MAGNUM PRO & MATTOC PRO/EXPERT

SERVICE GUIDE

2014-2016

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INTRODUCTION

This manual is intended to guide the user through the steps necessary to fully service and maintain the 2014-2016 Mattoc Pro/Expert, Mattoc Pro2, and Magnum Pro suspension forks.

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.

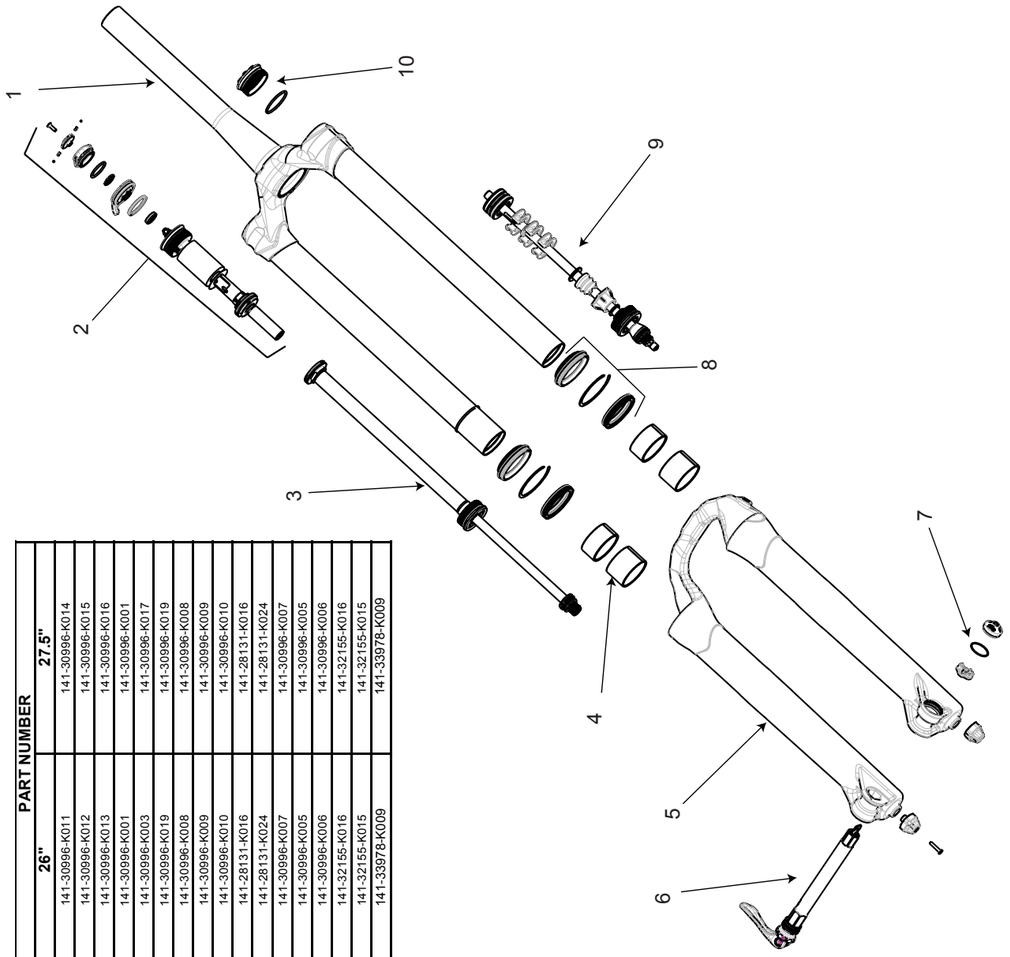
TABLE OF CONTENTS

REQUIRED TOOLS

Below is a list of tools necessary for servicing the 2014-2016 Mattoc Pro, Mattoc Pro2, Mattoc Expert, and Magnum Pro forks.

- 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
- Manitou Tool Kit - Manitou part number 172-31133
  (This includes the Manitou Cassette Tool, 8mm thin wall socket, and flat ground 24mm socket)
- 8mm Hex Wrench
- 2mm Hex Wrench
- 20mm 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

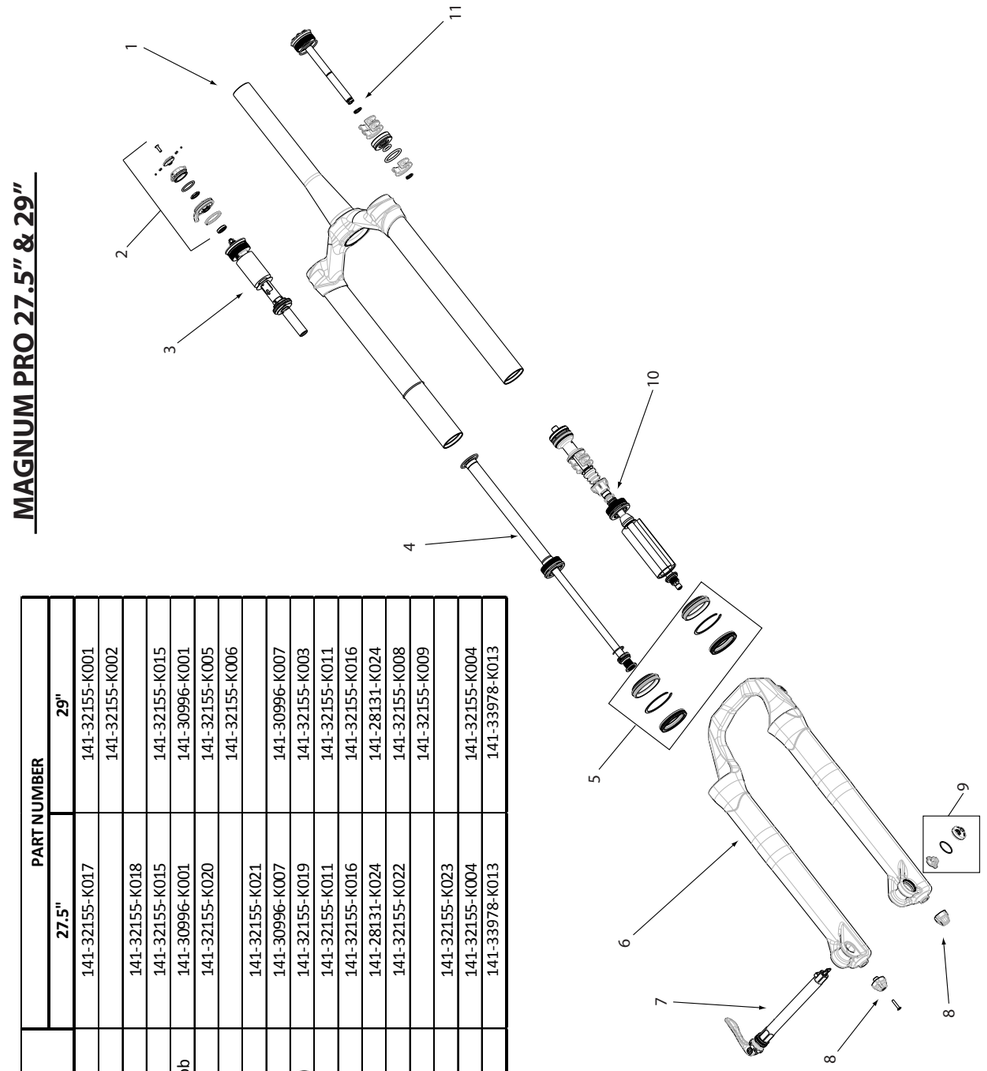
MATTOC PRO 26 & 27.5 EXPLODED VIEW



MATTOC PRO 26" /27.5"

PART DESCRIPTION	PART NUMBER	
	26"	27.5"
1. Crown/Steer/Leg - Matte Black	141-30996-K011	141-30996-K014
1. Crown/Steer/Leg - White	141-30996-K012	141-30996-K015
1. Crown/Steer/Leg - Matte Red	141-30996-K013	141-30996-K016
2. Compression Damper Assembly	141-30996-K001	141-30996-K001
3. Cartridge Rebound Damper Assembly	141-30996-K003	141-30996-K017
4. Bushing Kit	141-30996-K019	141-30996-K019
5. Outer Casting - QR15 - Matte Black	141-30996-K008	141-30996-K008
5. Outer Casting - QR15 - White	141-30996-K009	141-30996-K009
5. Outer Casting - QR15 - Matte Red	141-30996-K010	141-30996-K010
6. QR15 Axle	141-28131-K016	141-28131-K016
7. QR15 Hardware	141-28131-K024	141-28131-K024
8. Seal Kit	141-30996-K007	141-30996-K007
9. Compression Rod Assembly	141-30996-K005	141-30996-K005
10. Top Cap	141-30996-K006	141-30996-K006
11. Rebound Knob/Air Cap Assembly	141-32155-K016	141-32155-K016
MC2 Replacement Knob Kit	141-32155-K015	141-32155-K015
Decal Kit	141-33978-K009	141-33978-K009

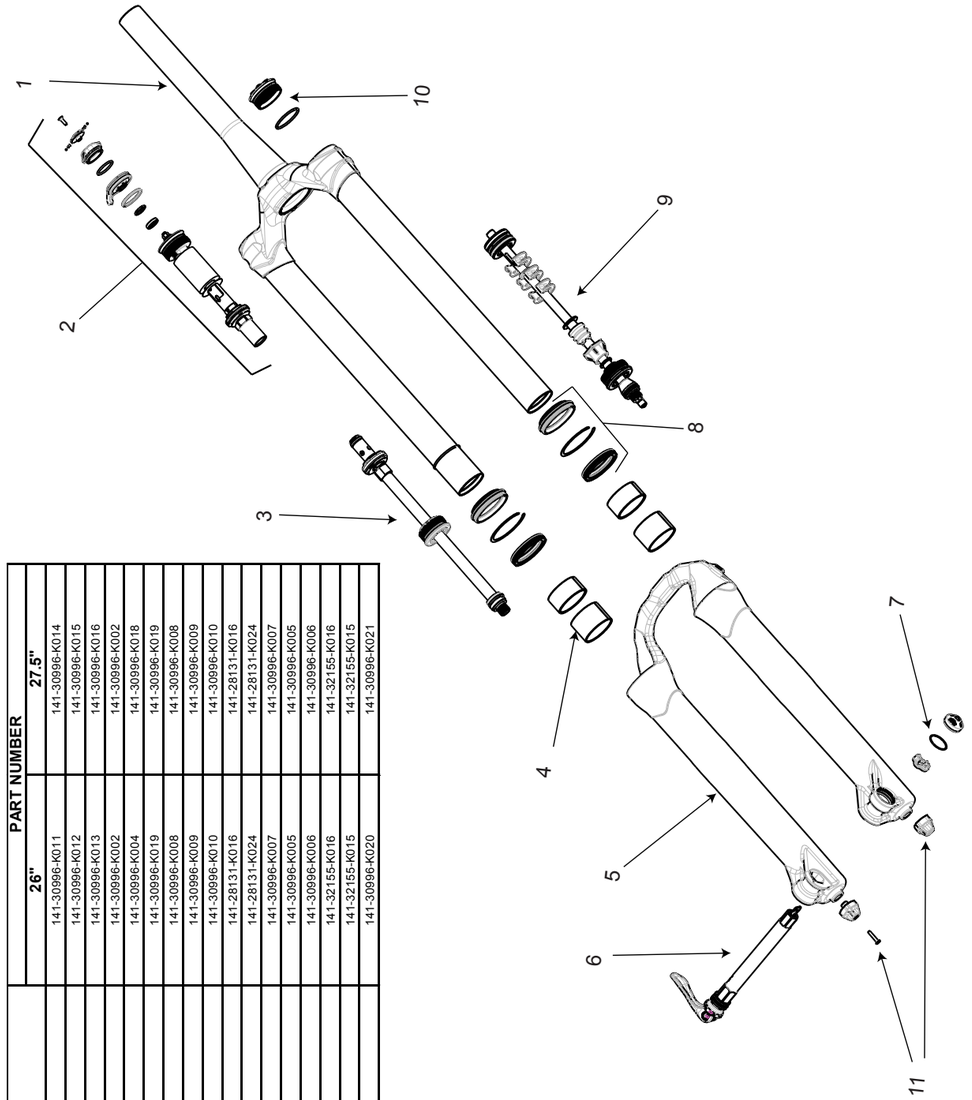
MAGNUM PRO 27.5 & 29+ EXPLODED VIEW



MAGNUM PRO 27.5" & 29"

PART DESCRIPTION	PART NUMBER	
	27.5"	29"
1. Crown/Steer/Leg - 80/100	141-32155-K017	141-32155-K001
1. Crown/Steer/Leg - 120		141-32155-K002
1. Crown/Steer/Leg - 120/140	141-32155-K018	
2. MC2 Knob Kit	141-32155-K015	141-32155-K015
3. MC2 Compression Damper - Includes Knob	141-30996-K001	141-30996-K001
4. Rebound Damper Assembly - 80/100	141-32155-K020	141-32155-K005
4. Rebound Damepr Assembly - 120		141-32155-K006
4. Rebound Damepr Assembly - 120/140	141-32155-K021	
5. Seal Kit	141-30996-K007	141-30996-K007
6. Outer Casting (includes seals & bushings)	141-32155-K019	141-32155-K003
7. QR15 Axle	141-32155-K011	141-32155-K011
8. Rebound Adjust Knob/Air Cap Kit	141-32155-K016	141-32155-K016
9. QR15 Axle Hardware	141-28131-K024	141-28131-K024
10. Air Spring Assembly - 80/100	141-32155-K022	141-32155-K008
10. Air Spring Assembly - 120		141-32155-K009
10. Air Spring Assembly - 120/140	141-32155-K023	
11. Adjustable Air Cap	141-32155-K004	141-32155-K004
Decal Kit	141-33978-K013	141-33978-K013

MATTOC EXPERT 26 & 27.5 EXPLODED VIEW



	PART NUMBER	
PART DESCRIPTION	26"	27.5"
1. Crown/Steer/Leg - Matte Black	141-30996-K011	141-30996-K014
1. Crown/Steer/Leg - White	141-30996-K012	141-30996-K015
1. Crown/Steer/Leg - Matte Red	141-30996-K013	141-30996-K016
2. Compression Damper Assembly	141-30996-K002	141-30996-K002
3. Rebound Damper Assembly	141-30996-K004	141-30996-K018
4. Bushing Kit	141-30996-K019	141-30996-K019
5. Outer Casting - QR15 - Matte Black	141-30996-K008	141-30996-K008
5. Outer Casting - QR15 - White	141-30996-K009	141-30996-K009
5. Outer Casting - QR15 - Matte Red	141-30996-K010	141-30996-K010
6. QR15 Axle	141-28131-K016	141-28131-K016
7. QR15 Hardware	141-28131-K024	141-28131-K024
8. Seal Kit	141-30996-K007	141-30996-K007
9. Compression Rod Assembly	141-30996-K005	141-30996-K005
10. Top Cap	141-30996-K006	141-30996-K006
11. Rebound Knob/Air Cap Assembly	141-32155-K016	141-32155-K016
MC2 Replacement Knob Kit	141-32155-K015	141-32155-K015
Decal Kit	141-30996-K020	141-30996-K021

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 Mount Hardware
- 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 a 8mm Hex wrench into the end of the rebound rod and loosen **clockwise** until rebound rod disengages from the casting threads.

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

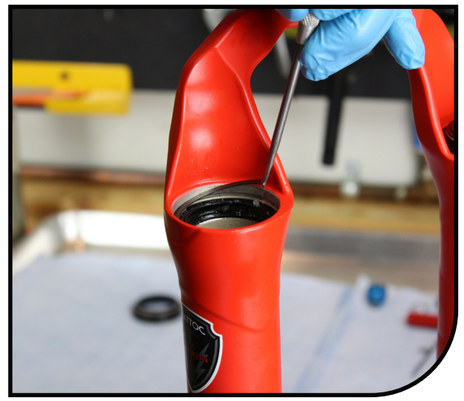
4 Using the Mattoc 8mm Thin Wall Socket, turn the compression rod **clockwise** until compression rod is disengaged from the casting threads.

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 metal clip using a pick.

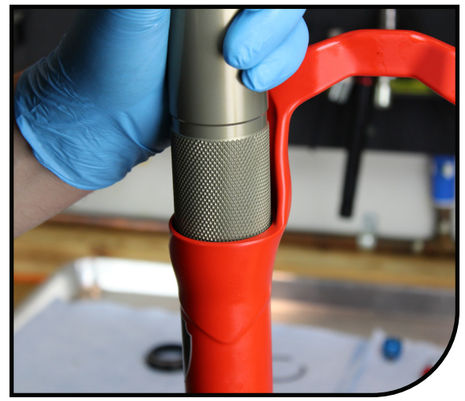


8 Gently pry the oil seals out of the casting. Place a towel under the tire lever to prevent damage to the casting.

9 Place new oil seal onto the Manitou 34mm Seal Press.

CASTING REMOVAL & SERVICE

10 Using the Manitou 34mm Seal Press or large socket press in the oil seals.



11 Reinstall metal clips.

12 Using the Manitou 34mm Seal Press or large socket press in the dust seals.

AIR SPRING SERVICE

1 Make sure the air is released 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. The early Mattoc forks will have the cap shown on the right. Mattoc 2 and Magnum Pro forks will have the IVA assembly shown on the left.

AIR SPRING SERVICE

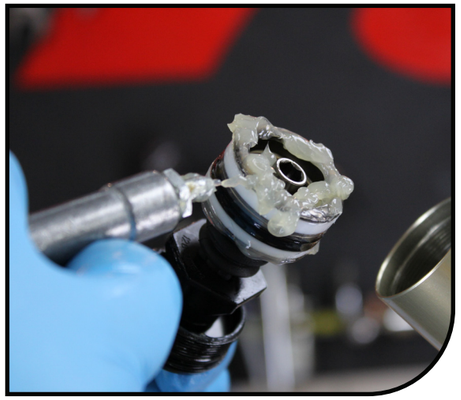
3 Invert the fork and use Manitou cassette tool and adjustable wrench to unthread the air spring assembly from the stanchion.

4 Remove Air Spring Assembly, clean with isopropyl, and re-grease.

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

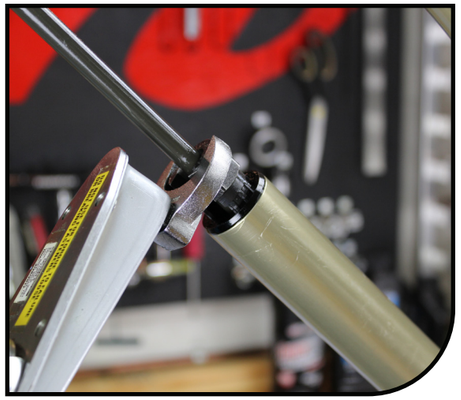
6 Liberally grease the piston quad seal and outer surface with Slickoleum™ grease. Add 8cc's of Slickoleum™ grease to the top of the air piston.



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

8 Install air spring assembly into stanchion. Using a 26mm crow's foot and Manitou cassette tool, torque to spec.

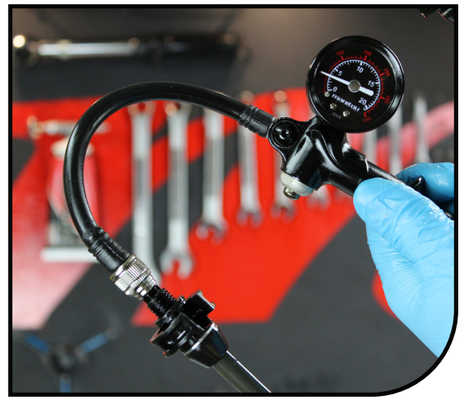
Torque Specs
- Mattoc Pro & Magnum Pro 60-80 in lb [6.8-9.0 N m]
- Mattoc Expert 80-100 in lb [9.0-11.3 N m]



AIR SPRING SERVICE

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

10 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 screw of the MC2 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.

2 Remove the black high speed compression knob while keeping the silver HBO knob in place.

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

3 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.

4 Remove the sliver spacer that was under the red low speed adjustment knob.

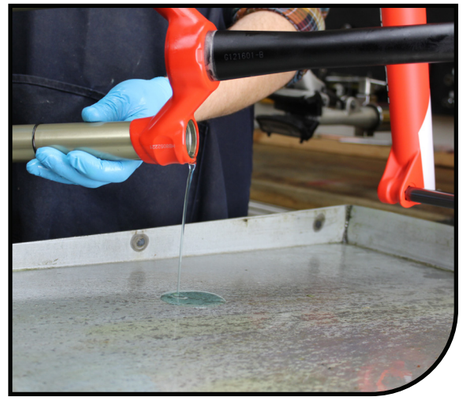
5 Use the Manitou cassette tool and adjustable wrench to unthread the compression damper assembly from the stanchion.

6 Remove compression damper assembly from the stanchion.

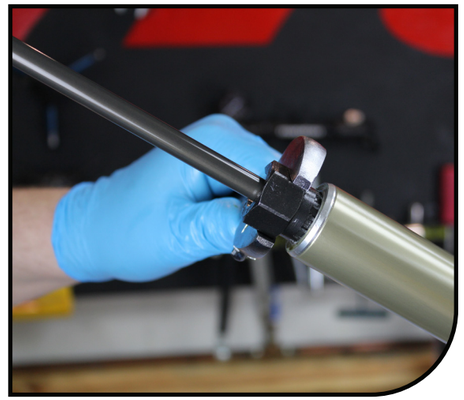
The Mattoc Pro will have the rebound damper assembly style shown on the top. The Mattoc Expert will have the assembly on the bottom.

DAMPER SERVICE

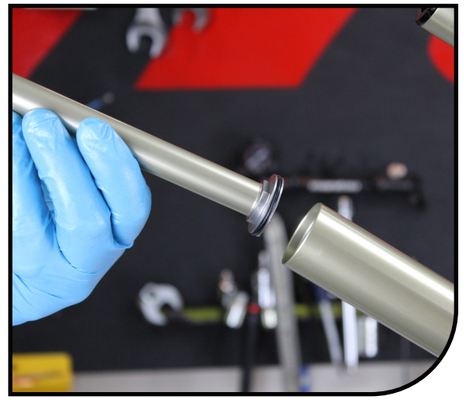
7 Pour Fork Oil into a catch pan.



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.



DAMPER SERVICE

The Mattoc and Magnum Pro will have the half cartridge design rebound damper shown on the top. The Mattoc Expert will have the in-leg design shown on the bottom.

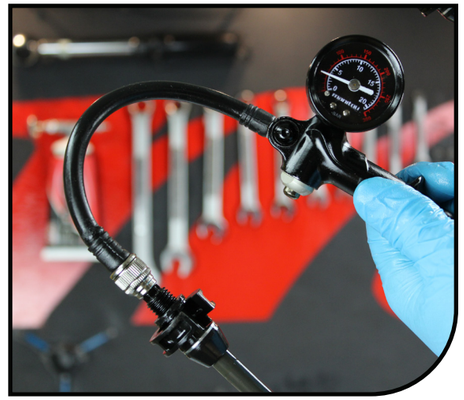
9 Use a 26mm crow's foot, Manitou cassette tool, and torque wrench to install the rebound damper assembly.

Torque Specs
- Mattoc Pro & Magnum Pro 60-80 in lb [6.8-9.0 N m]
- Mattoc Expert 80-100 in lb [9.0-11.3 N m]

CASTING INSTALL

1 Before filling the fork with fork oil and installing the MC2 compression damper, we must first install the casting. This ensures a correct oil level. First apply a generous amount of Slickoleum™ 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.

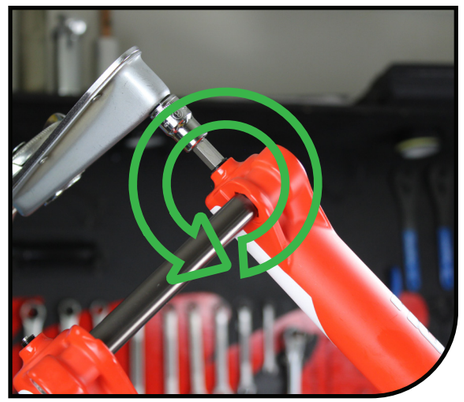
CASTING INSTALL

4 Slide casting onto the stanchion assembly. Only slide the casting down about halfway at this point. Take care that the seal lips do not fold over upon installation.

5 Insert 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.

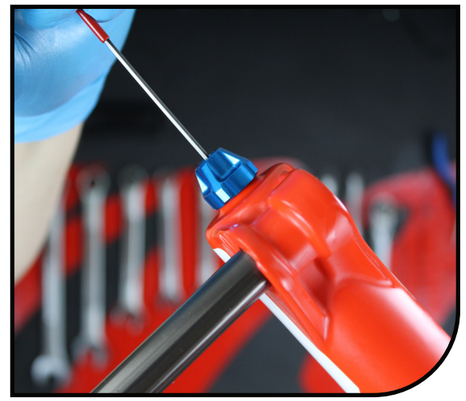
Semi-bath Amounts
- Mattoc Pro, Pro2, and Expert 7cc in each leg
- Magnum Pro 15cc in each leg

6 Using an 8mm Allen 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.



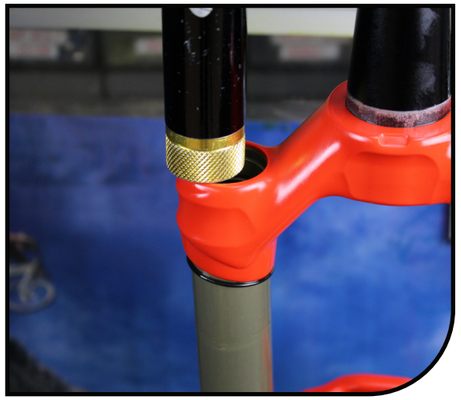
8 Using the Manitou 8mm Thin Wall Socket, turn the compression rod **counter-clockwise.** Do not overtighten, doing so can damage the end of the rods.

COMPRESSION DAMPER INSTALL

1 Pour 5wt Maxima fork oil into the damper leg. Fill it up about ¾ full.

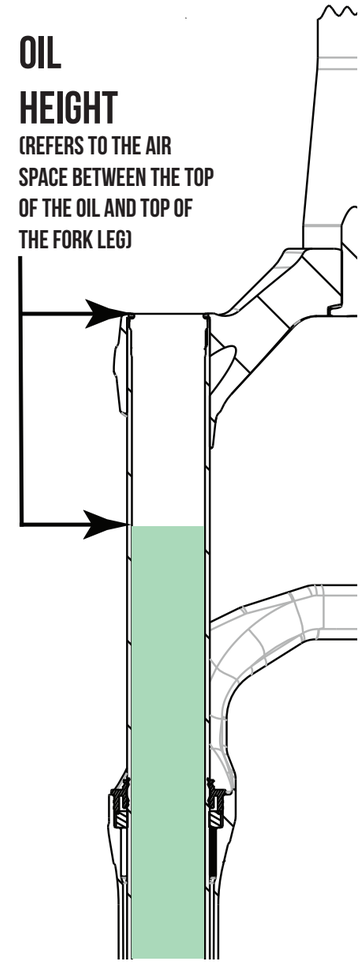
2 Place a lint-free towel over the opening in the damper leg and compress the fork 10-15 times.

3 Pour additional 5wt 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
MATCH COMP	83MM
M30 (ABS+)	83MM
M30 (KWIK TOGGLE, 80/100MM)	92MM
M30 (KWIK TOGGLE, 120MM)	97MM
CIRCUS SPORT (FFD)	83MM
CIRCUS COMP/EXPERT	87MM
MARVEL COMP/EXPERT	87MM
MARVEL PRO	75MM
MINUTE COMP/EXPERT	87MM
MINUTE PRO	75MM
MACHETE (KWIK TOGGLE)	87MM
MACHETE (ABS+)	87MM
MAGNUM COMP	87MM
MAGNUM PRO	75MM
MATTOC COMP	87MM
MATTOC EXPERT	80MM
MATTOC PRO	75MM
DORADO (SEE DORADO SERVICE GUIDE)	/ /



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 US 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 Using a crow's foot, Manitou cassette tool, and torque wrench, tighten down the MC2 at a torque of 60–80 in lb [6.8–9.0 N m].

6 Place the silver spacer onto the MC2 damper as shown.

COMPRESSION DAMPER INSTALL

7 Place red low speed adjustment knob onto damper assembly. With a 13mm socket, tighten down the nut finger tight

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.

8 Place high speed and HBO knob assembly onto the red low speed adjustment knob. Tighten down screw with 2mm Hex wrench.

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.

9 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.

DORADO AIR

RIDER WEIGHT LBS	RIDER WEIGHT KGS	AIR PRESSURE PSI	AIR PRESSURE [BAR]
>220	>100	94-102	6.5-7.0
200	91	80-94	5.5-6.5
170	77	68-80	4.7-5.5
140	64	64-68	3.7-4.7
120	55	46-54	3.2-3.7

MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]

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