

25500242 Rev. B0 0216

Safety Message to Installers and Service Personnel of Emergency Vehicle Safety Equipment

⚠ WARNING

The lives of people depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. In addition, listed below are some other important safety instructions and precautions you should follow:

Before Installation or Service

Qualifications

- To properly install or service this equipment, you must have a good understanding of automotive electrical procedures and systems along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle service manuals when installing equipment on a vehicle.

Electrical Hazards

- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation and safety functions or circuits.

During Installation or Service

- To avoid a battery explosion, always disconnect the negative battery cable first and reconnect it last. Avoid a spark when connecting near or to the battery. The gasses produced by a battery can cause a battery explosion that could result in vehicle damage and serious injury.
- Do not install equipment or route wiring or a plug-in cord in the deployment path of an airbag.
- Before mounting any components, check the manual to be sure that the component you are installing is suitable for use in that area of the vehicle. Many components are not suitable for use in the engine compartment or in other areas subject to extreme environmental exposure.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes to prevent electrical shorts, grommet all drilled holes through which wiring passes. Also ensure that mounting screws do not cause electrical or mechanical damage to the vehicle.

After Installation or Service

- If a vehicle seat is temporarily removed, verify with vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- To ensure proper operation, test all vehicle functions, including horn operation, vehicle safety functions, and vehicle light systems. Ensure that installation has not affected vehicle operation or changed any vehicle safety function or circuit.
- After installation and testing are complete, provide a copy of these instructions to instructional staff and all operating personnel.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

NOTE: The PBX-PIT05 will not fit vehicles with optional factory fog lights or optional front-warning auxiliary lamps (21L).

Unpacking the Product

After unpacking the product, inspect it for damage that may have occurred in transit. If it has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of damage. **Failure to identify damage before installation could lead to rejection of any claim.** Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts listed in Table 1 are included in the package. If you are missing any parts, contact Federal Signal Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT). Disposal of all shipping materials must be carried out in accordance with national and local codes and standards.

Table 1 Parts list and tools needed (Figure 1 on page 3 and Figure 2 on page 4)

Item	Qty.	Description	Tools Needed
1	2	Pit Bar Rail Assembly (driver-side shown)	Ratchet
2	2	Inner Mounting Bracket (driver-side shown)	Screwdriver
3	2	Inner Support Brackets (driver and passenger)	14 mm Wrench
4	2	Long Spacers (PBX-PIT01)	14 mm Socket
5	2	Short Spacers (PBX-PIT01)	Allen Wrench
--	1	M6 Flange Bolt (not shown)	18 mm Wrench
--	1	M6 Flange Nut (not shown)	15 mm Socket
6	2	M12 Flange Bolt	13 mm Socket
7	6	M12 Flange Nut	10 mm Socket
8	2	M12 Long Socket-Head Cap Screw (PBX-PIT01)	8 mm Socket
9	2	M12 Medium Socket-Head Cap Screw (PBX-PIT01)	6 mm Socket
10	4	M12 Washer	Ratchet Extender
11	2	M10 Button-Head Screw	Torque Wrench
12	2	M10 Cupped Washer (6 for PBX-PIT05)	Transfer Punch
13	2	M10 Flange Nut (6 for PBX-PIT05)	Hole Saw
14	4	1.50" Rubber Grommets (PBX-PIT01)	Utility Knife
15	4	M12 Hex-Head Bolt (PBX-PIT05)	
16	4	M10 Hex-Head Bolt (PBX-PIT05)	
17	2	Pit Bar Mounting Brackets (driver and passenger) (PBX-PIT05)	

WARNING

PUSH BUMPER/PITBAR PRECAUTION: Installing a push bumper or pitbar on a vehicle may raise the vehicle's minimum collision speed for airbag deployment. It is imperative that police officers wear safety belts when operating their motor vehicle. Failure to follow this warning may cause serious injury or death.

NOTICE

DRILLING PRECAUTIONS: Before drilling holes, check the area to ensure you do not damage vehicle components. All drilled holes should be deburred and all sharp edges should be smoothed. All wires going through drilled holes should be protected by a grommet or convolute/split-loom tubing.

NOTICE

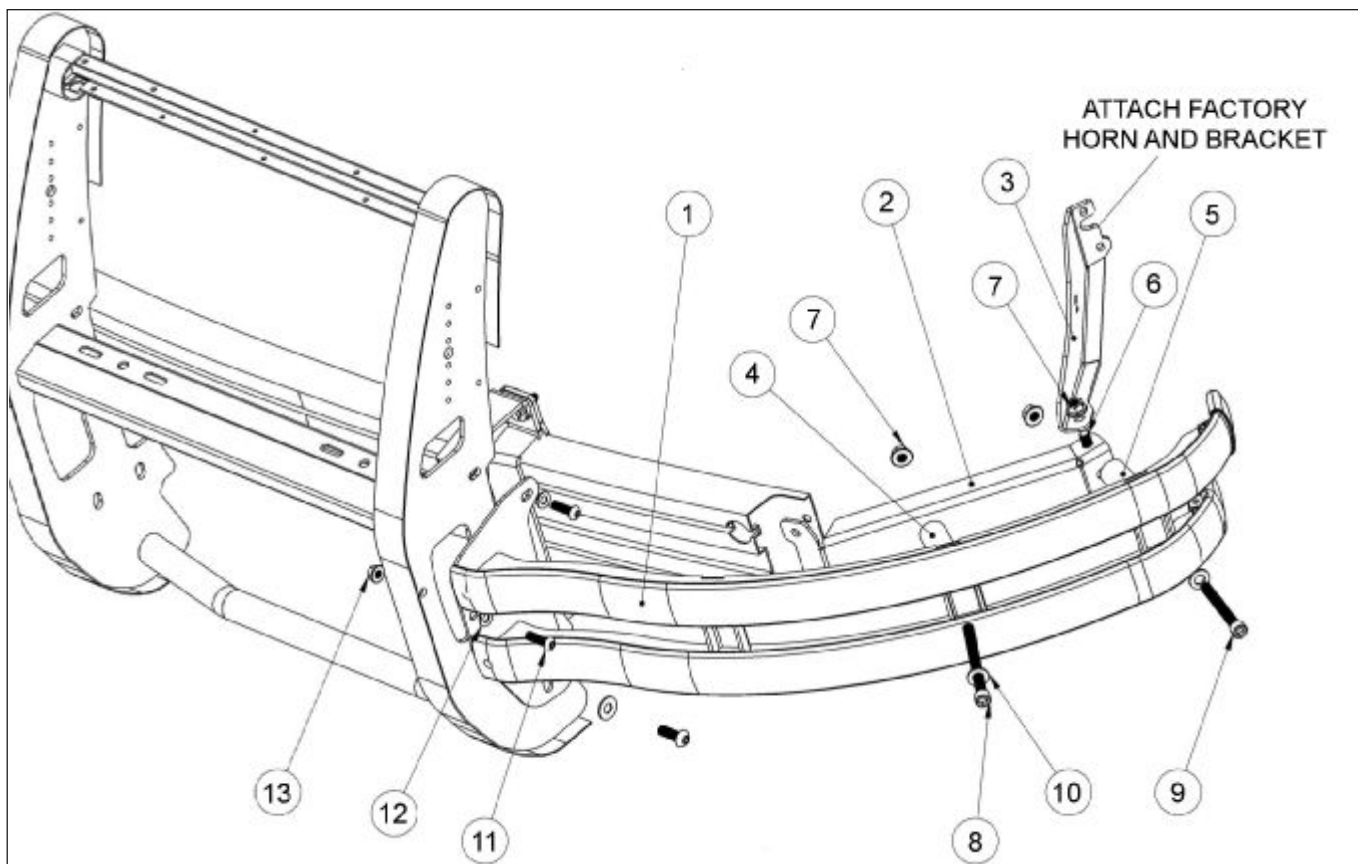
THREAD DAMAGE AND GALLING: To prevent thread damage and galling, anti-seize lubricant must be used on all stainless steel fasteners.

Installing the Pit Bar

To install the pit bar:

1. Remove the entire front grille and fascia (referred to as the front clip) from the front of the vehicle. Follow the directions in doc. no. 25500233 for the PBX01/PBX05 push bars to accomplish this.
2. If they have not been installed, attach the push bar mounting brackets contained in the PBX01 or PBX05 kit (refer to 25500233).

Figure 1 Location of PBX-PIT01 items on vehicle (driver side shown)



3. On one side of the vehicle at a time, remove the factory bolts from the ends of the steel bumper channel and reuse them to loosely attach the inner mounting brackets (Figure 2 on page 4).
4. Remove the driver-side factory horn and bracket.
5. Remove the factory M6 inner fender bolts and reuse them to loosely attach the inner support brackets (Figure 3 on page 4).
6. Use the supplied M6 hardware to reattach the horn and bracket to the holes in the inner support brackets.

Figure 2 Location of PBX-PIT05 items on vehicle (driver side shown)

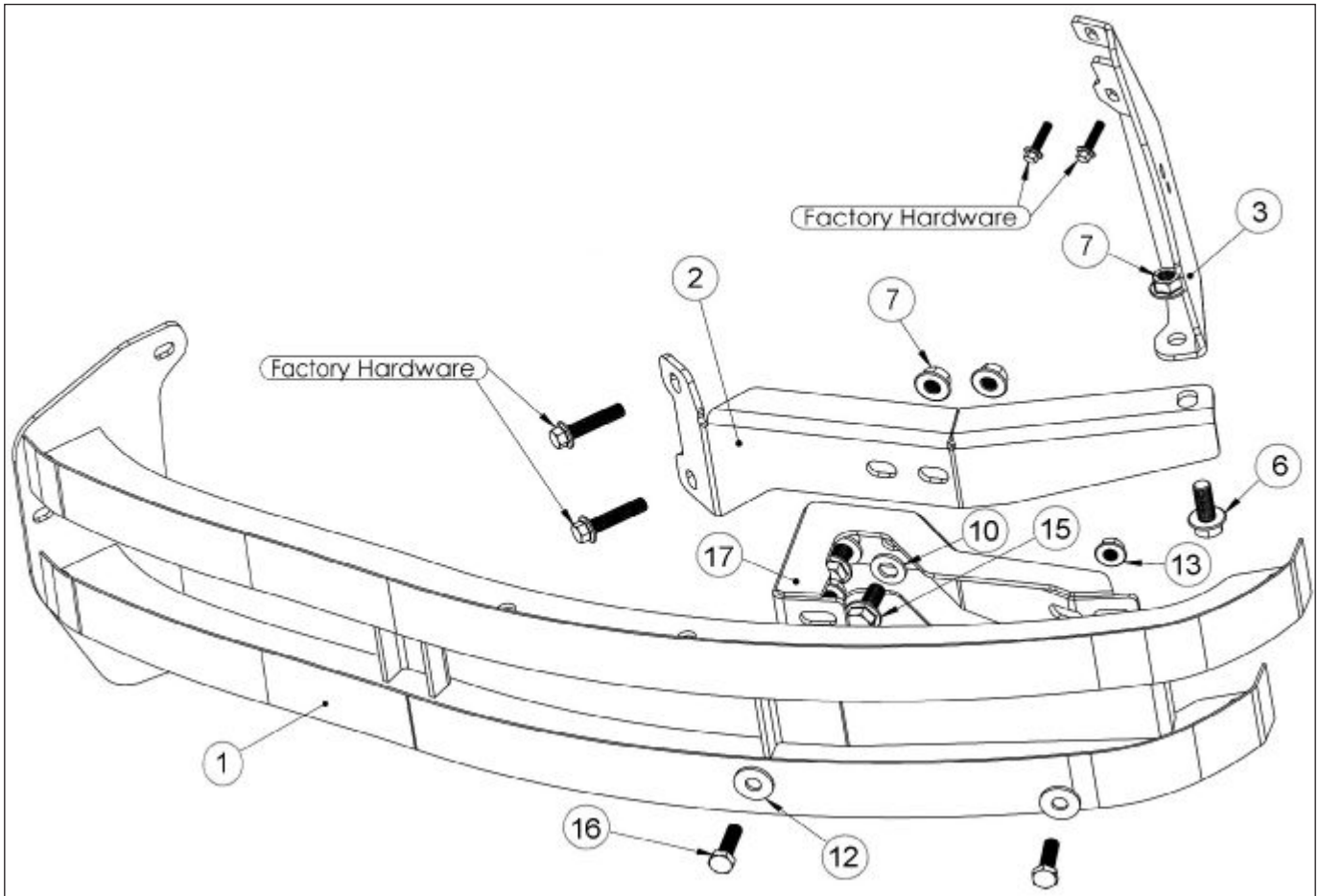
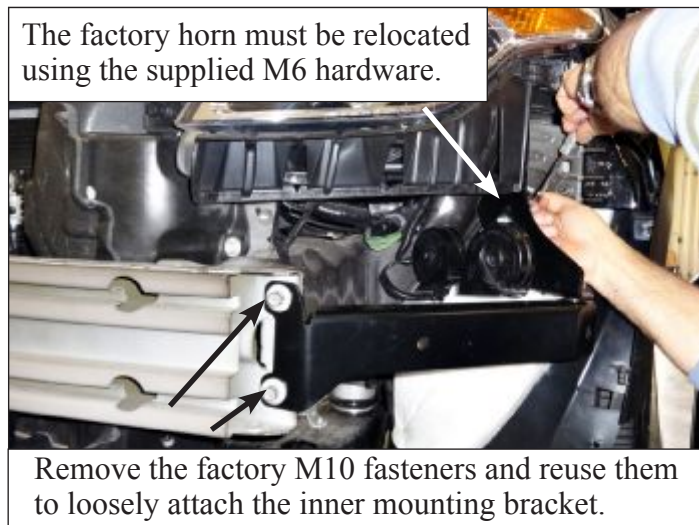


Figure 3

Figure 4



5. Bolt the inner mounting bracket to the inner support bracket using the M12 flange bolt and nut. The nut should be placed on the top of the bracket to allow for the socket-head cap screws that hold the pit rails to the inner mounting brackets.

7. Align and adjust brackets as necessary, then tighten all bracket mounting hardware as follows:
 - M6: 6 ft-lb to 8 ft-lb
 - M10: 30 ft-lb to 35 ft-lb
 - M12 50 ft-lb to 55 ft-lb
8. Snap the plastic front clip back on the vehicle, but do not attach the retaining screws that are in the fender well area.
9. Install the PBX01 or PBX05 push bar on the front of the vehicle per 25500233. Leave the mounting hardware loose because much of it will be reused to mount the pit bar rails.
10. **For PBX-PIT05 only:** To provide room for the pit bar brackets, trim the area shown in Figure 5 from the plastic bumper cover inserts. Start by trimming a small area first, then enlarge the hole after test-fitting the brackets.
11. On one side of the vehicle at a time, attach the pit bar rails to the push bar using the push bar mounting hardware and the supplied M10 button head bolts (Figure 2, Item 1).

Figure 5



Figure 6



12. **For PBX-PIT01 only:** With the pit bar rails installed, use a 1/2" or 17/32" transfer punch placed through the mounting holes on the pit bar rails to mark drilling locations on the vehicle's front clip (Figure 6). Remove the pit bar rails, then use a 1/4" drill bit to drill the marked locations.
13. **For PBX-PIT01 only:** Spread the inner fender plastic away from the front clip and reach through with a light. Look through the drilled 1/4" holes to verify that they are in-line with the mounting holes on the inner mounting brackets.
14. **For PBX-PIT01 only:** Use a 1-1/2" hole saw to drill holes using the 1/4" pre-drilled holes as a guide. Be aware of a plastic reinforcement piece on the backside of the front clip that may necessitate drilling the holes slightly high to clear it.
15. **For PBX-PIT01 only:** Deburr the drilled 1-1/2" holes and install the supplied rubber grommets.

16. **For PBX-PIT01 only:** Place the supplied spacers inside the drilled 1-1/2" holes. The longer spacer goes toward the center of the vehicle (Figure 1 on page 3). Loosely reinstall the pit bar rails.
17. Place an M12 flat washer on each M12 socket head cap screw, then feed the hardware through the Pit Bar rail assembly, spacers, and the inner mounting bracket.
18. See Figure 7. Reach through the opening between the front clip and the plastic inner fender in order to thread an M12 flange nut on each of the M12 socket-head cap screws.

Figure 7



Figure 8



19. Hold the nuts with a box-end wrench while tightening the hardware from the front with an Allen wrench.
20. Align and adjust the pit bars and push bar as necessary. Tighten all remaining hardware as follows:
 - M10: 30 to 35 ft-lb
 - M12: 50 to 55 ft-lb
21. Install all remaining front-clip factory hardware.

Maintaining the Pit Bar Assembly

Regularly clean stainless steel and gloss black finishes with a mild soap and water. Apply a non-abrasive wax or polish. To polish small scratches on stainless steel, use stainless steel polish. To avoid making scratches on the stainless steel surfaces, follow the grain of the steel while polishing. .

Getting Technical Support and Service

Federal Signal Corporation will service your equipment or provide technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization number. The RMA number can be obtained from your local distributor or Federal Signal. Please provide a brief explanation of the service requested or the nature of the malfunction. Contact your local dealer/distributor for replacement parts availability or contact the Federal Signal Service Department (7 a.m. to 5 p.m., Monday through Friday, Central Time) at:

Service Department
Federal Signal Corporation
2645 Federal Signal Drive
University Park, IL 60484-3167

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