

2022 CHEVROLET CORVETTE SERVICE MANUAL

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Rear Bumper Impact Bar Replacement (Without Tub Replacement)

Materials

- Structural Adhesive Aluminum Panel Bonding
- Sheet Molded Compound (SMC) Adhesive Sheet Molded Compound (SMC) Panel Bonding

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 rear bumper impact bar is made of carbon fiber. [Structural Carbon Fiber Description](#)
6. Note:

Left shown, right similar.
7. Note:

[Three dimensional measuring equipment required for installation.](#)
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 M8 bolts (1). [2X]
13. [Click here for full size](#)
14. Note:

Left shown, right similar.
15. Remove flow drill screws (1). [6X] [Fastener Specifications](#)
16. [Click here for full size](#)
17. Note:

Left shown, right similar.
18. Locate cut line (1) on inner tub floor and cut out inner portion (2) for access to flow drill screw.
19. [Click here for full size](#)

20. Note:

Left shown, right similar.

21. Through access hole (1) remove flow drill screw (2). [1X]

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

23. Cut access openings in rear bumper impact bar at cut lines (1). Structural Carbon Fiber Description

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

25. Cut access openings in rear bumper impact bar at cut lines (1).

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

27. Note:

Rear bumper impact bar rivets (1) will not be reinstalled.

28. Note:

Do not damage aluminum top plate when removing rivets.

29. Using belt sander or equivalent tool remove underside of rivet (1).

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

31. Warning:

When separating bonded composite or carbon fiber, be sure to adhere to the following precautions:

- Do not use an open flame
- Heat area slowly and evenly to avoid reaching resin smoking point
- 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.

32. Apply heat to inner underside of rear bumper impact bar to release adhesive (1).

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

34. Apply heat to inner underside of rear bumper impact bar to release adhesive (1).

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

36. Note:

Rear bumper impact bar may need to be cut around tow eye bracket.

37. Cut rear bumper impact bar around tow eye bracket (1) if needed.

38. Remove rear bumper impact bar (2) from vehicle.

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

40. Apply heat to rear bumper impact bar brackets to release adhesive (1).

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

42. Note:

Rear bumper impact bar is supplied as an assembly with brackets included.

43. Remove rear bumper impact bar brackets (1) from vehicle.

44. Note:

Do not damage body structure when removing adhesive.

45. Remove remaining adhesive from body structure.

Installation Procedure

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

Temporarily install new rear bumper impact bar.

3. Position rear bumper impact bar (1) on vehicle using three dimensional fixturing equipment.
4. [Click here for full size](#)
5. Note:

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

6. Drill 5.4 mm (7/32") pilot holes (1) for M6 flow drill screws. [10X] Fastener Specifications
7. Using scribe tool, mark locations (2) on rear beam for pilot holes. [4X]
8. Remove rear bumper impact bar from vehicle.
9. [Click here for full size](#)
10. Drill 5.4 mm (7/32") pilot holes (1) at marked locations. [4X] Fastener Specifications
11. [Click here for full size](#)
12. Note:

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

13. Note:

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

14. Note:

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

15. Note:

Ensure all bare metal is covered.

16. Clean and prepare mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations. Aluminum Panel Bonding
17. Apply structural adhesive (1) to mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations. Aluminum Panel Bonding
18. [Click here for full size](#)
19. Note:

Ensure all bare metal is covered.

20. Apply a consistent bead of adhesive (1) 14 mm (9/16) in diameter to mating surfaces on structure and replacement part according to adhesive manufacturer's recommendations. Sheet Molded Compound (SMC) Panel Bonding
21. Note:

Special structural adhesive used to join bare carbon fiber to aluminum structure.

22. Apply structural adhesive on mating surfaces (2) of structure and replacement part according to adhesive manufacturer's recommendations. Structural Carbon Fiber Description
23. [Click here for full size](#)
24. Install rear bumper impact bar on vehicle.
25. [Click here for full size](#)
26. Install M8 bolts (1) torque of 22N-m (16 lb ft) [2X].
27. [Click here for full size](#)
28. Note:

Left shown, right similar.

29. Note:

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

30. Install M6 flow drill screws (1). [6X] Fastener Specifications

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

32. Note:

Left shown, right similar.

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 (2) through access hole (1) . [1X]

35. Remove excess adhesive.

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

37. Paint any bare metal areas in the repaired area. Basecoat/Clearcoat Paint Systems

38. Do NOT paint carbon fiber beam.

39. Install all related panels and components.

40. Enable the SIR System. SIR Disabling and Enabling

Access Hole Patch Installation Procedure

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

2. Clean area around access hole according to composite adhesive manufacturer's recommendations. Sheet Molded Compound (SMC) Panel Bonding

3. Note:

Overlap access hole with reinforced mesh tape by a minimum of 25 mm (1 in) in all directions.

4. Apply reinforced mesh tape (1) over access hole.

5. Note:

The frame should extend 10 mm (3/8 in) beyond mesh tape.

6. Using 50 mm (2 in) masking tape create a frame around mesh tape.

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

8. Note:

When applying adhesive use a spread with firm even pressure over mesh tape.

9. Apply one even coat of adhesive (1) over reinforced mesh tape. Sheet Molded Compound (SMC) Panel Bonding

10. On backside of patch, spread squeeze-through adhesive evenly over repair area.

11. Note:

Create a uniform thickness patch over access hole, approximately 3mm thick.

12. Apply second coat of adhesive (1) over reinforced mesh tape. Sheet Molded Compound (SMC) Panel Bonding

13. Note:

Remove masking tape while adhesive is wet.

14. Remove 50 mm (2 in) masking tape from repair area.

15. Install all related panels and components.
16. Enable the SIR System. SIR Disabling and Enabling

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