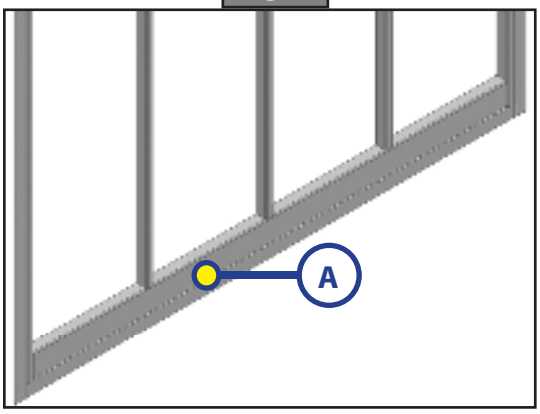
Weld On

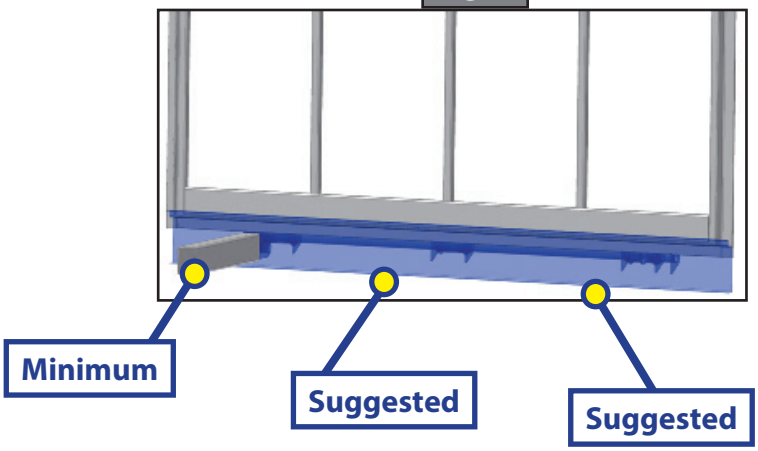
1. Tube must be added to the hinge attachment area of the ramp door. Tube must be 1″ x 3″ - 11 ga. tube minimum (Fig. 1A).

Fig. 1

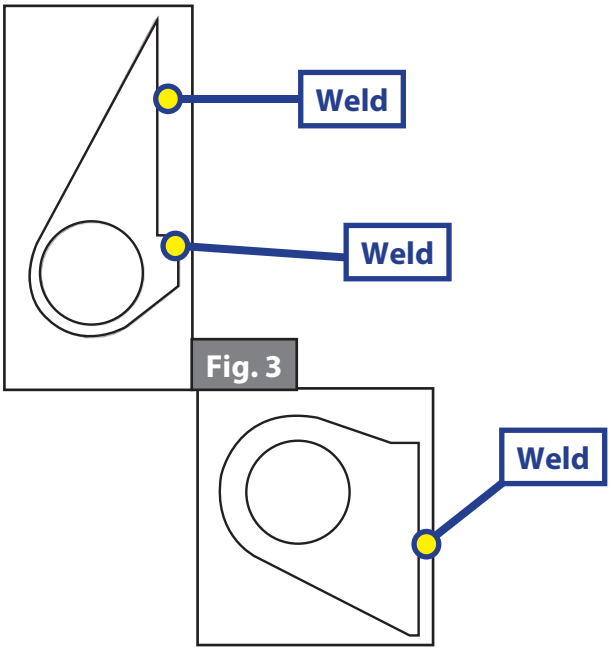


2. Rear cross member must be tied to the next forward cross member. A support tube must be tied into the frame directly forward of the adjustment bracket at minimum and forward of each hinge assembly is suggested. Support tube must be 2″ x 3″ - 11 ga. tube minimum (Fig. 2).

Fig. 2

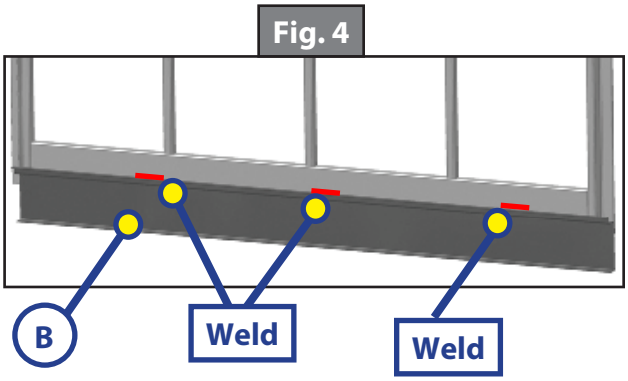


3. Hinge brackets weld locations noted below. Full welds over the length of each weld surface. Weld both sides of bracket (Fig. 3).



4. Bumper or rear cross member must be 11 ga. minimum (Fig. 4B). Reinforcing welds are to be applied to the 1″ x 3″ tube, opposite of the hinges to secure the torque on the hinges does not pull the door frame apart. Note weld location highlighted in red.

Fig. 4



RAMP DOOR INFINITE HINGE INSTALLATION

Weld On

NOTE: Installation requirements and instructions for Torsion Hinge are for 5 - 8 1/2 wide Trailers. The operation of this hinge will apply 5,000 – 9,000 in/lb of force to your Trailer.
The hinge and all components must be welded to the Trailer strong enough to withstand the in/lb forces being applied to the door and frame. Read and fully understand Instructions before Installing Hinge. Failure to adhere to these instructions and requirements shall void the limited warranty.

Installation & Requirements

1. The rear cross member and door of the trailer/frame must be designed, built and braced to eliminate any flexing. The same must be able to withstand the force applied to them by the torsion hinge while the door is being operated.
2. All Door Hinge Brackets (Fig. 5A) must rest completely against the door without any gaps prior to welding. The Hinge must be centered on the door. The welds must be strong enough to withstand the in/lb forces applied. (Soldering and Brazing are not acceptable.)
3. As the door is being installed, the Frame Hinge Brackets (Fig. 5B) must be rotated until full contact is made with the rear cross member. The welds must be strong enough to withstand the in/lb forces applied. (Soldering and Brazing are not acceptable.)
4. Insert the Hinge End Tube Assembly (Fig. 5A – see diagram) into the end of the hinge.

NOTE: 14 Brackets

Fig. 5A - Bracket Detail

Fig. 5

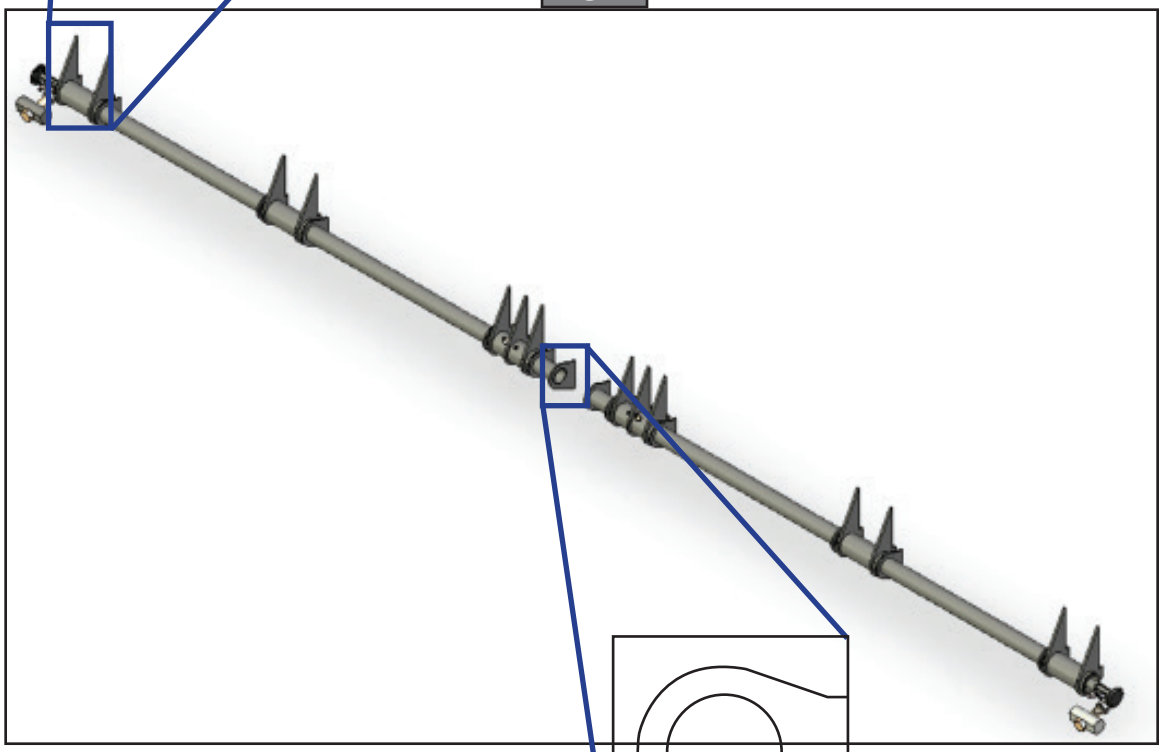


Fig. 5B- Bracket Detail

Weld On

1. Maintain proper alignment with the hinge assuring that the End Tube is installed on the same centerline as the Hinge. The welds must be strong enough to withstand the in/lb forces applied. (Soldering and brazing are not acceptable.)
2. Weld the Frame Torsion Bracket Assembly (Fig. 5B) to the rear cross member with the back surface of the bracket making full contact with the rear cross member. The welds MUST be strong enough to withstand the in/lb forces applied. (Soldering and brazing are not acceptable.)
3. Turn Adjustment bolt (Bolt "A" - Fig. 7) clockwise to add preload as desired and lock the jam nut (Nut "B" - Fig. 7) to the Pivot shaft (Shaft "C" – Fig. 7) after adjustment is made.

NOTE: Adding preload will lessen the force required to raise the ramp door, however it will increase the closing force of the door.

⚠ CAUTION

All attachment points must have sufficient welds. Any flexing of the frame will result in fatigue fracture at attachment point. Do not attach the torsion hinge to a frame or door that flexes at the point of attachment. Do not stand behind the door while operating. Keep all body parts clear of the door while closing.

Maintenance

Add grease during torsion hinge installation - final assembly. General purpose chassis grease is recommended. Annual maintenance should be performed and documented with a visual inspection for any damage and application of lubricant at grease points.

Fig. 6 - Assembly A

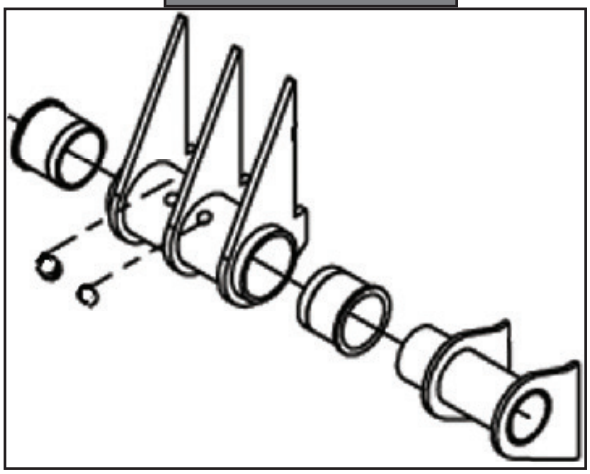
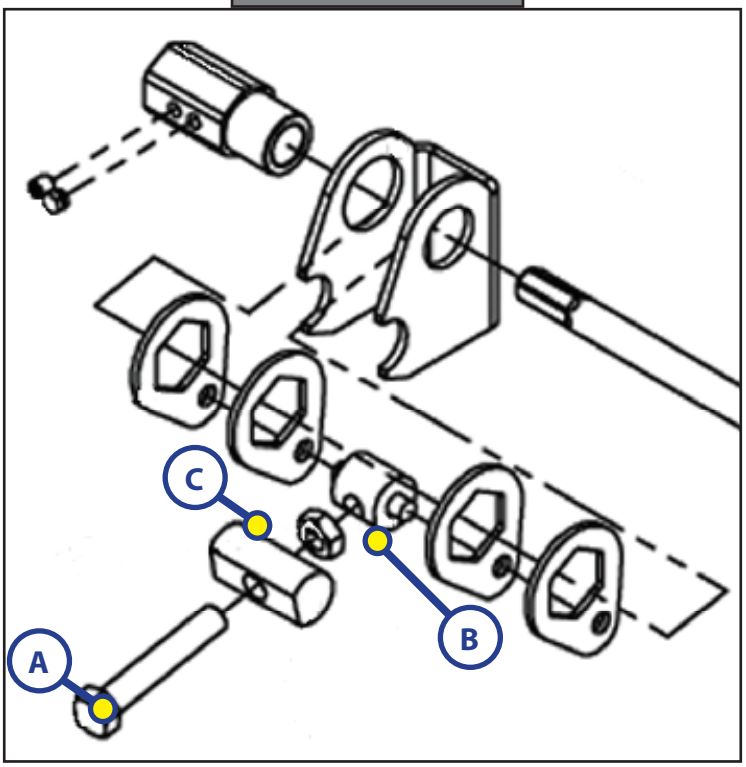


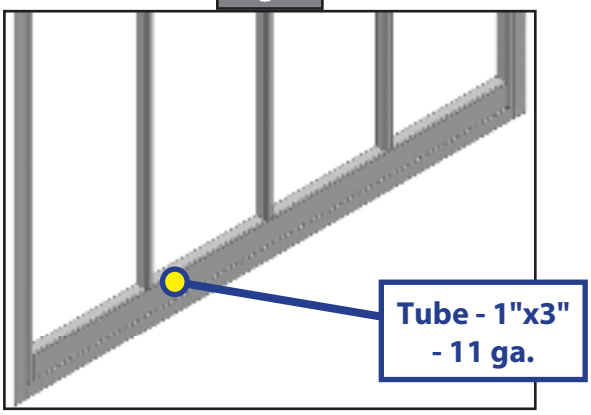
Fig. 7 - Assembly B



Bolt On

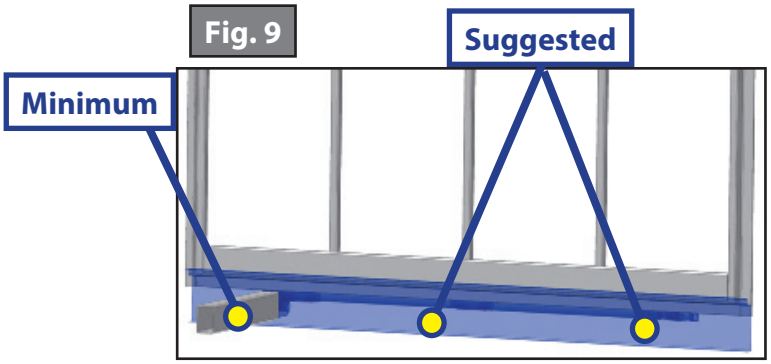
1. Tube must be added to the hinge attachment area of the ramp door. Tube must be 1″ x 3″ - 11 ga. tube minimum (Fig. 8).

Fig. 8



2. Rear cross member must be tied to the next forward cross member. A support tube must be tied into the frame directly forward of the adjustment bracket at minimum and forward of each hinge assembly is suggested. Support tube must be 2″ x 3″ - 11 ga. tube minimum (Fig. 9).

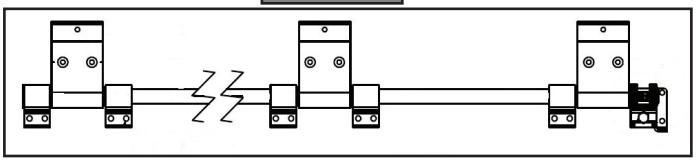
Fig. 9



3. Hinge brackets (Fig. 10A) bolted using Torx barrel nut and hex cap screw and washers.

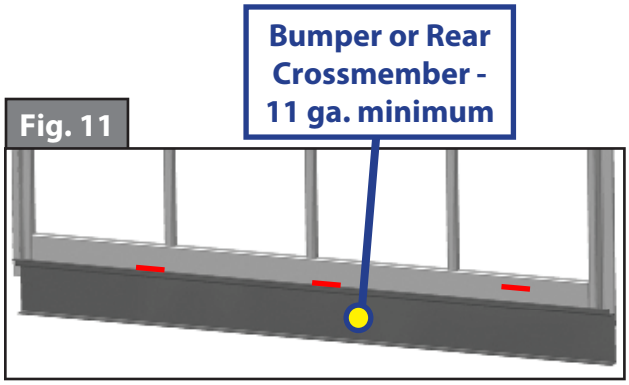
Fig. 10A

Fig. 10B



4. Bumper or rear cross member must be 11 ga. minimum (Fig. 10B). Reinforcing welds are to be applied to the 1″ x 3″ tube, opposite of the hinges to secure the torque on the hinges does not pull the door frame apart. Note weld location highlighted in red.

Fig. 11



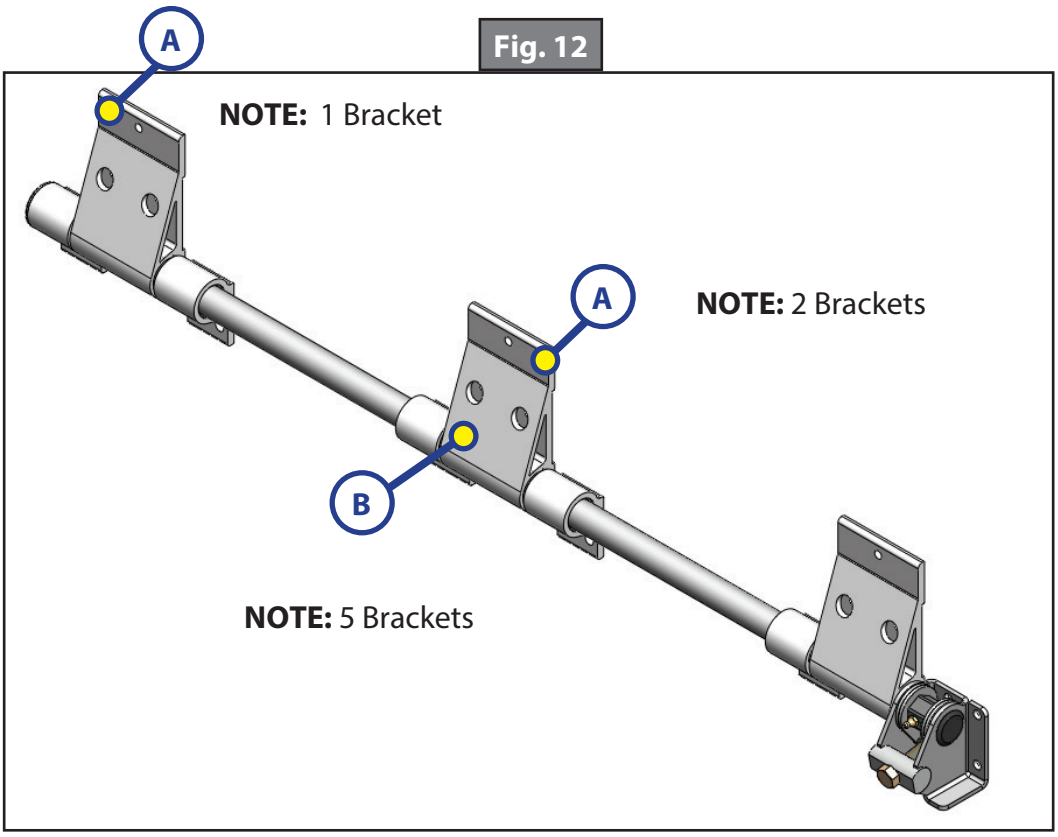
Bolt On

NOTE: Installation requirements and instructions for Torsion Hinge are for 5 & 8 1/2 wide trailers. The operation of this hinge will apply 5,000 – 9,000 in/lb of force to your trailer.
The hinge and all components must be bolted to the Trailer strong enough to withstand the in/lb forces being applied to the door and frame. Read and fully understand Instructions before Installing Hinge.
Failure to adhere to these instructions and requirements shall void the limited warranty.

Installation & requirements

1. The rear cross member and door of the trailer/frame must be designed, built and braced to eliminate any flexing. The same must be able to withstand the force applied to them by the torsion hinge while the door is being operated.
2. All Door Hinge Brackets (Bracket "A" – Fig. 12) must rest completely against the door without any gaps prior to bolting. The Hinge must be centered on the door. The bolts must be strong enough and torqued to withstand the in/lb forces applied.
3. As the door is being installed, the Frame Hinge Brackets (Bracket "B " – Fig. 12) must be rotated until full contact is made with the rear cross member. The bolts must be strong enough and torqued to withstand the in/lb forces applied.

Fig. 12



Bolt On

1. Insert the Hinge End Tube Assembly (Assembly "A" – see diagram) into the end of the hinge. Maintain proper alignment with the hinge assuring that the End Tube is installed on the same centerline as the Hinge. The bolts must be strong enough and torqued to withstand the in/lb forces applied.
2. Bolt the Frame Torsion Bracket Assembly (Assembly "B" – see diagram) to the rear cross member with the back surface of the bracket making full contact with the rear cross member. The bolts must be strong enough and torqued to withstand the in/lb forces applied.
3. Turn Adjustment bolt (Bolt "A" - see Fig. 14) clockwise to add preload as desired and lock the jam nut (Nut "B" - see Fig. 14) to the Pivot shaft (Shaft "C" – see Fig. 14) after adjustment is made.

NOTE: Adding preload will lessen the force required to raise the ramp door, however it will increase the closing force of the door.)

⚠ CAUTION

All attachment points must have strong bolts torqued correctly.
Any flexing of the frame will result in fatigue fracture at attachment point. Do not attach the torsion hinge to a frame or door that flexes at the point of attachment.

Do not stand behind the door while operating. Keep all body parts clear of the door while closing.

Maintenance

Annual maintenance should be performed and documented with a visual inspection for any damage and application of lubricant at grease points.

Fig. 13 - Assembly A

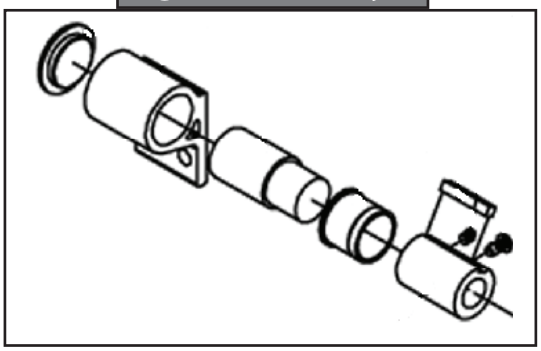


Fig. 14 - Assembly B