



## Assembly Guide for SPORTSTAR II Trailer (with gate)



Congratulations! You are the proud owner of a **NORTHSTAR** trailer. Please follow the instructions and steps in this manual for proper assembly.

## TRAILER PARTS LIST

Part No.	Part Description	Qty.
1	Frame (deck)	1
2	Tongue (with wiring harness) and Coupler (hitch)	1
3	Side-Rail	2
4	Front Corner Bracket	2
5	Side Loading Ramp	2
6	Wheel and Hub Assembly	2
7	Leaf-Spring	2
8	Axle	1
9	Fender	2
10	Tongue Side Brace(A-frames)	2
11	Rear Gate	1
12	Rear Corner Bracket	2

## HARDWARE

Part No.	Description	Qty.
A	U-Bolt (19mm)	4
B	Spring Plate	2
C	22mm lock-nut	13
D	19mm lock-nut	10
E	17mm lock-nut	14
F	Spare Tire Lug Nut (22mm)	2
G	17mm Flat-Washer	28
H	19mm Flat-Washer	4
I	22mm Flat-Washer	22
J	Cotter-Pin	20
K	Side-Rail / Gate-Pin	8
L	3 ¾" 22mm Bolt	7
M	3" 19mm Bolt	2
N	1 ½" 22mm Bolt	4
O	1" 17mm Bolt	14
P	Ramp Pin-Bolt 22mm	2
Q	Retaining Cable with Pin	2
R	Taillight / Brake Light	2
S	Red Marker Light	2
T	Orange Marker Light	2
U	Safety Chain	1
V	License Plate Light	1
W	3" 22mm Bolt	1

Make sure that all parts, as listed above, are included in your shipment. If any parts are missing please contact NORTHSTAR TRAILER at 1-801-375-3088. Other tools needed for assembly: grease gun, flathead screwdriver, socket set, wrench set, small zip ties, small rubber mallet.

# IMAGES OF PARTS AND HARDWARE

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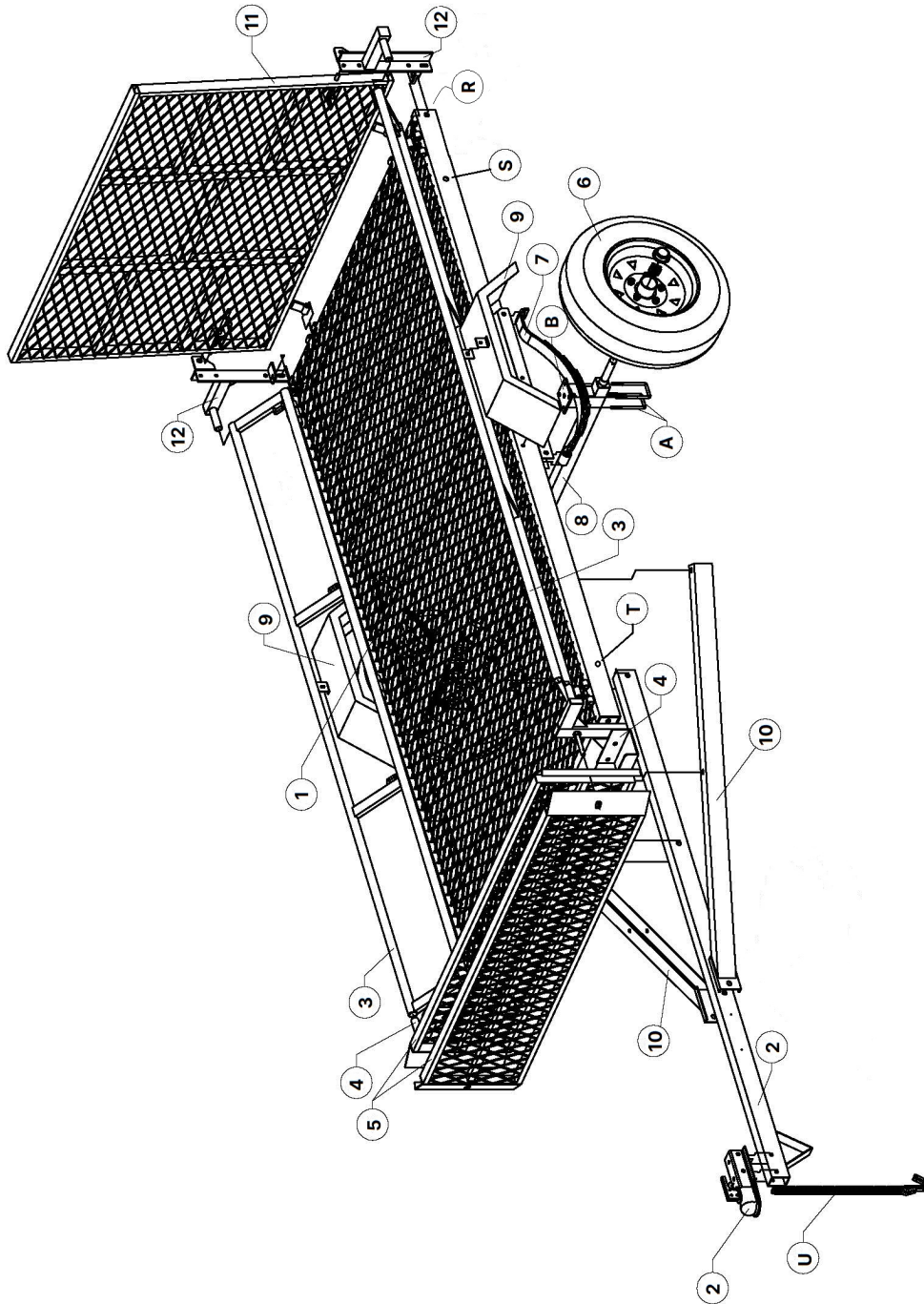


Figure 1: Expanded view of trailer parts

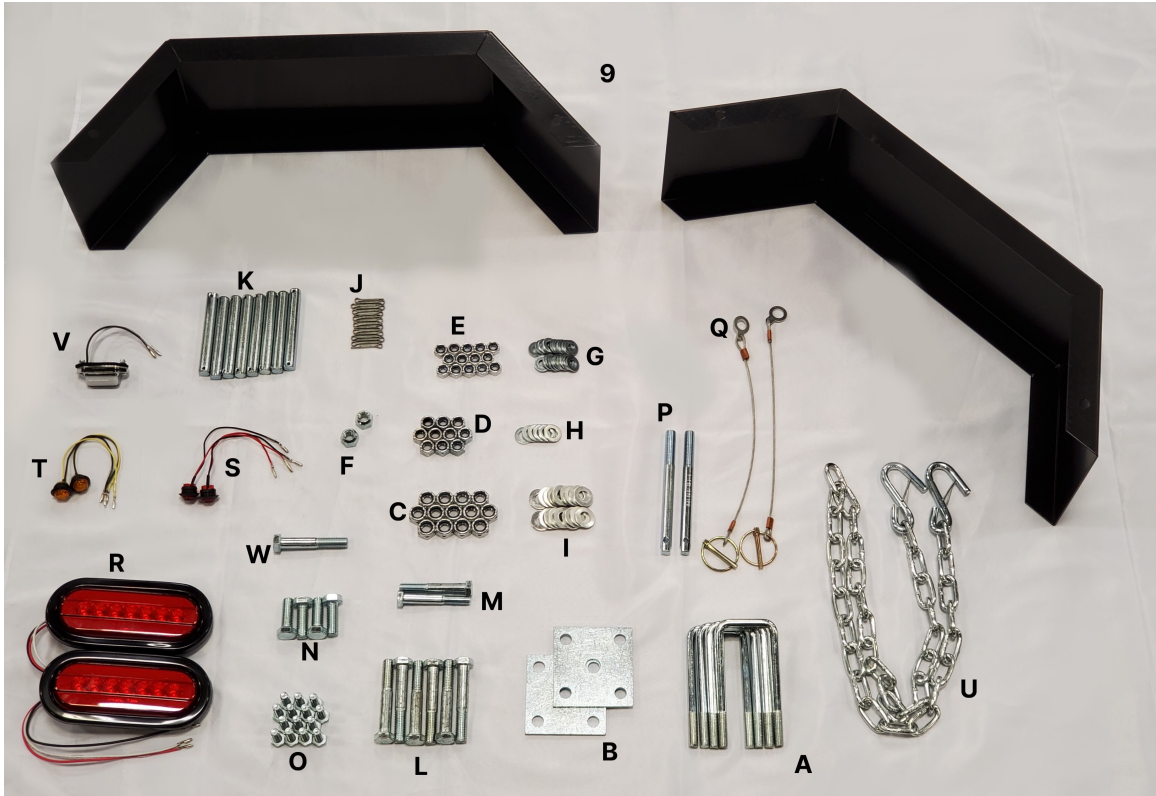
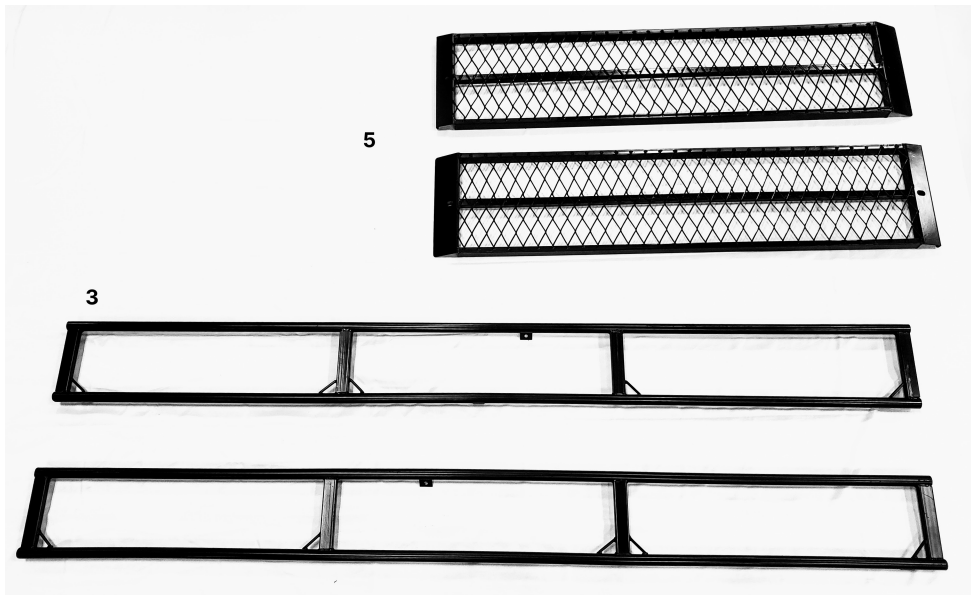


Figure 2: Labeled contents of hardware box



Figure 3: Labeled parts



*Figure 4: Labeled parts continued*



Note -- Bolts should have one lock-nut and two flat washers; one washer for each end of the bolt.

*Figure 5. Bolt, Washer, and Lock-nut Diagram*

This trailer requires inverted assembly. (Assembled upside-down). Start by turning the trailer frame upside-down so the trailer deck is facing the ground. Use a table robust enough to support the weight of the trailer frame and high enough to elevate the frame to waist-height, or place the corners of the frame on buckets, or use sawhorses to elevate each end.

*CAUTION: This trailer is heavy. More than one person is required to flip the trailer frame and assemble this trailer. Personal injury may occur if you try to assemble this trailer alone.*

## STEP 1: LEAF SPRING & AXLE ASSEMBLY

- a. Flip the trailer frame (1) upside-down, and place the frame on a waist-high table or other elevated supports in order to facilitate assembly.
- b. Position the leaf-spring (7) on the frame's spring casing (welded to the frame) so the eye in the leaf-spring is positioned toward the front of the trailer and aligns with the bolt eye-hole in the spring casing.
- c. Fasten the circular end of the leaf-spring to the casing with 3-3/4" 22mm bolt (L), two 22mm flat-washers (I), and a 22mm lock-nut (C) by inserting the bolt through the leaf-spring and through the eye-holes in the casing.  
*(Leave tension loose to allow play when aligning the axle; you will securely tighten bolts in step "i".)*
- d. Secure the hooked end of the leaf-spring to the casing by running a 3-3/4" 22mm bolt (L), two 22mm flat-washers (I), and a 22mm lock-nut (C) through the eye-holes of the leaf-spring casing and over the flat side of the leaf-spring.

### FASTEN AXLE TO LEAF SPRINGS

- e. Lay the axle (8) on top of the leaf-springs, and align the holes in the axle knobs with the posts on the leaf-springs. The axle will lie snug on top of the springs.
- f. Take two U-bolts (A) and slide them over the axle, so the bolts hang over the axle and on both sides of the leaf-springs. Attach the spring-plate (B) to the U-bolts using four 19mm lock-nuts (D), and then tighten the lock-nuts to finger-tightness.
- g. Once all of the lock-nuts are on the U-bolts, tighten the lock-nuts in alternating sequence in order to ensure an even, level plate pressure.
- h. Continue to tighten the lock-nuts until the spring-plate just begins to bend and conform to the shape of the leaf-spring. (Approximately 35 ft-lbs of torque).
- i. Securely tighten the bolts from step "c" and "d" until channel casing begins to conform to leaf-springs.

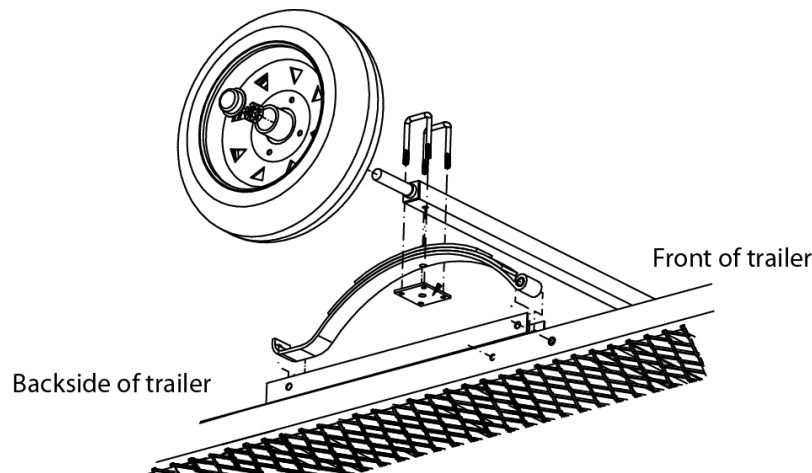


Figure 6: Expanded view of leaf-spring and axle assembly

## STEP 2: ATTACH WHEELS TO AXLE

*Note: the hub assembly comes attached to the wheels with washers and semi-lubricated bearings (to prevent rust). Upon removing the dust-caps take special care to not drop the bearings or get them dirty. Pack bearings before inserting them inside hub on axle.*

- a. Using a 38mm wrench or socket, remove the castle nut from the end of the axle.
- b. Carefully remove the dust-cap from the wheel (6) by gently prying around the edges of the cap with a small, flathead screwdriver, or by using a long bolt to gently drive through the backside of the hub and into the cap.
- c. Remove the outer bearing, flat-washer, and tanged-washer from the interior of the hub, and then set aside.
- d. Pack bearings until grease protrudes through bearing beads.
- e. Carefully slide the wheel onto the end of the axle. *Lug-nuts facing away from trailer.*
- f. Slide the bearing into the hub; press into place carefully as to not remove any grease.
- g. Place the flat-washer on the bearing, followed by the tabbed-washer. Ensure that the washers are snug with and pressed flat against the bearing.
- h. Fully tighten the castle-nut against the bearings to the point that the nut applies enough pressure against the bearings to lock them into place. Then, loosen the castle nut approximately  $\frac{1}{4}$ ", or to the point where the wheel can spin; the nut should be loose enough that the wheel freely spins, yet tight enough that the wheel does not have horizontal play or wiggle. The final castle-nut tension will be approximately 35 ft-lbs. (Proper tension is critical to the longevity of the bearings).
- i. Align a slot of the castle-nut with the tabbed-washer so the washer tabs appear in the slots of the nut, then use a screwdriver to bend one of the washer tabs into a notch of the nut. This is very important to ensure the integrity of the hub assembly.
- j. Attach a grease gun to the hub's Zirk fitting—located on each end of the axle —, and apply pressure for approximately 10-12 pumps.
- k. Replace the dust-cap on the end of the hub by tapping it into place with a rubber mallet. If the dust cap is loose, a scratch awl tool or screwdriver can be used to punch grip bumps along the outside of the cap circumference. RTV sealant or silicon may be applied to the circumference of the dust-cap before installation to ensure that the cap will not fall off while in tow. Let sealant completely dry before towing.

*Note: the dust-cap has an exterior Zirk fitting access, and does not need to be removed to grease the bearing. Grease the wheel bearings a minimum of 1x per year for normal use, and up to 3x per year for frequent use in order to ensure the longevity of the bearings. Adjust and re-grease the bearings after the first 100 miles.*

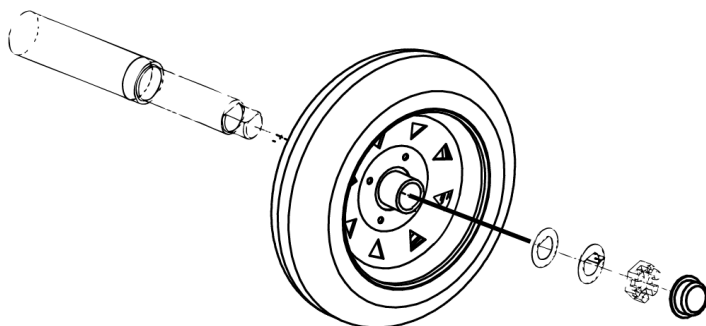
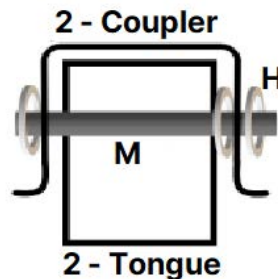


Figure 7: Expanded view of hub assembly

### STEP 3: COUPLER ASSEMBLY

*\*Note: In rare cases the tongue's wiring harness may fall inside the tongue after shipping and unpacking, and you may need to fish the wires and pull them out of the tongue.*

- a. *Tip: Lay the tongue on its side on a table or propped up on something to install the coupler (2).*
- b. Slip the coupler (hitch) over the tongue (2), making sure to align the holes on the coupler with the corresponding holes on the tongue.
- c. Using a 3" 19mm bolt (M), two 19mm washers (H), and one 19mm lock-nut (D), thread the 3" bolt (M) through the rear hold of the coupler, ensuring the tongue's wiring harness is not pinched by the bolt. Finger tighten the 19mm lock-nut (D) onto the rear bolt of the coupler.



*Figure 8: To prevent pinching the coupler mechanism while tightening, use an extra 19mm flat washer (H) threaded onto the 3" bolt (M), between the tongue (2) and the coupler (2).*

- d. When attaching the front bolt of the coupler to the tongue, you will need to secure the coupler safety chain (U).
- e. Using the 3" 19mm bolt (M), two 19mm flat washers (H), and one 19mm lock-nut (D), thread the 3" 19mm bolt (M) halfway through the coupler, then, from the bottom of the coupler, attach the center link of the coupler safety chain (U) to the bolt, and thread the bolt through the rest of the tongue and coupler. Finger tighten the 19mm lock-nut (D) on the bolt. *Ensure that the coupler safety chain is securely attached to the trailer through the front coupler bolt, and that the tongue wiring harness is not pinched by any coupler mounting hardware before tightening.*
- f. Securely tighten the bolts in an alternating pattern until the coupler is in contact with the tongue using two 19mm wrenches or sockets.
- e. Push the tongue's wiring harness back inside the tongue, leaving only the shielded portion exposed. This will ensure longevity of the trailer wires.



## STEP 4: ATTACH TONGUE TO FRAME/TONGUE SUPPORTS

### PART ONE: TONGUE

*Note: do not fully tighten the bolts until the side-braces are installed. Be careful not to pinch or cut the tongue's wiring harness when inserting the bolts.*

*Remember: The trailer is still upside down, so all components must be installed upside down*

- a. \*Make sure that the tongue's wiring harness extends out from both the back and the front of the tongue.
- b. Thread both Spare tire lug-nuts (F) onto spare tire mount on tongue.
- c. Align the tongue's (2) eye-holes with the eye-holes on the frame.
- d. Use two 3-3/4" 22mm bolts (L), four 22mm flat washers (I), and two 22mm lock-nuts (C) to fasten the tongue to the frame.

### PART TWO: TONGUE SUPPORTS

- e. Attach the side-braces (10) to the tongue of trailer using 3" 22mm bolt (D), two 22mm flat washers (I), and a 22mm lock-nut (C).
- f. Attach the side-braces to the frame using four 1-1/2" bolts (N), eight 22mm flat-washers (I), and four 22mm lock-nuts (C). (*NORTHSTAR will read upside down*).
- g. Once the side-braces are attached, tighten the 3-3/4" 22mm bolts from step "c" - "f" as tight as a manual wrench will allow. Be careful not to cut or pinch any wires inside the tongue.
- h. Plug frame wiring harness and tongue wiring harness together and tuck excess wiring inside the base of the tongue.

**TIGHTEN AND SECURE ALL BOLTS!** After the tongue and the side braces are in their proper positions, make sure to securely tighten all bolts, and make sure that all cotter-pins are installed, and that at least one leg of the cotter-pin is bent to 90 degrees.

### **ROTATE THE TRAILER TO AN UPRIGHT POSITION.**

Position the trailer so the tires are on the ground. More than one person is required to rotate the trailer; **DO NOT ATTEMPT TO ROTATE THE TRAILER TO THIS POSITION ALONE.**

## STEP 5: ASSEMBLE AND INSTALL LIGHTS

### PART ONE: INSTALL TAIL/BRAKE LIGHTS

- a. Remove the rubber grommet from the tail-light (R).
- b. Insert the rubber grommet into the driver side tail-light hole to the rear of the trailer frame until outer edge is almost flush with the trailer and inner lip of grommet catches on frame.
- c. Plug wires into the back of the tail-light.
- d. Feed wires connected to tail-light through grommet hole with wires towards the side of the frame and push tail-light into grommet. *Note: be careful not to push the grommet through the hole.*
- e. Connect driver side wires as follows by pushing wire connectors together as shown in Figure 9.
- f. Complete Steps "a." - "d." for the passenger side tail-light
- g. Connect passenger side wires as follows by pushing wire connectors together as shown in Figure 9.
- h. Tie off any wiring slack with a small zip-tie.

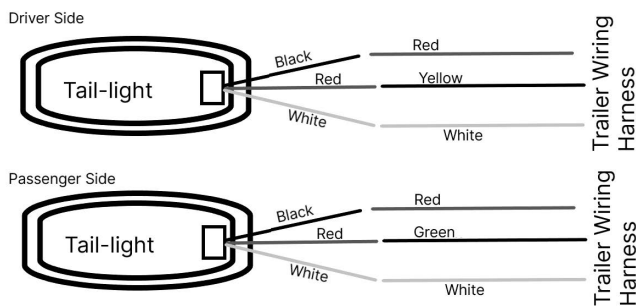


Figure 9: Tail-light wiring diagram.

*Note: Tail-lights should be snug inside rubber grommet and hard to remove.*

Figure 10: Tail/brake lights (R)



### PART TWO: INSTALL LICENSE PLATE LIGHT

Figure 11: License plate light (V)

- a. Connect two license plate light (V) wires to wiring harness through center hole at the rear of the trailer frame.
- b. Connect wires by pushing wire connectors together as follows:
  - i. White to White
  - ii. Black to Black
- c. Position light with silver side up and white light cap facing down while feeding screw-bolts through holes in the frame. Attach the flat washer and lock-nut to each end of the screws.
- d. Use a Philips head screw driver and pliers to tighten screws until light is pressing foam seal firmly against frame.
- e. Tuck extra wiring inside inner frame space underneath trailer.

## PART THREE: INSTALL MARKER LIGHTS

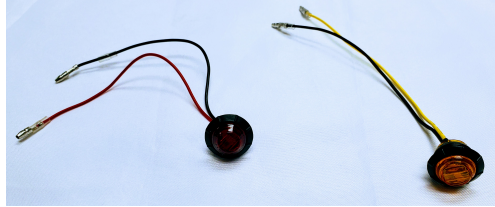


Figure 12: (from left to right) Red marker light (S) & Orange marker light (T)

- a. *Note: Red marker lights (S) attach to the sides of the rear of the trailer. Orange marker lights (T) attach to the sides of the front of the trailer.*
- b. Connect the Red marker lights (S) by pushing the metal connectors as follows:
  - i. Black to White
  - ii. Red to Red
- c. Slide the rubber grommet off the red marker light and push the grommet into the round marker light hole in the frame. Then push the light into the rubber grommet
- d. *Note: if installed correctly, it should be hard to remove light from the frame.*
- e. Connect the Orange marker lights (T) by pushing the metal connectors together as follows:
  - i. Yellow to Red
  - ii. Black to White
- f. Complete step "c." for each Orange marker light.

*Tip: Once you install the lights, tidy up loose wiring by bundling it up with zip-ties in the rear corners of the trailer frame.*

## STEP 6: ATTACH FENDERS

- a. Align the fender bolt-holes with the bolt-holes in the frame.
- b. Use two 1" 17mm bolts (O), eight 17mm flat-washers (G), and two 17mm lock-nuts (E) to fasten each fender (9) to the frame.
- c. Tighten fenders with two 17mm wrenches or sockets until fenders are flush against trailer frame without any horizontal play.
- d. *Note: Fenders should not be loose as they play a part in securing the side rails in Step 7 Part Two.*

## STEP 7: INSTALL SIDE RAILS & CORNER BRACKETS

*Note: fasten bolts to finger-tightness until the side braces, brackets and side-rails are all in place—this will allow you to make alignment adjustments if needed. Once all parts are aligned and secured, tighten all bolts.*

### PART ONE: INSTALL REAR CORNER BRACKETS

- a. Attach the rear corner brackets (12) to the frame using two 1" 17mm bolts (O), four 17mm washers (G), and two 17mm lock-nuts (E) for each corner bracket.
- b. Tighten to finger tightness to allow some play while installing the side rails.

### PART TWO: INSTALL SIDE RAILS

- b. Slide the side-rail (3) opening over the knob on the back of the bracket. Lay side-rails alongside trailer so the bolt-tab on the side-rail lays snug with the outside of the bolt-tab on top of the fender.
- c. Ensure that the side-rail pin-slots are positioned in-between the pin-slots on the trailer frame.
- d. Fasten side-rails to the fenders using one 1" 17mm bolt (O), two 17mm flat washers (G), and one 17mm lock-nut (E) for each side-rail. *Finger tighten, you will not fully tighten these bolts until step "g."*
- e. Insert three side-rail pins (K) for each side-rail. Secure the pins with a cotter-pin (J), and secure cotter-pins by bending at least one leg to 90 degrees.

### PART THREE: ASSEMBLE/INSTALL FRONT CORNER BRACKETS (with ramp mounts)

- a. Attach the front corner brackets (4) by sliding the rail knob into the side rail and secure them to the trailer frame using two 1" 17mm bolts (O), four 17mm flat-washers (G), and two 17mm lock-nuts (E) for each corner bracket.
- b. Thread a 22mm lock-nut (C) onto the ramp-pin bolt (P). Tighten the nut to the end of the thread where it borders the smooth surface of the bolt.
- c. Slide the washer end of the retaining cable (Q) onto the threads.
- d. Twist the ramp-pin bolt into the front corner bracket until the cable washer is flush with the bracket; the ramp-pin will extend approximately 1/8" through the nut welded onto the backside of the bracket. Use a wrench or vice grip to fully tighten the ramp-pin bolts.
- e. Use two 17mm wrenches or sockets to tighten the front and rear corner brackets and the two 17mm bolts connecting the fenders to the side rails. Corner brackets should be tight and flush against the trailer frame.

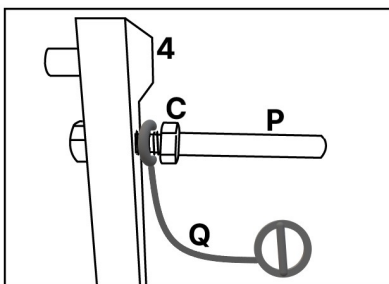


Figure 13: Front corner bracket assembly

**TIGHTEN AND SECURE ALL BOLTS!** After all side-rails and brackets are in their proper positions, make sure to securely tighten all bolts, and make sure that all cotter-pins are installed in the side-rail pins. Make sure that at least one leg of cotter-pin is bent to 90 degrees.

*Note: the front brackets run parallel to the front of the trailer and store/carry the trailer ramps.*

## **STEP 8: MOUNT TRAILER RAMPS & INSTALL REAR GATE**

### PART ONE: MOUNT SIDE-LOADING RAMPS

- a. Mount the trailer ramps (5) on the front corner brackets, and secure the ramps to the brackets by sliding the ramp-pins through the eye-holes on each end of the ramps.
- b. Secure the ramps to the brackets by inserting the cable pins from the retaining cables (Q) into the holes in the ramp-pin bolts (P).

### PART TWO: INSTALL REAR GATE

- a. Position the rear gate (11) so that the gate's pin-slots sit in-between the pin-slots on the trailer frame mesh side up.
- b. Connect the gate's pin-slots with those on the trailer using two side-rail/gate-pins (K).
- c. Secure the gate-pins with two cotter-pins (J) for each side-rail/gate-pin (K), and then secure the cotter-pins by bending at least one leg to 90 degrees.

### **CONGRATULATIONS!**

You have completed your Sportstar II WG, ATV/Utility trailer!

We hope you enjoy your NORTHSTAR TRAILER.

Please contact us at 1-801-375-3088 or email us at [info@northstartrailer.com](mailto:info@northstartrailer.com) if you have any questions. Our business hours are Monday - Friday 8:00 a.m. to 4:30 p.m. Mountain Standard Time.

### TRAILER SPECIFICATIONS

Trailer Weight: 580 lbs  
GVWR: 2000 lbs  
Cargo Weight: 1420 lbs  
Length (w/tongue): 178"  
Width: 78"  
Tire Size: 175/80 D-13

Note: The dealer that sold you this trailer will ship you the trailer's *Certificate of Origin*. The certificate will arrive approximately two weeks after the trailer is delivered. Contact your dealer with any questions regarding the status of your certificate.

## **Need Parts?**

Northstar Trailer has a Parts Department! We will help you find the right parts to replace or repair on your trailer.

Phone: 801-375-3088

## **Ask about our other Accessories!**

Big Red Earth Anchor

Gas Can Mount

Jack-stand

Spare Tire

Motorcycle Tire Rail

1335 W 1650 N  
Suite A  
Springville, UT 84663

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Monday - Friday 8:00 AM - 4:30 PM MST