

x-road

THE MULTI-FUNCTION ROLL/BRAKE/ABS TEST STAND



» x-road in Production

Innovation

With the roll/brake/ABS test stand, type x-road, Dürr Assembly Products offers the possibility to carry out vehicle function tests including: dynamic driving tests, parameter set-up tests, and tests of electrical control devices for front wheel drive, rear wheel drive or 4 wheel drive vehicles in the end of line area. The modular design and the high degree of flexibility in the test stand enable future test requirements to be completed with the minimum of effort.

The automation of the test stand ensures reproducible test results. Freely definable test sequences complete the flexibility of the concept. The x-road combines highly reliable system technology with precise measuring technique. The quality of the measured values is thoroughly checked before delivery. Therefore the measuring system x-cal, which has been developed especially for this purpose, is used. [see flyer x-cal].

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Technical data x-road	
Typ. max. speed test	170 km/h
Typical motor traction force for each roller set (41kW technology in relation to the roller circumference, $v = \text{constant}$)	$F_{\text{neff}} = 1700\text{N}$ $F_{\text{max}} = 3700\text{N}$
Accuracy of the speed detection (in relation to the roller circumference)	typical $< \pm 1$ km/h
Max. difference speed FA to RA - $v = \text{constant}$ - dynamical ($a = \text{constant}$ and $< 6\text{m/s}^2$)	$< 0,1$ km/h $< 0,5$ km/h
Wheel base max. adjustment speed	60 mm/s

Tasks

- » General function test of the vehicle during dynamic test mode
- » Gearbox function tests (automatic and manual)
- » Tests of the vehicle's braking system
- » Acceleration and deceleration tests under road-like conditions
- » Tests of sensors in the vehicle (ABS, ESP, ASR)

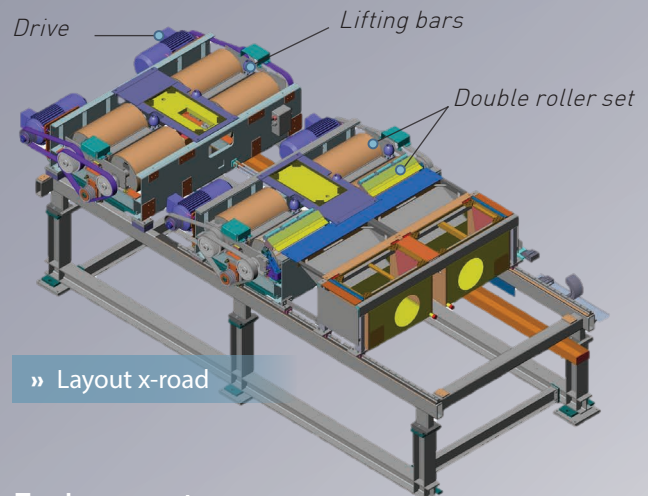
Flexibility

First of all, the high flexibility of the x-road is determined by the intelligent drive control on all rollers and the versatility of the automation system. With the basic modes of operation

- » roll mode
- » static brake mode ($v = \text{const}$) and
- » dynamic brake mode (dv/dt)

some different test situations and loads can be generated, according to the requirements. In this case, it is not important whether the test sequence is configured and documented via interface by an external system, or whether the test sequence integrated in x-line is used.

* The photos or figures of the assembly and testing systems in the flyer are not showing the complete installation. The requirements of the machinery directive (2006/42/EG) will only be met by other supplementary scope of supply or - on delivery of uncompleted machines - those requirements must be fulfilled by the manufacturer of the (complete) machine. Flyer x-road, Version E



Environment

Due to the functionality of the energy recovery system which is integrated in each x-road, any surplus energy will be returned to the grid. This saves energy costs and has a positive effect on the CO2 balance, too.

Module x-road

- » 4 roller sets to support the vehicle wheels
- » 4 vector-controlled driving motors that are individually operated in motor mode or generator mode via frequency converter. A central control module detects the specifications (speed/torque) for a synchronous respectively independent operation of the motors
- » 4 lifting bars that enable the passing over the roller sets without any problem.
- » A wheel base adjustment by which the test stand can be adjusted to the wheel base of the vehicle to be tested.
- » An exhaust gas flap for the specific extraction of the exhaust gases at the rear area of the vehicle.
- » The automation software x-line, the integrated software package with the functionalities: system control, motor management, interface handling.

