



JADE X WP1

SERVICE GUIDE



POWERED BY



Version 1.0

WARNING!

Failure to comply with these warnings and instructions may cause **SERIOUS INJURY, DEATH, or DAMAGE TO YOUR PRODUCT.**

Be sure to read this manual carefully before using your DVO suspension. Throughout this manual, reference is made that “an accident” could occur. Any accident may cause damage to the product, **SERIOUS INJURY, OR DEATH.**

These instructions contain important information about the correct installation, guidelines for set-up, service and maintenance of your suspension. Nevertheless, please be informed that special knowledge and tools are essential to install, service and to maintain DVO Suspension. Common mechanical knowledge may not be sufficient to repair, service or maintain your suspension. Therefore we strongly recommend getting your suspension installed, serviced and/or maintained by a trained and qualified bicycle mechanic. Improper installation, service or maintenance can result in an accident.

Forks and rear shocks contain fluids and air under extreme pressure. **DO NOT** attempt to disassemble any portion of a DVO Suspension product unless instructed to do so by a DVO Suspension authorized technician.

Only use genuine DVO Suspension replacement parts. Modification, improper service, or the use of aftermarket replacement or spare parts may result in an accident and **VOIDS** the warranty of your product.

DVO Suspension forks and rear shocks are designed for the usage by a single rider only.

DO NOT use DVO Suspension products on any powered vehicle that is not a pedal-assist Class-1 or Class-3 e Bike.

Always be equipped with proper safety gear. This includes a properly fitted and fastened helmet. According to your riding style you should use additional safety protection. Make sure your equipment is in flawless condition.

Make sure you select the correct fork and rear shock according to your frame manufacturer specification. Installing suspension that does not match the geometry of your frame could result in a failure of the suspension itself and void the suspension warranty. Installing a fork or rear shock not designed for your frame will change the geometry and handling of your bike. Learn how to ride and train your skills. Know your limits and never ride beyond those.

Study all other manuals provided with your bicycle and make yourself familiar with all components mounted to your bike.

PRE-RIDE SAFETY CHECK

1. **DO NOT** ride your bicycle if any one of the following test criteria is not passed! Riding your bike without eliminating any defect or carrying out the necessary adjustments can result in an accident, **SERIOUS INJURY OR DEATH.**
2. Do you notice any cracks, dents, bent, or tarnished parts of your suspension fork or shock, or any other part of your bicycle? If so, please contact a trained and qualified bicycle mechanic to check your fork, shock, seat post, saddle, and complete bike.
3. Do you notice any oil leaking from your fork and/or shock? If so, please consult a trained and qualified bicycle mechanic to check your suspension and bike before riding.
4. Make sure your wheel is attached and centered properly in order to avoid any contact with the suspension fork or brake system.
5. Make sure your axle system is secure. There should be no play between the hub and fork lower.
6. Make sure your brakes are properly installed, adjusted, and work properly. This also applies to every other part of your bike like handlebars, pedals, cranks arms, seat post, saddle, etc.
7. Check the cable length and routing of your braking components. Make sure they do not interfere with your steering actions or full compression and extension of your suspension.
8. Check your shock hardware and ensure there is no play between the shock and mounting surfaces. Ensure your shock hardware is tightened to the bike manufacturer's recommend torque before riding.

Service Overview

This manual will guide you step by step performing a full service to your Topaz shock. Please follow each instruction carefully to achieve the best and safest results.

*Always wear your safety gear while working on suspension products. We care about you, make sure you wear your safety glasses and protective gloves while servicing DVO Suspension Products.

⚠ WARNING!

ALWAYS WEAR SAFTY GEAR!

Tools Needed For Service

1. Valve Core Remover
2. Valve Puller
3. Oil Drain Pan
4. Bleed Syringe
5. 24mm Crows-foot Wrench
6. 16mm Socket or Crows-foot Wrench
7. Flathead Screwdriver
8. Vice
9. 14mm Shaft Clamps
10. Pick
11. Shock Pump
12. 2mm, 3mm, 4mm Allen Key
13. Torque Wrench
14. 14mm Seal Bullet (#140-M080-S)

Supplies Needed For Service

1. Rebuild Kit part #223-9008
2. Gloves
3. Safety Glasses
4. Clean, Lint Free Rag
5. Suspension Cleaner or Alcohol
6. Loctite 263 RED
7. Loctite 243 BLUE
8. 2.5 wt oil. No Maxima
9. Slickoleum Grease

Recommended Service Interval

- Full Service 100 Hours of Ride Time

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Lube & Torque Specs

Lubricant	Brand	Wt.	Notes
Shock oil	DVO, Motul, Motorex, Silkoline, R.S.P.	2.5	Do NOT use Rock Shox or Maxima powersports suspension fluids under any circumstances. Permanent seal damage will occur.
Grease	Slickoleum, Slick Honey	-	

Product	Oil / Grease	Volume	Type (Wt.)
DVO-WP Jade X	Damper	70-80 cc	2.5
	Slickoleum, Slick Honey	N/A	2.5

Product	Part	Torque	Notes
DVO-WP Jade X	Bleed screw	2 N.m	N/A
	Damper body end cap	20 N.m	N/A
	Housing to damper body	20 N.m	Loctite 2701 Green
	Reservoir housing bolts (x2)	3 N.m	N/A
	Damper shaft to eyelet	15 N.m	Loctite 263 Red
	Piston group bolt	15 N.m	Loctite 243 Blue
	Piston nut	5 N.m	Loctite 243 Blue
	CV Compression unit	5 N.m	N/A
	HSC/LSC knob set screw	.6 N.m	Loctite 243 Blue
	Valve core	.6 N.m	N/A

The data contained in this document supersedes any and all previous lubrication, torque, and thread coat specifications. Failure to follow these specifications will void the product warranty and may lead to serious injury or death.

Damper Service

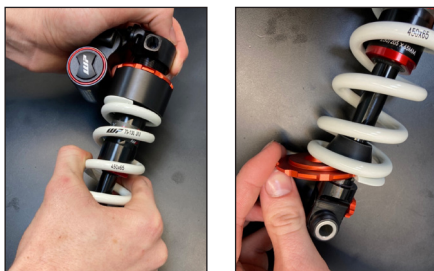
⚠ WARNING!

EYE HAZARD



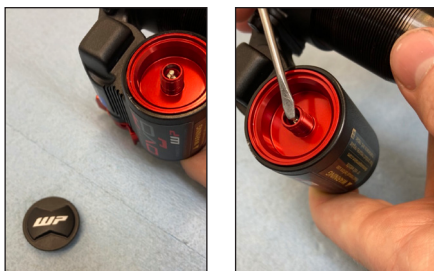
1.

Rotate the spring preload collar counter-clockwise to decrease tension on the spring, and remove the lower spring clip. Remove the spring and spring spacer and set aside.



2.

Remove the bladder cap and release the air from the bladder.



3.

Thread on the valve puller, and press the bladder cap inward, exposing the bladder air plug clip. Remove the valve puller. Use a small pick or flathead and gently remove the clip and set aside.



4.

Thread the valve puller back on, and pull up to remove the bladder. Remove the bladder cap and bladder from the valve puller and set aside, and pour the reservoir oil into a catch basin.



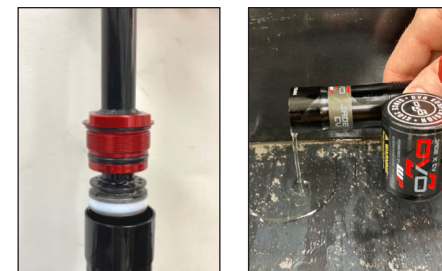
5.

Gently clamp the shock housing in a vice with the shaft/eyelet facing up/vertical. Use a 24mm wrench to loosen the damper and cap.



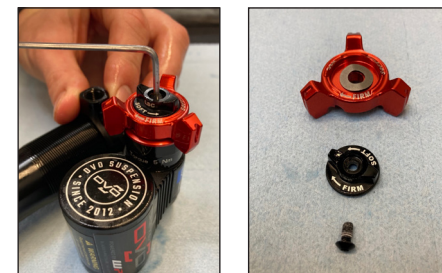
6.

Unthread and remove the shaft assembly and set aside. Drain the oil from the damper body into a catch basin.



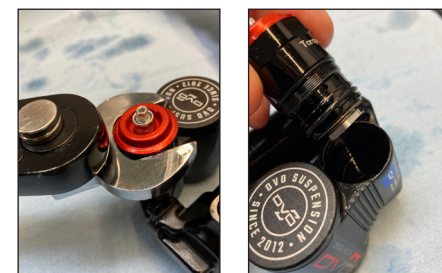
7.

Using a 2mm allen wrench, remove the compression knob bolt and LSC knob. Next, remove the bent shim and HSC knob and set aside.



8.

Using a 24mm wrench, loosen and remove the CV compression assembly and set aside.



Damper Service (continued)



9.

Use a 3mm allen wrench to remove the reservoir to housing bolts, and then remove the reservoir from the upper housing and set aside.



10.

Using a small pick, remove the o-ring from the upper housing. Remove the alignment pin from the reservoir as shown. Take care not to misplace!



11.

Clamp the damper shaft in a vice using 14mm shaft clamps. Be sure the rebound adjuster is facing outward to provide adequate clearance and prevent damage. Use a 16mm socket to loosen the piston bolt.



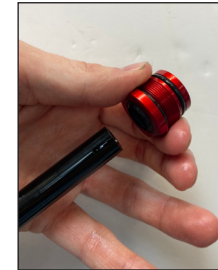
12.

Remove the piston bolt group, spray clean with suspension cleaner and set aside.



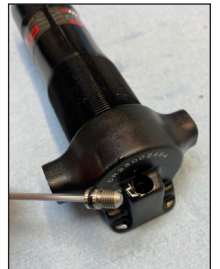
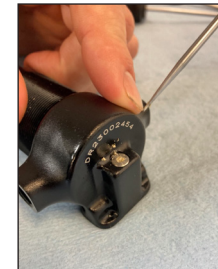
13.

Remove the damper end cap and bottom out bumper and discard. A new damper endcap and bottom out bumper are included in the rebuild kit.



14.

If you are servicing a new shock for the first time, you will need to remove the wax pellet from the bleed screw before it can be removed. Use a pick to remove the wax and expose the hex opening. Use a 2mm allen wrench to then remove the bleed screw.



15.

Using suspension cleaner, spray and clean the inside of the damper body and housing and set aside.



16.

Disassemble, clean and inspect the piston bolt group.

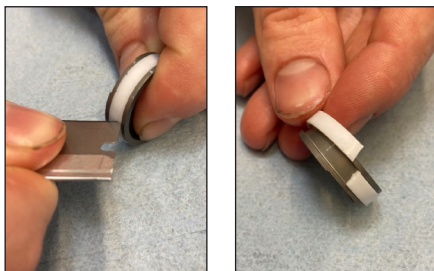


Damper Service (continued)



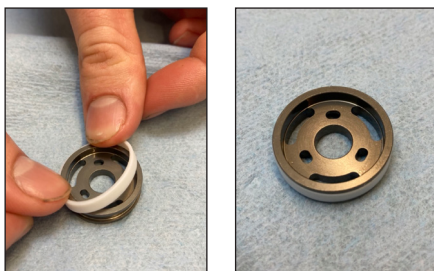
17.

Carefully use a razor blade to cut and remove the glide ring from the piston.



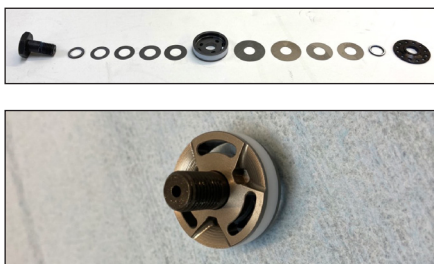
18.

Reinstall the new glide ring by pressing it on as shown.



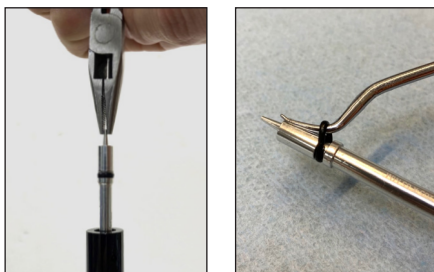
19.

Begin reassembling the piston bolt group. Ensure the washers, shims, and piston are installed in the correct order. After reassembly set aside.



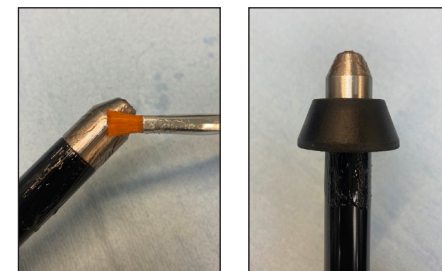
20.

Using small needle-nose pliers, gently grasp and remove the rebound needle. Remove and reinstall the o-ring and set aside.



21.

Install the shaft bullet tool (#140-M080-S) on the shaft and apply a light coat of grease. Slide the bottom out bumper back on the shaft.



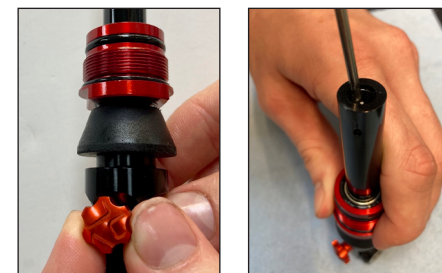
22.

Apply a light coat of grease to both end of the seals on the damper end cap, slide back onto shaft, and then remove the shaft bullet.



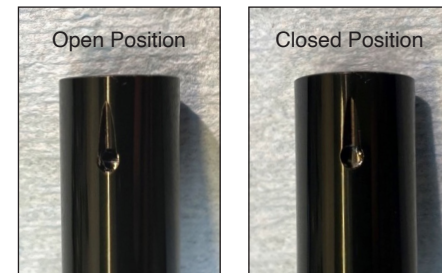
23.

Rotate the rebound knob counter-clockwise, so that it is in the full-open position. (Do not back the knob all the way out of the eyelet). Place rebound needle back in shaft. Holding the shaft assembly vertically, push the needle into the shaft.



24.

Visibly check that the needle is in the open position.



Damper Service (continued)



25.

Apply a light coat of Loctite 243 Blue to the piston bolt threads and allow to cure. Clamp the damper shaft into the 14mm shaft clamps, and reinstall the piston bolt group.



26.

Using a 16mm socket, torque the piston bolt to 15Nm.



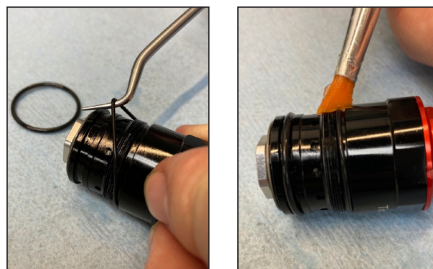
27.

Reinstall and apply a light coat of grease to the housing o-ring and centering pin, then reinstall the reservoir housing bolts. Using a 3mm allen wrench, torque to 3Nm.



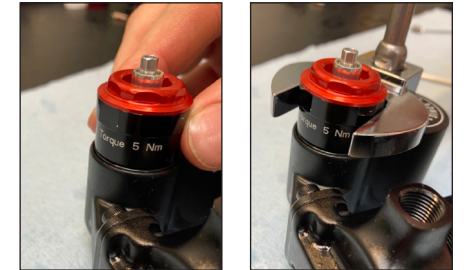
28.

Using a pick, remove and replace the o-rings on the CV compression assembly, then apply a light coat of grease. If you are replacing the entire CV compression assembly, Apply grease, and move to the next step.



29.

Place the CV compression assembly into the housing, taking care not to damage the o-rings. Thread the assembly by hand, and then torque to 5Nm using a 24mm wrench.



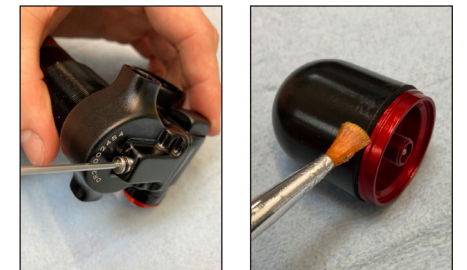
30.

Press the black LSC knob on the hex and open the LSC circuit by turning the knob counter-clockwise until it stops. Remove knob and set aside.



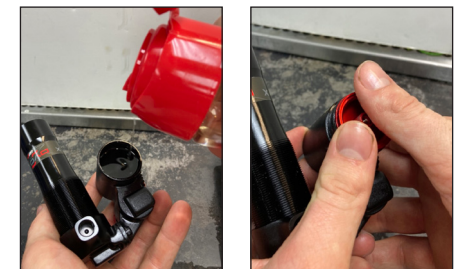
31.

Reinstall the bleed screw into the housing. Next, apply a light coating of grease to the bladder and bladder cap, coating the edges all the way around.



32.

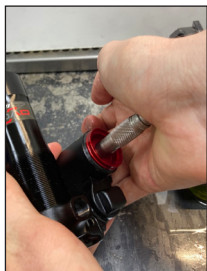
Over your catch basin, fill the bladder reservoir with oil. Slowly press the bladder back into the reservoir (oil will overflow).



Damper Service (continued)

33.

Install the valve puller and slowly press the bladder cap into the reservoir enough to expose the clip groove. (Ensure that the bladder remains straight during this process). Remove the valve puller and reinstall the retaining clip.



34.

Reinstall the valve puller and pull the bladder plug up until it locks into place.



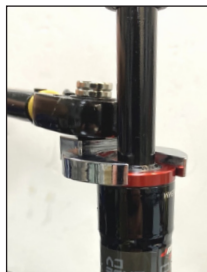
35.

Fix the housing in a vice with the damper body upward and fill to the top with 2.5wt suspension oil. Slowly insert the shaft assembly into the damper body. Oil will overflow and that is acceptable.



36.

Thread the damper end cap in and then torque to 20Nm. using a 24mm crows-foot wrench.



Damper Bleed



37.

Fix the shock in the vice in an upright, aged position as shown, and remove the bleed screw.



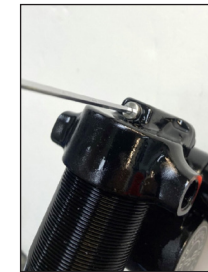
38.

Thread the bleed syringe into the bleed port, and fill half of the the cylinder with 2.5wt suspension oil. Cycle the shock up and down to remove any air bubbles trapped in the system.



39.

After the bleed process is completed, remove and replace the o-ring on the old bleed screw, or install a new bleed screw and torque to 2Nm. using a 3mm allen wrench.



40.

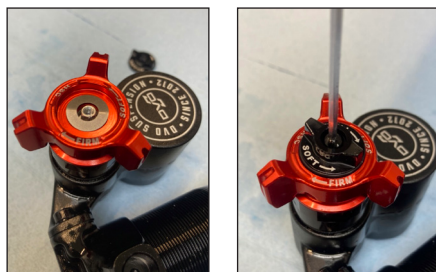
Using a shock pump, inflate the bladder to your desired pressure. Suggested range is 140-180PSI. Do not exceed 180psi. Reinstall the bladder air cap.



Damper Bleed (continued)

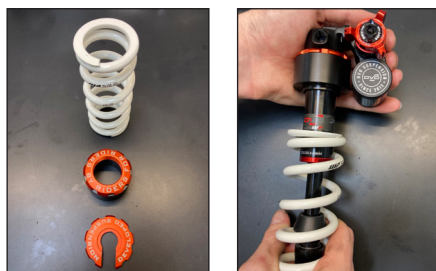
41.

Reinstall the red HSC knob and bent washer. Reinstall the black LSC knob and torque bolt to 0.6N.m using a 2mm allen wrench.



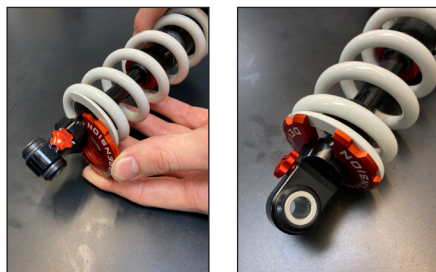
42.

Reinstall the spring preload collar and spring spacer, followed by the spring.



43.

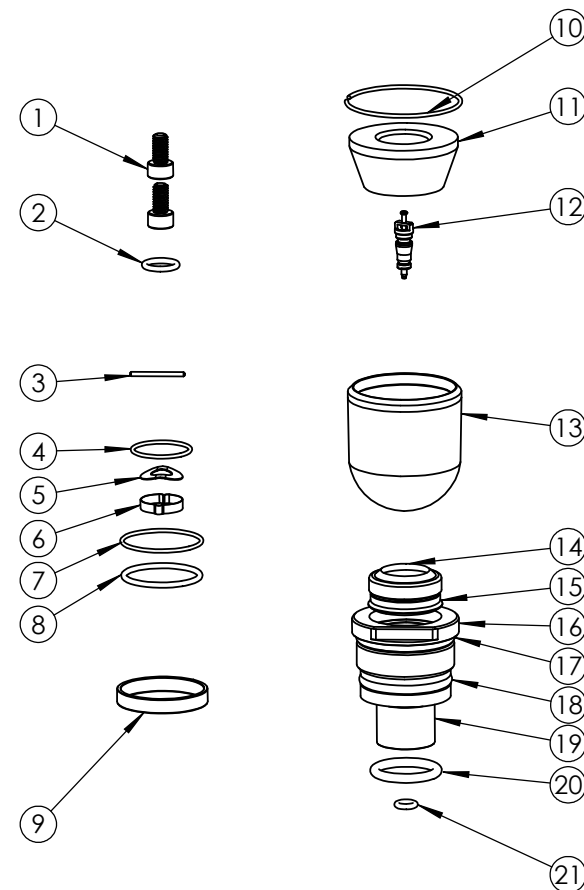
Guide the spring clip into place, and then slightly compress the spring while pressing down on the clip so that it fully seats on the eyelet base.



44.

Wipe down the shock and reinstall on the bike according to the bike manufacturer specifications.

Rebuild Kit Contents



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	RSB024	RESERVIOR SHCS	2
2	FAA175	RES TO HOUSING O-RING	1
3	REE253	RES TO HOUSING DOWEL PIN	1
4	RAA150-150	LS ADJ O-RING	1
5	D257-1001	SHIM BENT	1
6	D257-1012	DETENT WASHER	1
7	RAA141	COMP HEAD O-RING	1
8	RAA118	PISTON O-RING	1
9	DVO1421019-A	GLIDE RING	1
10	DVO1561049	BLADDER AIR PLUG CLIP	1
11	DVO1421014	BUMPER	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
12	FAA170-10	VALVE CORE	1
13	D191-1005	BLADDER	1
14	RAA 095	DUST SEAL	1
15	RAA 096	SHAFT SEAL	1
16	DVO1421015-10	END CAP - RED	1
17	FAA256	ENDCAP O-RING	1
18	FAA149	ENDCAP O-RING	1
19	REE112	14MM BUSHING	1
20	RAA062	ENDCAP TOP-OUT O-RING	1
21	FAA135	REB NEEDLE O-RING	1

Contents of the rebuild kit subject to change without notice based on product changes or improvements.

[illegible]

This diagram shows the exploded view of a LEGO Technic assembly. The parts are numbered 1 through 14. The assembly includes a motor (2), a gear (7), a long axle (8), a spring (13), and various connectors and pins (1, 3, 4, 5, 6, 9, 10, 11, 12, 14). The diagram illustrates how these parts fit together to form a mechanical structure.

[illegible]