COSBER

USER MANUAL

TRUCK Brake Tester

COSBER C-BTT Series

CONTENT

1 General ... 3

1.1 Important notes ... 3

1.2 Safety ... 3

1.3 Safety ... 3

1.3.1 Beware of electric shocks. ... 3

1.3.2 Keep away from the rotating rollers! Risk of crushing can lead to injury and death. ... 4

1.3.3 Note on the installation of the product ... 4

2 Description of the product ... 4

2.1 Use according to the intended purpose. ... 4

2.2 Initial assembly and commissioning ... 5

2.3 Ambient conditions ... 5

2.4 Main components of the brake dynamometer ... 5

2.4.1 Roller set ... 5

2.4.2 Switchboard ... 7

2.4.3 Remote control ... 8

2.4.4 Analog display (optional) ... 8

2.4.5 Description of the lifting function ... 10

2.4.6 Options ... 11

3 Installation of the system ... 12

4 Start ... 12

4.1 Installation checklist ... 12

4.2 Check at startup. ... 12

5 Software system ... 13

5.1 Installation of the program ... 13

5.2 Use of the test system ... 13

5.2.1 Settings in the test program ... 13

5.2.2 Database 16
5.3 Self-test 17
5.4 Test operation 18
5.4.1 Flowchart of the operation 18
5.4.2 Procedure of brake testing for PC version 19
5.4.3 Procedure for evaluating the parking brake. 20
5.5 Drive type (all-wheel drive vehicles) 21
5.5.1 Description of the all-wheel drive test mode on the brake test bench 21
5.6 Mode 22
5.6.1 Procedure of brake testing with analogue display (optional) 22
6 Service 27
6.1 Error 27
6.2 Restoration 29
6.3 Maintenance schedule 29
7 Security 30
7.1 Inspection plan 30
7.2 Visual control 30
7.3 Security Testing 30
7.4 Unit Testing (for Germany) 30
7.5 Procedure for decommissioning the plant. 30
8 Notes 32

1 General

1.1 Important notes

- First, thank you for choosing this product.
- This manual is included with the product. For the sake of efficient use of the system, users should read the instructions carefully before installation and keep them carefully for reference later and for maintenance purposes.
- The specifications and information mentioned in the instructions are for information purposes only. Your content may be updated periodically without notice.
- This product should only be used for the intended use for which it is specifically designed. It should not be used for other purposes under any circumstances. The manufacturer is not liable for any damage resulting from improper use of the product.
- Please strictly adhere to the "guidelines" and "instructions" during operation and remember that the system must be maintained regularly.
- This product should only be operated and used by specially trained professionals.
- Personnel who are not members of our company are not authorized to disassemble or modify the product or use it for any other purpose beyond the detection function of the system itself without our consent.
- In cases where the product is damaged by human factors or force majeure (earthquake, flood, etc.), the user must take effective remedial action quickly and notify our company as soon as possible.

1.2 Safety

Before starting, suppressing, connecting, and operating the system, read the instructions carefully and strictly adhere to them.

WARNING!

INFORM OTHER USERS AND BYSTANDERS OF DANGERS AND ALWAYS INFORM THEM ABOUT DANGEROUS CONSEQUENCES AND PREVENTIVE MEASURES.

Designation	Probability of occurrence	Severity of risk
Danger	Imminent danger	Injury and death
Warning	Danger	Injury
Hint	Danger	Minor injury

1.3 Safety

1.3.1 Beware of electric shocks.

1.3.2 Keep away from the rotating rollers! Risk of crushing can lead to injury and death.

1.3.3 Note on the installation of the product.

All necessary configuration settings and calibration of the sensors should be conducted exclusively by Cosber technical personnel or approved partners of Cosber.

2 Description of the product

2.1 Use according to the intended purpose.

WARNING!

- In the event of non-intended use, the safe operation of the system cannot be guaranteed.
- You must always use the system in compliance with the specifications for the brake test device.
- The system may not be altered or modified under any circumstances without consent.
- Pay attention to the specifications for brake testing of the respective vehicle manufacturers (manuals).
- The brake test bench should only be used to detect a two-axle vehicle breaking device. Please refer to the product specifications for the description of the proper track, maximum axle load, and all-wheel drive.
- The brake test bench should provide brake test results in the form required by all official testing bodies.

For other purposes:

- Read and observe the product specifications.
- Stick to the specifications of the brake test bench and all related components.
- Observe the safety instructions during all operating steps.
- Operate the brake test bench properly.

- Use the correct procedure for all brake tests.
- Conduct all maintenance work in a timely manner.
- Operations not included in this manual are considered improper use of the product and may result in personal injury or property damage. In this case, the manufacturer is not liable for any losses resulting from this.

2.2 Initial assembly and commissioning

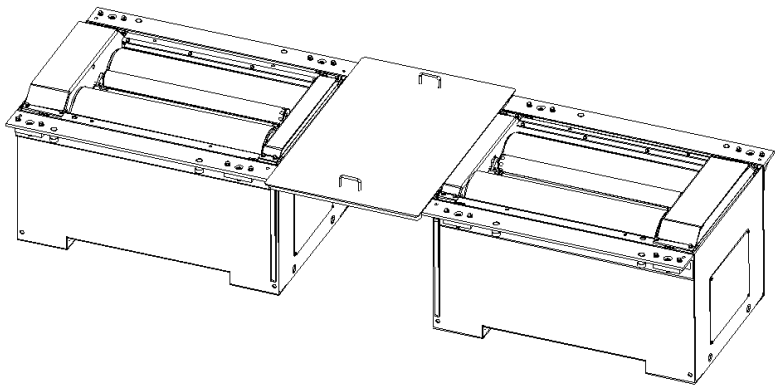
- All necessary configuration settings and calibration of the sensors should be conducted exclusively by Cosber technical personnel or authorized partners of Cosber.
- All the requirements for installation must be met before the Technical Service staff start the installation. The pit must comply with the specifications in the schematic drawing of the foundation of the product.

2.3 Ambient conditions

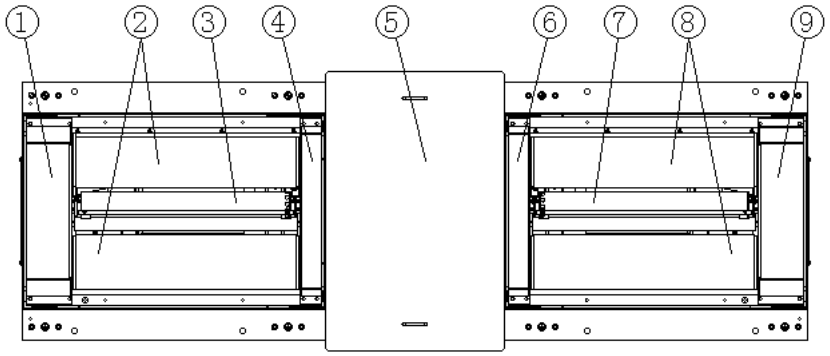
Ambient temperature operation	0~40 °C
Ambient Temperature Storage	-10~50 °C
Ambient Humidity Operation	≤ 90% (no condensation)

2.4 Main components of the brake dynamometer

2.4.1 Roller set



2.4.1.1. Description of the components



No.	Description
1	Wide coverage
2	Left Roll
3	Left Probe Roller
4	Narrow cover
5	Medium coverage
6	Narrow cover
5	Right Role
6	Scanning roller right
7	Wide coverage

2.4.1.2. Specifications

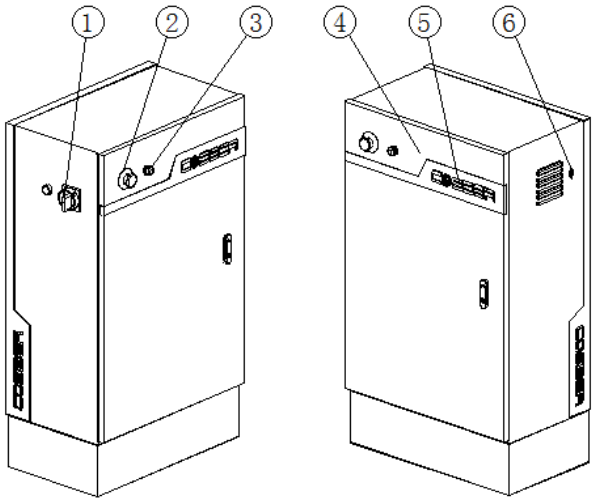
Model	C-BTT52 (9.0 kW)	C-BTT52 (11.0 kW)	C-BTT62	C-BTT72	C-BTT82
Max. test load / axle load at 50% deceleration	11400 kg / 6100 kg	12500 kg / 7600 kg		23400 kg / 16100 kg	
Max. override load / axle	13000 kg			18000 kg	
Max. Breaking force / wheel	27.8 kN / 15.1 kN	30.6 kN / 18.6 kN		57.3 kN / 39.4 kN	
Wheel diameter	600~1100 mm				
Track gauge min. / max.	800~2,800 mm / 900~2,900 mm / 1,000~3,000 mm			1,000~3,000mm / 1,100~3,100 mm / 1,200~3,200 mm	
Test speed	2.4 km/h / 5.0 km/h				
Roll length	1,000 mm				
Roller Diameter	Ø 205 mm			Ø 248 mm	
Role exaggeration	30 mm			50 mm	
Friction coefficient (dry / wet)	> 0.7 / 0.6				
Power	2 x 9.0 kW	2 x 11.0 kW		2 x 13.0/17.0 kW	
Dimensions per roll set (L x W x H)	1291 x 1040 x 686 mm			1346 x 1240 x 806 mm	
Weight per roll set net / gross	690 kg / 740 kg		725 kg / 775 kg	990 kg / 1,040 kg	1030 kg / 1080 kg

Volume	≤ 70 dB(A)

2.4.1.3. Options

Description	Standard	Optional
Roller coating	Corundum Rolls	Welded Spike Rollers
Weighing function	No	8 weighing sensors
Surface	Hot dip galvanized	Wet Painted (Green)

2.4.2 Switchboard



2.4.2.1. Description of the components

No.	Description
1	Main switch
2	Emergency stop switch
3	Operating light
4	Switchboard
5	Molding
6	ASA interface (optional)

2.4.2.2. Specifications

Model	C-BTT52 (9.0 kW)	C-BTT52 (11.0 kW)	C-BTT62	C-BTT72	C-BTT82
Fuse	3x C50A (slow blow)			3x C63A (slow blow)	
Power cable specifications (to be provided by the customer)	5×10 mm² 3P+N+PE 2x31A			5×16 mm² 3P+N+PE 2x23A	
Power supply	AC 3 Ph x 400V / 50 Hz				
Dimensions (L x W x H)	600 x 300 x 1,050 mm				

Weight	60 kg

2.4.2.3. Options

Description	Standard	Optional
All-wheel drive mode	Yes	No
Exit aid	Braked rollers	Reel Ramp
ASA Communication	Yes	No
Supply voltage	3Ph AC 400 V/50 Hz	3Ph AC 230 V/60 Hz
Remote control	Yes	No

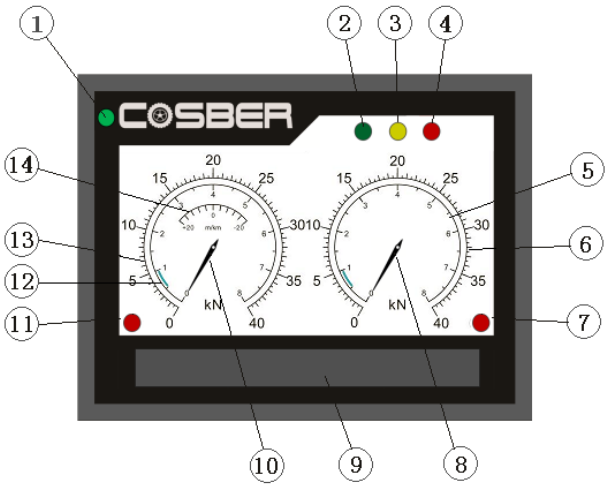
2.4.3 Remote control

Key	Function	Description
1	Repetition	Recheck element
2	Stop	Stop the exam. Press this button to exit the test program and stop all operations.
<	Left	Left wheel test. In all-wheel drive mode, the left wheel rotates forward, and the right wheel rotates backward
>	Right	Right wheel test. In all-wheel drive mode, the right wheel rotates forward, and the left wheel rotates backward
Λ	Both	Left and right wheel motors start at the same time. In all-wheel drive mode, the left wheel initially rotates forwards and the right wheel backwards. Then the right wheel rotates forwards and the left wheel backwards.
V	Next	Launches the next item
ON	Activate	Activates the remote control
Off	Disable	Disables the remote control

2.4.4 Analog display (optional)

2.4.4.1. Description of the analog display

The analog display shows measured values, the status, error status, and text.



No.	Function	Description
1	Operating light	When the analog display is on, this light is solid (green)
2	Evaluation indicator (green)	The light indicators show the evaluation results for the difference in braking force on the right and left. One of these indicators appears after the test run. Green means passed, yellow means warning, and red means complaint.
3	Evaluation light indicator (yellow)	
4	Evaluation indicator (red)	
5 12	Landing Gear Tester Damping Rate Right Suspension Tester Damping Rate Left	When used on a chassis tester, the damping rate for the right/left wheels of the vehicle is between 0-100%
6	Right wheel braking force scale	brake force test; the pointer shows the brake force value. Depending on the selection, the value is displayed on the inner scale (0-8 kN) in car mode or on the outer scale (0-40 kN) in truck mode
13	Left wheel braking force scale	
7	Status displays right role	The status indicator is activated when the roller is rotated by the left and right motors of the brake test bench. The indicator appears when the corresponding reel rotates. Otherwise, it will not glow.
11	Status Indicator Left Roll	
8	Measuring pointer right wheel	The pointer displays the current brake force value in real time when a brake force is detected. After the test, it displays the results of the last brake test
10	Measuring pointer left wheel	
9	LED matrix display	The LED matrix display shows operating notes, dynamic test data, and test results
14	Scale Track Plate	When using a track plate, the result of the track tests is displayed here

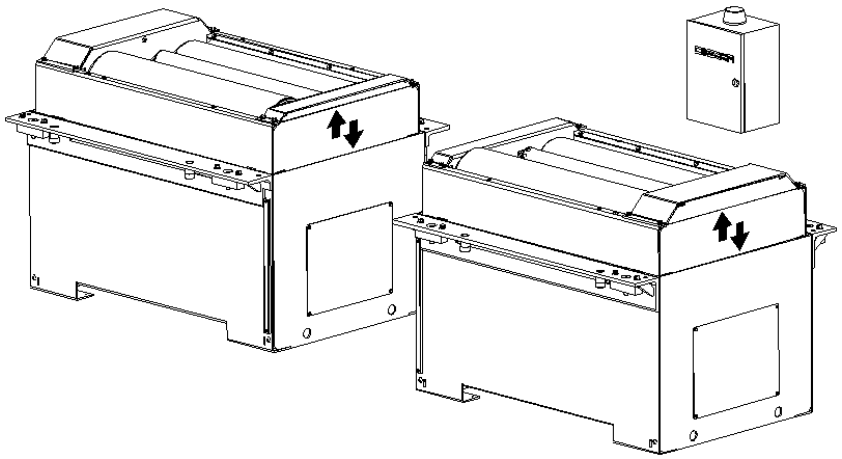
2.4.4.2. Specifications

Model	Analog Display

Braking force measurement range	100 – 40,000 N
Braking force display accuracy	1 N
Analog Display	2x 255mm watches (300°)
LED Display	16 characters, 1 row
Measuring range damping rate (traction)	0~100%
Display Accuracy Damping Rate (Grip)	1 %
Measuring range of track displacement	-20 mm ~ +20 mm
Tracking Shift Display Accuracy	1 mm
Class	IP54
Dimensions (LxWxH)	830x200x610 mm
Weight	25 kg

2.4.5 Description of the lifting function

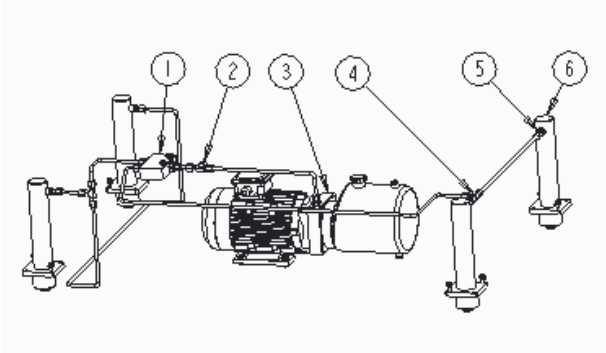
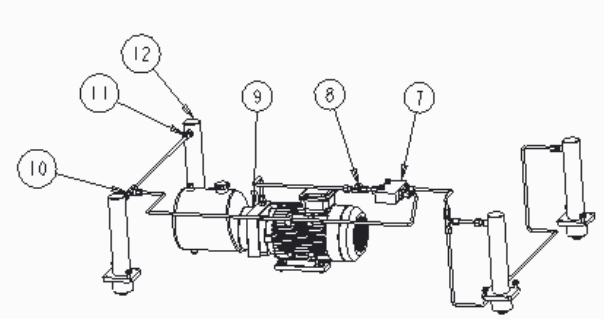
The left and right sides of the brake test bench are raised and lowered at the same time.



2.4.5.1. Specifications

Model	Lifting function
Load capacity per roller set	4,000 kg
Lifting height max.	200 mm
Power	2x 1.1 kW
Hydraulic pressure max.	15 MPa
Flow	3.2 l/min
Oil volume	2x 4L
Hydraulic oil quality	HLP 46
Power cable specifications (to be provided by the customer)	5x2.5 mm² 2x3A
Power supply	AC 3 Ph x 400V / 50 Hz
Dimensions (LxWxH)	300x150x400 mm
Weight	12 kg

2.4.5.2. Hydraulic System Components

left	right side
	

No.	Designation
1	Shunt valve
7	
2	Union nut
8	
3	Engine Oil Pump Components
9	
4	Three-way hydraulic connector
10	
5	Two-way hydraulic connector
11	
6	Oil cylinder
12	

2.4.6 Options

Model	Article
Column for analogue display	20.02.01.9913
Wall mounting for analog display	20.02.01.9908
Foundation frame hot-dip galvanized	
Foundation Frame Wet Painted (Green)	
Roller cover plate, hot dip galvanized	
Roller cover plate wet-painted (green)	
Motorcycle cover plate hot dip galvanized	
Motorcycle Cover Plate Wet-Painted (Green)	
PC Cabinet	20.02.15.4001
Universal Calibration Device	20.99.00.0100
Wired pedal force sensor	
Wireless pedal force sensor	
Wired Compressed Air Sensors	

3 Installation of the system

See separate installation instructions.

4 Start

4.1 Installation checklist

- Before starting up the system for the first time, check that all assembly work has been completed properly.
- Before checking the wiring, check that the main switch is in the OFF position.

1) Check that the system and all accessories are fully assembled.
2) Check if there are suitable disconnectors at the site.
3) Check that all components are properly assembled.
4) Check that the motor power cable of the brake test bench is properly connected to the terminal in the control cabinet.
5) Check that the brake test bench signal cable is properly connected to the motherboard in the control cabinet.
6) Check that the main power cable of the control cabinet is properly connected to the disconnect switch.
7) Check whether the protective conductor is connected.
8) Check that the serial cable on the main control panel of the control cabinet is properly connected to the USB port of the PC.
9) Check that the power cable of the analog display is properly connected to the terminal in the control cabinet.
10) Verify that the analog display serial signal cable is properly connected to the motherboard in the control cabinet.

4.2 Check at startup.

WARNING!

BEWARE OF ELECTRIC SHOCK WHEN SWITCHING ON THE MAIN SWITCH. IF AN ELECTRIC SHOCK OR ELECTRICAL LEAKAGE CURRENT OCCURS, YOU MUST DISCONNECT THE POWER SWITCH IMMEDIATELY.

1) Turn on the power switch on the control cabinet and check whether the operating light appears.

2) Turn on the 3-phase disconnect switch and the single-phase disconnect switch in the control cabinet and check whether the internal circuit in the control cabinet is operating normally.

3) When you turn on the power, make sure that all the lights on the analog display light up, the pointers are moving, and the display is showing something. After starting, the pointer returns to its original position, the operating light appears, and the other lights go out.

4) Start the software program and check if the engine rotation is correct.

5) Start the software program and check that the system signal is correct.

ATTENTION!

ENSURE THAT ALL COMPONENTS ARE CORRECTLY ASSEMBLED AND PROPERLY WIRED BEFORE USING THE EQUIPMENT.

5 Software system

5.1 Installation of the program

See separate installation instructions.

5.2 Use of the test system

5.2.1 Settings in the test program

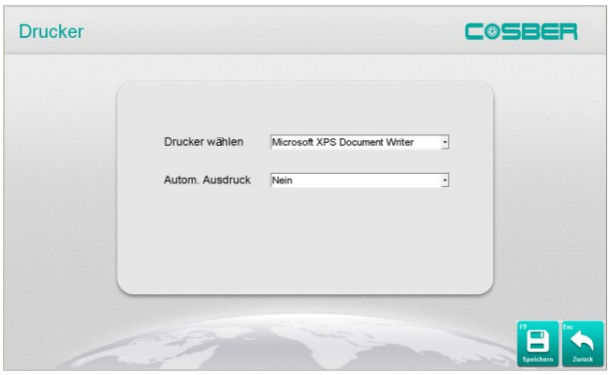
1. Start the testing program

2. Enter your username and password to go to the interface,

3. Click on "F8 Settings" to go to the system-relevant settings and the calibration of the system,

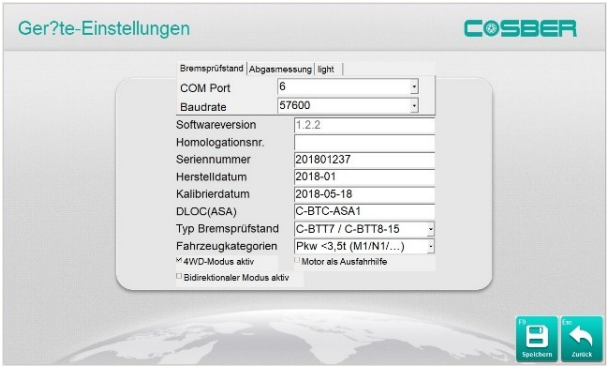
5.2.1.1. Printer Settings

Select whether a report is automatically printed when the check is complete and select your printer. Click "F9-Save" to save the setting;



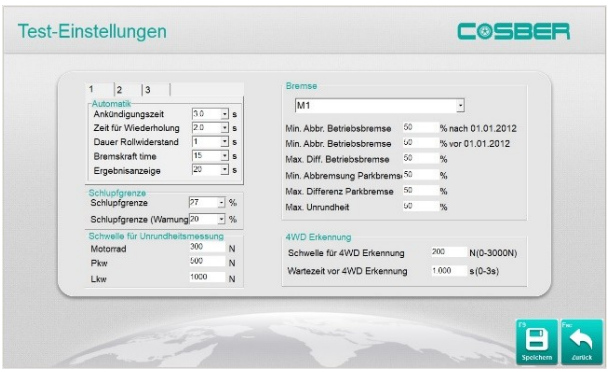
5.2.1.2. Device Settings

Set the port number. It should match the serial port of the hardware. The port number for communication is COM1 by default and the baud rate should be set to 57600. Click "F9-Save" to save the setting;



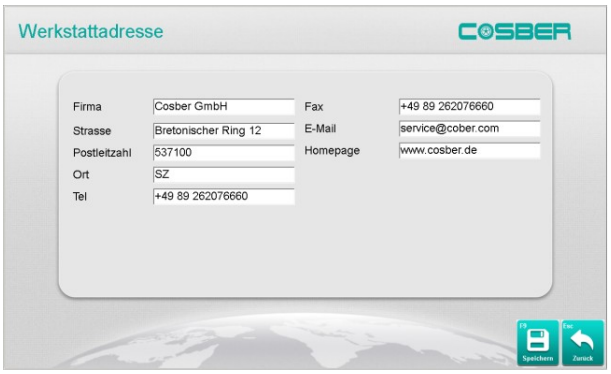
5.2.1.3. Test

Determine the appropriate standard so that you can determine whether your test results comply with national standards. Click "F9-Save" to save the setting;



5.2.1.4. Workshop address

Enter your company name, address, and related information. Click "F9-Save" to save the setting;

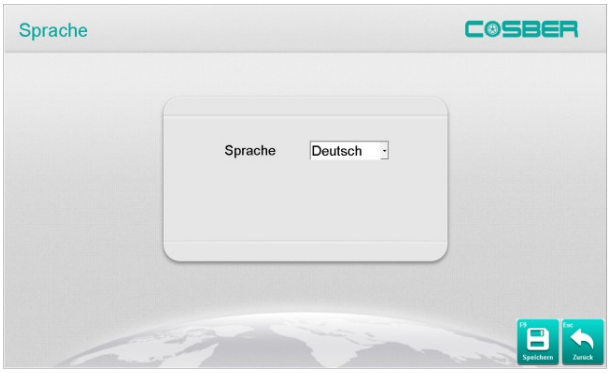


5.2.1.5. Backup / Restore

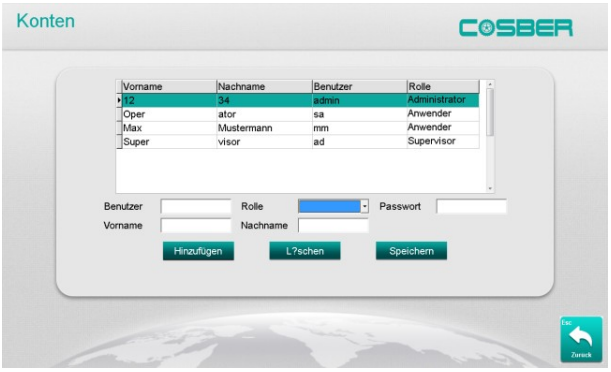
You can save the parameters of the current system to the backup or restore existing system parameters. The list works with date and time as labels;

5.2.1.6. Language

Select your desired language and click "F9-Save" to save the setting. Exit the program and start the software again.



5.2.1.7. Accounts



1. Add/change user account:
    a. Enter the username, password, and user level (rights).
    b. Click "Save" (F9) to save the setting.
2. To delete a user:
    a. Select the user's name.
    b. Click Delete to remove the user.
3. Change password:
    a. First, enter the old password.
    b. After that, enter the new password.
    c. Click Save (F9) to save the password.

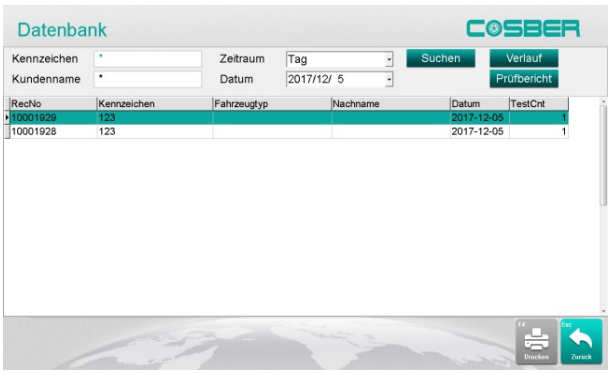
5.2.1.8. Calibration

See the Calibration and Adjustment Manual for the procedure for calibrating the sensors.

5.2.2 Database

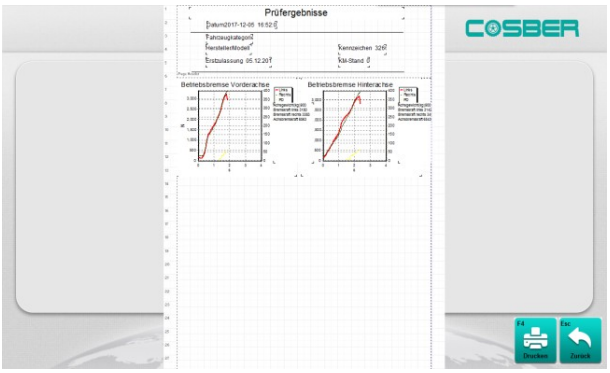
1. On the first page of the test program, click on "F3 -Data" to enter the database.

2. Enter the registration number or the test date (day, week, month, and year) to view the data of the test results of the vehicle being examined.

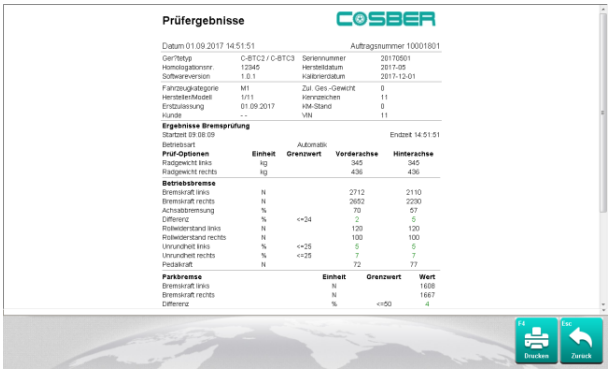


3. Click on "F4 - Print" to print them.

4. Click on "Chart" to view the curves of the relevant elements.



5. Click Print to print the test report.



5.3 Self-test

See the service manual.

5.4 Test operation

HINT!

FIRST, MAKE SURE THAT THE TIRES OF THE VEHICLE YOU WANT TO INSPECT ARE FREE OF FOREIGN OBJECTS (E.G., ROCKS, SCREWS, ETC.) AND CHECK THAT THE TIRE PRESSURE IS NORMAL.

PARK THE VEHICLE IN FRONT OF THE FACILITY BEFORE THE TEST. POSITION THE VEHICLE TO THE TEST BENCH AND ALWAYS FOLLOW THE PROMPTS SHOWN ON THE DISPLAY.

DANGER!

DURING THE TESTING PROCESS, ALWAYS KEEP A SAFE DISTANCE FROM THE BRAKE TEST BENCH AND THE VEHICLE TO AVOID INJURY.

WARNING!

EVEN IF ALL SAFETY MEASURES ARE OBSERVED, DANGERS CAN STILL OCCUR! IN THIS CASE, STOP ALL PROCESSES AND DISCONNECT THE POWER SUPPLY. ESTABLISH A SAFE CONDITION AND INFORM OUR COMPANY.

5.4.1 Flowchart of the operation

1. Preparation for the brake test → Remove dirt and debris from the tires of vehicles awaiting inspection.

2. Exam starts → Start the control software, click on "Test", enter the customer data, select the item to be checked, and click on "Next" to start the check.

3. Retract (front axle) → Carefully drive the front wheels into the brake test bench. Shift the vehicle to neutral. The roller will automatically take over the rotation of the wheels.

4. Check roundness → Hit the brakes with a force of over 500 N and maintain the pressure for 5 seconds.

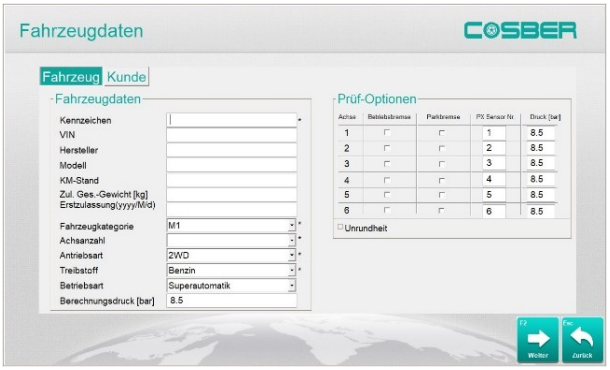
5. Brake force test → When prompted, press the brake pedal fully for two to three seconds, then release the brake pedal.

6. Retraction (rear axle)	Carefully drive the rear wheels onto the brake test bench. Shift the vehicle to neutral. The roller will automatically take over the rotation of the wheels.
7. Check roundness	Hit the brakes with a force of over 500 N and maintain the pressure for 5 seconds.
8. Brake force test	When prompted, press the brake pedal fully for two to three seconds, then release the brake pedal.
9. Check the braking force of the parking brake	Complete the rear brake test, wait for the prompt on the screen. When prompted, pull up or down the parking brake.
10. Audit is completed	Drive the vehicle down from the brake test bench and park the vehicle.

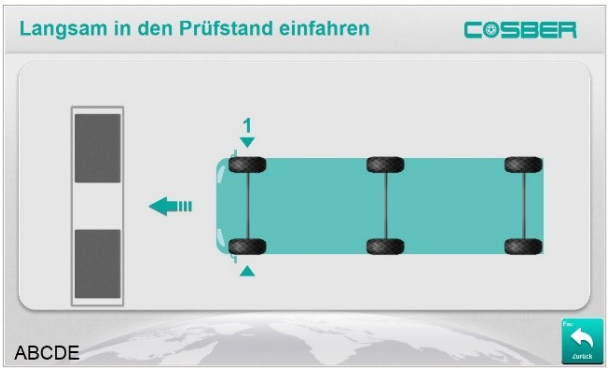
5.4.2 Procedure of brake testing for PC version

1. Start the inspection program and click on "Vehicle" to get to the mask with the vehicle information.

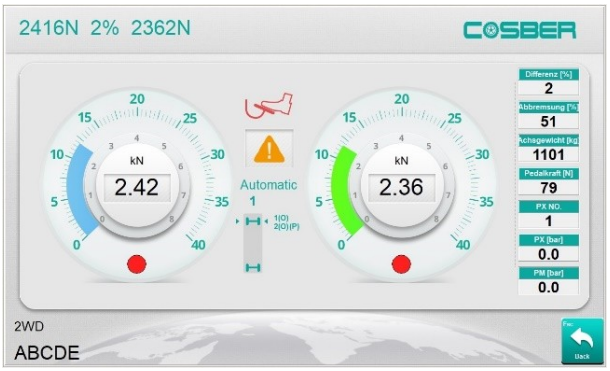
2. Enter the vehicle-relevant information. Check the boxes of the desired check items and click "F2-Next" to start the check.



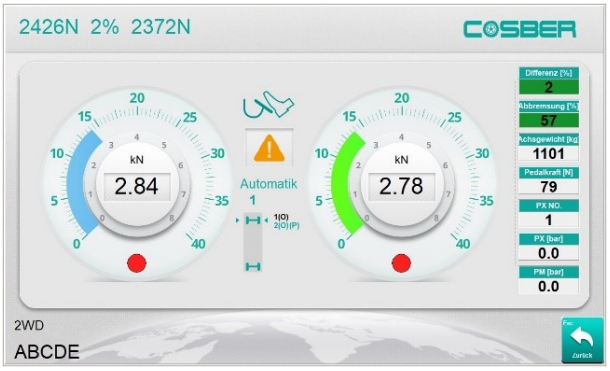
3. Drive onto the test rollers according to the prompts. Set the gearbox position to the neutral position (N). Do not apply the brake. The axle weight is measured first.



4. Start rolling, the rolling resistance is measured as it turns. After that, the measurement of roundness will begin, after the prompt, step on the brakes and maintain a brake force of over 500 N for 5 seconds. Release the brake as soon as the prompt appears.



5. After the prompt, start braking. Slowly press the pedal all the way through. The braking process should be completed within 3 - 6 seconds. The braking force on the left and right wheels is measured. The roller stops automatically after braking.

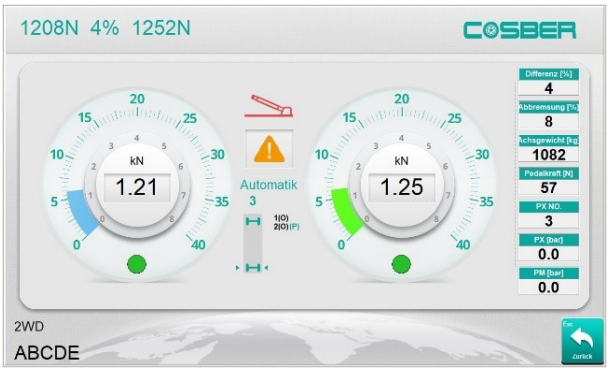


6. After testing, drive out of the brake rollers as prompted.
7. Check the service brake on the next axle using the same procedure.

5.4.3 Procedure for evaluating the parking brake.

Do not leave the brake test bench after checking the service brake on the rear axle. Check the brake force of the parking brake. Shift the vehicle to neutral and do not brake. When the display prompts you to do so, apply the parking brake slowly within 3 seconds. Release the brake when the display prompts you to do so.

After the test, drive out of the test bench according to the request on the display.



5.5 Drive type (all-wheel drive vehicles)

ATTENTION!

THE ALL-WHEEL DRIVE FUNCTION IS OPTIONAL. IF IT IS NOT AVAILABLE, THE ALL-WHEEL DRIVE FUNCTION CANNOT BE USED ON FOUR-WHEEL DRIVE VEHICLES THAT CANNOT BE CONVERTED TO TWO-WHEEL DRIVE.

If all-wheel drive is optional, the inspector must select the appropriate test mode depending on the actual type of vehicle under test.

5.5.1 Description of the all-wheel drive test mode on the brake test bench

1. The brake test procedure for each vehicle axle that is evaluated is conducted twice. Due to the differential principle, the driving force of the axle that is currently being evaluated is not transferred to the other axle.
2. When the engines on both sides start up for the first time at the same time, the left roller rotates in the direction of travel of the vehicle, and the right roller rotates in the other direction. During the test, only the brake force data for the left side is collected.
3. When the engines on both sides start up for the second time at the same time, the right roller rotates in the direction of travel of the vehicle, and the left roller rotates in the other direction. During the test, only the brake force data for the right side is collected.
4. The test results can be viewed and saved when both checks are completed.

WARNING!

1. If the vehicle under test has a two-wheel/four-wheel drive mode, deselect the all-wheel drive function and select the Two-Wheel Drive option before driving the vehicle to the brake test bench.
2. If the vehicle under test has only four-wheel drive, select the All-Wheel Drive option. Failure to do so may result in property damage or injury.

5.6 Mode

Test Mode	Description	Multiple test runs	Data is stored
Super car	Starts the engine automatically	No	Yes
Manual	Test engine starts manually via remote control	Yes	Yes
Car	Starts the engine automatically	Yes	No
Odometer	Starts the engine automatically	Yes	No
Manuel Odometer	Engine is manually connected to the Remote control started	Yes	No

5.6.1 Procedure of brake testing with analogue display (optional)

5.6.1.1. Modes

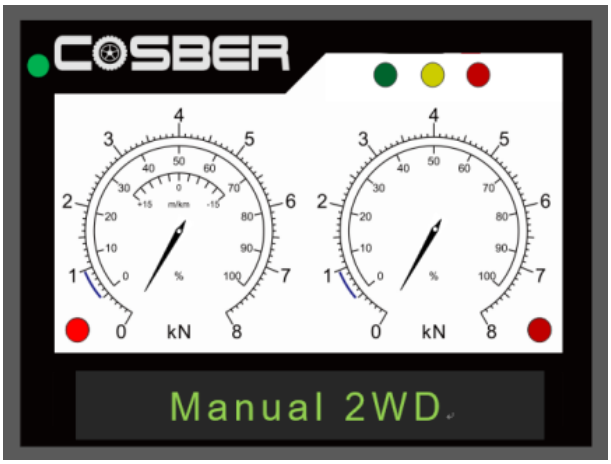
Manual	Single Wheel Measurement
Automatic	Axial measurement
Ovality	Roundness measurement

5.6.1.2. Operating mode: Manual (individual wheel measurement)

The vehicle must not be on the brake test bench when selected.

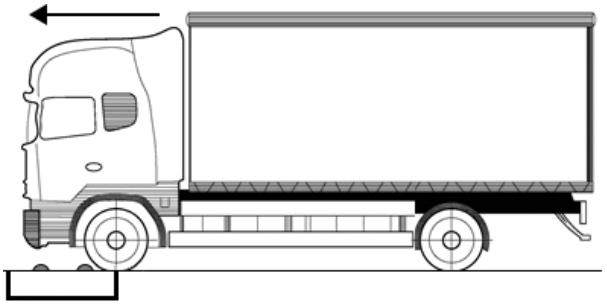
Press button 1 to switch to Manual mode.

Press button < to switch between two-wheel drive (2WD) and all-wheel drive (4WD).



Drive the vehicle onto the brake test bench.
Display reports "Arrived!".

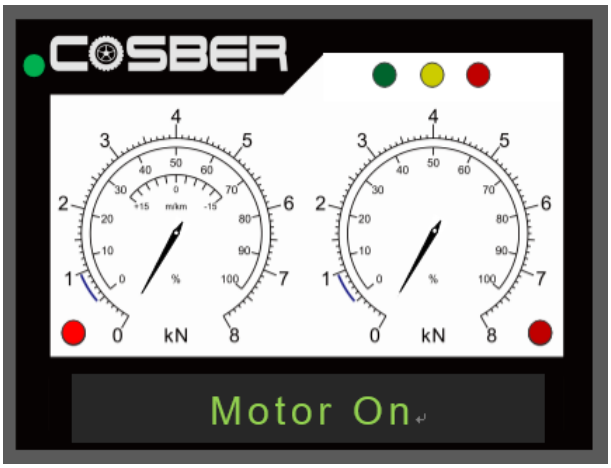
The weight sensor (optional) shows the axle weight under load.



The wheel to be measured can now be selected using the keyboard.

Press button <, for left roller.
Press button > for right roller.

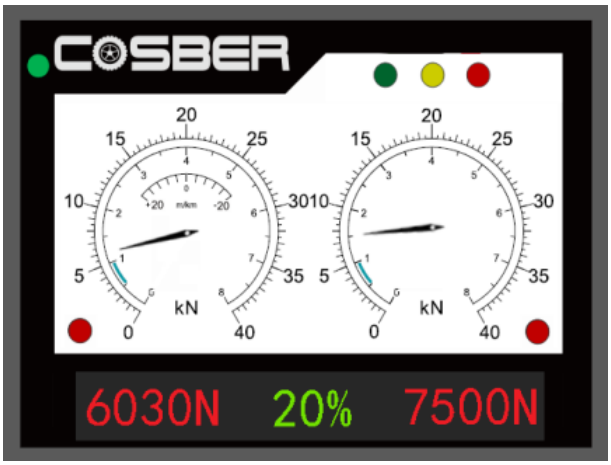
When the display shows "Motor On!", the reel starts and the status light of the reel flashes.



Start with the brake test.

After completion, drive the vehicle out of the rollers (touch roller no longer depressed).

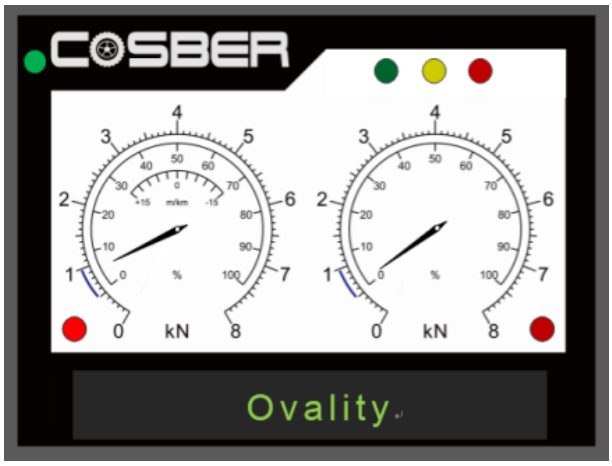
Press the STOP button (2) by hand to complete the inspection.



No maximum braking force is detected when the wheels are idling for more than 7s

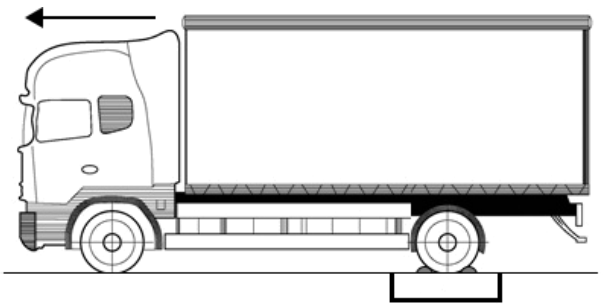
(adjustable). Roller stops automatically.

Measurement of out-of-roundness
Press button ∧ on the remote control.
Display reports "Ovality".
Braking force left/right is greater than 500 N.
Display of results after 5s. The results are saved in network mode on the PC.



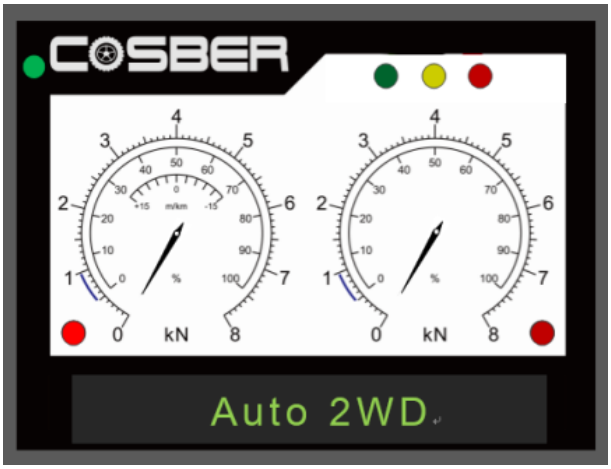
Data storage in network mode
Front axle
Rear axle
Parking brake

Extension function
Shut down the vehicle from the brake test bench after the measurement.
Engine of the brake test bench is not locked: engine starts driving.
Engine of the brake test bench is locked:
Power supply to the motor is disconnected and the roller is immediately locked.
Shut down from the brake test bench.

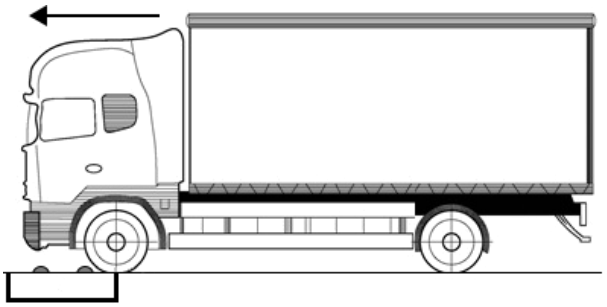


5.6.1.3. Auto mode

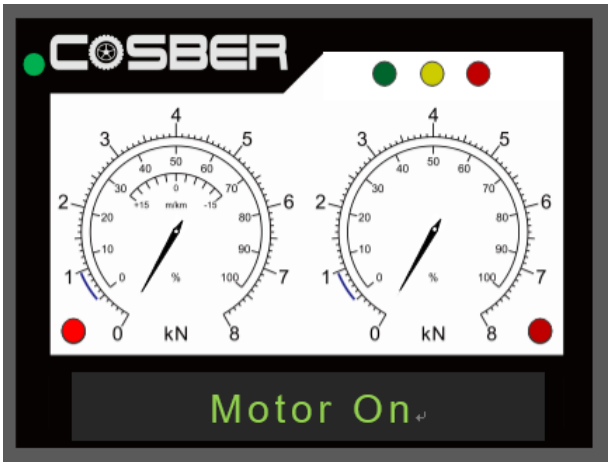
Single axle auto starts mode.
In idle mode, press button 1 to switch to Auto mode.
Press button < to switch between two-wheel and all-wheel drive.
Make sure that the display shows "Car 2WD"! The vehicle should not be on the brake test bench.



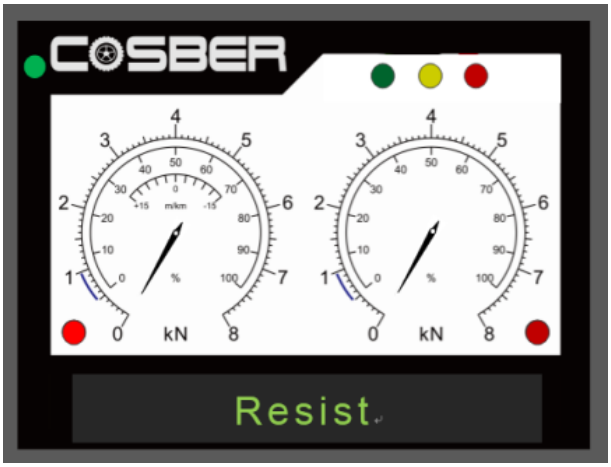
Drive the vehicle onto the brake test bench.
The display reports "Arrived!" when the vehicle is driven to the brake test bench.
"Axle Weight" display. The axle weight (kg) is displayed.



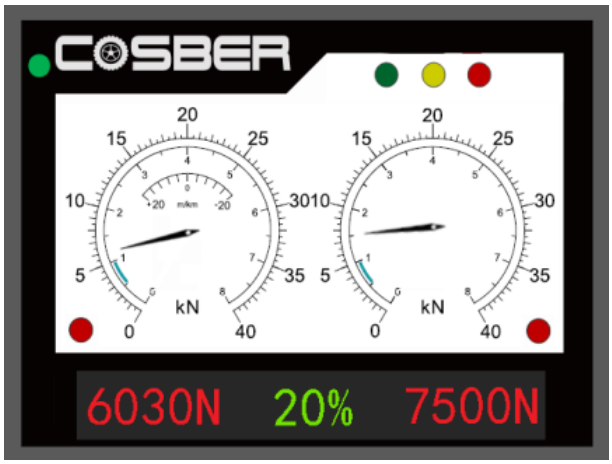
Start Role
Display says, "Engine on".
Engine status indicators flash left/right and the engine starts automatically.



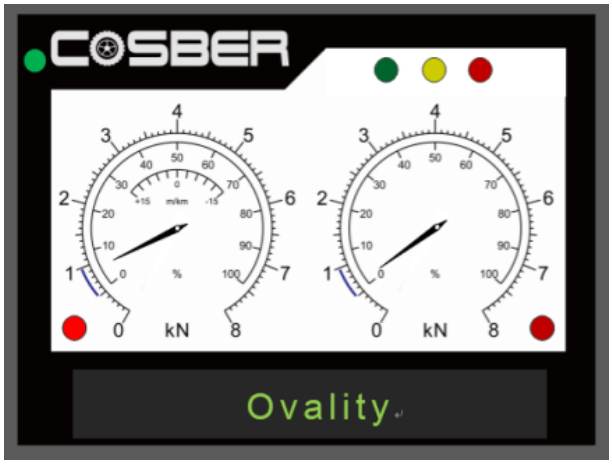
Rolling resistance measurement
Display reports "Resist".
Display of the results of the rolling resistance measurement after 3 seconds.



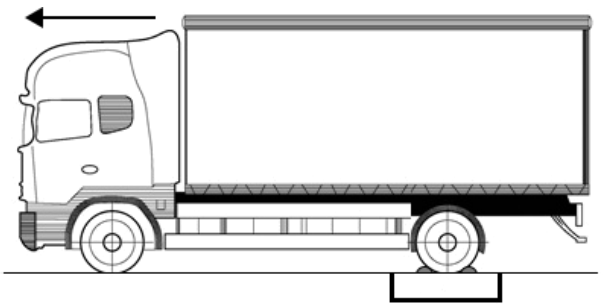
Metering operation
Brake force test.
If "Brake!" is displayed, slowly press down the brake pedal until the maximum braking force is applied.
Display brake force and difference right/left.
Extension of the wheels (touch roller no longer pressed down).
Press the STOP button 2 by hand to complete the check.
No maximum brake is detected when the wheels are idling for more than 7s. Roller stops automatically (time is adjustable).



Measurement of out-of-roundness
Display reports "Ovality".
Braking force left/right is greater than 500 N.
Display of results after 5s. The results are saved in network mode on the PC.

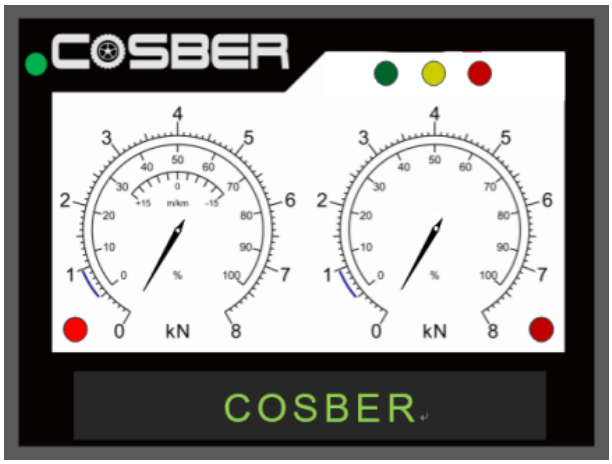


Driving function
Shut down the vehicle from the brake test bench after the measurement.
Engine of the brake test bench is not locked: engine starts driving.
Engine of the brake test bench is locked:
Power supply to the motor is disconnected and the roller is immediately locked.
Shut down from the brake test bench.



Re-measurement
If the vehicle does not leave the brake test bench after the measurement, measure the brake force again.

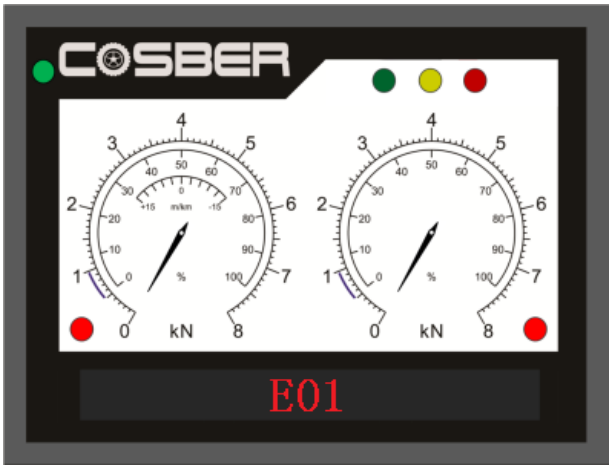
Single-axle operating mode: leave the car and go back to idle.
Press STOP button 2 on the remote control.
To switch between operating modes, press the Operating Mode button on the remote control.
After receiving the network command, the flashing indicator "COSBER" will flash.



6 Service

6.1 Error

If an error occurs, the device will stop operating and display an error code.



Error code	Problem	Solution
E01	Error with switching signal of the stylus on the left.	• Check wiring or adjust gap.

E02	Error with switching signal of the sensing roller on the right.	• Check wiring or adjust gap.
Hint: Under the following special operating conditions, the system can also report "E01" and "E02". • During the self-test procedure, when the switch for "Probe Roll in Correct Position" is pressed. • In the idle state, when the switch for "Probe Roll in Correct Position" is pressed. • If the vehicle is driven to the test bench prematurely. The above situations are not actual failures, and the system should continue when proper operation is restored.		
E03	Castors do not tarnish	• Check power supply. • Check the emergency stop switch. • Check pit safety
	Rollers start briefly and switch off again. Error in the speed signal of the left stylus.	• Proximity switch on the left stylus - defective ("old" CRTS sensor?)- Distance too large (approx. 1mm) - cable damaged • Sensor socket left defective. • Sensor cable to the left of the sensor socket to the control cabinet - Damaged- Corrosion
E04	Rollers do not tarnish.	• Check power supply. • Check the emergency stop switch. • Check pit safety
	Rollers start briefly and switch off again. Error with speed signal of the stylus on the right.	• Proximity switch on the right touch roller - defective ("old" CRTS sensor?)- Distance too large (approx. 1mm) - cable damaged • Sensor socket defective on the right • Sensor cable to the right of the sensor socket to the control cabinet - Damaged- Corrosion
E05	Rollers start briefly and switch off again. Error with speed signal of the drive roller on the left.	• Proximity switch on sprocket left. - defective ("old" CRTS sensor?)- Distance too large (approx. 1mm) - cable damaged

E06	Rollers start briefly and switch off again. Error with speed signal of the drive roller on the right.	• Proximity switch on sprocket right - defective ("old" CRTS sensor?)- Distance too large (approx. 1mm) - cable damaged
E08		• Rolling resistance on the left too high in the switch-on phase • Check sensor socket on the left
E09		• Rolling resistance on the right too high in the switch-on phase • Check sensor socket on the right
E10	Castors do not tarnish	• Check power supply. • Check the emergency stop switch. • Check pit safety

6.2 Restoration

ALL REPAIR WORK SHOULD BE CONDUCTED BY COSBER'S TECHNICAL SERVICE OR A COSBER-APPROVED PARTNER. NEVER DISASSEMBLE THE SYSTEM WITHOUT PRIOR CONSENT.

HINT!

- Keep all surfaces of the facility clean. The roller of the brake test bench should be oil-free.
- Remove oil, mud, sand, or other residue from the roller of the brake test bench before using it.
- The parts of the system must be maintained according to the points in the maintenance plan.
- If the equipment is not going to be used for an extended period, turn off the main supply, lubricate any parts that require lubrication, and cover the control cabinet and analog display to prevent dust from accumulating on them.
- The prolonged use of the system is accompanied by the elongation/elongation of the drive chain. This means that the position of the roller should be readjusted so that the tension of the drive chain continues to be correct.

6.3 Maintenance schedule

1	Remove dust in the control cabinet and on the analog display.	Quarterly
2	Check the connections of all electrical components in the control cabinet and analog display.	Annual
3	Check whether connecting screws on the brake test bench have become loose.	Annual
4	Remove dirt on the roller and residue on the platform.	Monthly

5	Check that the reel rotates freely.	Monthly
6	Check the tight fit of the chain and lubricate the chain.	Annual
7	Check sensors (gap spacing).	Annual
8	Check all wires for damage.	Annual

7 Security

7.1 Inspection plan

1	Visual inspection of plant operation	Daily
2	Security Testing	Annual
3	Unit inspection (for Germany)	Every two years

7.2 Visual control

- Conduct a visual inspection each time the system is switched on.
- Every time the system is switched on, the built-in electrical system automatically detects safety-relevant functions. The system displays allowed exceptions.

7.3 Security Testing

- German regulations on safety testing: The operator must inspect safety-relevant components on the system at least once a year (BGV A1, Chapter 39, Articles 1 and 3).
- International regulations for safety testing: The operator must inspect safety-related components on the plant at least once a year in accordance with the laws and regulations of the respective country or region.

7.4 Unit Testing (for Germany)

- A qualified expert must be commissioned to conduct the unit inspection.
- An authorized customer service technician must conduct the first start-up and initial commissioning.
- Once every two years (repeat examination).
- If parts relevant to the measurements are replaced, an inspection must be conducted immediately after the repair.

7.5 Procedure for decommissioning the plant.

- If the system is taken out of service for an extended period, switch off the main supply and cover the control cabinet so that dust does not accumulate there. Attach the label to the main switch.

- Prevent improper loading or influence on the brake test bench. Put up appropriate warning signs to prevent property damage and personal injury.

8 Notes

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