OWNER'S MANUAL

APEX PRO 6746

Art. no. 53000161en

http://www.wp-suspension.com

WP SUSPENSION

DEAR WP CUSTOMER

Congratulations on your decision to purchase a WP chassis component. You are now the owner of a state-of-the-art sports chassis that you will continue to enjoy for a long time if you maintain it properly.

We wish you good and safe riding at all times!

The Owner's Manual contained the latest information for this model series at the time of going to print. However, minor differences due to further developments in design cannot be ruled out completely.

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This document is valid for the following models:
APEX PRO 6746 KTM 790/890 DUKE (15.18.0R.81)

53000161en

09/2021

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1.1 Symbols used

The meaning of specific symbols is described below.

✓	Indicates an expected reaction (e.g. of a work step or a function).
✗	Indicates an unexpected reaction (e.g. of a work step or a function).
	All work marked with this symbol requires specialist knowledge and technical understanding. In the interest of your own safety, have these jobs performed by a WP Authorized Center! There your WP chassis will be treated with the optimum care and attention by specially trained experts using the necessary special tools.
	Indicates a page reference (more information is provided on the specified page).
	Indicates information with more details or tips.
»	Indicates the result of a testing step.
◀	Indicates the end of an activity, including potential reworking.

1.2 Formats used

The typographical formats used in this document are explained below.

Proprietary name	Indicates a proprietary name.
Name®	Indicates a protected name.
Brand™	Indicates a brand available on the open market.
Underlined terms	Refer to technical details or indicate technical terms, which are explained in the glossary.

2 SAFETY ADVICE

2.1 Use definition – intended use

This chassis component is designed and built to withstand the normal stresses and strains of regular racing.

Info
Only use this chassis component in closed-off areas remote from public road traffic.
Only use this chassis component in the vehicle for which the chassis component is approved and/or recommended.

2.2 Misuse

The chassis component must only be used as intended.
Dangers can arise for people, property and the environment through use not as intended.
Any use of the chassis component beyond the intended and defined use constitutes misuse.
Misuse also includes the use of operating and auxiliary fluids which do not meet the required specification for the respective use.

2.3 Safety advice

A number of safety instructions need to be followed to operate the product described safely. Therefore read this instruction and all further instructions included carefully. The safety instructions are highlighted in the text and are referred to at the relevant passages.

Info
Various information and warning labels are attached in prominent locations on the product described. Do not remove any information or warning labels. If they are missing, you or others may not recognize dangers and may therefore be injured.

2.4 Degrees of risk and symbols

Danger
Identifies a danger that will immediately and invariably lead to fatal or serious permanent injury if the appropriate measures are not taken.

Warning
Identifies a danger that is likely to lead to fatal or serious injury if the appropriate measures are not taken.

Caution
Identifies a danger that may lead to minor injuries if the appropriate measures are not taken.

Note
Identifies a danger that will lead to considerable machine and material damage if the appropriate measures are not taken.

2.5 Safe operation

Danger

Danger of accidents A rider who is not fit to ride poses a danger to him or herself and others.

– Do not operate the vehicle and use chassis components if you are not fit to ride due to alcohol, drugs or medication.
– Do not operate the vehicle and use chassis components if you are physically or mentally impaired.

Only use the chassis component when it is in perfect technical condition, in accordance with its intended use, and in a safe and environmentally compatible manner.
If there are faults, which impair safety, have them immediately remedied in a WP Authorized Center.
Adhere to the information and warning labels on the chassis component.

2.6 Work rules

Special tools are necessary for certain tasks. The tools are not a component of the chassis component, but can be ordered using the number in parentheses.
During assembly, use new parts to replace parts which cannot be reused (e.g., seals, seal rings, O-rings).
In the case of certain screws, a thread locker (e.g. **Loctite®**) is required. Observe the manufacturer's instructions.
After disassembly, clean the parts that are to be reused and check them for damage and wear. Change damaged or worn parts.
After completing a repair or service work, check the operating safety of the chassis component.

2.7 Environment

If you use your chassis component responsibly, you can ensure that problems and conflicts do not occur.
When disposing of used oil, other operating and auxiliary fluids, and used components, comply with the laws and regulations of the respective country.

2.8 Owner's Manual

It is important that you read this Owner's Manual carefully and completely before making your first trip. The Owner's Manual contains useful information and many tips on how to operate, handle, and service your motorcycle. This is the only way for you to find out how to set up the chassis component ideally and how to protect yourself from injury.
Keep the Owner's Manual in an accessible place to enable you to refer to it as needed.
If you would like to know more about the chassis component or have questions on the material you read, please contact a WP Authorized Center.
The Owner's Manual is an important part of the chassis component and must be handed over to the new owner if the vehicle is sold.

2.9 Correct installation

Correct installation in the same way as for the original components and in accordance with the repair manual of the vehicle is essential for ensuring maximum safety and functionality.
It is therefore strongly recommended that you have the chassis component installed at a WP Authorized Center.

2.10 Chassis tightening torques

Unless otherwise stated, the tightening torques specified in the operating and repair manual apply for the vehicle.

3.1 Manufacturer and implied warranty

The work prescribed in the service schedule must be carried out in a WP Authorized Center only, since otherwise no warranty claims will be recognized. Damage or secondary damage caused by tampering with and/or conversions on the chassis component are not covered by the manufacturer warranty.

3.2 Fuel, auxiliary substances

Use operating and auxiliary substances (such as fuel and lubricants) as specified in the Owner's Manual.

3.3 Spare parts, accessories

For your safety, only use spare parts and accessory products that are approved and/or recommended by WP and have them installed in a WP Authorized Center. WP accepts no liability for other products and any resulting damage or loss.
Certain spare parts and accessory products are specified in parentheses in the descriptions. Your WP Authorized Center will be pleased to advise you.

3.4 Service

A prerequisite for perfect operation and prevention of premature wear is that the service, care, and tuning work is properly carried out as described in the Owner's Manual. An incorrect suspension setting can lead to damage and breakage of chassis components.
Use of the chassis component under difficult conditions, such as on a wet circuit, can lead to considerably more rapid wear. For this reason, it may be necessary to inspect or replace parts before the next scheduled service.
It is imperative that you adhere to the stipulated service intervals. If you observe these exactly, you will ensure a much longer service life for your chassis component.

3.5 Figures

The figures contained in the manual may depict special equipment.
In the interest of clarity, some components may be shown disassembled or may not be shown at all. It is not always necessary to disassemble the component to perform the activity in question. Please follow the instructions in the text.

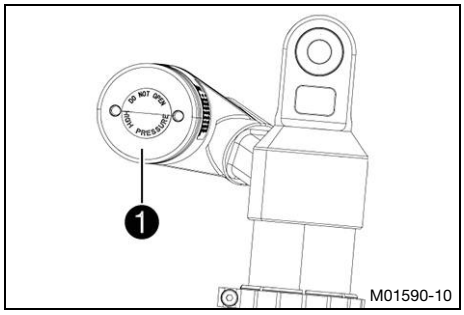
3.6 Customer service

If you have any questions about your chassis component or WP, your WP Authorized Center will be pleased to advise you.

A list of WP Authorized Centers can be found on the WP website.
International WP Suspension website: http://www.wp-suspension.com

4 SERIAL NUMBERS

4.1 Shock absorber article number



Shock absorber article number ❶ is located on the bottom of the compensating tank.

5.1 Advice on preparing for first use

Warning

Danger of accident Modifications to the suspension setting may seriously alter the handling characteristic.

Extreme modifications to the suspension setting may cause a serious deterioration in the handling characteristic and overload components.

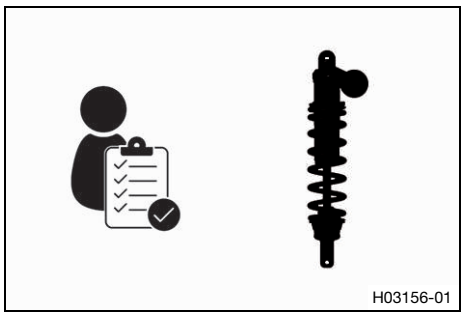
– Only make adjustments within the recommended range.
– Ride slowly to start with after making adjustments to get the feel of the new handling characteristic.

– Adjust the low-speed compression damping of the shock absorber. (📖 p. 14)
– Adjust the high-speed compression damping of the shock absorber. (📖 p. 15)
– Adjust the rebound damping of the shock absorber. (📖 p. 15)
– Check the static sag of the shock absorber. (📖 p. 17)
– Check the riding sag of the shock absorber. (📖 p. 17)

6.1 Checks and maintenance measures when preparing for use

Info

Before every use, check the condition of the chassis component and ensure that it is safe to operate. The chassis must be in perfect technical condition when it is being operated.



– Check chassis component for damage.
– Check all the screw connections to ensure that they are tight.

7.1 Additional information

Any further work that results from the compulsory work or from the recommended work must be ordered separately and invoiced separately.
Different service intervals may apply in your country, depending on the local operating conditions.

7.2 Required work

	every 20,000 km (12,400 mi)
Main work	
Perform the shock absorber service.	•

- Periodic interval

7.3 Recommended work

	after 5,000 km (3,100 mi)
Perform the shock absorber service.	○

○ One-time interval

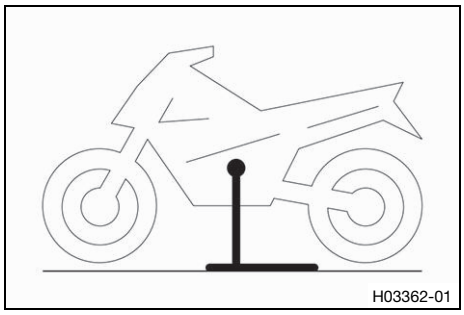
8 SERVICE WORK ON THE CHASSIS

8.1 Raising the motorcycle with work stand

Note

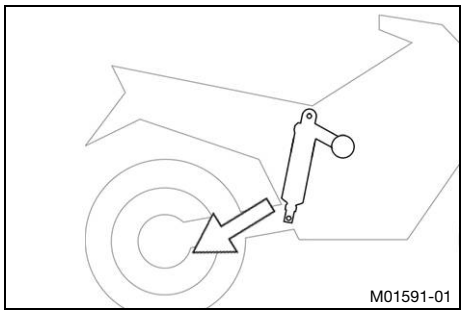
Danger of damage The parked vehicle can roll away or fall over.

– Park the vehicle on a firm and level surface.



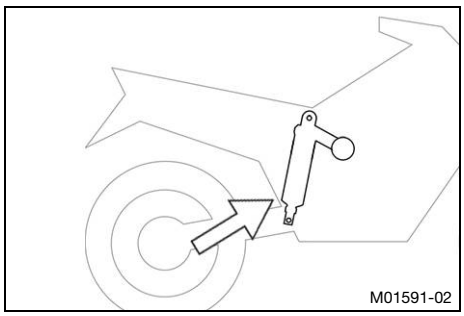
– Lift up the motorcycle according to the repair manual.
  ✓ Neither wheel is in contact with the ground.
– Secure the motorcycle against falling over.

8.2 Removing standard shock absorber



– Remove the standard shock absorber according to the repair manual.

8.3 Installing the WP PRO COMPONENTS shock absorber



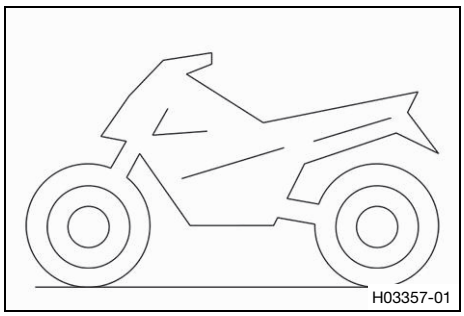
– Install the shock absorber according to the repair manual.
– Attach the stickers (included).

8.4 Removing the motorcycle from the work stand

Note

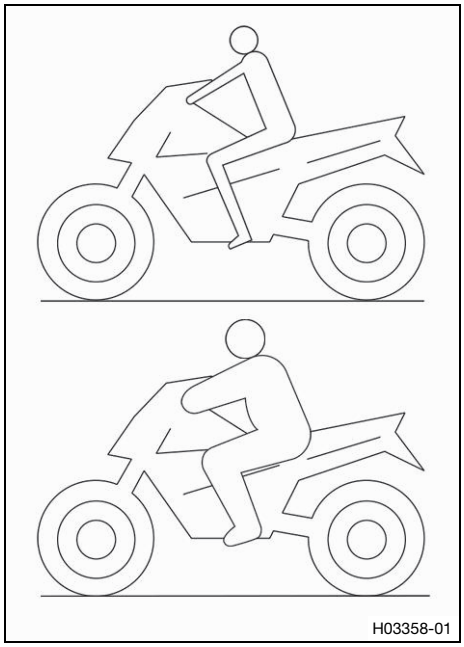
Danger of damage The parked vehicle can roll away or fall over.

– Park the vehicle on a firm and level surface.



– Remove the motorcycle from the work stand according to the repair manual.
– Remove the work stand.

9.1 Checking the basic chassis setting with rider's weight



– For optimal motorcycle riding characteristics and to avoid damage to forks, shock absorbers, link fork and frame, the basic settings of the suspension components must match the rider's weight.
– This chassis component is factory set to a standard rider's weight.

Guideline

Standard rider weight	75 … 85 kg (165 … 187 lb.)

– If the rider's weight is above or below this range, the basic setting of the suspension components must be adjusted accordingly.
– Minor differences in the rider's weight can be compensated for by modifying the spring preload.
– In case of larger differences, appropriate springs must be fitted.

9.2 Adjusting the low-speed compression damping of the shock absorber

Caution

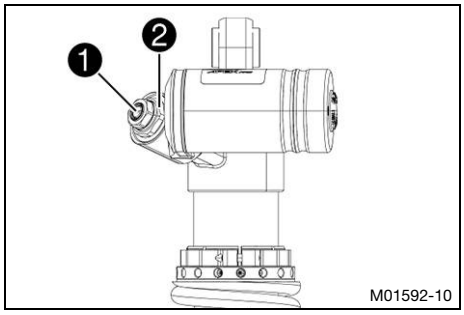
Risk of injury Parts of the shock absorber will move around if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided. (Your WP Authorized Center will be pleased to assist you.)

Info

The effect of the low-speed setting can be seen in slow to normal compression of the shock absorber.



– Turn adjusting screw ❶ clockwise up to the last perceptible click.

Info

Do not loosen fitting ❷!

– Turn the counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

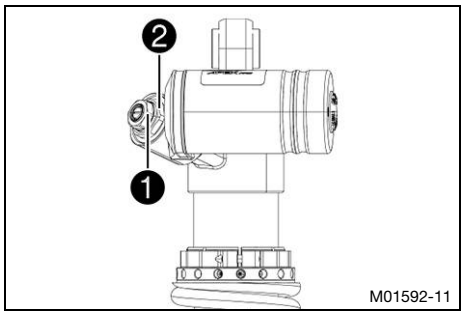
Low-speed compression damping	
Comfort	16 clicks
Standard	12 clicks
Sport	9 clicks

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping during slow to normal compression.

9.3 Adjusting the high-speed compression damping of the shock absorber

Caution
Risk of injury Parts of the shock absorber will move around if the shock absorber is detached incorrectly.
The shock absorber is filled with highly compressed nitrogen.
– Please follow the description provided. (Your WP Authorized Center will be pleased to assist you.)

Info
The effect of the high-speed setting can be seen in fast compression of the shock absorber.



– Turn adjusting screw ❶ clockwise all the way.

Info
Do not loosen fitting ❷!

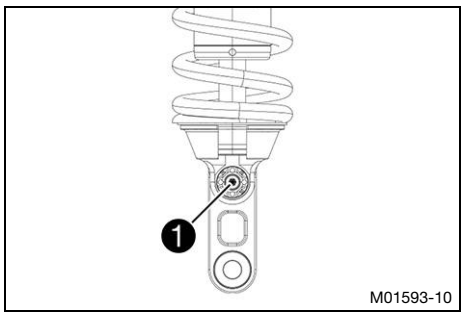
– Turn counterclockwise by the number of turns corresponding to the shock absorber type.
Guideline

High-speed compression damping	
Comfort	1.5 turns
Standard	1.5 turns
Sport	1.5 turns

Info
Turn clockwise to increase damping; turn counterclockwise to reduce damping during fast compression.

9.4 Adjusting the rebound damping of the shock absorber

Caution
Risk of injury Parts of the shock absorber will move around if the shock absorber is detached incorrectly.
The shock absorber is filled with highly compressed nitrogen.
– Please follow the description provided. (Your WP Authorized Center will be pleased to assist you.)



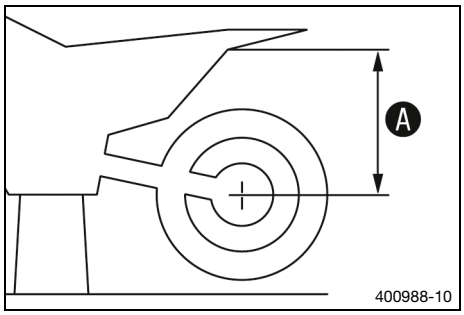
– Turn adjusting screw ❶ clockwise up to the last perceptible click.
– Turn the counterclockwise by the number of clicks corresponding to the shock absorber type.

Guideline

Rebound damping	
Comfort	16 clicks
Standard	12 clicks
Sport	9 clicks

Info
Turn clockwise to increase the damping; turn counterclockwise to reduce the damping.

9.5 Measuring the dimension of the rear wheel unloaded

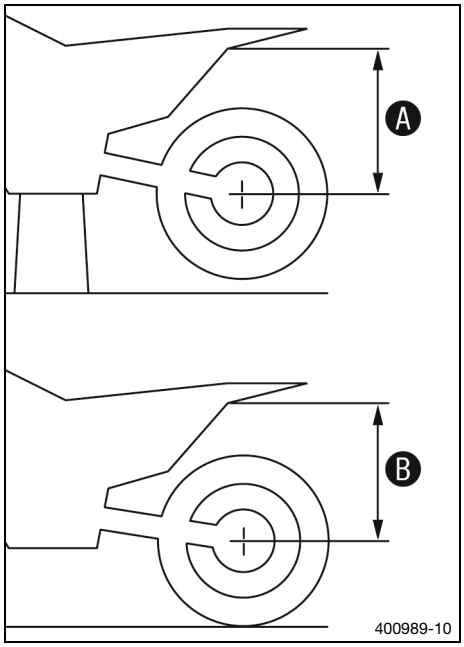


Preparatory work
– Raise motorcycle with work stand. (p. 12)

Main work
– Measure the vertical distance between the rear axle and a fixed point such as a marking on the side cover.
– Note the value as dimension Ⓐ.

Finishing work
– Remove the motorcycle from the work stand. (p. 12)

9.6 Checking the static sag of the shock absorber



– Measure dimension A of rear wheel unloaded. (📖 p. 16)
– Hold the motorcycle upright with aid of an assistant.
– Measure the distance between rear axle and fixed point again.
– Note the value as dimension B.

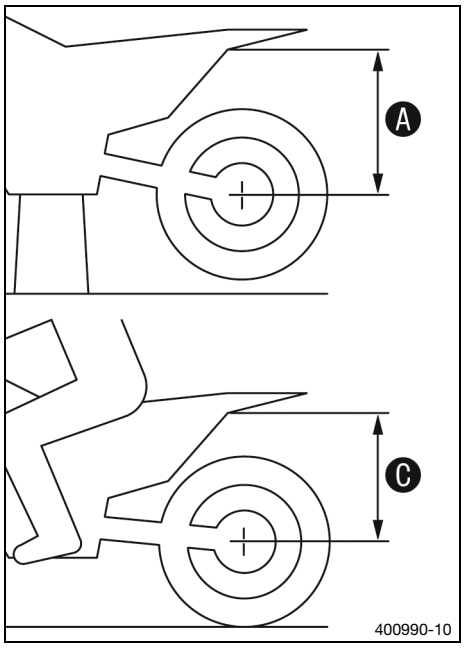
Info
The static sag is the difference between measurements A and B.

– Check the static sag.

Static sag	20 mm (0.79 in)

» If the static sag is less or more than the specified value:
– Adjust the spring preload of the shock absorber. (📖 p. 18)

9.7 Checking the riding sag of the shock absorber



– Measure dimension A of rear wheel unloaded. (📖 p. 16)
– With another person holding the motorcycle, the rider, wearing full protective clothing, sits on the seat in a normal sitting position (feet on footrests) and bounces up and down a few times.
✓ The rear wheel suspension levels out.
– Another person now measures the distance between the rear axle and the fixed point.
– Note the value as dimension C.

Info
The riding sag is the difference between measurements A and C.

– Check riding sag.

Riding sag	36 mm (1.42 in)

» If the riding sag differs from the specified measurement:
– Adjust the riding sag. 🔧 (📖 p. 19)

9.8 Adjusting the spring preload of the shock absorber

Caution

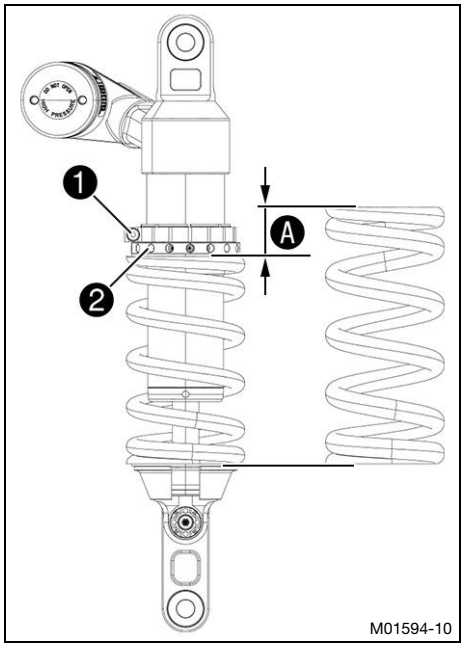
Risk of injury Parts of the shock absorber will move around if the shock absorber is detached incorrectly.

The shock absorber is filled with highly compressed nitrogen.

– Please follow the description provided. (Your WP Authorized Center will be pleased to assist you.)

Info

A hydraulic preload adjuster is available as an optional accessory.
The assembly of the hydraulic preload adjuster by a WP Authorized Center is recommended.



Condition

without hydraulic preload adjuster

– Remove the shock absorber. (p. 12)
– After removing the shock absorber, clean it thoroughly.
– Measure the full spring length while it is under tension and note down the value.
– Loosen screw 1.
– Turn adjusting ring 2 with a suitable tool until the spring is no longer under tension.
– Measure the total spring length while the spring is not under tension.
– Tighten the spring by turning adjusting ring with a suitable tool to the specified measurement A.

Guideline

Spring preload	
Standard (without hydraulic preload adjuster)	5 mm (0.2 in)

Info

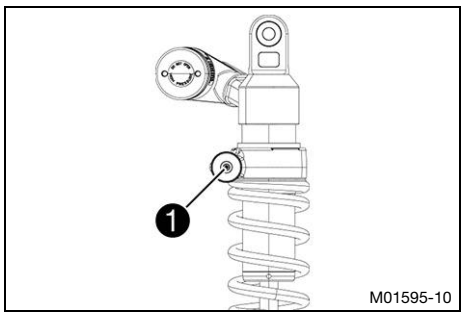
The spring preload is the difference between the relaxed spring length and the tensioned spring length.
Depending on the static sag and/or the riding sag, it may be necessary to increase or decrease the spring preload.

– Tighten screw 1.

Guideline

clamping ring screw, shock absorber	M5	5 Nm (3.7 lbf ft)

– Install the shock absorber. (p. 12)



Condition

with hydraulic preload adjuster

– Turn screw ❶ on the hydraulic preload adjuster all the way counterclockwise.
– In order to adjust preload, turn screw ❶ clockwise.

Guideline

Spring preload	
Standard (with hydraulic preload adjuster)	5 turns

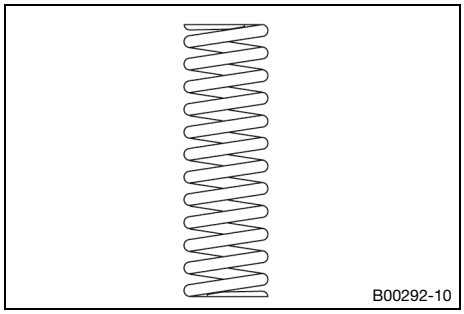
Info

Depending on the static sag and/or the riding sag, it may be necessary to increase or decrease the spring preload.

9.9 Adjusting the riding sag

Preparatory work

– Remove the shock absorber. (p. 12)
– After removing the shock absorber, clean it thoroughly.



Main work

– Choose and mount a suitable spring.

Guideline

Spring rate	
Weight of rider: 65 … 75 kg (143 … 165 lb.)	140 N/mm (799 lb/in)
Weight of rider: 75 … 85 kg (165 … 187 lb.)	150 N/mm (857 lb/in)
Weight of rider: 85 … 95 kg (187 … 209 lb.)	160 N/mm (914 lb/in)

Info

The spring rate is shown on the outside of the spring. Smaller weight differences can be compensated by changing the spring preload.

Finishing work

– Install the shock absorber. (p. 12)
– Check the static sag of the shock absorber. (p. 17)
– Check the riding sag of the shock absorber. (p. 17)
– Adjust the rebound damping of the shock absorber. (p. 15)

10 TECHNICAL DATA

10.1 Shock absorber

Shock absorber article number	15.18.0R.81
Shock absorber	**WP SuspensionAPEX PRO 6746**
High-speed compression damping	
Comfort	1.5 turns
Standard	1.5 turns
Sport	1.5 turns
Low-speed compression damping	
Comfort	16 clicks
Standard	12 clicks
Sport	9 clicks
Rebound damping	
Comfort	16 clicks
Standard	12 clicks
Sport	9 clicks
Spring preload	
Standard (without hydraulic preload adjuster)	5 mm (0.2 in)
Spring preload	
Standard (with hydraulic preload adjuster)	5 turns
Spring rate	
Weight of rider: 65 … 75 kg (143 … 165 lb.)	140 N/mm (799 lb/in)
Weight of rider: 75 … 85 kg (165 … 187 lb.)	150 N/mm (857 lb/in)
Weight of rider: 85 … 95 kg (187 … 209 lb.)	160 N/mm (914 lb/in)
Spring length	150 mm (5.91 in)
Gas pressure	10 bar (145 psi)
Static sag	20 mm (0.79 in)
Riding sag	36 mm (1.42 in)
Inbuilt length	387 mm (15.24 in)
Shock absorber fluid (📖 p. 21)	SAE 2.5

10.2 Chassis tightening torques

clamping ring screw, shock absorber	M5	5 Nm (3.7 lbf ft)

Shock absorber fluid (SAE 2.5) (50180751S1)

Standard/classification

– SAE (📖 p. 22) (SAE 2.5)

Guideline

– Use only oils that comply with the specified standards (see specifications on the container) and that exhibit the corresponding properties.

SAE

The SAE viscosity classes were defined by the Society of Automotive Engineers and are used for classifying oils according to their viscosity. The viscosity describes only one property of oil and says nothing about quality.

PA	Preload adjuster	Device on the suspension components that enables the adjustment of the spring preload

14 LIST OF ABBREVIATIONS

Art. no.	Article number
ca.	circa
cf.	compare
e.g.	for example
etc.	et cetera
i.a.	inter alia
no.	number
poss.	possibly

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