1.1 Description of the test unit

The device (R58/37, R58/117 V01 or R58/117/1) contains an electronic calibration unit for each of the sensors SI and SII of the double wheel sensor. The activation of the internal sensors are indicated by LEDs. The power supply of the testing device is provided by a built-in 12-VDC Ni-Cad battery (1.2V x 10).

1 = Connection for signal input of SI and SII
2 = Indicator lamp "Charge battery"
3 = LED indicator lamps SI and SII
   (switching function)
4 = Battery charging connection
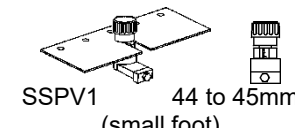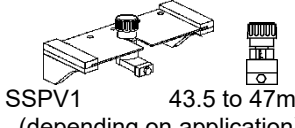5 = Switch "ON" or "OFF"

Fig. 1

Fig. 2

Fig. 1   Test unit R58/117 V01

Fig. 2   Test unit R58/117/1

To check the DSS function, you need:
– a test unit
– and a wheel sensor testing device plate (SSPV) (see sheet 3)

Version	Test unit	Interface module (AB)	SSPV
For AB with: idle voltage 8V constant current 3.2 mA	R58/117 V01	e.g. for the DSS type: N59-1R-200-45 2N59-1R-200-45 2N59-1R-200-40 2N59-1R-600-40 e.g. for amplifier type: 4AB10/1205/1 4AB10/1105/3 and /32	SSPV1 44 to 45mm (small foot)
For AB with: idle voltage 10V constant current 5.2 mA	R58/117/1	e.g. for the DSS type: 2N59-1R-400RE-40 e.g. for amplifier type: 4AB10/1105/35, 4AB10/1105/38, 4AB10/1105/40, 4AB10/1105/43, 4AB10/1105/51	SSPV1 43.5 to 47mm (depending on application) (small foot) (with or without stops)

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Note: Measuring error in case of discharged battery!

If the LED "Charge battery" lights up, any calibration results will be inaccurate. Observe the battery charging status and recharge the battery if necessary before making adjustments.

Attention: Do not overcharge the battery!

Charge the battery only with the characteristic values for charging current and charging time stated on the side of the test unit. These may be found on the information plate.

Attention: Measuring error due to metallic objects!

Metallic objects like tools or rings, bracelets or watches etc. can affect the functional test. Do not place any tools or hands or arms with metallic jewellery above the DSS.

1.2   Connecting the DSS to the test unit

Note: DSS and ambient temperature

The DSS can be tested at any temperature between
- 25°C and + 70°C.

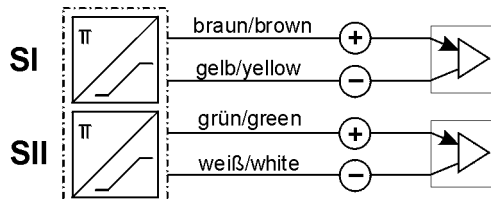- Connect the leads of the DSS with same color connections at the test unit.

Fig. 3   Connection diagram for double wheel sensor
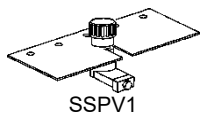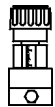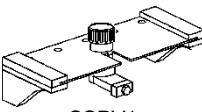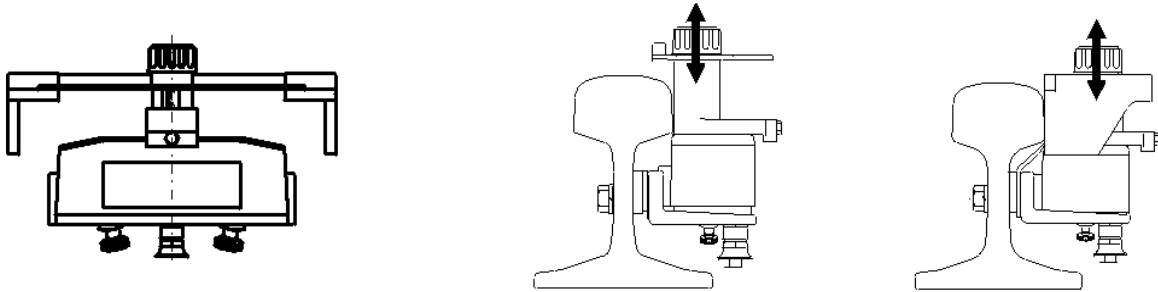
SSPV1 TOOL

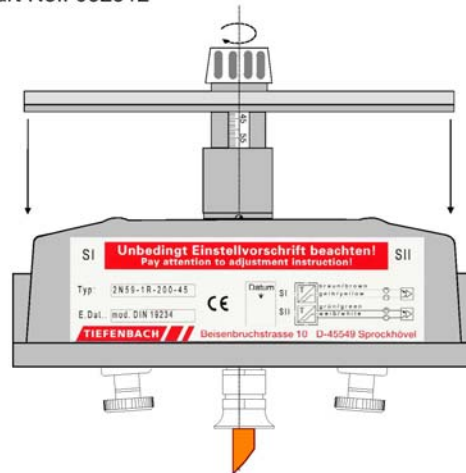Fig. 4   Place SSPV testing device onto DSS double wheel sensor

The SSPV must be placed at the center of the DSS and not contact the rail head. If the rail head interferes with the height adjustment, then a SSPV with lateral stop plates must be used that slide along the rail head and keep the plate away from the rail head edge.

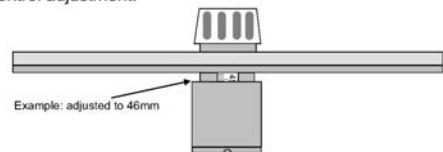### Selecting the SSPV for the wheel sensor

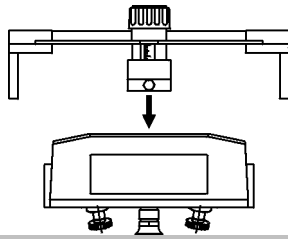| Wheel sensor	SSPV	Foot	Adjusting range	Remark
2N59-1R-200-45￼2N59-1R-200-40￼2N59-1R-600-40￼N59-1R-200-45￼2N59-1R-400RE-40	SSPV1		40-55 mm￼intermediate foot	without￼stop
2N59-1R-200-45￼2N59-1R-200-40￼2N59-1R-600-40￼N59-1R-200-45￼2N59-1R-400RE-40	SSPV1		40-55 mm￼intermediate foot	with stop

SSPV 1
Part-No.: 032312

Control adjustment:

Example: adjusted to 46mm

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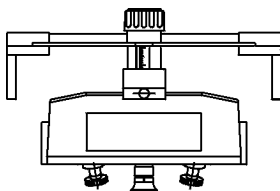**PINTSCH TIEFENBACH**

1.3   Adjusting the DSS

- Prior to commencing the adjustment procedure, test the function of the DSS sensor.
- Move the SSPV or another metallic object close to the switch and check whether the LEDs light up at the R58 device.
 (see Fig. 1).

Note: Potential problems

If the LEDs do not light up, either the R58 test unit or the sensor could be faulty.

- Set the SSPV to an admissible distance (see the data sheet of the respective sensor) and place it to the center of the sensor. Typically, 45 to 46mm for N59 or 2N59-1R-200-45 and 44 to 45mm for the 2N59-1R-200-40 wheel sensors, Typically 44 to 47mm for 2N59-1R-400RE-40 wheel sensor, dependent on the application.
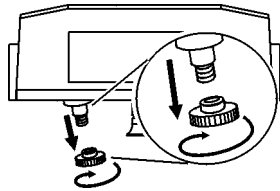
- Remove the knurled nuts of the setscrews.
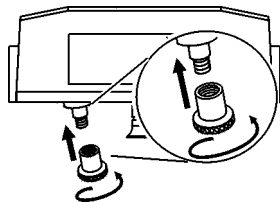
- Screw on the EW 2 setting tool (SI or SII) and tighten it without pressing the setting device out of the adjusting lock. Alternatively, you can use the EW 1 tool which makes it easier to adjust the sensor.
- Keep the setting tool pushed upwards so that the adjusting lock is disabled.

EW 1

EW 2

Fig. 5   Setting tool EW 1 and EW 2

Rotating the setscrew:	clockwise	switching distance greater
	counter-clock wise	switching distance smaller

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**Note: Destruction of the set screw adjusting lock**

The set screws are secured against self-adjustment.
To adjust the screws, it is mandatory to press them in
and keep them pressed in (up) this position while making the
adjustments. Otherwise the adjustment mechanism will be damaged and
cause a malfunction of the wheel sensor.
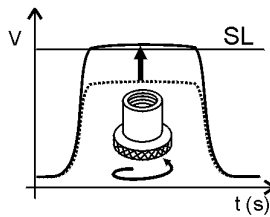
- Rotate the setscrew clockwise until the function LED (see Fig. 1) starts lighting up. Exercise caution and do not force the adjustment.
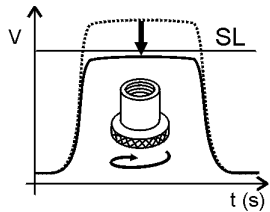
- If the LED lights up already when putting on the testing device, then rotate the setscrew first counter-clockwise until the LED goes out.
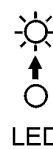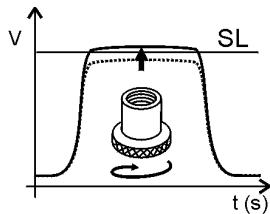
- Now rotate the unsecured setscrew clockwise again until the function LED just starts lighting up.
- Repeat the procedure for the other internal sensor!
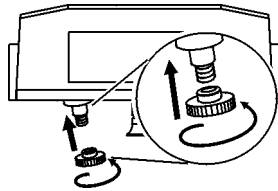
- Screw the knurled nuts back onto the setscrews.

Note: Risk of measuring faults

The thread of the set screw must be in a relaxed resting position after the adjustment is finished; otherwise, there is the risk of possible detection errors due to the switching distance possibly changing to an unacceptable range. Check to see that it has fully popped back down. Press in up with your finger and let it go to ensure it has popped back down.

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1.4   Checking the DSS with the SSPV

**Note: The switching distances for SI and SII must be almost identical**

Measure and compare the switching distances for the systems SI and SII. If the switching distance is not almost identical (tolerance ≤1 mm), the system with the longer distance must be readjusted in order to obtain the same distances as the other system.
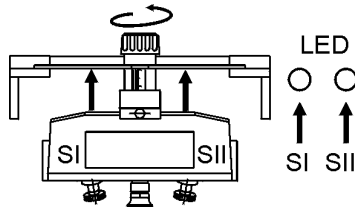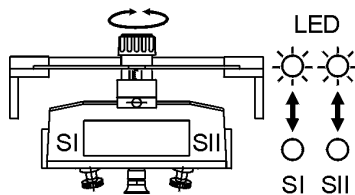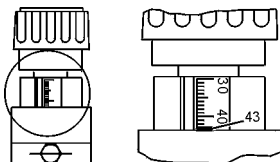
- Turn the SSPV way up.
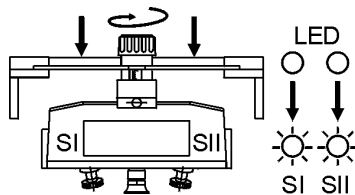
- Lower the SSPV by turning it until the LED (see Fig. 11) of SI and SII light.
-
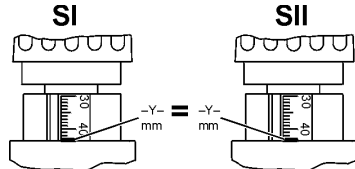
- Compare the two switching distances. If the deviation is more than ≤1 mm, then the system with the longer switching distance must be readjusted.

- Check the switching distance (**SA**) by adjusting the SSPV several times.

- Read the determined value and compare it with the specified value (stated on page 4). If this value should be incorrect, the DSS must be calibrated again as described in section