GRAND DESIGN IMAGINE CUSTOMER SATISFACTION PROGRAM 920014

Product:	Axle Hangers and Main Rails		Date:	07/16/2025	
Flat Rate:	V-brace: 3.0 hrs	Flat Rate:	Angle: 0.5 hrs/ea.	Flat Rate:	Tube: 1.5 hrs/side

Purpose

The first section of this document outlines the process of adding bracing material to spring axle hangers. The second section covers repairing a crack in the main rails of the frame, identified through a visual inspection.

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

NOTE: Red lines with black borders indicate where welding is to occur.

Safety

⚠WARNING

The trailer MUST be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death, serious personal injury, severe product and/or property damage.

⚠WARNING

Always lift the trailer by its frame and never by its axle or suspension. Axle and suspension components are not designed, or rated, for the dead weight, point-of-contact loads that the trailer's frame is. Do not go under the trailer unless it is supported by appropriately rated jack stands. Improperly supported trailers can collapse, causing possible serious personal injury or death.

⚠CAUTION

Moving parts can pinch, cut or crush. Keep clear and use caution.

⚠CAUTION

Wear appropriate personal protective equipment (PPE) when performing service or maintenance operations. Always wear eye protection when servicing trailer axles, brakes, hubs, springs and wheels. Not using PPE may result in personal injury.

⚠CAUTION

Welding generates excessive heat, hot sparks and blinding light. Use appropriate personal protective equipment for welding.

Read and understand all instructions before installing or operating this product. Adhere to all safety labels.

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Section One - Welding a Reinforcing Angle (Mandatory On All Units)

Resources Required

- 1 - 2 persons, depending on task
- Floor jacks
- Jack stands
- Pneumatic or electric air or impact gun
- Reinforcing Angle (V-Brace PN# 103727)
- Assorted deep well sockets
- Torque wrench (ft-lb)
- Welder
- Gloss black spray paint

⚠WARNING

Be sure to disconnect any and all power sources providing electricity to the trailer. A welding unit can send a damaging charge along the frame to any power source grounded on the frame, including house batteries, tow vehicle batteries, and solar charging panels. Failure to heed this warning could result in death, permanent or partial damage to the power source(s) causing unit or property damage, or personal injury.

Procedure

Preparation

1. Using floor jacks (Fig. 1A), lift the frame slightly and place properly-rated jack stands under the frame (Fig. 1B).
2. Remove floor jacks (Fig. 1A). Trailer frame and axles will be supported by jack stands only.
3. Remove tires and wheels — curbside and roadside — from the axles.
4. Move and protect any attachments close to the spring hangers that may impede installation of the V-braces.
5. Locate the front (Fig. 2A), center (Fig. 2B) and rear (Fig. 2C) axle hangers on the trailer frame rail.

NOTE: V-braces can be installed without the removal of the leaf springs and Road Armor equalizer.

Fig. 1

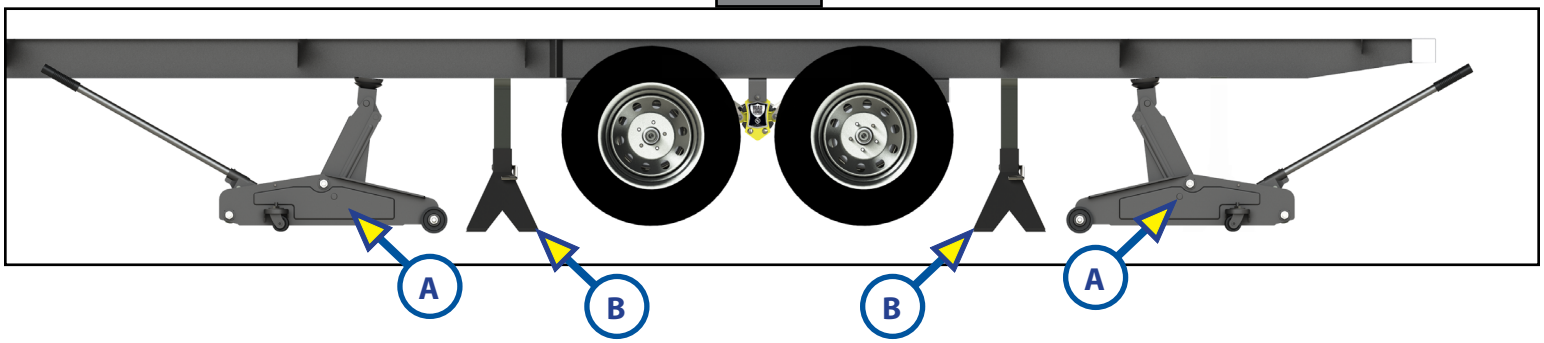

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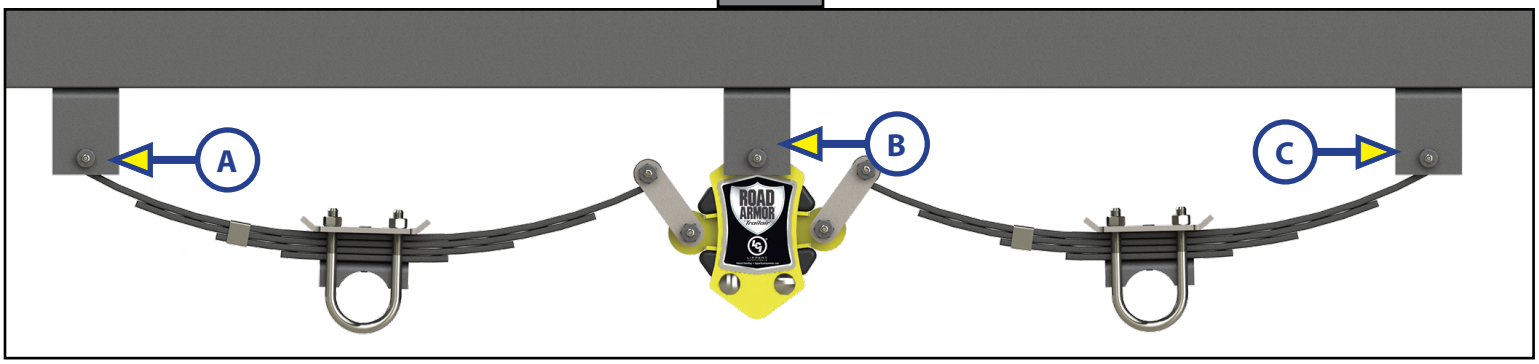
Fig. 2



Install V-Braces

1. Prep the weld surface area, making sure to remove all contaminants and debris prior to welding.
2. Insert the V-brace into the hanger (Figs. 3 and 4) so the V-brace spans the width of the hanger.
3. Four welds of approximately 1", shown in Figs. 3 and 4, are required to secure the V-brace to the hanger. The side welds are diagonally opposite each other.
   - **A.** On the front side of the V-brace, weld the top and right sides (Weld #1 and Weld #2, Fig. 3).
   - **B.** On the back side of the V-brace, weld the left and bottom sides (Weld #3 and Weld #4, Fig. 4).
4. After all new weld locations have cooled, clean weld areas then cover with black gloss Rust-Oleum® or similar paint product.
5. Continue to weld V-braces in place for the front, center and rear hangers.
6. Repeat procedure on the opposite side of the trailer frame.

Fig. 3

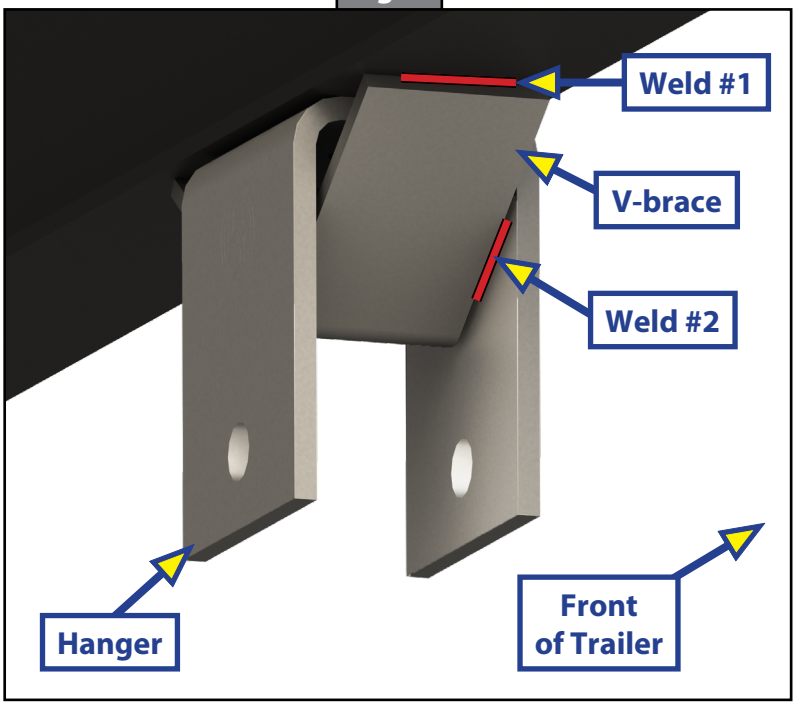
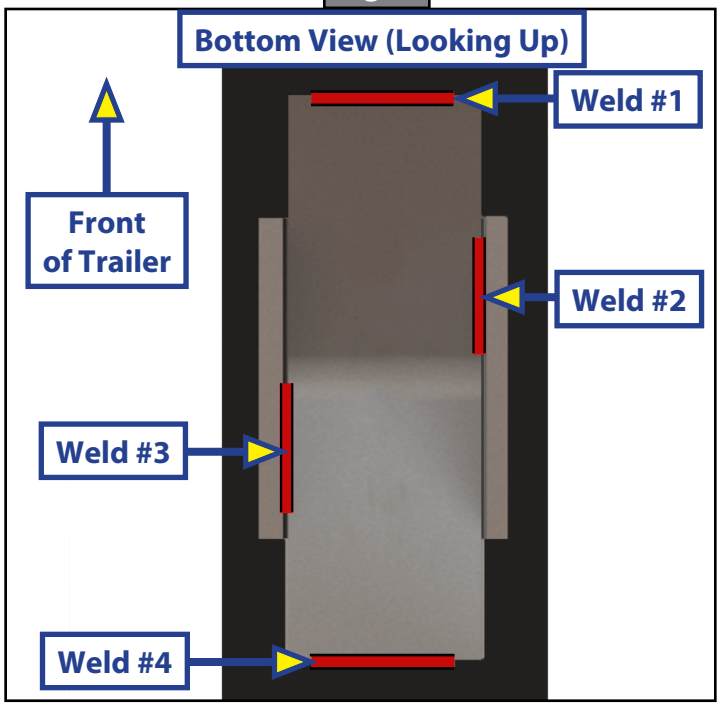


Fig. 4



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NOTE: Before this section is completed, be sure to inspect both the door side as well as the off-door side main rails for cracks in the axle areas. If no cracks are found, please move forward to the "**After V-braces Installed**" procedure. If a crack is found, move to "**Section Two - Two Options For Welding A Reinforcing Support.**"

After V-Braces Installed

1. Reinstall any previously-removed or relocated items that were moved to permit the installation.
2. Reinstall wheels according to the OEM specifications.
3. Using floor jacks, support the frame while removing all jack stands.
4. Lower the trailer to the ground and torque all wheel lug nuts to the manufacturer's specification.

Section Two - Two Procedures For Welding A Reinforcing Support (If Needed)

If cracks are found in the axle area of the frames main rails, apply one (1) of the procedures below:

1. **Procedure A**: This is the preferred method and is used for a crack(s) extending more than 2 inches above the bottom flange of the main rail. Please contact Lippert for PN - 106124.
2. **Procedure B**: This alternative procedure can be performed if the crack(s) are within 2 inches of the bottom flange of the frame rail and there are no obstructions such as outriggers or support angles above the spring hangers. Parts can be sourced locally as well as contacting Lippert. The tube dimensions and the Lippert part number are found in the Resources Required section below.

Resources Required

- Floor jack
- Jack stands
- Personal protective equipment
- Fire extinguisher
- Welder
- Grinder
- Black spray paint
- Tape measure

- Procedure A - *Crack reinforcement angle 1.5" x 4" x 12.25" 10 ga. (PN-106124)
- Procedure B - *Steel tube 1" x 2" x 94" 7 ga. (PN-2024114232)

*Can be obtained locally

Section Two - Procedure A - Reinforcement Angle (Preferred)

NOTE: Use this procedure if cracks extend over 2 inches above the I-beam's bottom flange and there are obstructions along the flange.

Preparation

1. The trailer should still be supported per the manufacturer's recommendations from the reinforcement procedure, Section One.

NOTE: Remove underbelly fasteners along the repair area to inspect for any items inside of the underbelly that may be touching the weld area and to prepare for safety monitoring during the welding process. Insulate or shield any relocated underbelly features from excessive heat or sparks generated during the welding operation.

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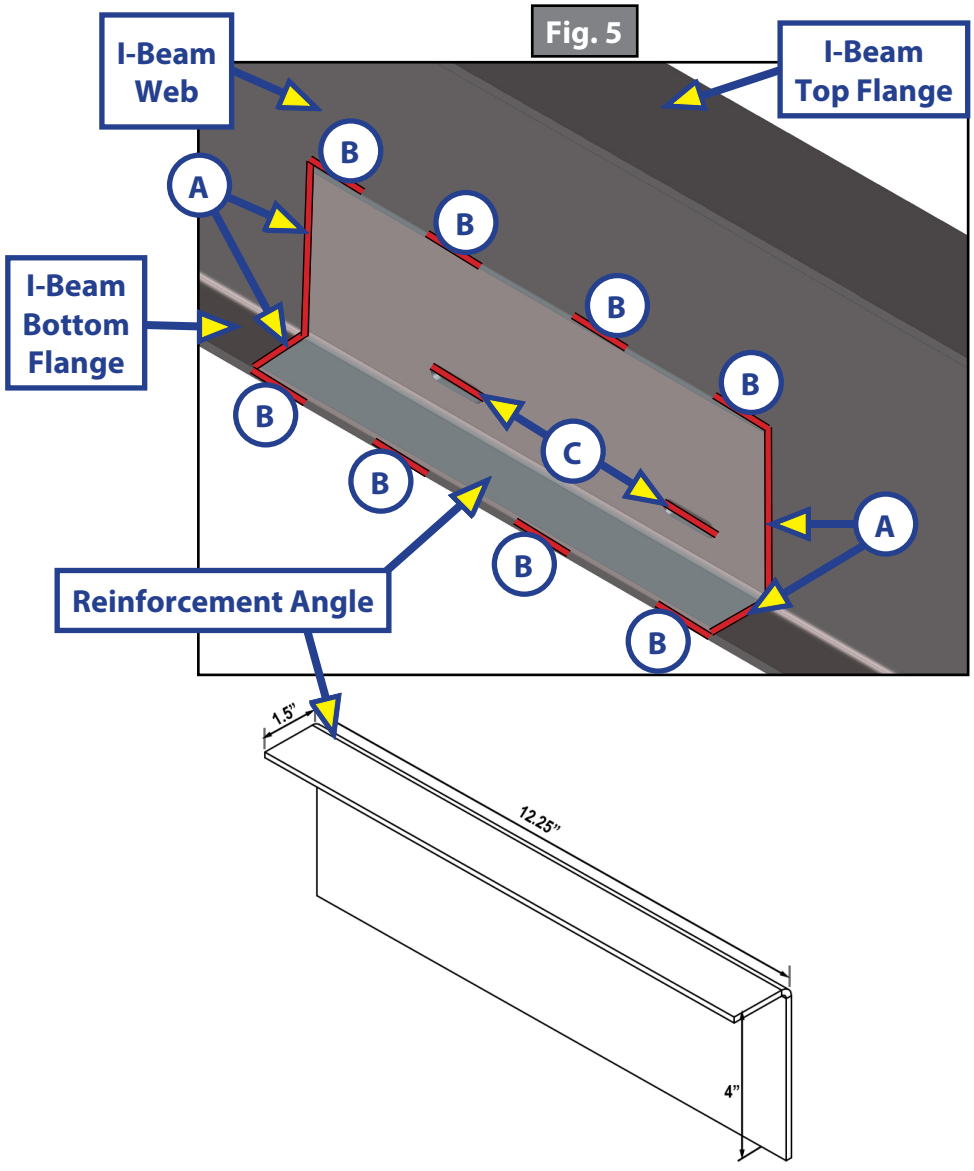
Repairing the Crack

1. Grind the crack out, small "V" groove on the exterior of the I-beam and clean the area for proper weld penetration.
2. Fill in the crack by adding a weld on the exterior of the I-beam. Once cooled grind weld smooth.
3. Secure the reinforcement angle by completely welding the ends of the angle (Fig. 5A) and stitch weld 2" along the top and bottom edges of the angle (Fig. 5B). Plug weld slots (Fig. 5C).
4. After all new weld locations have cooled, clean weld areas then cover with black gloss Rust-Oleum® or similar paint product.
5. Reinstall any previously-removed or relocated items that were moved to permit the installation.
6. Reinstall wheels according to the OEM specifications.
7. Using floor jacks, support the frame while removing all jack stands.
8. Lower the trailer to the ground and torque all wheel lug nuts to the manufacturer's specification.

Fig. 5



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Step Two - Procedure B - Steel Tube (Alternative)

NOTE: This procedure is applicable if the cracks extend no more than two inches above the bottom flange of the I-beam and there are no obstructions.

Preparation

1. The trailer should still be supported per the manufacturer's recommendations from the reinforcement procedure, Section One.

NOTE: Remove underbelly fasteners along the repair area to inspect for any items inside of the underbelly that may be touching the weld area and to prepare for safety monitoring during the welding process. Insulate or shield any relocated underbelly features from excessive heat or sparks generated during the welding operation.

Repairing the Crack

1. Grind the crack out, small "V" groove on the exterior of the I-beam and clean the area for proper weld penetration.
2. Fill in the crack by adding a weld on the exterior of the I-beam. Once cooled grind the weld smooth.
3. Secure the reinforcement tube by completely welding around the ends of the tube and stitch weld 2" every 12" along the top edge and bottom edge of the tube (Fig. 6).
4. After all new weld locations have cooled, clean weld areas then cover with black gloss Rust-Oleum® or similar paint product.
5. Reinstall any previously-removed or relocated items that were moved to permit the installation.
6. Reinstall wheels according to the OEM specifications.
7. Using floor jacks, support the frame while removing all jack stands.
8. Lower the trailer to the ground and torque all wheel lug nuts to the manufacturer's specification.

Fig. 6