

**JUNIT | SERVICE & TRAVEL GUIDE**



## MANITOU

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Support: [manitoumtb.com/support](https://manitoumtb.com/support)

### Warranty:

For full warranty information please visit [hayesbicycle.com/warranty](https://hayesbicycle.com/warranty)

**HAYES**

**m**  
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**PROTAPER**

**REYNOLDS**

**SUN**  
ringle

**WHEELSMITH**  
W  
SPOKES

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**HAYES**  
PERFORMANCE SYSTEMS

# INTRODUCTION

This manual is intended to provide the information necessary for installation, set-up, normal maintenance and service of the Manitou JUNIT Machete suspension fork. We highly recommend installation be performed by a qualified mechanic. These instructions can be downloaded from the Hayes Performance Systems website at [www.manitoumtb.com](http://www.manitoumtb.com)

## **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:

### **United States**

- Phone: (888) 686-3472
- Email: [techsupport@hayesbicycle.com](mailto:techsupport@hayesbicycle.com)

### **Canada**

Smithtech

- Phone: (778) 987-6827
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S4 Suspension

- Phone: (450) 504-1148
- Email: [myriam@s4suspension.com](mailto:myriam@s4suspension.com)

### **Europe**

- Phone: +49 89 203237450
- Email: [techsupporteu@hayesbicycle.com](mailto:techsupporteu@hayesbicycle.com)

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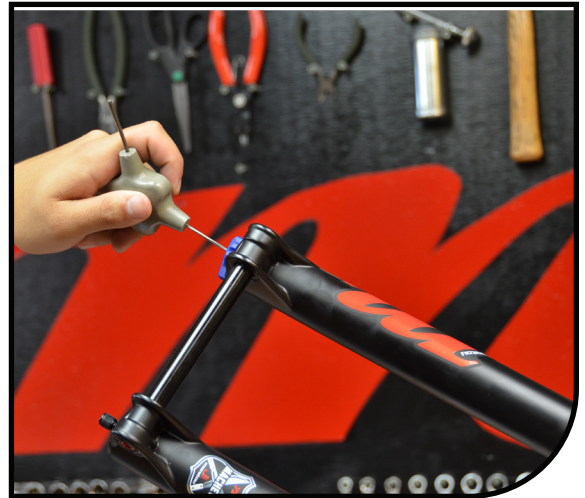


# TOOLS AND MATERIALS

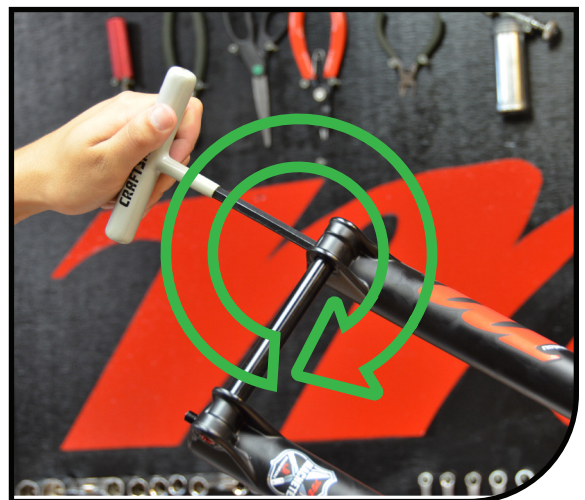
- Safety Glasses
- Nitrile Gloves
- Lint-Free Rags
- Slickoleum™ Grease
  - 10-Oz Tub – Manitou Part Number 20-32929
  - 5MI Tube – Manitou Part Number 141-33604-K001
- Semi-Bath Oil, 5/40W Synthetic
  - Manitou Part Number 85-0022
- 5W Maxima Fork Oil
  - Manitou Part Number 85-0023
- 32mm Seal Press
  - 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 Hex Socket
- 22mm Wrench, Open or Box End
- Cassette Tool (PRO IRT removal only)
- Torque Wrench
- 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.

**PRO ONLY:** unscrew air cap from IRT, depress schrader valve to ensure all air is released.

## **CAUTION**

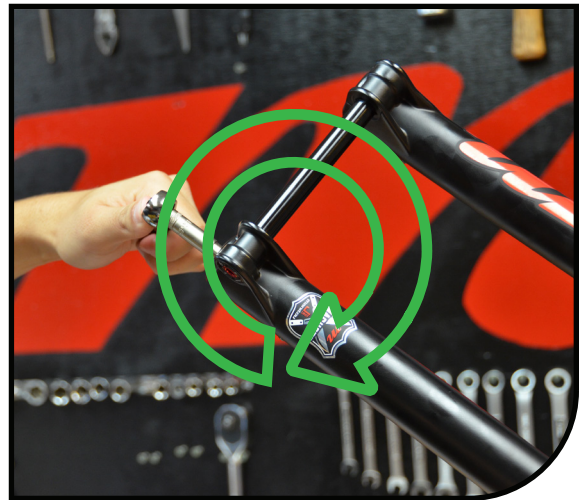
**Do not proceed to next step without completely depressurizing air spring**



# 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.



# CASTINGREMOVAL & 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** **PRO:** Using a standard cassette tool rotate air spring top cap counter-clockwise and remove when threads completely disengage from the stanchion.

**Expert:** 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.

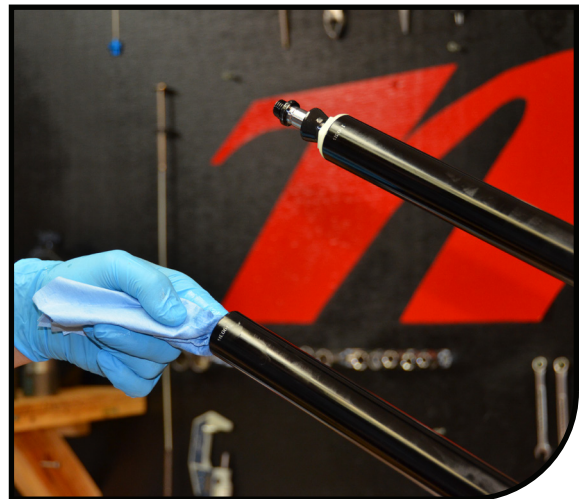


# AIR SPRING SERVICE

**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.



**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.

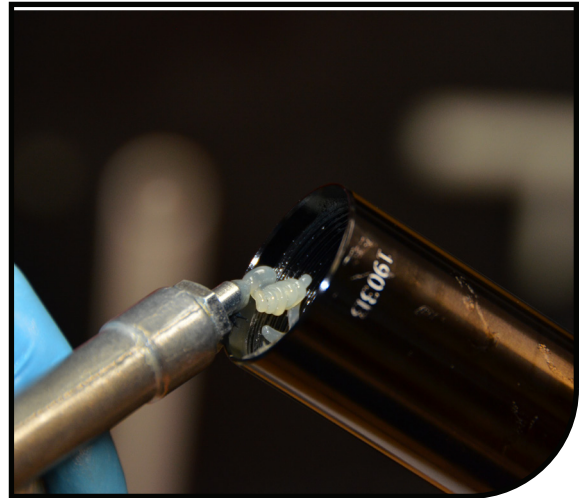


**5** Liberally grease the piston quad seal and outer surface with Slickoleum™ grease. Also add 3cc's of Slickoleum™ grease to the top of the air piston.

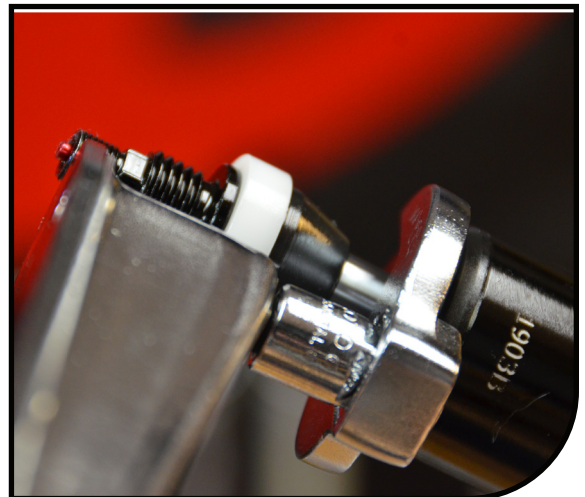


# AIR SPRING SERVICE

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



- 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** **PRO:** Apply Slickoleum™ grease to IRT piston and threads. Install IRT into stanchion. Torque to 60-80 in lbs [6.8-9.0 N m].

**Expert:** Install top cap into stanchion. Torque to 60-80 in

## NOTICE

lbs [6.8-9.0 N m].  
Make sure to apply top down force on the tool to prevent slipping.





# DAMPER SERVICE

- 1 Rotate adjuster knob counter-clockwise to its end stop. Holding the knob steady, insert 2mm hex wrench into adjuster knob screw and rotate the wrench counter-clockwise until threads completely disengage.



- 2 Remove the black compression knob, (2) detent balls, and (2) detent springs



- 3 Using Manitou 24mm Flat Ground Socket, rotate compression damper top cap counter-clockwise until threads completely disengage from the stanchion

## NOTICE

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





# DAMPER SERVICE

- 4 Remove compression damper assembly from the stanchion.



- 5 Pour fork oil into a catch pan.



- 6 Invert the fork. Using a 22mm wrench, rotate the rebound damper end cap counter-clockwise until threads completely disengage from stanchion.

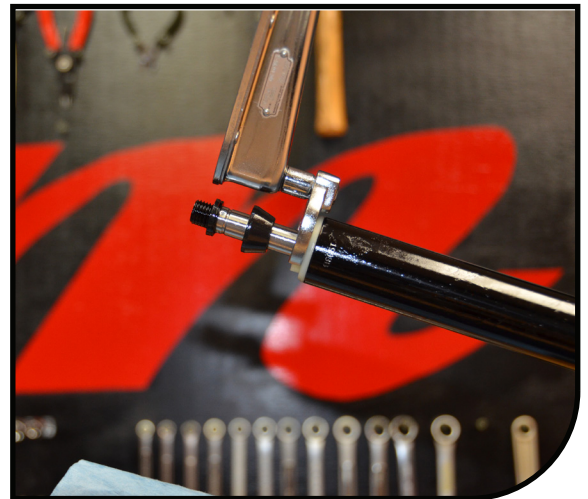


# DAMPER SERVICE

**7** 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.



**8** Install rebound damper 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]."



# CASTING INSTALL

**1** Before filling the fork with fork oil and installing the compression damper, we must first install the casting. This ensures a correct oil level. First, 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, pull on the comp rod to full extension (you should feel some compression of the internal top-out bumper). Remove the shock pump. This process will ease casting installation.



**3** Fully extend the rebound damper rod.





# CASTING INSTALL

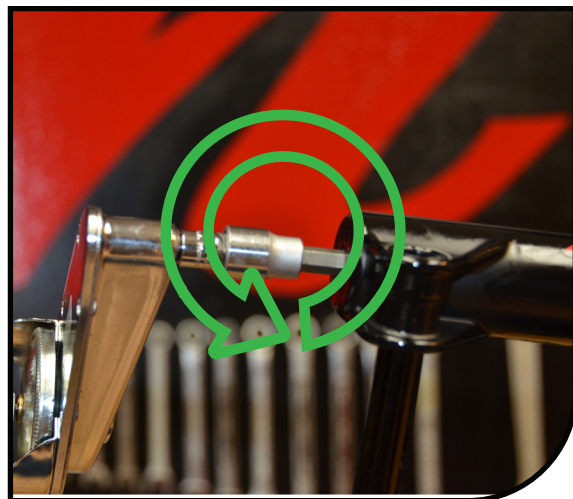
**4** Slide casting onto the stanchion assembly. Only slide the casting down about halfway at this point. Take care that the seal lips do not fold over upon installation.



**5** Insert 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.

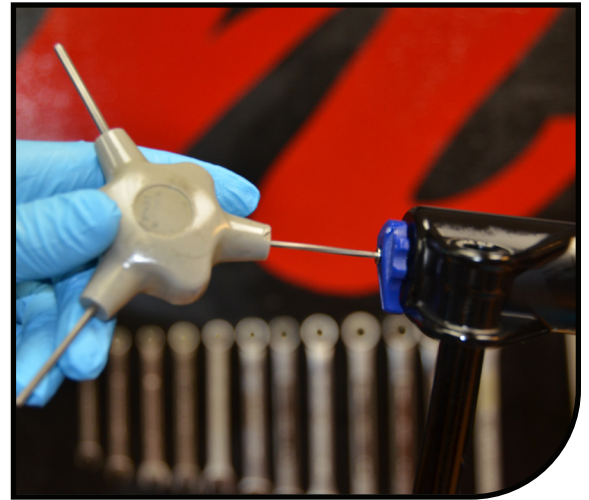


**6** Using an 8mm Hex wrench and torque wrench, tighten the rebound damper rod to 30–40 in lb [3.4–4.5 N m] by turning them **counter-clockwise**. Do not overtighten, as doing so can damage the end of the rods.

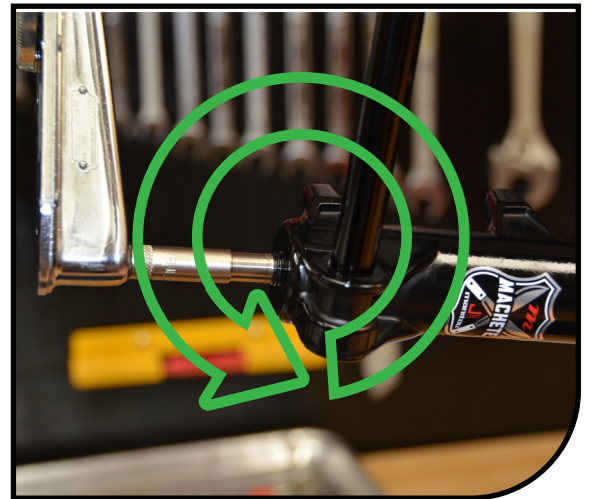


# CASTING INSTALL

- 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 Pour 5wt Maxima fork oil into the damper leg. Fill it up about  $\frac{3}{4}$  full.



- 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.





# COMPRESSION DAMPER INSTALL

**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 **73mm** for 20" Forks and **85mm** for 24" Forks. An oil height setting tool used for motorcycle forks (similar to the one pictured) makes this job easier.



**4** Turn adjuster hex on damper all the way counter-clockwise and install the Absolute+ damper into the fork.



**5** Using Manitou 24mm Flat Ground Socket and a torque wrench, rotate the compression damper top cap clockwise and tighten to 45-55 in lb [5.1-6.2 N m].



# COMPRESSION DAMPER INSTALL

**6** Install the detent springs and balls into the top cap, with one set oriented 180 degrees from the other. A small amount of grease may be used to hold the detents in place. Install the adjuster knob. Holding the knob steady, use a 2mm hex wrench to assemble the adjuster knob screw (rotating clockwise) and torque to 0.5-0.7 in lb [4-6 N m].



**7** Tightly assemble 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

## EXPERT AIR 100-120MM TRAVEL -20IN WHEEL

Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
30	14	20-24	4.4-1.6
45	20	30-36	2.0-2.5
60	27	40-48	2.7-3.3
75	34	49-59	3.4-4.1
90	41	59-71	4.1-4.9
<b>! WARNING !</b>			
<b>MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]</b>			

## EXPERT AIR 100-120MM TRAVEL -24IN WHEEL

Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
40	18	31-37	2.1-2.5
60	27	46-55	3.2-3.8
80	36	62-74	4.3-5.1
100	45	77-92	5.3-6.4
120	54	92-111	6.3-7.6
<b>! WARNING !</b>			
<b>MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]</b>			

## EXPERT AIR 120-145MM TRAVEL -24IN WHEEL

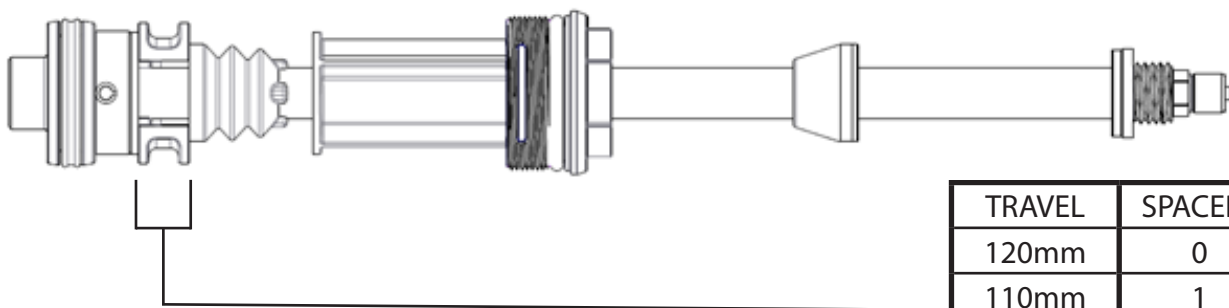
Rider Weight		Air Pressure	
LBS	KGS	PSI	[BAR]
40	18	25-31	1.8-2.1
60	27	38-46	2.6-3.2
80	36	51-62	3.5-4.3
100	45	63-77	4.4-5.3
120	54	76-92	5.3-6.3
<b>! WARNING !</b>			
<b>MAX PRESSURE NOT TO EXCEED 120 PSI [8.3 BAR]</b>			

# JUNIT MACHETE TRAVEL CHANGE

In order to change the travel of your JUNIT Machete (20" and 24"), first remove the compression rod assembly. For instructions on how to do this, refer to page 14. Once the rod is removed, arrange the travel spacers into the desired amount of travel using the following charts.

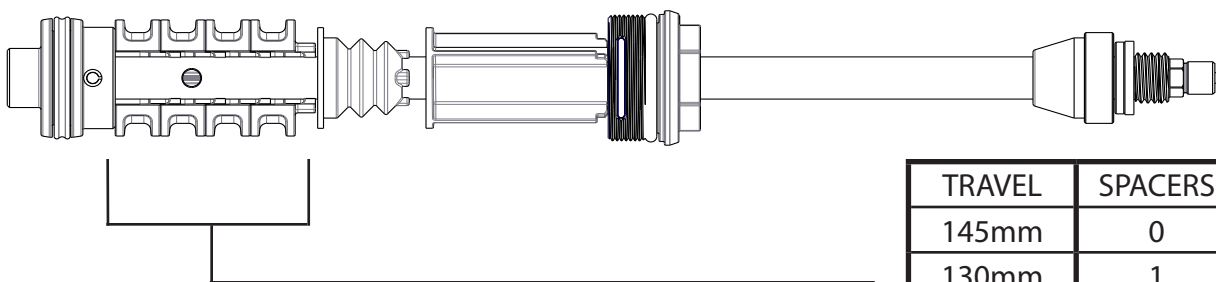
## JUNIT Machete Spacer Diagram

20"



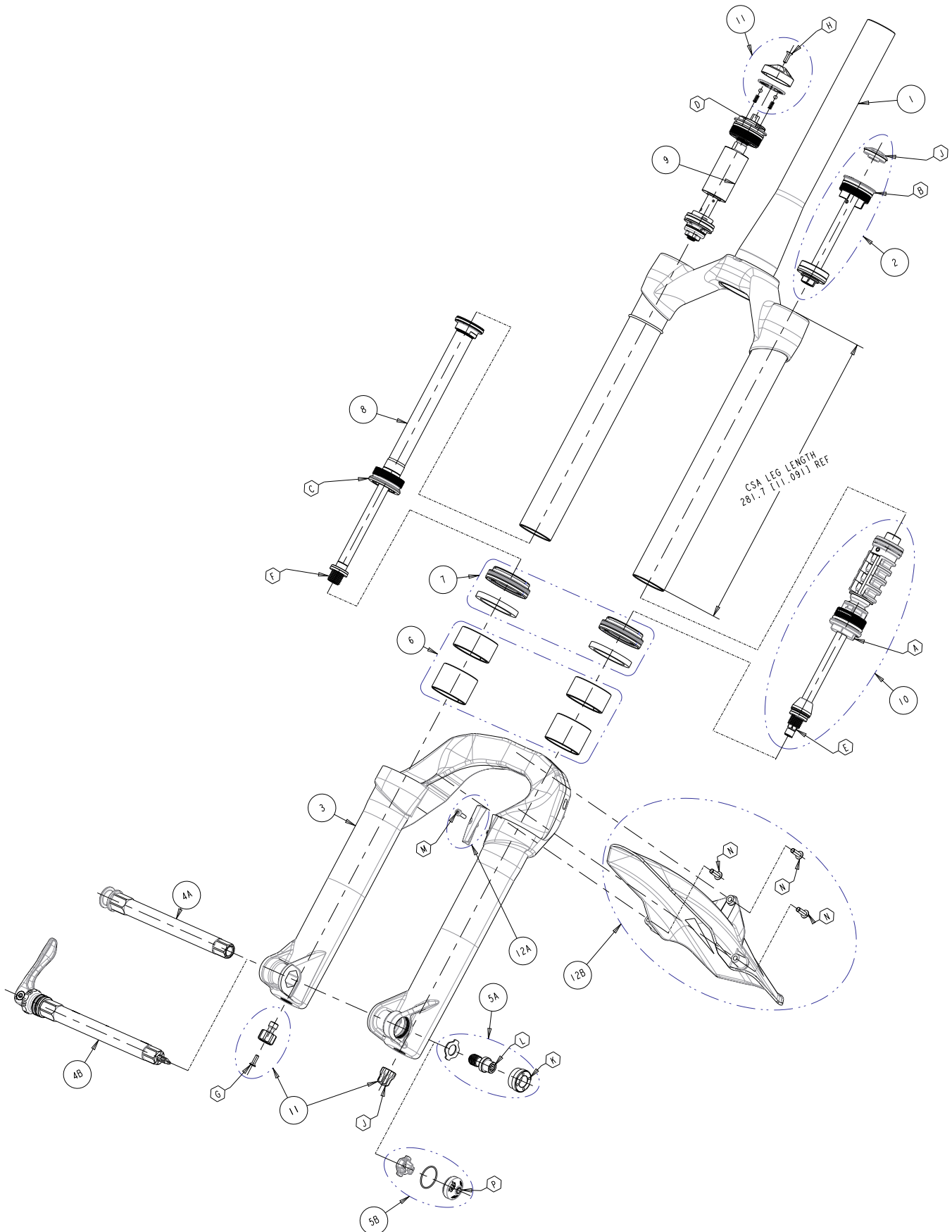
TRAVEL	SPACERS
120mm	0
110mm	1
100mm	2
90mm	3
80mm	4

24"



TRAVEL	SPACERS
145mm	0
130mm	1
120mm	2
110mm	3
100mm	4

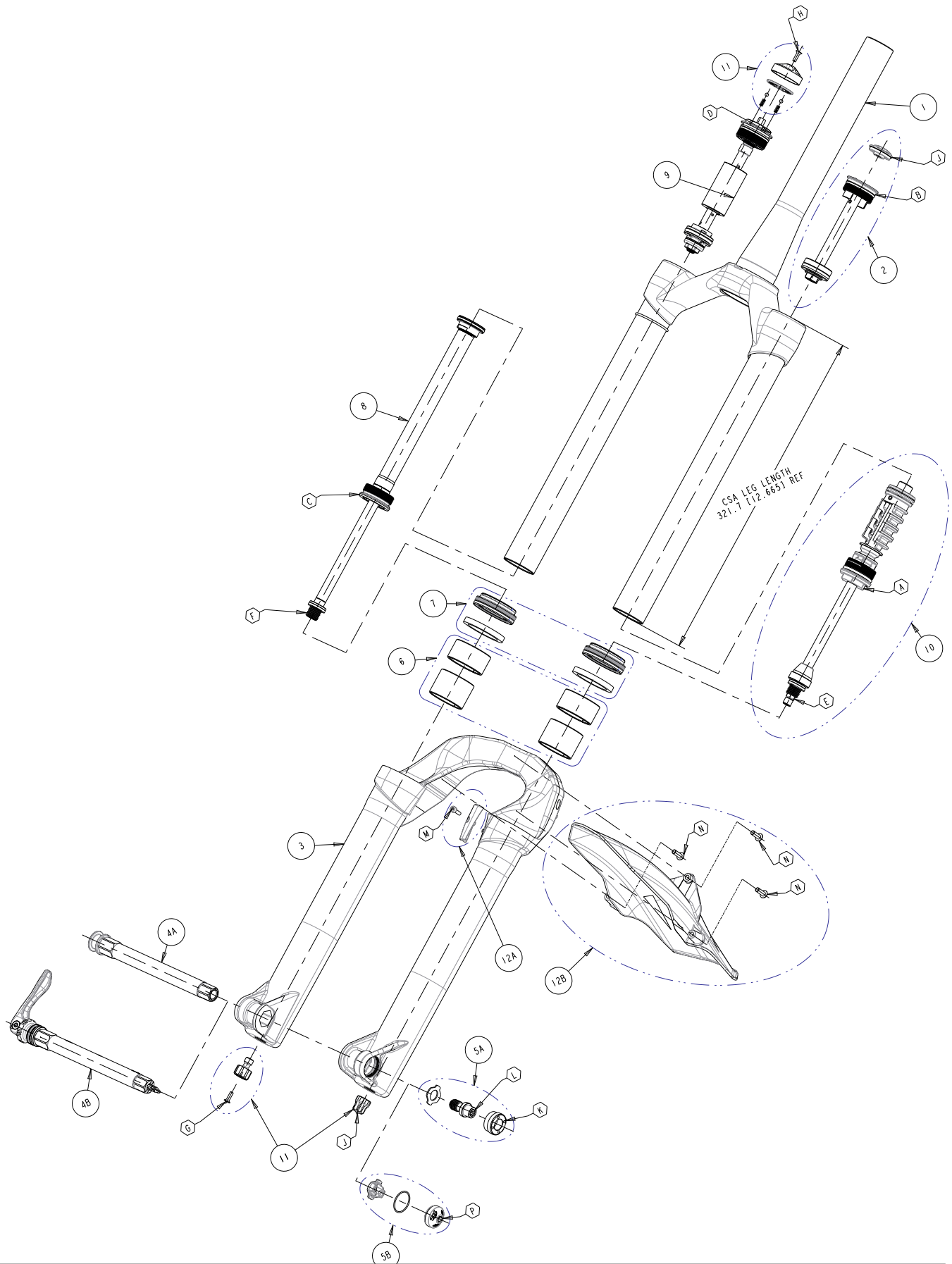
# JUNIT PRO 20" EXPLODED VIEW



# JUNIT PRO 20" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 20" 80/120, 10.25MM OS, SLVR, BLK LEG	141-36683-K026
2	KIT, IRT, 32MM	141-36683-K020
3	KIT, CASTING, 32MM 20" GBLK (INCL. BUSHINGS AND SEALS)	141-36683-K029
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	85-5964
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND DAMPER, Half Cartridge 20" 80/120	141-36683-K018
9	KIT, COMPRESSION DAMPER, ABS+ 20", YOUTH TUNE (INCL. ADJUSTER KNOB)	141-36683-K009
10	KIT, Dorado AIR, 32MM 20" 80/120	141-36683-K016
11	KIT, 32MM KNOB, PRO ABS+ & ADJ RBND	141-36683-K022
12	KIT, FENDER, MY20 MEZZER & KIDS FORK	141-36103-K001
	KIT, IVA, 32MM SHORT (OPTION, REPLACES ITEM 2)	141-32668-K011
	KIT, DECAJUNIT PRO 32MM	141-36683-K023
	KIT, ASSY, MILO AL W/ CABLE & HOUSING	193-24931-C001
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, REBUILD 32MM	141-28528-K010
	KIT, MATTOC SERVICE TOOL (8MM THIN-WALL SOCKET, 24MM FLAT SOCKET, & ENDCAP SOCKET)	172-31133

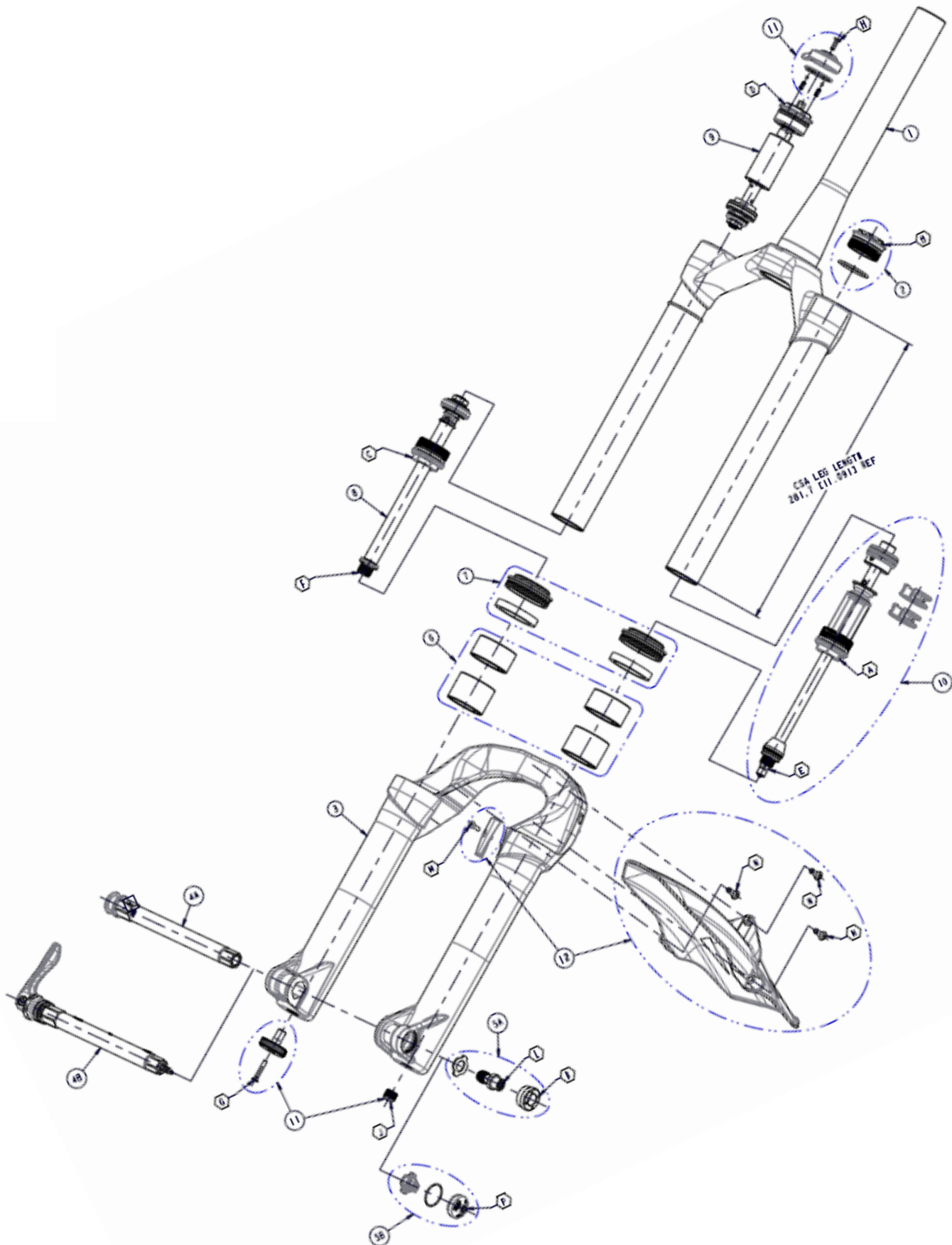
# JUNIT PRO 24" EXPLODED VIEW



# JUNIT PRO 24" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 24" 100/145, 12.25MM OS, SLVR, BLK LEG	141-36683-K027
	KIT, CSA 32MM 24" 100/145, 10.25MM OS, SLVR, BLK LEG	141-36683-K028
2	KIT, IRT, 32MM 24"	141-36683-K020
3	KIT, CASTING, 32MM 24" GBLK (INCL. BUSHINGS AND SEALS)	141-36683-K030
4A	KIT, AXLE, HEXLOCK LIGHTWEIGHT BOOST (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	85-5964
7	KIT, SEAL 32MM	141-38117-K016
8	KIT, REBOUND HALF-CART DAMPER, 24" 100/145	141-36683-K019
9	KIT, COMPRESSION DAMPER, ABS+ 24", YOUTH TUNE (INCL. ADJUSTER KNOB)	141-36683-K010
10	KIT, DORADO AIR, 32MM 24" 100/145	141-36683-K017
11	KIT, 32MM KNOB, PRO ABS+ & ADJ RBND	141-36683-K022
12	KIT, FENDER, MY20 MEZZER & KIDS FORK	141-36103-K001
	KIT, IVA, 32MM SHORT (OPTION, REPLACES ITEM 2)	141-32668-K011
	KIT, DECAL, JUNIT 32MM PRO, STANDARD & STEALTH GRAPHICS	141-36683-K023
	KIT, ASSY, MILO AL W/ CABLE & HOUSING	193-24931-C001
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, REBUILD 32MM	141-28528-K010
	KIT, MATTOC SERVICE TOOL (8MM THIN-WALL SOCKET, 24MM FLAT SOCKET, & ENDCAP SOCKET)	172-31133

# JUNIT EXPERT 20" EXPLODED VIEW

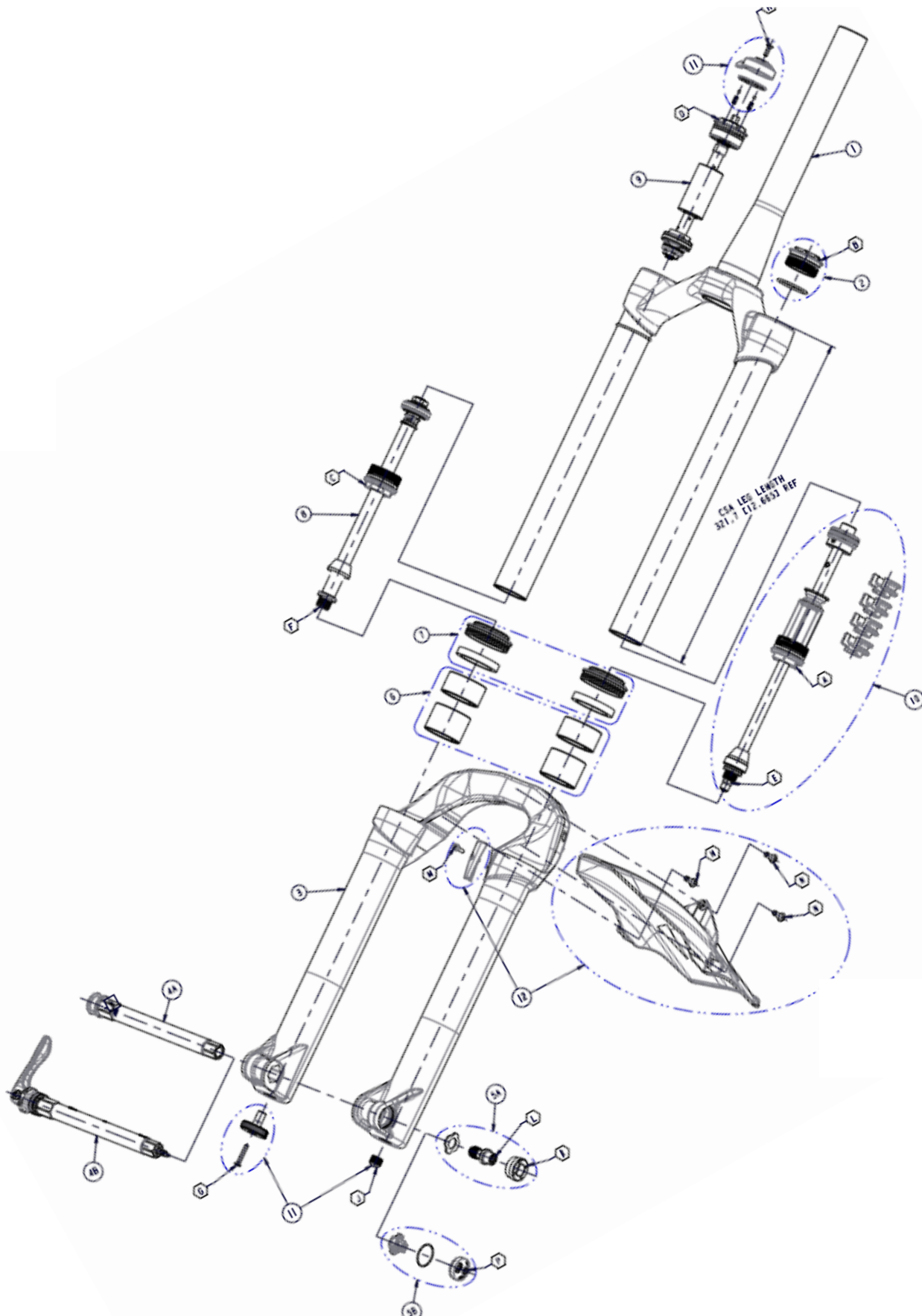


# JUNIT EXPERT 20" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 20" 80/120, 10.25MM OS, MBLK, BLK LEG	141-36683-K001
2	KIT, NON-IVA TOP CAP, 32MM	141-36683-K011
3	KIT, CASTING, 32MM 20" MBLK (INCL. BUSHINGS AND SEALS)	141-36683-K003
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	85-5964
7	KIT, SEAL 32MM	85-5293
8	KIT, REBOUND DAMPER, 20" 80/120	141-36683-K007
9	KIT, COMPRESSION DAMPER, ABS+ 20", YOUTH TUNE (INCL. ADJUSTER KNOB)	141-36683-K009
10	KIT, EXPERT AIR, 32MM 20" 80/120	141-36683-K005
11	KIT, 32MM KNOB, ABS+ & ADJ RBND	141-27177-K003
12	KIT, FENDER, MY20 MEZZER & KIDS FORK	141-36103-K001
	KIT, IVA, 32MM SHORT (OPTION, REPLACES ITEM 2)	141-32668-K011
	KIT, DECAL, YOUTH 32MM	141-36683-K012
	KIT, ASSY, MILO AL W/ CABLE & HOUSING	193-24931-C001
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, REBUILD 32MM	141-28528-K010
	KIT, MATTOC SERVICE TOOL (8MM THIN-WALL SOCKET, 24MM FLAT SOCKET, & ENDCAP SOCKET)	172-31133



# JUNIT EXPERT 24" EXPLODED VIEW



# JUNIT EXPERT 24" EXPLODED VIEW

ITEM	PART DESCRIPTION	KIT NUMBER
1	KIT, CSA 32MM 24" 100/145, 12.25MM OS, MBLK, BLK LEG	141-36683-K002
	KIT, CSA 32MM 24" 100/145, 10.25MM OS, MBLK, BLK LEG	141-36683-K013
2	KIT, NON-IVA TOP CAP, 32MM	141-36683-K011
3	KIT, CASTING, 32MM 24" MBLK (INCL. BUSHINGS AND SEALS)	141-36683-K004
4A	KIT, AXLE, HEXLOCK LIGHTWEIGHT BOOST (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	85-5964
7	KIT, SEAL 32MM	85-5293
8	KIT, REBOUND DAMPER, 24" 100/145	141-36683-K008
9	KIT, COMPRESSION DAMPER, ABS+ 24", YOUTH TUNE (INCL. ADJUSTER KNOB)	141-36683-K010
10	KIT, EXPERT AIR, 32MM 24" 100/145	141-36683-K006
11	KIT, 32MM KNOB, ABS+ & ADJ RBND	141-27177-K003
12	KIT, FENDER, MY20 MEZZER & KIDS FORK	141-36103-K001
	KIT, IVA, 32MM SHORT (OPTION, REPLACES ITEM 2)	141-32668-K011
	KIT, DECAL, YOUTH 32MM	141-36683-K012
	KIT, ASSY, MILO AL W/ CABLE & HOUSING	193-24931-C001
	KIT, ASSY, MILO REMOTE LOCKOUT, LEVER & CABLE	141-31975-K003
	KIT, REBUILD 32MM	141-28528-K010
	KIT, MATTOC SERVICE TOOL (8MM THIN-WALL SOCKET, 24MM FLAT SOCKET, & ENDCAP SOCKET)	172-31133

## GLOBAL HEADQUARTERS & HAYES BICYCLE GROUP USA

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