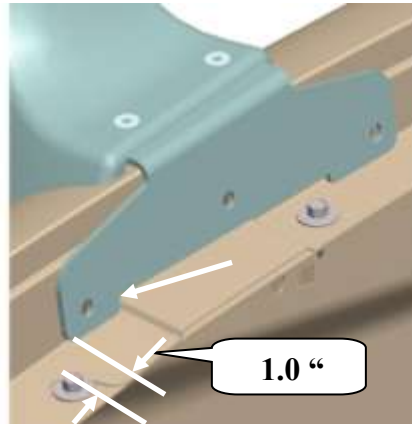
Right Side Fender Mount Installation Instructions

Read all instructions before proceeding with mirror installation.

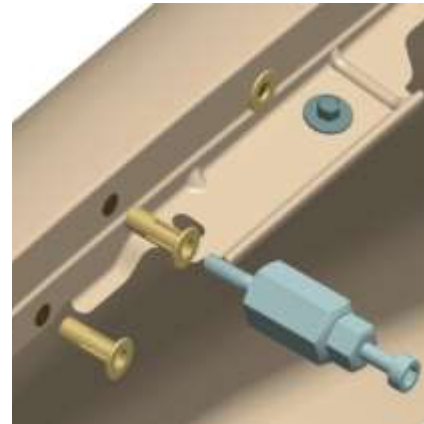
Tools Needed: Drill, (11/32", 3/8", 9/32") drill bits, # 2 Phillips Screwdriver, Riv-Nut installation tool with 1/4-20 thread 1" hole shooter (if Remote Control installation), 5/32" Hex Wrench



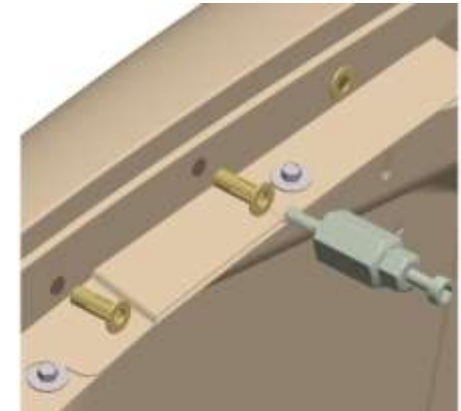
(1) Ford



(1) GM



(2) Ford



(2) GM

CAUTION – Before drilling any holes check inner fender for hoses, wires etc.

Steps correspond to photos for Ford or GM

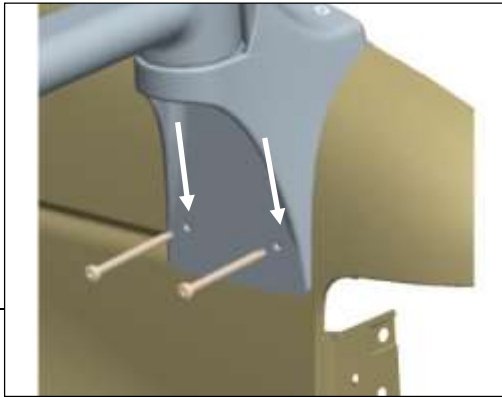
(1) Ford- Open hood, and on passenger side, identify the hood flange (see arrow) on the inner part of the fender. Place mirror assembly bracket on the fender making contact with hood flange for proper mirror location as shown in photo.

(1) GM- Measure 1.0" from flange bolt to front edge of bracket for proper mirror location as shown in photo. Keeping the assembly in place, mark location of (3) mounting holes, using the mounting bracket as a template. Remove assembly, center punch hole location and drill holes using a 11/32" flat bottom drill bit. **CAUTION- It is important to drill no deeper than 1-1/2" so the outside fender skin is not penetrated.**

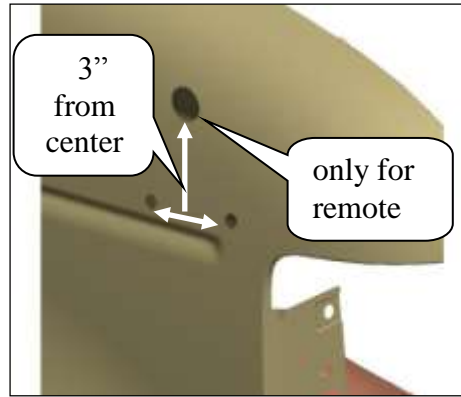
(2) Ford/GM- Using recommended Riv-Nut (1/4"-20) installation tool, tighten and secure the Riv-Nuts into fender wall.

(3) GM- Drill 9/32 thru all 3 three fender skins. Drill 3/8" hole no deeper than 1-1/2" thru outer and middle fender skins. This is necessary so the tube spacers will make contact with the inner fender skin. Install machine screws and hex nuts.

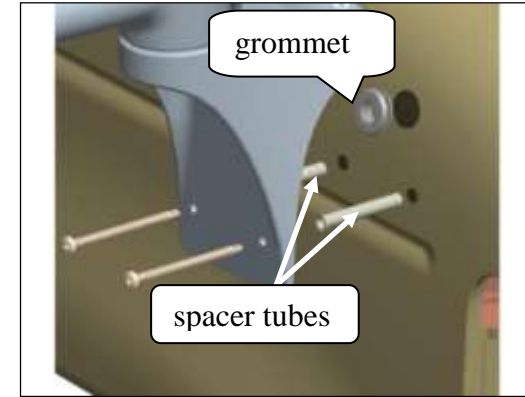
Fender Mount Installation Instructions Continued



(5)



(6)



(7)

Photos for both Ford and GM Installation

(4) Ford- We have included drill point screws and machine screws with nuts. On some vehicles depending on accessories near the inner fender skin in the engine compartment you may not have access to install the nut on the machine screw. If insufficient room, use the self drilling screws. Follow steps 5, 6 and 7. If sufficient room, use the machine screw and nut. Drill 9/32 thru all 3 three fender skins. Drill 3/8" hole no deeper than 1-1/2" thru outer and middle fender skins. This is necessary so the tube spacers will make contact with the inner fender skin. Install machine screws and hex nuts.

(5) Ford/GM- Place mirror assembly back on to fender and loosely assemble upper bracket using only (2) 1/4" x 3/4" mounting bolts and lock washers provided. On the outside of fender, locate and mark the 2 mounting holes using the casting as a template. Note: Push down on assembly to get the best fit to the fender profile while marking holes. Remove assembly from fender. Center punch hole location and drill holes using a 5/32" flat bottom drill bit to 1-1/2 depth. **CAUTION- it is important to drill no deeper than 1-1/2" to avoid damage to engine compartment. NOTE- the bottom outside holes will penetrate the outer fender as well as an intermediate "middle" fender wall.** This is necessary so tube spacers will make contact with the inner third fender panel.

(6) Ford/GM- If Remote Control, measure 3" up from center of two lower holes (see arrows) and drill a pilot hole for the wire harness. For the two lower holes use a 3/8" drill to the same 1-1/2" depth to enlarge the holes. If Remote Control enlarge the single upper hole to 1" using a using a 1" hole shooter.

(7) Ford/GM- There are two length spacer tubes provided. Before inserting tube spacers, wire harness and rubber grommet, apply silicone sealer around holes. Insert tube spacers in (2) lower holes, placing the longer one in the rear hole and the shorter spacer in the front hole. If Remote Control place rubber grommet into the 1" hole before routing wire harness thru hole into fender. Place mirror assembly on to fender, route wire harness into fender as required. Opening passenger door you will find a grommet covering an entrance hole into the passenger compartment. Remove grommet and run the wire harness into opening and plug connectors together from the mirror harness to the harness from the switch assembly. Finish attaching mirror assembly to fender. Starting with upper hood bracket use (3) 1/4" x 3/4" mounting screws and lock washers provided and tighten to 75-100 inch lbs of torque into Riv-Nuts. Attach and tighten the two remaining 3-1/2" screws to outside lower mounting holes to complete assembly. Re-check all screws for tightness. Rotate (pivot) arm several times to ensure proper operation.



2020 SS Shuttle Bus Mirror Replacement Parts

**** Note: Under the Velvac mirror head is a silver identification tag. The tag will give the Velvac mirror assembly number. The number can be entered into the search box of our online RV site "http://www.velvac.com/RVs_only" to locate part numbers for replacement components. Replacement mirror heads and replacement glass kits include installation instructions.**

Superstar Mirror Heads				
Mirror Heads		Description	Glass Kits*	
Left part#	Right part #		Left part #	Right part #
716859	716860	Manual mirror head-black	710143	710144
* Glass kits include flat glass, convex glass with housing and retaining bezel				



Deluxe Mirror Heads					
Mirror Heads		Description	Flat Glass Kits*	Convex Glass Kits*	Convex Repair Kits**
Left part#	Right part #				
716863	716864	flat glass only-no convex-black	709450	n/a	n/a
716861	716862	manual mirror flat and convex-black	709448	709449	709764
716865	716866	remote/heated flat glass-manual/heated convex glass-black	709448	709449	709589
716867	716868	remote/heated flat glass-remote/heated convex glass-black	709448	709449	n/a
* Flat and Convex glass kits include glass, heating element if heated, glass retaining clip- fits left and right					
**Convex repair kits include glass, heating element, actuator (pivot) and retaining clip-fits left and right					





2020 SS Shuttle Bus Mirror Replacement Parts Continued:

Accessories (See specifics in description for applications)	
Part#	Description
747855	switch kit for Ford Econoline includes motor switch, heater switch, cover plate
747856	switch kit for GM includes motor switch, heater switch, cover plate
748304	heat/remote harness from driver to passenger side for either Ford or GM
709743	2 base gaskets for Econoline Van between door and base
408237	8 mirror base mounting studs for Ford
408169	10 mirror base mounting studs for Chevrolet/GMC
404002	8 mirror base mounting nuts
747551	marker light below elbow