



# GROOVE

## USER MANUAL





*Congratulations on your purchase of another cutting-edge suspension product from White Brothers! Please read this manual completely before you ride. It will help you to set your fork for optimum performance.*

### **IMPORTANT CONSUMER SAFETY INFORMATION**

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

1. Never remove steerer tube from lower 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. 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.
5. White Brothers recommends that you wear proper safety equipment every time you ride, including an approved bicycle helmet. Never ride at night without lights or reflectors.
6. Always use genuine White Brothers parts. Use of aftermarket replacement parts and upgrades voids the warranty and could cause structural failure.
7. 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.

*\*If service becomes necessary or removal occurs, please call White Brothers customer service for product evaluation and diagnosis.*

Your new White Brothers fork has oil damping and is air and coil sprung for light weight performance. The springs and damper are set stock to satisfy a wide range of rider weights and riding styles. Fine tuning can be easily accomplished by changing air pressure and external damper settings. See the tuning section for details. Steering accuracy is improved over conventional MTB forks by utilizing superior materials and design. Every effort has been made to make White Brothers forks very light and perform at a level superior to other forks on the market. 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 steerer 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 steerer tube. Check with your frame manufacturer to ensure your bike is designed for a triple clamp fork. If not, you may void your warranty.*

**WARNING: REFER TO THE HEADSET OWNERS MANUAL IF THERE ARE ANY QUESTIONS ABOUT THE HEADSET INSTALLATION.**

1. Remove your old fork from the bicycle. Measure the diameter and length of your old fork's 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's upper race, upper triple clamp, headset spacer (optional), and stem onto the fork steerer tube. Adjust with optional spacers to your preferred height. (see Figure #2)
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 steerer tube.
6. The star nut must now be installed into the steerer 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. (see Figure #2)
9. Install the headset top cap into the star 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. Tight-

en the pinch bolts on the upper clamp and double check that the lower clamp bolts are tight. These can easily be over tightened. We recommend tightening to 8 foot pounds. If there are any questions consult your dealer or mechanic.

10. Slide the wheel in and line up the brake rotor with the brake caliper then line up the hub with the axle feet. Slide the 20mm axle from either direction and tighten the axle nut. Tighten the pinch clamps after the axle is properly seated and tight.

11. Adjust your front brake according to the manufacturer's instructions.

12. Check to see that the brakes are adjusted and properly working. Make sure the brake line doesn't interfere with any part of the bike when the fork is compressed and released.

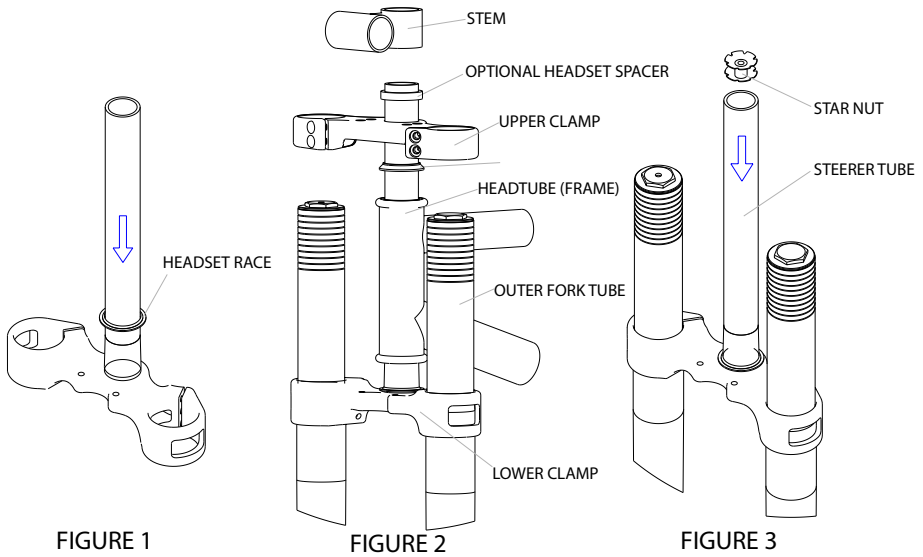


FIGURE 1

FIGURE 2

FIGURE 3

### 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 CAUSE THE TIRE TO HIT THE CROWN RESULTING IN SERIOUS INJURY OR DEATH.**

**THE GROOVE WILL NOT WORK ON FRAMES WITH HEAD TUBES LONGER THAN 5-1/2".**

### 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 will diminish and the fork will absorb the bumps better. After this initial break-in, fine

tuning the hydraulic damper may be beneficial to achieve the best possible fork performance for your weight and riding style.

## TUNING YOUR DAMPER

1. Rebound damping is adjusted by turning the slotted brass adjuster on the top cap of the right leg. The adjuster has 8 turns of adjustment. Turn the adjuster clockwise for slower rebound. To speed up rebound, turn the adjuster 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. Rebound that is set too slow will pack-up (feel harsh over consecutive bumps) while rebound set too fast will cause the fork to top out harshly. If the fork is topping out and you have the correct spring for your weight, turn the adjuster one turn at a time until the top-out stops.

2. Compression damping can be changed two ways: (1) by adjusting the compression damping screw on the back of the canister on the bottom of the right fork leg. Threading it in slows compression and threading it out speeds up compression; and (2) by adding or removing air pressure (or nitrogen) from the canister at the bottom of the right leg. Pop off the dust cap and adjust between 50 psi min. and 175 psi. max. Adding air will increase the compression damping (slow it down) and removing air will decrease compression damping (faster compression). Less compression damping will increase the fork dive but will feel smoother over small bumps. More compression damping will feel stiff over small bumps but will be more resistant to bottoming. Never run less than 50 psi in the canister.

### WARNING:

**EXCEEDING THE MAXIMUM RECOMMENDED DAMPER PRESSURE CAN RESULT IN CATASTROPHIC RUPTURE OF THE RESERVOIR CANISTER, CAUSING SERIOUS INJURY OR DEATH.**

*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 50 hours of riding:** Complete service should include removing the upper fork legs cleaning and re-greasing all shafts, bushings and seals. Check damper leg for proper function(see disassembly of the damper leg).

*Note: disassembly of the hydraulic damper should be left for the White Brothers factory.*

**WARNING: IMPROPER SERVICING OF THE DAMPER LEG CAN RESULT IN HYDRAULIC LOCK AND CATASTROPHIC FAILURE OF PRESSURIZED PARTS, CAUSING SERIOUS INJURY OR DEATH. SERVICING OF THE DAMPER MUST BE REFERRED TO THE WHITE BROTHERS FACTORY OR A FACTORY AUTHORIZED SERVICE CENTER.**

*\*WHITE BROTHERS RECOMMENDS THAT YOU CONSULT A TECH BEFORE PERFORMING THE FOLLOWING:*

### **BASIC FORK DISASSEMBLY**

#### *REMOVAL OF THE LEG ASSEMBLIES*

1. Disconnect the front brake and loosen the pinch clamp bolts at the bottom of each leg. Unthread the axle with a 17mm wrench and remove the wheel.
2. Loosen the four M6 upper clamp bolts. Before loosening the lower clamp bolts, start to loosen the top caps using a 25mm socket. Then loosen the lower clamp bolts and slide the legs out of the clamps.

#### *DISASSEMBLY OF THE SPRING LEG ASSEMBLY (LEFT HAND)*

1. Unscrew the top cap from the outer leg. Check for noticeable play between the stanchion tube and the outer fork tube. If there is play, contact White Brothers or a qualified dealer for service.
2. Lower the outer leg until the seal touches the drop out. Place in vise with soft jaws.
3. Remove air from cap. Use a 25mm socket to loosen the rod from the air cap. Hold the shaft on the flats with a 9mm open end wrench and unscrew the air cap from the shaft.
4. Remove the inner leg from the outer leg. Remove the stanchion plug using a 25mm wrench or socket.
5. Clean and inspect all the parts. Check the DU bushings inside the outer leg carefully for wear. This is done by looking at the color of the clean bushings. If the bushings are dark gray, they are in good condition. If they are bronze/gold in areas, they are worn and can cause fork stanchion damage. Please note that special tools are required to remove and replace these bushings. This service can be performed directly through White Brothers or a qualified dealer.

6. Next, inspect the fork stanchion tubes for wear, nicks or scrapes. These will cause premature wear on the seals and DU bushings. If there is any damage to the stanchion tubes, have them replaced.
7. Inspect the o-rings for damage. There is a o-ring on each end of the control rod and on both spring guides. If there's any question about them sealing, replace the o-rings.

#### *DISASSEMBLY OF THE DAMPER LEG ASSEMBLY (RIGHT HAND)*

*\*Service of the damper is best performed by the WB factory. Contact White Brothers for the details.*

1. Unscrew the top cap from the outer leg. Check for noticeable play between the stanchion tube and the outer fork tube. If there is play, contact White Brothers or a qualified dealer for service. Slide the outer leg down to the axle clamp.
2. Unscrew the top cap counterclockwise from the shaft by holding the flats on the shaft with an open end wrench.
3. Remove plastic washer, bumper and spring, then pull the inner leg out of the outer leg.

#### **BASIC FORK REASSEMBLY**

##### *REBUILDING THE OUTER LEGS*

1. Thoroughly clean all the parts.
2. Check the condition of the wiper seals and the inner oil seal for cracks, abrasions or obvious signs of wear. They help to keep the dirt out, especially when riding in harsh conditions.

*Note: If the wiper seals are in question, replacement is always recommended.*

3. The wiper seals can be removed with a spoon style tire iron or something similar and can be re-installed using a large socket as a driver to install squarely into the leg.

*Note: Jamming the seals in at an angle can crush the steel casing and the seal will no longer seal correctly and/or stay in place.*

4. Apply grease to the DU bushings down inside the leg. Verify the bushings are in good working order. Bushings are replaceable but require a number of special tools to remove and install. Return to White Brothers to have the bushings changed if required.

##### *REBUILDING THE SPRING LEG SUBASSEMBLY*

1. Thoroughly clean all the parts.
2. Check the condition of the o-rings and replace if necessary.
3. Install the parts as shown in the exploded view, using heavy grease on all internal parts. Thread the assembly into the inner leg. Use a 25 mm socket to get the stanchion plug started, being careful not to cross thread it into the stanchion.

### *REBUILDING THE DAMPER LEG ASSEMBLY*

1. Thoroughly clean all the parts.
2. Inspect for obvious signs of damage. Pressurize the damper canister to at least 50psi. Test the damper by pushing the shaft down. It should compress and return in a controlled manner. Screw the compression adjuster in to insure the damper slows when adjusted. At the top of the stroke, if the damper shaft does not return to 8" above the seal head this indicates the need for damper service. Reinstall the greased spring. Reinstall the washer and bumper after the outer leg is installed.

### *REINSTALLING THE OUTER LEGS*

1. Apply Slick Honey or other non-lithium based suspension lube to the DU bushings inside the outer leg. Make sure to lube the lower DU bushing which is deep in the outer leg.
2. With all parts cleaned and reinstalled with new grease, fit the outer leg over the stanchion tube and gently rock and slide the legs until the inner leg slides into the bushings. Slide the outer leg all the way down to the drop out. Check for noticeable play between the stanchion tubes and the fork lower. If there is play, contact White Brothers for service.

### *REINSTALLING THE SPRINGS AND LH TOP CAP*

1. A 10mm wrench will hold the flats on the shaft as you thread the top cap down until it stops. Hold the top cap with a 25 mm socket and tighten.
2. Thread the top cap into the outer leg and tighten. Note: A little more than hand tight is all that is necessary, as the upper clamp will hold the top caps tight.

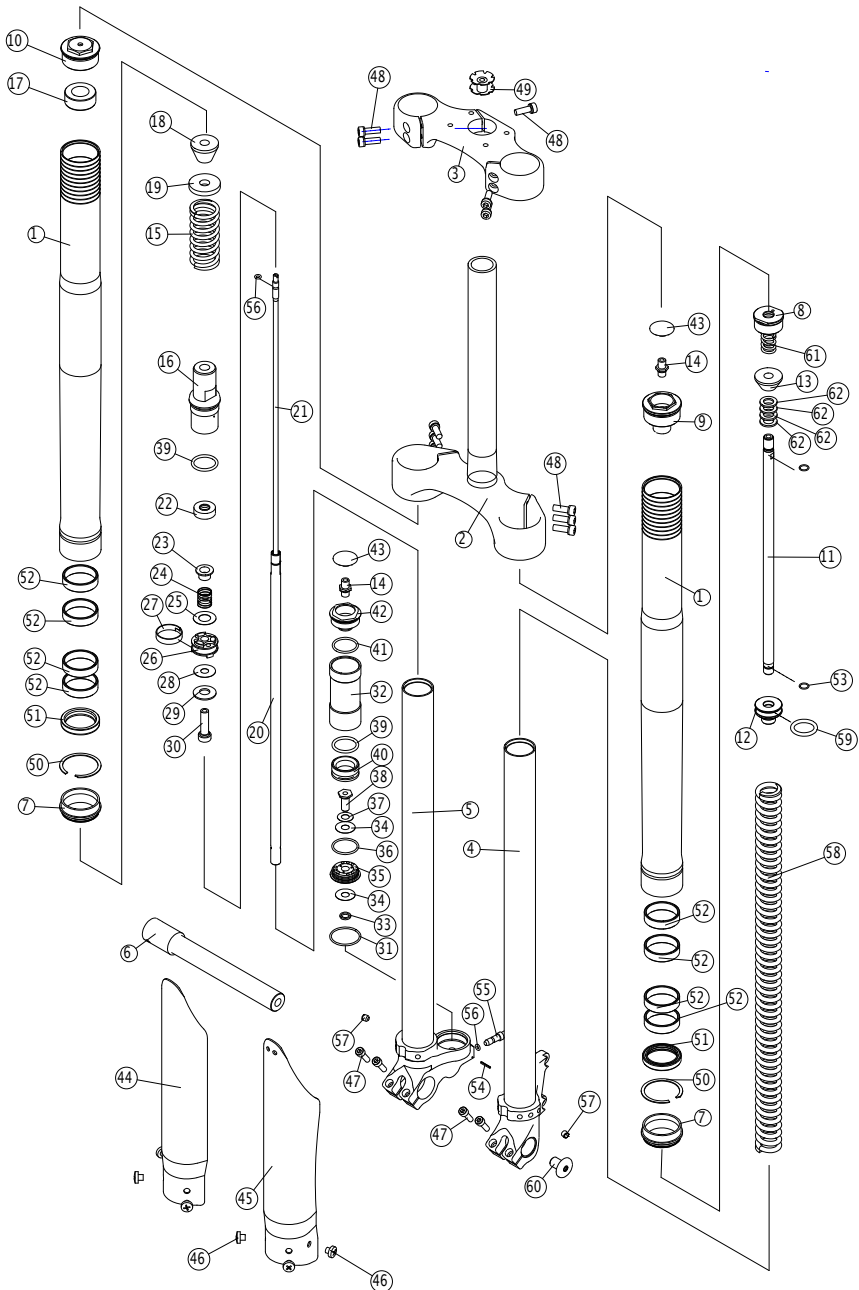
### *REINSTALLING THE RH TOP CAP*

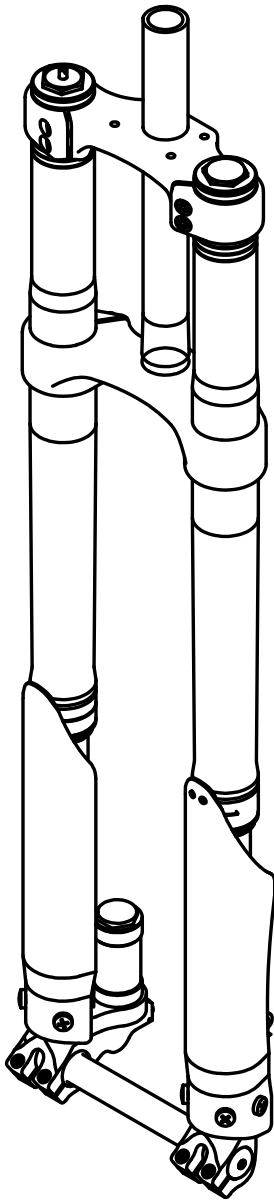
1. Screw the rebound needle in clockwise until it stops then back it out 3 to 4 turns.
2. On the damper shaft, install the chrome bottom out spring onto the seal head, spring spacer and then the yellow bumper with heavy grease on all parts. The parts will be seated the first time the fork bottoms out.
3. Install the top cap onto the damper shaft and tighten. Remove the assembly from the vise and thread the top cap into the outer leg and tighten. Note: A little more than hand tight is all that is necessary, as the upper clamp will hold the top caps tight.



# TECHNICAL DRAWING

## PARTS TABLE ON FOLLOWING PAGE





ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	100021-100022	DH Outer Leg
2	1	P1159-1	Crown/Steerer Assembly
3	1	P1157-110	Upper Crown
4	1	100609	Spring Leg Assm.
5	1	100610	Damper Leg Assm.
6	1	97-3677	Axle
7	2	97-1351	Wiper Seal
8	1	101468	Seal Head
9	1	100600	DH Air Cap
10	1	P2348	DH Damping Cap
11	1	100668	Compression Rod
12	1	100669	Spring Guide/Air Piston
13	1	97-3342	Bumper Soft
14	2	100054	Schraeder Valve Assembly
15	1	P3220	Spring Progression
16	1	100615	Seal Head
17	1	100616	Top Cap Plug
18	1	P3290	Compression Bumper Medium
19	1	97-3914	Spring Spacer 5mm
20	1	P2028	DH Damper Shaft
21	1	P2035	Needle Assm.
22	1	97-1409	Shaft Seal
23	1	P2014	Check Valve Guide
24	1	P2015	Check Valve Spring
25	1	P2004	Check Valve 22x12x0.02
26	1	P2012	Piston
27	1	P3000	Piston Band
28	1	P2006	Low Spd Shim 22x8x0.02
29	1	P2005	Belvil Washer
30	1	P4010	Shim Stack Bolt
31	1	P3026	O-Ring 024
32	1	P1515-1	Reservoir Can
33	1	P2001B	Shim
34	2	29-136	Shim
35	1	P2016	Compression Piston
36	1	P3028	O-Ring 021
37	1	29-127	Shim
38	1	P4011	Piston Bolt
39	2	P3021	O-Ring 118
40	1	P2010	Floating Piston Assm.
41	1	100162	O-Ring 2x22.5
42	1	100627	Air Cap Triple Clamp Series
43	2	P4650	Dust Cap
44	1	98-406-1	LH Stone Guard
45	1	98-406-2	RH Stone Guard
46	6	P4005	Screw Nylon Guard
47	4	97-9200	M5x16mm Screw
48	11	97-852	Bolt M6
49	1	97-9300	Star Nut
50	2	P4301	C Clip
51	2	P3060	Oil Seal
52	8	97-986	DU Bushing
53	2	101288	O-Ring 008
54	1	P4015	Retaining Pin
55	1	P4004	Compression Adjuster Screw
56	2	97-1418	O-Ring 006
57	2	P4051	Set Screw 6mm x 6
58	1	101887	Compression Spring
59	1	100262	O-Ring 211
60	1	100531	Axle End Bolt
61	1	100016	Negative Spring
62	4	P3310-1	Negative Spring Shim

## SERVICE LOG

SERVICE

DATE

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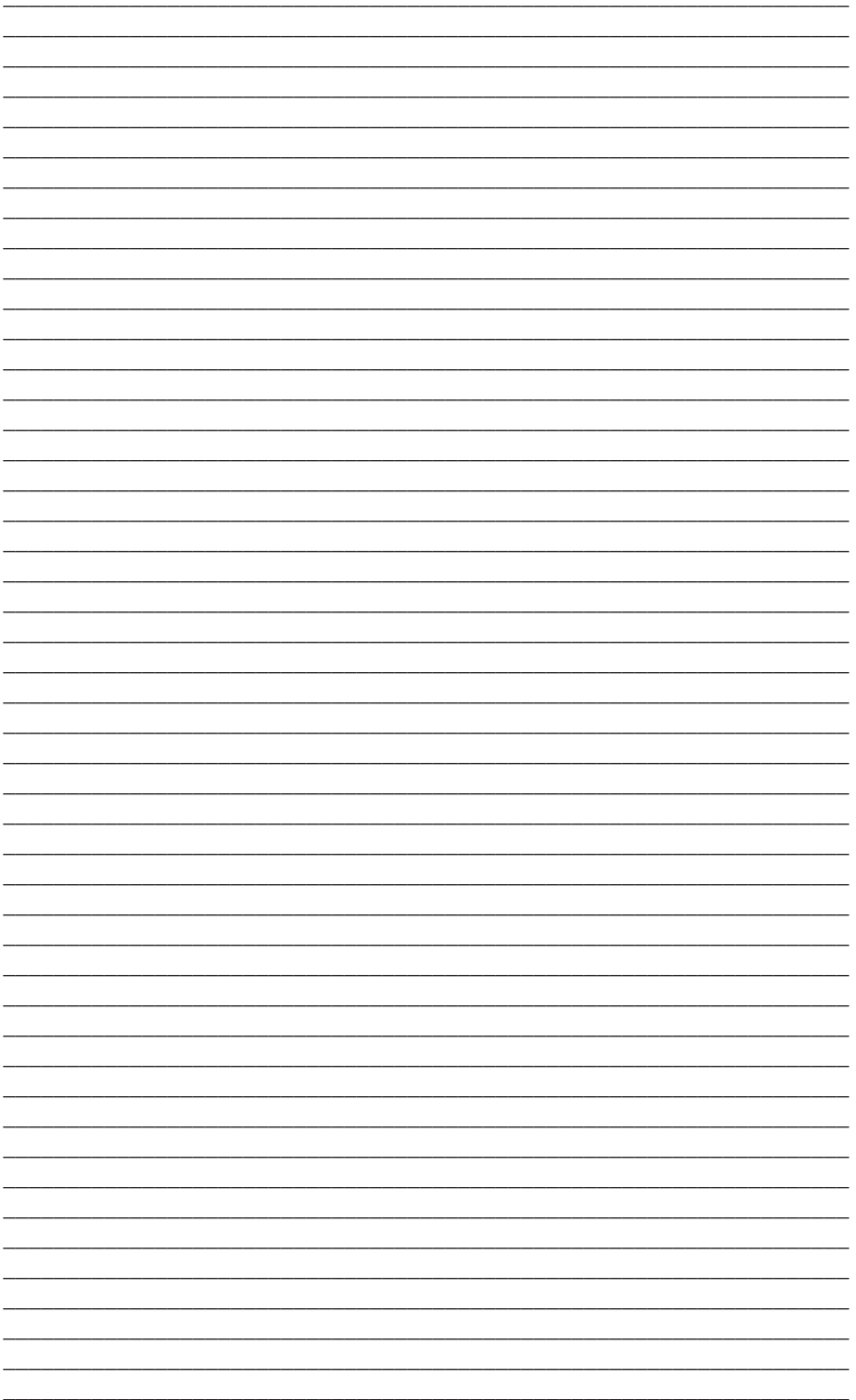
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## LIMITED WARRANTY

### ***Who is covered:***

This warranty is extended only to the original end-use purchaser, or the person receiving the product as a gift, and shall not be extended to any other person or transferee. Original proof of purchase is required.

### ***What is covered/For how long:***

Your White Brothers fork is warranted for a period of 1 year from the date of retail purchase (two years in Europe). White Brothers warrants that this product, when delivered to you in new condition, in original packaging, from a White Brothers authorized reseller and used in normal conditions, is free from any defects in manufacturing, materials, and workmanship.

### ***What is not covered:***

This warranty does not cover defects resulting from improper or unreasonable use or maintenance; improper installation, failure to follow operating instructions; accident; unauthorized alterations or modification of original condition; damages caused by inadequate packing or shipping procedures; wear items including seals, bushings, o-rings, piston bands, foam rings, stanchions, bottom out bumpers, stripped fastener threads and heads; and products purchased from unauthorized dealers.

### ***What we will do:***

During the warranty period, we will, at our sole option, repair or replace any defective parts within a reasonable period of time and free of charge.

### ***What we will not do:***

Pay shipping, insurance, or transportation charges from you to us, or any import fees, duties and taxes.

### ***What you must do to obtain Limited Warranty Service:***

Return product, with proof of purchase from an authorized White Brothers dealer, using the following procedures:

1. Contact White Brothers for specific return and shipping instructions.
2. Label and ship the product, freight prepaid, to the address provided by White Brothers; and
3. Place any necessary return authorization number prominently on the outside of the carton.

## **OTHER CONDITIONS**

THE PROVISIONS OF THIS LIMITED WARRANTY ARE IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESSED OR IMPLIED, WRITTEN OR ORAL, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WHITE BROTHERS MAXIMUM LIABILITY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID BY YOU FOR THE PRODUCT. IN NO EVENT SHALL WHITE BROTHERS BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR INDIRECT DAMAGES HOWSOEVER CAUSED INCLUDING WITHOUT LIMITATION THE REPLACEMENT OF EQUIPMENT AND PROPERTY. THIS WARRANTY IS VOID IF THE LABEL BEARING THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED.

## **OTHER LEGAL RIGHTS**

This limited warranty gives you specific legal rights, and you also may have other rights that vary from state to state or country to country. Some places do not allow limitations on implied warranties or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

*\* Failure to register this product will not affect your limited warranty rights, however, proof of purchase is required.*



**WHITE BROTHERS CYCLING IS A DIVISION OF:**

**MOUNTAIN RACING PRODUCTS**

**580 N WESTGATE DR**

**GRAND JUNCTION, CO 81505**

**970.241.3518**

**FOR MORE INFORMATION VISIT US ON THE WEB:**

**[WHITEBROTHERSCYCLING.COM](http://WHITEBROTHERSCYCLING.COM)**



