

HYDRAULIC STABILIZER BEAM CYLINDER

This service group applies to the: Ascendant 107 ft Ladder.

1. REPLACEMENT

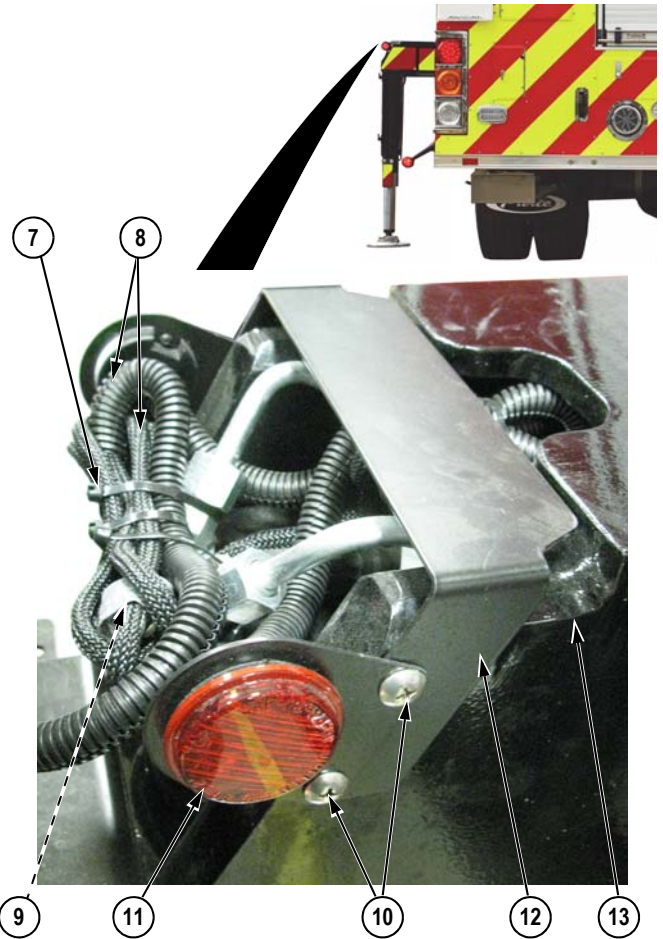
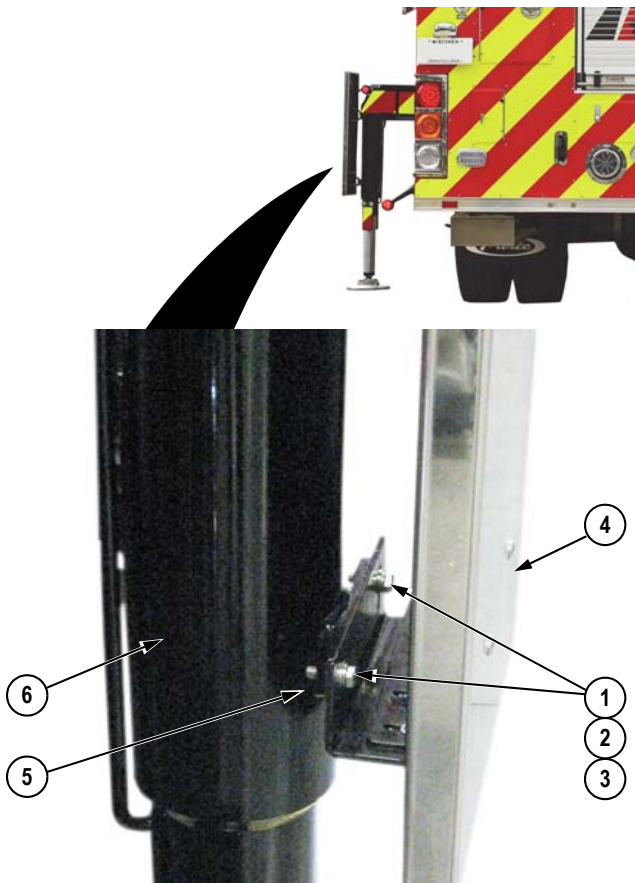
a. Removal

NOTE: Both stabilizer beam cylinders are removed the same way. Steps shown are for removing the left (driver's) side. Right (passenger) side will be on the opposite side of the truck.

1. Stow aerial. (Refer to "Operator's Manual.")
2. Extend stabilizer beam that cylinder is going to be replaced, out approximately 1-2 ft. Lower jack until the jack pad is appropriately 1 inch from the ground and hole opening in top of stabilizer beam are aligned. (Refer to "Operator's Manual.")
3. Attach a "DO NOT START" tag to truck ignition switch.

NOTE: Support the cylinder access cover before removing the mounting screws.

4. Remove four screws (1), lockwashers (2), washers (3) and jack cylinder front access cover (4) from bracket (5) on stabilizer jack cylinder (6).



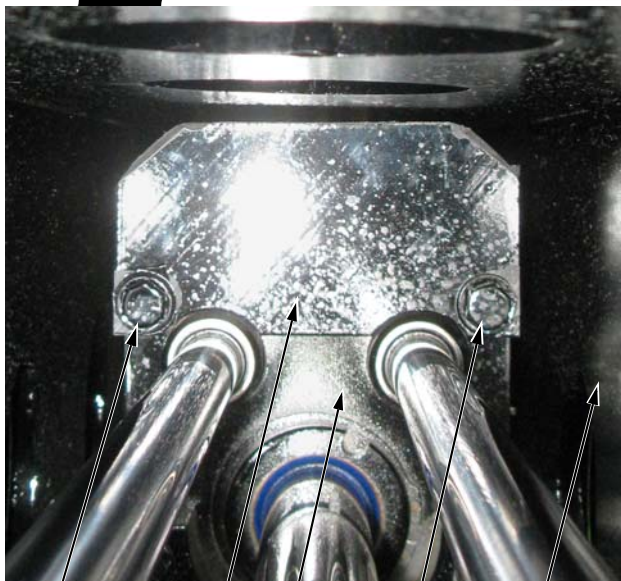
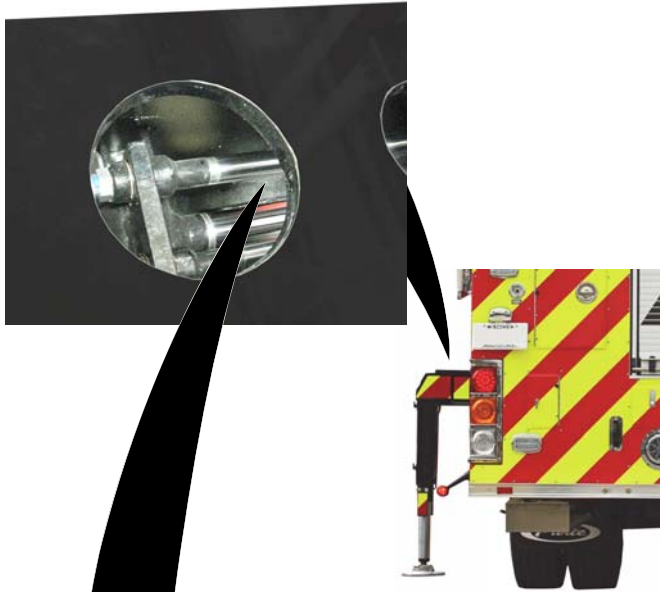
NOTE:

- Label all wires and connectors before removing to ensure correct installation.
- Remove cable ties as required.

5. Remove cable ties (7) from wire harness (8).
6. Disconnect connector (9).
7. Remove four screws (10), two light assemblies (11), and cover bracket (12) from stabilizer beam (13).

⚠ WARNING

Cylinder access cover is heavy and must be supported before removing mounting screws. Failure to comply may result in serious injury to personnel.



14 15 16 17 14 15 13

WARNING

Ensure truck is shut off when working inside of stabilizer beam. Failure to comply may result in serious injury to personnel.

NOTE:

- Note position of stabilizer beam cylinder upper wear pad to ensure proper installation.
- Use of an extension with a socket attached will ease removal of upper wear pad.

8. Remove two screws (14), washers (15) and upper wear pad (16) from stabilizer beam cylinder (17) inside stabilizer beam (13).

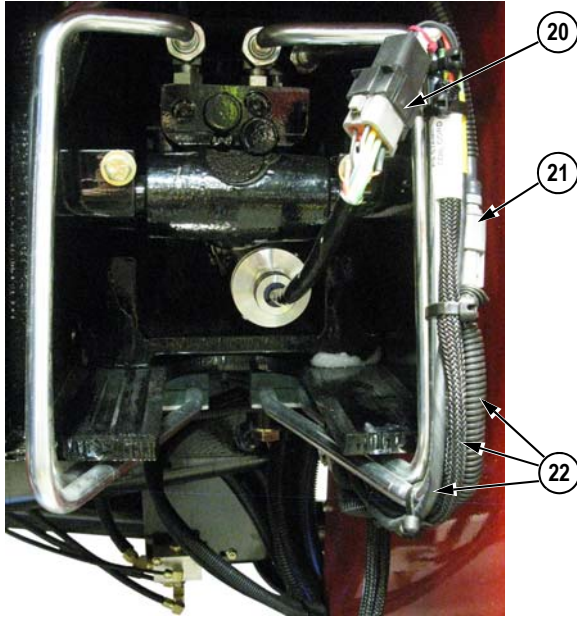
WARNING

Stabilizer access cover is heavy and must be supported before removing mounting screws. Failure to comply may result in serious injury to personnel.

NOTE:

- Support the stabilizer access cover before removing the mounting screws.
- Stabilizer access cover is being removed from the back side of stabilizer beam cylinder being replaced.
- Note position of laser track light hole on stabilizer rear access panel to ensure proper installation.

9. Remove six screws (18) and stabilizer rear access cover (19) from cover frame.

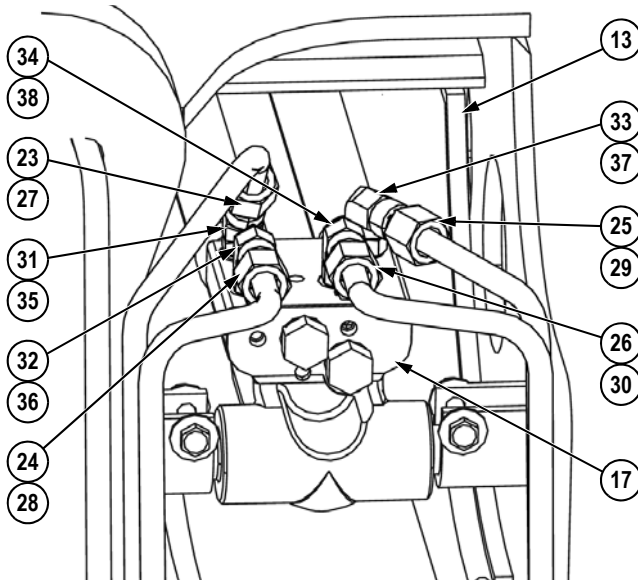


NOTE: The number of connectors and wiring harnesses may vary due to options available. Label all connectors prior to disconnecting to ensure proper installation.

- 10. Disconnect stabilizer coil cord assembly connector (20).
- 11. Disconnect connector (21).

NOTE: To ensure correct installation, note the number and location of cable ties used to secure the wiring harnesses to the stabilizer beam cylinder hydraulic lines.

- 12. Remove cable ties securing the wiring harnesses (22) to the stabilizer beam cylinder hydraulic lines.



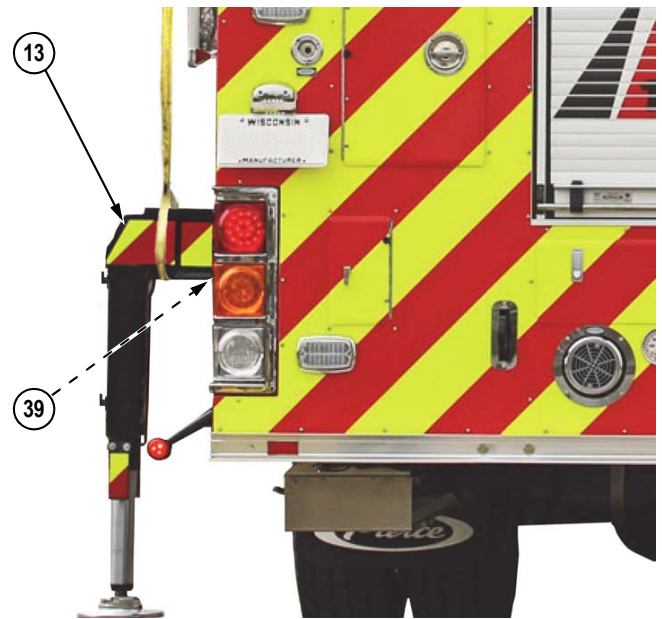
NOTE:

- Use a suitable container to catch hydraulic oil.
- Label all hydraulic lines before removing to ensure correct installation.

- 13. Disconnect four hydraulic lines (23, 24, 25 and 26) and O-rings (27, 28, 29 and 30) from elbows (31, 32, 33 and 34).

NOTE: Note orientation of elbows before removing to ensure correct installation.

- 14. Remove four elbows (31, 32, 33 and 34) and O-rings (35, 36, 37 and 38) from stabilizer beam cylinder (17).
- 15. Install plugs or tape over the holes that four elbows (31, 32, 33 and 34) were installed in.

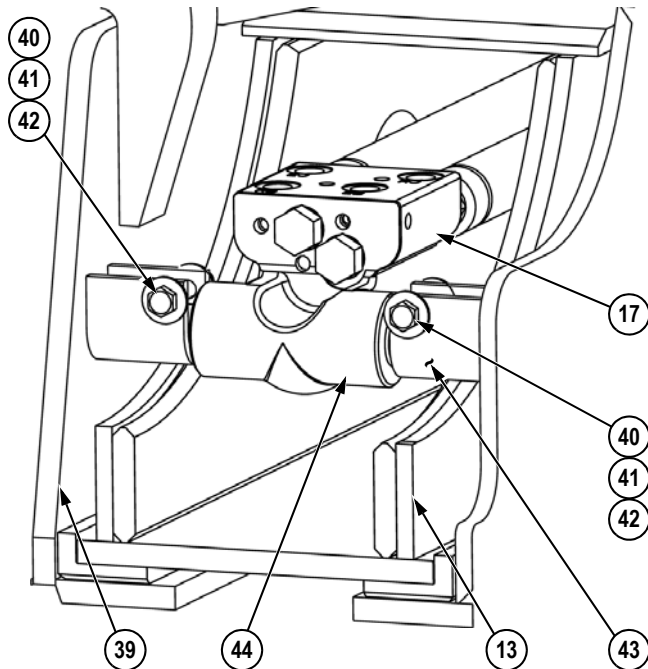


WARNING

- ▲ The stabilizer beam is heavy and must be supported. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ Do not attempt to lift stabilizer beam too high or with excessive force. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE: Reposition lifting slings as necessary to keep stabilizer beam as level and balanced as possible.

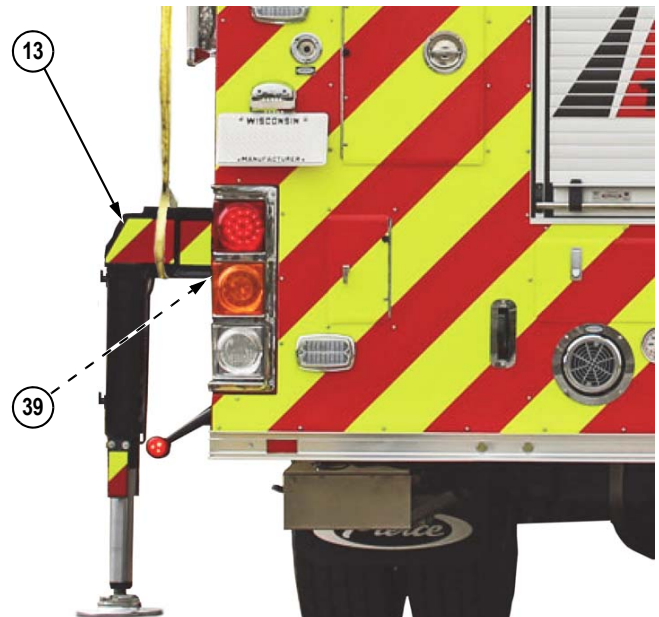
- 16. Attach a suitable lifting device to stabilizer beam (13) as shown.
- 17. Using the suitable lifting device, slowly raise stabilizer beam (13) until bottom of stabilizer beam just starts to lift off of torque box stabilizer housing (39).



⚠ WARNING

Do place hands or fingers inside stabilizer beam housing between beam cylinder and top of stabilizer beam during removal. Failure to comply may result in serious injury to personnel.

18. Remove two locknuts (40), four washers (41) and two screws (42) from cylinder saddle brackets (43).
19. While using lifting device to support and move stabilizer beam (13), lift stabilizer beam cylinder rod end (44) out of cylinder saddle brackets (43).

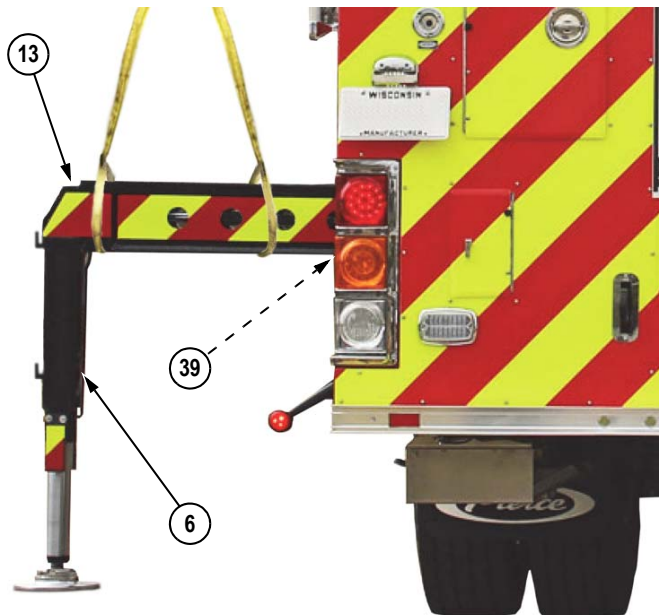


⚠ WARNING

- ▲ The stabilizer beam is heavy and must be supported. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ Do not completely remove stabilizer beam from torque box stabilizer housing with only one lifting strap attached to beam. Ensure there are two lifting straps attached to stabilizer beam prior to removal. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ Do not attempt to lift stabilizer beam too high or with excessive force. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE: Only pull stabilizer beam about 3 ft. (1 m) out of torque box stabilizer housing. Ensure there is at least 2 ft of the stabilizer beam still inside torque box stabilizer housing while only using one lifting strap.

20. Using lifting device, pull stabilizer beam (13) out of torque box stabilizer housing (39) no more than 3 ft (1 m).

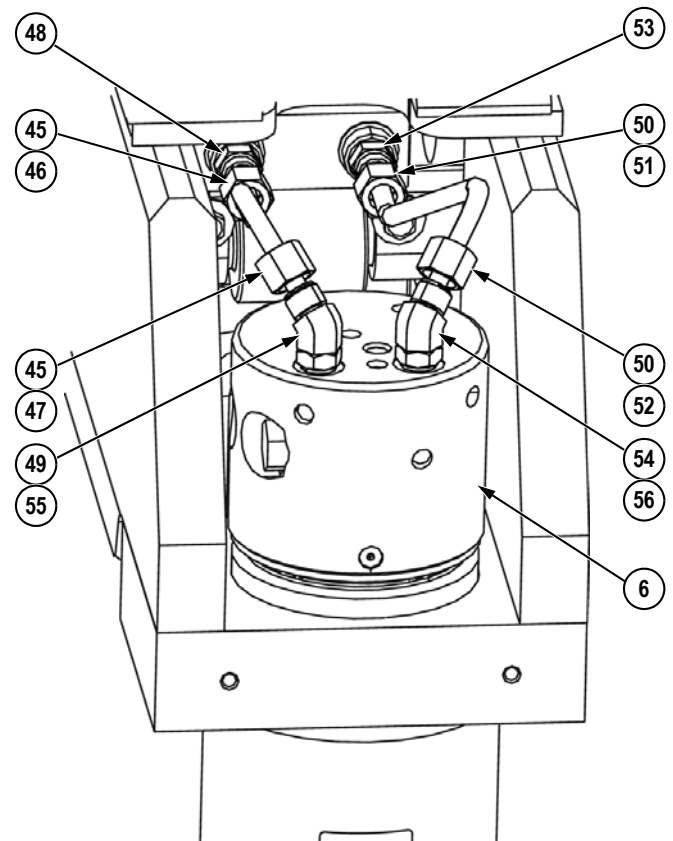


WARNING

- ▲ The stabilizer beam is heavy and must be supported during removal from the truck. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ The stabilizer beam with jack cylinder attached will be very unbalanced and unsafe unless lifting straps are properly positioned. Keep one lifting strap as close as possible to the jack cylinder while lifting, moving or supporting. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ Do not attempt to lift stabilizer beam too high or with excessive force. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE: Reposition lifting slings as necessary to keep stabilizer beam as level and balanced as possible.

21. Attach a second lifting strap to stabilizer beam as shown. Keep first lifting strap as close to stabilizer jack cylinder (6) as possible.
22. Using lifting device and two lifting straps to support and move stabilizer beam, slowly lift and pull stabilizer beam (13) out of torque box stabilizer housing (39) and away from truck.



WARNING

The stabilizer beam assembly is heavy and must be supported while removing components. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

23. Position stabilizer beam assembly on a work bench, saw horses, or similar blocking to support while removing components.

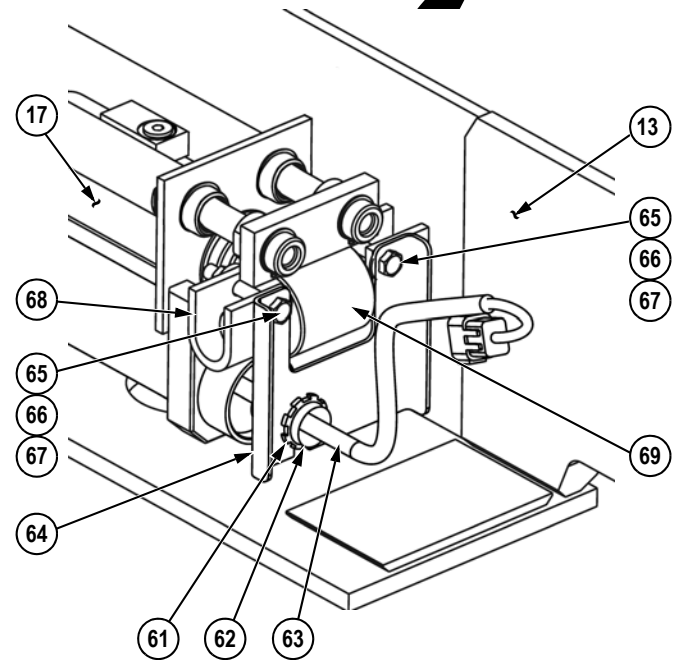
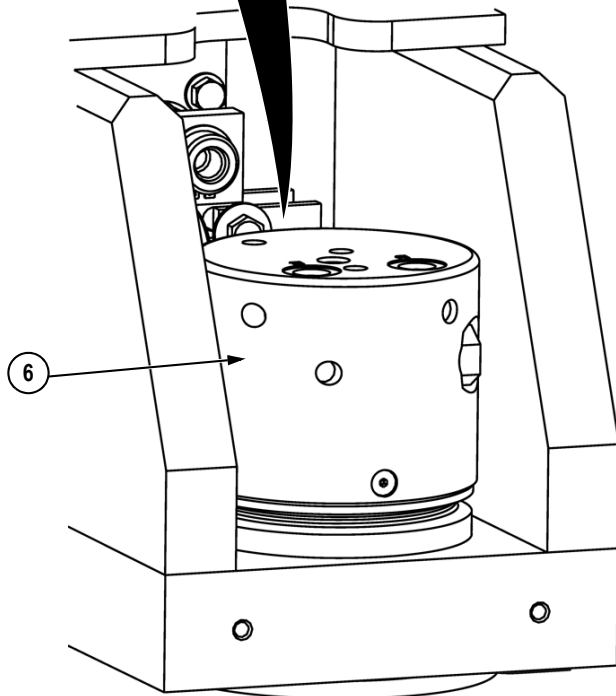
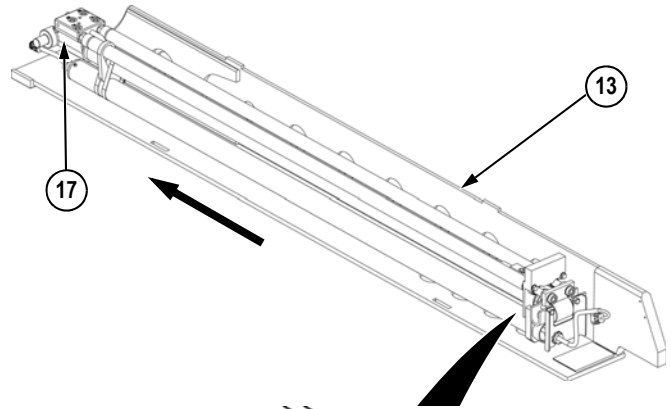
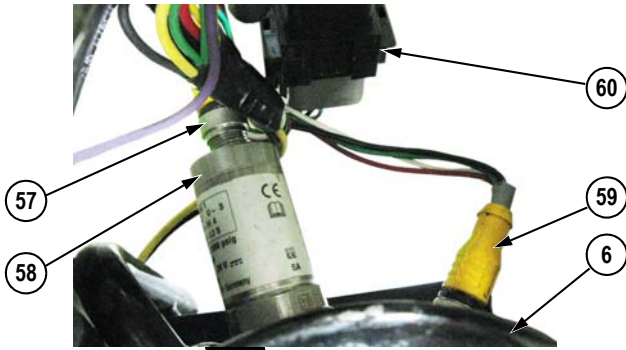
NOTE:

- Use a suitable container to catch hydraulic oil.
- Label all hydraulic lines before removing to ensure correct installation.
- Remove cable ties as required.

24. Remove hydraulic line (45) and O-rings (46 and 47) from fitting (48) and elbow (49).
25. Remove hydraulic line (50) and O-rings (51 and 52) from fitting (53) and elbow (54).

NOTE: Note orientation of elbows before removing to ensure correct installation.

26. Remove two elbows (49 and 54) and O-rings (55 and 56) from stabilizer jack cylinder (6).
27. Install plugs or tape over fittings (48 and 53) and the holes that elbows (49 and 54) were installed in.



NOTE:

- ⚠ Label all wires and connectors before removing to ensure correct installation.
- ⚠ Remove cable ties as required.

28. Loosen collar and remove connector (57) from transducer (58).
29. Loosen collar and remove connector (59) from stabilizer jack cylinder (6).
30. Disconnect connector (60).

NOTE:

- ⚠ Stabilizer beam shown with the top and side removed and jack cylinder removed for clarity.
- ⚠ Remove cable ties as required.

31. Loosen collar (61) and slide over end strain relief (62) and wire (63).
32. Slide wire (63) down and out of slot on bracket (64).

⚠ WARNING

Do place hands or fingers inside stabilizer beam housing between beam cylinder and top of stabilizer beam during removal. Failure to comply may result in serious injury to personnel.

33. Remove two locknuts (65), bracket (64), four washers (66) and two screws (67) from cylinder saddle brackets (68).

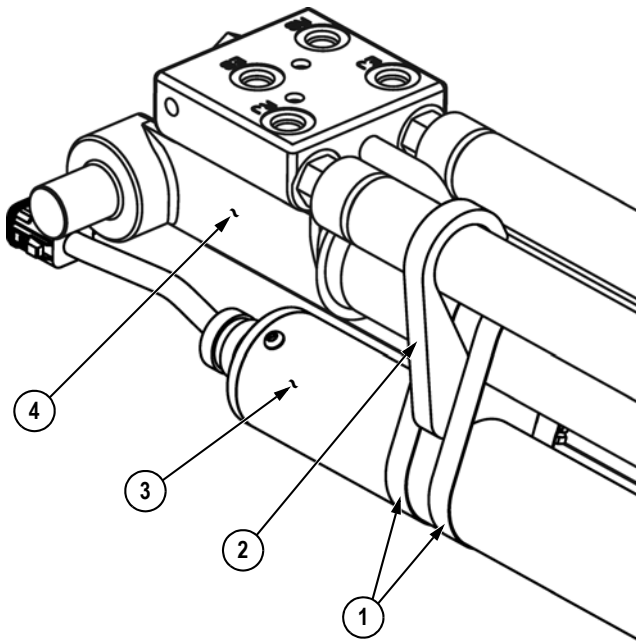
WARNING

Stabilizer beam cylinder is heavy and must be supported during removal. Failure to comply may result in serious injury to personnel.

NOTE: Note orientation and position of stabilizer beam cylinder prior to removal to ensure correct installation.

34. Attach a suitable lifting device to stabilizer beam cylinder (17).
35. Lift stabilizer beam cylinder rod end (69) out of cylinder saddle brackets (68).
36. Using lifting device, slowly lift and pull stabilizer beam cylinder (17) out of stabilizer beam (13).
37. Position stabilizer beam cylinder (17) on a flat clean work surface.

b. Disassembly

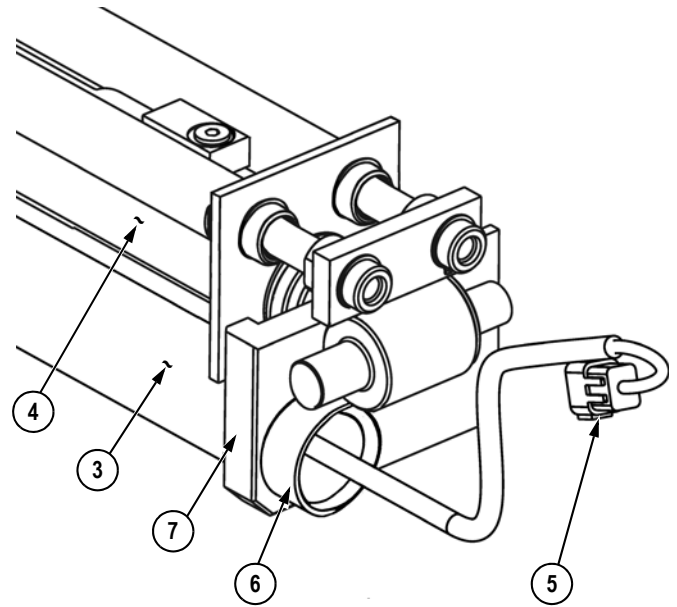


WARNING

Stabilizer beam cylinder is heavy and must be supported during disassembly. Failure to comply may result in serious injury to personnel.

NOTE: Note location, position and direction of hose clamps, tube bracket and coiled cord assembly before removing to ensure correct installation.

1. Loosen and remove two hose clamps (1), tube bracket (2) and coiled cord assembly (3) from stabilizer beam cylinder (4).



NOTE: Note distance and position of coiled cord assembly inside bushing sleeve before removing to ensure correct installation.

2. Pull and remove coiled cord assembly (3) and connector wire (5) from bushing sleeve (6).
3. Remove bushing sleeve (6) from block (7) on end of stabilizer beam cylinder (4).

c. Assembly

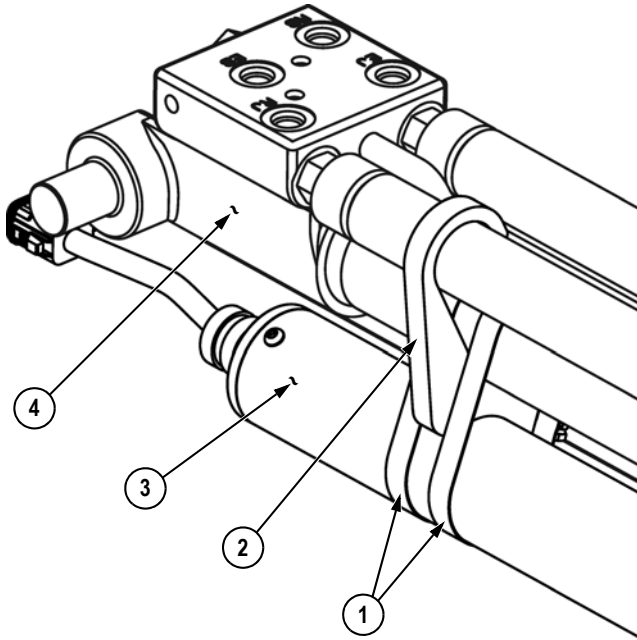
WARNING

Stabilizer beam cylinder is heavy and must be supported during assembly. Failure to comply may result in serious injury to personnel.

1. Install bushing sleeve (6) in block (7) on end of stabilizer beam cylinder (4).

NOTE: Ensure coiled cord assembly is positioned inside bushing sleeve at the same distance and position as noted prior to removal.

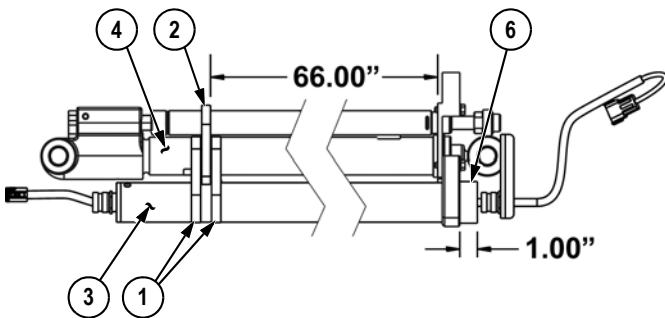
2. Route connector wire (5) through bushing sleeve (6) and install coiled cord assembly (3) in bushing sleeve and block (7) on end of stabilizer beam cylinder (4).



NOTE:

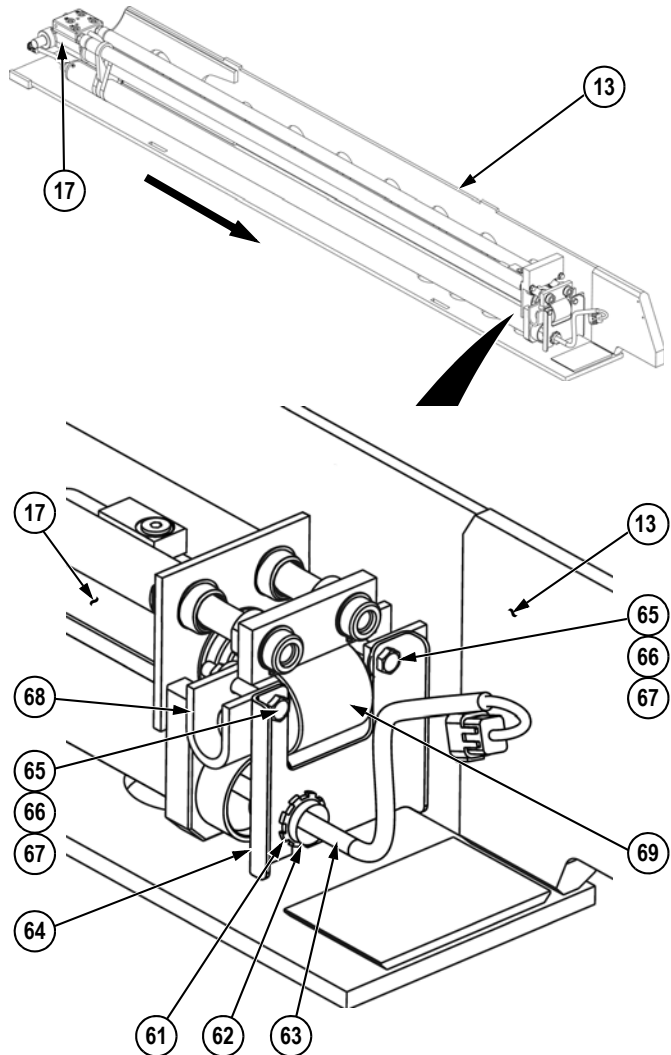
- ⚠ Ensure hose clamps, tube bracket and coiled cord assembly are in the same location, position and direction as noted prior to removal.
- ⚠ Do not tighten hose clamps until step 5.

3. Position coiled cord assembly (3), tube bracket (2) and two hose clamps (1) on stabilizer beam cylinder (4). Do not tighten hose clamps.



4. Check measurements shown above. Once these measurements have been obtained, tighten two hose clamps (1).

d. Installation



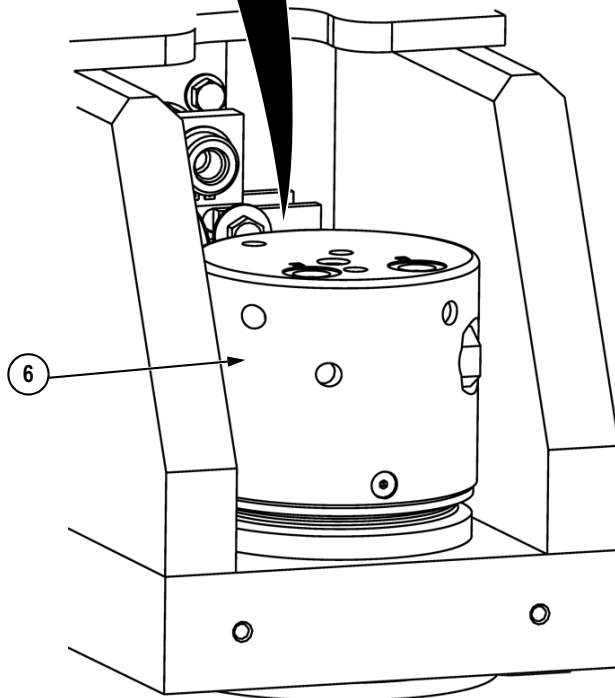
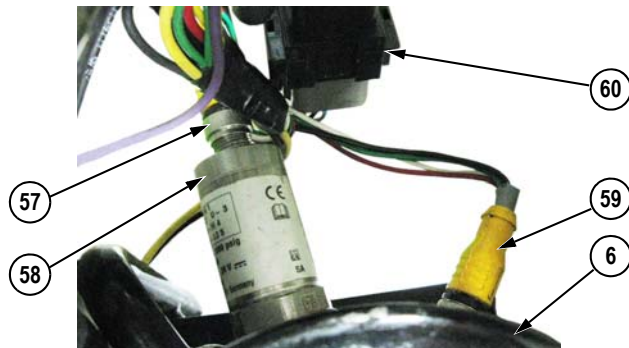
⚠ WARNING

- ▲ Stabilizer beam cylinder is heavy and must be supported during installation of components. Failure to comply may result in serious injury to personnel.
- ▲ Do not place hands or fingers inside stabilizer beam housing between beam cylinder and top of stabilizer beam during removal. Failure to comply may result in serious injury to personnel.

NOTE:

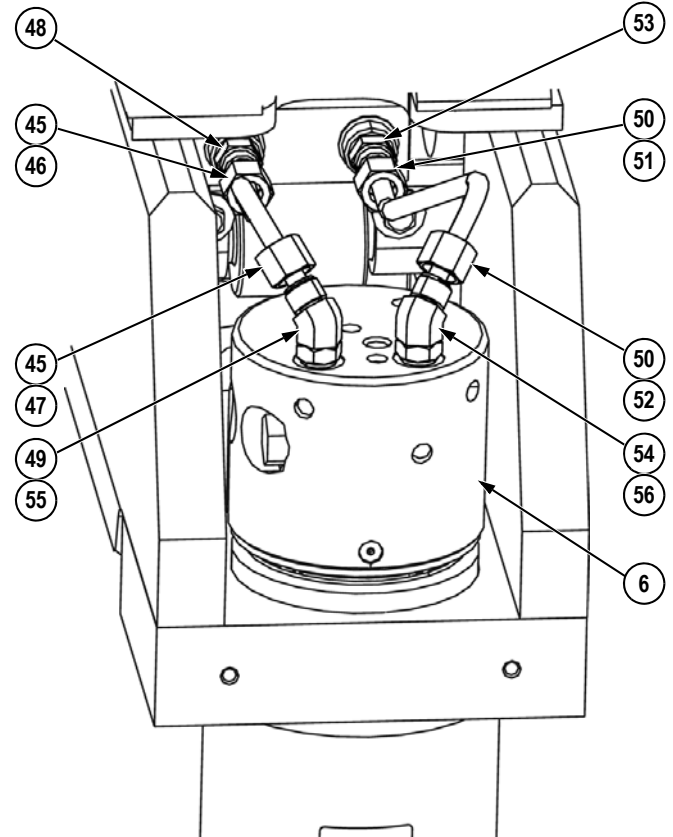
- ⚠ Install stabilizer beam cylinder in the same orientation and position as noted of prior to removal.
- ⚠ Stabilizer beam shown with the top and side removed and jack cylinder removed for clarity.
- ⚠ Install cable ties in locations noted during removal and as required.

1. Position stabilizer beam assembly on a work bench, saw horses, or similar blocking to support while installing components.
2. Attach a suitable lifting device to stabilizer beam cylinder (17).
3. Using lifting device, position stabilizer beam cylinder (17) in stabilizer beam (13) as shown.
4. Position stabilizer beam cylinder rod end (69) into cylinder saddle brackets (68).
5. Install two screws (67), bracket (64), four washers (66) and two locknuts (65) in cylinder saddle brackets (68).
6. Position wire (63) through strain relief (62).
7. Slide wire (63) up through slot on bracket (64).
8. Position strain relief (62) in bracket (64) and install and tighten collar (61).



NOTE: Install all wires and connectors as noted prior to removal.

9. Connect connector (60).
10. Install connector (59) on stabilizer jack cylinder (6) and tighten collar.
11. Install connector (57) on transducer (58) and tighten collar.



⚠ WARNING

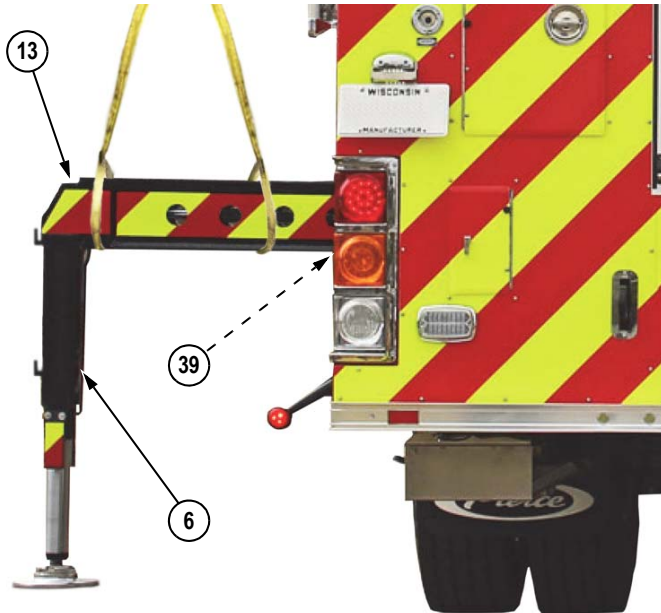
The stabilizer beam assembly is heavy and must be supported while installing components. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

12. Remove plugs or tape from fittings (48 and 53) and the holes that elbows (49 and 54) were installed in.

NOTE:

- Install elbows and fittings in same location and orientation as noted prior to removal.
- Inspect O-rings located in fittings before installation. Replace O-rings as needed.
- Lightly lubricate O-rings with hydraulic oil before installation.
- See "Hydraulic Hose & Tube Fitting Torque Specifications," Group 9600-P-003, for torque specifications.

13. Install two elbows (49 and 54) and O-rings (55 and 56) in stabilizer jack cylinder (6).
14. Install hydraulic line (50) and O-rings (51 and 52) on fitting (44) and elbow (45).
15. Install hydraulic line (45) and O-rings (46 and 47) on fitting (48) and elbow (49).



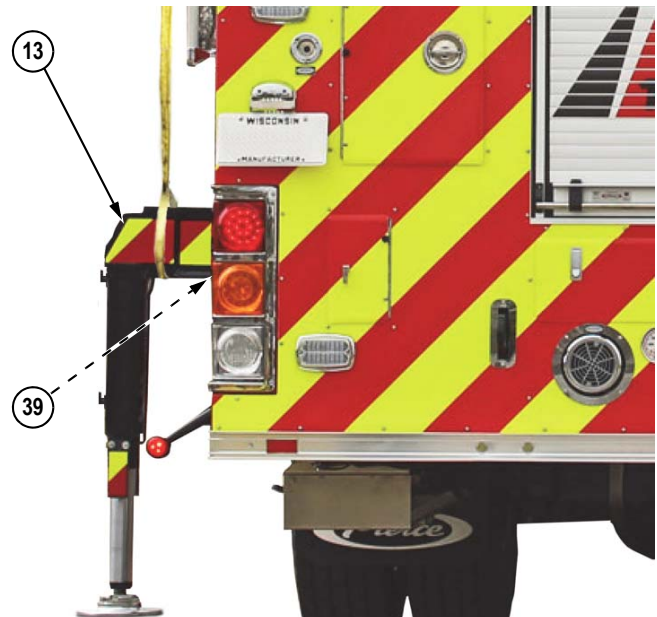
⚠ WARNING

- ▲ The stabilizer beam is heavy and must be supported. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ The stabilizer beam with jack cylinder attached will be very unbalanced and unsafe unless lifting straps are properly positioned. Keep one lifting strap as close as possible to the jack cylinder while lifting, moving or supporting. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.
- ▲ Do not attempt to lift stabilizer beam too high or with excessive force. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE: Reposition lifting slings as necessary to keep stabilizer beam as level and balanced as possible.

16. Attach a suitable lifting device with two lifting straps as shown. Keep first lifting strap as close to stabilizer jack cylinder (6) as possible.
17. Using the suitable lifting device and two lifting straps to support and move stabilizer beam, slowly lift stabilizer beam (13) and position it into torque box stabilizer housing (39).

18. Continue installing stabilizer beam (13) into torque box stabilizer housing (39) until approximately 3 ft (1 m) of the stabilizer beam is sticking out of the housing.

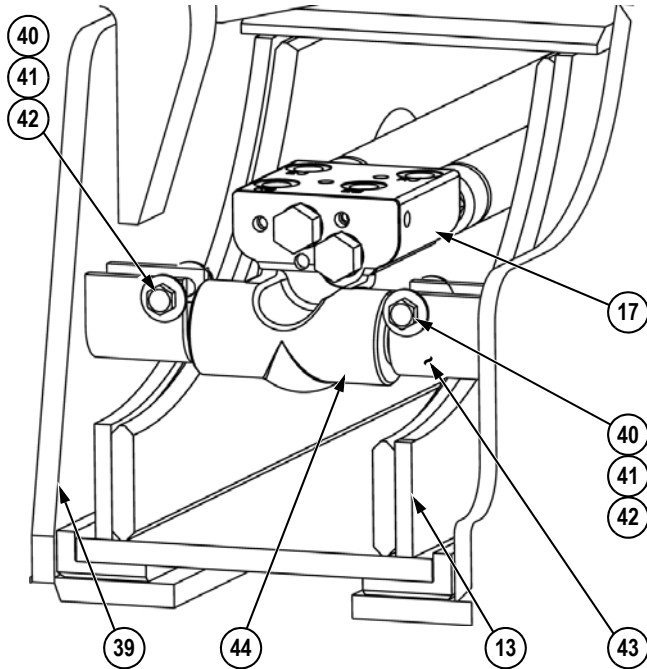


⚠ WARNING

Do not attempt to lift stabilizer beam too high or with excessive force. Failure to comply may result in serious injury or death to personnel and/or damage to equipment.

NOTE: Reposition lifting slings as necessary to keep stabilizer beam as level and balanced as possible.

19. Remove one lifting strap and position the remaining lifting strap as close to stabilizer jack cylinder (6) as possible.
20. Using suitable lifting device, slowly raise stabilizer beam (13) until bottom of stabilizer beam just starts to lift off of torque box stabilizer housing (39).

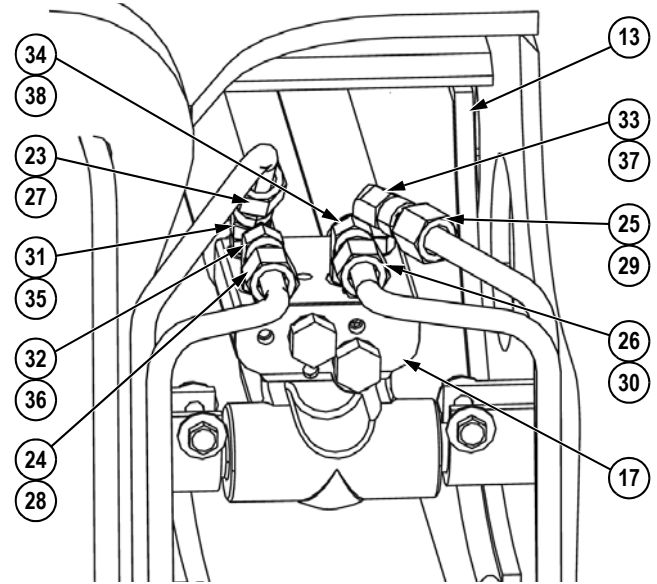


⚠ WARNING

Do place hands or fingers inside stabilizer beam housing between beam cylinder and top of stabilizer beam during removal. Failure to comply may result in serious injury to personnel.

NOTE: Stabilizer beam or stabilizer beam cylinder may need to be repositioned in order for cylinder rod end to be installed into cylinder saddle brackets.

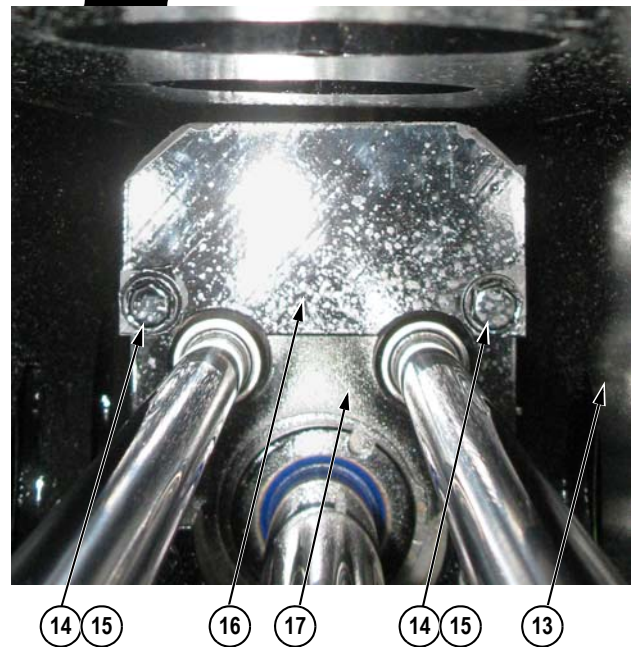
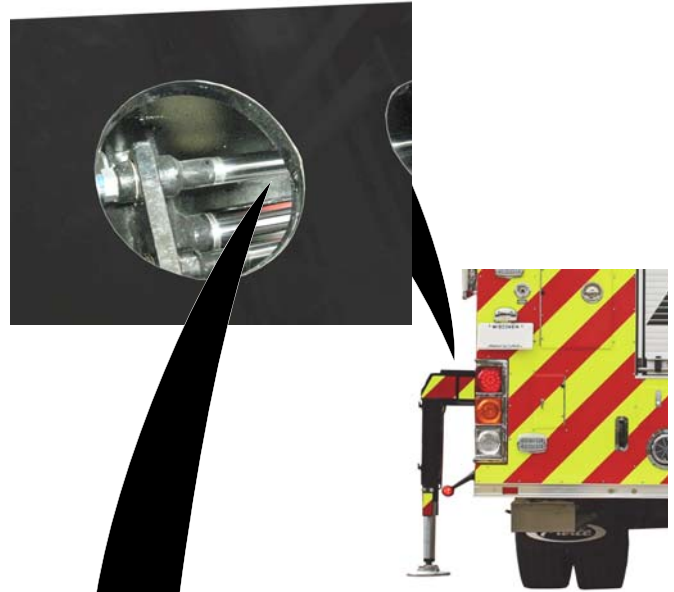
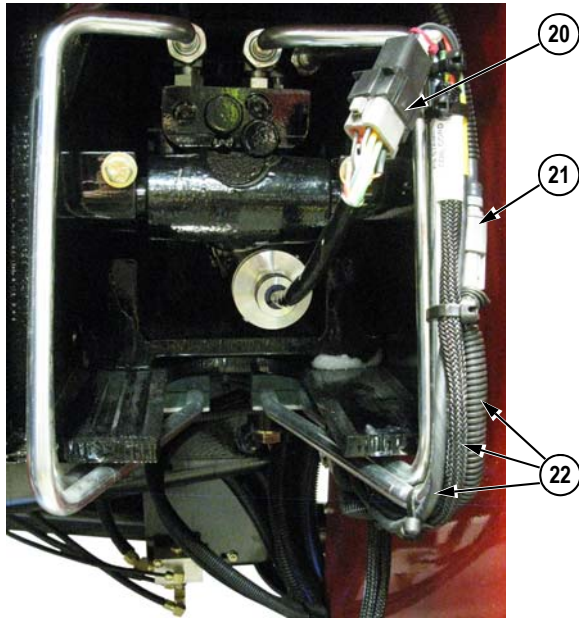
21. While using lifting device to support stabilizer beam (39), position stabilizer beam cylinder rod end (44) into cylinder saddle brackets (43).
22. Install two screws (42), four washers (41) and two locknuts (40) in cylinder saddle brackets (43).
23. Remove lifting device and lifting strap from stabilizer beam (13).



NOTE:

- Install elbows in same location and orientation as noted prior to removal.
- Inspect O-rings located in fittings before installation. Replace O-rings as needed.
- Lightly lubricate O-rings with hydraulic oil before installation.
- See "Hydraulic Hose & Tube Fitting Torque Specifications," Group 9600-P-003, for torque specifications.

24. Remove plugs or tape from the holes that elbows (31, 32, 33 and 34) were installed in.
25. Install four elbows (31, 32, 33 and 34) and O-rings (35, 36, 37 and 38) in stabilizer beam cylinder (28).
26. Install four hydraulic lines (23, 24, 25 and 26) and O-rings (27, 28, 29 and 30) on elbows (31, 32, 33 and 34).



NOTE:

- ⚠ Install connectors and wiring harnesses as noted prior to removal.
- ⚠ The number of connectors and wiring harnesses may vary due to options available.
- ⚠ Install cable ties in locations noted during removal and as required.

27. Connect connector (21).
28. Connect stabilizer coil cord assembly connector (20).
29. Install cable ties to secure the wiring harnesses (22) to the stabilizer beam cylinder hydraulic lines.

⚠ WARNING

Ensure truck is shut off when working inside of stabilizer beam. Failure to comply may result in serious injury to personnel.

NOTE:

- ⚠ Install stabilizer beam cylinder upper wear pad in same position as noted prior to removal.
- ⚠ Use of an extension with a socket attached will ease installation of upper wear pad.

30. Install upper wear pad (16) on stabilizer beam cylinder (17) inside stabilizer beam (13) with two screws (14) and washers (15).

31. Completely raise and lower the stabilizer jack several times to remove air (bleed) from cylinders and hoses. (Refer to "Operator's Manual.")
32. Raise stabilizer jack. (Refer to "Operator's Manual.")
33. Completely extend and retract stabilizers several times to remove air (bleed) from cylinders and hoses. (Refer to "Operator's Manual.")
34. Check for leaks and proper operation.
35. Stow stabilizers and check hydraulic oil level. Add hydraulic oil as needed.
36. Check stabilizer proximity switch adjustment if necessary. (See "Proximity Switch," Group 8750-P-027.)
37. Perform stabilizer jack cylinders drift-down test. (Refer to Operator's Manual; "Fifty (50) Hour/Annual Inspection.")
38. Apply Sentry Seal (Pierce P/N 95-1444) to hydraulic line connections (23, 24, 25, 26, 45 and 50) and elbows (31, 32, 33, 34, 49 and 54).

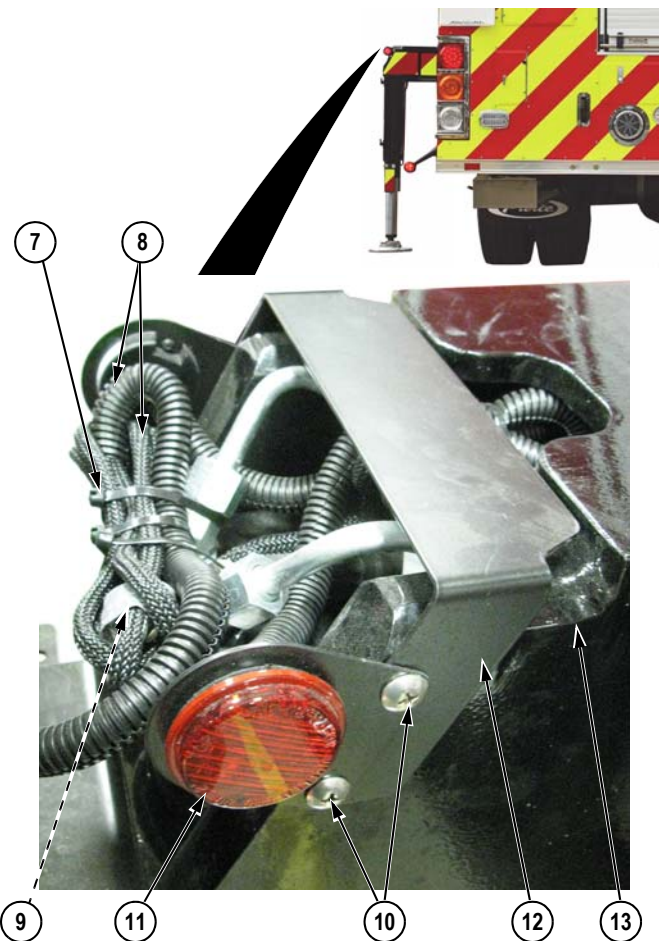
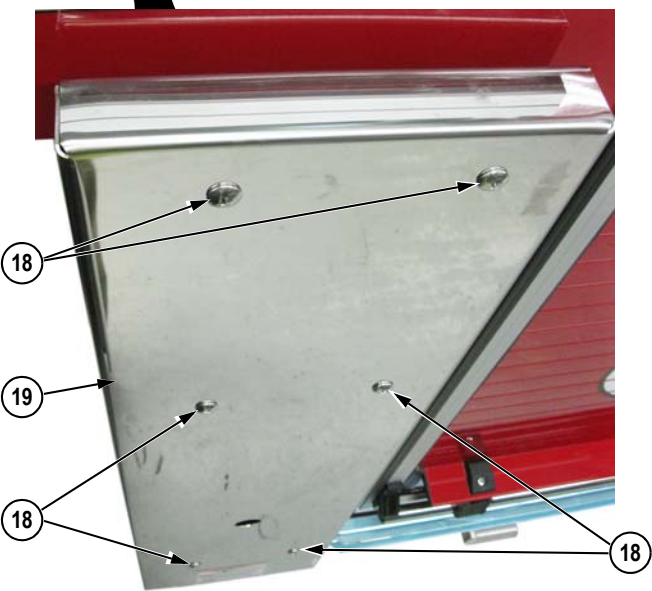
WARNING

Stabilizer access cover is heavy and must be supported while installing mounting screws. Failure to comply may result in serious injury to personnel.

NOTE:

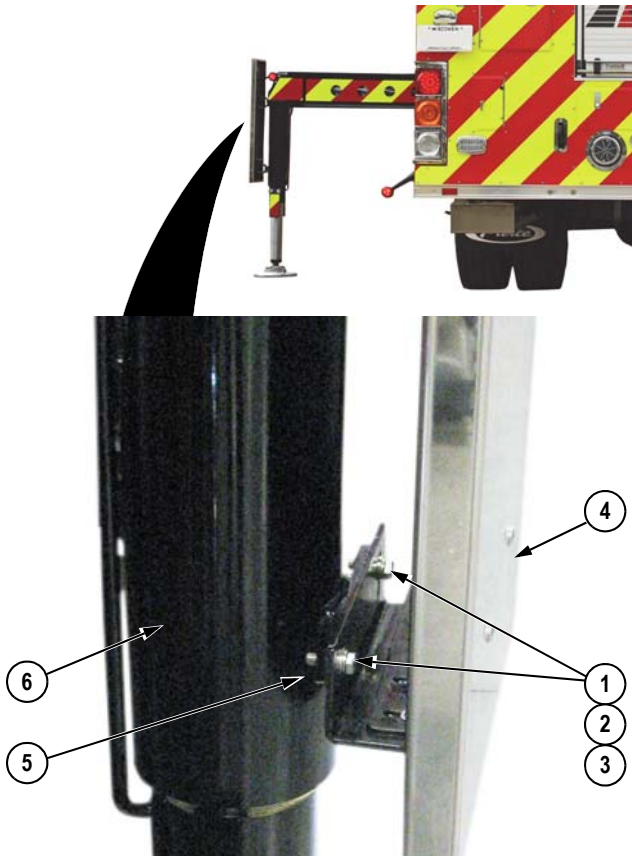
- Support the stabilizer access while installing removing the mounting screws.
- Ensure the laser track light hole on stabilizer rear access panel is in the position as noted prior to removal.

39. Install stabilizer rear access cover (19) on cover frame with six screws (18).



NOTE: Install all wires and connectors as noted prior to removal.

40. Install two light assemblies (11) and cover bracket (12) on stabilizer beam (13) four screws (10).
41. Connect connector (9).
42. Install cable ties (7) on wire harness (8) as noted prior to removal.



⚠ WARNING

Cylinder access cover is heavy and must be supported while installing mounting screws. Failure to comply may result in serious injury to personnel.

NOTE: Support the cylinder access cover while installing the mounting screws.

43. Install jack cylinder front access cover (4) to bracket (5) on stabilizer jack cylinder (6) with four screws (1), lockwashers (2) and washers (3).
44. Stow stabilizers and check hydraulic oil level. Add hydraulic oil as needed.
45. Remove "DO NOT START" tag from truck ignition switch.