

Bumper Removal and Installation

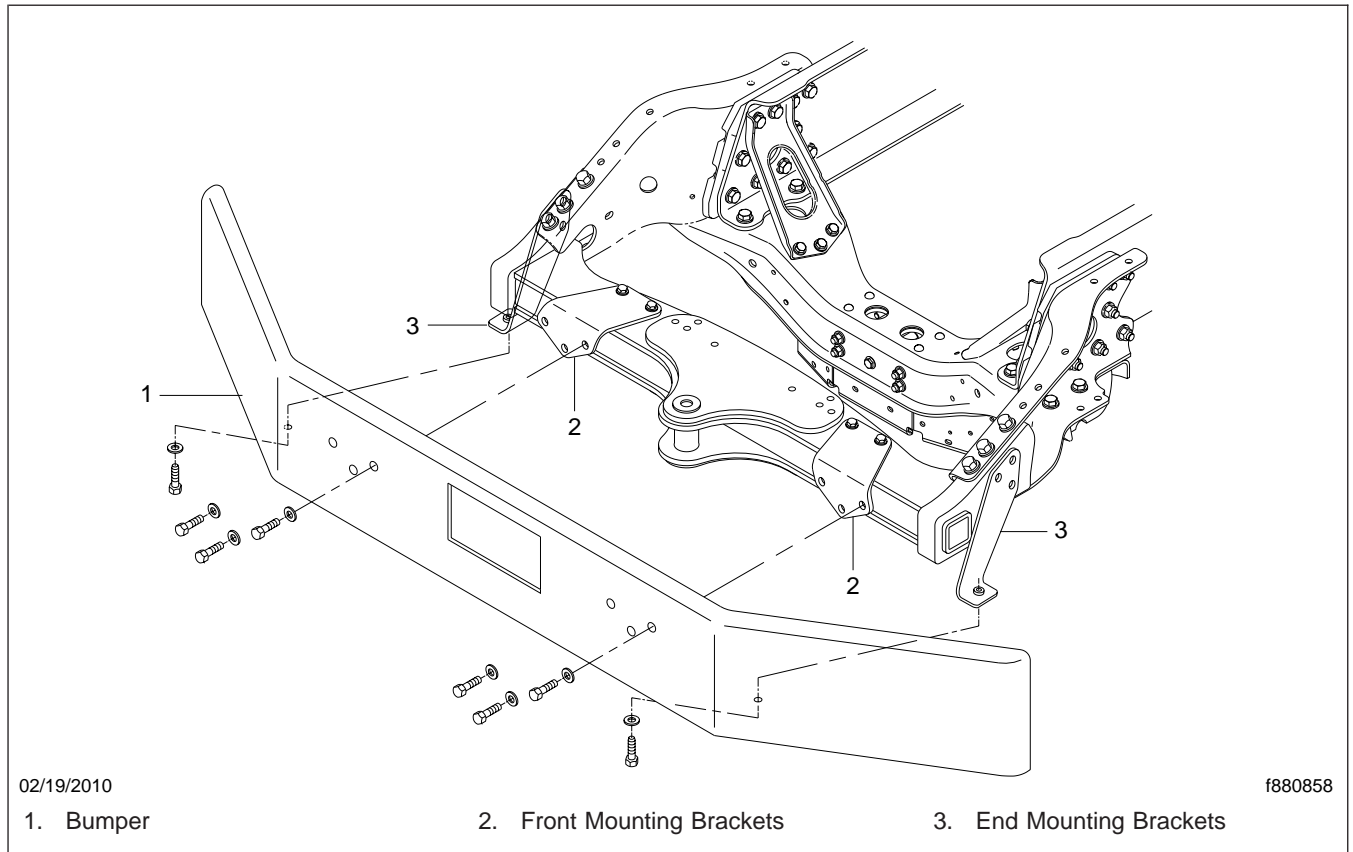


Fig. 3, Bumper, 12-Inch Steel Logger, Severe Service, Set-Back Axle

General Information

The Premier model 690 trailer coupling is a non-air-adjusted, heavy-duty coupling. It is used for load capacities up to 90,000 lbs, and is available with either right- or left-hand operation. See [Fig. 1](#).

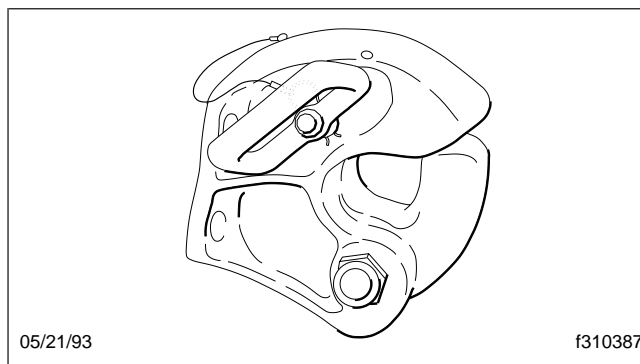


Fig. 1, Premier 690 Trailer Coupling

Pintle Hook Inspection

Inspection

With the 690 coupling in the closed position, pull outward on the 692 pintle:

- The measured gap between the top of the 692 pintle and the adjacent face of the 690 coupling body must be less than 3/8 inch (9.52 mm). See Fig. 1.
- A 3/8 inch (9.52 mm) or greater gap indicates that the coupling is no longer suitable for service. A repair kit will be necessary to return the coupling to service, or a new 690 coupling may be installed.

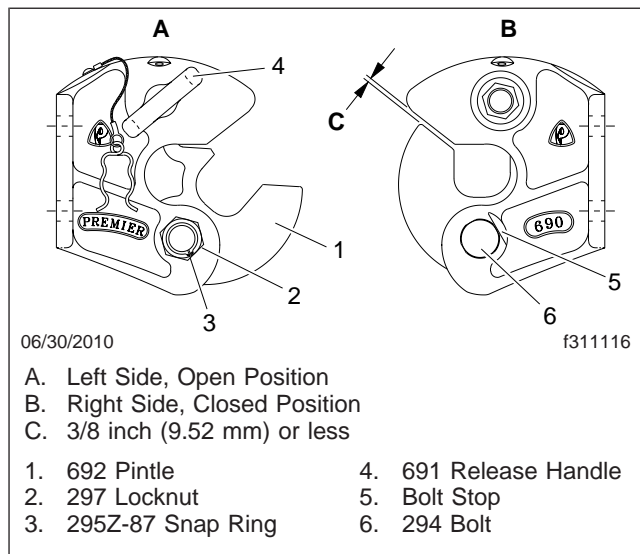


Fig. 1, 690 Coupling

Using Premier wear gauge, part number 14014, check the percentage of wear on the pintle hook. See Fig. 2 and Fig. 3.

WARNING

WARNING: If the pintle hook is damaged, has stress cracks, or if it's worn beyond 20% of its original diameter, replace the entire coupling; don't repair it. Using a worn or damaged trailer coupling could cause the trailer to disconnect from the vehicle, which could result in an accident causing serious personal injury and property damage.

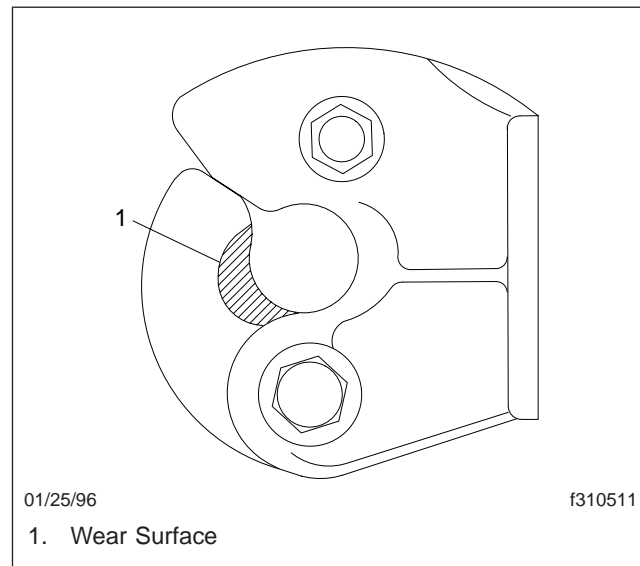


Fig. 2, Wear Checking

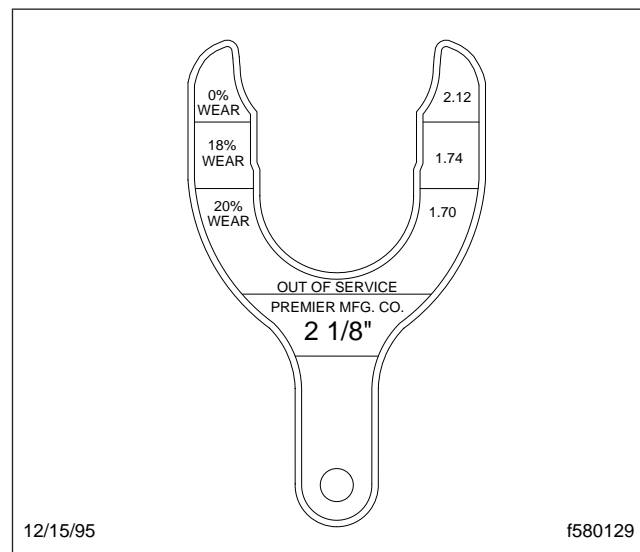


Fig. 3, Wear Gauge

Disassembly and Assembly

Disassembly

1. Remove the coupling from the vehicle.
2. Remove the pintle-hook nut and bolt, then remove the pintle hook from the coupling body. See **Fig. 1**.

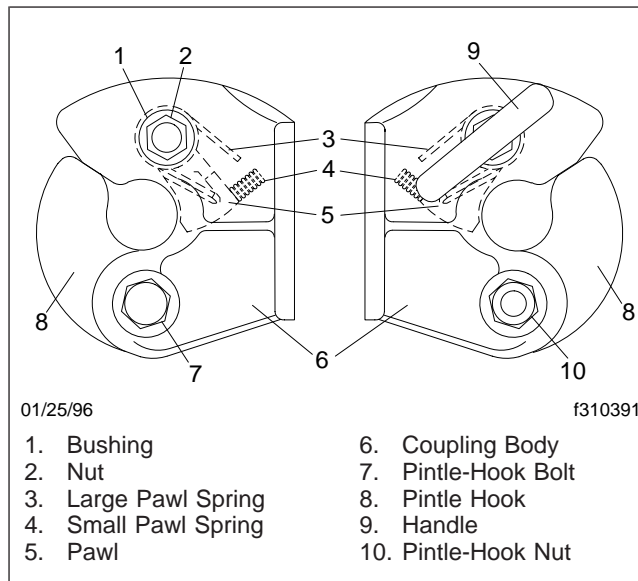


Fig. 1, Trailer Coupling Parts

3. With the handle pushed in, remove the nut from the end of the handle.
4. Remove the bushing, then the handle from the body.
5. From the bottom of the coupling body, remove the small pawl spring, then the pawl and the large pawl spring. Discard the two springs.
6. Remove the locking pin assembly from the coupling body, and discard it. See **Fig. 2**.

Assembly

1. Check for wear on any parts that aren't included in the new repair kit. Replace them if needed.
2. Place the coupling body on its face, with the mounting surface up and the bottom of the coupling body toward you. See **Fig. 3**.
3. Place a new large spring on the pawl, so that one leg of the spring fits into the groove in the pawl. See **Fig. 4**.

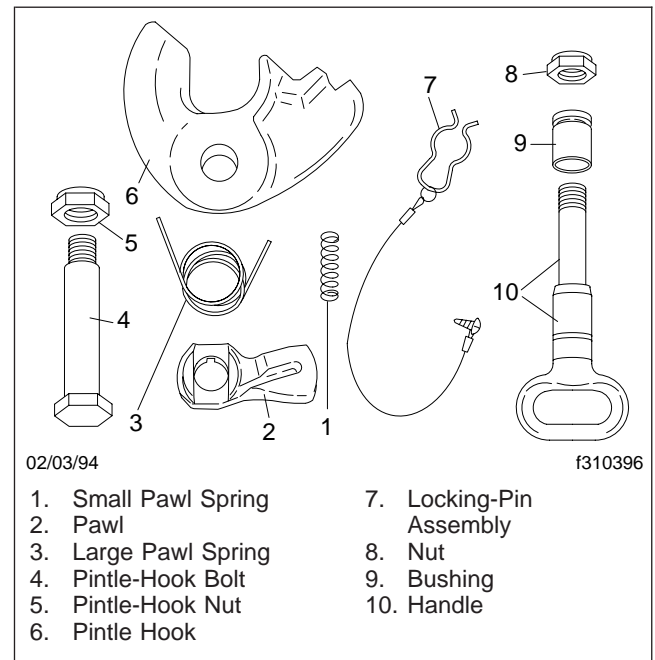


Fig. 2, Repair Kit Parts

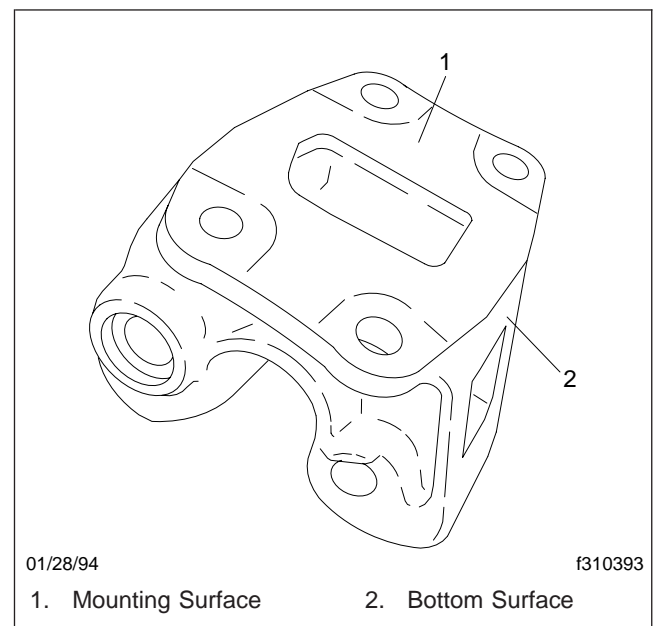


Fig. 3, View of the Mounting Surface

4. Install the pawl and spring in the bottom of the coupling body, with the spring to your left. See **Fig. 5**. Make sure the other leg of the spring sits in the slot inside the body.

Disassembly and Assembly

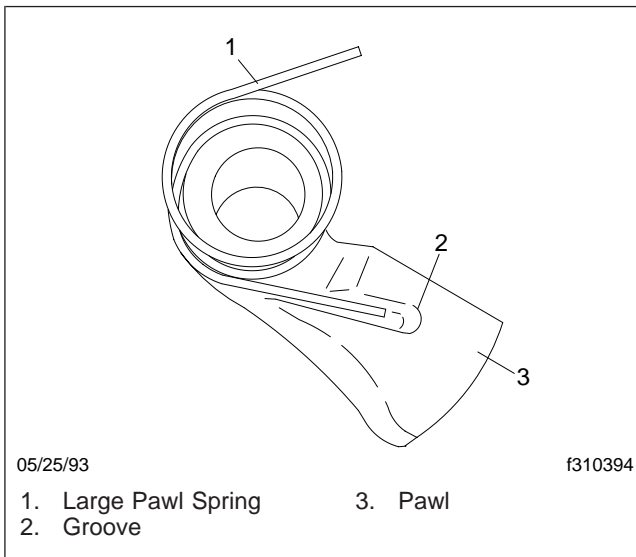


Fig. 4, Pawl and Pawl Spring

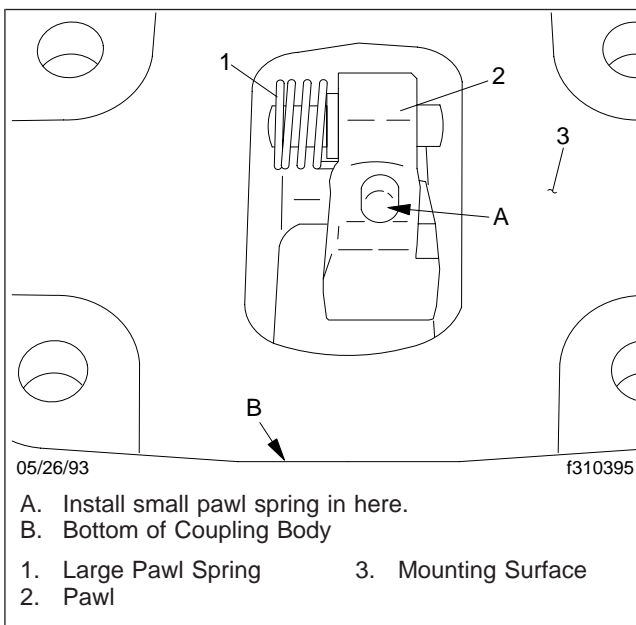


Fig. 5, Pawl Spring Installation

7. Turn the handle toward yourself, then—from the bottom of the coupling body—install the small pawl spring in the depression on the pawl. See Fig. 5. Make sure the other end of the spring fits into the depression inside the coupling body.
8. Rotate the pawl up and lock it into position by turning the handle away from you, then pushing it in.

NOTICE

Do not overtighten the nuts for the pintle hook and the handle or it may cause the parts to bind, which could result in unnecessary wear on the coupling.

9. Set the coupling body on its mounting surface, then install the new pintle hook, bolt, and nut. Tighten the nuts on the pintle hook bolt and the handle snugly.
10. Install the new locking pin assembly on the top of the coupling body. See Fig. 2.
11. Lubricate all the moving parts with light penetrating oil. Don't lubricate the wear surface of the pintle hook. Open and close the pintle hook several times to distribute the oil.
12. Install the coupling on the vehicle. Tighten the mounting bolts 320 lbf-ft (434 N·m).

5. Install the new handle into the coupling body and the pawl. Make sure the taper of the handle matches the taper of the hole in the pawl, and that the handle locks into place. See Fig. 2.
6. Install the bushing over the threaded end of the handle, then install the nut.

294 Bolt Replacement

NOTE: Before performing the 294 bolt replacement procedure, first verify that the 690 coupling is not in need of a complete repair kit. Perform the inspection procedure in **Subject 100**.

Bolt Replacement

See **Table 1** for new parts required. Parts can be ordered from Premier Manufacturing Company at: (800) 255-5387 or (503) 234-9202.

Parts Required		
Description	Part Number	Qty.
Bolt	294	1
Locknut	297	1

Table 1, Parts Required

- Place the 690 coupling into the OPEN position as shown in **Fig. 1**.

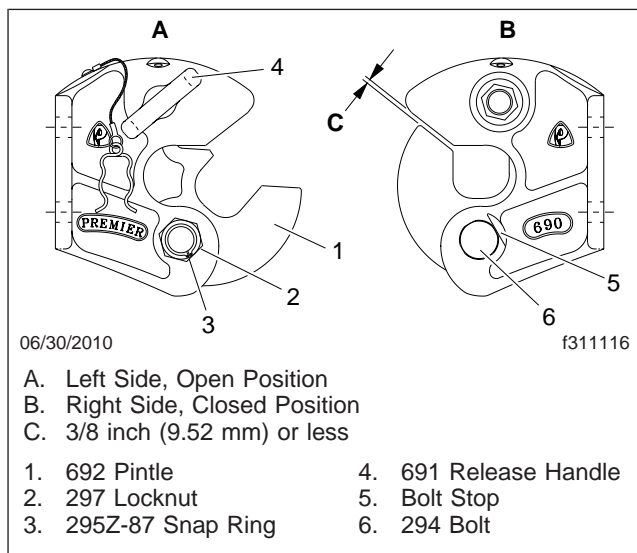


Fig. 1, 690 Coupling

- If the bolt is an old style with a snap ring, remove the 295Z-87 snap ring from the end of the 294 bolt, then discard it.
- Remove the 297 locknut and discard it.
- Firmly gripping the 692 pintle, slide the 294 bolt out of the 690 coupling body.

- Using a hammer or file, destroy the threaded end of the 294 bolt and discard it.
- Thoroughly clean the 690 coupling body holes where the 294 bolt was inserted, as well as the interior surfaces of the 690 coupling body. Clean the hole and all surfaces of the 692 pintle.
- On each side of the coupling body, measure the hole diameters where the 294 bolt was inserted. If a hole diameter exceeds 1.156 inches (29.36 mm) the coupling body is considered out-of-service and must be replaced.
- Inspect the holes around the 691 release handle for wear. If there is a gap of 1/32-inch (0.79 mm) or greater between the 691 handle shaft and hole circumference, remove the handle assembly, then measure the hole diameters. If a hole diameter exceeds 1.30 inches (33.02 mm), the coupling is to be considered out-of-service and must be replaced.
- Test fit the 294 bolt by inserting it from the right side through the holes of the 690 coupling body, without the 692 pintle in place. Make certain that the new 294 bolt head is flush with the outer 690 coupling body side wall.

If the new 294 bolt head and the 690 coupling body are not flush, two possible causes are shown in **Fig. 2**.

- Arrow A indicates a gap between the new 294 bolt head and the 690 coupling body caused by the hole in the 690 coupling body not being chamfered. This can be resolved by grinding a 45 degree chamfer, no larger than 1/16 inch (1.59 mm), around the entire circumference of the 690 coupling body hole.
 - Arrow B indicates a gap because the bolt stop is preventing the bolt from sitting flush to the coupling body. This can be corrected by grinding or filing the bolt stop until the bolt head clears it.
- For final assembly, remove the 294 bolt and apply heavy grease to the the 692 pintle hole, the 690 coupling body holes, and the shank of the new 294 bolt (do not lubricate the threads).
 - Place the 692 pintle into the 690 coupling body, aligning the pintle hole with the body holes. From the right side, insert the new 294 bolt through the aligned holes. Clean all signs of lubrication from

294 Bolt Replacement

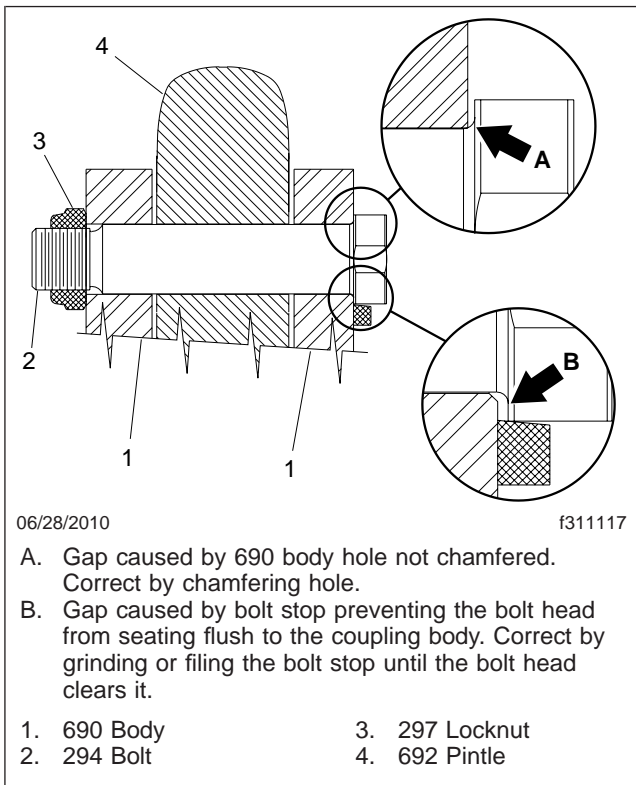


Fig. 2, Bottom Section View

the threads of the 294 bolt. Align one of the four flatheads adjacent to the bolt stop as shown in [Fig. 1](#).

12. Securing the 294 bolt head with a wrench, thread a new 297 locknut onto the bolt. Ensure that no lubricant is present on the bolt threads, then torque to 50 lbf-ft (68 N·m).
13. Open and close the 690 coupling several times, making sure it operates smoothly and correctly.

General Information

The Holland Simplex SE series fifth wheels are used for pulling trailers having the standard 2-inch-diameter kingpin. When installed as a stationary fifth wheel, they are bracket-mounted to the tractor frame in a position that best distributes the trailer load over the tractor axles. See **Fig. 1**.

When used as a sliding fifth wheel, they are mounted on a sliding mount with an air-operated or manual release. See **Fig. 2**.

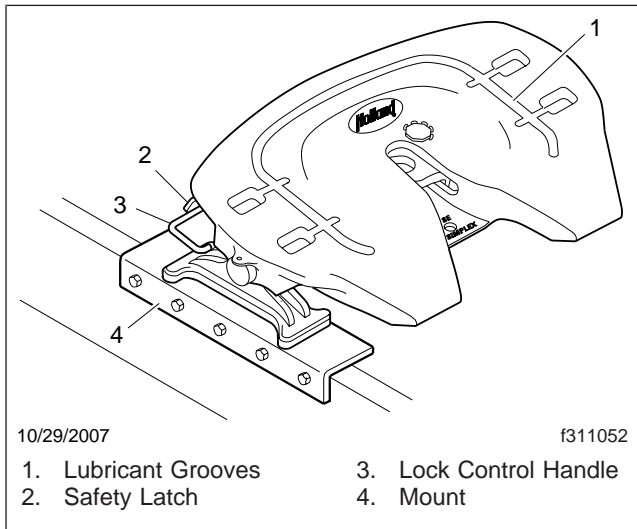


Fig. 1, Stationary Fifth Wheel

The fifth wheel lock mechanism for the trailer kingpin consists of a rotating jaw that grips the trailer kingpin, and a spring-actuated lock. The jaw rotates on a jaw pin during coupling and uncoupling operations.

The kingpin is released by activating a manual lock control handle located on either the right side (curb-side) or left side (roadside) of the fifth wheel. On fifth wheels equipped with an air-operated release, the kingpin lock can be opened by air cylinder activation. Kingpin lockup occurs when the kingpin is forced into the jaw and the operating rod handle moves to the locked position.

On air-operated sliding mounts, release or lockup of the slider saddle plate occurs when the air cylinder is activated by a two-position air-control valve in the tractor cab. See **Fig. 3**.

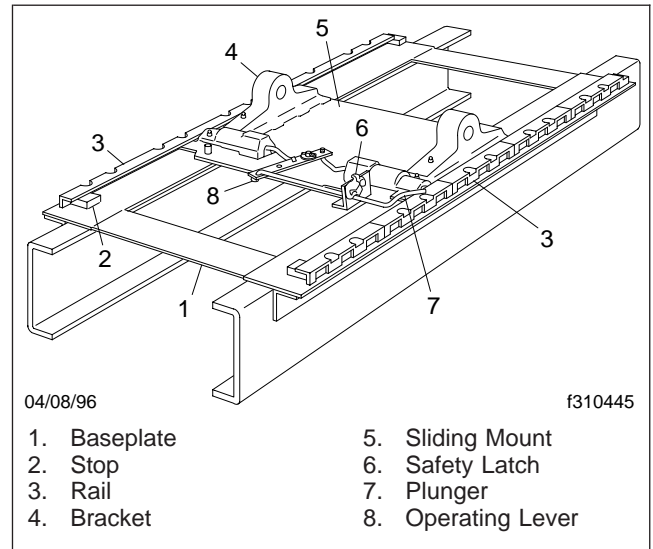


Fig. 2, Taperloc Slider, Manually Operated Release

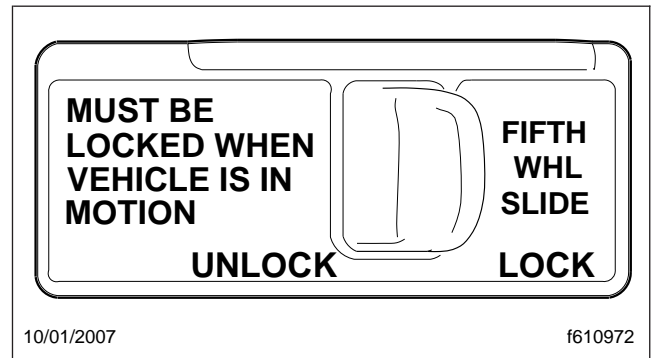


Fig. 3, Air Control Valve in Cab

The manually operated slider saddle plate has an operating rod that moves the operating lever to lock or unlock both sides of the saddle plate at the same time.

Principles of Operation

As the tractor is moved out from under the trailer, after unlocking the fifth wheel, the kingpin rotates the jaw until the jaw is in a position that allows the kingpin to disconnect.

During coupling, the motion of the kingpin entering the jaw rotates the jaw into the locked position, locking the jaw around the kingpin.

For operating instructions, see **Chapter 17** in the *Coronado® Driver's Manual*.

 **WARNING**

All fifth wheel maintenance, adjustment, and rebuilding must be done only by a qualified mechanic. Incorrect or incomplete procedures could result in loss of the trailer connection, which could cause personal injury and property damage.

 **WARNING**

Do not use the fifth wheel if it does not operate correctly. A fifth wheel malfunction could cause possible disengagement of the trailer from the tractor, resulting in personal injury and property damage.

Removal

1. Using a bar, lock the fifth wheel.
2. Steam clean the fifth wheel.
3. Remove the retaining bolts, clinch pins, and bracket pins. If needed, use a clamp to compress the top plate and brackets to relieve the pressure on the bracket pins. See [Fig. 1](#).

If cotter pins are present instead of clinch pins, discard them. Clinch pins may be reused.
4. Using an overhead hoist, lift the fifth wheel off the mount and tractor frame.

Installation

1. Using an overhead hoist, place the fifth wheel on the mount brackets.
2. Clamp the fifth wheel in place to compress the bracket pads.
3. Insert the bracket pins, clinch pins, and retaining bolts.
4. Measure the clearance between the jaw and kingpin, and adjust as needed to permit proper locking and to accommodate SAE kingpin tolerances. For instructions, see [Subject 110](#) in this section.

IMPORTANT: The fifth wheel must be well lubricated to operate correctly. Refer to **Group 31** in the *Coronado® Maintenance Manual* for maintenance and lubrication instructions.

5. Using a multipurpose chassis grease, grease the top plate and the grease fittings.
6. Check the fifth wheel operation. Refer to **Chapter 17** in the *Coronado® Driver's Manual* for complete fifth-wheel operating instructions.

31.03

Fifth Wheel, Holland Simplex

Removal and Installation

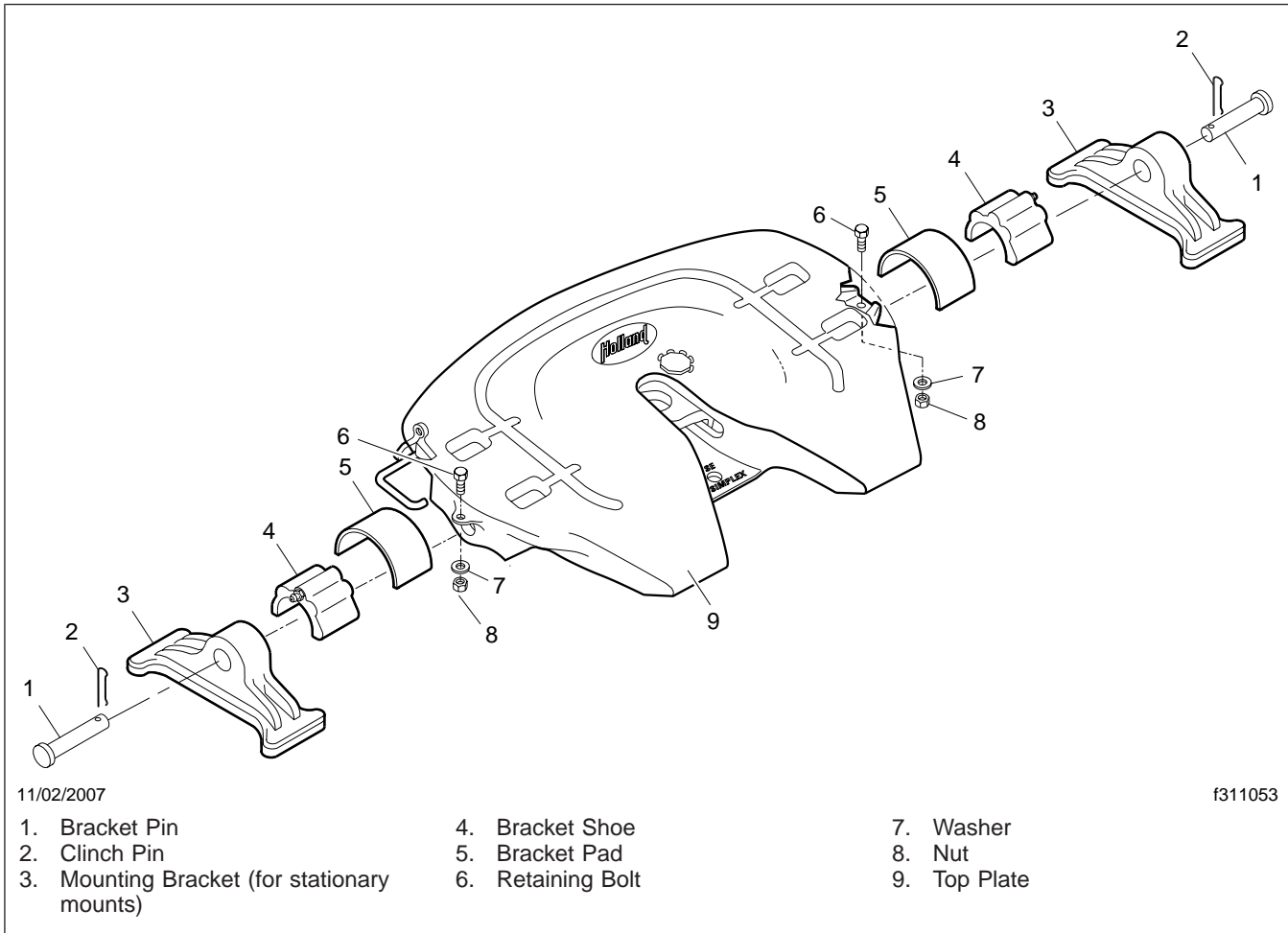


Fig. 1, Holland Simplex Fifth Wheel

Jaw and Kingpin Clearance Adjustment

Adjustment

Check for excessive clearance at the kingpin regularly. New fifth wheels provide a minimum 1/16-inch (1.6-mm) clearance between the kingpin and jaw. This clearance is necessary to permit proper locking and to accommodate SAE kingpin tolerances.

1. Check the clearance between the jaw and kingpin, as follows.
 - 1.1 With the jaw open, insert Holland gauge 4000171 or a new kingpin in the fifth wheel. See **Fig. 1**.

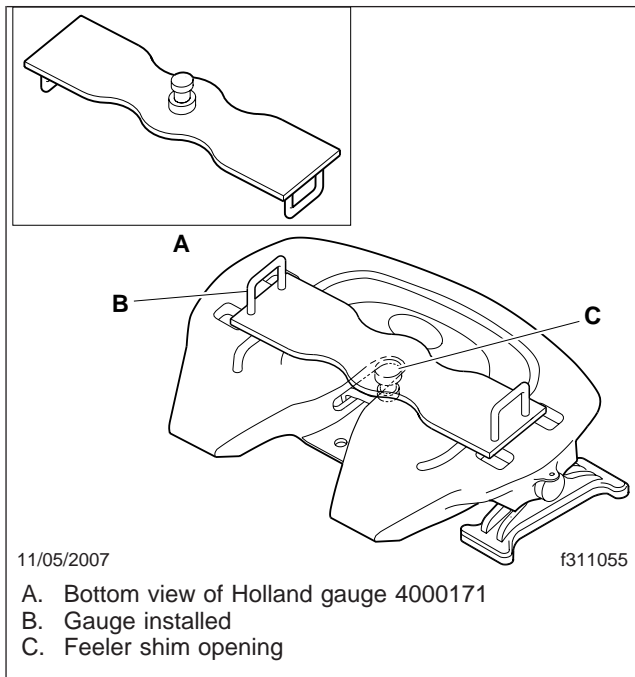


Fig. 1, Jaw Gauge

- 1.2 Make sure the safety latch swings freely over the lock control handle. See **Fig. 2**. This places the fifth wheel in the coupled and locked position.

NOTE: For complete instructions on a properly coupled condition, see the tag affixed to the side of the fifth wheel near the operating handle, and the driver's card that is furnished with each fifth wheel.

- 1.3 Measure the distance between the kingpin (or gauge) and the front edge of the top

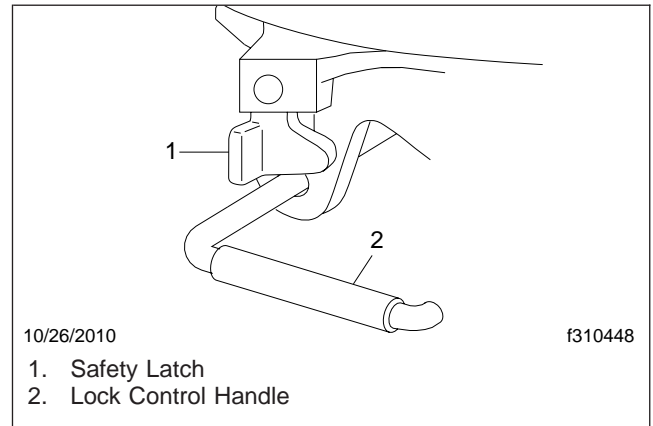


Fig. 2, Left-Side View

plate slot. If using the gauge, make sure it is flat on the fifth wheel and pulled as far to the rear as possible.

- 1.4 Remove the gauge or kingpin.
2. The clearance between the jaw and the kingpin should be 1/8 inch (3 mm) or less. If the measurement is more than 1/8 inch (3 mm), adjust the clearance, as follows.
 - 2.1 Using a bar, move the jaw to the locked position. This will relieve the pressure on the jaw pin.
 - 2.2 Remove the clinch pin from the jaw pin and lift the jaw pin just enough to clear the indexing head. Turn the jaw pin to the next higher numbered position (indicated on the casting).

IMPORTANT: Do not turn the jaw pin past position 4. See **Fig. 3**. If more than 1/8-inch (3-mm) clearance remains at position 4, replace the jaw, jaw pin, and lock.

NOTE: Starting from the original position, with the arrow pointing to the rear, each turn of the jaw pin to one of the four positions on the casting reduces the distance between the kingpin and jaw by the amount shown in **Table 1**.

- 2.3 Repeat the previous step to check the clearance between the jaw and the kingpin. Continue to adjust and measure the clearance until the measurement is 1/8