Jaltest WST
Wear Sensor Tester

(Tester of wear sensors)

User manual

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INNOVATION & TECHNOLOGY

Rev. 01

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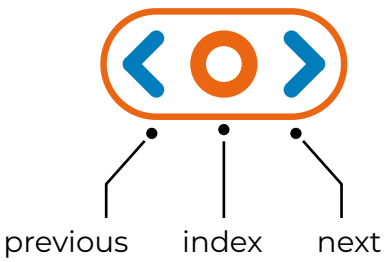
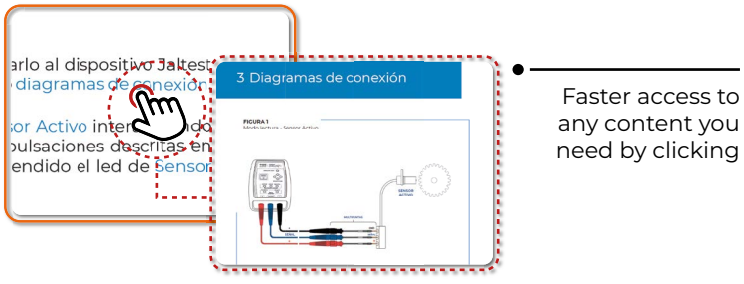




1 General information

1.1 PRODUCT DESCRIPTION

Jaltest WST is a portable equipment of small dimensions made for checking the correct operation of brake pad wear sensors as well as their state.

It has a selector that enables the user to choose the type of sensor to be checked and, through a display incorporated to the device, see the voltage value (V) in an easy way.

It enables reducing considerably the time invested in checks thanks to the cable kit that provides an optimal connection.

1.2 INDICATIONS AND SUGGESTIONS

- Use the equipment only as described in the user manual.
- Prevent non-qualified staff from working with this equipment.
- Prevent the equipment from being in contact with liquids, do not use it on wet surfaces and avoid exposure to the rain.
- Store the equipment and its components in a dry place, away from heat sources and out of the reach of solar radiation.
- Prevent the equipment from being knocked or falling.
- Switch off the equipment after its use to avoid discharging the battery.

1.3 EQUIPMENT COMPOSITION

Jaltest WST is formed by an electronic device with a sensor type selector and a complete kit of connectors.

1.3.1 DEVICE

A. Connection
Input port of the cable for the sensor

B. Display
Display of voltage values (V)

C. Battery status
The orange LED lights up if the battery is too low

D. Continuous sensors of MAN and Meritor

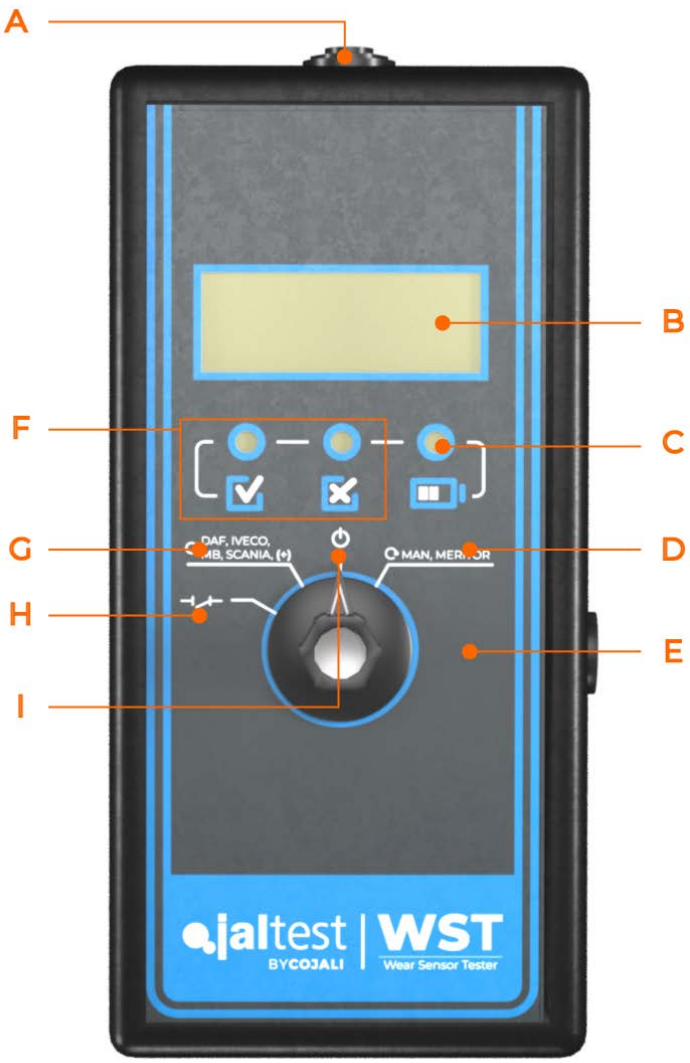
E. Sensor type selector
Rotary switch that enables positioning the type of sensor

F. Wear indicator
-The green LED lights up if the wear of the brake pads and disc is correct
-The red LED lights up if the wear of the brake pads and disc is not correct

G: Continuous sensors of DAF, Iveco, Mercedes-Benz, Scania, others

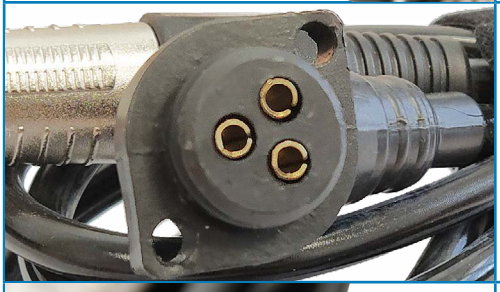
H: End-of-pad/2-wire sensors

I: Device turned-off



1.3.2 CABLE KIT

Indicative application list

CONNECTOR	BRANDS
	RENAULT, VOLVO
	VOLVO
	SCANIA, MERCEDES-BENZ, KNORR-BREMSE
	MERCEDES-BENZ, DAF, EVOBUS, IVECO, SCANIA, HYUNDAI, MAN, KNORR-BREMSE, WABCO
	RENAULT, VOLVO

2 Procedure

2.1 CHECK OF CONTINUOUS AND END-OF-PAD/2-WIRE SENSORS

1. Disassemble the vehicle wheel if needed
2. Disconnect the connector of the brake caliper sensor
3. Loosen the brake pads with the help of the adapter until they can be disassembled

Important: The pushers must be at the same height, with a difference below 0.25mm. Otherwise, the brake caliper must be replaced.

4. Connect the corresponding connector from Jaltest WST to the sensor connector
5. Turn the sensor type selector to the corresponding position. See table 2
6. Adjust the distance between the pusher and the brake caliper according to table of the selected sensor* and compare the values shown on Jaltest WST with those of the table (maximum and minimum values)
*Table 3 for manufacturer DAF, IVECO, MB, SCANIA, (+)
Table 4 for MAN, MERITOR
Table 5 for end-of-pad/2-wire sensors

Important: Important: The adjustment spindles should not be totally unthreaded, since the synchronisation between the pushers would be lost. Never exceed the absolute minimum dimension “L” shown on table 1.

Note:
· If Jaltest WST indicates 0V during the test, check the position of the selector and the connection.
· If the values are correct and within a tolerance of ± 0.25V, the sensor operates correctly. Otherwise, the sensor must be replaced.

2.2 CHECK OF THE WEAR OF BRAKE PADS AND DISCS

To check the wear, the brake calipers can assemble 2 types of sensors: end-of-pad/2-wire sensors and continuous sensors. Depending on the type of sensor, the check must be performed in one way or another. In any case, the following steps must be carried out:
1. Disassemble the vehicle wheel if needed
2. Disconnect the connector of the brake caliper sensor
3. Connect the corresponding connector from Jaltest WST to the sensor connector

2.2.1 END-OF-PAD/ 2-WIRE SENSORS

1. Turn sensor type selector to the position of the end-of-pad/2-wire sensor
2. If the OK LED lights up in green, the wear is correct
3. If the NOT OK LED lights up in red, it must be visually inspected, since Jaltest WST does not indicate any wear value

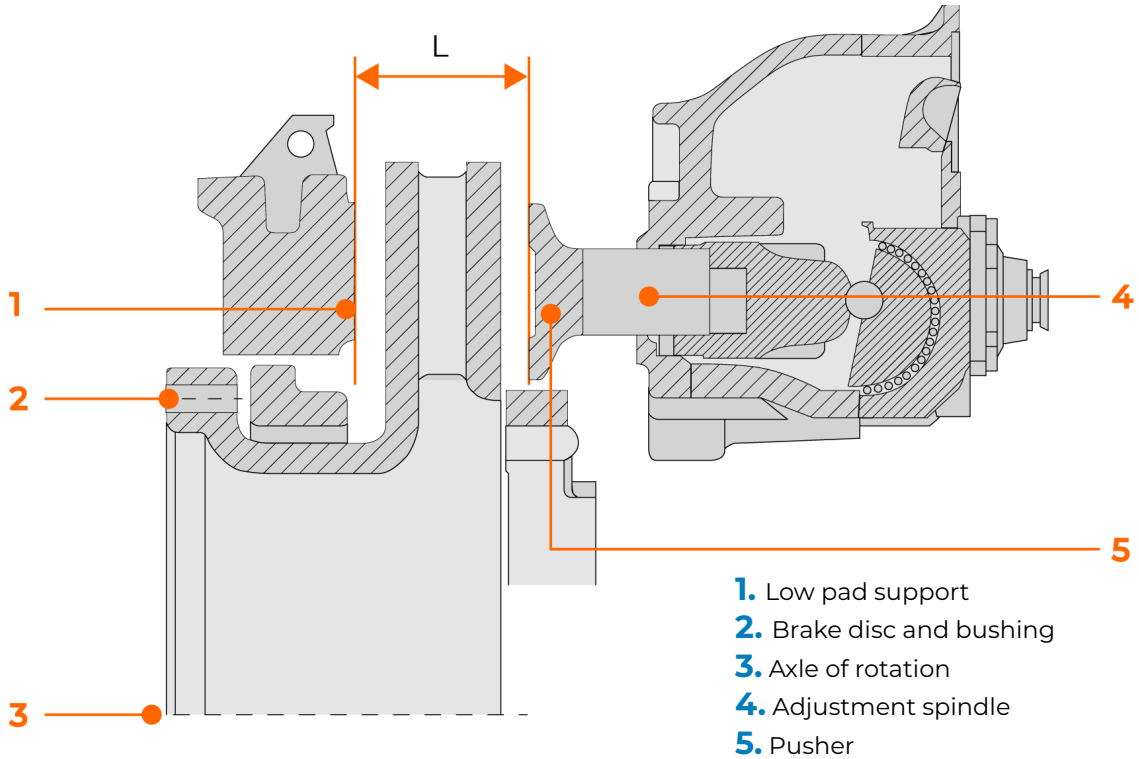
Note: If Jaltest WST indicates a value below 0.2V or above 4.8V, the brake caliper sensor is an end-of-pad/2-wire sensor and, therefore, it cannot be checked with accuracy the wear state of the pad. The inspection must be performed visually.

2.2.2. CONTINUOUS SENSORS

1. Turn sensor type selector to the position of the corresponding continuous sensor. See table 2
2. Compare the value shown with those of table 3 in case of sensors in DAF, IVECO, MB, SCANIA, (+) and with table 4 or sensors in MAN and MERITOR
3. If the value shown in Jaltest WST is below 2.7V, the OK LED lights up in green
If the value shown in Jaltest WST is above 2.7V, the NOT OK LED lights up in red. In this case, the wear of brake pads and discs must be visually inspected and it should be considered to replace them.

Note: If it is a continuous sensor and Jaltest WST indicates a value below 0.2V or above 4.8V, the component might have an open circuit or a short circuit.

3 Reference table



1. Low pad support
2. Brake disc and bushing
3. Axle of rotation
4. Adjustment spindle
5. Pusher

3.1 TABLE 1. DISTANCE BETWEEN THE DISC AND THE PAD

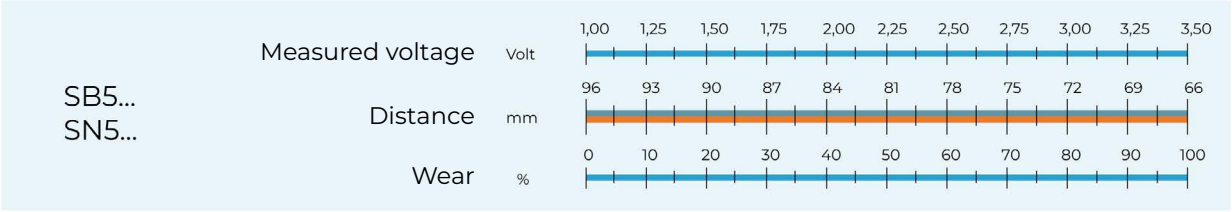
Type of brake caliper	Maximum distance "L" (mm)	Minimum distance "L" (mm)	Absolute minimum distance "L" (mm)
SB5 / SN5	96	66	64
SB6.../SB7.../SN6.../SN7... DAF, IVECO, MB, SCANIA, (+)	105	68	66
SB6.../SB7.../SN6.../SN7.../ MAN, MERITOR	105	70	68
SL7.../SM7...	110	73	71
ELSA 1 MAN	103	70	68
ELSA 2 MAN, RENAULT	103	70	68
ELSA 195 VOLVO	103	70	68
ELSA 225 RENAULT, VOLVO	103	70	68

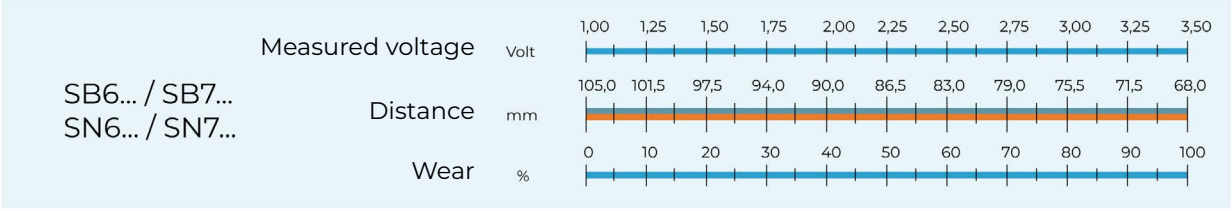
3.2 TABLE 2. POSITION OF THE SENSOR SELECTOR

Position of the sensor type selector	Vehicle or axle manufacturer		Pin colour of the continuous sensor	Information to know if the operation is correct
DAF, IVECO, MB, SCANIA, (+)	DAF DAIMLER DANA EVOBUS HENDRICKSON HYUNDAI IVECO	MERITOR SAF SCANIA SOR-LIBCHAVY VOITH ZF OTHERS	SILVER	The voltage values increase from 1V to 3.5V lineally between the maximum and minimum distance
MAN, MERITOR	Knorr-Bremse MAN, DANA, SAF, OTHERS		GOLD	The voltage values increase from 0.7V to 3.56V lineally between the maximum and minimum distance
	Meritor MAN, RENAULT, VOLVO		-	
END-OF-PAD/2-WIRE SENSORS	DAF DAIMLER ERF ZF		SILVER	The voltage values change from 0.15V to 5V when the minimum distance is reached
	MAN		GOLD	

3.3 POSITION OF THE SELECTOR FOR DAF, IVECO, MB, SCANIA, (+)

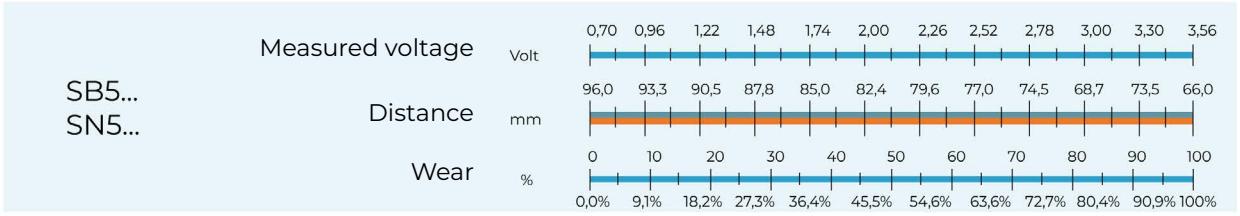
Type of brake caliper	Maximum distance "L" (mm)	Measured voltage (V)	Minimum distance "L" (mm)	Measured voltage (V)	Distance variation for complete turn of the adjustment screw (mm/V)
SB5/SN5	96	1	66	3,5	6/0,50
SB6/SN6	105		68		6/0,41
SB7/SN7					
SL7/SM7	110		73		

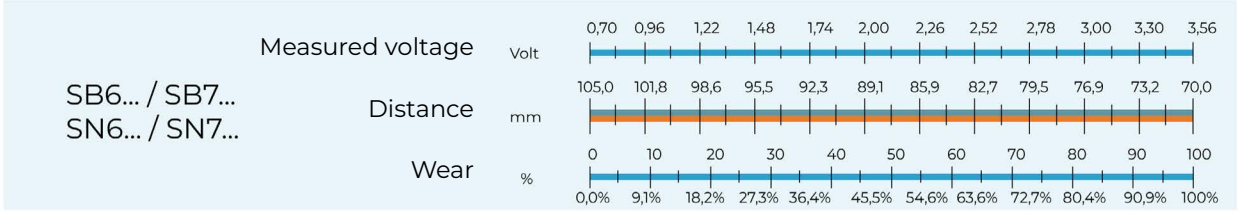


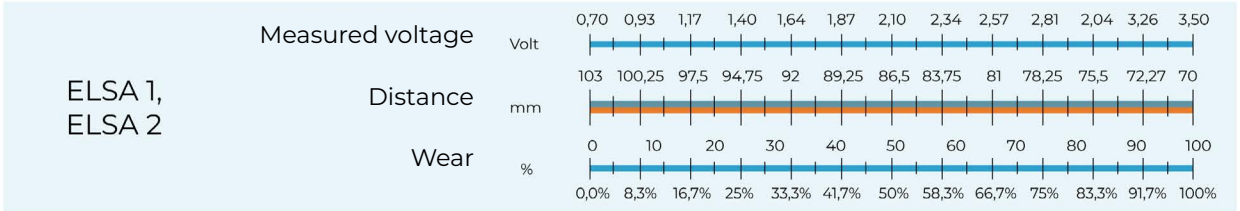


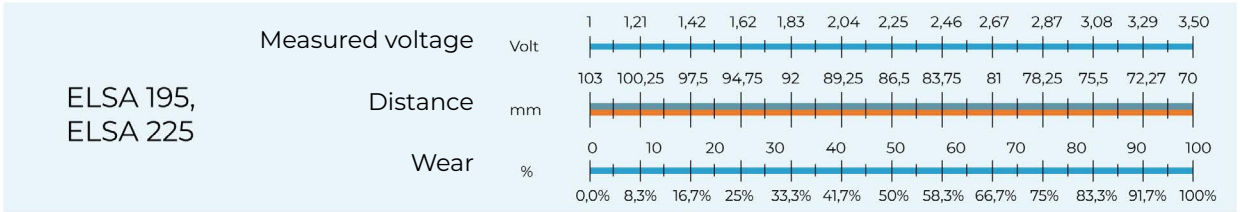
3.4 TABLE 4. POSITION OF THE SELECTOR FOR MAN, MERITOR

Type of brake caliper	Maximum distance "L" (mm)	Measured voltage (V)	Minimum distance "L" (mm)	Measured voltage (V)	Distance variation for complete turn of the adjustment screw (mm/V)
SN5	96	0,7	66	3,5	6/0,57
SB6/SN6 SB7/SN7	105		70		6/0,49
ELSA 1 / ELSA 2	103				
ELSA 195/ ELSA 225		1			6/0,44









3.5 TABLE 5. POSITION OF THE SELECTOR FOR END-OF-PAD/2-WIRE SENSORS

Type of brake caliper	Maximum distance "L" (mm)	Measured voltage (V)	Minimum distance "L" (mm)	Measured voltage (V)
SB5/SN5	96	≤ 0,15	66	5
SB6/SN6	105		68	
SB7/SN7				

4 Technical data

- Device dimensions: **66 x 144 x 40 mm**
- Suitcase dimensions: **350 x 230 x 86 mm**
- Device weight: **~ 193 g**
- Complete suitcase weight: **~ 1270 g**
- Range of operating temperatures: **From -10 °C until 40 °C**

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