



ULTIMATE HENSLEY[®]
ARROW

INSTALLATION and OPERATION MANUAL

TOW SAFE LLC

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810-658-0006 • 1-800-410-6580

NOTICE:

EXCEEDING MAXIMUM CAPACITY CREATES A SAFETY HAZARD

ULTIMATE ARROW:

16,000 lb. max - Gross Trailer Weight Rating

1,600 lb. max - Tongue Weight Rating

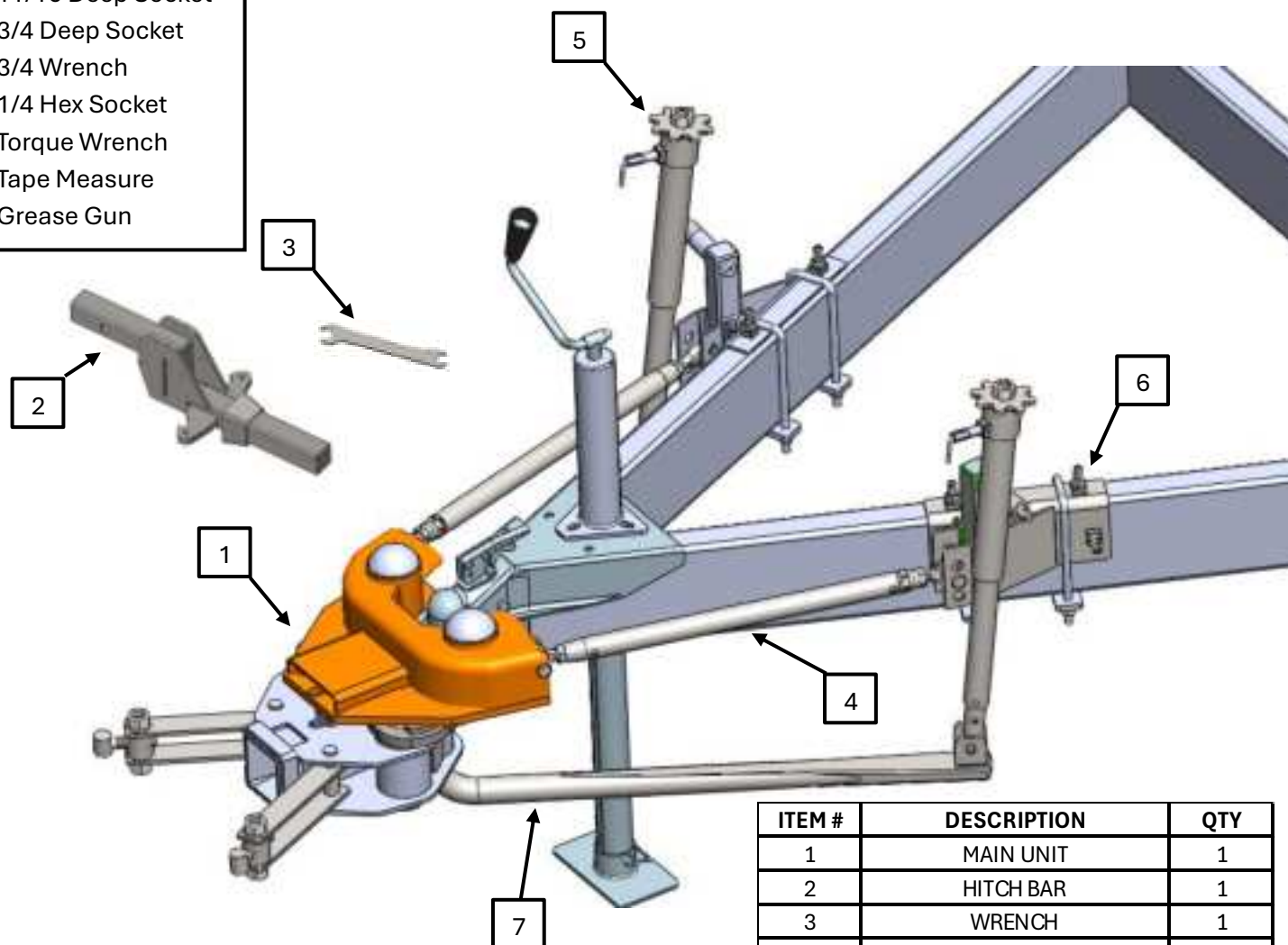
Do not exceed the maximum of your towing vehicle, your vehicle hitch receiver or the Ultimate Hensley Arrow™ towing system.

WARNING: The Ultimate Arrow™ capacity rating exceeds the limit of Original Arrow™ components. Only use Ultimate Arrow™ components. Refer to pages 12-14 for further information.

WARNING! DO NOT EXCEED TOW VEHICLE MAX TOWING CAPACITY

Tools Required:

15/16 Wrench
11/16 Deep Socket
3/4 Deep Socket
3/4 Wrench
1/4 Hex Socket
Torque Wrench
Tape Measure
Grease Gun

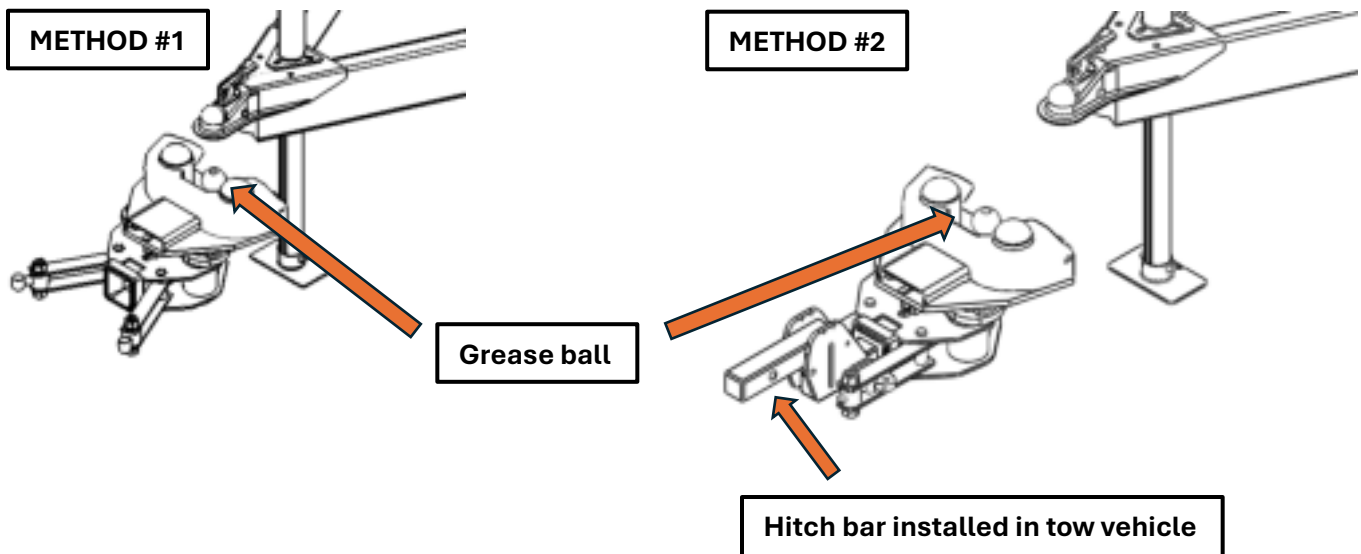


ITEM #	DESCRIPTION	QTY
1	MAIN UNIT	1
2	HITCH BAR	1
3	WRENCH	1
4	STRUTS	2
5	JACKS	2
6	FRAME BRACKETS	2
7	SPRING BAR	2
8*	U BOLT KIT	1
9*	SET SCREW KIT	1
10*	PIN KIT	1
11*	ROD END KIT	1
12*	SAFETY CHAIN EXTENSION KIT	1
13*	7-WAY ELECTRICAL EXTENSION	1
14*	SPARE PARTS KIT	1

*=NOT SHOWN FOR CLARITY

Main Unit Installation

- Grease ball on main unit.
- Install main unit into trailer coupler. **METHOD #1** have the coupler latch held open while carrying main unit, and install ball into coupler. **METHOD #2** Install hitch bar into tow vehicle and main unit, use tow vehicle to install main unit into trailer coupler (shown on pages 6-8).
- **WARNING! A pin or padlock MUST be used in coupler latch!**

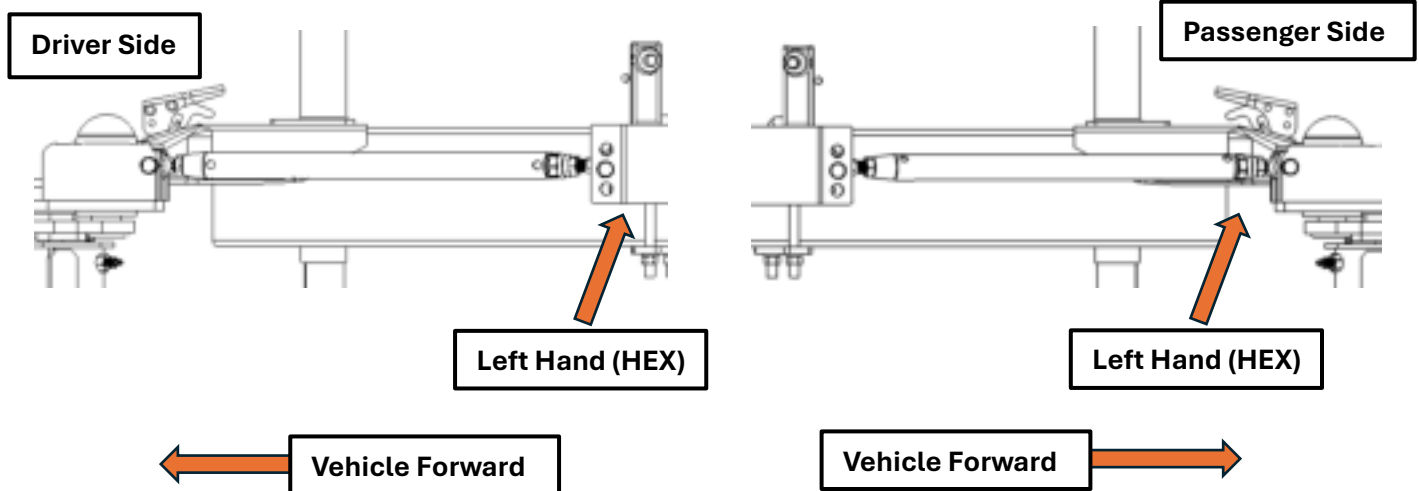


Strut Build/Install

- Install left hand rod ends/jam nuts into hex side of strut bar. Install right hand rod ends/jam nuts into smooth side of strut bar. Leave hardware loose for now.
- Ensure both struts are of equal length



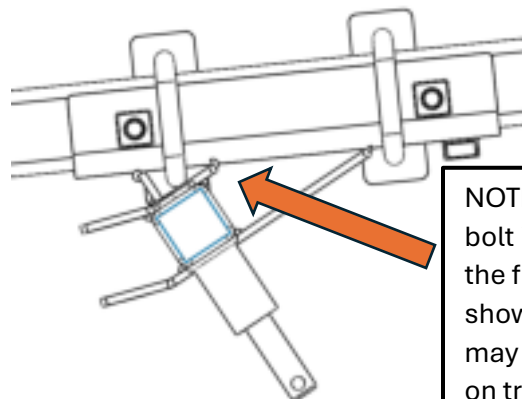
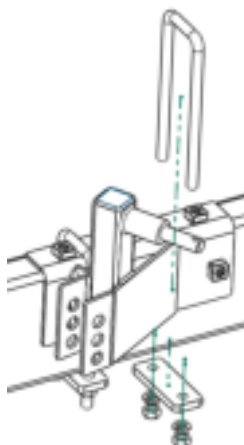
- Install passenger side strut with the hex (LH) on the main unit.
- Install driver side strut with the hex (RH) on the main unit.
- Install driver side strut with the hex (LH) side on the frame bracket.
- Install passenger side strut with the hex (RH) side on the frame bracket.
- While installing struts, use the hole on the frame bracket that keeps the strut parallel with the frame.



- If you are unable to get the strut parallel with the frame, you will need the frame bracket extension kit (Shown on page 15).
- Place both Frame Brackets on trailer frame with struts attached to frame bracket and main unit. This will produce the ideal location of the frame bracket mounting.
- Use one U-Bolt to keep frame each Frame bracket in position.

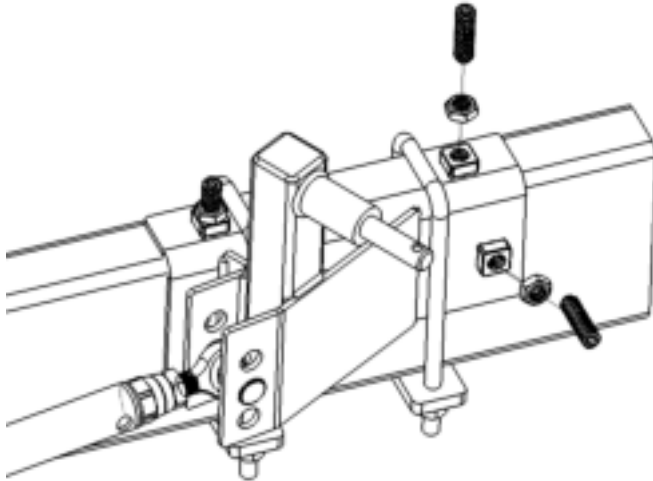
Frame Bracket Installation

- Check that both left and right brackets will fit at the same location.
- Install U-bolts around frame and frame bracket.
- Tighten U-bolts to 45 ft-lbs.



NOTE: Be sure one U-bolt is trapped within the frame bracket as shown. Locations may vary depending on trailer wiring, crossmembers, etc.

- Install set screws and jam nuts.
- With the struts installed, tighten the set screws on the frame bracket. Tighten to 45 ft-lbs. tighten jam nuts against the frame bracket.

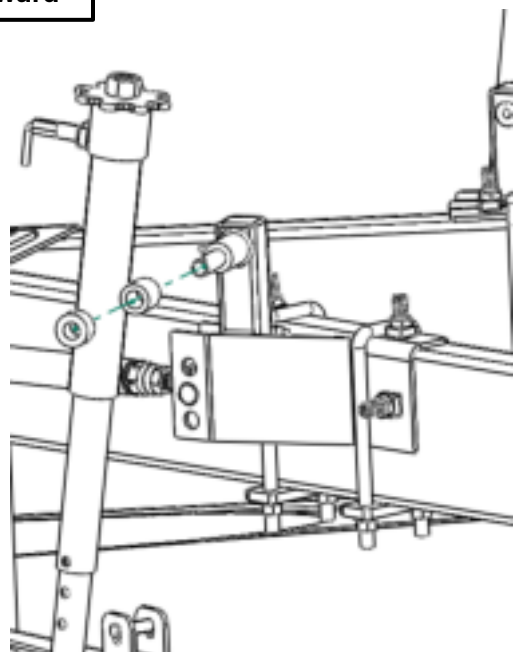
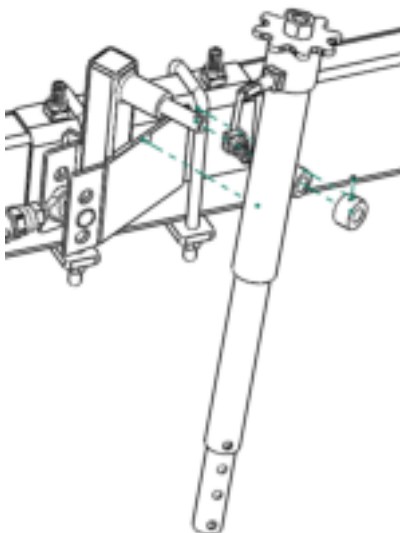


Jack Installation

- Install the jack on the frame bracket, with mount facing rearward.
- Install supplied 41/64" collar on the frame bracket with set screw to secure jack.

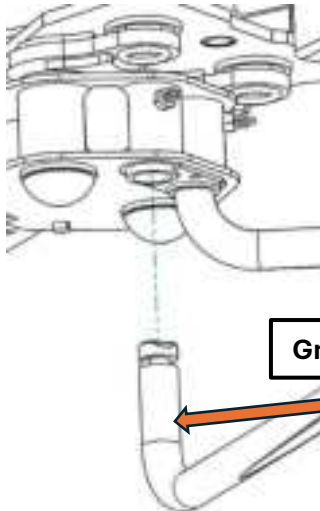


Vehicle Forward

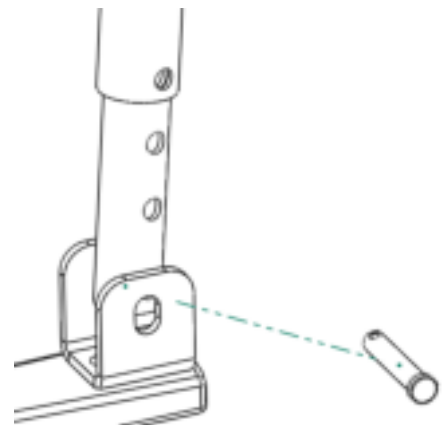


Spring Bar Installation

- Apply grease to the end of the spring bar. Insert spring bar into main unit, pushing upward until grease fitting secures bar (should feel a click). **NOTE:** spring bar should be in line with the trailer frame.
- Secure spring bar to jack, using pin already in jack. Leave two holes exposed on jack lower tube.



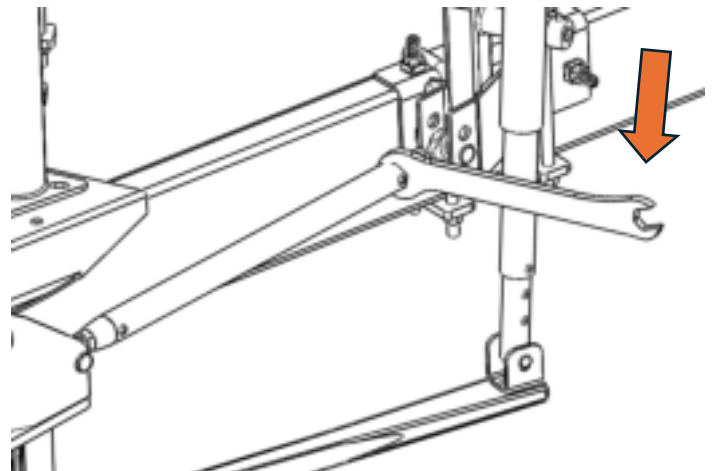
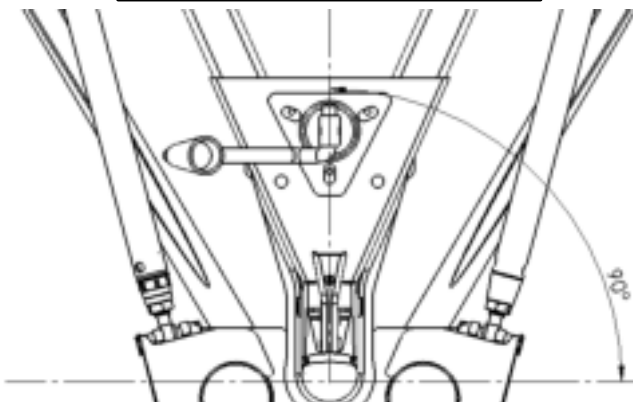
Grease bar



Strut Bar Adjustments

- Adjust both struts to center (square) main unit to trailer. Be sure struts are **FIRM** and tighten jam nuts. Check that the unit is centered by measuring the strut length, both sides should be the same. **NOTE:** measurements may be slightly off due to variation of frame bracket location.
- Use the supplied wrench to tighten the struts. The strut needs to be lengthened as it is tightened. If installed correctly you should be pushing down on the wrench on both sides of the trailer.
- Tighten jam nuts against strut bar.

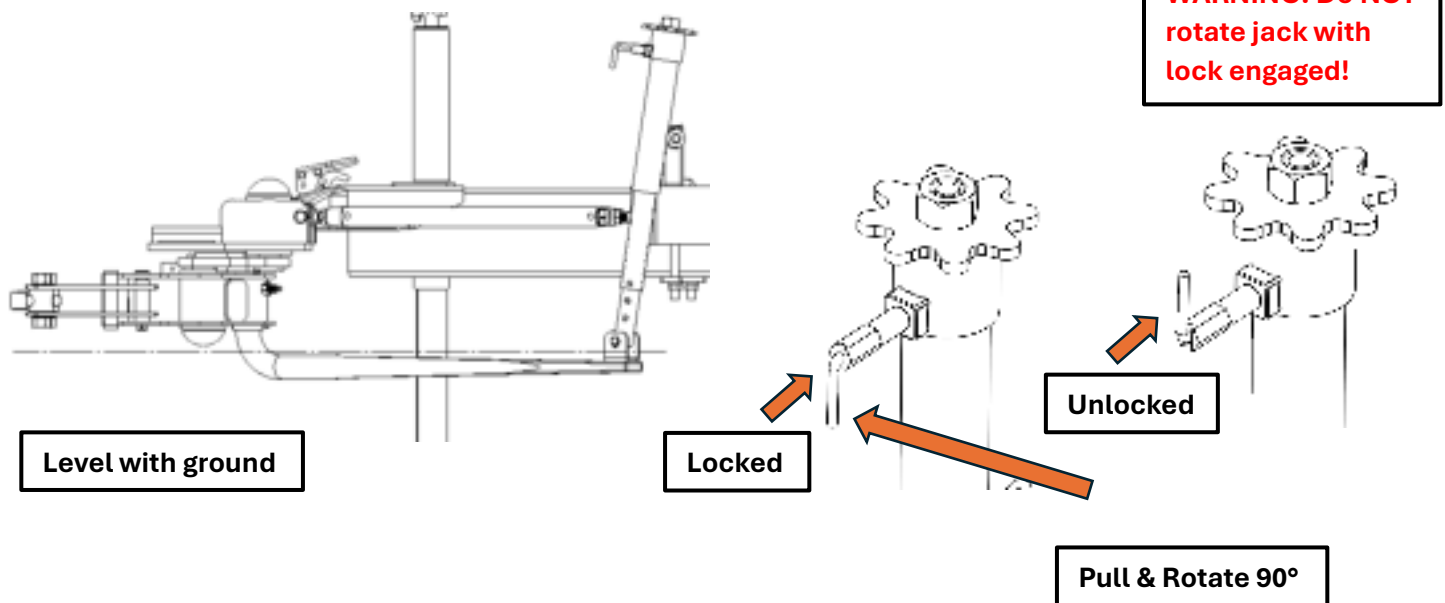
Main unit square with frame



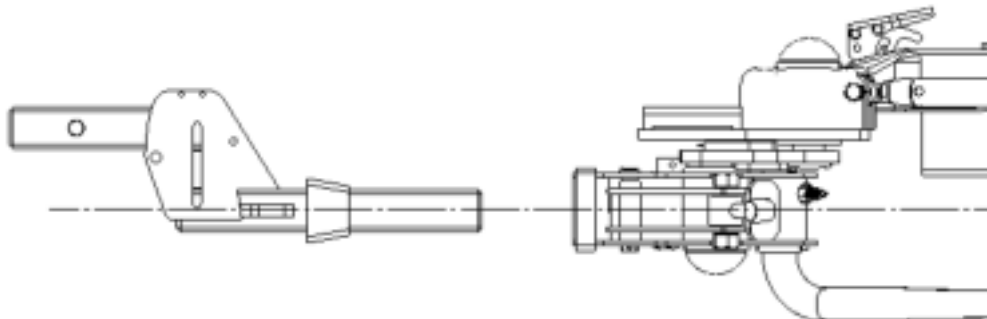
Hitching Up

WARNING! Be sure that the trailer tires are chocked keeping the trailer from rolling.

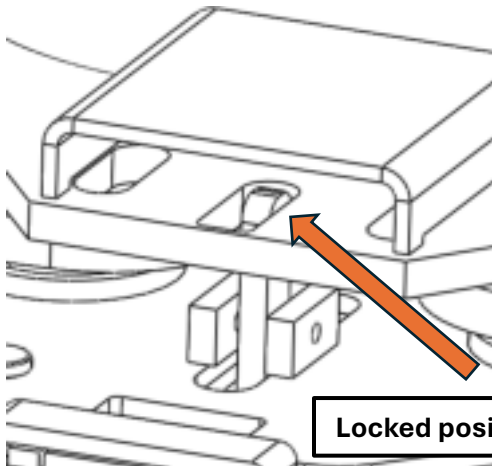
- Use the jacks to level the hitch box/main unit.
- To operate jacks, pull lock lever out and rotate 90° to disengage, then turn the jack by hand or using the supplied wrench. Leave lock lever disengaged at this time. **DO NOT USE AN IMPACT ON JACKS!**



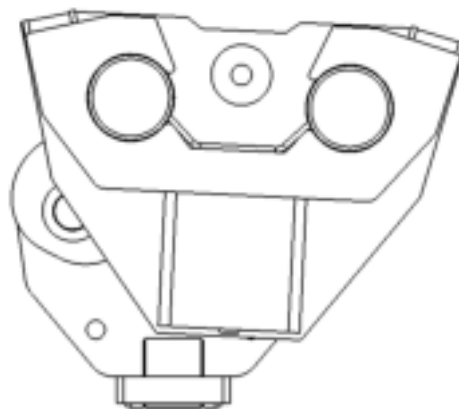
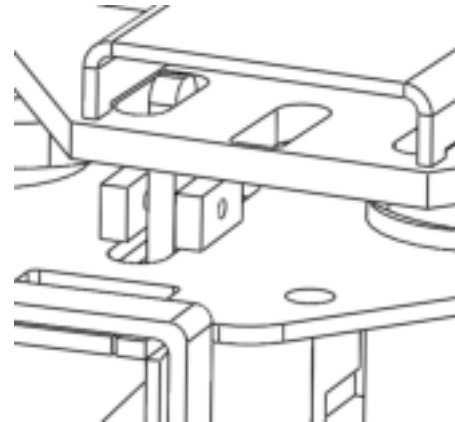
- Install hitch bar into tow vehicle hitch receiver.
- Use the trailers tongue jack to align the hitch bar with the hitch box opening.
 - NOTE: if the trailer/tow vehicle are on a slight angle, that angle must match!



- Be sure the locking lever is down and locking the main unit from rotating.
- **NOTE:** if the surrounding area requires, the main unit can be offset left/right for ease of hitch up. The locking lever is used in the necessary slot in the upper portion of the unit.

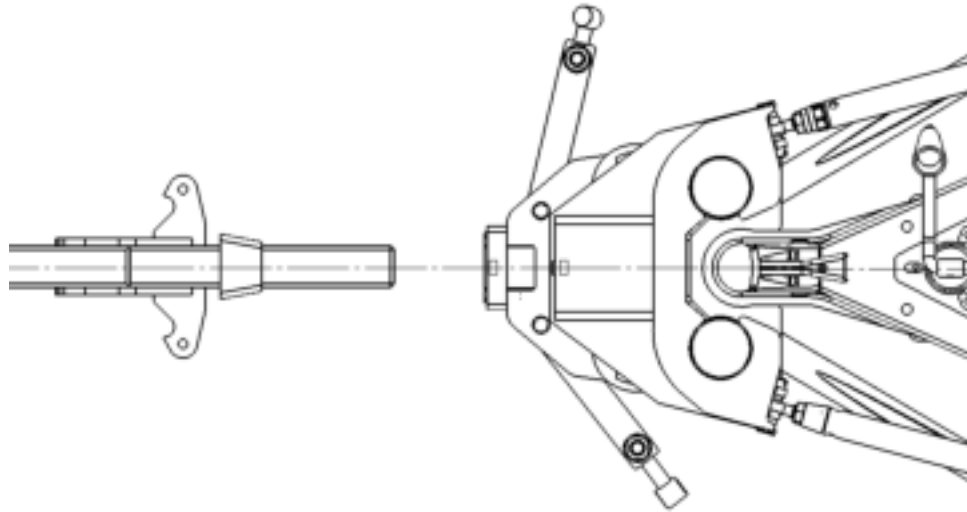


Locked position

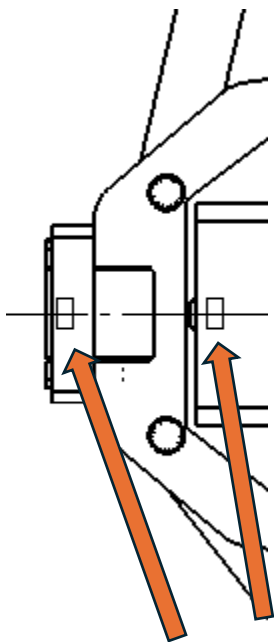


Shown in offset position

- Be sure hitch bar and hitch box opening are centered left/right.

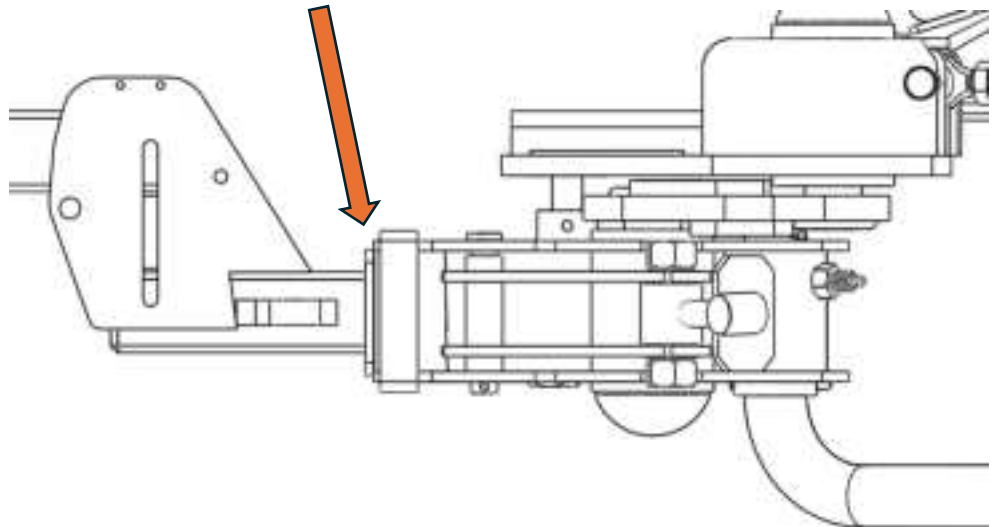


- Back into hitch box, using the white alignment decals to help guide the hitch bar in.
- Back into hitch box until the taper of the hitch bar is fully seated

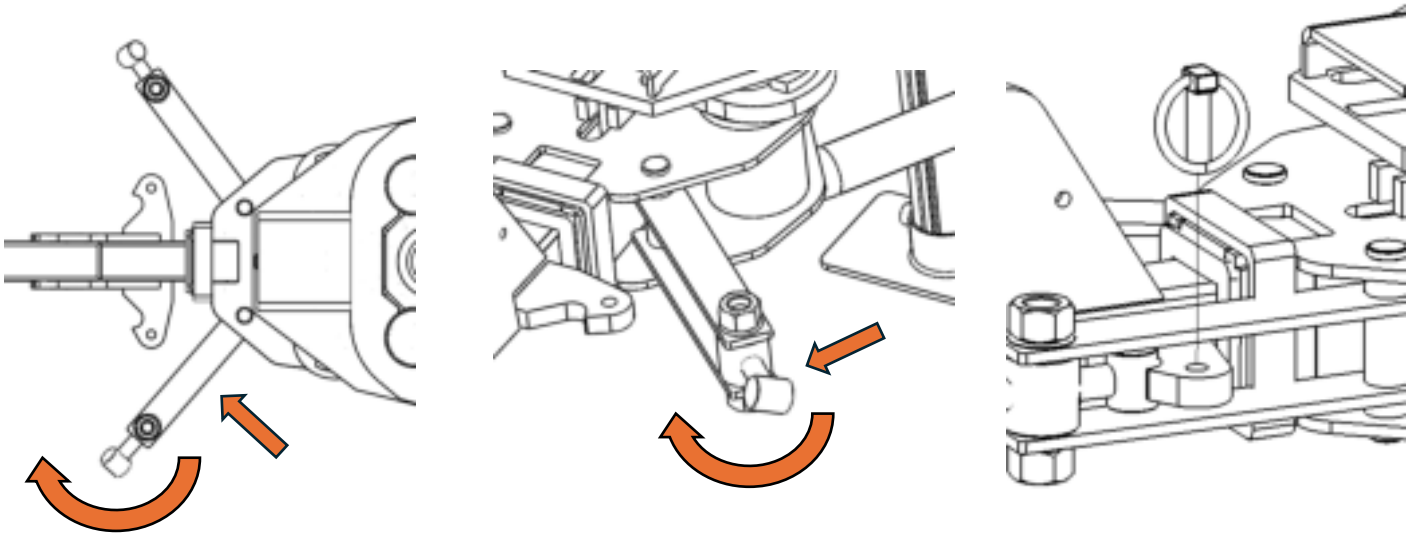


White alignment decals

Hitch bar taper will be protruding out slightly or flush when fully seated



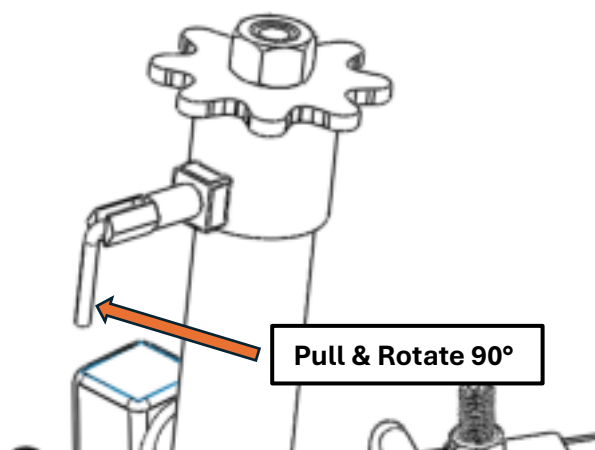
- If needed use the following instruction to draw the hitch bar into the hitch box.
- Once hitch bar is seated in hitch box, using the supplied wrench close the over center latches.
- The rod end will need to be adjusted to allow the latch to close properly. If the latch is too tight and will not close, the rod end needs to be shorter. Rotate clockwise and try again. The latch should be firm similar to locking pliers when closing. If the latch is not firm when closing turn the rod end counter-clockwise and try again.
- Once closed place safety pin through hole in hitch bar tab.



- With the over center latches and pins secured, tension the spring bars.
- Using your hand or the supplied wrench turn the top of the jack to tension the spring bars.
- We recommend stopping at the middle mark on the jack's center tube.



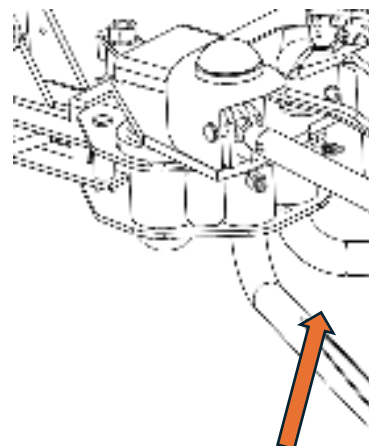
- Once properly tensioned lock the jack by turning the plunger handle 90°, and rotate until plunger clicks into jack. Verify jack is locked and cannot rotate.



- Attach safety chains, electrical cable, and brake away cable.
- Raise trailer tongue jack.

Accessories installation

- Safety chain extensions
 - Remove existing hook
 - Add supplied link to end of existing chain.
 - Add supplied chain to link
 - Route chains under and in between spring bars
 - Reattach hook at desired chain length
- Brake away cable extension NOTE: may not be needed
 - The trailers brake cable should have the same if not more slack than the safety chains.
 - Place wire through connector
 - Place wire through existing wire
 - Loop wire through other side of connector and crimp connector closed.
 - Repeat for other side of wire with existing hook.
- 7-way electrical extension NOTE: may not be needed
 - Plug 7-way extension into existing trailer plug.
 - Plug into tow vehicle
 - Check light/brake function.



Route chains here

Install inspection

- Raise tongue jack (check that jack foot will clear spring bars as they rotate, may need to remove foot)
- Verify truck and trailer are level with each other
- Check that all hardware is secured and torqued to specifications
- Check that strut bars are tight and adjusted to keep the unit centered with the tow vehicle/trailer

Test Drive

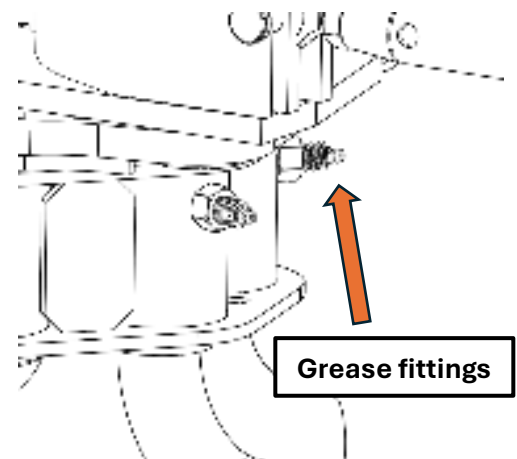
- Remove trailer chocks
- Drive 10-20 miles, turning often.
- Check that struts are firm, adjust if necessary to center unit with tow vehicle/trailer
- Check all frame bracket hardware/frame bracket location. (may need to retorque all hardware)

Un-hitching

- Chock trailer tires
- Loosen jacks until they are easy to wiggle by hand.
- Lower tongue jack until pressure is removed from hitch bar, watch for gaps in tow vehicle receiver/hitch bar.
- Open over center latches, safety chains and brake away cable.
- Pull away from trailer.

Maintenance

- Grease hitch bar fittings in lower unit. (500 mile intervals or as needed).
- apply a light coating of silicone spray grease to the taper of the hitch bar and hitch box as needed to ease hitching up.
- Always check that struts are firm. (every trip)
- Check that frame brackets have not moved (every trip)
- Check frame bracket hardware is torqued correctly. (500 mile intervals)
- Grease hitch ball and trailer coupler. (Yearly)



WARNING: The Ultimate Arrow™ capacity rating exceeds the limit of Original Arrow™ components. Only use Ultimate Arrow™ components.

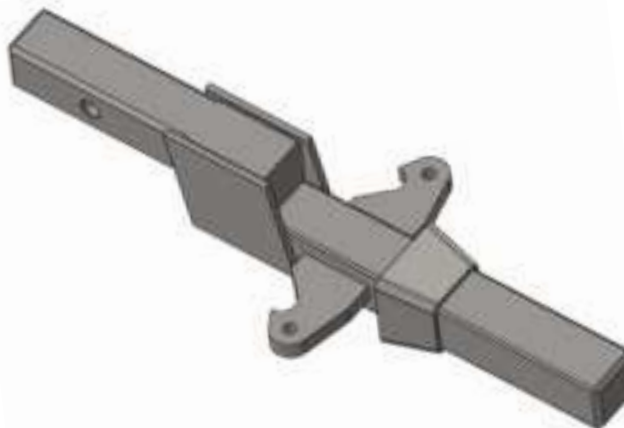
Ultimate Arrow Components Vs. Original Arrow Components

Below is a quick reference for the differences between Ultimate and Original Arrows.

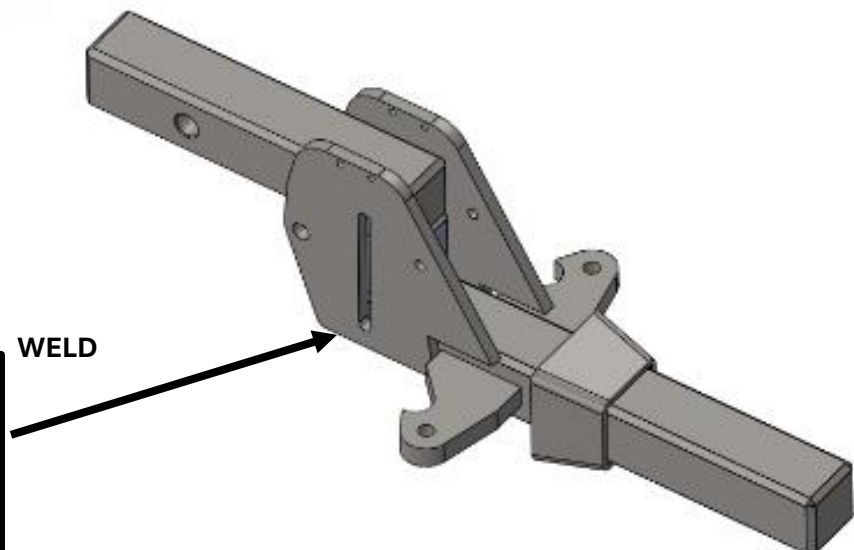
Hitch bars

- The Ultimate Arrow™ hitch bar has thicker side plates and a vertical weld shown on the outer most face of the hitch bar. Original style hitch bar cannot be used with the Ultimate Arrow™.

Original



Ultimate



WELD

Hitch Bar should have 3/8" thick side plates with a weld down the center and holes. Also note the difference in side plate shape to add strength

Differences between Original and Ultimate continued:

Struts

- The Ultimate Arrow TM strut bar is a 1-piece tubular design. The older 3-piece design will not fit and is unacceptable for use.

Original



Ultimate



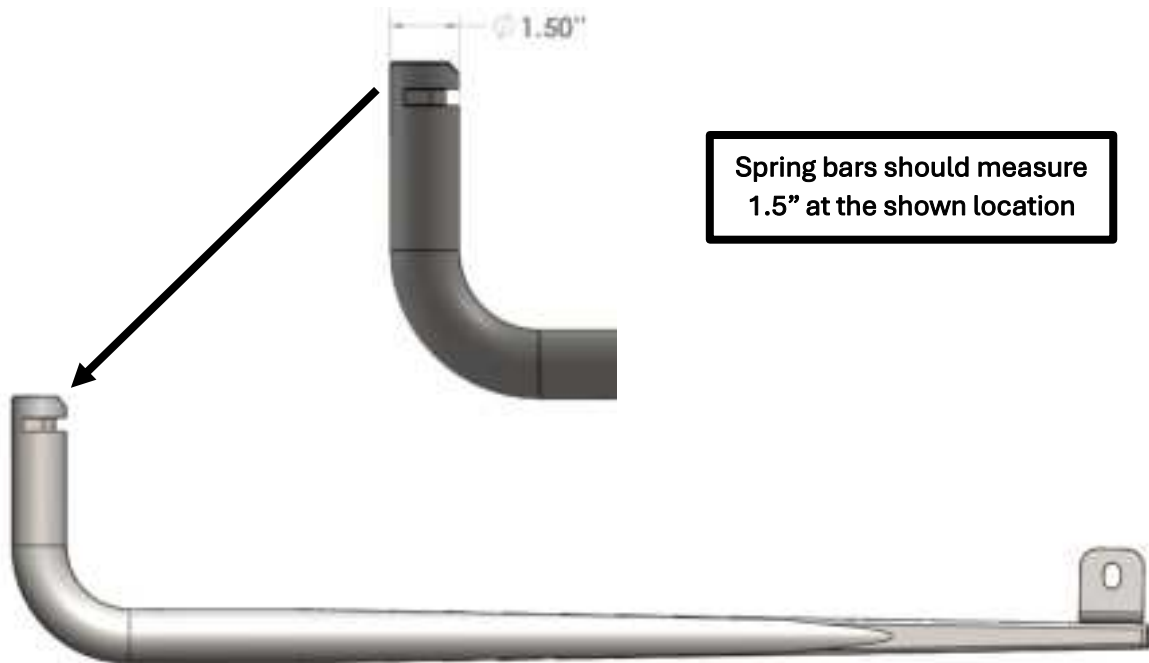
Rod End

Struts should be 1 piece with high strength rod ends

Differences between Original and Ultimate continued:

Spring bars

- The Ultimate Arrow [™] spring bars measure 1.5" in diameter where they insert into the main unit.



Frame Bracket Extension Kit

- Install the frame bracket extension tube on the frame bracket with the open side facing forward, using the supplied pins.
- The strut will install in the only remaining hole, as shown below.

