

# OWNER'S MANUAL

WP BAVP 5018 TRAX LINK SHOCK ABSORBER  
SUZUKI RMZ 450

Art. no. 53000141en





Congratulations on your decision to purchase a WP chassis component. You are now the owner of a state-of-the-art sports chassis that will give you enormous pleasure if you service and maintain it properly.

We hope you enjoy riding this motorcycle!

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.

All specifications are non-binding. WP Suspension GmbH specifically reserves the right to modify or delete technical specifications, prices, colors, forms, materials, services, designs, equipment, etc., without prior notice and without providing reasons, to adapt these to local conditions, as well as to stop the production of a particular model without prior notice. WP accepts no liability for delivery options, deviations from figures and descriptions, misprints, and other errors. The models portrayed partly contain special equipment that does not belong to the regular scope of supply.

© 2018 WP Suspension GmbH, Mattighofen Austria

All rights reserved

Reproduction, even in part, as well as copying of all kinds, is permitted only with the express written permission of the copyright owner.

WP Suspension GmbH  
Stallhofnerstraße 3  
5230 Mattighofen, Austria

This document is valid for the following models:

WP BAVP 5018 TRAX Link shock absorber Suzuki RMZ 450 (18.23.0R.02)



# TABLE OF CONTENTS

1	MEANS OF REPRESENTATION.....	3	9.2	WP BAVP 5018 TRAX Link shock absorber.....	14
1.1	Symbols used .....	3	9.3	Compression damping of the shock absorber.....	14
1.2	Formats used .....	3	9.4	Adjusting the low-speed compression damping of the shock absorber.....	15
2	SAFETY ADVICE .....	4	9.5	Adjusting the high-speed compression damping of the shock absorber.....	15
2.1	Use definition – intended use .....	4	9.6	Adjusting the rebound damping of the shock absorber .....	16
2.2	Misuse.....	4	9.7	Measuring the rear wheel dimension unloaded .....	16
2.3	Safety advice .....	4	9.8	Checking the static sag of the shock absorber.....	17
2.4	Degrees of risk and symbols .....	4	9.9	Checking the riding sag of the shock absorber.....	17
2.5	Safe operation.....	5	9.10	Adjusting the spring preload of the shock absorber 🛠.....	18
2.6	Work rules.....	5	9.11	Adjusting the riding sag 🛠.....	18
2.7	Environment.....	5	10	TECHNICAL DATA .....	20
2.8	Owner's Manual .....	5	10.1	Shock absorber .....	20
2.9	Correct installation.....	6	10.2	Chassis tightening torques .....	20
2.10	Chassis tightening torques .....	6	11	SUBSTANCES.....	21
3	IMPORTANT NOTES .....	7	12	STANDARDS .....	22
3.1	Manufacturer and implied warranty .....	7	13	LIST OF ABBREVIATIONS .....	23
3.2	Operating and auxiliary substances .....	7	INDEX.....		24
3.3	Spare parts, accessories .....	7			
3.4	Service .....	7			
3.5	Figures .....	7			
3.6	Customer service.....	7			
4	SERIAL NUMBERS.....	8			
4.1	Shock absorber article number .....	8			
5	PREPARING FOR USE.....	9			
5.1	Advice on preparing for first use.....	9			
6	RIDING INSTRUCTIONS .....	10			
6.1	Checks and maintenance measures when preparing for use.....	10			
7	SERVICE SCHEDULE.....	11			
7.1	Additional information.....	11			
7.2	Required work.....	11			
7.3	Recommended work.....	11			
8	SERVICE WORK ON THE CHASSIS .....	12			
8.1	Raising the motorcycle with a lift stand .....	12			
8.2	Removing standard shock absorber 🛠.....	12			
8.3	Installing the WP PRO COMPONENTS shock absorber 🛠.....	12			
8.4	Removing the motorcycle from the lift stand .....	12			
9	TUNING THE CHASSIS.....	14			
9.1	Checking the basic chassis setting with the rider's weight.....	14			

## 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 rework.

## 1.2 Formats used

The typographical formats used in this document are explained below.

**Proprietary name**

Indicates a proprietary name.

**Name<sup>®</sup>**

Indicates a protected name.

**Brand<sup>™</sup>**

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 competitive use.



#### 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 recommend.

---

### 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.



### Warning

**Danger of burns** The damper gets very hot when the vehicle is driven.

- Do not touch the damper before it has cooled down.
- Allow the damper to cool down before performing any work.

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**<sup>®</sup>) 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 maintain 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 accordance with the instructions of the vehicle manufacturer 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 that apply are those in the vehicle manufacturer's instructions.



### **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 warranty.

### **3.2 Operating and 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. Incorrect adjustment and tuning of the chassis and suspension can lead to damage and breakage of components.

Use of the chassis component under difficult conditions, such as on sand or on wet and muddy surfaces, 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.

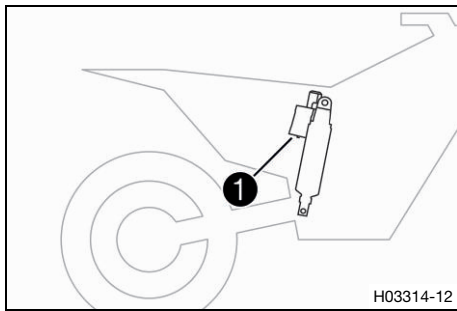
### **3.6 Customer service**

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>

## 4.1 Shock absorber article number



The shock absorber article number **1** is located on the bottom of the compensating tank.

---

**i** **Info**

The shock absorber article number consists of an eight figure number with a single letter in the sixth position.

---

## 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 chassis component for yourself before using it for the first time.

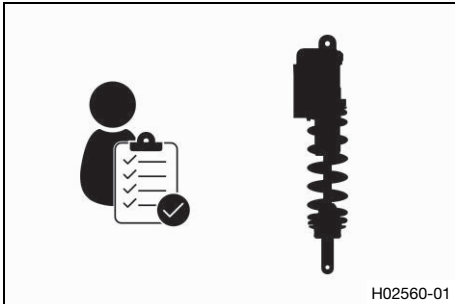


# 6 RIDING INSTRUCTIONS

## 6.1 Checks and maintenance measures when preparing for use

### **i** 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.

## 7.1 Additional information

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

## 7.2 Required work

<b>Every 40 operating hours</b>
Service the shock absorber. 🛠️

- Periodic interval

## 7.3 Recommended work

<b>Once after 20 operating hours</b>
Service the shock absorber. 🛠️

- One-time interval

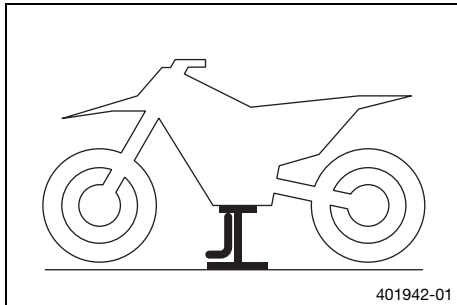
# 8 SERVICE WORK ON THE CHASSIS

## 8.1 Raising the motorcycle with a lift stand

### Note

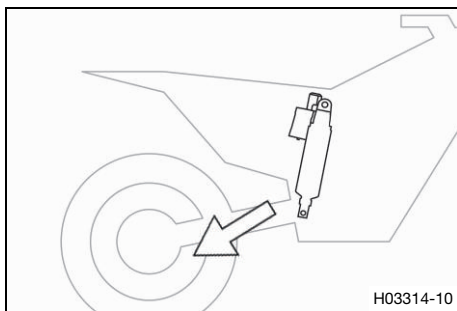
**Danger of damage** The parked vehicle can roll away or fall over.

- Park the vehicle on a firm and level surface.



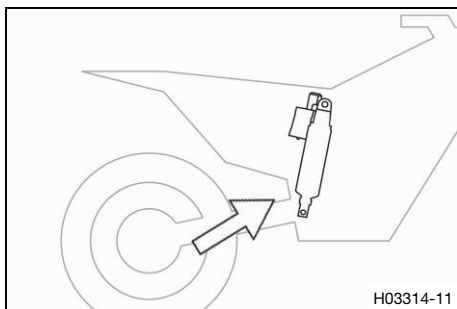
- Raise the motorcycle in accordance with the instructions of the vehicle manufacturer.
  - ✓ Neither wheel is in contact with the ground.
- Secure the motorcycle against falling over.

## 8.2 Removing standard shock absorber



- Remove the standard shock absorber as per the instructions of the vehicle manufacturer.

## 8.3 Installing the WP PRO COMPONENTS shock absorber



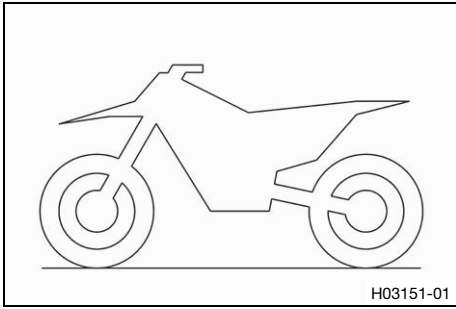
- Install the shock absorber in accordance with the instructions of the vehicle manufacturer.

## 8.4 Removing the motorcycle from the lift stand

### Note

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

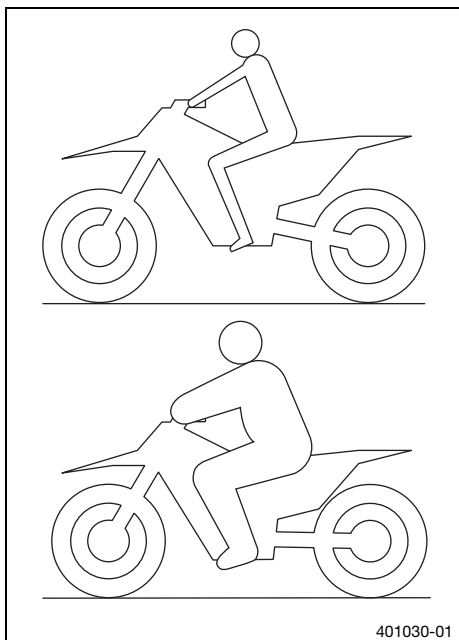
- Park the vehicle on a firm and level surface.



- Remove the motorcycle from the lift stand as per the instructions of the vehicle manufacturer.
- Remove the lift stand.



## 9.1 Checking the basic chassis setting with the rider's weight



- For optimal motorcycle riding characteristics and to avoid damage to forks, shock absorbers, swingarm and frame, the basic settings of the suspension components must match the rider's weight.
- In the delivered condition, this chassis component is adjusted for an average rider's weight (with full protective clothing).

### 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.
- Small weight differences can be compensated by adjusting the spring preload, but in the case of large weight differences, the springs must be replaced.

## 9.2 WP BAVP 5018 TRAX Link shock absorber

WP TRAX shock absorbers are the most innovative shock absorbers on the market. The WP TRAX unit is an extremely compact mechanical system that is integrated into the lower part of the shock absorber and significantly improves the road grip of the rear wheel.

This system is used successfully by the motor racing division, and numerous world championship titles are proof of its effectiveness.

The TRAX system was developed to accelerate the rebound of the rear wheel after a bump. No acceleration is possible over this time due to the absence of contact with the ground.

## 9.3 Compression damping of the shock absorber

The compression damping of the shock absorber is divided into two ranges: high-speed and low-speed. High-speed and low-speed refer to the compression speed of the rear wheel suspension and not to the vehicle speed.

The high-speed setting, for example, has an effect on the landing after a jump: the rear wheel suspension compresses quickly.

The low-speed setting, for example, has an effect when riding over long ground swells: the rear wheel suspension compresses slowly.

These two ranges can be adjusted separately, although the transition between high-speed and low-speed is gradual. Thus, changes in the high-speed range affect the compression damping in the low-speed range and vice versa.



## 9.4 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.

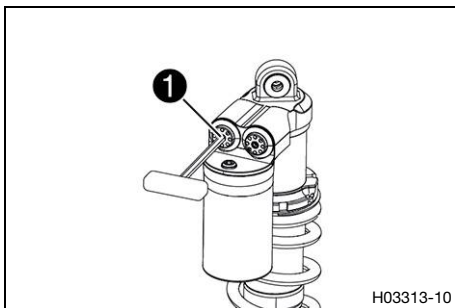
The shock absorber is filled with highly compressed nitrogen.

- 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 the adjusting screw ① clockwise with a hexagon socket wrench up to the last perceptible click.



### Info

The low-speed adjuster is the adjuster **L** on the left.

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

### Guideline

Compression damping, low-speed	15 clicks
--------------------------------	-----------



### Info

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



## 9.5 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.

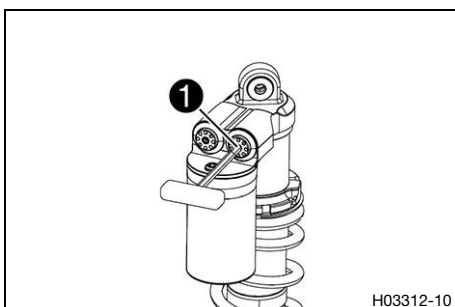
The shock absorber is filled with highly compressed nitrogen.

- 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 the adjusting screw ① clockwise with a hexagon socket wrench up to the last perceptible click.



### Info

The high-speed adjuster is the adjuster **H** on the right.

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

## Guideline

High-speed compression damping	30 clicks
--------------------------------	-----------



### Info

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

## 9.6 Adjusting the rebound damping of the shock absorber

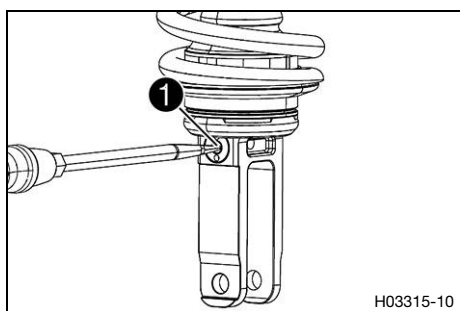


### Caution

**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 **1** clockwise up to the last perceptible click.
- Turn counterclockwise by the number of clicks corresponding to the shock absorber type.

## Guideline

Rebound damping	25 clicks
-----------------	-----------



### Info

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

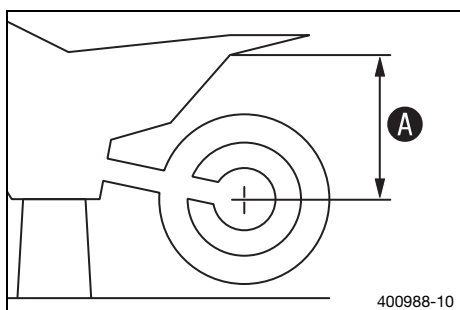
## 9.7 Measuring the rear wheel dimension unloaded

### Preparatory work

- Raise the motorcycle with a lift stand. (📖 p. 12)

### Main work

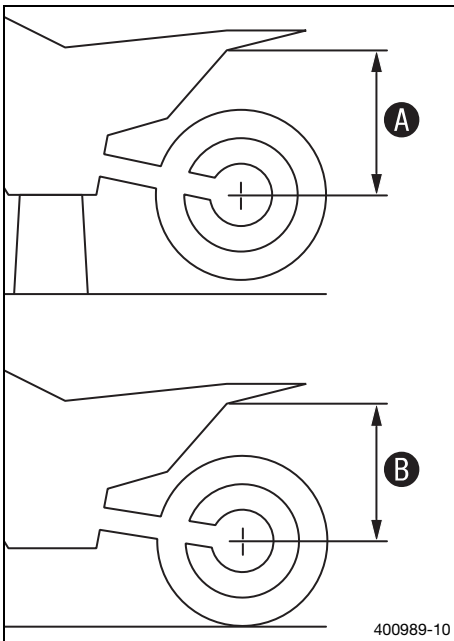
- Measure the distance – as vertical as possible – between the rear axle and a fixed point, for example, a mark on the side cover.
- Note down the value as dimension **A**.



### Finishing work

- Remove the motorcycle from the lift stand. (📖 p. 12)

## 9.8 Checking the static sag of the shock absorber



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



### Info

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

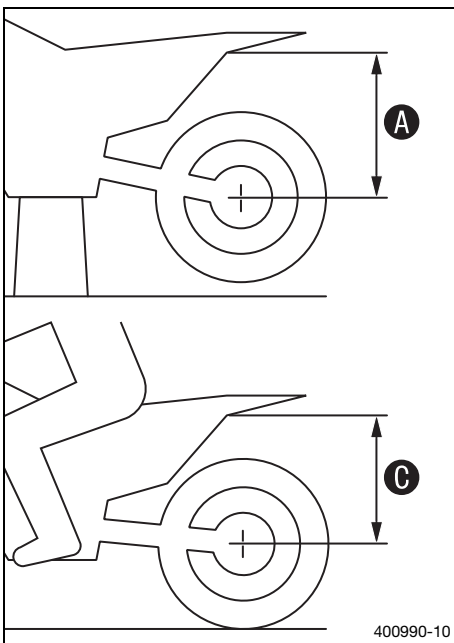
- Check the static sag.

Static sag	41 mm (1.61 in)
------------	-----------------

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



## 9.9 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 down the value as dimension **C**.



### Info

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

- Check the riding sag.

Riding sag	101 mm (3.98 in)
------------	------------------

- » If the riding sag differs from the specified measurement:
  - Adjust the riding sag. (🔧📖 p. 18)



## 9.10 Adjusting the spring preload of the shock absorber

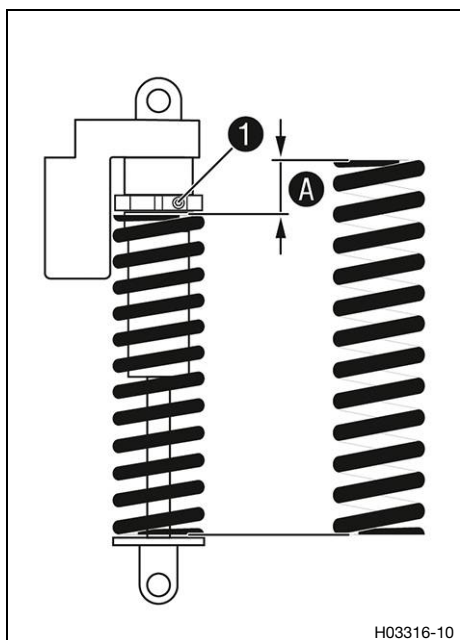


### Caution

**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.)



### Preparatory work

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

### Main work

- Measure the full spring length while it is under tension and note down the value.
- Loosen screw 1.
- Turn the adjusting ring 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	8 mm (0.31 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)
-------------------------------------	----	-------------------

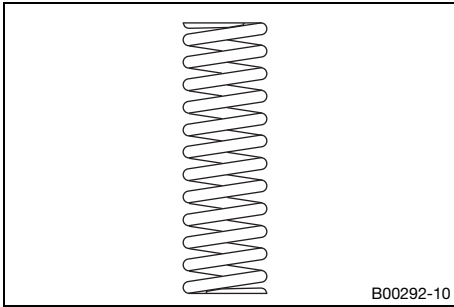
### Finishing work

- Install the shock absorber. (p. 12)

## 9.11 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: 55 ... 65 kg (121 ... 143 lb.)	48 N/mm (274 lb/in)
Weight of rider: 65 ... 75 kg (143 ... 165 lb.)	51 N/mm (291 lb/in)
Weight of rider: 75 ... 85 kg (165 ... 187 lb.)	54 N/mm (308 lb/in)
Weight of rider: 85 ... 95 kg (187 ... 209 lb.)	57 N/mm (325 lb/in)
Weight of rider: 95 ... 105 kg (209 ... 231 lb.)	60 N/mm (343 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. 16)

## 10.1 Shock absorber

Shock absorber article number	18.23.0R.02
Shock absorber	WP BAVP 5018 TRAX Link shock absorber, Suzuki RMZ 450
Compression damping, low-speed	15 clicks
High-speed compression damping	30 clicks
Rebound damping	25 clicks
Spring preload	8 mm (0.31 in)
Spring rate	
Weight of rider: 55 ... 65 kg (121 ... 143 lb.)	48 N/mm (274 lb/in)
Weight of rider: 65 ... 75 kg (143 ... 165 lb.)	51 N/mm (291 lb/in)
Weight of rider: 75 ... 85 kg (165 ... 187 lb.)	54 N/mm (308 lb/in)
Weight of rider: 85 ... 95 kg (187 ... 209 lb.)	57 N/mm (325 lb/in)
Weight of rider: 95 ... 105 kg (209 ... 231 lb.)	60 N/mm (343 lb/in)
Spring length	260 mm (10.24 in)
Gas pressure	8 bar (116 psi)
Static sag	41 mm (1.61 in)
Riding sag	101 mm (3.98 in)
Fitted length	477 mm (18.78 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.



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

<b>A</b>	
Accessories	7
Auxiliary substances	7
<b>B</b>	
<b>Basic chassis setting</b>	
checking with rider's weight	14
<b>C</b>	
Correct installation	6
Customer service	7
<b>E</b>	
Environment	5
<b>F</b>	
Figures	7
<b>I</b>	
Implied warranty	7
Intended use	4
<b>M</b>	
Misuse	4
<b>Motorcycle</b>	
lift stand, raising with	12
lift stand, removing from	12
<b>O</b>	
Operating substances	7
Owner's Manual	5
<b>P</b>	
<b>Preparing for use</b>	
advice on preparing for first use	9
checks and maintenance measures when preparing for use	10
<b>R</b>	
<b>Riding sag</b>	
adjusting	18
<b>S</b>	
Safe operation	5
Service	7
Service schedule	11
<b>Shock absorber</b>	
article number	8
high-speed compression damping, adjusting	15
installing the WP PRO COMPONENTS version	12
low-speed compression damping, adjusting	15
rebound damping, adjusting	16
riding sag, checking	17
spring preload, adjusting	18
standard version, removing	12
static sag, checking	17
<b>Spare parts</b>	7
<b>T</b>	
<b>Technical data</b>	
chassis tightening torques	6, 20
shock absorber	20
<b>U</b>	
Use definition	4
<b>W</b>	
Warranty	7
Work rules	5
WP BAVP 5018 TRAX Link shock absorber	14



53000141en

06/2018