



MASTODON SERVICE & TRAVEL
ADJUSTMENT GUIDE | MY2024+



MANITOU

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WARRANTY

For full warranty information please
visit hayesbicycle.com/warranty

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PROTAPER


REYNOLDS


SUN
ringle

INTRODUCTION

This manual is intended to guide the user through the steps necessary to fully service and maintain the Mastodon Pro and Comp 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 Hayes Customer Support at:

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REQUIRED TOOLS

BELOW IS A LIST OF TOOLS NECESSARY FOR SERVICING AND CHANGING THE TRAVEL ON THE MASTODON PRO AND COMP FORKS:

- Safety Glasses
- Nitrile Gloves
- Lint-Free Rags
- Torque Wrench (6-220 in-lb [0.7-25 Nm])
- 2mm Hex Wrench
- 8mm Hex Wrench
- 14mm Box End Wrench (Pro), 19mm Box End Wrench (Comp)
- Shock Pump
- Cassette Lockring tool* (e.g. Park tool FR-5.2)
- 1" socket
- 8mm Thin Wall Socket *
- 24mm Socket *
- (Optional, replaces items above with*) Manitou Tool Kit - Manitou part number 172-31133 (This includes the Manitou Cassette Tool, 8mm thin wall socket, and flat ground 24mm socket)
- Travel Spacer kit 141-36713-K032
- Plastic or non-marring pick
- Downhill tire lever or flat blade screwdriver
- 3wt Maxima Fork oil (141-34078-K016)
- Semi-bath Oil, 5/40w Synthetic - Manitou part number 85-0022
- Slickoleum™ Grease
- Isopropyl alcohol
- 34mm seal install tool 172-37540-K002
- Air piston Seal Kit 141-32155-K012 (Pro) or 141-32156-K011 (Comp) or Rebuild kit 141-39022-K021
- Low Friction Dust Seal Kit for 34mm Stanchions (141-34000)

CASTING REMOVAL & SERVICE

If the fork is new and only a travel change is needed, follow steps 1-5, then skip to page 9 for air spring service instructions. Page 24 references travel spacer orientation for the desired travel.

1

Unscrew air cap and attach shock pump. Depress pressure bleed button until pump reads “Zero”. Depress Schrader Valve a few times with 2mm hex wrench to ensure all air is released.



2

Hold lock-nut with a 14mm (Pro/Expert) or 19mm (Comp) box end wrench. Using 8mm Socket, turn the compression rod **clockwise** until compression rod is disengaged from the lock-nut.



CASTING REMOVAL & SERVICE

- 3** Remove rebound knob using a 2mm Hex wrench.

Note: Be sure to hold the knob still while removing the screw. The damper adjuster may be damaged if the knob is over torqued.



- 4** Hold lock-nut with 14mm end wrench for Pro & Expert, or a 19mm end wrench for Comp. Insert a 8mm Hex wrench into the end of the rebound rod and loosen clockwise until rebound rod disengages from the lock-nut.



- 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.



CASTING REMOVAL & SERVICE

6

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



7

Remove old foam wiper rings. Clean Casting. Thoroughly saturate new foam rings with semi-bath fluid and install into fork casting.



8

Remove springs from outer lip of new leg seals. Clean casting seal press area with Isopropyl alcohol.



CASTING REMOVAL & SERVICE

9

Using the Manitou 34/37mm Seal Press, press in the dust seals.
Reinstall springs onto seals.



AIR SPRING SERVICE

1

⚠ WARNING ⚠

**MAKE SURE THE AIR IS RELEASED
FROM THE FORK.**

AIR SPRING SERVICE

2

Using a 24mm socket, loosen IVA cap until threads are free from leg.



3

Pull IVA assembly straight out, Clean with isopropyl, Inspect seal for damage. If needed replace IVA piston seals.



4

Invert the fork and use Manitou cassette tool with adjustable wrench to unthread the air spring assembly from the stanchion OR depress valve on end of comp-rod with 2mm hex and stroke rod to bottom. Slide standard cassette lock-ring tool over threaded adapter and unthread the air spring assembly from the stanchion.



AIR SPRING SERVICE

5

Remove Air Spring Assembly, clean with isopropyl, Inspect seal for damage. Replace air piston seal 141-32155-K012 (Pro) or 141-32156-K011 (Comp). **If Travel change is needed see page 24 before moving on.**



6

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.



7

Liberal apply Slickoleum™ grease to the piston seal, outer piston surface, and spring shaft. Add 3cc's of Slickoleum™ grease to the top of the air piston.



AIR SPRING SERVICE

8

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



9

Install air spring assembly into stanchion. Using a 26mm crow's foot and Manitou cassette tool OR 1" Socket and Standard cassette tool torque to 40-45 LB-IN [4.5-5.1 Nm]. If rod is bottomed, attach shock pump to valve and draw the rod out until fully extended.



10

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



AIR SPRING SERVICE

11

Insert IVA Piston into the stanchion.



12

Install IVA cap into stanchion. Torque to 200-220 LB-in [22.6-25 Nm] using a 24mm socket.



13

Attach a shock pump and inflate main air chamber to 30 PSI. This will aid in installing the casting later.



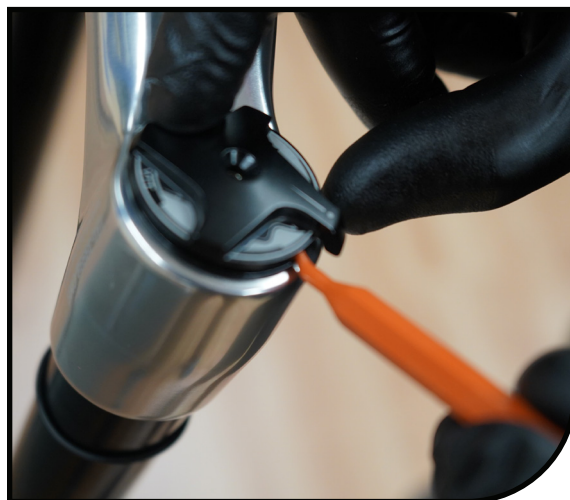
MASTODON PRO VTT6 DAMPER SERVICE

- 1 Using a 2mm Hex wrench remove the screw of the VTT6 knob.

Note: Be sure to hold the knob still while removing the screw. The damper adjuster may be damaged if the knob is over torqued.



- 2 Use a non-marring pick or pliers with non-marring barrier to remove the black VTT knob by lifting straight up.



- 3 Remove the v-seal that was under the black VTT adjustment knob.



MASTODON PRO VTT6 DAMPER SERVICE

4

Use a standard cassette tool and 1" socket to unthread the damper top-cap from the stanchion.



5

Remove damper assembly from the stanchion. Inspect damper piston seal for any damage.



6

Tip out used damper oil from top of stanchion into drain pan. Cycle damper shaft several times to cycle out old oil from damper.

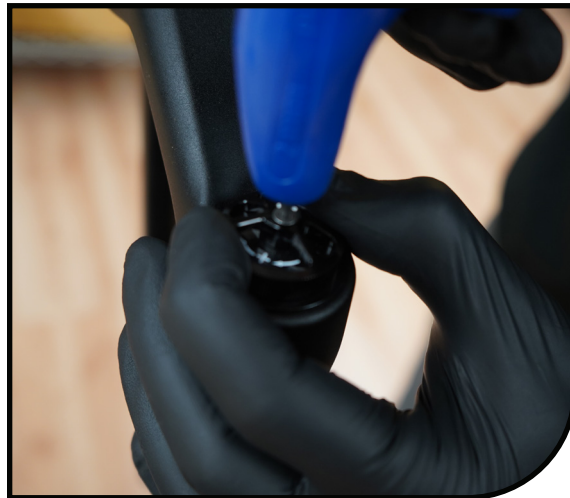


MASTODON COMP ABS+ DAMPER SERVICE

- 1 Using a 2mm Hex wrench remove the screw of the ABS+ knob. Knob can be removed by hand.

Note: Be sure to hold the knob still while removing the screw. The damper adjuster may be damaged if the knob is over torqued.

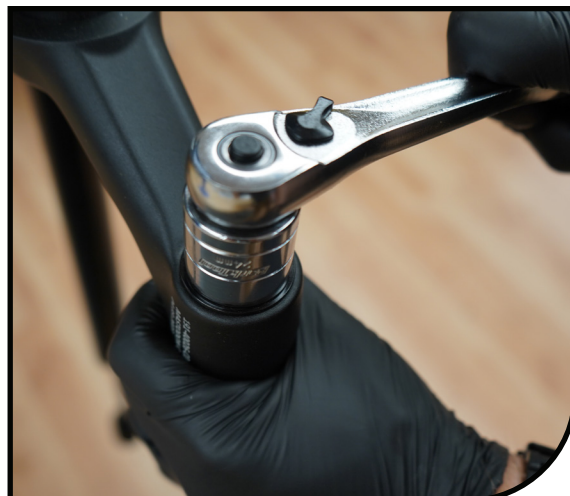
Note: Small detent balls and springs are located below ABS+ knob.



- 2 Remove detent balls and springs from the ABS+ top cap.



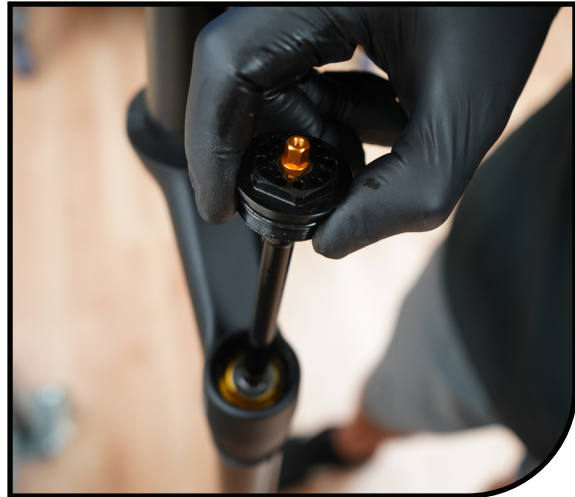
- 3 Use 24mm socket to unthread the damper top cap from the stanchion.



MASTODON COMP ABS+ DAMPER SERVICE

4

Remove damper assembly from the stanchion. Inspect damper piston seal for any damage.



5

Tip out used damper oil from top of stanchion into drain pan. Cycle damper shaft several times to cycle out old oil from damper.



CASTING INSTALL

1

Apply a light coating of semi-bath (85-0022) to the inner diameter of the oil seal/dust wiper.



2

Make sure the spring shaft is fully extended and air chamber is filled with air (30 PSI).



3

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.



CASTING INSTALL

4

Insert 15cc of semi-bath (85-0022) into each casting leg. Once the semi-bath is in the legs slide the casting the rest of the way onto the stanchion assembly until the damper and spring shaft adapters pass thru the end of the casting. Some manual alignment may be needed.



5

Thread the lock-nut onto the damper shaft adapter. Holding the lock-nut with a 14mm Pro, 19mm Comp box wrench, use an 8mm Hex wrench to tighten the rebound damper adapter to 5,7-6,4 N-M [50-57 LB-IN] by turning them counter-clockwise. Do not overtighten, doing so can damage the threads.



6

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.

Note: Be sure to hold the knob still while removing the screw. The damper adjuster may be damaged if the knob is over torqued.



CASTING INSTALL

7

Thread the other lock-nut onto the spring shaft adapter. Holding the lock-nut with a 14mm Pro, 19mm Comp box wrench, use an 8mm socket tighten the compression rod adapter to 5,7-6,4 N-M [50-57 LB-IN] by turning them **counter-clockwise**. Do not overtighten, doing so can damage the threads.



VTT6 AND ABS+ DAMPER INSTALLATION

1

Fill damper leg about 3/4 full with Maxima 3wt fork oil.



2

Install the axle into the fork without a hub or wheel. Cover the damper leg opening with a lint-free towel. Using a wood block or similar raised support underneath the axle, compress the fork 10-15 times.

The raised support should be wide enough and long enough to safely support the axle as well as tall enough to eliminate contact between the floor and the air cap or rebound knob. Do not overtighten the axle bolt.



3

With the fork fully extended add oil to the height of 75mm for VTT6 and 87mm for ABS+ measured from the top of the stanchion.

NOTE: OIL HEIGHT IS SET WITH FORK FULL EXTENDED AND CASTING INSTALLED



VTT6 AND ABS+ DAMPER INSTALLATION

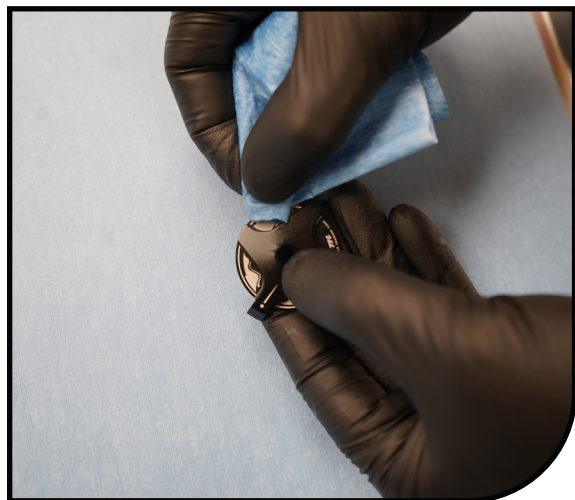
4

With the VTT6 / ABS+ adjuster in the OPEN/ full counter clockwise position, install damper assembly into stanchion. Using a standard cassette lock-ring tool for VTT6, or a 24mm socket for ABS+ to 200-220 LB-in [22.6-25 Nm].



5

Clean the adjuster knobs with isopropyl and replace v-seal into damper top cap. Install the black VTT6 adjustment knob onto adjuster hex, being sure the knob can fully rotate without contacting the crown.



Option: ABS+ Install springs and ball bearings into ABS+ top cap. A small dab of grease on top of the spring can help hold the ball bearings in place.



VTT6 AND ABS+ DAMPER INSTALLATION

6

With a 2mm hex, thread on the screw and torque to 4-6 in-lb [0.5-0.7 Nm]
Note: Be sure to hold the knob still while installing the screw. The damper adjuster may be damaged if the knob is over torqued.



7

Clean fork and use a shock pump to set to desired pressure. Lightly pull the casting away from the CSA as you add air. See set-up sheet for recommended air pressures.



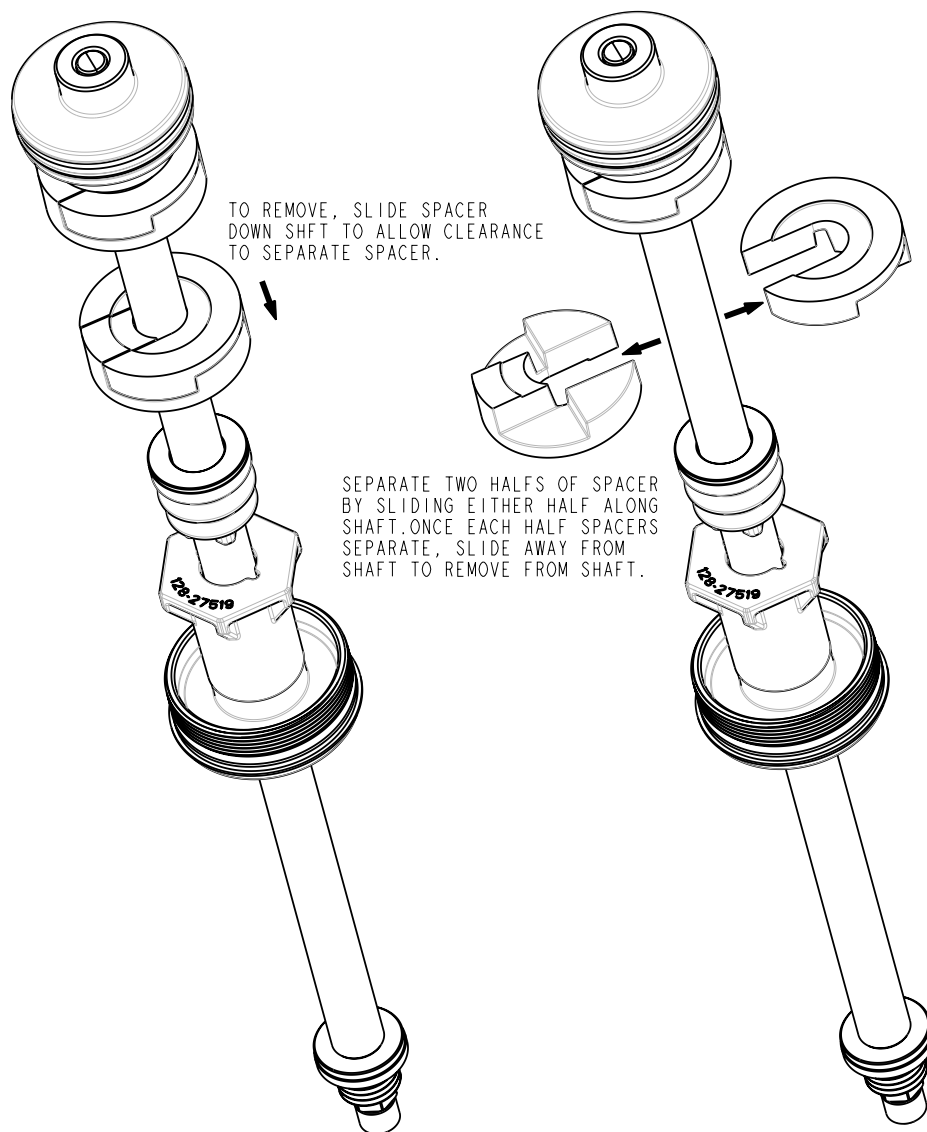
TRAVEL CHANGE

In order to change the travel of your Mastodon, first remove the compression rod assembly. For travel change on new forks, bath oil may be preserved by removing stanchion assembly while fork is placed flat on benchtop. Once the rod is removed arrange the travel spacers into the desired amount of travel using the charts on the following pages.v

INCREASING TRAVEL

Increasing Travel: Each spacer removed increase travel & axel-to-crown by 10mm.

Note: Mastodon Pro use a two piece spacer. (use note below about seperating them). Mastodon Comp, Mastodon Pro / Expert use a once piece spacer that clips onto the comp

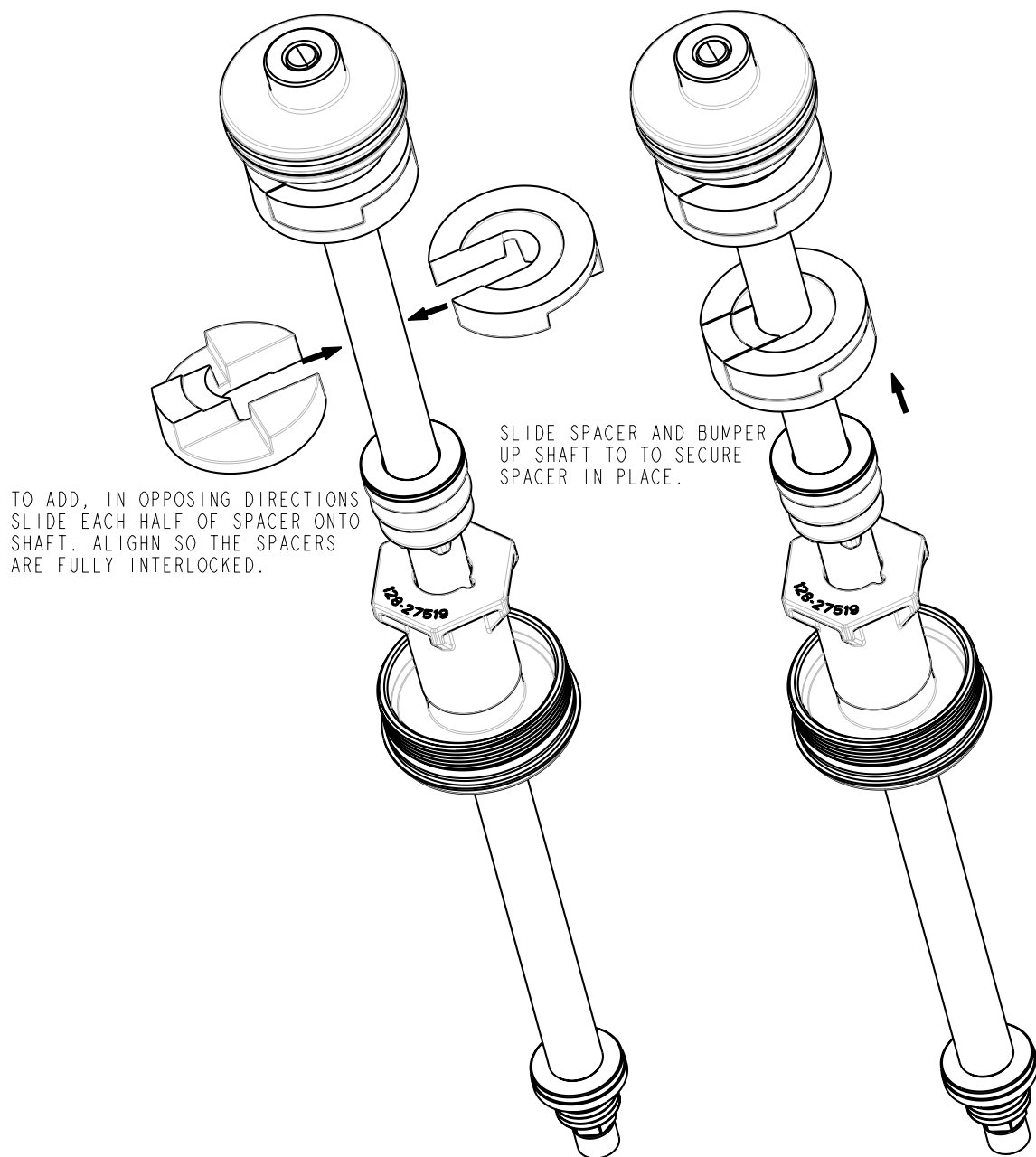


TRAVEL CHANGE

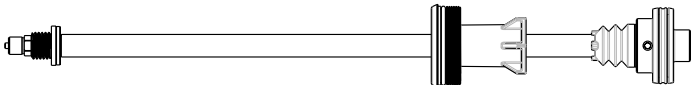
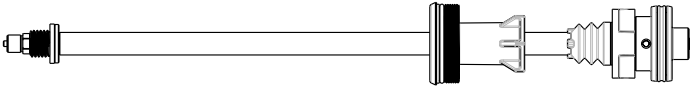
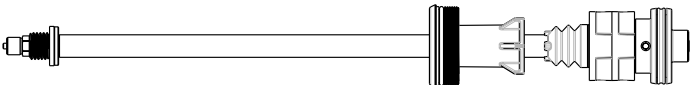
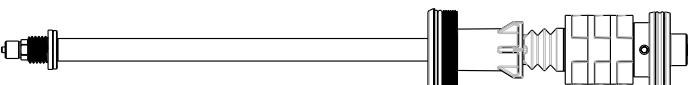
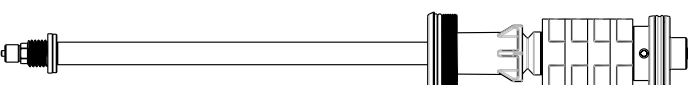
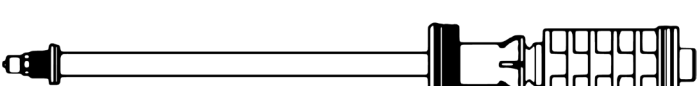



DECREASING TRAVEL

Decrease Travel: Each spacer added decreases travel & Axel-To-Crown by 10mm.

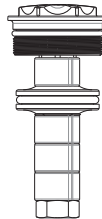
Note: Mastodon Pro use a two piece spacer. (use note below about seperating them).
Mastodon Comp use a once piece spacer that clips onto the comp rod.



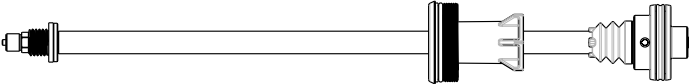
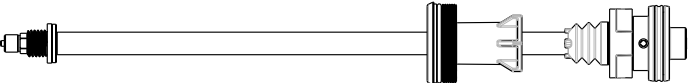
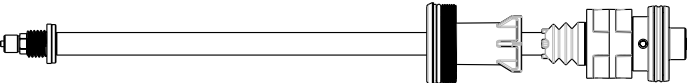
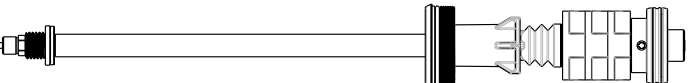
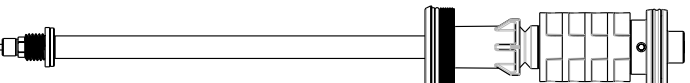
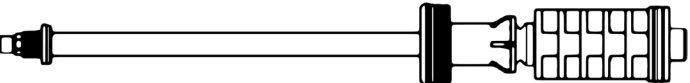

MASTODON PRO TRAVEL SPACERS

# OF SPACERS	TRAVEL	DEPICTION
0	160	
1	150	
2	140	
3	130	
4	120	
5	110	
6	100	
7	90	
8	80	

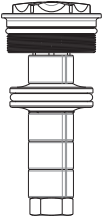
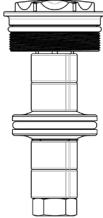

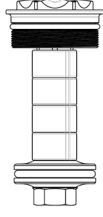
MASTODON PRO IVA SETTING

TRAVEL	IVA POSITION	DEPICTION
160	1	
150		
140	2	
130		
120	3	
110		
100	4	
90		
80	5	

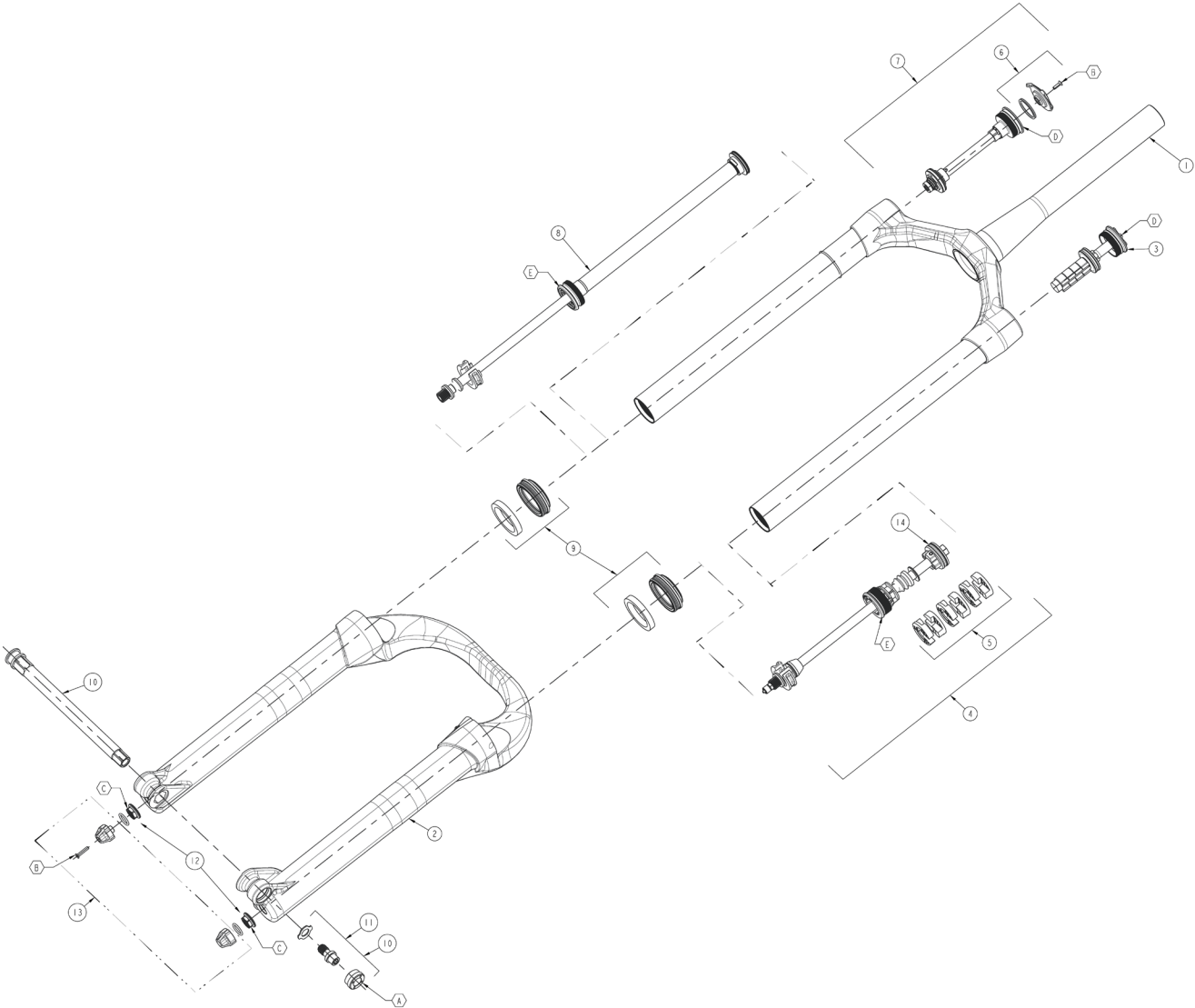
MASTODON COMP TRAVEL SPACERS

# OF SPACERS	TRAVEL	DEPICTION
0	140	
1	130	
2	120	
3	110	
4	100	
5	90	
6	80	

MASTODON COMP IVA SETTING

TRAVEL	IVA POSITION	DEPICTION
140	2	
130		
120	3	
110		
100	4	
90		
80	5	

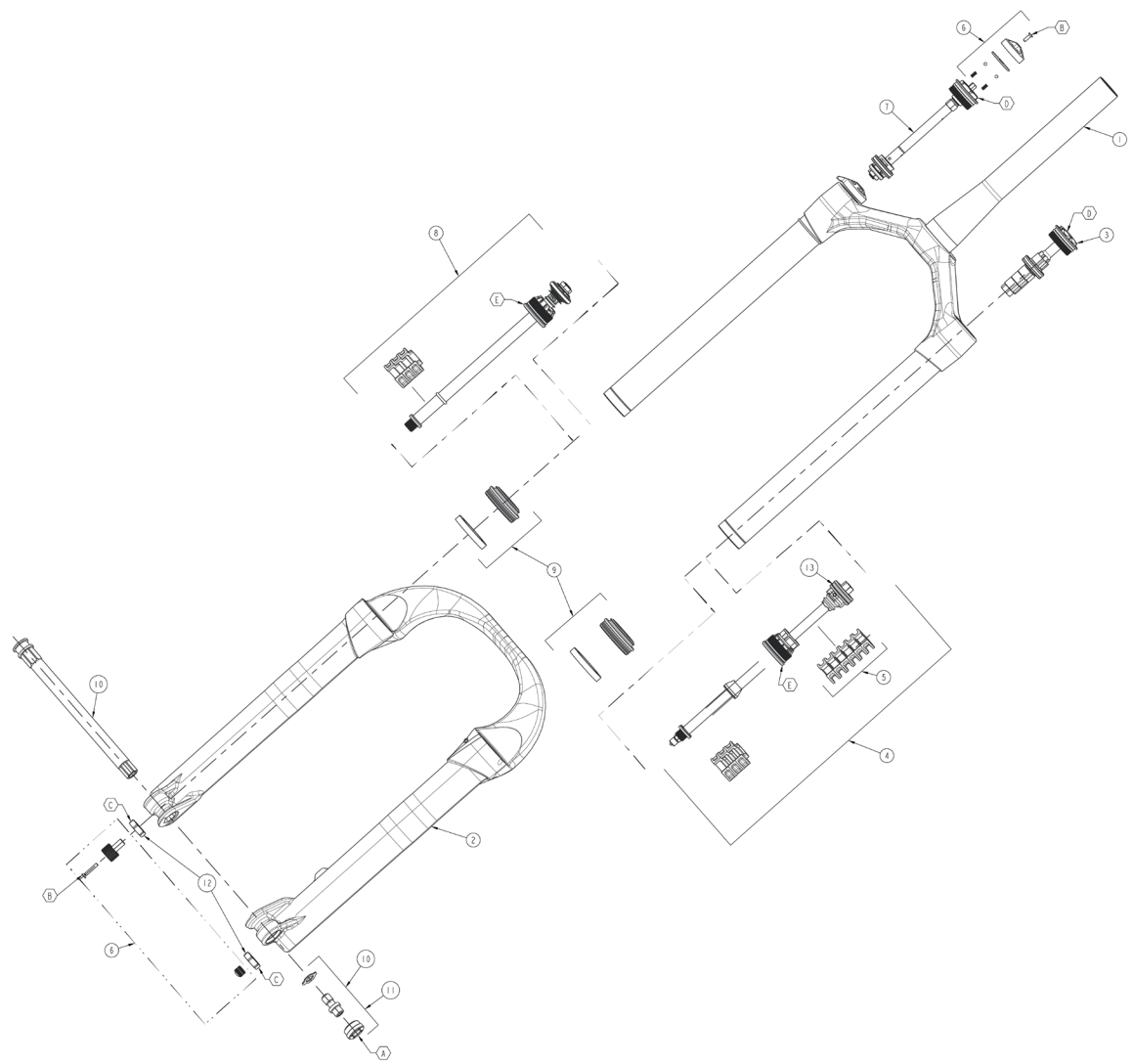
MASTODON PRO EXPLODED VIEW & PARTS



MASTODON PRO EXPLODED VIEW & PARTS

ITEM #	PART DESCRIPTION	KIT NUMBER
1	UPPER LEG ASSEMBLY, MY24 MASTODON PRO M31x0.8 BLK 80-160, POLISH CLEAR	141-40492-K001
2	LOWER LEG ASSEMBLY, MY24 MASTODON PRO M31x0.8 BLK 80-160, GLOSS BLACK	141-40492-K003
3	IVA (AIR VOLUME COMPENSATOR), MID, M3IX0.8	141-32668-K012
4	AIR SPRING ASSEMBLY, DORADO AIR, M32XI	141-39022-K031
5	TRAVEL SPACERS (4X 10MM)	141-36713-K032
6	KNOBS, ALL: VTT, REBOUND, AIR CAP	141-36713-K033
7	COMPRESSION DAMPER ASSEMBLY, VTT-6 WITH KNOB	141-40492-K005
8	REBOUND DAMPER ASSEMBLY, TPC WITH KNOB	141-40492-K006
9	SEALS, 34MM	141-34000
10	HEXLOCK SL 150MM AXLE (INCL HARDWARE)	141-33147-K004
11	HEXLOCK SL AXLE HARDWARE	141-33147-K003
12	FOOT NUT, M12 (2PC)	141-39022-K017
13	KNOBS, LOWER, REBOUND, AIR CAP	141-32155-K016
14	AIR PISTON SEAL	141-32155-K012
REF	REBUILD KIT	141-28528-K008
REF	DECAL KIT, MY24 MASTODON PRO/COMP, STANDARD AND STEALTH	141-40492-K008
REF	HOSE GUIDE	141-36103-K003

MASTODON COMP EXPLODED VIEW & PARTS



MASTODON COMP EXPLODED VIEW & PARTS

ITEM #	PART DESCRIPTION	KIT NUMBER
1	UPPER LEG ASSEMBLY, MY24 MASTODON COMP M31x0.8 BLK 80-140, MATTE BLACK	141-40492-K002
2	LOWER LEG ASSEMBLY, MY24 MASTODON COMP M31x0.8 BLK 80-140, MATTE BLACK	141-40492-K004
3	IVA (AIR VOLUME COMPENSATOR), MID, M3IX0.8	141-32668-K013
4	AIR SPRING ASSEMBLY, EXPERT AIR, M31.5X0.8	141-39022-K011
5	TRAVEL SPACERS (4X 10MM)	141-30159-K012
6	KNOBS, ALL: ABS+, REBOUND, AIR CAP	141-36683-K015
7	COMPRESSION DAMPER ASSEMBLY, ABS+ WITH KNOB	141-40492-K007
8	REBOUND DAMPER ASSEMBLY, TPC WITH KNOB	141-39022-K016
9	SEALS, 34MM	141-34000
10	HEXLOCK SL 150MM AXLE (INCL HARDWARE)	141-33147-K004
11	HEXLOCK SL AXLE HARDWARE	141-33147-K003
12	FOOT NUT, M12 (2PC)	141-39022-K017
13	AIR PISTON SEAL	141-32156-K011
REF	REBUILD KIT	141-28528-K008
REF	DECAL KIT, MY24 MASTODON PRO/COMP, STANDARD AND STEALTH	141-40492-K008
REF	HOSE GUIDE	141-36103-K003

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