



BUFFALO **BICYCLES**

Field Mechanic
Manual

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Important Points of Bicycle Repair

Top six rules:

1. Never drop components in the dirt and always clean components before installing them.
2. Always clean bearings before installation and use clean grease when installing. Never use oil for bearings.
3. Always adjust bearings when they start to get loose. Loose bearings wear out quickly. Always tighten locknuts and lockrings to prevent bearings from losing adjustment.
4. Always clean and grease threads before installing components.
5. Always remove excess oil from a chain after lubrication (oil should be inside the chain, not on the outside). Never use grease on chains.
6. After a month of riding, field mechanics are to check the first components; headset, rear and front hubs if there is any free play adjust accordingly. This free play is more than likely from the bedding in of the components.

Bottom bracket

- Ensure all components and threads are clean, including the threads inside the frame.
- Grease all threads and add a light coating of grease inside the left hand cup.
- Fully install and tighten the cartridge first, right side, then tighten the cup on the left side. The left cup will not tighten against the frame.

Crank set

- Ensure that the crank bolts are very tight or else they will come loose with riding. If possible, put a thread-locking compound on these bolts. Never use grease on crank bolts or on the spindle of the bottom bracket.

Headset/Fork

- Ensure all components and threads are clean.
- Grease all threads and fill cups with grease.
- Ensure bearing retainers are facing the correct direction.
- Properly adjust the upper bearing race and then tighten the lockring against it, following
- Always adjust a loose bearing to prevent rapid wear out.

Wheel building

- Add oil to spoke threads before installing nipples.
- If spokes are too long, use more crosses (e.g. 4x instead of 3x).
- If spokes are too short, use fewer crosses (e.g. 2x instead of 3x).
- Finished wheel should be round, true, and properly dished. All spokes should have the same tension.
- Use a properly sized spoke key for tightening.

Hubs

- Ensure the axle, bearings and hub shell are all clean.
- Fill bearing cups with fresh grease before installing bearings.
- Tighten one cone and locknut together on the axle, then properly adjust the other cone and tighten the locknut against it.
- Always adjust a loose bearing to prevent rapid wear out.

Coaster brake hub

- Ensure all components are clean.
- Fill inside of hub with high temperature (wheel bearing) grease.
- Fill bearing races with fresh grease before installing bearings. Ensure bearing retainers are facing the correct direction.
- Tighten the LH cone and locknut on the axle then properly adjust the RH cone and the tighten locknut against it.
- When the wheel is installed on bike, ensure that the brake arm is properly attached to the seat stay or chain stay.
- Always adjust a loose bearing to prevent rapid wear out.

Handlebars

- Grease the expander bolt threads before installing the wedge.
- Grease the stem shaft before inserting it into the fork steerer tube.

Seat post

- Grease the seatpost before installing.

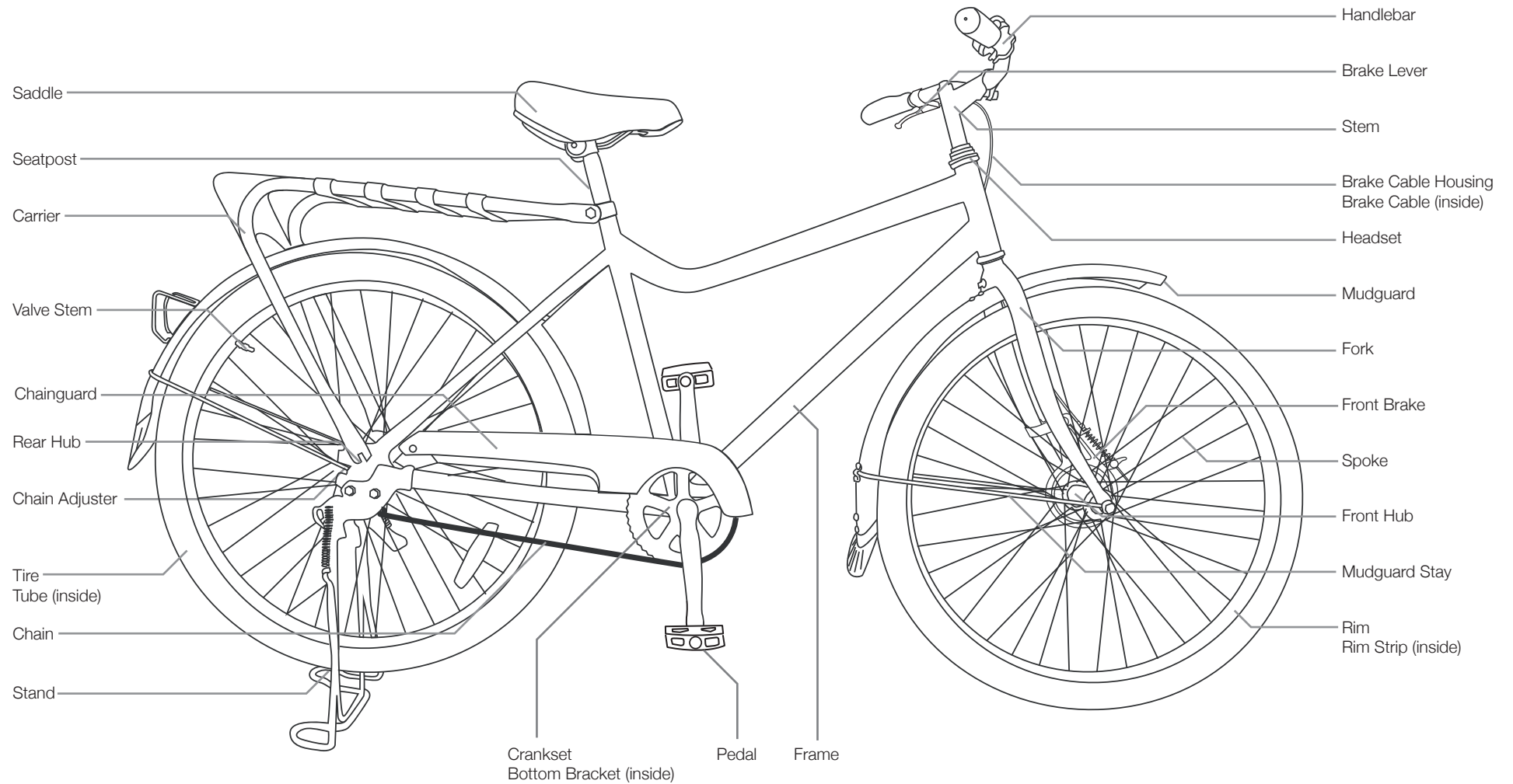
Chain

- Never add grease to a chain. Clean the chain, apply oil, rotate the crank 50 times to work the oil into chain.
- Wipe off any excess oil.
- Oil should be inside the chain, not on the outside.
- Always keep the chain tension adjusted properly to prevent the chain from coming off the sprockets.

Tube (patching)

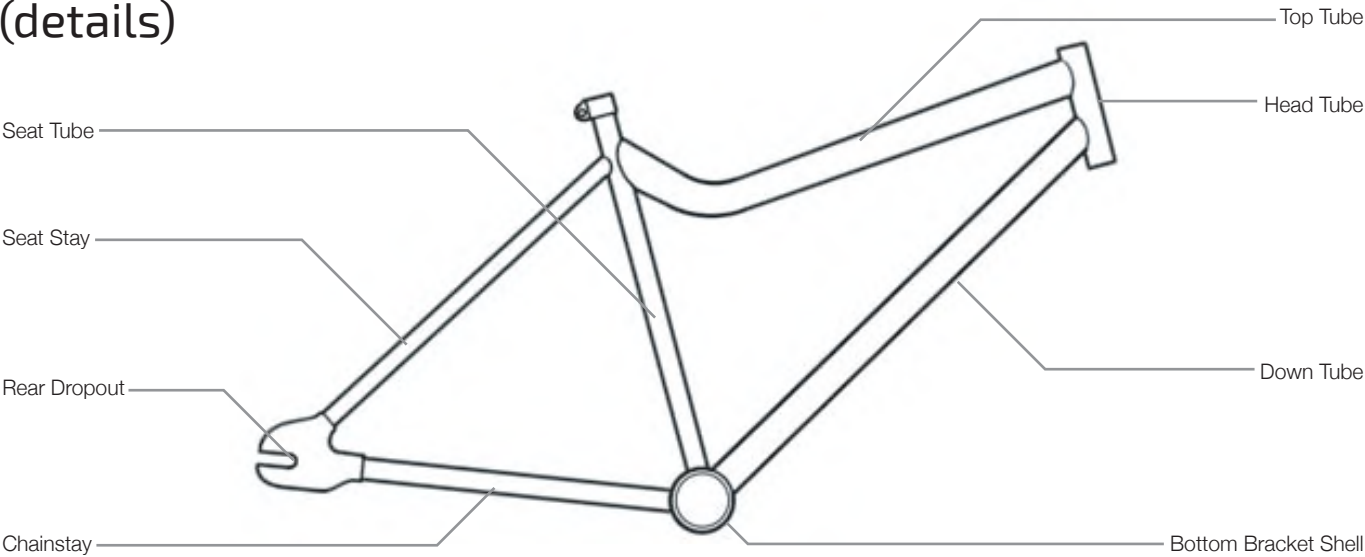
- Scratch the area around puncture using sandpaper.
- Apply a thin layer of patch glue around the puncture and allow it to dry.
- A p p l y the p a t c h to the g l u e a n d p r e s s it f i r m l y a g a i n s t the f i n g e r s . A l l o w the p a t c h to d r y f o r o n e m i n u t e.
- Check the tire for any debris that might have caused the puncture and remove it.
- Reinstall new tube and tyre.

Components

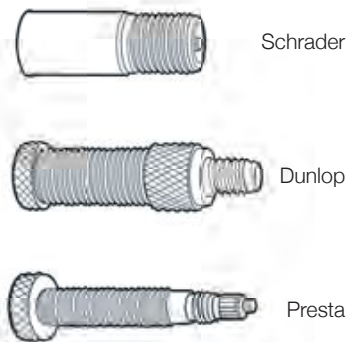


Components (details)

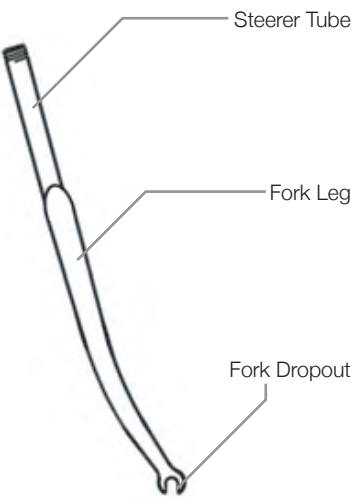
Frame



Valve Types



Fork



Spoke



Tube Repair

Required Tools

Tire Lever



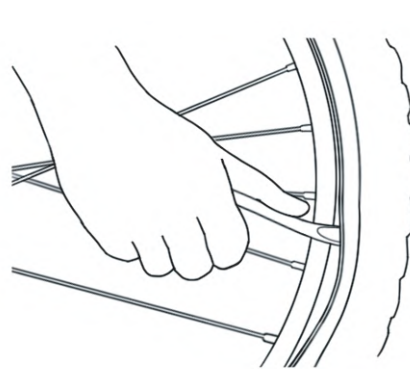
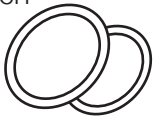
Hacksaw Blade



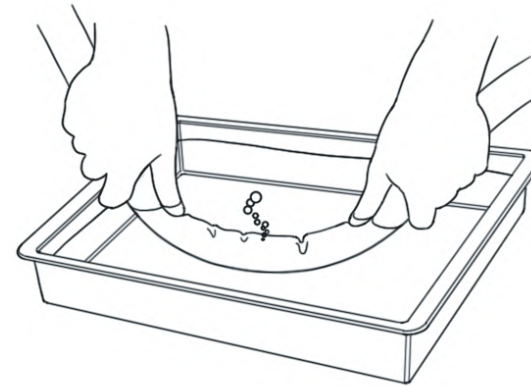
Patching Glue



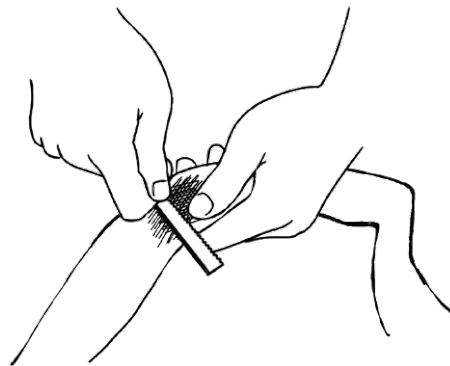
Patch



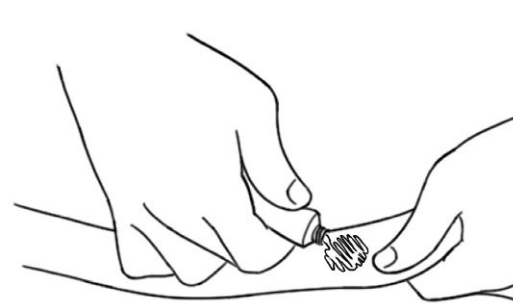
1. Remove the tube



2. Hold the tube underwater to locate hole



3. Scratch the tube where the patch will go with a hacksaw blade



4. Add patching glue to the tube and allow it to dry.



5. Press the patch down hard on the tube for 30 seconds

Square Taper Bottom Bracket

Required Tools

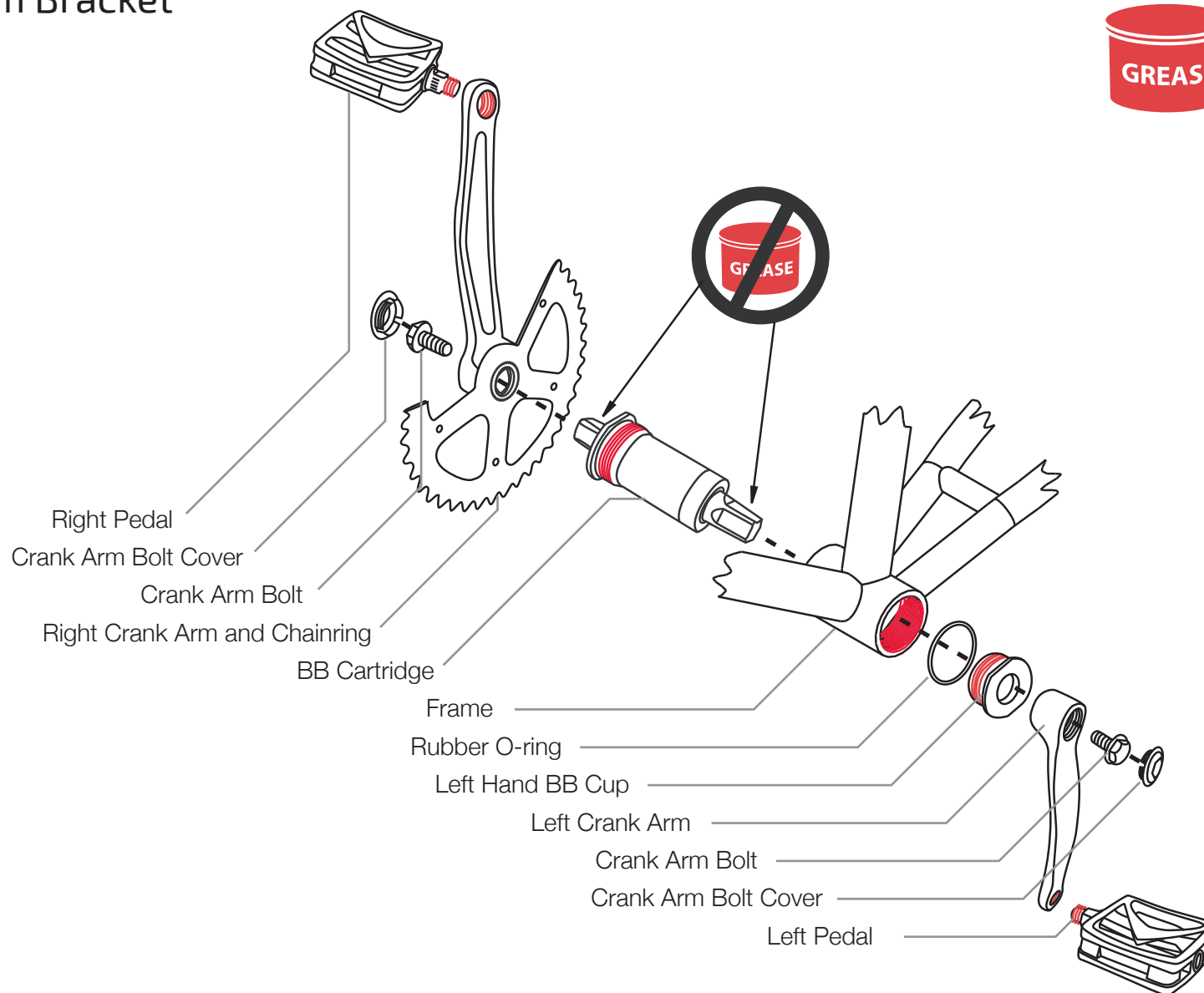
15mm Spanner



36mm Spanner



Crank puller / with 16mm Spanner



Cottered Bottom Bracket

Required Tools

10mm spanner



15mm spanner



26mm spanner



36mm spanner



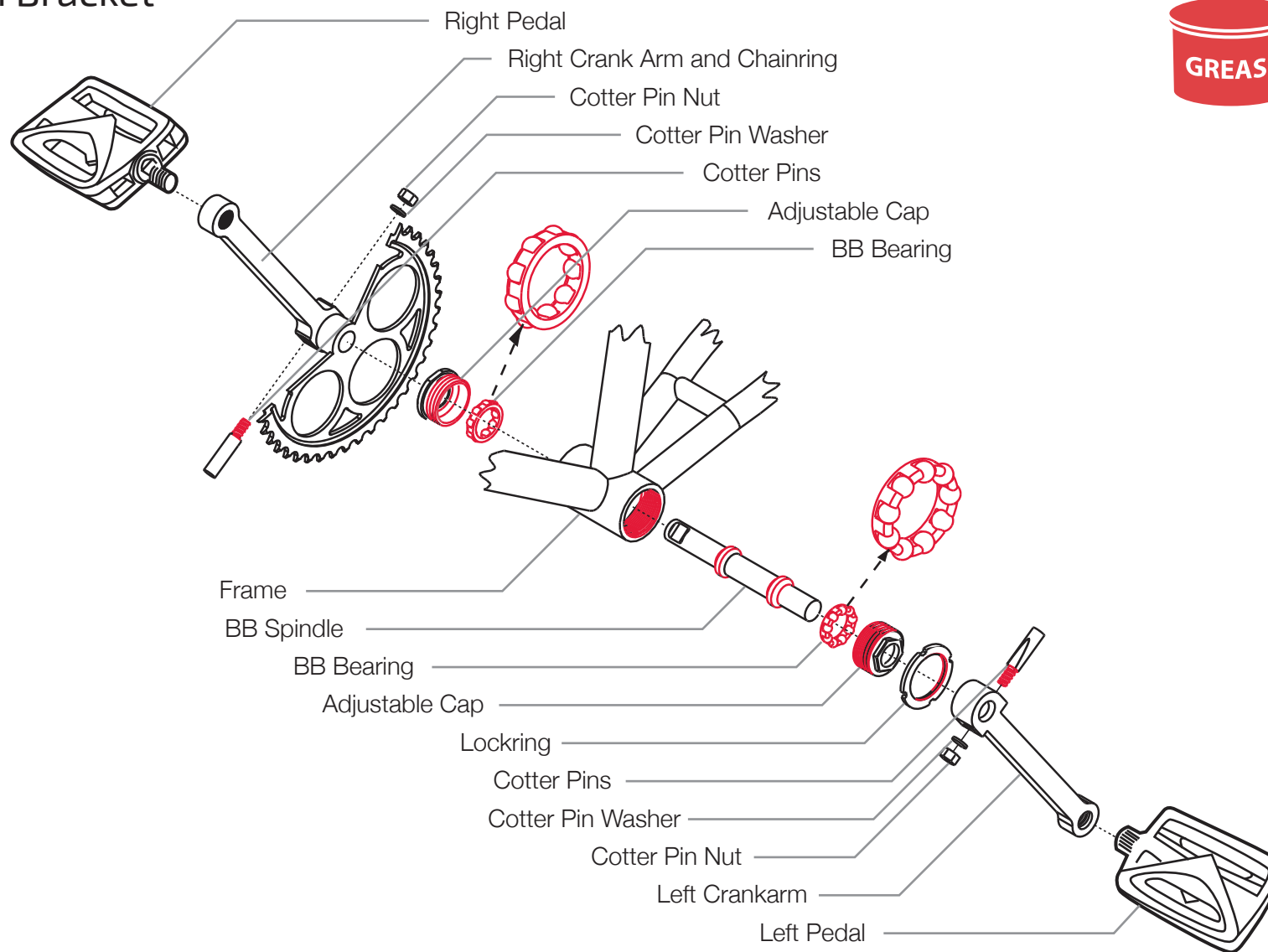
Lockring Spanner



Hammer



Cotter Deadweight



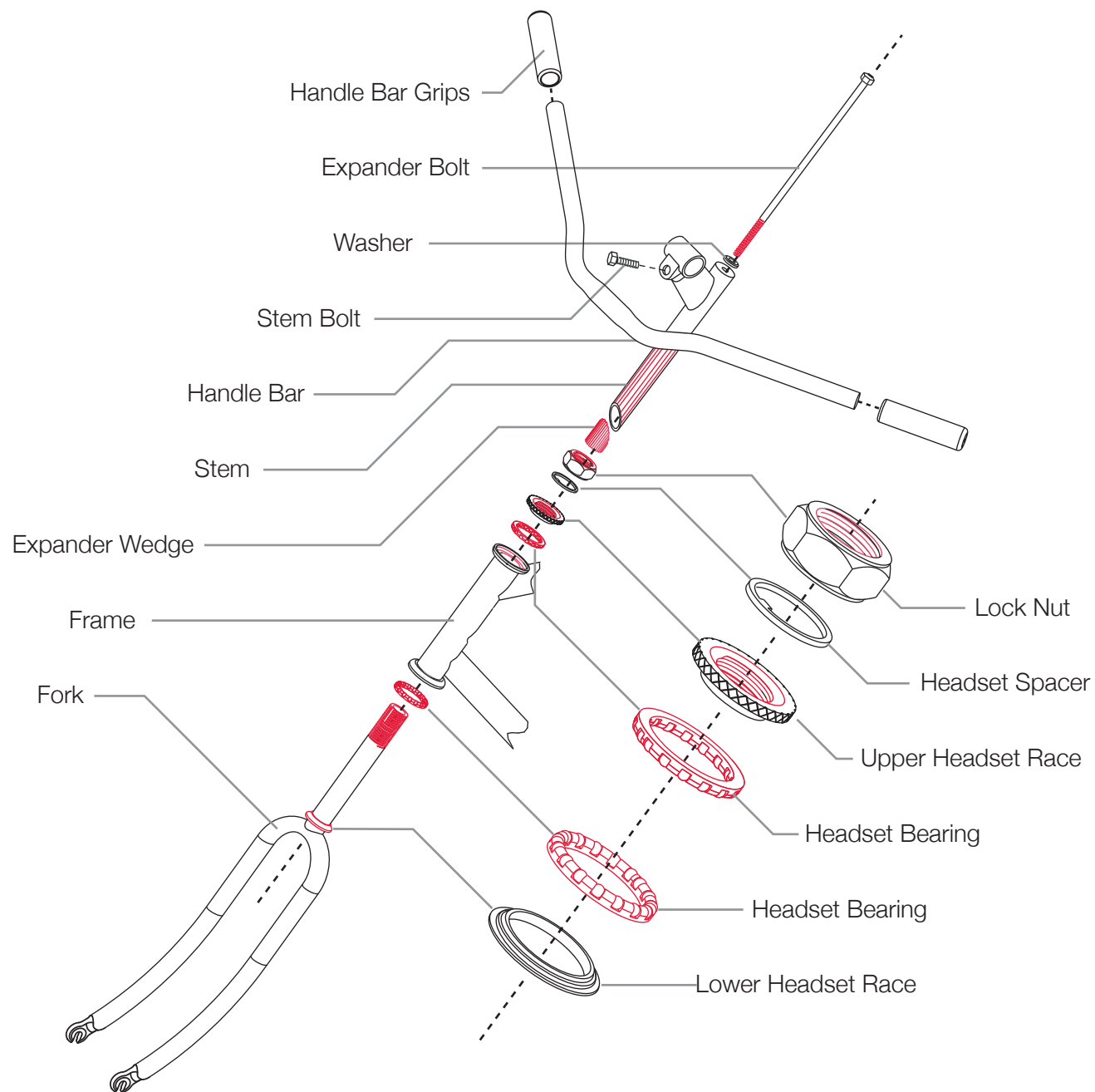
Headset

Required Tools

13mm Spanner



30mm Spanner



Front Servo Brake

Required Tools

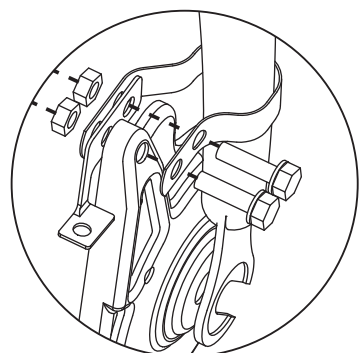
10mm Spanner



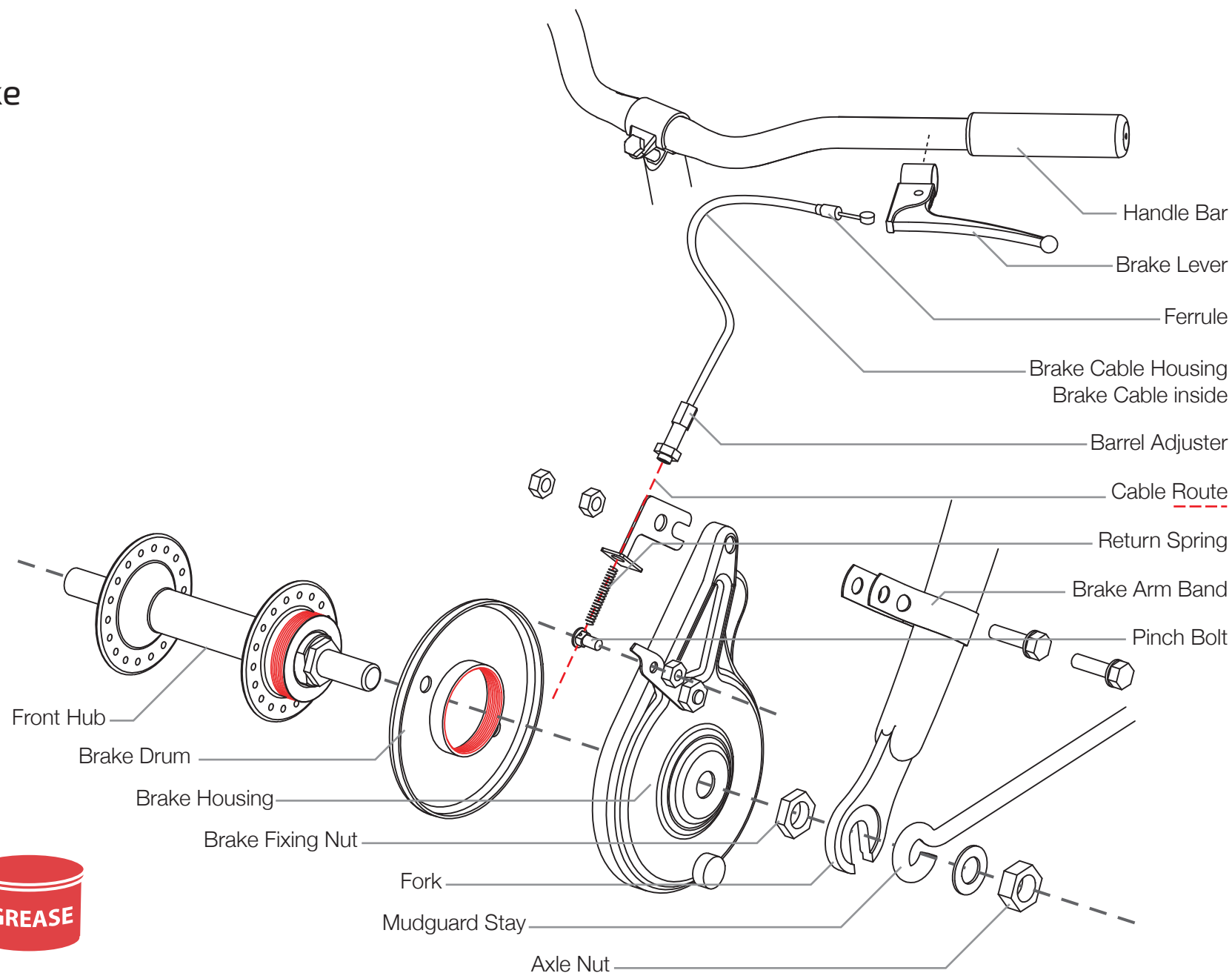
8mm Spanner



Philips Screwdriver



Clamp Assembly
Detail



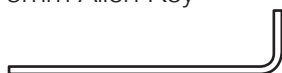
Servo Drum Removal Tool

Required Tools

10mm Spanner



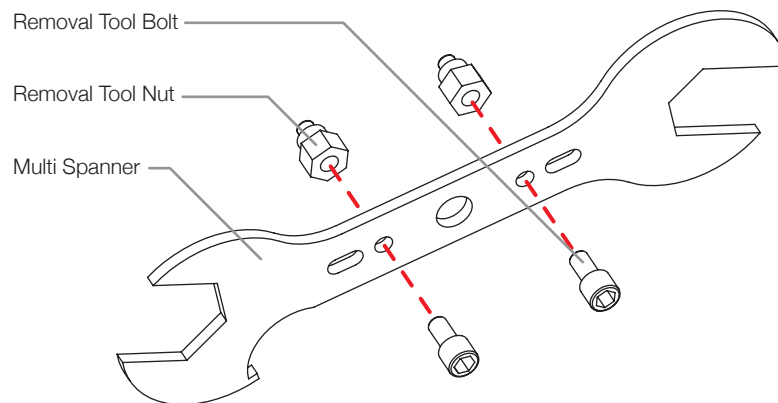
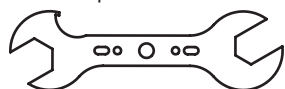
6mm Allen Key



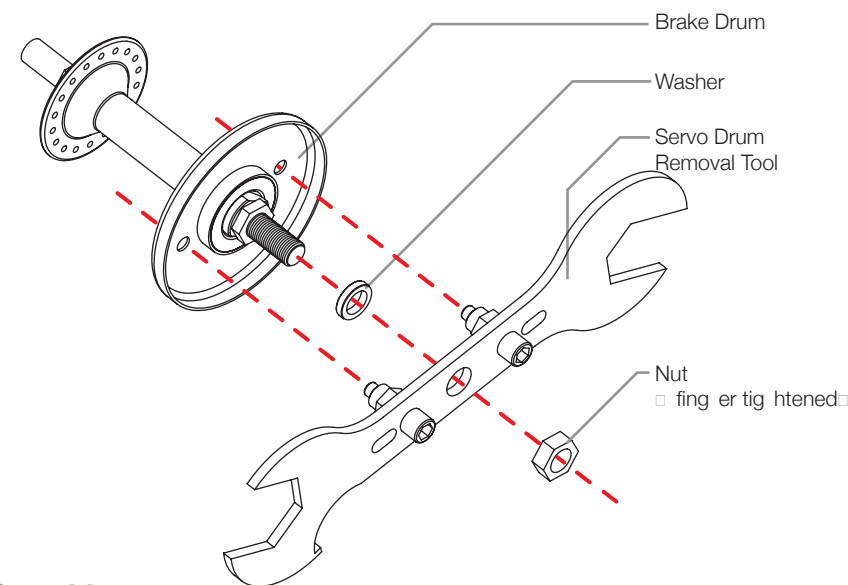
Hammer



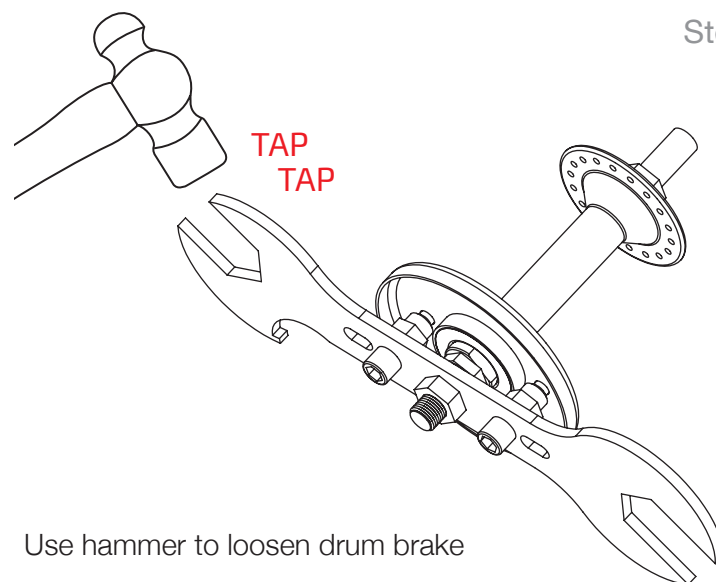
Multi Spanner



Step 01

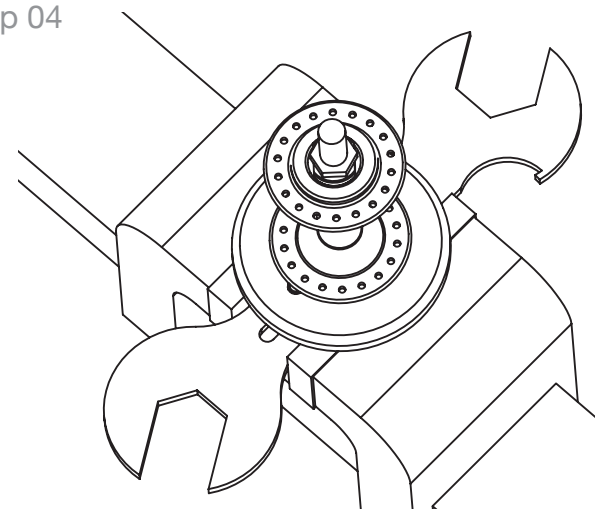


Step 02



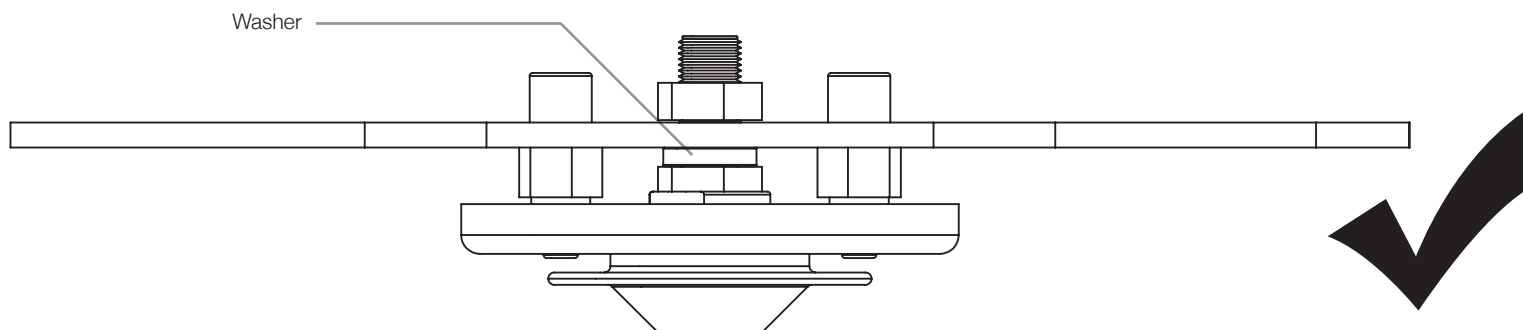
Step 03

Step 04

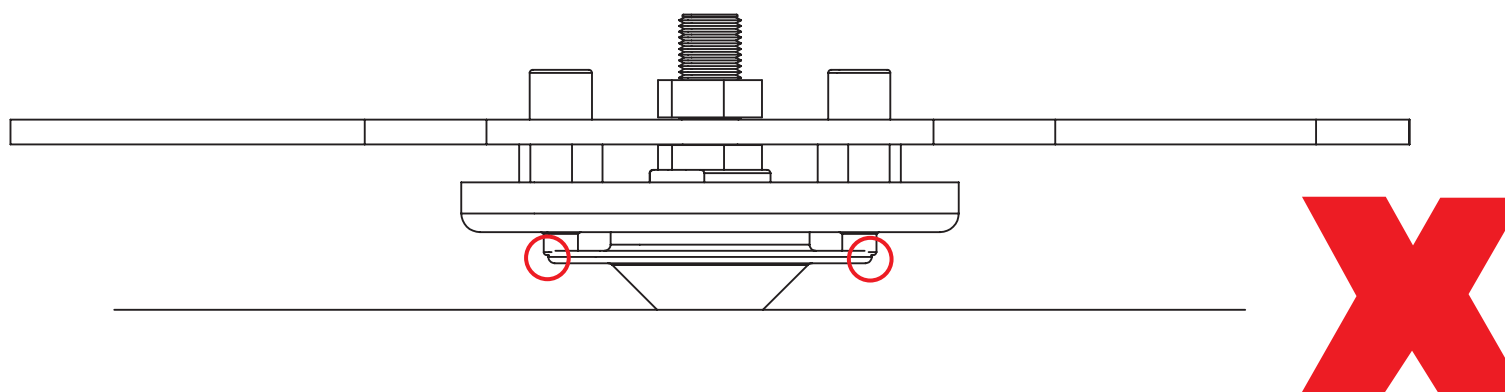


Servo Drum Removal Tool

Correct Placement



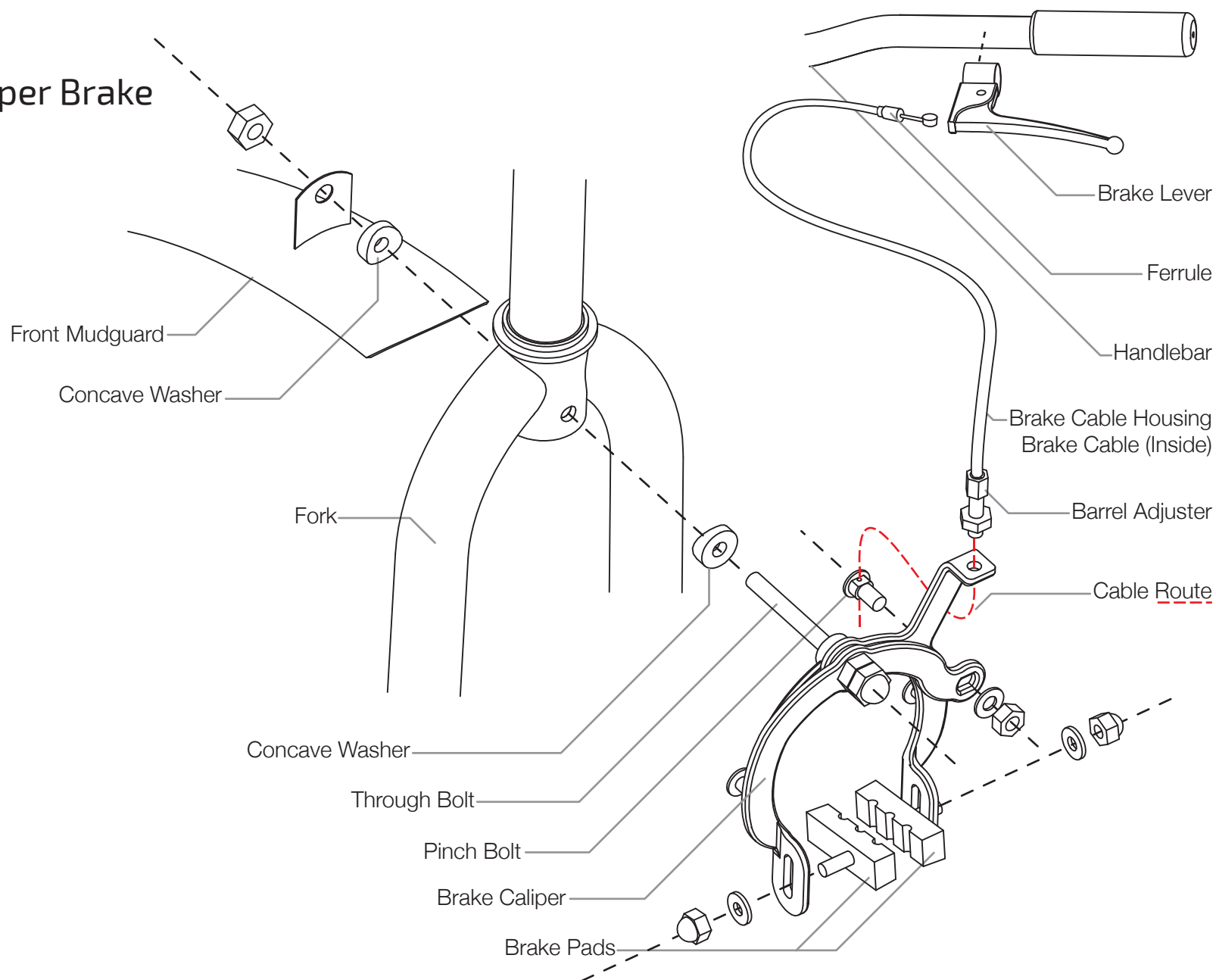
Incorrect Placement



Front Side Pull Caliper Brake

Required Tools

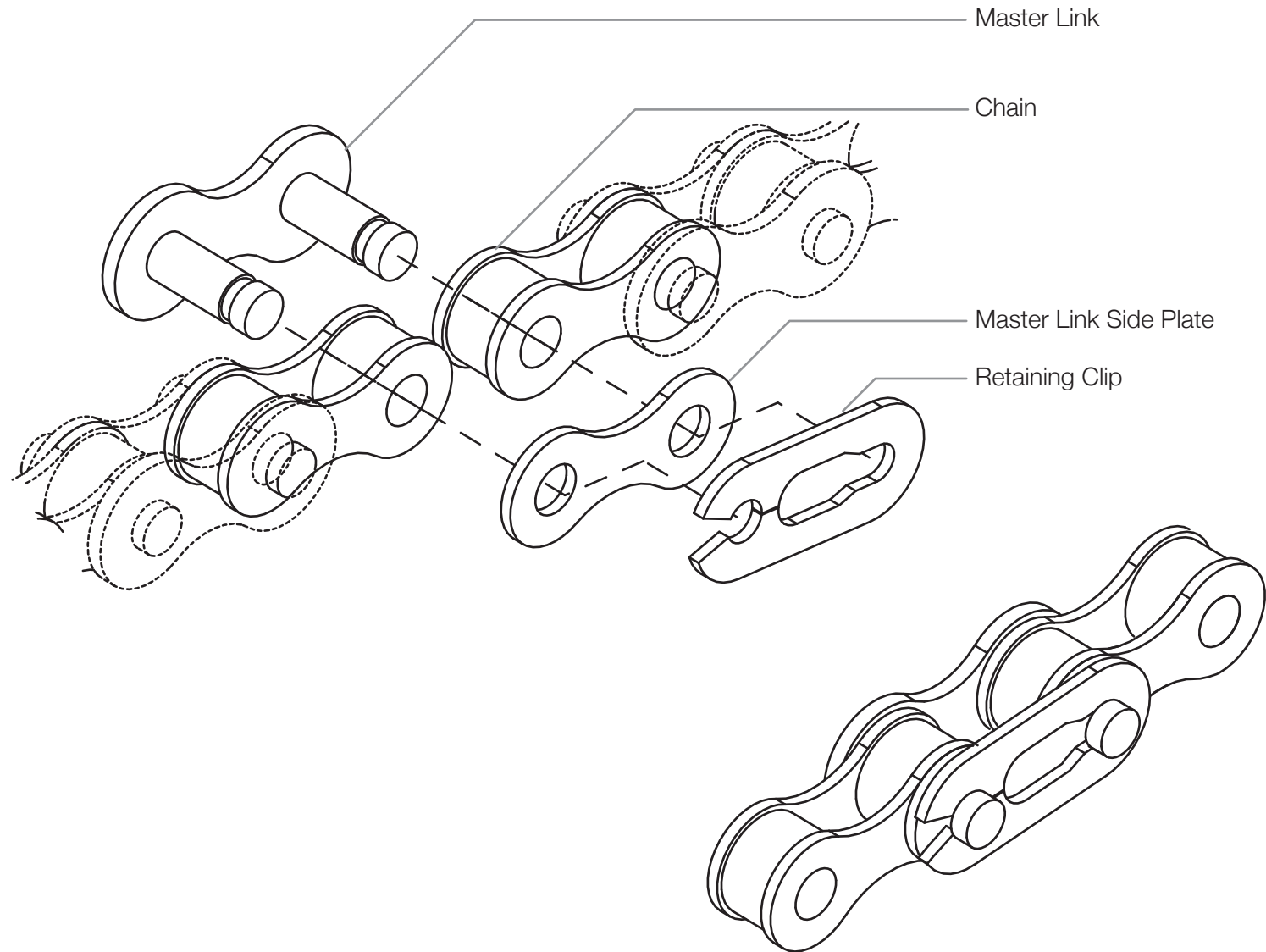
10mm Spanner



Chain

Required Tools

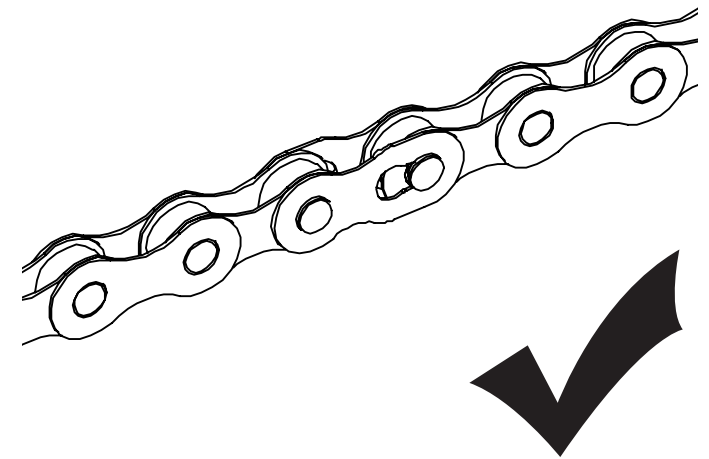
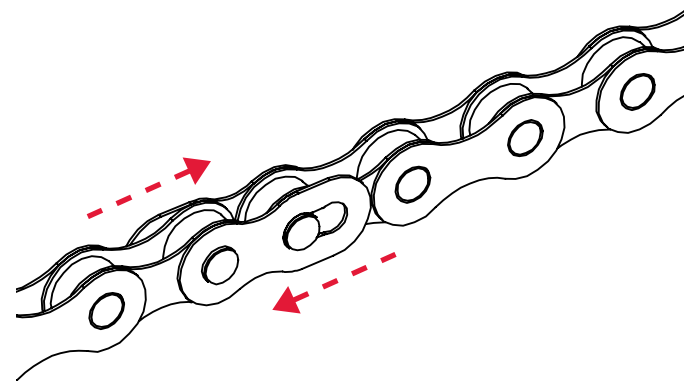
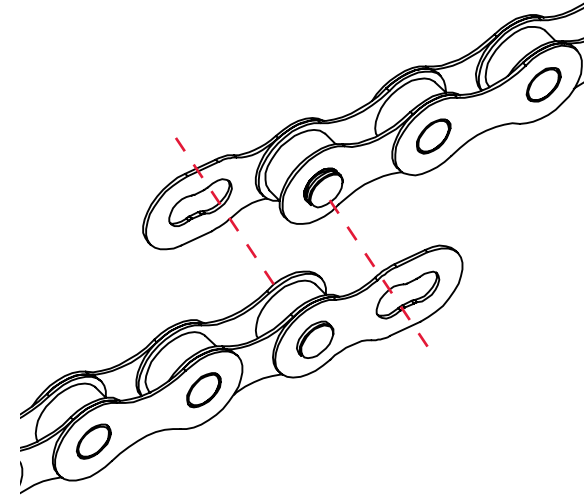
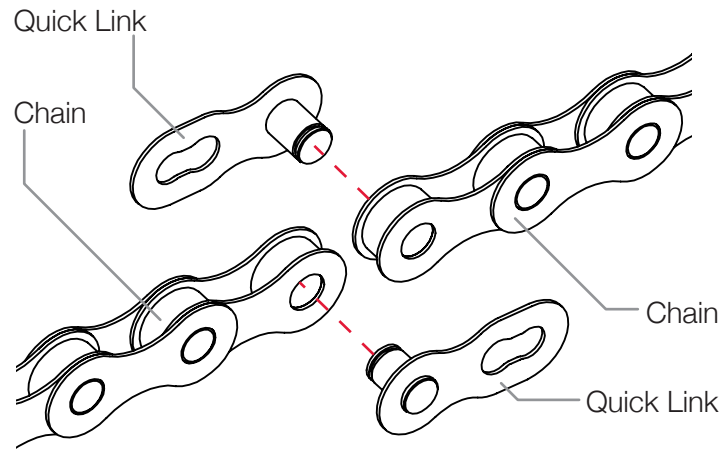
Pliers



Chain (Quick link)

Required Tools

Pliers



Front Hub

Required Tools

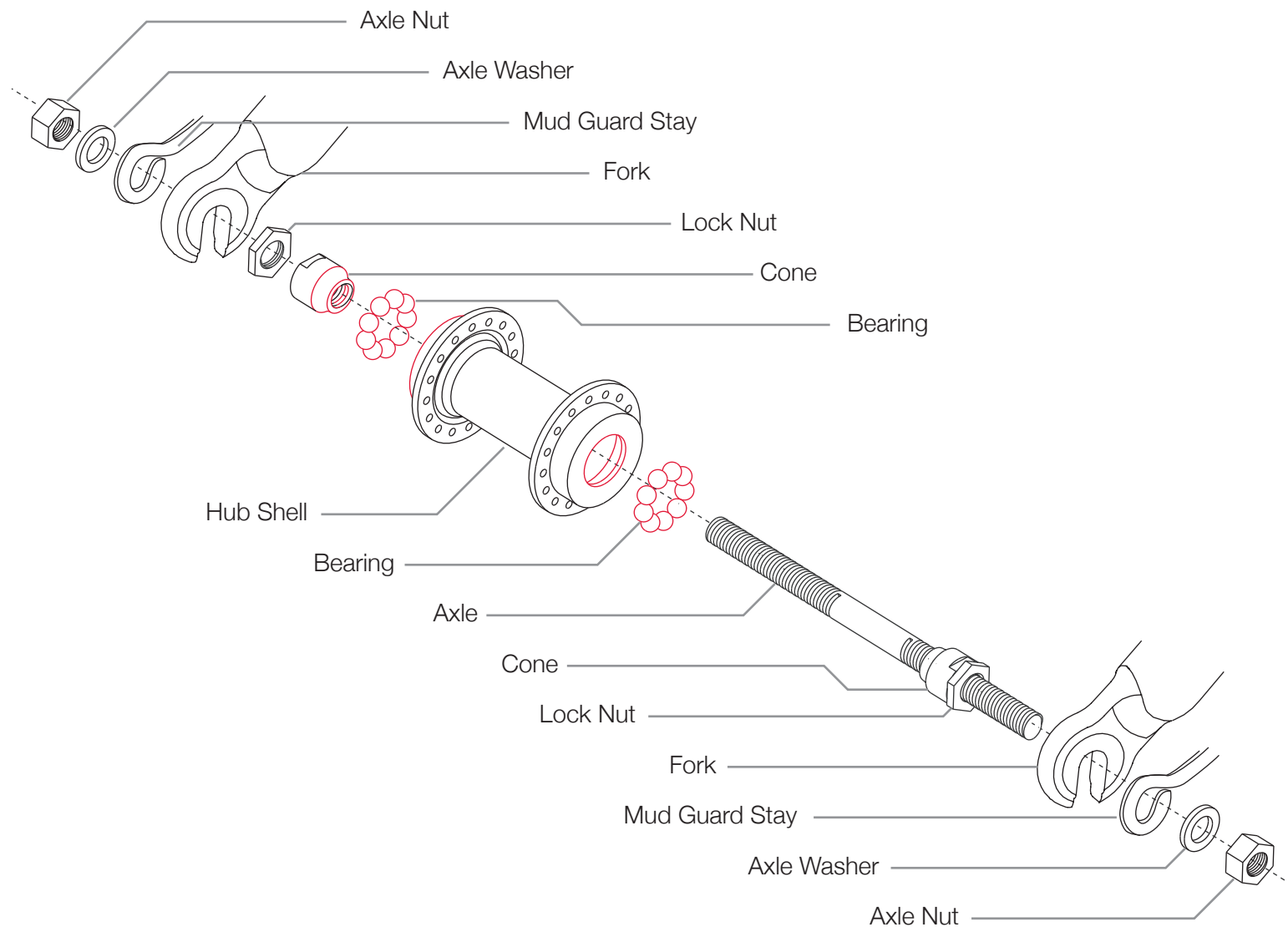
15mm Spanner



17mm Spanner



15mm Cone Spanner



Rear Assembly

Required Tools

Screw Driver



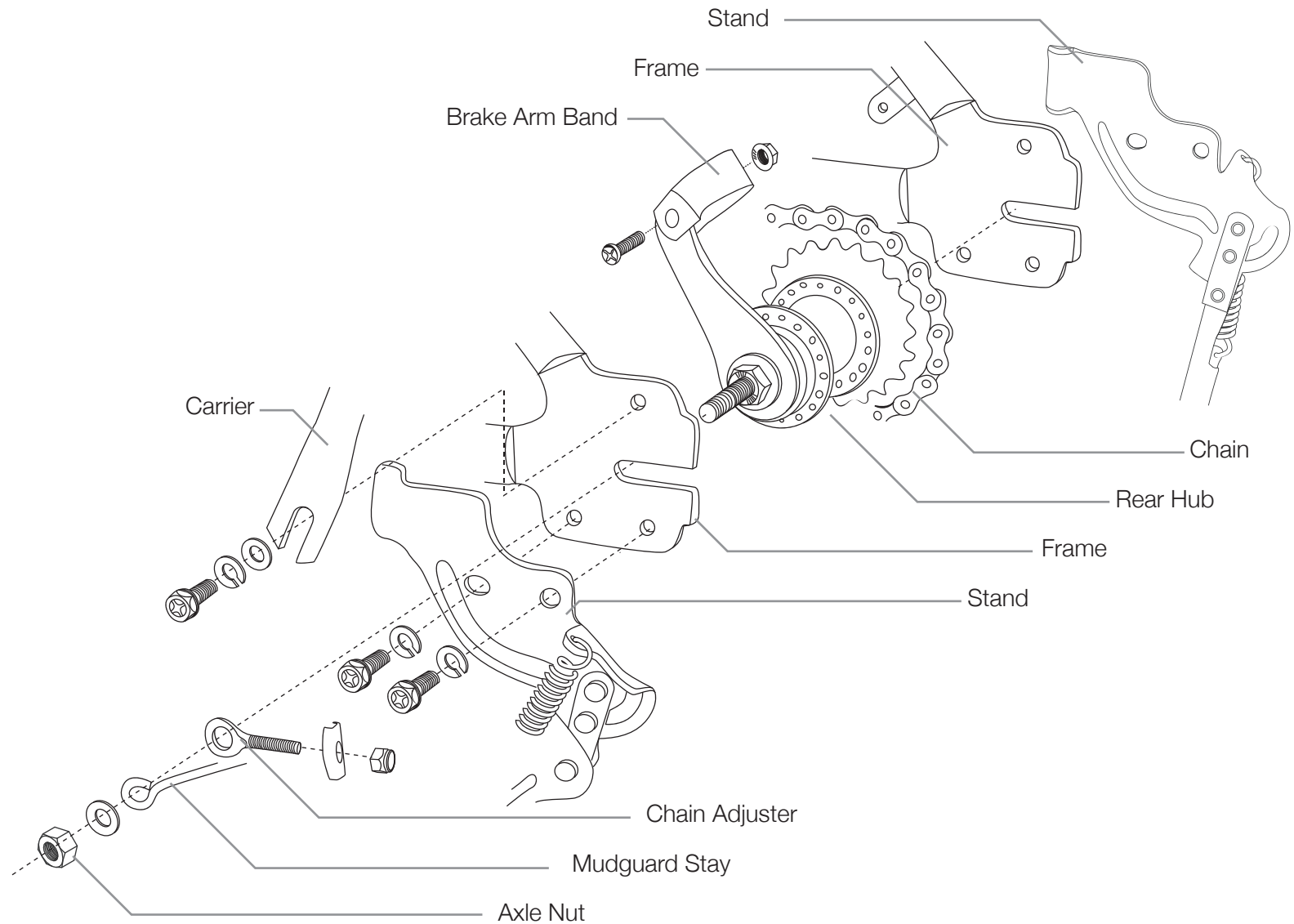
10mm Spanner



13mm Spanner

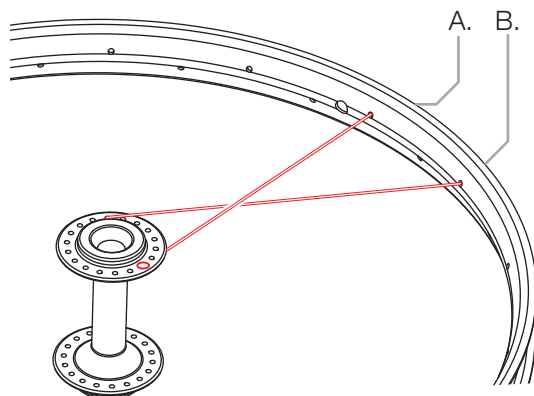


15mm Spanner



Wheel Lacing

Step 1:

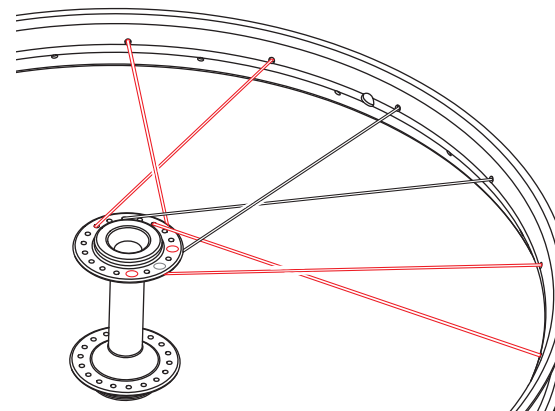


Choose any two spokes with the proper spacing (eight holes) and install them as a crossed pair adjacent to the valve stem hole. Spokes must “lace” over each other.

Spoke spacing for various crossing patterns

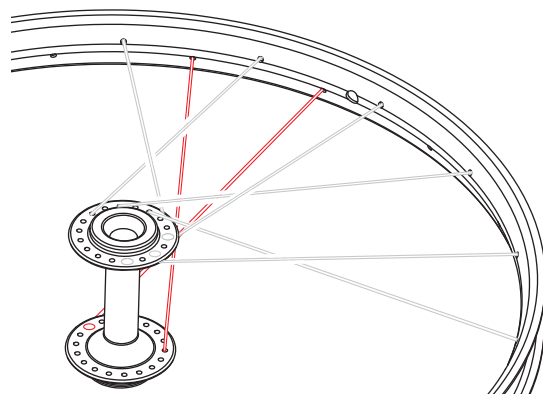
No. of Crossings	Hub Holes
4X	8
3X	6
2X	4
1X	2

Step 2:



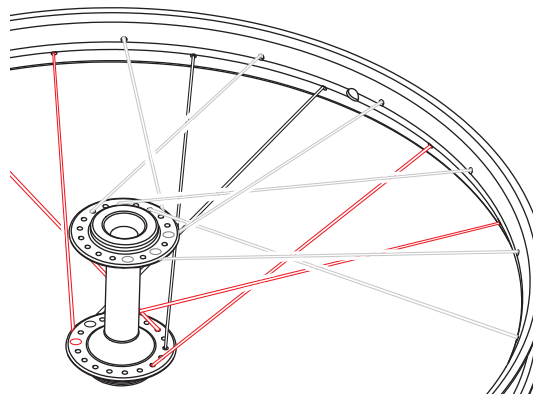
Install all the other spokes on that side in pairs.

Step 3:



Choose the pair of spokes on the other side that reach the holes adjacent to the valve hole.

Step 4:

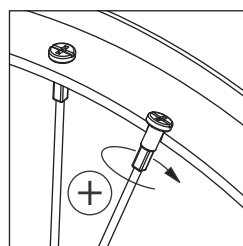
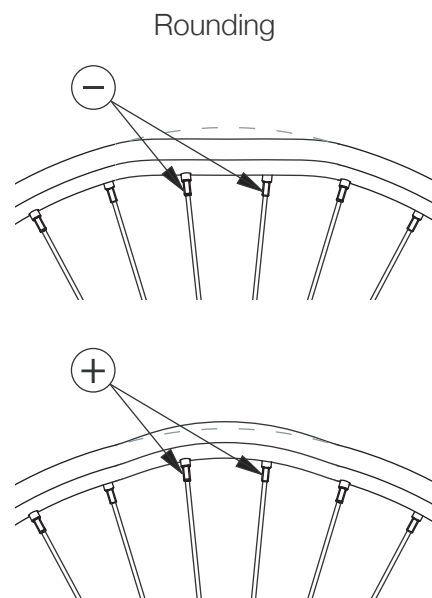
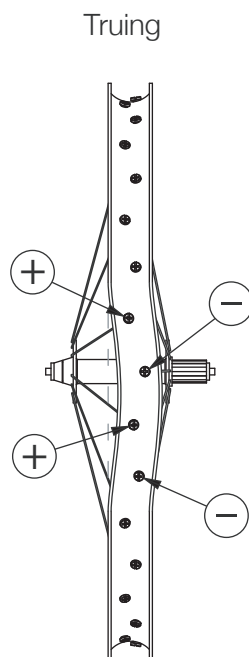


Install the remaining spokes on that side of the wheel in pairs.

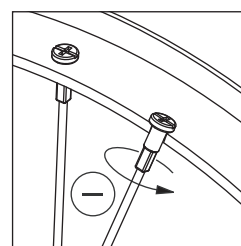
Wheel Alignment

Required Tools

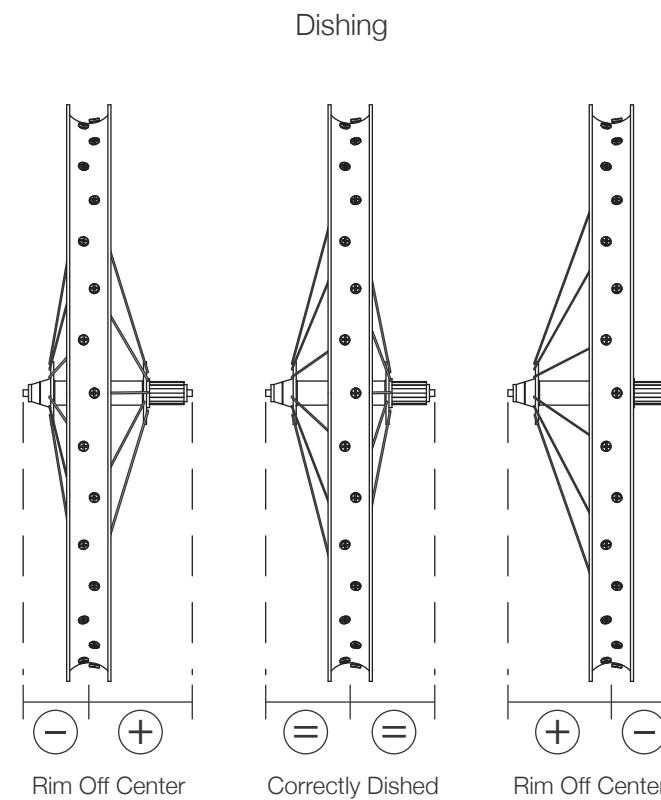
Spoke Wrench



Tighten



Loosen



Rim Off Center

Correctly Dished

Rim Off Center

KT Rear Hub

Required Tools

10mm Spanner



15mm Spanner



17mm Spanner



Screwdriver



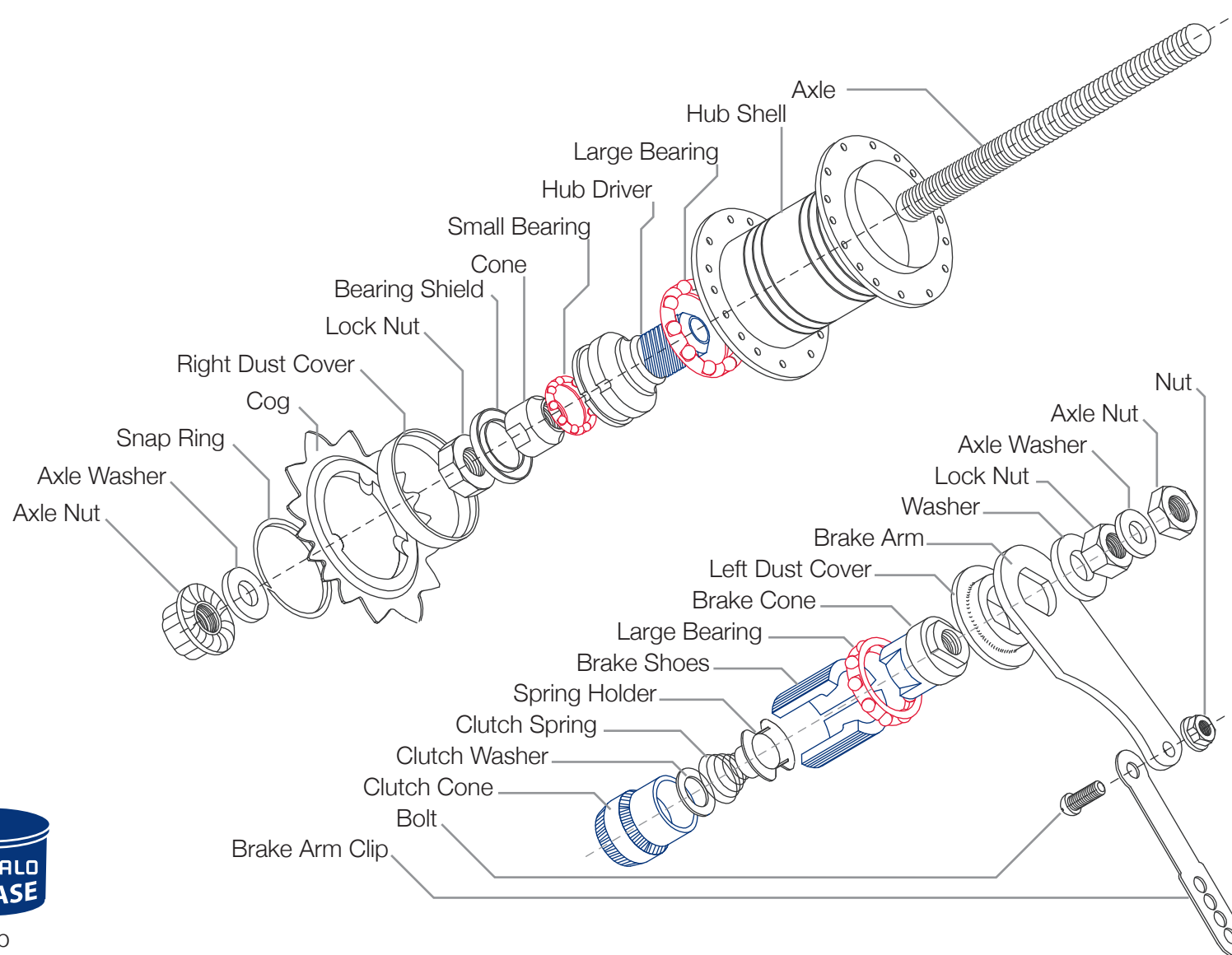
15mm Cone Spanner



Multipurpose
Grease



Hub
Grease



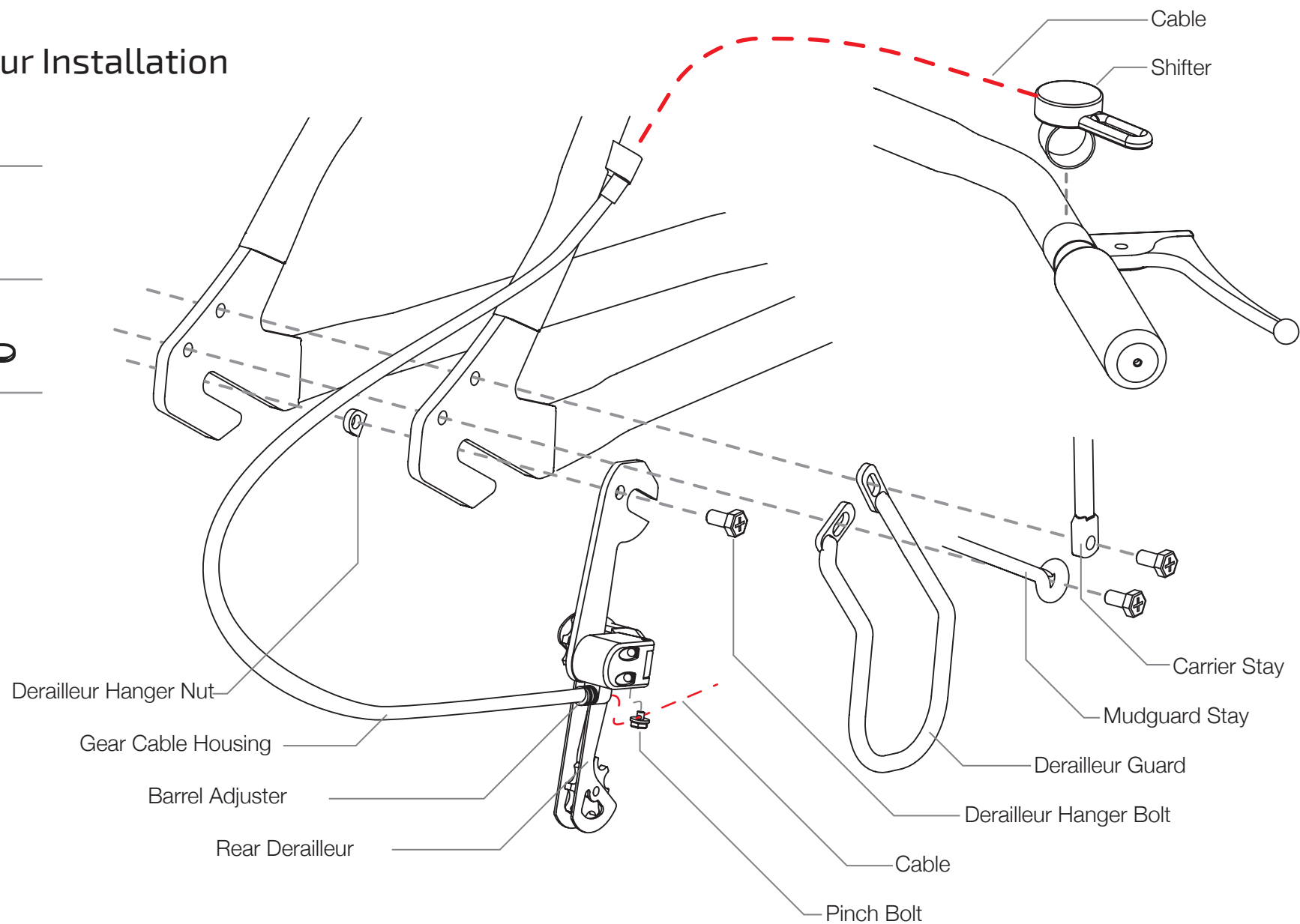
Rear Derailleur Installation

Required Tools

9mm Spanner



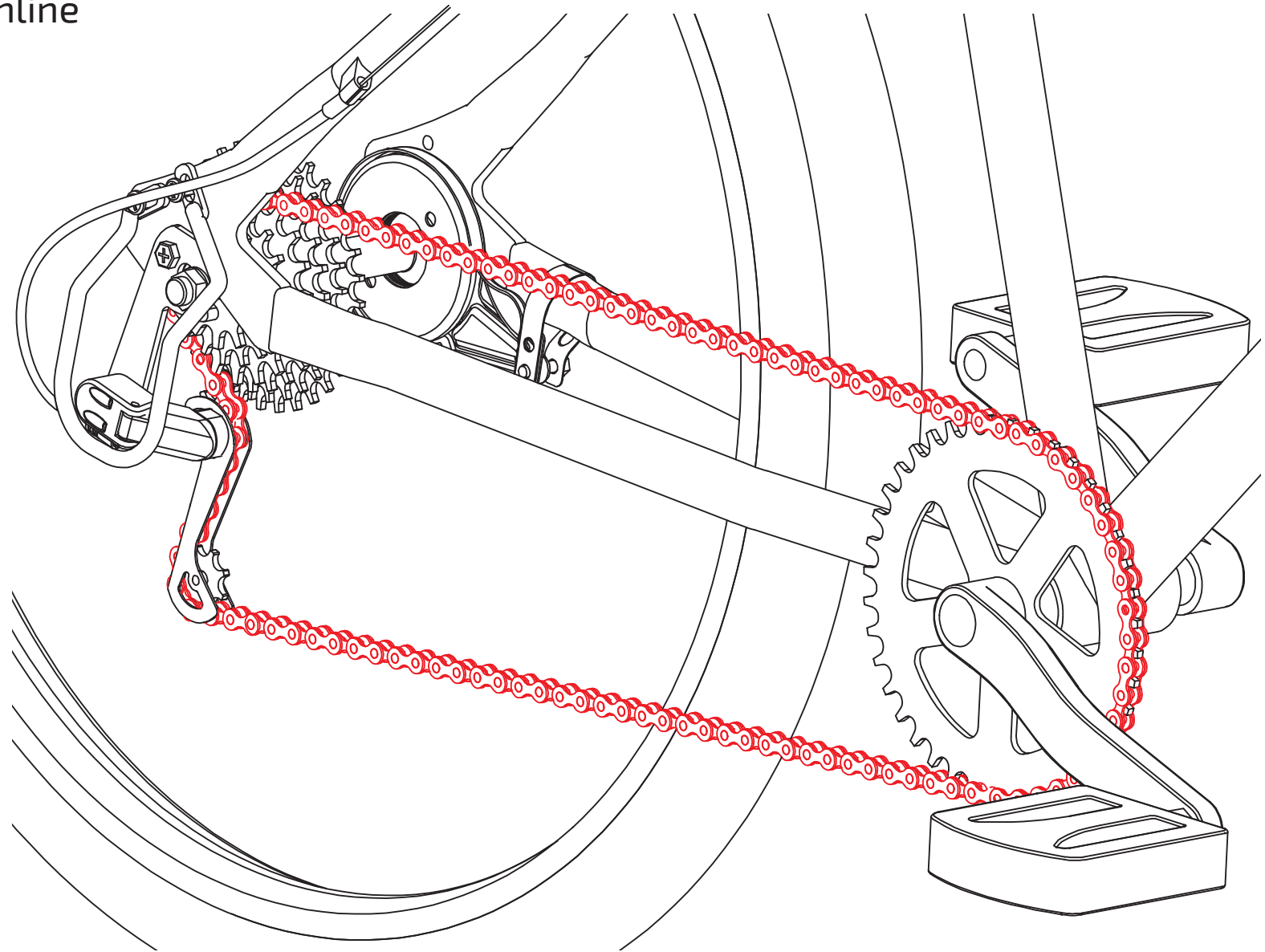
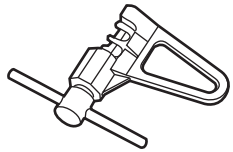
10mm Spanner



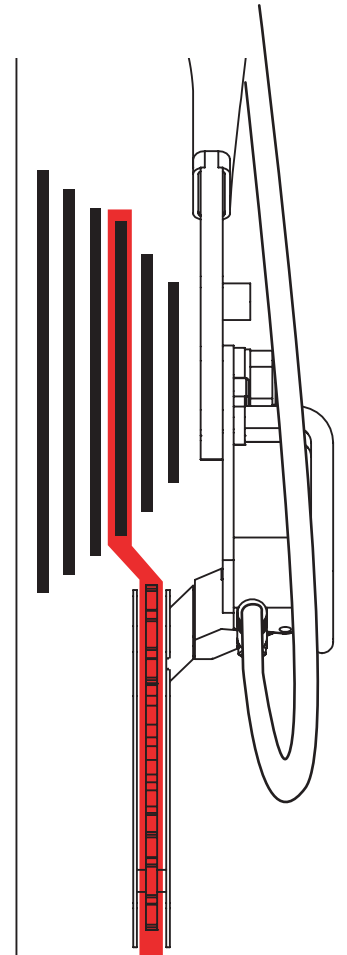
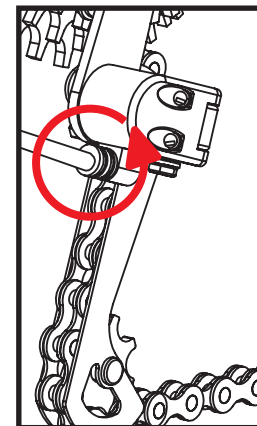
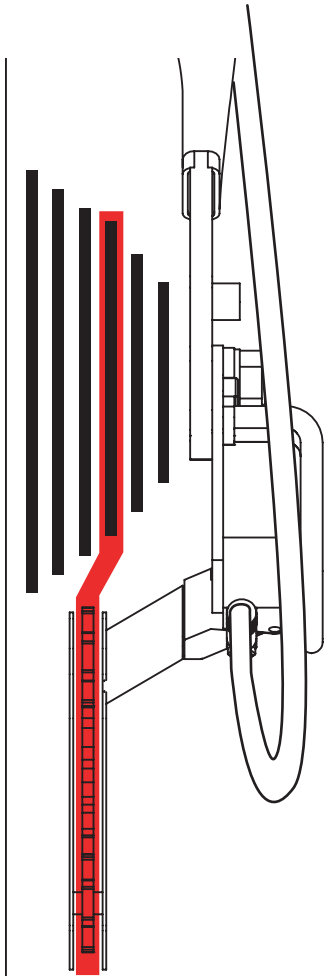
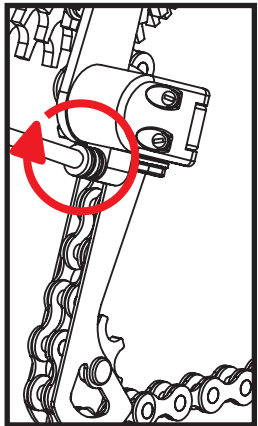
Rear Derailleur - Chainline

Required Tools

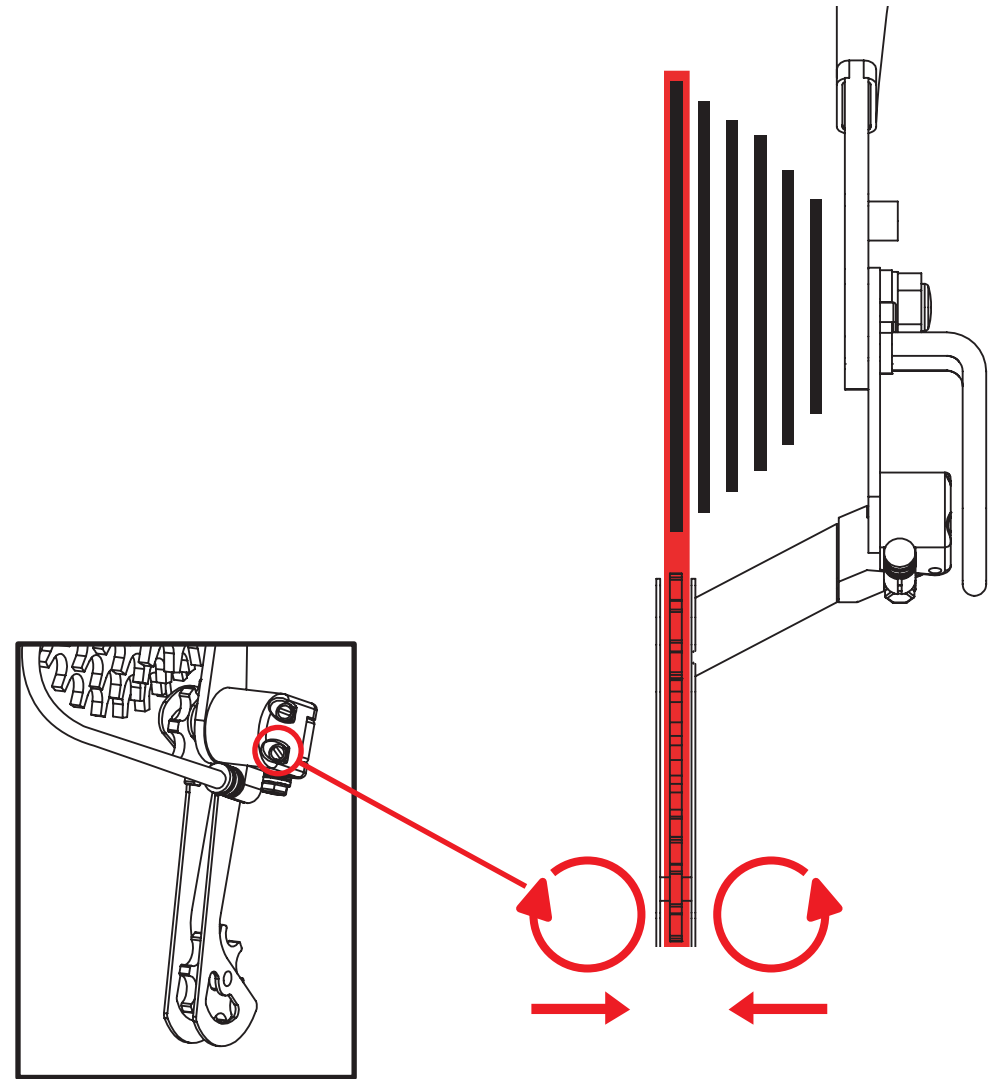
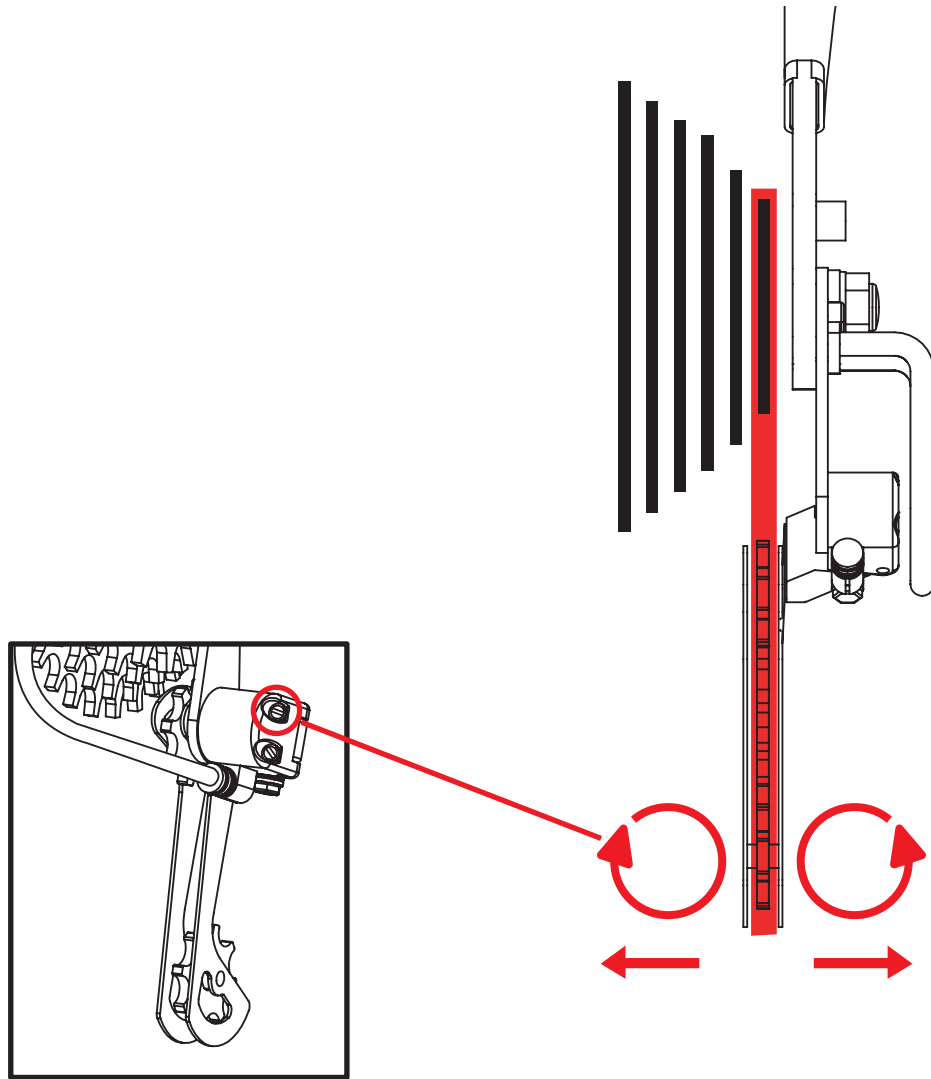
Chain Tool



Rear Derailleur | Setup



Rear Derailleur | Setup



Coaster Brake Hub Diagnosis and Repair

Symptom	Root Cause	Repair
The hub bearings are loose so that the wheel can be shaken side to side.	The bearings and bearing races are starting to wear out or the brake arm band has broken and the hub LH locknut has loosened.	Ensure that the LH locknut is tight, then adjust the small RH cone using a 15mm cone wrench and a standard 17mm wrench.
Brake arm band is broken.	The band can fail when the brake arm rotates upwards. This occurs when bike rolls backwards while the brake is applied.	Replace the brake arm band and confirm that the LH locknut is still tight.
Hub is making clacking sounds while pedaling and coasting.	The brake pads are rattling inside the hub. This is due to a lack of grease around the pads, caused by over-heating and degradation of the grease.	Re-pack the hub with high-temperature (wheel bearing) grease. Instruct the rider to use the brake more gently to avoid over-heating in the future.
Hub is slipping while pedaling forward or backwards (braking).	The teeth on the clutch cone are worn out. This is caused by normal usage.	Replace the clutch cone and re-pack the hub with high-temperature (wheel bearing) grease. Instruct the rider to use the brake more gently to avoid over-heating in the future.
Hub is locking up when braking.	There is no grease between the brake pads and hub shell. This is caused by over-heating and degradation of the grease.	Re-pack the hub with high-temperature (wheel bearing) grease. Instruct the rider to use the brake more gently to avoid over-heating in the future.
Hub makes growling sound when wheel is rotating.	Bearings and/or bearing races are pitted and worn out. This is caused by extended use, heavy loads, and infiltration of dirt and water.	Replace all affected components. The small RH cone and the brake cone along with the bearings are the most likely components to require replacement.
The grease inside the hub is black and hard.	The grease has been over-heated.	Re-pack the hub with high-temperature (wheel bearing) grease. Instruct the rider to use the brake more gently to avoid over-heating in the future.

Installing RHS-1

Required Tools

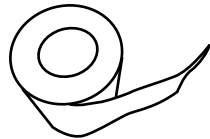
15mm Cone Wrench



17mm Spanner

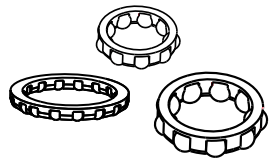


Tissue



Required Parts

RHS-1



Remove the wheel from the bicycle.

Using a 15mm cone wrench and standard 17mm wrench, loosen the RH locknut.

1



Remove the RH locknut and cone.

2



Remove the hub driver by screwing it out of the hub.

3



continued 4



Remove the small bearing from the hub driver.

Remove the large RH bearing from the hub shell.

Remove the remaining internals by pulling them out of the LH side of the hub.

4



Clean all the internals of the hub.

Apply clean grease to the brake cone.

Install the new large LH bearing and apply grease to it.

5



Install the clutch cone, friction spring assembly and apply grease to it.

6



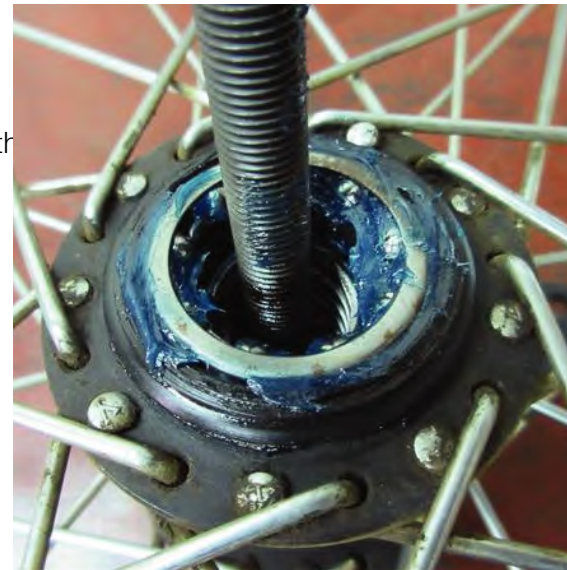
Carefully slide the complete assembly into the LH side of the hub. Wiggle the axle until the assembly full seats. If the brake pads move out of position, then the assembly will have to be removed, the brake pads re-positioned, and the assembly installed again.

8



Install the brake pads by sticking them to the grease on the clutch cone. The tabs on the brake pads fit into notches on the brake cone.

7



Install the new large RH bearing and apply grease to it.

9



Install the new small RH bearing and apply grease to it.

10



Thread on the bearing cone and locknut.

12



Thread the hub driver into the clutch cone that is already installed inside the hub.

11



Adjust the cone, and tighten the locknut against it.

13

Installing RHS-5

Required Tools

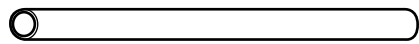
15mm Cone Wench



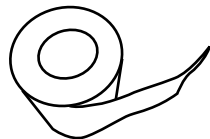
17mm Spanner



□ ip e □ to fit o □ er b ra □ e a m



□ is s u e □ f o r c l e a n i n g □



Required Parts

RHS-5



Loosen the axle nut on the LH side of the bike.

1



□ o o s e n t h e □ □ l o c □ n u t w h i l e t h e b r a □ e a m
a n d □ □ a □ l e n u t a r e s t i l l t i g h t.

□ e m o □ e t h e h u b □ w h e e l f r o m t h e b i □ e.

2



Using a 15mm cone wrench and standard 17mm wrench, loosen the RH locknut.

3



Remove the hub driver by screwing it out of the hub.

5



Remove the RH locknut and cone.

4



Remove the small bearing from the hub driver.

Remove the large RH bearing from the hub shell.

Remove the remaining internals by pulling them out of the LH side of the hub.

6



continued 6



Install the new brake cone, dust cover, brake arm, washer, and LH locknut onto the axle. Make sure to leave about 1cm of threads showing at the center of the axle.

8



Dismantle the remaining components from the axle.

Separate out the parts that are to be replaced.

Thoroughly clean the remaining parts of grease and dirt (see picture).

7



Tighten the locknut while holding the brake arm with the pipe.

9



Apply clean grease to the brake cone.

Install the large LH bearing and apply grease to it.

10



Install the brake pads by sticking them to the grease on the clutch cone. The tabs on the brake pads fit into the notches on the brake cone.

12



Install the new clutch cone friction spring assembly and apply grease to it.

11



Carefully slide the complete assembly into the LH side of the hub. Wiggle the axle until the assembly full seats. If the brake pads move out of position, then the assembly will have to be removed, the brake pads re-positioned, and the assembly installed again.

13



Install the large RH bearing and apply grease to it.

14



Thread the hub driver into the clutch cone that is already installed inside the hub.

16



Install the small RH bearing and apply grease to it.

15



Thread on the new bearing cone and locknut.

17



Adjust the cone, and
tighten the locknut against
it.

18