46-26362B



FORK OWNER'S MANUAL

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MANITOU SUSPENSION FORKS

CONGRATULATIONS ON CHOOSING THE LATEST SUSPENSION TECHNOLOGY AVAILABLE. This fork is fully assembled and ready to be installed onto your bicycle. It comes equipped with a 1 1/8-inch steerer tube or an optional 1.5 inch tapered steerer, and may also be available in disc brake only or Hex Lock Thru Axle versions. A handlebar-mounted reflector must be used for on-road use, which is not included with your fork.

This manual is designed as a comprehensive guide for all Manitou fork models, including MATCH COMP, TOWER COMP, EXPERT and PRO, CIRCUS COMP and EXPERT, MINUTE EXPERT, PRO, TS AIR and MRD, MARVEL COMP, EXPERT and PRO and R7 PRO and MRD. All figures and tables are located at the back of this manual. This manual can also be downloaded from the www.manitoumtb.com website.

⚠ WARNING GENERAL CONSUMER SAFETY INFORMATION

BICYCLING IS A HAZARDOUS ACTIVITY THAT REQUIRES THAT THE RIDER STAY IN CONTROL OF HIS OR HER BICYCLE AT ALL TIMES. ANY FALL FROM YOUR BICYCLE CAN RESULT IN SERIOUS INJURY OR EVEN DEATH. READING THIS MANUAL ENTIRELY, AND PROPERLY MAINTAINING YOUR BICYCLE AND SUSPENSION FORK WILL REDUCE THE POSSIBILITY OF INJURY OR DEATH. PRIOR TO EVERY RIDE, YOU SHOULD CLOSELY EXAMINE YOUR SUSPENSION FORK (AFTER CLEANING) IN BRIGHT SUNLIGHT TO ENSURE THAT NO DAMAGE HAS OCCURRED DURING THE COURSE OF RIDING, TRANSPORTING, OR AFTER A FALL. PAY PARTICULAR ATTENTION TO THE CROWN, INNER LEGS, OUTER LEGS, DROPOUTS, BRAKE ARCH AREAS AND "STRESS POINTS" (SUCH AS WELDS, SEAMS, HOLES AND POINTS OF CONTACT WITH OTHER PARTS ETC.) DO NOT RIDE YOUR BICYCLE IF THE FORK SHOWS ANY SIGNS OF BENDING, LEAKING, CRACKING, CREAKING, SQUEAKING, CLUNKING, OR ANY OTHER UNFAMILIAR NOISES; OR IF IT IS MISSING ANY OF THE ORIGINALLY SUPPLIED COMPONENTS. CONTACT YOUR DEALER OR MANITOU CUSTOMER SERVICE AT 888/686-3472 IF YOU HAVE ANY QUESTIONS CONCERNING THE FUNCTION, INTEGRITY, OR CONDITION OF YOUR FORK. ANY MODIFICATIONS NOT AUTHORIZED IN THIS MANUAL SHOULD BE CONSIDERED UNSAFE. IF YOU ARE A MODERATE OR AGGRESSIVE OFF-ROAD RIDER, OR RIDE AT LEAST THREE TIMES A WEEK OVER ROUGH TERRAIN, MANITOU RECOMMENDS SERVICING YOUR SUSPENSION FORK EVERY YEAR. TAKE YOUR FORK TO A MANITOU AUTHORIZED DEALER WHO CAN SERVICE YOUR FORK, OR CONTACT AN AUTHORIZED SERVICE CENTER.

⚠ WARNING REFLECTORS

MANITOU FORKS ARE DESIGNED FOR OFF-ROAD USE, AND AS SUCH, THEY DO NOT COME WITH PROPER REFLECTORS FOR ON-ROAD USE. HAVE YOUR DEALER OR MECHANIC INSTALL PROPER REFLECTORS TO MEET THE CONSUMER PRODUCT SAFETY COMMISSION'S (C.P.S.C.) REQUIREMENTS FOR BICYCLES IF YOUR FORK IS GOING TO BE USED ON PUBLIC ROADS AT ANY TIME. IF YOU HAVE QUESTIONS REGARDING C.P.S.C. REFLECTORS, PLEASE CONTACT YOUR DEALER.

⚠ WARNING IT IS CRITICAL THAT YOU SELECT AND USE THE SUSPENSION FORK THAT IS APPROPRIATE FOR YOUR ANTICIPATED RIDING STYLE, THAT YOU USE THE FORK PROPERLY AND FOLLOW THE WARNINGS CONTAINED IN THE OWNER'S MANUAL, REGARDLESS OF THE RIDING STYLE. FAILURE TO PROPERLY MATCH THE FORK TO YOUR FRAME OR RIDING STYLE COULD CAUSE THE FORK TO FAIL, RESULTING IN A LOSS OF BICYCLE CONTROL AND POSSIBLY SERIOUS INJURY OR DEATH TO THE RIDER. IN ADDITION, AN IMPROPER COMBINATION OF FRAME AND FORK FOR THE INTENDED CATEGORY WILL VOID THE FORK'S WARRANTY. VISIT OUR WEBSITE AT WWW.MANITOUMTB.COM/IU FOR MORE DETAILED INFORMATION AND GUIDANCE ON FORK SELECTION FOR YOUR RIDING STYLE. YOU SHOULD ONLY ATTACH GENERATORS, RACKS, AND DISC BRAKES TO THE DESIGNATED MOUNTING POINTS PROVIDED ON THE FORKS. NEVER MAKE ANY MODIFICATION TO YOUR FORK TO ATTACH ANY EQUIPMENT. THERE IS A HEIGHTENED LEVEL OF VOLUNTARY RISK ASSOCIATED WITH FREERIDING, DIRT JUMPING, AND DOWNHILLING. LARGER STUNTS/JUMPS MEAN MORE POTENTIAL FOR EQUIPMENT ISSUES OR PROBLEMS AND THE LIKELIHOOD OF SERIOUS INJURY IS GREATLY INCREASED. LEARN HOW TO PROPERLY RIDE AROUND OBSTACLES ON THE TRAIL OR ROAD. HITTING OBSTACLES SUCH AS CURBS, ROCKS, TREES, ROOTS, HOLES OR SIMILAR OBSTACLES STRAIGHT ON PUTS FORCES ON YOUR FORK IT WAS NOT DESIGNED TO ABSORB.

LANDING IMPROPERLY AFTER A JUMP OR DROP ALSO PUTS FORCES ON YOUR FORK IT WAS NOT DESIGNED TO ABSORB. YOU SHOULD ONLY PERFORM JUMPS OR DROPS WHEN A TRANSITION OR DOWN RAMP IS AVAILABLE TO HELP YOUR BICYCLE AND FORK ABSORB THE IMPACT FORCES GENERATED DURING THE LANDING, AND BOTH WHEELS SHOULD SMOOTHLY MAKE CONTACT WITH THE TRANSITION OR DOWN RAMP AT THE SAME TIME. ANY OTHER TYPE OF LANDING IS DANGEROUS, AS IT COULD OVERLOAD THE FRAME OR FORK AND RESULT IN A COMPONENT PART FAILURE AND AN ACCIDENT, OR COULD CAUSE YOU TO LOOSE CONTROL OF THE BICYCLE, EVEN WITHOUT A COMPONENT PART FAILURE. THE STEEPNESS AND LENGTH OF THE TRANSITION OR DOWN RAMP DEPENDS ON THE HEIGHT FROM WHICH YOU JUMP OR DROP. EVERY SITUATION IS DIFFERENT FOR EVERY RIDER; CONSULT WITH AN EXPERIENCED RIDER BEFORE ATTEMPTING ANY JUMP OR DROP.

FAILURE TO PROPERLY RIDE AROUND OBSTACLES ON THE TRAIL, OR FAILURE TO PROPERLY LAND AFTER A JUMP OR DROP COULD CAUSE YOUR FORKS TO FAIL, RESULTING IN A LOSS OF BICYCLE CONTROL AND, POSSIBLY, SERIOUS INJURY OR DEATH TO THE RIDER. RIDE ONLY IN AREAS SPECIFICALLY DESIGNATED FOR YOUR RIDING STYLE. DO NOT MISUSE OR ABUSE YOUR FORKS. LEARN HOW TO RIDE, AND ALWAYS RIDE WITHIN YOUR ABILITIES. OUT-OF-CONTROL RIDING PUTS THE EQUIVALENT OF YEARS OF HARD USE ON YOUR FORKS AFTER ONLY A FEW RIDES. SOMETIMES THE DAMAGE IS NOT OBVIOUS TO THE USER, BUT COULD HAVE FAILED INTERNAL COMPONENTS OR DAMAGED THE LOAD CARRYING ABILITIES OF THE MATERIALS USED IN THE CONSTRUCTION OF THE FORK.

ALL SUSPENSION FORKS REQUIRE REGULAR MAINTENANCE AND REPAIR. THE HARDER YOU RIDE, THE MORE OFTEN YOU MUST INSPECT AND MAINTAIN YOUR FORKS. IF YOUR FORKS START MAKING ANY STRANGE NOISES, CLUNKS, CREAKS, CLICKS, OR FEEL "LOOSE" OR DIFFERENT IN ANY WAY, THEY SHOULD NOT CONTINUE BEING USED, BUT IMMEDIATELY HAVE A CERTIFIED MANITOU SERVICE CENTER INSPECT AND REPAIR THE FORKS BEFORE YOU RIDE AGAIN. INSPECT YOUR FORKS REGULARLY TO SEE THAT THEY ARE NOT BENT, DEFORMED, CRACKED, OR CHIPPED. NO MATTER HOW SLIGHT, THEY SHOULD NOT CONTINUE TO BE USED. IMMEDIATELY HAVE A CERTIFIED MANITOU SERVICE CENTER INSPECT AND REPAIR THE FORKS BEFORE BEING USED AGAIN.

IDENTIFY YOUR RIDING STYLE

It is critical that you select and use the suspension fork that is appropriate for your anticipated riding style, that you use the fork properly and follow all warnings contained in this owner's manual regardless of the riding style. See below for different riding categories. Visit our website at www.manitoumtb.com/iu for more detailed information and guidance on fork selection for your riding style.

Trekking (TK): Trekking is similar to XC riding but not as aggressive as XC. It involves slower riding, typically on paved and smooth roads, and no riding obstacles such as rocks, roots, or depressions.

Cross Country (XC): Also called "marathon riding". Involves riding along hilly trails where some bumps and smaller obstacles, such as rocks, roots, or depressions, may be encountered. XC RIDING DOES NOT INCLUDE LARGE JUMPS OR DROPS (riding off rocks, fallen trees or ledges) from any height. XC forks must only be used with tires specifically designed for cross country riding. XC forks can be used with disc, rim or linear pull brakes.

All Mountain (AM): Riding with more emphasis on aggressive XC riding with larger obstacles and rough terrain. AM RIDING DOES NOT INCLUDE LARGE JUMPS OR DROPS (riding off rocks, fallen trees or ledges) from any height. These forks should be used only with disc brakes, as well as frames, wheels, and other components specifically designed for this riding style.

Freeride (FR): This riding style is for skilled riders and involves aggressive slopes, very rough terrain, large obstacles, and moderate jumps. Freeride forks should be used only with disc brakes as well as frames, wheels and other components specifically designed for freeriding.

Dirt Jumping (DJ): Also called "Urban Riding", this type of riding is only for the most skilled riders and involves jumping from one mound of dirt to another and landing smoothly on a downside transition. It also includes riding or jumping over and around man-made or other concrete structures. These forks should be used only with frames, wheels and other components specifically designed for this riding style.

Downhill (DH): This discipline is only for professional or highly-skilled riders. It includes

use on relatively high jumps (or “drops”) and negotiating larger obstacles such as boulders, fallen trees or holes. These forks should be used only with disc brakes, as well as frames, wheels, and other components specifically designed for this riding style.

INTENDED USES

Visit our website at www.manitoumtb.com/iu for more detailed information and guidance on fork selection for your riding style.

TK	**Trekking**	Forks for smooth pavement riding.
XC	**Cross Country**	Intermediate terrain, expeditions and competition use.
AM	**All Mountain**	Riding based with more emphasis on aggressive XC riding with larger obstacles.
FR	**Freeride**	Forks for the roughest descents, jumps and drops.
DJ	**Dirt Jumping**	Suspension for big air, manmade stunts and dual slalom courses.
DH	**Downhill**	Forks for aggressive downhill riding and pro racing.

	INTENDED USE					
FORK MODEL	TK	XC	AM	FR	DJ	DH
MATCH COMP		•	•			
TOWER PRO, EXPERT, COMP		•	•			
MINUTE MRD, PRO, EXPERT, TS AIR		•	•			
R7 MRD, PRO MARVEL		•				
CIRCUS EXPERT, COMP					•	

Please see the website at www.manitoumtb.com for additional information.

WARNING *“DOWNHILL”, “FREESTYLE” OR COMPETITIVE RIDING*

TO RIDE DOWNHILL AT HIGH SPEED OR IN COMPETITION IS TO VOLUNTARILY ASSUME A VERY HIGH RISK, AND DOWNHILL OR FREESTYLE RIDING CAN LEAD TO SERIOUS ACCIDENTS. SPEEDS “DOWNHILLING” CAN REACH SPEEDS SEEN ON MOTORCYCLES WITH SIMILAR HAZARDS AND RISKS. WEAR APPROPRIATE SAFETY GEAR, INCLUDING A FULL FACE HELMET, FULL FINGER GLOVES, AND BODY ARMOR. HAVE YOUR BICYCLE INSPECTED BY A QUALIFIED MECHANIC BEFORE EVERY EVENT AND BE SURE IT IS IN PERFECT WORKING CONDITION. ROUTINE AND THOROUGH MAINTENANCE IS EVEN MORE CRITICAL THAN WITH A BIKE NOT USED FOR DOWNHILLING OR FREESTYLE RIDING. CONSULT WITH EXPERT RIDERS AND RACE OFFICIALS ON CONDITIONS AND EQUIPMENT ADVISABLE AT THE SITE WHERE YOU PLAN TO RIDE DOWNHILL OR FREESTYLE. SUSPENSION AND DISK BRAKES MAY INCREASE THE HANDLING CAPABILITIES AND COMFORT OF YOUR BICYCLE AND MAY ALLOW YOU TO RIDE FASTER, BUT DO NOT CONFUSE THE ENHANCED CAPABILITIES OF A SUSPENSION BIKE WITH DISK BRAKES WITH YOUR OWN CAPABILITIES. INCREASING YOUR SKILL WILL TAKE TIME AND PRACTICE. PROCEED CAREFULLY UNTIL YOU ARE SURE YOU ARE COMPETENT TO HANDLE THE FULL CAPABILITIES OF YOUR BIKE. WHILE THE RUGGED APPEARANCE OF MOUNTAIN BIKES AND THESE DISK BRAKES MIGHT SUGGEST THEY ARE INDESTRUCTIBLE, THEY ARE NOT. CERTAINLY THEY ARE TOUGH AND STURDY. DOWNHILL OR FREESTYLE RIDING OR RACING PLACES EXTREME STRESS ON BICYCLES AND THEIR COMPONENTS (LIKE IT DOES RIDERS). REPEATED USE OF A FORK IN DOWNHILL RIDING MAY RESULT IN SUDDEN OR PREMATURE FAILURE OF A BICYCLE OR COMPONENT RESULTING IN SEVERE INJURIES. IF YOU PARTICIPATE IN THESE TYPES OF EVENTS, THE LIFETIME OF THE PRODUCT MAY BE SIGNIFICANTLY SHORTENED DEPENDING UPON THE LEVEL AND AMOUNT OF RACING. THE “NORMAL WEAR” OF A COMPONENT MAY DIFFER GREATLY BETWEEN COMPETITIVE AND NON-COMPETITIVE USES, WHICH IS WHY PROFESSIONAL LEVEL RIDERS OFTEN USE NEW BIKES AND COMPONENTS EACH SEASON AS WELL AS HAVE THEIR BIKES SERVICED BY PROFESSIONAL MECHANICS.

WARNING *REDUCED FORK LIFE*

THE LIFE OF THIS FORK WILL BE REDUCED IF (1) YOU USE IT MORE THAN THE AVERAGE USER, (2) YOU ARE HEAVIER THAN THE AVERAGE RIDER, (3) THE TERRAIN YOU RIDE ON IS ROUGHER THAN AVERAGE, (4) YOU TEND TO BE HARDER ON COMPONENTS THAN THE AVERAGE RIDER, (5) IT IS INSTALLED OR MAINTAINED IMPROPERLY, (6) IT MUST ENDURE MORE ADVERSE ENVIRONMENTAL CONDITIONS THAN THE AVERAGE FORK (I.E. SWEAT, CORROSIVE MUD, SALTY BEACH AIR, ETC.), AND/OR (7) YOU DAMAGE IT IN A CRASH, JUMP, OR THROUGH OTHER ABUSE. THE MORE FACTORS YOU MEET, THE MORE ITS LIFE WILL BE REDUCED, HOWEVER IT IS IMPOSSIBLE TO SAY HOW MUCH.

WARNING *PRESS FIT CROWNS*

THE STEERER TUBE (ON BOTH SINGLE AND DOUBLE CROWN FORKS) AND STANCHIONS (INNER LEGS ON SINGLE CROWN FORKS) ARE PRESS FIT AT THE FACTORY AND SHOULD NEVER BE REMOVED FROM THE CROWN. PRESSING THEM OUT WILL PERMANENTLY DAMAGE THE CROWN BEYOND REPAIR AND RENDER IT UNSAFE FOR ANY CONTINUED USE. NEVER ATTEMPT TO THREAD A THREADLESS STEERER TUBE. CUTTING THREADS WILL WEAKEN THE STEERER TUBE AND CAUSE AN UNSAFE CONDITION. OBTAIN THE CORRECT CROWN/STEERER FROM YOUR DEALER, OR CONTACT MANITOU CUSTOMER SERVICE AT 888/686-3472.

REPLACEMENT OF THE ENTIRE CROWN/STEERER ASSEMBLY MUST BE DONE TO INCREASE STEERER TUBE LENGTHS OR CHANGE DIAMETERS. REMOVING AND REPLACING THE STEERER TUBE WILL RESULT IN AN UNSAFE CONDITION AND SHOULD NEVER BE DONE.

CAUTION *INSTALLATION INSTRUCTIONS*

Ensure that the proper steerer tube has been delivered on your fork first. The steerer tube may need to be cut to length to fit your bicycle head tube. If you are not familiar with this procedure, or do not have the proper tools to cut the steerer tube, it is recommended that you seek a dealer with a qualified bicycle mechanic to perform the installation. When cutting a steering column of a fork make sure to measure twice before cutting; forks cut too short during installation are NOT covered by the warranty.

BREAK-IN

Your new fork is designed to break in during your first few rides (about 20 hours total riding time). Prior to break-in, you may notice your fork feels tight and slightly notchy. Following the break-in period, your fork will feel much smoother and will react to bumps much better than when you first put it on your bike. After 20 hours, you may want to recheck adjustments (where applicable) to fine-tune the fork completely.

WARNING WHENEVER YOU INSTALL ANY NEW COMPONENT ON YOUR BIKE MAKE SURE YOU THOROUGHLY TRY IT OUT CLOSE TO HOME (WITH YOUR HELMET) WHERE THERE ARE NO OBSTACLES, TRAFFIC, OR OVERLY CHALLENGING TERRAIN. MAKE SURE EVERYTHING IS WORKING PROPERLY BEFORE GOING OFF ON A RIDE OR TO A RACE.

FORK INSTALLATION – SINGLE CROWN FORKS

1. Remove the old fork from your bicycle.
2. Measure and cut the steerer tube to fit your bicycle head tube (see CAUTION above). You can use your old fork as a guide for cutting the steerer tube length.
3. Remove the headset crown race from the old fork and press onto the fork steerer until the race is seated snugly against the top of the crown per the headset manufacturer’s instructions.
4. Clean and grease the headset bearings and races per the headset manufacturer’s

instructions.

5. Install the lower bearings (if applicable) on fork crown race per the headset manufacturer's instructions.
6. Insert the steerer tube into the head tube of the frame.
7. Install the upper bearings, stem spacers, and stem.
8. Install the stem cap and bolt. Tighten the bolt to headset manufacturer's specifications.
9. Install the handlebars and torque the stem pinch screws or stem clamping system to stem manufacturer's specifications.
10. Install the brakes and adjust per the brake manufacturer's instructions.
11. For forks equipped with a MILO remote lockout lever, install the lever in an easily accessible position and torque to values indicated in Table 3 at the back of this manual.
12. For forks with standard dropouts (non through axle), adjust the front wheel quick release to clear the 0.275" (7 mm) thick secondary catch dropout. The quick release must be tightened to quick release manufacturer's specifications after it is properly seated into the dropout counter bores. Ensure that there is adequate thread engagement (4 or more threads with the release adjusted to lock). Refer to your bicycle owner's manual on the proper use and adjustment of the quick release lever. NOTE: Forks with standard dropouts are equipped with a secondary catch dropout to retain the wheel in the fork in the event the quick release comes loose.
13. To install the hex axle, simply slip the axle into the dropout, small axle hex side first into the large dropout hex. Thread in the set bolt into the small hex side and snug slightly. Push the fork up and down a few times to center the axle and hub and then tighten all pinch bolts to recommendations found in Table 3.
14. Install the brake cable per manufacturer's instructions (see warning below).

BRAKE CABLE INSTALLATION

WARNING FAILURE TO PROPERLY ROUTE AND SECURELY ATTACH THE FRONT BRAKE CABLE TO THE FORK CAN CAUSE SERIOUS INJURY OR DEATH.

Included with your fork is a small black disc brake cable guide (part no. 066455) that can be attached to the fork to aid in routing the cables to disc brake calipers. Forks with integrated cable guides will instead come with a standard zip tie. The best method we've found is to attach the cable so that it runs down the outside of the left fork leg. Make sure the brake line is not crimped and does not touch the tire as the fork moves through its range of travel.

WARNING WHEN INSTALLING THE WHEEL WITH A PROPERLY INFLATED TIRE, CHECK TO MAKE SURE THE FORK ACHIEVES MINIMUM TIRE CLEARANCE. FAILURE TO CONFORM TO RECOMMENDED TIRE CLEARANCE SPECIFICATIONS MAY CAUSE THE TIRE TO STOP SUDDENLY DURING USE CAUSING PERSONAL INJURY OR DEATH.

Measure minimum tire clearance from any point on the profile of the tire upward to the bottom of the brake arch (see Figure A). Compare to Table 1 for minimum brake arch clearance. All figures are located at the back of this manual.

Measure the tire at maximum width (see Figure B). Compare with Table 1 for maximum tire width.

INITIAL SET-UP

MEASURING SAG **(the amount your suspension compresses due to the weight of your body when in a natural riding position)**

To measure sag, you'll need a tape measure, zip tie, a pencil, a piece of paper and a helper.

1. Tie a zip tie around the fork leg and push it down to the top of the dust seal.
2. Have the rider sit on the bike. It is important to be in the normal riding position (weight centered) with your feet on the pedals. Have the rider get off the bike and allow fork to go back to full extension.
3. Measure the distance between the top of the dust seal and zip tie. Table 2 shows the amount of sag you should have depending on the travel of your fork.
4. On coil forks with preload adjusters, turning the knob clockwise increases spring preload and decreases sag, while turning the knob counterclockwise decreases spring preload and increases sag.
5. On air forks, remove the Schrader air cap located on the top of the left leg and, using a dedicated shock pump (Manitou part #85-4162), inflate the fork with the desired pressure. Be aware that the slight sound of air hissing during pump removal is caused by air leaving the pump, not the fork.
6. If adjusting the preload or air pressure does not provide the proper sag, you may require a new ride kit.

ADJUSTING MAIN SPRING AIR PRESSURE

Remove the air cap located on the top of the left fork leg and, using a dedicated air pump (Manitou Part #85-4162), inflate the fork with the desired pressure. Be aware that the slight sound of air hissing during pump removal is caused by air leaving the pump, not the fork.

Atmospheric Controlled Tuning (ACT) Air is designed to allow the rider to tune the coil spring rate without the need to replace the main spring. Maximum spring air pressure is 50 psi (3.5 bar) for ACT Air. Most riders will find a pressure between 10 psi and 30 psi (0.7 and 2 bar) to be optimal. If at maximum pressure you are getting more than the recommended sag, you will need to go to a firmer spring kit. These can be ordered from your local dealer.

Maximum main spring air pressure is 110 psi (7.5 bar) for the MARS Air spring. Most riders will find 80-100 psi (5.5-7 bar) to be optimal. If at maximum pressure you are getting more than the recommended sag, you will need to go to a firmer spring kit. These can be ordered from your local dealer.

Maximum main spring air pressure is 150 psi (10.4 bar) for the TS Air system in the R7 forks and 120 psi (8.27 bar) in the Minute TS Air fork. Most riders will find 80-110 psi (5.5-7.5 bar) to be optimal with the R7 forks and 60-90 (4.1-6.2 bar) to be optimal with the Minute TS Air.

Maximum main spring pressure is 120 psi (8.27 bar) for the ISO Air system. Most riders will find 60-90 psi (4.1-6.2 bar) to be optimal with ISO Air.

AIR PRESSURE CHARTS

Below are air pressure charts to aid you in setting your fork up. Here is a list of the different air systems and which fork uses them.

MARS AIR - Tower Pro, Minute Pro, Minute MRD

ACT AIR - Tower Expert, Minute Expert, Circus Expert

TS AIR - R7 Pro, R7 MRD, Minute TS AIR

ISO AIR - Marvel

MARS AIR

RIDER WEIGHT LBS	RIDER WEIGHT KGS	SOFT PSI [BAR]	STANDARD PSI [BAR]	FIRM PSI [BAR]
220	99.8			50 [3.4]
200	90.7		70-100 [4.8-6.9]	
170	77.1		60-90 [4.1-6.2]	
140	63.5		50-70 [3.4-4.8]	
120	54.4	80 [5.5]		

MAX PRESSURE NOT TO EXCEED 110 PSI [7.58 BAR]

TS AIR

R7 PRO & MRD

RIDER WEIGHT LBS	RIDER WEIGHT KGS	STANDARD SPRING
220	99.8	95-120 PSI [5.2-7.9 BAR]
200	90.7	90-110 PSI [5.2-7.2 BAR]
170	77.1	85-100 PSI [5.2-6.2 BAR]
140	63.5	80-95 PSI [4.8-6.2 BAR]
120	54.4	70-90 PSI [4.1-5.5 BAR]

MAX PRESSURE NOT TO EXCEED 150PSI [10.23 BAR]

MINUTE TS AIR

RIDER WEIGHT LBS	RIDER WEIGHT KGS	STANDARD SPRING
220	99.8	75-95 PSI [5.2-6.6 BAR]
200	90.7	72-87 PSI [5.0-6.0 BAR]
170	77.1	68-80 PSI [4.7-5.5 BAR]
140	63.5	64-75 PSI [4.4-5.2 BAR]
120	54.4	55-72 PSI [3.8-5.0 BAR]

MAX PRESSURE NOT TO EXCEED 120PSI [8.27 BAR]

ACT AIR

RIDER WEIGHT LBS	RIDER WEIGHT KGS	SOFT SPRING	FIRM SPRING
220	99.8	30-50 PSI [2.0-3.4 BAR]	15 PSI [1.0 BAR]
200	90.7	20-35 PSI [1.4-2.4 BAR]	10 PSI [0.7 BAR]
170	77.1	10-25 PSI [0.7-1.7 BAR]	N/A
140	63.5	5-15 PSI [0.3-1.0 BAR]	N/A
120	54.4	0-10 PSI [0-0.7 BAR]	N/A

MAX PRESSURE NOT TO EXCEED 50PSI [3.45 BAR]

ISO AIR

RIDER WEIGHT LBS	RIDER WEIGHT KGS	STANDARD SPRING
220	99.8	75-95 PSI (5.2-66 BAR)
200	90.7	72-87 PSI (5.0-6.0 BAR)
170	77.1	68-80 PSI (4.7-5.5 BAR)
140	63.5	64-75 PSI (4.4-5.2 BAR)
120	54.4	55-72 PSI (3.8-5.0 BAR)

MAX PRESSURE NOT TO EXCEED 150PSI (10.23 BAR)

COMPRESSION DAMPING ADJUSTMENT – ABSOLUTE+ DAMPING AND MILO REMOTE LOCKOUT

Forks equipped with the Absolute+ damper can be upgraded to the MILO integrated remote lockout system. MILO is an "on or off" system designed to be mounted on the handlebar for easier activation.

COMPRESSION DAMPING ADJUSTMENTS – ABSOLUTE+

Absolute+ allows the rider to dial in increasing amounts of compression damping by clockwise rotation of the adjuster knob. The final position provides platform for pedaling efficiency. The level of platform can be adjusted internally with shim changes. See www.manitoumtb.com for more information.

REBOUND DAMPING ADJUSTMENT

Rebound adjusters on Manitou forks are located on the bottom of the right fork leg. Turning the knob clockwise (as you are looking at the fork from the bottom) increases rebound damping, while turning the knob counterclockwise decreases rebound damping. Harsh ride can be caused by rebound settings that are too slow.

MAINTENANCE

Your fork requires periodic maintenance, cleaning, and inspection. This is because moisture and contamination may build up inside the fork depending on the severity of riding conditions. To maintain top performance, it is recommended that the fork be periodically disassembled, cleaned, dried and relubricated. After every ride wipe down the inner legs and the seal area to extend the life of the seal. You can download service and tuning instructions on the web at www.manitoumtb.com.

SUGGESTED SERVICE INTERVALS FOR ALL MANITOU SUSPENSION FORKS	
NORMAL CONDITIONS	
Short, Sporadic Rides	**Long, Frequent Rides**
Disassemble fork per Service Manual. Clean out casting and replace Semi Bath oil every 6 months. Service damping systems by changing the damper oil every year. Grease spring stack as needed. On air fork models, check the oil level sitting on top of the air piston every 2 months per directions found on www.manitoumtb.com.	Disassemble fork per Service Manual. Clean out casting and replace Semi Bath oil every 4 months. Service damping systems by changing the damper oil every year. Grease spring stack as needed. On air fork models, check the oil level sitting on top of the air piston every 6 weeks per directions found on www.manitoumtb.com.
SEVERE CONDITIONS	
Short, Sporadic Rides	**Long, Frequent Rides**
Disassemble fork per Service Manual. Clean out casting and replace Semi Bath oil every 4 months. Service damping systems by changing the damper oil every year. Grease spring stack as needed. On air fork models, check the oil level sitting on top of the air piston every 6 weeks per directions found on www.manitoumtb.com.	Disassemble fork per Service Manual. Clean out casting and replace Semi Bath oil every 3 months. Service damping systems by changing the damper oil every year. Grease spring stack as needed. On air fork models, check the oil level sitting on top of the air piston every 4 weeks per directions found on www.manitoumtb.com.

⚠ WARNING **BEFORE EVERY RIDE YOU SHOULD:**

1. **Ensure that the quick release skewers are properly adjusted and tight. Refer to your bicycle owner's manual on the proper use and adjustment of the quick release lever and for other pre ride checks. NOTE: Forks with standard dropouts are equipped with a secondary catch dropout to retain the wheel in the fork in the event the quick release comes loose.**
2. **Ensure that all bolts are tightened to the appropriate torque recommendations by the part's respective manufacturer.**
3. **Wipe the inner legs and clean the fork. Check the entire fork for any obvious damage.**
4. **Check the headset for proper adjustment. To check for a loose front headset apply the front brake with both wheels on level pavement and push the bike forwards and backwards rapidly to see if you hear the headset rattling. If it is, then it is too loose. Follow headset manufacturer's instructions to tighten.**
5. **Ensure that the front brake cable is properly routed and check brake adjustment. Follow brake manufacturer's instructions.**

CHECKING OIL LEVEL

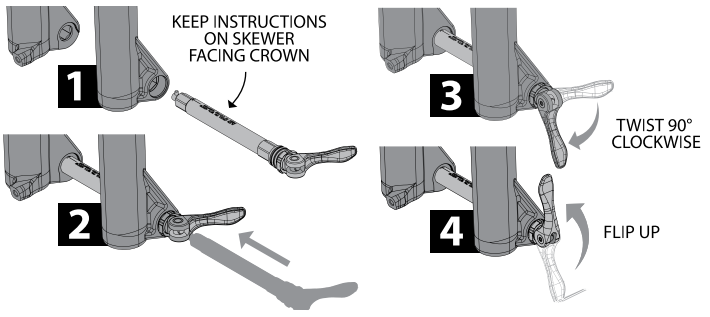
⚠ WARNING **SETTING THE PROPER OIL LEVEL IN YOUR DAMPED SUSPENSION FORK IS CRITICAL. THE DAMPING IS LOCATED IN THE RIGHT LEG OF YOUR FORK. NOT ENOUGH OIL WILL ALLOW FOAMING AND REDUCE THE PERFORMANCE. TOO MUCH OIL WILL RESTRICT TRAVEL AND MAY CAUSE DAMAGE TO THE SYSTEM AND CREATE AN UNSAFE RIDING CONDITION. FINISH READING THIS ENTIRE SECTION PRIOR TO ALTERING THE OIL LEVEL.**

To check the oil level, remove the compression assembly located in the right leg (as you are looking at the fork from the rider's position). Leave the spring stack in place to keep the fork fully extended. Use a tape measure or "dip stick" to measure from the top surface of the fork leg to the oil surface (See Figure C at the back of the manual). Please consult www.manitoumtb.com for the correct oil level for your fork model.

NOTE: *Use SAE 5WT suspension fork oil from high quality manufacturers such as Motorex or Maxima.*

QR15 INSTALLATION INSTRUCTIONS

1. Flip the lever to the open position. You'll see an open arrow on the side of the lever. Align cross pin with the arrow on the axle. You will feel it click into place when it is in the proper position.
2. Place wheel into fork. Insert axle into the drive side dropout of the fork. When inserting the axle, you want to make sure that the writing on the axle is facing up and that the cross pin is vertical. The lever of the axle will be pointing out towards the front of the fork. Insert axle thru the casting and hub until it stops (the o-ring by the tension dial should be inside the casting counter bore).
3. Rotate lever 90 degrees clockwise until you feel it click into place.
4. Flip lever up to the closed position locking the axle. If it feels like it requires too much force to close the lever, adjust the tension with the adjuster dial. Adjust by turning the adjuster dial clockwise to decrease tension. Counter-clockwise rotation will increase tension if the axle feels too loose when closing the lever.



If you have any questions regarding your Manitou suspension fork, in the USA contact the Manitou Customer Service Department at 888/686-3472, or for information outside of the USA contact your authorized Manitou dealer or distributor. You can also log on to www.manitoumtb.com and download this manual or see detailed instructions on how to service your suspension fork.

WARRANTY INFORMATION

Any Hayes Bicycle Group (HBG) product found by the factory to be defective in materials and/or workmanship within one year (two years in European Union countries) from the date of purchase will be repaired or replaced at the option of the manufacturer, free of charge, when received at the factory or authorized distributor locations with proof of purchase, freight prepaid. Any other warranty claims not included in this statement are void. This includes assembly costs (for instance by the dealer), which shall not be covered by HBG. This warranty does not cover breakage, bending, or damage that may result from crashes or falls. This warranty does not cover any defects or damage caused by alterations or modification of new HBG products or parts or by normal wear, accidents, improper maintenance, damages caused by the use of parts of different manufacturers, improper use or abuse of the product, or failure to follow instructions contained in the applicable instruction manual. Any modifications made by the user will render the warranty null and void. The cost of normal maintenance or replacement of service items, which are not defective, shall be paid for by the original purchaser. This warranty is expressly in lieu of all other warranties, and any implied are limited in duration to the same duration as the expressed warranty herein. HBG shall not be liable for any incidental or consequential damages. Customers in countries other than USA should contact their dealer or local HBG distributor.

TABLE 1 - WHEEL CLEARANCE

	MINIMUM ARCH CLEARANCE	MAXIMUM TIRE WIDTH
FORK MODEL	**(SEE FIGURE A)**	**(SEE FIGURE B)**
R7 MRD, R7	12,5 mm	60 mm
MATCH COMP; TOWER PRO, EXPERT, COMP; MINUTE MRD, PRO, EXPERT, LTD; CIRCUS EXPERT, COMP MARVEL	9,5 mm	63 mm

TABLE 2 - SAG MEASUREMENT

FORK TRAVEL	SAG
80 mm	12 - 16 mm
100 mm	15 - 20 mm
120 mm	18 - 30 mm
130 mm	26 - 33 mm
140 mm	27 - 36 mm

TABLE 3 - RECOMMENDED TORQUE SPECIFICATIONS

ITEM	TORQUE SPECIFICATIONS - Nm (in-lbs)
HEX AXLE BOLTS	3,4 - 4,5 Nm (30 - 40 in-lb)
REMOTE HANDLEBAR CLAMP	0,45 - 0,68 Nm (4 - 6 in-lb)
REMOTE LEVER CABLE CLAMP SCREW	0,34 - 0,56 Nm (3 - 5 in-lb)

• DEUTSCH

MANITOU FEDERGABELN

WIR GRATULIEREN IHNEN ZUR WAHL DER NEUESTEN ERHÄLTLICHEN FEDERUNGSTECHNOLOGIE. Diese Gabel ist zum Einbau in das Fahrrad fertig vormontiert. Sie wird mit einem 28,5 mm (1 1/8 Zoll) Gabelschaftrohr oder einem optionalen 38 mm (1,5 Zoll) konischen Gabelschaftrohr geliefert und ist u.U. auch in Scheibenbremsen- oder Sechskant-Steckachsen-Ausführung erhältlich. Ein am Lenker angebrachter Reflektor ist während des Radfahrens auf der Straße zu benutzen. Dieser Reflektor ist nicht im Lieferumfang der Gabel enthalten.

Diese Anleitung gilt für alle Manitou Gabeln, einschließlich der Modelle MATCH COMP, TOWER COMP, EXPERT und PRO, CIRCUS COMP und EXPERT, MINUTE EXPERT, PRO, TS AIR und MRD, MARVEL COMP, EXPERT und PRO sowie R7 PRO und MRD. Alle Abbildungen und Tabellen sind am Ende dieser Anleitung zu finden. Diese Anleitung kann auch von der Website www.manitoumtb.com heruntergeladen werden.

⚠ WARNUNG INFORMATIONEN ZUR VERBRAUCHERSICHERHEIT

FAHRRADFAHREN IST GEFÄHRLICH, UND DER RADFAHRER MUSS DAS FAHRRAD JEDERZEIT UNTER KONTROLLE HABEN. JEDER STURZ MIT DEM FAHRRAD KANN ZU SCHWEREN ODER GAR TÖDLICHEN VERLETZUNGEN FÜHREN. DAS DURCHLESEN DER GESAMTEN ANLEITUNG UND EINE ORDNUNGSGEMÄSSE INSTANDHALTUNG DES FAHRRADES SOWIE DER FEDERGABEL VERRINGERN DIE GEFAHR VON VERLETZUNGEN ODER UNFÄLLEN MIT TÖDLICHEN FOLGEN FÜR DEN RADFAHRER. VOR JEDER BENUTZUNG DES FAHRRADES MUSS DIE FEDERGABEL (NACH EINER REINIGUNG) BEI GUTEN LICHTVERHÄLTNISSEN GRÜNDLICH ÜBERPRÜFT WERDEN, UM SICHERZUSTELLEN, DASS BEIM FAHREN, BEIM TRANSPORT ODER NACH EINEM STURZ KEINE BESCHÄDIGUNGEN AUFGETRETEN SIND. DABEI BESONDERS AUF GABELBRÜCKE, STANDROHRE, TAUCHROHRE, AUSFALLENDEN, BREMSBRÜCKENBEREICH UND STARKER BELASTUNG AUSGESETZTEN STELLEN (WIE SCHWEISSNÄHTE, VERBINDUNGEN, BOHRUNGEN, KONTAKTSTELLEN MIT ANDEREN TEILEN USW.) ACHTEN. DAS FAHRRAD DARF NICHT GEFAHREN WERDEN, FALLS DIE GABEL ANZEICHEN VON VERBIEGUNGEN, LECKSTELLEN ODER RISSEN AUFWEIST, FALLS KNIRSCHENDE, QUIETSCHENDE, KLAPPERNDE ODER ANDERE UNGEWÖHNLICHE GERÄUSCHE ZU HÖREN SIND ODER FALLS EINES DER URSPRÜNGLICH GELIEFERTEN TEILE FEHLT. BITTE SETZEN SIE SICH BEI FRAGEN ZU FUNKTION, INTAKTHEIT ODER ZUSTAND DER GABEL MIT IHREM VERTRAGSHÄNDLER ODER UNTER DER RUFNUMMER +1-262-242-4300 MIT DEM KUNDENDIENST VON MANITOU IN VERBINDUNG. MODIFIZIERUNGEN, DIE NICHT IN DIESER ANLEITUNG AUFGEFÜHRT SIND, STELLEN EIN SICHERHEITSRISIKO DAR. DURCHSCHNITTLICHEN UND EXTREMEN GELÄNDEFAHRERN SOWIE BEI MINDESTENS DREI GELÄNDEFAHRTEN PRO WOCHE EMPFIEHLT MANITOU, DIE FEDERGABEL JEDES JAHR EINER GRÜNDLICHEN WARTUNG ZU UNTERZIEHEN. SIE KÖNNEN DIE GABEL VON EINER MANITOU VERTRAGSWERKSTATT WARTEN LASSEN ODER SICH MIT EINEM AUTORISIERTEN KUNDENDIENSTZENTRUM IN VERBINDUNG SETZEN.

⚠ WARNUNG REFLEKTOREN

MANITOU GABELN SIND FÜR GELÄNDEFAHRTEN VORGESEHEN. SIE WURDEN DAHER NICHT MIT REFLEKTOREN FÜR DEN STRASSENVERKEHR AUSGERÜSTET. SOLLTE DIE GABEL JEMALS IM ÖFFENTLICHEN STRASSENVERKEHR BENUTZT WERDEN, SOLLTEN SIE VOM HÄNDLER ODER EINER WERKSTATT GEEIGNETE REFLEKTOREN GEMÄSS DEN STRASSENVERKEHRS- UND SICHERHEITSVORSCHRIFTEN FÜR FAHRRÄDER ANBRINGEN LASSEN. FRAGEN ZU DEN STRASSENVERKEHRS- UND SICHERHEITSVORSCHRIFTEN BEANTWORTET IHNEN DER HÄNDLER.

⚠ WARNUNG

DIE FEDERGABEL MUSS ENTSPRECHEND IHRES ERWARTETEN FAHRSTILS AUSGEWÄHLT UND VERWENDET WERDEN. DIE GABEL AUSSCHLIESSLICH ENTSPRECHEND DEN ANWEISUNGEN IN DIESER ANLEITUNG VERWENDEN, UND ALLE IN DIESER BEDIENUNGSANLEITUNG ENTHALTENEN WARNHINWEISE BEFOLGEN – DIES GILT UNABHÄNGIG VOM FAHRSTIL. WIRD DIE GABEL NICHT ENTSPRECHEND DES RAHMENS UND FAHRSTILS AUSGEWÄHLT, KANN DIES ZUM AUSFALL DER GABEL, ZUM VERLUST DER KONTROLLE ÜBER DAS FAHRRAD UND MÖGLICHERWEISE ZU SCHWEREN ODER TÖDLICHEN VERLETZUNGEN DES FAHRERS FÜHREN. DES WEITEREN WIRD DURCH EINE UNGEEIGNETE KOMBINATION VON RAHMEN UND GABEL FÜR DIE ERWARTETE DISZIPLIN