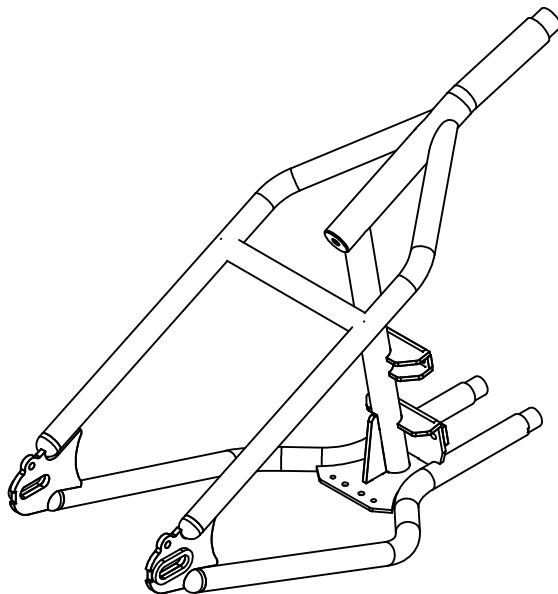


Lowbrow Customs Weld-on Hardtail Rear Frame Section 1982-2003 Harley Sportster

This weld-on rear frame section from Lowbrow Customs is an absolute perfect fit on stock 1982 - 2003 Sportsters (stock front frame section not included). These motorcycle hardtails are a 3 inch stretch and 1 inch drop compared to a stock Sportster. This means axle-to-axle the hardtailed bike will be 3 inches longer, and have 1 inch less ground clearance. This is the perfect blend of style and performance.

- For 1982-2003 Harley-Davidson Sportsters.
- The stock front frame section is retained with the steering neck that has the stamped VIN number so the frame conversion keeps the original VIN number and title. This front section and title are not included with the hardtail.
- Highest quality available with perfect fit and finish.
- Frames are 100% professionally TIG welded with precision laser cut plates and CNC bent tubes.
- Proudly made in Cleveland, Ohio, USA.



Installation of this hardtail frame is easy and takes only an afternoon. All tubing matches the stock frame tubing diameter, with a 1-5/8 inch thick walled steel backbone and 1-1/4 inch diameter heavy-duty lower frame rails. This blends the installed hardtail seamlessly into your stock frame.

Installation involves measuring and marking the stock frame for where to cut, cutting off the rear frame section, bolting in the engine to be used as a welding alignment fixture, and welding the hardtail in place to the stock front frame section. The engine is then removed to finish some frame welds and painting. The backbone and lower rail tubes have pre-installed slugs to offer perfect alignment and a strong joint.

Tools required will be a cut-off wheel or saw, disc sander for weld prep and paint removal, and a TIG or MIG welder. Inexperienced builders may cut and assemble the frame themselves, and have an experienced weldor do the welding if they feel their welding skills are not up to the task.

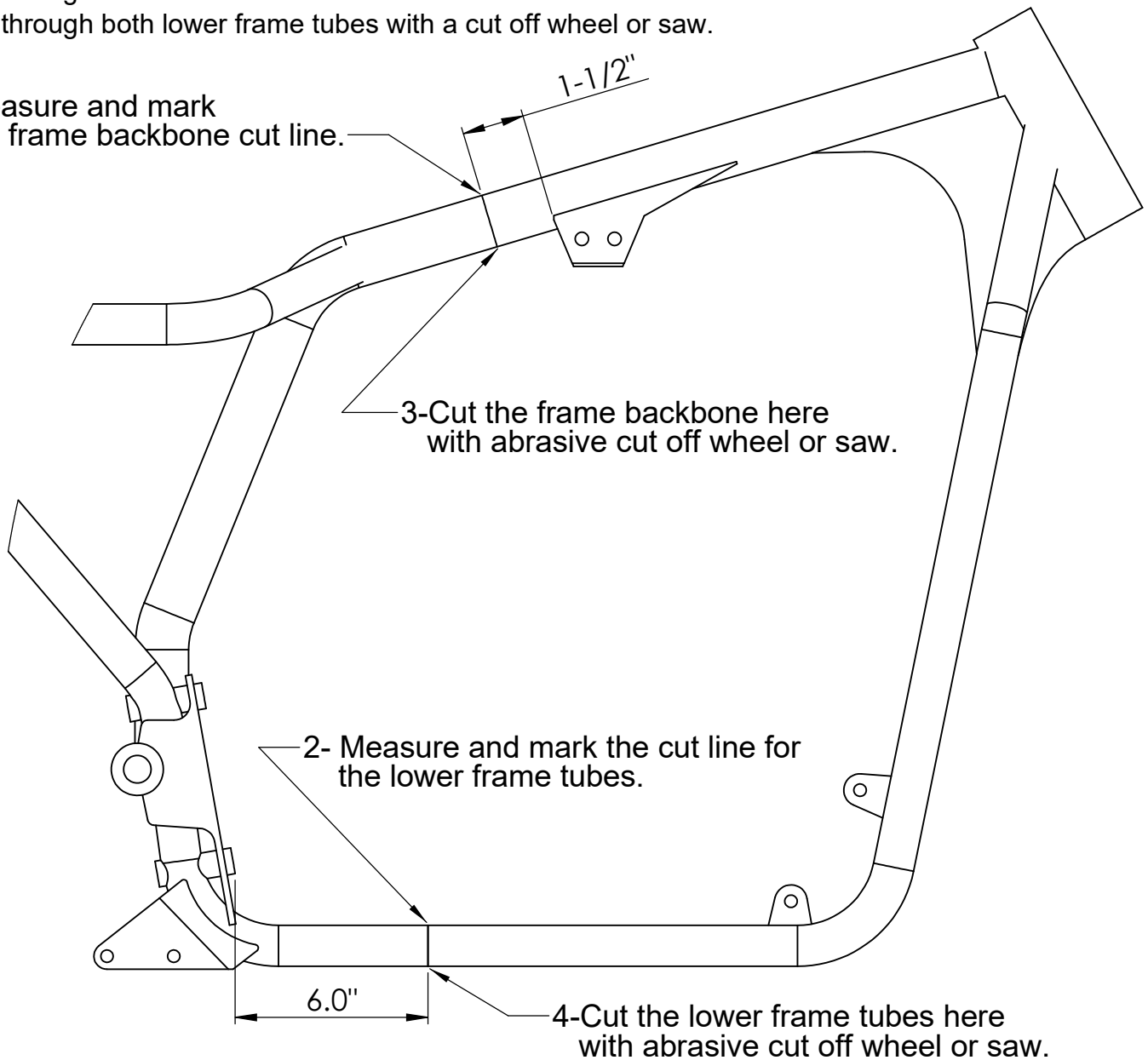
Weld-On Hardtail Features

- The entire rear motor mount area is designed to be as strong as possible and will handle any motor no matter how built. The rear motor mount bolts (included) are very easy to access with our unique design, which adds to the ease of installation.
- The backbone slug is tubing and allows any wiring (headlight, handlebar switches) to be run through the backbone of the frame, exiting right above the battery box and oil tank. The lower slugs are solid steel and are machined to be a perfect fit inside the lower frame rails.
- The hardtail is designed to use the stock length 3/4" rear axle, eliminating the need for a custom rear axle length. The axle plates are thick, heavy duty with TIG welded doubler plates for the axle head and axle nut. This localizes any paint scratches from axle tightening to the doublers and away from the axle plates.
- Each hardtail includes a set of axle adjusters that will work with stock rear axles. The adjusters tuck in behind the axle plates, keeping them hidden, and they are adjusted from the rear of the axle plate. This is very similar to an Ironhead Sportster setup, which allows the rear wheel and chain to be adjusted with ease while keeping everything copacetic
- The rear brake will require a rigid-type disc brake caliper mount to pivot on the axle with an anchor rod bolted to the frame, as the stock swingarm mounted caliper bracket will not fit. A 1/4" thick brake rod tab to be welded on, is included with the hardtail kit.
- Belt to chain final drive conversion is required because of the 3" stretch.
- The hardtail converted frame will need mounts for the selected gas tank to be used. The hardtail frame conversion retains the stock front section of the backbone with 1-5/8" diameter tube, selected gas tanks will need to fit this backbone size. Good choices for gas tanks are 1982-2003 stock gas tanks, 1982-2003 Sportster tanks with front Frisco mounting or other Frisco style tanks. Frisco style tanks mount above the backbone and don't use a deep tunnel
- The front frame section retains the stock kickstand mount and kickstand.
- Frame is pre-drilled to fit The Lowbrow Customs #010646 Bolt-On Battery Box & Fender Mount or Gasbox #013519 battery box adapter plate to mount the Gasbox #009408 Universal battery box.
- The Lowbrow Customs #008626 Weld-On Upper Fender Mount tab For Curved and Ribbed Motorcycle Fenders is a perfect choice to mount the rear fender to the hardtail cross member.
- Integrated in the axle plate design are convenient 3/8 inch holes for rear fender struts.
- The Lowbrow Customs Horseshoe Oil Tank #010404 made specifically for this hardtail (sold separately). It offers easy installation and a perfect fit!
- The seat post tube is 1-1/2" in diameter and can fit the #012459 Dished Clamp-On Oil Tank for Lowbrow Customs Harley Sportster Hardtails.

Measure and Cutting the Frame

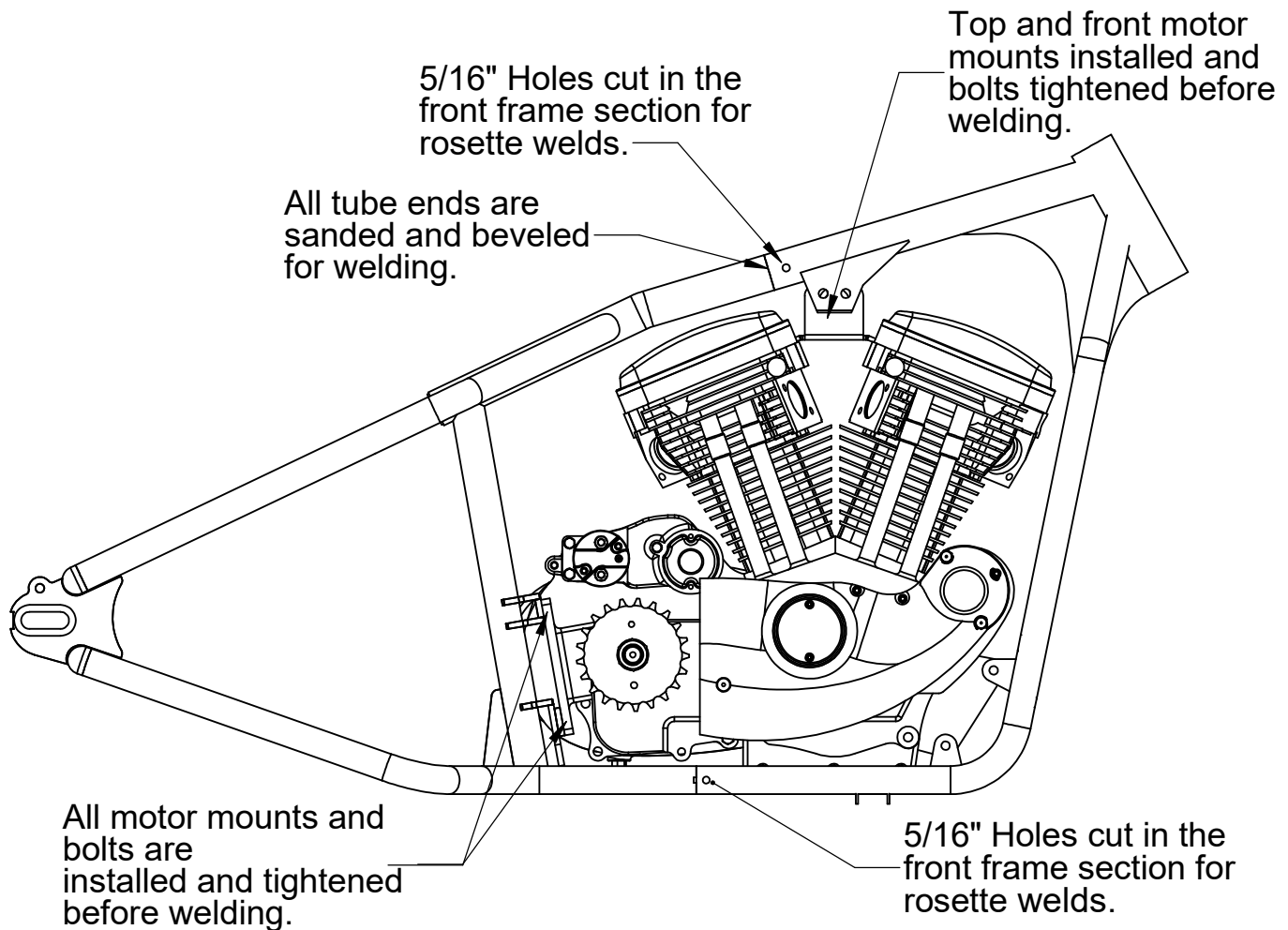
- Cutting the frame and welding the hardtail requires the motor to be removed. It may be easiest to remove all of the components from the frame.
- Carefully measure the backbone cut line as measured from the rear of the top motor mount bracket as shown. Measure along the backbone, the cut will be square to the frame tube. Mark or scribe the frame backbone for the cut, masking tape and marker works well.
Note: Cut at 1-1/2" first, then test fit the hardtail and frame together. For a perfect fit, the backbone may be trimmed shorter, up to 1" from the motor mount bracket. Cut the backbone **long** at first, then trim shorter as necessary.
- Measure from the bottom face of the lower engine mount sleeve- forward along the frame, and scribe or mark the cut line as shown. Use a Square and keep the measurement square to the lower frame tube.
- Cut through the frame backbone with an abrasive cut off wheel or metal saw.
- Cut through both lower frame tubes with a cut off wheel or saw.

1- Measure and mark the frame backbone cut line.



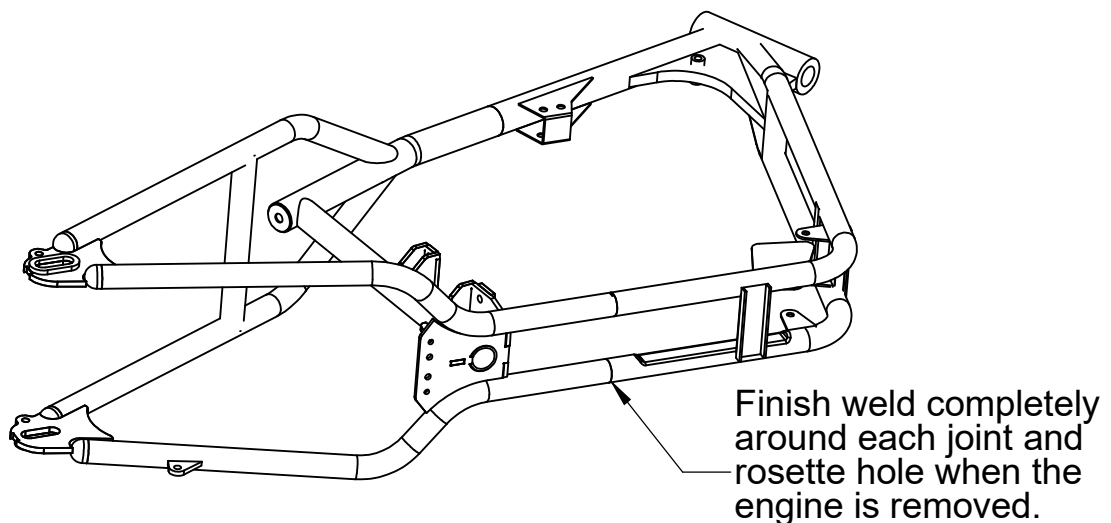
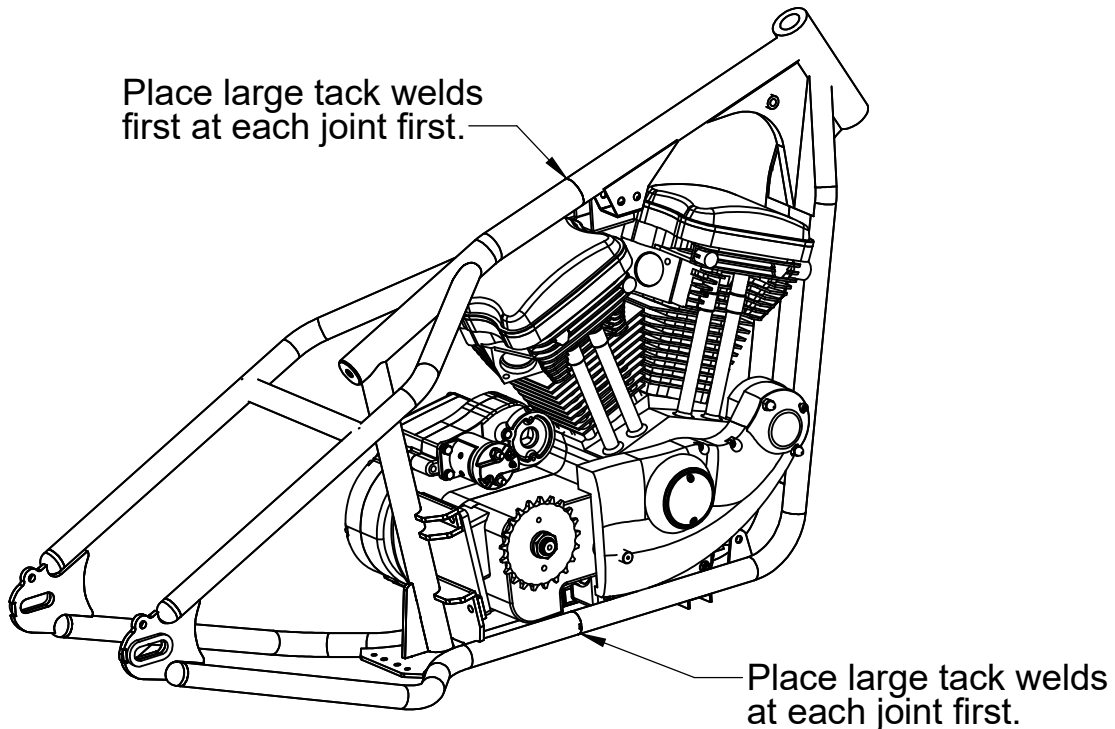
Assemble the Engine and Frame Parts

- **Prep** the front frame section for welding by sanding away paint and any rust from the weld areas, deburr the inside of the tubes. Using a grinder, cut a bevel on the outside of the backbone and the lower frame tubes where they were cut. The beveled outside edge will allow the weld to penetrate for a stronger joint.
- **Drill** 5/16" holes on the backbone and lower frame tubes about 1/2" back from the cuts for rosette welds as shown. Rosette welding into the holes will allow weld to penetrate into the hardtail slugs for a strong joint.
- **Assemble** both frame halves and the engine. The front and rear frame parts will be bolted to the engine, the **engine will serve to hold and align the frame halves for welding**. Install all motor mounts and bolts to be sure everything fits together. The hardtail has a tube slug to slide into and center the backbone for welding, and the hardtail lower frame tubes have solid slugs to insert into the lower frame tubes to center the tubes and strengthen the weld joint. The cuts may need trimming for the best fit, a small gap between the tubes will allow weld to penetrate down to the slugs, to join the tubes and slugs together.



Welding the Frame

- Before welding, be sure that the metal is free of paint, dirt or oils. Clean the welding areas if necessary.
- Best practice is to place heavy tacks at each tube joint first, then go back and finish weld.
- Weld the frame parts together as much as is accessible **with the engine installed**.
- Unbolt and remove the engine to finish weld around all of the tube joints.

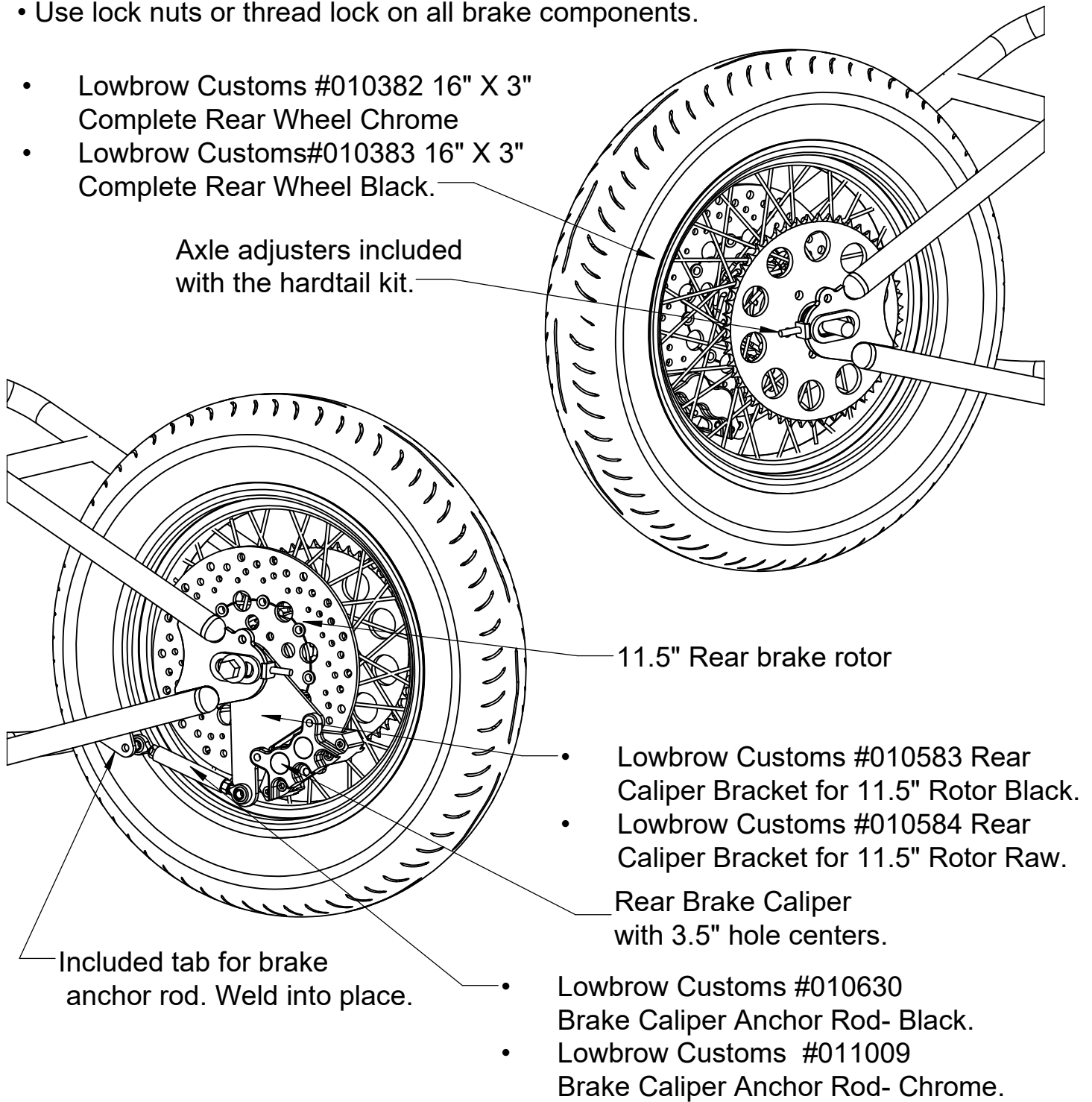


Rear Wheel and Brake

- The rear axle plates uses a stock 3/4" axle.
- Axle plates inside width is 9-1/2".
- Center the rear wheel in the frame with suitable 3/4" axle spacers.
- Use lock nuts or thread lock on all brake components.

- Lowbrow Customs #010382 16" X 3" Complete Rear Wheel Chrome
- Lowbrow Customs #010383 16" X 3" Complete Rear Wheel Black.

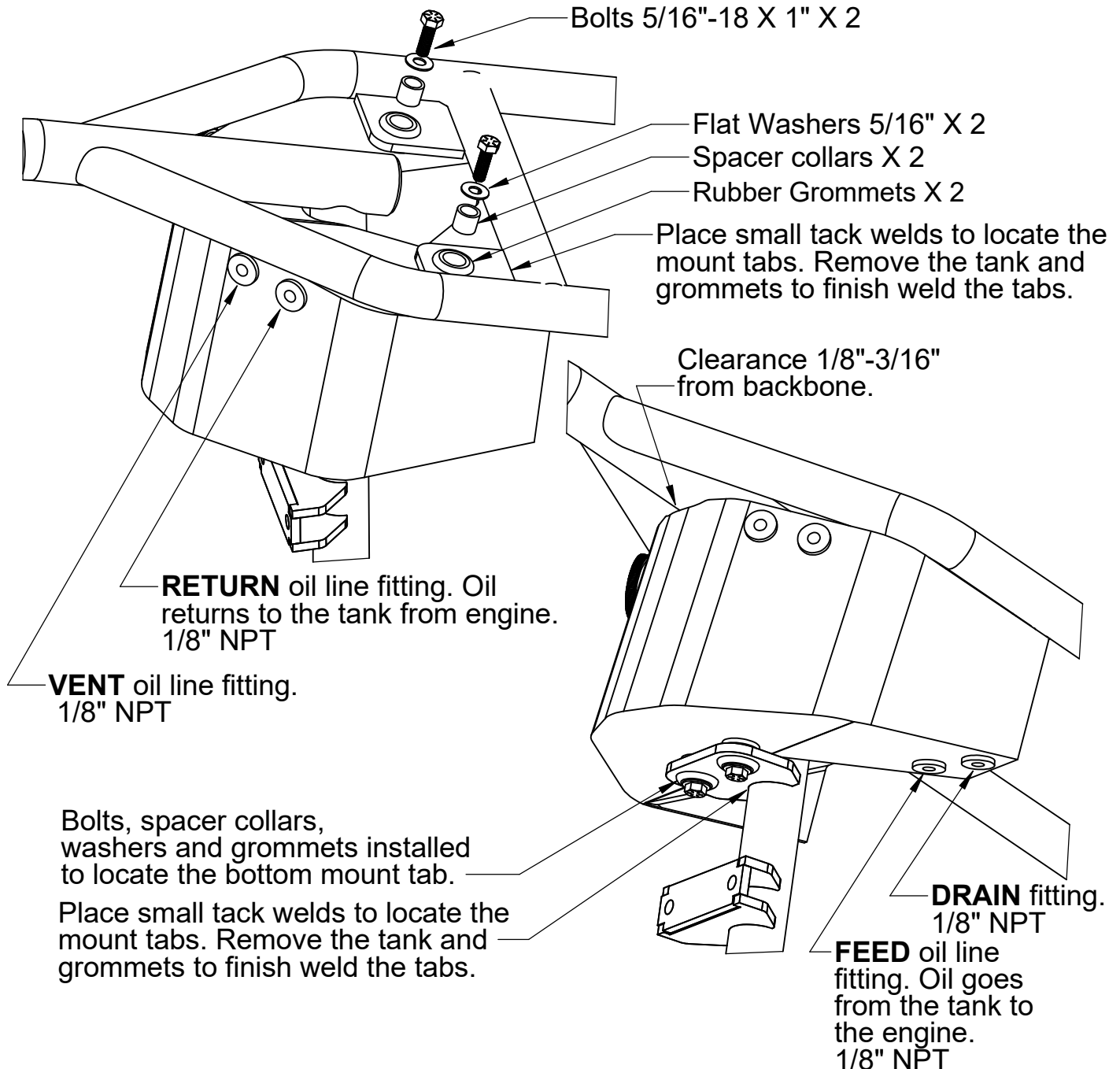
Axle adjusters included with the hardtail kit.



Sportster Horseshoe Oil Tank

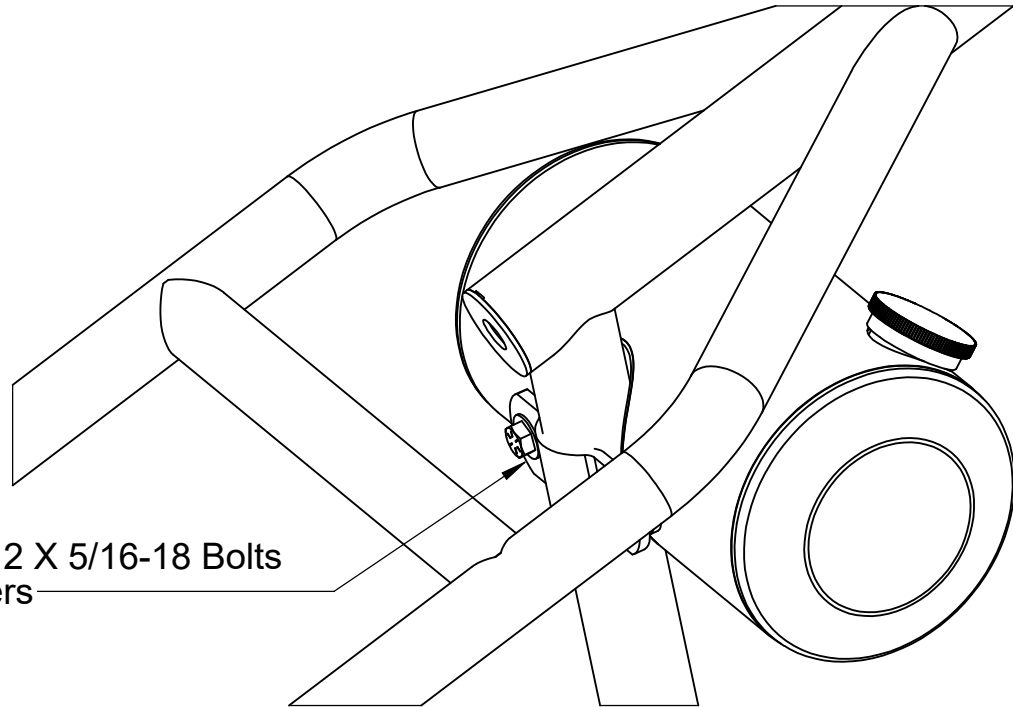
Lowbrow Customs #010404. The tank kit has mounting tabs that requires welding to the frame to complete installation:

- Install the top and bottom mount tabs on the oil tank with the supplied rubber grommets, spacer collars, bolts and washers.
- Position the top of the tank for clearance to the frame backbone, typical clearance is 1/8"-3/16". Remove and trim the tabs as needed to fit between the frame tubes.
- Place small tack welds to secure the mount tabs. Too much heat will melt the rubber grommets, so take your time.
- Remove the tank and grommets to finish weld the mounting tabs.

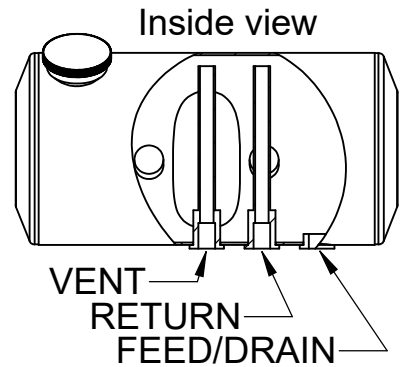
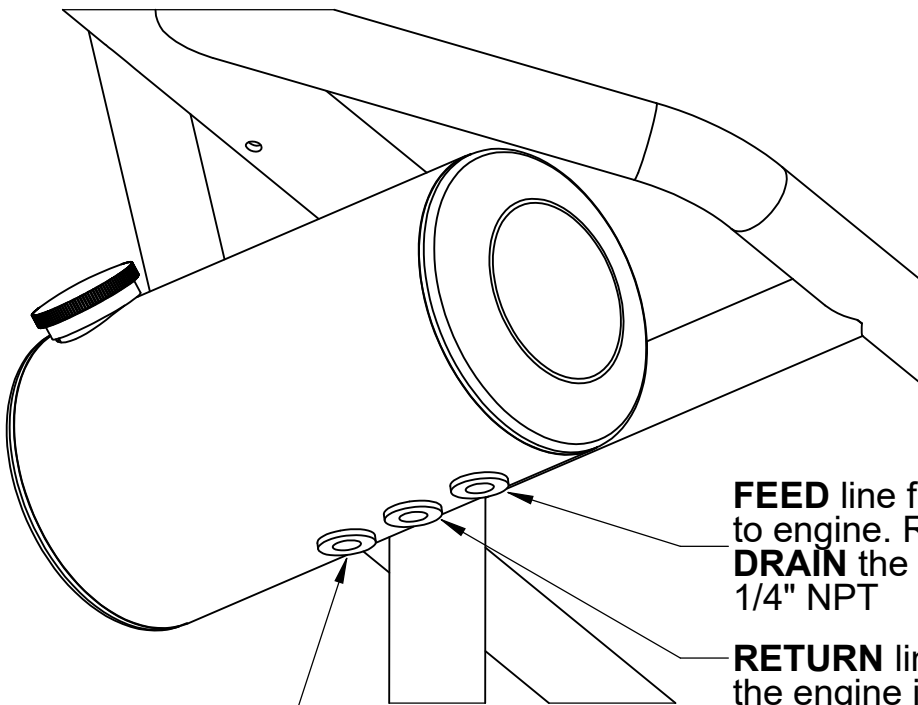


Clamp On Sportster Oil Tank

- Lowbrow Customs #012459 Dished Clamp-On Steel Oil Tank.
- No welding is required to mount tank.
- Clamps onto seat post with a diameter of 1-1/2".



Clamp and 2 X 5/16-18 Bolts and washers



Inside view

VENT
RETURN
FEED/DRAIN

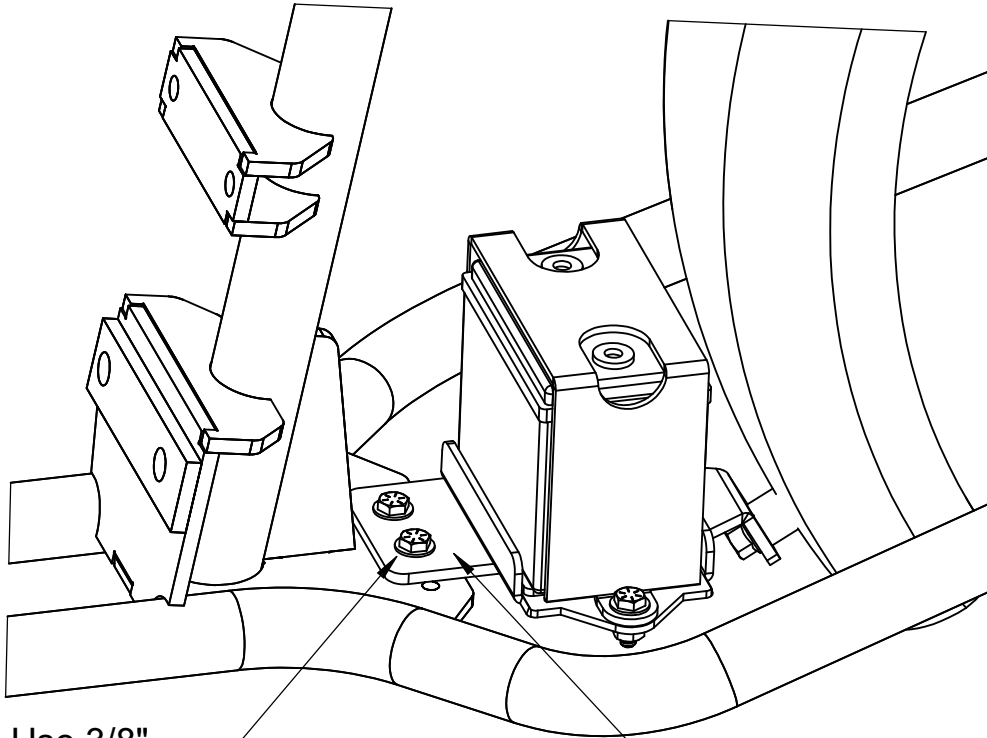
VENT line fitting.
1/4" NPT

FEED line fitting. Oil goes from tank to engine. Remove this line to **DRAIN** the oil tank.
1/4" NPT

RETURN line fitting. Oil goes from the engine into the tank.
1/4" NPT

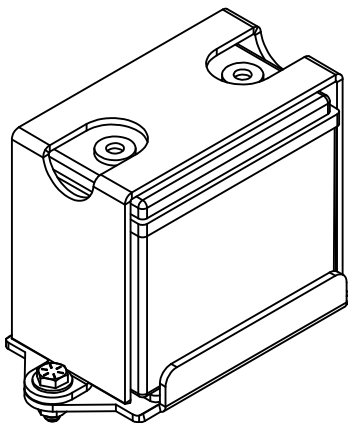
Battery Mounting 1

- The hardtail has holes pre-drilled to install Lowbrow Customs #010646 Bolt-On Battery Box & Fender Mount For 1982-2003 Sportster Weld-On Hardtail to mount the battery in front of the rear fender.
- This mount has holes pre-drilled to fit Gasbox #004489 Antigravity 12 Cell Universal Battery Box (shown) or Gasbox #009408 Universal Battery Box for YTZ-12S electric start battery.
- The adapter plate has a tab for rear fender mounting.



Use 3/8"
Mounting
hardware

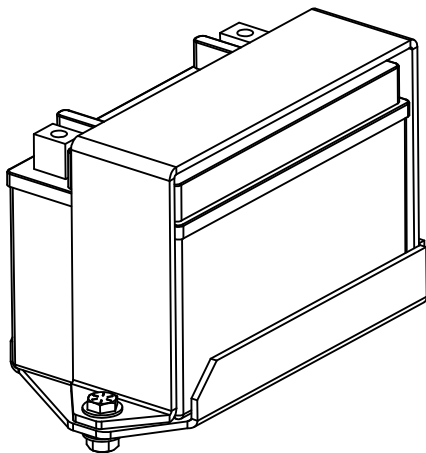
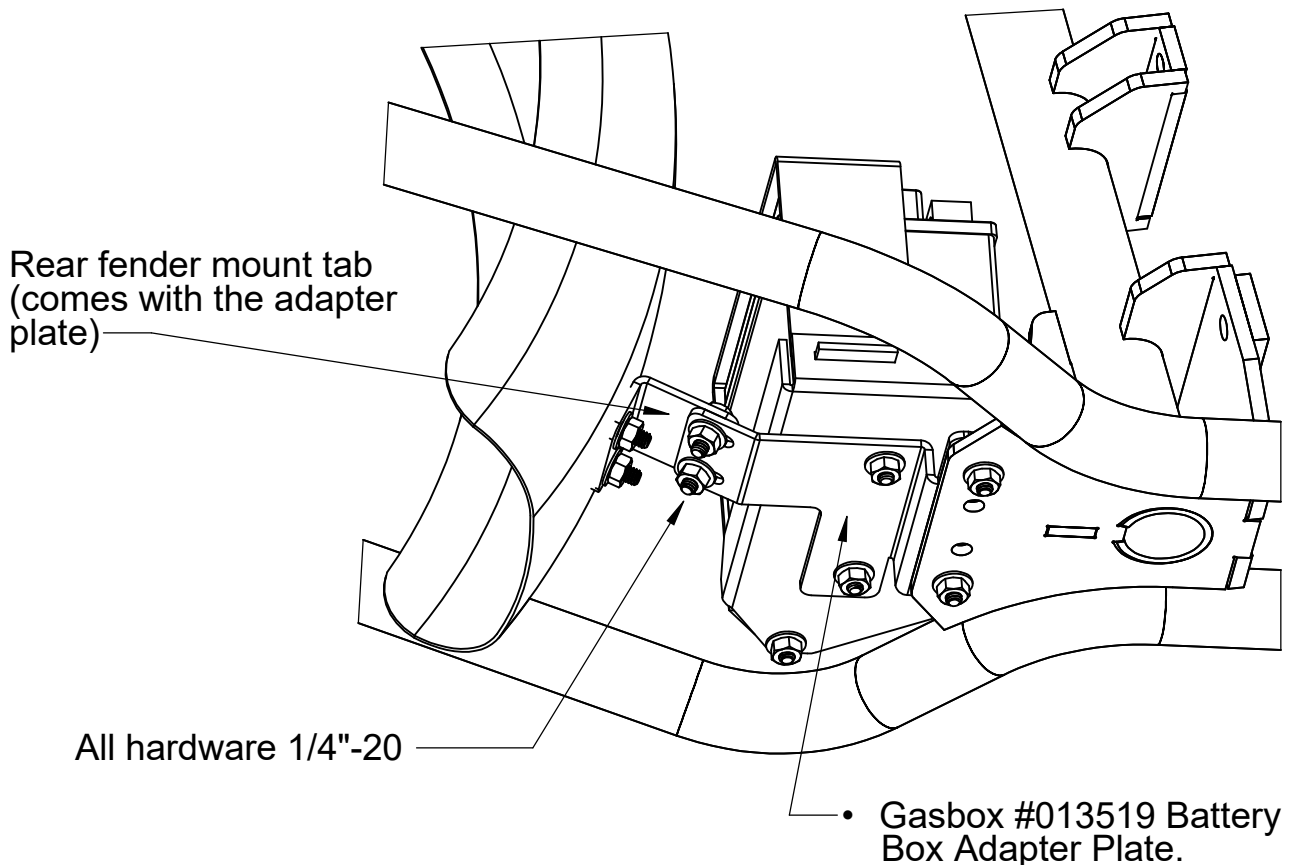
• Lowbrow Customs
#010646 Bolt-On Battery
Box & Fender Mount For
1982-2003 Sportster
Weld-On Hardtail.



- Gasbox #004489 Universal Battery Box for Antigravity 12 Cell Lithium battery.
- Lowbrow Customs #002656 Antigravity 12 Cell Lithium battery.

Battery Mounting 2

- The hardtail has holes pre-drilled to install Gasbox #013519 Battery Box Adapter Plate to mount the battery in front of the rear fender.
- The adapter plate has holes to install Gasbox #009408 Universal Battery Box for YTZ-12S electric start battery (shown) or Gasbox #004489 Universal Battery Box for Antigravity 12 Cell Lithium battery.
- The adapter plate includes an adjustable tab for rear fender mounting.



- Gasbox #009408 Universal Battery Box for YTZ-12S electric start battery.
- Lowbrow Customs #013002 YTZ-12S AGM electric start battery.

Fender Mounting

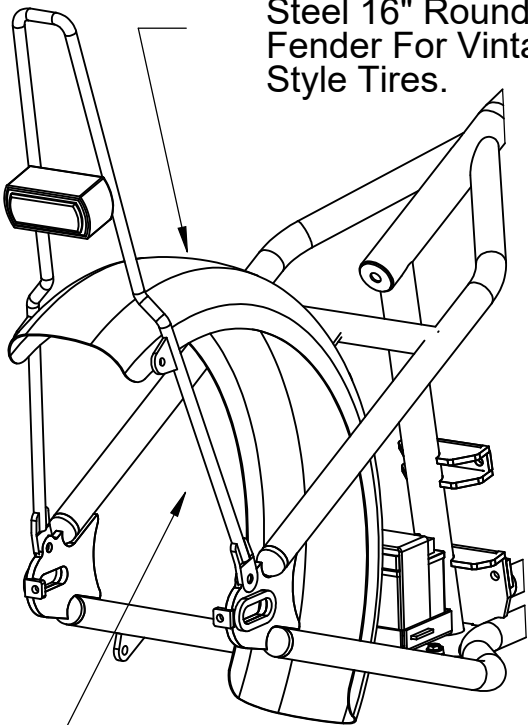
There are many options for rear fender mounting, three versions are shown:
Use lock nuts or thread lock on all fender components.

- Lowbrow Customs #008626 Weld-On Upper Fender Mount Tab For Curved Fenders.

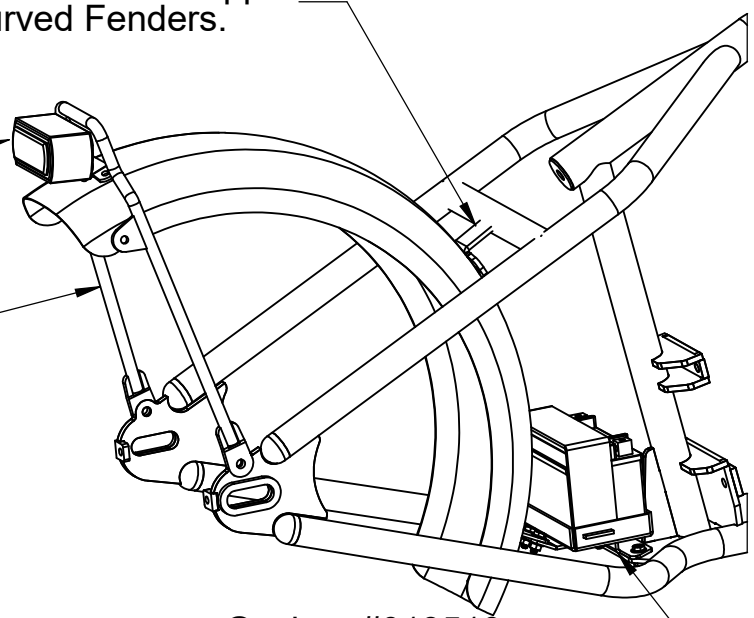
- Lowbrow Customs #002715 Box Chopper Tail Light.
- Gasbox #011897 Box Tail Light Universal Fender Mount Bracket.

- Gasbox #011915 Chrome Shorty Grab Bar- Round Fenders.

- Gasbox #001156 Steel 16" Round Fender For Vintage Style Tires.

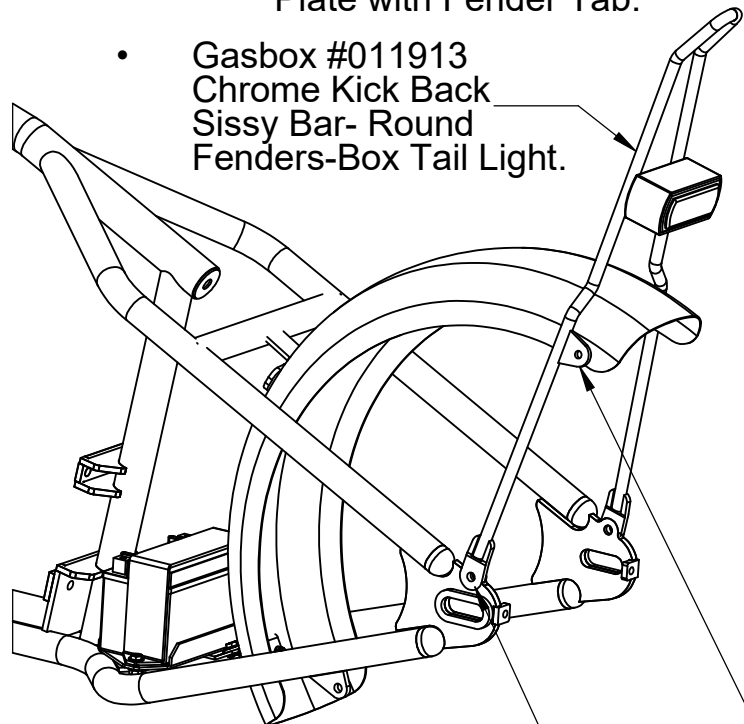


- Gasbox #011901 Chrome Square Top Sissy Bar -Round Fender -Box Tail Light.



- Gasbox #013519 Battery Box Adapter Plate with Fender Tab.

- Gasbox #011913 Chrome Kick Back Sissy Bar- Round Fenders-Box Tail Light.

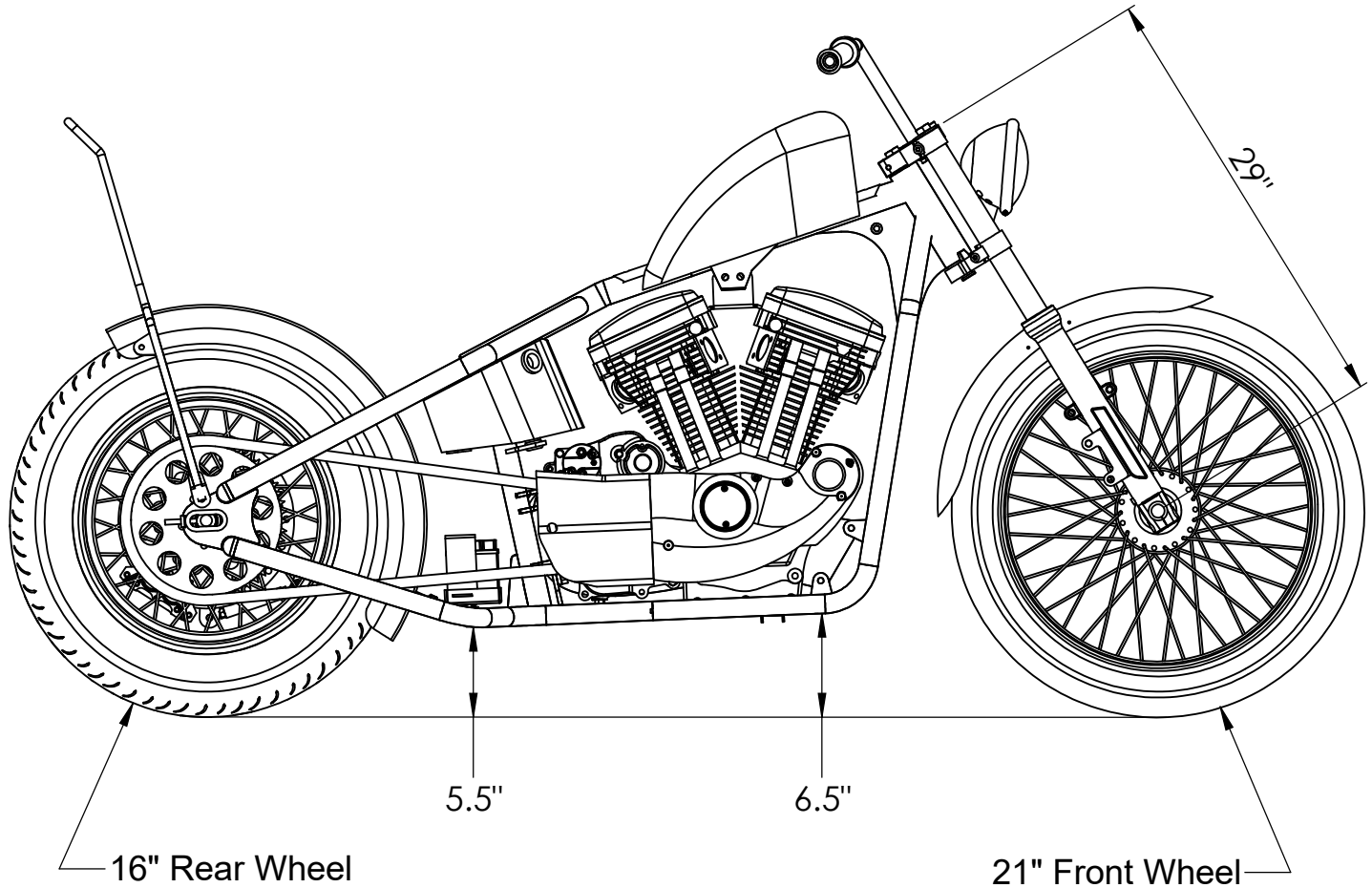


Lower sissy bar bolts 3/8"

- Lowbrow Customs #000089 Threaded Steel Bungs 1/2" Long 5/16"-18 Threads.

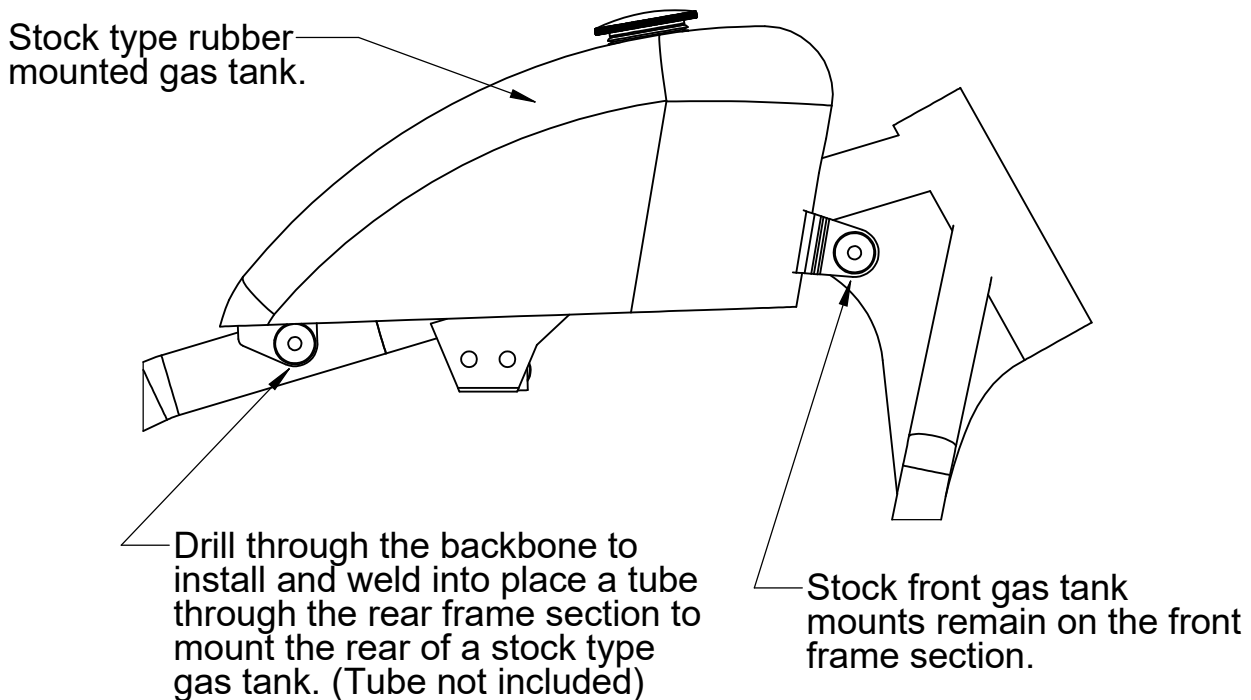
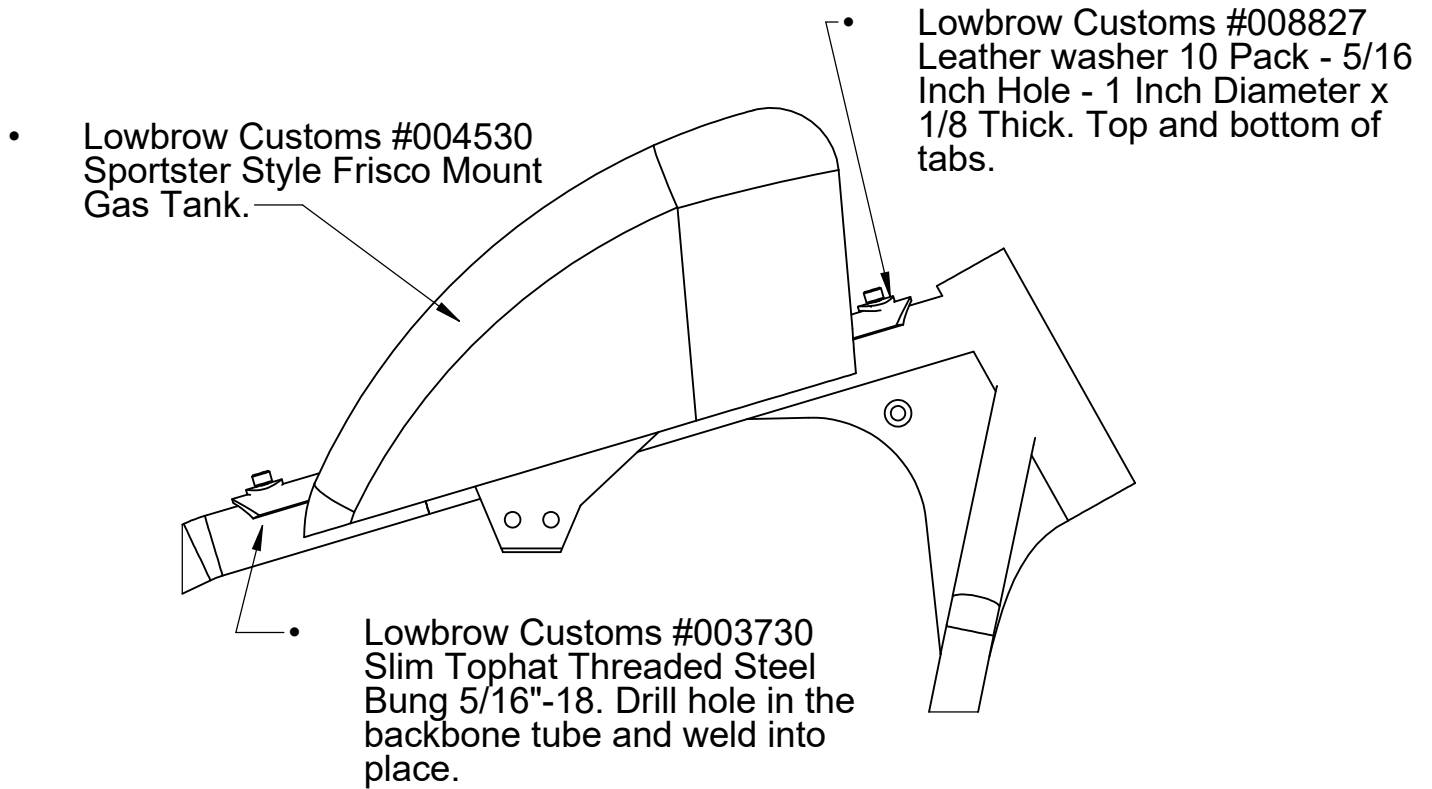
Stance

Fork length sets the stance of the motorcycle. 2", 4" and 6" over Sportster fork tubes are available at Lowbrow Customs. A one inch rise from the rear to front of the lower frame tubes is recommended.



Gas Tank Mounts

Mounts for the gas tank will need to be welded in.
Shown are two styles of tanks:

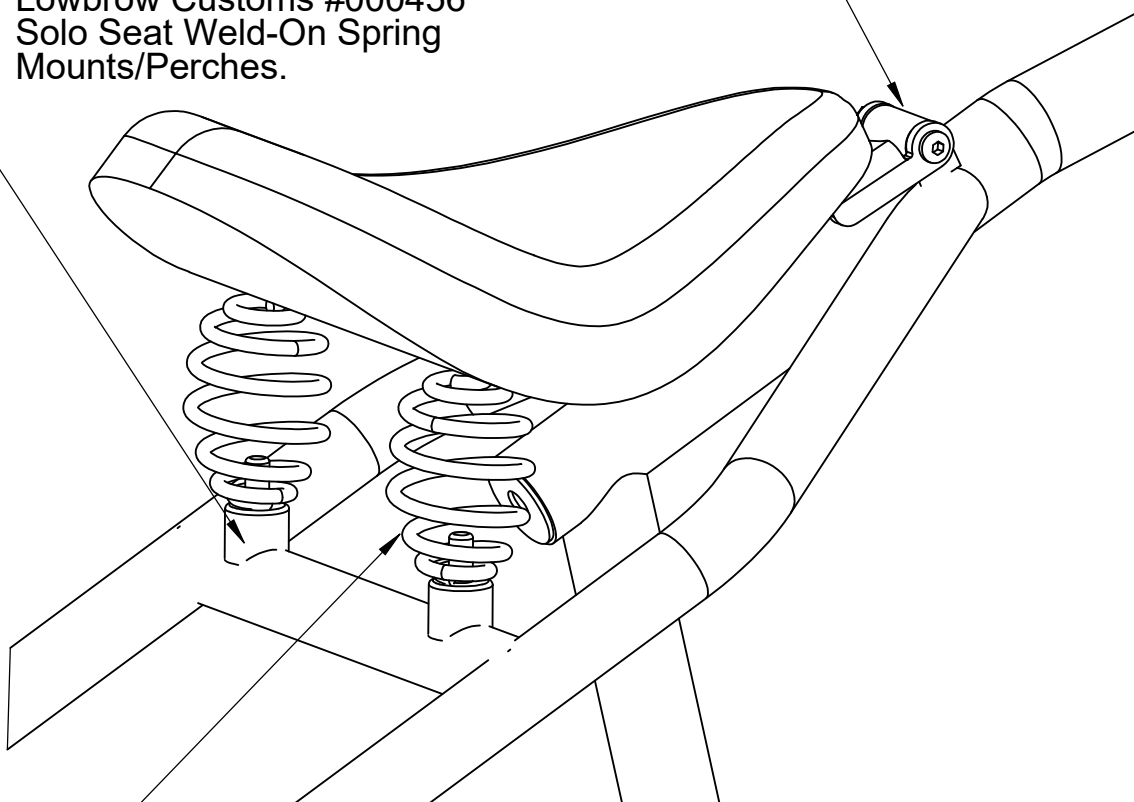


Seat Mounting

There are many options for seats, one option is shown:

- Lowbrow Customs #009495
Black Steel Solo Seat
Hinge/Pivot Bracket Weld-On.

- Lowbrow Customs #000456
Solo Seat Weld-On Spring
Mounts/Perches.



- Lowbrow Customs #001475
Solo Seat Springs- Barrel
Style- 3 Inch chrome