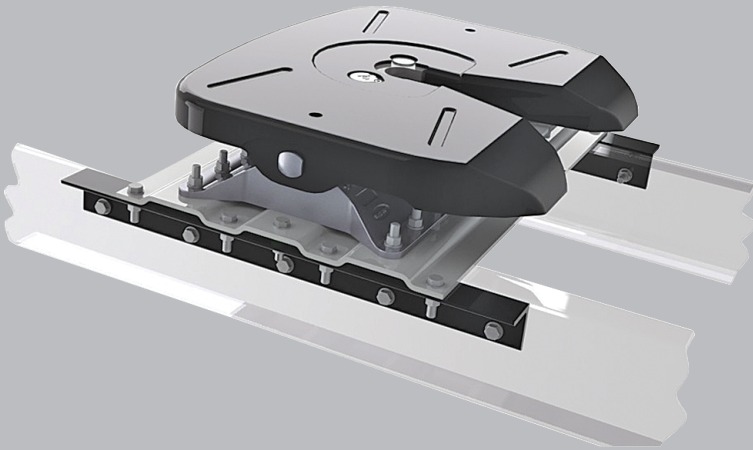


## Installation Manual

### FW20 and FW28 Fifth Wheel Mounting Bracket

- ISO Mount Stationary



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## Introduction

This manual provides you information necessary for the proper installation of FW20 and FW28 HOLLAND® Fifth Wheels.

**NOTE:** For technical support and genuine HOLLAND® fifth wheel replacement components contact SAF-HOLLAND® Customer Service. Refer to this manual’s back cover for the nearest location.

## Notes, Cautions, and Warnings

Throughout this manual, you will notice the terms “NOTE,” “IMPORTANT,” “CAUTION,” and “WARNING” followed by useful product information. So that you may better understand the manual, those terms are defined as follows:

**NOTE:** Includes additional information to enable accurate and easy performance of procedures.

**IMPORTANT:** Includes additional information that if not followed could lead to hindered product performance.

**CAUTION** Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, could result in property damage.

**CAUTION** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

**WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

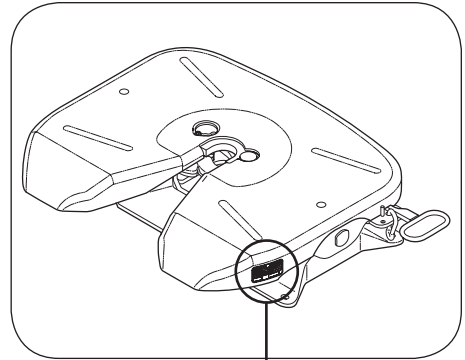
Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

## 1. Model Identification

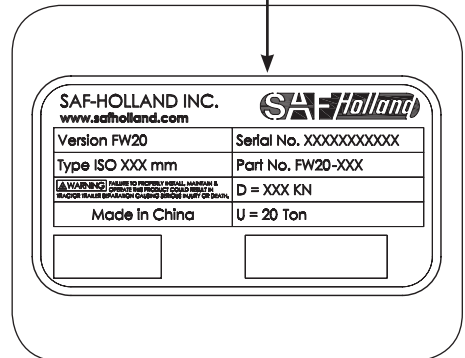
Fifth wheel Identification tags are located on the same side of the fifth wheel as the lock mechanism release handle near the pickup ramps, or above the fifth wheel mounting bracket pin (**Figure 1**).

Important information such as the product serial and model number, are listed on the Identification tag (**Figure 2**). Record these numbers for future quick reference.

**Figure 1**



**Figure 2**



## 2. General Safety Instructions

**IMPORTANT:** You **MUST** read and understand all of the procedures presented in this manual before starting the process of installing a HOLLAND® fifth wheel.

**IMPORTANT:** Keep this manual in a safe location for future reference.

**IMPORTANT:** All fifth wheel installation **MUST** be performed by a qualified technician using proper tools and safe procedures.

**IMPORTANT:** We highly recommend the use of only SAF-HOLLAND® Original Parts.

**NOTE:** In the United States, workshop safety requirements are defined by federal and/or state Occupational Safety and Health Act. Equivalent laws may exist in other countries. This manual is written based on the assumption that OSHA or other applicable employee safety regulations are followed by the location where work is performed.

**⚠️ WARNING** Failure to follow all of the installation procedures contained in this manual could cause a hazardous condition to develop which, if not avoided, could result in death or serious injury.

**IMPORTANT:** Prior to operation of the fifth wheel you must be thoroughly satisfied that the fifth wheel has been properly installed on the vehicle.

**⚠️ WARNING** Failure to properly install the fifth wheel could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

## 3. General Installation Recommendations

- Before installing your HOLLAND® fifth wheel, be sure to review the model number specified on the product identification tag, and confirm that the specification meets the desired vehicle requirements.

- Consult the HOLLAND® Fifth Wheel Catalog and Specification Guide for fifth wheel capacities and applications.

The technician installing a SAF-HOLLAND® product must be confident that the installation procedure used is appropriate for the vehicle, product and application.

- Consult ISO 3842, Directive 94/20/EL of the European Parliament and of the Council and GB/T/20070 National standard of P.R.C. for local and regulatory standards installation requirements.

- Consult the tractor manufacturer's body builder book, the latest SAE and D.O.T. standards, and the T.M.C. Practice 603 B for installation procedures.

- Determine the proper fifth wheel position. Proper positioning of the fifth wheel is important for weight distribution, swing clearance, articulation, and handling characteristics of the vehicle. Consult SAEJ701 and the tractor manufacturer's body builder book/vehicle requirements.

- The fifth wheel **MUST** be installed ahead of the rear axle centerline and/or bogie centerline (**Figure 3**).

**⚠️ WARNING** Failure to do so can adversely affect steering stability potentially causing the driver to lose control of the vehicle which, if not avoided, could result in death or serious injury.

**IMPORTANT:** DO NOT use U-bolts in fifth wheel installations.

**⚠️ WARNING** The use of U-bolts in fifth wheel installations could result in catastrophic failure of the fifth wheel assembly, which if not avoided, could result in death or serious injury.

- Trailer pick-up ramps are recommended at the rear of the tractor frame.
- When mounting to aluminum frames, follow the tractor manufacturer's recommendations. SAF-HOLLAND® has available a stationary mounting angle intended for use with aluminum frames. Contact SAF-HOLLAND® or distributors of HOLLAND® brand products for availability.

## 4. Mounting Angle Selection

### Outboard ISO Stationary

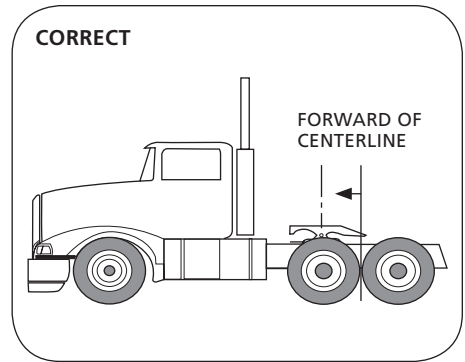
For convenience and ease of installation, some HOLLAND® fifth wheels are manufactured without mounting angles attached. The following are recommendations on how to select and prepare your mounting angles for installation:

- Minimum recommended thickness listed in **Table 1** below and comprised of steel specification ASTM A36 or ASTM A588.
- Minimum Horizontal leg size of 3" (76 mm).
- Minimum vertical leg size of 3-1/2" (89 mm).
- The minimum angle length **MUST** be equal to or longer than the length of the fifth wheel mounting base, and not less than 36" (914 mm) in total length.

**Table 1**

Fifth Wheel	Minimum Mounting Angle Thickness
FW20	3/8" (10 mm)
FW28	1/2" (12 mm)

**Figure 3**



## 5. Mounting Angle Preparation

For ease of installation, it may be beneficial to transfer geometric information such as cutouts and mounting hole locations from the vehicle frame to the mounting angle. SAF-HOLLAND® recommends using the following sequence:

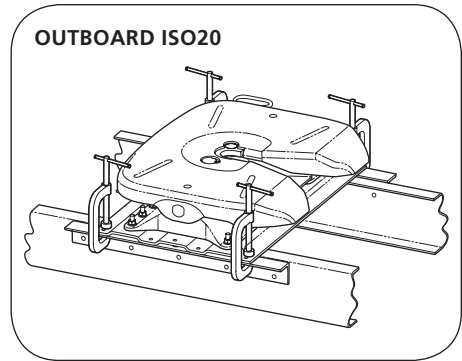
1. Securely position the mounting angle and fifth wheel mounting base to the tractor frame in the appropriate position for mounting the fifth wheel to the vehicle.
2. Clamp the assembly in place and use the fifth wheel mounting plate as a template to transfer the mounting hole location (**Figure 4**).

The fifth wheel **MUST** be installed ahead of the rear axle centerline and/or bogie centerline (**Figure 5**).

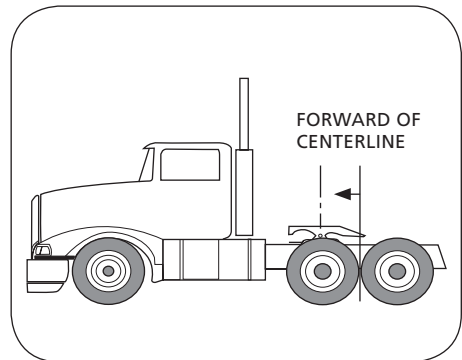
**⚠ WARNING** Failure to mount the fifth wheel ahead of the rear axle centerline and/or bogie centerline can adversely affect steering stability potentially causing the driver to lose control of the vehicle which, if not avoided, could result in death or serious injury.

**IMPORTANT:** When initially positioning the mounting angles, the full length of the mounting angles should seat flush with the top and side surfaces of the tractor frame rails to prevent flexing of the mounting angle and to give uniform weight distribution along the truck rail (**Figure 4**).

**Figure 4**



**Figure 5**



3. Transfer geometric information from the vehicle such as the mounting hole locations and where cut outs are necessary for assembly.
  - Mounting holes should be 21/32" (16.75 mm) in diameter. To accommodate 5/8" (16 mm) mounting bolts.
  - Mounting bolts should be located no closer than 1" (25 mm) from the bottom of the mounting angle to the center of the bolt hole.
  - A minimum of five (5) bolts are required to attach each fifth wheel mounting angle to the tractor frame rail.
  - The distance between mounting bolts should not exceed 8" (203 mm) except where cutouts are required in the mounting angle.
  - Whenever a cutout is made on the mounting angle, such as required to bypass spring hangers, a 1" (25 mm) minimum radius should be used in the cutout.
  - Mounting bolts should be placed within 1-1/2" (38 mm), but no closer than 1" (25mm) of the cutout, before and after.
  - Bolt holes MUST be located within 4" (102 mm) from the ends of the mounting angle.

**⚠ WARNING** Failure to properly locate bolt holes could result in catastrophic failure of the fifth wheel assembly, which if not avoided, could result in death or serious injury.

4. Machine the Mounting Angle.

**IMPORTANT:** Be sure to break/smooth all sharp edges, corners, and machining marks.

**IMPORTANT:** Chamfer and smooth sharp edges and corners of the mounting angle where contact is made with the tractor frame.

## 6. Mounting Plate Preparation

HOLLAND® outboard stationary ISO mount and foot mount fifth wheels are intended to be installed with a corrugated or flat mounting plate:

Example Part Numbers:

- FWXX-185
- FWXX-150

**NOTE:** HOLLAND® corrugated mounting plates can be purchased from SAF-HOLLAND® by contacting Customer Service. Refer to this manual's back cover for the nearest location.

Recommended mounting plate thickness is determined by the vertical capacity of the specific model fifth wheel being used.

Mounting plates are to be comprised of steel specification ASTM A36 or ASTM A572 Gr. 50.

**NOTE:** All bracket contact surfaces on all mounting plates MUST be flat within .060" (1.5 mm).

Refer to **Table 2** below for the minimum recommended thickness.

**Table 2**

Fifth Wheel	Minimum Mounting Plate Thickness
FW20	3/8" (10 mm)
FW28	1/2" (12 mm)

## 7. Attaching Mounting Angles to the Tractor Frame

The following is required to properly secure mounting angles to the tractor frame:

- New 5/8" SAE Grade 8 or 16 mm ISO Grade 10.9 minimum diameter bolts.
- New SAE Grade "C" lock nuts.
- New hardened steel washers for use under both the bolt and the lock washer.

**WARNING** Failure to comply to specified fastener recommendations could result in catastrophic failure of the fifth wheel assembly, which if not avoided, could result in death or serious injury.

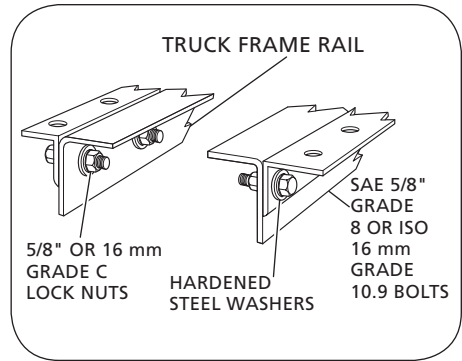
1. Securely attach the mounting angles flush with the top of the tractor frame with the specified fasteners (**Figure 6**). Follow the bolting recommendations sequence (**Figure 7**). A minimum of five (5) fasteners are required to attach each mounting angle to the tractor frame rail.

**CAUTION** Failure to attach angles flush with top of the tractor frame could result in a potentially hazardous situation which, if not avoided, could result in property damage.

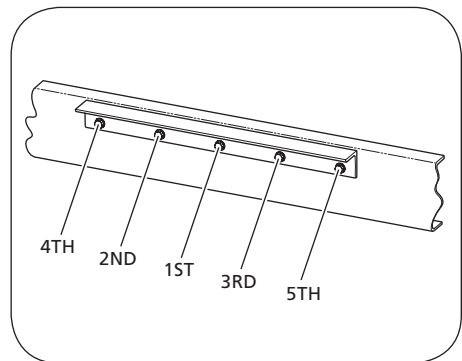
2. Torque fasteners to manufacturer's specifications using the recommended sequence (**Figure 7**).

**NOTE:** Tighten the center fastener first, then using an alternating pattern, tighten the fasteners on either side working from center outward.

**Figure 6**



**Figure 7**





## 8. Attaching Fifth Wheel to the Tractor Frame

The following are recommendations on how to properly secure the fifth wheel to the tractor frame:

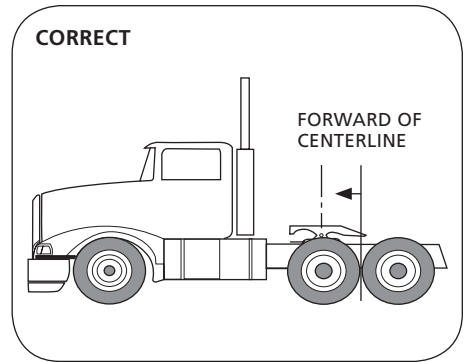
- Use only new 5/8" SAE Grade 8 or 16 mm ISO Grade 10.9 minimum diameter bolts.
- Use only new SAE Grade "C" lock nuts.
- Bolts attaching the fifth wheel assembly to the outboard mounting angles require hardened steel washers under both the bolt and the lock nut.
- Bolts attaching the fifth wheel assembly to the mounting plate require hardened steel washers that are a minimum of 6 mm thick and 40 mm O.D. under both the bolt and lock nut.

**⚠ WARNING** Failure to comply to specified fastener recommendations could result in catastrophic failure of the fifth wheel assembly, which if not avoided, could result in death or serious injury.

The fifth wheel **MUST** be installed ahead of the rear axle centerline and/or bogie centerline (**Figure 8**).

**⚠ WARNING** Failure to mount the fifth wheel ahead of the rear axle centerline and/or bogie centerline can adversely affect steering stability potentially causing the driver to lose control of the vehicle which, if not avoided, could result in death or serious injury.

**Figure 8**



## Mounting Procedures

1. Securely fasten all mounting holes in the mounting plate to the fifth wheel assembly (**Figure 9**). A minimum of twelve (12) fasteners are required to attach the mounting plate to the fifth wheel assembly.

**WARNING** Failure to fasten all mounting holes in the mounting plate could result in catastrophic failure of the fifth wheel assembly which, if not avoided, could result in death or serious injury.

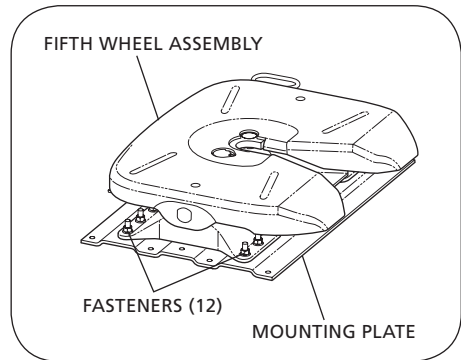
2. Torque fasteners to manufacturer's recommendations.
3. Place fifth wheel and mounting plate on mounting angle. Align the holes in the fifth wheel mounting plate with the outboard angle mounting holes.
4. Securely fasten all the mounting holes in the fifth wheel to the mounting angle (**Figure 10**). A minimum of ten (10) fasteners, five (5) on each side, are required to attach the fifth wheel mount to each angle.

**WARNING** Failure to fasten all the mounting holes in the fifth wheel to the mounting angle could result in catastrophic failure of the fifth wheel assembly, which if not avoided, could result in death or serious injury.

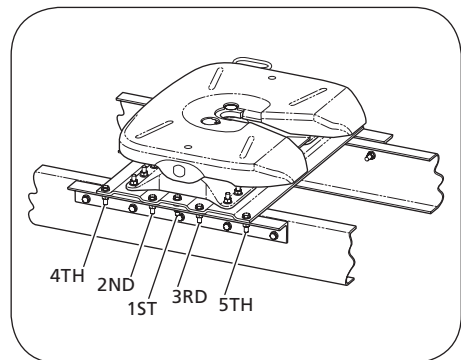
5. Torque fasteners to manufacturer's specifications using the recommended sequence (**Figure 10**).

**NOTE:** Tighten the center fastener first, then using an alternating pattern, tighten the fasteners on either side working from center outward.

**Figure 9**



**Figure 10**





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SAF-HOLLAND Original Parts are tested and designed to provide maximum performance and durability. Non SAF-HOLLAND parts will only limit the performance potential and could possibly void SAF-HOLLAND's warranty. Always be sure to specify SAF-HOLLAND Original Parts when servicing SAF-HOLLAND products.

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