



## Assembly Guide for SPORTSTAR III Trailer



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****HARDWARE**

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	2
11	Rear Gate	1
12	Rear Corner Bracket	2

Part No.	Description	Qty.
A	U-Bolt	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	10
L	1" 17mm Bolt	4
M	2 3/4" 17mm Bolt	8
N	3" 19mm Bolt	2
O	3 1/2" 17mm Bolt (Thin)	2
P	3 1/2" 22mm Bolt (Thick)	7
Q	4" 22mm Bolt	4
R	Ramp Pin-Bolt (22mm)	2
S	Retaining Cable with Pin	2
T	Taillight / Brake Light	2
U	Red Marker Light	2
V	Orange Marker Light	2
W	Safety Chain	1
X	License Plate Light	1
Y	Frame End Cap	2

Make sure that all parts, as listed above, are included in your shipment. If any parts are missing, please contact NORTHSTAR at 1-801-375-3088.

Other tools needed for assembly: grease gun, flathead screwdriver, socket set, wrench set, small rubber mallet, vice grips.

IMAGES OF PARTS AND HARDWARE

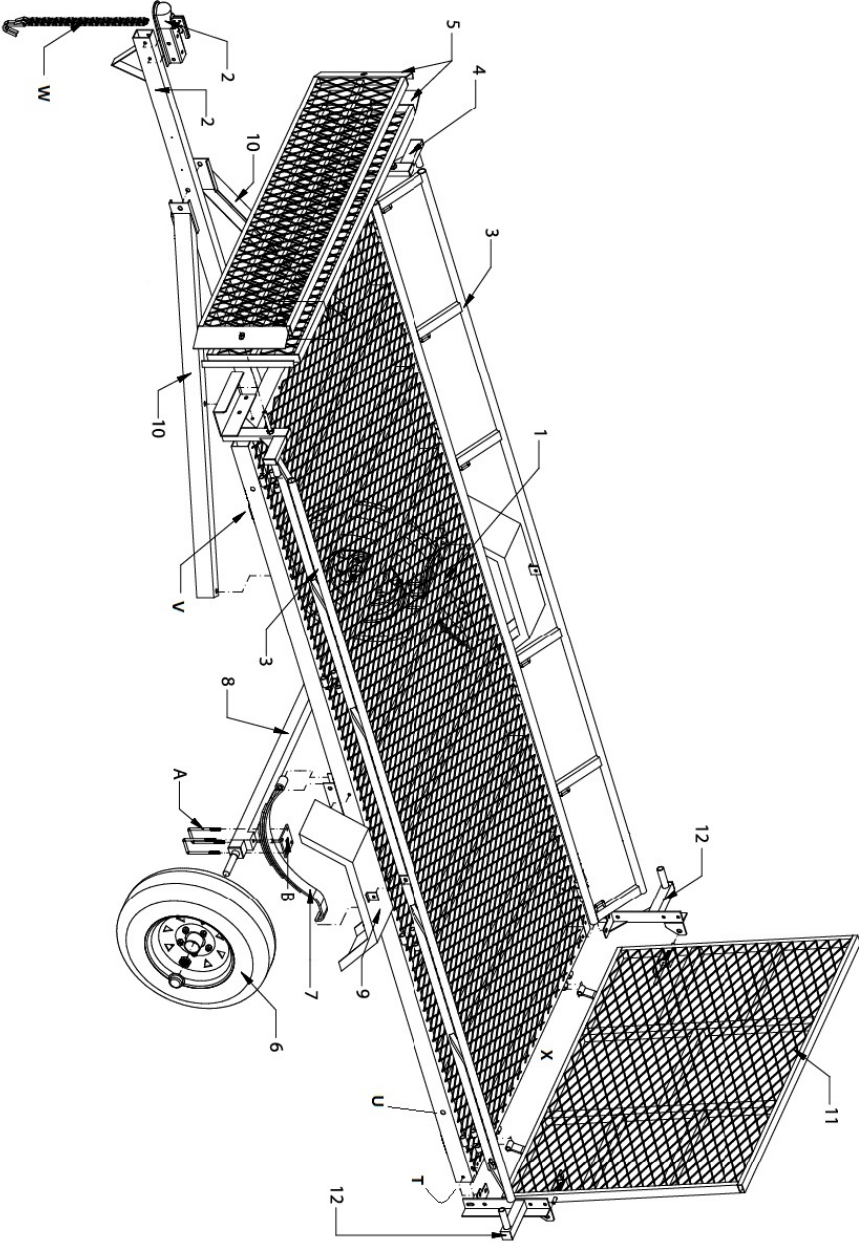


Figure 1: Expanded view of trailer

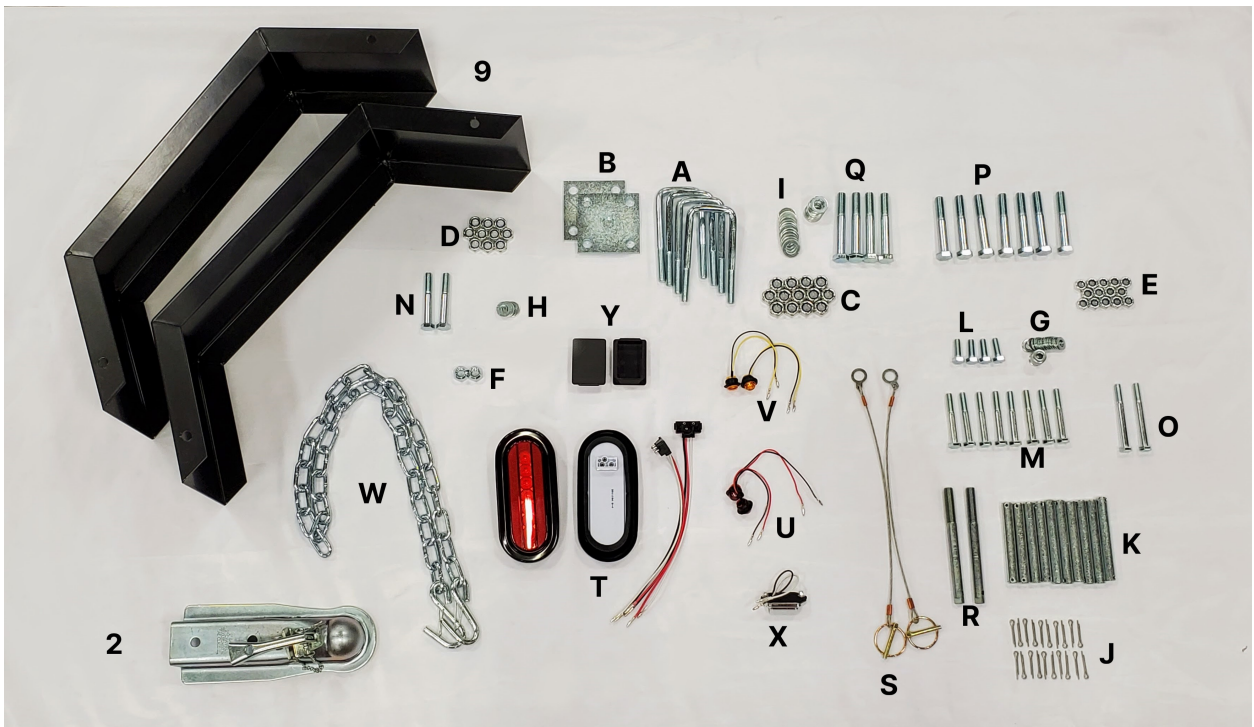


Figure 2: Labeled hardware.

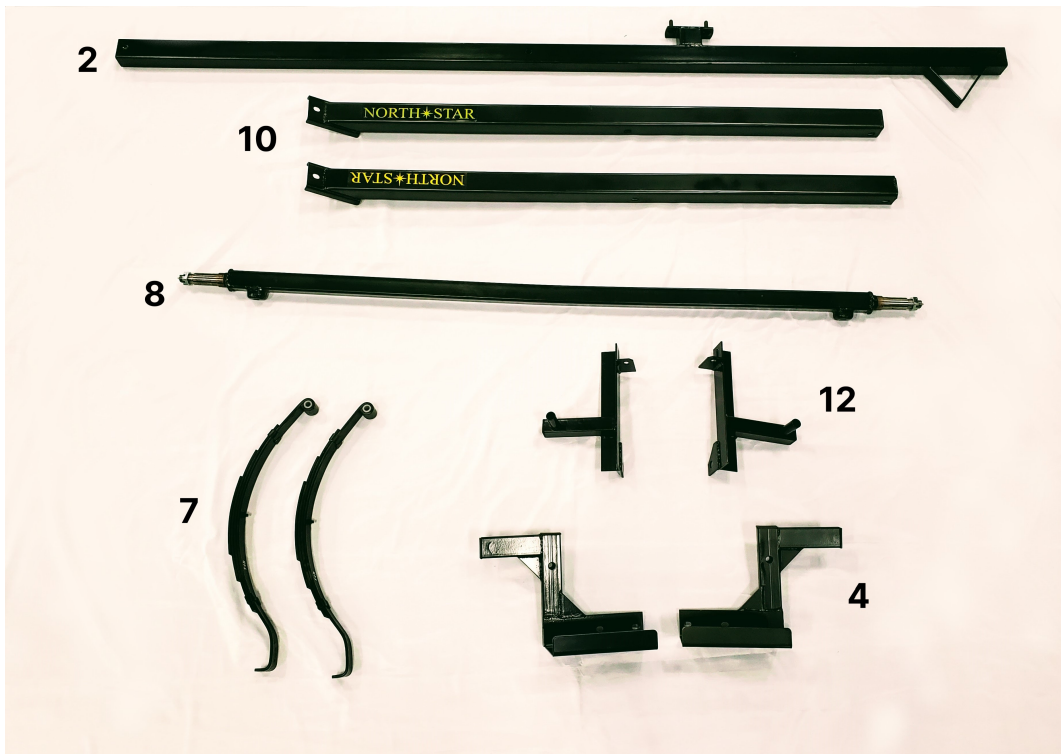


Figure 3: Labeled parts.

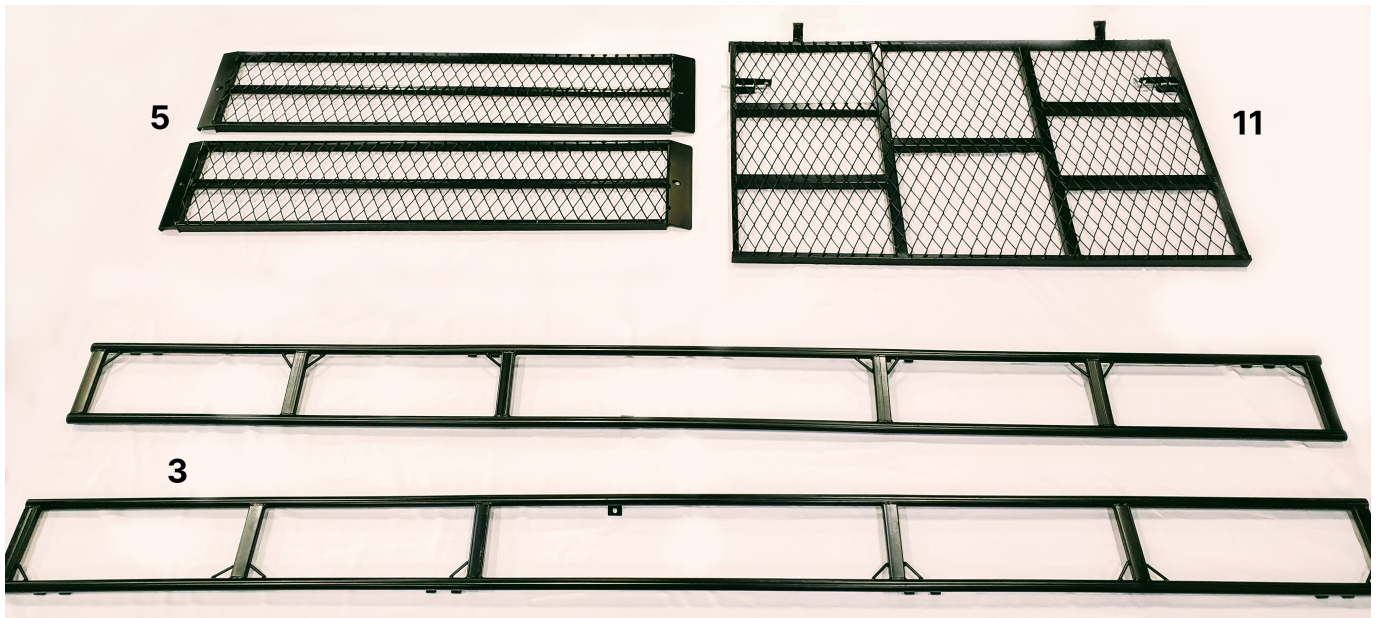


Figure 4: Labeled parts continued.



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

## INVERTED ASSEMBLY

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

## PART ONE: ATTACH LEAF-SPRINGS TO FRAME

- 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 leaf-spring to the casing with 3 ½" 22mm bolt (P), two 22mm flat-washers (I), and one 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 ½" 22mm bolt (P), two 22mm flat-washers (I), and one 22mm lock-nut (C) through the eye-holes of the leaf-spring casing and over the flat side of the leaf-spring.

## PART TWO: 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 bolts using four 19mm lock-nuts (D) for each spring plate, 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 with two 19mm wrenches or sockets in an 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." with two 22mm wrenches or sockets until the leaf-spring casing begins to conform to the shape of the leaf-spring (approximately 35 ft-lbs.).

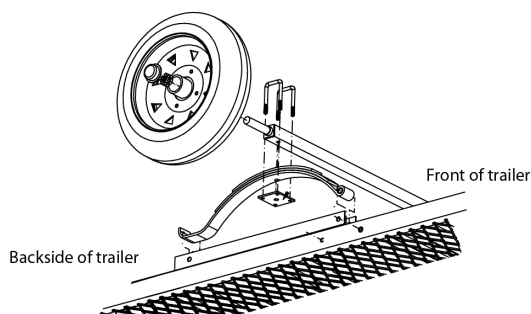


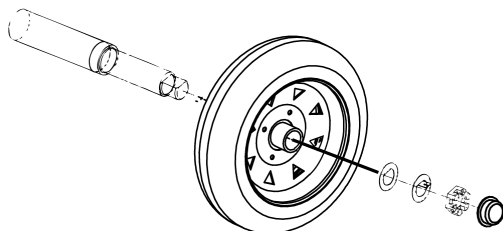
Figure 6: Expanded view of leaf-spring and axle assembly.

## 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 tabbed-washer from the interior of hub and 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 bearings 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 bearings.
- 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.*

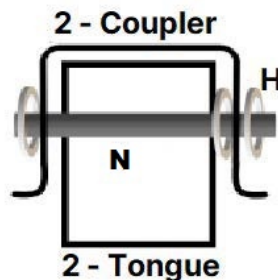


*Figure 7: Expanded view of hub assembly.*

## 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 (N), two 19mm washers (H), and one 19mm lock-nut (D), thread the 3" bolt (N) 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 (N), 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 (W).
- e. Using the 3" 19mm bolt (N), two 19mm flat washers (H), and one 19mm lock-nut (D), thread the 3" 19mm bolt (N) halfway through the coupler, then, from the bottom of the coupler, attach the center link of the coupler safety chain (W) 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 (2).
- c. Align the tongue's eye-holes with the eye-holes on the frame.
- d. Use two 3-1/2" 22mm bolts (P), four 22mm flat washers (I), and two 22mm lock-nuts (C) to fasten the tongue to the frame at finger tightness.

### PART TWO: TONGUE SUPPORTS

- e. Attach the tongue side-braces (10) to the tongue of trailer using one 3-1/2" 22mm bolt (P), two 22mm flat washers (I), and a 22mm lock-nut (C).
- f. Attach the side-braces to the frame using four 4" 22mm bolts (Q), eight 22mm flat-washers (I), and four 22mm lock-nuts (C) fed up through the frame and tongue supports so the bolt head is flush with the trailer deck. (*NORTHSTAR will read upside down*).
- g. Once the side-braces are attached, tighten the 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.

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

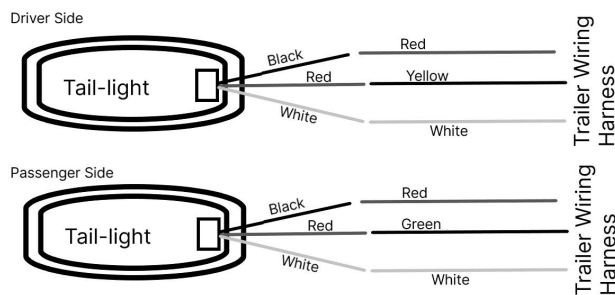
Position the trailer so the tires are on the ground. More than one person is required to rotate the trailer; **DO NOT ATTEMPT TO ROTATE THE TRAILER TO THIS POSITION ALONE.**

## STEP 5: ASSEMBLE AND INSTALL LIGHTS

*Note: make sure that the wires for both the tail and running lights extend out from the trailer frame. If wires are not showing, fish them out of the trailer frame in preparation for the light installation.*

### PART ONE: INSTALL TAIL/BRAKE LIGHTS

- a. Remove the rubber grommet from the tail-light (T).
- 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. Push excess wires back into frame.



*Figure 9: Tail-light wiring diagram.*

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



*Figure 10: Tail/brake lights (T)*



*Figure 11: License plate light (X)*

### PART TWO: INSTALL LICENSE PLATE LIGHT

- a. Connect two license plate light (X) 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

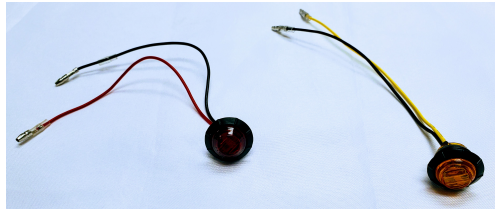


Figure 12: (from left to right) Red marker light (U) & Orange marker light (V)

- a. *Note: Red marker lights (U) attach to the sides of the rear of the trailer. Orange marker lights (V) attach to the sides of the front of the trailer.*
- b. Connect the Red marker lights (U) 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 (V) 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.

## STEP 6: ATTACH FENDERS

- a. Align the fender bolt-holes with the bolt-holes in the frame.
- b. Use two 2-3/4" 17mm bolts (M), 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 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 rear corner brackets (12) with one 1" 17mm bolt (L), two 17mm flat-washers (G), and one 17mm lock-nut (E) threaded through the bolt hole in the side of the bracket and frame for each rear corner bracket. *Note: the second flat-washer and lock-nut will be secured inside the tube of the frame.*
- b. Attach one 3-1/2" 17mm bolt (O), two 17mm flat-washers (G), and one 17mm lock-nut (E) vertically through the bolt holes on the top of the frame for each rear corner bracket. *Note: this bolt goes all the way through the tube frame with the second flat-washer and lock-nut secured underneath the trailer on the outside of the tube frame.* Leave at finger tightness.

### PART TWO: INSTALL SIDE RAILS

- a. Slide the side-rail (3) opening over the knob on the back of the rear corner 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.
- b. Ensure that the side-rail pin-slots are positioned in-between the pin-slots on the trailer frame.
- c. Fasten side-rails to the fenders using one 1" 17mm bolt (L), 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 Part Three, "e."
- d. Insert four side-rail pins (K) for each side-rail. Secure the each pin with two cotter-pins (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 2-3/4" 17mm bolts (M), 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 (R). 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 (S) 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.
- f. Use a rubber mallet or hammer with scrap of wood to gently tap the frame end caps (Y) into the rear of the trailer frame on each side.

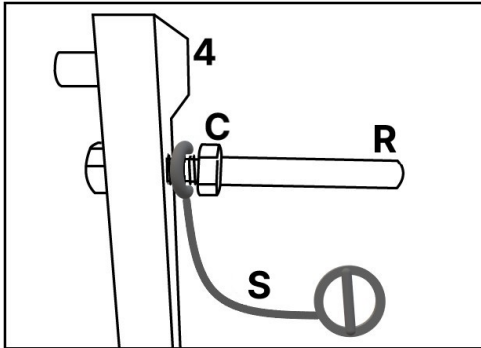


Figure 13: Front corner bracket assembly.

**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 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 are used to store/carry trailer ramps.*

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

### PART ONE: MOUNT SIDE-LOADING RAMPS

- a. Mount the side-loading 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 III, 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: 670 lbs  
GVWR: 3000 lbs  
Cargo Weight: 2330 lbs  
Length (w/tongue): 217"  
Width: 82.5"  
Tire Size: 185/80 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