



PRO
SERVICE GUIDE

HAYES

PERFORMANCE SYSTEMS



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INTRODUCTION

This manual is intended to guide the user through the steps necessary to fully service and maintain the Mastodon Pro suspension fork.

! WARNING We highly recommend that service to this fork be performed by a certified bicycle mechanic. Failure to follow instructions presented in this manual could lead to serious injury or death. Any questions about the servicing of this fork or the manual itself should be directed to Manitou Customer Support at:
Phone: 888-686-3472
Email: techsupport@hayesbicycle.com

! WARNING Suspension forks by design can contain preloaded springs, gases and fluids under extreme pressures. Warnings contained in this manual must be observed to avoid damage to fork, serious injury or even death.

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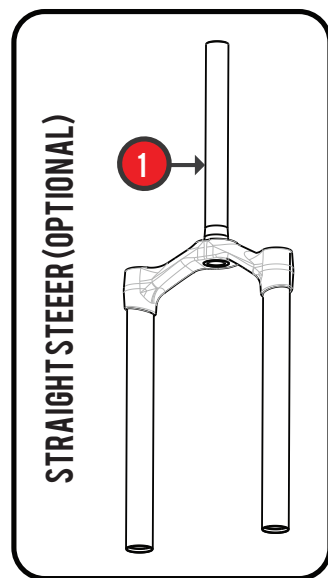
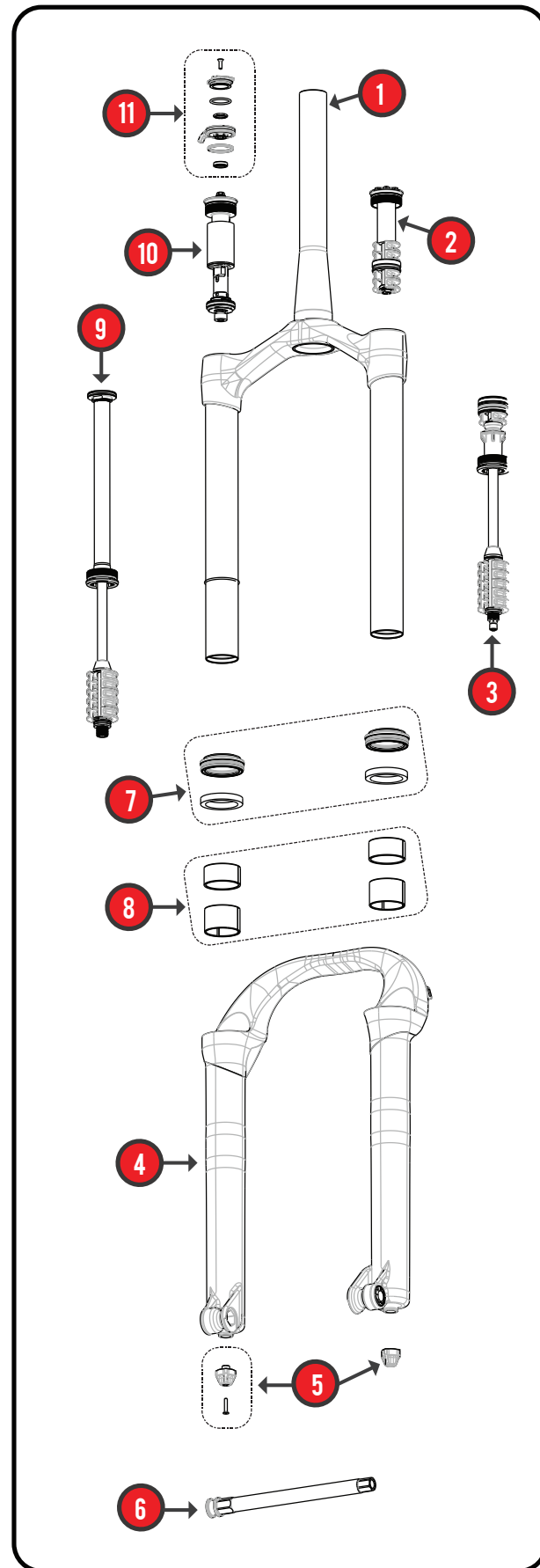
REQUIRED TOOLS

Below is a list of tools necessary for servicing the Mastodon Pro fork.

- Safety Glasses
- Nitrile Gloves
- Lint-Free Rags
- Torque Wrench
- Slickoleum Grease
- Semi-bath Oil, 5/40w Synthetic - Manitou part number 85-0022
- 5wt Maxima Fork oil - Manitou part number 85-0023
- Maxima Cold Weather Light 3w Fork Oil
- Mattoc Tool Kit - Manitou part number 172-31133
 - Manitou cassette tool
 - Manitou thin walled 8mm socket
 - Manitou 24mm flat ground socket
- Optional O-ring Kit - Manitou part number 141-28528-K008
- 8mm Hex Socket
- 2mm Hex Wrench
- 20mm Socket
- 24mm Socket
- 22mm Box end Wrench
- 12mm Box End Wrench
- 12mm Socket
- Ratchet
- 22mm Crow's Foot
- Fork/Shock Pump
- Pick
- Adjustable Wrench
- Downhill tire lever or flat blade screwdriver

MASTODON PRO STD & EXT EXPLODED VIEW

	PART DESCRIPTION	PART NUMBER
1	CSA 100, 1-1/2 TAPER STEER	141-34087-K001
	CSA 120/140, 1-1/2 TAPER STEER	141-34087-K002
	CSA 150, 1-1/2 TAPER STEER	141-34087-K017
	CSA 100, 1-1/8 TAPER STEER	141-34087-K003
	CSA 120/140, 1-1/8 STRAIGHT STEER	141-34087-K004
2	CSA 150, 1-1/8 TAPER STEER	141-34087-K018
	AIR CAP VOLUME ADJUST	141-32155-K004
3	PRO STD AIR SPRING ASSEMBLY	141-34087-K007
	PRO EXT AIR SPRING ASSEMBLY	141-34087-K008
4	OUTER CASTING (INCLUDES SEALS AND BUSHINGS)	141-34087-K009
5	REBOUND ADJUST & ARI CAP KNOBS	141-32155-K016
6	HEX LOCK SL 150MM AXLE	141-33147-K004
7	SEAL KIT	141-34000
8	BUSHING KIT	141-30996-K019
9	REBOUND DAMPER, STD/EXT , 100MM	141-34087-K015
	REBOUND DAMPER, STD/EXT , 120/140MM	141-34087-K013
	REBOUND DAMPER, EXT , 150MM	141-34087-K016
10	MC2 W/O HBO COMPRESSION DAMPER	141-30996-K001
11	MC2 W/O HBO KNOB KIT	193-24931-C001
	DECAL KIT	141-34087-K012
	REBUILD KIT	141-28528-K008



HAYES PERFORMANCE SYSTEMS WARRANTY

Limited Warranty:

HAYES warrants its products to be free from defects in materials or workmanship under normal intended use for a period of one year (two years in European Union countries) from the date of purchase, subject to normal wear and tear. Unless otherwise prohibited by law, any such defective products will be repaired or replaced at the option of HAYES when received with proof of purchase, freight prepaid. 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 modifications of HAYES products or by normal wear, accidents, improper maintenance, damages caused by the use of HAYES products with parts of different manufacturers, improper use or abuse of the product, application or uses other than those set forth in the HAYES instruction manual or failure to follow the instructions contained in the applicable HAYES instruction manual. Instruction manuals can be found on-line at www.hayescomponents.com. Any modifications made by the BUYER or any subsequent user will render the warranty null and void. This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed from the product. The cost of normal maintenance or replacement of service items, which are not defective, shall be the BUYER's responsibility. If permitted by local law, this warranty is expressly in lieu of all other warranties (except as to title), express or implied, and in particular and without limitation HAYES disclaims the implied warranties of merchantability or fitness for purpose. If for any reason warranty work is necessary, return the component to the place of purchase or contact your dealer or local HAYES distributor. In the USA, contact HAYES for a return authorization number (RA#) at (888) 686-3472. At that time, instructions for repair, return, or replacement shall be given. Customers in countries other than the USA should contact their dealer or local HAYES distributor.

Limitation of Liability.

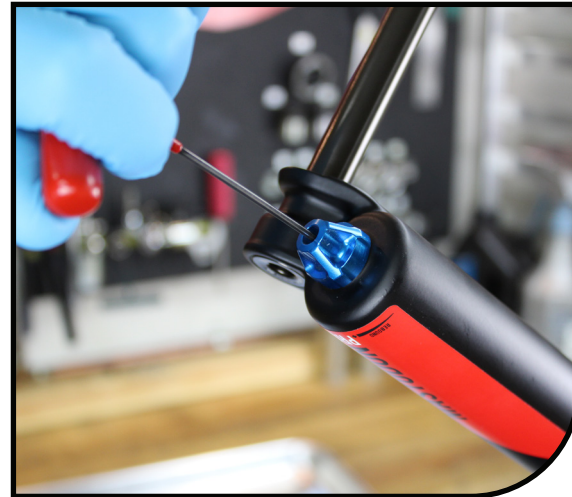
Unless required by mandatory law, HAYES shall not be liable for any incidental, indirect, special or consequential damages.

This warranty does not apply to normal wear and tear. Wear and tear parts are subject to damage through normal use, failure to service according to recommendations or riding in conditions other than recommended. The cost of normal maintenance or replacement of service items, which are not defective, shall be paid for by the original purchaser. Wear and tear parts that will not be replaced under warranty include but are not limited to the following:

- Bushings
- Rear Shock
- Handlebar grips
- Tubeless Valves
- Dust Seals
- Fork and Shock air Seals and/or O-rings
- Bearings
- Upper Stanchion Tubes
- Stripped or worn bolts
- Remote Lockout Cable
- Gloves
- Lower Stanchion Tubes (Dorado)

CASTING REMOVAL & SERVICE

1 Remove rebound knob using a 2mm Hex wrench.



2 Insert an 8mm Hex wrench into the end of the rebound damper rod and turn the rod **clockwise** until it is disengaged from the casting and can be pushed into the casting.



3 Unscrew air cap and depress Schrader Valve a few times to ensure all air is released.



4 Using the Manitou 8mm Thin Wall Socket, turn the compression rod **clockwise** until compression rod is disengaged from the casting threads.



5 Remove casting from fork. It is recommended this be done over a drain pan as the lower casting contains semi-bath oil. Allow oil in casting to drain out before continuing to next step.



6 Using a downhill tire lever or similar tool, gently pry the dust seals out of the casting.



CASTING REMOVAL & SERVICE

7 Remove old foam wiper rings. Apply semi-bath fluid to the new foam wiper rings and install into fork casting.



8 Remove springs from lip of dust seals. Clean seal area with Isopropyl alcohol. Using the Manitou 34mm Seal Press or large socket press in the dust seals. Reinstall springs onto seals.



AIR SPRING SERVICE

1 Release air from the fork. Depress Schrader valve a few times to ensure all air is released.



2 Remove IVA using a 24mm socket.



3 Pull IVA straight out.



AIR SPRING SERVICE

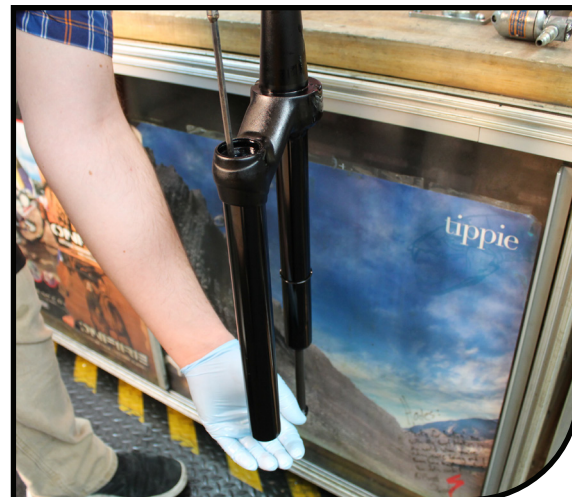
- 3** Invert the fork and use Manitou cassette tool and adjustable wrench to unthread the air spring assembly from the stanchion.



- 4** Remove air spring assembly from the stanchion. Clean spring and rod assembly with Isopropyl alcohol.



- 5** Once the air spring assembly is removed clean the inside of the stanchion with isopropyl alcohol and a lint free towel (Be careful to not scratch the inner surface of the stanchion). Inspect the inside and outside of the stanchion for scratches or other damage.



AIR SPRING SERVICE

- 6** Liberally grease the piston quad seal and outer surface with Slickoleum™ grease.



- 7** Add 8cc's of Slickoleum™ grease to the top of the air piston.



- 8** Add Slickoleum™ grease to the stanchion threads before inserting the air spring assembly. Spread grease across entire thread surface.



AIR SPRING SERVICE

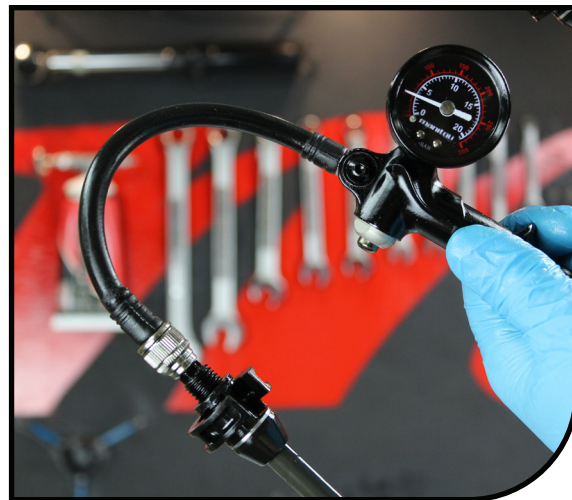
- 9 Install air spring assembly into stanchion. Using a 26mm crow's foot and Manitou cassette tool, tighten assembly end cap to 60-80 in lb [6.8-9.0 N m]



- 10 Install air cap onto stanchion. Tighten to 60-80 in lb [6.8-9.0 N m].



- 11 Attach a shock pump and inflate air leg to 60PSI. This will aid in installing the casting later.



DAMPER SERVICE

- 1 Using a 2mm Hex wrench, remove the black high speed adjustment knob from the MC2 assembly.

Note: Be sure to hold the knob still while removing the screw/nut. These tend to move and can damage the damper if the knob is over turned.



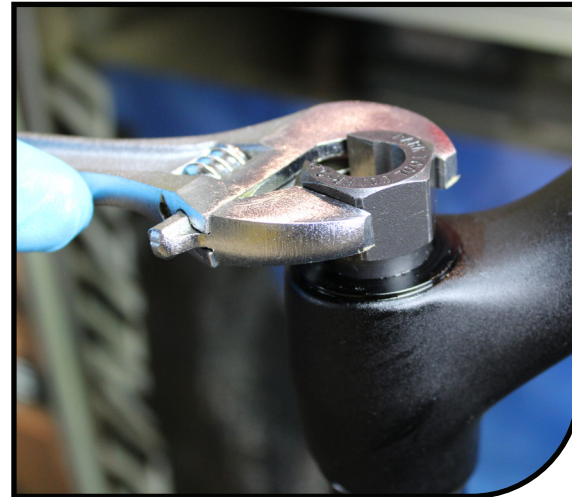
- 2 With a 13mm socket, unthread the exposed nut and remove the red low speed adjustment knob.

Note: Be sure to hold the knob still while removing the screw/nut. These tend to move and can damage the damper if the knob is over turned.



DAMPER SERVICE

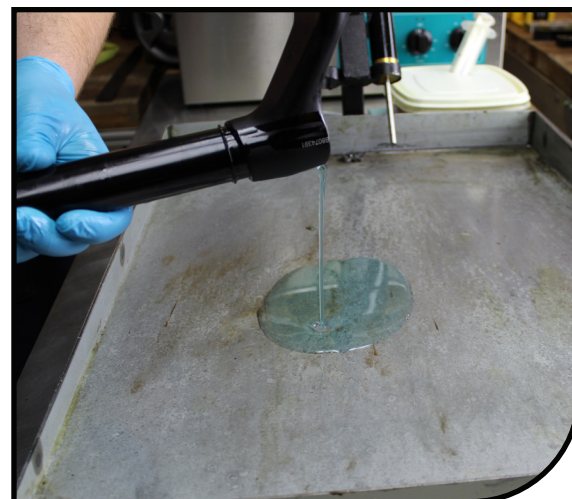
- 4** Use the Manitou cassette tool and adjustable wrench to unthread the compression damper assembly from the stanchion.



- 5** Remove compression damper assembly from the stanchion.



- 6** Pour damper oil into a catch pan.



DAMPER SERVICE

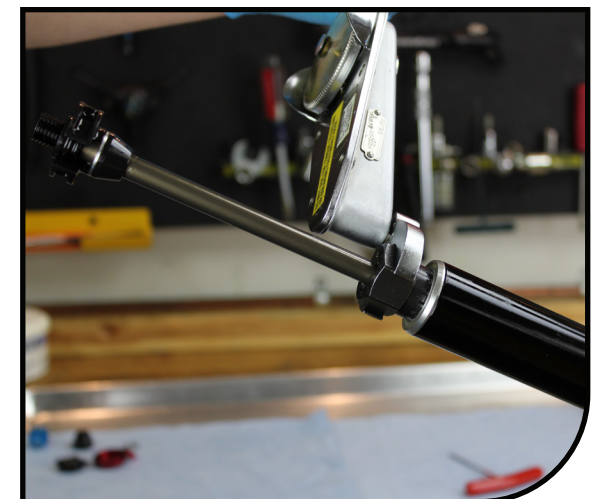
- 7** Using a Manitou cassette tool and adjustable wrench, unthread the rebound damper assembly from the fork stanchion.



- 8** Remove rebound damper assembly from the fork. Once the damper assembly is removed, clean the inside of the stanchion with isopropyl alcohol and a lint free towel. Inspect the inside and outside of the stanchion for scratches and other damage. Inspect rebound damper for damage as well. Replace if necessary.



- 9** Install rebound damper into stanchion. Using a 26mm crow's foot, Manitou cassette tool, and torque wrench, tighten the rebound damper assembly end cap to 60-80 in lb [6.8-9.0 N m].

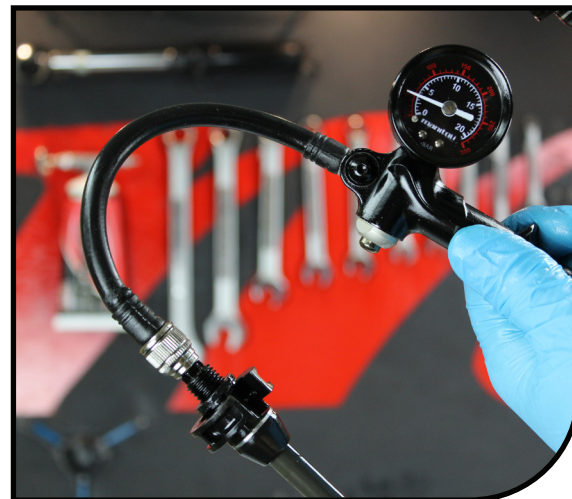


CASTING INSTALL

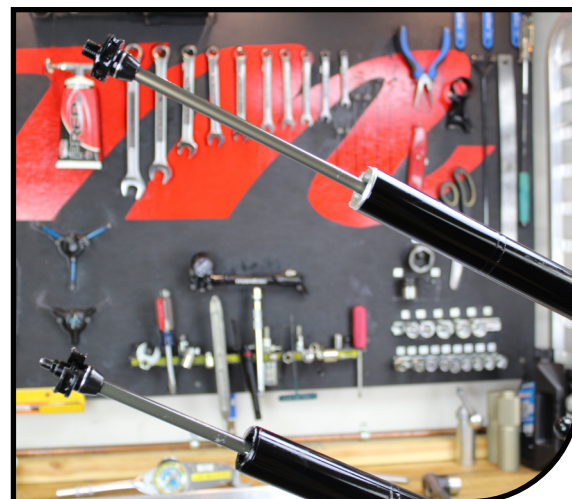
- 1 Before filling the fork with fork oil and installing the ABS+ compression damper, the casting must first be installed. This ensures a correct oil level. First apply a generous amount of grease to the oil seal/dust seal area of the casting.



- 2 Fill the air chamber with air (60PSI). This will extend the air spring assembly and make casting installation easier.



- 3 Fully extend the rebound damper rod.



CASTING INSTALL

- 4 Slide casting onto the stanchion assembly. Only slide the casting down about halfway at this point. Take care that the seals do not get folded over upon installation.



- 5 Insert 15cc's (15ml) of semi-bath into each casting leg. Once the semi-bath is in the legs slide the casting the rest of the way onto the stanchion assembly.

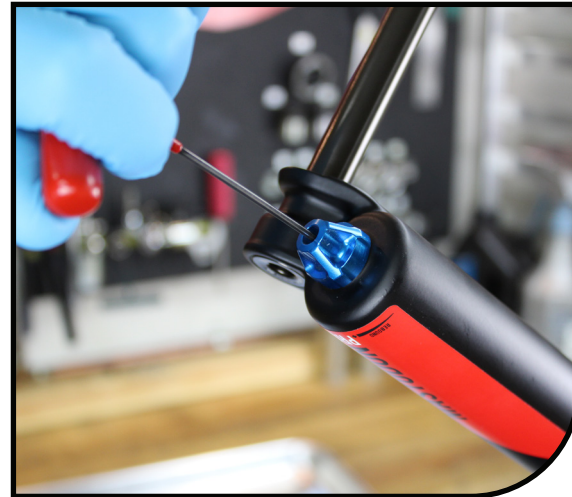


- 6 Using an 8mm Hex wrench tighten the rebound damper rod to 35–40 in lb [3.95–4.5 N m] by turning them **counter-clockwise**. Do not overtighten, doing so can damage the end of the rods.



CASTING INSTALL

- 7** Install the rebound knob using a 2mm Hex wrench. Add a small drop of blue Loctite to the screw before installation to prevent the screw from backing out during riding.



- 8** Using the Manitou 8mm Thin Wall Socket, turn the compression rod **counter-clockwise**. Tighten to 35–40 in lb [3.95–4.5 N m]



COMPRESSION DAMPER INSTALL

- 1** Pour Maxima fork oil into the damper leg.
- Full Synthetic Racing Shock Fluid, 3w for cold weather
 - 5w for warm weather
- Fill it up about 3/4 full.



- 2** Place a lint-free towel over the opening in the damper leg and compress the fork 10-15 times.

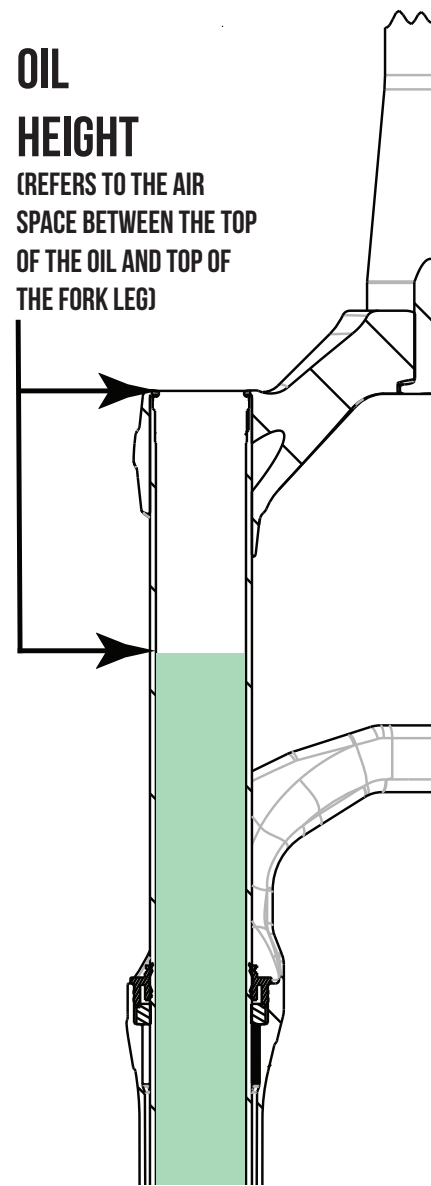


- 3** Pour additional fork oil into the damper leg until the oil height (space from the top of the damper leg to the top of the oil) is set at the proper level. See following page for the correct oil height depending on compression damper type and fork travel. An oil height setting tool used for motorcycle forks similar to the one pictured makes this job easier.



COMPRESSION DAMPER INSTALL

FORK MODEL	OIL HEIGHT
MASTADON PRO	75MM
MASTADON COMP	87MM
MARKHOR (80/100MM)	92MM
MARKHOR (120MM)	97MM
MATTOC PRO	75MM
MATTOC COMP	87MM
MACHETE (ABS+)	87MM
MACHETE (KWIK TOGGLE, 90-120MM)	87MM
MACHETE (KWIK TOGGLE, 130-140MM)	91MM
CIRCUS COMP/EXPERT	87MM
CIRCUS SPORT (FFD)	83MM
R7 PRO	83MM
DORADO (SEE DORADO SERVICE GUIDE)	180-190MM



NOTE

1. OIL HEIGHT IS SET WITH COMPRESSION DAMPER REMOVED.
2. OIL HEIGHT IS SET WITH FORK FULLY EXTENDED AND CASTING INSTALLED.

ALL FORKS LISTED USE 5W SYNTHETIC MAXIMA OIL, MANITOU PART NUMBER 85-0023.

COMPRESSION DAMPER INSTALL

4 Insert compression damper into the damper leg. Ensure the damper is set in the unlocked position when installing.



5 If installing an ABS+ damper use a 1" socket or crow's foot, the Manitou Cassette tool and a torque 60–80 in lb [6.8–9.0 N m].



6 Secure red high speed knob adjustment knob with the 13mm nut using a socket, tighten down hand tight.



COMPRESSION DAMPER INSTALL

7 Using a 2mm Hex wrench reinstall the black high speed adjustment knob.



8 Clean fork and use a shock pump to set to desired pressure. Lightly pull the casing away from the CSA as you add air. Pressure chart below for reference.



RIDER WEIGHT		AIR PRESSURE		MADE IN TAIWAN
LBS	KGS	PSI	[BAR]	
>220	>100	90-110	[6.2-7.6]	
200	91	85-100	[5.9-6.9]	
170	77	73-85	[5-5.9]	
140	64	59-73	[4-5]	
120	55	51-59	[3.5-4]	

MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]
 PATENTS: WWW.HAYESCOMPONENTS.COM/PATENTS



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