



**PRO
SERVICE GUIDE
2017**



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INTRODUCTION

This manual is intended to guide the user through the steps necessary to fully service and maintain the 2017 Mattoc 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 pre-loaded 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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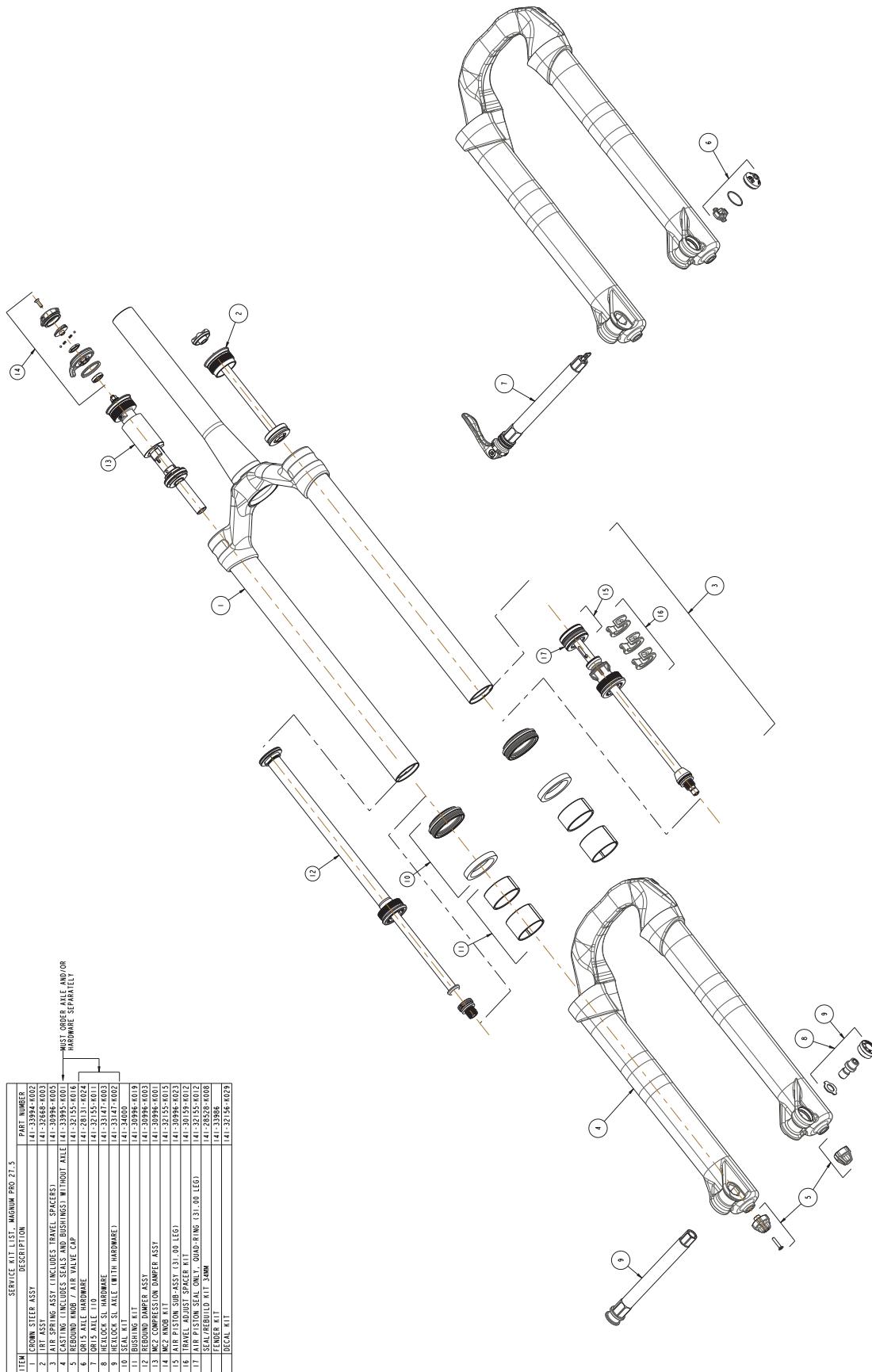
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REQUIRED TOOLS

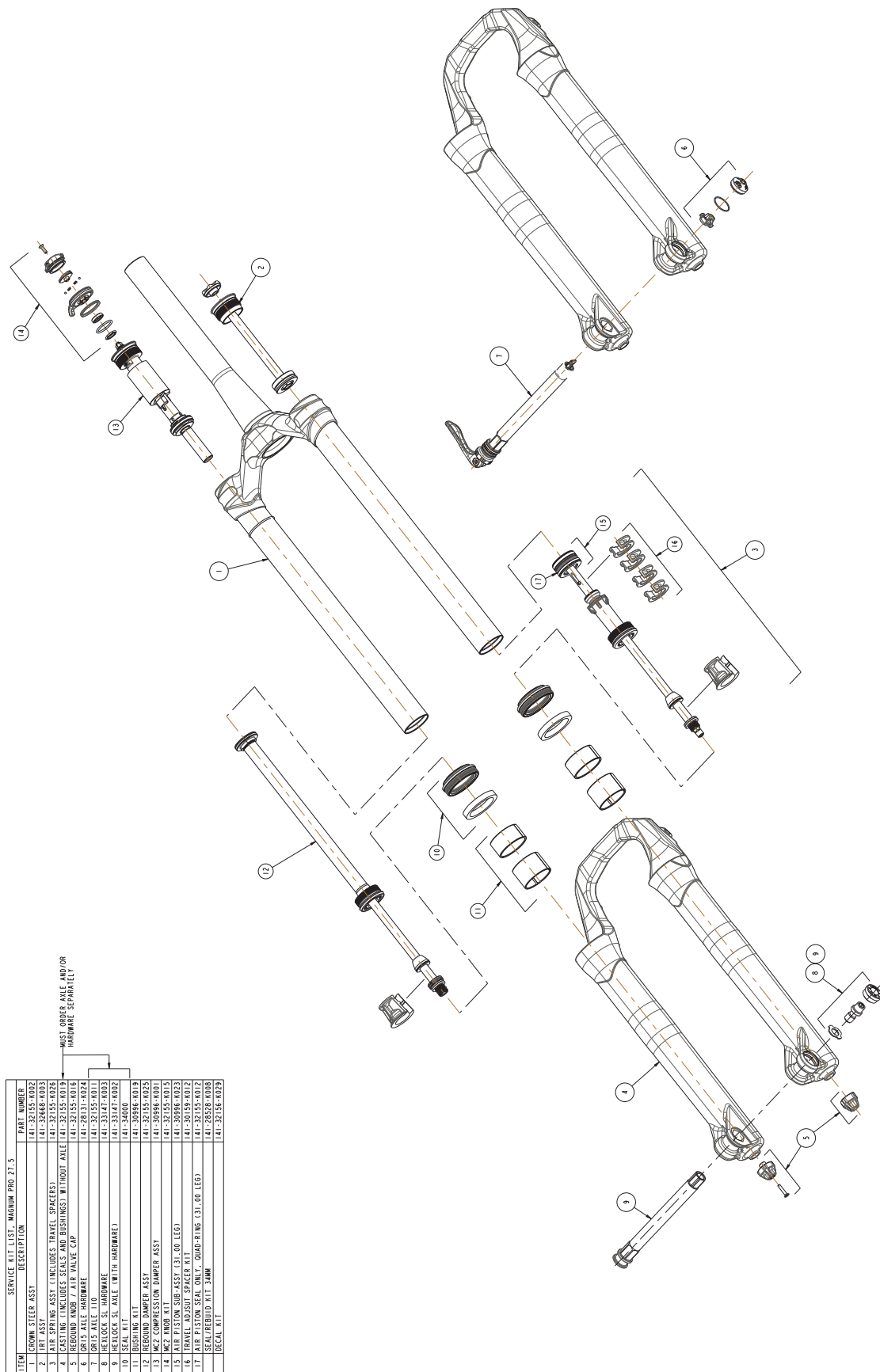
Below is a list of tools necessary for servicing the 2017 Mattoc Pro fork.

- 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
- 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

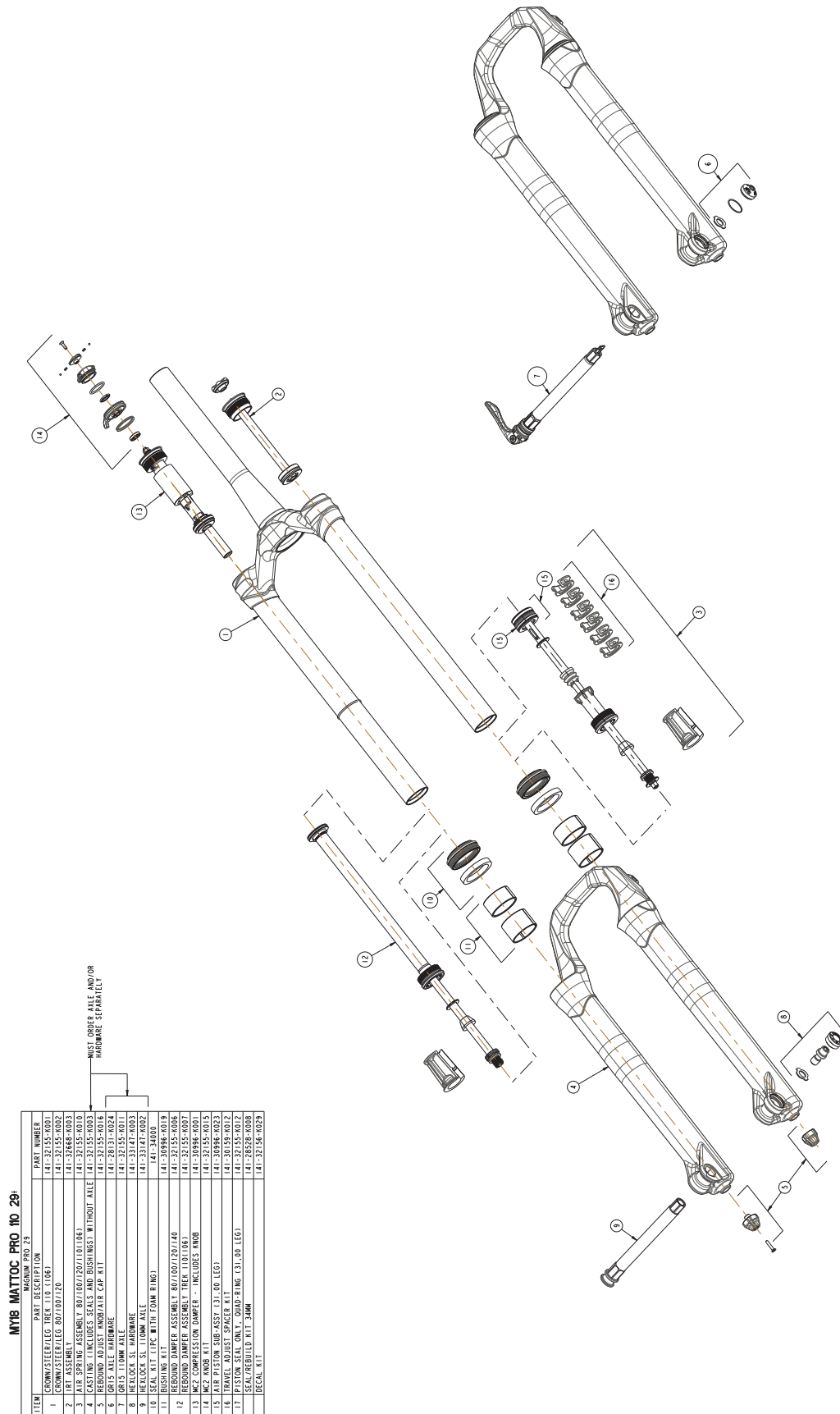
MATTOC PRO 110 27.5 EXPLODED VIEW



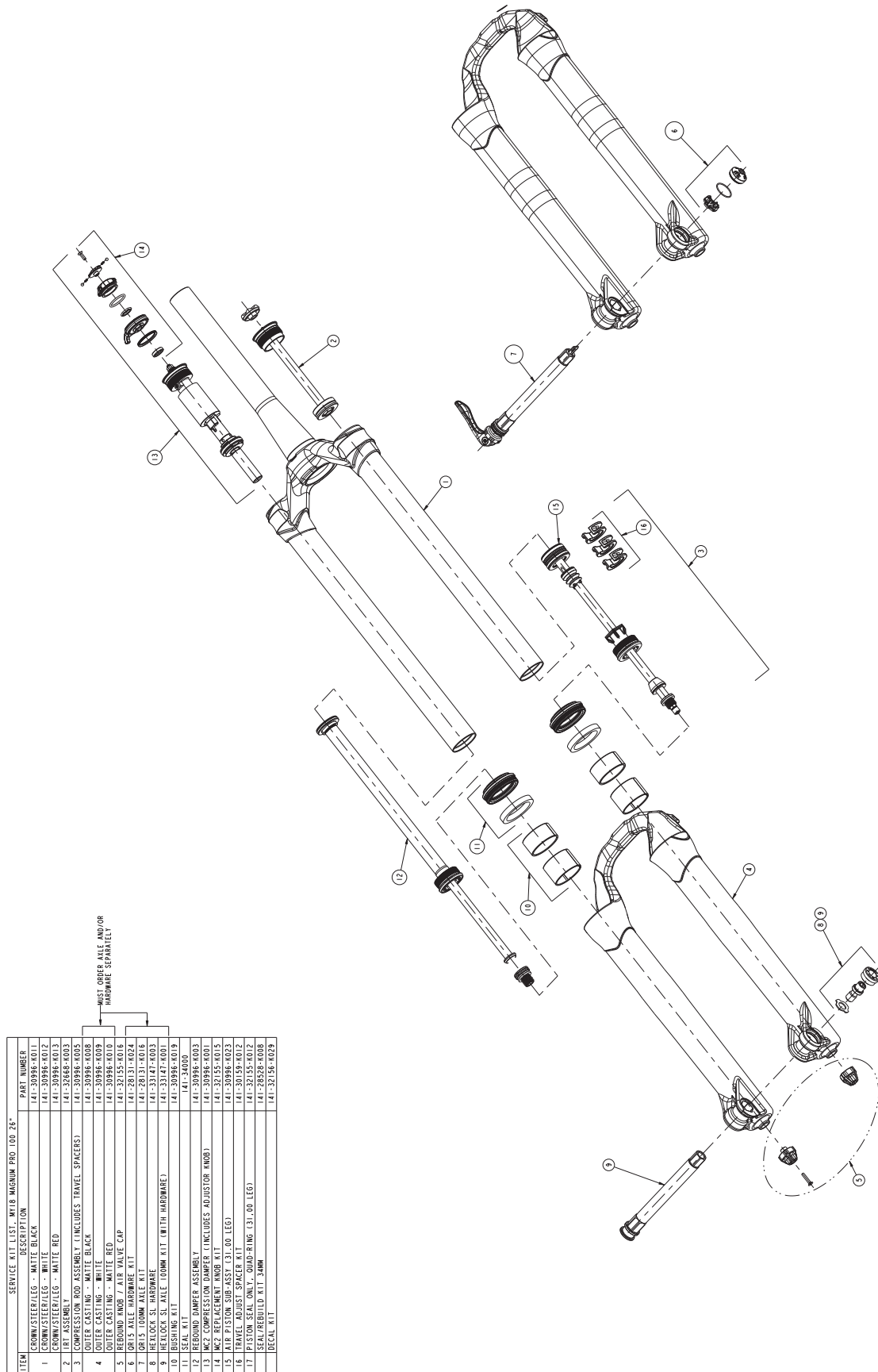
MAGNUMPRO 110 27.5+/29 EXPLODED VIEW

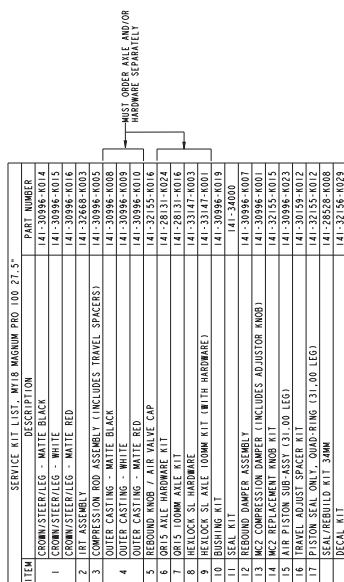


MATTOC PRO 110 29+ EXPLODED VIEW



MATTOC PRO 100 26 EXPLODED VIEW





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	Dust Seals	Stripped or Worn Bolts
Rear Shock	Fork/Shock Air Seals and/or O-rings	Remote Lockout Cable
Mount Hardware	Bearings	Gloves
Handlebar grips	Upper Stanchion Tubes	Lower Stanchion Tubes(Dorado)
Tubeless Valves		

CASTING REMOVAL & SERVICE

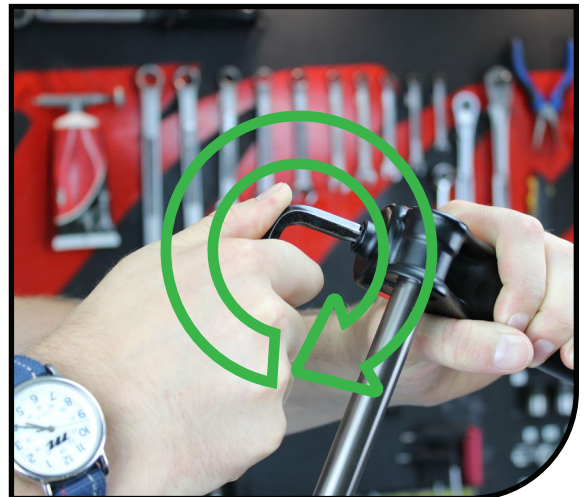
1

Remove rebound knob using a 2mm Hex wrench.



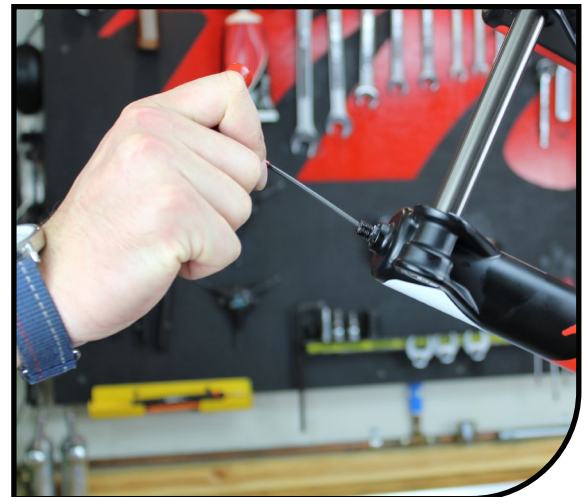
2

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.



CASTING REMOVAL & SERVICE

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 Make sure the air is released from the fork. Depress IRT and Compression Rod Schrader valves a few times to ensure all air is released.



- 2 Remove IRT using a 24mm socket.



- 3 Pull IRT assembly straight out.



AIR SPRING SERVICE

3

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



4

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



5

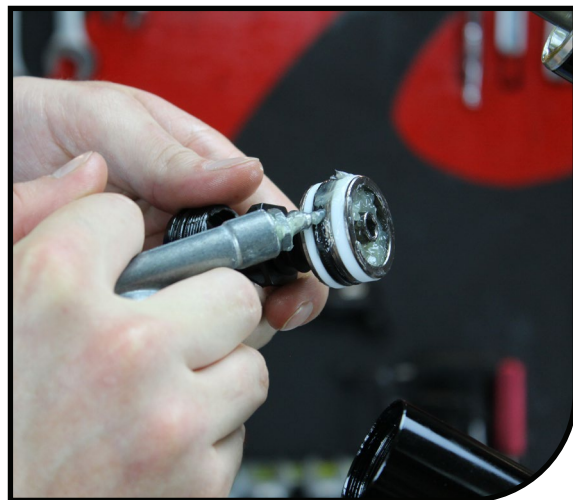
Once the air spring assembly is removed clean the inside of the stanchion with isopropyl alcohol and a lint free towel (Be careful to not scratch the inner surface of the stanchion). Inspect the inside and outside of the stanchion for scratches or other damage.



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 60-80 in lb [6.8-9.0 N m].



AIR SPRING SERVICE

9

Liberal grease the IRT piston seal and outer surface with Slickoleum™ grease. Apply Slickoleum™ grease to the threads of the stanchion.



10

Insert IRT piston into stanchion. Apply even pressure to piston surface as you work the piston seal past the stanchion threads.



11

Install IRT into stanchion. Torque to 60-80 in lb [6.8-9.0 N m].



AIR SPRING SERVICE

- 12** Attach a shock pump and inflate IRT to 100PSI.

NOTE: ALWAYS SET IRT PRESSURE BEFORE COMPRESSION ROD ASSEMBLY.



- 13** 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 HBO 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.



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 silver spacer that was under the red low speed adjustment knob.



DAMPER SERVICE

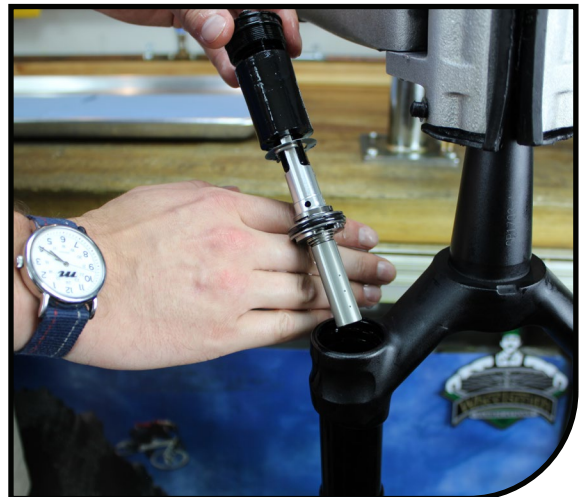
5

Use the Manitou cassette tool and 1/2 socket or adjustable wrench to unthread the compression damper assembly from the stanchion.



6

Remove compression damper assembly from the stanchion.



7

Pour fork oil into a catch pan.



DAMPER SERVICE

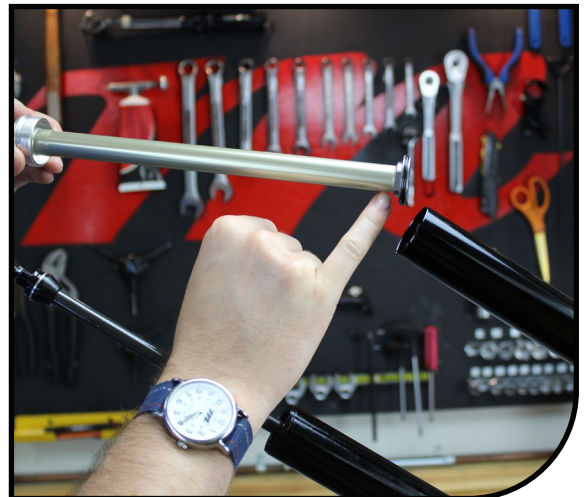
8

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



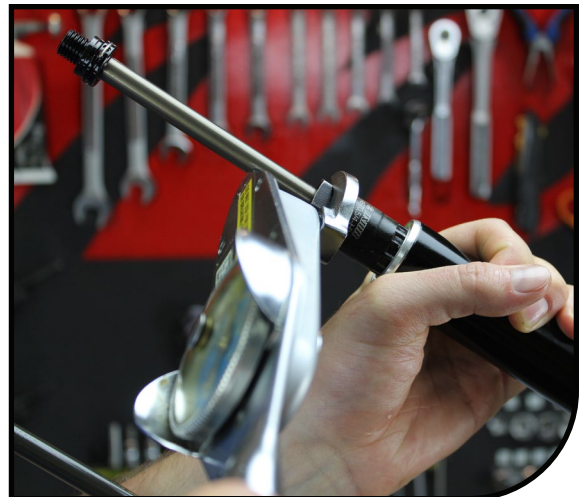
9

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 and replace if necessary.



10

Use a 26mm crow's foot, Manitou cassette tool, and torque wrench to install the rebound damper assembly. Torque to 60-80 in lb [6.8-9.0 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.



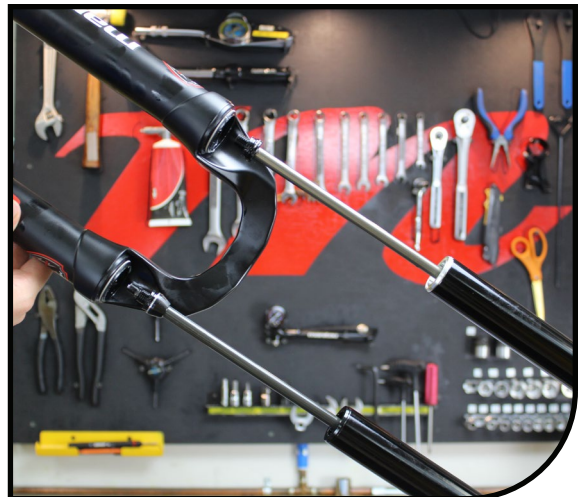
2

Make sure the air chamber is filled 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 15cc 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**. 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 $\frac{3}{4}$ full.



2

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



3

Pour additional 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.

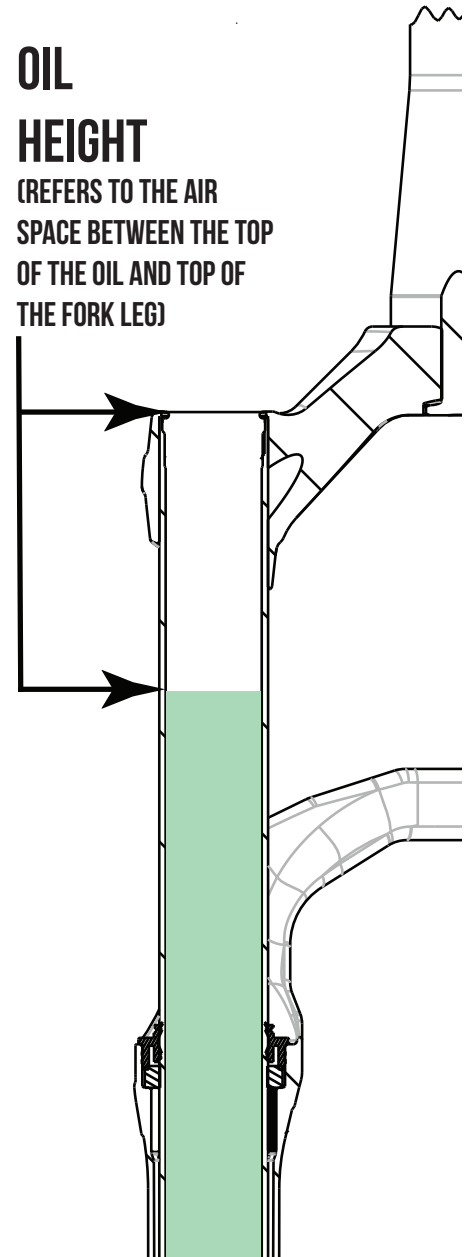


COMPRESSION DAMPER INSTALL

FORK MODEL	OIL HEIGHT
MASTODON PRO	75MM
MASTODON 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

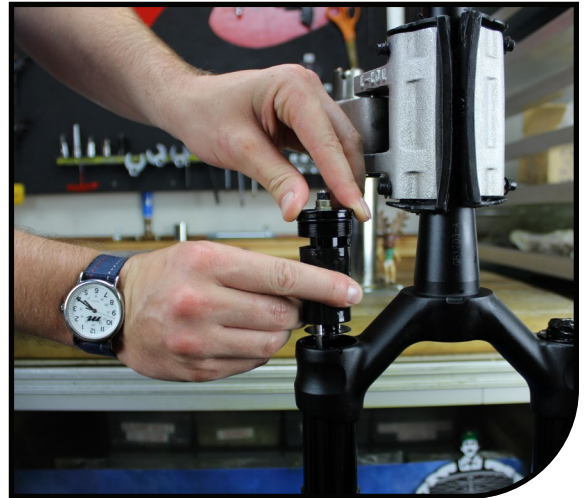
1. OIL HEIGHT IS SET WITH COMPRESSION DAMPER REMOVED.
2. OIL HEIGHT IS SET WITH FORK FULLY EXTENDED AND CASTING INSTALLED.



COMPRESSION DAMPER INSTALL

4

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



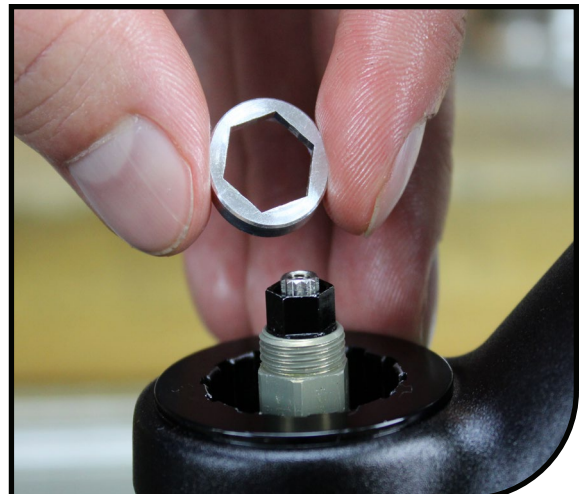
5

Using the 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, flat side facing up.



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 HBO 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		AIR PRESSURE	
LBS	KGS	PSI	[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]			



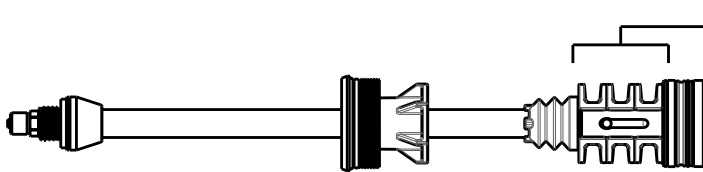
PRO & COMP
TRAVEL CHANGE GUIDE

MATTOC TRAVEL CHANGE

In order to change the travel of your Mattoc Pro/Comp (26-27.5-29+), first remove the compression rod assembly. For instructions on how to do this refer to page 16. Once the rod is removed arrange the travel spacers into the desired amount of travel using the following charts.

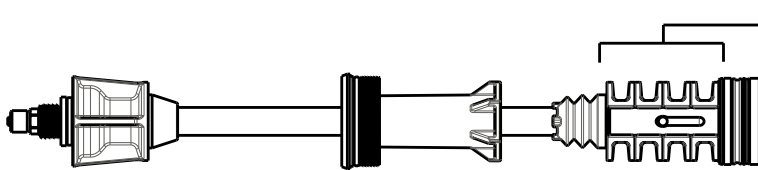
2017 Mattoc 110mm "Boost" Hub Spacing

27.5"



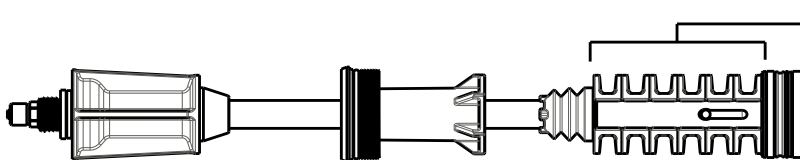
TRAVEL	SPACERS
170	0
160	1
150	2
140	3

27.5+/29"



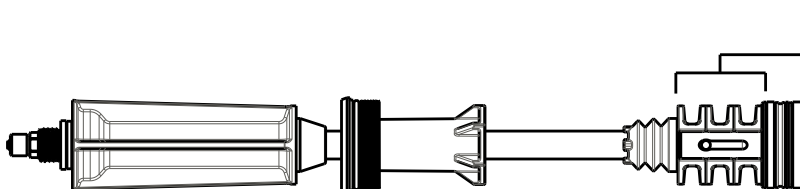
TRAVEL	SPACERS
140	0
130	1
120	2
110	3
100	4

29+



TRAVEL	SPACERS
120	2
110	3
100	4
90	5
80	6

29+ TREK

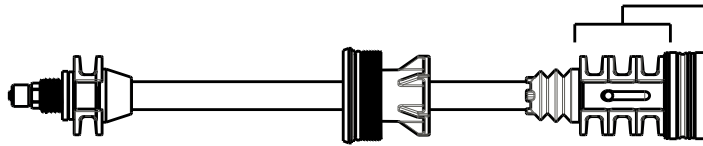


TRAVEL	SPACERS
110	0
100	1
90	2
80	3

MATTOC TRAVEL CHANGE

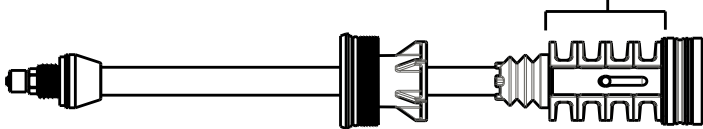
2017 Mattoc 100mm Hub Spacing

27.5"



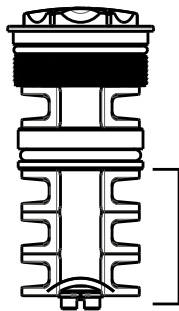
TRAVEL	SPACERS
160	0
150	1
140	2

26"

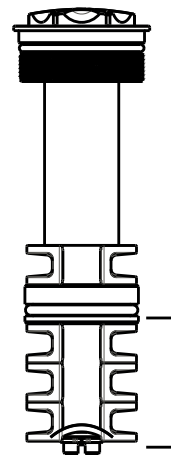


TRAVEL	SPACERS
170	0
160	1
150	2
140	3

2017 Mattoc Comp IVA



TRAVEL	SPACERS
170	0
160	1
150	2
140	3



TRAVEL	SPACERS
140	4
130	4
120	3
110	3
100	2
90	2
80	1



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