Highland Ridge Recall: #17V065 2017-126 Crush Tube Hanger

⚠CAUTION **⚠WARNING** **⚠ DANGER**

Caution, warning and danger symbols indicate that an installation procedure has a safety risk involved and may cause death, serious injury or property damage if not performed safely and within the parameters set forth in this manual. This repair should only be completed by a qualified service technician.

NOTE: Orange lines in this service form refer to using a tool to cut and/or remove components. Red lines (solid or dashed) indicate using a welder to add frame components. Blue lines refer to making marks on the frame with a marking method.

NOTE: All welds in this repair document should be ¼" fillet welds.

Model year 2016 to 2017, the affected trailer frame (PN 373786) floor plan 388 RKS came with a 2"x3" crush tube welded to the bottom of the I-beam, with the 3" plane mated to the bottom of the I-beam. The hangers were then welded directly to the crush tube.
As of February 2017, the crush tube was replaced with a 2"x2" crush tube. These repairs (Fig. 1) are used to address the 1" difference in crush tube width that allowed the hangers to puncture or collapse into the crush tube.

When there are no signs of damage to the crush tube, use Hanger Reinforcement kit PN 17V065A (Fig. 1). See Reinforce Hanger section of this manual. This kit can be installed regardless of whether the trailer has Correct Track™ or standard hangers. This kit can be installed without removing the axles or the hangers.

If the trailer is damaged, such as the spring hanger is pushed through the tube or ripped off, or has any indication of cracking around the welds/tube, the trailer should be repaired using the Replace Hanger kit. PN 17V065B should be used if the trailer is equipped with Correct Track™. If the trailer does NOT have Correct Track, the Replace Hanger kit PN 17V065B2 should be used. This kit requires removing the axles and hangers. See Replace the Hangers section of this manual.

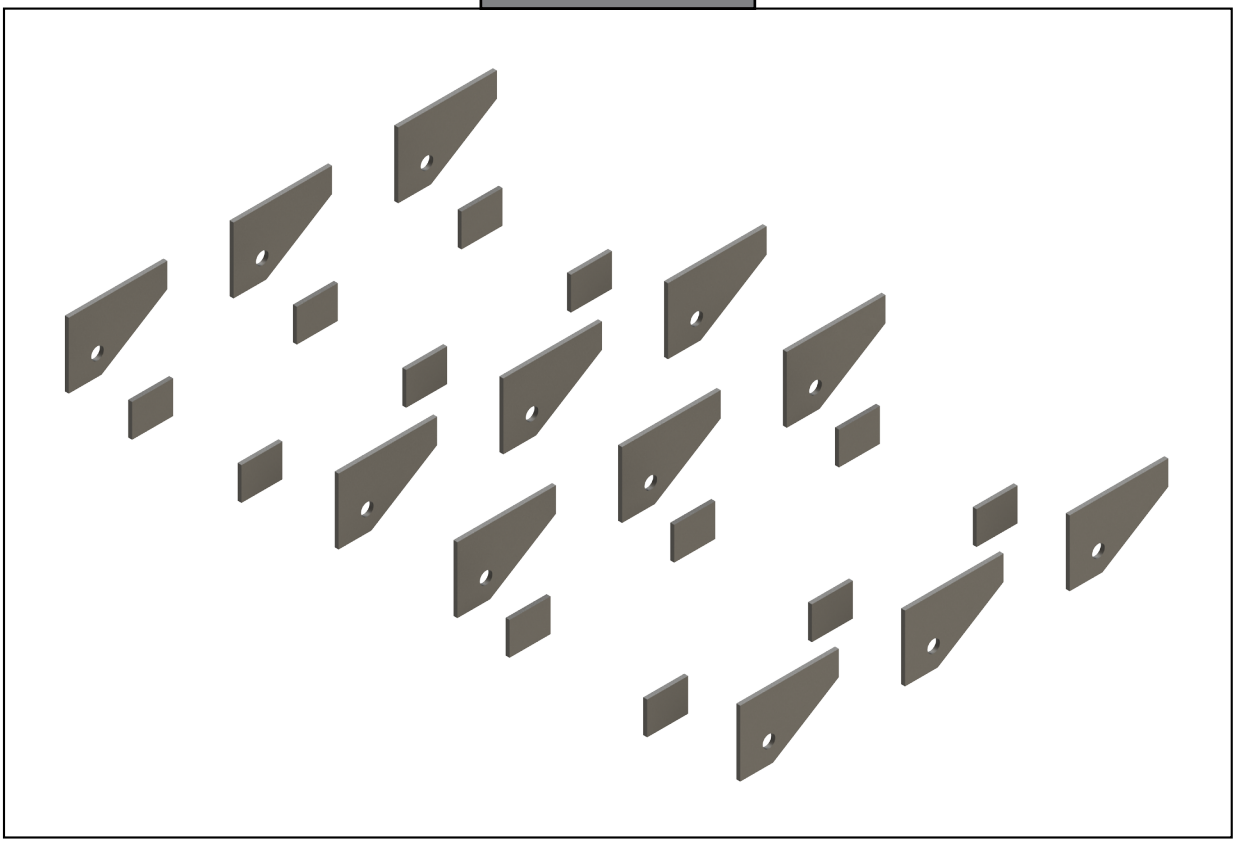
Hanger Reinforcement Procedure

Resources Required

- Personal Protective Equipment
- Fire Extinguisher
- Spray Bottle of Water
- Cordless or Electric Drill or Screw Gun
- Appropriate Drive Bits
- Welder
- Oxy Acetylene Torch/Plasma Cutter
- Grinder
- Tape Measure
- Preferred Marking Method
- C-Clamps
- Black Spray Paint
- Floor Jack
- Jack Stands
- Reinforce Hangers Kit (PN 678938)

Repair #1 Hanger Reinforcement kit PN 17V065A consists of 24 pieces: trapezoid plate PN (x12) and spacer plates PN (x12).

Fig. 1- 17V065A



Preparation

NOTE: This kit will install and be welded the same way using the same measurements, regardless of whether the hangers are Correct Track™ or standard (Fig. 2). The spacer plate (Fig. 2A) is welded on first. The trapezoid plate (Fig. 2B) is welded on after the spacer plate.

⚠WARNING

Lift the trailer by the chassis. Do not go under the trailer unless it is properly supported. Unsupported trailers can fall and may result in death, serious injury or property damage.

1. Lift front and rear of chassis/frame with a floor jack and stabilize with jack stands (consult the manufacturer's specifications for proper procedures).
2. Remove tires.

⚠WARNING

Failure to remove flammable objects, obstructions, tires, axles or additional suspension components may result in death, serious injury or property damage.

3. Remove any wires, heat ducts, gas lines, water/holding tanks and underbelly material that is against the I-beams or that might cause a fire hazard.

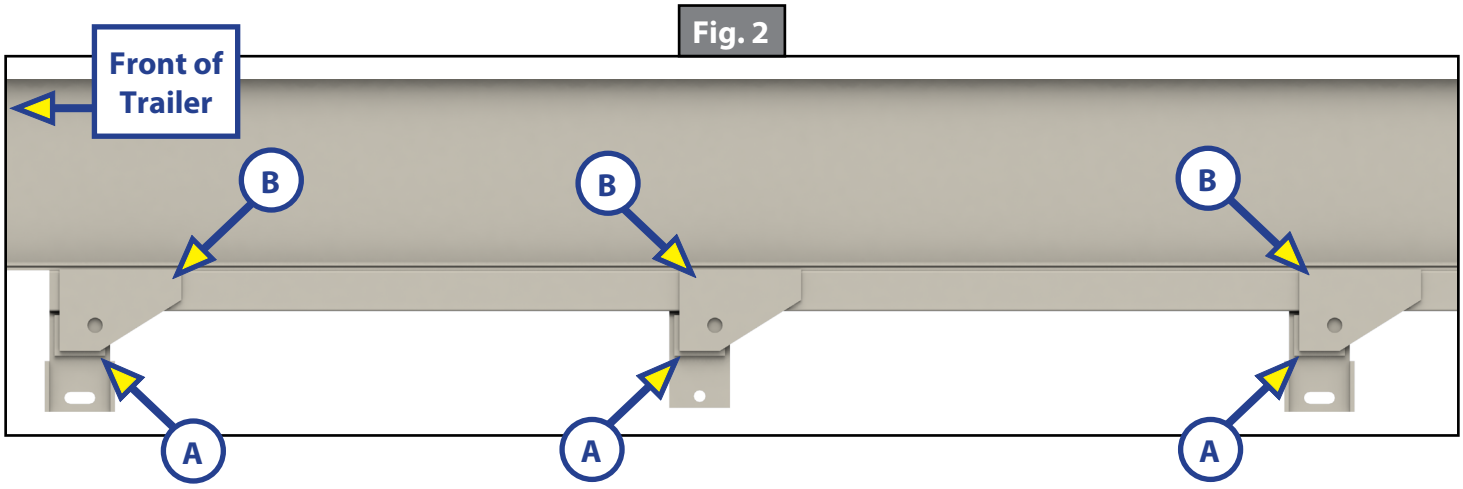
Prepare Area For Welding

4. Use 400 to 800 grit sandpaper to sand the damaged area until smooth. Make sure to gradually blend the unaffected area in to the affected area to avoid creating a divot.

NOTE: The sandpaper grit depends on the size and depth of the damaged area.

5. Remove all debris. An air hose is the preferred method for debris removal, however a clean, dust-free, dry cloth may be used, as long as no residue is left behind.
6. Apply R-M Pre-Paint Cleaner to a clean cloth. Clean the affected area and wipe until dry.

Fig. 2



NOTE: Some trailers built before Revision M have the crush tube touching the lower I-beam (Fig. 3A).
Some trailers have a small gap between the crush tube and the lower I-beam.
Trailers starting with Revision M and following come with a 1 ½" gap between the crush tube and the lower I-beam (Fig. 4A).

NOTE: Some trailers built before Revision M, have the front hangers nearly touching the lower I-beam (Fig. 3B).
Trailers starting with Revision M and following have the front edge of the front hanger 2 ⅝ inches back from the end of the crush tube (Fig. 4B).

Fig. 3

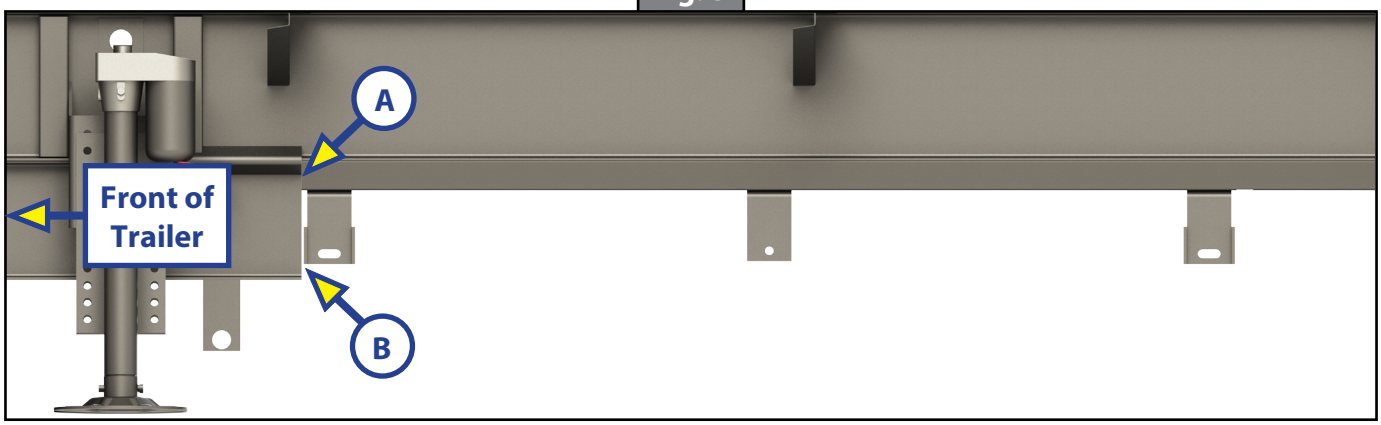
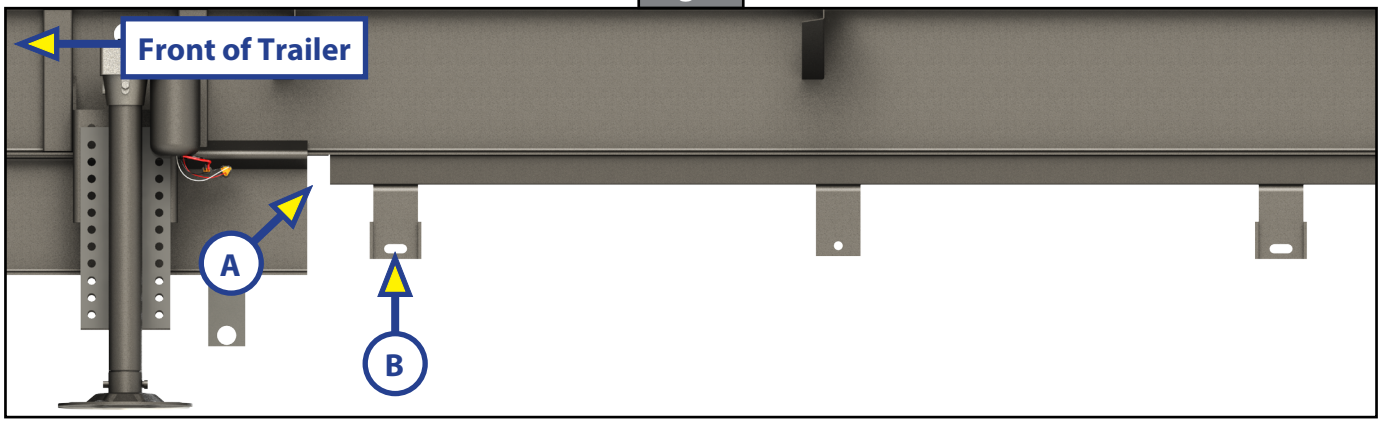


Fig. 4

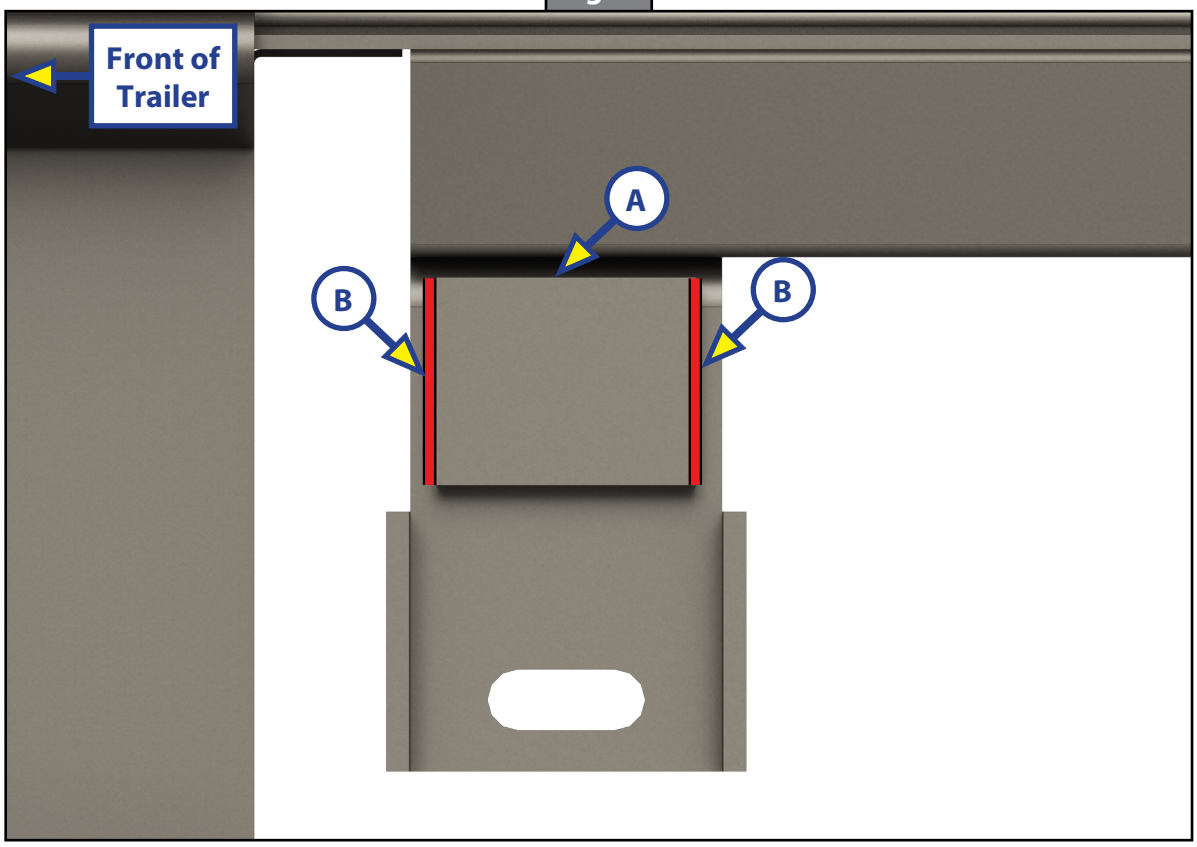


Hanger Reinforcement Procedure

NOTE: There are 2 trapezoid plates and 2 spacer plates for each hanger. There are 12 total trapezoid plates and 12 total spacer plates for each trailer.

1. Start on the curbside of the trailer. On the outside of the front hanger, center the spacer plate (Fig. 5A) below the bend of the hanger and .25" from the right and left edge of the hanger.
2. Weld the spacer plate to the hanger on the outside of the hanger. Weld only on the left and right edges (Fig. 5B).

Fig. 5



3. Once sufficiently cooled, the trapezoid plate is placed over the spacer plate (Fig. 6).
4. The trapezoid plate is placed .25" from the front edge of the spacer, and .25" above the bottom edge of the spacer.
5. Weld the entire length of edge A (Fig. 6).
6. From the corner of edge A and B, weld 1.5" in towards the center of edge B (Fig. 6).
7. From the corner of edge C and B, weld 1.5" in towards the center of edge B (Fig. 6).
8. On edge C, weld from the corner of edge B and C, to the edge of the crush tube (Fig. 6).
9. On edge C, from the corner of edge D and C, weld to the edge of the spacer plate (Fig. 6).
10. Weld the entire length of edge D (Fig. 6).
11. Place a pocket weld in the hole in the trapezoid plate (Fig. 6A).

NOTE: Additional weld illustrations are shown in Fig. 7, Fig. 8, and Fig. 9.

12. Repeat steps 1 through 11 on the inside of the hanger.
13. Repeat the steps on the center and rear hangers on the curbside of the trailer.
14. Repeat the steps on all 3 hangers on the roadside.
15. Touch up the welded areas using black spray paint.
16. Reinstall all items that were removed in steps 2 and 3 of the "Preparation" section.
17. Remove jack stands and lower the trailer to the ground.

Fig. 6

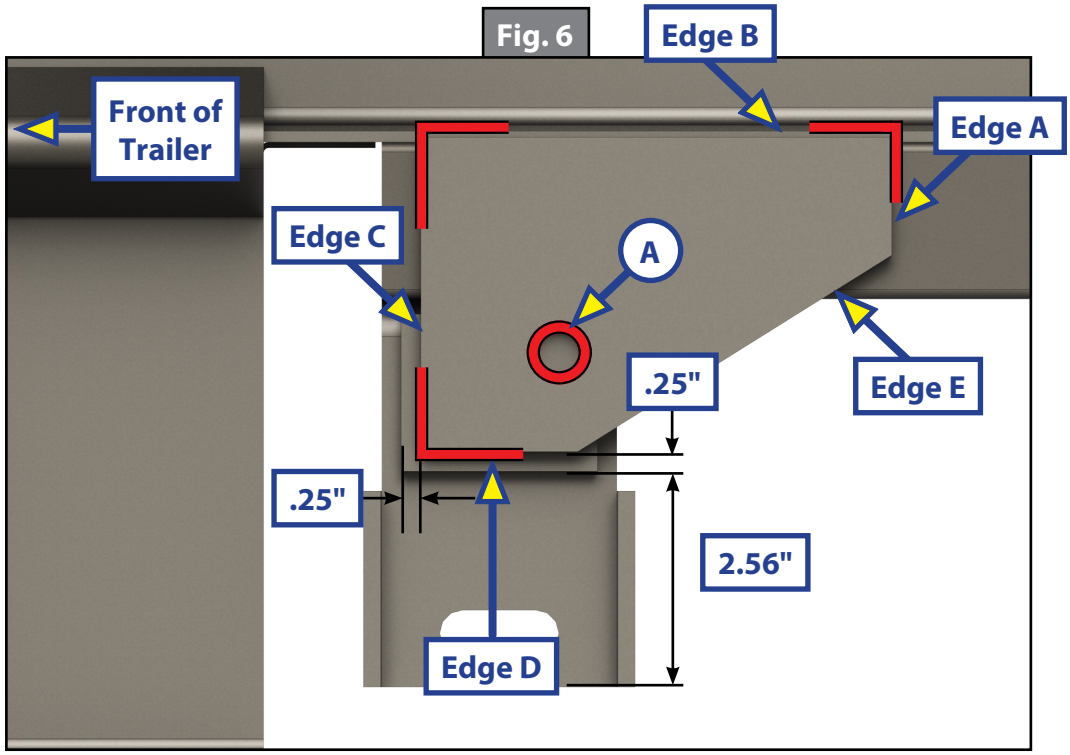


Fig. 7

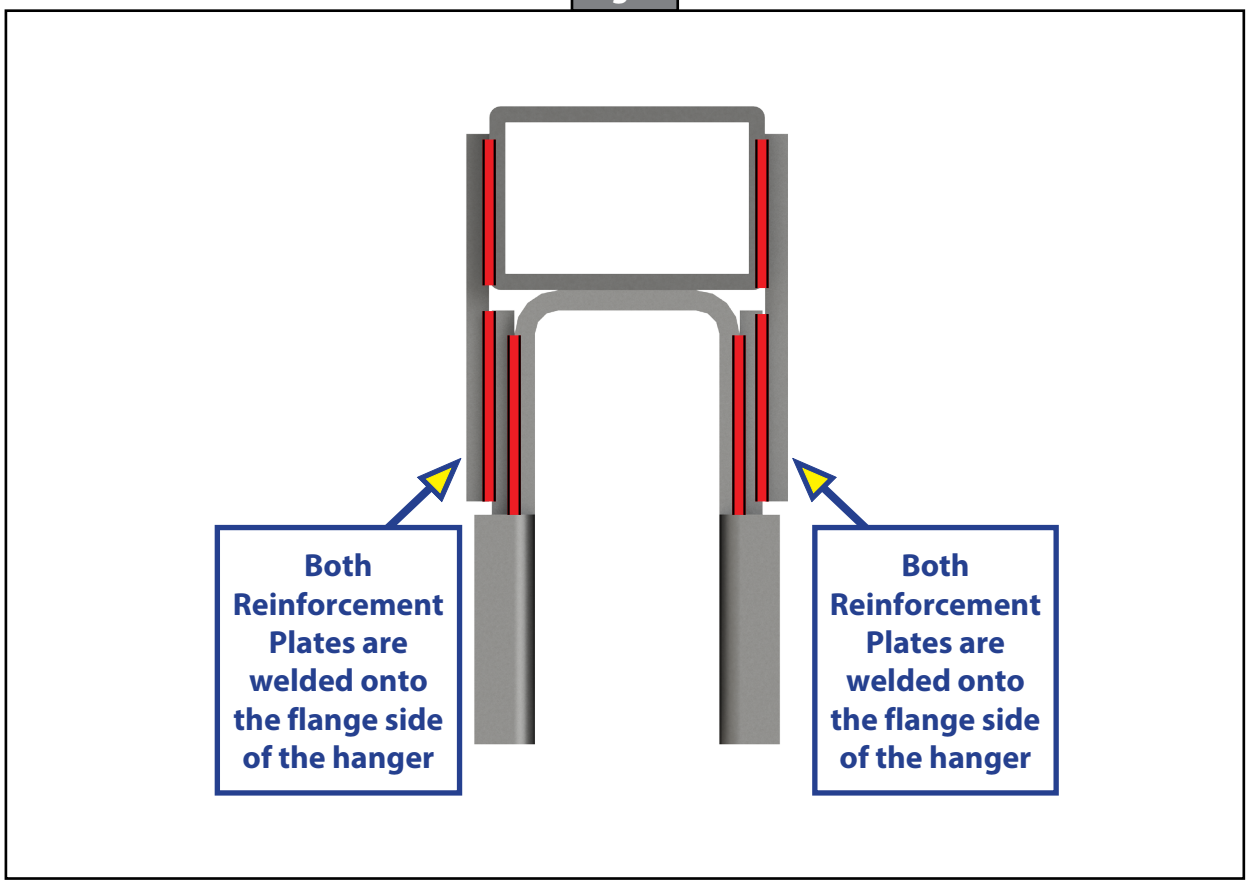

Both Reinforcement Plates are welded onto the flange side of the hanger
Both Reinforcement Plates are welded onto the flange side of the hanger

Fig. 8

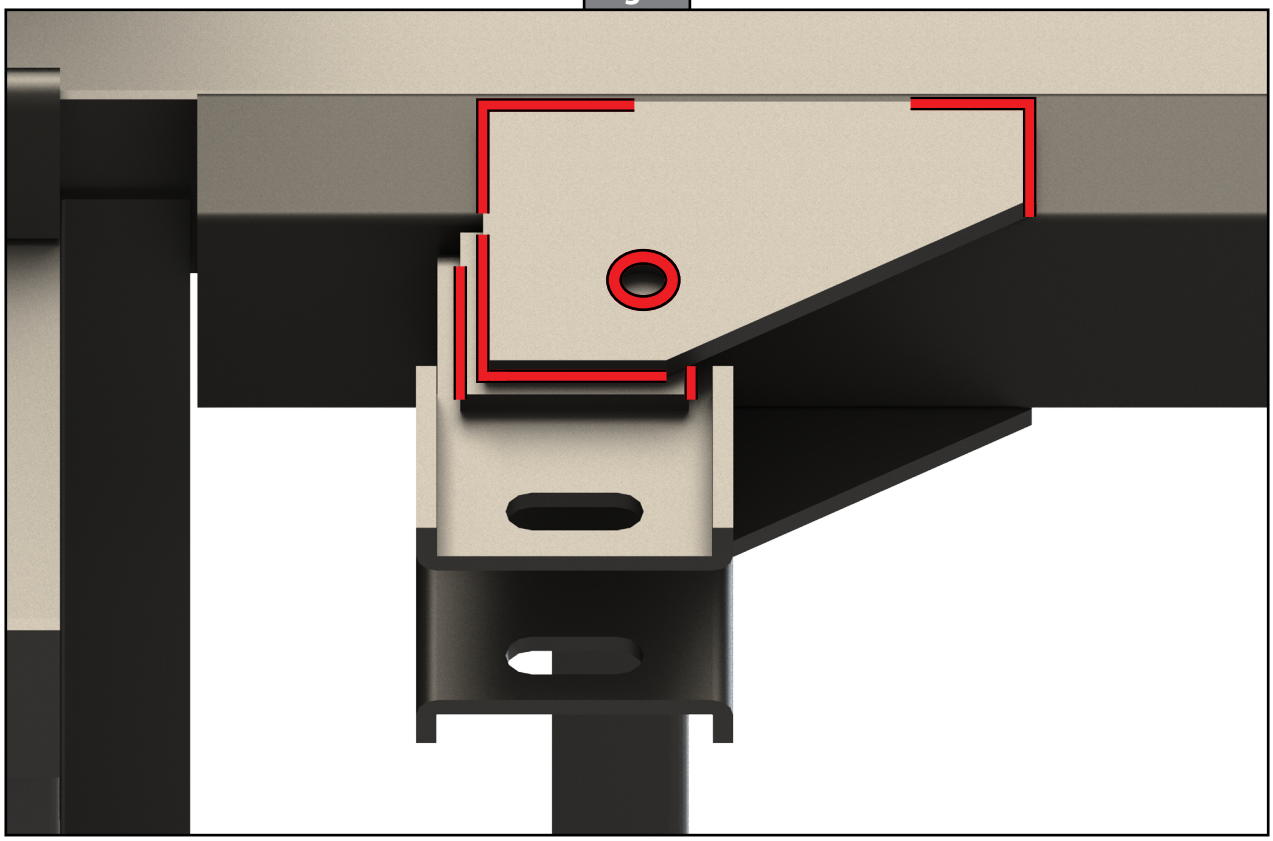
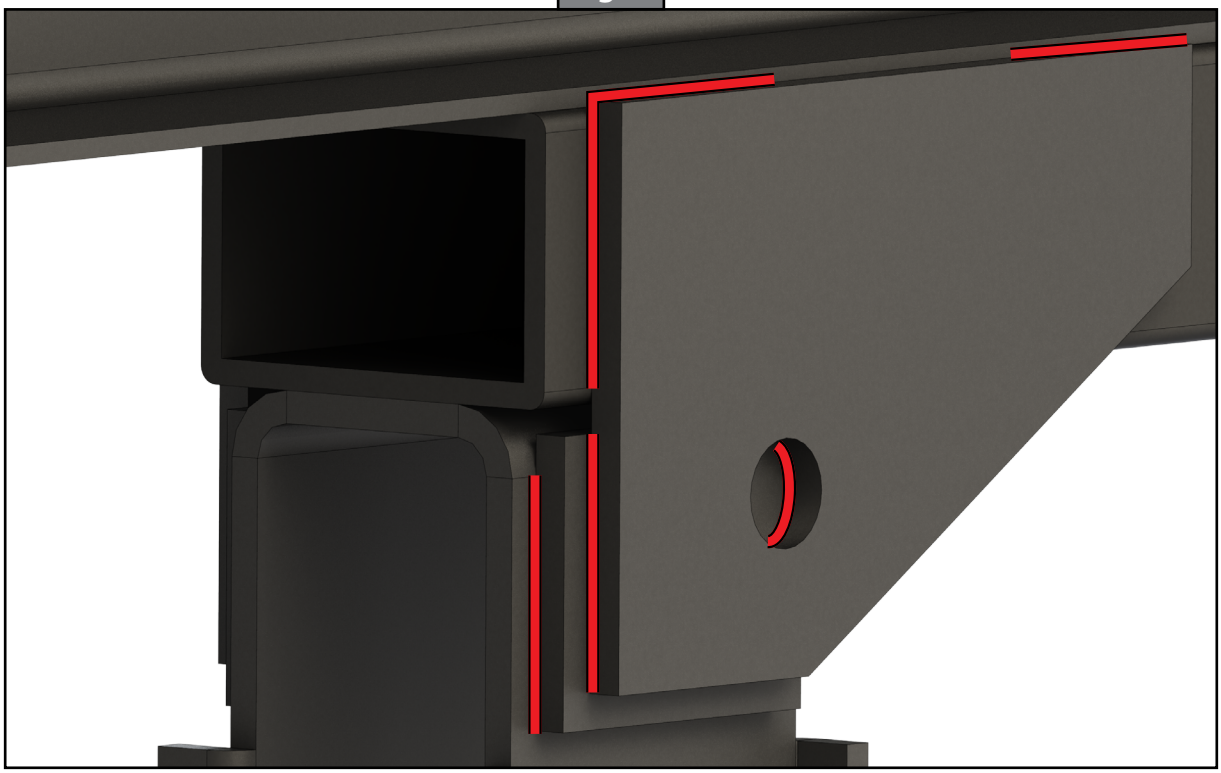


Fig. 9



Repair # 2 Replace the Hangers

Resources Required

- Personal Protective Equipment
- Fire Extinguisher
- Spray Bottle of Water
- Cordless or Electric Drill or Screw Gun
- Appropriate Drive Bits
- Welder
- Oxy Acetylene Torch/Plasma Cutter
- Grinder
- Tape Measure
- Preferred Marking Method
- C-Clamps
- Black Spray Paint
- Floor Jack
- Jack Stands
- Replacement Hanger Kits
  (Correct Track™ = Fig. 10/ Standard = Fig. 11)

The Correct Track™ kit, PN 17V065B, consists of 3 parts: front saddle bracket (x2), center saddle bracket (x2) and rear saddle bracket (x2).
The standard kit, PN 17V065B2, consists of 2 parts: front saddle bracket (x2) and center and rear saddle bracket (x4).
This repair requires removal of the axles and all 6 hangers to complete.

NOTE: Make sure the correct kit is used. Some trailers will have Correct Track™ and others will not. Please verify to be sure you receive the proper kit.

NOTE: All welds in this repair document should be ¼" fillet welds.

Fig. 10 -PN 17V065B

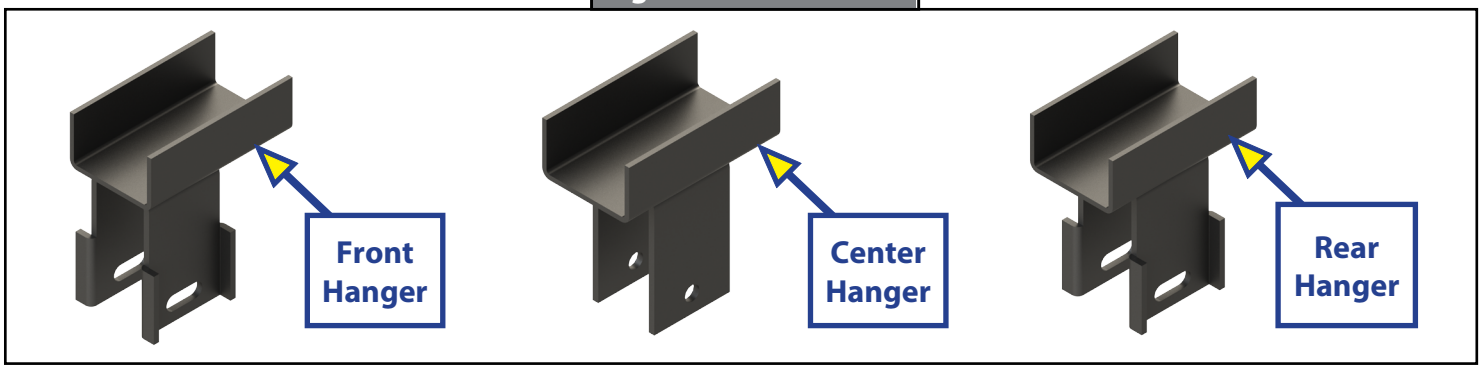
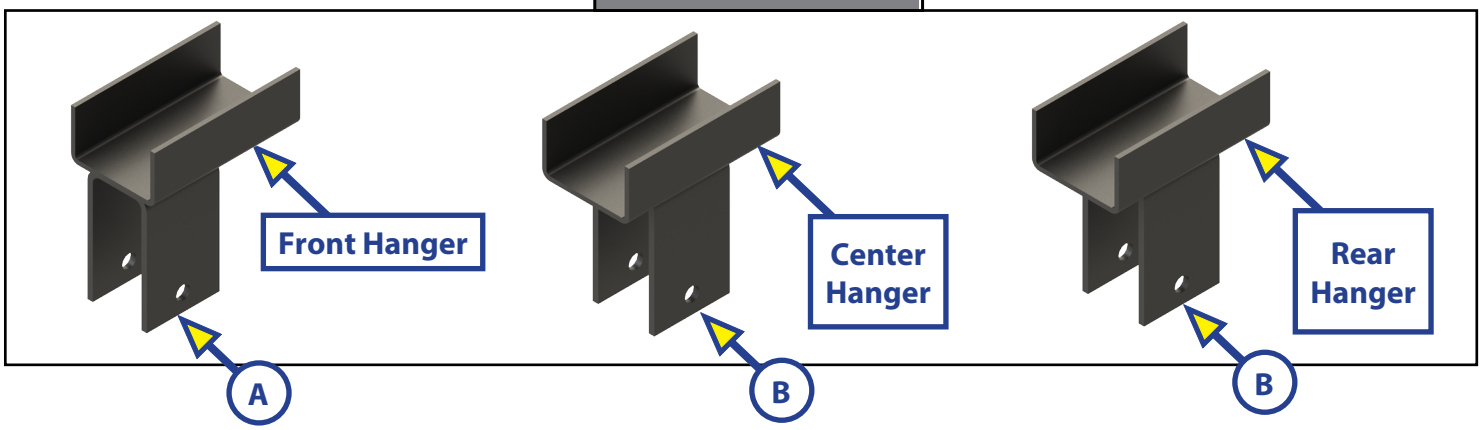


Fig. 11- PN 17V065B2



Preparation

NOTE: Both kits will install and be welded the same way using the same measurements, regardless of whether the hangers are Correct Track™ or standard.

⚠WARNING

Lift the trailer by the chassis. Do not go under the trailer unless it is properly supported. Unsupported trailers can fall and may result in death, serious injury or property damage.

1. Lift front and rear of chassis/frame with a floor jack and stabilize with jack stands (consult the manufacturer's specifications for proper procedures).

⚠WARNING

Failure to remove flammable objects, obstructions, tires, axles or additional suspension components may result in death, serious injury or property damage.

2. Remove tires, axles and any additional suspension components from the axle hangers.
3. Remove any wires, heat duct, gas lines, water/holding tanks and underbelly material that is against the I-beams or that might cause a fire hazard.

Prepare Area For Welding

NOTE: If additional paint needs to be removed from the area surrounding the parts removed, use the following procedure.

4. Use 400 to 800 grit sandpaper to sand the damaged area until smooth. Make sure to gradually blend the unaffected area in to the affected area to avoid creating a divot.

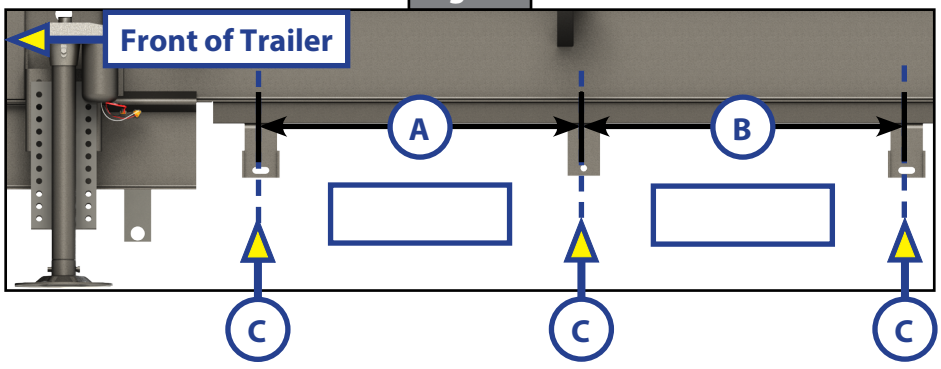
NOTE: The sandpaper grit depends on the size and depth of the damaged area.

5. Remove all debris. An air hose is the preferred method for debris removal, however a clean, dust-free, dry cloth may be used, as long as no residue is left behind.
6. Apply R-M Pre-Paint Cleaner to a clean cloth. Clean the affected area and wipe until dry.

NOTE: All hangers curbside and roadside will be removed.

7. Measure the center-to-center distance of the current axle hangers from the center hanger out to each side (Fig. 12A and 12B). The measurement can be written in the box.
8. Mark the location of the center of each hanger on the crush tube (Fig. 12C).

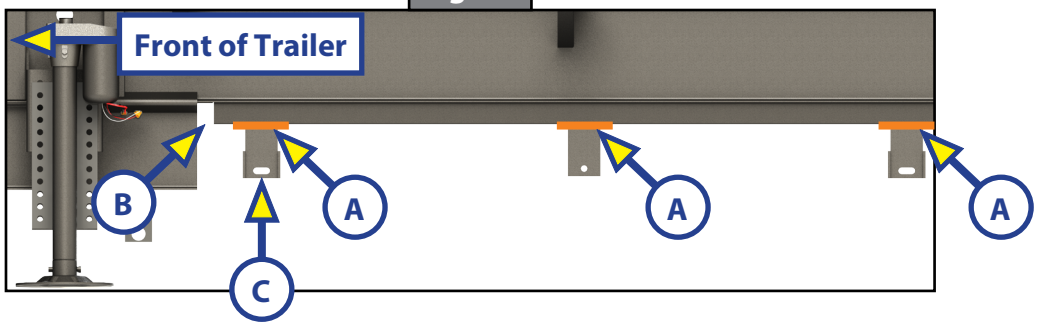
Fig. 12



9. Cut all three hangers off of the crush tube along each current weld (Fig. 13A).

NOTE: Try to avoid cutting into the crush tube.

Fig. 13



10. Fill in any holes made in the crush tube with a welder.

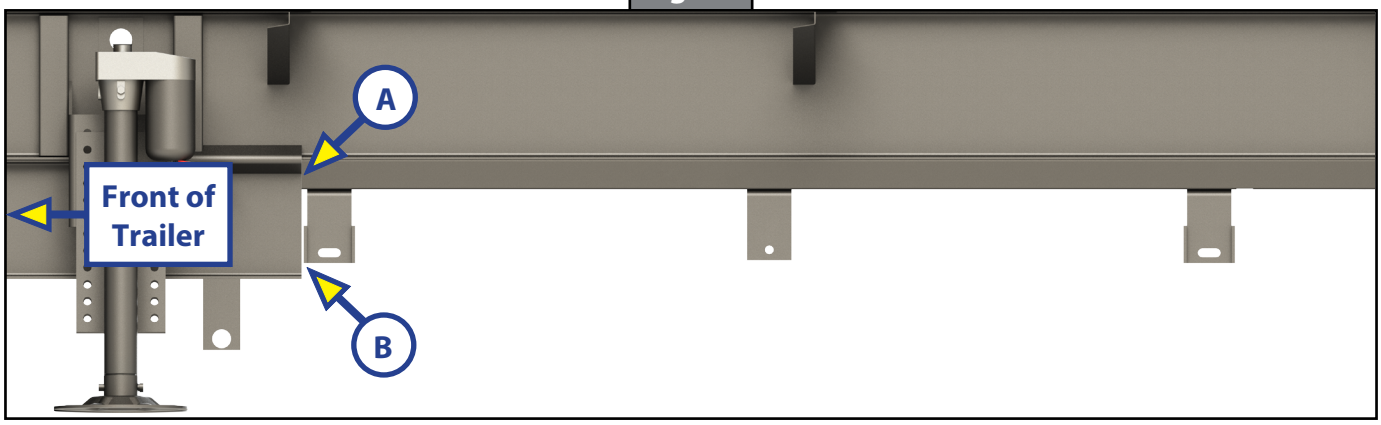
11. Grind the crush tube until it is smooth.

NOTE: Any holes previously made in the crush tube by old hangers should be covered with C-channel hangers in the new kit (Fig. 10 or Fig. 11). If C-channel does not cover the entire hole in the crush tube, contact Highland Ridge to review the condition of the crush tube before proceeding.

NOTE: Some trailers built before Revision M, have the crush tube touching the lower I-beam (Fig. 14A).
Some trailers have a small gap between the crush tube and the lower I-beam.
Trailers starting with Revision M and following come with a 1 ½" gap between the crush tube and the lower I-beam (Fig. 13B).

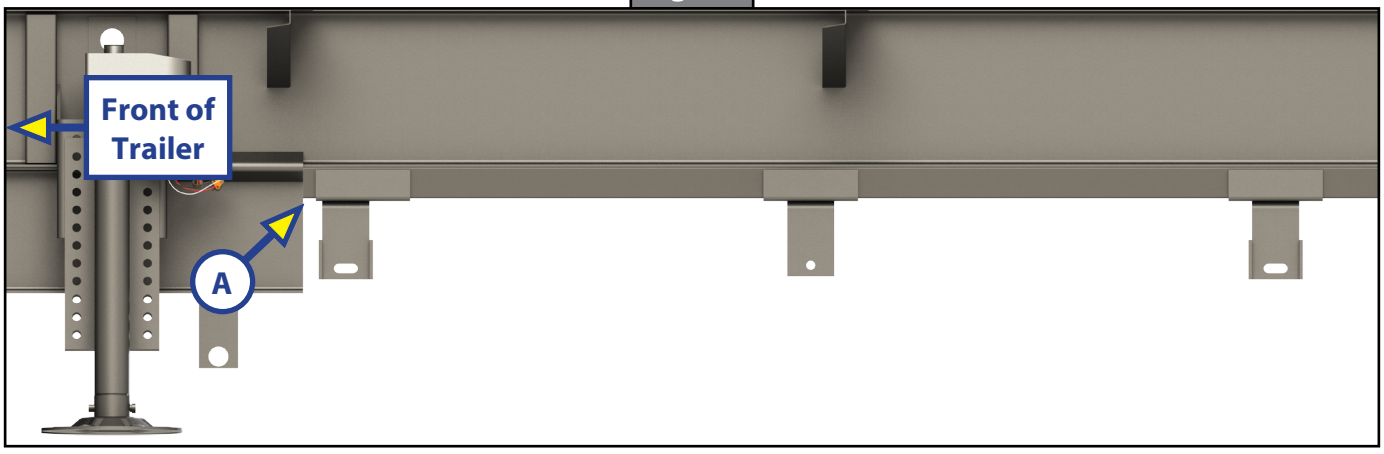
NOTE: Some trailers built before Revision M, have the front hangers nearly touching the lower I-beam (Fig. 14B).
Trailers starting with Revision M and following have the front edge of the front hanger 2 ⅝ inches back from the end of the crush tube (Fig. 13C).

Fig. 14



NOTE: Trailers built before Revision M with the crush tube touching the lower I-beam should have the repair saddle bracket installed ¼" back from the end of the lower I-beam (Fig. 15A).
This will provide ½" total between the end of the lower I-beam and the front edge of the front hanger allowing space to weld the end of the bracket to the crush tube. The center and rear hangers should be moved rearward also, in order to maintain the same center-to-center hanger spacing as measured in step 7.

Fig. 15



Replacing the Hangers

12. Align the center of each hanger with the marks made in step 7 of "Preparation."

13. Check the positioning of the C-channel hangers using the marks left on the crush tubes. Verify current hanger measurements equal hanger measurements taken prior to removal from crush tube (Fig. 12A and 12B).

14. Clamp the repair kit (Fig. 10) or (Fig. 11) C-channel to the bottom of the I-Beam (Fig. 16C).

15. Measure for square between the hangers, including measuring across the frame in an X shape and make adjustments so that a ¼ " tolerance is met (Fig. 16A and Fig. 16B). Refer to TI - 058 included with this bulletin; for instructions on measuring for proper tolerances between hangers. This document can be found online at: http://www.lci1.com/support-spring-axles.

16. The Correct Track kit includes 3 different brackets. Front bracket (Fig. 16D) shows a hanger welded to the front end of C-channel. Center bracket (Fig. 16E) shows a hanger welded to the center of C-channel. Rear bracket (Fig. 16F) shows a hanger welded to the center of C-channel.

NOTE: The standard repair kit includes 2 different brackets. Front bracket (Fig. 11A) shows a hanger welded to the front end of C-channel. Center and rear brackets (Fig. 11B) show a hanger welded to the center of C-channel.

17. Tack weld the repair kit [PN 17V065B (Fig. 10) or PN 17V065B2 (Fig. 11)] C-channel to the I-Beam.

NOTE: Do not weld the front edge (Fig. 19B) on the front hanger only.

18. Completely weld the C-channels to the I-Beams following red lines (Fig. 16G, Fig. 17A, Fig. 18A, Fig. 19A, Fig. 20A and Fig. 21A).

Fig. 16

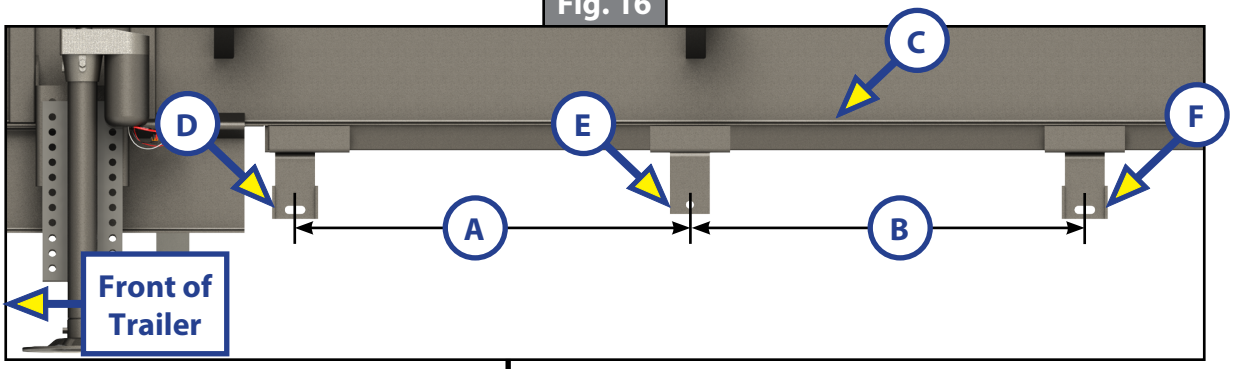


Fig. 16 Detail

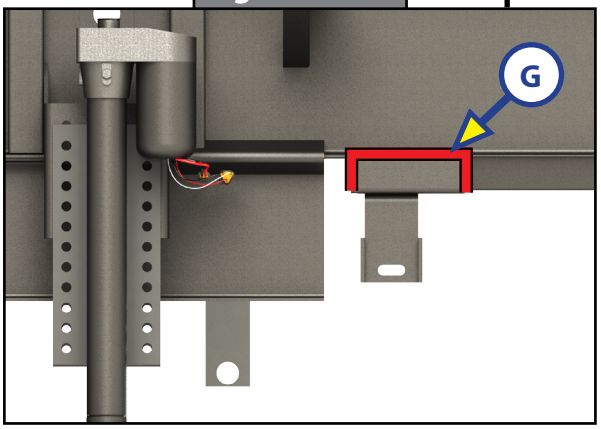


Fig. 17

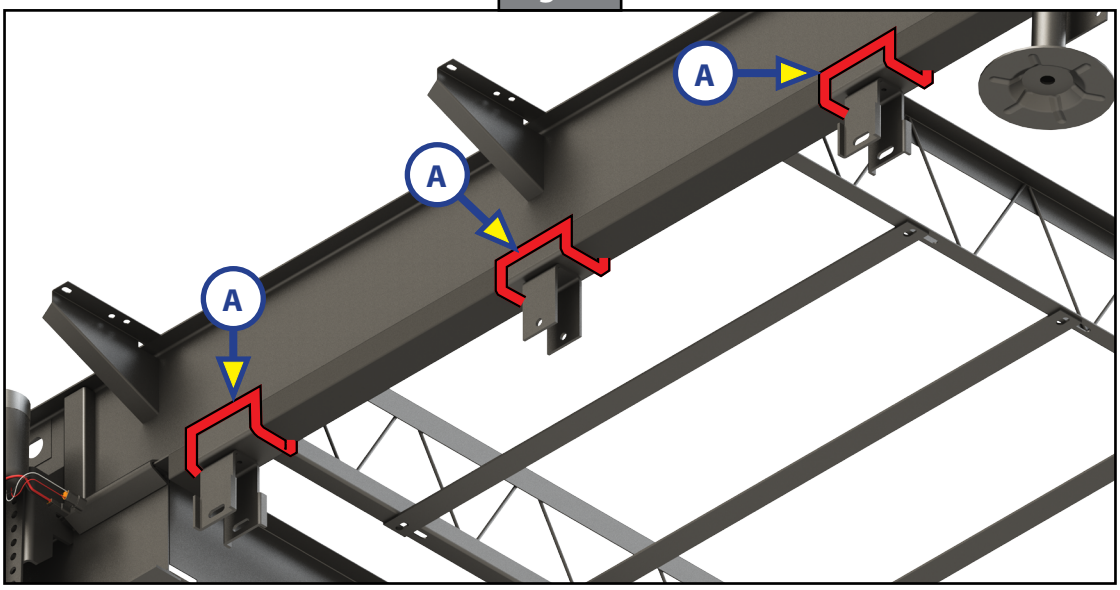


Fig. 18

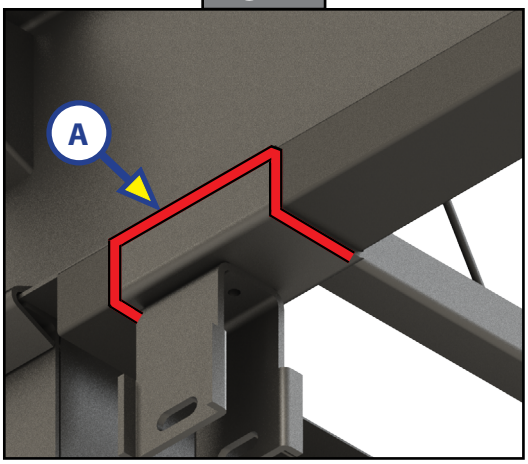


Fig. 19

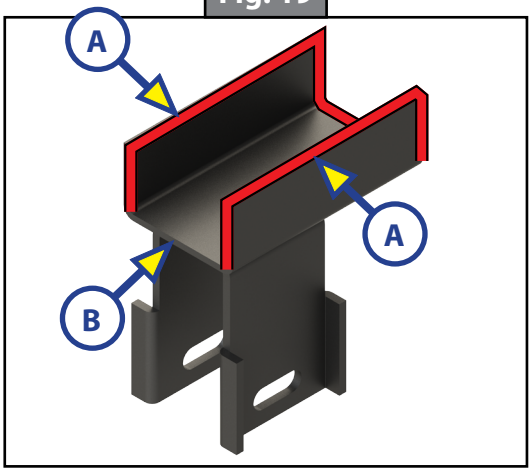


Fig. 20

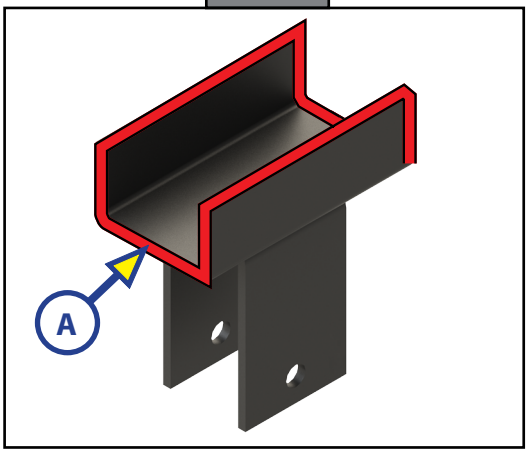
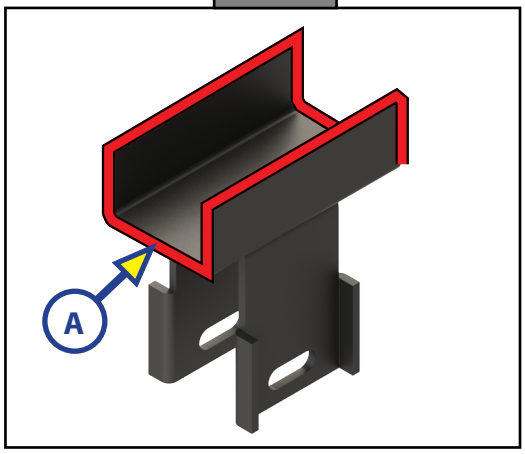


Fig. 21



19. Touch up the welded areas using black spray paint.
20. Reinstall all items that were removed in steps 2 and 3 of the "Preparation" section.
21. Remove jack stands and lower the trailer to the ground.