

Service Manual



Contents

Identify your fifth wheel	2-3
Slides and brackets	4-5
Pre-service procedures.....	6-8
Preventive maintenance.....	9-10
Uncoupling design	11-12
Troubleshooting	13-15
Rebuild	16-18
Disassembly	19-20
Assembly	21-22

Identify fifth wheel assembly

Identify top plate

Identifying features:

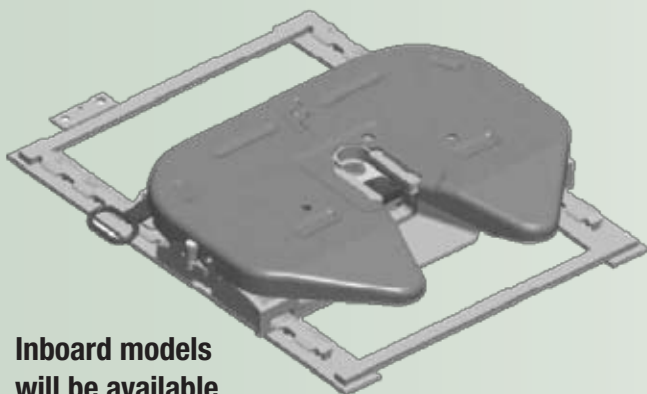
- Fabricated pull handle
- Slide assemblies have center-mounted air cylinders
- Name tags located on front skirt



Ultra LT Series

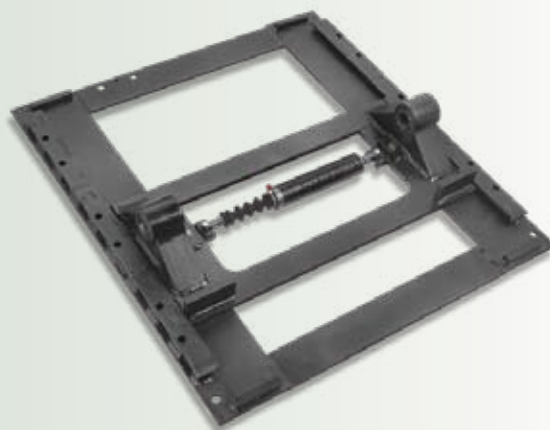
Identify slides and brackets (Note: see Slides and Bracket section for more information)

Inboard



Inboard models
will be available
in the future

Outboard



Adjustable plate mount



Identify your fifth wheel

Serial number locations

Serial number engraved directly into the right of fifth wheel skirt.
Note: position 5 and 6 of the serial number indicates the year built.



Part number nomenclature

Fontaine Fifth Wheel complete assembly part numbers. Example: **SL4LW0675012**

1. Top plate

SL Release

SL = Side left
SR = Side right
AA = Air actuated

4 Top plate model

4 = Ultra LT Series

2. Mounting bracket

LWO Mounting bracket

LWO = Outboard slide bracket
APB = Adjustable plate bracket
Pending release:
LWI = Inboard slide bracket
SMB = Stationary bracket mount
A36 = Angle mount

6750 Mounting height

Actual height from truck frame to top of fifth wheel.
Examples: 6750 = 6-3/4"
7750 = 7-3/4"
8750 = 8-3/4"

3. Slide rail

12 Slide travel

For sliding fifth wheels only.
Example: 12 = 12" slide
24 = 24" slide
36 = 36" slide
48 = 48" slide

Duty class restrictions

Application/restriction levels

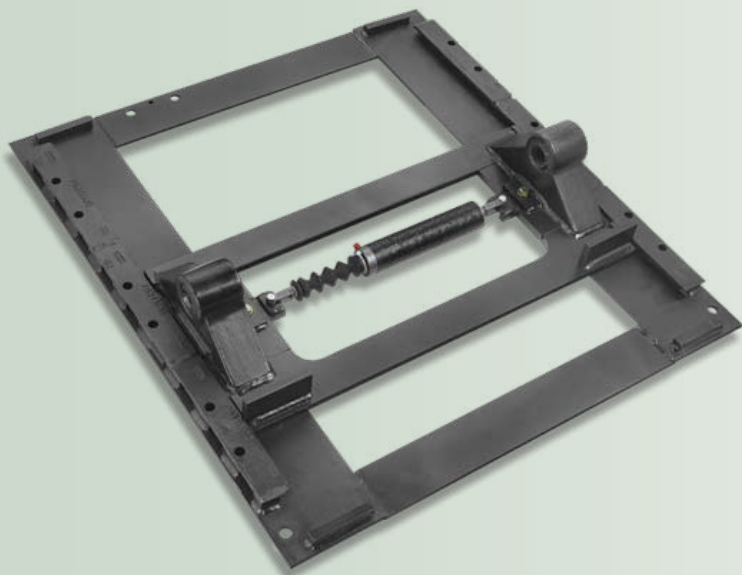
Standard duty: Fifth Wheel must be used in a 100% on-highway application, with more than 30 miles between each stop. The total number of towed axles equals two (2). Road type must be maintained concrete or asphalt. Gross Combination Weight (GCW) is less than 95,000 lbs or 43,000 kgs. See Fontaine Application Guide LT-076 for specific application recommendations. Product used in unapproved applications voids manufacture warranty.

Moderate duty: Fifth Wheel must be used in a less than 10% off-highway application, with no minimum mileage between each stop. The maximum total number of towed axles equals four (4). Road type must be maintained concrete, asphalt, gravel, or crushed rock. Gross Combination Weight (GCW) is less than 115,000 lbs or 52,000 kgs. See Fontaine Application Guide LT-076 for specific application recommendations. Product used in unapproved applications voids manufacture warranty.

Severe duty: Fifth Wheel can be used in any off-highway application, with no minimum mileage between each stop. The total number of towed axles equals five (5) or more. All road types are acceptable including hard packed dirt and non-maintained roads. Gross Combination Weight (GCW) is more than 115,000 lbs or 52,000 kgs. See Fontaine Application Guide LT-076 for specific application recommendations. Product used in unapproved applications voids manufacture warranty.

Important application notes:

1. If any single restriction factor within your application is surpassed within a given duty level, the next duty level must be selected.
2. When selecting a fifth wheel, if the application or vehicle usage places the maximum capacity on a certain fifth wheel, then the selection of a fifth wheel with a higher capacity is advised. For example, a tractor that is at a maximum vertical load of 50,000 lbs in a moderate duty application should be using a fifth wheel with a vertical load capacity of 55,000 lbs or greater. This additional capacity should give better service life over a longer period of time.
3. All logging, mining, oil field and similar applications are considered severe duty. Do not select assemblies in the standard or moderate levels when a special application is designated.

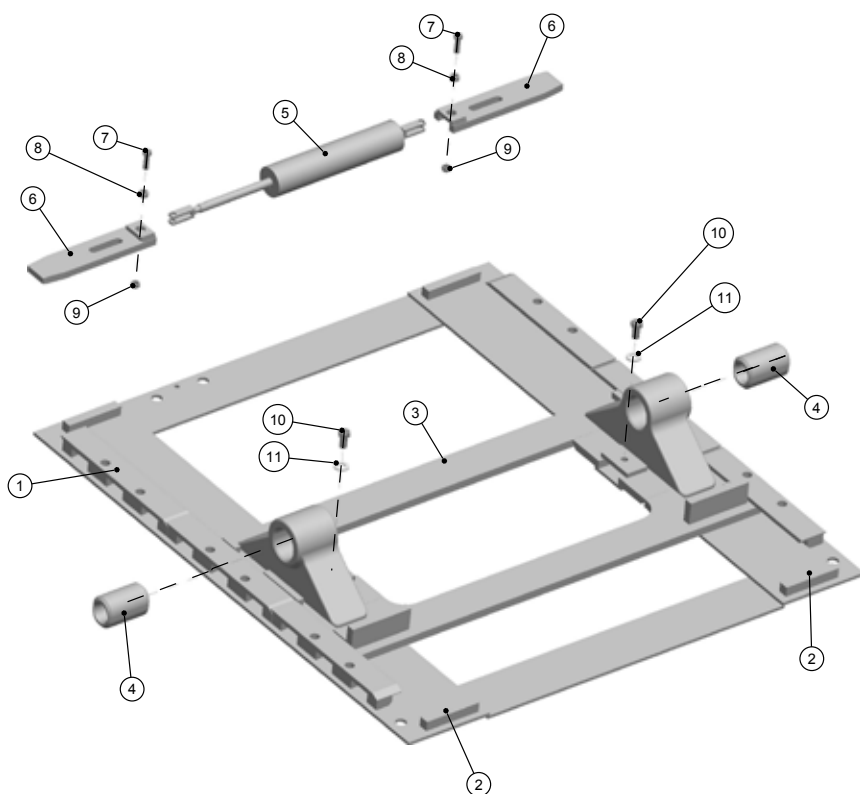


LWO: Outboard slide

- Up to 50 lbs lighter than competitive outboard slide systems
- 4" slide increments give you slide versatility for improved payload distribution
- Compact design with central mounted air cylinder
- Booted air cylinder provides protection to shaft
- Available in 6-3/4", 7-3/4", 8-3/4" and 9-3/4" heights; 12", 16", 24", 36" and 48" slide travel

LWO weight chart

Slide Length	Height			
	6-3/4"	7-3/4"	8-3/4"	9-3/4"
12"	356 lbs	361 lbs	367 lbs	373 lbs
16"	363 lbs	368 lbs	374 lbs	380 lbs
24"	376 lbs	381 lbs	387 lbs	393 lbs
36"	396 lbs	401 lbs	407 lbs	413 lbs
48"	416 lbs	421 lbs	427 lbs	433 lbs
Add 5 lbs for air actuation				



LWO parts list

Item no.	Description	Part no.	Qty.
①	Slide rail	—	1
②	Rear slide stop	—	2
③	Slide bracket	—	1
④	Bracket bushing	BSH-3000	2
⑤	Air cylinder	*	1
⑥	Locking wedge	—	2
⑦	Hex bolt, 3/8"-16 x 1-1/4", gr5	*	2
⑧	Spacer bushing	*	2
⑨	Hex lock nut, 3/8"-16, gr5	*	2
⑩	Flat washer, 1/2"	—	2
⑪	Hex head bolt, 1/2"-13 x 1"	—	2

* Included in LWO/LWI air cylinder kit, part no.: CYL-LWO-LWI

Fontaine® Ultra LT Series Slides and Brackets



APB: Adjustable plate mount

- LT top plate with the ABP bracket is the lightest mounting system available for the LT family
- Manufactured with the durability and cost-effectiveness of steel construction
- Brackets are welded to a 3/8" steel plate with six 5/8" bolt holes on each side for mounting versatility
- Plate has different cut out and different locations for rear rocker limit blocks
- Available in 6-1/4", 7-1/4", 8-1/4" and 9-1/4" heights

APB weight chart

Height			
6-1/4"	7-1/4"	8-1/4"	9-1/4"
281 lbs	286 lbs	291 lbs	297 lbs

Always check for damage due to improper handling or delivery practices prior to starting recommended pre-service procedure.

A. Fasteners

Make sure all nuts and bolts are in place and properly tightened.

Check all welds for cracks, breaks or separation.

Check to see if both bracket pins are in place and secured by retainer pins and cotter pins.

See Figure A and B.

Figure A

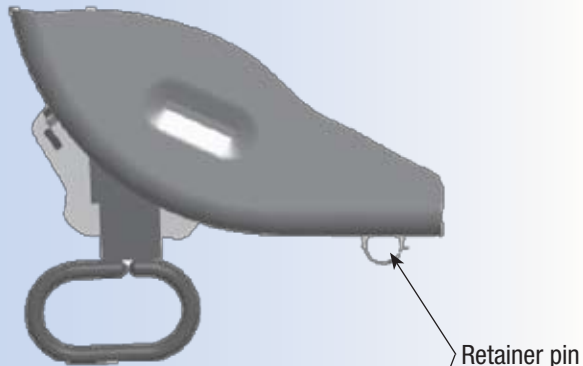
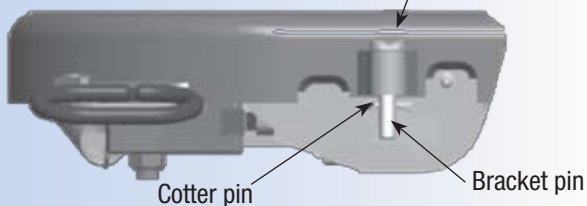


Figure B



B. Lubrication

1. Tilt the top plate forward (front of the fifth wheel down) and apply grease to each bearing area through the zerk fitting located on each side of the top plate just to the front of the bracket pins. Continue to apply grease until it is coming out of the back of the bearing. It may be necessary to raise the rear of the fifth wheel with a pry bar to open up the pocket slightly and allow the grease to flow through. Periodically remove the fifth wheel to clean old grease from the bracket grease channels to help insure an even distribution of fresh grease. A substantial amount of grease may be required initially to fill the reservoir. Tilt the wheel to the rear (rear of the wheel down) and repeat the procedure. Rock the top plate back and forth several times to spread the grease over the bearing surface.

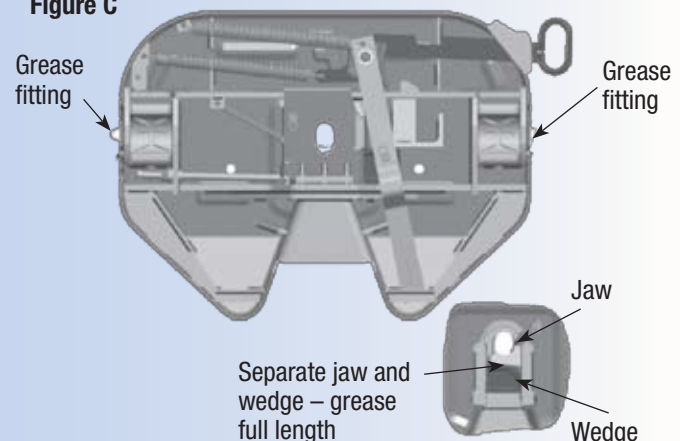
Inspect the trailer kingpin plate and top surface of the fifth wheel to make sure each is properly greased. A liberal coating of grease should be applied to the complete surfaces of both the trailer kingpin plate and the top surface of the fifth wheel. A paddle or brush will make this job easier.

Do not use a lube plate (high density polyethylene) on top of the fifth wheel or kingpin bolster plate in lieu of grease without prior approval by Fontaine.

The additional thickness of this material can prevent the proper operation of the fifth wheel and can cause a dangerous condition.

2. Lubricate the fifth wheel lock prior to opening and closing. Referring to Figure C, grease the jaw and lockbar (wedge) on top and bottom. Separate the jaw and lockbar (wedge) with a large screwdriver and distribute the grease along the full length of the jaw and lockbar (wedge) mating surfaces. Open and close the fifth wheel several times to further distribute the grease.

Figure C



Pre-service procedures

Fontaine suggests the use of a moly-based lubricant such as Mobilgrease XHP320 or equivalent when applying lubricant to the locking jaw and wedge. Lightly oil other moving parts in the fifth wheel (areas or regions that experience extreme and/or prolonged freezing temperatures should consider using a less viscous substance such as: 90-weight oil, diesel fuel, kerosene, motor oil, etc. Fontaine suggests contacting your specific lubricant manufacturer for guidelines on mixing compatibility of any lubricant).

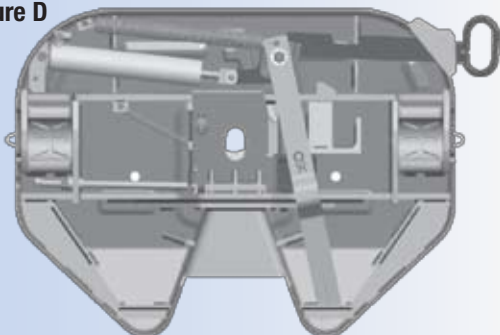
3. For sliding fifth wheels, lightly oil the locking mechanism. Operate the mechanism several times to ensure it is functioning properly.
4. Grease the top plate. Spread grease all over the mating surface of the top plate. Be sure the grease pockets built into the top plates are full of grease.

Note: This lock is set from the factory with some running slack based on a two inch kingpin. If a kingpin is less than nominal diameter but within tolerance of SAE 1955 the amount of slack will increase. No attempt should be made to reduce the slack on smaller diameter kingpins as it would result in failure to close properly around a nominal kingpin diameter. The adjustment stud can not be used as knock-out rod! If the fifth wheel is not properly adjusted the wheel will be very difficult to open. Once the wheel is opened the adjustment procedure should be followed by installing a 2" kingpin and the adjustment stud should receive 2-1/2 turns after contact with the lock bar.

C. Operation

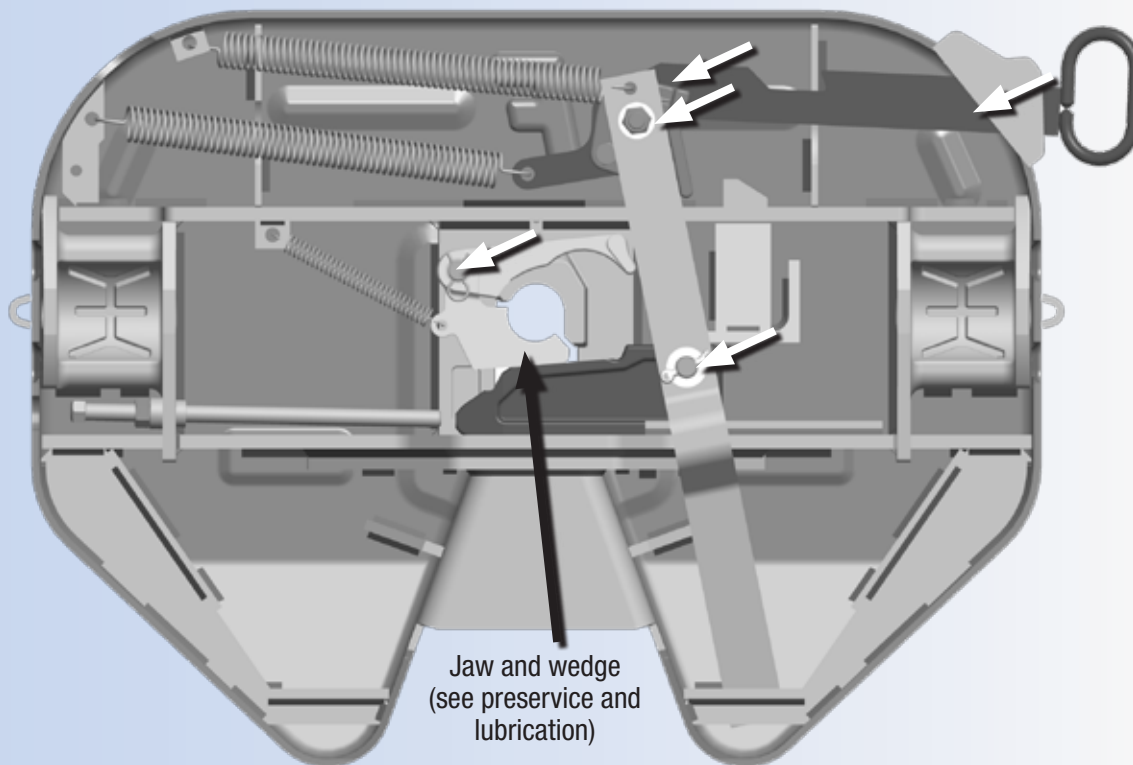
1. Fontaine's Ultra LT fifth wheel opens by a straight pull on the release handle until maximum opening stroke is achieved then is moved slightly forward until the handle cut out sets up on the handle block located on the fifth wheel skirt.
2. Close the locking mechanism using a test kingpin or 2" (50.8 mm) diameter pipe. Repeat several times making sure that all moving parts have adequate lubrication.
3. The pull handle grip should always be free of grease or any substance which could prevent a firm grip, causing the handle to slip and possibly resulting in injury.
4. Fontaine's air actuated Ultra LT fifth wheel is shown in Figure D. A release valve located on the dash or in a lock box mounted on the rear of the cab is used to activate the release cylinder. To open, set the tractor parking brake and pull the release valve. Hold the valve open until the locking mechanism is locked in the open position. The pull valve will not activate the air cylinder unless the tractor parking brakes are set.

Figure D



Lubrication points: (Ultra LT)

Black arrows are lube points when the fifth wheel is on a mount. However, for proper maintenance it is recommended you clean it and re-grease the pivot points... see white arrows.



Preventive maintenance

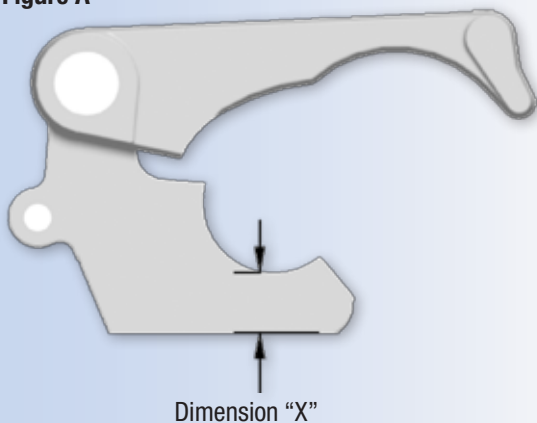
Remember to exercise extreme caution, follow all stated & customary safety procedures, and be sure to wear safety glasses.

Step 1. Visual inspection

Using a suitable solvent, degrease the fifth wheel and mounting brackets every 90 days or 30,000 miles and inspect for:

1. Cracks in the fifth wheel assembly, mounting brackets, and mounting parts.
2. Wear and/or damage to moving parts.
3. Correct operation of the secondary lock.
4. Loose nuts and bolts in the fifth wheel and in the mounting hardware.
5. Securely fastened and properly working springs.
6. Check to see if both bracket pins are in place and secured by retainer pins and cotter pins.
7. Check the locking jaw. If dimension "X" is less than 0.8" (20.25 mm) replacement of the jaw and lockbar (wedge) is required. See Figure A.

Figure A



Check the fifth wheel operation and adjustment. Using a test kingpin or 2" (50.88 mm) diameter pipe, follow the instructions provided in the pre-service procedure on pages 6-8.

Step 2. Function Inspection

Begin with the fifth wheel in the unlocked position. Pull handle to unlock fifth wheel if it is not open.

Insert a test kingpin, such as Fontaine Kingpin Tool KIT-ULTRA-KP, to close the lock.

Make sure the jaw and wedge are engaged behind the kingpin and the pull handle is fully retracted.

Open and close the wheel again.

If the action is slow or sluggish, it may be due to a build up of old grease or a bent part causing binding (see trouble shooting section).

Lightly lubricate the pivot points on the mechanism with a spray lubricant.

Step 3. Adjustment

1. With the wheel in the closed position, loosen the adjuster lock nut and turn the adjuster stud counter clockwise (outward) until it is free from touching the end of the lockbar (wedge).
2. Insert a test kingpin or 2" (50.8 mm) diameter shaft to ensure the locking mechanism is completely closed.
3. Turn the adjuster stud clockwise (inward) until it contacts the end of the lockbar (wedge). Now turn the adjuster stud clockwise (inward) an additional 2-1/2 revolutions. This will give the recommended .02" (0.525 mm) running clearance.
4. Tighten the adjuster lock nut.

Improper adjustment can cause the mechanism to bind and/or wear prematurely.

Preventive maintenance

Step 4. Lubrication

Lubrication recommended every 6 weeks or 15,000 miles.

Follow the instructions provided in the lubrication pre-service procedures on pages 6-7.

Special precautions must be taken during cold weather to ensure that the Fontaine Ultra LT locking mechanism operates freely. Ice and sludge can build up and lubricants become thick and binding at low temperatures. In areas or regions that experience extreme and/or prolonged freezing temperatures, Fontaine recommends use of a cleaner or degreaser on the latching mechanism, making sure that the moving parts operate freely. This should be followed by an application of 90-weight oil, diesel fuel, kerosene, motor oil, etc. to all moving parts. This procedure may also be necessary in operations where excessive road grime or grit is encountered.

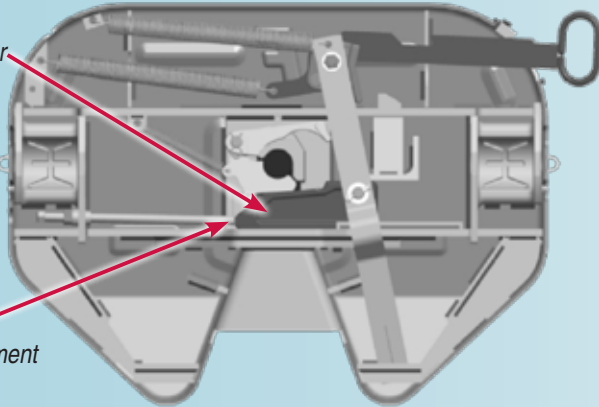
The regular performance of the routine, "90-Day/30,000 mile preventative maintenance procedure," is also recommended.

Uncoupling design

1.

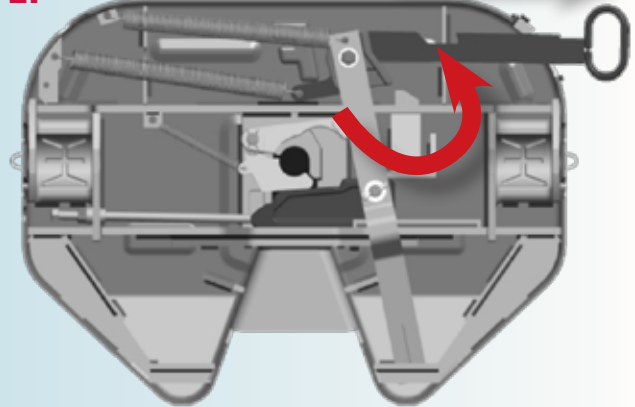
Lockbar

Adjustment stud



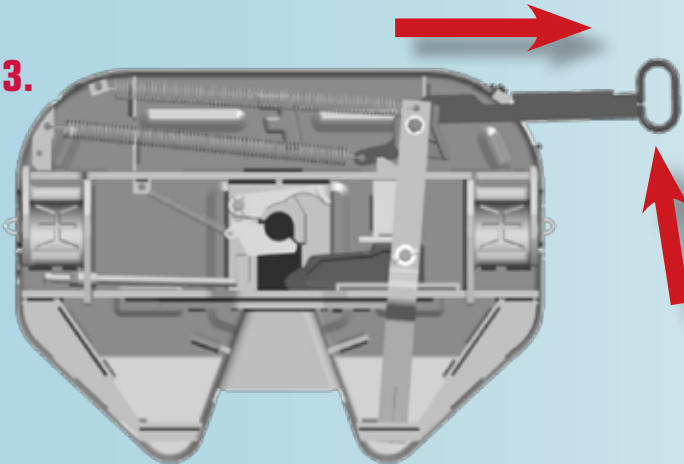
Lockbar (wedge) is stopped by the adjustment stud. Springs apply constant pressure to hold the wedge tight against the stud. Proper adjustment allows the wedge from becoming "wedged" behind the jaw.

2.



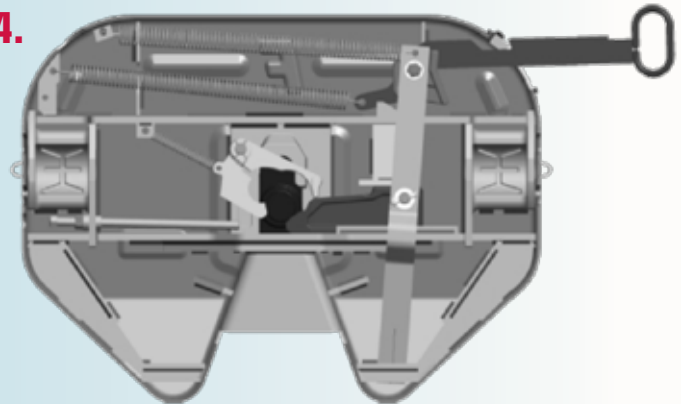
First pull of the handle rotates the secondary lock to clear the secondary lock stop.

3.



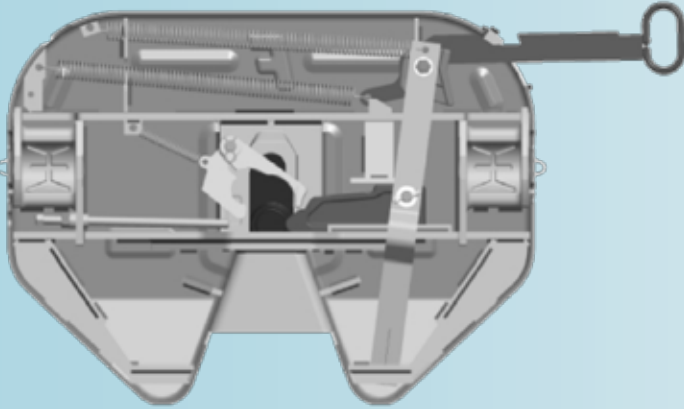
Handle is pulled until notch is free to be placed on the latch catch block on the handle plate (not shown). Trailer holds the kingpin the jaw in the fifth wheel. There is a portion of the lockbar that is in the throat of the fifth wheel.

4.



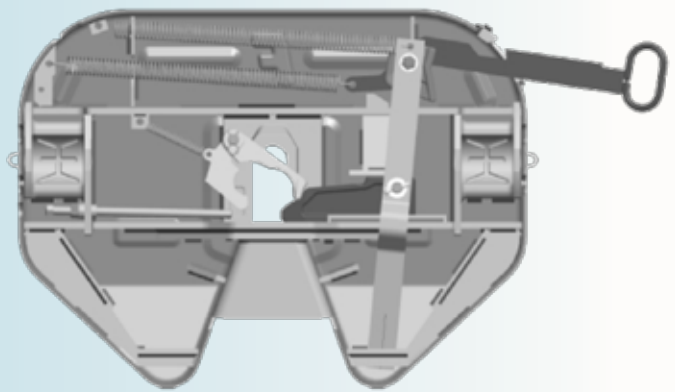
As trailer pulls the kingpin away from the stationary jaw, the rotating jaw moves. The kingpin then contacts the lockbar that is the throat.

5.



As trailer continues to pull the kingpin out of the fifth wheel, jaw rotates until it hits stop on cover plate. The kingpin pushes the lockbar allowing the notch to become free of the lock catch. The springs rotate the handle away from the lock catch allowing the fifth wheel to become set-up for the next couple.

6.



Fifth wheel is ready to couple. There is some portion of the lockbar in the throat of the fifth wheel.

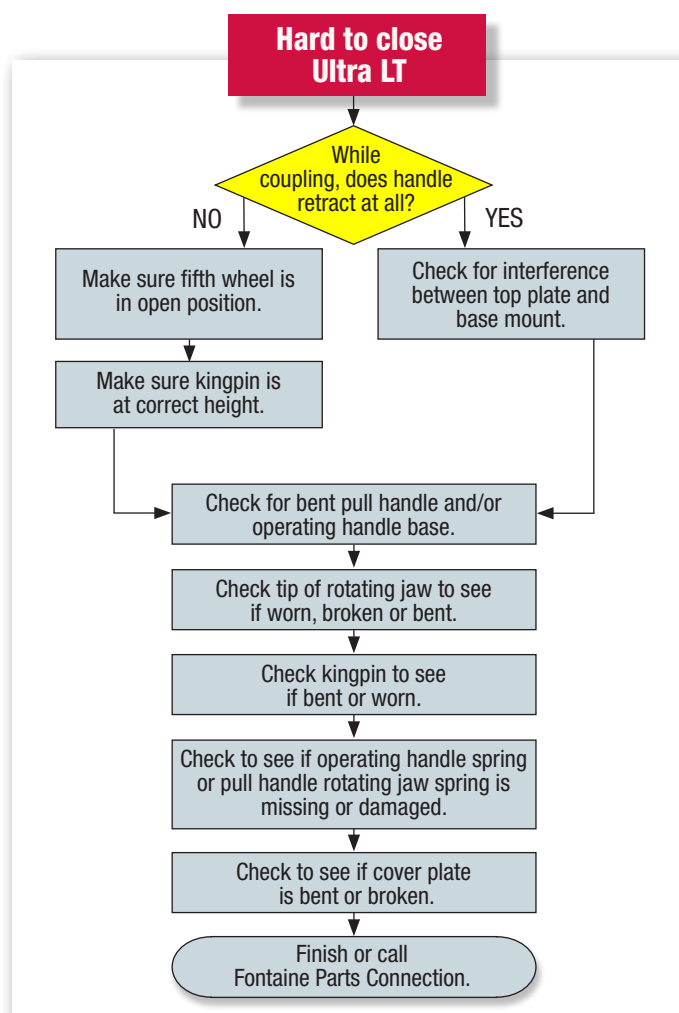
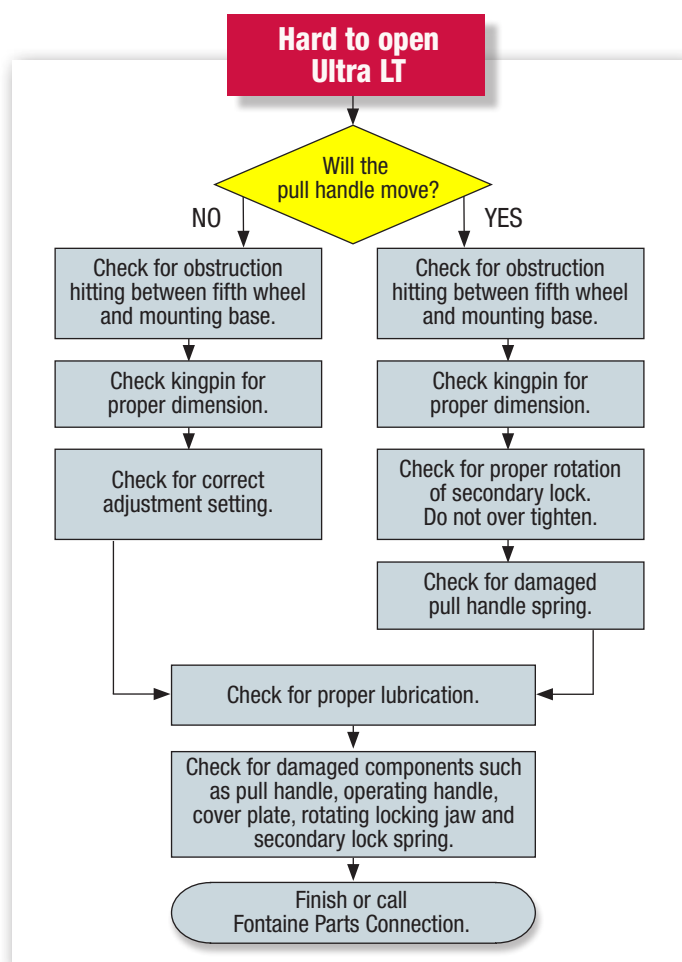
Visual lock indicators

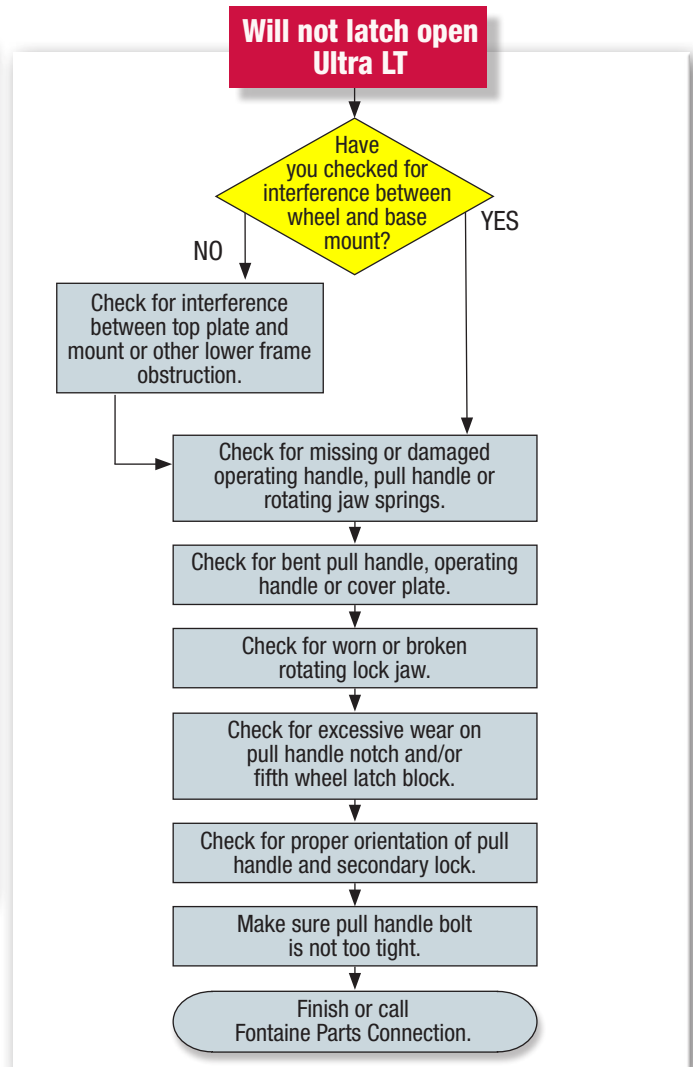
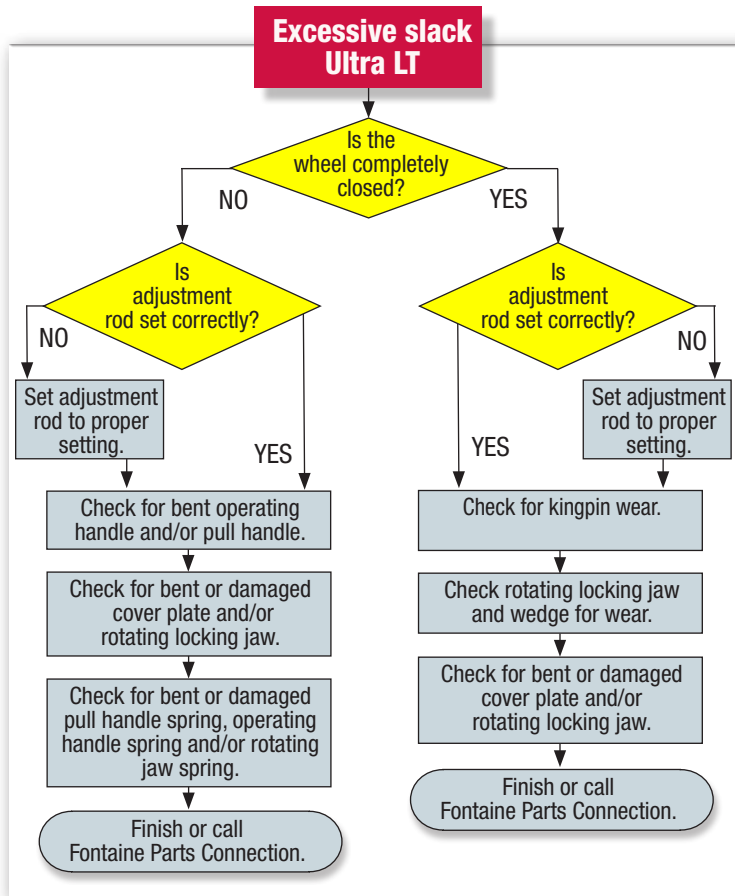


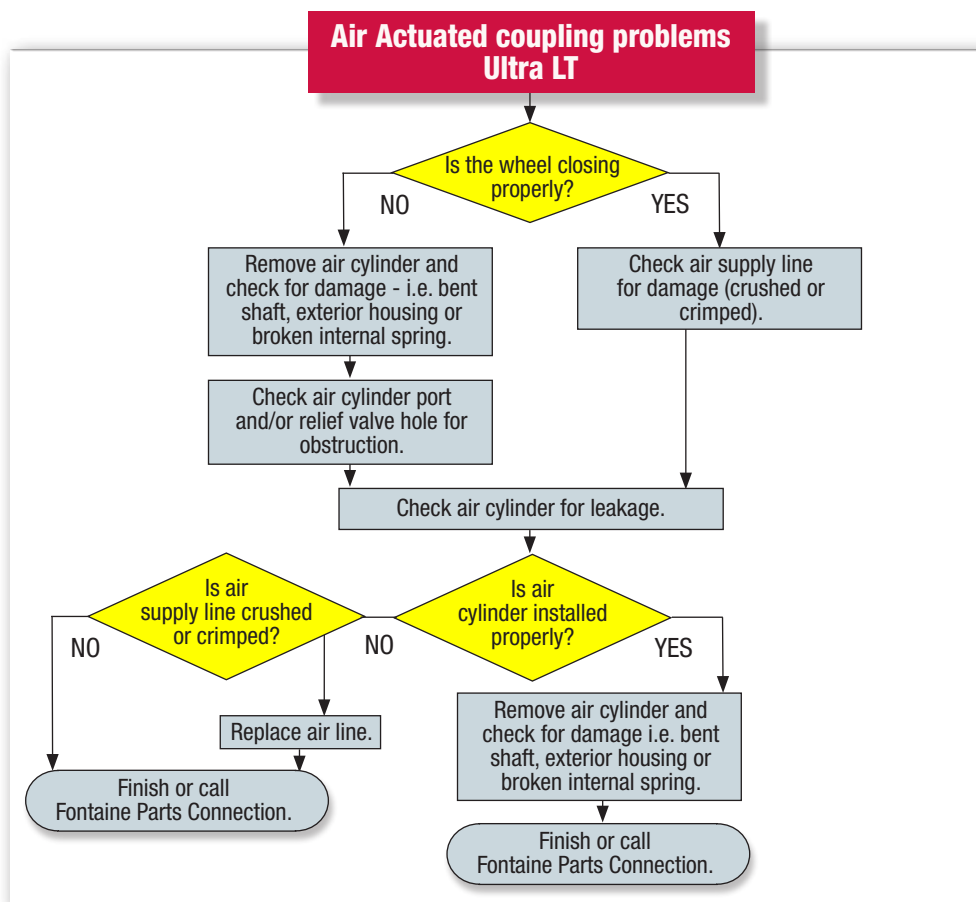
Fifth wheel is not closed since handle notch is not over the handle plate.



Fifth wheel is locked as shown by the handle notch being over the handle plate.







Inspect fifth wheel for damage

Before rebuilding check to make sure that there are no cracks in the crossmembers or other components. Under no circumstances should a fifth wheel be repaired or used if any component (cross member, saddle bearing, etc.) is cracked. Also check for excessively worn areas.

Items needed for rebuild (follow rebuild instructions included in the LT-147)

Remember to exercise extreme caution, follow all stated and customary safety procedures, and be sure to wear safety glasses.

Do not use pneumatic tools. Over-tightening may cause damage.

- 15/16" wrench
- 3/4" socket wrench
- Pliers
- Flat head screw driver
- Long pry bar
- Test kingpin KIT-ULTRA-KP
- Kingpin gauge MSC-GAUGE
- Moly-based lubricant such as Mobilgrease XHP320 or equivalent

Top plate rebuild kit

KIT-RPR-UL-L



After inspection you may need to optionally order other kits. See schematic on page 18.

Special tools *Fontaine offers special tools for your fifth wheel to help your repairs go fast and easy.*

KIT-ULTRA-KP



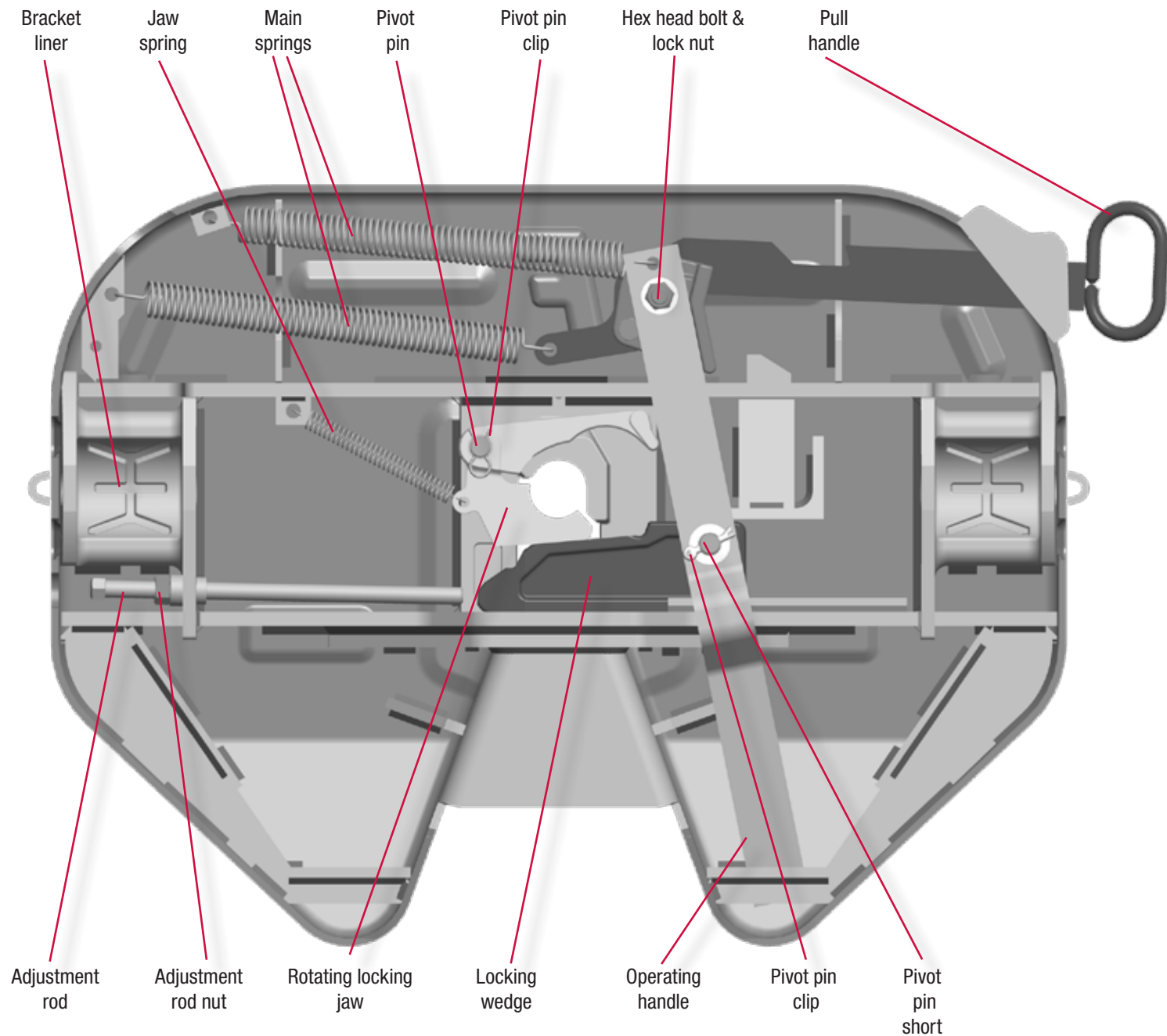
Kingpin gauge
MSC-GAUGE

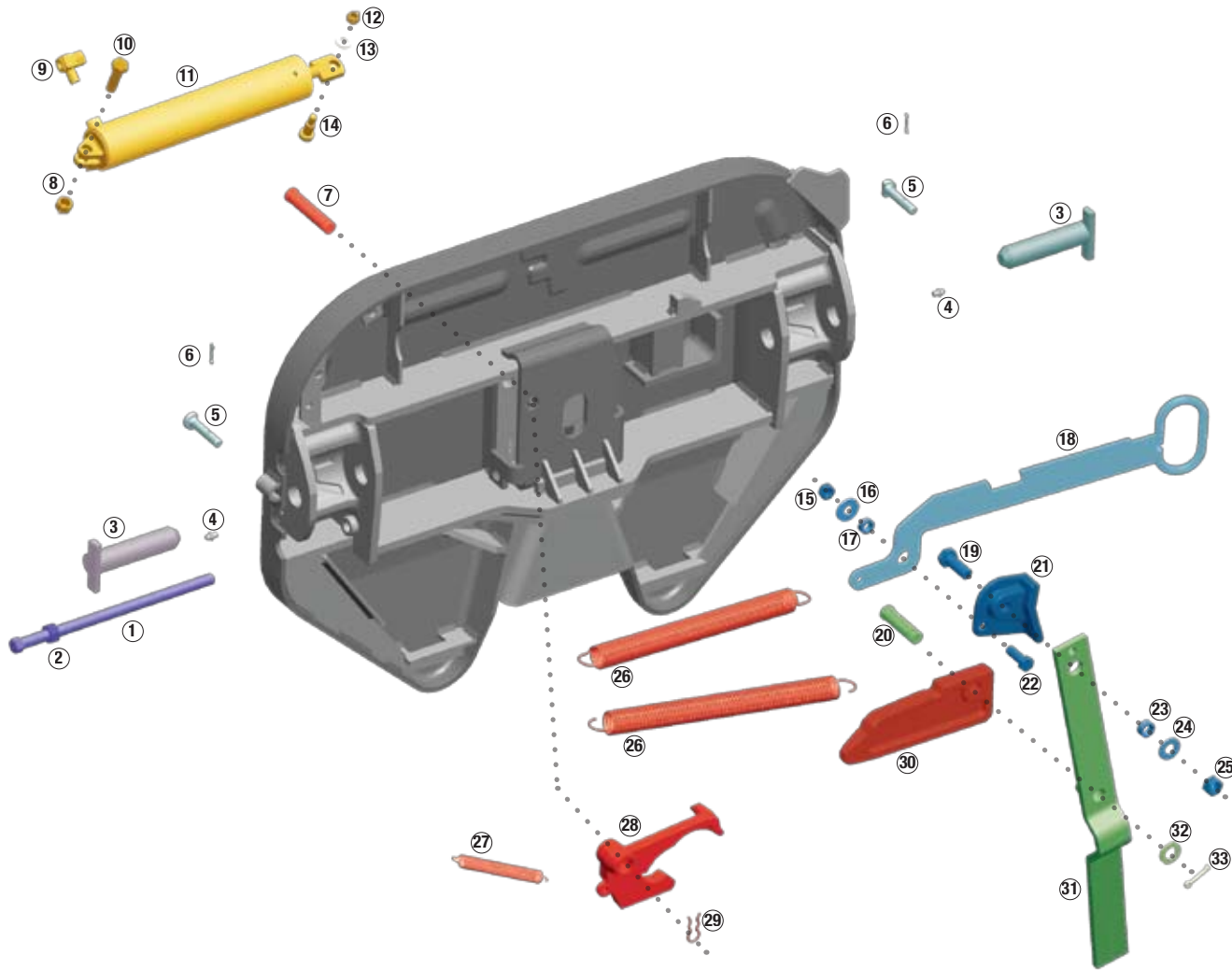


Rebuild

Ultra LT series part identification

Cover plate not shown for clarity.





Repair kit (KIT-RPR-UL-L)

Item	Description	Quantity
7	Pivot pin, long	1
20	Pivot pin, short	1
25	Lock nut, 5/8"-11	1
26	Main spring	2
27	Jaw spring	1
28	Rotating locking jaw	1
29	Pivot pin clip	2
30	Locking wedge	1
32	Washer, 3/4"	1
33	Cotter Pin	1

Spring kit (KIT-SPR-ULHH)

26	Main spring	2
27	Jaw spring	1

Adjuster rod kit (KIT-ROD-UL)

1	Adjustment rod	1
2	Adjustment rod nut	1

Secondary lock kit (KIT-SEC-ULHH-L)

Item	Description	Quantity
15	Lock nut, 1/2"-13	1
16	Washer, 1/2"	1
17	Bushing, 5/16"	1
19	Hex head bolt, 5/8"-11 x 1.75"	1
21	Secondary lock	1
22	Hex head bolt, 1/2"-13 x 1.5"	1
23	Spacer bushing	1
24	Washer, flat 5/8"	1
25	Lock nut, 5/8"-11	1

Operating lever kit (KIT-OPR-UL)

19	Hex head bolt, 5/8"-11 x 1.75"	1
20	Pivot pin, short	1
23	Spacer bushing	1
24	Washer, flat 5/8"	1
25	Lock nut, 5/8"-11	1
31	Operating handle	1
32	Washer, 3/4"	1
33	Cotter Pin	1

Air cylinder kit (KIT-AA-UL-L)

Item	Description	Quantity
8	Lock nut, 1/2"-13	1
9	Exhaust valve	1
	Quick disconnect (not pictured)	1
10	Hex head bolt, 1/2"-13 x 1.75"	1
11	Air cylinder	1
12	Lock nut, 3/8"-16	1
13	Washer, 3/8"	1
14	Shoulder bolt, 3/8"-16	1
26	Main spring	1

Mounting pin kit (KIT-PIN-UL)

3	Bracket pin	2
5	Bracket retainer pin	2
6	Cotter pin	2
	Bracket bushing (not pictured)	2

Pull handle kit (KIT-PUL-UL-L)

15	Lock nut, 1/2"-13	1
16	Washer, 1/2"	1
17	Bushing, 5/16"	1
18	Pull handle	1
22	Hex head bolt, 1/2"-13 x 1.5"	1

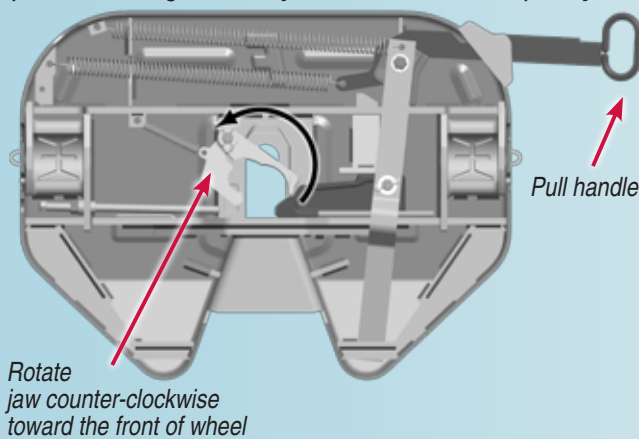
Disassembly

Cover plate removed for clarity. Refer to exploded view of assembly on page 18 to identify item number and parts.

Degrease fifth wheel before installing new parts

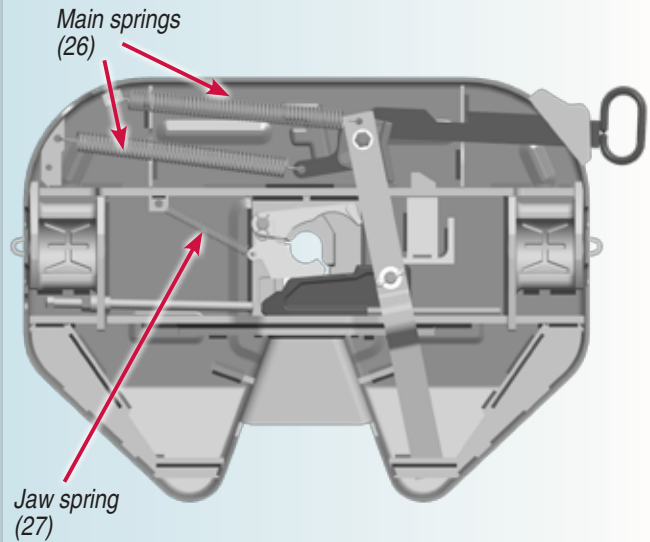
1. Set the fifth wheel in the closed position

To set the fifth wheel in the closed position, rotate the jaw towards the front of the fifth wheel with a screw driver of adequate length to keep hands and fingers out of the throat of the wheel. This will partially close the wheel. Now pull out on the pull handle a small amount and complete the rotation of the jaw toward the front of the wheel. Allow the pull handle to go in slowly for the wheel to completely close.



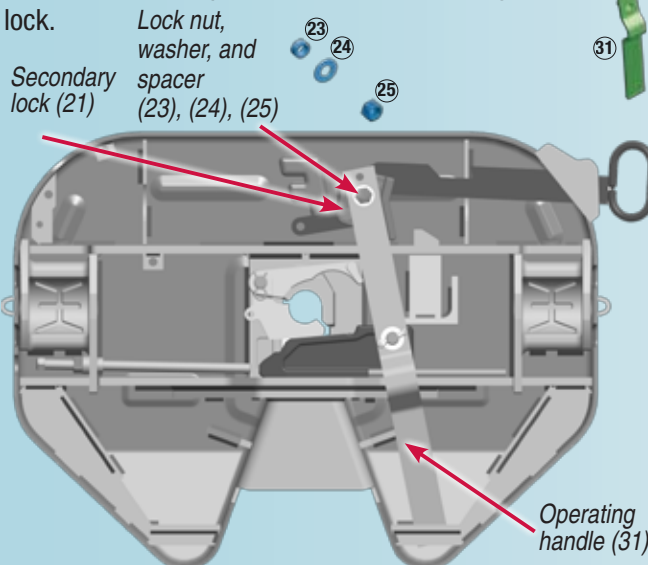
2. Remove the jaw spring

Remove the jaw spring (item 27). Now remove the main spring (item 26) from the pull handle. Remove the main spring (item 26) from the operating handle.



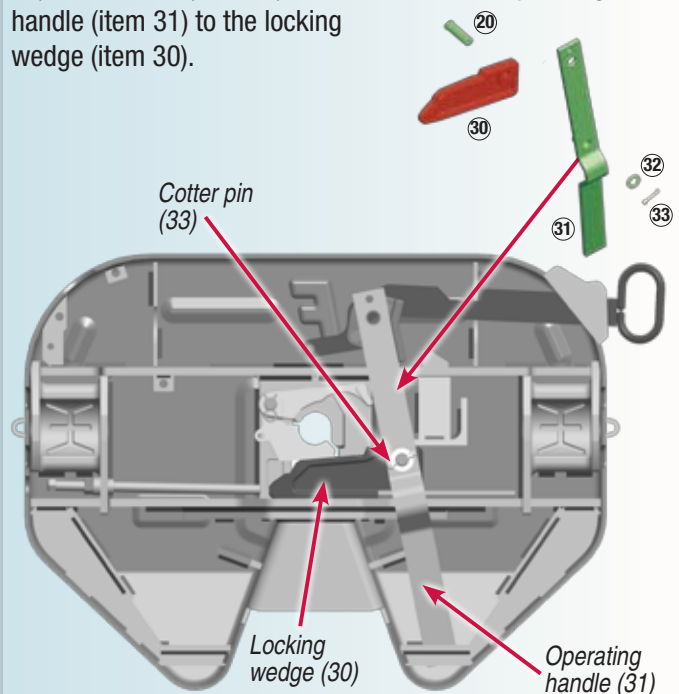
3. Remove the lock nut, flat washer, spacer and hex nut

Remove the 5/8"-11 lock nut, flat washer and spacer (items 23, 24 & 25) and 5/8"-11 hex head bolt (item 19) which secures the secondary lock latch (item 21) to the operating handle (item 31). Hex head bolt is captured inside the secondary lock.



4. Remove the pivot pin clip/pin

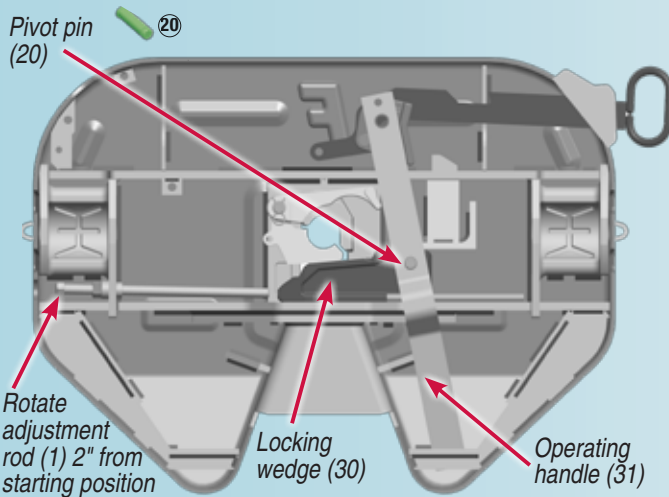
Remove the cotter pin (item 33) from the pivot pin (item 20) and washer (item 32) which attaches the operating handle (item 31) to the locking wedge (item 30).



Cover plate removed for clarity. Refer to exploded view of assembly on page 18 to identify item number and parts.

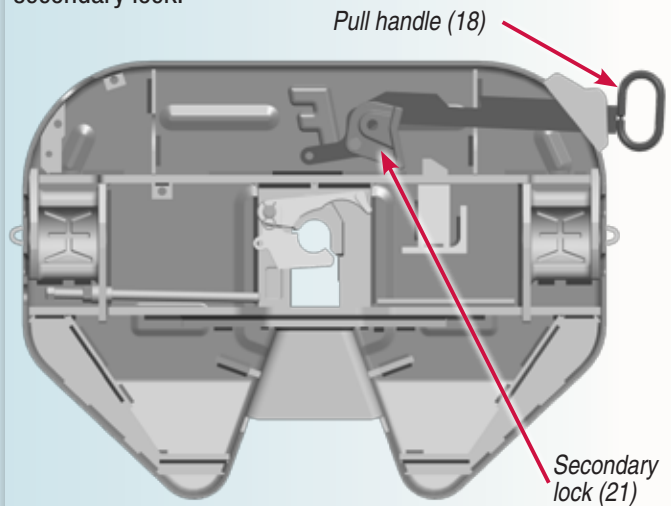
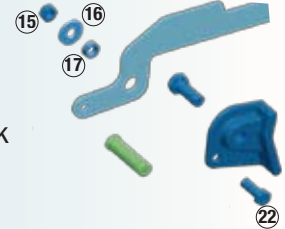
5. Remove the operating handle and locking wedge

Remove the operating handle (item 31) and locking wedge (item 30) by pulling the operating handle to the open position. This will allow you to remove the operating handle from the wedge. Remove the wedge (item 30) and short pivot pin (item 20). Turn the adjustment rod (item 1) counter clockwise (outward) until it has moved about 2" from starting position. This will eliminate interference when removing and installing the locking jaw.



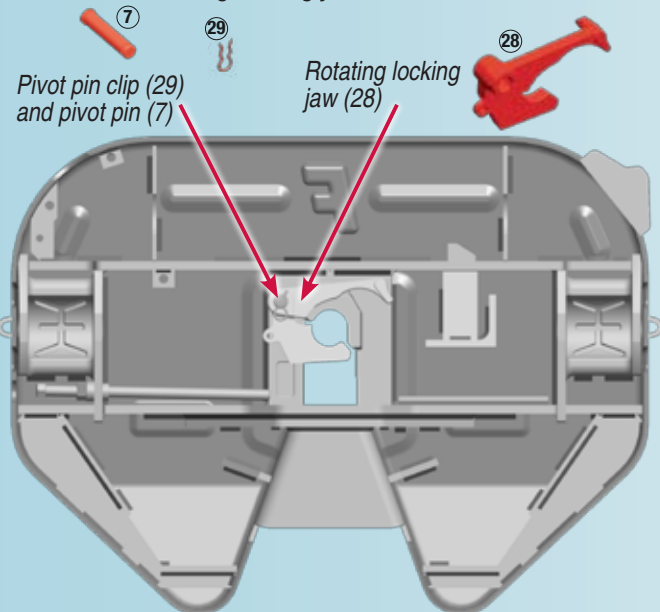
6. Remove the pull handle and secondary lock.

Remove the 1/2" hex head bolt, spacer bushing, washer and lock nut (items 15, 16, 17 & 22) which secures the secondary lock latch (item 21) to the pull handle. Remove the pull handle and secondary lock.



7. Remove the rotating locking jaw

Remove the pivot pin clip (item 29) from the long pivot pin (item 7). Raise the top plate and remove the long pivot pin (item 7) that secures the rotating locking jaw (item 28). Remove the rotating locking jaw.



Assembly

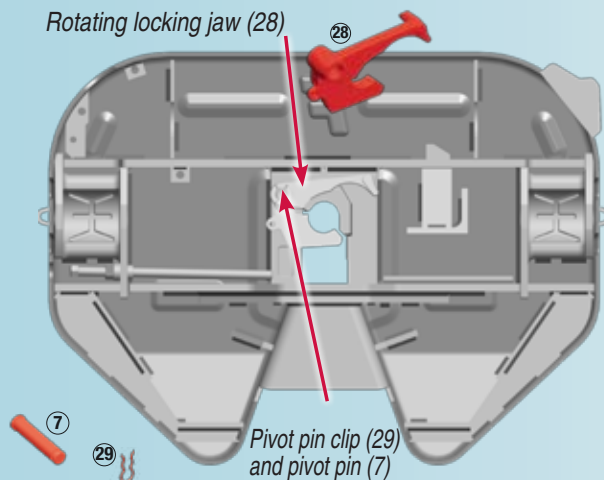
Refer to exploded view of assembly on page 18 to identify item number and parts.

Adequate lubrication should be used

1. Insert rotating locking jaw

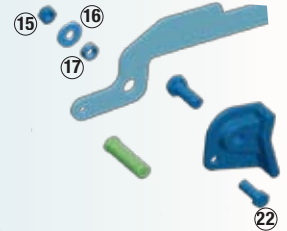
Insert the rotating jaw (item 28) after applying a light coating of grease. Note: Insert the jaw so that the hole in the cover plate lines up with the hole in the rotating jaw. Raise the fifth wheel and then insert the long pivot pin (item 7) into the fifth wheel and then into the rotating jaw. Note: Make sure the notched portion of the pivot pin is inserted into the fifth wheel first. Secure the pivot pin in place with a new pivot pin clip (item 29).

Rotating locking jaw (28)

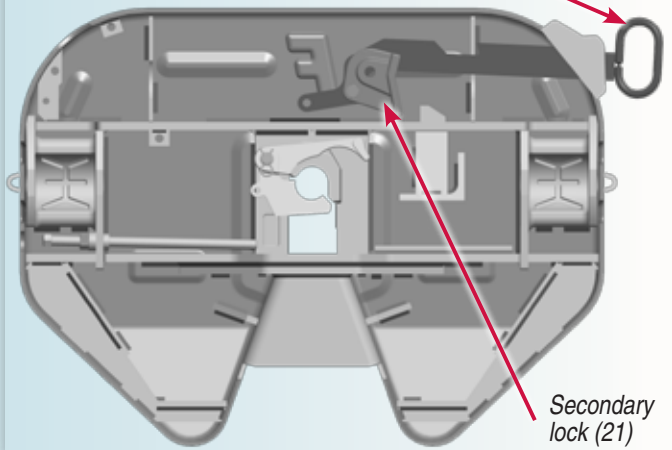


2. Insert the pull handle and secondary lock

Insert the pull handle. After applying a light coat of grease to the pivot points, insert the secondary lock latch (item 21) into the fifth wheel. Attach the pull handle to the secondary lock latch using the 1/2" hex head bolt, spacer bushing, washer and new lock nut (items 15, 16, 17 & 22).



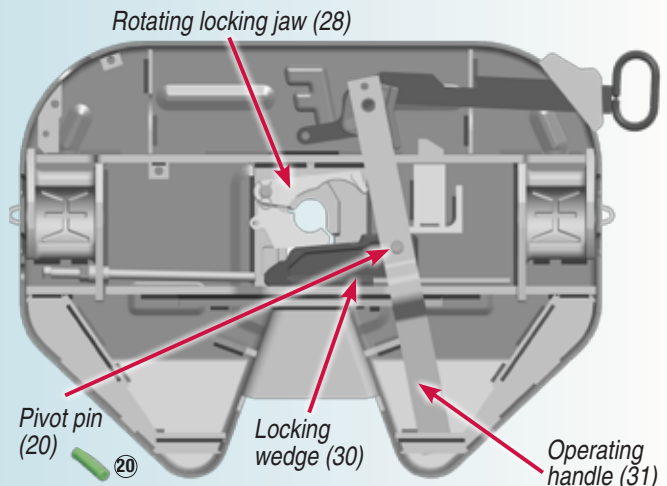
Pull handle (18)



3. Insert wedge, and handle

Insert the new short pivot pin (item 20) into the locking wedge (item 30) after applying a light coat of grease. Insert the locking wedge into the wheel. Move the locking wedge in behind the rotating locking jaw (item 28) to verify operation. Now slide the locking wedge back toward the outside of the wheel. This will assist in installing the operating handle. Insert the end of the operating handle (item 31) into the slot at the bottom of the fifth wheel and over the locking wedge pivot pin. Rotate the operating handle towards the center of the fifth wheel. This will slide the locking wedge behind the locking jaw.

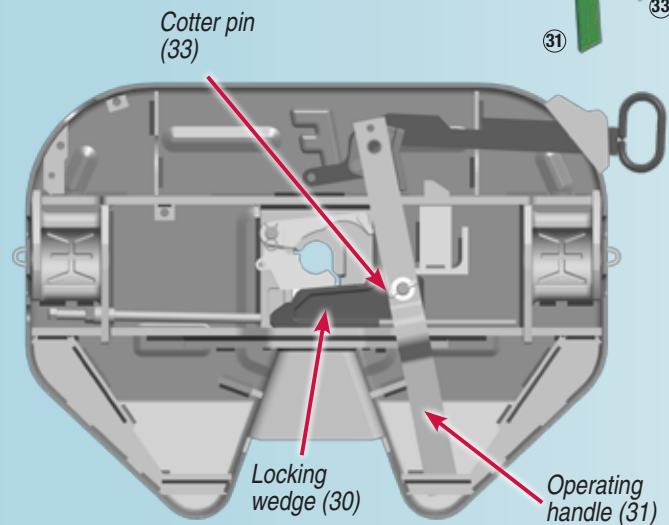
Before rebuilding the assembly, check to make sure that there are no cracks in the crossmembers or other components. Also check bracket pin holes to ensure they are not overly worn (pins should fit snugly). Refer to exploded view of assembly on page 18 to identify item numbers and parts.



Refer to exploded view of assembly on page 18 to identify item number and parts.

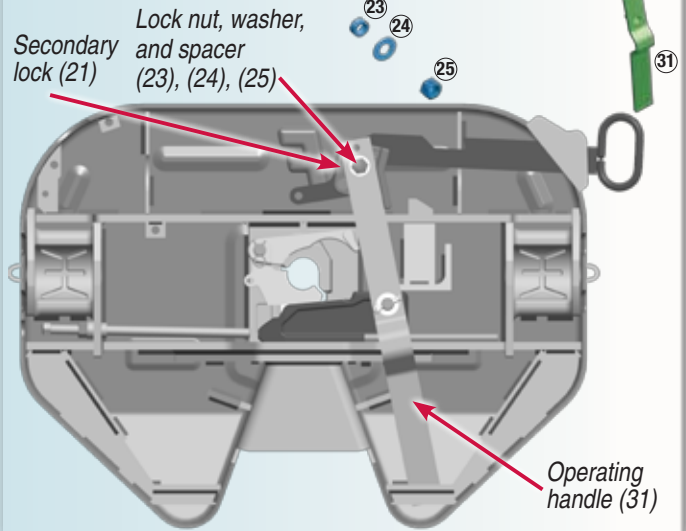
4. Attach the operating handle to the locking wedge

Attach the operating handle (item 31) to the locking wedge using a cotter pin (item 33) and washer (item 32) to secure the connection.



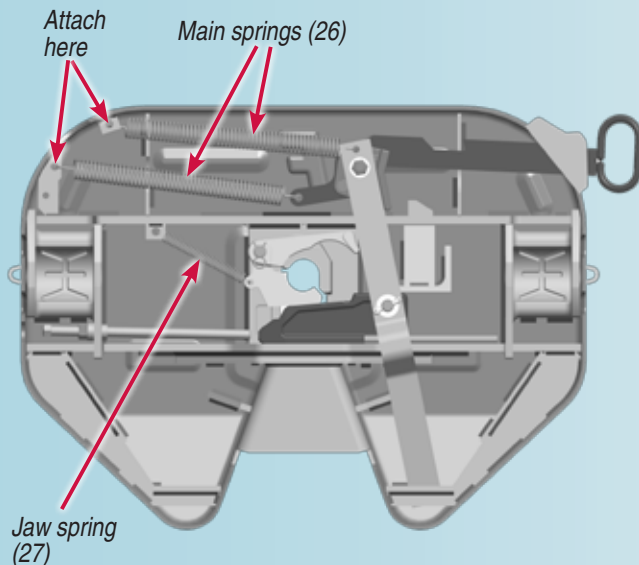
5. Attach the secondary lock latch to the operating handle

Attach the secondary lock latch (item 21) to the operating handle (item 31) using the 5/8"-11 hex head bolt (item 19) and new lock nut (item 25) with flat washer and spacer (items 23 & 24). **Note the orientation of the bolt (item 19) the threads should be facing up.**



6. Attach springs

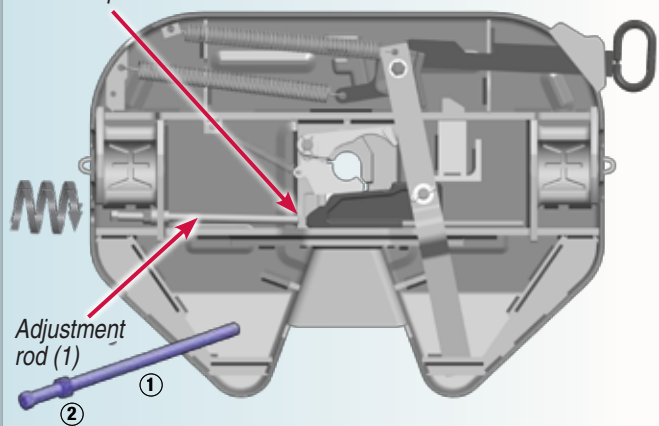
Make sure the fifth wheel is completely closed. Attach the jaw spring (item 27) to the rotating locking jaw. Now install main spring (item 26) to the pull handle. Now install the main spring (item 26) to the operating handle.



7. Adjust fifth wheel

Open the fifth wheel, insert a 2" kingpin and close the wheel. Turn the adjustment rod (item 1) clockwise (inward) until it contacts the end of the locking wedge. Now turn the adjustment rod clockwise (inward) an additional 2-1/2 complete revolutions. This will give the recommended 0.525 mm (.02") running clearance. Tighten the adjuster rod jam nut (item 2). The fifth wheel should operate freely and smoothly without binding or interference.

Contact plus 2-1/2 turns





Fontaine Fifth Wheel • 7574 Commerce Circle • Trussville, AL 35173
800-874-9780 • Fax: 205-655-9982

www.fifthwheel.com