DVO SUSPENSION




Version 1.1

# **ONYX 38 SERIES** SET-UP GUIDE

# ⚠ 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.

# Tools Needed For Setup

1. Shock Pump

2. 5mm, 8mm Allen Key

3. Tape Measure or Calipers

4. Cassette Tool

5. Protective eyewear

# SOME HELPFUL TIPS BEFORE YOU GET STARTED

1. All of these settings are just starting points to get you close. Don't be afraid to use your adjusters or change up your settings to make it perfect for you.

2. Write down your settings! Modern suspension forks have a ton of adjustment which is awesome, but you can get lost. When you find a good spot, write it down so you can always go back to it.

3. Dedicate time to setting your bike up for the trail, not the parking lot. It's a good idea to get out on the trail and find a section you can repeat. Try different settings to truly feel what the adjusters are doing. Once you truly understand what they do and feel like, you'll know when to use them in any situation.

4. Balance is key! This is a big one. Try your best to get your fork and shock feeling equal. If the rebound in the rear shock is way faster than the fork, the bike won't have a very predicable ride. Feel to make sure the rebound, spring rate, and compression are having similar feelings front and back. This will provide a predictable and confidence inspiring ride.

5. If you have questions, don't hesitate to ask. Give us a call, shoot us an email, we'll get you dialed in!

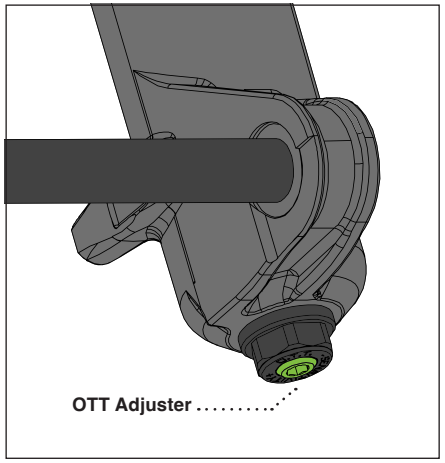


# OTT Feature

## What is OTT?

OTT stands for *Off the Top* and is a DVO Exclusive Performance Feature that delivers amazing traction, comfort & control matching a wide range of riders weights & skill levels. OTT allows the rider to fine tune the small bump sensitivity without affecting the mid-stroke or end-stroke.

The table (below) shows the models with the adjustable OTT feature. Not all Onyx 38 models have the OTT feature.




**Models with OTT Feature**

| Fork Model | OTT Feature | |
|---|---|---|
| | Yes | No |
| Onyx 38 D1 | ✓ | |
| Onyx 38 D1 SL | | ✓ |
| Onyx 38 D2 | | ✓ |
| Onyx 38 D3 | | ✓ |

### Tech Tip!

As a general rule of thumb, the heavier or aggressive rider will use more air pressure & more OTT. A lighter or less aggressive rider will use lower air pressures and less OTT.

Heavier Riders = **More OTT**
Lighter Riders = **Less OTT**

## Adjusting the OTT Feature

This is a 5mm allen key adjustment located on the bottom of the left fork leg. When adjusting the OTT, go by full rotations not by clicks.

**IMPORTANT**
Let the air out of the fork before adjusting OTT!

**OTT Base Setting Chart**

| Air Pressure | Number of OTT Rotations Starting From Open (Counter-Clockwise) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSI | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 50-55 | ■ | ■ | ■ | ■ | | | | | | | | |
| 55-60 | | | ■ | ■ | ■ | | | | | | | |
| 60-65 | | | | ■ | ■ | ■ | | | | | | |
| 65-70 | | | | | ■ | ■ | ■ | | | | | |
| 70-75 | | | | | | ■ | ■ | ■ | | | | |
| 75-80 | | | | | | | ■ | ■ | ■ | | | |
| 85-90 | | | | | | | | ■ | ■ | ■ | | |
| 90-100 | | | | | | | | | ■ | ■ | ■ | ■ |

## How does it effect the ride?

Higher air pressures allows fast moving riders to skip over bumps and holes but the downside is the harshness. With the OTT feature, the initial 30mm's of travel can be independently tuned regardless of air pressure. Heavier or fast riders can run higher air pressures while still having amazing small bump sensitivity & traction by simply increasing OTT. Lighter riders who run lower air pressures will use less OTT allowing use of all the travel without having the fork sack or hammock in the middle of the stroke. The Best of Both Worlds!

# Setting SAG and Air Pressure

## What is SAG?

SAG is the amount your fork compresses under your body weight (don't forget to include your riding gear), also referred to as Rider Weight. Remember that these are only starting points and adjustments will vary based on rider ability, trail conditions and personal preference.

After you are done setting up your suspension fork according to the recommended base settings, check your SAG to make sure you are within the recommended SAG settings.

The recommended SAG is 15% - 30%. Setting proper SAG is the only way to find the right air pressure for your fork. Refer to the chart below to find the proper SAG.




## Can SAG effect the handling of my bike?

It is very beneficial to test different SAG settings for various riding conditions. Changing the amount of SAG on your fork will change the geometry of your bike.

Riders that make high speed stability a priority can run less SAG. This will keep the front end of the bike high under braking and rough sections but comfort and cornering traction will be compromised.

Riders that want to have a comfortable ride with great cornering traction should run more SAG (around 30%).

## ⚠ WARNING!

**DO NOT exceed maximum air pressure of 100PSI. Failure to comply with these instructions may cause SERIOUS INJURY, DEATH, or DAMAGE TO YOUR PRODUCT.**



### SAG Measurement in MM

| MAX Travel | 15% SAG | 20% SAG | 30% SAG |
|---|---|---|---|
| **160mm** | 24mm | 32mm | 48mm |
| **170mm** | 26mm | 34mm | 51mm |
| **180mm** | 27mm | 36mm | 54mm |

**Tech Tip!** If you're enjoying your fork on a E-Bike, you may need to increase the air pressure 5-10 PSI from the recommended setting below.

### Air Pressure Base Setting Chart (for all onyx 38 models)

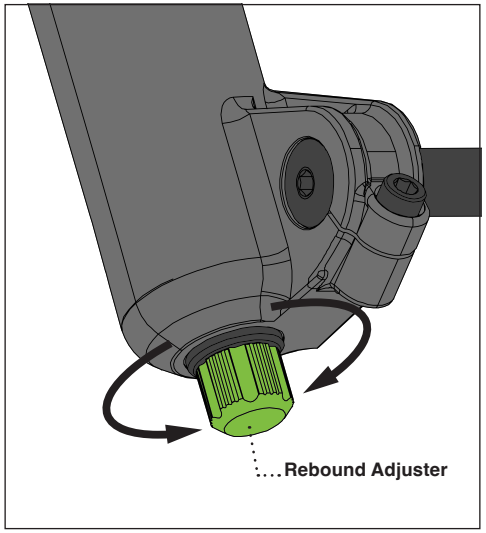
| Rider Weight | | Air Pressure (psi) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| lbs | kg | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 MAX |
| **120-139** | **54-63** | PLUSH | | FIRM | | | | | | | | |
| **140-159** | **64-72** | | PLUSH | | FIRM | | | | | | | |
| **160-179** | **73-81** | | | PLUSH | | FIRM | | | | | | |
| **180-199** | **82-90** | | | | PLUSH | | FIRM | | | | | |
| **200-219** | **91-100** | | | | | PLUSH | | FIRM | | | | |
| **220-239** | **101-108** | | | | | | PLUSH | | FIRM | | | |
| **240-249** | **109-113** | | | | | | | PLUSH | | FIRM | | |
| **250-259** | **114-117** | | | | | | | | | PLUSH | | FIRM |

# Rebound

## What is Rebound?

Rebound controls the speed at which the fork extends after compression. Rebound damping control is relative to the amount of air pressure used.

**Start with your rebound closed (all the way clockwise) then adjust out to make it faster. Each click out (counter-clockwise) is your rebound setting. Use the chart to find a good starting position.**




| Open | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Closed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Fastest Rebound Setting**
(Counter-Clockwise)

**Slowest Rebound Setting**
(Clockwise)

**Rebound Base Setting Chart** (for all onyx 38 models)

| Air Pressure | Rebound Clicks (out from closed) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSI | 25 | 24 | 22 | 20 | 18 | 16 | 14 | 12 | 10 | 8 | 6 | 4 | 2 | 0 |
| 50-55 | | FAST | | SLOW | | | | | | | | | | |
| 55-60 | | | FAST | | SLOW | | | | | | | | | |
| 60-65 | | | | FAST | | SLOW | | | | | | | | |
| 65-70 | | | | | FAST | | SLOW | | | | | | | |
| 70-75 | | | | | | FAST | | SLOW | | | | | | |
| 75-80 | | | | | | | FAST | | SLOW | | | | | |
| 80-85 | | | | | | | | FAST | | SLOW | | | | |
| 90-95 | | | | | | | | | FAST | | SLOW | | | |
| 100+ | | | | | | | | | | FAST | | SLOW | | |

## Is my rebound setting too fast or too slow?

If rebound is too fast, your wheel will fall into more holes, instead of skipping over the top of them. Handling will feel twitchy and hard to control, it will be easier to be thrown out of control on jumps and landings.

If rebound is set too slow it will pack on successive hits because the fork cannot extend fast enough keeping you in the mid stroke. This will result in the wheel going deeper into the travel on every hit and riding towards the end stroke. The result will be a harsh feeling and loss of traction.

# High Speed Compression

## What is High Speed Compression?

D1 level products come with a full range high speed compression adjuster. This is the green dial located under the black colored low speed compression adjuster. HSC controls the damping force under faster suspension movements. Use this to control the amount of support on bigger impacts such as g-outs, landings, drops, etc..




**High Speed Compression**
(Green Adjuster)

### Tech Tip!

Start with your HSC all the way open (counter-clockwise). Adjust by full rotations, NOT by clicks. When you make an adjustment to your HSC, do a half to a full turn.

Clockwise Rotations = Firmer
Counter-Clockwise Rotations = Softer

**High Speed Compression Base Setting Chart**

| Air Pressure | Full Rotations (NOT Clicks) | | | | | |
|---|---|---|---|---|---|---|
| PSI | 0 | 1 | 2 | 3 | 4 | 5 |
| **50-55** | ■ | | | | | |
| **55-60** | ■ | | | | | |
| **60-65** | | ■ | | | | |
| **65-70** | | ■ | | | | |
| **70-75** | | | ■ | | | |
| **75-80** | | | ■ | | | |
| **80-85** | | | | ■ | | |
| **85-90** | | | | ■ | | |
| **90-95** | | | | | ■ | |
| **100+** | | | | | ■ | |

## About High Speed Compression

High Speed Compression damping affects the suspension when the shaft is moving up and down at high speeds. High Speed Compression helps with large impacts or sharp/sudden impacts. High Speed Compression can be used to reduce bottom.

Too much High Speed Compression may result in the fork not being able to reach full travel, and or spiking on large impacts.

If you don't have enough High Speed Compression, The fork will blow through it's travel too easily on jump faces, and will bottom out to easily on large impacts.

# Low Speed Compression

## D1 Low Speed Compression

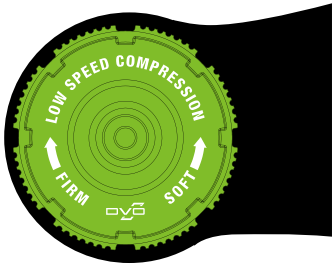
The D1 models have an adjustable low speed compression with 5 settings. Rotate the LSC knob (black color) clockwise until it stops and this is the open or “softest” setting. Each counter-clockwise click is a firmer setting to increase support.

Counter-Clockwise Rotations = Firmer
Clockwise Rotations = Softer




## D2 Low Speed Compression

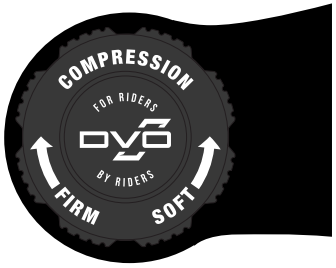
The D2 models have an adjustable low speed compression with three settings. Rotate the knob counter-clockwise until it stops and this is the open or “softest” setting. Each clockwise click is a firmer setting to increase support.




## D3 Low Speed Compression

The D3 Model forks come with a full range low speed compression. Use this feature to add more support for body movements on the bike. This will help the front-end stand up taller and reduce the potential for “diving” under braking.

Start from full open, (counter-clockwise) then make full turn adjustments at a time.




## *What is Low Speed Compression?*

Low speed compressions controls the slower vertical movements such as climbing or slower paced trails and bumpy whoop sections. A good example of low speed is rolling slowly over a large rock and riding to its downside, this is where the suspension will fully compress but at a slower rate and low speed compression circuit comes into play. LSC refers to the shaft speed of the suspension and not the actual riding speed. LS compression is best controlled through a low speed oil circuit and or shim stack.

## *Too little or too much LSC*

Too much Low Speed Compression will result in harshness over small bumps and traction will be reduced. Turning performance may also suffer because the suspension will ride too high in its travel. The ride may become harsh.

Not enough Low Speed Compression will result in the front end diving to quickly under braking. The suspension will have a mushy feeling and may bottom out too easily.

# Axle Installation

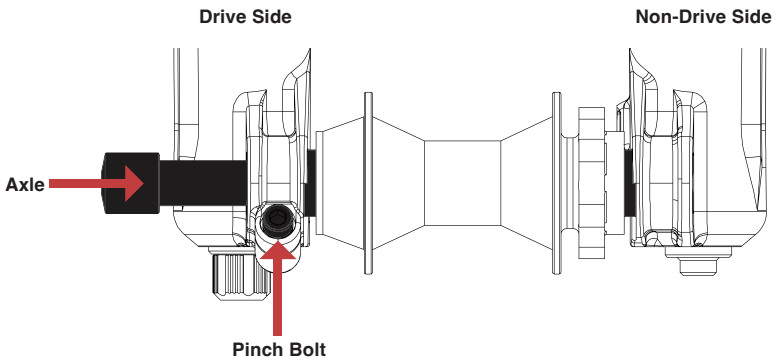
Your new Onyx 38 comes with a floating axle system. Proper installation is extremely important for safety and function. Follow the steps below to perform installation correctly.

1. Loosen pinch bolt with a 5mm allen key and install the wheel into the dropouts. Insert the axle into the drive side dropout and hub.

2. Tighten the axle with a 5mm allen key to **12 Nm**.

3. Compress the fork multiple times to ensure proper alignment.

4. Tighten the pinch bolt on the drive side dropout to **5 Nm**



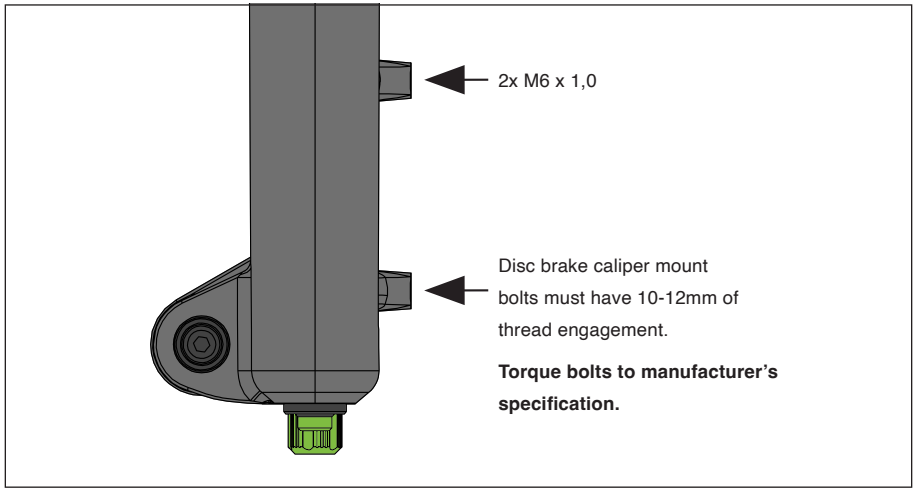

***Tech Tip!***

Frequently check the torque of your pinch bolt. This can drastically effect the performance and safety of your fork.

# Mounting Disc Brakes

Your new Onyx 38 comes with a 203mm post mounts to allow you to bolt your caliper directly to the fork and utilize a 203mm rotor.

If using a different sized rotor (not 203mm) , you will need to source the appropriate caliper spacer and bolts. Contact the brake manufacturer for further information.




## ⚠ WARNING!

**Follow your brake manufacturer's installation instructions for proper installation and adjustment of the brake system. Failure to properly install and adjust your brakes can lead to a loss of control of the bicycle which can result in SEVERE INJURY OR DEATH.**

# Air Volume Tuning

Changing volume spacers is an easy way to tune the air spring of your Onyx 38 fork. This can provide an increase in mid-stroke and bottom-out resistance.

How do I know when to use a volume spacer? Always start with your SAG as the reference point. If SAG is set correctly and you are using full travel too easily, install one volume spacer and test ride. Repeat until the appropriate travel is used. **A maximum of 4 volume spacers can be used.**

## *How to install Volume Spacers*

**NOTE: Air volume spacers should only be used in "SL" model forks.**

1. Make sure your fork is clean and free of any dirt or contamination.

2. **Release ALL air pressure** from fork.

3. Using a cassette tool, loosen air side top cap (A)  and remove.

4. Thread on desired amount of volume spacers (C) into the air side top cap (A). **Tighten to 2 Nm**.

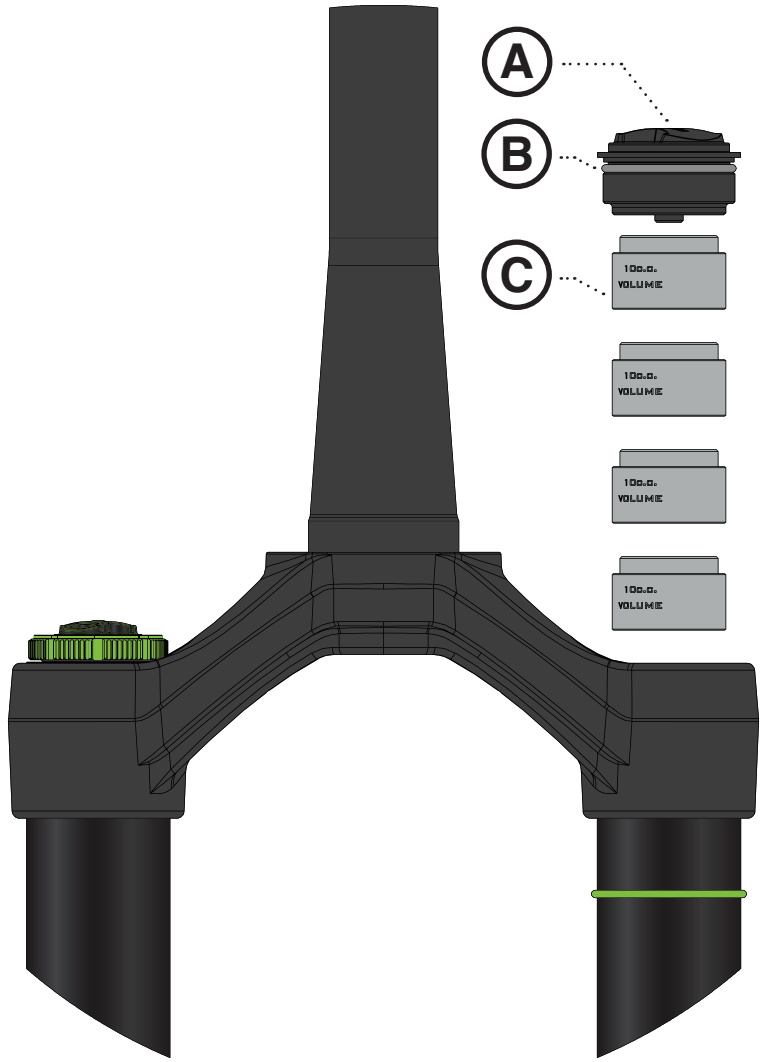
5. Re-install air side top cap (A) into the stanchion. **Tighten to 20 Nm**.

6. Make sure the air side top cap o-ring (B) has sufficient grease. We recommend Slikoleum or an equivilent grease.

6. Using a shock pump, inflate the fork to your desired air pressure.

## ⚠ WARNING!

**Always refer to the proper installation instructions stated above. Failure to properly install and adjust your volume spacers can result in SEVERE INJURY OR DEATH.**




***Additional information on next page....***

## Tech Tip!

Air springs are always progressive which means the force needed to compress the fork is always increasing through the stroke. A higher air pressure means the fork will naturally be more progressive. A lighter pressure will be less progressive. Lighter riders may need to use more volume spacers. And heavier riders may need to use less.

### Volume Spacer Configurations

| Travel | Factory Installed Volume Spacers | Max Volume Spacers |
|---|---|---|
| **160-180mm** | 0 | 4 |

### Air Spring Graph (Onyx SL Models)

