FIFTH WHEELS

INSTALLATION INSTRUCTIONS

GENERAL SAFETY INFORMATION

It is important to read, understand, and follow the important information contained in these installation instructions. Failure to do so may result in a hazardous condition or cause a hazardous condition to develop.

All welding should be performed by an AWS certified welder using a low hydrogen process and AWS E70XX filler metal. Failure to weld correctly may cause distortion, damage, and/or result in insufficient strength and subsequent joint failure which, if not avoided, could result in death or serious injury.

Prior to welding take precautions to ensure that the tractor electrical system is not damaged due to the welding process.

FIFTH WHEEL DESIGN AND INTENDED USE

Holland Fifth Wheels are Designed and Intended to be used

1. For pulling trailers with standard SAE kingpins which are in good condition and securely mounted or locked in position in the trailer.
2. Within the capacities stated in SAF-HOLLAND literature.
3. As recommended in SAF-HOLLAND literature (available from www.safholland.us).

*Holland Fifth Wheels are **NOT** Designed or Intended For*

1. Use with non-SAE kingpins, such as kingpins which are bent, improper size or dimensions, not secured to maintain SAE configuration, or which are installed in warped trailer bolster plates.
2. Tow-away operations which damage or interfere with the proper operation of the fifth wheel.
3. The attachment of lifting devices.
4. The transport of loads in excess of rated capacity.
5. Applications other than recommended.

INSTALLATION

General Recommendations

1. Every user and installer using SAF-HOLLAND products either recommended or not recommended by SAF-HOLLAND, must thoroughly satisfy himself that the installation procedure used is appropriate for the vehicle, product and application.
2. Consult the SAF-HOLLAND literature for fifth wheel capacities and applications.
3. Consult the tractor manufacturer's body builder's book and the latest SAE and D.O.T. standards for additional installation methods. SAF-HOLLAND recommends the ***T.M.C. Recommended Maintenance Practice 603B*** for installation procedures.
4. Determine the proper fifth wheel position, or, in the case of a sliding fifth wheel, the range of proper positions. Proper positioning of the fifth wheel is important for weight distribution, swing clearance and handling characteristics. See SAE J701a for proper placement, as well as the tractor manufacturer's body builder's book.

INSTALLATION *continued*

5. Use Grade 8, 5/8˝ minimum diameter bolts and Grade "C" locknuts for mounting.
6. Bolt holes can be 1/32˝ larger in diameter than the bolt fastener. Bolts must be adequately tightened using charted torque ranges in foot-pounds for the recommended Grade 8, 5/8˝ diameter bolts. Larger diameter Grade 8 bolts and coated fasteners may be used.
7. The bolts attaching the fifth wheel mounting angles to the truck frame require hardened steel washers under both the bolt and under the locknut, unless flanged head bolts or flanged head locknuts are employed.
8. A minimum of 5 bolts are required to attach each mounting angle to a frame rail, and the distance between bolts must not exceed 8˝, except when cutouts are required in the mounting angles.
9. Whenever a cutout is made on the mounting angle, such as required to bypass spring hangers, a 1˝ minimum radius should be used and bolts should be placed within 1½˝, but not closer than 1˝ of the cut, fore and aft.
10. The mounting angle should have a minimum thickness as shown in *Chart 1* and should be steel specification ASTM A 36.
11. When initially positioning the fifth wheel for frame holes, the full length of the fifth wheel or slider mounting angles should seat flush on the top and side surface of the truck-tractor frame rails where channel-type rails are employed. There should not be a gap over the top of the truck frame rails. The base of the fifth wheel assembly and of the mounting angle members should seat flush on the top of the frame rail to prevent flexing and to give uniform weight distribution. It is also recommended to chamfer or smooth sharp edges and corners of mounting materials wherever contact is made with the tractor frame.
12. If the fifth wheel is to be mounted using a mounting plate (bracket with mounting base), refer to ***Chart 1*** for minimum plate thickness recommendations.

CHART 1

Fifth Wheel Vertical Capacity	Minimum Mounting Angle Thickness	Minimum Mounting Plate Thickness
12,000 lbs.	1/4˝	1/4˝
20,000 lbs.	5/16˝	1/4˝
40,000/45,000 lbs.	5/16˝	5/16˝
50,000/55,000 lbs.	3/8˝	3/8˝
62,500/70,000 lbs.	1/2˝	1/2˝
100,000 lbs.	3/4˝	3/4˝
165,000 lbs.	3/4˝	1˝

⚠WARNING Do not use U-bolts in fifth wheel installations. Use only new Grade 8 bolts and new Grade C lock nuts, sized 5/8˝ minimum diameter. Failure to do so may result in structural failure of the installation with a potential loss of the fifth wheel assembly, mounting structure, and/or trailer which, if not avoided, could result in death or serious injury.

continued

INSTALLATION *continued*

13. Trailer pick-up ramps are recommended at the rear of the truck-tractor frame.
14. When mounting to aluminum frames, follow the tractor manufacturer's recommendations. Holland has available a stationary mounting angle intended for use with aluminum frames. Contact SAF-HOLLAND or Holland distributors for availability.
15. Review, in addition, the specific information on the following pages for each type of fifth wheel mounting, as well as ***"Inspection and Lubrication Prior to Use"*** on Page 4 of this publication.

STATIONARY FIFTH WHEEL INSTALLATION

Prior to preceeding with the installation of the stationary fifth wheel assembly, carefully review the ***"General Safety Information"*** section on page 1.

Bracket with Mounting Angle *(see Figure 1A, 1B, and 1C):*

1. HOLLAND brackets with mounting angle are provided with the bracket welded in the center of a 36˝ long angle with a 4˝ minimum horizontal and 31/2˝ minimum vertical leg size, and to a specific tractor frame width. Verify that the bracket and tractor frame width are the same.
2. In addition to the information given in ***"Installation: General Recommendations"*** on page 1, follow the recommendations in ***Figure 1***.

Bracket for Angle Mounting *(see Figure 1A, 1B, and 1C):*

1. HOLLAND brackets for angle mounting are intended to be welded to mounting angles at the time of installation.
2. See ***"Installation: General Recommendations"*** on page 1, for angle thickness and material (use 4˝ minimum horizontal and 3½˝ minimum vertical leg size). The recommended length of each mounting angle is 36˝. It is recommended that each angle extend a minimum length of 18˝ forward of the fifth wheel pivot point, and not less than 12˝ to the rear. If angles shorter than 36˝ are required, the special recommendations of the tractor manufacturer should be obtained.
3. In addition to the information given in ***"Installation: General Recommendations,"*** follow the recommendations given in ***Figures 1A, 1B,*** and ***1C***. The following sequence is suggested for both fabricated and cast brackets:
   A. Securely position the mounting angle to the tractor frame.
   B. Bolt the angles to the tractor as shown in ***Figures 1A*** and ***1B***.
   C. Position the brackets on the angles and verify the correct spacing to mount the fifth wheel.
   D. For **fabricated** brackets (a welded asssembly), weld the bracket to the mounting angle with 1/4˝ fillet welds on both sides, and 1/2˝ groove welds on both ends, as shown in ***Figures 1A*** and ***1B***. The welds should be continuous around the bracket and joined at the corners.
   E. For **cast** brackets (single piece), weld with 5/16˝ fillet weld, as shown in ***Figure 1C***. The welds must be continuous around the bracket ends.

Bracket with Mounting Base *(See Figures 2A, 2B, and 2C):*

1. HOLLAND brackets with mounting base are intended for installation on either corrugated or flat mounting plates.
2. In addition to the information given in ***"Installation: General Recommendations,"*** on page 1, follow the recommendations in ***Figures 2A, 2B,*** and ***2C***.
3. See ***"Installation: General Recommendations"*** on page 1 for angle thickness and material. The mounting angle should be 1˝ longer than the mounting plate, and be 36˝ minimum length. Use 3˝ minimum horizontal and 3½˝ minimum vertical leg size. Longer horizontal legs may be required with narrow frame widths.

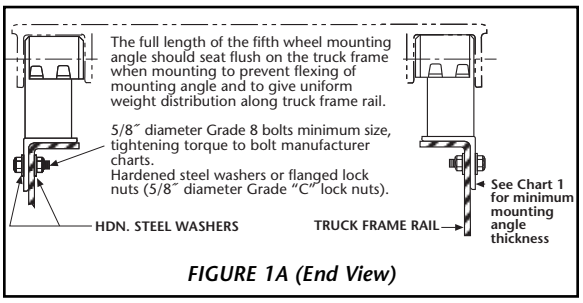


FIGURE 1A (End View)

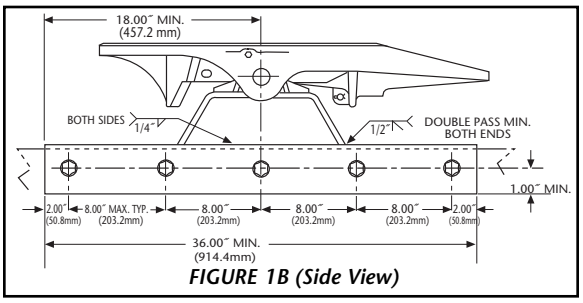
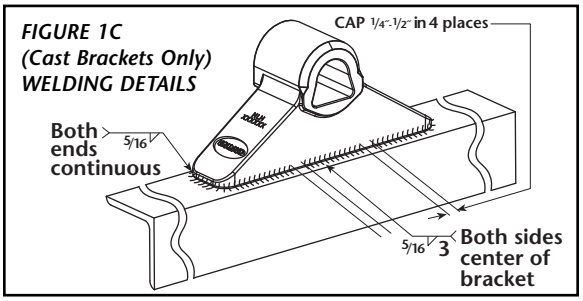


FIGURE 1B (Side View)



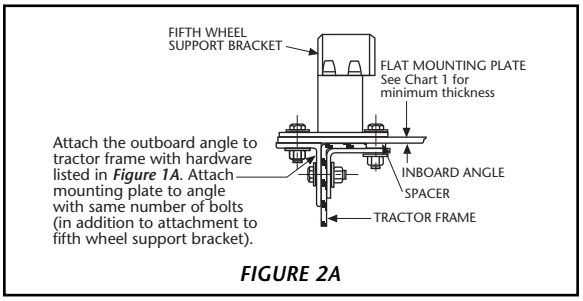


FIGURE 2A

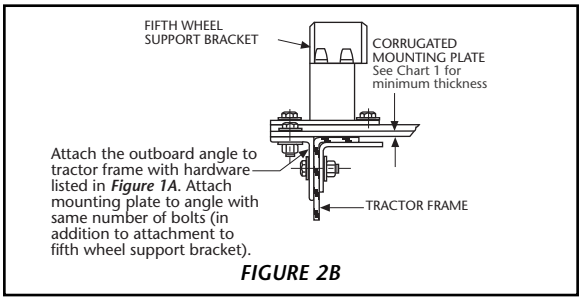


FIGURE 2B

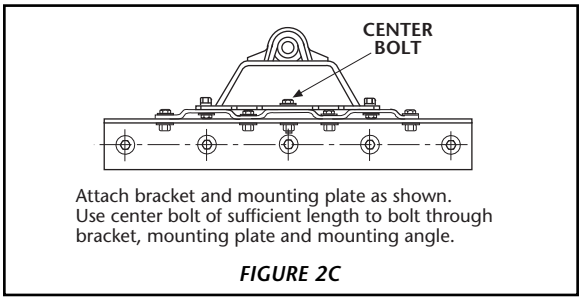


FIGURE 2C

SLIDING FIFTH WHEEL INSTALLATION

Prior to preceeding with the installation of the sliding fifth wheel assembly, carefully review the ***"General Safety Information"*** section on page 1.

Inboard Angle Mounting *(See Figures 3 and 4):*

1. Angles must be installed on the sliding fifth wheel base plate to facilitate mounting. See ***"Installation: General Recommendations,"*** on page 1, for angle thickness and material.
2. Use a mounting angle which is at least 2˝ longer than the slide base plate and 36˝ minimum length. Use 4˝ minimum horizontal and 3½˝ minimum vertical leg size. The fifth wheel top plate and support bracket may be removed from the base plate for ease of handling.
3. Position the angles on the slide plate for the required frame width. Be sure to keep the plate centered left to right, and front to rear on the mounting angles.
4. Weld as shown in ***Figure 3***. Make 5/16˝fillet welds inside and 3/8˝ groove welds on the outside with skip welds 3˝ long on approximately 8½˝ centers (weld 3˝, skip 5½˝). Weld inside opposite skips on the outside. **ALSO WELD:** The plate to the top of the angle at the ends of the plate.
5. Attach the slider plate and mounting angles to the tractor using recommendations in "General Recommendations" and in ***Figure 4***.
6. Reassemble the fifth wheel top plate and bracket sub-assembly to the slider base plate if they were removed previously.

Outboard Angle Mounting *(See Figures 5 and 6):*

1. If angles are not installed, see ***"Installation: General Recommendations,"*** on page 1, for thickness and material. Use 3˝ minimum horizontal and 3½˝ minimum vertical leg size. Longer horizontal legs may be required with narrow frame widths. The recommended length of each mounting plate is the same length as the slide base mounting plate.
2. In addition to the information given in ***"Installation: General Recommendations,"*** on page 1, follow the recommendations in ***Figure 5*** and ***Figure 6***. The following sequence is suggested:
   A. Securely position the mounting angles to the tractor frame and attach as shown in ***Figure 5***. Follow the bolting recommendations as shown in ***Figure 4***. Angles must be flush with the top of the truck frame.
   B. Locate the slide base and center left to right and front to rear on the mounting angles. Clamp in place and drill 2 1/32˝ diameter holes using the mounting plate as a template if holes are not provided in the angle.
   C. Align holes in the slide plate with outboard angle mounting holes and bolt using Grade 8 fasteners, hardened steel washers and Grade C locknuts, properly tightened, (see ***Figure 6***). Use all mounting holes on the fifth wheel.

Adjustment of Sliding Bracket Locking Plungers

The slide locking plungers are given a preliminary adjustment during factory assembly. However, due to variations introduced during mounting (such as frame and material tolerances) a final adjustment must be made at the time of installation.

CAUTION **At installation, after one month of service, and at recommended maintenance intervals, adjust the locking plungers by using the adjusting bolts provided on both sides of fifth wheel sliding bracket. Failure to do so may result in accelerated wear of components, lower service life, improper load transfer, or improper load distribution.**

To adjust locking plungers:

1. Loosen lock nut and turn adjusting bolt out (counterclockwise). See ***Figure 7***.
2. Disengage and engage the locking plungers. Check that the plungers are securely seated without binding.
3. Turn the adjusting bolt in (clockwise) until it contacts the rack. Turn the bolt an additional 1/2 turn then tighten the locking nut securely.

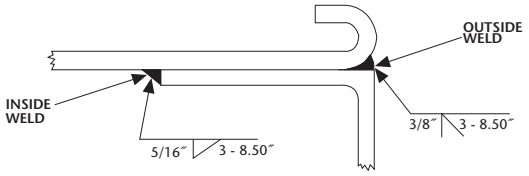


FIGURE 3

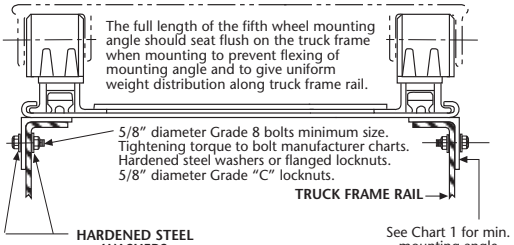


FIGURE 4 (End View)

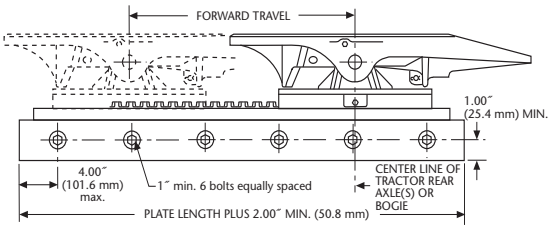


FIGURE 4 (Side View)

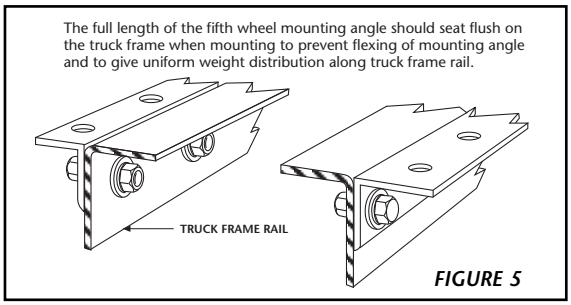


FIGURE 5

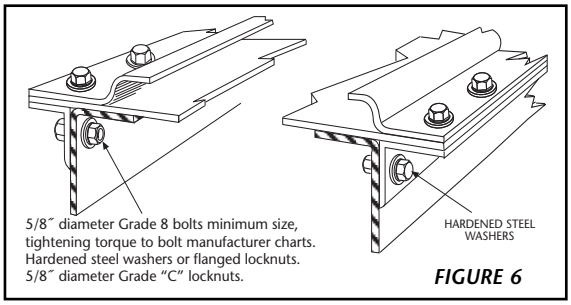


FIGURE 6

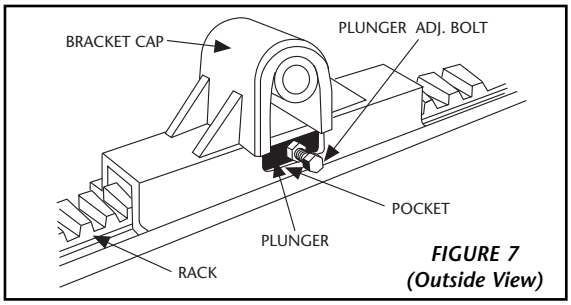


FIGURE 7 (Outside View)

Installation of Slide Stops

1. It is the responsibility of the installer to insure that slide stops are installed properly at all four corners of the slider plate.
2. Slide the bracket to the full rear position and engage the plungers in the rack.
3. Locate rear stops under the curled edge allowing some clearance to the bracket (approximately 1/8˝). Clamp in place. This should position the stops approximately 1/4˝ to 1/2˝ from the edge of the rear of the plate, see ***Figures 8A*** and ***8B***.
4. Slide bracket ahead out of the way and weld the stops in place as shown in ***Figures 8A*** and ***8B***. The welds should be 5/16˝ fillet.
5. Slide the bracket to the full rear position and check for clearance. Make sure the plungers on the sliding bracket seat properly into the rack with all teeth engaged.
6. Repaint as required.

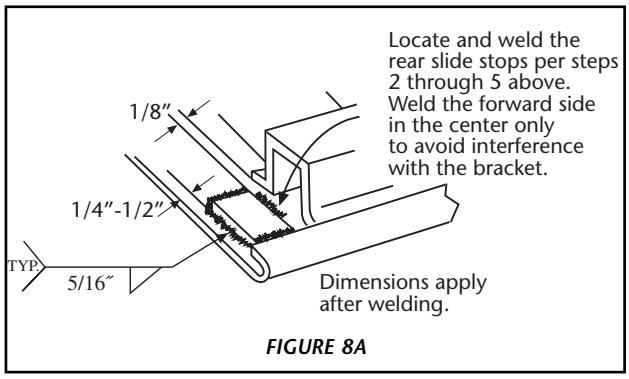


FIGURE 8A

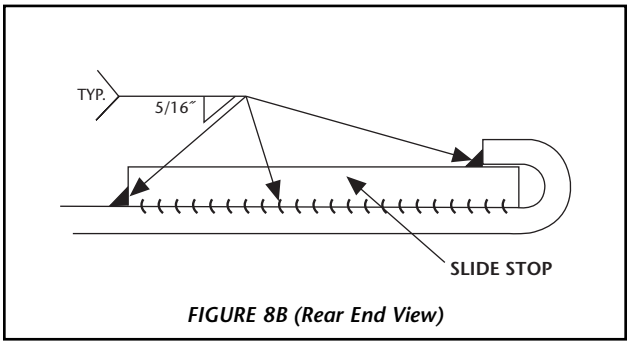


FIGURE 8B (Rear End View)

Attachment of Air-Activated Slide Release – If Required

1. Mount the cab control valve in accordance with the instructions provided. It should be readily accessible to the driver, but protected to prevent accidental activation.
2. Attach an air line, using appropriate fittings to the “air” or “in” port of the valve. Use an air source recommended by the tractor manufacturer. Use fittings and lines of suitable pressure rating.
3. Connect an air line between the “cyl” or “out” port of the valve and the active side of the air cylinder. A bulkhead fitting may be placed at the front of the slide base plate, if desired. Use fittings and lines of suitable pressure rating and be sure line is run so as not to interfere with any other operation or component.
4. Check operation of the valve and cylinder.

INSPECTION AND LUBRICATION PRIOR TO USE

1. Review the installation. Be sure all nuts and bolts are in place and properly tightened. Be sure all necessary steps were properly followed and that all components removed to facilitate installation are reinstalled.
2. Check the fifth wheel locking mechanism with a SAF-HOLLAND TF-TLN-5001 (2˝) or TF-TLN-1500 (3½˝) Lock Tester. Examine for proper locking as described in ***“Fifth Wheel Operating Instructions”***: XL-FW306 (FW35), XL-FW353 (FW8), or XL-FW302 (FW3500, FW2000, and FW0070) included with your fifth wheel. This must be done to assure that the mechanism has not been damaged by shipment, handling, or storage. *For copies of operating instructions for your HOLLAND fifth wheel, please contact SAF-HOLLAND.*

⚠WARNING Failure to properly install, operate, or maintain this fifth wheel may result in tractor and trailer separation which, if not avoided, could result in death or serious injury.

3. Apply grease to the bearing surface of the support bracket through the grease fittings on the side or front of the fifth wheel pockets. The top plate must be lifted up slightly to ensure proper application of grease. (**NOTE:** This is not required on HOLLAND LowLube and NoLube top plates.)
4. Apply a generous coating of grease to the top of the fifth wheel plate, where it will contact the trailer plate. (**NOTE:** This is not required on HOLLAND LowLube and NoLube top plates.)
5. Apply a generous coating of grease to the front lock and lock jaws.

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