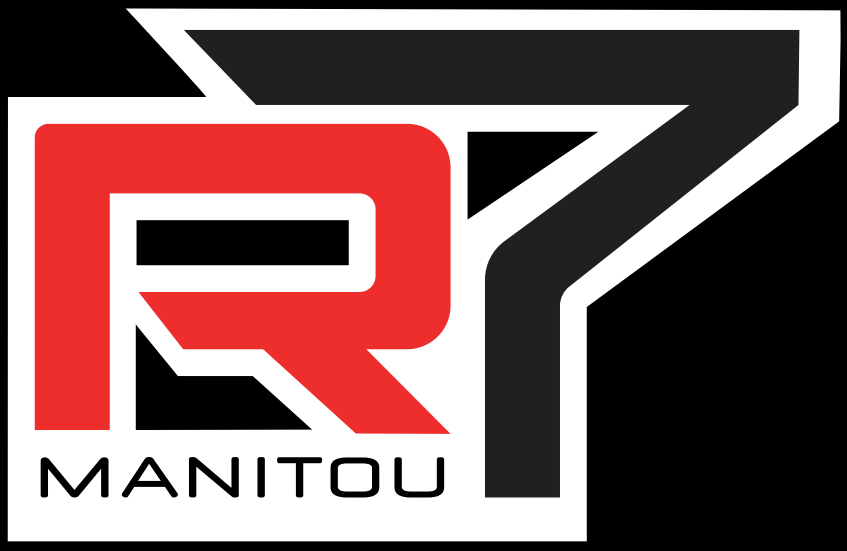


R7 EXPERT / PRO | SERVICE & TRAVEL GUIDE

manitou

MANITOU

5800 W Donges Bay Rd
Mequon, WI 53092

manitoumtb.com

888.686.3472

Support: manitoumtb.com/support

Warranty:
For full warranty information please visit hayesbicycle.com/warranty

HAYES PERFORMANCE SYSTEMS

Revised June 12, 2020

INTRODUCTION

This manual is intended to provide the information necessary to service the Manitou R7 Expert and Pro Suspension fork. We highly recommend any service or installation be performed by a qualified mechanic. These instructions can be downloaded from the Hayes Bicycle Group website at www.hayesbicycle.com

⚠WARNING⚠

We highly recommend that service to this component 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 product or the manual itself should be directed to Hayes Customer Support at:

Hayes Bicycle USA	5800 W Donges Bay Road Mequon WI 53092
	Phone: 888.686.3472
	Email: techsupport@hayesbicycle.com

Hayes Bicycle Europe	Dirnismaning 20 a 85748 Garching (b. Munich) Germany
	Phone: +49 89 203237450
	Email: techsupportEU@hayesbicycle.com

Hayes Bicycle Asia	16F, No. 37, Sec. 3 Mincyuan E. Rd. Zhongshan District Taipei City 10476 Taiwan ROC
	Phone: 886-2-2518-1108

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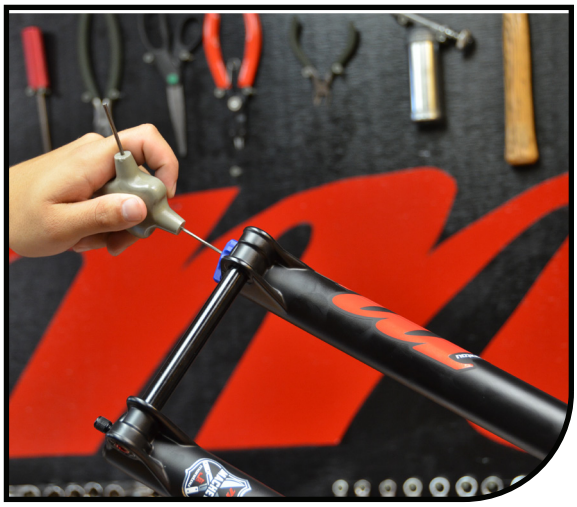
TOOLS AND MATERIALS

- Safety Glasses
- Nitrile Gloves
- Lint-Free Rags
- Slickoleum™ Grease
  10-Oz Tub – Manitou Part Number 20-32929
  5Ml Tube – Manitou Part Number 141-33604-K001
- Semi-Bath Oil, 5/40W Synthetic
  Manitou Part Number 85-0022
- 5W Maxima Fork Oil
  Manitou Part Number 85-0023
- 32mm Seal Press
  Manitou Part Number 172-31122
- 32mm Rebuild Kit
  Manitou Part Number 141-28528-K010
- Manitou Tool Kit – Manitou Part Number 172-31133
  (Includes The 3 Tools Below)
  Manitou Slotted Cassette Tool
  Manitou Thin Walled 8mm Socket
  Manitou 24mm Flat Ground Socket
- 2mm Hex Wrench
- 4mm Hex Wrench
- 6mm Hex Wrench
- 8mm Socket
- 11mm Socket
- 22mm Wrench, Open or Box End
- Torque Wrench
- Park Tool FR-5.2 Cassette Lockring Tool, or similar
- 1” Socket, for use with Park Tool FR-5.2 Cassette Lockring Tool
- Socket Wrench
- 22mm Crow’s Foot
- Fork/Shock Pump
- Pick
- Adjustable Wrench
- Downhill Tire Lever Or Flat Blade Screwdriver
- Support Block (2”x4”x4” Wood, Plastic, or Similar)

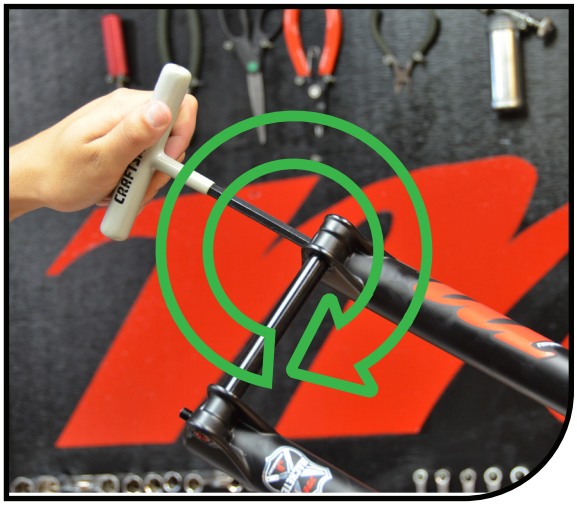
CASTING REMOVAL & SERVICE

1 Holding the rebound knob steady, insert 2mm hex wrench into rebound knob screw and rotate the wrench counter-clockwise until threads completely disengage.

Remove rebound knob and screw.



2 Insert an 8mm Hex wrench into the end of the rebound rod and rotate **clockwise**. The rebound end fitting will move toward the inside of the casting. Continue rotating until end fitting disengages completely from casting threads.



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

CAUTION

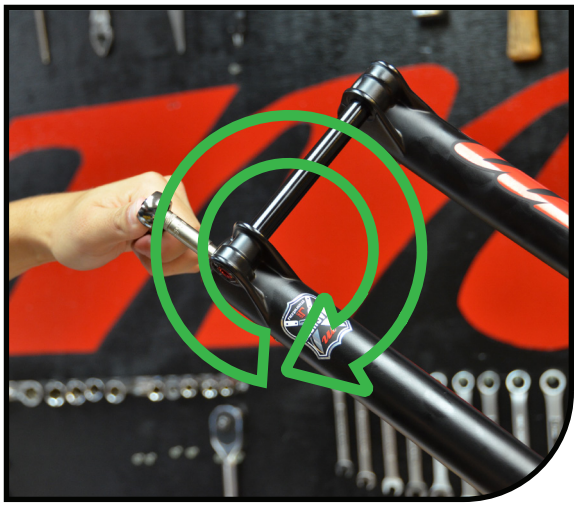
Do not proceed to next step without completely depressurizing air spring



CASTING REMOVAL & SERVICE

4 Insert Manitou 8mm Thin Wall Socket onto the end of the compression rod and rotate **clockwise**. The comp rod end fitting will move toward the inside of the casting. Continue rotating until end fitting disengages completely from casting threads.

Note: the compression rod can also be loosened by using an 8mm box end wrench on the external hex and a 4mm hex wrench on the internal hex of the comp rod end fitting. Rotating both wrenches **clockwise** simultaneously will loosen the compression rod, reducing the risk of damaging a seized end fitting.



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. Clean seal area with isopropyl alcohol. Apply semi-bath fluid to the new foam wiper rings and install into fork casting.



8 Remove springs from lip of dust seals. Using the Manitou 32mm Seal Press or large socket, press in the dust seals. Reinstall springs onto seals.



AIR SPRING SERVICE

1 Using Manitou 24mm Flat Ground Socket, rotate air spring top cap counter-clockwise and remove when threads completely disengage from the stanchion.



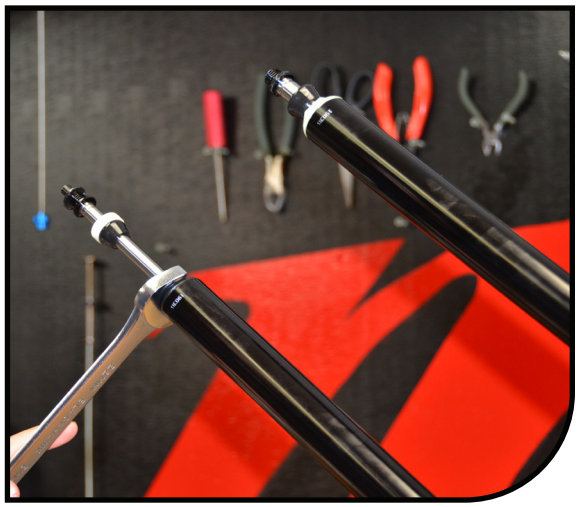
CAUTION

Do not begin disassembly until completely depressurizing air spring.

NOTICE

Make sure to apply top down force on tool to prevent slipping

2 Invert the fork. Using a 22mm wrench, rotate the air spring end cap counter-clockwise until threads completely disengage from stanchion.

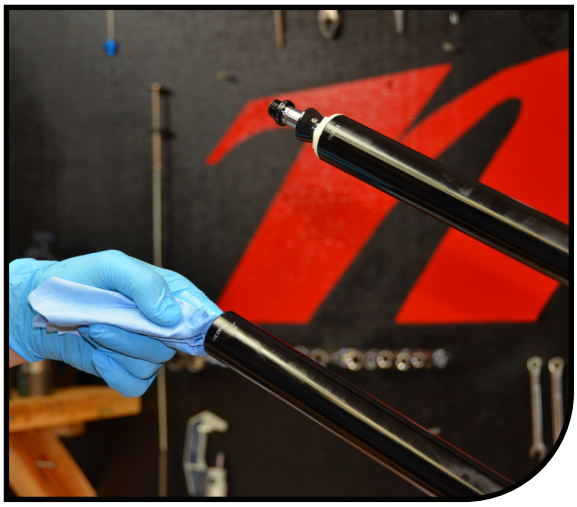


3 Remove air spring assembly. Clean assembly with isopropyl alcohol and a lint-free towel. Inspect air spring shaft, bumpers, and air piston seal for wear/damage and replace if necessary.



AIR SPRING SERVICE

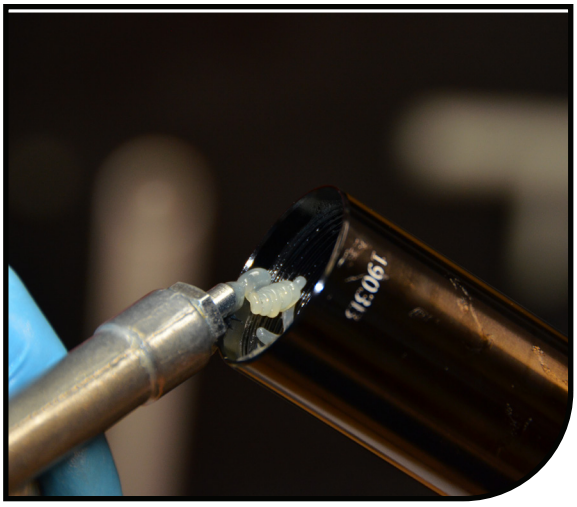
4 Once the air spring assembly is removed, clean the inside of the stanchion with isopropyl alcohol and a lint free towel. Be careful to not scratch the inner surface of the stanchion. Inspect the inside and outside of the stanchion for scratches or other damage.



5 Liberally grease the piston quad seal and outer surface with Slickoleum™ grease. Also add 3cc's of Slickoleum™ grease to the top of the air piston.

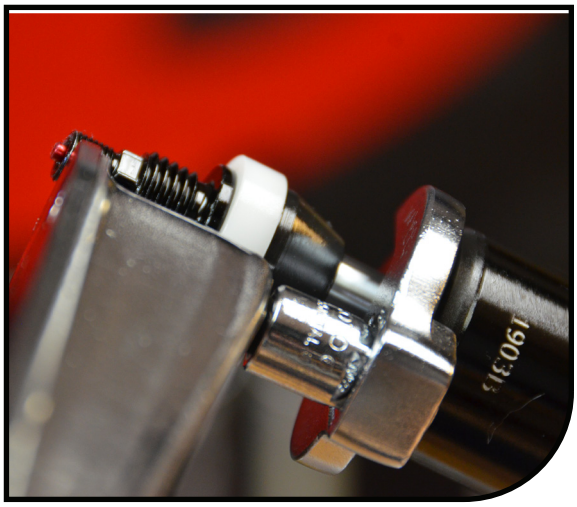


6 Add Slickoleum™ grease to the stanchion threads before inserting the air spring assembly. Spread grease across entire thread surface.



AIR SPRING SERVICE

7 Install air spring assembly into stanchion. Rotating clockwise, start the end cap threads by hand to prevent cross-threading. Using a 22mm crow's foot and torque wrench, torque to 80-100 in lb [9.0-11.3 N m].



8 Install air spring top cap into stanchion. Torque to 60-80 in lbs [6.8-9.0 N m].

NOTICE

Make sure to apply top down force on the tool to prevent slipping.



DAMPER SERVICE

1a *PRO MODEL* Using a 2mm hex wrench, rotate counter-clockwise and remove open-mode-adjust knob screw when threads completely disengage from the damper. Remove the open-mode-adjust knob.



NOTICE

For Expert, skip to step 2.

1b *PRO MODEL* Using an 11mm socket, rotate counter-clockwise and remove the knob lock nut when the threads completely disengage from the damper.



NOTICE

For Expert, skip to step 2.

2 *Expert Model* Using a 2mm hex wrench, rotate counter-clockwise and remove knob screw when threads completely disengage from the damper.

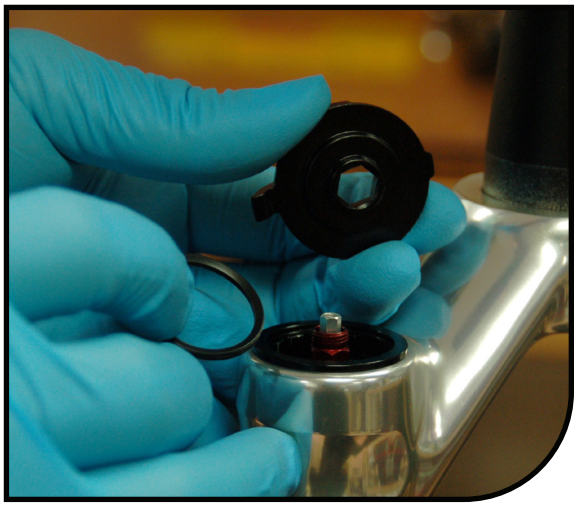


NOTICE

For Pro, skip to step 3.

DAMPER SERVICE

3 Remove the black compression knob and knob seal.



4 Rotating counter-clockwise, use a standard cassette lockring tool, such as Park Tool's FR-5.2, with the appropriate socket/wrench to unthread the compression damper assembly.

NOTICE

Non-standard spanners may damage the damper's splined interface. Only use a standard cassette lockring tool and apply a top-down force while loosening to prevent slipping.

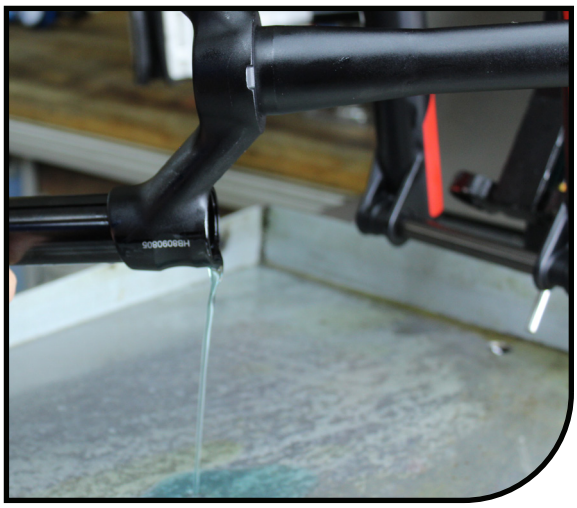


5 Remove compression damper assembly from the stanchion.



DAMPER SERVICE

6 Pour fork oil into a catch pan.



7a ***PRO MODEL*** Using the Manitou slotted cassette tool and wrench, rotate the damper end cap counter-clockwise until threads completely disengage from the stanchion.

NOTICE

For Expert, skip to step 7B



7b ***EXPERT MODEL*** Using a 22mm wrench, rotate the damper end cap counter-clockwise until threads completely disengage from the stanchion.

NOTICE

For Pro, skip to step 8



DAMPER SERVICE

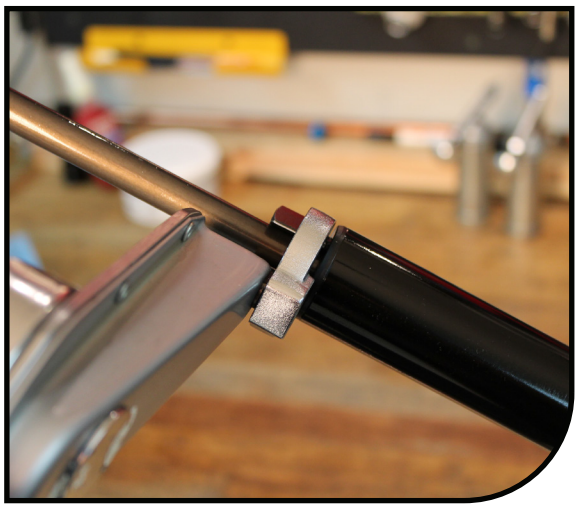
8 Remove rebound damper assembly from the fork. Once the damper assembly is removed, clean the inside of the stanchion with isopropyl alcohol and a lint free towel. Inspect the inside and outside of the stanchion for scratches and other damage. Inspect rebound damper for damage and replace if necessary.



9 Install rebound damper assembly into stanchion. Rotating clockwise, start the end cap threads by hand to prevent cross-threading.

PRO MODEL Use a 26mm crow's foot, Manitou slotted cassette tool, and torque wrench to tighten to 60-80 in lbs [6.8-9.0 N m].

EXPERT MODEL Use a 22mm crow's foot and torque wrench to tighten to 80-100 in lbs [9.0-11.3 N m].



CASTING INSTALL

1 Apply a thin layer of either Slickoleum grease or semi-bath oil to the inside surface of the fork seal.



2 Tightly assemble shock pump fitting to comp rod end fitting. Inflate the air spring to 50 PSI. The air spring should not move during inflation. With the shock pump still attached, lightly pull the comp rod to full extension so that some compression of the internal top-out bumper can be felt. Remove the shock pump. This process will ease casting installation.



3 Lightly pull the rebound damper rod to full extension.



CASTING INSTALL

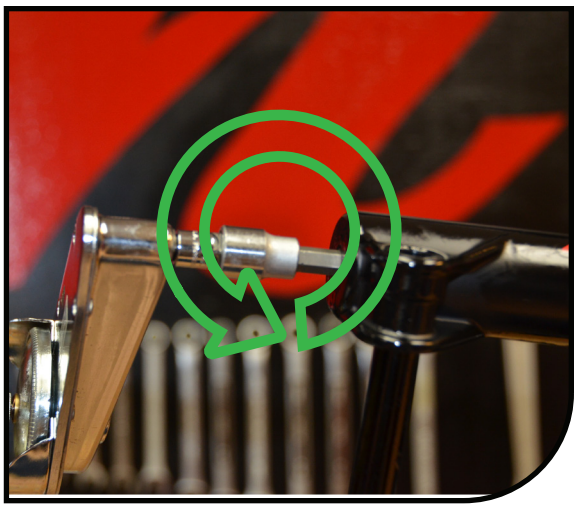
4 Slide the casting partially onto the stanchion assembly, such that the air spring and rebound end fittings are not yet in contact with the casting threads. Take care during installation to not fold over fork seal lips on the stanchions.



5 Insert 7cc 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.

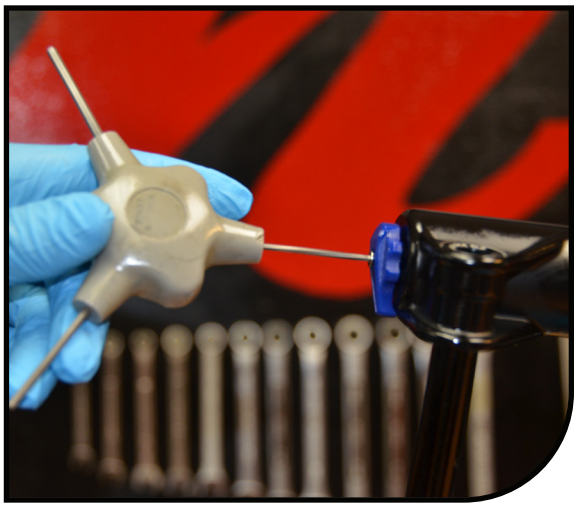


6 Using an 8mm Hex wrench and torque wrench, tighten the rebound damper rod to 30–40 in lb [3.4–4.5 N m] by turning them **counter-clockwise.** Do not overtighten, as doing so can damage the end of the rods.

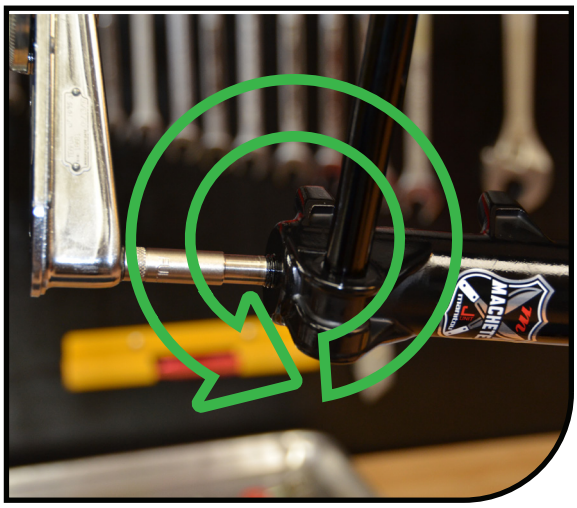


CASTING INSTALL

7 Install rebound knob. Holding the knob steady, use a 2mm hex wrench to assemble the rebound knob screw (rotating clockwise) and torque to 0.5-0.7 in lb [4-6 N m].



8 Using the Manitou 8mm Thin Wall Socket and torque wrench, turn the compression rod **counter-clockwise.** Torque to 30-40 in lbs [3,4-4,5 N m]. Do not overtighten, as doing so can damage the end of the rods.



COMPRESSION DAMPER INSTALL

1 Fill the damper leg approximately 3/4 full with Maxima 5wt fork oil.



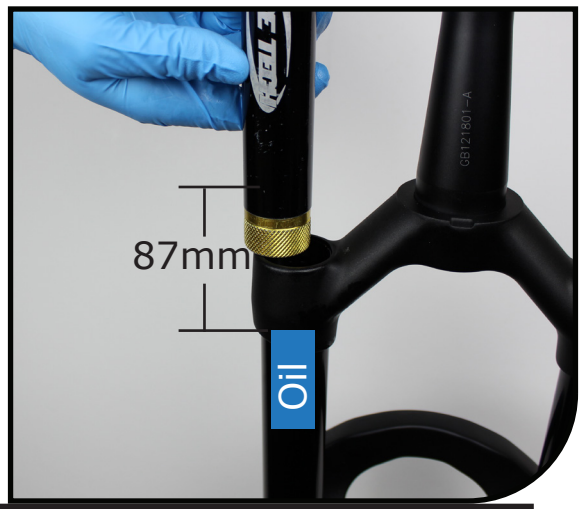
2 Install the axle into the fork without a hub or wheel. Cover the damper leg opening with a lint-free towel. Using a wood block or similar raised support underneath the axle, compress the fork 10-15 times.



NOTICE

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 comp rod end fitting or rebound knob. Do not overtighten the axle bolt.

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 of **87mm**. An oil height setting tool used for motorcycle forks similar to the one pictured makes this job easier.



COMPRESSION DAMPER INSTALL

4 Rotate the adjuster hex on the compression damper counter-clockwise to the unlocked/open position. Install the damper into the fork.



5 Rotating clockwise, use a torque wrench and a standard cassette lockring tool, such as Park Tool's FR-5.2, with the appropriate socket to torque the compression damper assembly to 60-80 in-lbs [6.8-9.0 Nm].

NOTICE

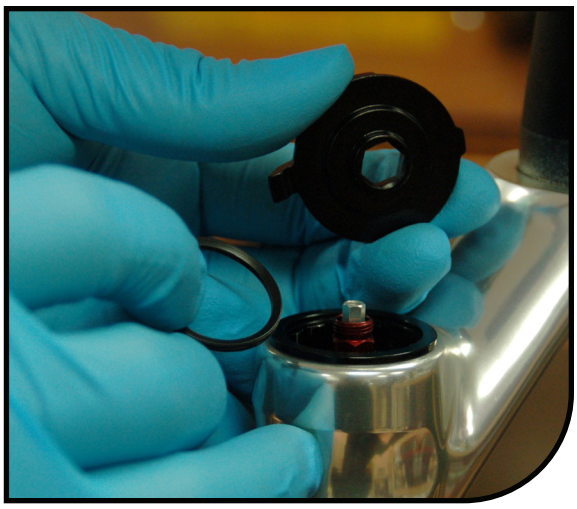
Non-standard spanners may damage the damper's splined interface. Only use a standard cassette lockring tool and apply a top-down force while loosening to prevent slipping.



6a *PRO MODEL* Install the knob seal and adjuster knob. Holding the knob steady, use an 11mm socket and torque wrench to assemble the knob lock nut (rotating clockwise) and tighten to 0.5-0.7 in lbs [4-6 N m].

NOTICE

For Expert, skip to step 7

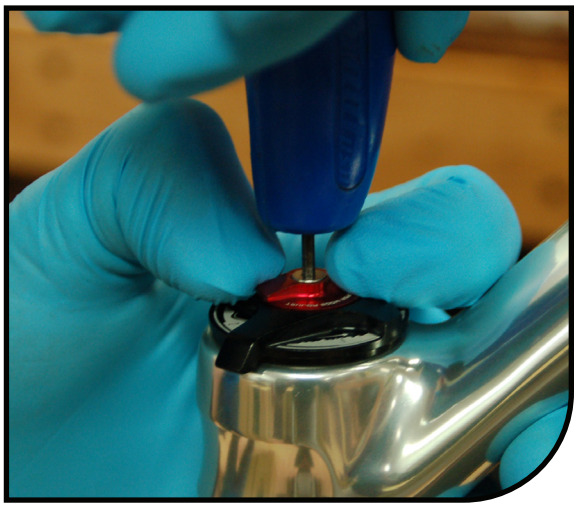


COMPRESSION DAMPER INSTALL

6b *PRO MODEL* Install the open-mode-adjust knob. Holding the knob steady, use a 2mm hex wrench and torque wrench to assemble the knob screw (rotating clockwise) and tighten to 0.5-0.7 in lbs [4-6 N m].

NOTICE

For Expert, skip to step 7



7 *EXPERT MODEL* Install the knob seal and adjuster knob. Holding the knob steady, use a 2mm hex wrench and torque wrench to assemble the knob screw (rotating clockwise) and tighten to 0.5-0.7 in lbs [4-6 N m].

NOTICE

For Pro, Skip to Step 8



8 Tightly thread a shock pump to the comp rod end fitting and fill to desired air spring pressure, occasionally pulling the casting away from the CSA as air is added. The recommended starting pressures are shown in the charts on the next page. Remove the shock pump and clean the fork with isopropyl alcohol.

NOTICE

Lightly pulling the casting away from the CSA during air fill ensures full extension of the fork and proper air spring performance.



RECOMMENDED STARTING PRESSURE

80MM TRAVEL

Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
>220	>100	109-120	[7.5-8.3]
200	91	95-110	[6.5-7.6]
170	77	83-95	[5.7-6.3]
140	64	69-83	[4.8-5.7]
120	55	61-69	[4.2-4.8]
! WARNING !			
MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]			

100MM TRAVEL

Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
>220	>100	104-115	[7.2-7.9]
200	91	90-105	[6.2-7.2]
170	77	78-90	[5.4-6.2]
140	64	64-78	[4.4-5.4]
120	55	56-64	[3.9-4.4]
! WARNING !			
MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]			

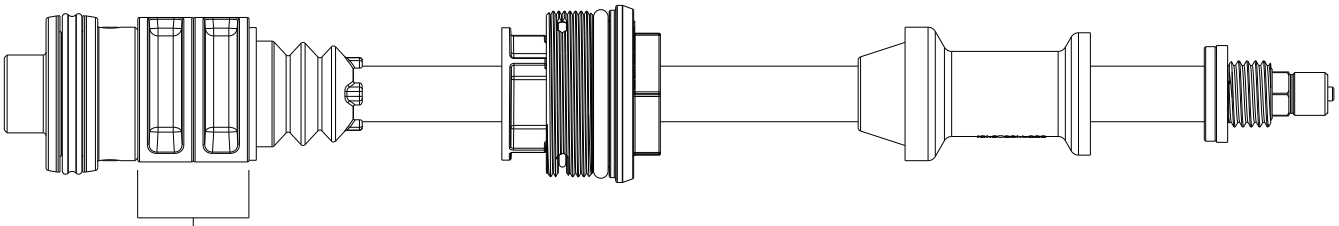
120MM TRAVEL

Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
>220	>100	99-110	[6.8-7.6]
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]
! WARNING !			
MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]			

R7 PRO / EXPERT TRAVEL CHANGE

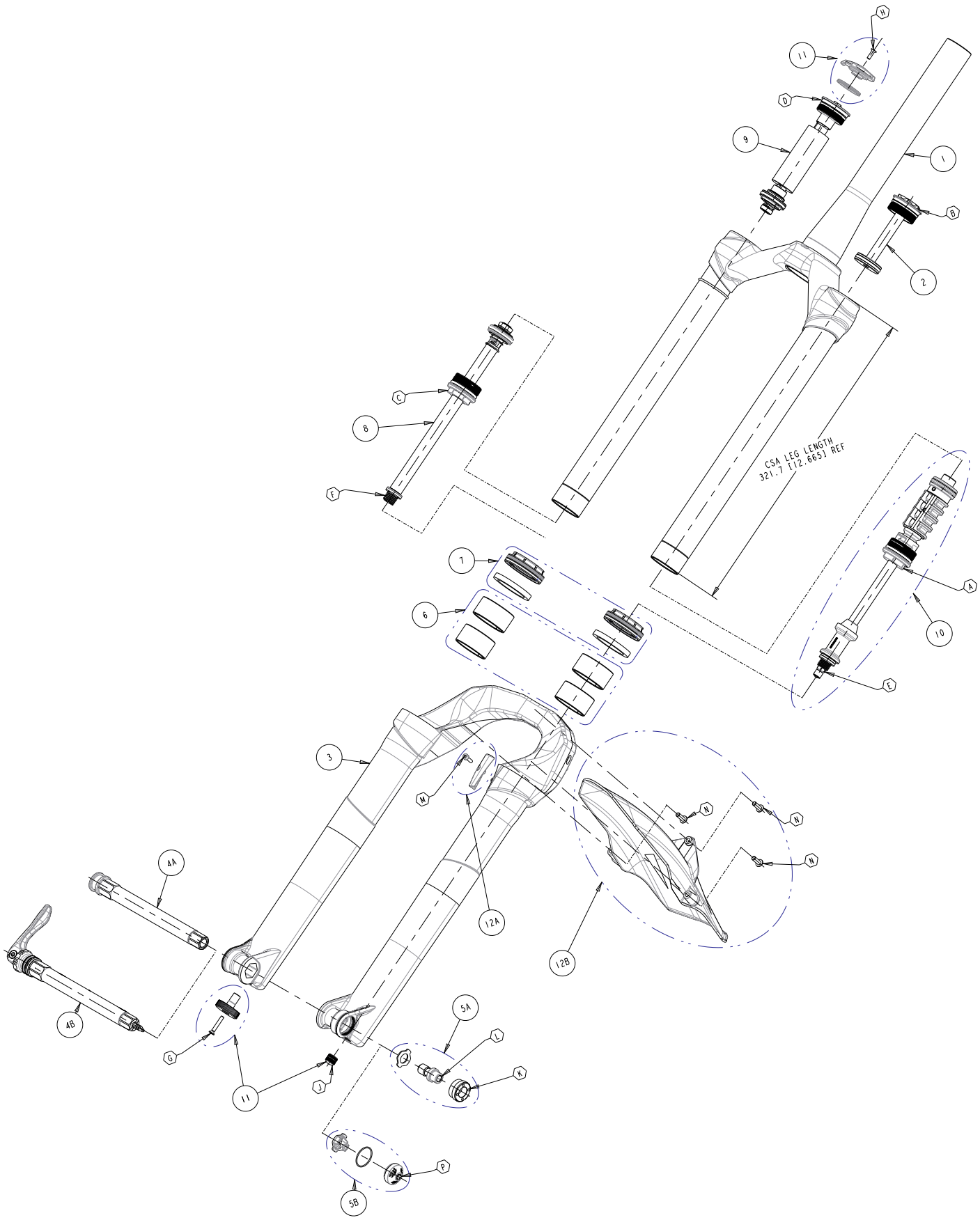
In order to change the travel of your R7 Pro or Expert, first remove the compression rod assembly. For instructions on how to do this, refer to page 9. Once the rod is removed, arrange the travel spacers into the desired amount of travel using the following charts. Picture shows 100mm travel configuration. Diagram and travel chart apply to both Pro and Expert.

R7 Spacer Diagram



TRAVEL	SPACERS
120mm	0
110mm	1
100mm (SHOWN)	2
90mm	3
80mm	4

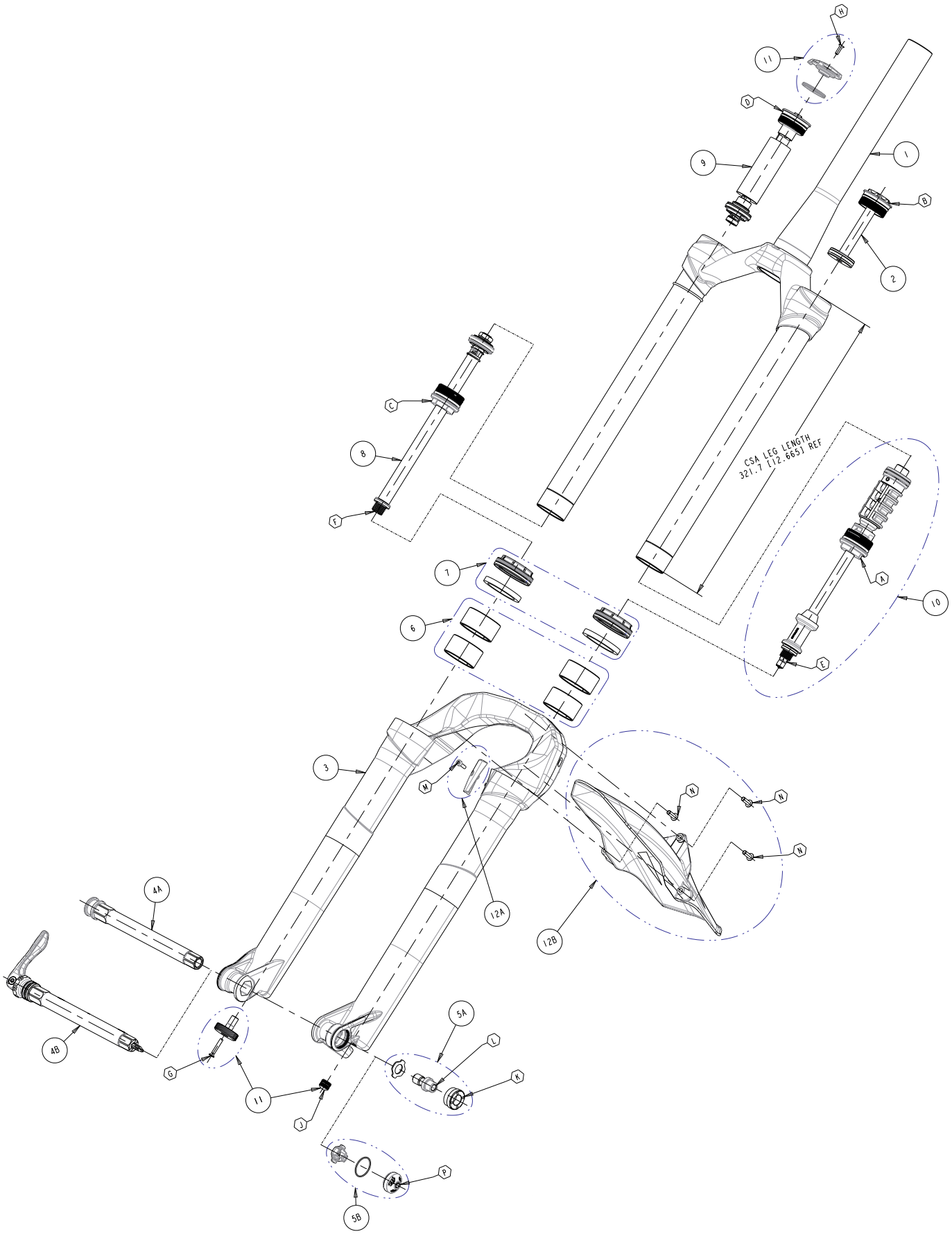
R7 EXPERT 27.5" EXPLODED VIEW



R7 EXPERT 27.5" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 80/120, 19.25MM OS, GBLK, BLK LEG (STANDARD OFFSET)	141-38117-K002
	KIT, CSA 32MM 80/120, 12.25MM OS, GBLK, BLK LEG (SHORT OFFSET)	141-38117-K005
2	KIT, IVA, TALL 32MM M29.6X0.75 THREAD (REPLACES FIXED VOLUME SPACER SHOWN)	141-38117-K022
3	KIT, CASTING, 32MM 27.5" GBLK (INCL. BUSHINGS AND SEALS)	141-38117-K023
4A	KIT, AXLE, HEXLOCK LIGHTWEIGHT (INCL. HARDWARE)	141-33147-K005
4B	KIT, AXLE, QR15 BOOST (OPTION, REPLACES 5A, INCL. HARDWARE)	141-28131-K028
5A	KIT, HARDWARE, HEXLOCK AXLE	141-33147-K003
5B	KIT, HARDWARE, QR15 AXLE	141-28131-K024
6	KIT, BUSHING 32MM	141-38117-K017
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND DAMPER, 27.5"/29" 80/120	141-36683-K008
9	KIT, COMPRESSION DAMPER, VTT	141-38117-K014
10	KIT, EXPERT AIR, 32MM 27.5"/29" 80/120	141-38117-K011
11	KIT, 32MM KNOB, VTT & ADJ RBND	141-38117-K018
12A	KIT, HOSE CLAMP, MY20 MEZZER & KIDS FORK	141-36103-K003
12B	KIT, FENDER, MY20 MEZZER & KIDS FORK (INCL. 12A)	141-36103-K001
	KIT, ASSY, MILO AL W/CABLE & HOUSING	193-24931-C017
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, DECAL, MY21 R7	141-38117-K021
	KIT, REBUILD 32MM	141-28528-K010

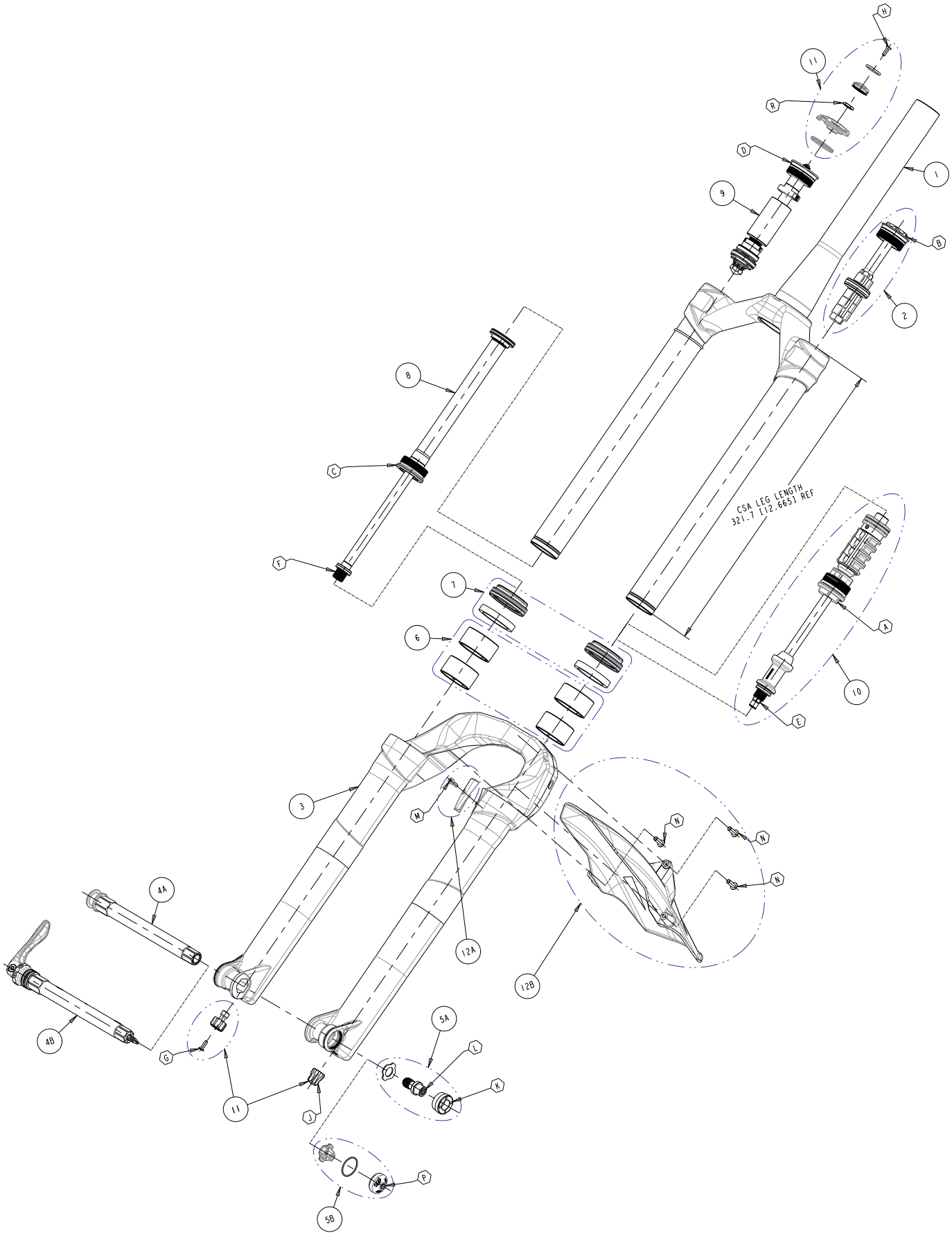
R7 EXPERT 27.5+/29" EXPLODED VIEW



R7 EXPERT 27.5+/29" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 80/120, 19.25MM OS, GBLK, BLK LEG (STANDARD OFFSET)	141-38117-K002
	KIT, CSA 32MM 80/120, 12.25MM OS, GBLK, BLK LEG (SHORT OFFSET)	141-38117-K005
2	KIT, IVA, 32MM (REPLACES FIXED VOLUME SPACER SHOWN)	141-38117-K022
3	KIT, CASTING, 32MM 27.5+/29" GBLK (INCL. BUSHINGS AND SEALS)	141-38117-K024
4A	KIT, AXLE, HEXLOCK (INCL. HARDWARE)	141-33147-K002
4B	KIT, AXLE, QR15 BOOST (OPTION, REPLACES 4A, INCL. HARDWARE)	141-28131-K028
5A	KIT, HARDWARE, HEXLOCK AXLE	141-33147-K003
5B	KIT, HARDWARE, QR15 AXLE	141-28131-K024
6	KIT, BUSHING 32MM	141-38117-K017
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND DAMPER, 27.5/29" 80/120	141-36683-K008
9	KIT, COMPRESSION DAMPER, VTT	141-38117-K014
10	KIT, EXPERT AIR, 32MM 27.5/29" 80/120	141-38117-K011
11	KIT, 32MM KNOB, VTT & ADJ RBND	141-38117-K018
12A	KIT, HOSE CLAMP, MY20 MEZZER & KIDS FORK	141-36103-K003
12B	KIT, FENDER, MY20 MEZZER & KIDS FORK (INCL. 12A)	141-36103-K001
	KIT, ASSY, MILO AL W/CABLE & HOUSING	193-24931-C017
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, DECAL, MY21 R7	141-38117-K021
	KIT, REBUILD 32MM	141-28528-K010

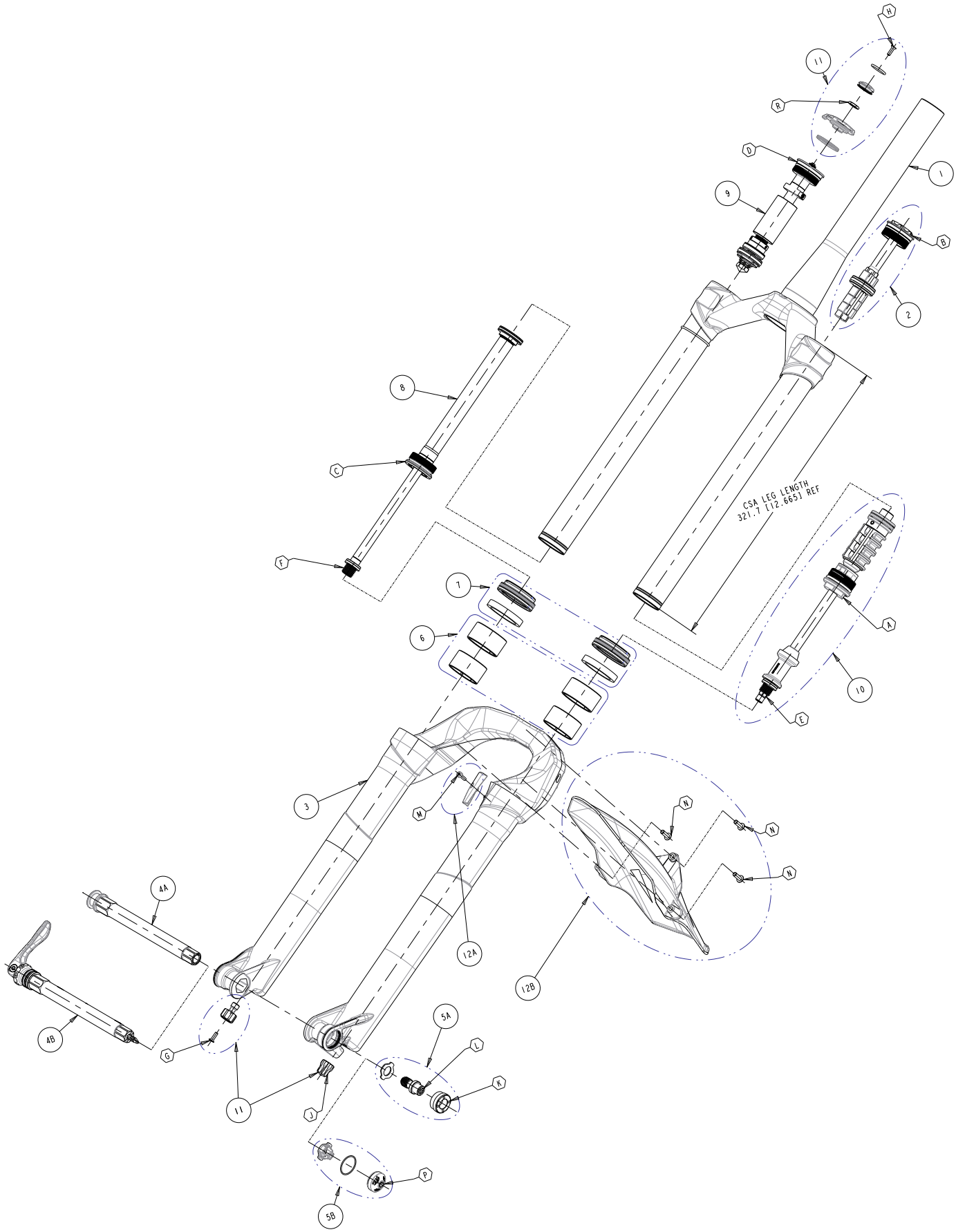
R7 PRO 27.5" EXPLODED VIEW



R7PRO27.5" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 80/120, 19.25MM OS, SLVR, BLK LEG (STANDARD OFFSET)	141-38117-K003
	KIT, CSA 32MM 80/120, 12.25MM OS, SLVR, BLK LEG (SHORT OFFSET)	141-38117-K006
2	KIT, IVA, TALL 32MM M29.6X0.75 THREAD	141-38117-K022
3	KIT, CASTING, 32MM 27.5" GBLK (INCL. BUSHINGS AND SEALS)	141-38117-K023
4A	KIT, AXLE, HEXLOCK LIGHTWEIGHT (INCL. HARDWARE)	141-33147-K005
4B	KIT, AXLE, QR15 BOOST (OPTION, REPLACES 5A, INCL. HARDWARE)	141-28131-K028
5A	KIT, HARDWARE, HEXLOCK AXLE	141-33147-K003
5B	KIT, HARDWARE, QR15 AXLE	141-28131-K024
6	KIT, BUSHING 32MM	141-38117-K017
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND DAMPER, HALF-CART 27.5/29" 80/120	141-38117-K013
9	KIT, COMPRESSION DAMPER, VTT PRO	141-38117-K015
10	KIT, DORADO AIR, 32MM 27.5/29" 80/120	141-38117-K012
11	KIT, 32MM KNOB, VTT PRO & ADJ RBND	141-38117-K019
12A	KIT, HOSE CLAMP, MY20 MEZZER & KIDS FORK	141-36103-K003
12B	KIT, FENDER, MY20 MEZZER & KIDS FORK (INCL. 12A)	141-36103-K001
	KIT, ASSY, MILO AL W/CABLE & HOUSING	193-24931-C017
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, DECAL, MY21 R7	141-38117-K021
	KIT, REBUILD 32MM	141-28528-K010

R7 PRO 27.5+/29" EXPLODED VIEW



R7PRO27.5+/29" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 80/120, 19.25MM OS, SLVR, BLK LEG (STANDARD OFFSET)	141-38117-K003
	KIT, CSA 32MM 80/120, 12.25MM OS, SLVR, BLK LEG (SHORT OFFSET)	141-38117-K006
2	KIT, IVA, 32MM	141-38117-K022
3	KIT, CASTING, 32MM 27.5+/29" GBLK (INCL. BUSHINGS AND SEALS)	141-38117-K024
4A	KIT, AXLE, HEXLOCK LIGHTWEIGHT (INCL. HARDWARE)	141-33147-K005
4B	KIT, AXLE, QR15 BOOST (OPTION, REPLACES 4A, INCL. HARDWARE)	141-28131-K028
5A	KIT, HARDWARE, HEXLOCK AXLE	141-33147-K003
5B	KIT, HARDWARE, QR15 AXLE	141-28131-K024
6	KIT, BUSHING 32MM	141-38117-K017
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND DAMPER, HALF-CART 32MM 27.5/29” 80/120	141-38117-K013
9	KIT, COMPRESSION DAMPER, VTT PRO 32MM	141-38117-K015
10	KIT, DORADO AIR, 32MM 27.5/29” 80/120	141-38117-K012
11	KIT, 32MM KNOB, VTT PRO & ADJ RBND	141-38117-K019
12A	KIT, HOSE CLAMP, MY20 MEZZER & KIDS FORK	141-36103-K003
12B	KIT, FENDER, MY20 MEZZER & KIDS FORK (INCL. 12A)	141-36103-K001
	KIT, ASSY, MILO AL W/CABLE & HOUSING	193-24931-C017
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, DECAL, MY21 R7	141-38117-K021
	KIT, REBUILD 32MM	141-28528-K010
	KIT, MATTOC SERVICE TOOL (8MM THIN-WALL SOCKET, 24MM FLAT SOCKET, & END CAP SOCKET)	172-31133

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