

For passenger  
cars and light  
commercial  
vehicles



The new generation of  
**Brake Testers** and **Test Lanes**:  
**Safe** and **precise** testing



**BOSCH**

Invented for life

# **Automatic and reliable:**

Brake tests with the highest possible precision

## **Brake testers and test lanes for passenger cars, delivery vans and light commercial vehicles**

- ▶ BSA 42xx – the entry level brake tester
- ▶ BSA 43xx – the universal brake tester
- ▶ SDL 43xx – the extension to a test lane for brakes, suspension and track
- ▶ BSA 436x – the brake tester for extra-wide vehicles
- ▶ BSA 44xx – the brake tester for light commercial vehicles



# BSA series and SDL series: Brake service from Bosch



Complete brake tester and expandable module



For all brake tests: The test lane from Bosch

## New brake service requirements

Increased equipping of vehicles with electronic systems like all-wheel drive, electronic parking brake and also electronic brake control systems presents the workshop with new challenges in the area of brake service. In order that the electronic system can fulfill its task, all hydraulic and mechanical components must interact perfectly. This is why system expertise, efficient diagnostics and information systems play a constantly increasing role. Electronics is the key to correct repair and maintenance of the braking systems of modern vehicles.

## Comprehensive support from Bosch for brake business

Irrespective of whether brakes are tested in an independent workshop or during the general inspection – suitable brake testers/test lanes from Bosch can be set up according to individual requirements.

## As your workshop partner, Bosch supplies everything required for brake system service:

- ▶ The most up-to-date brake testers and test lanes are continuously developed and adapted to the widest possible variety of workshop requirements
- ▶ High-quality brake service thanks to
  - optimized interaction of modern brake testing technology
  - comprehensive workshop information
  - superior quality of Bosch brake parts

All advantages of the BSA series at a glance:

### Fast and precise measured results thanks to innovative technology

- ▶ Automatic or manual operation
- ▶ With infrared remote control
- ▶ Fully automatic, microprocessor-controlled test procedure, measured value processing and display
- ▶ Fast-reacting, precise measuring system DMS (strain gauge)
- ▶ Space-saving mechanical system through integrated control and power electronics
- ▶ Sensor rollers for slip control and safety monitoring

### Networking through the latest computer technology for a good overview

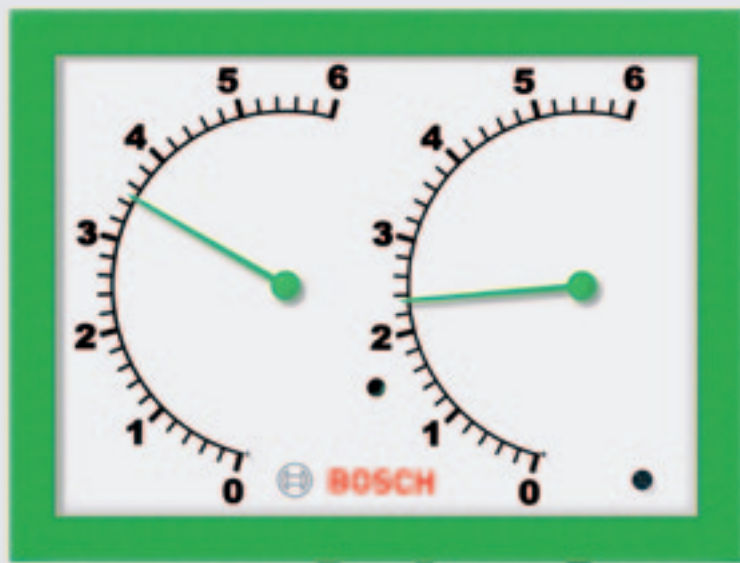
- ▶ The Data Exchange Platform networks the Bosch workshop equipment for efficient data exchange
- ▶ BNet technology for networking with several workshop PCs and ASA network
- ▶ Analog parallel displays with integrated electronics
- ▶ LED lamps for displaying super automatic/automatic/manual operating mode

### Long life thanks to highest quality standards

- ▶ Hot-dip galvanized roller sets and brake rollers with plastic-corundum coating (coefficients of friction from 0.8 [dry] and 0.7 [wet])

# Efficient and precise – BSA 42xx:

## Brake testing for passenger cars and delivery vans



The BSA 4210 is delivered as standard series with a rectangular parallel display and wall mounting set

### BSA 42xx – innovative and economic

Economic operation is the decisive positive factor of the BSA 4210:

- ▶ Fast, simple and precise:
  - Testing of braking systems of passenger cars and delivery vans with a permissible total weight of up to 5 t
  - Automatic, or optional manual operating mode via infrared remote control
- ▶ Long service life, even outside:
  - Frame and cover of roller set hot-dip galvanized
  - Brake rollers reinforced with expanded metal and with plastic-corundum coating, which is easy on the tires
- ▶ Perfect preparation for the customer discussion. Test results of repair, service and maintenance tasks on the braking system can be printed out on the optionally available printer
- ▶ The analog display can be screwed onto the wall using the assembly set included in the delivery

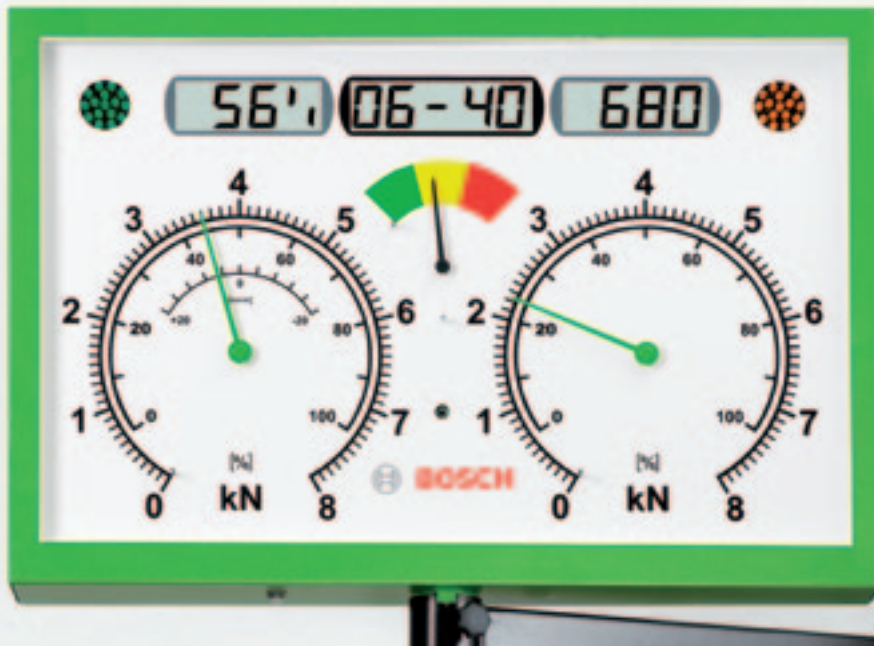
### Fully automatic test procedure: Nonstop precision

The fully automatic test procedure starts with running into the roller set, which is connected to the innovative power electronics. Safe operation is guaranteed by the antilock braking system shutoff, automatic restart and saving of the braking force display. The measured results can always be viewed on the analog parallel display.

Description	Order number
BSA 4210 S4 Roller set Rectangular analog display	1 691 500 100
BSA 4210 S40 Roller set Rectangular analog display, plug-in roller cover plates	1 691 500 130
Technical data BSA 42xx	
Maximum test load/axle	2.5 t
Maximum overdrive load	4.0 t
Engine power	2 x 2.0 kW
Test speed	2.5 km/h
Display range	0 – 6 kN
Nominal measurement range	6 kN
Minimum track width	800 mm
Maximum track width	2,200 mm
Roller length	700 mm
Roller elevation	25 mm
Dimensions (W/L/D) in mm	2,360/660/250
Weight approx.	420 kg
Special accessories BSA 42xx	
Wall mounting for rectangular analog display	1 691 400 004
Edge protection frame	1 691 602 000
Roller cover plates swivelable, hot-dip galvanized	1 691 601 011
Roller cover plates plug-in, hot-dip galvanized	1 691 601 010
BNet printing and archiving software	1 691 701 106
Printer set BNet device bus	1 691 601 026
Printer cabinet	1 691 602 010
Infrared remote control	1 691 601 004
Pedal force sensor	1 691 601 020

# Brake tester BSA 43xx:

## All measured values at a glance



Analog display unit BSA 43xx series

Whereas the BSA 42xx series has established itself as an entry to brake testing, the BSA 43xx series has further valuable functions that makes it a brake testing expert:

- ▶ For testing brakes on passenger cars and light commercial vehicles
- ▶ Extension to a complete test lane possible
- ▶ Selectable display: Analog stand column, analog wall mounting or PC visualization
- ▶ All-wheel drive version available
- ▶ "High-speed test" version available

### **Robust, durable and capable of meeting all daily workshop demands:**

- ▶ Fully hot-dip galvanized, compact operating units
- ▶ Brake rollers reinforced with expanded metal and with plastic-corundum coating, which is easy on the tires
- ▶ To optimize the roller force, the rear test roller is raised 25 mm
- ▶ Powerful and robust motors and gear for challenging applications

### **All measured values at a glance**

- ▶ Multifunctional, easy to read, swivelable and rotatable display unit
- ▶ Three types of measured value information: Via a green / yellow / red evaluation scale, from a pointer on the analog display and, finally, via the LCD display (standard series with BSA 43xx) for additional information on the braking factor in %, axle load in kg and ovality of the brakes
- ▶ Measured results are saved automatically and can be printed out by a print command via the standard series infrared remote control

### **Standard series super automatic mode or operation with infrared remote control**

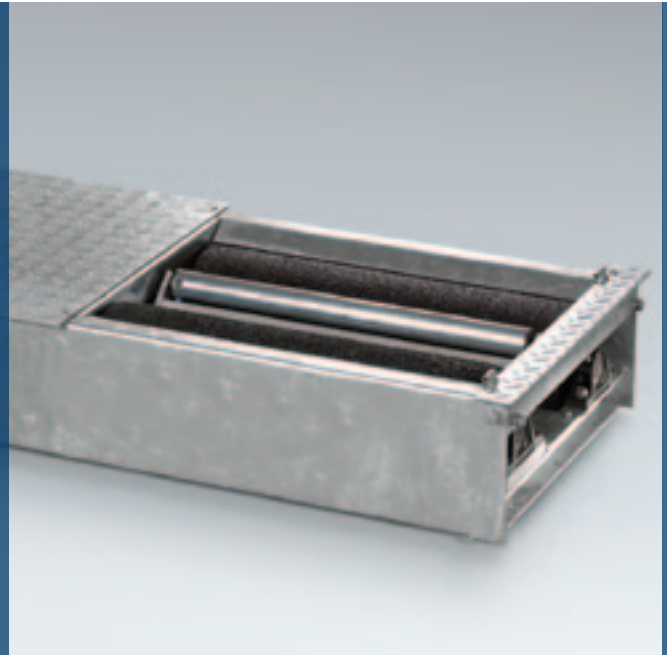
"Super automatic operation" guarantees the menu-guided sequence of the entire test procedure. After the start, the computer controls all test phases fully automatically, saves the data and provides information on how to move on. The automatic drive-out support via the electromagnetic brake of the test rollers (integrated with BSA 434x) ensures that driving out is particularly gentle. Duration of the complete procedure: Approx. three minutes with automatic data archiving and optional printing function. And all of this without having to press a single button. All brake tester models can be equipped with an interface for printing and archiving software (BNet-PC software) as an option and are thus compatible with every modern Windows PC.

# Brake tester BSA 43xx:

## Item by item for more test convenience



PC cabinet BSA 555 in conjunction with the roller set



The rear test roller raised as standard series ensures good traction

### Test program for electronic parking brakes

More and more vehicles are equipped with an electronic parking brake. Simply use the test program integrated as standard in all BSA 43xx models to check the parking brake in accordance with the manufacturer's specifications.

### Automatic all-wheel drive detection

The number of all-wheel drive vehicles in the workshop is also increasing. For every all-wheel drive vehicle, the BSA 434x series offers as standard the automatic all-wheel detection with direction of rotation reversal when starting the roller sets. Damage to the powertrain in the vehicle is thus avoided.

### No connection restrictions to your PC network

Thanks to the BNet device bus, the connection options in the BSA 43xx series are almost unlimited. By connecting to your workshop PC, you can create a network solution using the workshop software or the ASA network manager for the entire testing and workshop area. Whether for order handling, statistics evaluation or printing out the test records: The measurement results of all connected testers (brake test, suspension test, track test, wheel alignment, emission test or head light test) are available to your PC network. This makes order handling more efficient than ever before.

### Overview of the additional options for PC visualization:

- ▶ BNet database
- ▶ BNet order manager (customer and vehicle data)
- ▶ BNet print manager (test records)
- ▶ BNet archive manager (statistics and history)



Comprehensible graphical PC display, easy to understand. All information clearly arranged in the graphic printout. The customer can select between three different printout types: Standard printout, curves printout and graphic printout.

# Test reliability preprogrammed

## with analog display and PC visualization



The analog display can be installed according to customer wishes by means of a wall mounting and swivel arm (BSA 433), or by an aluminum stand column (BSA 437)

SDL 120: USB converter set for connection to a customer PC

Technical data	BSA 4310	BSA 4311	BSA 4340	BSA 4341	BSA 4340 S1
Description	Roller set	Roller set	Roller set	Roller set	Roller set
Order number	1 691 600 303	1 691 600 300	1 691 600 301	1 691 600 302	1 691 600 304
Maximum test load	3.5 t	2.5 t	3.5 t	2.5 t	3.5 t
Maximum transit load	4.0 t	4.0 t	4.0 t	4.0 t	4.0 t
Engine power	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW
Voltage	400 V	400 V	400 V	400 V	230 V
Frequency	50 Hz	50 Hz	50 Hz	50 Hz	60 Hz
Test speed	2.7 km/h	5.2 km/h	2.7 km/h	5.2 km/h	2.7 km/h
Automatic all-wheel drive detection	no	no	yes	yes	yes
Electronic engine brake	no	no	yes	yes	yes
Roller diameter	205 mm	205 mm	205 mm	205 mm	205 mm
Roller length	700 mm	700 mm	700 mm	700 mm	700 mm
Roller elevation	25 mm	25 mm	25 mm	25 mm	25 mm
Dimensions (W/L/D) in mm	2,360 / 660 / 250	2,360 / 660 / 250	2,360 / 660 / 250	2,360 / 660 / 250	2,360 / 660 / 250
Weight approx.	420 kg	420 kg	420 kg	420 kg	420 kg

### Displays – matched to every workshop requirement:

Technical data	BSA 433	BSA 437	BSA 555	BSA 535	SDL 120
Presentation medium	Analog display	Analog display	TFT monitor in the PC cabinet	TFT monitor in the PC cabinet	existing workshop PC or laptop <sup>1</sup>
Components	Wall mounting	Stand column made of aluminum	PC, 19" TFT monitor, printer, mouse	PC, 19" TFT monitor, printer, mouse	USB converter set, CD, dongle
Method of display	Analog	Analog	PC visualization	PC visualization	PC visualization
Order number	1 691 600 327	1 691 600 328	1 691 700 102	1 691 700 300	1 691 700 103
Display range	2 x 0 – 8 kN	2 x 0 – 8 kN	0 – 8 kN	0 – 8 kN	0 – 8 kN
Weight approx.	50 kg	60 kg	90 kg	90 kg	1 – 2 kg

<sup>1</sup> Observe the hardware requirements

# SDL 43xx: The complete test lane for brakes, suspension and vehicle track



Complete: Modern passenger car brake testing system, test lane SDL 43xx

The components of the SDL 43xx series from Bosch can be easily used to extend the brake testers to a complete test lane. For example, it is possible to integrate a side slip tester SDL 415, a side slip tester with track compensation tester SDL 425, a suspension tester SDL 430 or a suspension tester with noise diagnostics SDL 435.

- ▶ Connection option for additional test components and clearly arranged PC visualization through a BNet device bus integrated as standard series
- ▶ Special advantage: You do not need any additional display units to do this
- ▶ Fast and clearly arranged acquisition of the measuring data
  - via analog display and integrated LCD display (SDL 433x)
  - via 19" TFT color monitor on the PC cabinet BSA 555

SDL 415 side slip tester	
Order number	1 691 630 301
Maximum test load	2.0 t
Maximum overdrive load	4,0 t
Display range	+20 to -20 mm/m
Dimensions (W/L/D) in mm	750 / 480 / 35
Force transducer	waterproof DMS sensor

SDL 425 side slip tester with track compensation tester	
Order number	1 691 630 303
Maximum test load	2.0 t
Maximum overdrive load	4,0 t
Display range	+20 to -20 mm/m
Dimensions (W/L/D) in mm	1,100 / 440 / 35
Force transducer	waterproof DMS sensor

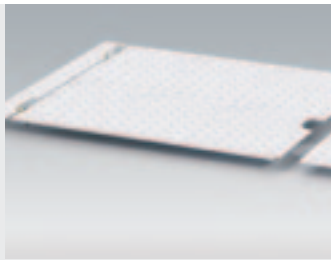
SDL 430 suspension tester	
Order number	1 691 620 300
Measurement principle	EUSAMA
Engine power	2 x 2.5 kW
Maximum test sequence	25 Hz
Stroke	6 mm
Test load	2.0 t
Overdrive load	4.0 t
Dimensions (W/L/D) in mm	2,360 / 440 / 280

SDL 435 FWT / noise diagnostics	
Order number	1 691 620 301
Measurement principle	EUSAMA
Engine power	2 x 3.0 kW
Maximum test sequence	10 to 30 Hz also with frequency converter
Test load	1.65 t
Overdrive load	4.0 t
Dimensions (W/L/D) in mm	2,360 / 440 / 280

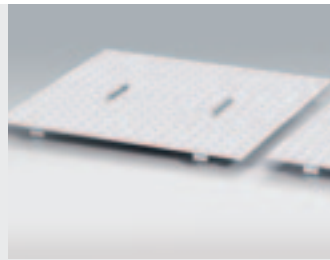


# BSA and SDL:

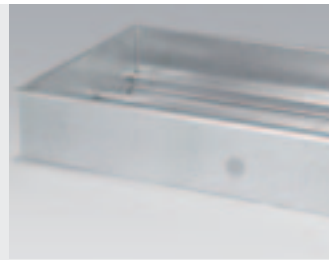
## Fully networked and expandable



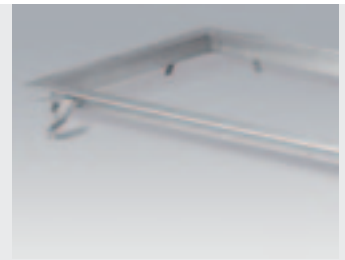
Swivelable cover plates for the roller sets of the BSA 43xx series



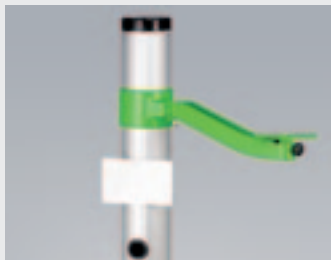
Plug-in cover plates for the roller sets



Assembly case for simple installation of the test lane SDL 43xx



Edge protection for neat installation of the roller sets



Aluminum stand columns for the BSA 44xx



BNet printer set with remote control



Cabinet for correct printer accommodation



Axle load scales with four sensors

Special accessories	Order number
Suspension tester SDL 430	1 691 620 300
Suspension tester with noise diagnostics SDL 435	1 691 620 301
Side slip tester SDL 415	1 691 630 301
Side slip tester with compensation plate SDL 425	1 691 630 303
PC cabinet BSA 555 (incl. PC, 19" TFT monitor, printer and mouse)	1 691 700 102
PC cabinet BSA 535 (incl. PC, 19" TFT monitor, printer and mouse)	1 691 700 300
PC kit for customer PC SDL 120	1 691 700 103
Edge protection frame for roller set BSA 43xx	1 691 602 000
Edge protection frame for roller set BSA 436xx	1 691 602 151
Edge protection frame for roller set BSA 44xx	1 691 872 000
Edge protection frame for suspension tester SDL 43x	1 691 622 002
Edge protection frame for test lane BSA 43xx and SDL 43x	1 691 602 001
Assembly case for roller set BSA 42xx and BSA 43xx	1 691 602 115
Assembly case for testing lane BSA 43xx and SDL 43x	1 691 602 002
Assembly frame for side slip tester SDL 415	1 691 632 000
Assembly frame for side slip tester with compensation plate SDL 425	1 691 632 001
Support blocks for scales	1 691 601 009
Positing ramps for SDL 430 and SDL 435	1 691 621 017
Dowel set for fixing (only for SDL 430)	1 691 621 001
Swivelable roller cover plates BSA 43xx (not BSA 436x)	1 691 601 011
Plug-in roller cover plates BSA 43xx (not BSA 436x)	1 691 601 010
Plug-in roller cover plates BSA 436x	1 691 602 112
Plug-in roller cover plates BSA 44xx	1 691 871 003
BNet printer set	1 691 601 026
Printer cabinet	1 691 602 010
BNet printing and archiving software	1 691 701 106
4-point axle load scales BSA 43xx	1 691 601 057
4-point axle load scales BSA 436x	1 691 601 058
4-point axle load scales BSA 44xx	1 691 871 004
Pedal force sensor	1 691 601 020
License key USB dongle #2 for visualization	1 691 708 005
License key USB dongle #3 for ASA and external device connection	1 691 708 006

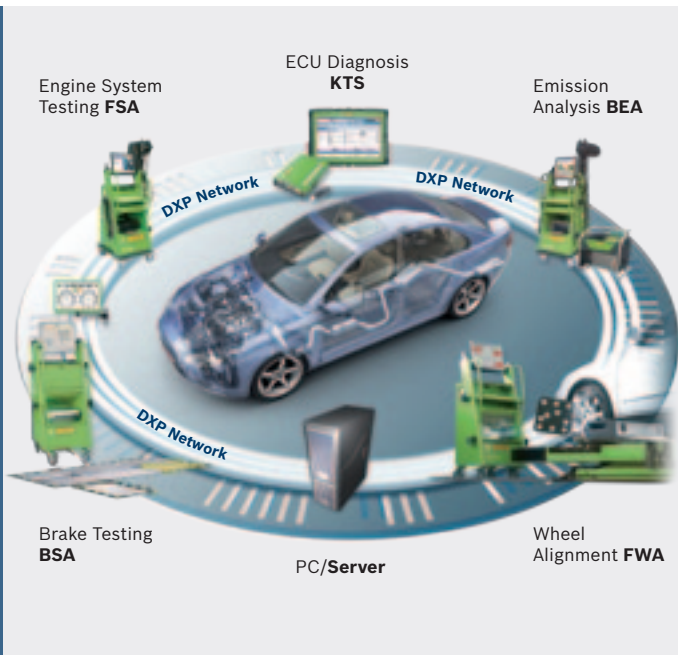


PC cabinet BSA 555



PC cabinet BSA 535

# BSA 436x and BSA 44xx: High-precision brake testing of light commercial vehicles



Thanks to the extra-wide roller set, vehicles with twin tires can also be easily measured

## New! Data Exchange Platform DXP – the efficient workshop software from Bosch

- ▶ Networking of all diagnostic devices
- ▶ Fast, simple, reliable data exchange between all PC-based testers in the workshop
- ▶ Direct activation of the ECU diagnosis (KTS) from every DXP-networked test system
- ▶ Central storage of identification data and result records and exchange with the Workshop Management System (WMS)

## Once recorded – accessible at any time, and everywhere

DXP from Bosch transfers all vehicle data recorded by a system to all other diagnostic systems integrated in the DXP network. Once identified, input of the license plate number or VIN (Vehicle Identification Number) is sufficient to call up the vehicle data at all workstations. This saves time. All testers from Bosch, Beissbarth and Sicam have networking-capability.

The software can be installed on every workshop PC with at least 2 GB main memory, a 150 GB hard disk, and Dual Core processor.

## Ideal for delivery vans and light commercial vehicles

The brake testers BSA 436x and 44xx allow you to obtain automatically controlled, precise measured values within a few minutes in brake tests on all vehicles with a track width of up to 2.8 m. For example, on delivery vans with twin tires, heavy mobile homes or light commercial vehicles up to 10.0 t.

## BSA 436x

Efficient, high-precision brake testing:

## BSA 44xx

The BSA 44xx series is based on the BSA 436x series but achieves even more:

# BSA 436x and BSA 44xx: Brake testing perfectly under control up to 5 t axle load



The BSA 436x series is delivered as standard series with a rectangular analog display



The BSA 44xx series is delivered as standard series with an oval analog display (with range switching)

Technical data	BSA 4361	BSA 4361 S1	BSA 4361 S40	BSA 4440	BSA 4440 S1	BSA 4440 S40
Article designation	Roller set with analog display	Roller set with analog display	Roller set with analog display	Roller set with analog display	Roller set with analog display	Roller set with analog display
Type of fastening	Wall mounting	Stand column made of aluminum	Wall mounting	Wall mounting	Stand column made of aluminum	Wall mounting
Order number	1 691 600 308	1 691 600 309	1 691 600 315	1 691 870 100	1 691 870 101	1 691 870 104
Maximum test load (axle)	2.5 t	2.5 t	2.5 t	5.0 t	5.0 t	5.0 t
Maximum overdrive load	4.0 t	4.0 t	4.0 t	7.5 t	7.5 t	7.5 t
Engine power	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW	2 x 3.7 kW
Test speed	5.2 km/h	5.2 km/h	5.2 km/h	2.3 km/h	2.3 km/h	2.3 km/h
Autom. all-wheel drive detection	yes	yes	yes	yes	yes	yes
Electr. engine brake	yes	yes	yes	yes	yes	yes
Display range	0 – 8 kN	0 – 8 kN	0 – 8 kN	0 – 12 kN	0 – 12 kN	0 – 12 kN
Nominal measurement range	7.5 kN	7.5 kN	7.5 kN	12 kN	12 kN	12 kN
Minimum track width	800 mm	800 mm	800 mm	860 mm	860 mm	860 mm
Maximum track width	2,800 mm	2,800 mm	2,800 mm	2,800 mm	2,800 mm	2,800 mm
Roller diameter	205 mm	205 mm	205 mm	205 mm	205 mm	205 mm
Roller length	1,000 mm	1,000 mm	1,000 mm	970 mm	970 mm	970 mm
Roller elevation	25 mm	25 mm	25 mm	25 mm	25 mm	25 mm
Dimensions (W / L / D) in mm	2,960 / 660 / 280	2,960 / 660 / 280	2,960 / 660 / 280	2,940 / 690 / 280	2,940 / 690 / 280	2,940 / 690 / 280
Weight approx.	550 kg	550 kg	550 kg	580 kg	580 kg	580 kg
Plug-in roller cover plates	no	no	yes	no	no	yes

# Bosch: Bringing you the workshop of the future

For over 120 years, Bosch innovations have been keeping vehicles on the road and getting people to and from their destinations while improving safety and peace of mind along the way.

Bosch Automotive Aftermarket offers workshops and retailers a comprehensive portfolio of products that is unmatched worldwide:

- ▶ Efficient diagnostics
- ▶ Innovative workshop equipment
- ▶ Quick, reliable delivery
- ▶ The world's most comprehensive range of spare parts – including both new and remanufactured
- ▶ Workshop concepts to meet every requirement
- ▶ Comprehensive training
- ▶ Targeted sales and marketing support
- ▶ A competent service hotline
- ▶ 24-hour online workshop services
- ▶ Affordable leasing services for workshop equipment and software

From parts to scheduling, organization and results, our solutions are combined with additional services to ensure your needs will be perfectly met, helping you to maximize your potential.

## Workshop tip:

The professional braking system analysis is perfectly supplemented by the complete passenger car brake program from Bosch.

## Robert Bosch GmbH

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Business Unit Diagnostics

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[www.bosch-diagnostics.com](http://www.bosch-diagnostics.com)



**With extensive know-how, Bosch offers the complete passenger car brake program in original equipment quality:**

Over 10,000 products, from individual components such as brake linings or drum brakes to perfectly tuned complete systems.

Technical changes and program modifications are reserved

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