



OWNERS MANUAL

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**650B**

A DIVISION OF



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## **IMPORTANT** **CONSUMER SAFETY INFORMATION**

**WARNING:** RIDING A BIKE IS DANGEROUS. NOT PROPERLY MAINTAINING OR INSPECTING YOUR BIKE AND IT'S COMPONENTS IS EVEN MORE DANGEROUS. IT IS ALSO DANGEROUS TO NOT READ AND FOLLOW THESE INSTRUCTIONS.

1. NEVER REMOVE STEERER TUBE FROM CROWN. THIS IS A PRESSED IN PART. REMOVING IT WILL RENDER BOTH THE CROWN AND STEERER TUBE INOPERABLE. \* MAKE SURE THE FORK CAPS AND ALL FORK HARDWARE (pinch bolts, etc.) ARE TIGHT BEFORE EACH RIDE.
2. DO NOT PERFORM ANY MODIFICATIONS OR ADJUSTMENTS THAT ARE NOT OUTLINED IN THIS MANUAL. SEE THE TUNING SECTION FOR MORE DETAILS.
3. INSPECT YOUR FORK BEFORE EVERY RIDE. INSPECT THE CROWN, TUBES, AND AXLE SEAT AREAS FOR ANY SIGNS OF FATIGUE, BENDING, CRACKING OR OTHER DAMAGE. IF YOU NOTICE ANY TYPE OF DAMAGE, DO NOT RIDE IT. RETURN IT TO YOUR DEALER OR TO WHITE BROTHERS FOR A COMPLETE INSPECTION AND NECESSARY REPAIR.
4. THIS WHITE BROTHERS FORK IS DESIGNED WITH A LOCKOUT THAT TURNS OFF THE FORK'S SUSPENSION. THE LOCKOUT IS ONLY DESIGNED TO BE USED ON SMOOTH TERRAIN. USING THE LOCKOUT ON ROUGH TERRAIN, BUMPS OR DROP-OFFS CAN CAUSE SERIOUS DAMAGE TO THE FORK AND COULD CAUSE SERIOUS PERSONAL INJURY OR DEATH.
5. PERFORM ALL RECOMMENDED MAINTENANCE ACCORDING TO THE MAINTENANCE SECTION OF THIS MANUAL. FAILURE TO PERFORM MAINTENANCE COULD DRASTICALLY REDUCE THE FORK'S LIFE, PERFORMANCE AND CAUSE YOUR FORK TO BE A SAFETY HAZARD.
6. WHITE BROTHERS RECOMMENDS THAT YOU WEAR PROPER SAFETY EQUIPMENT EVERY TIME YOU RIDE, INCLUDING AN APPROVED BICYCLE HELMET. NEVER RIDE AT NIGHT WITHOUT LIGHTS.
7. ALWAYS USE GENUINE WHITE BROTHERS PARTS. USE OF AFTERMARKET REPLACEMENT PARTS AND UPGRADES VOIDS THE WARRANTY AND COULD CAUSE STRUCTURAL FAILURE.
8. WHITE BROTHERS FORKS ARE DESIGNED FOR OFF ROAD USE ONLY.

THEY ARE NOT EQUIPPED WITH REFLECTORS FOR ROAD USE. IF YOU ARE GOING TO USE YOUR FORK ON THE ROAD, HAVE A DEALER OR MECHANIC INSTALL REFLECTORS THAT MEET THE CONSUMER PRODUCT SAFETY COMMISSION'S REQUIREMENTS.

9. ALL WHITE BROTHERS 20MM FORKS ARE DESIGNED BASED ON THE IS DISK BRAKE STANDARD. IF YOUR WHITE BROTHERS FORK HAS A 20MM THROUGH AXLE, IT IS CRITICAL TO SAFETY AND FUNCTION THAT YOU ONLY USE A DISK BRAKE PROPERLY DESIGNED FOR THE 20MM IS DISK BRAKE STANDARD. SIMPLY SPACING A NON 20MM DISK BRAKE TO WORK ON THE 20MM FORK MAY RESULT IN INSUFFICIENT THREAD ENGAGEMENT WHEN ATTACHING THE BRAKE. THIS CAN RESULT IN SERIOUS BODILY INJURY OR DEATH. ONLY USE DISK BRAKES PROPERLY DESIGNED FOR THE 20MM IS DISK BRAKE STANDARD.

*\*IF SERVICE BECOMES NECESSARY OR REMOVAL OCCURS, PLEASE CALL WHITE BROTHERS CUSTOMER SERVICE FOR PRODUCT EVALUATION AND DIAGNOSIS.*

## INTRODUCTION

Thank you for purchasing your new White Brothers fork. Our forks are designed to help you perform at your absolute peak. Your new White Brothers fork has oil damping and utilizes an air spring for light weight performance. The air spring and damper is set stock to satisfy a wide range of rider weights and riding styles. Fine tuning can be easily accomplished by changing air pressure of the air spring. See the adjustment and maintenance section for rider weight verses air pressures settings. For very heavy or very light riders the external damper can be adjusted to give a wide range of compression and rebound damping. Steering accuracy is improved over conventional MTB forks by utilizing superior materials and design. These include oversized 32mm fork tubes, a torsion box design steering crown with pressed in tubes, a one piece billet brake arch and extra thick drop-outs. The WB forks bootless design allows a considerable amount more slider/stanchion overlap than competitor forks which increases the fork steering accuracy. Fork travel has been chosen to offer the best performance possible for each fork's intended use. To ensure peak performance, proper installation and periodic maintenance is required. When riding on public land, please respect the rights of others and stay on established paths and trails. By riding responsibly, you are helping ensure the future of our sport.

## FORK INSTALLATION

White Brothers forks feature a 1-1/8" threadless steer tube. If you have a threaded type fork on your bicycle, consult your dealer for the appropriate upgrade parts necessary to convert to a 1-1/8" threadless steer tube.

1. Remove your old fork from the bicycle. Measure the diameter and length of your old forks steerer tube to ensure that the White Brothers steerer tube is the correct diameter and sufficient length for the installation.
2. Remove the crown race from your old fork.
3. Press the crown race onto your new White Brothers fork. **(see Figure #1)**
4. Preassemble the headset by sliding the fork steerer tube through the bearings. Then install the headset upper race, headset spacer (optional), and stem onto the fork steerer tube. Adjust with optional spacers to your preferred height. **(See Figure #2)** Refer to the head set owner's manual if there are any questions about the pre-assembly.

5. Mark the steerer tube at the top of the stem. The steerer tube will now need to be cut to the correct length. Disassemble and cut 3mm (1/8") below the mark. Consult your dealer or mechanic if you don't have the proper tools to cut the steer tube.
6. The star fangled nut must now be installed into the steer tube. If you don't have the set tool, we recommend dealer installation of this part. (See Figure #3)
7. Clean and grease all headset bearings and races to prepare them for assembly. *Note: Replace the bearings if there is any sign of wear or corrosion.*
8. Now loosely assemble the headset, stem and handle bars as done in step four.
9. Install the headset top cap into the star fangled nut. Tighten until there is no play in the steering. The fork should rotate freely in the head tube. Straighten the stem in relation to the front tire and tighten the pinch bolts on the stem. If there are any questions consult your dealer or mechanic.
10. Install your front brake and adjust according to the manufacture's instructions.
11. Adjust the quick release on the hub to clear the secondary catches on the drop-outs. Tighten the quick release after the axle is properly seated in the drop-out. Ensure that there is sufficient thread engagement (5 or more threads with the quick release in the lock position) due to the thicker White Brothers drop-outs. Install the front wheel per manufactures specifications.

**WARNING: All White Brothers forks are designed based on the IS disk brake standard. If your White Brothers fork has a 20mm through axle, it is critical to safety and function that you only use a disk brake properly designed for the 20mm IS disk brake standard. Simply spacing a non 20mm disk brake to work on the 20mm fork may result in insufficient thread engagement when attaching the brake. This can result in SERIOUS BODILY INJURY OR DEATH. ONLY USE DISK BRAKES PROPERLY DESIGNED FOR THE 20MM IS DISK BRAKE STANDARD.**

**WARNING: When installing the wheel or a new tire, check for minimum clearance. Measure from the highest point on the tire to the under side of the crown. There must be 1/8" or 3mm more clearance than the fork's travel to ensure adequate clearance in all riding conditions. Any less clearance can result in the tire hitting the crown resulting in serious injury or death.**

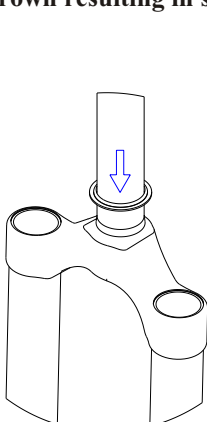


Figure #1

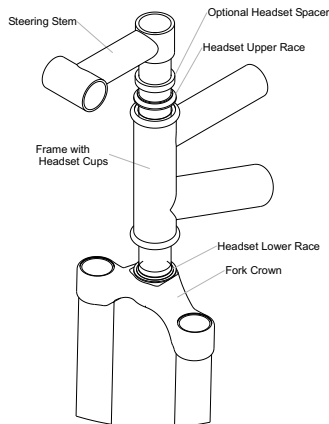


Figure #2

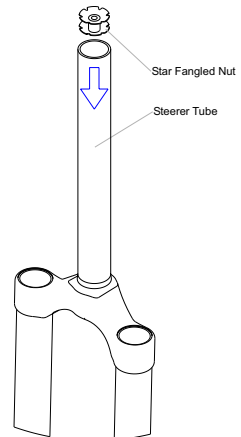


Figure #3

# TUNING

To get the most out of your White Brothers fork, it is important that you tune the fork to fit your weight, riding style and the terrain you ride.

## INITIAL BREAK-IN PERIOD:

Your new fork is designed to break-in over a period of 10 hours or more of riding. As all the parts bed into each other, the stiction (friction) of the fork decreases and the sensitivity increases. After the initial brake-in period, fine tuning the air pressure and damping adjustments may be beneficial to achieve the best possible performance.

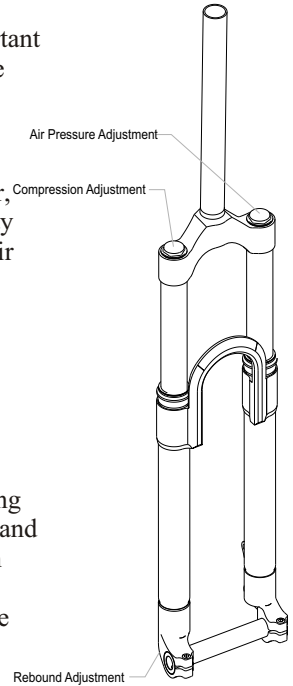
## TOOLS NEEDED:

- 24MM.socket with ratchet.
- 4mm Allen wrench
- 6mm Allen wrench

## AIR SPRING / OIL DAMPER

Your new White Brothers fork is designed with a air spring and oil damping. The following guidelines for adjusting and maintaining your fork will enable you to enjoy maximum performance and longevity from your fork.

1. First, test ride the fork over easy terrain. If after riding the fork over varied terrain you decide that more tuning is necessary, continue to the next step.
2. The compression or spring of the fork can be changed two ways: 1) by adjusting the spring air pressure 2)by adjusting the rebound setting or adding air to the damper.
3. To adjust the air pressure remove the dust cap from the left leg to expose the air valve. Add or remove pressure using a high pressure air pump to achieve your desired spring support. 50-100psi. is the user range. The fork is delivered with 80 psi.
4. **Compression adjustment** is done by adding or removing air at the top of the right leg. Pressure is 0 to 45 lbs. Higher air pressure will provide more compression damping while lower air pressure will provide less compression damping. Less compression damping will increase the fork dive but will feel smoother over small bumps. More compression damping will feel stiffer over small bumps but will be more resistant to bottoming.
5. **Rebound adjustment** is done by turning the knob on the bottom of the right leg. Turn the knob clockwise for slower rebound. To speed up rebound, turn the knob counter-clockwise. Start with a middle setting and fine tune the rebound from there. Proper rebound will allow the tire to track the ground over consecutive bumps. Too slow of rebound will pack-up (feel stiff over consecutive bumps) while rebound set too fast will cause the fork to top out harshly. Usable adjustment range is 1.5 turns total from bottom.



Figure

## MAINTENANCE

### TOOLS NEEDED:

High pressure air pump  
6-Millimeter Hex Key

Your White Brothers fork requires periodic maintenance to ensure peak performance and long life. Neglecting proper maintenance will reduce the fork's life. Internal build up of water and dirt or a lack of lubrication will cause excessive wear and void the warranty.

**BEFORE EVERY RIDE:** Visually inspect your fork for bent or broken parts, loss of oil, abnormal sounds or other indications of possible fork failure. Compress you fork to verify proper function. Check all other bicycle components to ensure proper working order.

**AFTER EVERY RIDE:** Clean and dry the exterior of your fork. When cleaning the fork, do not direct the water spray at the seals. Visually inspect your fork for damage.

**\*EVERY 20 - 40 HOURS OF RIDING:** The damper leg is lubricated by damping oil and does not need relubrication until a general service is performed (see next section). Relubrication of the air spring leg should be done at least every 20 hours of riding if the forks is being used in very muddy or dusty conditions. If the fork appears to be relatively clean the period can be extended to as long as 40 hours. To relubricate the air spring leg of the fork, put the bike in a workstand and remove the front wheel (if a workstand is not available, prop the bike securely). Place a tray or other receptacle under the fork to catch oil drips. Loosen the compression screw on the bottom of the air spring leg with a 6 mm hex key until the screw protrudes 5 - 10 mm. Reduce the air pressure in the spring leg to approximately 40 psi. While holding the lower leg, use a mallet to firmly tap the screw upward to unseat the compression rod inside the leg. Remove the screw. Depress the core of the schrader valve to release the remaining air from the leg. Allow the fork to sit for several minutes so that old oil can drip out of the leg. Rotate the fork in the workstand until it is upside-down, or prop the bike in an upside-down position. Pour approximately 15cc of fork oil (any SAE rating from 4 to 20 wt.) into the compression screw hole. With the fork still upside-down, repressurize the air spring leg with a shock pump. Reinstall the screw in the leg and hand tighten with moderate force. (Note: The lightweight aluminum screw can break if it is overtightened.) If old oil in the fork is heavily contaminated with dirt or sand, 60 - 90 cc of oil can be poured into the fork and then allowed to drain overnight to clean the inside of the leg before relubrication. Always dispose of old or dirty oil responsibly.

**\*EVERY 100 HOURS OF RIDING:** Complete service should include removing the lower fork legs cleaning and re-greasing all shafts, bushings and seals. Check top cap assembly's, damper cartridge, stanchion plug, brake post bolts and shaft bolts for proper torque. At this time, the fork should be carefully inspected for wear and damage before reassembly. Contact White Brothers for replacement parts and service. We recommend that this service be performed by a certified White Brothers service center or by the factory.

**\*White Brothers recommends that you consult with a qualified technician before performing major service.**

## FORK DISASSEMBLY AND GENERAL SERVICE

General fork service, including inspection and possible replacement of seals and bushings, is best performed by an experienced bicycle mechanic with a full assortment of tools for the purpose. Excessive looseness, severe stiction or leakage of oil or air are indications that the fork may need general servicing. Seasonal service is advisable if the fork is being subjected to very heavy use, such as that associated with cross country racing. Factory service is available for all models of forks; call the number listed on the back of this owner's manual for details.

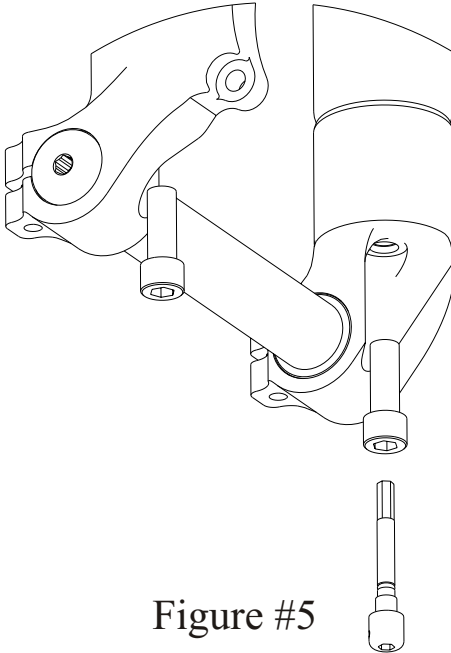


Figure #5

# TROUBLE SHOOTING

## Fork Feels Sticky

This is usually caused by:

1. A lack of lubrication. Clean and lubricate the fork as outlined in the maintenance section.
2. Contamination inside the fork. Clean and lubricate the fork as outlined in the maintenance section.
3. Fork is not sufficiently broken in. Contact White Brothers for further technical information.

## The Fork Bottoms Too Easily

1. Incorrect spring air pressure. Add air pressure as outlined in #3 of the tuning section.
2. Insufficient compression damping. Add compression damping by adding air (0-45 lb range) to the top of the right leg.

## The Fork Doesn't Use Full Travel

1. Incorrect spring air pressure. Remove air pressure as outlined in #3 of the tuning section.
2. Excessive compression damping. Reduce the compression damping by removing air (0-45 lb range) from the top of the right leg.

## Damping Adjustment is Not Working

1. Damper may need servicing. Contact White Brothers for technical information.

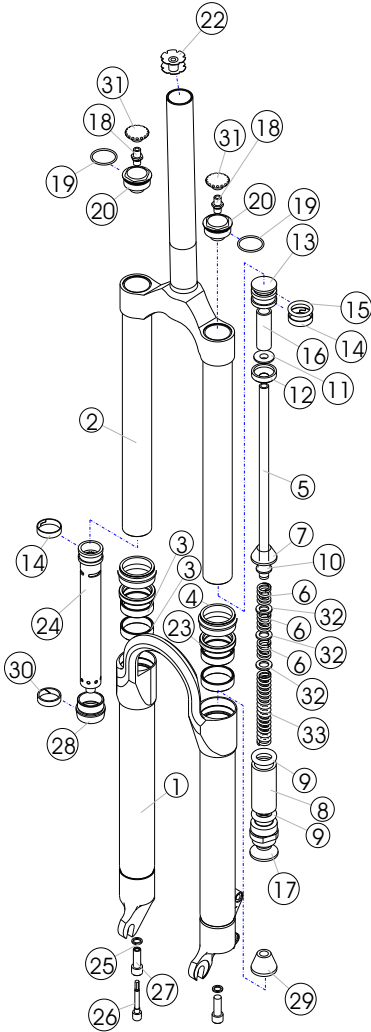


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### Exploded Views

The following is an illustration and parts table which gives you the exploded view of your White Brothers fork. The parts table indicates the part numbers for each individual part in the fork. Reference these numbers when ordering replacement parts. See your local dealer or contact White Brothers to order the parts you require.



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	101415	Lower Assembly
2	1	P1139-1	Crown Assembly
3	4	97-986	DU Bushing
4	2	97-1351	Wiper Seal
5	1	100660	Compression Rod
6	3	100016	Negative Spring, short
7	1	97-3342	Bumper, small
8	1	100663	Top Out Spacer
9	2	F-2402	O-Ring 313
10	1	100576	Bumper Guide
11	1	P4600	Conical Nut
12	1	P2504	Delrin Bush
13	1	100572	Air Piston
14	2	P3000	Piston Band
15	1	100262	O-Ring 211
16	1	100666	Piston Peg
17	1	100227	Stanchion Plug
18	2	100054	Schrader Valve
19	2	101271	O-Ring 022
20	2	100060	Air Cap
21	1	100063S	Compression Screw, Solid
22	1	97-9301	Star Nut
23	2	P3060	Oil Seal
24	1	101394	Damper
25	2	101245	Washer .312
26	1	100200	Rebound Knob
27	1	100063	Compression Screw, Hollow
28	1	101273	OB Seal Head
29	1	P3290	Urethane Bumper, medium
30	1	101405	OB Seal Head Band
31	2	101276-1	Air Cap Dust Cover
32	3	P3310-1	Nylon Shim .685
33	1	100662	Negative Spring

**OWNERS NAME:**

**ADDRESS:**

**PHONE:**

**PURCHASE DATE:**

**PURCHASE LOCATION:**

## **MAINTENANCE LOG**

Date

Service Performed

<u>Date</u>	<u>Service Performed</u>

## WARRANTY CLAIMS

White Brothers forks are the highest quality and as such are warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase for the original purchaser. On receipt of the fork, if it is found to be defective, White Brothers will determine replacement or repair of the fork. This warranty is the sole and exclusive remedy. White Brothers shall not be liable for any indirect, special or consequential damages. Warranty does not apply to any product that has been installed improperly or adjusted using methods not outlined in this manual. Warranty also does not cover forks that have been misused, or forks that have missing/altered serial numbers (located on the back of the right fork stanchion). The fork is not warranted against damage in the appearance of the fork or for modifications not outlined in this manual. This warranty does not cover breakage, bending, or damage that may result from crashes, falls or abuse. Normal wear (i.e. seals, bushings, sliders finish, etc) and tear and damage caused by lack of proper maintenance is not included. **\*The warranty registration card must be filled out and returned within 30 days of purchase to activate and validate this warranty.** A copy of the proof of purchase must be included with all warranties. Customers in the US please contact your White Brothers or your dealer for a Return Authorization Number (RA#) before returning the forks. All forks returned for inspection must be sent freight paid to:

White Brothers Cycling  
580 N. Westgate Dr.  
Grand Junction, CO 81505  
USA



A DIVISION OF



MOUNTAIN RACING PRODUCTS, INC  
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