



2015 - 2016
Technical Manual
2015-5-26

General Information



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General Information



INTRODUCTION

Founded in a Vancouver bike shop in 1981, Rocky Mountain Bicycles has its roots firmly planted in the loamy soil of British Columbia's Coastal Mountains. As riders ourselves we strive to build the best bikes in the world. From epic adventures to World Cup racing, our bikes are designed for people who Love the Ride.

OUR MISSION

The purpose of this document is to provide certified mechanics with the comprehensive technical information required for the maintenance of Rocky Mountain frames. This includes parts diagrams, assembly instructions, and warranty information.

Please note: this document covers some critical dimensions of and references to third party parts and accessories, but its scope does not cover maintenance, repair, or replacement instructions for anything beyond our frames. Mechanics should refer to third party manufacturers' own documentation for further information.



General Information

SCHEDULED MAINTENANCE

In order to enjoy your Rocky Mountain bicycle to the fullest and to maximize the service life of your parts, we recommend that you carry out scheduled maintenance on your bicycle.

The chart below states the recommended maintenance intervals for average use of the bicycle:

	Every Ride	20 hrs	80 hrs
Check Tire Pressure	x		
Check Wheel QR / Axles	x		
Check Brake Function	x		
Inspect Frame for Damage	x		
Check Bolt Torque		x	
Inject Grease in Pivots (where applicable)		x	
Check Brake Pads		x	
Full Pivot Service			x
Inspect Chainring / Cog Wear/Chain Wear			x
Fork Service	As per fork manufacturer's specifications		
Rear Shock Service	As per shock manufacturer's specifications		

Please keep in mind that extreme dry (desert) or wet (rain forest or pressure washer) conditions warrant a decrease in the interval between full pivot service procedures.

General Information



LUBRICATION

Grease is required where the bolts contact metal such as a bearing or the frame. We strongly recommend *Bel-Ray waterproof grease*.

FRAME AND LINKAGE BEARING INSTALLATION

Warning: This is a difficult procedure that needs to be done by an experienced mechanic. Without a proper press and press-in tool, parts can get damaged very easily. If there is any uncertainty with this procedure, contact Rocky Mountain Bicycles Customer Service for assistance at: 1.800.663.2512

Again, caution should be taken as these bearings need to be pressed in square to the pivot using proper tools.

IGUS BUSHINGS EXPLAINED

Rocky Mountain Bicycles have been using low maintenance IGUS Bushings for many years.

Although ABC bushings can be used dry, we have found after extensive testing that greasing the bushings prevents the infiltration of dust into the system. We strongly recommend **Bel-Ray waterproof grease**.

After washing the bike with water the bushing area should be wiped clean to prevent dirt buildup. **Caution:** prolonged exposure to water can cause the bushings to swell.

IGUS INSTALLATION

The process for installation and removal of bushings is quite simple. The bushings are a mild friction fit and do not need any special tools to install or remove. To install the bushings, using a pivot thru-bolt works best. Slip the bushing over the thru-bolt with the bushing against the base of the bolt head and the round starter edge against the bore, press the thru-bolt lightly until the bushing is FLUSH with the face of the pivot mount. Once the bushings are installed, grease them with the recommended lubricant.

General Information



IGUS REMOVAL

Using a round metal dowel, gently punch the bushings through from the opposite side. Always replace with new bushings when re-assembling.

SEATPOST INSERTION EXPLAINED

Seat posts must be inserted at least 100mm (4 inches) into the seat tube on all full suspension frames for warranty to remain valid; this is to ensure maximum support of the saddle during riding.

SUSPENSION SETUP

To maximize suspension performance, the sag (the amount the shock compresses under rider weight) must be set correctly. A good starting point is to inflate the rear shock with one psi per pound of rider body weight. We recommend the following sag percentages:

Platform	Sag %	
	Front	Rear
Element	20%	30%
Thunderbolt	20%	30%
Instinct	20%	30%
Altitude	20%	30%
Slayer	20%	30%
Slayer SS	20%	30%
Flatline WC	20%	30%

Please refer to your rear shock owner's manual for additional shock tuning information

1.0 Hardware



1.1 "ONE---TOOL" HARDWARE

The bikes feature custom aluminum self-centering and countersunk hardware. The one-tool hardware system eases assembly and helps prevent the hardware from loosening off during use.

*Note: during assembly, make sure the keyed portion of the bolt is engaged and locked in place first, then tighten the screw.



Fig. 1.1.1 – Custom bolts



Fig. 1.1.2 – "One Tool" hardware.



1.2 ANGULAR BUSHING CONCEPT (ABC)

Some of the bikes feature ABC bushings for some moving pivots along with sealed ball bearings at the main pivot. This pivot system is designed to save approximately 80 grams over a conventional design, by removing multiple cartridge bearings and replacing them with lightweight polymer bushings. This system has the advantage of being significantly stiffer than normal ball bearings.

This system consists of 4 main parts, the ABC Bushings, Alloy Angular Contact Washers and the Alloy Through Bolt as seen in figures 1.2.1. and 1.2.2

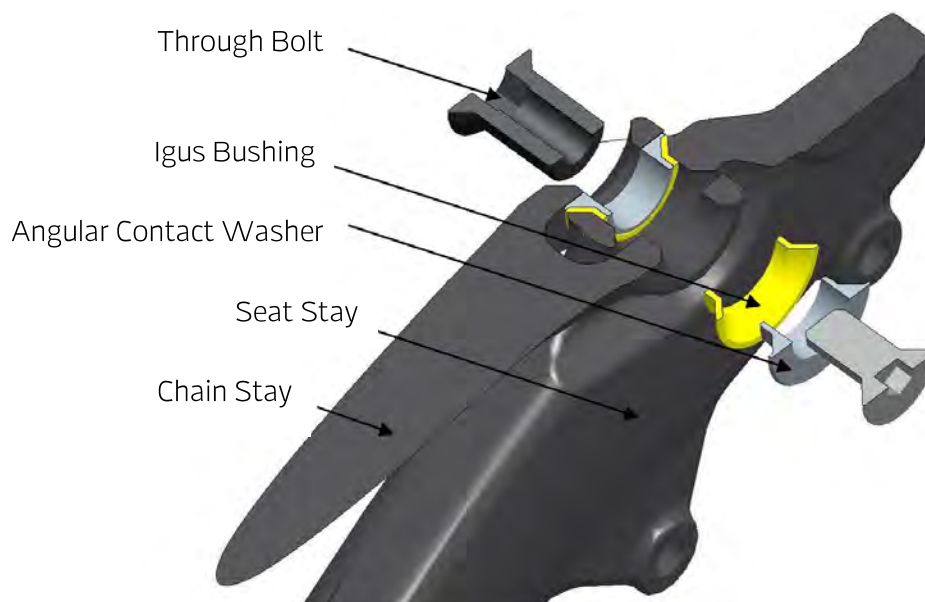


Figure 1.2.1 Chainstay / Seatstay pivot Cross-Section

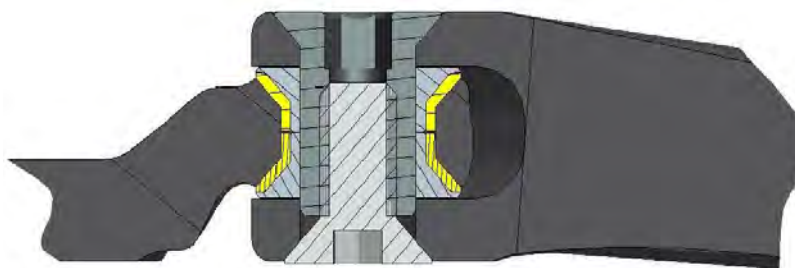


Figure 1.2.2 Chainstay / Seatstay pivot Cross-Section assembled

1.0 Hardware

1.3 BUSHING CONCEPT 2 (BC2)

The Thunderbolt MSL features the new BC2 pivot system on its link. It is very similar to the ABC pivots, however, the new system has 90 degree top-hat hardware and utilizes a grease port. This was done to considerably reduce the time required for pivot maintenance.

This system consists of 3 main parts; the BC2 Bushings, Alloy BC2 Contact Washers and the Alloy Through Bolt as shown in figures 1.3.1. and 1.3.2

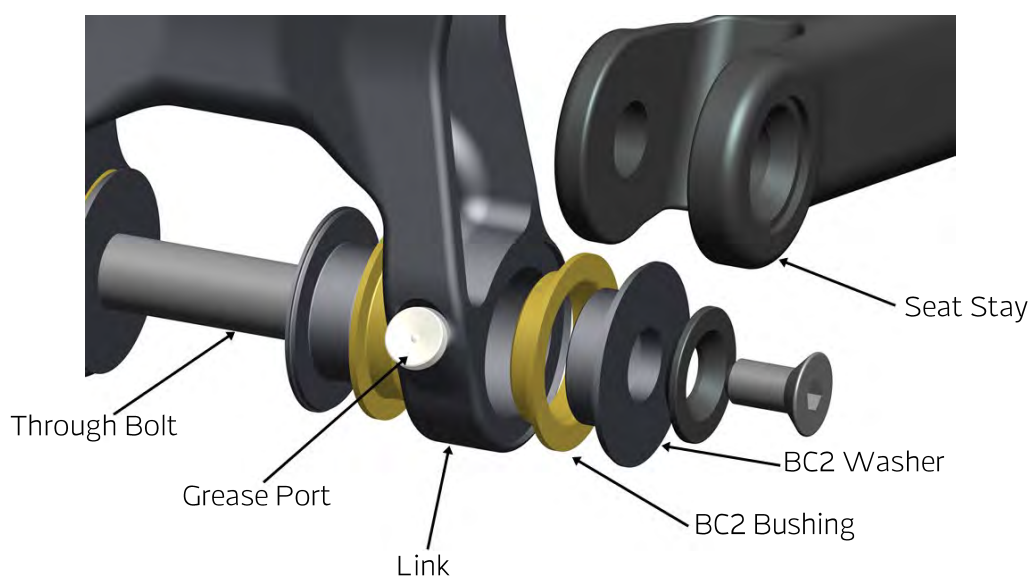


Figure 1.3.1 BC2 pivot exploded view

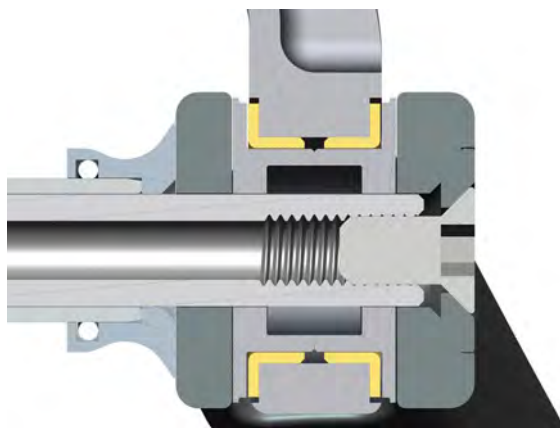


Figure 1.3.2 BC2 pivot cross-section

1.0 Hardware

1.4 PIPELOCK MAIN PIVOT

The Thunderbolt MSL features the PipeLock main pivot. This pivot system saves a considerable amount of weight by removing the cartridge bearings and instead uses a hollow PipeLock main pivot axle and lightweight polymer bushings. This system is significantly stiffer than traditional ball bearings.

The system consists of 4 main parts; the main pivot axles, main pivot collet, thrust washers and the bushings as shown in figures 1.4.1. and 1.4.2

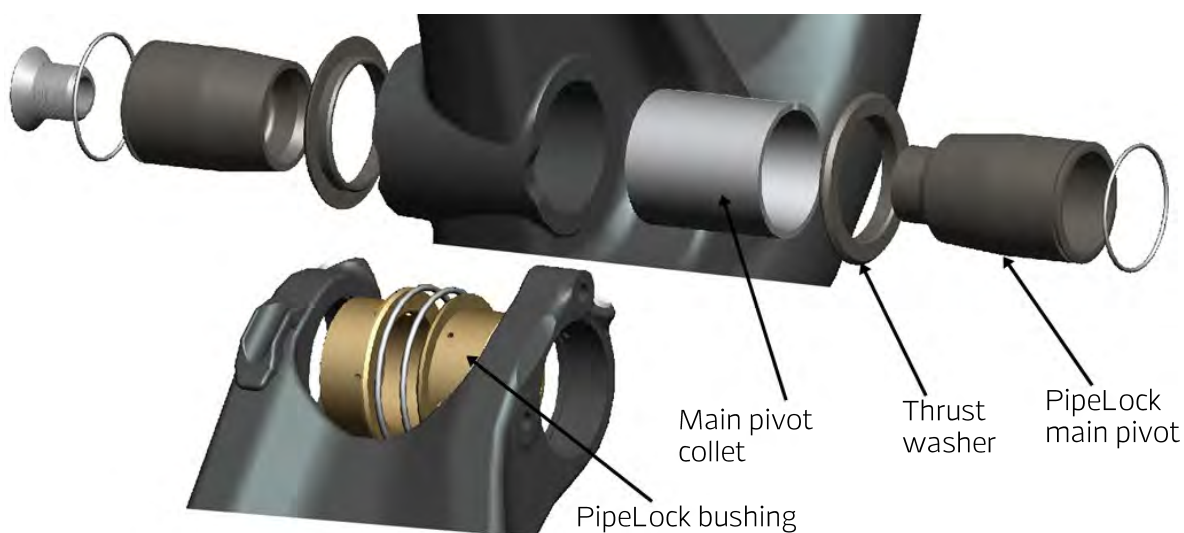


Figure 1.4.1 PipeLock main pivot exploded view

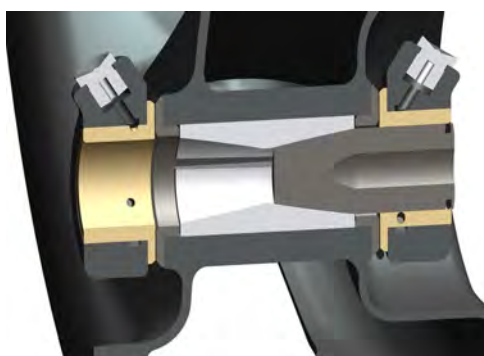


Figure 1.4.2 PipeLock grease port section view
with left half axle hidden

1.0 Hardware



1.5 TORQUE SPECIFICATIONS

The following table lists recommended torque specifications for a lubricated pivot assembly. Using a torque wrench, tighten fasteners to the following torque specs:

Screw Material	Screw Size	Thread pitch	N-m	lb-in	Lb-ft	kg-cm
Stainless Steel (316)	M5	0.8	3.7 - 4.0	32 - 35	2.7 - 3.0	38 - 41
Stainless Steel (316)	M6	1.0	6.7 - 9.0	60 - 80	5 - 6.7	69 - 92
Steel Gr.10.9, Zinc plated	M6	1.0	6.7 - 9.0	60 - 80	5 - 6.7	69 - 92
AL7075-T6, Anodized	M8	1.25	11.3 - 12.4	100 - 110	8.3 - 9.1	115 - 126
AL7075-T6, Anodized	M10	1.25	14 - 22	125 - 200	10.4 - 16.6	144 - 230
PipeLock Main Pivot	M12	1.0	12	110	8.9	120

Fig. 1.5.1 Recommended tightening torque spec. (coated w/blue loctite 243)

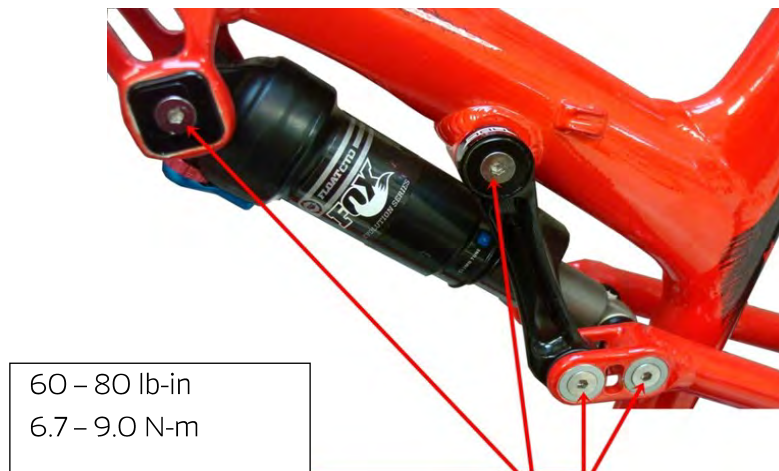


Fig. 1.5.2 Recommended tightening torque spec. (coated w/blue loctite 243)

1.0 Hardware



110 lb-in
12.0 N-m

Fig. 1.5.3 Recommended tightening torque spec. (coated w/blue loctite 243).

1.6 FASTENER ASSEMBLY

Assemble all fasteners with medium strength loctite 243 (blue) to prevent galling of threads and/or backing off of the screws while riding. Loctite should be applied to male threads, as seen in figure 1.6.1

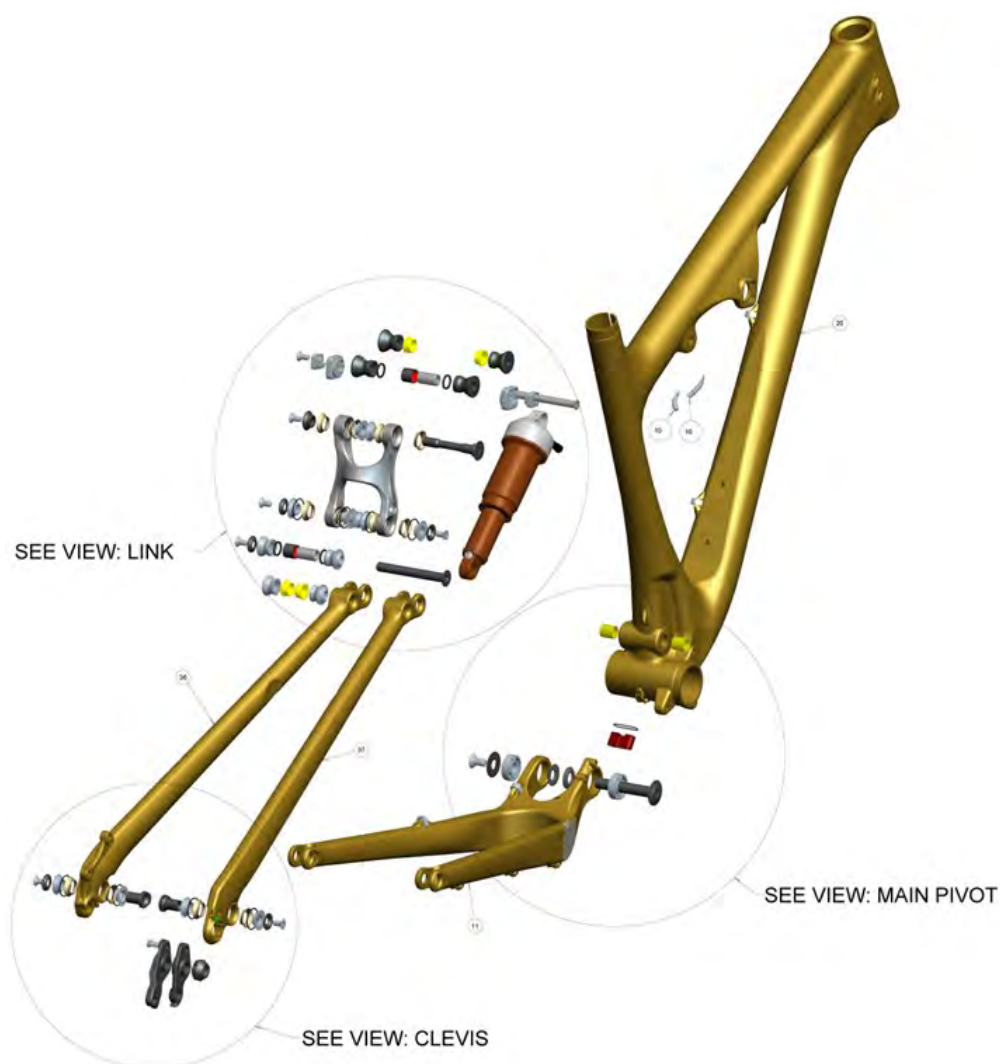


Fig. 1.6.1 Apply enough Loctite 243 to evenly coat the threads of the screws



2.0 Frame Assembly

*ASSEMBLY INSTRUCTION FOR ABC & BC2 BUSHING FRAMES
(ELEMENT, THUNDERBOLT, SHERPA, ALTITUDE AND INSTINCT)*



PREFACE

This next section is an example only, and intended to provide general information for the assembly of ABC bushing frame platforms.

The latest revision of the specific exploded Bill of Materials (B.O.M.) drawing shall be taken as current and accurate.

2.0 Frame Assembly



Fig. 2.0.1 Front and rear triangle parts

All metal inserts, bolts, bearings or screws that contact the frame need a layer of Bel-Ray waterproof grease applied to prevent corrosion, seizing and the ingress of dirt.

The first step in assembling the frame is to assemble the rear triangle. Fig. 2.0.2 shows the hardware required to assemble a complete frame.



Fig. 2.0.2 Hardware required for complete frame assembly

2.0 Frame Assembly



2.1 REAR TRIANGLE ASSEMBLY (ALL MODELS)

The rear triangle is assembled in the following steps:

Prepare the chain stay for assembly by pre-positioning the O-rings on each clevis, and greasing the inner surfaces of the chain stay pivots.

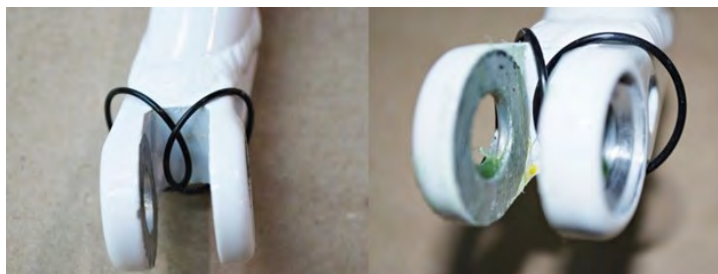


Fig. 2.1.1 Chainstay clevis with O-rings and grease

Prepare the seat stays by pressing the bushings in dry.



Fig. 2.1.2 Seat stay ABC surface before and after bushing installation

Grease the bushings, insert the ABC washers, then grease the external faces of the washers.



Fig 2.1.3 Seatstay ABC before and after installation

2.0 Frame Assembly



Assemble the chain stay and seat stays together making sure not to pinch the O-rings and then align the stays using the 9.7mm drift tool. Insert the "L" bolt into the chain stay.



Fig 2.1.4 Drift tool used to align seat/stay chain stay pivot

Grease the conical washer then apply loctite 243 (blue) to the screw.

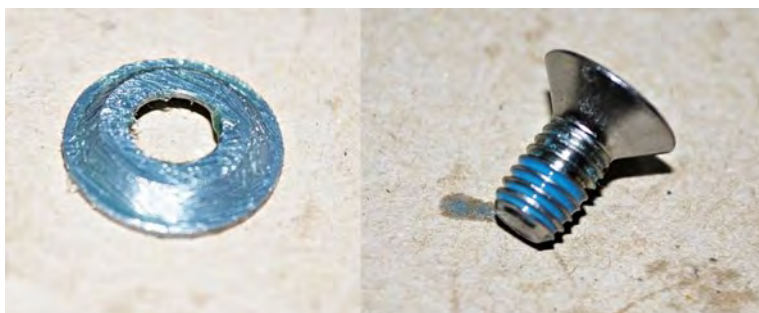


Fig. 2.1.5 Greased conical washer and LocTite coated screw

Tighten the screw and torque it to 60 - 80 in-lbs or 6.7 – 9.0 N-m. Afterwards position the O-rings and check that the seat stays move smoothly without any lateral play.

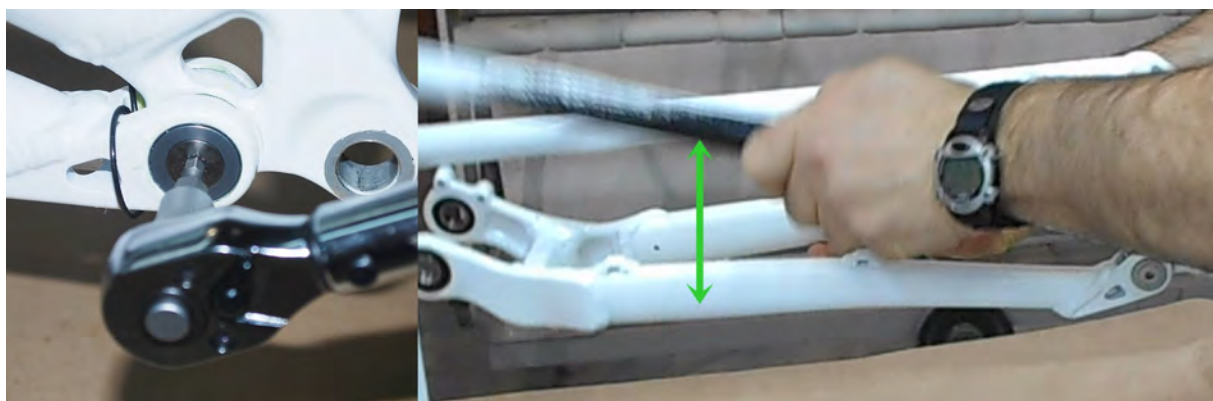


Fig. 2.1.6 Torque the seat stay/chain stay pivot then check for lateral play

2.0 Frame Assembly



2.2 ASSEMBLING THE MAIN PIVOT (ALL MODELS EXCEPT THUNDERBOLT MSL)

The rear triangle is assembled to the front triangle in the following steps:

Insert the sleeve bushings into the main pivot, with the rounded edge end first. These bushings have a tighter tolerance than the previous version and will require more force to insert.

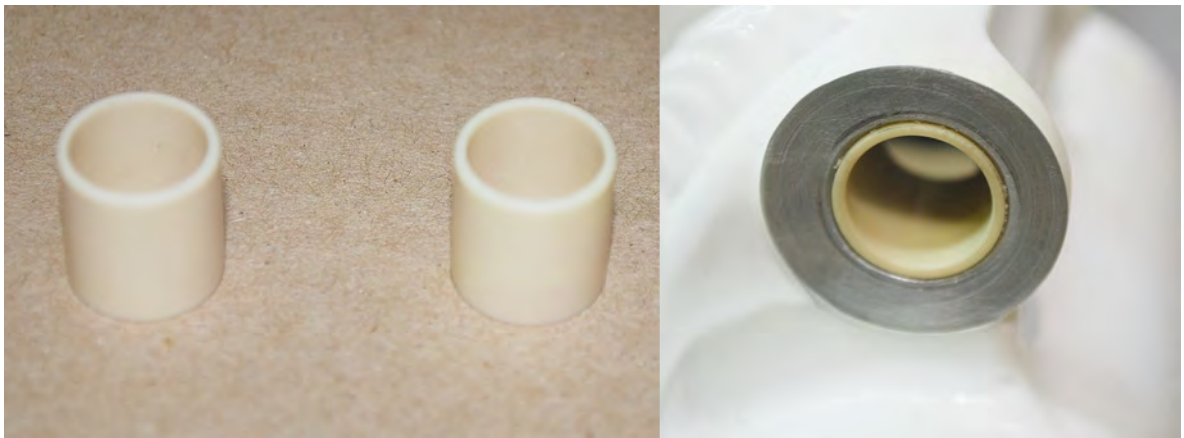


Fig. 2.2.1 Main pivot bushings before and after installation

Gently tap the bushings using the 11.7mm drift tool until they are flush with the pivot surface face of the frame. Grease the front triangle pivot surface face and the chain stay bearing surfaces.

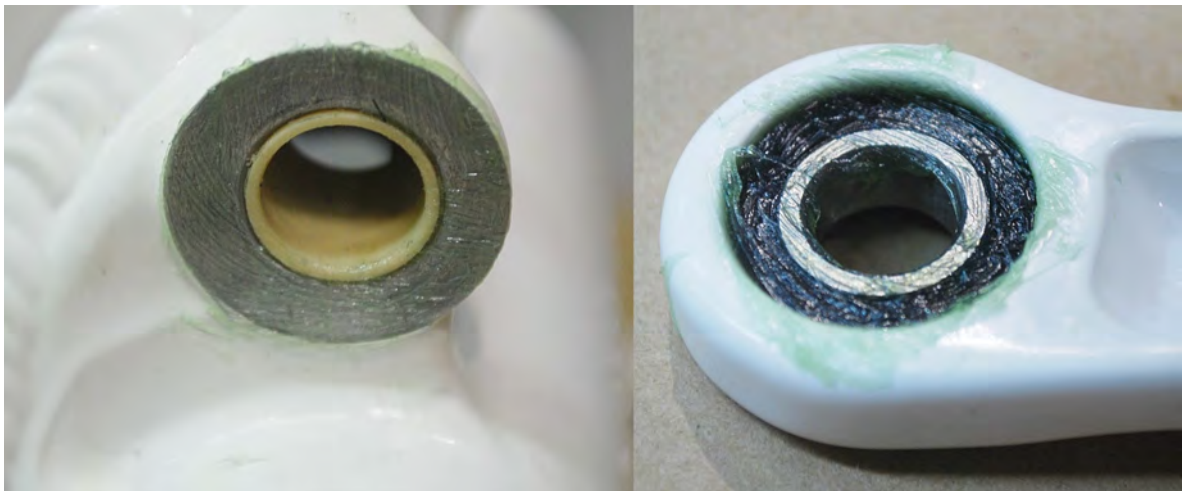


Fig. 2.2.2 Greased main pivot and bearing surfaces

2.0 Frame Assembly

Place the angular washers onto the bearings with the washer's small diameter side facing the bearings and grease the washer. Slide the chainstay onto the main pivot while being careful not to drop the washers when positioning the parts. Then align both parts with the 11.7mm drift tool



Fig. 2.2.3 Angular washer and 11.7mm drift tool

Insert the main pivot bolt making sure that it is well greased, and apply loctite 243 (blue) to the screw. The bolt is designed to be a tight fit to the frame bushings. Gently tap into place with a rubber mallet



Fig. 2.2.4 Main pivot hardware

Then tighten the screw and torque it to 100 - 110 in-lbs or 11.3 - 12.4 N-m.



Fig. 2.2.5 Torque the main pivot bolt to 11.3 - 12.4 N-m

2.0 Frame Assembly

2.3 ATTACHING THE REAR SHOCK TO THE SEAT STAYS (ALTITUDE / INSTINCT)

Insert the shock bolt into the drive-side seat stay, and then place a greased shock spacer onto the bolt with the conical face mating the seat stay.



Fig. 2.3.1 Shock bolt and spacer

Place the rear shock (with adjustments levers oriented forward and downwards) onto the bolt, and then place the second greased shock spacer onto the bolt with the conical face towards the non-drive-side seat stay.



Fig. 2.3.2 Rear shock and spacer

2.0 Frame Assembly



Now fully insert the shock bolt and then place a greased conical washer onto the non-drive-side seat stay.



Fig. 2.3.3 Shock bolt and conical washer

Apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 – 9.0 N-m .



Fig. 2.3.4 Screw with LocTite and torqued to 6.7–9.0 N-m

2.0 Frame Assembly



2.4 ATTACHING THE LINK TO THE SEAT STAYS (ALTITUDE/ INSTINCT)

Press 8x dry bushings into the link as shown in Fig. 2.4.1. Once inserted, grease the 4x lower bushings, then install the 4x lower ABC washers and grease them as well.



Fig. 2.4.1 Bushings pressed into the link then greased and greased washer

Place 2x O-rings onto each seat stay as shown in Fig. 2.4.2 and then grease all faces of the seat stays.



Fig. 2.4.2 O-rings positioned and greased seat stays

Position the link onto both stays making sure not to pinch the O-rings and align the stays using the 9.7mm drift tool. Then insert the sleeve bolts from the inboard side of both of the seat stays .



Fig. 2.4.3 Link positioned on seat stays and pivot bolt inserted

2.0 Frame Assembly



Place a greased conical washer onto each seat stay then apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 - 9.0 N-m.



Fig. 2.4.4 Conical washer and screw being torqued to 6.7-9.0 N-m

Position the O-rings over the ABC washers.



Fig. 2.4.5 O-rings positioned

2.0 Frame Assembly



2.5 ATTACHING THE LINK TO THE TOP TUBE (ALTITUDE/INSTINCT)

Grease the 2x inboard bushings, then place 2x ABC washers onto them. Grease the outside flat faces of the 2x washers and the top tube pivot surfaces. Position the link over the top tube pivot and align with the 9.7mm drift tool.



Fig. 2.5.1 Positioning the link on the top tube

Grease the outboard bushings, then insert the top tube pivot bolt into the link from the drive side.



Fig. 2.5.2 Inserting the pivot bolt into the link and pivot

Position the greased counter-sunk ABC washer into the link then apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 - 9.0 N-m.

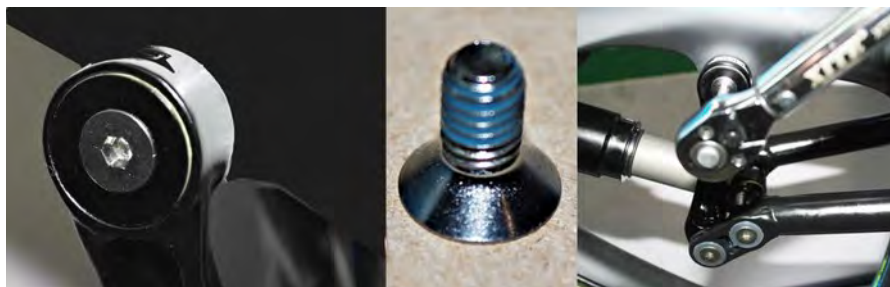


Fig. 2.5.3 Installing the Loctited screw and torquing it to 6.7-9.0 N-m

2.0 Frame Assembly



2.6 ATTACHING THE REAR SHOCK TO THE RIDE-9 SYSTEM (ALTITUDE/INSTINCT/THUNDERBOLT MSL)

Grease the shock spacers and position them on the rear shock then pre-align them with the Ride-9 system. For the desired Ride-9 setting go to: <http://www.bikes.com/en/stories/ride-9-explained>



Fig. 2.6.1 positioning the front shock spacers

Install the Ride-9 chips making sure that the shock bolt hole has a symmetrical orientation on both sides.

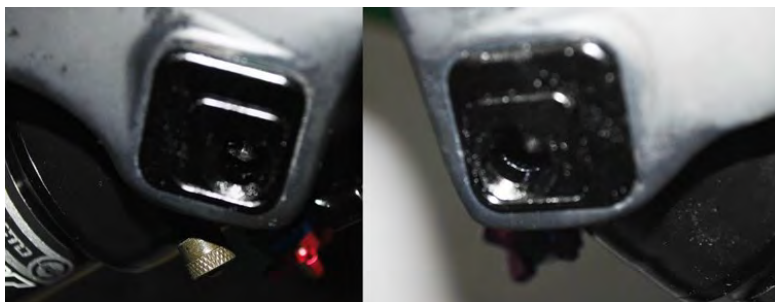


Fig. 2.6.2 Ride-9 chips with symmetrical orientation

Insert the 7.7mm drift tool from the non-drive-side to align the shock eye, then insert the top shock bolt from the drive side.



Fig 2.6.3 Using the 7.7mm drift tool to align the shock bolt

2.0 Frame Assembly



Grease the bolt threads, then torque the screw into the shock bolt at 60 - 80 in-lbs or 6.7 - 9.0 N-m [Do not put Loctite on this screw as you will possibly change your bike's geometry regularly].



Fig 2.6.4 Grease the Ride-9 bolt threads, do not apply Loctite



Fig 2.6.5 Assembled Shock and linkage

2.0 Frame Assembly

2.7 ATTACHING THE REAR SHOCK AND THE LINK TO THE SEAT STAY (ELEMENT/SHERPA/THUNDERBOLT ALLOY)

The major difference between the Altitude/Instinct frame shown previously and the Element/Thunderbolt is that the Element/Thunderbolt frame has a single clevis on the seat stays with both the shock and the link attached to it. There is also the absence of the Ride-9 system.



Fig 2.7.1 Hardware required for frame assembly

Press 8x bushings dry into the link, they should be a snap-fit. Then grease the 4x lower bushings and place 4x ABC washers on them. Grease the outside surfaces of the washers and place an O-ring on the inside ABC washers.



Fig 2.7.2 Link with bushings pressed in and greased washer

2.0 Frame Assembly

Place an O-ring on the outward facing clevis of each seat stay and grease all surfaces.



Fig. 2.7.3 O-ring positioned on outboard clevis and greased clevis

Grease both sides of the lower shock spacers and place them on the shock pin. Then carefully position the shock between both seat stays, keeping enough pressure on the seat stays to hold the shock in place. An adjustable strap such as a toe-clip strap or a plastic tie-strap, can be used for this by securing both seat stays together.



Fig. 2.7.4 Shock spacers

2.0 Frame Assembly



Insert the lower portion of the link into the seat stays, being careful to keep the ABC washers and inboard O-rings in place. Insert the 9.7mm drift tool to align the link and shock together, then insert the lower shock bolt from the drive side.



Fig. 2.7.5 Using the 9.7mm drift tool to align the seat stays with the link and shock

Place a greased conical washer onto the non-drive-side seat stay, then apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 - 9.0 N-m.

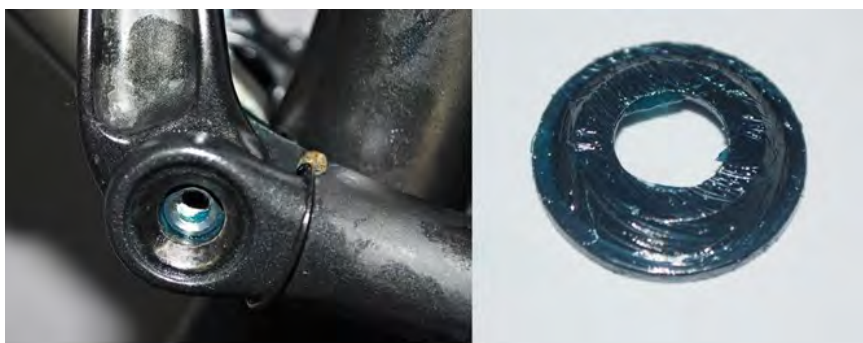


Fig. 2.7.6 Place a greased conical washer on the seat stay



Fig. 2.7.7 Apply Loctite to the screw and torque it to 6.7–9.0 N-m

2.0 Frame Assembly



2.8 ATTACHING THE LINK TO THE TOP TUBE (ELEMENT/SHERPA/THUNDERBOLT ALLOY)

Grease the 2x inboard bushings and place 2x ABC washers on them. Then grease the outer surfaces of the ABC washers. Position the link on the top tube and insert the 9.7mm drift tool to align the parts.



Fig. 2.8.1 Align the link with greased inboard washers using the 9.7mm drift tool

Grease the top pivot bolt and insert it into the link and top tube from the drive side .

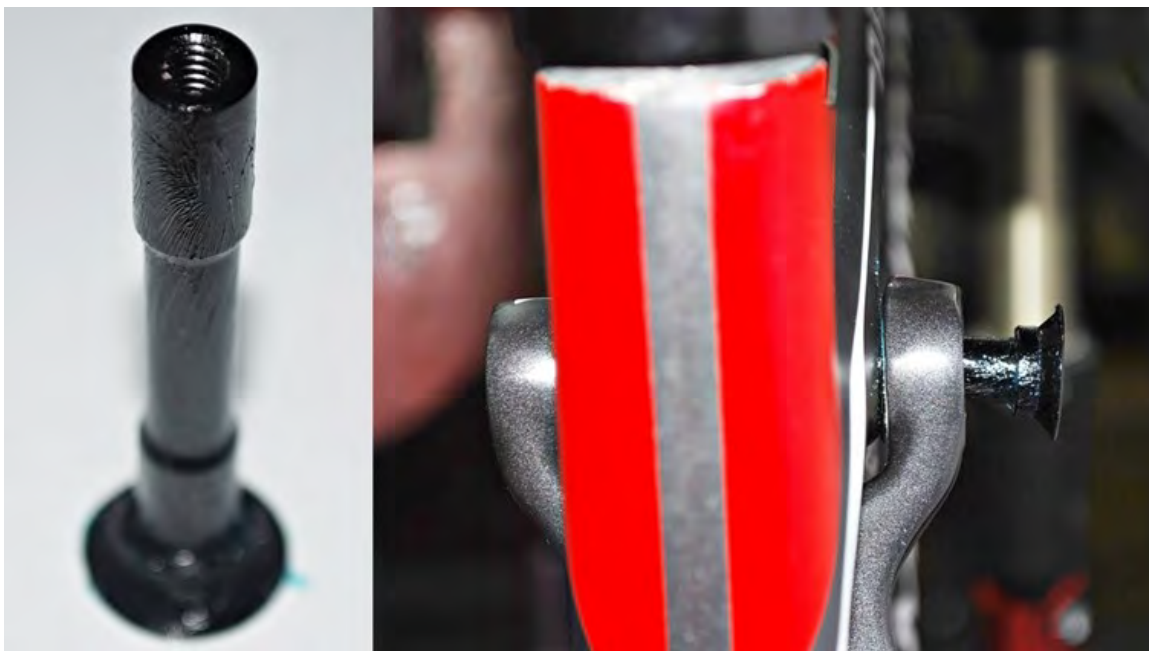


Fig. 2.8.2 Greased pivot bolt inserted from the drive side

2.0 Frame Assembly



Grease the non-drive-side bushing and place a counter-sunk ABC washer onto it.



Fig. 2.8.3 Greased bushing with counter-sunk ABC washer installed

Apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 – 9.0 N-m.



Fig. 2.8.4 Apply Loctite to the screw and torque it to 6.7–9.0 N-m

2.0 Frame Assembly



2.9 ATTACHING THE REAR SHOCK TO THE TOP TUBE (ELEMENT/SHERPA/THUNDERBOLT ALLOY)

Grease the inside of the forward shock spacers, and place them on the shock. Then grease the outside of the shock spacers.



Fig. 2.9.1 Grease the forward shock spacers

Position the forward end of the shock between the top tube pivots and then insert the 9.7mm drift tool to align the parts. Insert the greased shock bolt into the pivot from the drive side.

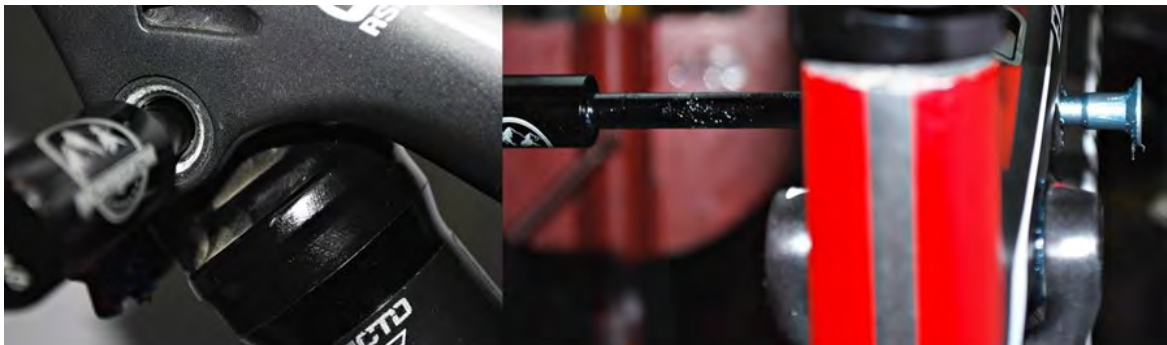


Fig. 2.9.2 Greased shock bolt inserted from the drive side

2.0 Frame Assembly



Place a greased conical washer on the non-drive-side, then apply Loctite 243 to the screw and torque it to 60 - 80 in-lbs or 6.7 - 9.0 N-m.



Fig. 2.9.3 Grease conical washer, then apply Loctite to the screw and torque it to 6.7–9.0 N-m



Fig. 2.9.4 Assembled Shock and linkage

2.0 Frame Assembly

2.10 ASSEMBLING THE PIPELOCK MAIN PIVOT (THUNDERBOLT MSL)

Insert the dry main pivot collet into the front triangle main pivot bore.



Fig. 2.10.1 Main pivot collet inserted into the frame

Then press the thrust washers into either side of the main pivot bore with a headset press ensuring that they bottom out and are parallel.



Fig. 2.10.2 Thrust washers pressed into the frame

Place two O-rings on the chainstay as shown, then insert the dry PipeLock main pivot bushings into the chain stay from the centre outwards. Press the bushing's thrust face on the edge of a table to ensure they have bottomed out against the chain stay bore.



Fig. 2.10.3 O-ring positioned and bushings pressed into the seat stay

2.0 Frame Assembly

Grease the PipeLock main pivot axle halves making sure that the mating surface of the non-threaded axle half is well greased. This is important for achieving correct bolt torque. Install the O-rings in the grooves. Then position the chain stay over the thrust washers and insert the PipeLock axle halves into the main pivot.



Fig. 2.10.4 Grease axle halves pressed into the chain stay

Apply Loctite 243 to the screw, insert it into the unthreaded PipeLock half axle and begin to engage the threads into the other half, then torque it to 100 - 110 in-lbs or 11.3 - 12.4 N-m. Position the O-rings that were placed previously on the chain stay in the joint between the thrust washer and the bushing.



Fig. 2.10.5 Apply Loctite to the screw and torque it to 11.3 - 12.4 N-m and position O-rings

Inject grease into the chain stay's 2 grease ports until the grease blows out either the axle or thrust O-ring. Wipe off the excess grease with a clean rag.



Fig. 2.10.6 Inject grease into the grease ports

2.0 Frame Assembly

2.11 ATTACHING THE LINK TO THE SEAT STAYS (THUNDERBOLT MSL)

Insert the small O-ring into the lower shock reducers then grease the reducers and position them on the shock.



Fig. 2.11.1 Grease the shock reducers and place them on the shock

Press the 8x bushings into the link dry, then grease the inside faces of all 8x bushings. Then place the 4x lower washers over the bushings. Afterwards position two O-rings on each seat stay.



Fig. 2.11.2 Bushings pressed into the link, then greased. Washer and O-rings positioned

Make sure that the lower grease ports of the link will be facing forward when the link is rotated up. Then Insert the pivot bolt from the drive side just until it is even with the inside edge of the seat stay and rotate the non-drive side seat stay until the seat stay hole lines up with the lower link holes. Position the inner O-rings on both seat stay/link junctions. Once that is done, rotate the link upwards, install the rear shock and finish inserting the bolt.



Fig. 2.11.3 Insert the pivot bolt from the drive side into the seat stay and shock

2.0 Frame Assembly

Apply Loctite 243 to the screw, and torque it to 60 - 80 in-lbs or 6.7 – 9.0 N-m. Then position the O-rings that were placed previously on the outer seat stays in the joints between the washers and the bushings.

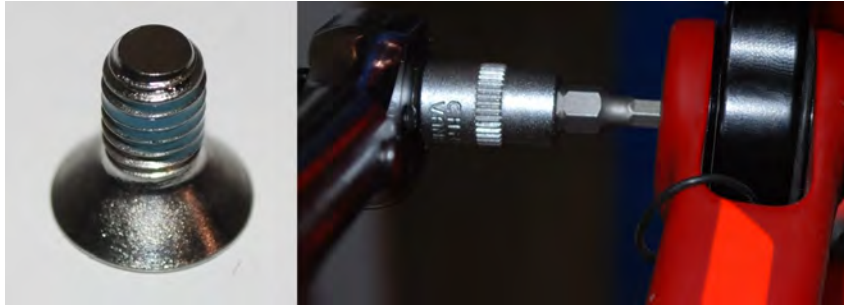


Fig. 2.11.4 Apply Loctite to the screw and torque it to 6.7–9.0 N-m

2.12 ATTACHING THE LINK TO THE TOP TUBE (THUNDERBOLT MSL)

Place an O-ring over each side of the link then insert the washers on the inside faces of the link and grease them. Position the link on the top tube and insert the greased top hat pivot bolt.



Fig. 2.12.1 Insert top tube pivot bolt from the drive side

Apply Loctite 243 to the screw, and torque it to 60 - 80 in-lbs or 6.7 – 9.0 N-m. Position the two O-rings that were placed previously on the link, on the washer contacting the top tube.

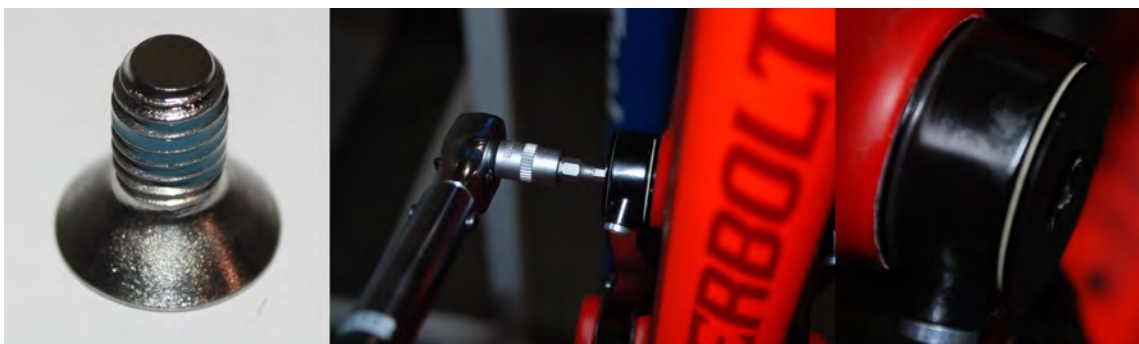


Fig. 2.12.2 Apply Loctite to the screw and torque it to 6.7–9.0 N-m

2.0 Frame Assembly

Position two O-rings on the link in the outboard joints between the washers and the bushings making sure that they are stretched into place and not rolled.

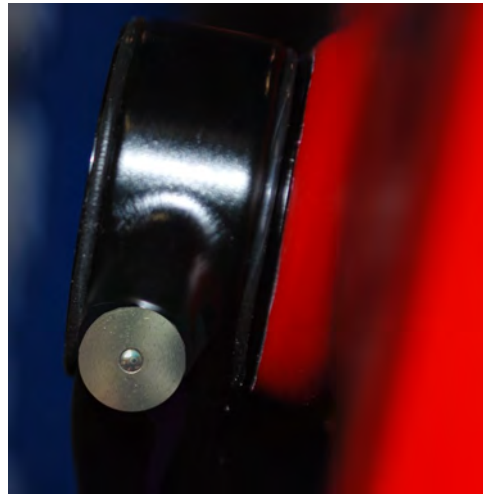


Fig. 2.12.3 O-rings positioned on the top tube link

Inject grease into the link's 4x grease ports until the grease blows out of the O-rings. Wipe off the excess grease with a clean rag.

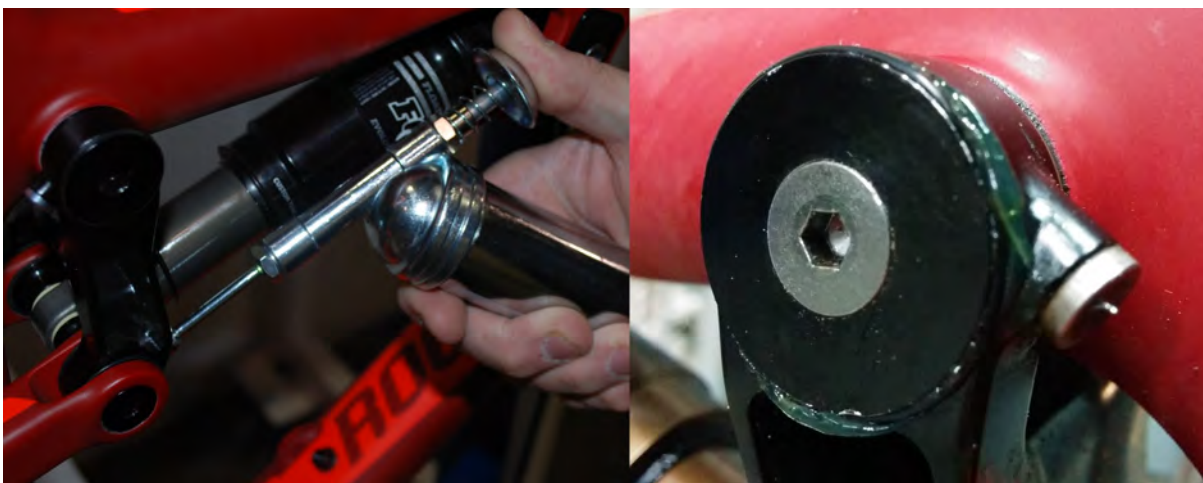
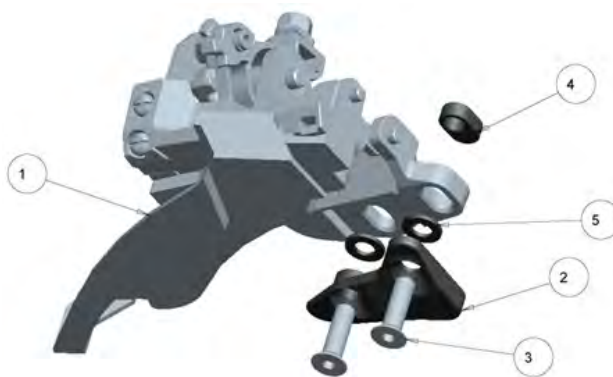
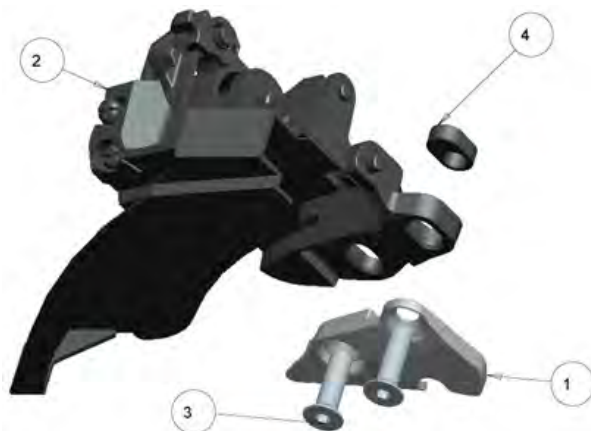


Fig. 2.12.4 Inject grease into the grease ports

3.0 FRONT DERAILLEUR KITS

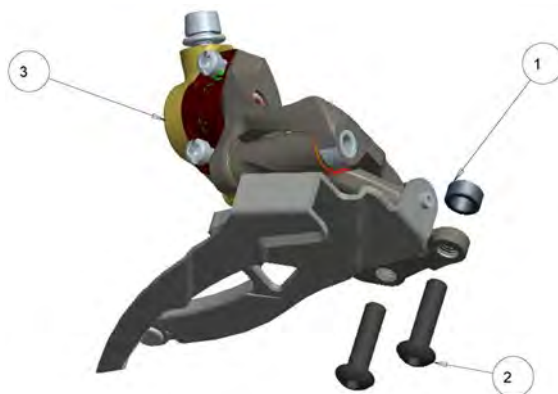


SHIMANO 2-SPEED FRONT DERAILLEUR KIT FOR 39T/27T CRANK ONLY			
#	QTY	PART NO.	DESCRIPTION
1	1	N/A	SHIMANO E-MOUNT FD, 2 SPEED.
2	1	1091042PMG	2-SPEED SHIMANO ANTI-CHAINDROP PLATE, E-MOUNT, AL6061-T6
3	2	180565FBY-018	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 16mm
4	1	180473	E-TYPE FD SLOT SPACER, FOR THRU BOLT; AL6061
5	2	180049FBY	STEEL WASHER, M8, ZP, M5.

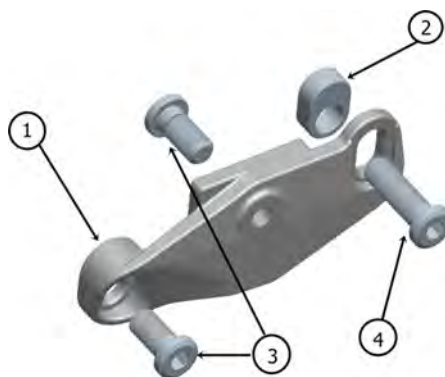


SHIMANO 3-SPEED FRONT DERAILLEUR KIT			
#	QTY	PART NO.	DESCRIPTION
1	1	1091040	ANTI-CHAINDROP PLATE, DIRECT E-MOUNT, AL6061-T6, HARD BLACK ANO
2	1	N/A	FRONT DERAILLEUR, 3-SPEED, E-TYPE, WITHOUT BB PLATE
3	2	180565FBY-018	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 16mm
4	1	180473	E-TYPE FD SLOT SPACER, FOR THRU BOLT; AL6061

3.0 FRONT DERAILLEUR KITS

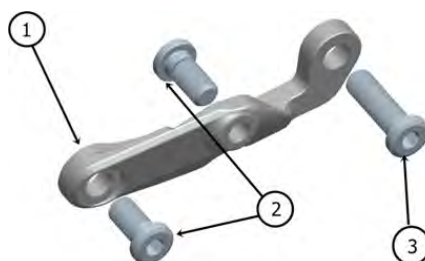


SRAM 2-SPEED & 3-SPEED FRONT DERAILLEUR KIT			
#	QTY	PART NO.	DESCRIPTION
1	1	180573PMG	E-TYPE FD SPACER, FOR SRAM; AL6061-T6. OD:8.5; ID:5.2; T:4.
2	2	180574FBY	DOMED HEAD CAP SCREW, M5X20MM. ZINC PLATED FABORY
3	1	N/A	SRAM E-MOUNT FD. 2-SPEED OR 3-SPEED

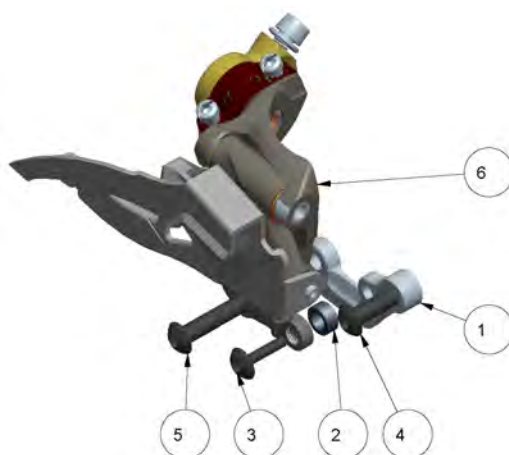


SLAYER KIT FOR SHIMANO 2-SPEED FRONT DERAILLEUR			
#	QTY	PART NO.	DESCRIPTION
1	1	1091019AST	E-TYPE F DER PLATE BOLT ON FOR SHIMANO
2	1	180473	E-TYPE FD SLOT SPACER, FOR THRU BOLT; AL6061
3	2	180474-010	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 10mm
4	1	180474-016	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 16mm

3.0 FRONT DERAILLEUR KITS

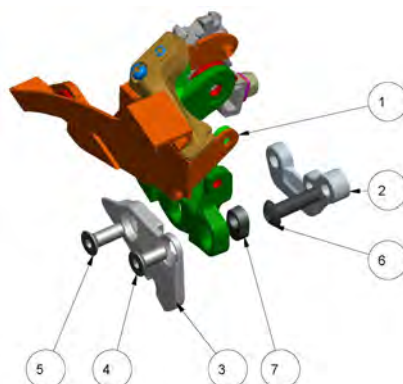


SLAYER KIT FOR SRAM 2-SPEED FRONT DERAILLEUR			
#	QTY	PART NO.	DESCRIPTION
1	1	1091028	E-TYPE FD SPACER, FOR SRAM; AL6061-T6. OD:8.5; ID:5.2; T:4.
2	2	180474-010	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 10mm
3	1	180474-016	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 16mm

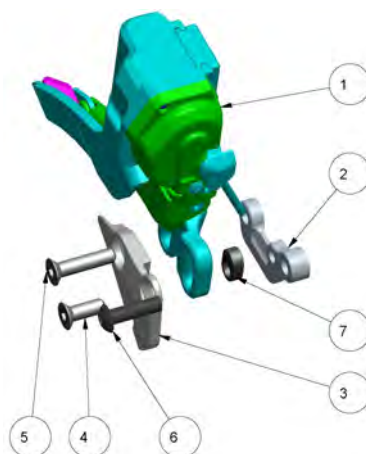


THUNDERBOLT MSL KIT FOR SRAM FRONT DERAILLEUR			
#	QTY	PART NO.	DESCRIPTION
1	1	1095066	2015 THUNDERBOLT FD ADAPTER PLATE, FOR S3 LDM E-TYPE
2	1	180573PMG	E-TYPE FD SPACER, FOR SRAM; AL6061-T6. OD:8.5; ID:5.2; T:4.
3	1	180574-014	DOME HEAD SCREW, M5X14MM, ZINC PLATED
4	1	180574-018	DOME HEAD SCREW, M5X18MM, ZINC PLATED
5	1	180574-022	DOME HEAD SCREW, M5X22MM ZINC PLATED
6	1	N/A	SRAM E-MOUNT FD. 2-SPEED OR 3-SPEED

3.0 FRONT DERAILLEUR KITS



THUNDERBOLT MSL KIT FOR SHIMANO MECHANICAL FRONT DERAILLEUR			
#	QTY	PART NO.	DESCRIPTION
1	1	N/A	FRONT DERAILLEUR
2	1	1095066	2015 THUNDERBOLT FD ADAPTER PLATE, FOR S3 LDM E-TYPE
3	1	1091040	ANTI-CHAINDROP PLATE, DIRECT E-MOUNT, AL6061-T6, HARD BLACK ANO
4	1	180472-012	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 12mm, A4/316 STAINLESS STEEL
5	1	180472-014	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 14mm, A4/316 STAINLESS STEEL
6	1	180574-018	DOME HEAD SCREW, M5X18MM, ZINC PLATED
7	1	180473	E-TYPE FD SLOT SPACER, FOR THRU BOLT; AL6061

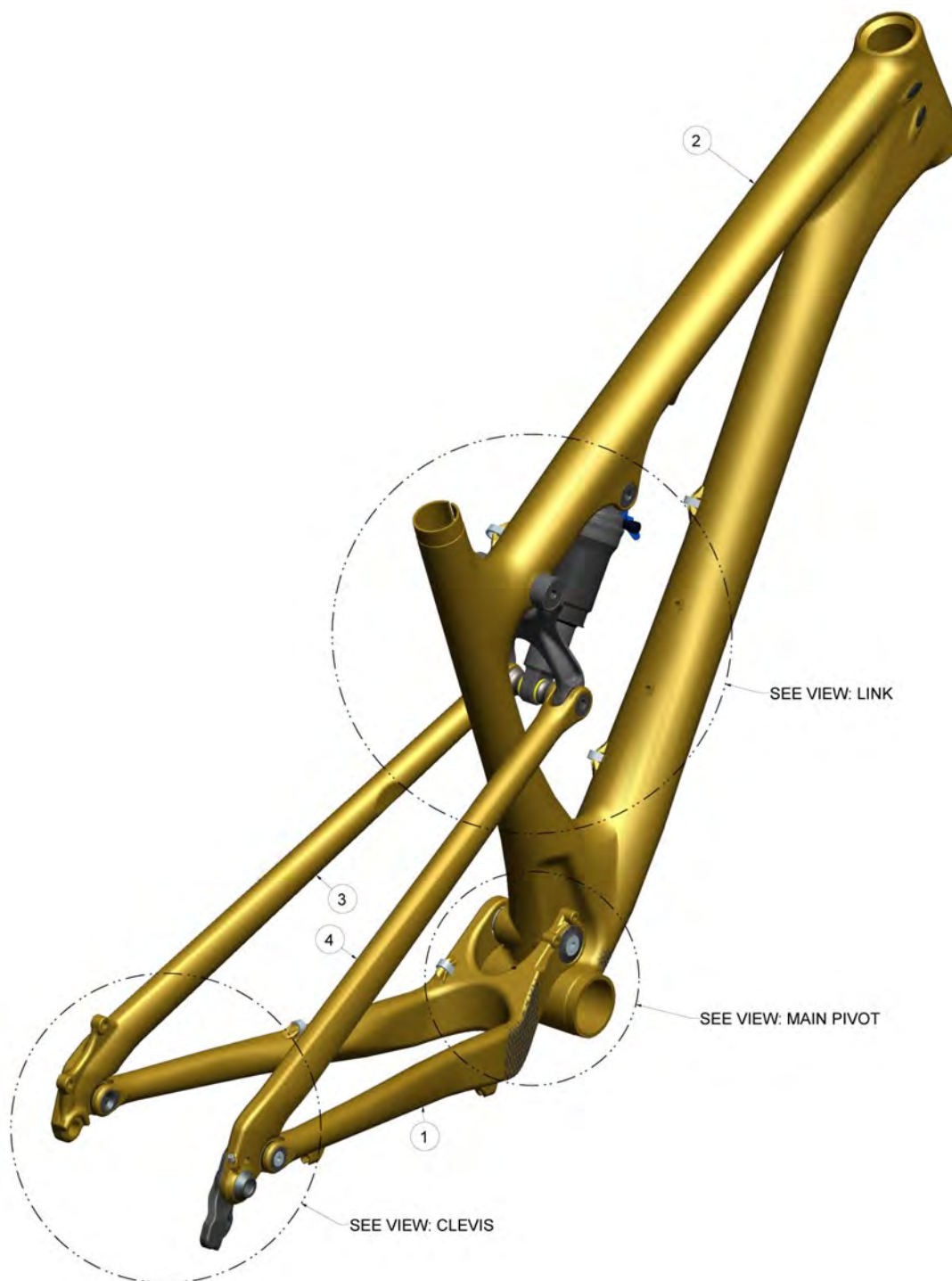


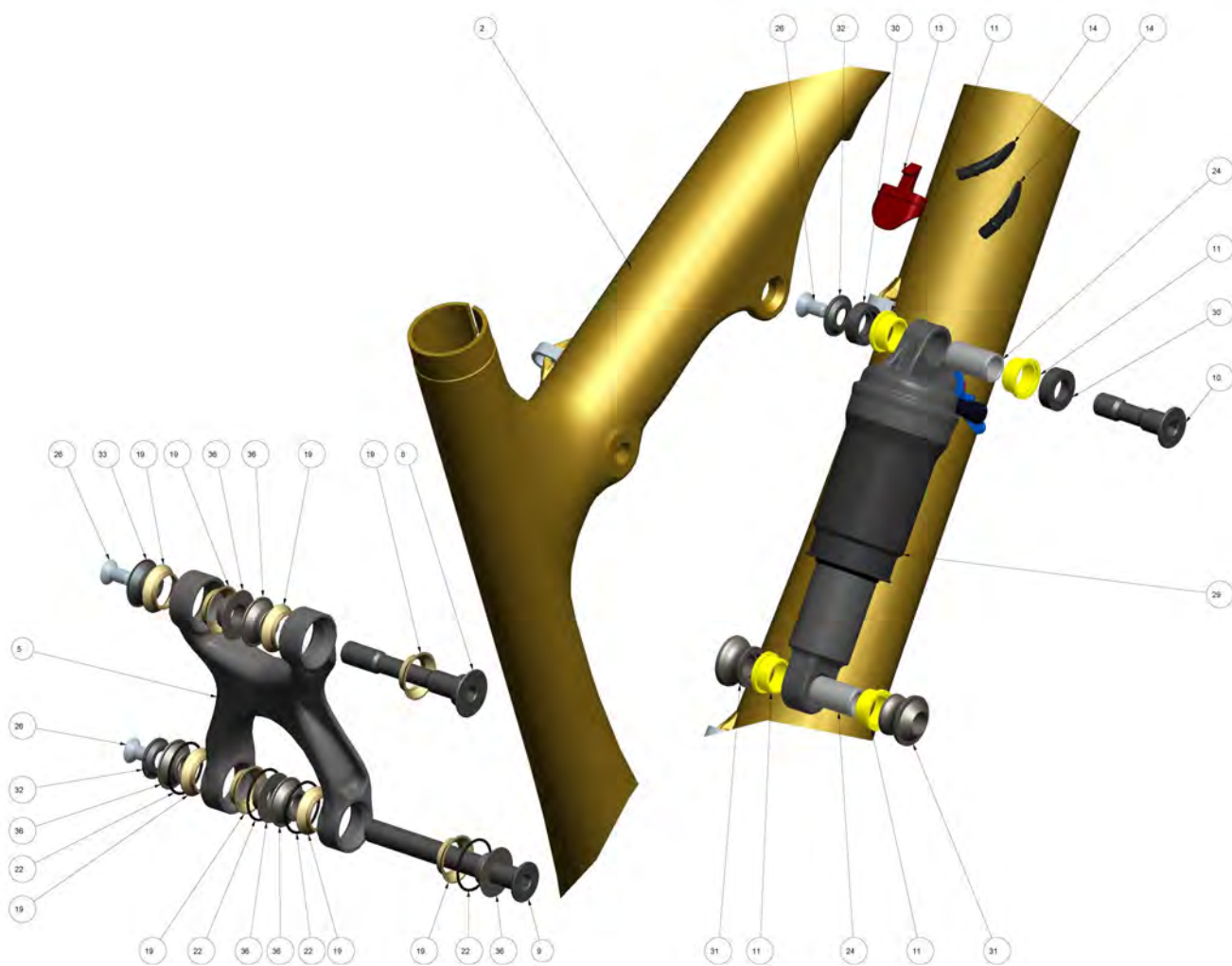
THUNDERBOLT MSL KIT FOR SHIMANO Di2 FRONT DERAILLEUR			
#	QTY	PART NO.	DESCRIPTION
1	1	N/A	SHIMANO Di2 FRONT DERAILLEUR
2	1	1095066	2015 THUNDERBOLT FD ADAPTER PLATE, FOR S3 LDM E-TYPE
3	1	1091040	ANTI-CHAINDROP PLATE, DIRECT E-MOUNT, AL6061-T6, HARD BLACK ANO
4	1	180472-014	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 14mm, A4/316 STAINLESS STEEL
5	1	180472-022	FLAT HEAD C'SUNK SOCKET SCREW, M5-0.8 X 10mm, A4/316 STAINLESS STEEL
6	1	180574-018	DOME HEAD SCREW, M5X18MM, ZINC PLATED
7	1	180473	E-TYPE FD SLOT SPACER, FOR THRU BOLT; AL6061

4.0 EXPLODED DIAGRAMS



ELEMENT RSL

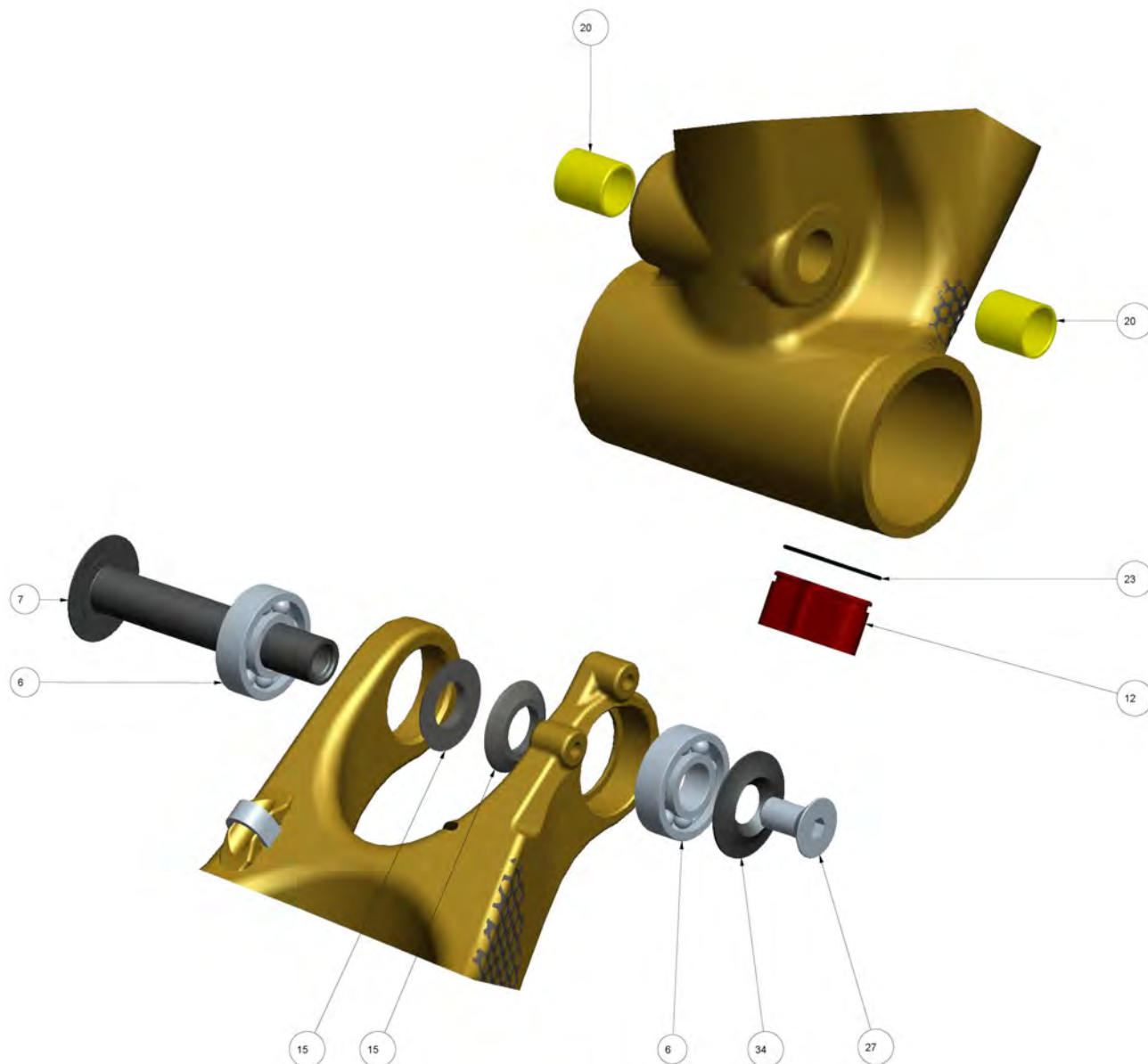




4.0 EXPLODED DIAGRAMS



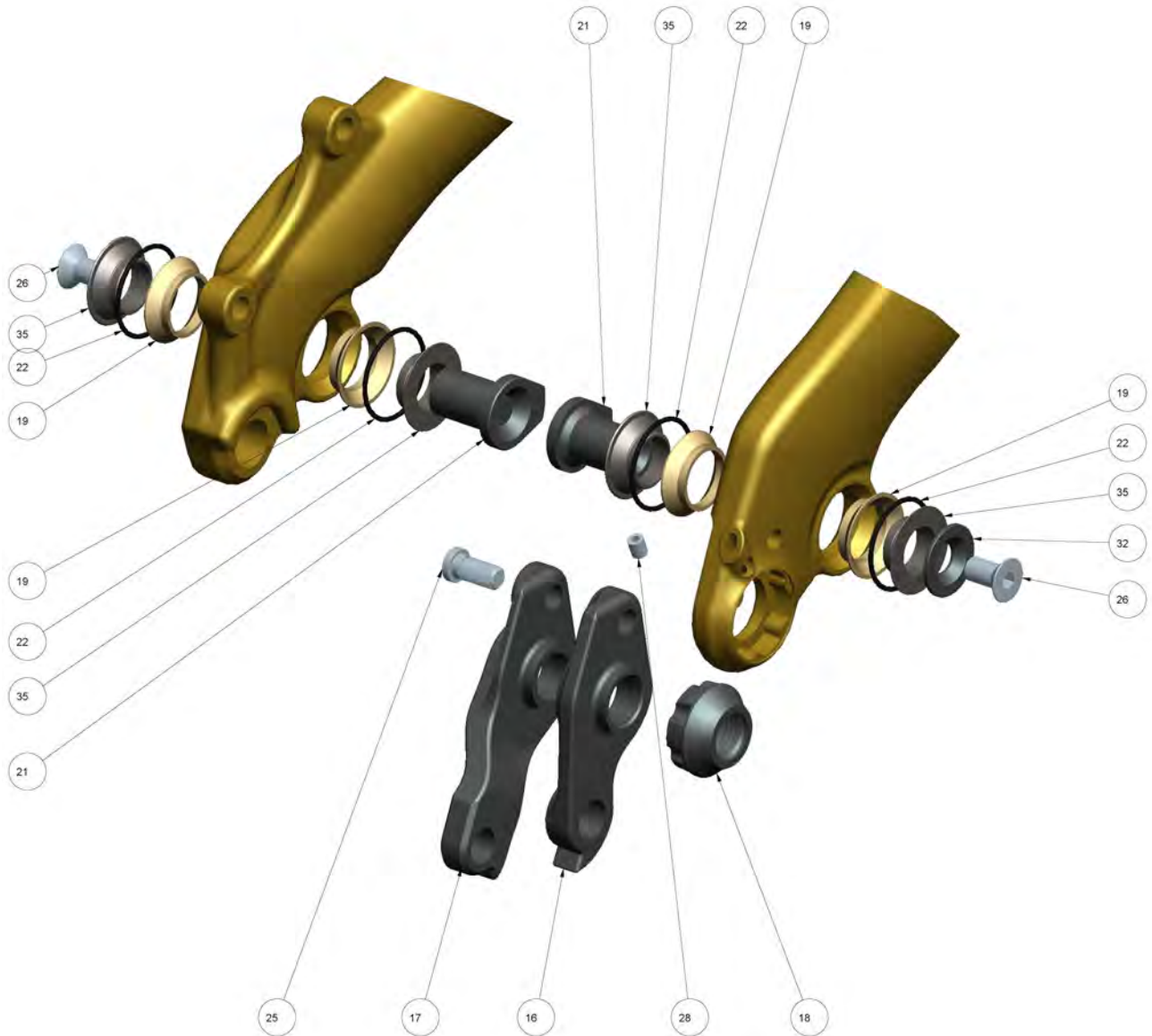
ELEMENT RSL
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS



ELEMENT RSL
CLEVIS VIEW



4.0 EXPLODED DIAGRAMS

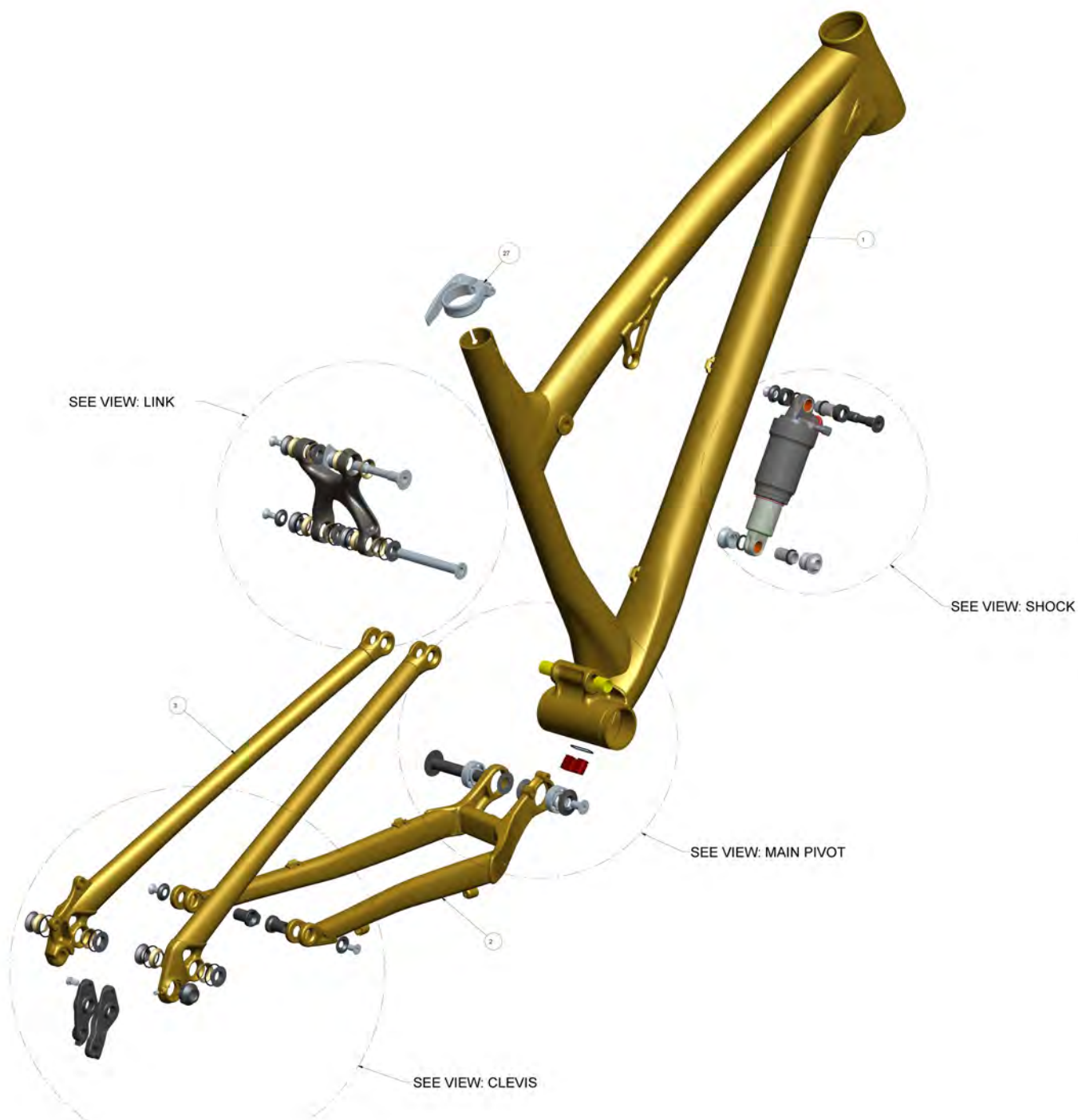


ELEMENT RSL			
Item #	QTY	PART NO.	DESCRIPTION
1	1	1053150PMG	2013 ELEMENT 29 CARBON CHAINSTAY
2	1	1063231PMG	2013 ELEMENT 29 CARBON FRONT TRIANGLE, SIZE 17.0"
3	1	1053179PMG	2013 ELEMENT 29 CARBON SEAT STAY, LEFT
4	1	1053180PMG	2013 ELEMENT 29 CARBON SEAT STAY, RIGHT
5	1	1092182	ELEMENT ALLOY 1-PIECE TOP LINK, 95MM LONG.
6	2	181063	BEARING - 12X28X8; 6001-2RS
7	1	180466-070	28mm FLANGE HD, THRU. BLT; INTERNAL M8X1.25 - OD:12X70mm
8	1	180492 UAT	C'SUNK HD, THRU BOLT. OD:12MM X 68, INT. M6 THREAD, AL7075-T6, HARD BLACK ANO.
9	1	180496 UAT	C'SUNK HD, THRU BOLT. OD:10MM X 85, INT. M6 THREAD, AL7075-T6, HARD BLACK ANO.
10	1	180527	ELEM WC SHOCK BOLT, OD:10MM, L: 41MM. AL7075-T6 HARD BLACK ANO
11	4	N/A	FOX_IGUS_BUSHING
12	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
13	1	1093000	INTERNAL CABLE TOP TUBE RUBBER INSERT
14	2	1093001	INTERNAL CABLE PORT PLUG, RUBBER
15	2	180545	CONICAL WASHER - ID, 12MM, OD-24, 3.0MM THK.
16	1	1092020	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.), HARD BLACK ANO.
17	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
18	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
19	12	1805444 IGS	IGUS ANGULAR CONTACT BEARING, J3
20	2	1804016 IGS	BUSHING - IGUS i-glide J350-1214-15: ID:12, OD:14, L:15
21	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLACK
22	8	180543	O-RING, ID 20MM, W:1.25. NITRILE.
23	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
24	2	111989 FOX	SHOCK PIN: ID:10 x 22.2mm LONG; STAINLESS STEEL
25	1	180487-012	CUSTOM LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 12mm; STAINLESS STEEL
26	5	180566-012 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
27	1	180567-016 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M8-1.25 X 16mm, A4/316 SS, 55060.080.016
28	1	180571 FBY	SET SCR., FLT. PT., M4 x 0.7 x 5mmL. ZINC PLATED. 07860.040.006
29	1	N/A	REAR SHOCK. 22.2 X M10 STEEL PINS FRONT/REAR.
30	2	3113000	SHOCK SPACER, FOR FOX IGUS, FRONT. AL7075-T6, HARD BLACK ANODIZE.
31	2	3113001	SHOCK REDUCER, REAR, FOR FOX IGUS., AL7075-T6, HARD BLACK ANODIZE.
32	4	180476 AST	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
33	1	180494UAT	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO
34	1	180499AST	BEARING CAP - OD:28 M8, AL6061-T6. HARD BLACK ANO
35	4	180490PMG	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO
36	6	180493UAT	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO

4.0 EXPLODED DIAGRAMS



ELEMENT ALLOY

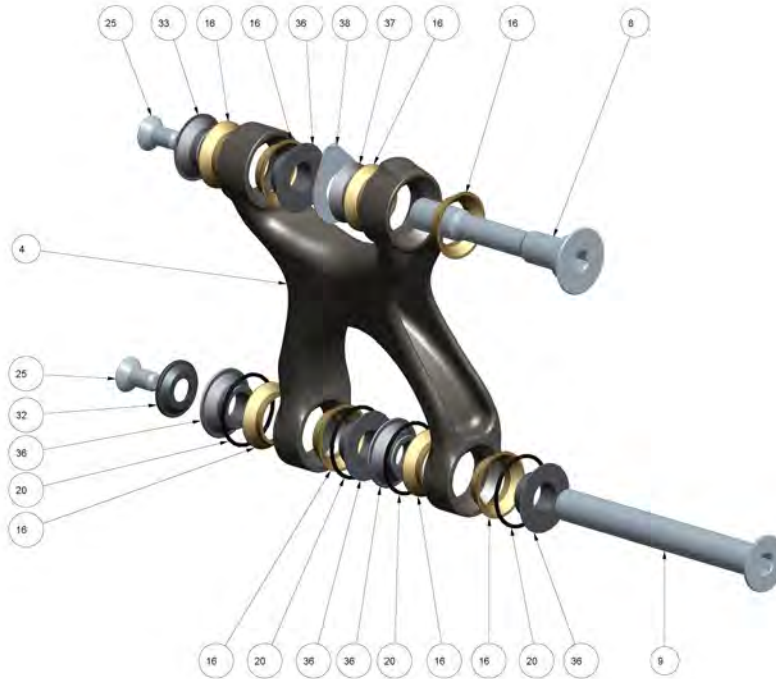


4.0 EXPLODED DIAGRAMS

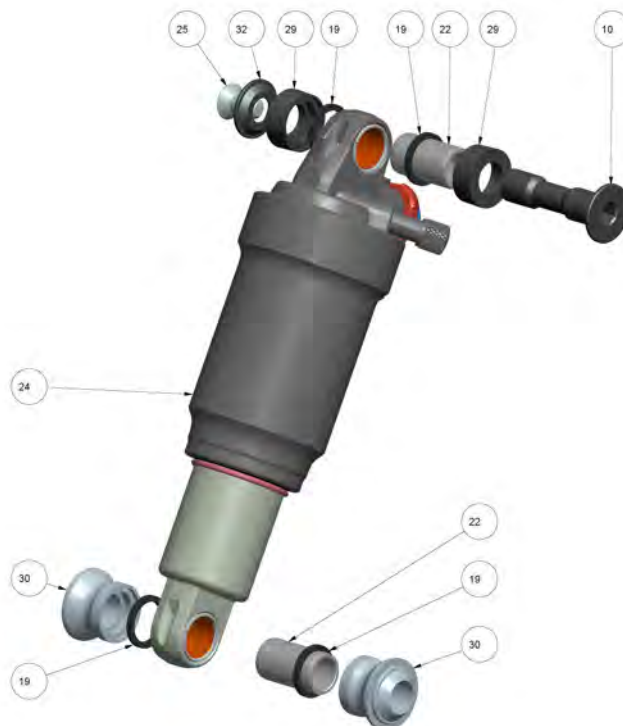


ELEMENT ALLOY

LINK VIEW



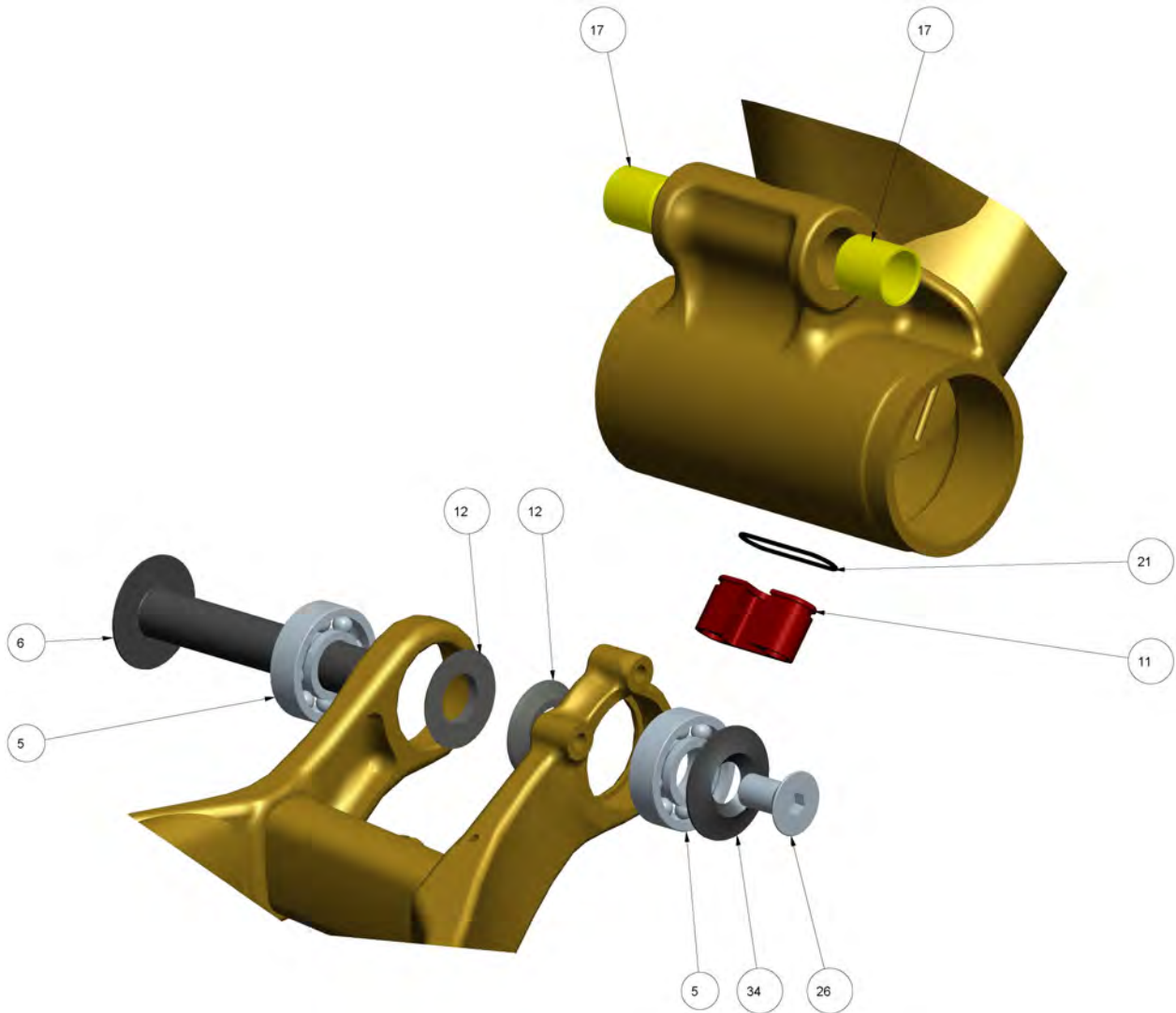
SHOCK VIEW



4.0 EXPLODED DIAGRAMS



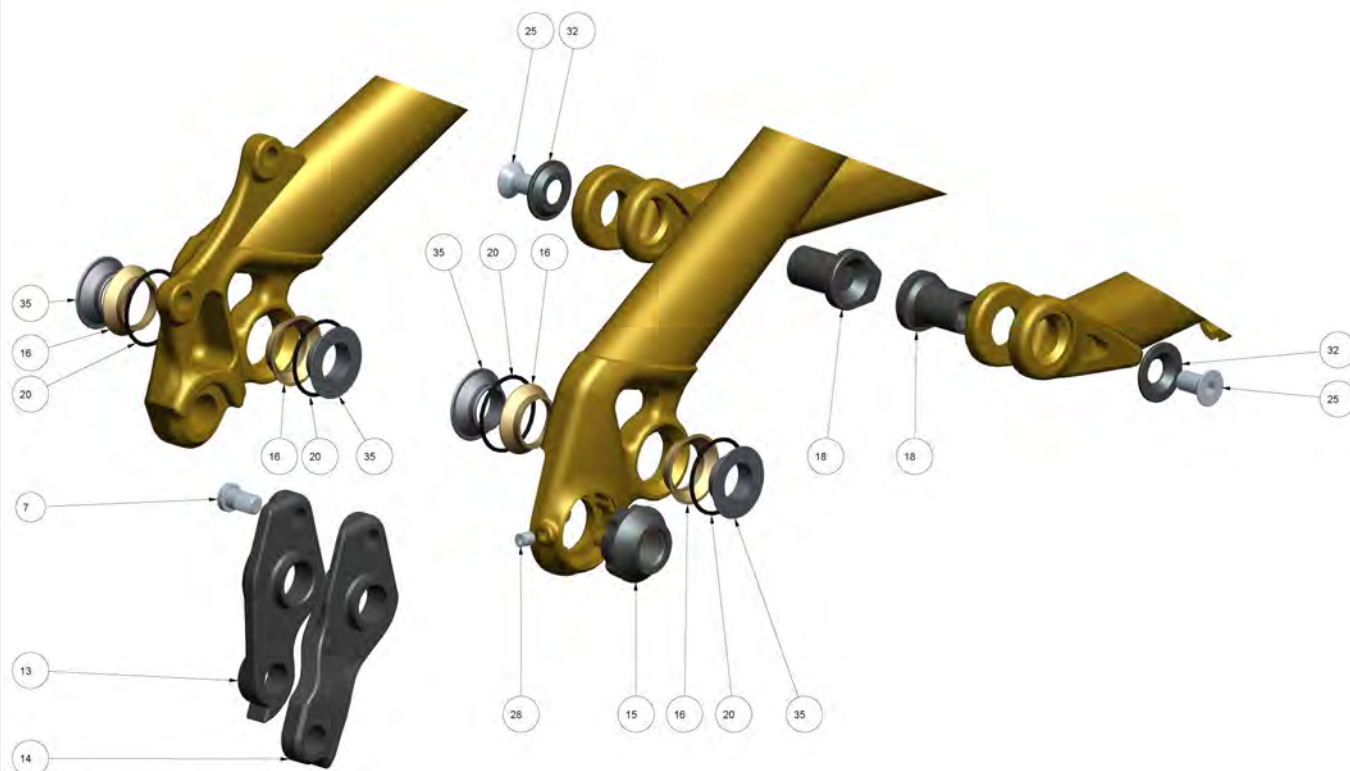
ELEMENT ALLOY
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS



ELEMENT ALLOY CLEVIS VIEW



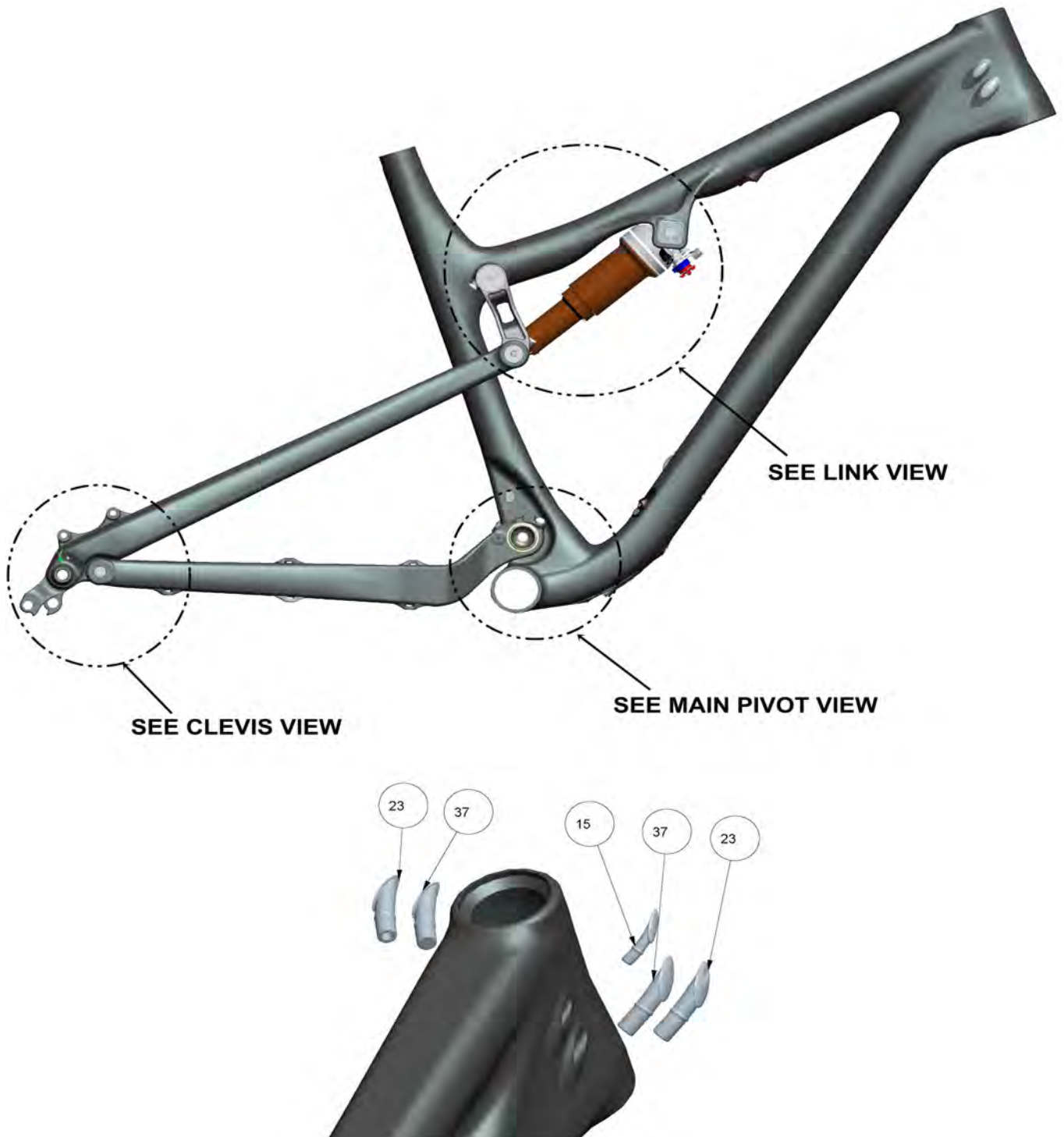
4.0 EXPLODED DIAGRAMS



ELEMENT ALLOY			
#	QTY	PART NO.	DESCRIPTION
1	1	10612004MEK	2012 ELEMENT ALLOY 29ER FRONT TRIANGLE, SIZE 18.5 (L)
2	1	1052501MEK	2012 ELEMENT ALLOY 29ER CHAINSTAY WELDMENT.
3	1	10512079-80MEK	ELEMENT ALU. "29er" L&R SEAT STAY
4	1	1092182	ELEMENT ALLOY 1-PIECE TOP LINK, 95MM LONG.
5	2	181063	BEARING - 12X28X8; 6001-2RS
6	1	180466-070	28mm FLANG HD, THRU. BLT; M8X1.25 - OD:12X70mm
7	1	180487-010	CUSTOM LOW FLAT HEAD SHOULDER SCREW, M6 X 10mm; STAINLESS STEEL
8	1	180492 UAT	C'SUNK BOLT. OD:12X68, INT M6, AL7075-T6, HARD BLACK ANO.
9	1	180496 UAT	CSUNK BOLT OD10MM X 85, INT M6 AL7075-T6, HARD BLACK ANO
10	1	180527	ELEM WC SHOCK BOLT, OD:10MM, L: 41MM. AL7075-T6 HARD BLACK ANO
11	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
12	2	180545	CONICAL WASHER - ID, 12MM, OD-24, 3.0MM THK.
13	1	1092020	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.), HARD BLACK ANO.
14	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
15	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
16	12	180444 IGS	IGUS ANGULAR CONTACT BEARING, 5.15MM LEN.
17	2	1804016 IGS	BUSHING - IGUS i-glide J350-1214-15: ID:12, OD:14, L:15
18	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLACK
19	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
20	8	180543	O-RING, ID 20MM, W:1.25. NITRILE.
21	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
22	2	111989 FOX	SHOCK PIN: ID:10 x 22.2mm LONG; STAINLESS STEEL
23	1	N/A	SHIMANO 142 X 12MM QUICK RELEASE AXLE.
24	1	N/A	REAR SHOCK, 6X1.25IN.
25	5	180566-012 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
26	1	180567-016 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M8-1.25 X 16mm, A4/316 SS, 55060.080.016
27	1	165382JDM	JD SEAT QR SEAT QR, 34.9mm, AL6061-T6, JY-009 XTR GREY ANO.
28	1	180571 FBY	SET SCR., FLT. PT., M4 x 0.7 x 5mmL. ZINC PLATED. 07860.040.006
29	2	180509	SHOCK REDUCER - FOR ID:10, OD:12.7 x 22.2mm PIN; 28mm OUTER SPAN
30	2	180495UAT	SHOCK REDUCER, REAR, STD, ID:10mm, AL7075-T6, HARD BLACK ANODIZE
31	1	N/A	SRAM E-MOUNT FD. 2-SPEED OR 3-SPEED
32	4	180476 AST	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
33	1	180494 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG, C'SUNK, ID:10, L:3.35, AL7075-T6, HARD BLACK
34	1	180499AST	BEARING CAP - OD:28 M8, AL6061-T6. HARD BLACK ANO
35	4	180490 PMG	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:12, L:2.65, HARD BLACK ANO.
36	5	180493 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:10, L:3.35, AL7075-T6, HARD BLACK ANO.
37	1	180506UAT	ALLOY WASHER FOR ANGULAR POLY. BRG, NO-FLANGE, ID:10, L:3.35, AL7075-T6, JY-009
38	1	180507UAT	WASHER, WITH ELEMENT SAG INDICATOR POINT ARROW, MAT'L: STAINLESS STEEL

4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL

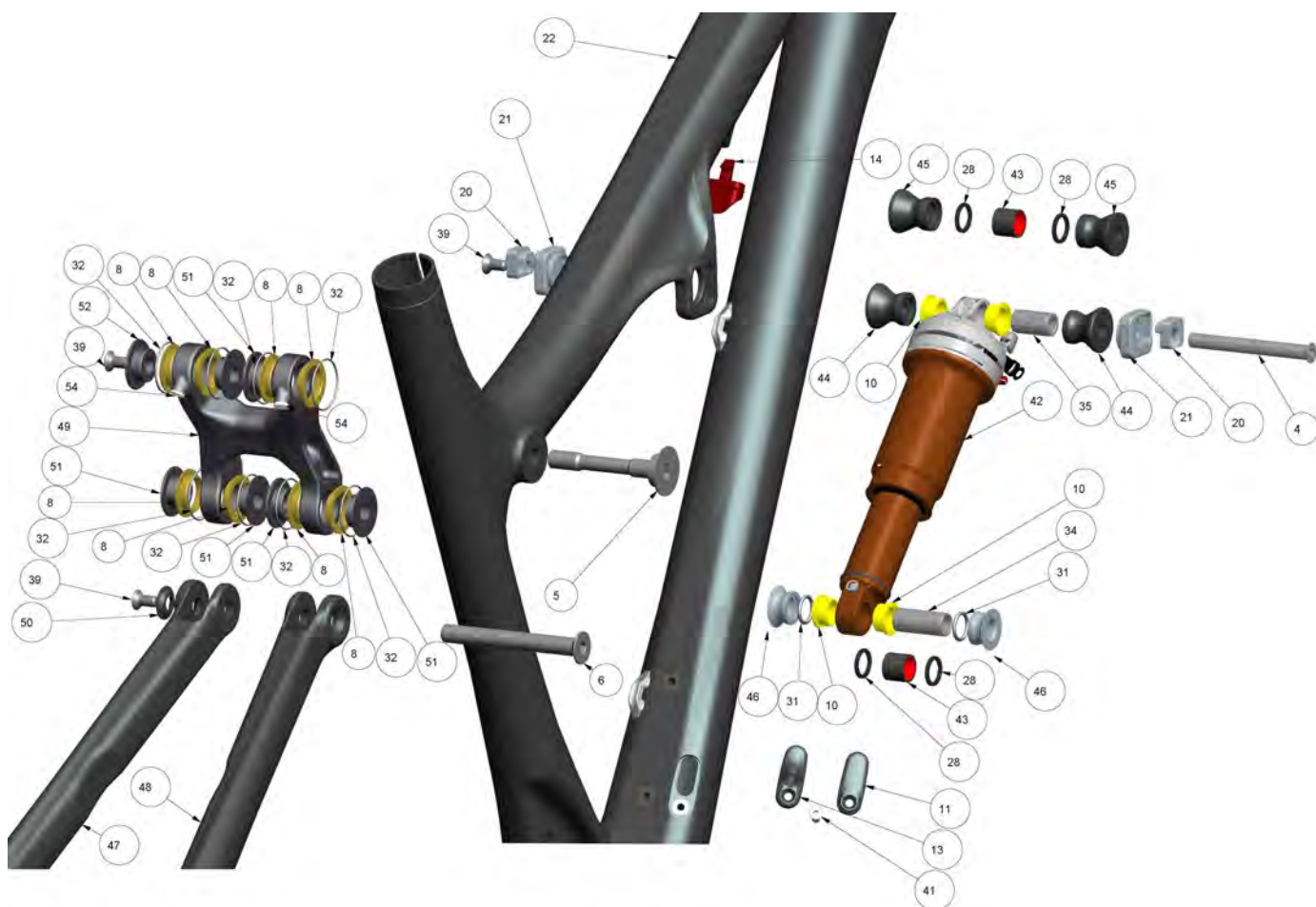


4.0 EXPLODED DIAGRAMS



THUNDERBOLT MSL

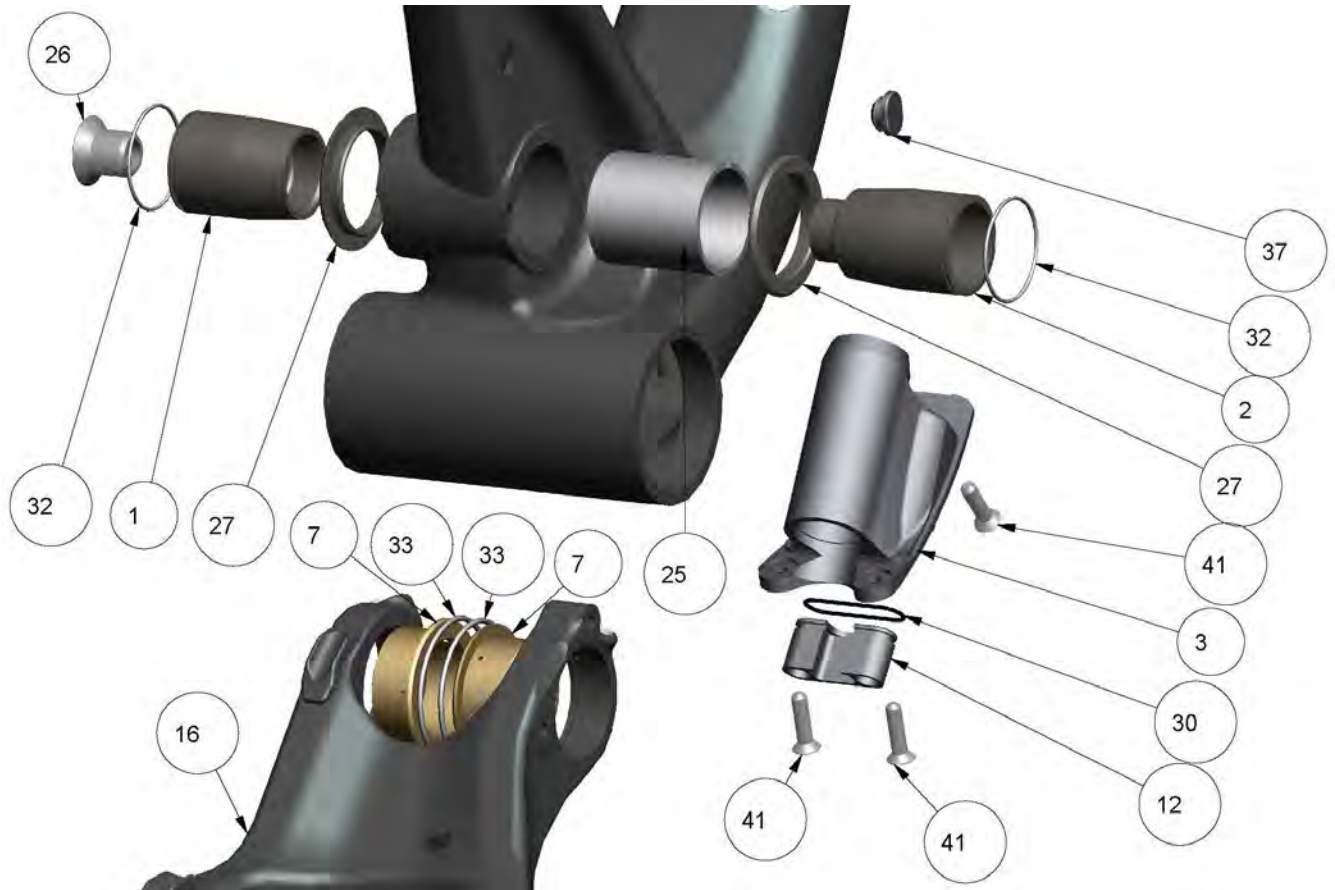
LINK VIEW



4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL

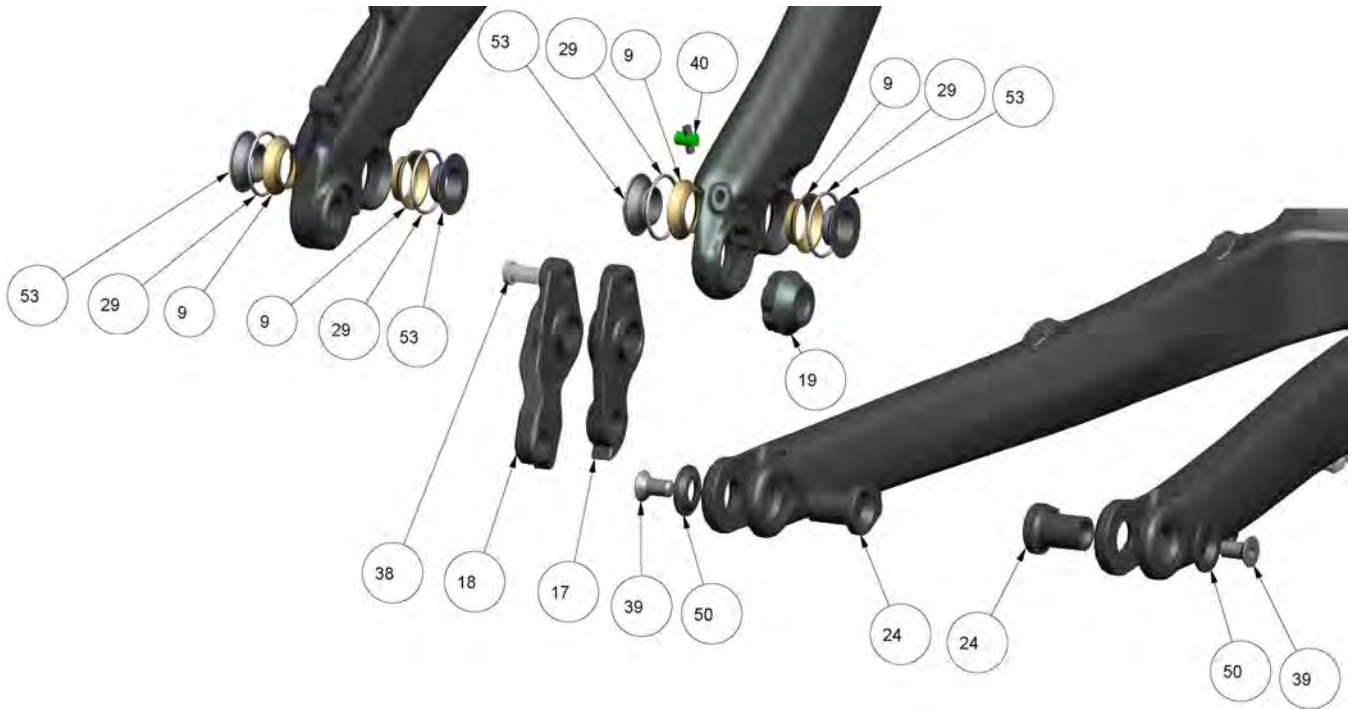
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL

CLEVIS VIEW



4.0 EXPLODED DIAGRAMS



THUNDERBOLT MSL			
ITEM #	QTY	PART NO.	DESCRIPTION
1	1	1095062	2015 THUNDERBOLT MSL MAIN PIVOT AXLE, LEFT
2	1	1095063	2015 THUNDERBOLT MSL MAIN PIVOT AXLE, RIGHT
3	1	1995001	2015 THUNDERBOLT MSL Di2 BATTERY CRADLE PORT
4	1	180630	CUSTOM FLAT HEAD BOLT, 8MM X 60MM X M6 INT., STAINLESS
5	1	1805005	TOPHAT OS THRU BOLT 10X71, M6, AL7075-T6, HARD BLACK ANO
6	1	180496 UAT	CSUNK THRU BOLT 10 X85, M6, AL7075-T6, HARD BLACK ANO
7	2	1805006	BUSHING, MAIN PIVOT, TOP HAT, IGUS, OD:30, ID: 26.5, L:13.5
8	8	1805062	LINK BUSHING, TOP HAT, IGUS, OD:20, ID:18, L:5
9	4	1805444	IGUS ANGULAR CONTACT BEARING, 5.15MM LEN.
10	4	N/A	FOX_IGUS_BUSHING
11	1	1096055	CABLE PORT PLASTIC COVER, FD EXIT PORT, FOR OVAL SLOT
12	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
13	1	1805063	2015 THUNDERBOLT FD CABLE STOP, BOLT-ON
14	1	1093000	INTERNAL CABLE TOP TUBE RUBBER INSERT
15	1	1093001	CABLE PORT RUBBER PLUG
16	1	1054050	2015 THUNDERBOLT CHAINSTAY, CARBON
17	1	1092020	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.), HARD BLACK ANO.
18	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
19	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
20	2	180628	FLIP CHIP, INSIDE, AL7075, BLACK ANODIZE.
21	2	180629	FLIP CHIP, OUTSIDE, AL7075, BLACK ANODIZE.
22	1	1064193	2015 THUNDERBOLT CARBON FRONT TRIANGLE, 18.0" (M)
23	2	1095086	CABLE PORT GROMMET, SEATPOST HOSE OR SHIFT HOUSING, RUBBER
24	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLAC
25	1	1095061	MAIN PIVOT COLLET, AL-7075-T6, RAW, OD:29.5
26	1	1095065	MAIN PIVOT SCREW, C'SUNK, SS304, M12X1.0, L:13
27	2	1095064	MAIN PIVOT THRUST WASHER, AL-7075-T6, MIL-A-8625, OD:37.5, L:4.5
28	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
29	4	180543	O-RING, ID 20MM, W:1.25. NITRILE.
30	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
31	2	1805079	O-RING, ID 12.42MM, W:1.78. NITRILE.
32	10	1805080	O-RING, ID 23MM, W:1.00. NITRILE.
33	2	1805081	O-RING, ID 24.5MM, W:1.50. NITRILE.
34	1	N/A	SHOCK PIN: ID:10 x 29.9mm LONG; STAINLESS STEEL
35	1	N/A	SHOCK PIN: ID:8 x 22.2mm LONG; ALUMINUM
36	2	1095088	CABLE PORT RUBBER PLUG FOR OVERSIZED 9MM ENTRY THRU-PORT
37	1	1805083	Di2 PORT BLOCKOFF PLUG, JAGWIRE P/N: CCN009
38	1	180487-012	CUSTOM LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 12mm; STAINLESS STEEL

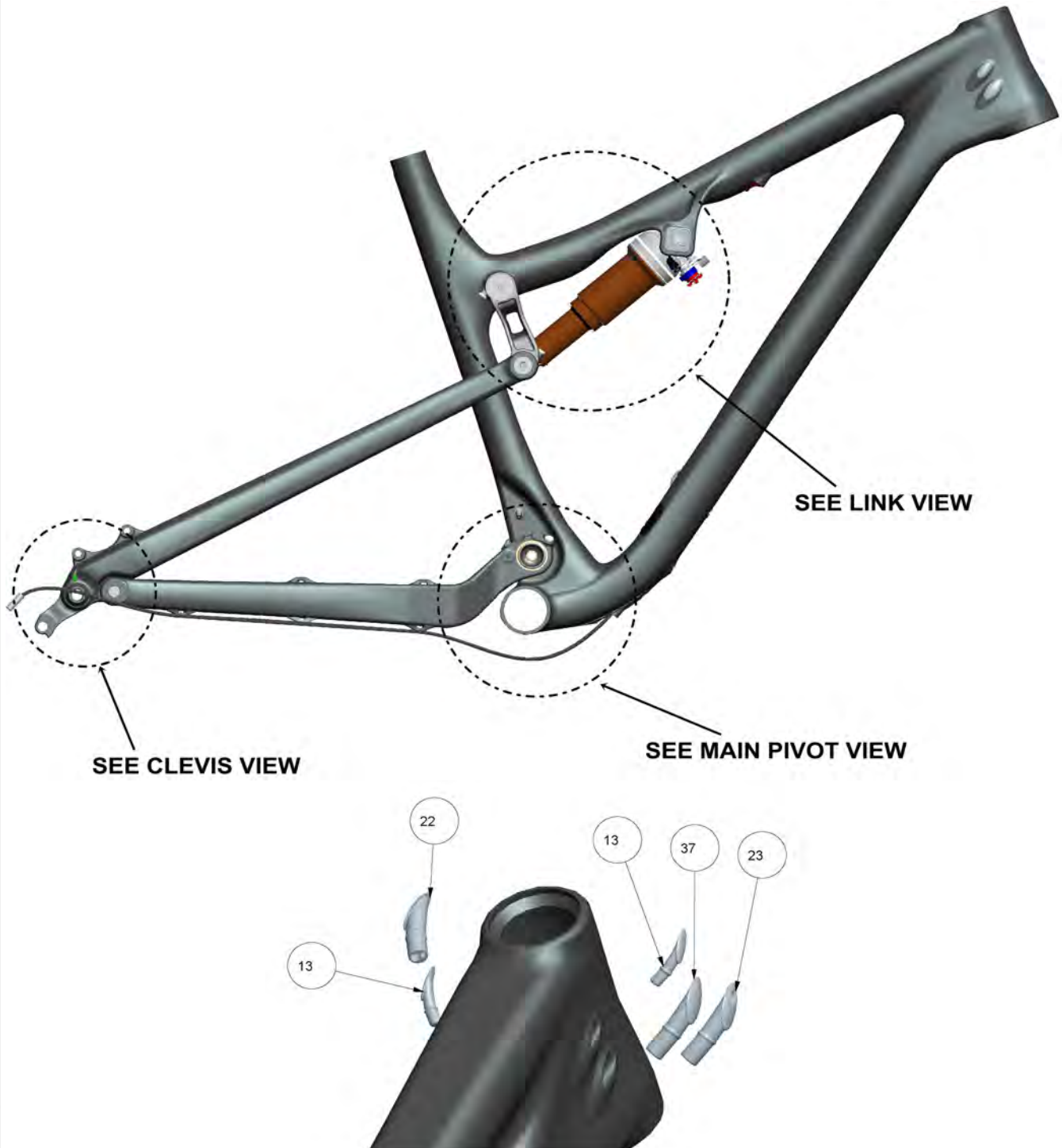


4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL			
ITEM #	QTY	PART NO.	DESCRIPTION
39	5	180566-012 FBV	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
40	1	180682PMG	CARBON FRAME M3X0.5 SET SCREW AND BARREL NUT, FOR AXLE NUT
41	4	1805077	C'SUNK SOCKET SCREW, M4x16mm, zinc plated 10.9 steel
42	1	N/A	REAR SHOCK, 7.5" EYE-TO-EYE, 2.0" STROKE
43	2	N/A	SHOCK BUSHING, ID:12.7mm, OD:15mm, L:12.7mm, STEEL
44	2	180631	SHOCK REDUCER, FOX IGUS - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
45	2	3113003	SHOCK REDUCER, STD. - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
46	2	180684	SHOCK REDUCER, REAR, 29.9MM PIN, IGUS SHOCK BUSHING, OD:24, ID:10
47	1	1054081	2015 THUNDERBOLT SEAT STAY, CARBON, LEFT
48	1	1054080	2015 THUNDERBOLT SEAT STAY, CARBON, RIGHT
49	1	1095060	2015 THUNDERBOLT TOP LINK, 80MM LONG, AL-6061-T6
50	3	180476	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
51	6	1805040	ALLOY WASHER FOR ABC BUSHING, 90DEG, ID:10, OD:18, L:6
52	1	1805041	ALLOY WASHER FOR ABC BUSHING, 90DEG, ID:10, OD:18, L:6, C'SUNK
53	4	180490	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:12, L:2.65, HARD BLACK ANO.
54	6	1805026	MINI ZIRK PORT

4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL Di2

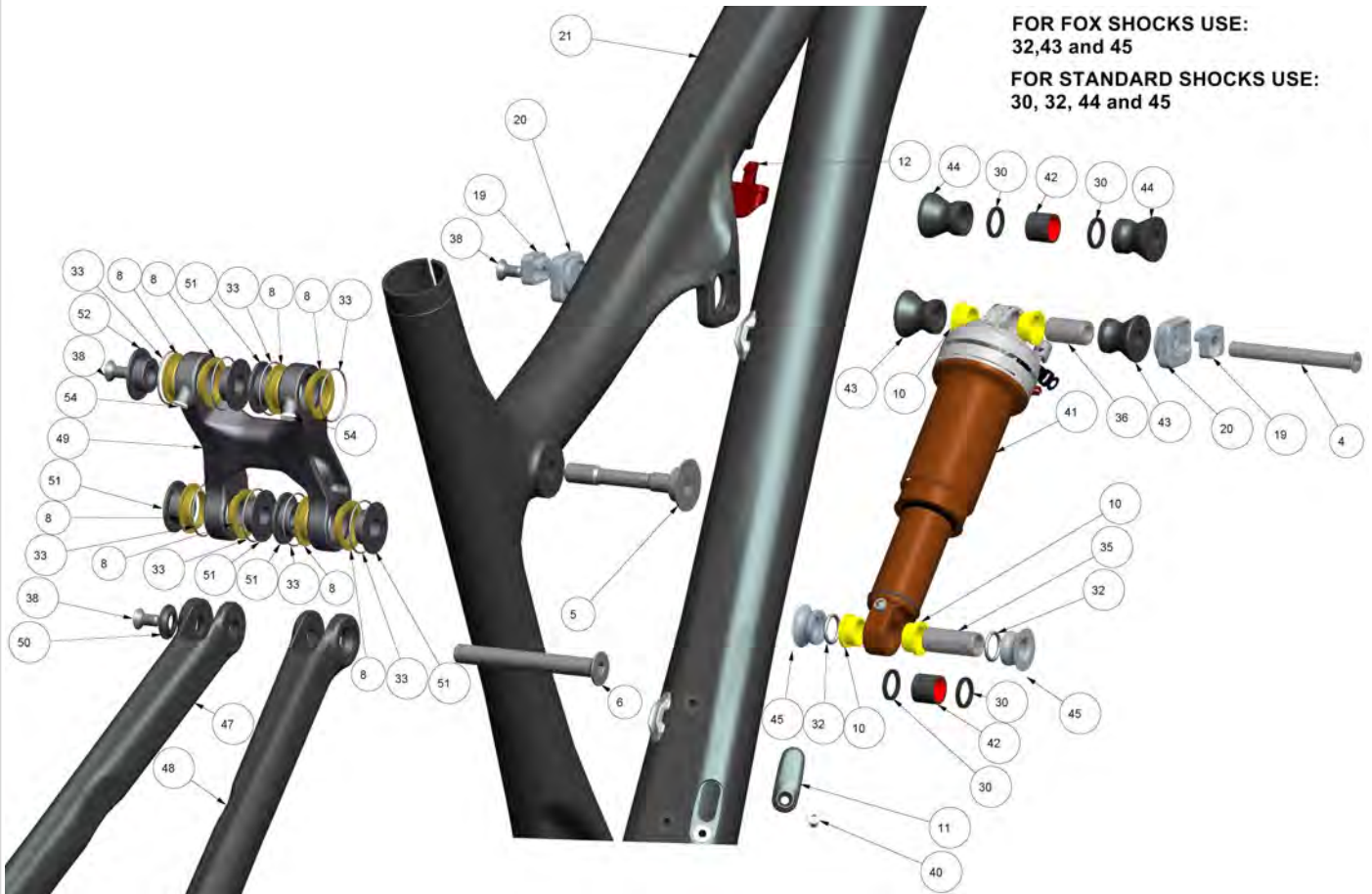


4.0 EXPLODED DIAGRAMS



THUNDERBOLT MSL Di2

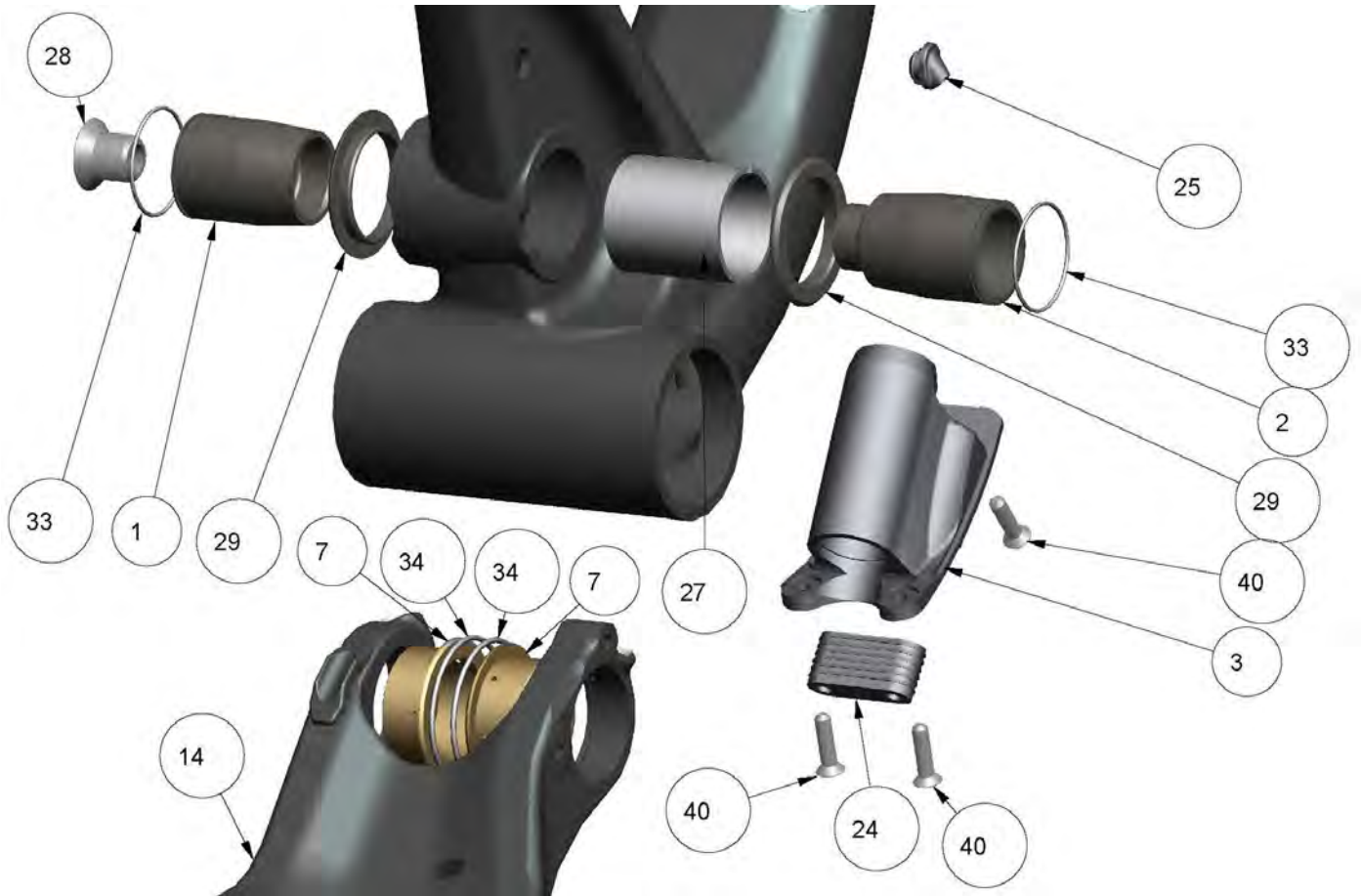
LINK VIEW



4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL Di2

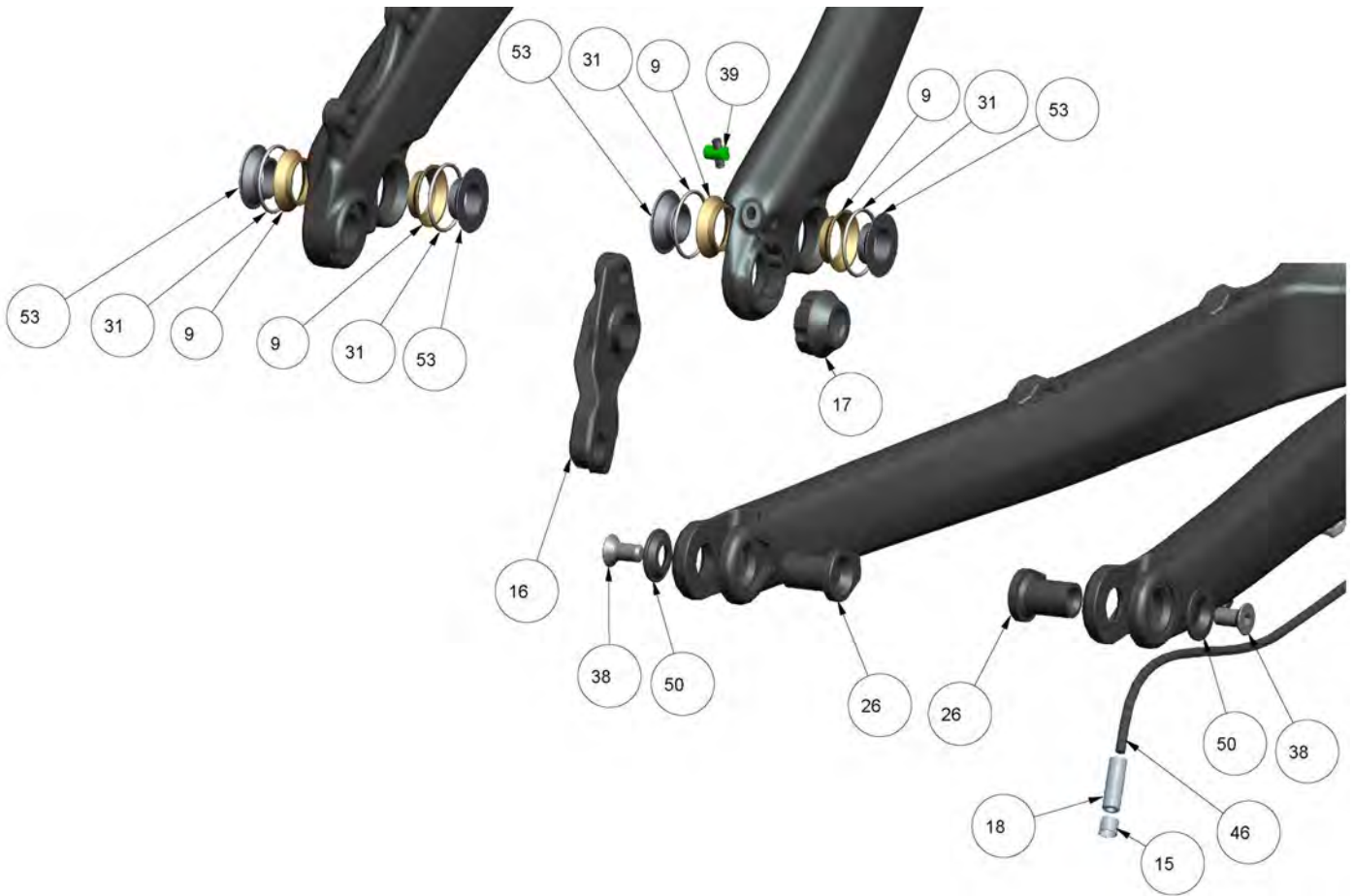
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS

THUNDERBOLT MSL Di2

CLEVIS VIEW



4.0 EXPLODED DIAGRAMS



THUNDERBOLT MSL Di2			
ITEM #	QTY	PART NO.	DESCRIPTION
1	1	1095062	2015 THUNDERBOLT MSL MAIN PIVOT AXLE, LEFT
2	1	1095063	2015 THUNDERBOLT MSL MAIN PIVOT AXLE, RIGHT
3	1	1995001	2015 THUNDERBOLT MSL Di2 BATTERY CRADLE PORT
4	1	180630	CUSTOM FLAT HEAD BOLT, 8MM X 60MM X M6 INT., STAINLESS
5	1	1805005	TOPHAT OS THRU BOLT 10X71, M6, AL7075-T6, HARD BLACK ANO
6	1	180496 UAT	CSUNK THRU BOLT 10 X85, M6, AL7075-T6, HARD BLACK ANO
7	2	1805006	BUSHING, MAIN PIVOT, TOP HAT, IGUS, OD:30, ID: 26.5, L:13.5
8	8	1805062	LINK BUSHING, TOP HAT, IGUS, OD:20, ID:18, L:5
9	4	1805444	IGUS ANGULAR CONTACT BEARING, 5.15MM LEN.
10	4	N/A	FOX_IGUS_BUSHING
11	1	1096055	CABLE PORT PLASTIC COVER, FD EXIT PORT, FOR OVAL SLOT
12	1	1093000	INTERNAL CABLE TOP TUBE RUBBER INSERT
13	2	1093001	CABLE PORT RUBBER PLUG
14	1	1054050	2015 THUNDERBOLT CHAINSTAY, CARBON
15	1	1805103	Di2 CABLE SLEEVE CRIMP
16	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
17	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
18	1	1805059	RUBBER Di2 FERRULE
19	2	180628	FLIP CHIP, INSIDE, AL7075, BLACK ANODIZE.
20	2	180629	FLIP CHIP, OUTSIDE, AL7075, BLACK ANODIZE.
21	1	1064193	2015 THUNDERBOLT CARBON FRONT TRIANGLE, 18.0" (M)
22	1	1095085	CABLE PORT GROMMET, SEATPOST HOSE & Di2 CABLE, RUBBER
23	1	1095086	CABLE PORT GROMMET, SEATPOST HOSE OR SHIFT HOUSING, RUBBER
24	1	1805060	RUBBER Di2 BB PLUG GROMMET
25	1	1805082	Di2 ANGLED PORT GROMMET, JAGWIRE P/N: CCN027-5
26	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLAC
27	1	1095061	MAIN PIVOT COLLET, AL-7075-T6, RAW, OD:29.5
28	1	1095065	MAIN PIVOT SCREW, C'SUNK, SS304, M12X1.0, L:13
29	2	1095064	MAIN PIVOT THRUST WASHER, AL-7075-T6, MIL-A-8625, OD:37.5, L:4.5
30	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
31	4	180543	O-RING, ID 20MM, W:1.25. NITRILE.
32	2	1805079	O-RING, ID 12.42MM, W:1.78. NITRILE.
33	10	1805080	O-RING, ID 23MM, W:1.00. NITRILE.
34	2	1805081	O-RING, ID 24.5MM, W:1.50. NITRILE.
35	1	N/A	SHOCK PIN: ID:10 x 29.9mm LONG; STAINLESS STEEL
36	1	N/A	SHOCK PIN: ID:8 x 22.2mm LONG; ALUMINUM
37	1	1095088	CABLE PORT RUBBER PLUG FOR OVERSIZED 9MM ENTRY THRU-PORT
38	5	180566-012 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012



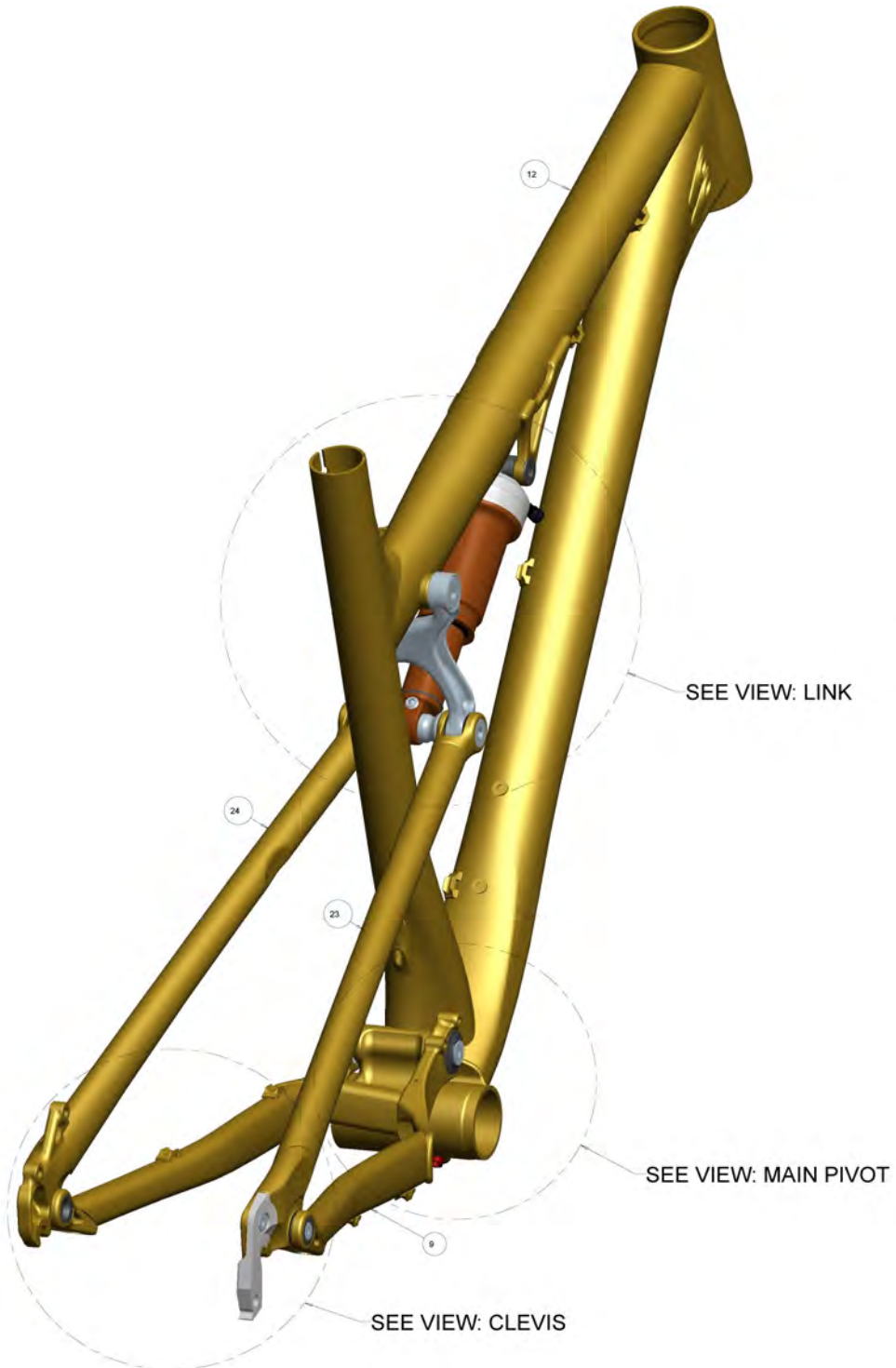
4.0 EXPLODED DIAGRAMS

<i>THUNDERBOLT MSL Di2</i>			
ITEM #	QTY	PART NO.	DESCRIPTION
39	1	180682PMG	CARBON FRAME M3X0.5 SET SCREW AND BARREL NUT, FOR AXLE NUT
40	4	1805077	C'SUNK SOCKET SCREW, M4x16mm, zinc plated 10.9 steel
41	1	N/A	REAR SHOCK, 7.5" EYE-TO-EYE, 2.0" STROKE
42	2	N/A	SHOCK BUSHING, ID:12.7mm, OD:15mm, L:12.7mm, STEEL
43	2	180631	SHOCK REDUCER, FOX IGUS - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
44	2	3113003	SHOCK REDUCER, STD. - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
45	2	180684	SHOCK REDUCER, REAR, 29.9MM PIN, IGUS SHOCK BUSHING, OD:24, ID:10
46	1	BS1000-0032	PROTECTIVE SLEEVE FOR Di2 REAR DERAILLEUR CABLE
47	1	1054081	2015 THUNDERBOLT SEAT STAY, CARBON, LEFT
48	1	1054080	2015 THUNDERBOLT SEAT STAY, CARBON, RIGHT
49	1	1095060	2015 THUNDERBOLT TOP LINK, 80MM LONG, AL-6061-T6
50	3	180476	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
51	6	1805040	ALLOY WASHER FOR ABC BUSHING, 90DEG, ID:10, OD:18, L:6
52	1	1805041	ALLOY WASHER FOR ABC BUSHING, 90DEG, ID:10, OD:18, L:6, C'SUNK
53	4	180490	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:12, L:2.65, HARD BLACK ANO.
54	6	1805026	MINI ZIRK PORT

4.0 EXPLODED DIAGRAMS



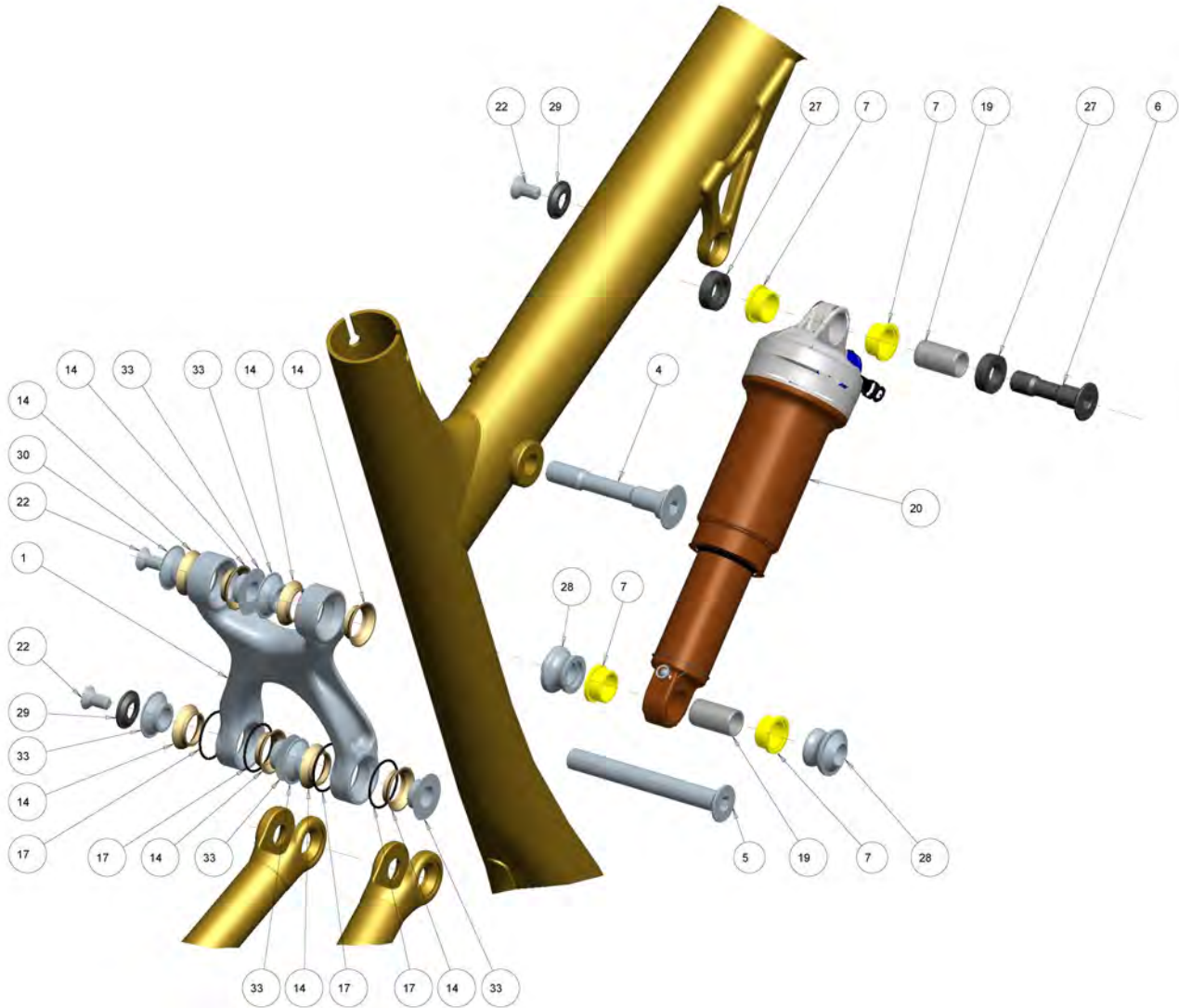
THUNDERBOLT ALLOY



4.0 EXPLODED DIAGRAMS



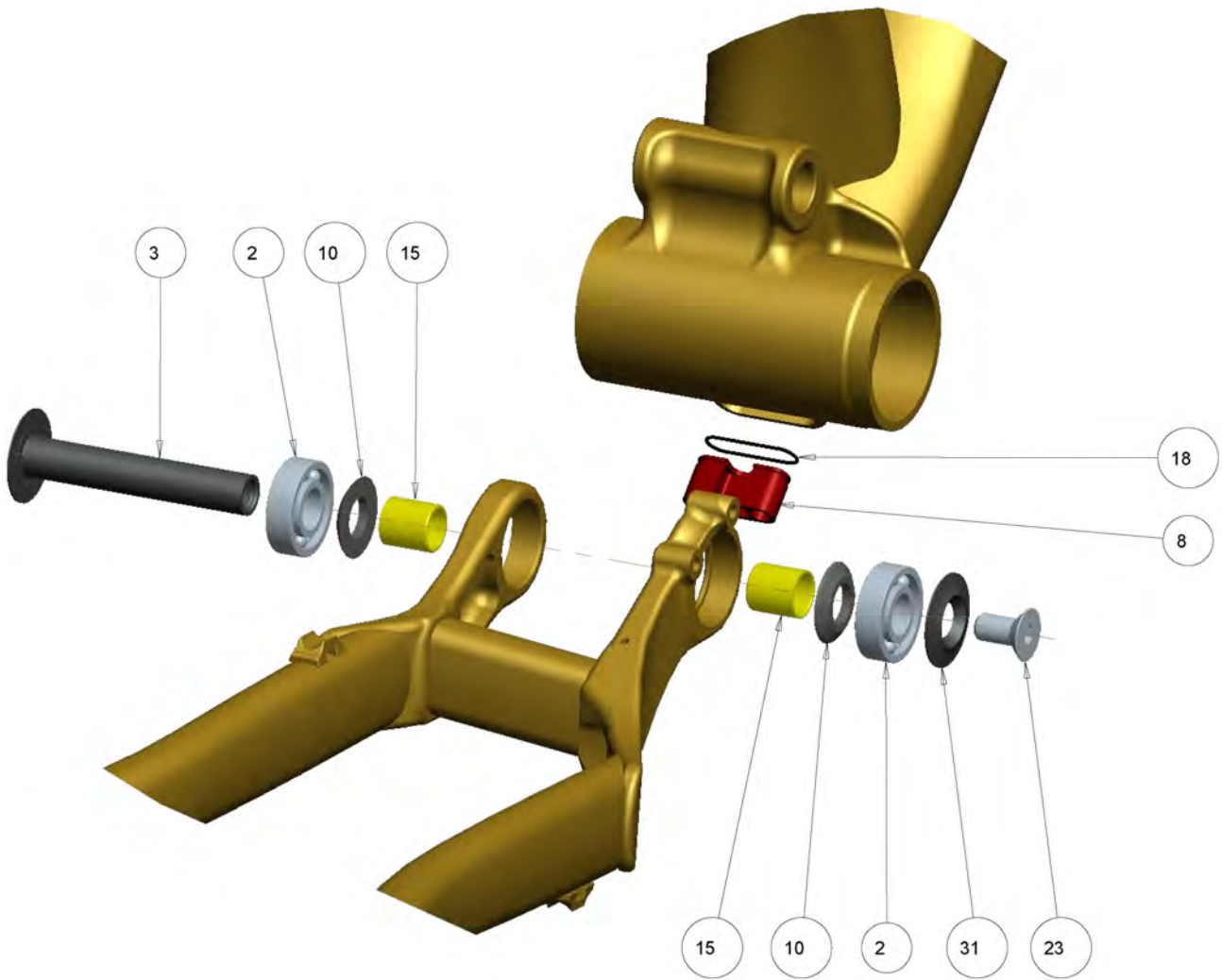
THUNDERBOLT ALLOY LINK VIEW



4.0 EXPLODED DIAGRAMS



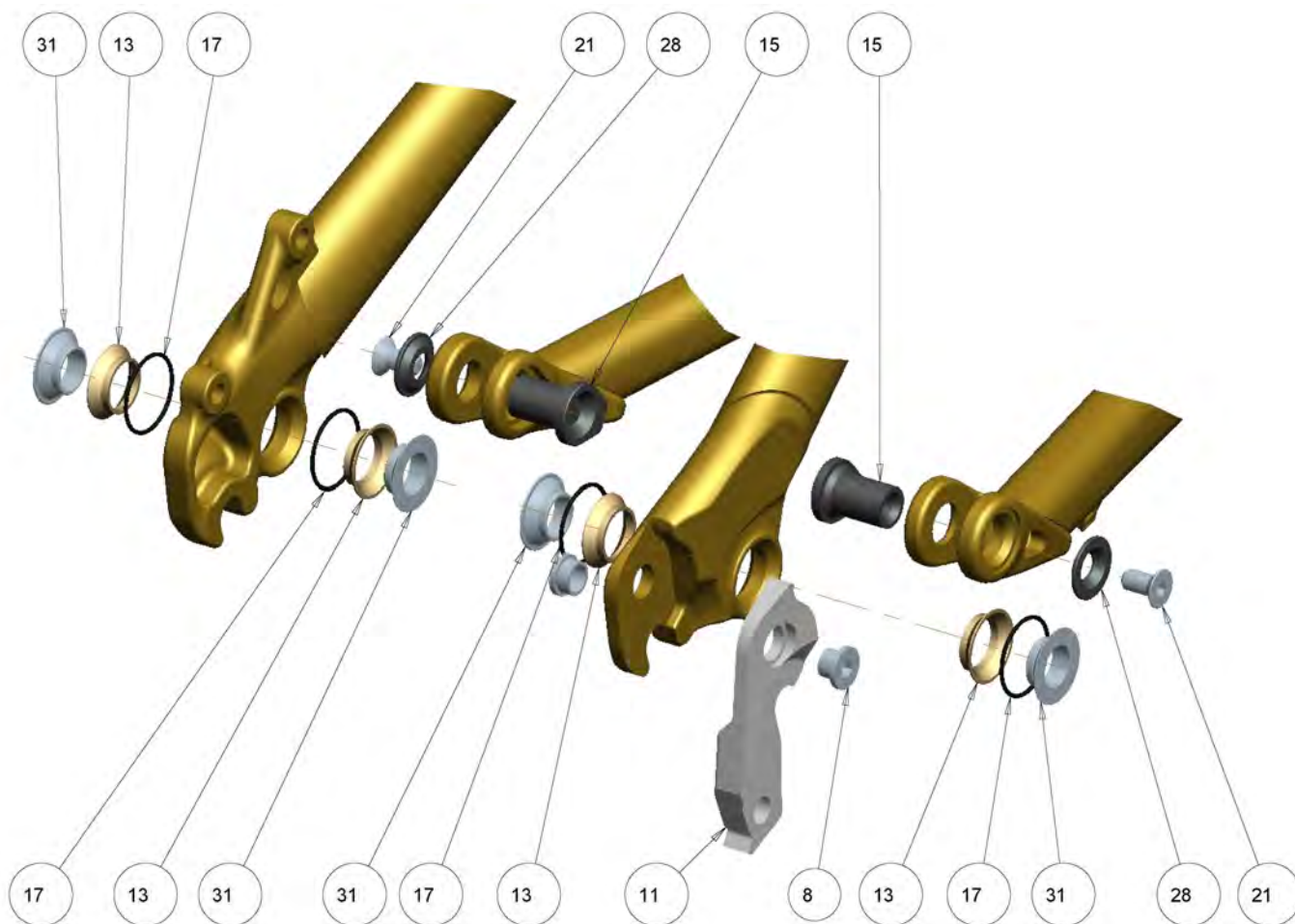
THUNDERBOLT ALLOY
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS



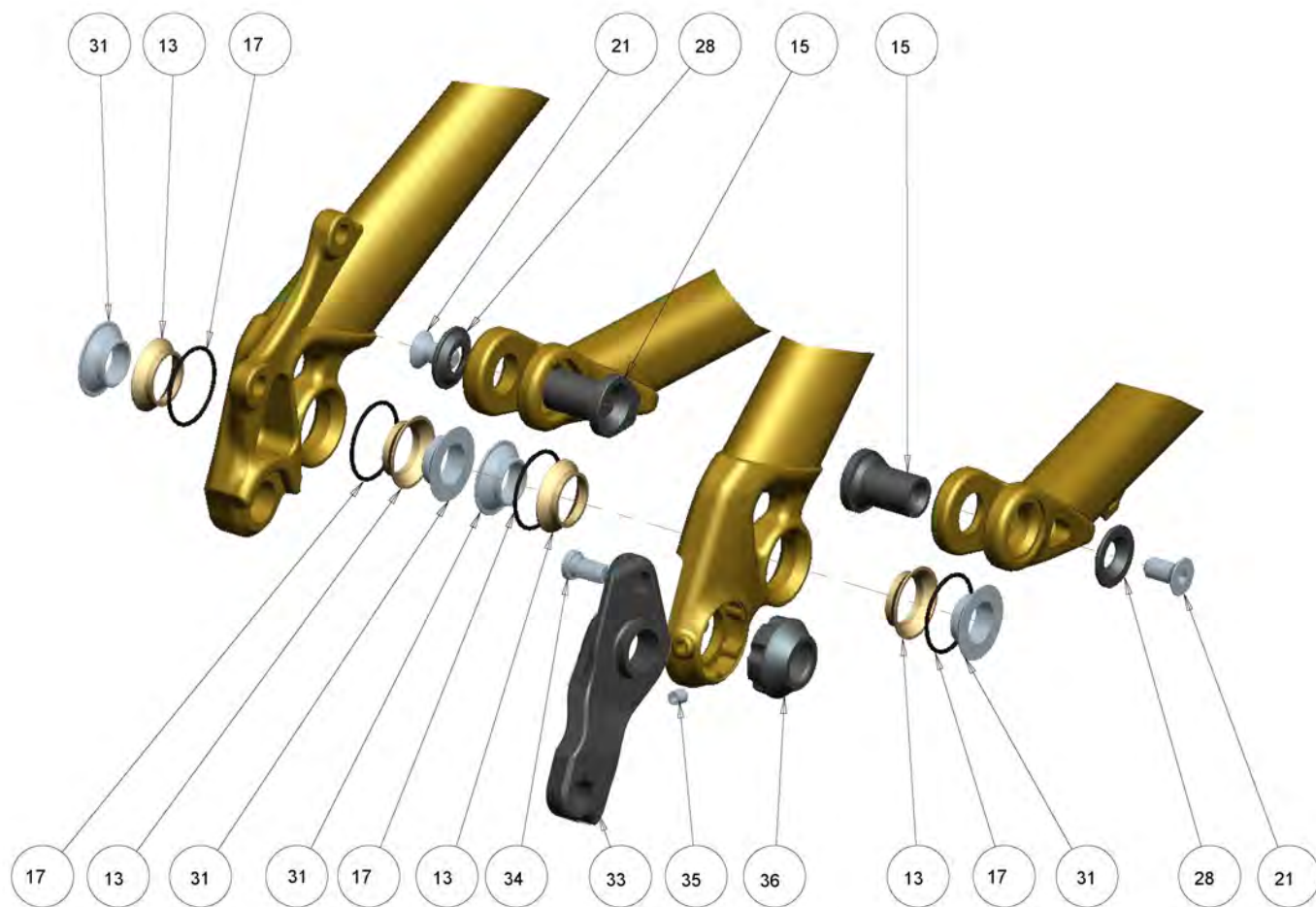
*THUNDERBOLT ALLOY
CLEVIS VIEW — OPEN DROPOUT MODELS*



4.0 EXPLODED DIAGRAMS



THUNDERBOLT ALLOY CLEVIS VIEW — THROUGH-AXLE MODELS



4.0 EXPLODED DIAGRAMS

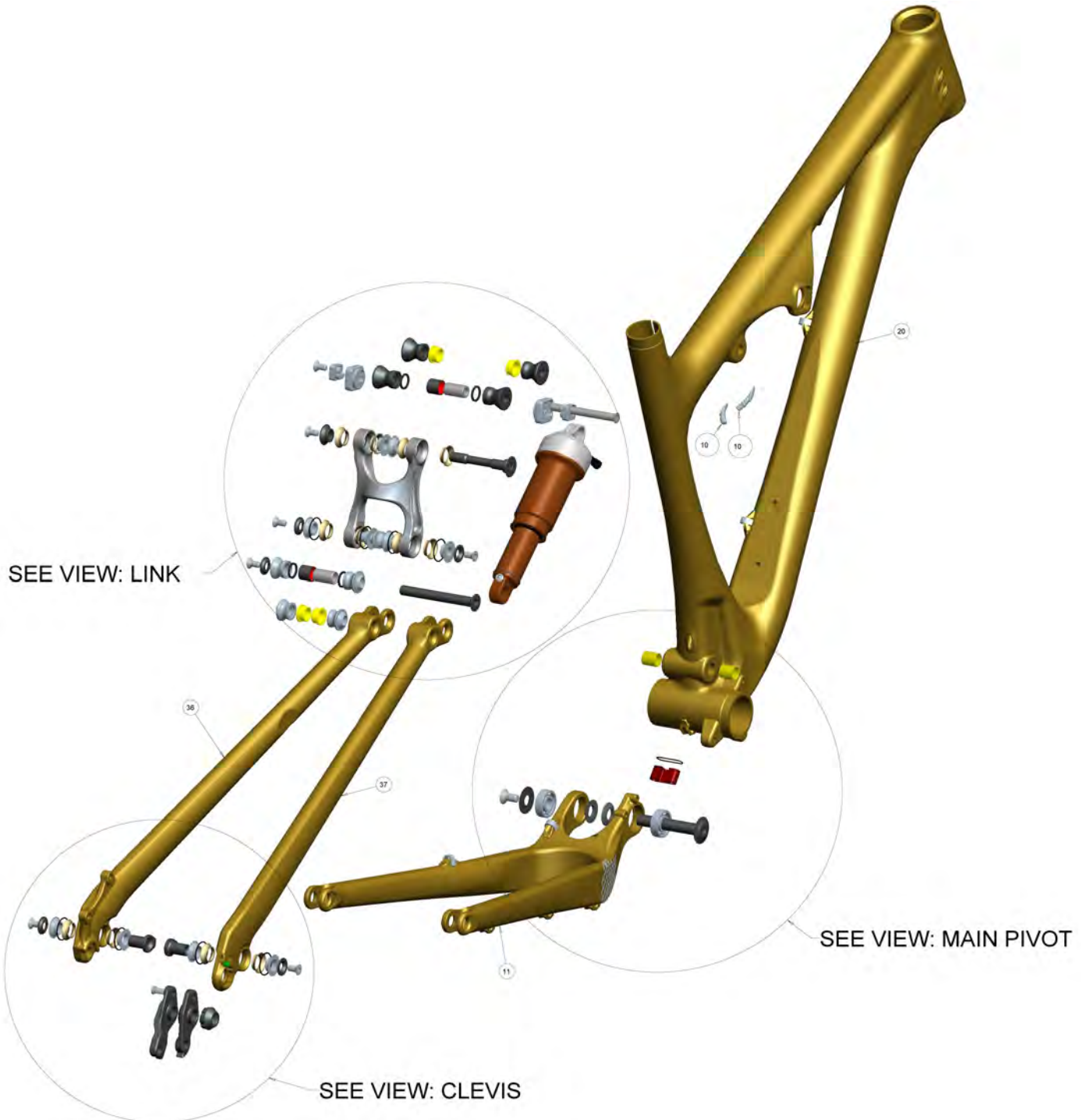


THUNDERBOLT ALLOY			
#	QTY	PART NO.	DESCRIPTION
1	1	1092182	ELEMENT ALLOY 1-PIECE TOP LINK, 95MM LONG.
2	2	181063	BEARING - 12X28X8; 6001-2RS
3	1	180466-070	28mm FLANGE HD, THRU. BLT; INTERNAL M8X1.25 - OD:12X70mm
4	1	180492 UAT	C'SUNK HD, THRU BOLT. OD:12MM X 68, INT. M6 THREAD, AL7075-T6, HARD BLACK ANO.
5	1	180496 UAT	C'SUNK HD, THRU BOLT. OD:10MM X 85, INT. M6 THREAD, AL7075-T6, HARD BLACK ANO.
6	1	180527	ELEM WC SHOCK BOLT, OD:10MM, L: 41MM. AL7075-T6 HARD BLACK ANO
7	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
8	1	180510RUX	CHAINRING NUT&BOLT - M8-0.75 X 5mm BOLT w/4mm LONG NUT
9	1	1054500MEK	2014 THUNDERBOLT ALLOY CHAINSTAY WELDMENT
10	2	180545	CONICAL WASHER - ID, 12MM, OD-24, 3.0MM THK.
11	1	1098095	2009 DERAILLEUR HANGER; AL7005-T6.
12	1	1064183MEK	2014 THUNDERBOLT ALLOY 650B FRONT TRIANGLE Size 18.0" (M)
13	12	1805444 IGS	IGUS ANGULAR CONTACT BEARING, J3
14	2	1804016 IGS	BUSHING - IGUS i-glide J350-1214-15: ID:12, OD:14, L:15
15	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLACK
16	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
17	8	180543	O-RING, ID 20MM, W:1.25. NITRILE.
18	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
19	2	111989 FOX	SHOCK PIN: ID:10 x 22.2mm LONG; STAINLESS STEEL
20	1	N/A	REAR SHOCK, 7.5" x 2.0"
21	5	180566-012 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
22	1	180567-016 FBY	FLAT HEAD C'SUNK SOCKET SCREW, M8-1.25 X 16mm, A4/316 SS, 55060.080.016
23	1	1054502MEK	2014 THUNDERBOLT ALLOY SEAT STAY - OPEN DO, RIGHT
24	1	1054503MEK	2014 THUNDERBOLT ALLOY SEAT STAY - OPEN DO, LEFT
25	2	N/A	SHOCK BUSHING, ID:12.7mm, OD:15mm, L:12.7mm, STEEL
26	2	180509	SHOCK REDUCER - FOR ID:10, OD:12.7 x 22.2mm PIN; 28mm OUTER SPAN
27	2	180495UAT	SHOCK REDUCER, REAR, STD, ID:10mm, AL7075-T6, HARD BLACK ANODIZE
28	4	180476 AST	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
29	1	180494UAT	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO
30	1	180499AST	BEARING CAP - OD:28 M8, AL6061-T6. HARD BLACK ANO
31	4	180490PMG	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO
32	6	180493UAT	WASHER FOR ANGULAR POLY. BRG. HARD BLACK ANO
33	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
34	1	180487-010	CUSTOM, LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 10mm; STAINLESS STEEL
35	1	180571FBY	SET SCR., FLT. PT., M4 x 0.7 x 5mmL. ZINC PLATED. 07860.040.006
36	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.

4.0 EXPLODED DIAGRAMS



ALTITUDE / INSTINCT MSL



4.0 EXPLODED DIAGRAMS

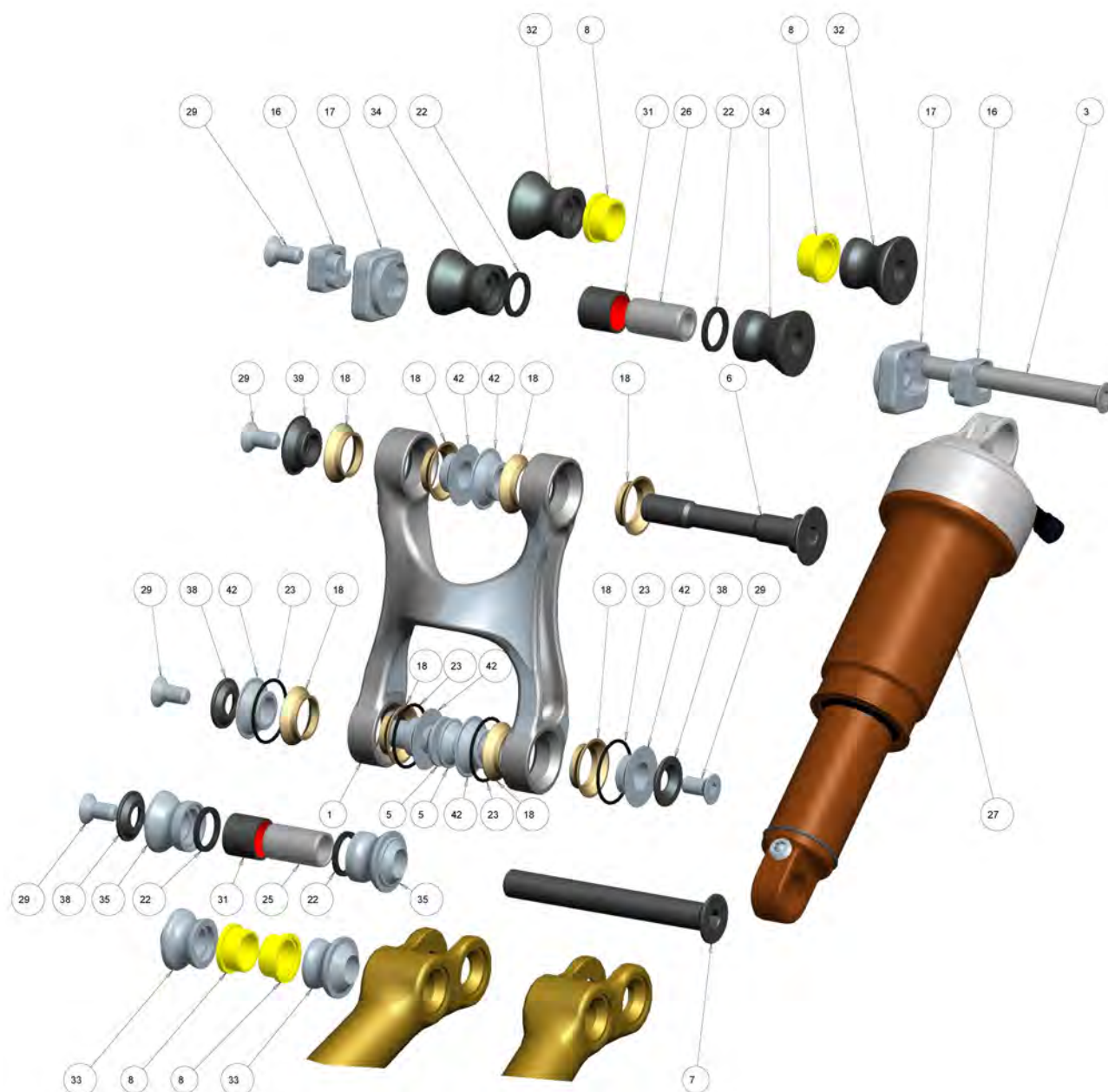


ALTITUDE / INSTINCT MSL

LINK VIEW

Part 8, 32, 33 for use with FOX shock

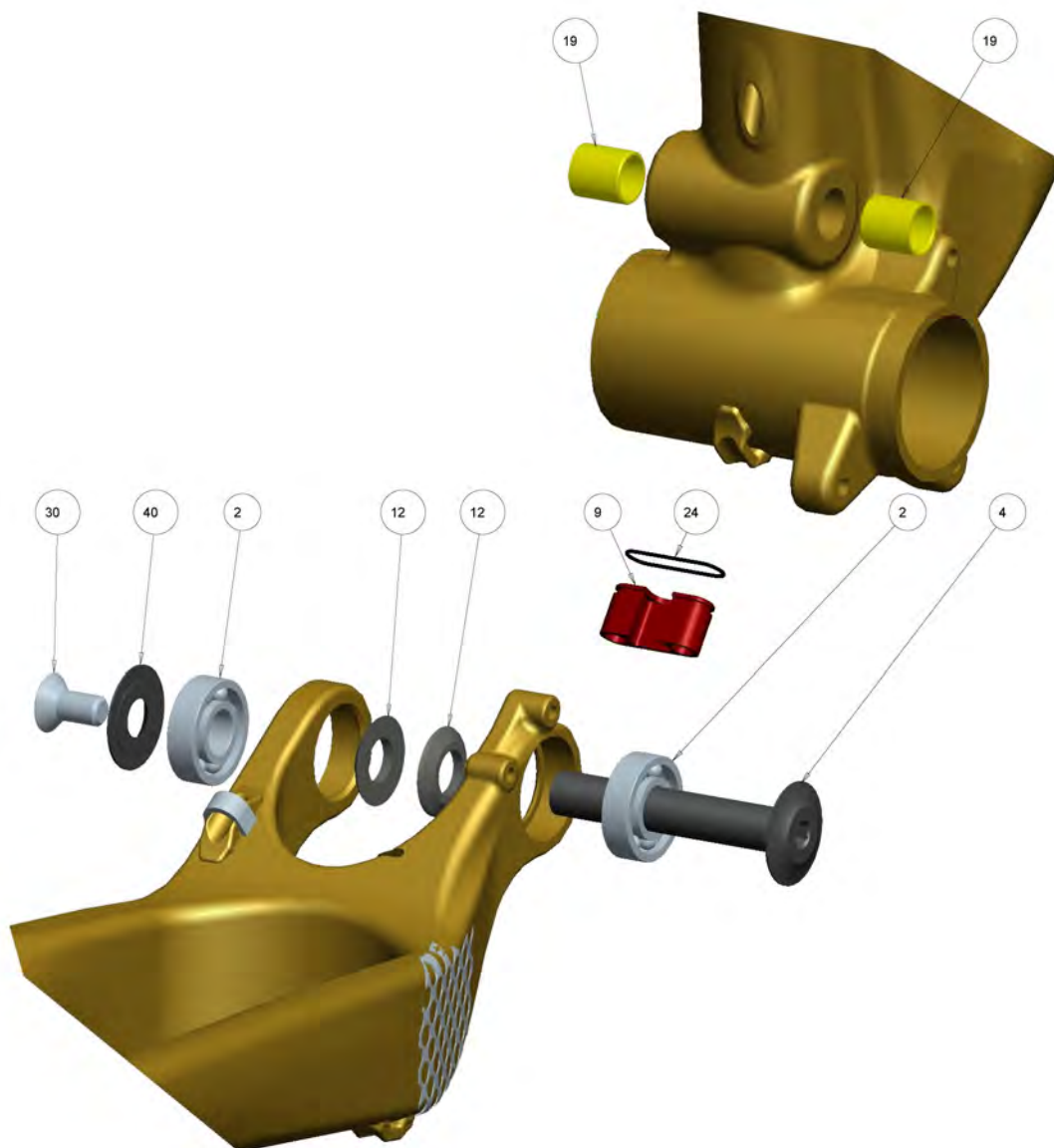
Part 34, 35, 22, 31 for use with Rock Shox shock



4.0 EXPLODED DIAGRAMS



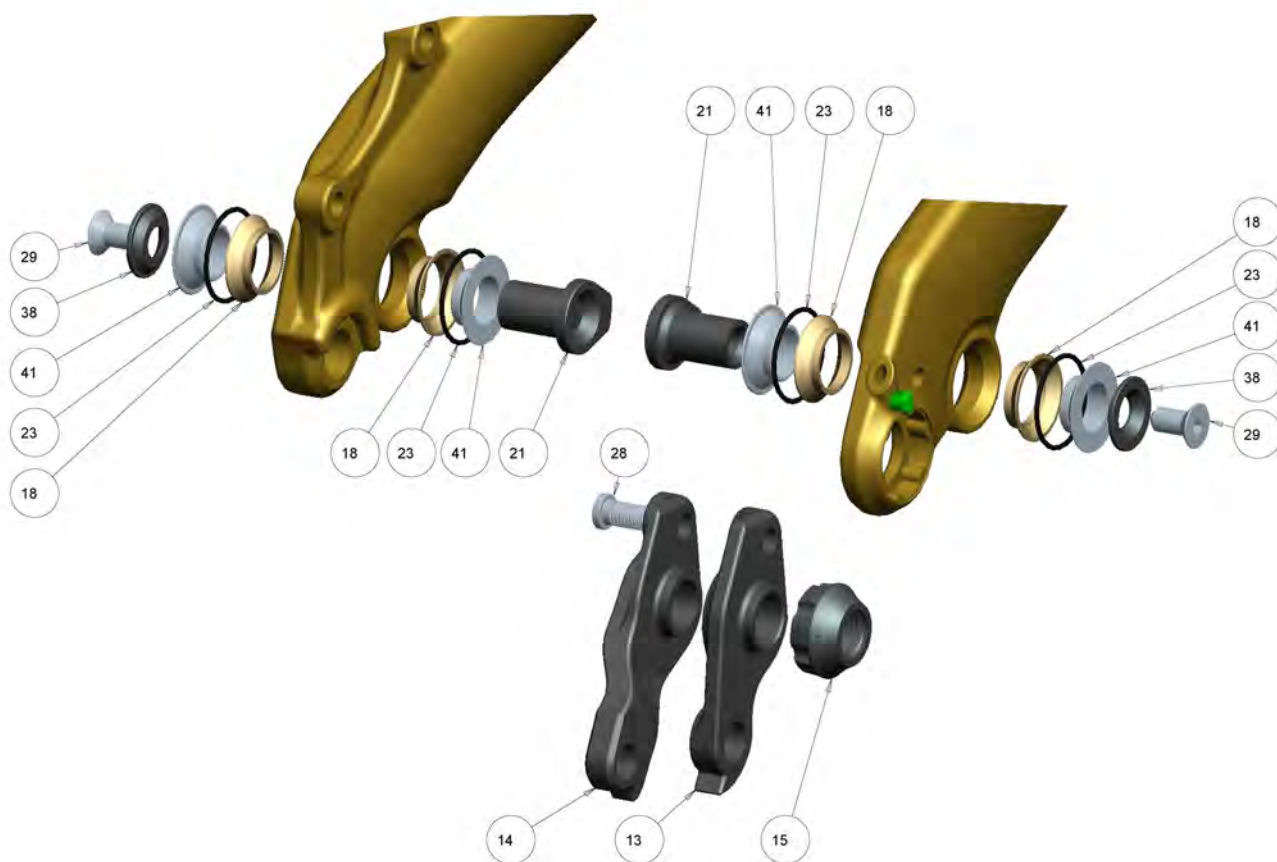
ALTITUDE / INSTINCT MSL
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS



ALTITUDE / INSTINCT MSL
CLEVIS VIEW



4.0 EXPLODED DIAGRAMS

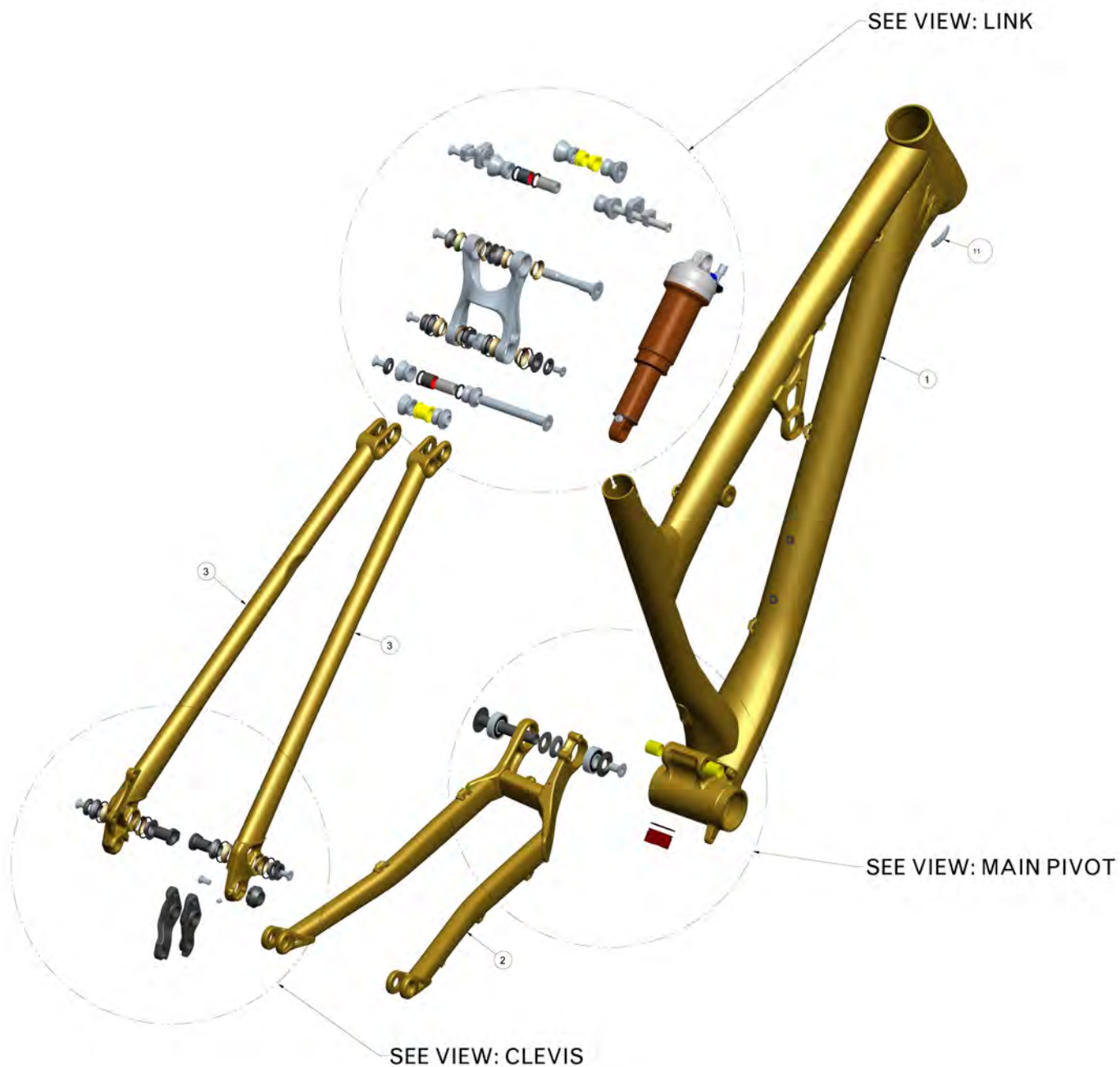


ALTITUDE / INSTINCT MSL			
#	QTY	PART NO.	DESCRIPTION
1	1	1093182	ALTITUDE & INSTINCT TOP LINK, ALLOY, 95MM LONG.
2	2	181063	BEARING - 12X28X8; 6001-2RS
3	1	180630	CUSTOM FLAT HEAD BOLT, 8MM X 60MM X M6 INT., STAINLESS
4	1	180466-070	28mm FLANGE HD, THRU. BLT; INTERNAL M8X1.25 - OD:12X70mm
5	2	180491 UAT	CSUNK BOLT OD:10MM X 21, INT M6 AL7075-T6, HARD BLACK ANO
6	1	180492 UAT	C'SUNK BOLT. OD:12X68, INT M6, AL7075-T6, HARD BLACK ANO.
7	1	180496 UAT	CSUNK BOLT OD:10MM X 85, INT M6 AL7075-T6, HARD BLACK ANO
8	4	N/A	FOX IGUS BUSHING
9	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
10	2	1093003	CABLE PORT RUBBER PLUG
11	1	1054510	2014 INSTINCT 29 CHAINSTAY, CARBON
12	2	180545	CONICAL WASHER - ID, 12MM, OD:24, 3.0MM THK.
13	1	1092020	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.), HARD BLACK ANO.
14	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
15	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
16	2	180628	FLIP CHIP, INSIDE, AL7075, BLACK ANODIZE.
17	2	180629	FLIP CHIP, OUTSIDE, AL7075, BLACK ANODIZE.
18	12	1805444 IGS	IGUS ANGULAR CONTACT BEARING, J3
19	2	1804016 IGS	BUSHING - IGUS i-glide J350-1214-15: ID:12, OD:14, L:15
20	1	1064271	2014 INSTINCT 29 CARBON FRONT TRIANGLE, 17.0" (M)
21	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLACK
22	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
23	8	180543	O-RING, ID 20MM, W:1.25. NITRILE.
24	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
25	1	111989 FOX	SHOCK PIN: ID:10 x 22.2mm LONG; STAINLESS STEEL
26	1	?	SHOCK PIN: ID:8 x 22.2mm LONG; STAINLESS STEEL
27	1	N/A	REAR SHOCK, 7.5" x 2.0"
28	1	180487-012	CUSTOM LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 12mm; STAINLESS STEEL
29	7	180566-012 FBV	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
30	1	180567-016 FBV	FLAT HEAD C'SUNK SOCKET SCREW, M8-1.25 X 16mm, A4/316 SS, 55060.080.016
31	2	N/A	SHOCK BUSHING, ID:12.7mm, OD:15mm, L:12.7mm, STEEL
32	2	180631	SHOCK REDUCER, FOX IGUS - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
33	2	3113001	SHOCK REDUCER, REAR, FOR FOX IGUS., AL7075-T6, HARD BLACK ANODIZE.
34	2	3113003	SHOCK REDUCER, STD. - FOR ID:8, OD:12.7 x 22.2mm PIN; 56mm OUTER SPAN
35	2	180495UAT	SHOCK REDUCER, REAR, STD, ID:10mm, AL7075-T6, HARD BLACK ANODIZE
36	1	1054513	2014 INSTINCT 29 SEAT STAY, CARBON, LEFT
37	1	1054512	2014 INSTINCT 29 SEAT STAY, CARBON, RIGHT
38	5	180476 AST	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
39	1	180494 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG, C'SUNK, ID:10, L:3.35, AL7075-T6, HARD BLACK
40	1	180499AST	BEARING CAP - OD:28 M8, AL6061-T6. HARD BLACK ANO
41	4	180490 PMG	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:12, L:2.65, HARD BLACK ANO.
42	6	180493 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:10, L:3.35, AL7075-T6, HARD BLACK ANO.

4.0 EXPLODED DIAGRAMS



ALTITUDE / INSTINCT ALLOY



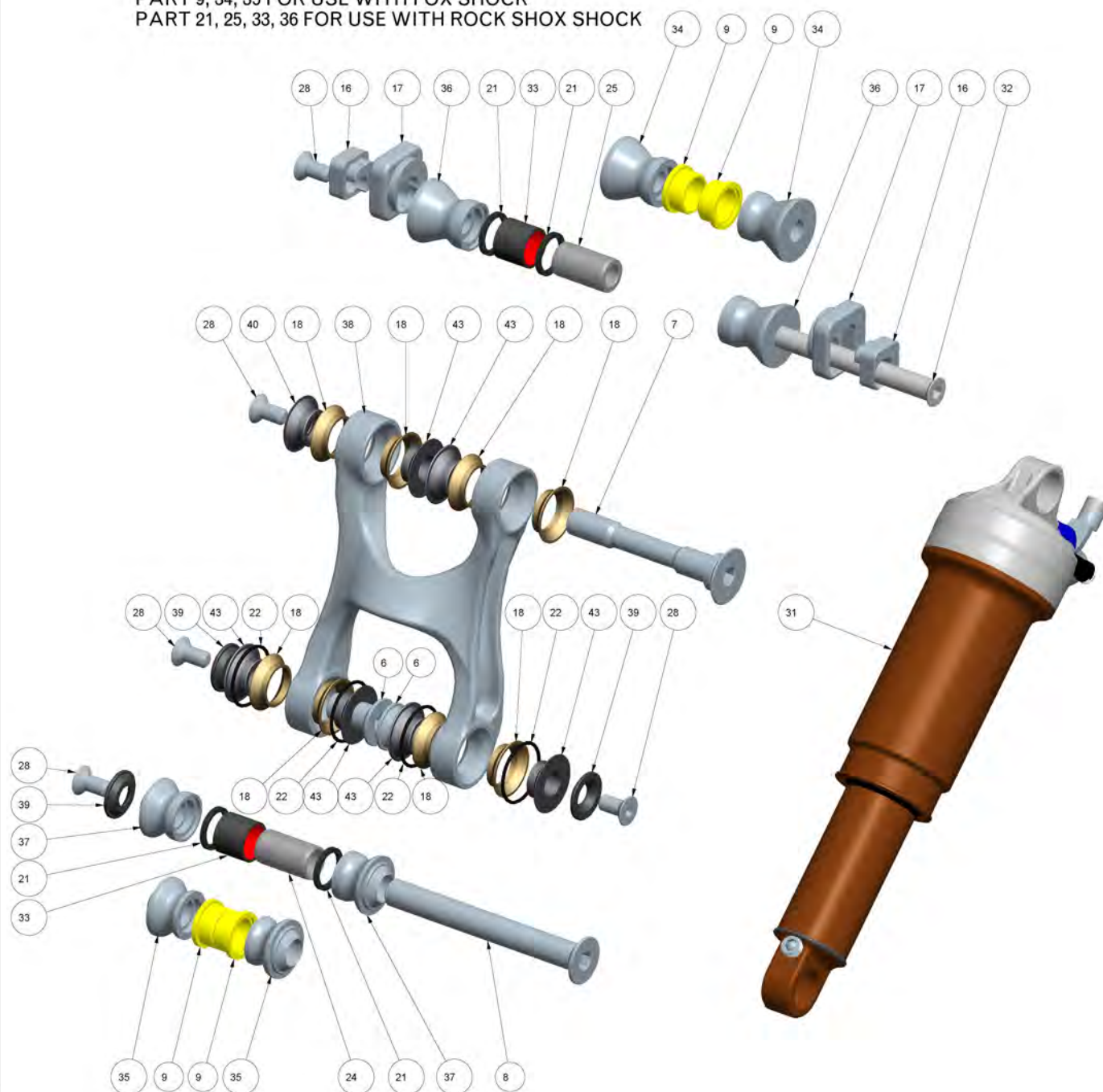
4.0 EXPLODED DIAGRAMS



ALTITUDE / INSTINCT ALLOY

LINK VIEW

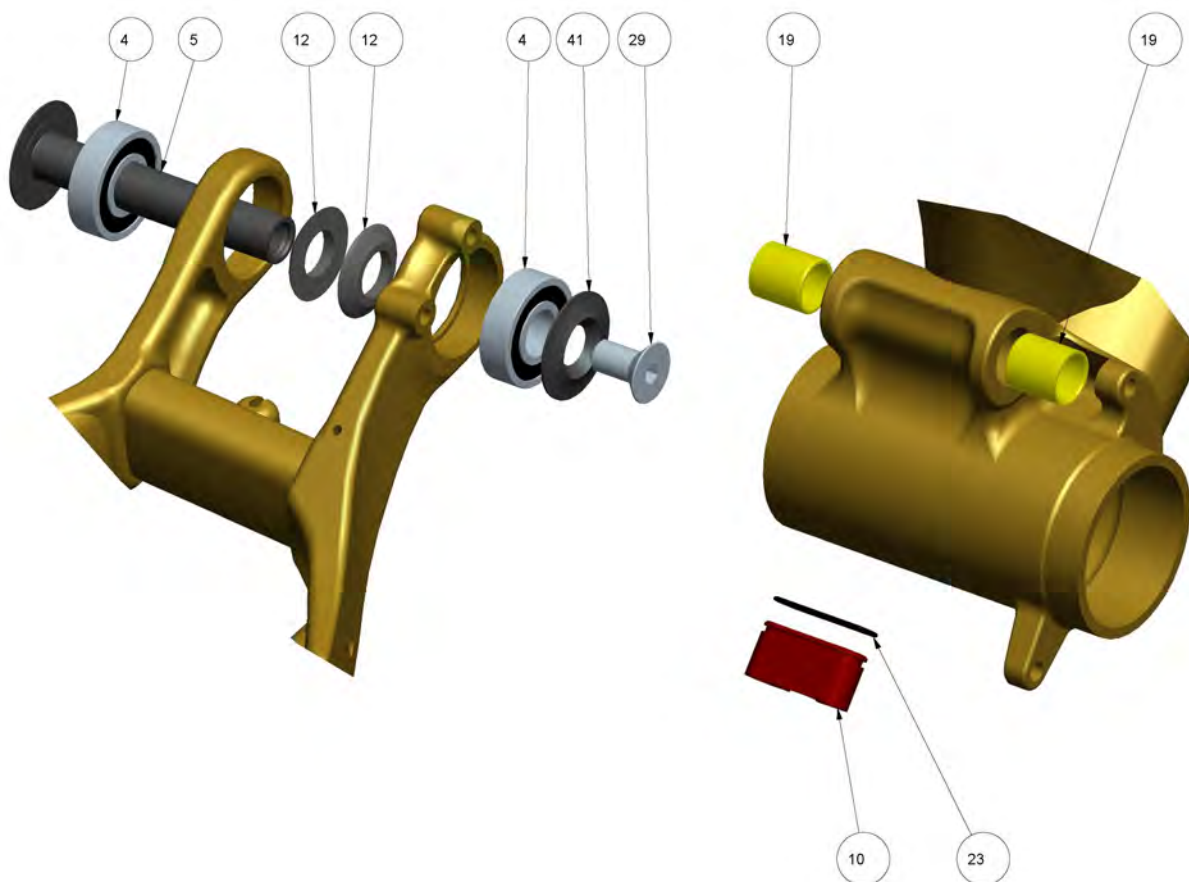
PART 9, 34, 35 FOR USE WITH FOX SHOCK
PART 21, 25, 33, 36 FOR USE WITH ROCK SHOX SHOCK



4.0 EXPLODED DIAGRAMS



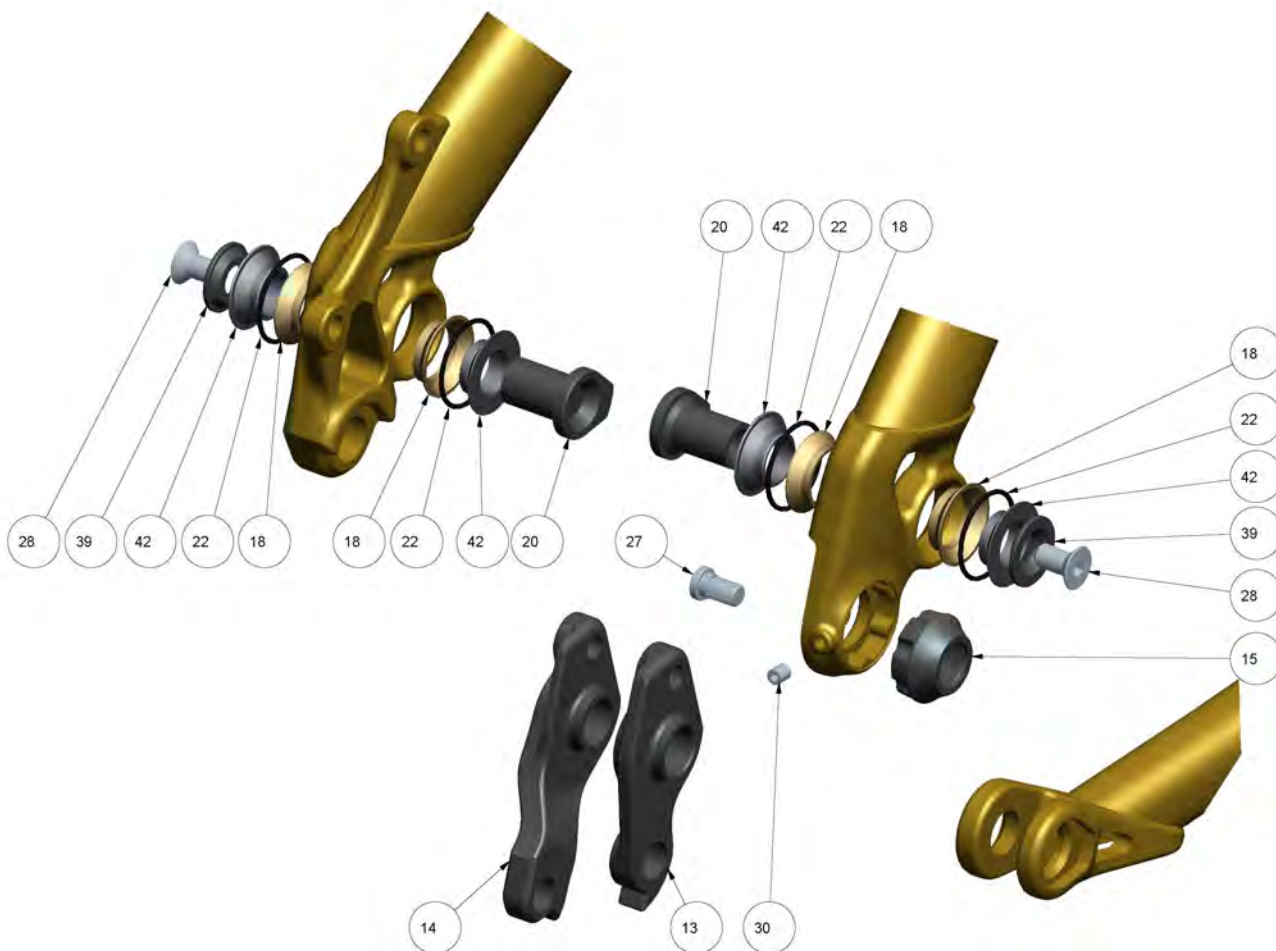
ALTITUDE / INSTINCT ALLOY
MAIN PIVOT VIEW



4.0 EXPLODED DIAGRAMS



ALTITUDE / INSTINCT ALLOY
CLEVIS VIEW



4.0 EXPLODED DIAGRAMS

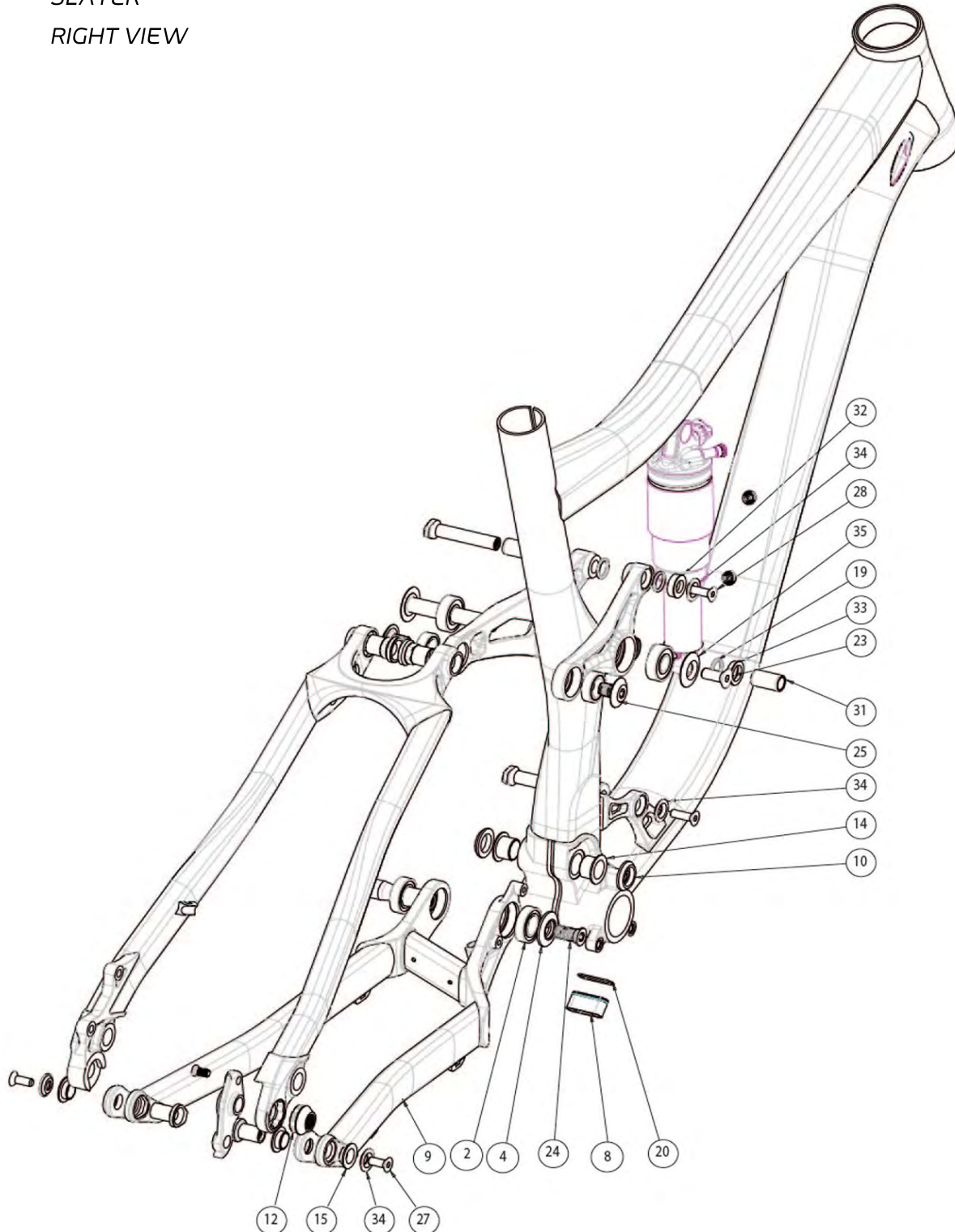


ALTITUDE / INSTINCT ALLOY			
#	QTY	PART NO.	DESCRIPTION
1	1	1063132	2013 ALTITUDE 18.0" FRONT TRIANGLE
2	1	1053130MEK	2013 ALTITUDE 650b CHAINSTAY
3	1	1053132-3MEK	2013 ALTITUDE 650b SEAT STAYS, R&L, AL7005.
4	2	181063	BEARING - 12X28X8; 6001-2RS
5	1	180466-070	28mm FLANG HD, THRU. BLT; M8X1.25 - OD:12X70mm
6	2	180491 UAT	CSUNK BOLT OD:10MM X 21, INT M6 AL7075-T6, HARD BLACK ANO
7	1	180492 UAT	C'SUNK BOLT. OD:12X68, INT M6, AL7075-T6, HARD BLACK ANO.
8	1	180496 UAT	CSUNK BOLT OD10MM X 85, INT M6 AL7075-T6, HARD BLACK ANO
9	4	N/A	FOX_IGUS_BUSHING
10	1	1092019	INTERNAL CABLE STOP INSERT, AL7005, HARD BLACK ANO.
11	1	1093003	CABLE PORT RUBBER PLUG
12	2	180545	CONICAL WASHER - ID, 12MM, OD-24, 3.0MM THK.
13	1	1092020	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.), HARD BLACK ANO.
14	1	1093002	DER. HANGER: (FOR SHIMANO 12mm X 142mm O.L.D.) DIRECT MOUNT., HARD BLACK ANO.
15	1	180448	2011 SLAYER: RH DROPOUT NUT SHIMANO 142mm HARD BLACK ANO.
16	2	180628	FLIP CHIP, INNER
17	2	180629	FLIP CHIP, OUTER
18	12	1805444 IGS	IGUS ANGULAR CONTACT BEARING, J3
19	2	1804016 IGS	BUSHING - IGUS i-glide J350-1214-15: ID:12, OD:14, L:15
20	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm; AL7075-T6, HARD BLAC
21	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
22	8	180543	O-RING, ID 20MM, W:1.25. NITRILE.
23	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
24	2	111989 FOX	SHOCK PIN: ID:10 x 22.2mm LONG; STAINLESS STEEL
25	1	?	SHOCK PIN: ID:8 x 22.2mm LONG; STAINLESS STEEL
26	1	N/A	SHIMANO 142 X 12MM QUICK RELEASE AXLE.
27	1	180487-010	CUSTOM, LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 10mm; STAINLESS STEEL
28	7	180566-012 FBV	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm, A4/316 SS, 55060.060.012
29	1	180567-016 FBV	FLAT HEAD C'SUNK SOCKET SCREW, M8-1.25 X 16mm, A4/316 SS, 55060.080.016
30	1	180571 FBV	SET SCR., FLT. PT., M4 x 0.7 x 5mmL. ZINC PLATED. 07860.040.006
31	2	N/A	REAR SHOCK, FOX, 7.875"x2.25" FOR ALTITUDE, 7.5"x2.0" FOR INSTINCT
32	1	180630	C'SUNK HD, THRU BOLT. OD:8 x 72, INT. M6x1.0, STEEL, PLATED
33	2	N/A	SHOCK BUSHING, ID:12.7mm, OD:15mm, L:12.7mm, STEEL
34	2	180631	SHOCK REDUCER, FRONT, IGUS, ID:8mm, FOR 56mm WIDE, AL7075-T6, HARD BLACK ANODIZE
35	2	3113001	SHOCK REDUCER, REAR, IGUS, ID:10mm, AL7075-T6, HARD BLACK ANODIZE
36	2	3113003	SHOCK REDUCER, FRONT, STD, ID:8mm, FOR 56mm WIDTH, AL7075-T6, HARD BLACK ANODIZE
37	2	180495UAT	SHOCK REDUCER, REAR, STD, ID:10mm, AL7075-T6, HARD BLACK ANODIZE
38	1	1093182	2013 ALTITUDE/INSTINCT TOP LINK, 95MM
39	5	180476 AST	C'SUNK WASHER: (for M6 screw) ID:6 x OD:18 x 3.0mm THK.
40	1	180494 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG, C'SUNK, ID:10, L:3.35, AL7075-T6, HARD BLACK
41	1	180499AST	BEARING CAP - OD:28 M8, AL6061-T6. HARD BLACK ANO
42	4	180490 PMG	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:12, L:2.65, HARD BLACK ANO.
43	6	180493 UAT	ALLOY WASHER FOR ANGULAR POLY. BRG. ID:10, L:3.35, AL7075-T6, HARD BLACK ANO.

4.0 EXPLODED DIAGRAMS



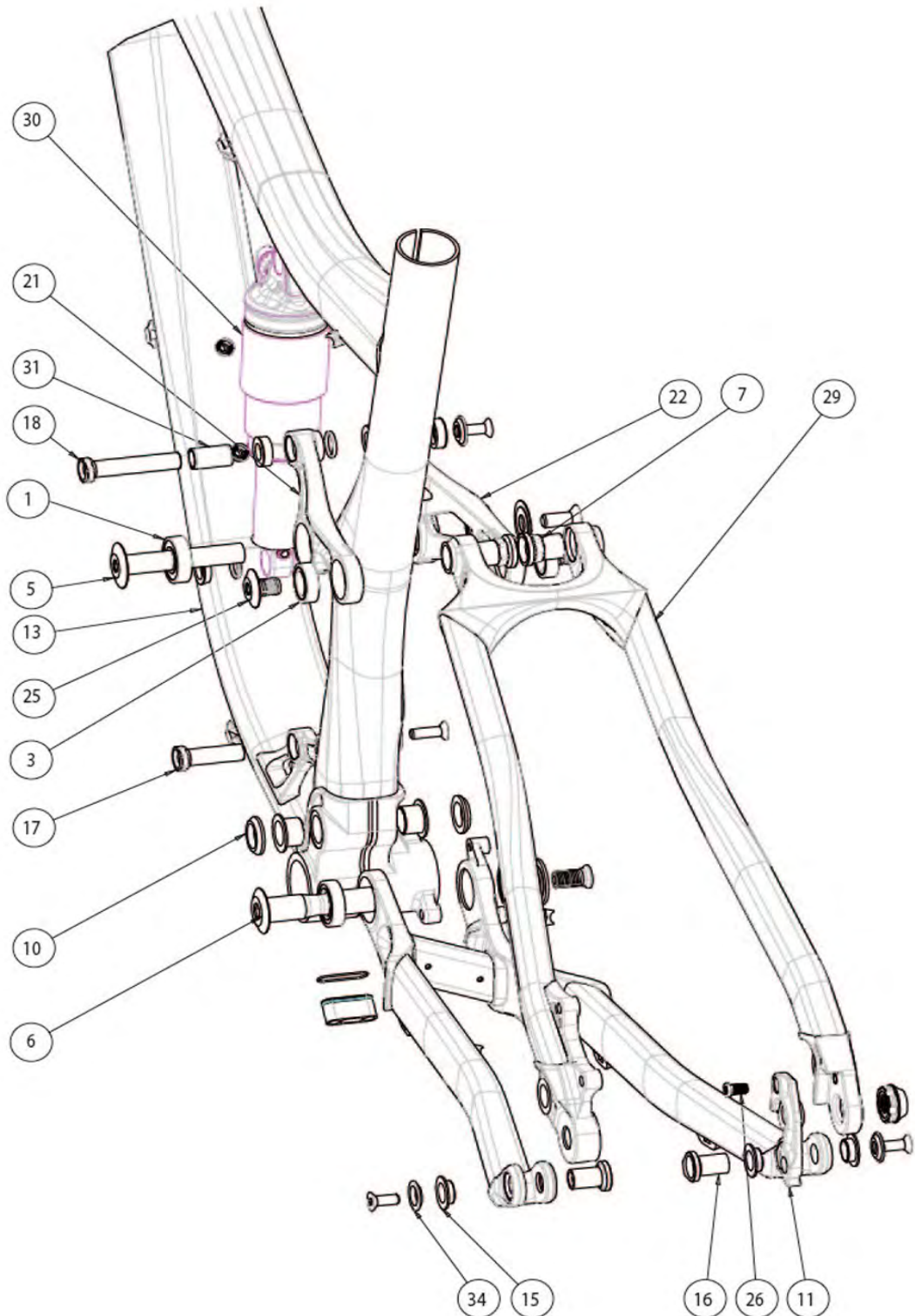
SLAYER
RIGHT VIEW



4.0 EXPLODED DIAGRAMS



SLAYER
LEFT VIEW



4.0 EXPLODED DIAGRAMS

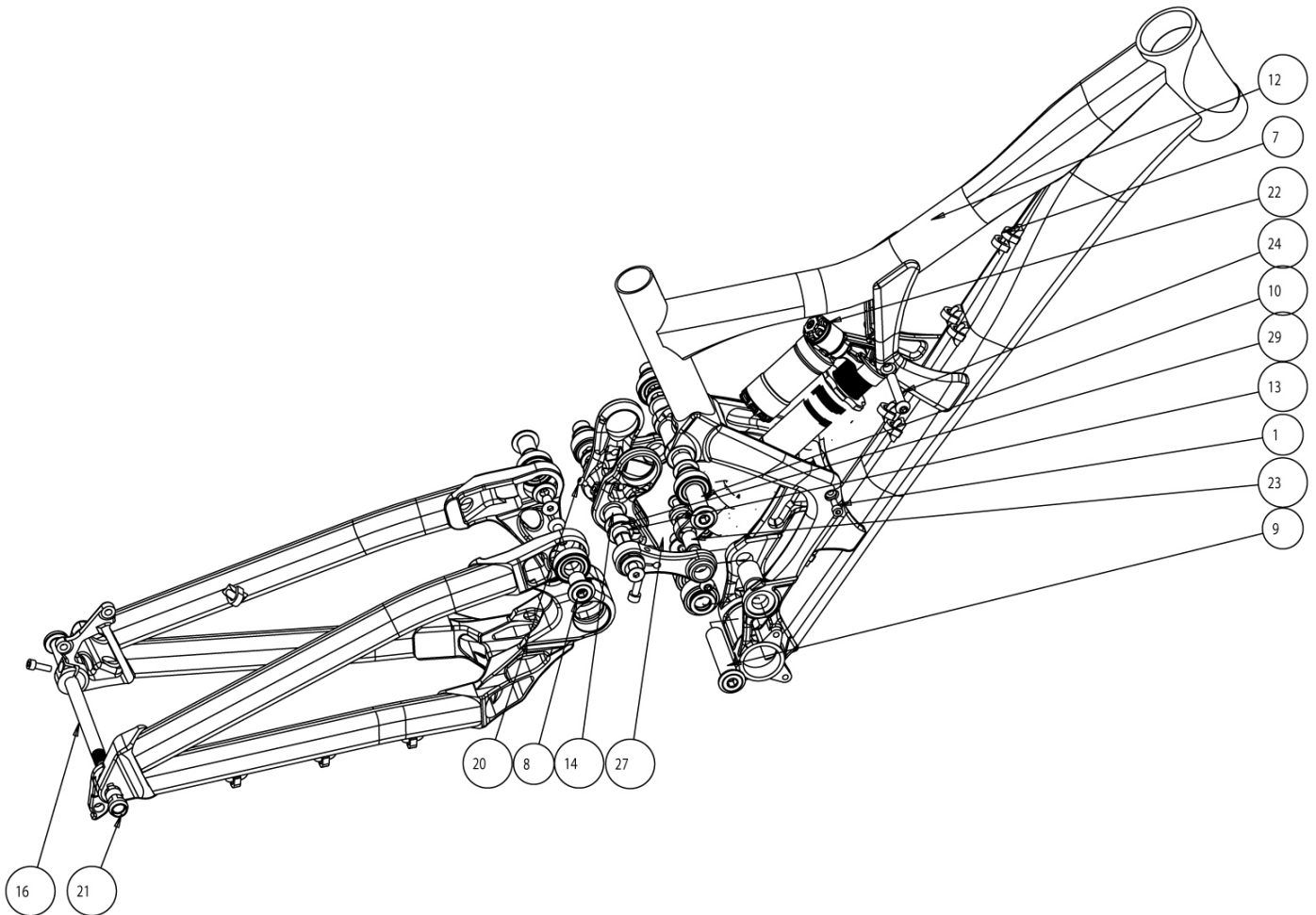


SLAYER			
#	QTY	PART NO.	DESCRIPTION
1	2	181063	BEARING - 12X28X8; 6001-2RS
2	2	181097	BEARING; Single Row, Angular contact - ID:15 OD:28X7mm
3	2	181111	BEARING; Double Row, Angular contact - ID:15 OD:24X7mm. 3802-2RS
4	1	180477	BEARING CAP - OD:28 x M10 SCREW (HD:14), FOR 15mm AXLE
5	1	180466-070	28mm FLANGE HD, THRU. BLT; INTERNAL M8X1.25 - OD:12X70mm
6	1	180467-064	FLANGE HD BOLT (HD:28mm); INTERNAL M10X1.25 - OD:15X64mm
7	2	180489-022	C'SUNK HEX BOLT - OD:15 X 22mm. INT M10X1.25 THREAD
8	1	1092019	INTERNAL CABLE STOP INSERT
10	2	180461	CONICAL WASHER - ID:15mm, OD:23, 4.0mm THK
11	1	1092020	DER HANGER FOR SHIMANO 12mm X 142mm O.L.D.
12	1	180448	DROPOUT NUT M12-1.5 FOR SHIMANO 142mm O.L.D
14	2	180307IGS	IGUS BUSHING - ID:15, OD:17 X 12mm
15	4	180335IGS	IGUS BUSHING - ID:12, OD:14 X 5.5mm
16	2	180463-021	KEY HD C'SUNK "L" BOLT - INT M6-1.0 THREAD; OD:12mm X 21mm
17	1	180464-038	KEY HD, SHK BLT - OD:10mm X 38mm; INT M6-1.0 THREAD
18	1	180464-056	KEY HD, SHK BLT - OD:10mm X 56mm; INT M6-1.0 THREAD
19	4	180522	RUBBER O-RING, FOR 12.7mm FOX SHOCK PIN
20	1	180572	O-RING ID:14MM, W:1.5MM, NITRILE RUBBER
21	1	1091015	2011 SLAYER: ROCKERPLATE (LH)
22	1	1091016	2011 SLAYER: ROCKERPLATE (RH)
23	1	180435-020	FLAT HD SOCKET CAP SCREW, M8-1.25 X 20mm
24	1	180470-020	CUSTOM FLAT HD OD:14mm, C'SUNK SCREW; EXT M10-1.25 X 20mm
25	2	180486-014	FLANGE HD SCREW HD:24mm, M10-1.25 X 14mm
26	1	180487-010	CUSTOM, LOW FLAT HEAD SHOULDER SCREW; M6-1.0 X 10mm
27	2	180191AST-016	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 16mm
28	2	180191AST-020	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 20mm
30	1	N/A	REAR SHOCK - 7.875" X 2.25"
31	2	111989FOX	SHOCK PIN: ID:10 x 22.2mm LONG
32	2	180509	SHOCK REDUCER - FOR ID:10, OD:12.7 x 22.2mm
33	2	180516	SHOCK REDUCER - FOR OD:12.7 x 22.2mm
34	4	180476AST	C'SUNK WASHER: for M6 screw ID:6 x OD:18 x 3.0mm THK
35	1	180499AST	BEARING CAP - OD:28 FOR M8 SCREW

4.0 EXPLODED DIAGRAMS



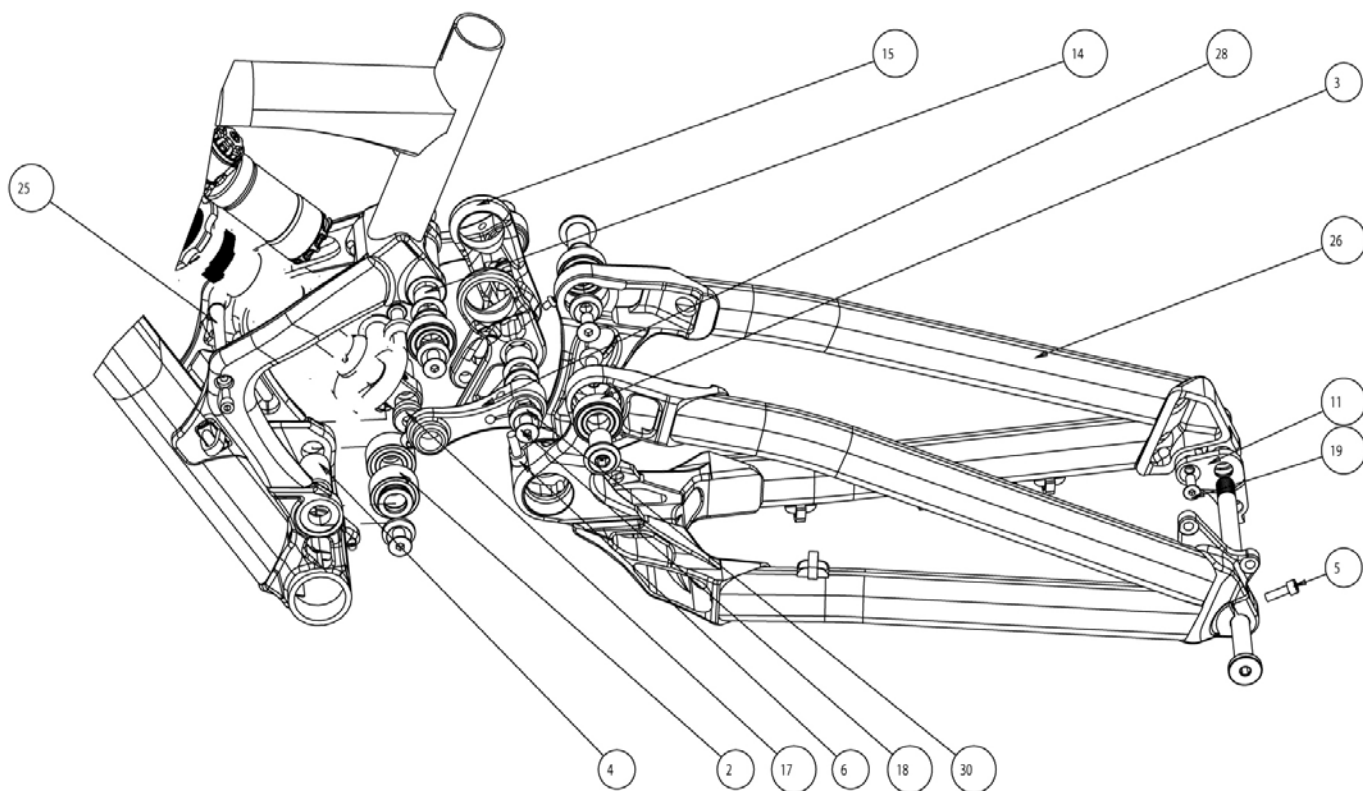
FLATLINE
RIGHT VIEW



4.0 EXPLODED DIAGRAMS



FLATLINE
LEFT VIEW



4.0 EXPLODED DIAGRAMS



FLATLINE			
#	QTY	PART NO.	DESCRIPTION
1	2	180443UAT	M5 X 0.8 X10MM L ALUM. CAP SCREW
2	2	181086ABI	Ball Bearings: Main Pivot, 15-32-13, 3002-2RS
3	4	181087ABI	Ball Bearings: Top Link & Tug, 15x32x9, 6002 2RS
4	1	180387UAT	Bearing Spacer, ID: 15 x 26L
5	1	180238FBY	SOCKET HEAD CAP SCREW; M5X16
6	2	180329FBY	SOCKET HEAD CAP SCREW; M6X16
8	2	180430UAT-020	FLANGE HD, THRU. BLT. M8X1.25 INT., OD15X20
9	1	180430UAT-071	FLANGE HD, THRU. BLT. M8X1.25 INT., OD15X71
10	1	180430UAT-081	FLANGE HD, THRU. BLT. M8X1.25 INT., OD15X81
11	1	180901AST	CUSTOM FLATLINE DH HANGER
13	1	180454AST	HEXAGON AXLE, 15.05MM OD
14	4	181088IGS	IGUS BUSHING, LFM-1517-17
15	1	109073	TOP LINK, 2010 WC FLATLINE
16	1	122971MRL	FLAT WORLD CUP AXLE
17	4	180312	SHOCK SPACER, REAR
18	6	180435-016	FLAT HD SOCKET CAP SCREW, M8-1.25 X 16mm
19	1	180359FBY-012	FLAT HEAD C'SUNK SOCKET SCREW, M6-1.0 X 12mm
20	1	180438AST	SOCKET HEAD CAP SCREW, M4X0.7 X 6mm
21	1	180431SH	SHIMANO NUT THREADED, M12X1.75
22	1	N/A	REAR SHOCK
23	2	111990FOX	FOX STEEL SLEEVE, 8mm BOLT X 0.501 OD
24	2	180505AIN	SLEEVE BOLT, OD:8MM x 46MM - w/M6 x 14.5MM
25	1	180428	ALU. STIFFENER ROD, RED ANO
27	1	1099023AST	TUG LINK, LEFT
28	1	1099024AST	TUG LINK, RIGHT
29	6	180287	FLAT WASHER, 15mm X 2mm THK
30	6	180338	CUSTOM M8 C'SUNK WASHER FOR FLT HD CP SCREW

5.0 WARRANTY POLICY



ROCKY MOUNTAIN BICYCLES WARRANTY POLICY

At Rocky Mountain Bicycles, we stand behind every bike we build. If anything goes wrong with your bicycle, please contact the authorized Rocky Mountain Bicycle dealer in your area. All warranty and after sale service, must be handled by an authorized dealer. To locate your nearest Rocky Mountain dealer, please visit our dealer locator at www.bikes.com.

WARRANTY FOR ORIGINAL OWNERS

We cover your Rocky Mountain frame from the **original date of purchase** against defects in material and workmanship.

Frame Material / Type of Use

CroMoly Steel:	Limited Lifetime*
Aluminum Hybrids:	Limited Lifetime*
Carbon Fiber:	5 years - Limited*
Aluminum – front & fully suspended	5 years - Limited*
Road & Cross bikes:	5 years – Limited*
Downhill & Freeride:	3 years - Limited*

** Please refer to limitations stated in section 4, 5, 6, 7, & 8 in our owners' manual.*

OTHER WARRANTY COVERAGE AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS

Coating – paint and decals	1 year
Frame hardware, suspension, pivots and bushings	1 year
DH & Freeride frame hardware, suspension	6 months
Pivots and bushings	6 months

Please note: non Rocky Mountain branded components are covered by the respective manufacturer's warranties.

5.0 WARRANTY POLICY



WHAT WILL VOID YOUR WARRANTY?

Warranty is **not** valid for any bicycles previously used for commercial activity such as rental, courier, police, security etc.

Installation of components, parts, or accessories not originally intended for or compatible with the bicycle (or frame) as sold.

Purchasing a Rocky Mountain Bicycle from an unauthorized dealer.

Purchasing a Rocky Mountain Bicycle or frame off third party internet sites (as eBay) no matter what the listing says.

WHAT IS NOT COVERED?

Normal wear and tear.

Damage or failure caused by accident, misuse, abuse or neglect.

Improper assembly and/or lack of proper maintenance

Extreme or improper use of your Rocky Mountain bicycle outside of its intended purpose.

Rocky Mountain Bicycles does not guarantee the compatibility of original components with a warranty replacement frame

UV rays effects (colors fading, turning yellow)

The components, parts, or accessories not compatible with the bicycle (or frame)

Details of what is not covered under warranty

A. Normal wear and tear on tires, tubes, brakes, gear cables, brake pads etc., are not covered. Your authorized Rocky Mountain dealer will inform you of what these normal maintenance items consist of.

B. Consequential damage or any damage caused by accident, misuse or abuse.

C. Improper assembly and/or lack of proper maintenance, sandblasting, sanding, grinding, wire brushing, filing, welding, brazing, drilled holes, anodizing, repainting, or chrome plating is not covered under your warranty and may void the warranty of the component manufacturers. Internal rust perforation on CroMoly steel frames is not covered under warranty.

D. You take great personal risk and shall forfeit the warranty, as outlined in the Warranty, when you ride in extreme terrain as depicted in mountain bike videos (i.e. riding "trials" style courses, riding ramps, doing stunts, riding on BMX tracks, riding down city stairs and embankments, or riding in other similar terrain. It is important to note that bent components, frames, forks, handlebars, seat posts, pedals, cranks and wheel rims are signs of accidents and/or abuse.

E. Labour for part replacement or changeover is not included

F. Rocky Mountain Bicycles retains the right to repair or replace at its discretion any part that is deemed a valid warranty. Please note that Rocky Mountain Bicycles cannot guarantee a colour match to the original component.

5.0 WARRANTY POLICY



EXCLUSION AND LIMITATION OF DAMAGES

THE WARRANTY OF ROCKY MOUNTAIN BICYCLES IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCTS AND DOES NOT GRANT ANY WARRANTY EITHER EXPRESSED OR IMPLIED, LEGAL OR CONVENTIONAL AND DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES, AND ROCKY MOUNTAIN SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR DIRECT OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES EVEN WHERE ROCKY MOUNTAIN HAS BEEN ADVISED OF SUCH DAMAGES AND ROCKY MOUNTAIN'S LIABILITY SHALL BE LIMITED TO \$ 50.00.

MAKING A WARRANTY CLAIM:

Please contact your original authorized Rocky Mountain dealer. If this business no longer carry or exists, please contact the closest Rocky Mountain Dealer near you. If you have purchased your Rocky Mountain bicycle from an authorized on-line retailer, you must contact them directly.

Please provide copy of **original sales receipt** for proof of **original ownership**

Please bring your **complete bicycle** to your authorized Rocky Mountain dealer for inspection. Your local dealer will provide the quickest answers and solutions for your warranty questions.

For International dealers, please contact your local distributor.

6.0 CRITICAL DIMENSIONS



TABLE 1 OF 2:

Frame	Headset	Max Fork Length	Seat Post Ø	Front Derailleur / ISCG Standard	Bottom Bracket
Element RSL	IS42 IS52	120mm	30.9mm	E type Low Direct Mount S3 Bottom Pull	Press Fit BB92
Thunderbolt MSL	IS42 IS52	130mm	30.9mm	E type Low Direct Mount S3 Bottom Pull	Press Fit BB92
Thunderbolt	ZS44 ZS56	120mm	30.9mm	E type Low Direct Mount S3 Bottom Pull	Press Fit BB92
Vertex RSL	IS42 IS52	100mm	27.2mm	34.9mm Down Swing High Clamp Bottom Pull	Press Fit BB92
Vertex	ZS44 ZS56	100mm	27.2mm	31.8mm Top Swing Low Clamp Bottom Pull	Press Fit BB92
Altitude	ZS44 ZS56	160mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Altitude Rally Edition	ZS44 ZS56	160mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Altitude MSL	IS42 IS52	160mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Altitude MSL Rally Edition	IS42 IS52	160mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Instinct	ZS44 ZS56	140mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Instinct BC Edition	ZS44 ZS56	140mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Instinct MSL	IS42 IS52	140mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Instinct MSL BC Edition	IS42 IS52	140mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	Press Fit BB92
Blizzard	ZS44 ZS56	120mm	30.9mm	E type Low Direct Mount S3 Bottom Pull / ISCG 05	BSA 100mm
Sport Hardtail 29"	ZS44 ZS44 or ZS44 EC44 * for tapered steerer	100mm	27.2mm	31.8mm Top Swing Low Clamp Top Pull	73mm
Sport Hardtail 27.5"	ZS44 ZS44 or ZS44 EC44 * for tapered steerer	120mm	27.2mm	31.8mm Top Swing Low Clamp Top Pull	73mm
Vertex 24"	ZS44 ZS44	50mm	27.2mm	31.8mm Top Swing Low Clamp Top Pull	68mm
Vertex 20"	ZS44 ZS44	80mm	27.2mm	N/A	68mm
Edge 24"	EC34 EC34	50mm	27.2mm	31.8mm Top Swing Low Clamp Top Pull	68mm
Edge 20"	EC34 EC34	50mm	27.2mm	N/A	68mm
Solo CX	ZS44 ZS44	N/A	31.6mm	34.9mm Down Swing High Clamp Bottom Pull	68mm
Metropolis	EC34 EC34	N/A	31.6mm	34.9mm Top Swing Low Clamp Top Pull	68mm
RC	ZS44 ZS44	N/A	31.6mm	34.9mm Top Swing Low Clamp Bottom Pull	68mm
Whistler	IS42 IS42	80mm	27.2mm	31.8mm Top Swing Low Clamp Bottom Pull	68mm
Whistler LO	IS42 IS42	80mm	27.2mm	31.8mm Top Swing Low Clamp Bottom Pull	68mm
Metro LO	ZS44 ZS44	N/A	27.2mm	31.8mm Top Swing Low Clamp Bottom Pull	68mm

6.0 CRITICAL DIMENSIONS



TABLE 2 OF 2:

Frame	Rear OLD	Shock Length	Shock Hardware	Disc Brake Standard	Max Tire Size **	Chainline
Element RSL	142mm	6" x 1.25"	22.2 x M10 Both Ends	6" IS	29" x 2.25	50mm
Thunderbolt MSL	142mm	7.5" x 2"		6" IS	27.5" x 2.35	50mm
Thunderbolt	142mm (135mm TB710)	7.5" x 2"	22.2 x M10 Both Ends	6" IS	27.5" x 2.35	50mm
Vertex RSL	142mm	N/A	N/A	6" IS	29" x 2.25	50mm
Vertex	135mm	N/A	N/A	6" IS	29" x 2.25	50mm
Altitude	142mm	7.875" x 2.25"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	27.5" x 2.4	50mm
Altitude Rally Edition	142mm	7.875" x 2.25"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	27.5" x 2.4	50mm
Altitude MSL	142mm	7.875" x 2.25"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	27.5" x 2.4	50mm
Altitude MSL Rally Edition	142mm	7.875" x 2.25"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	27.5" x 2.4	50mm
Instinct	142mm	7.5" x 2"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	29" x 2.35	50mm
Instinct BC Edition	142mm	7.5" x 2"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	29" x 2.35	50mm
Instinct MSL	142mm	7.5" x 2"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	29" x 2.35	50mm
Instinct MSL BC Edition	142mm	7.5" x 2"	22.2 x M10 Shaft / 22.2 x M8 Air Can	6" IS	29" x 2.35	50mm
Blizzard	197mm	N/A	N/A	6" PM	26" x 4.8 ** spec dependent	73mm
Sport Hardtail 29"	135mm	N/A	N/A	6" IS	29" x 2.25	50mm
Sport Hardtail 27.5"	135mm	N/A	N/A	6" IS	27.5" x 2.25	50mm
Vertex 24"	135mm	N/A	N/A	6" IS	24" x 2.1	47.5mm
Vertex 20"	135mm	N/A	N/A	6" IS	20" x 2.1	N/A
Edge 24"	135mm	N/A	N/A	6" IS	24" x 2.1	47.5mm
Edge 20"	135mm	N/A	N/A	6" IS	20" x 2.1	44mm
Solo CX	135mm	N/A	N/A	6" IS	700 x 35c	43.5mm
Metropolis	135mm	N/A	N/A	6" IS	700 x 38c * w/o fenders	50mm
RC	135mm	N/A	N/A	N/A	700 x 32c * w/o fenders	50mm
Whistler	135mm	N/A	N/A	6" IS	700 x 44c * w/o fenders	50mm
Whistler LO	135mm	N/A	N/A	6" IS	700 x 44c * w/o fenders	50mm
Metro LO	135mm	N/A	N/A	N/A	700 x 38c * w/o fenders	50mm

**Please note: This is ONLY A GUIDELINE. ACTUAL tire widths vary greatly for the same size. ie a 2.35" Maxxis is MUCH smaller than a 2.35" Schwalbe. Also, ACTUAL tire size can vary with construction. Entry level tires can balloon up more. Tire clearance will also vary depending on FD spec (2x10, 3x10, Shimano, SRAM...). Consumers should personally check clearance at FD and chainstay to avoid damage.

7.0 CONTACT US



ROCKY MOUNTAIN BICYCLES Eastern Office

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Québec, Canada, G6A 1A9
T : 1.800.663.2512 F : 1.800.570.8356

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North Vancouver, BC V7J 1J3
T : 1.800.663.2512 F : 604.980.9975

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