

2022 CHEVROLET CORVETTE SERVICE MANUAL

- **SEARCH**

1. **Body Repair**
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Front Bumper Energy Absorber Replacement

Materials

- Structural Adhesive Aluminum Panel Bonding
- Structural Rivet (CR1 2X)Fastener Specifications

Removal Procedure

1. Click here for full size
2. Warning:

Refer to Approved Equipment for Collision Repair Warning.
3. Warning:

Refer to Collision Sectioning Warning.
4. Warning:

Refer to Glass and Sheet Metal Handling Warning.
5. Note:

The front bumper energy absorber is 7003 series aluminum extrusion. Aluminum
6. Note:

Three dimensional fixturing equipment required for installation.
7. Note:

Left shown, right similar.
8. Disable the SIR system. SIR Disabling and Enabling.
9. Remove all related panels and components.
10. Remove the sealers and anti-corrosion materials from the repair area as necessary. Anti-Corrosion Treatment and Repair
11. Click here for full size
12. Remove spot welds (1). [2X]
13. Click here for full size
14. Warning:

When separating the aluminum panels during collision repair, be sure to adhere to the following precautions:
 - Do not use an open flame
 - Focus heat onto panel being replaced and do not exceed 200°C (392°F) for 3 consecutive minutes
 - Use care not to damage adjacent panel while prying the panels apartFailure to follow the precautions may lead to vehicle damage or personal injury.
15. Apply heat to release adhesive (1).

16. [Click here for full size](#)
17. Remove flow drill screws (1). [7X] Fastener Specifications
18. [Click here for full size](#)
19. Remove flow drill screws (1). [4X] Fastener Specifications
20. [Click here for full size](#)
21. Note:

Do not damage or cut attaching panels and reinforcements.

22. Measure and mark cut line on front bumper energy absorber (1) approximately leaving 25mm (1 in) of original assembly.
23. Using reciprocating saw or equivalent tool cut through front bumper energy absorber (1) at marked location.
24. [Click here for full size](#)
25. Remove front bumper energy absorber (1) from vehicle.
26. [Click here for full size](#)
27. Warning:

Refer to Aluminum Panel Warning.

28. Note:

Use even pulling strokes to control cut.

29. Note:

Wall thickness is 3mm.

30. Note:

Do not damage or cut attaching panels and reinforcements.

31. Using belt sander or similar tool, from inside of extrusion, cut through remaining portion of front bumper energy absorber to create relief cut (1).
32. [Click here for full size](#)
33. Warning:

Refer to Aluminum Panel Warning.

34. Note:

Use even pulling strokes to control cut.

35. Note:

Wall thickness is 2mm.

36. Note:

Do not cut into adjacent panels.

37. Using belt sander or similar tool, from inside of extrusion, cut through remaining portion of front bumper energy absorber to create relief cut (1).
38. [Click here for full size](#)
39. Warning:

Refer to Aluminum Panel Warning.

40. Warning:

When separating the aluminum panels during collision repair, be sure to adhere to the following precautions:

- Do not use an open flame

- Focus heat onto panel being replaced and do not exceed 200°C (392°F) for 3 consecutive minutes
- Use care not to damage adjacent panel while prying the panels apart

Failure to follow the precautions may lead to vehicle damage or personal injury.

41. Apply heat to release adhesive (1).

42. [Click here for full size](#)

43. Note:

Excessive prying force may damage attaching panels.

44. Note:

Insert thin chisels to assist in separating panels when released from adhesive.

45. Separate section of remaining front bumper energy absorber in the order shown.

46. Remove section from vehicle.

47. [Click here for full size](#)

48. Warning:

Refer to Aluminum Panel Warning.

49. Warning:

When separating the aluminum panels during collision repair, be sure to adhere to the following precautions:

- Do not use an open flame
- Focus heat onto panel being replaced and do not exceed 200°C (392°F) for 3 consecutive minutes
- Use care not to damage adjacent panel while prying the panels apart

Failure to follow the precautions may lead to vehicle damage or personal injury.

50. Apply heat to release adhesive (1).

51. [Click here for full size](#)

52. Note:

Excessive prying force may damage attaching panels.

53. Note:

Insert thin chisels to assist in separating panels when released from adhesive.

54. Separate section of remaining front bumper energy absorber in the order shown.

55. Remove section from vehicle.

56. Note:

Do not damage body structure when removing adhesive.

57. Remove remaining adhesive body structure.

Installation Procedure

1. [Click here for full size](#)

2. Note:

Temporarily install replacement part.

3. Position front bumper energy absorber (1) on vehicle using three dimensional fixturing equipment and clamp into place.

4. [Click here for full size](#)

5. Note:

Locate pilot holes for flow drill screws at center of hole on attaching panels.

6. Drill 4.0 mm (5/32) pilot holes (1). [7X] Fastener Specifications

7. [Click here for full size](#)

8. Note:

Locate pilot holes for flow drill screws at center of hole on attaching panels.

9. Drill 4.0 mm (5/32) pilot holes (1). [4X] Fastener Specifications

10. [Click here for full size](#)

11. Note:

If a winking condition is present in the clearance hole (1) of the front bumper energy absorber after verifying it is dimensionally correct, the clearance hole (1) can be enlarged from 14 mm (35/64) to 18 mm (45/64).

12. Enlarge clearance hole (1) if needed.

13. [Click here for full size](#)

14. Note:

6.7 mm (17/64) hole used for rivet installation.

15. Drill 6.7 mm (17/64) holes (1). [2X] Fastener Specifications

16. Note:

Prepare rivet holes for countersunk structural rivet.

17. Using countersink cutting tool, countersink the holes (1). [2X]

18. [Click here for full size](#)

19. Remove front bumper energy absorber (1) from vehicle.

20. [Click here for full size](#)

21. Note:

Accurate and timely assembly methods must be used in order to meet proper bonding requirements.

22. Note:

Dry fit all parts with proper clamping devices prior to final assembly to ensure full understanding of the assembly process.

23. Note:

When using adhesive, ensure all necessary tools and materials are in place prior to final assembly.

24. Note:

Only remove E-coat where adhesive will be applied.

25. Note:

Ensure all bare metal is covered.

26. Clean and prepare mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations.
Aluminum Panel Bonding

27. Apply structural adhesive (1) to mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations.
Aluminum Panel Bonding

28. [Click here for full size](#)

29. Apply structural adhesive (1) to mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations.
Aluminum Panel Bonding

30. [Click here for full size](#)

31. Install front bumper energy absorber on vehicle using three dimensional fixturing equipment.

32. [Click here for full size](#)

33. Note:

Ensure screw is fully seated with a minimum torque of 5N-m (4 lb ft) and not stripped.

34. Install flow drill screws (1). [7X] Fastener Specifications

35. [Click here for full size](#)

36. Note:

Ensure screw is fully seated with a minimum torque of 5N-m (4 lb ft) and not stripped.

37. Install flow drill screws (1). [4X] Fastener Specifications

38. [Click here for full size](#)

39. Install countersunk structural rivets. [CR1 2X]

40. Remove excess adhesive.

41. Seal structural rivets with seam sealer. Anti-Corrosion Treatment and Repair

42. Apply the sealers and anti-corrosion materials to the repair area as necessary. Anti-Corrosion Treatment and Repair

43. Paint the repaired area. Basecoat/Clearcoat Paint Systems

44. Install all related panels and components.

45. Enable the SIR System. SIR Disabling and Enabling

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