

SX5 INVERTED FRONT END

Installation Guide

SOFTAIL INVERTED FRONT END PACKAGE FITMENT:

2018 and Up — Softail Lowrider S
2022 and Up — Softail Lowrider ST



KRAUS Motor Company designs, engineers, tests, and manufactures performance suspension and braking systems for Harley-Davidson™ motorcycles designed to deliver improved road feel in real world punishing riding conditions. KRAUS Softail Packages come complete with all necessary stock hardware and parts to bolt a KRAUS Inverted Front Suspension Package up to your bike.

These instructions are meant to be an overview, a guide for the experienced technician. If you do not have prior experience or training installing motorcycle suspension componentry, we strongly recommend that you consider hiring a qualified, experienced technician to install this KRAUS Performance package for you.

ABOUT FINISHES:

Like most finishes, anodizing is delicate and can be scratched. Extra care should be taken during installation and cleaning of all of our parts. Although we use a high-grade type 2 anodizing that has a UV resistance, anodizing is an organic process/substance and can fade with excessive sun exposure or be stained with chemicals and cleaners.

PROJECT DETAILS:

Time required: One full day for a Sr. Tech.
Existing Componentry and OEM Fork Set
Removal: 1.5 hours
KRAUS Performance Package install: 4.5 hours
Validation and Road Test: 1 hour

TOOLS REQUIRED:

- Torque wrench
- Allen Key Set: T-handle/Ball and regular SAE & Metric
- Socket Set: SAE & Metric
- 2 Non-marring Wedges
- Bearing Press

DISCLAIMERS:

- Will **REQUIRE** aftermarket 108mm radial brake calipers.
- Will **REQUIRE** new front brake lines in addition to brake caliper.
- SX5 instructions will begin from the point where the front end of the bike is completely disassembled. Front wheel, forks, and trees **MUST** be removed.

REMOVE YOUR OEM PARTS:

- Fairing, if equipped
- Gauges
- Front Forks
- Triple Tree... AND any associated bodywork or accessories

REMEMBER:

- Take your time removing all of the controls and bodywork. We recommend covering your tank.

NOTE:

- We strongly recommend replacing your neck bearings with new bearings.

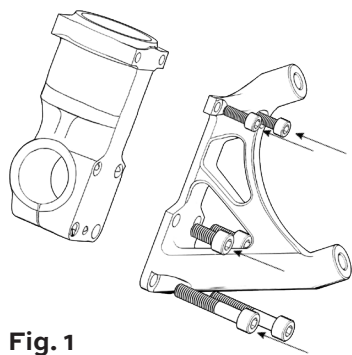


Fig. 1

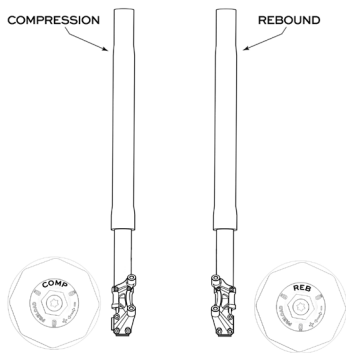


Fig. 2

TORQUE SPECS:

- Upper M5 Screws: 7Nm/62in-lbs.
- Lower M8 Screws: 19Nm/170in-lbs.
- M5 Screws: 4Nm/35in-lbs.

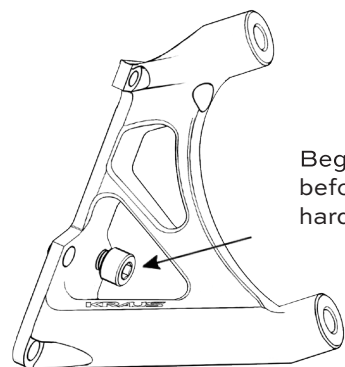


Fig. 3

Begin by threading this position first before proceeding with the rest of the hardware.

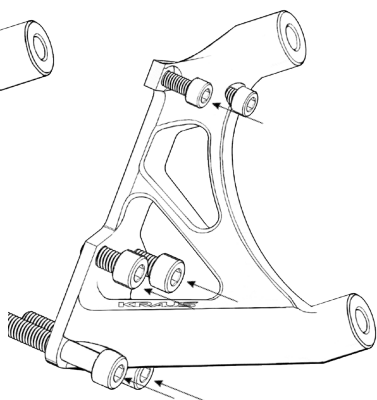


Fig. 4

Leave bottom (2) axle screws loose.

FORK PREPARATION:

1. Install Brake Caliper mounts onto fork. **(See Fig. 1)**
NOTE: Rebound Fork is intended to be installed on right side of bike while Compression fork is to be installed on the Left. Viewed from the seated position of the bike.

Compression fork has “COMP” inscribed on top cap; Rebound has “REB” inscribed on top cap. **(See Fig. 2)**

2. Using supplied hardware from fork component box, begin with the screw position on inner middle hole closest to wheel **(See Fig. 3)**, torque to spec, (Upper M6 Screws; 7Nm/62in-lbs), (Lower M8 Screws; 19Nm/170in-lbs). Leave axle screws loose. **(See Fig. 4)**
3. Install fender mounts (M5 Screws, 4Nm/35in-lbs). **(See Fig. 5)**

* If installing carbon fiber fender see instructions associated with product.

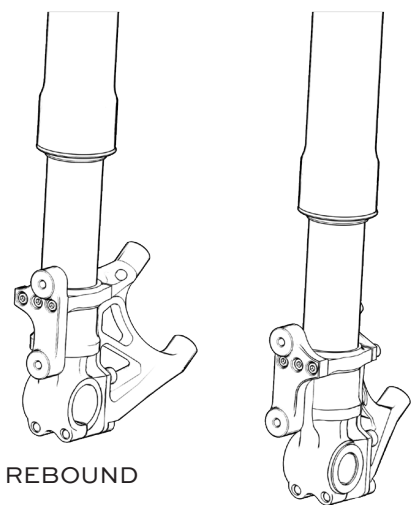


Fig. 5

INSTALLATION OF TRIPLE TREES:

1. Install bars and risers onto top triple tree. **(See fig. 6)**
2. Clean/inspect races, bearings & dust shields then grease your bike's neck bearings for install.
3. Install/slide the lower neck bearing dust shield followed by the lower neck bearing onto stem. Press them carefully onto the stem attached to the lower triple tree.
4. Press the lower bearing down the stem towards the dust shield until firmly seated at the stem's base. The bearing should spin freely.
5. Apply the specified and appropriate grease to the upper and lower neck bearing races.
6. Carefully slide bottom triple tree and stem up through frame neck.
7. Carefully place the top neck bearing onto the stem.
8. Gently press the upper bearing down the stem towards the fork neck until firmly seated on the top bearing race. The bearing should spin freely. Place top dust shield over the top neck bearing.
9. Install top triple tree onto stem.
10. Install yoke bushing onto top triple tree with 3/8" - 24x1.5" screw. **(See Fig. 7)**
11. Review following instructions in order to set bearing preload correctly.

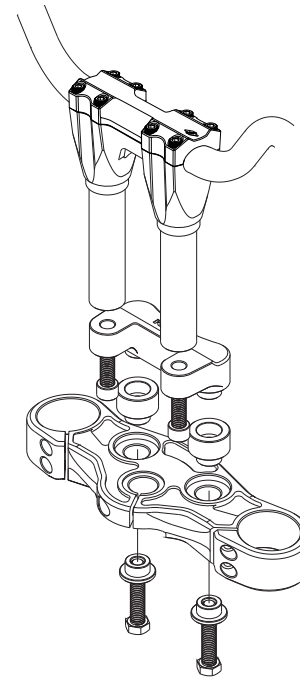


Fig. 6

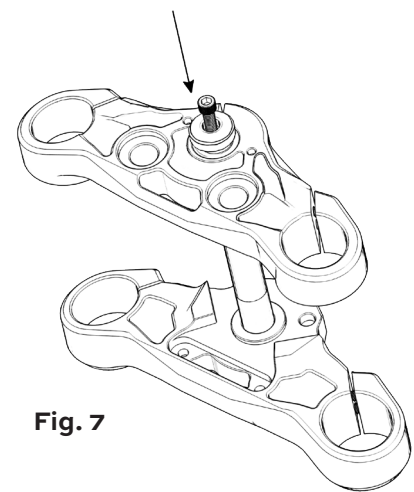
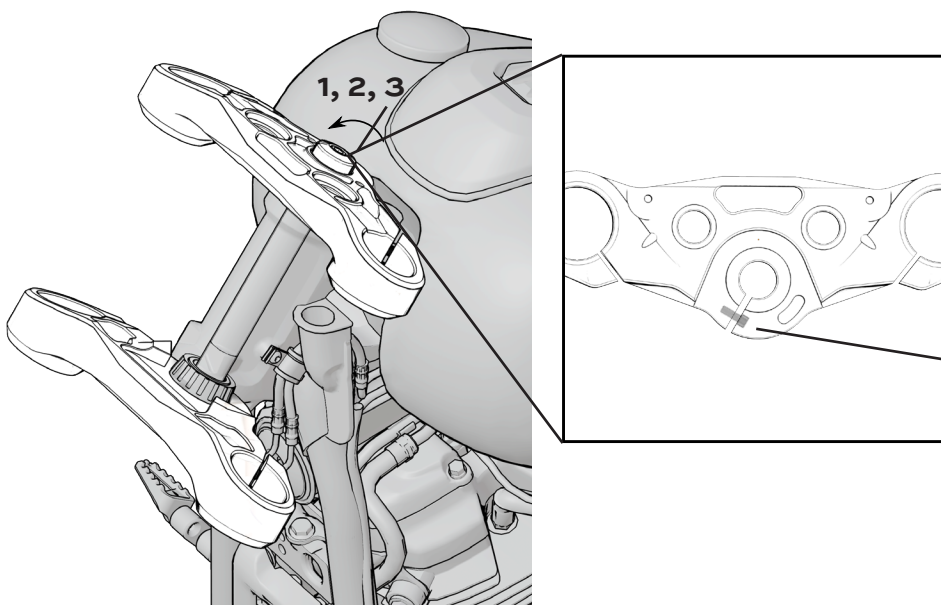


Fig. 7



1. Install stem screw through yoke nut bushing. Torque to 160 in-lbs.
2. Loosen stem screw. Rotate trees 45°. Ensure good bearing feel.
3. Tighten stem screw again to 62 in-lbs.
4. Tighten fork stem pinch screw to 20 ft.

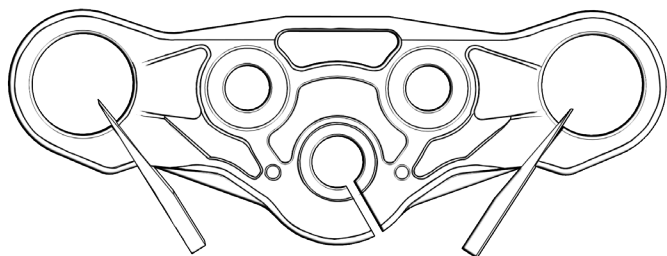


Fig. 8

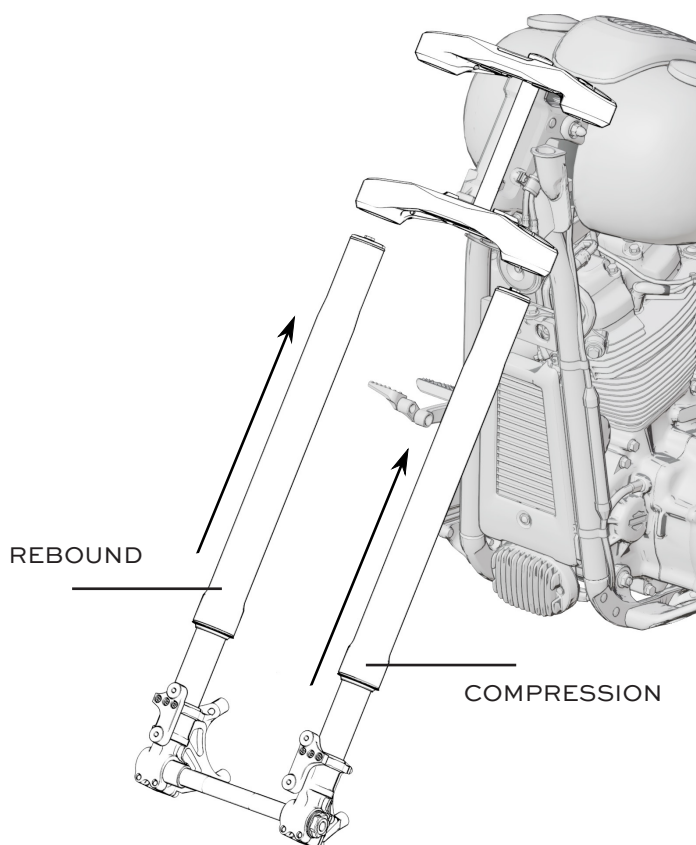


Fig. 9

TORQUE SPECS:

- Bottom tree pinch screws: 12 ft-lbs.
- Top tree pinch screws: 20 ft-lbs.

INSTALLATION OF FORK LEGS:

IMPORTANT! Not using shims can potentially cause damage or scoring to forks.

1. Before installing forks into either KRAUS tree, use spreader/shims to open the bore of each tree. **(See Fig. 8)**
2. Install each fork leg into trees. **(See Fig. 9)** Ensure pinch bolts are loose. Starting with one side of the triple tree using small flat blade screwdrivers or shims, expand both top and bottom fork clamp pinch bolts slightly. This makes sliding the fork into the triple trees easier, while avoiding damaging the fork legs. Repeat process with opposite side.
3. Make sure right and left forks are in their proper position. **Riders right side fork is REBOUND, left side fork is COMPRESSION.**
4. Slide each fork leg upwards into triple trees clamps: avoid scratching the fork tubes. Ensure top triple tree does not lift off the dust shield.
5. Adjust the fork tube height in the triple trees so that just the fork cap is protruding above the top triple tree. Push down on top triple tree to make sure the top triple tree has positive contact with the top neck bearing dust shield. Set both forks equal height in triple trees, confirm alignment by sliding the axle into the slider bottoms.
6. Make sure axial alignment is correct for proper fork and upper tube clearance.
7. Torque bottom Tree pinch screws to **12 ft-lbs.**
8. Torque top Tree pinch screws to **20 ft-lbs.**

INSTALLATION OF AXLE:

1. Prepare axle for install by lightly coating the surfaces of the axle with anti-seize or grease.
2. Slide the axle through the Rebound fork starting with the smaller end. Axle will slide through fork, the wheel, then spacer, then other fork on the other side of the wheel. **If your bike does not have ABS, use OEM spacer in this position.** Slotted spacer is to be installed flush with the inside of the compression fork. **(See Fig. 10)**

NOTE: Slotted spacer should have slit aligned with bottom slit of fork.

3. Slide washer onto end of axle, thread nut onto front axle and torque with pinch bolts loose on bottom of forks **(110ft-lbs).**
4. Torque pinch bolts. **(19Nm/170-lbs).**
5. Mount calipers onto the KRAUS fork lower leg caliper receivers using the KRAUS RADIAL CALIPER HARDWARE KIT **(M10x1.25 bolts and required spacers)**. Torque to 57 ft-lbs. Brake pads must be properly aligned and have full contact potential with rotor friction area. Add caliper mount spacers depending on rotor size.
6. Carefully and slowly rotate wheel making sure there are no alignment and clearance issues.
7. Install front fender using supplied bolts and black delrin spacers. Place the spacers between the fender and the forks.
8. Again carefully and slowly rotate wheel making sure there are no alignment and clearance issues.

FINAL ASSEMBLY/PROCEDURES:

1. When installing your brake line, confirm brake lines are proper length and not stressed or stretched whether the front end is compressed or extended.
2. Once the front end is installed and tightened up to specifications, you are ready to reinstall all of the components that you removed including any associated bodywork or accessories. We recommend that you refer to your OEM manual for procedure, step by step run through, required tools and specifications.
3. After all pieces and parts are properly installed, go for a slow, careful test ride. Afterwards, double check all pieces, parts and systems.

TORQUE SPECS:

- Axle nut: 110ft-lbs.
- Pinch bolts: 19Nm/170in-lbs.
- Radial Caliper Hardware: 57 ft-lbs

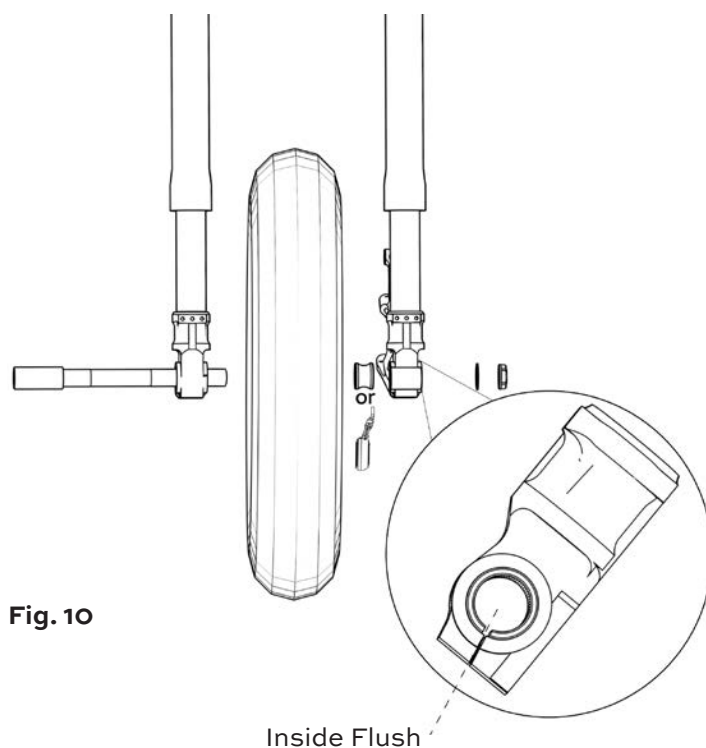


Fig. 10

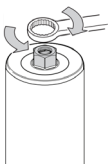
TORQUE SPECS:

- Top tree and clamp nut screws: 20ft-lbs.

CHECK YOUR SAG SETTINGS!

A proper sag setting can be the difference between good suspension and great suspension: See below to set your sag based on your weight.

	RIDER WEIGHT (LBS)												
	130	140	150	160	170	180	190	200	210	220	230	240	250
TURNS	10.75	11	11.25	11.5	11.75	12	12.75	12.5	12.75	13	12.25	13.5	13.75



Sag is set by turning your Preload cap adjuster Counter Clockwise all the way, then turning clockwise the specific amount according to the chart.

Adjusting Your Suspension

PRELOAD gets your suspension to operate in its ideal range, measured by recording sag. Using our chart should get you to 30mm, which is just about right.

Measuring sag:

1. Slide your stroke indicator to its highest position - See Fig. 1
2. Sit on your bike, careful not to add force other than your relaxed weight
3. Unload the weight on the front of the bike (raise front wheel in the air)
4. Measure distance from bottom of dust seal to top of stroke indicator (In millimeters) - See Fig. 2

Figure 1

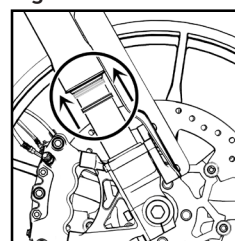
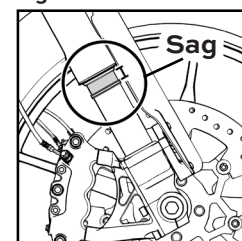
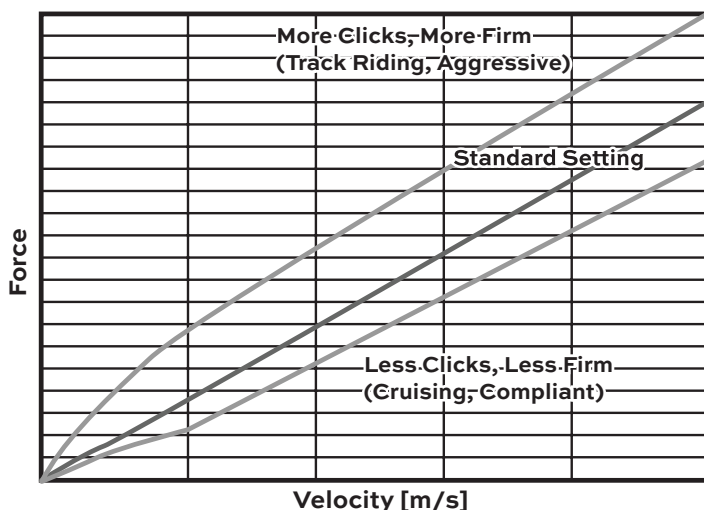


Figure 2



Adjusting Preload on the fork is done by turning the 14mm Hex clockwise for less sag, counter-clockwise for more sag. 30mm +/- 3mm is ideal. Using the chart you should turn the adjuster counter-clockwise until it stops, then turn clockwise the suggested setting.



PRELOAD Where Should It Be?

Time to fine tune for your riding style. Your forks have Compression (COM) and Rebound (REB) adjustment on your cap (3mm brass allen adjusters). These adjust the firmness of your ride.

The more they are turned in, the firmer the feedback. Standard setting is achieved by turning clockwise until it lightly seats/stops, then turned counter-clockwise 12 clicks. When fine tuning it's suggested to make 2 clicks at a time, then test ride.



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