

# Tech Tips

## 2016 Product Updates

Our Techs scour the field all year to gather up the latest Technical Updates, Tips, Tricks, and How-To's to make your trike building great.

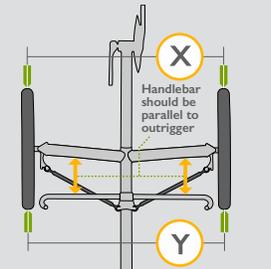
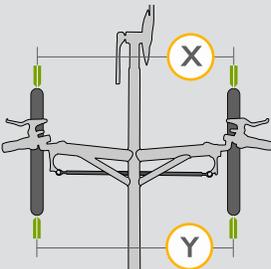
### Contents

Alignment Updates  
Hybrid Steering/Trigger Bars  
Rapid Axle

Seat Stay Through Hole  
Cable Routing  
New Sportster

## Alignment Measurement Updates

Given measurements are to the center of tire. Slight variations are possible.  
All trikes should be adjusted so that X and Y are equal (except for the Traveler).

<p><b>TANDEM</b> PRO</p>		<table border="1"> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>31 1/8 INCHES</td> <td>31 1/8 INCHES</td> </tr> </tbody> </table>	X	Y	31 1/8 INCHES	31 1/8 INCHES
X	Y					
31 1/8 INCHES	31 1/8 INCHES					
<p><b>SPORTSTER</b> 2016</p>		<table border="1"> <thead> <tr> <th>X</th> <th>Y</th> </tr> </thead> <tbody> <tr> <td>29 3/4 INCHES</td> <td>29 3/4 INCHES</td> </tr> </tbody> </table>	X	Y	29 3/4 INCHES	29 3/4 INCHES
X	Y					
29 3/4 INCHES	29 3/4 INCHES					





## Hybrid Steering Stack w/Trigger Handlebars

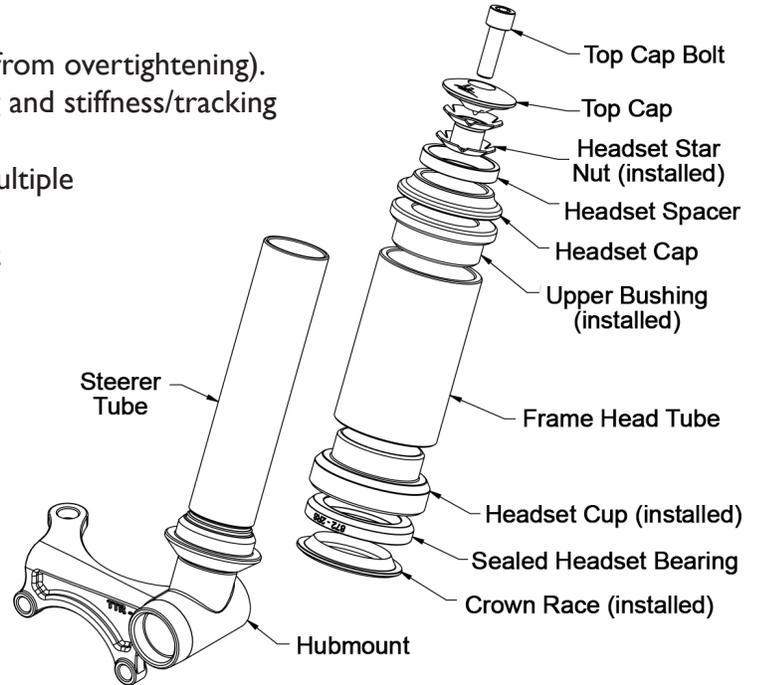
### Benefits

- Smoother steering feel (Prevent “sticky” steering from overtightening).
- Optimizes durability/smoothness of lower bearing and stiffness/tracking of upper bushing.
- Handlebar shape allows for clean installation of multiple shifter varieties (trigger, twist, thumb).
- Two bolt clamp gives more secure bar attachment to hubmount steerer.

### Assembly Process

1. Identify the left and right hubmounts by the marks on the brake caliper mounts.
2. Lightly grease the headset cup and crown race, then slide the sealed bearing onto steerer tube.
3. Grease steerer tube and install steerer tube through the cup and bushing on the head tube.
4. Stack the headset cap and headset spacer onto the steerer tube. Wipe off any excess grease and install the handlebars.
5. Install the top cap and set steering to desired stiffness.
6. Set bars to desired width and tighten the two handlebar clamp bolts to 3-5 Nm of torque.

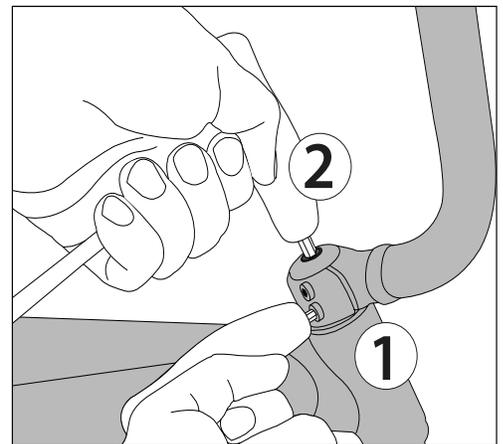
**TIP:** It is easiest to set an equal bar width while sitting in the seat with the trike on the ground.



### Adjusting Steering Feel

The new Hybrid Steering Stack allows for a looser, smoother steering feel than the nylon bushing steering stack. The tightness of the top cap determines the steering feel: A tighter top cap creates stiffer steering while a looser top cap creates lighter steering. Be sure to remove any play from the system to prevent uneven wear.

1. To adjust the steering feel, loosen the handlebar clamp bolts (1) and loosen or tighten the top cap bolt (2).
2. Tighten the handlebar clamp bolts (1) to 3-5 Nm of torque.



### Maintenance

- Check system for any play that may develop over time.
- Depending on riding conditions and steering setup, the upper bushing and lower sealed bearing may need to be replaced if excessive or uneven wear develops.



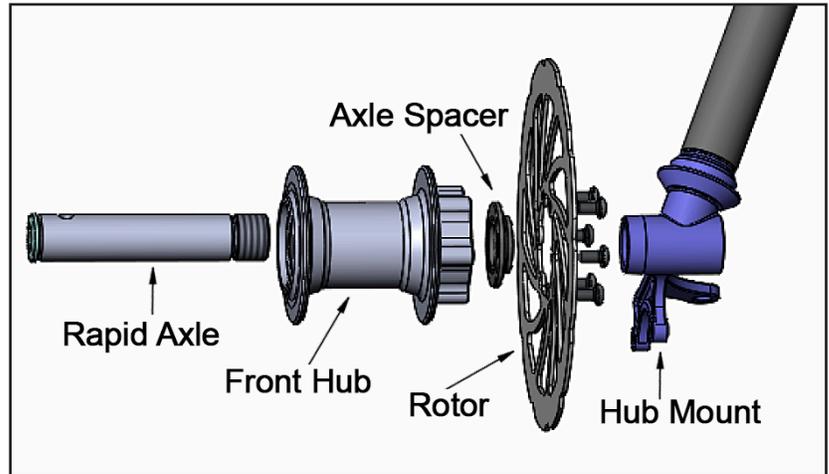
## Rapid Axle

### Benefits

- Quicker assembly times
- Removal of wheels with brake calipers in place
- Allows overall trike size to be reduced for travel or transport

### Assembly Process

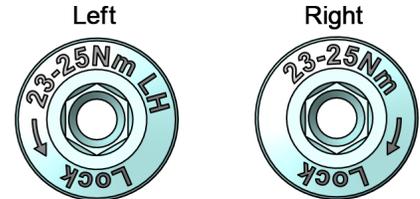
1. Lightly grease the outside of the Rapid Axles but make sure no grease coats the axle threads. Only Loctite should be used on the threads.
2. An axle spacer covers the inner bearing of the hub. It is pre-installed on new kits but must be set in place before the disc rotor if the rotor is removed for any reason.
3. Identify the right and left axles and slide the axle through the hub so it is flush with the inside bearing of the hub.
4. Place the disc rotor between the brake pads and square the wheel to the hubmount.
5. Begin threading the Rapid Axle by hand and check that the axle is properly threading.
6. Finish tightening with an 8mm hex wrench to 23-25 Nm of torque.



**NOTE:** To help prevent loosening, axles tighten in the direction of typical wheel rotation. The left axle has a left-hand thread (tightens counter-clockwise), the right axle has a right-hand thread (tightens clockwise).

### Maintenance

- Check axles for tightness regularly and tighten if necessary.
- If wheels are removed/reinstalled regularly, medium threadlocker (Loctite blue) should be reapplied occasionally to ensure axle tightness and security.



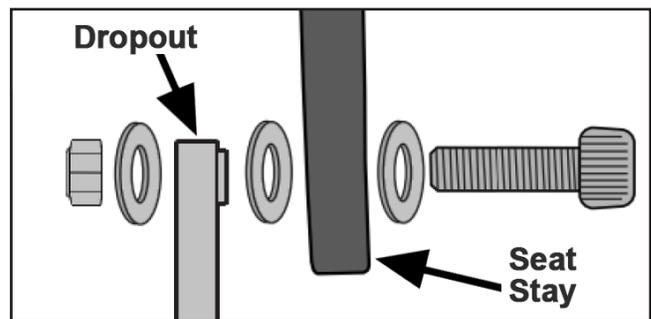
## Seat Stay Through-Hole Attachment

### Benefits

- Seat stay fasteners won't loosen from seat removal or regular seat angle adjustments

### Installation

1. The lower seat stays come pre-installed. Check that the washers and fasteners are stacked correctly.
2. Pivot the seat stay a few times to check that the fastener is tight. If necessary, tighten the fastener and nyloc nut.





## Cable Routing

### Benefits

- Easier setup/assembly
- Smoother bends allow for crisper shifting and reduced cable/housing wear
- Helps keep cables away from wheels when turning
- Allows the use of stiffer/higher quality cables and housing

### Routing & Securing Cable Housing

1. With handlebars and derailleurs or internal hub wheel installed, follow the appropriate series of cable guides or eyelets (see photos) and use included zip ties to attach the housing.
 

**TIP:** Secure and clip housing zip ties after installing hubmounts, but before installing front wheels.
2. After setting the boom and handlebars in the desired position, ensure there are no kinks or sharp bends in the housing.
 

**NOTE:** Depending on the handlebar position and derailer, cable/housing length may need to be resized.
3. Clip any excess zip tie and check that there are no sharp edges that could cut the rider.

Cable guides - Left front



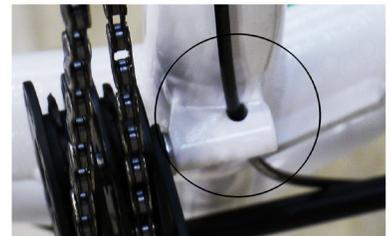
Cable guides - Right front



Rambler / Traveler  
Cable eyelet for front shift housing



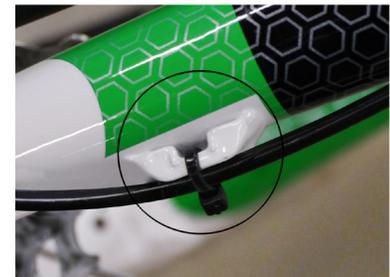
Sportster  
Cable eyelet for front shift housing



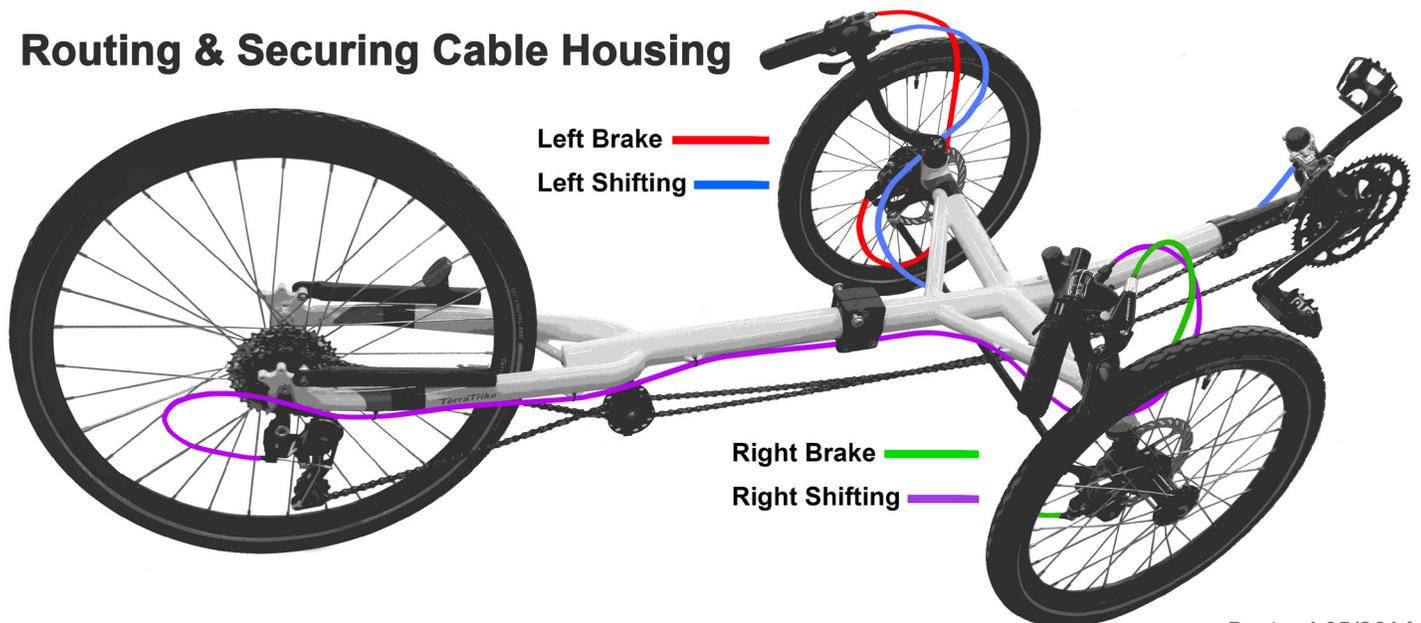
Rambler / Traveler  
Rear cable guides



Cable zip tied on cable guide



## Routing & Securing Cable Housing



Revised 05/2016



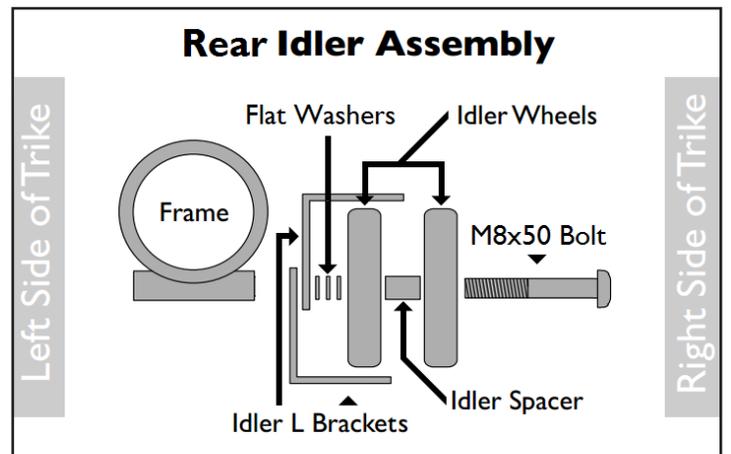
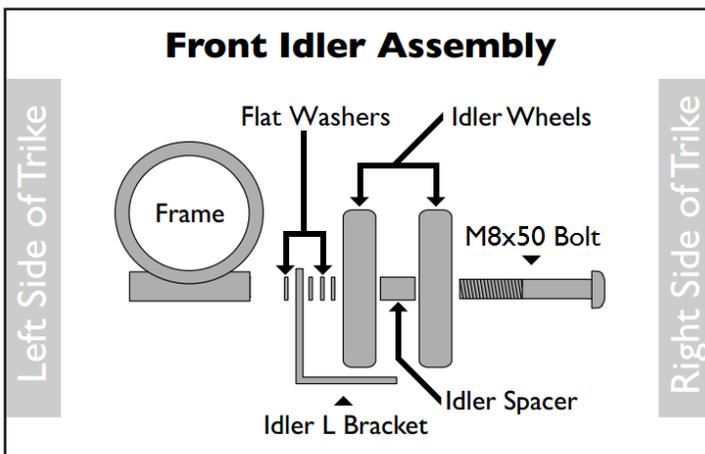
## 2016 Sportster

### What's New

- Single piece frame and ovalized chain stays for improved stiffness and better power transfer
- New Hybrid Steering System with bushing and bearing combination
- Colors based on spec level (Green for x24, White for x30, Matte Black for SL)
- All spec levels will come standard with the padded "Comfort" Mesh
- Component Changes on SL Spec
  - Tires: Schwalbe ONE
  - Chain: YBN SL 10 Speed
  - Brake Levers: Avid Speed Dial 7

### Idler Assemblies

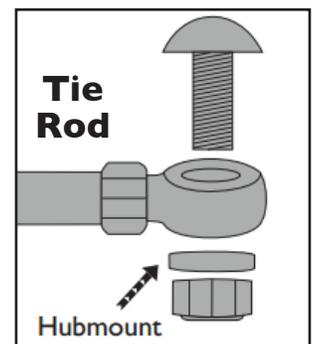
Make sure medium strength threadlocker (Loctite) is present on the bolt before installation.



Tighten the M8x50 bolt to 10-12 Nm of torque

### Tie Rod Installation

The tie rod is installed above the hubmount on 2016 Sportsters.



### Boom Clamp Torque

The torque spec for the new Sportster boom clamp is 12-15 Nm.

**Your Questions:**

Submit your tech questions easily online at:  
[TTU.TerraTrike.com/BrainTrust](http://TTU.TerraTrike.com/BrainTrust)

Revised 05/2016