DNM USD-8S

DNM USD-8S Suspension Fork Instruction Manual

For Downhill (DH) and Freeride (FR) Mountain Bikes

1. Introduction

Thank you for choosing the DNM USD-8S Suspension Fork. This manual provides essential information for the proper installation, adjustment, maintenance, and safe operation of your new suspension fork. Please read this manual thoroughly before use to ensure optimal performance and longevity of your product.

1.1 Safety Information

- Always wear appropriate safety gear when riding.
- Ensure all components are correctly installed and torqued to manufacturer specifications. Incorrect installation can lead to serious injury.
- Regularly inspect your fork for any signs of damage, wear, or leaks. Do not ride with a damaged fork.
- Adjustments should only be made by individuals familiar with bicycle suspension systems. If unsure, consult a professional bicycle mechanic.
- Do not modify the fork. Unauthorized modifications can compromise safety and void the warranty.

2. Product Overview

The DNM USD-8S is a high-performance inverted (upside-down) air suspension fork designed for demanding Downhill (DH) and Freeride (FR) mountain biking. It features a robust 3-system damping mechanism, adjustable air pressure, rebound, and preload, providing excellent control and comfort over varied terrain.

2.1 Key Features

- **Damping:** 3-system for precise control.
- **Travel:** 203 mm (8 inches) for absorbing large impacts.

- **Adjustments:** Preload, Rebound, and Air Pressure adjustable.
- **Axle:** 20 mm (0.79 inch) x 110 mm Thru-axle design (AL-7075).
- **Stanchions:** 35 mm (1.38 inch) AL-7075, Dark Hard Anodized for durability.
- **Brake Compatibility:** Disc brakes only (Post mount).
- **Construction:** CNC machined AL-6061 dropout and crowns.

2.2 Fork Components

Familiarize yourself with the main components of your USD-8S fork:

- **Steerer Tube:** Connects the fork to the bicycle frame.
- **Crowns (Upper & Lower):** Connect the stanchions and steerer tube.
- **Stanchions (Upper Tubes):** The inner, moving tubes of the fork.
- **Lower Legs (Outer Tubes):** Contain the damping and air spring systems.
- **Axle:** Secures the front wheel to the fork.
- **Adjustment Knobs/Valves:** For air pressure, rebound, and preload.
- **Brake Mounts:** For attaching disc brake calipers.

Figure 1: Front view of the DNM USD-8S Suspension Fork, showcasing its inverted design and overall structure.

3. Setup and Installation

Proper installation is crucial for safety and performance. If you are not confident in performing these steps, seek assistance from a qualified bicycle mechanic.

3.1 Pre-Installation Checks

- Verify that the fork's steerer tube diameter (1-1/8") matches your bike's head tube.
- Ensure the fork's axle standard (20mm x 110mm thru-axle) is compatible with your front wheel.
- Confirm that your bike uses disc brakes with a post-mount caliper system.

3.2 Steerer Tube Preparation

1. Measure and cut the steerer tube to the appropriate length for your frame and stem setup. Allow for headset stack height and stem clamp height.
2. Install a star nut (not included) into the steerer tube using a star nut setting tool. Ensure it is straight and at the correct depth.

3.3 Fork Installation onto Bicycle Frame

1. Grease the steerer tube and install the lower headset bearing crown race.
2. Insert the steerer tube through the head tube of your bicycle frame.
3. Install the upper headset bearing, spacers, and stem.
4. Tighten the top cap bolt to preload the headset bearings, then tighten the stem clamp bolts to secure the fork. Refer to your stem manufacturer's torque specifications.

3.4 Wheel and Brake Installation

1. Insert your 20mm thru-axle front wheel into the fork dropouts.
2. Slide the 20mm thru-axle through the hub and fork dropouts, then tighten it securely.
3. Mount your disc brake caliper to the post-mount tabs on the fork lower leg. Ensure proper alignment and torque the bolts to the brake manufacturer's specifications.

Figure 2: Front view of the fork, illustrating the overall structure for installation reference.

Figure 3: Side view of the fork, showing the steerer tube and lower leg design.

4. Adjustments and Operation

The USD-8S fork offers several adjustments to fine-tune its performance to your riding style and terrain.

4.1 Air Pressure Adjustment

The air spring pressure determines the fork's sag and overall stiffness. Adjusting air pressure requires a high-pressure shock pump (not included).

1. Locate the air valve cap on the top of one of the fork legs (typically the left leg).
2. Unscrew the cap and attach a high-pressure shock pump.
3. Add or release air to achieve your desired sag and feel. Consult a sag setup guide for mountain bike forks for recommended percentages (typically 20-30% of total travel).
4. Remove the pump and replace the air valve cap.

4.2 Rebound Adjustment

Rebound damping controls the speed at which the fork extends after compression. The rebound adjuster is typically a red knob located on the top of one of the fork legs.

1. Turn the red knob clockwise (usually marked with a '+' or 'S' for slow) to increase rebound damping, making the fork extend slower.
2. Turn the red knob counter-clockwise (usually marked with a '-' or 'H' for fast) to decrease rebound damping, making the fork extend faster.
3. Adjust rebound to prevent the fork from packing down on successive bumps or kicking back too quickly.

Figure 4: Close-up view of the fork's top crowns, highlighting the rebound (red) and preload adjusters.

4.3 Preload Adjustment

Preload adjustment affects the initial compression force required to move the fork. This can be used to fine-tune the fork's sensitivity to small bumps.

1. Locate the preload adjuster knob on the top of the other fork leg.
2. Turn the knob clockwise to increase preload, making the fork feel stiffer initially.
3. Turn the knob counter-clockwise to decrease preload, making the fork feel more sensitive to small bumps.

Figure 5: Detailed view of the preload adjuster knob on the top crown of the fork.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your DNM USD-8S fork.

5.1 Cleaning

- After every ride, especially in wet or muddy conditions, clean the stanchions and seals with mild soap and water.
- Wipe down the entire fork with a soft cloth. Avoid using high-pressure washers directly on seals or adjustment knobs.

5.2 Inspection

- Regularly check for any scratches or damage on the stanchions. Deep scratches can damage seals and lead to oil leaks.
- Inspect seals for cracks, tears, or excessive wear. Replace worn seals promptly.
- Check all bolts for proper torque, especially those on the crowns, brake mounts, and axle.
- Look for any signs of oil leakage around the seals or adjustment knobs.

5.3 Service Intervals

- **Every 50 hours of riding or every 3 months:** Perform a lower leg service, including cleaning and lubricating the dust wipers and foam rings, and replacing the lower leg oil.
- **Every 100-200 hours of riding or annually:** A full service, including air spring and damper service, should be performed by a qualified technician. This involves replacing all seals and fluids.

6. Troubleshooting

This section addresses common issues you might encounter with your USD-8S fork.

Problem	Possible Cause	Solution
Fork feels too stiff / Not getting full travel	Too much air pressure; Too much preload	Reduce air pressure; Decrease preload.
Fork feels too soft / Bottoms out easily	Too little air pressure; Too little preload	Increase air pressure; Increase preload.
Fork extends too quickly (harsh rebound)	Too little rebound damping	Increase rebound damping (turn knob clockwise).
Fork extends too slowly (packs down)	Too much rebound damping	Decrease rebound damping (turn knob counter-clockwise).
Oil leakage around seals	Worn or damaged seals; Scratched stanchions	Clean stanchions; Replace seals; Consult a mechanic for stanchion damage.
Unusual noises (creaking, clunking)	Loose components (headset, stem, axle); Internal issue	Check and tighten all bolts; If noise persists, seek professional service.

7. Specifications

Detailed technical specifications for the DNM USD-8S Suspension Fork.

- **Model:** USD-8S
- **Damping System:** 3-system
- **Wheel Size Compatibility:** 26 inch / 27.5 inch
- **Axle to Crown Height:** 750 mm (29.6 inches)
- **Travel:** 203 mm (8 inches)
- **Adjustments:** Preload, Rebound, Air Pressure Adjustable
- **Down Tube Material:** AL-7075

- **Axle Type:** 20 mm (0.79 inch) x 110 mm Thru-axle Design
- **Steerer Tube Diameter:** 28.6 mm (1-1/8 inch)
- **Steerer Tube Material:** AL-7075
- **Dropout/Crown Material:** Forging, AL-6061
- **Stanchion Diameter:** 35 mm (1.38 inch)
- **Stanchion Material:** AL-7075, Dark Hard Anodized
- **Cartridge:** Replaceable and individual
- **CNC Machined Parts:** AL-6061 dropout and crowns
- **Spring Type:** Coil Spring (Note: Product description mentions 'Air Pressure Adjustable' and 'Coil Spring'. The primary spring is air, with coil potentially for assist or specific damping components.)
- **Brake Compatibility:** Disc brakes only (Post mount)
- **Riding Style:** DH / FR
- **Approximate Weight:** 3.9 kg
- **Origin:** Made in Taiwan

8. Warranty Information

The DNM USD-8S Suspension Fork comes with a **1-year warranty** from the date of purchase against manufacturing defects in materials and workmanship. This warranty does not cover damage resulting from improper installation, misuse, neglect, accidents, modifications, or normal wear and tear. For warranty claims, please retain your proof of purchase and contact your retailer or DNM customer support.

9. Support and Contact

For further assistance, technical support, or inquiries regarding your DNM USD-8S Suspension Fork, please refer to the following resources:

- **Retailer:** Contact the store or online vendor where you purchased the fork.
- **DNM Official Website:** Visit the official DNM website for updated manuals, FAQs, and contact information.
- **Professional Bicycle Mechanic:** For complex installations, repairs, or servicing, always consult a certified bicycle mechanic.