manitou

Luxe

2004 SERVICE MANUAL

Luxe Super
Luxe Elite

answer products incorporated

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INTRODUCTION

This manual is intended to guide the user through basic service of Manitou Luxe front forks. Service is supported by the identification of common parts and assemblies that have been assembled into Service Kits. The purpose of this manual will be to describe conditions that may drive the need for service and to provide installation instructions for the kits.

Due to the time-consuming nature suspension fork service, at this time our primary focus is to offer service kits that minimize the amount of downtime and labor involved.

Important information is highlighted in this manual by the following notations:

WARNING
Failure to follow WARNING instructions could result in severe injury or death to the person inspecting or repairing the suspension fork or the user.

CAUTION
A CAUTION a caution indicates special precautions that must be taken to avoid damage to the product.

NOTE
A NOTE provides key information to make procedures easier or clearer

GENERAL WARNING: Suspension forks by design can contain preloaded springs, gases and fluids under extreme pressure and warnings contained in this manual must be observed to reduce the possibility of injury or possible death. Following these instructions can help you reduce the risk of being injured. Any questions in regards to the information in this manual should be directed to Answer Products Customer Service at (661) 257-4411.

WARNING: Suspension forks uses preloaded spring(s) to provide compression spring resistance. This system must be relieved of preload prior to servicing. Failure to relieve air pressure could result in injury or possible death.

CAUTION: Suspension forks use precision machined aluminum and other soft alloy components. Using correct tools for assembly is essential to prevent damage.

GLOSSARY OF TERMS

Arch – A support that connects the two outer lower legs of the casting so as to keep them moving in unison.

Boss – The word used to describe an outer casting that has brake posts for V-brakes or cantilever brakes.

Bottom Out Bumper – A rubber or elastomer device that absorbs the shock that occurs when a suspension is compression to its limit.

Bushings – A cylindrical sleeve between a fork stanchion tube (inner leg) and a fork outer casting (slider), which facilitates the sliding movement between these two parts.

Coil Spring – A coiled piece of metal that acts as a spring to help suspend a fork.

Compression – The phase of the suspension operation in which the wheel travels up, or travels closer to the frame. The suspension forks reaction to a bump in the trail.

Convertible Travel – A system used to alter the travel of a suspension fork. It requires moving a travel clip on the compression rod to a different position. This operation is accomplished by disassembling the fork and physically moving the travel clip on the compression rod.

Crown Steerer Assembly – the stanchion legs (inner legs), the fork crown, and the steer tube pressed together as one assembly. This assembly is then finished by adding all of the fork internals and then outer casting (slider).

Drop Out – The end of an outer casting (slider) where the wheel attaches.

Dust Boot – Usually a piece of rubber in the shape of a cylinder with baffles to allow it to compress as the fork compresses through its travel. Its function is to help keep dirt and water from getting into the inner legs of the fork.

Fork Crown – The component that joins the stanchion tubes (inner legs) to the steer tube of the fork.

MCU – (Micro-Cellular Urethane) Special urethane that is filled with tiny air cells that act like springs when the elastomer is compressed.

No Boss - The word used to describe an outer casting that has no brake posts for V-brakes or cantilever brakes. This casting is to be used for disk brakes only.

O-Ring – A soft, flexible neoprene or Buna rubber ring with a round cross-section, which is used for sealing and retention.

Outer Casting – (see Slider)

Preload – A condition of compressing a spring or elastomer before the operating loads are put on the suspension, so that it provides a stiffer spring rate.

Rebound – The phase of the suspension operation in which the wheel returns to its original position on the ground after compression.

Reverse Arch Technology – Also known as RA. It is a system that is designed to move the arch of a fork to the backside of a fork, rather than the conventional front position. It was designed to provide greater rotational torque strength to an outer casting (slider), without adding additional weight to the fork.

SAG – The amount a suspension fork compresses at rest with a normal load (rider's weight).

Seal – A part, usually neoprene rubber or Buna, that keeps contaminants out and/or working fluids in.

Spring Rate – The rate at which the resistance of a spring increases as it is compressed.

Slider/Outer Casting – The tube (outer casting leg) of the suspension fork that remains fixed to the wheel. It slides up and down on the stanchion leg (inner leg).

Stanchion Legs – The suspension tube (inner leg) fixed to the fork crown. It remains stationary during the operation of the suspension.

Steer Tube – The long cylindrical tube that extends from the top of the fork crown. Its function is to be inserted into the bicycle head tube and attach the suspension to the bicycle frame.

Top Out Bumper – A rubber, coil spring, or elastomer device that absorbs the shock that occurs when the load is taken off a suspension so that it is allowed to rebound to its limits

Travel – The amount that a wheel moves between the most compressed and the most extended states of the suspension

Wiper Seal – A rubber material that is used as a seal to keep dirt and water out of the outer casting legs. It is not designed to keep air pressure or extreme oil pressure in. Manitou has the new Evil Genius wiper seals.

2004 Luxe Forks Disassembly and Rebuild Instructions

Disassembly Instructions

WARNING This fork uses a preloaded coil spring provide spring resistance. The spring must be relieved of its preload prior to servicing. Failure to do so could result in injury or possible death.

1. Turn spring preload adjuster knob counter clockwise until it stops. Remove 2mm hex screw on spring preload adjuster knob and remove knob on the top left side of the fork.
2. Remove preload adjuster using 18mm socket.
3. Remove top leg cap on right hand side using 24mm socket.
4. Compress fork and remove the spring preload, MCU, and spring assy.
5. Invert fork and tap on work bench to remove plastic spacer from inside of left inner leg.
6. Using a _ inch drive 4mm hex on an extension remove the comp rod screws from inside the bottom of both inner legs.
7. Pull off outer leg from crown/steer assy.
8. To remove compression rods, remove the compression rod clips (slotted washer if installed) and the black rubber bottom out bumper. Feed the compression rod up through the inner leg.
9. Rubber fork boots can now be removed and replaced from the casting at this time if necessary.

Assembly Instructions

1. Remove rubber fork boots from the casting and slide them onto the inner legs of the crown/steer assy.
2. Lightly grease the bushings on the inside of the outer leg casting and on the lower portion of the inner legs below the boots using a thick grease such as Motorex Bike Grease 2000.
3. Reinstall compression rods into the inner legs if necessary.
4. Reinstall the bottomout bumpers and clips.
5. Slide the outer leg onto the crown/steer assy, make sure the arch is facing to the rear.
6. Using a _ inch drive 4mm hex on an extension tighten the comp rod screws from inside the bottom of both inner legs. Torque per Luxe Fastener Torque and Setup Levels section.

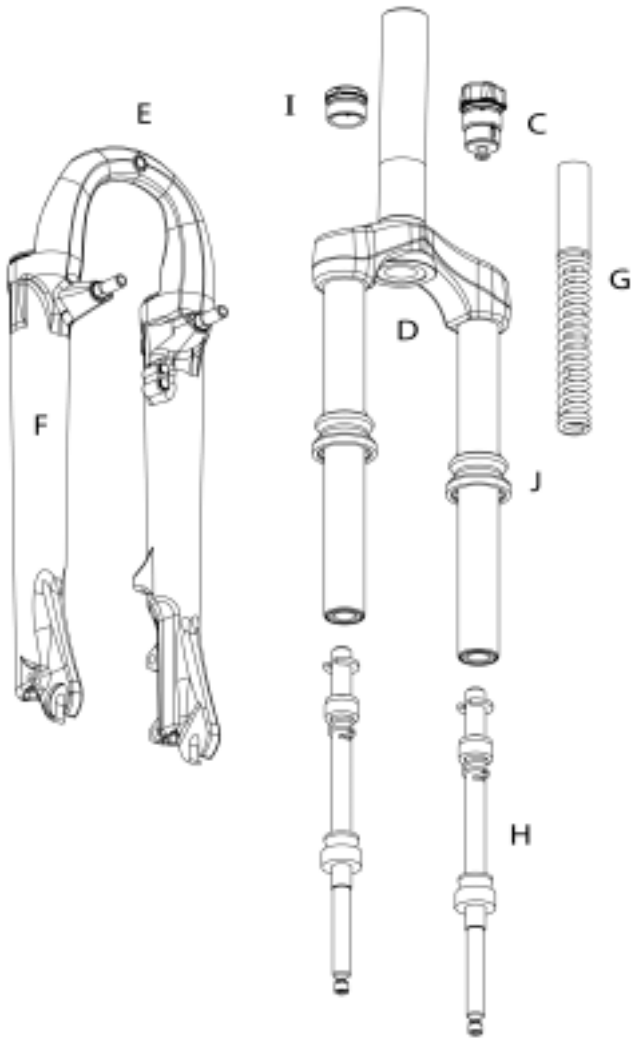
WARNING When installing the outer Leg Casting to the Crown Steer Assy, Compression rod bolts must be properly tightened prior to use. Failure to do so could result in injury or possible death.

7. Snap boots over dust seal of outer leg casting.
8. Install plastic spacer into left inner leg.
9. Grease spring heavily with Motorex Bike Grease 2000.
10. Extend fork and install the spring preload, MCU, and spring assy.
11. Tighten preload adjuster using 18mm socket.
12. Install preload adjuster knob using 2mm hex screw.
13. Install top leg cap on right hand side using 24mm socket

TROUBLESHOOTING

Symptom	Cause	Solution	Service Manual Page
Grease leaks from Wiper Seals	Seal not seated properly	Remove Casting from Inner Legs, reinstall or replace seals	6
	Nicks or scratches on inner legs	Replace Crown/Steerer/Inner Leg Assembly	6
	Wear	Remove Casting from Inner Legs, reinstall or replace seals	6
Lack of Travel	Insufficient grease on inner legs	Remove Casting from Inner Legs and regrease bushings	6
	Fork alignment	Visually inspect fork, call Answer Products Customer Service	3
Fork Top out	Top out spring damaged	Inspect and replace Top out spring if needed.	6
Fork Bottom out	Too much SAG	Refer to SAG Set up in Tuning section of Owners Manual	
	Bottom out Bumper damaged	Inspect and replace Bottom out Bumper if needed	6
Play in Fork	Loose bushings	Replace outer casting	6
	Loose Compression Rod bolt	Tighten bolt to specified torque	6

Luxe: Fastener Torque and Setup Levels



Model: Luxe	
Description	**Torque Value**
Torque – Brake Post	90–110inlbs (10.2-12.4nm)
Leg Caps	25–35inlbs (2.8-4.0nm)
Torque - Comp Rod Screw	10-30inlb (1.1-3.4nm)
Adjuster caps:	
Torque	35-50inlbs (4.0-5.7nm)

Luxe Service Kits

		Luxe	
Model		Elite	Super
Code		T-410	T-420
Travel (mm)		60	60
Pre Load Adj/Top Cap	**C**	85-4800	
Crn/Str/Leg	**D**		
	***Steel S/T (26")	85-5301	
	***Steel S/T (700C)		
	***Blk AL S/T(26") STD/SM	85-5303	
	***Blk AL S/T(700C)	85-5303	
	***Steel Threaded (26)	85-5307	
	***Steel Threaded (700c)		
Outer Leg Assy	**E**		
STD	Black (26")	85-5309	
STD	Black (700c)	85-5310	
STD	Silver (26")	85-5311	
STD	Silver (700c)	85-5312	
Sticker Kit	**F - Silver**	85-5313	
	F - Black	85-5314	
Ride Kits	**G**		
	***Soft	85-5030	
	***Medium	85-5031	
	***Firm	85-5032	
Comp Rod/	**H**		
	60	85-5315	
Knob Kit	**I**	85-5210	
Boot Kit	**J**	85-5211	
Seal Kit	**K**	85-5316	
Bumper Kit	**K**	85-5317	