

MOUNTAIN HORSE INSTALL KIT



P/N 9928508

APPLICATION

Installation Instructions are for all Mountain Horse TSS and TFS Installation Kits and Timbersled Mountain Horse chassis installations. The Timbersled Mountain Horse is designed to fit a variety of makes and models of bikes. For specific details on your bikes install kit visit Timbersled.com or scan the QR code if using a mobile device. If viewing on a PC click [HERE](#)



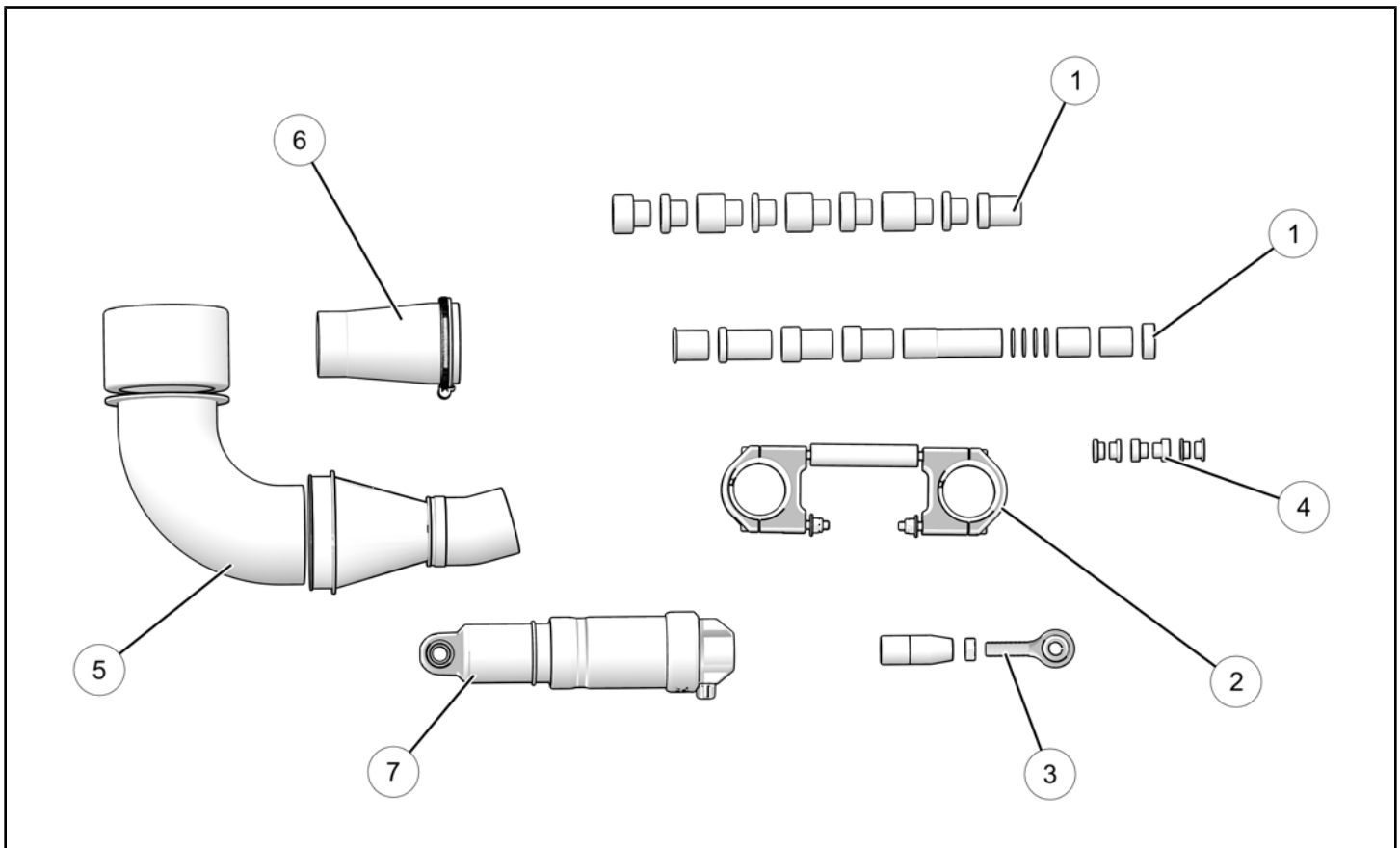
BEFORE YOU BEGIN

Read these instructions and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

KIT CONTENTS

The Mountain Horse chassis can be installed using either the Mountain Horse TSS (Timbersled Suspension Strut) Install Kit or the Mountain Horse TFS (Timbersled Fixed Strut) Install Kit. Refer to the images below for a general overview of what is included in the install kits. Your specific kit may vary slightly depending on make and model.

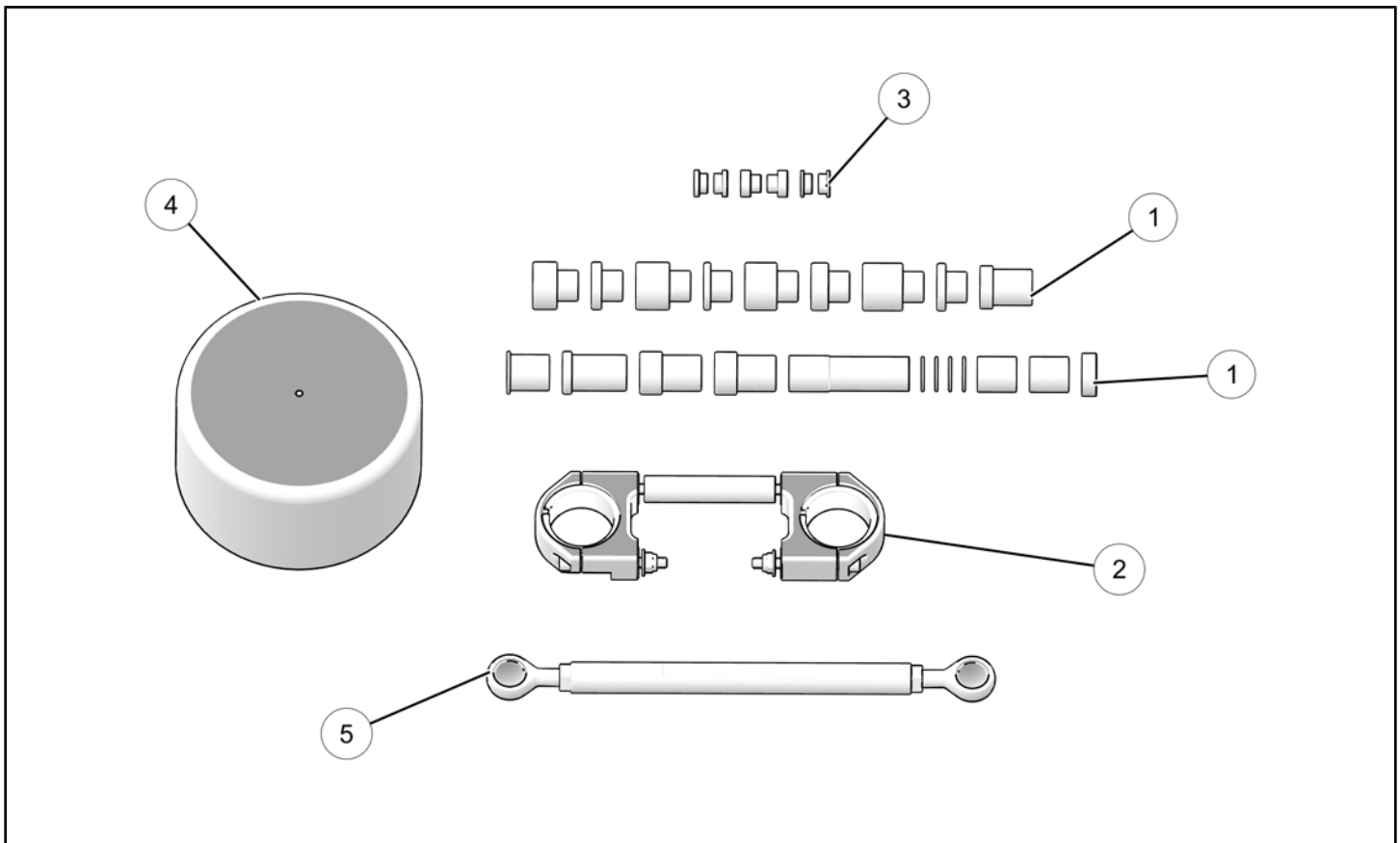
TSS Kit Shown Below



REF	QTY	PART DESCRIPTION	PART NUMBER
1	1	Spacer Pack	-
2	1	Fork Clamp	-
3	1	TSS Strut Rod	-

REF	QTY	PART DESCRIPTION	PART NUMBER
4	1	Strut Rod Reducer Pack	-
5	1	TSS Air Intake	-
6	1	Carb Adaptor	-
7	1	TSS Shock Body	-
	1	Instructions	9928508

TFS Kit Shown Below



REF	QTY	PART DESCRIPTION	PART NUMBER
1	1	Spacer Pack	-
2	1	Fork Clamp	-
3	1	Strut Rod Reducer Pack	-
4	1	Pre Filter	-
5	1	Strut - Solid, Adjustable	-
	1	Instructions	9928508

TOOLS REQUIRED

- Safety Glasses
- Dremel Tool (or equivalent)
- Drill
- Drill Bit: 21/64"
- Hammer, Soft Face
- Hex Key Set, Metric
- Pliers, Slip Joint
- Screwdriver, Standard
- Tin Snips, Straight Cut
- Socket Set, Hex Bit, Metric
- Socket Set, Metric
- Wrench Set, Metric
- Vehicle Lift/Support Equipment
- Model Specific Timbersled Fitment Table
- Torque Wrench

IMPORTANT

Your Mountain Horse Install Kit is exclusively designed for your vehicle. Please read the installation instructions thoroughly before beginning. Installation is easier if the vehicle is clean and free of debris. For your safety, and to ensure a satisfactory installation, perform all installation steps correctly in the sequence shown.

ASSEMBLY TIME

Approximately 3–5 hours

NOTE

Additional time may vary depending your specific make and model of bike.

INSTALLATION INSTRUCTIONS

The instructions listed are universal for all bikes using the Timbersled kit. The process in the instructions may vary slightly between makes and models. Refer to your host bike's owner's manual for specific references and assembly/disassembly procedures.

You will also need a copy of the Timbersled Fitment Table for your specific bike model. The Timbersled Fitment Table can be found and printed at Timbersled.com or by contacting your local Timbersled dealer.

MOTORCYCLE REAR DISASSEMBLY



1. Place bike on a stand or suitable support where both wheels are off the ground. Secure properly to prevent bike from tipping when wheels are removed.

NOTE

An adjustable stand is helpful for reassembly.

2. Remove the seat, side panels, frame guards, and exhaust silencer. Retain these parts for later re-installation.
3. Remove the air filter, roost guard, chain, upper and lower chain rollers and chain guides from bike frame. These parts will not be needed while the Timbersled kit is installed on the bike.

NOTE

Do not start or operate motorcycle while air filter is removed. Timbersled recommends plugging your air intake with a clean lint-free towel while air filter is removed to prevent any debris from entering the motorcycle's air intake system.

4. Remove the foot-brake master cylinder and lever from the bike frame.
5. Remove the upper shock bolt from frame and retain for later installation.
6. Remove the suspension linkage bolt from the frame if your bike has one. This will not be used with the Timbersled kit.
7. Remove the swing arm pivot bolt. You will re-use this with your Timbersled kit installation later.
8. Remove the shock, tire, brake, and swing arm assembly from the bike as a complete assembly. These parts will not be needed while the Timbersled kit is installed on the bike.

NOTE

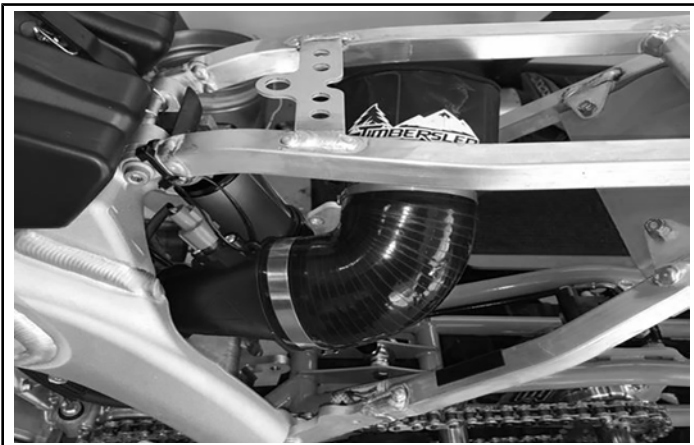
It is recommended to cable tie all bushings, spacers, etc. to their corresponding parts at all pivoting points to prevent losing any parts during storage.

9. Remove the front brake line from handlebar master cylinder. Retain master cylinder, banjo bolt, and crush washers for later installation. **DO NOT** remove the front tire yet. You will do this later during the install process.

NOTE

Timbersled recommends covering the removed brake line end with a clean lint-free towel and plastic bag to keep debris from entering your brake system and keep any remaining brake fluid from spilling. Use zip tie or equivalent to secure bag and towel to brake line during storage.

AIR BOX REMOVAL/MODIFICATION - TSS ONLY



To install your snow bike system with the TSS Installation Kit the bike's stock air-box will need to be removed on some bikes and modified on others to make clearance for the added suspension movement with the TSS. The new provided Timbersled TSS Air Intake System [Ⓐ] will take place of the stock air box.

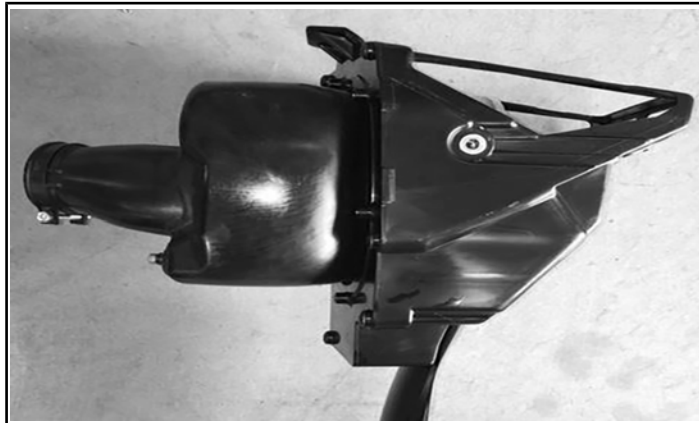
NOTE

Perform the steps in this section **ONLY** if you plan to use the TSS (Timbersled Suspension Strut) Installation Kit. For TFS (Timbersled Fixed Strut) Installation Kit skip this section and move on to the *Frame Bushing and Spacer/Reducer Installation* section

BIKES WITHOUT A BATTERY IN THE AIR BOX

1. Unplug the air temperature intake sensor.

2. Remove the bike's rear sub-frame and unbolt the air-box with the air intake plenum still attached to the air box.



NOTE

Some bikes will have a plastic trim part riveted to the side of the air box. It is optional, but this part can be removed and re-riveted to the side panel to make your bike look complete once everything is done.

3. Once the air box is out you can reinstall the bike's rear sub frame. Be sure to follow bike manufacturers procedures and specifications for the proper installment of the sub-frame.
4. On some bikes you will need to reattach the rear fender to the sub frame by using the two stock bolts that were threaded into the air box.

NOTE

Two nuts will be needed to reattach the rear fender. These nuts are not provided with your installation kit.

BIKES WITH BATTERY INSIDE THE AIR BOX

1. Unplug the air temperature intake sensor.
2. Remove the crank case breather hose from the intake plenum and route it so that it is pointing downward so that snow and water do not run into it. Secure the hose in place with cable ties.

- Loosen the intake plenum throttle body hose clamp and remove the intake plenum from the bike. You can do this by simply pulling it out with your hands.



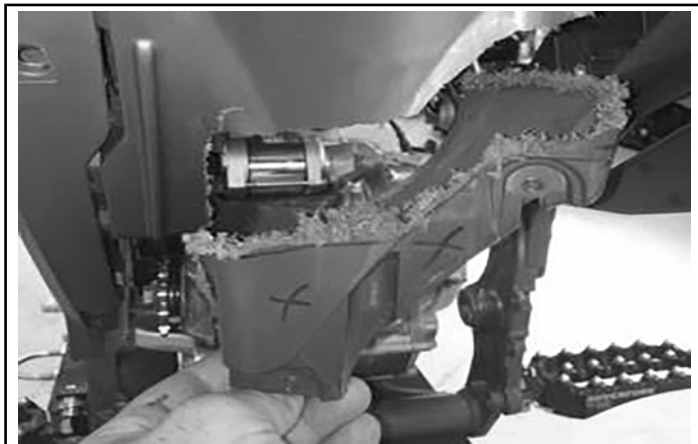
- Remove the intake sensor from intake plenum. Retain the intake sensor as you will reinstall it into the new intake system later on in the assembly process.
- Draw a cut line on your air box.



IMPORTANT

Plug the throttle body and exhaust pipe so that shavings do not get in them before performing the next step.

- Using a Dremel with the appropriate cutting tool installed, remove the plastic section you previously marked by carefully cutting along the marked line.

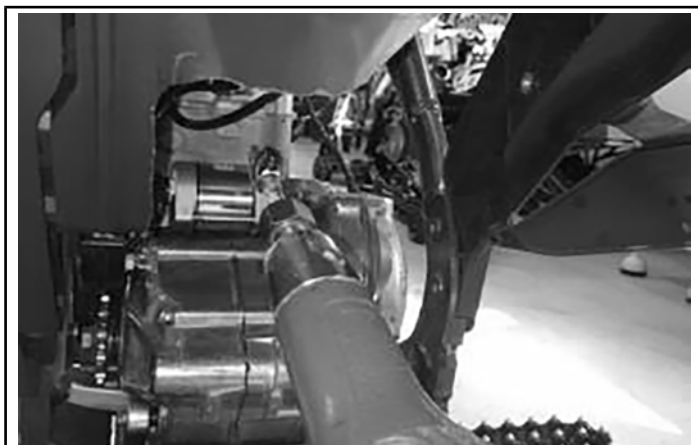


- Test fit the new intake system

NOTE

See *Air Intake System Install* section on page 10 for proper orientation. You may need to cut a little more to achieve clearance around the air filter. Once test fitted, remove the intake. The final install will be later in the assembly process.

- Clean the cut edge and deburr as needed.



- Clean all shavings from the bike.



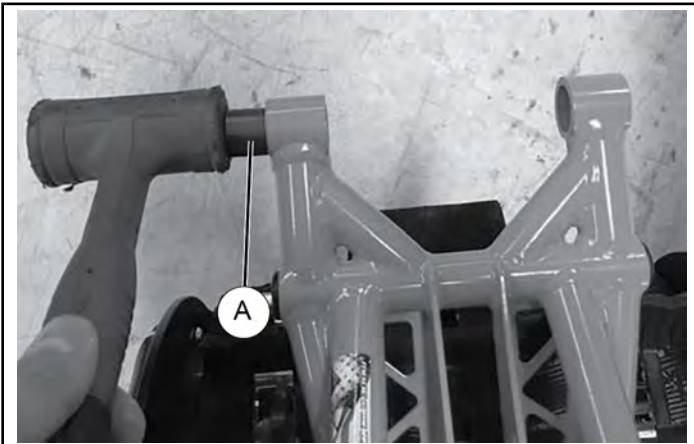
FRAME BUSHING AND SUB-FRAME REDUCER INSTALLATION

There are two different Install Kits available. The TSS (Timbersled Suspension Strut) Install Kit and the TFS (Timbersled Fixed Strut) Install Kit. Installation procedures for the frame bushings and reducers are universal for either kit.

NOTE

The TFS Kit includes pivot bushings and reducers to allow you to easily upgrade to the TSS Kit at a later date.

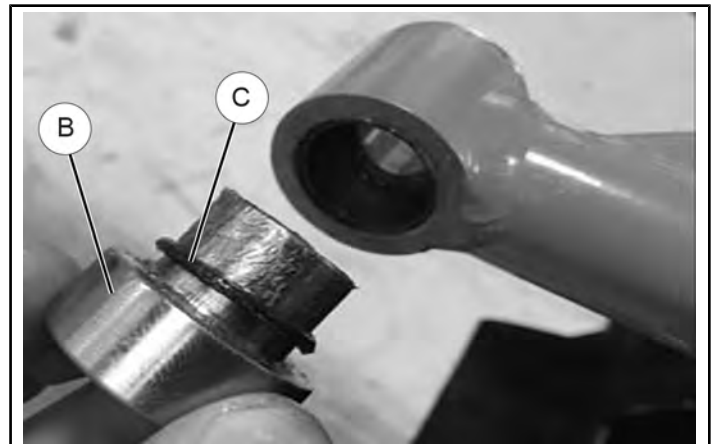
1. Install the proper pivot bushings (A) and fit kit reducers as required for your make and model of bike by installing the bushings into each of the front eyelet holes on the frame using a plastic or rubber hammer. The bushing will need to be centered in the hole so that the reducer O-rings can seal the eyelet.



2. Test fit a reducer into the bushings to check fit, they should slide in smoothly. If they are tight, the bushings will need to be sized. To do this, use a 7/8" drill bit. Slide the drill bit all the way through the bushing before spinning it. Place your drill in high range and spin the drill bit. It should easily cut the plastic smoothly without chattering. Hone the bushing with the drill until the spacer/ reducer has a precision fit. Repeat process for both pivot bushings. Ream as needed.



3. Install the sub-frame reducers (B) into their proper location. To do this, first place an O-ring (C) on each of the sub-frame reducers used. Put a coating of grease on the inside of the bushing and the outside of the spacer/reducer and install them into the frame. They should slip in without interference

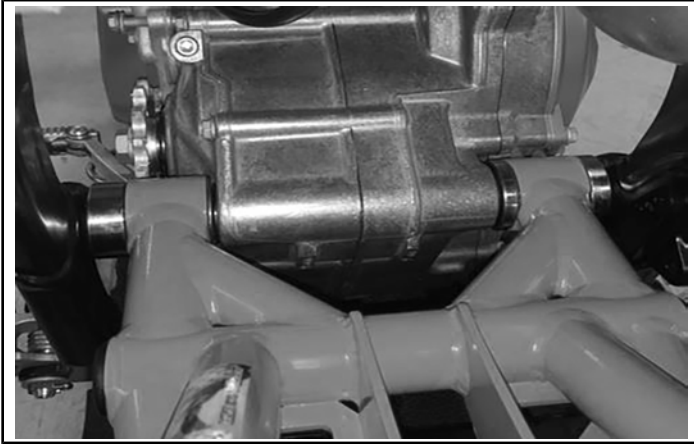


NOTE

To locate the sub-frame reducer positioning refer to the **Timbersled Fitment Sheets**. Fitment Sheets can be found and printed at Timbersled.com or by contacting your local Timbersled Dealer. Each of the frame spacers/ reducers will have a part number stamped on the end that will be its reference number on the Fitment Sheet to show their location

REAR TRACK ASSEMBLY INSTALLATION

1. Insert the rear track assembly into the bike between the engine and the frame. It may be a snug fit due to the O-rings holding the spacers out. It should squeeze in as you firmly push the assembly into place. Visually make sure everything looks correct and is aligned properly.



NOTE

It may be helpful to squeeze the reducers with an adjustable pliers or clamp in the frame eyelets prior to installation to ensure proper seating of the O-rings.

2. Install the previously removed swing arm pivot bolt and nut.

TORQUE

Torque swing arm pivot bolt to OEM manufacturers specifications.

3. Next you will need to install either the TSS Shock Strut or the Fixed Strut Strut Rod depending on which installation kit you have. Install the aluminum reducers into either the TSS shock or the TFS strut rod. The reducers are color coded with a red, yellow or gray marking to identify their location. For quick reference the red reducer will be located in the lower adjustable rod-end for the TSS kit or in the lower rod end of the strut rod that bolts onto the rear track assembly for the TFS kit. The yellow or gray reducers will be located into the upper shock body end for the TSS kit or into the upper end of the strut rod for the TFS kit

NOTE

The side in which the strut rod reducers will be located will depend on their proper alignment into the bikes shock bracket. For further reference, **refer to the Fitment Sheet** for locations.

4. Install the TSS or TFS onto the bike and rear track assembly.
 - a. For TSS installation, ensure that the TSS shock is correctly oriented with the shock body toward the top and air valve cap toward the bottom. First place the adjustable end of the TSS into the Timbersled sub-frame shock bracket using the supplied bolt, lock washer, and nut. Make sure the nut is orientated and installed with the non-threaded inner diameter of the nut positioned in towards the lock washer and bracket, and the threaded inner diameter of the nut is out towards the end of the bolt. See image on page 8. Next, place the shock body end into the bike frame's upper shock mounting bracket and install the original bolt and nut. Torque upper and lower strut rod joints to the specifications listed below.

TORQUE

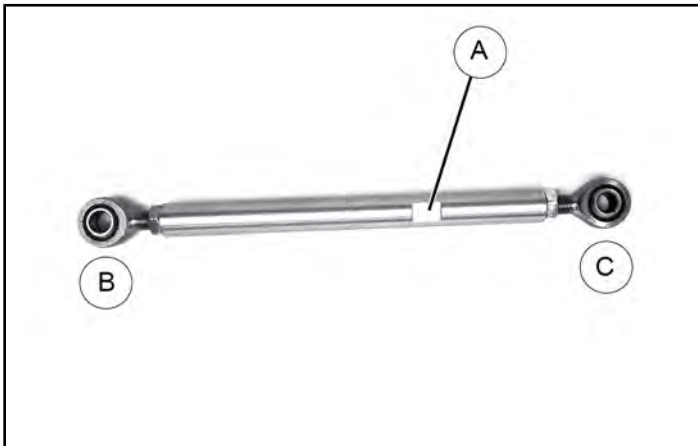
Lower: 68Nm (50 Ft. Lbs)

TORQUE

Upper: See bike manufacturers OEM torque specifications



- b. For TFS installation, first ensure that the TFS strut rod is correctly orientated with the wrench groove (A) on the shaft indicating the lower half of the strut rod. Install the strut rod onto the bike and rear track assembly. First place the lower end of the strut rod (C) with the smaller inner diameter rod end, or rear track assembly end, of the strut rod into the bracket using the provided bolt, lock washer and nut. Next place the upper end of the strut rod (B) with the larger inner diameter rod end into the bike frames shock mounting bracket and install the original bolt and nut. Tighten both upper and lower nuts and bolts to specification listed below.

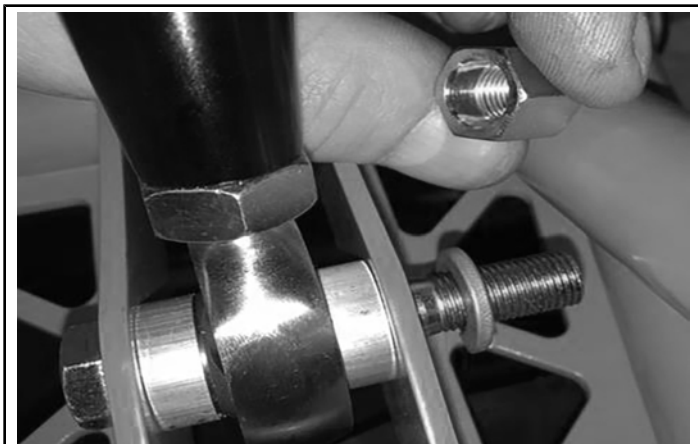


TORQUE

Lower: 68Nm (50 Ft. Lbs)

TORQUE

Upper: See bike manufacturers OEM torque specifications



NOTE

The nut has a counter bored end so it will fit over the shoulder of the bolt that comes through the bracket. Ensure that this is assembled properly.

BRAKE SYSTEM INSTALLATION

There are two possible ways to install the brake system. You may install it in conjunction with the stock handlebar front brake master cylinder or you can install it for use with the stock foot brake master cylinder. We recommend using the hand brake since the foot brake may get buried in the snow and be difficult to operate.

HANDBRAKE INSTALLATION

1. Using a medical style syringe with hose, suck all of the fluid out of the master cylinder.



2. Route the supplied 5' brake line up to the handlebar and connect it to the factory master cylinder using the stock banjo bolt and sealing washers. Secure the line with cable ties so it does not touch the exhaust or anything that may cause damage to it.



NOTE

The brake line has two different bends on the banjo fittings. If the brake line does not fit your master cylinder with ease you can swap ends for a better bend angle to fit your bike.

⚠ WARNING

Ensure all sections of brake line are a minimum of 2" away from all hot engine and exhaust surfaces and free from all possible pinch points. Failure to comply will adversely affect the brake system and may cause damage to equipment/property or may lead to severe injury or death in an accident.

FOOTBRAKE INSTALLATION (IF DESIRED)

1. Remove the stock foot brake line from the swing arm and rear caliper. Attach it to the snow bike caliper. Route the line in the most uniform fashion.

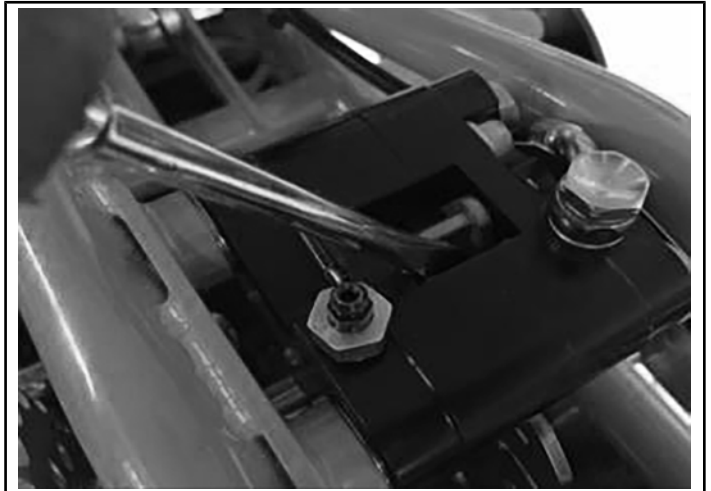
BLEEDING THE BRAKE SYSTEM

1. If not previously done, use a medical style syringe with hose to remove all of the fluid out of the master cylinder.
2. Remove the bleed screw from the caliper and gently blow compressed air into the caliper bleed hole until you see both pistons push the brake pads out touching the brake disk.
3. Reinstall the bleed screw so that you can open and close it with your fingers.
4. Fill the syringe using Dot-4 brake fluid and place the hose on the caliper bleed screw while holding it onto the bleed screw with your fingers, open the bleed screw and push fluid into the system with the syringe until you see the master cylinder is full.



5. Close the bleed screw and tighten.
6. Pull and release the brake lever many times. While doing this, you will see small bubbles rising out of the master cylinder and start to feel some brake pressure. Lean the bike to the left and right side while pulling and releasing the brake lever. You will continue to see bubbles coming out the top of the master cylinder. Do this until you stop seeing bubbles. This process may take a while.
7. Bleed the brake the traditional way down at the brake caliper. Pump the brake a few times. At this point your brake pressure will feel fairly good.

8. Push both brake pads back using a flat blade screw driver; be careful to not overflow the master cylinder. This may push some more air bubbles out the top of the master cylinder. Re-pump up the brake, your brake lever should feel more solid.



9. Repeat steps 7 and 8 as many times as needed to get a firm lever feel. You will know when your brake is bled free of any air because the brake lever will feel solid when you pull it.
10. Once the brake is fully bled fill your master cylinder full of fluid so that when you put the cap on it overflows.

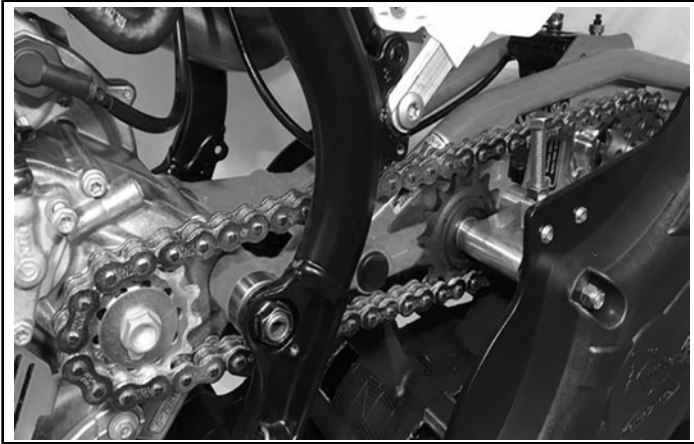
ENGINE CHAIN INSTALLATION

On some bike models, in order to fit the wider supplied O-ring engine chain, the engine sprocket may need to be removed and turned around or require a supplied spacer be placed behind the engine sprocket to provide more clearance between the chain and engine case.

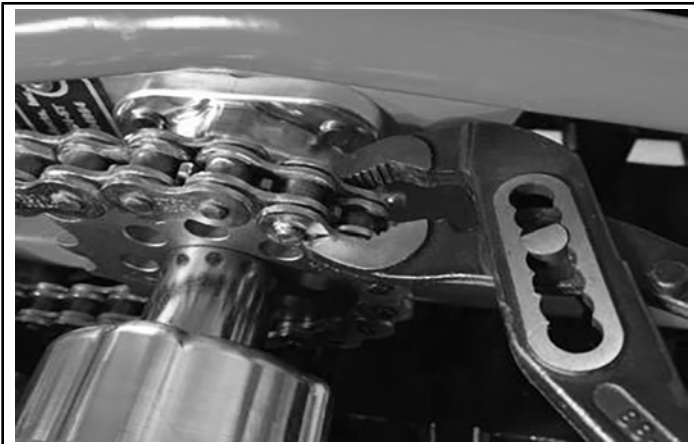
IMPORTANT

Refer to the Fitment Info Sheet for proper engine sprocket size for your make/model of bike to achieve proper chain adjustment. Failure to comply may cause premature wear and or damage to the bikes driveline components.

1. Install the engine chain with master link by wrapping the two ends of the chain around the jack shaft sprocket. Thoroughly grease the master link pins and O-rings with the supplied grease before installing. If the chain is too tight to get the master link in, compress the rear suspension slightly by having someone sit on the seat or by letting the air out of the TSS shock if installed.



2. Install the O-rings and outer plate by placing it on the pins and pressing it together with pliers.



3. Install the retaining clip so that it is facing backwards of rotation.



4. Adjust the chain so that it is tight to the touch.

NOTE

For TSS models this is required due to the chain becoming looser when the TSS suspension is compressed. For TFS models the chain will loosen up as it breaks in.

AIR INTAKE SYSTEM INSTALLATION

This section is for TSS Install kits with the Timbersled Deep Snow Intake Systems.



IMPORTANT

The supplied Timbersled Deep Snow Intake system is designed for snow use **ONLY**. Failure to comply may result in engine damage or failure.

This system is universal for all EFI dirt bikes that have the throttle body on the back side of the engine.

NOTE

On carbureted bikes a correct size adapter is available through Timbersled.

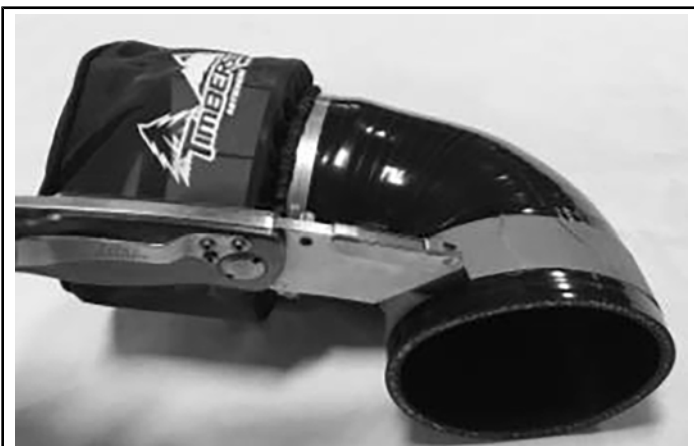
1. For EFI models install the air temp intake sensor into the oval center adapter by using the supplied screws. Ensure that the factory O-ring is still in place for a proper seal. On carbureted bikes, plug the sensor hole with the supplied press in plug. Install the plug by taping it in with a punch and hammer. Insert the plug so it is below the surface 1/8".



2. Install intake system so that air filter is located as high as possible and pointing toward the Right-hand side of the bike. To accomplish this each of the rubber hoses has an angle built into them. With this you are able to rotate the components on the oval shaped center adapter to position the air filter to its best fitting location. If needed you can trim the hoses shorter to make a better fit.

NOTE

For cutting hose, wrap tape around the hose where you want the cut line to be. Then use a sharp box cutter to cleanly cut the hose.

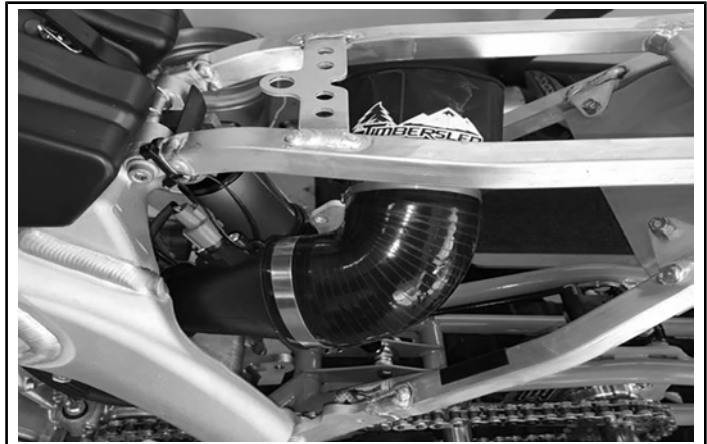


3. Once everything is set, ensure that the center oval shaped adapter is vertical for max clearance between the TSS shock and bike frame and that the filter is not touching anything that could rub a hole in it. Also ensure that it is not too close to the exhaust where it could burn a hole in the filter. Secure all 3 hose clamps at this time.

TIP

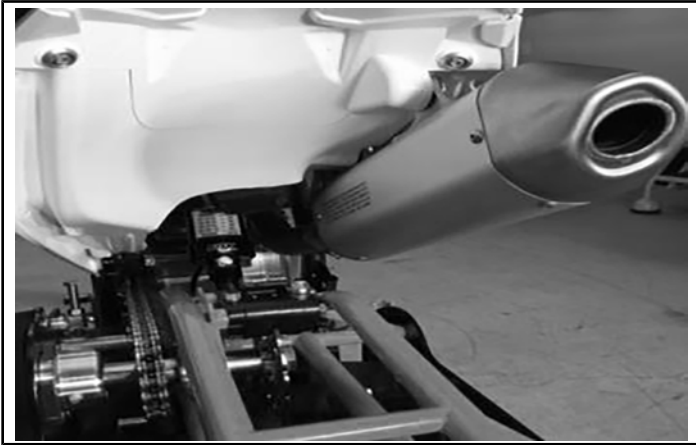
A zip tie can be used to help support the intake system if needed. Use the supplied holes that are next to the intake sensor

4. Plug in the air temp intake sensor and route the wiring as needed.

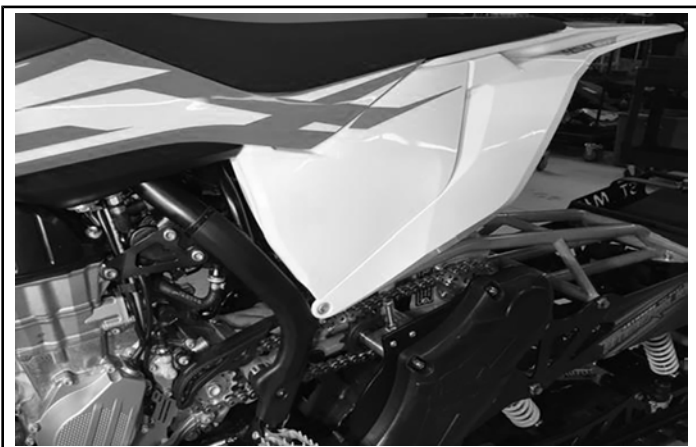


REAR ASSEMBLY

1. For bikes using the TFS installation kit, install the supplied pre-filter onto the stock foam air filter.
2. Reinstall the exhaust system and frame guards if your bike has them.



3. Reinstall the side panels, seat, and required engine chain guards.



MOTORCYCLE FRONT END DISASSEMBLY

1. Remove the front brake system from forks. The front brake system will not be needed while the TimberSled Kit is installed.
2. Remove the axle nut. Loosen the front axle pinch-clamp bolts and remove the front axle bolt.
3. Remove the wheel from the bike. The wheel will not be needed while the TimberSled Kit is installed.
4. Remove the fork guards. Retain for later use.

SPINDLE INSTALLATION

NOTE

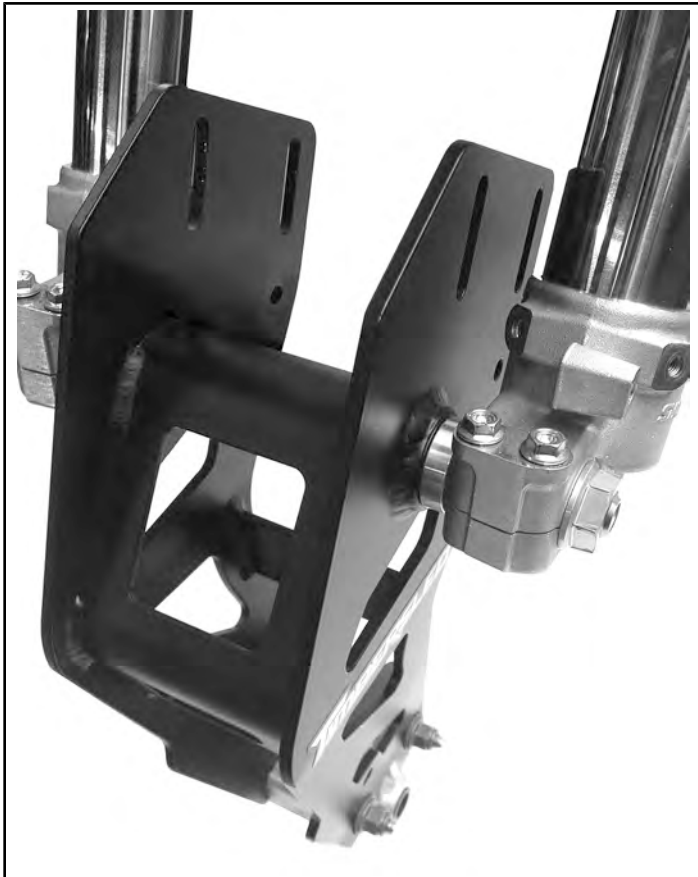
The Timbersled spindles are universal for all models of bikes. **Pre MY18** spindles are noticeably different than **MY18** spindles and require additional installation steps that are called out in step 6 of the spindle installation procedures. All other steps are similar. The images contained in the installation procedures are MY18 unless otherwise noted.

1. Install the correct spacer/reducers for your make and model of bike into the left and right side of the spindle cross tube.

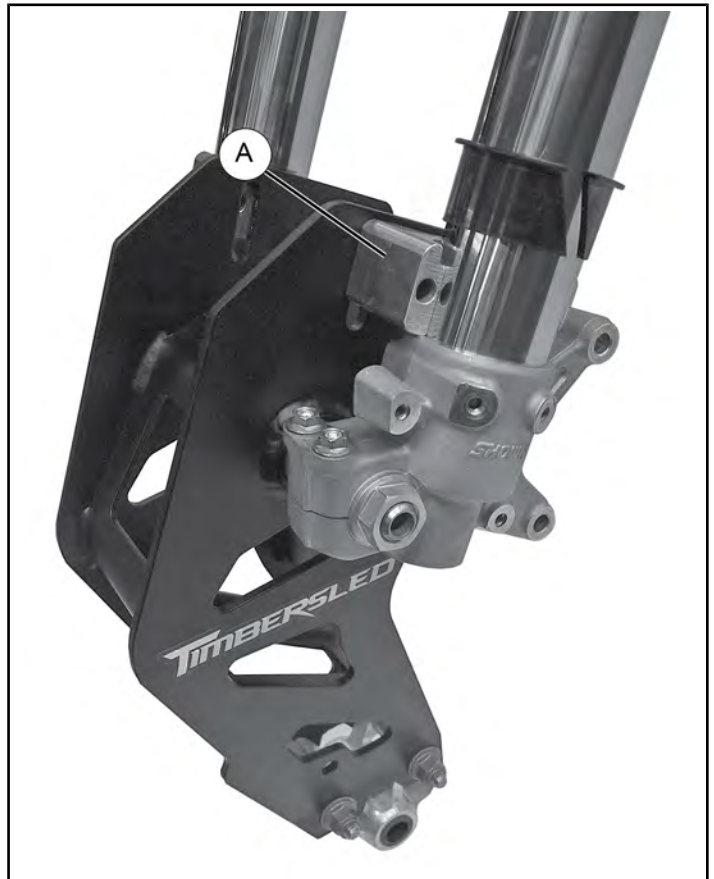
NOTE

See the **Timbersled Fitment Table** for your exact bike model to see the correct spacer/reducer placement. Some models have a 3-piece setup with a spacer/ reducer on the left hand side with a tube style spacer that will fit into the center of the spindle and a washer style spacer on the right hand side.

2. Place spindle assembly into position with the concave side of the spindle facing towards the rear of the motorcycle. Slide in the stock front axle bolt (unless the fit kit is supplied with a Timbersled machined axle) and install the nut. **DO NOT TIGHTEN** any of the front end fasteners at this time.



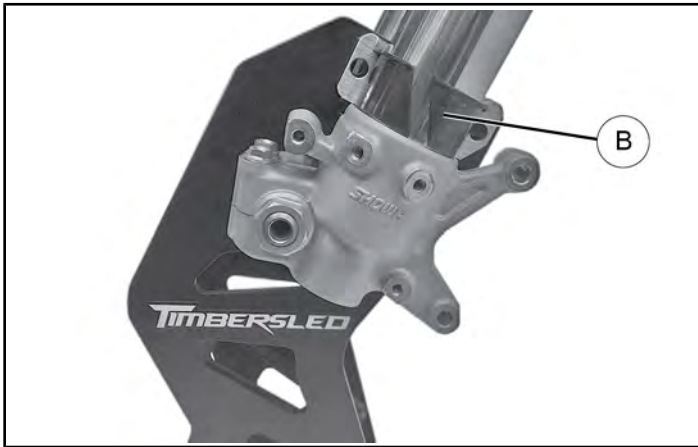
3. Locate the inner fork clamps (A) and place them onto the inside face of the fork tubes in between the fork tube and the spindle with the fork seal relief groove facing up.
4. Slide both inner fork clamps (A) (less fork clamp cap) down between the spindle and fork tubes. Position them as low as possible on the fork tube.



NOTE

Slide the brake-side clamp down on the fork tube as low as it will go first, then set the opposing side. Ensure that both left and right fork clamps are sitting at the same height.

5. Install the plastic split bushing **B** onto the fork tubes above the clamps with the bushing flange on the top. Slide the bushing down into the fork clamps so that bushing flange is all the way down inside the relief groove.



6.
 - a. **MY 18 - Current**

Rotate the spindle forward and back until the fork clamp bolt holes line up with the slotted spindle holes. This will properly set the correct amount of trailing the ski will have in relation to the axle bolt.

NOTE

To help hold the spindle in place while you work on it you can snug the axle nut and set the spindle on the ground. You can then tap the spindle back and forth to get the correct positioning.

- b. **Pre MY 18:** Images contained in this step are of MY17 and older Timbersled spindles.

For pre MY18 spindles 4 holes will need to be drilled in the spindle to install the fork clamp bolts. To do so rotate the spindle until the back of the fork clamp is 1/8" away from the back edge of the spindle. This will properly set the correct amount of trailing the ski will have in relation to the axle bolt.

NOTE

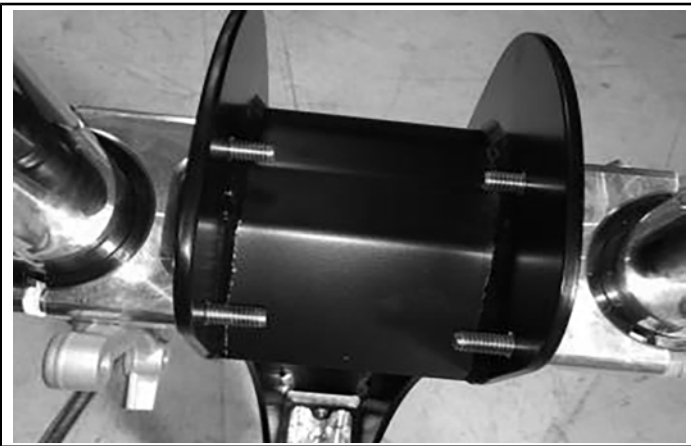
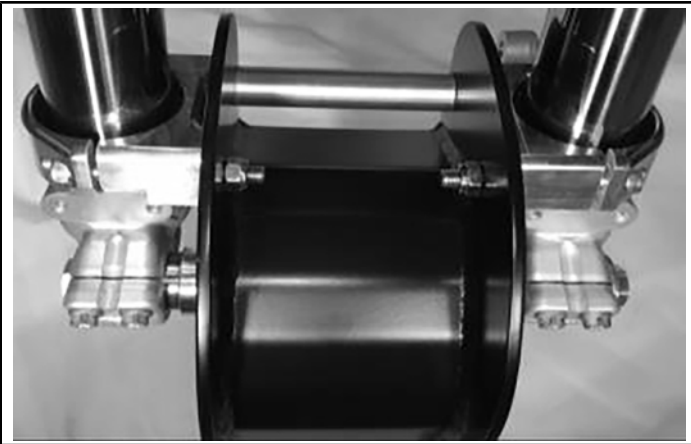
To help hold the spindle in place while you work on it you can snug the axle nut and set the spindle on the ground. You can then tap the spindle back and forth to get the correct positioning.



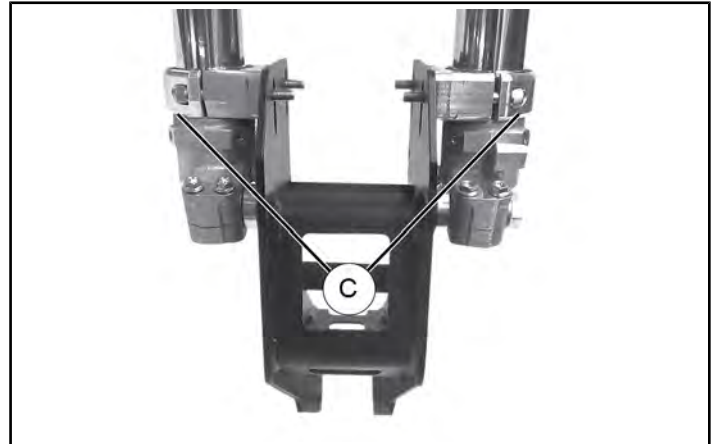
Before drilling insure that the left and right fork clamps are sitting as low as possible and are at the same height on both sides. Slide the brake-side clamp down as low as it will go first, then match other side. Once in position drill a 21/64" hole through the spindle, using the fork clamps as a guide. After each hole is drilled slide a bolt in. This will insure that nothing moves as you drill the others. Once all 4 holes are drilled thoroughly clean all metal chips away making sure there are no metal fragments between the fork tubes, bushing, and clamps.

See images on following page for reference.

(Step 6b cont'd)

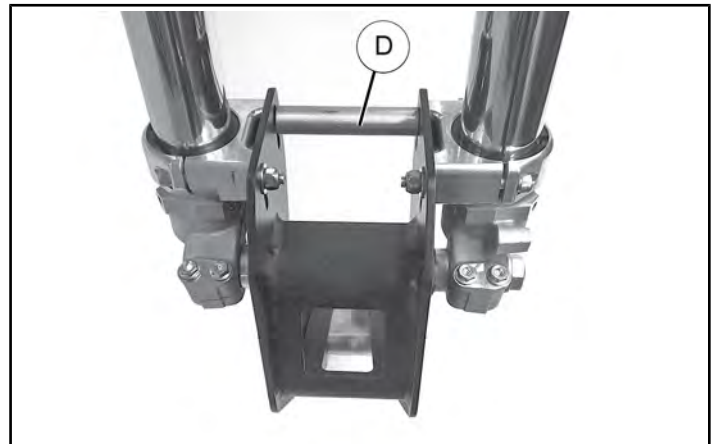


7. Place the outer fork clamps © onto the lower assembly with the fork seal relief groove facing up and so that the split fork bushing flange is not pinched or crushed.



8. Insert the 2.75" x 5/16" bolt in the front fork clamp bolt holes and the 3.0" x 5/16" bolt in the rear fork clamp bolt holes on both left and right fork clamps.
9. On the rear fork clamp bolts, you will use the included spindle support cross shaft ④ that the 3" bolts will thread into. This cross shaft will fit in-between the ears of the spindle and will provide support to the assembly. Use the provided flat washer and 5/16" lock nut on the inside of the Spindle to secure the front fork clamp bolts. Torque the front and rear fork clamp bolts evenly to the specification listed below.

TORQUE
25Nm (18 Ft. Lbs)



10. If re-installing bike's stock front axle, see your bike manufacturers Owner's Manual for proper torque specifications. If using a front axle provided in your Timbersled Install Kit, torque the axle bolt to the specifications below.

TORQUE
75Nm (55 Ft. Lbs)

11. Tighten the lower fork tube pinch bolts to your bike manufacturers specified torque settings.

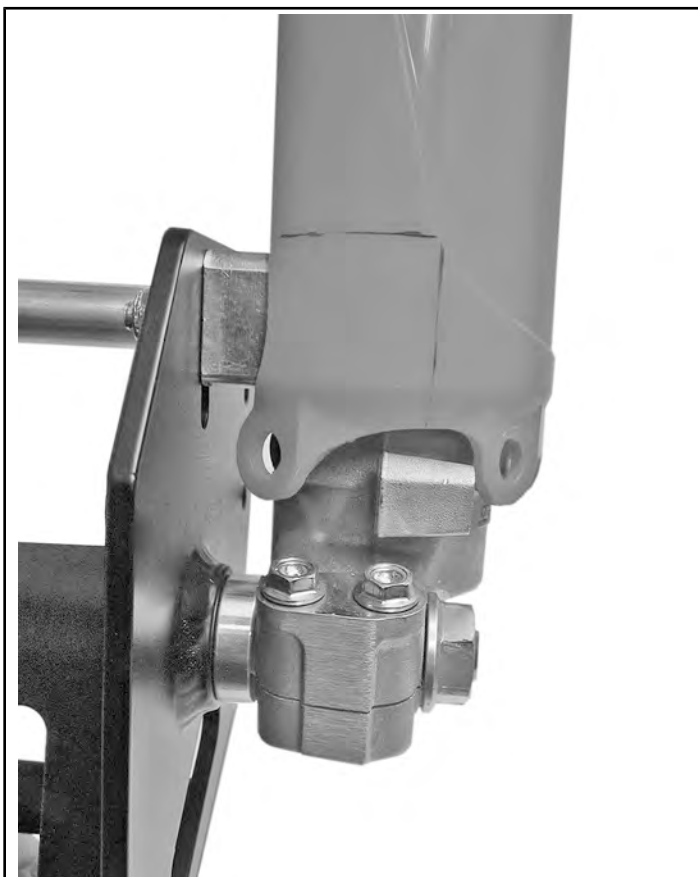
12. Reinstall fork guards.

NOTE

This step is optional as the fork guards will need to be modified if you choose to reinstall them.

13. To reinstall the fork guards, first hold the fork guard up into place and free hand draw a line where they will need to be cut to provide enough clearance between the fork clamp and the fork guard for reinstallation. Use tin snips to cut out this portion of the fork guards. Reinstall them on the bike using only the two outside screws. The inside screws will not be used due to the portion being cut away. Refer to the following three images for fork guard modification and installation.

(Step 13 Cont'd.)



SKI INSTALLATION

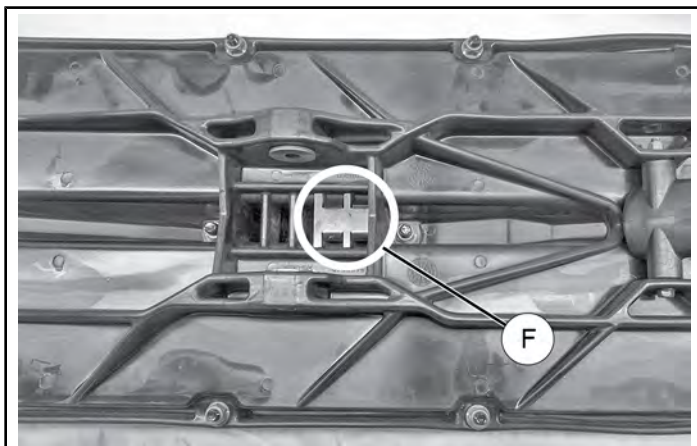
NOTE

Pre MY18 ski assemblies are noticeably different than MY18 spindles and do not require the use of the ski rubber support plate as called out in step 1 of the ski installation procedures. All other steps are similar. The images contained in the installation procedures are MY18 unless otherwise noted.

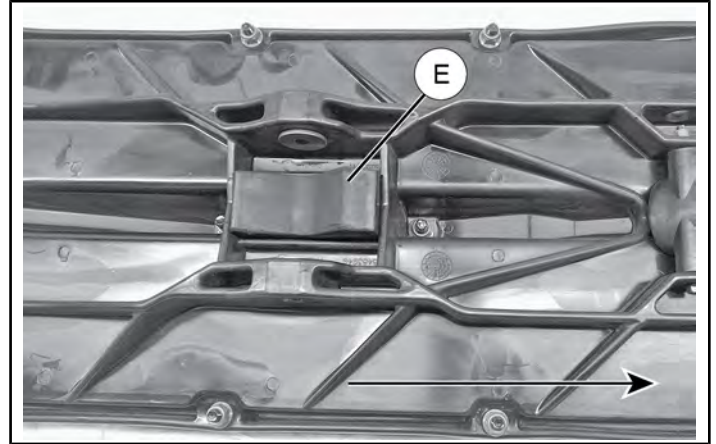
1. First, place the ski rubber support plate ④ into the center cradle of the ski. Make sure the four lower plate fingers drop fully down into the front two slots ⑥ in the ski cradle as indicated with the top T-shaped ears of the plate facing towards the rear of the ski.

NOTE

Arrows indicate forward (front) direction.



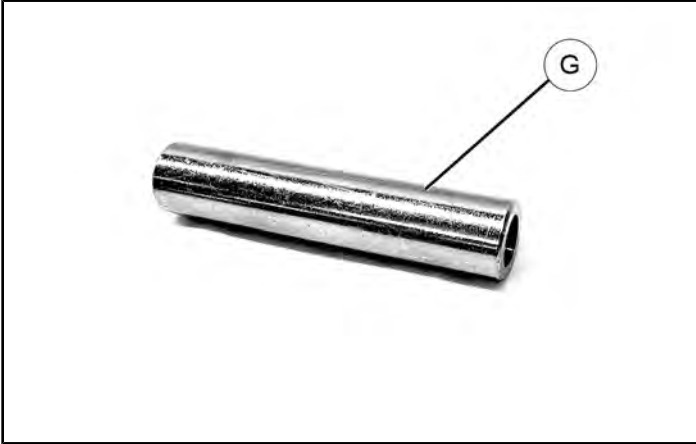
2. Next, place the ski rubber ⑤ into the ski cradle with the large thick portion of the ski rubber facing the front of the ski.



The image below is of pre MY18.



3. Place a coating of waterproof grease on the outer diameter of the ski collar **G**. Install the ski collar into the lower ski bolt hole of the spindle block.



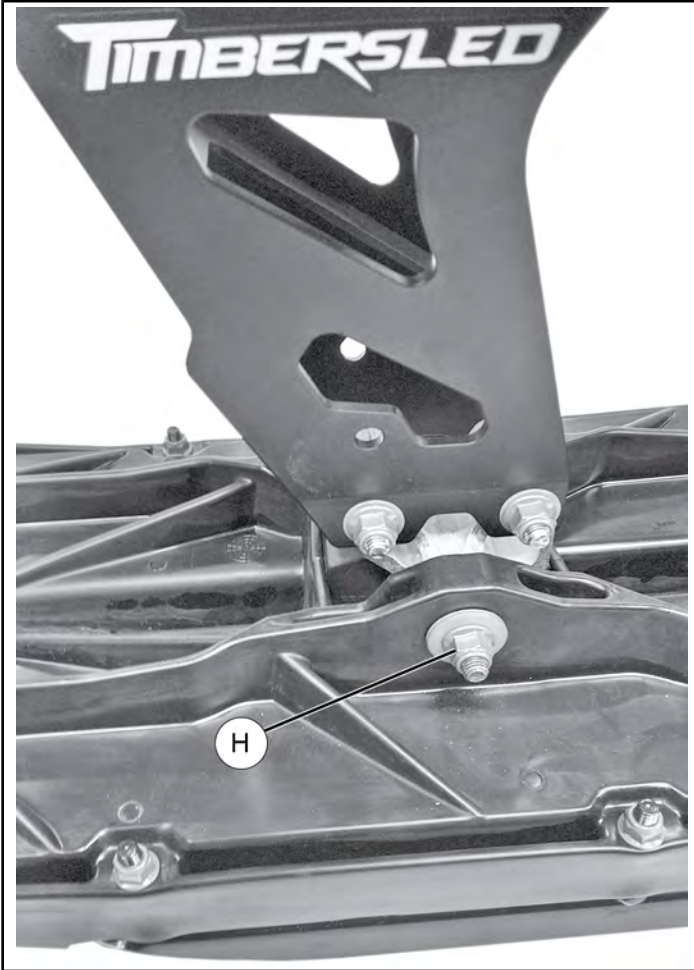
4. Place ski, with ski rubber and ski rubber support plate installed, under the spindle. Lift up on the front of the ski to pull it up into place. Once in place, push the ski bolt through belleville washers, ski cradle ears, and spindle cradle to hold the ski in place. Make sure the concave surface of the belleville washers is facing in against the the ski cradle ears.

NOTE

It will be a tight fit between the ears of the ski bracket.



5. Secure ski by installing the locking nut (H) onto ski bolt and tighten. Torque nut (H) to specification listed below.



The image below is of pre MY18.



TORQUE

45 Nm (33 ft/lbs)

⚠ WARNING

Failure to torque fasteners as directed will adversely affect the steering system and may lead to severe injury or death.

6. Ensure all tools are accounted for and all steps have been completed in the correct order.



FEEDBACK FORM

A feedback form has been created for the installer to provide any comments, questions or concerns about the installation instructions. The form is viewable on mobile devices by scanning the QR code or by clicking [HERE](#) if viewing on a PC.

