NAILD R3ACT® 2PLAY REAR SUSPENSION SERVICE MANUAL FOR MARIN MOUNT VISION

⚠ WARNING

Carefully read, understand and follow the instructions provided in this manual, and keep it in a safe place for future reference. If you have any doubt whatsoever regarding the use or maintenance of any NAILD product, please contact NAILD. Failure to follow these warnings and instructions can result in product malfunction, causing an accident, severe injury or death.

TABLE OF CONTENT

1.SAFETY SYMBOLS

The words and symbols used below are used to help you recognize information that is important to your safety.

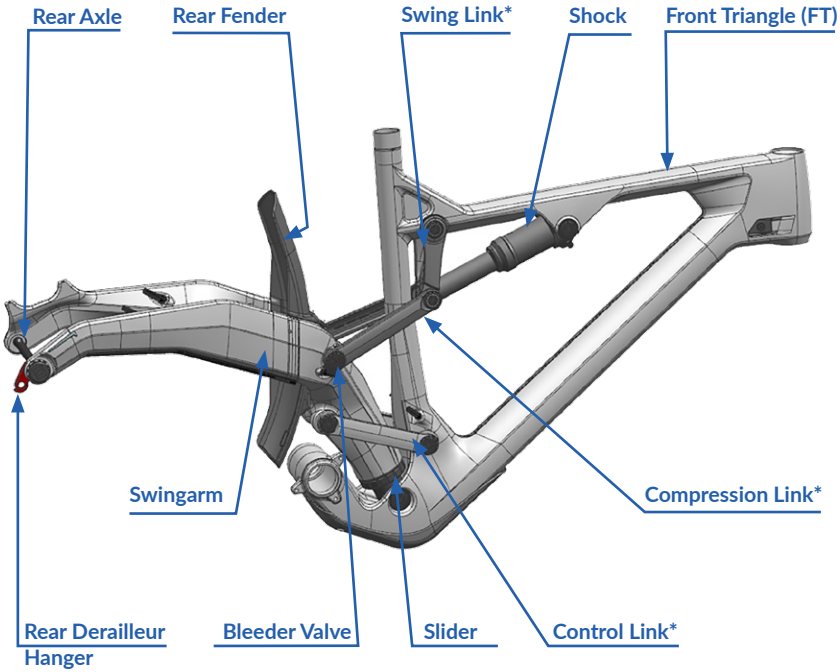
⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

NOTICE Indicates important information relevant to the Naild component, Naild component use or to sections of this manual to which particular attention must be paid.

REMEMBER: Descriptions preceded by this symbol contain information, or procedures recommended by Naild for optimum use of the Naild component.

2. GENERAL INFORMATION

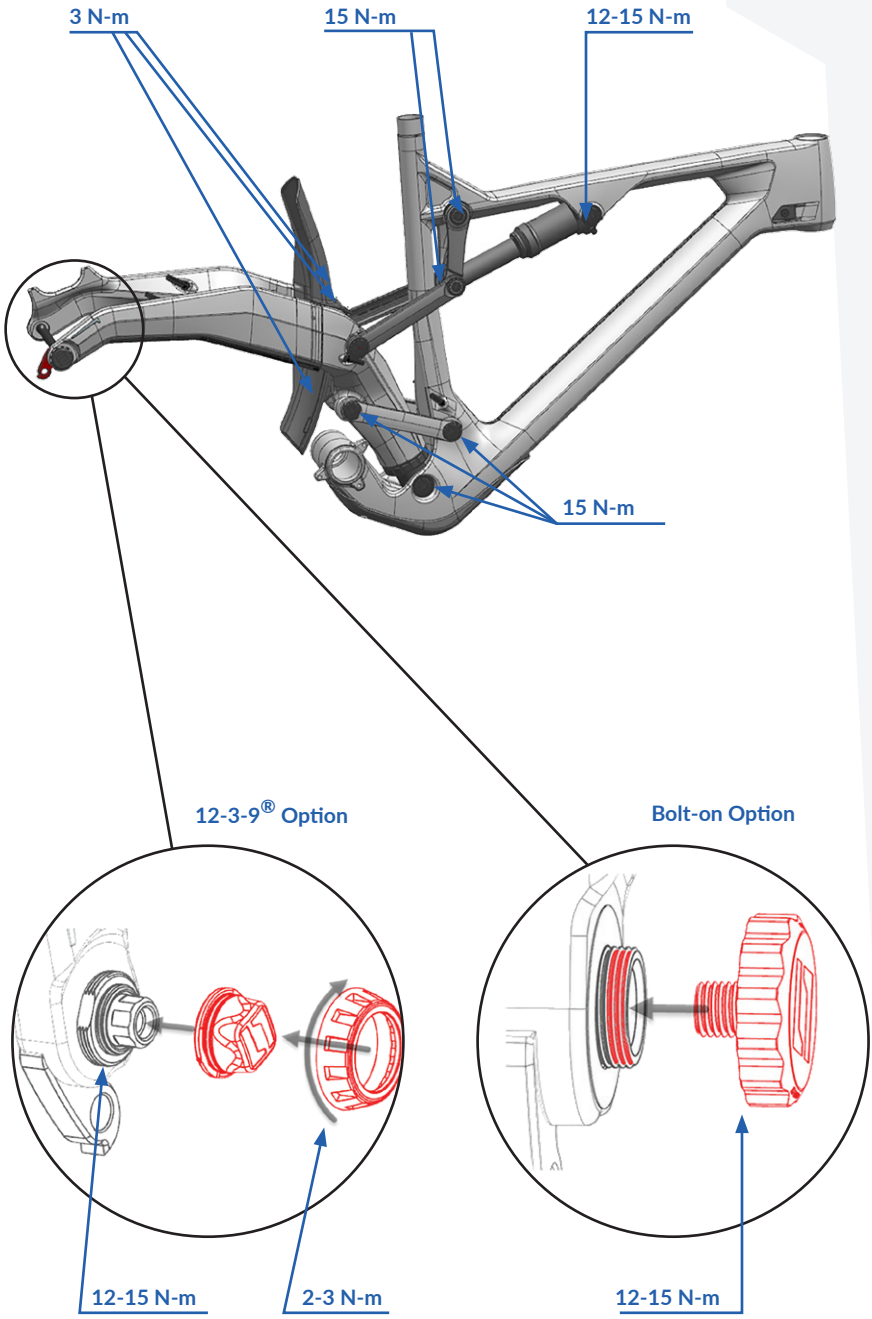
2.1 General layout and torque page



Some layout abbreviations in the document text:

DS – Drive Side
FT – Front Triangle (Frame)
NDS – Non-Drive Side
RT – Rear Triangle (Swingarm)

***Items supplied as kits with bearings assembled. Bearings not to be removed!**


3 N-m
15 N-m
12-15 N-m
15 N-m
12-3-9® Option
Bolt-on Option
12-15 N-m
2-3 N-m
12-15 N-m

2.2 Recommended fluids in this document

Table 1. Fluids color coding.

Color name	Material	Description
Green	Primer Activator	Loctite 7649 or Vibra-Tite 611 Excel primer or Loctite 7088 primer paste optionally.
Red	Adhesive	Loctite 603 or Vibra-Tite 530 retaining compound, Loctite 609 as option 2.
Red	Permanent thread-locker	Loctite 262 or Vibra-Tite 131 (Red, high strength). Loctite 268 paste optionally
Blue	Semi-permanent threadlocker	Loctite 243 or Vibra-Tite 122 (Blue medium strength). Loctite 248 paste optionally
Turquoise	Assembly lube	High performance assembly lube
Brown	Grease for bearings and O-rings	Almagard 3752 high pressure assembly grease
Grey	Assembly oil	Race Tech Ultra Slick Fork Fluid USF-05, or similar grade

⚠ WARNING

The following manual is designed for use by trained mechanics in certified bicycle shops with special equipment.

⚠ WARNING

Some components are supplied by NAILD in kits or subassemblies. Attempt to replace only part of it or using non-OEM components or liquids, not following procedures described in this manual may result in failure of the bicycle, injuries or even death.

2.3 Service intervals and tools

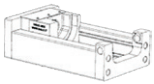
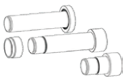
Table 2. Service intervals.

Component		Inspection	Interval
Slider	Slider and sleeve	Check for cracks and excessive wear	100 Hrs
	Oil Seal	Check for leakage and surface imperfection	
	Bushings	Check for play	
Control link	Link body	Cracks or bends	20 Hrs
	Bearings	Inspection*	
Compression link	Link body	Cracks or bends	20 Hrs
	Bearings	Inspection*	
Swing link	Link body	Cracks or bends	20 Hrs
	Bearings	Inspection*	
	O-rings	Surface imperfection	
Bleeder valve	Axles	Cracks, excessive wear, thread integrity	100 Hrs
	O-rings	Surface imperfection	
Trunnion shock bearings (Polyurethane)		Check for cracks, excessive wear and surface imperfection	100 Hrs
Rear axle		Check for cracks, excessive wear, thread integrity	100 Hrs
Linkage axles, swing link axles, slider axle		Check for cracks, bends, excessive wear and thread integrity	100 Hrs
Swingarm trunnion pivot	Cup inserts	Check for cracks	100 Hrs
	Bearings	Inspection*	

***Inspection and evaluation of bearings:**

- Inspect the exposed external surfaces of the bearing for corrosion.
- Inspect the bearing rings for any abnormal signs.
- Inspect the bearing seals for wear or damage.
- Where possible, rotate the inner circle slowly and feel for uneven resistance in the bearing; an undamaged bearing turns smoothly.

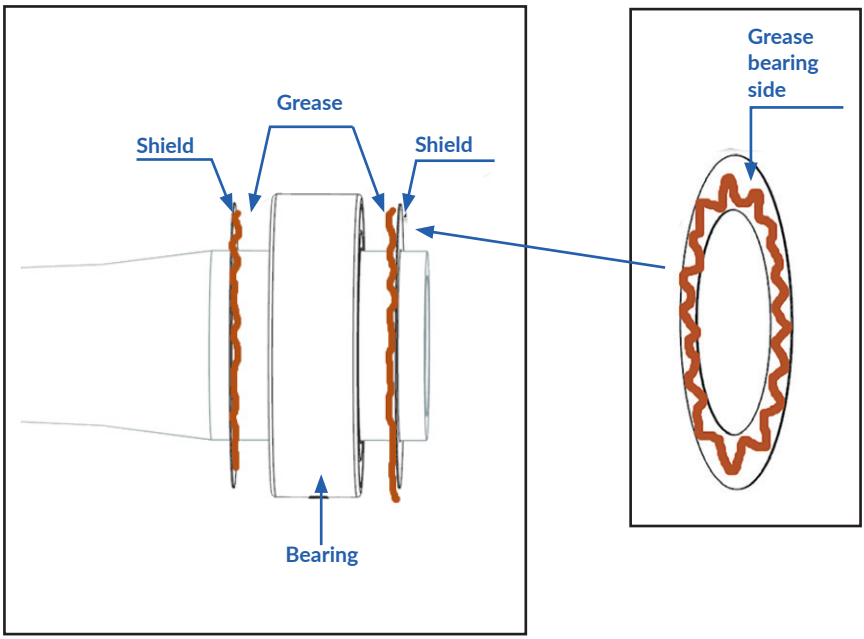
Table 3. Service tools.

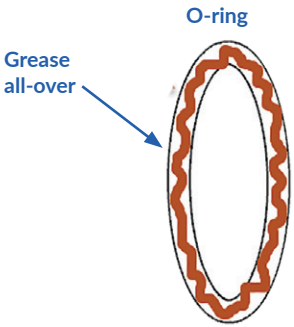
Tool ID	Image	Description	Application	Where to buy
Generic tool		16mm 12-point socket wrench (2 pcs)	All connection points	Off-the-shelf
Generic tool		25mm 12-point socket wrench	Bolt-on rear axle	Off-the-shelf
Generic tool		21mm open end wrench	12-3-9® rear axle	Off-the-shelf
Generic tool		2.5mm Allen wrench	Fender	Off-the-shelf
Generic tool		6mm Allen wrench	Bolt-on rear axle	Off-the-shelf
Special tool		FAA122 spanner wrench	12-3-9® rear axle	SR Suntour
FBT-2 or FBT-3		Fork bushing tool	Slider bushings removal	Barnett bicycle institute
AT-060-BPL		43 mm collets	Slider bushings removal	NAILD
AT-060-SIP		Slider impact puller	Slider removal from swingarm	NAILD
AT-060-M3		Assembly press jig	Slider assembly into swingarm	NAILD
AT-060-BPR		Bearing press	Cup inserts assembly to swingarm	NAILD
NLD-98-997		Sleeve bushings and seal insertion tools	Bushings insertion to slider	NAILD
AT-060-S5		Syringe with dispensing tip (5 cc, 90 deg bent)	Slider lubrication	NAILD
AT-AAT-03		Adjuster alignment tool for NAILD “12-3-9®” - 12x148 mm	12-3-9® axle	NAILD

2.4 Lubrication of bearings and O-rings

⚠ WARNING

At all times you work on bearings, make sure they are lubricated with recommended grease. Make sure both bearing shields have thin film of grease on bearing contacting side.





O-rings to be greased allover.

2.5 Recommendations on threadlocker application

A. Clean both threads with alcohol dampened lint-free shop cloth.

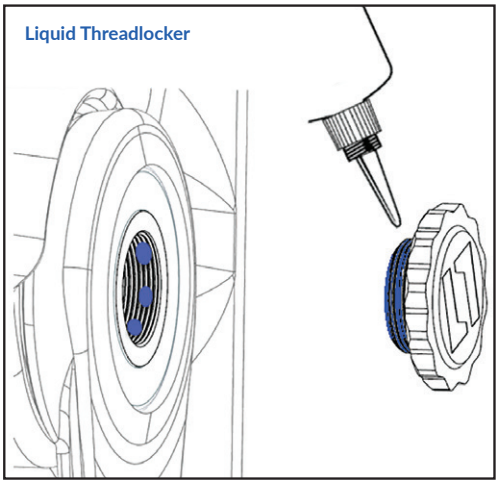
B. (Optional). Apply primer on both threads, allow 30 seconds to dry (if use semi-solid threadlocker, completely fill root of the threads at the area of engagement).

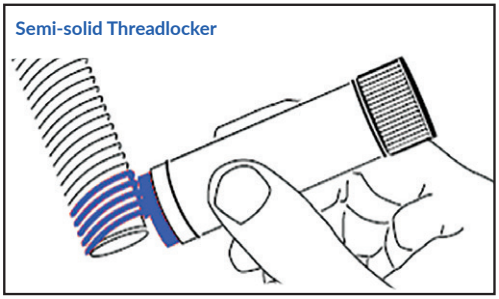
C. Squirt several drops down the sides of female threads.

D. Apply several drops onto bolt.

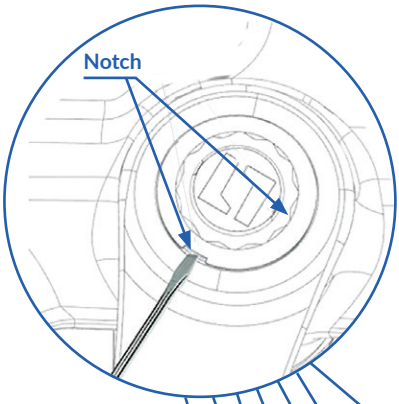
E. Assemble and tighten to torque specified on torque page.

F. When using a stick product, completely fill the root of bolt threads at the area of engagement.

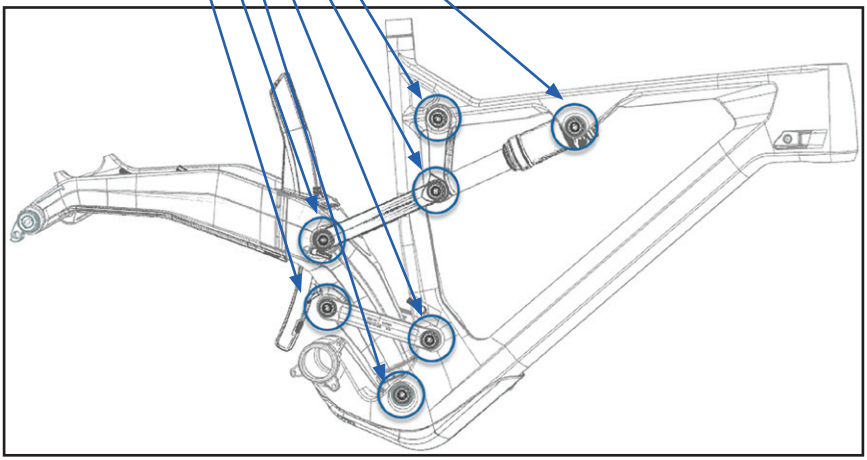




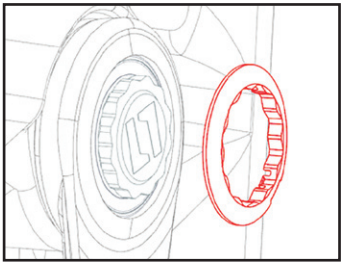
2.6 Caps and covers disassembly



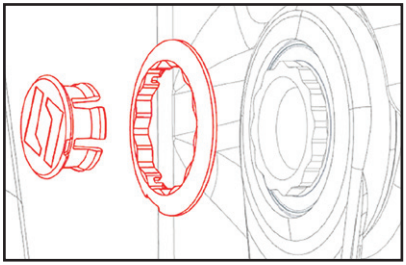
All pivot points are equipped with covers. To remove them use thin screwdriver with flat tip.



Non-drive side

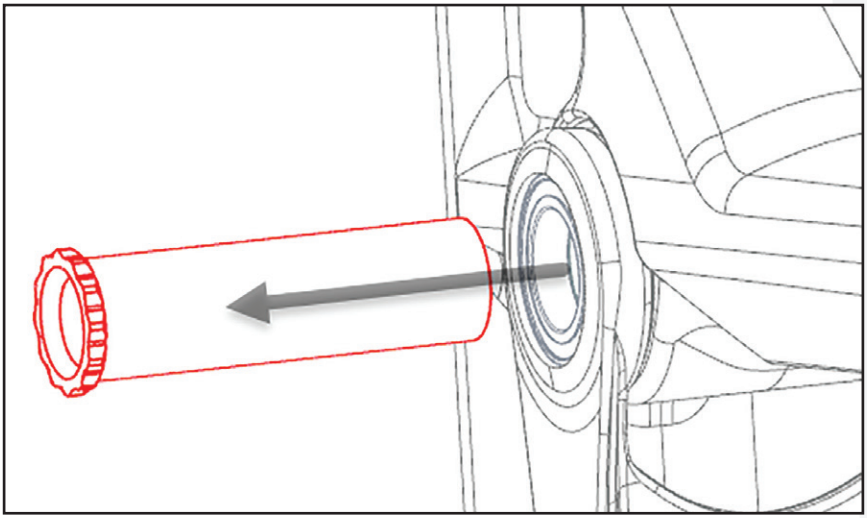


Drive side



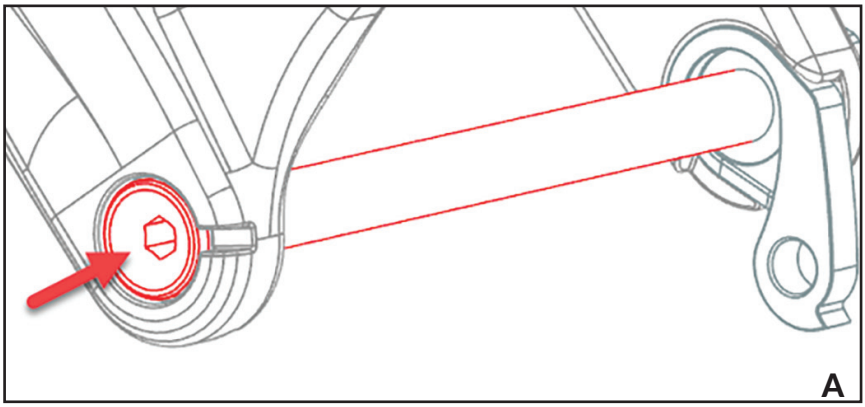
2.7 Axles disassembly

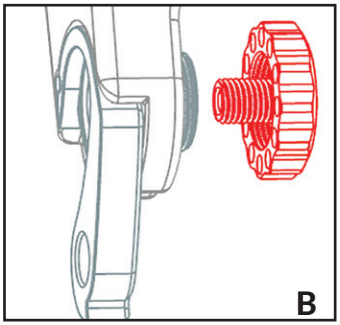
For disassembly of axles & other precision parts great care to be taken in order to prevent surface or thread damage. For pushing axles out please use rods of softer material e.g. wood or plastic. Harder materials can be used if the contact surface is perfectly flat.

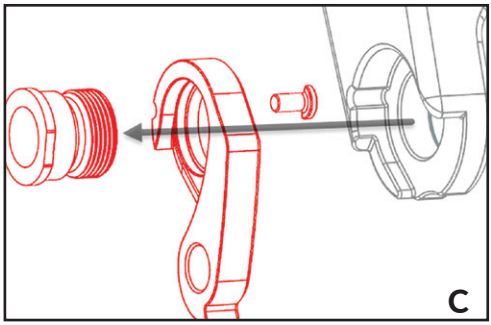


3. REAR AXLE

3.1 Option #1 - Bolt-On Thru-Axle







A. Remove axle (6mm Allen wrench).

B. Remove bolt-on cap (25mm 12-point socket wrench).

C. Remove barrel insert (tap carefully), derailleur hanger, locating pin as shown.

Assemble in reverse order:

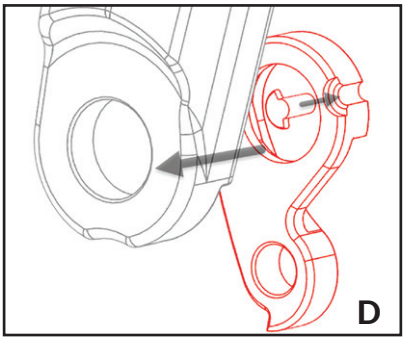
D. Mate pin to hanger.Insert pin with hanger into DS side of swingarm.

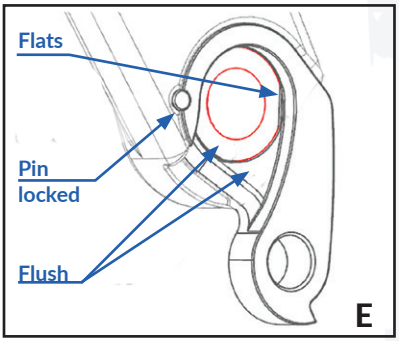
E. Install barrel into hanger observing flats alignment. Make sure it sits flush. Use assembly lube.

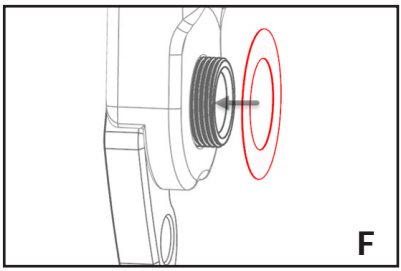
F. Install washer.

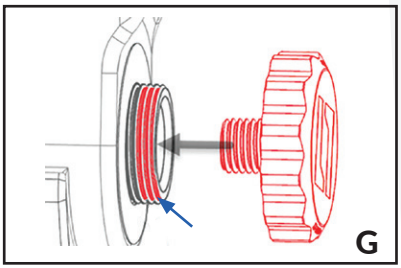
G. Assemble cap bolt onto barrel insert. Use permanent threadlocker. Tighten to torque specified on torque page.

H. Install Axle (A).







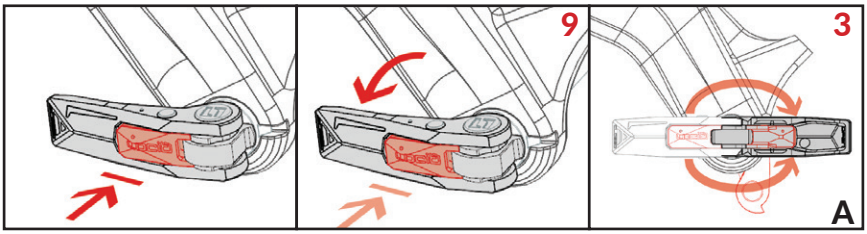


Threadlocker

3.2 Option #2 - 12-3-9® Quick Release Thru-Axle System

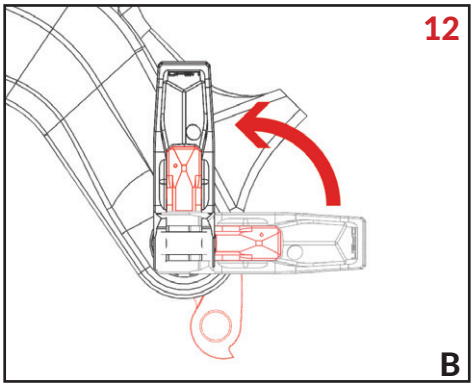
To remove 12-3-9® axle follow steps:

A. Fully depress Locit® trigger. While still depressing the Locit® trigger flip the lever from 9 to 3 o'clock position. Do not force the lever. It will not open unless the Locit® trigger is fully depressed.



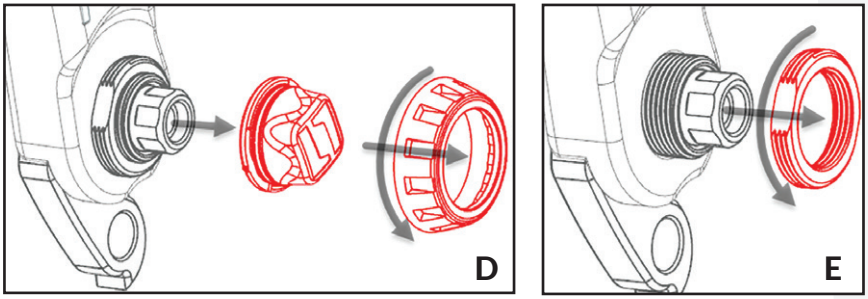
B. From position **3** rotate level counter clockwise to position 12.

C. Now at position **12** Axle Assembly is disengaged from the Adjuster Assembly. Pull Axle Assembly out.

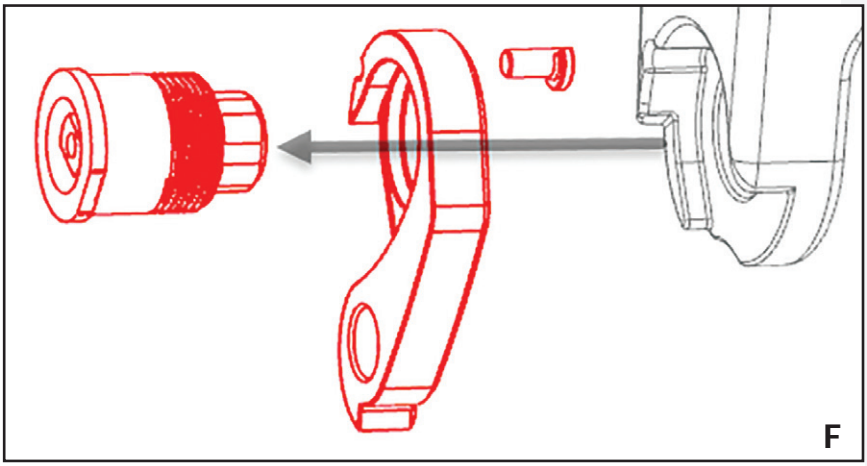


D. Unscrew adjuster cover nut (use FAA122 spanner wrench) and remove adjuster cover.

E. Unscrew locking nut.



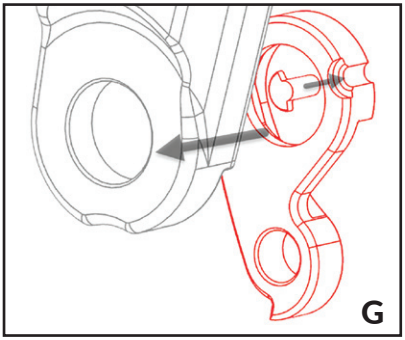
F. Remove barrel insert, derailleur hanger, locating pin.

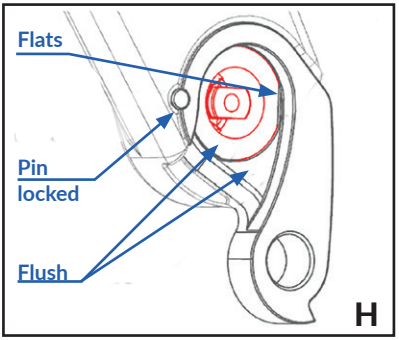


Assemble in reverse order:

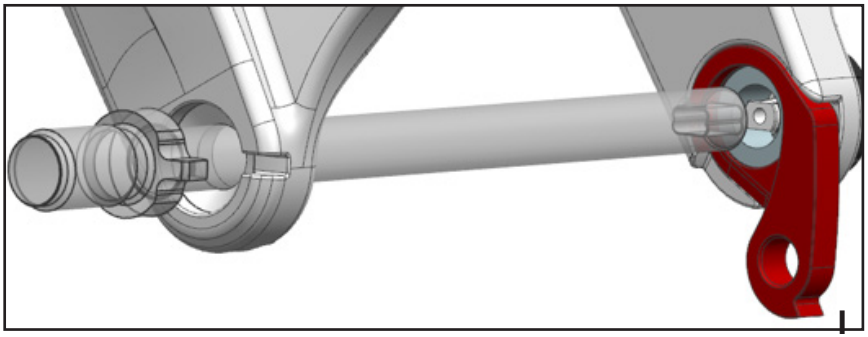
G. Mate pin to hanger. Insert pin with hanger into DS side of swingarm.

H. Install barrel into hanger observing flats alignment. Make sure it sits flush.



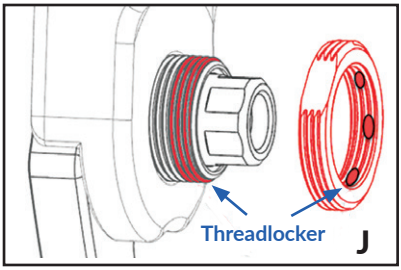


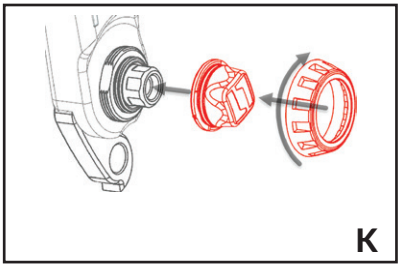
I. Align AT-AAT-03 axle tool at DS with barrel insert, at NDS with slot in swingarm as shown. Install it with boss into slot.



J. Assemble locking nut. Use permanent threadlocker. Tighten to toque specified on torque page.

K. Install adjuster cover and adjuster cover nut (use FAA122 spanner wrench). Torque adjuster cover nut to 2-3 N-m. **Attention! Cover is plastic – do not overtighten!**



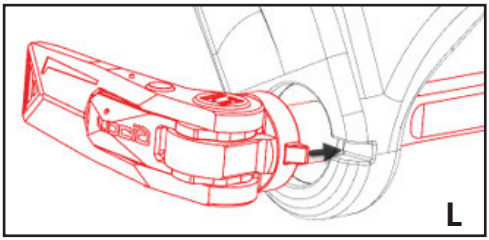


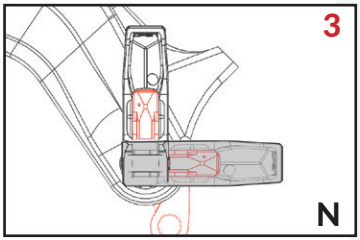
To install 12-3-9® axle follow steps:

L. With the lever at **12** and the Clocking Tooth at **3** o'clock, insert the Axle Assembly through the frame and hub ensuring the Clocking Tooth engages with the slot in the frame. There should be little to no resistance.

M. If the sides of the Clocking Tooth do not engage the sides of the locating slot in the frame, that means the Axle Assembly is not inserted far enough into the Adjuster Assembly. To remedy this, rotate the Adjuster Cap clockwise until the Clocking Tooth engages the sides of the slot but not quite touching the bottom of the slot.

N. Rotate level clockwise from **12** to **3**. Rotation should be smooth with little resistance.

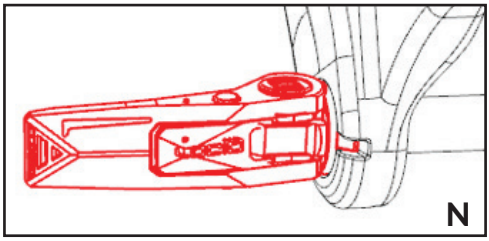


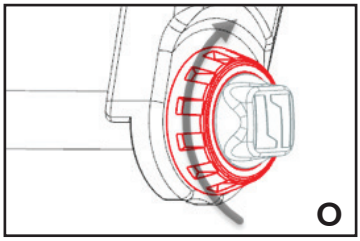


O. From the **3** position, flip the lever halfway so that it is pointing straight out, **Parallel** to the axle. There should still be very little tension on the lever at this point. You are now ready to set the pre-adjustment tension.

⚠ WARNING

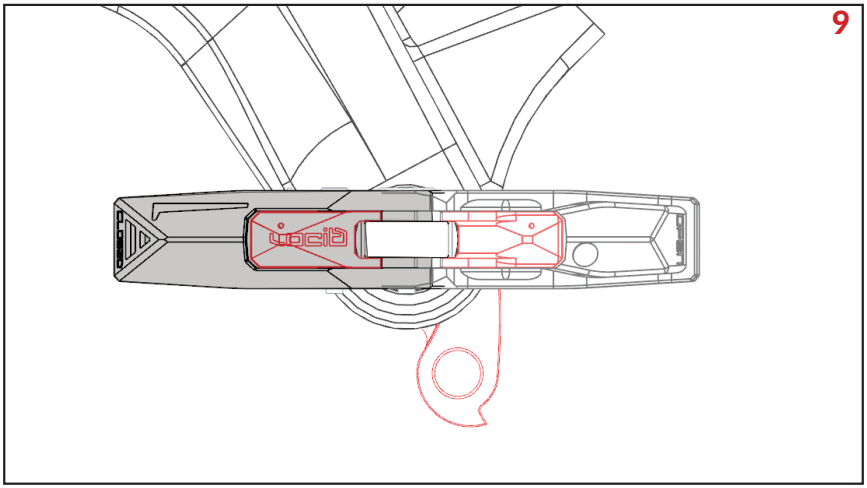
Do not flip the lever to the 9 position yet. If the lever is accidently flipped to the 9 position please perform A-C points to remove axle or damage may occur, resulting in an accident, personal injury and death.





P. With the lever in the **Parallel** position, rotate the Adjuster Cap clockwise until you feel firm resistance. Now Axle Assembly is fully inserted and the system is ready to be closed.

Q. Flip the lever from **Parallel** to the **9** position, feeling for increasing resistance. Do not touch the Locit® trigger during this motion. If the resistance is too great to close the lever completely so that the Locit® trigger engages, return the lever to the **Parallel** position and rotate the Adjuster Cap counter clockwise a few clicks and try again. Similarly, if the lever feels too loose in the **9** position, depress the Locit® trigger and return the lever to the **Parallel** position, rotate the Adjuster Cap clockwise a few clicks and move the lever to the **9** position until the Locit® trigger clicks. A little back and forth adjustment may be required to properly dial in the clamping force.



⚠ WARNING

Do not force the lever or damage may occur. Only hand pressure should be used. Never use tools to close the lever. Before riding, check that the axle system is completely engaged.

R. Lever torque specification in the **CLOSED** position is 5.0 – 7.5 N·m (44-66 in·lb). There will be an audible click as the Locit® trigger engages and the **CLOSED** inscription will be clearly visible at the end of the lever.
The lever now cannot be opened without first depressing the Locit® trigger. Before riding, check that the axle system is completely engaged.

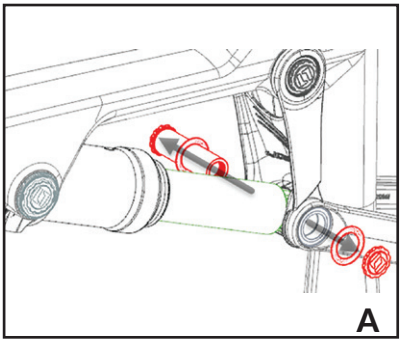
4. SWINGLINK

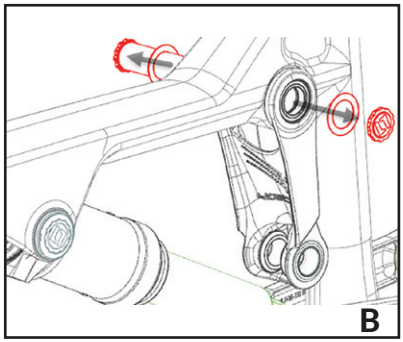
A. With caps and covers removed according to section 2.6, unscrew bottom linkage bolt of swing arm on NDS, remove axle and washers according to section 2.7. If any signs of wear or damage are visible on axle or bolt, replace immediately. Disengage shock and compression links.

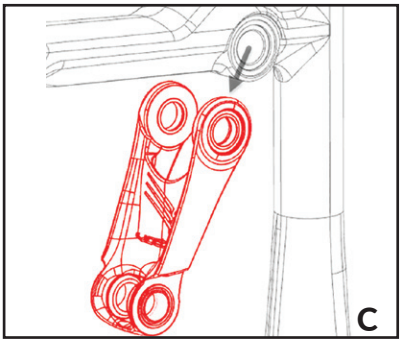
B. Unscrew upper bolt and disassemble.

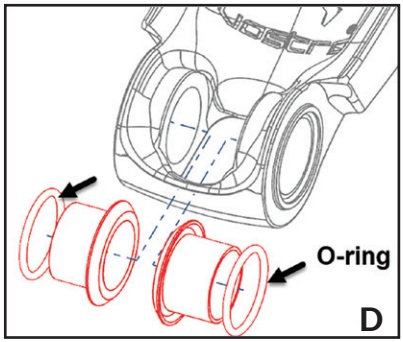
C. Remove swinglink off the frame.

D. To access O-ring, slide bushing inside and remove it.





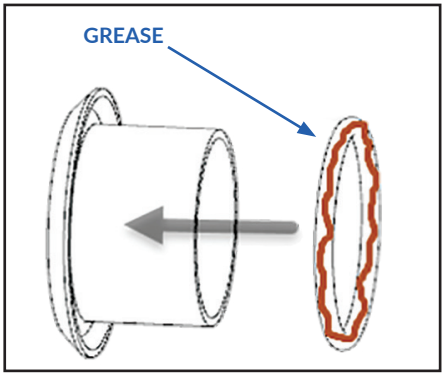


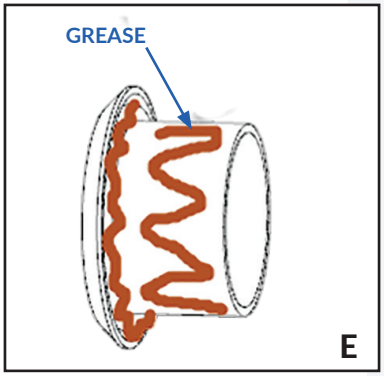


E. Before assemble O-rings with bushings back to swingarm make sure they are greased all-over.

Swinglink assembly to be performed in reverse order.

F. Bearings and bearing shields to be greased according to section 2.4, semi-permanent threadlocker to be applied to thread according to section 2.5.



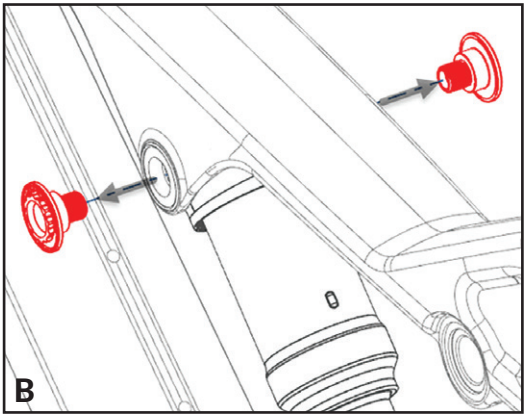


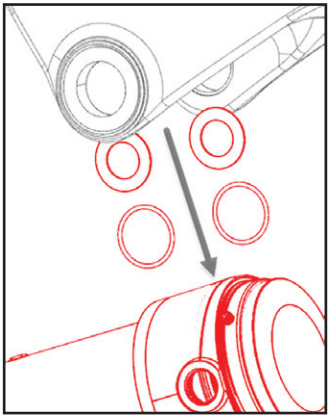
5. SHOCK

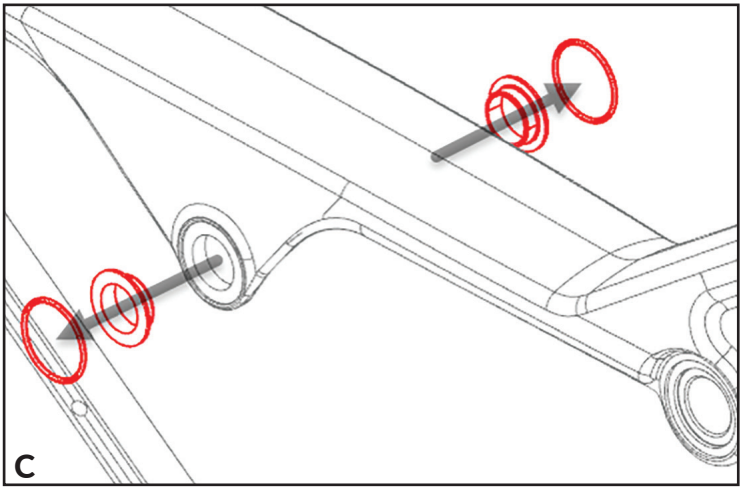
A. With axle already removed and swinglink disengaged according to section 4.A., loosen both trunnion shock bolts at DS and NDS.

B. Unscrew and remove bolts, then remove shock with bushing shields and O-rings.

C. In case shock trunnion bearings need replacement, extract bearings and O-rings from frame. Use bearing press with corresponding bushings diameters if needed.



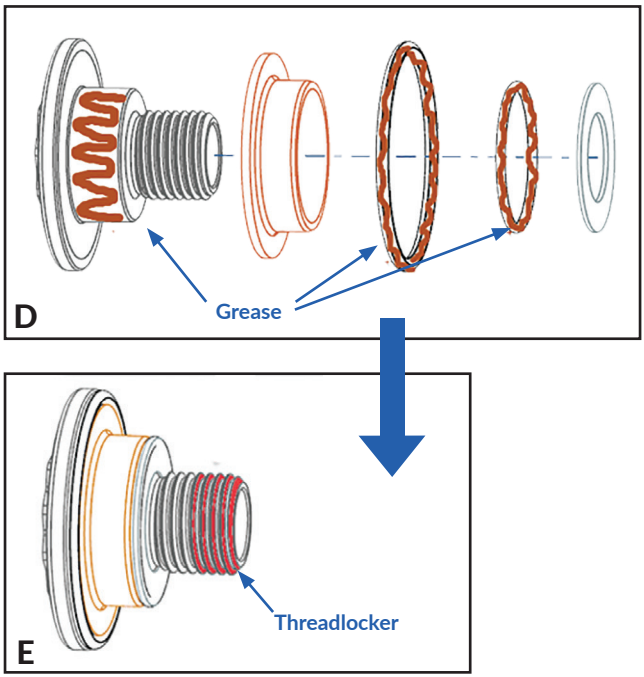




Assembly to be performed in reverse order.

D. Apply thin layer of Almagard grease on bearing seat of bolts and all-over O-rings.

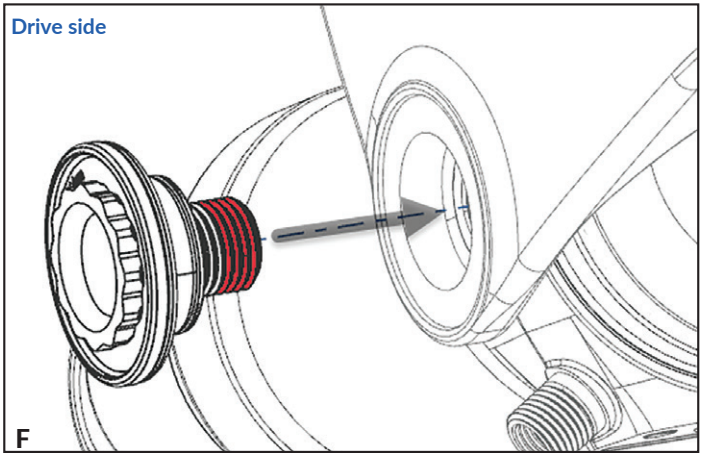
E. Preassemble 2 sets of components as shown (bolt, bearing, O-rings and washer). Apply permanent threadlocker.

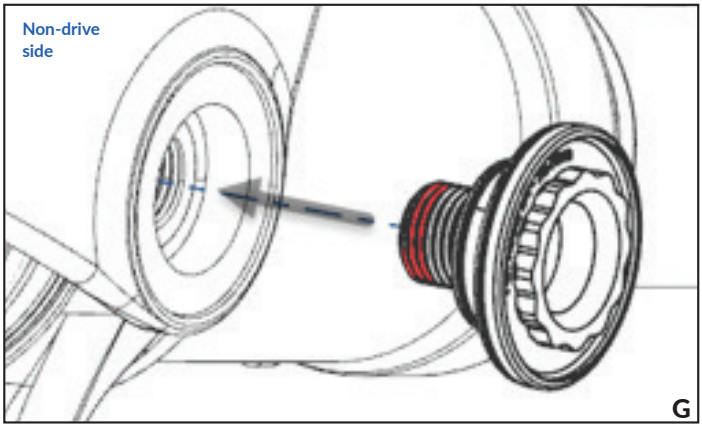


F. Align shock with shock bores in FT. Insert pre-assembled in step E shock bolt set into shock from DS. Screw to the end, but do not torque yet!

G. Screw pre-assembled shock bolt set at NDS to the end.

H. Torque DS and NDS shock screws to values indicated at torque page.

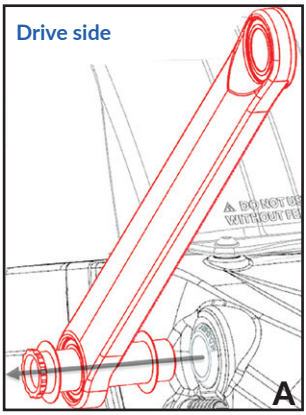


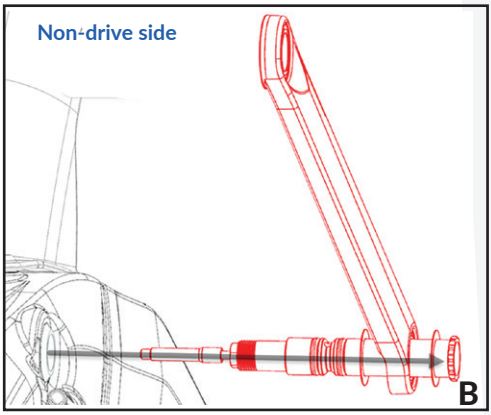


6. COMPRESSION LINKS AND BLEEDER VALVE

A. With axle already removed and swinglink disengaged according to section 4.A., unscrew DS and NDS sides of bleeder valve. Remove NDS side of valve together with NDS compression link.

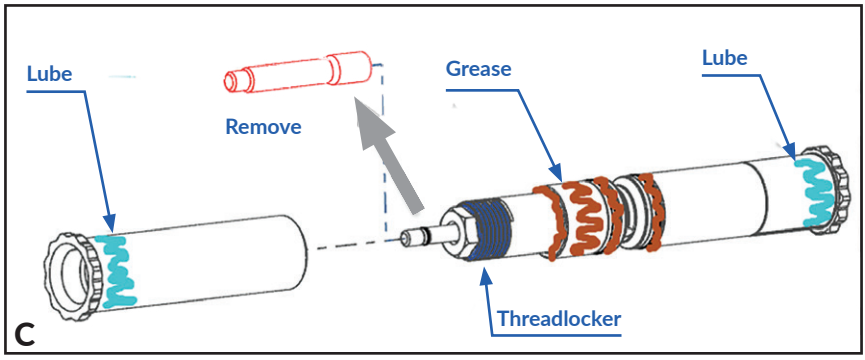
B. Remove DS side of valve together with DS compression link.





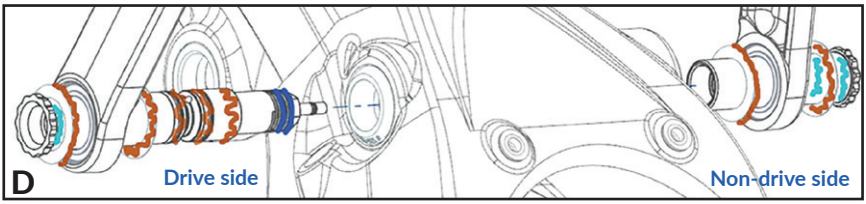
Assembly to be performed in reverse order:

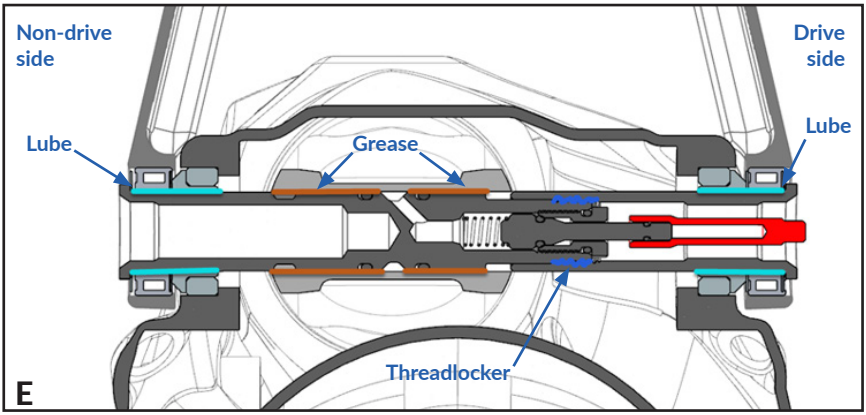
C. Remove push button. Apply assembly lube on bearing seats. Apply Almagard grease on O-rings and fit area as shown. Use semi-permanent threadlocker for threads.



D. Pre-assemble pivots of bleeder valve with links and bearing shields as shown. Slide into compression bore of swingarm.

E. Tighten axles to torque indicated on torque page. Install push button. Ensure valve is moving bind-free. Extension is held in place only by O-ring.



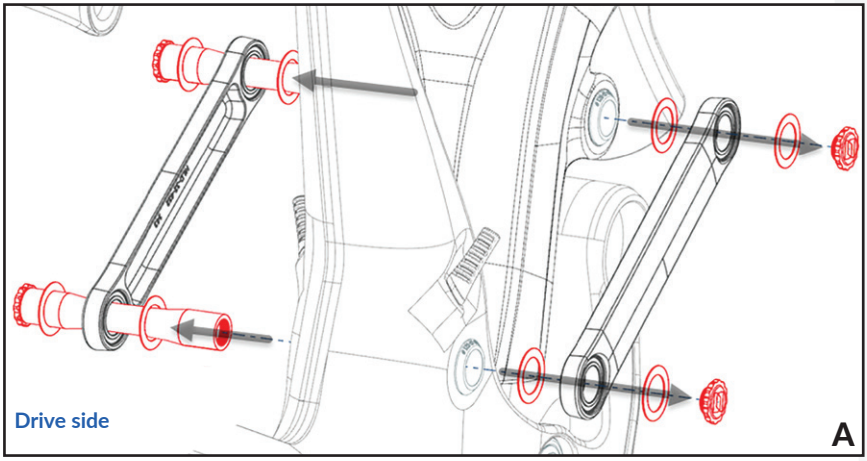


7. CONTROL LINKS

A. With caps and covers removed according to section 2.6, unscrew both linkage bolts, remove link at NDS, remove link with axles and washers at DS.

Assembly to be performed in reverse order.

B. Make sure bearings and shields are lubricated according to section 2.4. Apply semi-permanent threadlocker according

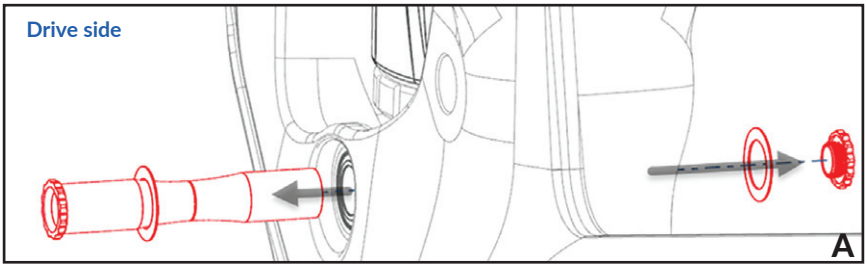


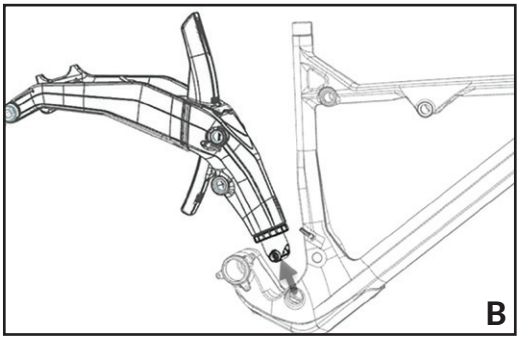
8. SWINGARM

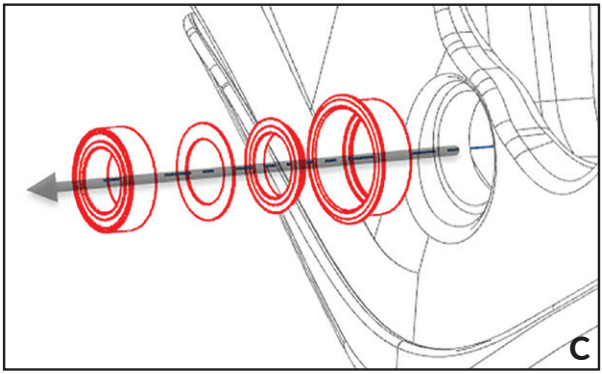
A. With caps and covers removed according to section 2.6, unscrew linkage bolt at NDS, remove axle at DS according to section 2.7.

B. Pull swingarm out of the FT.

C. If bearing replacement is needed, press bearing out with shield, spacer and bearing cup.







Assembly of swingarm to be performed in reverse order. Use AT-060-BPR bearing press or generic shop bearing press.

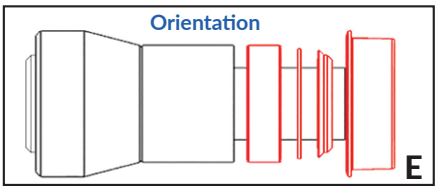
D. Make sure bearings and shields are lubricated as per 2.4. Apply semi-permanent threadlocker according to section 2.5.

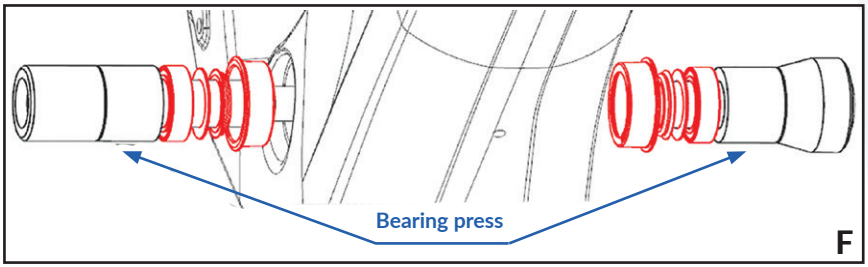
E. Pre-assemble bearing press with bearing, shield, spacer and cup as shown. Follow orientation!

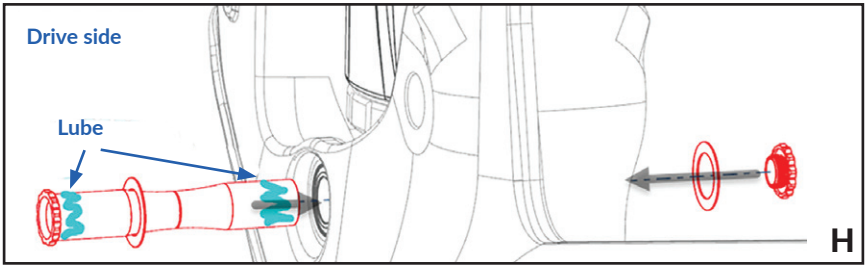
F. Tighten left and right sides till cups are fully seated into frame.

G. Apply assembly lube on axle bearing seats before installation.

H. Slide axle through bearing on both sides, apply semi-permanent threadlocker. Assemble as shown and tighten accordingly to torque page.







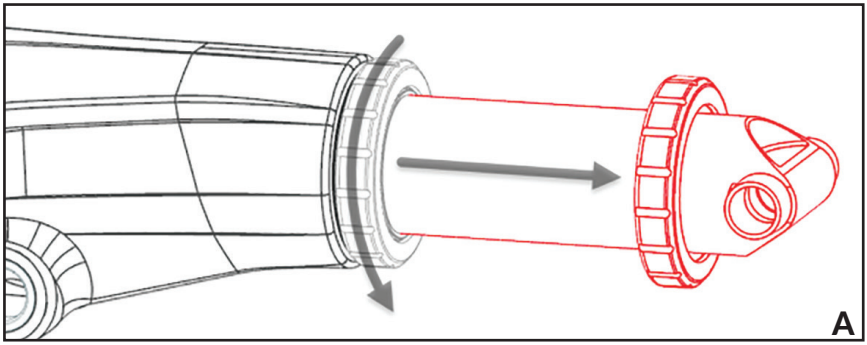
9. SLIDER

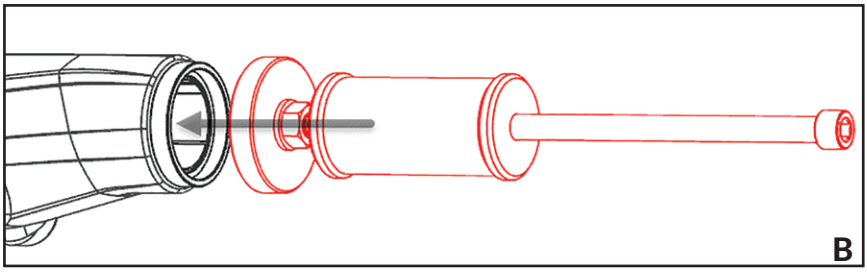
9.1 Slider disassembly

Use slider impact puller to remove the slider out of swingarm.

A. Unscrew threaded ring, pull inner slider inner body out, pull oil seal out.

B. Install slider impact puller on thread of slider sleeve. Use slide hammer to pull slider sleeve out.





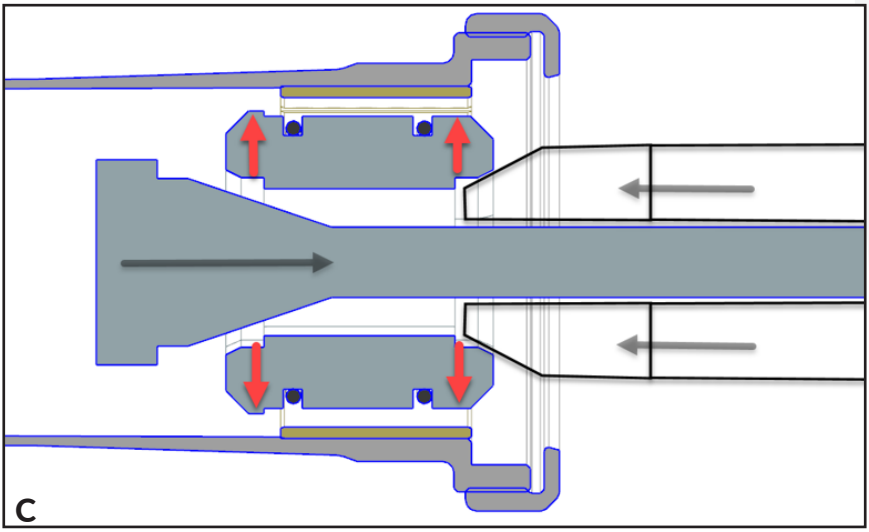
Use Barnett bicycle institute fork bushing tool FBT-3, FBT-2 or similar and AT-060-BPL (set of 43mm collets) from Naild for bushings extraction (see next page).

Tool layout

1. AT-060-BPL.
2. Lower expansion cone, fixed.
3. Upper expansion cone, adjustable.
4. Depth-setting tube.
5. Slide hammer.
6. Main shaft.

C. Install collets with lip-end at the bottom and leave contracted. Insert expansion cones (2, 3) inside the collets. With upper con loosened, pass collets through the shallow bushing. Tighten upper cone and collets will expand and fit I.D. of bushing. Tap slide hammer till impact pull bushing out.

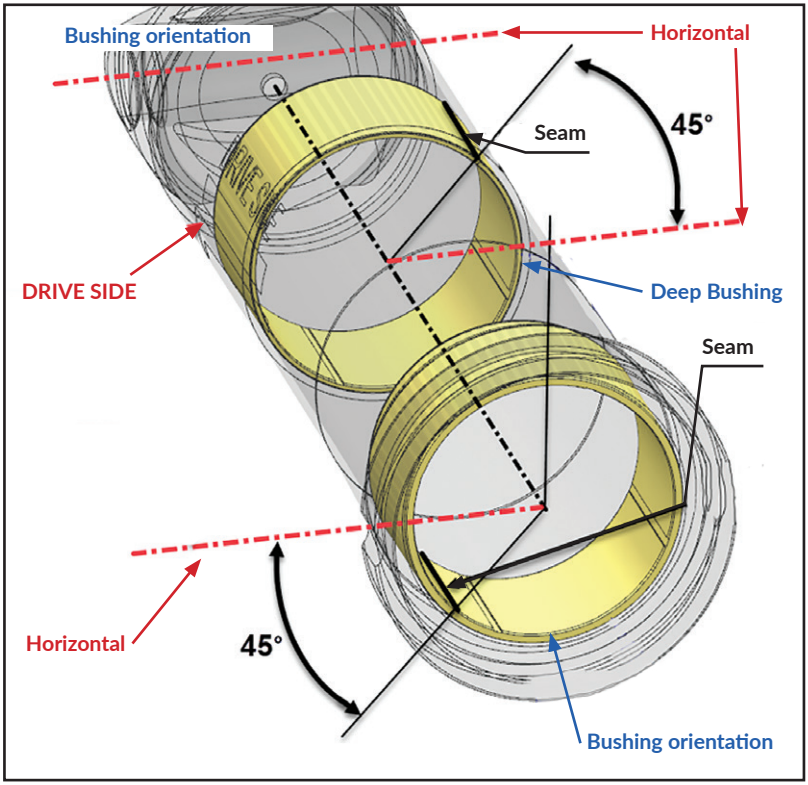
D. Adjust depth setting tube and repeat procedure for deep bushing.



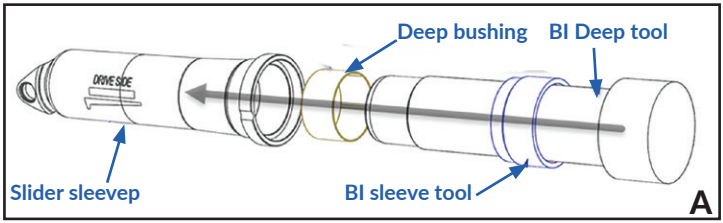
9.2 Slider assembly

NOTICE

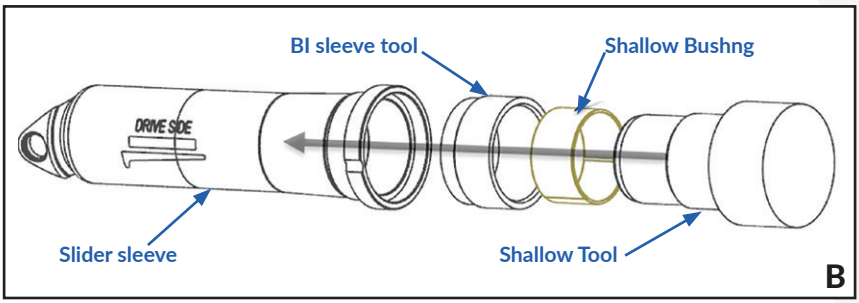
Follow bushings seam orientation as shown! Shallow bushing has thicker wall (1mm vs 1.5mm)!



A. Install deep bushing using tools as shown.

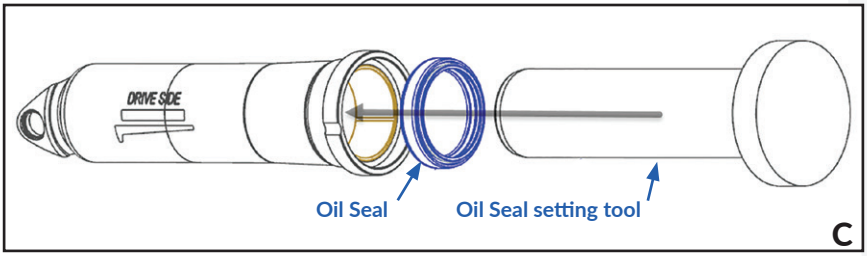


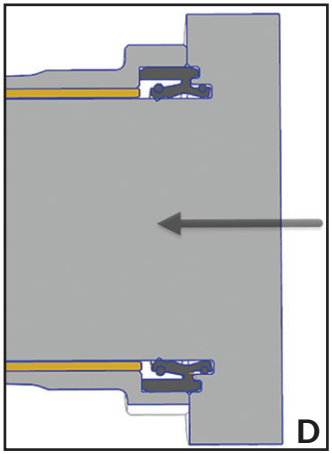
B. Install shallow bushing using tools as shown.



C. Seal should be soaked in assembly oil for 24 hours prior to install. Use Loctite LB 8801 non-silicone grease paste or similar for Oil Seal.Install Oil Seal using tools as shown.

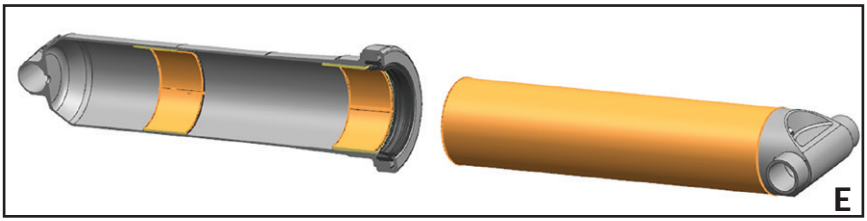
D. Follow seal orientation, make sure seal sit secure and tool is flush to sleeve shoulder.

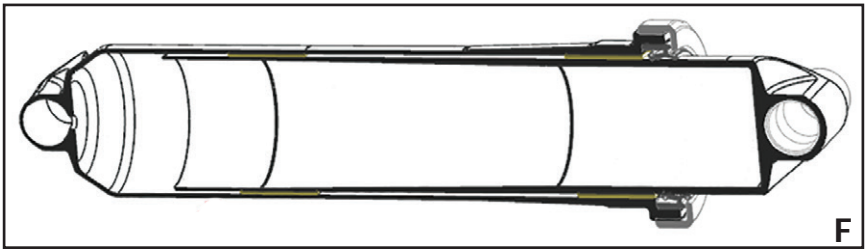




E. Lubricate indicated surfaces with assembly oil using a high-density foam mini-roller. This should be a thin coating just enough to “wet” the surfaces.

F. Fully install stanchion subassembly into sleeve subassembly. Insertion should occur with limited resistance, without binding. Make sure insertion is sufficient to pass deep bushing.

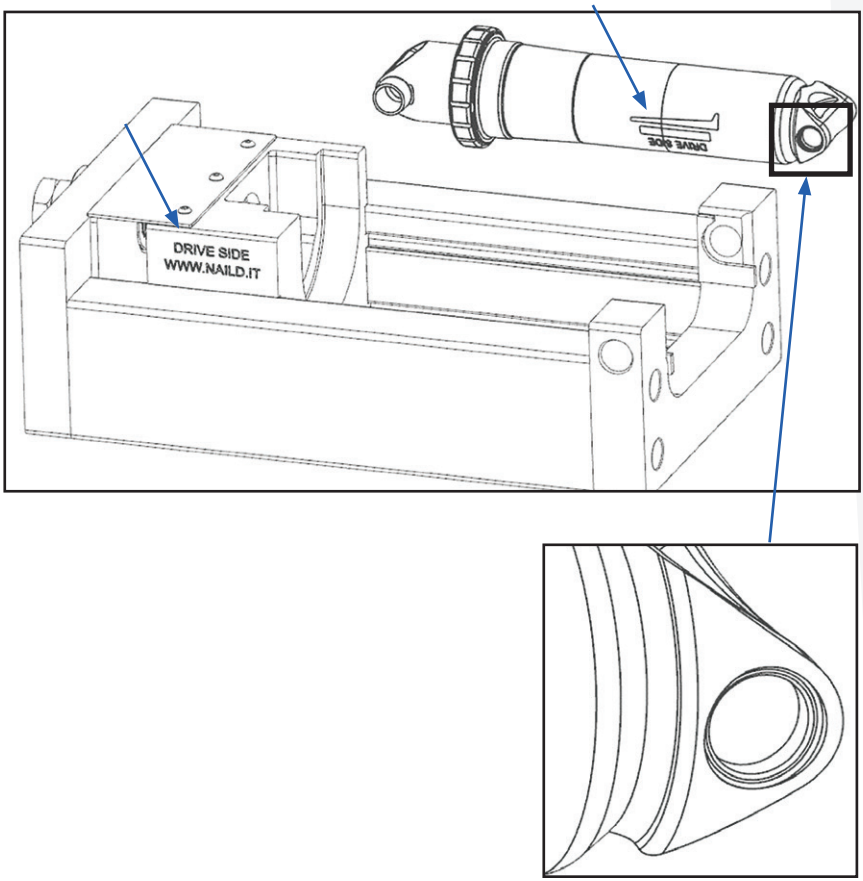




G. Use slider Press Jig to install slider assembly into swingarm.

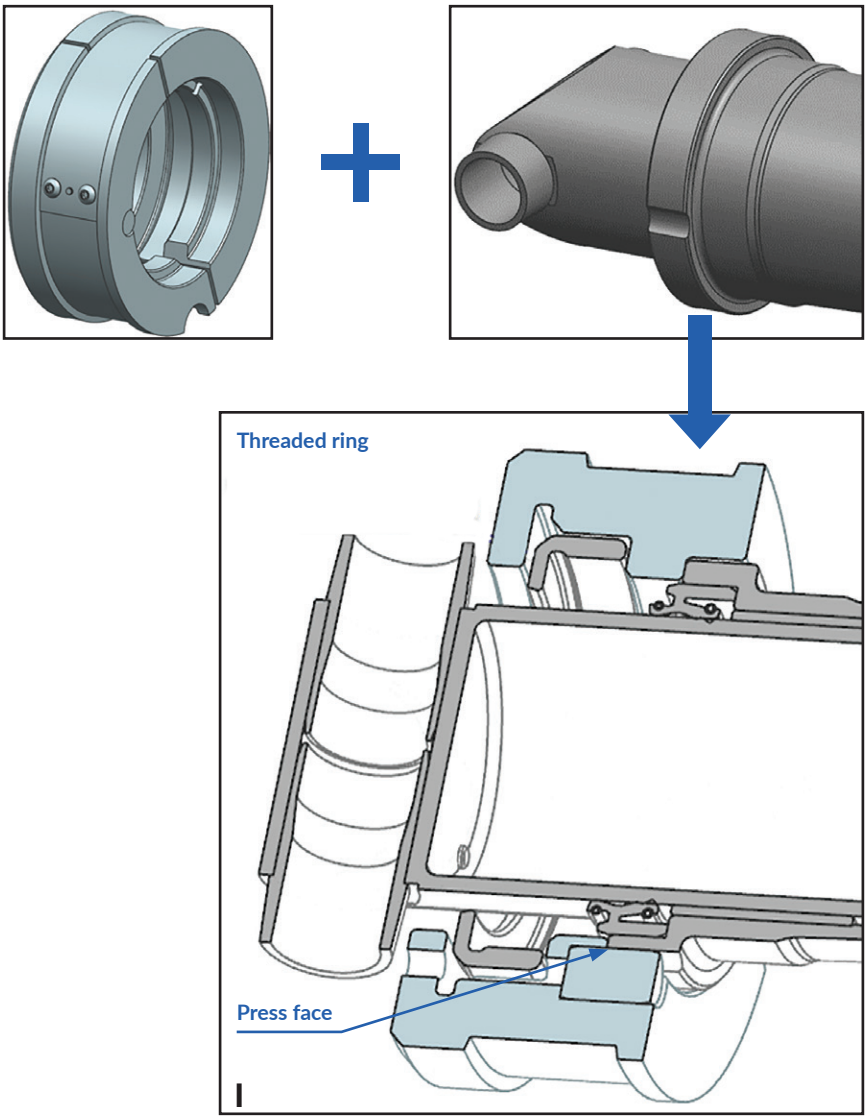
NOTICE

During installation make sure Slider and jig drive sides are aligned. “Drive side” is laser-etched both on jig and slider. Another feature to identify DS is counterbore on slider eye.



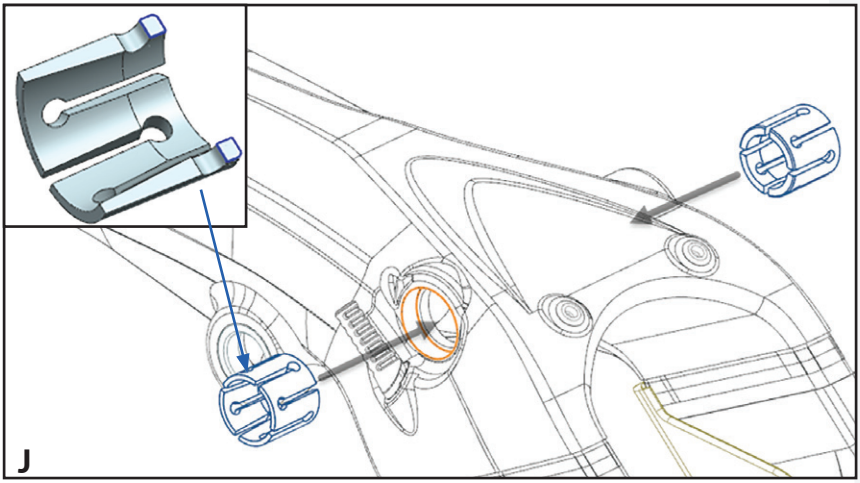
H. Use slider press jig to install slider assembly into swingarm.

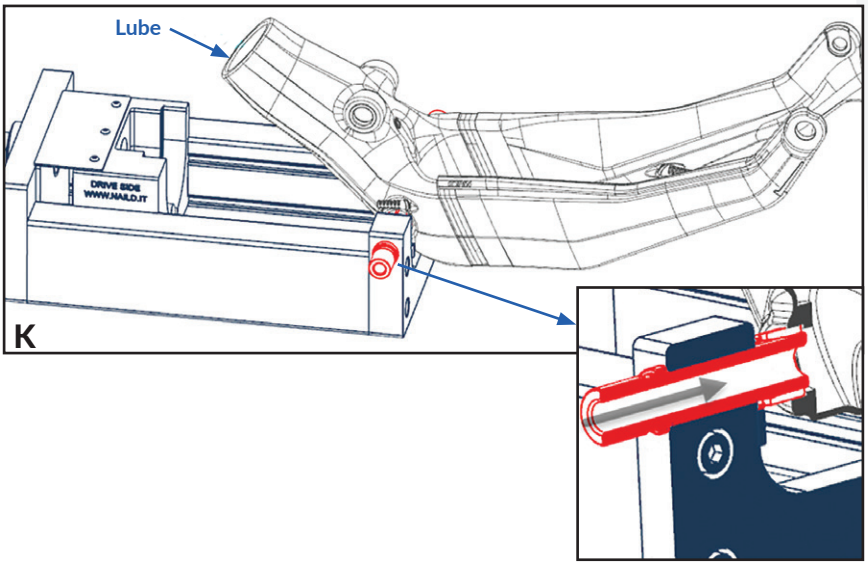
I. Open the collar to wrap it around threaded ring (unscrewed). Bring collar alignment pin into shoulder groove on DS of sleeve. Seat collar onto face of sleeve. This is press face.



J. Insert collets into both DS and NDS compression bores of swingarm. The taper must face outwards. These collets should be a slip-fit and bottom-out inside bores.

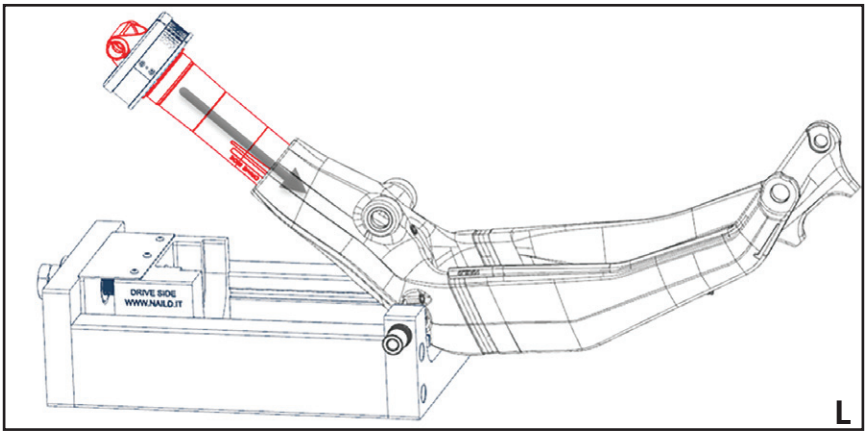
K. With Pressing Jig fixed on a table, use Fixture Pins to secure swingarm and the Collets into the jig. Make sure DS of swingarm is aligned with DS of jig.

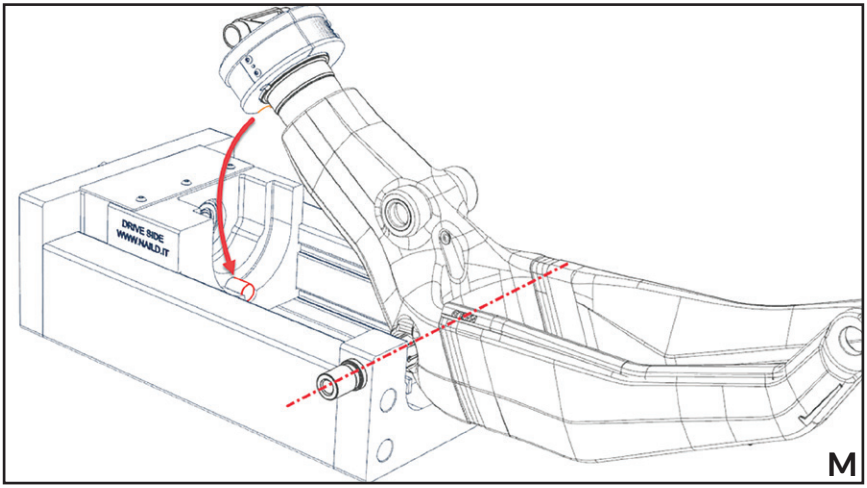




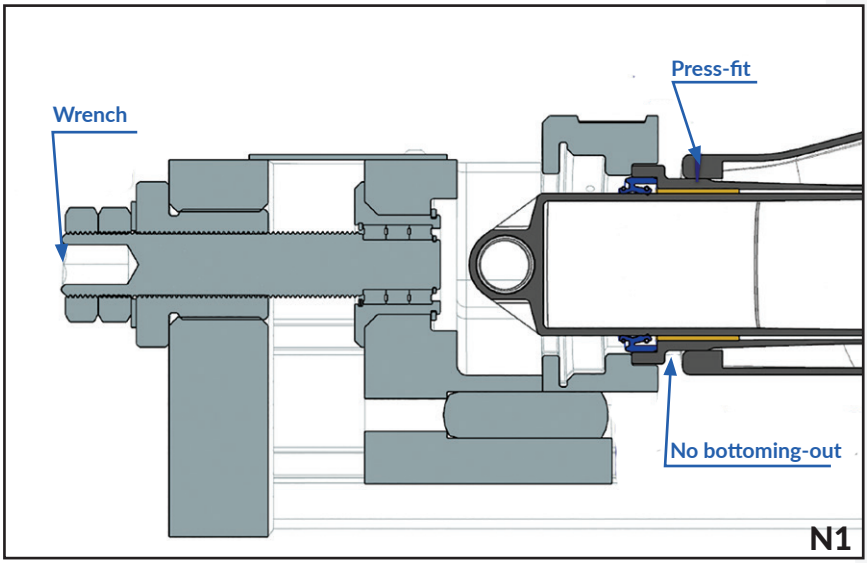
L. With swingarm still rotated above the jig, loosely insert the slider assembly with collar on it into the swingarm bore. Keep the drive sides aligned correctly!

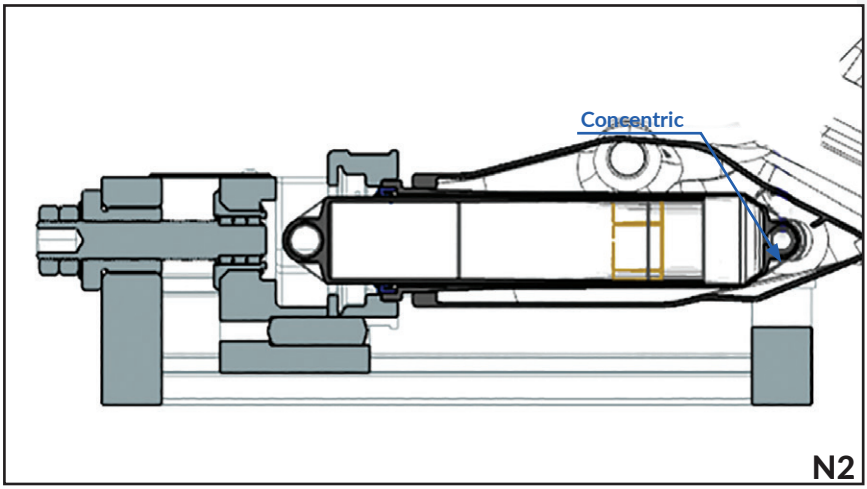
M. Make sure pressing block of jig is in fully open position. Rotate slider and swingarm into horizontal position. The collar alignment slot should nest onto alignment pin of pressing block.





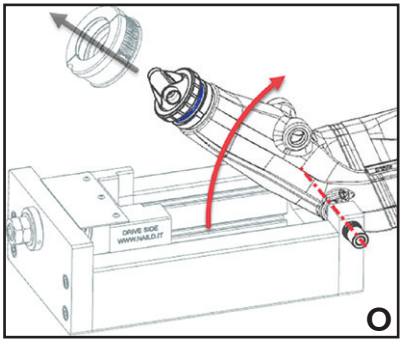
N. Use 12mm Allen wrench to bring pressing block into contact and flush with pressing collar. Keep turning until press-fit area of sleeve engage with I.D. of the swingarm bore. Correctly calibrated jam nuts set the depth of initial concentricity.

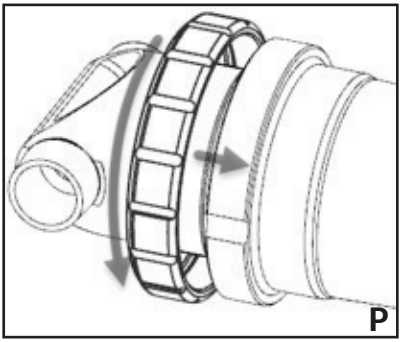




O. Keep swingarm secured in collets. Open the pressing block.Rotate swingarm out of pressing block. Remove pressing collar.

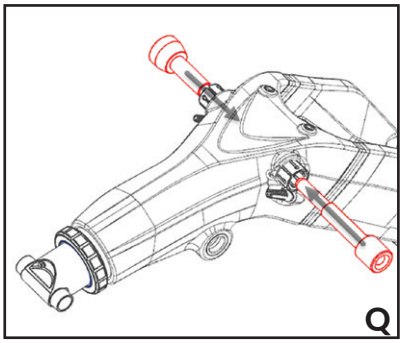
P. Screw ring onto sleeve until initial resistance (contact) of oil seal is felt. After resistance tighten ring 1/3 more turns.Do not overtighten!

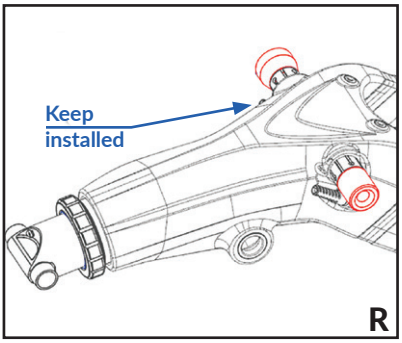




Q. Insert longer tool from NDS through collet, insert shorter tool from DS. Screw them together till bottomed out on the collets and the tools rotate freely and without binding. This step should bring slider swingarm bore into concentricity with swingarm.

R. Keep collets and tools installed in order to preserve concentricity until bleeder valve is installed.





10. SWINGARM ASSEMBLY TO FRAME

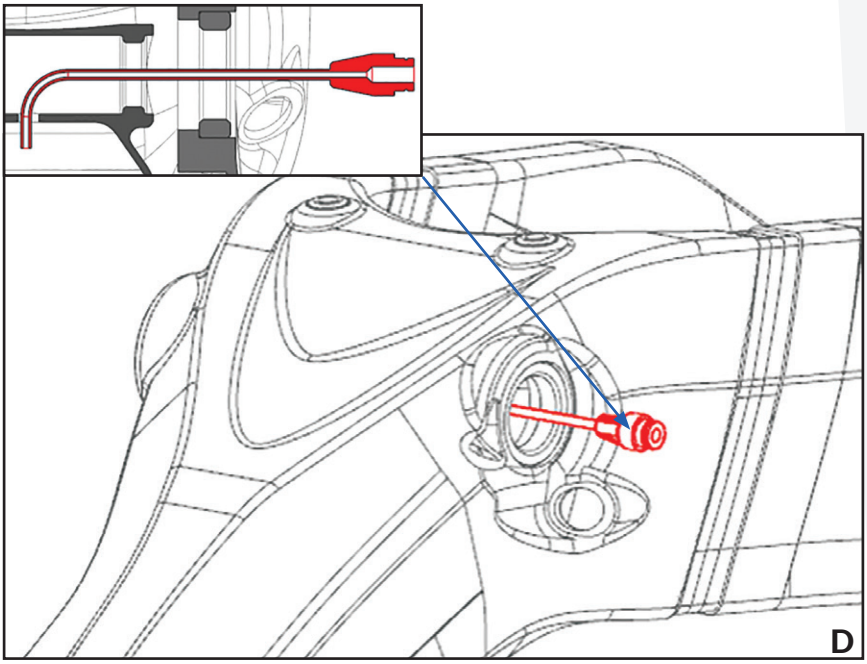
If disassembly-assembly of slider was performed as per chapter **9**, follow the order to assemble swingarm to FT.

A. Assemble pivot point according to section 8.D. - 8.H.

B. Assemble control links according to section 7.B.

C. Remove taper tools and collets from swingarm compression bores.

D. Inject 6cc of assembly oil (e.g., Race Tech Ultra Slick Fork Fluid or similar grade) through the inner vent hole slider.



E. Assemble shock to FT according to 5.D. - 5.H.

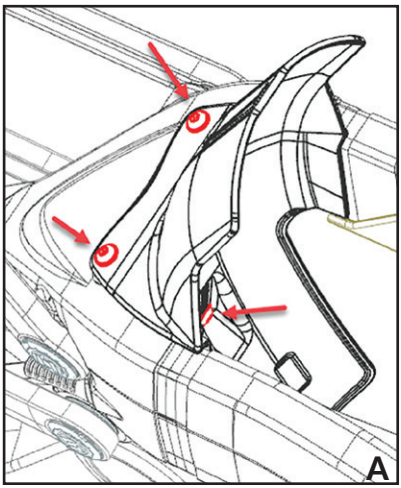
F. Assemble shock with swinglink and compression links and attach swinglink to FT according to section 4.

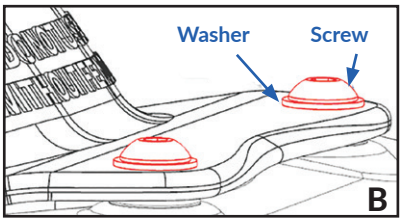
G. Assemble bleeder valve and compression links to RT according to section 6.C. - 6.E.

11. REAR FENDER

A. To disassemble fender unscrew 3 screws as shown.

B. To assemble fender use screws and washers, apply semi-permanent threadlocker, tighten accordingly to torque page.





⚠ WARNING

Do not ride without fender properly attached! See owner's manual for more details.

12. CHAINSTAY PROTECTOR

To fix the delaminated chainstay (CS) protector, perform the following steps.

A. Remove remainders of double-sided tape off the swing-arm and chain stay protector. Clean both surfaces with clean lint-free cloth dampened in alcohol.

B. Apply CS protector onto swingarm so it fits perfectly. Mark contours of CS protector on swingarm with light colored wax pencil.

C. Take CS protector off, apply new 3M high-strength thin double-sided adhesive tape on swingarm all around inside contour drawn. Make sure there is no gaps where water can get in.

D. Apply CS protector onto swingarm, press firmly along edges. Make sure no wrinkles, air bubbles, or gaps in contour.