UNIMETAL Sp. z o.o.
PL 77-400 Złotów, ul. Kujańska 10
tel. +48 67 2632271, fax +48 67 2632637
marketing@unimetal.pl; www.unimetal-moto.com

UNILINE QUANTUM MC

TEST LANE FOR MOTORCYCLES

INSTALLATION MANUAL

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1. SAFETY

1.1. General

Considering your own and customers' safety, it is necessary to obey the following rules which determine hazardous situations and specify ways in which accidents should be avoided and potential damages of devices should be prevented.

1. Only trained and competent persons are allowed to use the devices in the UNILINE QUANTUM MC test lane.
2. Read the User Manual before first usage and apply all the safety and operational rules specified in the document.
3. All the devices and components included in the test lane should be operated according to the provided instructions and specifications.
4. Never use the devices if it is or seems to be damaged or out of order.
5. The personnel operating the devices in UNILINE QUANTUM MC must wear working clothes without loose parts, so as to avoid risk of getting caught by rollers and posing a serious hazard to life of the personnel.
6. All the outside bolt connections should be periodically inspected.
7. Regularly check whether the protection mechanisms of the devices work correctly, especially the sensors of the slip control contact roller in the roller device.
8. Never make adjustment (set-up) works while system is in operation.
9. In case of any danger press the “Emergency stop” button located on right side of control cabinet.
10. Do not wet the devices, because rain, humidity and all kinds of liquid or moist can damage electronic circuits.
11. Use an adequate clothing and have a suitable behavior in order to prevent accidents.
12. Do not smoke and light flames when you work on the vehicle.
13. Keep hands and hair away from parts in motion.
14. Do not wear ties, wide clothes, wrist jewels and watches when you are working on a vehicle, in particular if the engine is on.
15. Do not touch the high voltage cables when the engine is on.
16. During the test at any device, no one except the operator should be near the devices.
17. Remove the power supply voltage before connecting or disconnecting cables.
18. Avoid the contact with wet hands.

REMARK: The start-up of the device, troubleshooting and all repairs of the device must be performed only by the Authorized Service of the Manufacturer or its Authorized Representative. Electrical works must only be carried out by electricians with the appropriate competence and permissions. Improper use or unintentional destruction of the device may void the warranty. Operation and use of the device is only permitted by trained personnel. If you experience any issues with the device, please inform the UNIMETAL SERVICE.

REMARK: In the case of user's interference in the construction, design, software, security systems or operating principle, it is considered as a significant modification. Such actions exclude the manufacturer from liability for incorrect operation of the device, damage or accidents. As a result of the described actions, the device warranty is discontinued.

REMARK: The UNIMETAL company placing the device on the market has exclusive copyrights and manages of them with every right. In the case of the violation of any of the provisions of this document, it results in criminal and civil liability within the limits set by law. In the case of changes in the construction of the device, a natural or corporate person is obliged to inform the manufacturer about relevant changes, to which the Manufacturer must give one's asset.

ATTENTION: In case of any dangerous, stop the test and stop the device using "EMERGENCY STOP" button on control cabinet, or switch off "MAIN SWITCH" or tap on the middle of the screen the android device.

1.2. Electricity

1. Only trained persons are allowed to have access to the electrical system. Before opening the terminal cabinet, e.g. to carry out a minor repair, use the main switch to shut off the electric energy supply to the Test Lane.
2. Protect the electrical wiring of the system from moisture.
3. When devices are at standstill, use the main switch to shut off the electric energy supply to the device. The main switch should be prevented from being used by unauthorized persons.

1.3. Test on the RHB-3 and SPT-1 devices

1) During the brake or speed test, no one should stay close to rotating drive rollers as well as near the vehicle tested (especially in front and behind). This area should be fenced or marked with a special warning strip on the floor around roller sets, signal lamps and a warning board with a following script should alternatively be provided: "CAUTION! BRAKE TEST IN PROGRESS!".

2) A vehicle should be driven into the devices slowly so as to avoid unnecessary risks of damaging the vehicle and devices.
3) During the test, the position of a vehicle should be corrected by moving the steering wheel (in order to avoid damaging the mechanical roller modules or vehicle as well as posing a hazard to people).
4) In case when, in course of brake test, the vehicle "climbs up" the driving rollers, there is a danger that it can be "ejected" from the roller module (which poses a hazard to the people who are present at the inspection post).
5) Never start vehicle's engine by means of the RHB-3 or SPT-1 driving rollers.
6) Never park vehicles on the roller bench.
7) Do not put your limbs in the wheel clamps.

2. DESCRIPTION OF SYSTEM COMPONENTS

2.1. Roller brake tester RHB-3

The motorcycle roller brake tester RHB-3 (Fig. 1) is designed for testing braking systems of 2-wheeled vehicles with maximal axle load of 1t. Device is connected to the control unit and controlled from the remote control or the Android device.

After driving onto the roller module and the wheel is placed in the roller bed, the auxiliary roller lever is bent and the proximity sensor system detects it and passes the information to the control system. When the engine starts, the torque is transmitted to the vehicle wheel. The engines counteract the rolling resistance and keep the rollers and the vehicle wheel rotating with a required peripheral speed (till the end of the test).

When brakes on the vehicle are applied after information displayed on Android device, the wheel start to exert a braking opposite torque (i.e. in the direction which is opposite to that of the roller rotation). This braking torque is transmitted onto the gear motor measuring arm (fixed to the chassis of the gear motor) that induces a force on a strain gauge. The indications of the gauge are directly proportional to the braking forces of the vehicle and are transmitted to the server and Android device where the measured result are expressed in the required units (kN).

There is a built-in anti-slippage system. Its main function is to switch off drive engine if the slippage of a vehicle tire on the roller.

Fig. 1 – RHB-3 device

Dimensions and weight of RHB-3 device	
Length	620 mm
Width	790 mm
Height	305 mm*
Weight	150 kg
Roller diameter	200 mm

*The dimension may be increased by the amount by which the levelling feet are unscrewed.

2.1.1. Optional equipment - Weighing system

The RHB-3 may be optional equipped with an weighing system. Weighing system consists of a set of 4 gauge strain sensors (Fig. 10) on which the frame with the rollers and its drive system rests on. The signals from those sensors are sent to an amplifier where they are summed up. These signals are sent to the computer system and the load value is displayed on the computer/Android device screen.

Fig. 2 – Weighing system sensors

2.1.2. Optional equipment – Wheel clamps KZ-MC

The roller brake tester RHB-3 could be also equipped with the wheels clamps KZ-MC (Fig. 3) designed to lock the front or/and back wheel which isn't tested during the measurement. The clamps starts automatically when the brake test is started. The KZ-MC device is an additional option depending on the selected equipment version.

Fig. 3 Design of Wheel Clamps KZ-MC

Dimensions and weight of KZ-MC	
Length	1081 mm
Width of one unit	426 mm
Height	120 mm
Weight	2 x 62 kg

2.1.3. Optional equipment – Effort meter for brake lever and pedal with use BMS-100 device

Measuring device BMS-100 (Fig. 4) contains measuring and transmitting module as well as receiving one. Communication between the device and the control cabinet is performed in the 433 MHz radio band. The measuring device has its own power source that is digitally controlled. It is used with effort meter for brake pedal or brake lever

The BMS-100 device is powered by 6 standard R6 batteries and Ni-MH batteries. The battery charge is shown on the display (in percent). The BAT LOW communication on the display means that the battery is discharged and measurements may be errored. Then it is necessary to change or charge the batteries.

⏻	ON/OFF button switches on/off
→0←	ZERO button – resets the devices (zeroing latest indications)
⇨◇	MAX button catches and stores in the memory the maximal readings, changes the units daN/MPa (i.e. switches between mechanical force and pneumatic pressure modes)

Fig. 4 – BMS-100 device buttons description

The effort meter for brake pedal (Fig. 5) is fixed on the brake pedal with an adjustable rubber strap.

Fig. 5 – Effort meter for brake pedal connected to the measuring device BMS-100

The effort meter for brake lever is mounted using a plastic tube (1 in Fig. 6) slipped onto the motorcycle's handlebar.

Fig. 6 – Effort meter for brake lever

2.2. Speed tester SPT- 1

Speedometer SPT-1 (Fig. 7) is a device used to test vehicles speed indicators by comparing its measurement with measures taken on the test device. It is intended to use for 2-wheels vehicles with the axle load up to 1t. Measurement is taken with use of the induction sensor.

Device SPT-1 consists of rollers in frame seated on bearings. Measurement is made with a special disc made with specified amount of sensory elements which are picked up by an induction sensor mounted on a main frame. When mentioned disc is spinning together with rollers, induction sensor pick signals generated by sensory elements. Those signals are then processed by controller thanks to which measured speed is displayed in real time to user on the computer. The device is equipped with a pneumatic lift mechanism supporting drive-out of vehicles. The lift will push the vehicle up to allow the Driver to drive-out from the SPT-1. The procedure is controlled by the remote control or the Android device.

Fig. 6 – Design of SPT-1 device

Dimensions and weight of SPT-1 device	
Length	846 mm
Width	530 mm
Height	290 mm
Weight	120 kg
Roller diameter	150 mm

2.3. Control unit CJS

All the devices of UNILINE QUANTUM either configured into a test lane or as a separate test device are connected to the (central) control cabinet (Pic. 7) by means of electric power lead and signal cables. The control cabinet is used for communication with user, supplies the devices with electric power and processes measured signals. It contains:

- electric systems (powering the test lane devices),
- electronic systems, including the CPU motherboard to which all signals cables, radio devices (brake pedal meter or pneumatic pressure sensor) as well as control cabinet computer are connected,
- depending on equipment - computer set (with keyboard, mouse, display and printer) with the UNILINE QUANTUM software providing user interface,
- wireless remote control (Pic. 23).

There are a safety switch and light power indicator located on the right hand-side of the cabinet.

Optionally an additional repeater may be connected. It is automatically detected by the UNILINE QUANTUM software after plugging in a second receiver.

a) b)

Pic. 7 – Control cabinet; a) Standard version, b) Galaxy version

2.4. Control devices

2.4.1. Wireless remote control

The remote control (Fig. 8) is a wireless controller (radio transmission), made of plastic. On the front wall, there are buttons for navigation and the "Enter" acceptance button. The remote control is powered by 2x1,5V AA batteries.

Fig. 8 – Remote control; 1- navigation buttons, 2- confirm button

The arrow keys (see 1 in Fig. 8) allow you to navigate through the program menu, switch between tests, select the test axle number of the vehicle. To confirm the selected option, confirm the message, click "Enter". (see 2 in Fig. 8). The "Enter" key also allows you to interrupt the test at any time and stop the device in an emergency.

2.4.2. Computer keyboard

Operating the program with the keyboard is analogous to controlling a remote control. Use the arrows (see 1 in Fig. 9) to navigate in the program menu, switch between tests, and change the number of the axis to be tested. Enter" key (see 2 in Fig. 9) the selected option or message can be accepted and the test can be aborted at any time and the device stopped in an emergency.

Fig. 9 – Picture of a sample keyboard; 1- navigation buttons, 2- confirm button

2.4.3. Android device

The Android device is the optional equipment (Fig. 10), depending on the selected equipment option, is provided by the customer on his own, or is supplied by the manufacturer.

The application which allows to control roller brake tester should be downloaded from the Google Play, given in the link below:

https://play.google.com/store/apps/details?id=com.quantumterminalv2.terminalv2

Communication is via Wi-Fi. The control is possible if the device is equipped with a Wi-Fi option.

Fig. 10 – Example android device

The user controls the device using the arrows at the bottom of the screen. Their functions are similar to the arrows on the remote control. To confirm the selected option, start the test as with the remote control, press ENTER.

3. TECHNICAL DATA

3.1. Purpose of UNILINE QUANTUM MC test lane

RHB-3	Value
Max axle load	1 t
SPT-1	
Max axle load	1 t

3.2. Metrological data

RHB-3	
Speed of test	5 km/h
Maximum breaking force	3 kN
Display resolution of braking force measurement	0,1 N
Accuracy of weighing system	± 3 %
Accuracy of brake force readings	± 3 %
Results resolution of braking force difference measurement	1 %
Results range of braking force difference measurement	0 ÷ 99 %
Max measurement value of weighting system	1,5 t
Friction in dry conditions	0,8
Friction in wet conditions	0,6
Oil type	RENOLIN UNISYN GEAR 220 VC (or equivalent with similar technical characteristics)
KZ-MC	
Minimum working pressure	8 bar
SPT-1	
Measurement range	0-40 km/h
Drive-out assist system	Pneumatic lift

BMS-100	
Force measuring range	0-100 daN
Pressure measuring range	0-1 MPa
Resolution	1 daN / 0,01 MPa
Measurement accuracy	±1%

3.3. Power supply

RHB-3	
Power consumption	3 kW
Power supply	3 x 400 V; 60 Hz
SPT-1	
Power supply	3 x 400 V; 60 Hz
Pneumatic power supply	0,8 MPa
BMS-100	
Receiver power	24 V DC (from the control cabinet).
Transmitter power	6-12 VDC (from batteries).

3.4. Environmental conditions

Temperature range	+5 ÷ +40 °C
Atmospheric pressure	860 - 1060 hPa
Relative humidity	Up to 95% in the temp. of 30 °C
Power voltage tolerance	±10%
Power frequency tolerance	±1%
Protection class	IP 22

4. OPERATING INSTRUCTIONS

4.1. Basic functionalities of UNILINE QUANTUM

After starting the program, the start screen will be displayed as in the Fig. 11. In the upper bar there are main options (see 1 in Fig. 11) with icons that enable to enter the program tabs.

Fig. 11 – UNILINE QUANTUM start page

The standard available tabs are as follows:

	VEHICLE - selecting a vehicle type, inputting vehicle data and setting test configuration.
	VEHICLE CHANGE – changing current vehicle selection for a vehicle that is stored in a cache memory of vehicles.
	INSPECTORS – selecting an inspector that is going to use the test lane.
	PRINTOUT – preview of test report and printout options

	DATA BASE – managing data base that contains all tests that had been saved (the necessary condition for saving is to input vehicle data).
	OTHER TESTS – connection to other devices integrated into UNILINE QUANTUM test lane (such as gas analyzer, opacimeter, headlight tester or EOBD scanner etc.).
	SETTINGS – the following options can be set: - activating demo mode; - adding inspectors, - extra settings (switching between manual and full automatic mode, data base, connectivity, ftp, e-mail), - language selection.
	EXIT – shutting the program down.

4.2. Control the test procedure

Operator could control the test by manual mode one can choose the test type and axle number by use of the corresponding arrows on the remote control (or keyboard or Android device):

- arrows “Left“ ← and “Right” → for selecting test type,
- arrows “Up” ↑ and “Down” ↓ for selecting axle number,
- button “ENTER” for accepting the choice.

ATTENTION! While using devices one must strictly follow all the instructions displayed by the UNILINE QUANTUM program.

4.3. Main menu

The main menu (see 1 in Fig. 12) is displayed when the program is started. It can be navigated by the navigation arrows on the remote control, on Android device or the computer keyboard.

Fig. 12 – Quantum start page – main menu

The ←→ arrows allow to change the type of test to be performed (e.g. service brake, parking brake), ↑↓ arrows allow you to change the number of the axle on which the test is to be performed (see 2 in Fig. 12).

Using the right left arrows, you can also select the "New vehicle" option (Fig. 13), which allows you to start a quick test without entering vehicle data. When the menu is stopped on the "New vehicle" option, using the up and down arrows, you can select additional test options such as the "Vehicle Type" option to select the type of vehicle to be tested (Fig. 14)

Fig. 13 – New Vehicle screen

Fig. 14 – Vehicle Type screen

Confirm each of the selected options by clicking the ENTER button on the keypad or the ENTER button on the remote control.

The selected axle number does not need to be confirmed; the axle number that is currently selected is automatically saved.

4.4.Selecting vehicle type and initiating test procedure

After clicking the VEHICLE icon (1 in Fig. 15) a main vehicle type window (Fig. 15) will pop up.

To start entering vehicle data, click “New test” (2 in Fig. 15), then one can select a vehicle type e.g. motorcycle, its total weight (GVW) range, vehicle category and input odometer readings. To confirm the entered data, click on "Apply" (3 in Fig. 15).The first three selections may be necessary for carrying the test out properly and assessing the test results.

In the right part of the main window (see 5 in Fig. 15) there are listed all tests that have been carried out for the current vehicle. An item can be deleted provided that it has not been saved in the data base.

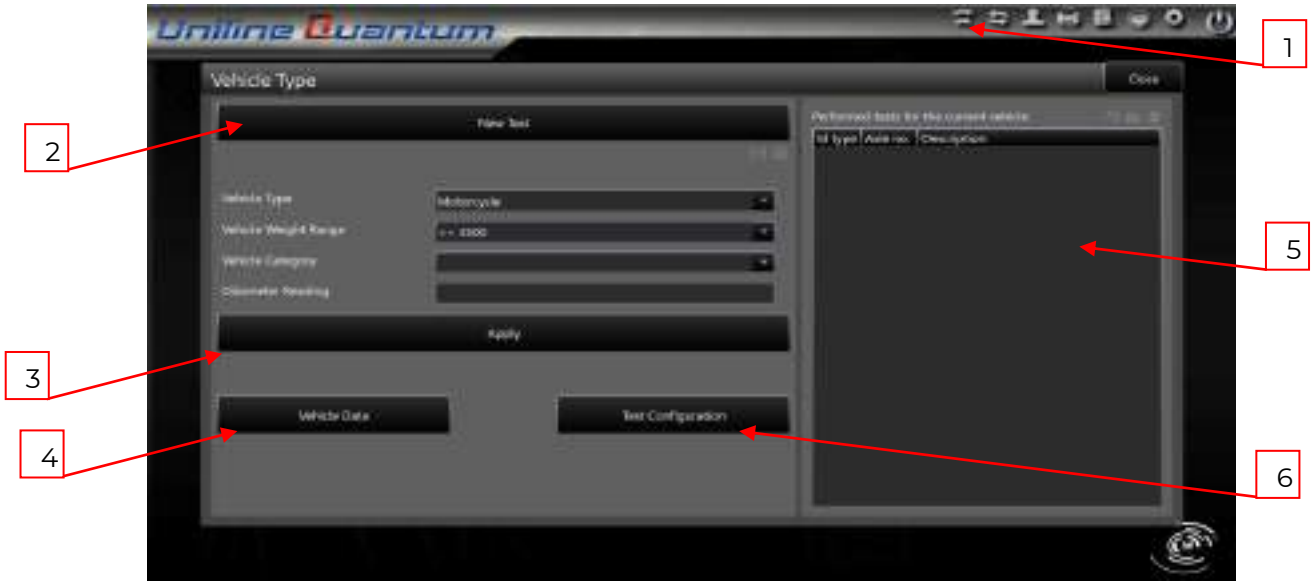


Fig. 15 – Data entry window

By clicking "VEHICLE DATA" button (see 4 in Fig. 15) a new window will appear (Fig. 16) where one can input a detailed information about the vehicle to be tested (and to be saved in the data base) or select an existing one from the data base (1 in Fig. 16).

Fig. 16 – Select vehicle window

By clicking the "Test configuration" button (6 in Fig. 15) one can configure the test procedure in details (according to the vehicle to be tested). In particular, we can select tests to be performed, set the range limits for wheel alignment or default pneumatic pressure in braking systems (Fig. 17). To confirm entered test configuration click "Save" and close the window.

Fig. 17 – Test configuration screen

After clicking on the tab "Test of brakes" (Fig. 18) will open a tab that allows you to edit the brake test in detail, to select the options from the list select the box next to the item, save the changes and close the window.

NOTE: Not all options, such as 4WD Test, apply to motorcycle testing. The program is universal for all vehicles. When testing a motorcycle, use only the functions appropriate to the actual test.

Fig. 18 – Brake test options tab

4.5. Brake system test

4.5.1. Service brake

(1) Use the arrows ↔ from the main menu to select "Service brake", use the arrows ↑↓ to select the number of the axle to be tested (Fig. 19).

Fig. 19 – Start screen of the service brake test

(2) Drive the motorcycle onto the roller module so that its first axle is in the rollers. To confirm choose test press ENTER.

(3) If the test lane is equipped with wheel clamps KZ-MC for front wheel or for front and back wheel place the wheel(s) between clamps and use the ↑ arrow to close the front clamps, and the ↓ arrow to close the back clamps.

(4) If the position of the vehicle in the rollers is incorrect, the message "Incorrect vehicle position" will appear. (Fig. 20). In this case the position must be corrected. When the vehicle position is correct, the message "Position correct [ENTER]" is displayed (Fig. 21). If device is equipped with the weighing system the axle weight is displayed in the box – see 1 in Fig. 20.

Fig. 20 – Incorrect vehicle position message

Fig. 21 – Correct position message

(5) Press ENTER to start the test.

NOTE: The message "Start test on left" is displayed because the program is universal for all roller devices. When testing a motorcycle on brake rollers designed for testing cars with motorcycle adapters it is important on which module, right or left, the test is to be performed.

(6) The message “!ATTENTION Rollers Starting!” (Fig. 22) appears on the screen and a 3 second warning beep is emitted, then the engine starts and rollers start rotating.

Fig. 22 – Message "!ATTENTION Rollers Starting!"

NOTE: One must not try any braking till a proper command asking to start braking is displayed.

(7) After starting the engine, the rolling resistance is measured and a message is displayed as in Fig. 23. Check the position of the vehicle in the rollers and control the steering wheel so that the wheels are in the middle of the rollers.

NOTE: Do not brake when measuring the rolling resistance.

NOTE: During the test, the values of the measured parameters will always be displayed on the left indicator.

Fig. 23 – "Rolling resistance measurement" message

(8) After completing the resistance/bind test, the system keeps the rollers rotating and automatically passes to the ovality test, which starts when the message "Ovality test" is displayed (Fig. 24). Then one should apply the service brake so as to keep the braking force value stably in the range marked in green. The system will automatically complete that test if the braking force is kept stable for a period of 5 seconds. After that ovality test the system passes automatically to the next step.

Fig. 24 – "Ovality test" message

(9) Right after the ovality test is completed, the system starts the braking force measurement (the rollers are kept rotating). When the message “Slowly increase braking force” (Fig. 25) is displayed and a warning beep is emitted apply the service brake and constantly increase the braking force.

Fig. 25 – Slowly increase braking force" message

NOTE: If the effort meter was used during the test (description of use in 4.6) the value of the force applied to the pedal or brake lever will appear in the box (1in Fig. 25).

NOTE: If RHB-3 is equipped with a weighing system, the measured axle load value will appear in the box (2 in Fig. 25).

(10) The test procedure shall be stopped if one of the following takes place:

- Emergency stop (e.g. by pressing any of the arrows or ‘’ENTER”).
- A slippage of any of the wheels occurs and the message “Slippage” appears (see 1 in Fig. 26).
- The vehicle is pulled out of the roller bed.
- The maximal admissible brake pedal force is exceeded.
- The maximal braking force on one of the wheels is exceeded.
- The test time passes the prescribed limit.

(11) After completing the tests for the axle the message “Test complete” (Fig. 26) appears, and the value of braking force is displayed.

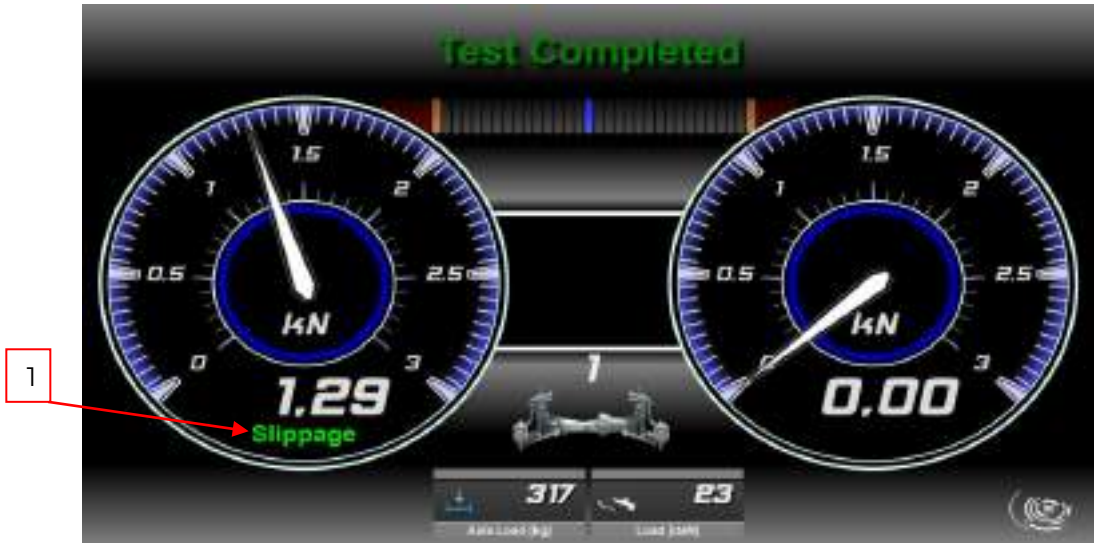


Fig. 26 – Test completes message

(12) If the test lane is equipped with wheel clamps KZ-MC for front wheel or for front and back wheel, use the ↑ arrow to open the front clamps, and the ↓ arrow to open the back clamps. Then you could leave the RHB-3 device.

(13) You should move on to testing the second axis, depending on the test mode, the program will automatically change the number of the axis to be tested, or the operator will have to do this manual using the arrows ↑↓.

(14) The test on the next axle is performed analogous to the test on the first axle.

4.6. Operating BMS-100 device with effort meter for brake pedal or lever

(1) Plug in either the effort meter for brake pedal or the brake lever.

(2) Put the effort meter onto the brake pedal of a vehicle or slippe the effort meter tube onto the motorcycle's handlebar.

(3) Switch on the measuring device by use of the ON/OFF button.

(4) Check if the device is in a required mode by checking the displayed units names.

(5) Reset/zero the device by pressing the ZERO button.

(6) The measuring set is ready to use and is displaying measured values (of force exerted on the brake pedal or brake lever).

NOTE: During the test, follow the procedure described in 4.5.

(7) When message “Slowly increase braking force” appears apply the brake pedal or lever by effort meter.

(8) The measured values are automatically transmitted by radio to the control system of the roller brake tester/test lane.

(7) In order to catch the maximal indicated value that may occur during a measurement press the MAX button (then the “M” letter will be displayed).

4.7. Speed test

The SPT-1 is controlled with the wireless remote control or the Android device. If program don't switch automatically between the test types, use the arrows ↔ and when "New Vehicle" option appears (Fig. 64) use arrow ↓ to switch to Speed Test (Fig. 65).

Fig. 64 – New Vehicle window

Fig. 65 – Speed test window

(1) Drive the vehicle onto the device.

WARNING: Try to enter the device as centrally as possible as the rollers rotation can cause the vehicle to drift to the sides. You can counteract this drift by slowly turning the steering wheel. Avoid turning the steering wheel too fast.

(2) By ENTER confirm the start of the test, then the platform will be lowered and message like in Fig. 66 appears.

Fig. 66 – Lowering the platform message

(3) Then, the screen will display the message: "Keep the speed of 40km/h" (the speed value can be freely changed, depending on the needs) - we accelerate to a given speed and try to maintain it in the green range. When the speed is stable for 5 seconds, the values are recorded and their average is the result of the test. As time passes, the progress bar at the bottom of the screen fills up (like in Fig. 68).

Fig. 67 – Keep steady speed message

(4) When the measurement is completed you will see message “Decrease speed to stop” (Fig.68), after which the user can stop the wheels. After speed reaches 0 km/h, test is completed the platform is lifted up and the user could leave the device.

Fig. 68 – Completed test window

4.8. Test report preview and printout

To preview the report, click the printer icon in the program options bar. The report preview window allows you to print the report according to the selected options. In order to save the test in the database, click the "Save to database" button.

NOTE: To save the vehicle in the database, enter the vehicle data.

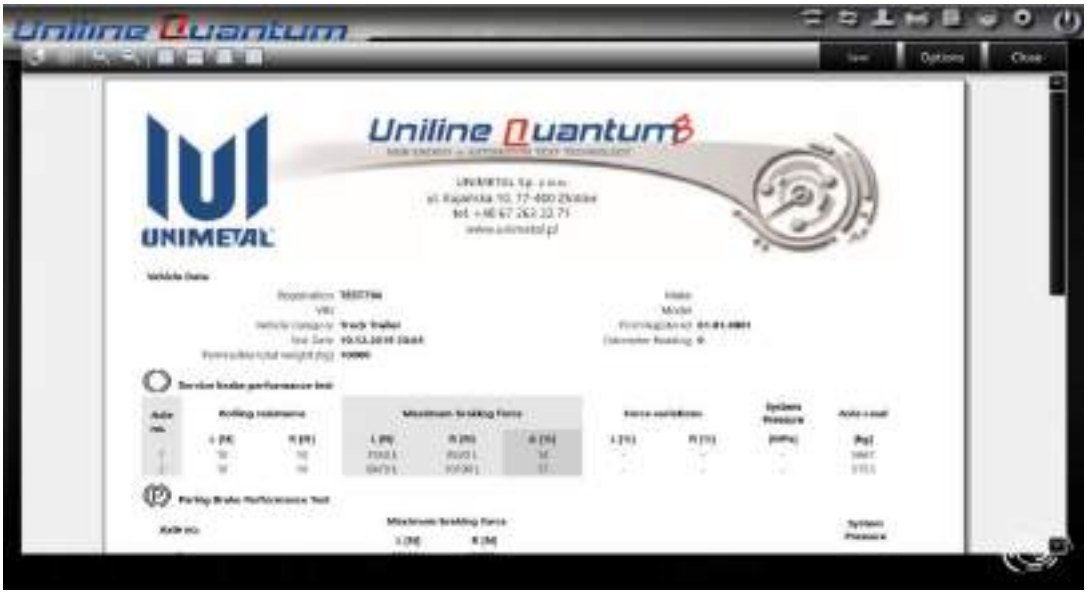


Fig. 42 – Report preview

Fig. 43 – Printout options

5. TROUBLESCHOOOTING

Device	Problem	Solution
RHB-3	Do not comply with the displayed messages	1. Stop the test - press "EMERGENCY STOP" button on control cabinet. 2. Switch off "MAIN SWITCH" or tap on the middle of the screen the android device and repeat the measurement correctly.
	Start the test with the applied brake	1. Stop the test - press "EMERGENCY STOP" button on control cabinet, or tap on the middle of the screen the android device and repeat the measurement correctly.
	The device motors do not start	1. Switch off the thermal protection in the control unit.
	Emergency stopping the test	1. Press "EMERGENCY STOP" button on control cabinet, 2. Tap on the middle of the screen the android device.
	Repeat the test	1. Select the test from menu again, if necessary correct the position and start the re-test. The results of the previous test will be replaced by new ones.

NOTE: If the actions described above are met and the problem is not solved, call service.

Device	Problem	Solution
KZ-MC	The device does not react	1. Check that the air supply has the appropriate pressure. 2. Check that the voltage switches work correctly (audible knocks in the control cabinet). 3. Check that the electrovalve works properly (audible knocks, the component is in the device. 4. Check that the pressure on the pressure regulator is not set too low
	The clamping force of the clamp is too low	1. Increase the air pressure, do not exceed the maximum allowable value.
SPT-1	The lift platform is not high enough	1. Remove the cover adjust the nuts on the pins to the required height. 2. If the platform does not rise due to the high weight of the vehicle, increase the air pressure in installation (not exceeding the maximum permissible value).
	During the test the vehicle is pulled to one side	1. Control the position of the vehicle with the steering wheel so that the wheels are centrally located in the rollers.
	Emergency stopping the test	1. Press "EMERGENCY STOP" button on control cabinet. 2. Tap on the middle of the screen the android device.
	Repeat the test	1. Select the test from menu again, if necessary correct the position and start the re-test. The results of the previous test will be replaced by new ones.

NOTE: If the actions described above are met and the problem is not solved, call service.

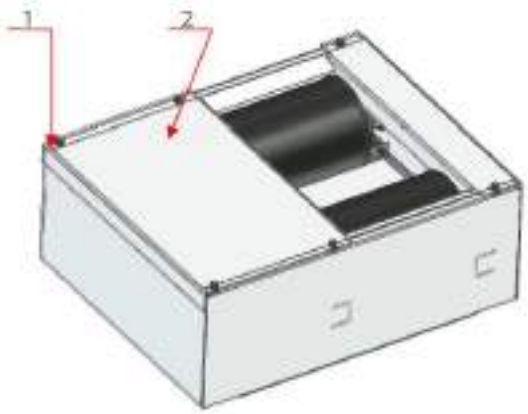
6. MAINTENANCE

6.1. Daily maintenance

DAILY MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
RHB-3	Cleaning	Clean the surface of the unit from sand, dust, mud or water. Use a broomstick and a cloth and broomstick.
SPT-1	Cleaning	Clean the surface of the unit from sand, dust, mud or water. Use a broomstick and a cloth and broomstick.
KZ-MC	Cleaning	Clean the surface of the unit from sand, dust, mud or water. Use a broomstick and a cloth.

6.2. Weekly maintenance

WEEKLY MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
RHB-3	Tightening the devices covers.	Use an Allen key No. 5 to check that the cover is not loose. If the screws connections (1) are not rigid, tighten the screws. There are 4 screws M8x16 in the cover, and 20 screws on the perimeter of the frame.
	Checking the gearmotor for leaks.	Unscrew the screws M8x16 (1) by use Allen key No. 13. Take off the cover (2) and check the area around the gearmotor for oil leaks.
	Checking the tightening of third roller.	Use an flat wrench No. 13 to check that the third rollers are not loose. If the screws connections (3) are not rigid, tighten the screws. There are one screw on each side of each roller.
RHB-3	Checking the third roller springs.	Organoleptic inspection of the condition of the springs to ensure that they are not cracked, damaged or detached
		

WEEKLY MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
SPT-1	Tightening the devices covers.	Use an Allen key No. 5 to check that the covers are not loose. If the screws connections (1) are not rigid, tighten the screws. There are 4 screws M8x16 in the cover, and 20 screws on the perimeter of the frame
	Checking for leaks in the pneumatic system.	Unscrew the screws M8x16 (1) by use Allen key No. 13. Take off the cover (2) and check the pneumatic hoses and bellow cylinders for bent, worn or cracked. Make sure you don't hear any air leaking.
		
KZ-MC	Tightening the devices covers	Use an flat wrench No. 13 to check that the cover is not loose. If the screws connections (1) are not rigid, tighten the screws. There are 4 screws on each unit.
	Checking the rubber protection	Check the condition of the rubber protection to ensure they are not cracked, damaged or loose. If the rubbers are moving off the surface of the clamps, tighten them with the socket wrench no. 13

6.3. Monthly maintenance

MONTHLY MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
SPT-1	Check and tighten the bearing fixing screws.	By use socket wrench No. 19 check that the fixing screws M12x40 (1) are not loose. If the screws connections (1) are not rigid, tighten the screws. There are two M12x40 screws on each side of each roller.
		

6.4. Every 3 months maintenance

EVERY 3 MONTH MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
RHB-3	Check the position sensor	Check the gap between the sensor and swing arm with an feeler gauge, the gab should be between 1-2mm. Check the tightness of the sensor with a 17 mm plat wrench and tighten them if necessary. The detailed procedure is described in Service Manual.
	Check the proximity sensor	Check the gap between the sensor and third roller with an feeler gauge, the gab should be between 1-2mm. The detailed procedure is described in Service Manual.
	Check the chain tension	Check the chain tension by pressing your finger halfway along the length. If the deflection is not more than 15 mm the chain is properly tensioned. The detailed procedure is described in Service Manual.

EVERY 3 MONTH MAINTENANCE PLAN FOR LV TEST LANE		
Device	Action	Description
RHB-3	Check the lever fixing and tightening of the strain gauge sensor	Use a wrench 13 and tighten the reaction lever to the strain gauge sensor. Use a wrench 13 and tighten the reaction lever. The detailed procedure is described in Service Manual.
SPT-1	Check the bearings fixing	Use the spanner to check the bearing tightening, tighten if necessary. The detailed procedure is described in the Service Manual.
	Check the proximity sensor	Check the gap between the sensor and third roller with an feeler gauge, the gab should be between 1-2mm. The detailed procedure is described in Service Manual.
	Checking the lift platform position sensor	Check the gap between the sensor and third roller with an feeler gauge, the gab should be between 1-2mm. The detailed procedure is described in Service Manual.
	Conservation of the guidance mechanism	Clean the guide surface and then apply the thin layer of new grease. The detailed procedure is described in Service Manual.