

DNM Shock Absorbers

Owner's Manual

Available for:

MTG-RC MT-RC MT-AR MT-BAG

MK-BAG MK-AR DHL

SAFETY SIGNAL

Important information concerning safety is distinguished in this manual by the following notations:



The safety alert symbol means: Caution! Your safety is involved.



WARNING!

Failure to follow warning instructions could result in severe or fatal injury to anyone working with inspecting or using the suspension or to bystanders.

CAUTION!

Caution indicates that special precautions must be taken to avoid damage to the suspension.

NOTE!

This indicates information that is of importance with regard to procedures.

NOTE!

***DNM** Products are subject to continual improvement and development .Consequently although these instructions include the most up-to-date information available at the time of printing , there may be minor differences between your suspension and this manual. Please consult your **DNM** dealer if you have any questions with regard to the contents of the manual.*

INTRODUCTION

All of **DNM** advanced suspension products are adapted to the brand and

model, This means that length, travel spring action and damping characteristics, are tested individually just for the motorcycle that you have decided to fit with **DNM** suspension.

BEFORE INSTALLATION

DNM Racing AB can not be held responsible for any damage whatsoever to shock absorber or vehicle , or injury to persons, if the instructions for fitting and maintenance are not followed exactly.

Similarly, the warranty will become null and void if the instructions are not adhered to.

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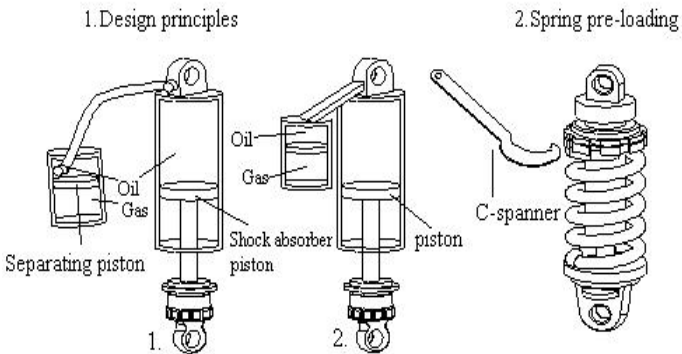
WARNING!

1. Installing a shock absorber is not approved by the vehicle manufacturer, which may affect the stability of your vehicle. DNM Racing AB cannot be held responsible for any personal injury or

damage whatsoever that may occur after fitting the shock absorber. Contact a DNM dealer or other qualified person for advice.

2. Please study and make certain that you fully understand all the mounting instructions and the owner manuals before handling this shock absorber kit. If you have any questions regarding proper installation procedures, contact a DNM dealer or other qualified person.

3. The vehicle service manual must be referred to when installing the DNM shock absorber.



Tuning the suspension

Motorcycle road holding qualities

All motorcycles are designed with a suspension geometry that includes height and fork angle. The changing of components can affect this and it is there for essential that both the rear and the front ends match each other.

Changing to **DNM** suspension gives optimum performance only when both the front fork and the rear suspension interact properly. It is of the greatest importance that the front and rear loaded heights are within the specified values.

In the Mounting instruction, see section: Setting the spring preload.

Design

Most of the **DNM** shock absorbers are of the De Carbon type (Fig.1).The fluid is put under gas pressure and the fluid are kept apart by a separating piston. The separating piston is often fitted in a separate fluid chamber, connected by hose (Fig.1:1),or fixed directly on top of the shock absorber (piggyback) (Fig.1:2).

Pressurization of the fluid is made with nitrogen. The pressurization prevents cavitation of the fluid and the shock absorbing action is therefore more even. The external fluid chambers also contribute to better cooling of the fluid, giving longer service life for both the fluid and components.

DNM shock absorbers have integrated temperature compensation. As the temperature increases and the fluid flows more easily the flow is controlled accordingly. The shock absorbing effect is therefore independent of the temperature. The more advanced models permit individual adjustment of compression damping and rebound damping.

DNM shock absorbers provide the possibility for adjustment, making them adaptable to most motorcycles, riders and ranges of use. All of the shock absorbers have adjustable preloading of the spring action (Fig.2).

Settings

Basic settings

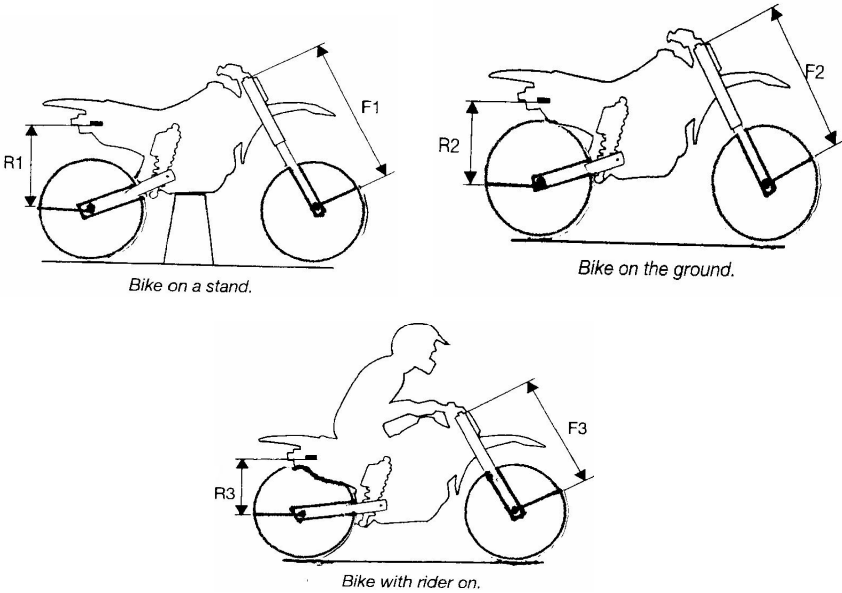
Always ensure that the basic setting made by **DNM** is correct. It is adapted to the make and model (in its original state) and for a rider of average weight



WARNING!

Incorrect spring action may produce a fork angle that is too steep or too float. This in turn will give a tendency for over-steering or under-steering, which could seriously affect the handing characteristics of the motorcycle.

The original settings of the shock absorber, when delivered from **DNM** , should always be a base when the settings are changed by use of the adjustment devices.



Setting the spring preload

Step 1 Measuring

Preload on the spring/springs is very important, because it affects the height of the motorcycle and the fork angle. Consequently, handling characteristics can be changed, even negatively. Proceed as follows (it will be much easier if done by two persons):

- Place the motorcycle on a stand, so the front fork and the rear end are in fully extended position.
- Measure the distance, e.g., from the lower edge of the rear mudguard or from a point marked by a piece of tape, immediately above the rear wheel axle, to the wheel axle (R1).
- Make a similar measurement on the front axle, e.g., from the bottom of the upper fork crown to the front wheel axle (F1).
- Allow the motorcycle (without rider) to apply load on the springs and repeat the measuring procedure (R2, F2).
- Then take the same measurements with the rider and equipment on the motorcycle (R3,F3). It is important that the rider has a correct riding posture, so that the weight is balanced on the front and rear wheel in the same way as when riding.

Recommendations

The difference should not deviate from the following sizes, if no other recommended settings are given in the Mounting instructions:

Free sag: (R1-R2), (F1-F2)

Rear: MX/Off-Road 30 ± 5 mm

Front: MX/Off-Road 30 ± 5 mm

Ride height: (R1-R3), (F1-F3)

Rear: MX	100 ± 5 mm
Off-Road	30% of the total stroke
Front: MX/Off-Road	80 ± 5 mm

Step.2 Adjusting

Adjust the pre-load with the rings on the shock absorber.

Hold the upper ring and adjust the lower one to the desired position (Fig.2). Then lock with the upper ring.

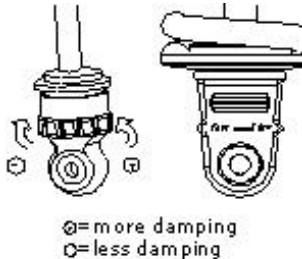
NOTE!

If ride height is higher than recommended, softer spring/springs must be used.

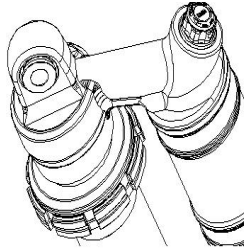
If ride height is lower than recommended, harder spring/springs must be used.

Contact your DNM dealer or other qualified person for advice.

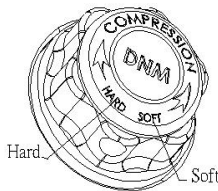
3. Adjustment of rebound damping



4. Adjustment of compression damping



5. Hard and soft compression damping adjusters



Setting the damping

The adjusting possibilities of **DNM** shock absorbers facilitate fine setting. You can optimize adjustments to suit your own weight and equipment, your individual way of riding and the condition of the road. To be able to improve the road holding qualities it is of the utmost importance that you fully understand the function of the shock absorbers. From there you can learn by trial and error how they affect the motorcycle.

Depending on the model there are adjustments for rebound damping, compression damping and adjustment of the length of the shock absorber. Damping is set with knobs and screws with a normal right-hand thread. By turning you can increase the damping action or reduce it. It is easy to count to the right setting.

Rebound damping action affects the characteristics of the motorcycle most. The setting knob is located at the bottom on the piston rod (Fig.3). It can be

adjusted in about 14 steps.

Setting your motorcycle

NOTE!

Always begin with the basic settings recommended by DNM. Always make notes, adjust in small steps at a time. Adjustments should not be more than six steps/2 turns from the basic setting

How to prepare the settings

By utilizing the adjustment possibilities you can test by trial and error, and learn how they affect your motorcycle.

Always begin by test riding the motorcycle with all adjustments at their basic setting. Choose a short run of varying character, i.e., long and sharp bands, hard and soft bumps. Keep to the same run and adjust only one setting at a time.

6.Rebound damping

- Unstable
- Bouncy



- Stable
- Soft



7. Compression damping

- Hard
- Bumpy



Increase

- Soft
- Comfortable



Reduce

Start with the rebound damping (Fig.6)

If the motorcycle feels unstable, loose and rather bouncy then the rebound damping should be increased. Begin by turning the adjusting knob 2 steps. Test run again and adjust one step back if it felt too hard and bumpy.

If the motorcycle is hard and bumpy, especially over a series of bumps,

then the rebound damping should be reduced. Turn 2 steps, test run and make any necessary correction. For original rebound setting see Mounting Instructions.

Compression damping (Fig.7)

If the motorcycle feels soft, has low riding position and a tendency to bottom easily in long dips then the compression damping should be increased.

If the motorcycle feels harsh and has hard resilience, e.g., during changes in the road paving, then the compression damping must be reduced.

Normally changes are made by high speed compression adjuster only.

Turn 1/2 turn at a time. Test run and make necessary corrections.

When you have sufficient feel of the motorcycle you can make further fine adjustments. It is feeling and experience that counts.

NOTE!

Ensure that the springs are properly preloaded before attempting to make any adjustments. A simple rule is that increased preload of the spring should be follow by an increase of rebound damping by two steps.

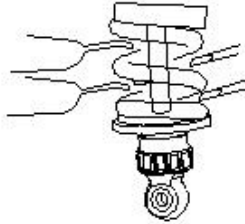
When you, feel that you have achieved an improvement, go back to where you started and check once more. Be observant of other relevant factors such as tires, temperature, etc. Test run to make sure whether further fine adjustment should be made.

Inspection and maintenance

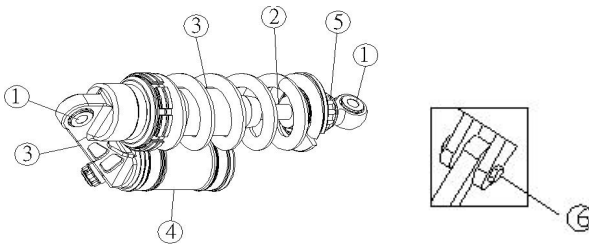
Clean the shock absorbers externally with a soft detergent. Use compressed air. Be careful that all dirt and debris is removed.

Lift the bump rubber and clean the area below (Fig.8).

8.Lift the bump rubber and clean the area below



9.Inspection points



Inspection points (Fig.9).

1. Check ball joints for possible excessive play.
2. Check the piston shaft for leakage and damage.
3. Check the shock absorber body and for external damage.
4. Check the external reservoir for damages that can restrict the floating piston from moving freely.
5. Check for excessive wear of rubber components.
6. Check the fastening to the vehicle.

7. Check the hose equipped models for leaks in hose and inlet plugs.

Keep the shock absorbers clean and always spray them with oil (QS 1, WR40 or CRC 5-56) after washing the motorcycle.

Preventive maintenance and regular inspection reduces the risk of functional disturbance. If there is any need for additional services, please get in touch with an authorized DNM service workshop.

There they have the necessary tools and know how for whatever you need.

NOTE!

Make certain that your shock absorbers are always filled With DNM High Performance Shock Absorber Oil.

NOTE!

Regular maintenance and inspection contribute to the prevention of functional disturbances.

Recommended service intervals:

The first time: Ride 1000kms

The second time: Every 1000kms maintain one time

 **WARNING!**

Never alter the gas pressure. Special purpose charging equipment and access to nitrogen is required. The gas pressure should normally never be altered.
