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MACHINES FOR THE PRODUCTION OF TIRE SIDEWALL MOLDS

TIRE SOLUTIONS



LANG

PRECISION IS OUR WORLD...

The LGT-S and LGR-S are special high-precision milling machine for the engraving of 2D and 3D data on tire sidewall molds.

The machine body is a heavy duty, torsion free, tubular steel construction filled with a vibration reducing compound so an extremely high level of stability is ensured. Tire sidewall molds for tires for motorbikes, cars, trucks, and even oversized special vehicles, as well as agrar tires and OTR, can be produced at the highest quality with our solutions.

The machines are driven by high dynamic AC servo control units. The X- and Z-axis are located on the crosswise frame, the C-axis turns the rotation symmetrical work piece, the B-axis needs to be selected (depends on milling spindle).

For the best possible coordination between machine and control, LANG uses its own LTire software so the user has only one partner to communicate. LTire is a Microsoft® Windows™ software for fast and efficient design of the complete design of a tire sidewall mold and for operating LANG 4-axis machines for rotational profile symmetrical molds. The program offers the usual CAD functions and, furthermore, a wealth of automated functions specifically adapted to the construction of a tire sidewall design. In addition, LTire runs on the machine PC with its graphic interface, guaranteeing easy and intuitive machine operation.

All LANG machines of the Tire Solution Programm even if milling or laser processing are compatible to each other and uses the same software. In this way, even the finest structures can be easily realised with the special milling machines from the market leader LANG.

Loading and unloading of the tire sidewall milling machines can be realised by crane.



Advantages

- ✓ Touch operation
- ✓ Windows 10-based user interface with 64-bit system
- ✓ High-precision results with short production times due to precision drives on all 4 axes
- ✓ Excellent machine quality thanks to many years of experience
- ✓ Energy-efficient cooling concept for spindle and control cabinet
- ✓ Compact design - especially when doors are open
- ✓ Easily accessible working area
- ✓ Consistent customer- and process-oriented overall concept for short production times
- ✓ Easy and fast change of CAM strategies on the machine when using the LANG Software as an option
- ✓ Exact reproducibility at a max. traverse speed of 15 m/min
- ✓ High process reliability due to absolute glass scales in X- and Z-axis (Closed Loop System)
- ✓ Possibilities for wet processing / preparation for oil mist extraction
- ✓ Integrated oil and chip tray as well as a chip drawer extractable to the front
- ✓ Central connection panel for machine supply and accessories
- ✓ Spacious maintenance doors for easy cleaning
- ✓ Spindles up to 10 KW (also with spindle nose growth compensation)
- ✓ Hard machining



LGT-S



The LGT-S is a special high-precision milling machine for the engraving of 2D- and 3D-data on tire sidewall molds in nearly every size. Its largest clampable work piece diameter is about 1.530 mm.

This machine wins with its modern, functional design and integrated control cabinet. A maintenance door with internal maintenance units allows easy service of the machines. The enclosed cabin protects the operator from noise and provides safety.

The generous sliding doors make the working area very accessible without obstructing space. The machine enclosure with the collecting tray allows the wet processing of the molds.

Z Axis with weight compensation

- ✓ Rotation axis (B-Axis)
- ✓ Working with milling spindle 1,6 up to 10kW
- ✓ Working with tools up to a diameter of 13mm, HSK E32, WK 19 (8mm)



Machine body with additional options

- ✓ Disk type tool changer with 30 stations
- ✓ Optional saw head for 10 kW spindle
- ✓ Optional closing of the roof, exhaust system, chip conveyor, magnetic filter
- ✓ Optional Blum-Laser for tool measuring



LGR-S

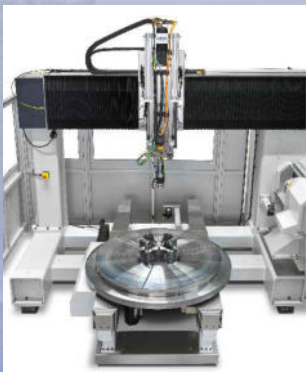


The LGR-S is a special high-precision machine for the engraving of 2D and 3D data on tire sidewall molds also in larger versions such as agrar tires and OTR. For this purpose, it is fitted with an additional massive traverse made of granite, which ensures the highest precision even with such sizes and weights.

For loading and unloading by crane of the tire sidewall molds the rotary table of the LGR-S can be moved 1m out of the machining room, which makes the work piece handling very easy. With its large doors, the safety enclosure allows easy loading and unloading of the molds.

Machine body with additional options

- ✓ Disk type tool changer with 30 stations
- ✓ Optional Blum-Laser for tool measuring
- ✓ Optional Digitizing system MP15, OMP40



Technical Data



Machine type		LGT-S	LGR-S	
Largest clampable work piece diameter	[mm]	1.530	2.300	
Largest engravable work piece diameter	[mm]	1.530	2.300	
Rotary table diameter	[mm]	1.200	1.200	
Max. load	[kg]	3.000	3.000	
Working range C (rotary table)		360°	360°	
Working range X	[mm]	100-765	0-1.150	
Working range Z	[mm]	400	500	
Working range B		+/- 90°	+/- 90°	
Machine control		High-End AC Servo control, PC based; with TFT Touch Panel		
C-axis				
Max. rapid feed	[m/min]	15,7 (R=600 mm)	15,7 (R=600 mm)	
X-axis				
Resolution	[nm]	1,2		
Max. rapid feed	[m/min]	15	15	
Measuring system		Glass scale	Glass scale	
Z-axis				
Resolution	[nm]	0,61		
Max. rapid feed	[m/min]	15	15	
Measuring system		Glass scale	Glass scale	
B-axis				
Max. rapid speed standard axis	[m/min]	7,5 (R=150 mm)	7,5 (R=150 mm)	
Max. rapid speed strong axis	[m/min]	18,8 (R=150 mm)	18,8 (R=150 mm)	
Max. space requirement (LxWxH)	[mm]	3.800 x 3.050 x 3.550	4.530 x 3.650 x 3400	
Weight of machine	[kg]	5.500	9.000	
Options for milling spindles				
Power S1	[kW]	1,2	2,6	10
Rotation Speed	[U/min]	60.000	50.000	42.000
Change cone		WK 16-6	WK 19-10	HSK E32

Complete system solutions

We offer complete system solutions for your milling and engraving applications. From the software LErgoCAD and LTire to the individual machine conception and product-specific training, with LANG you have only one partner from the idea to the finished product.

Our decades of experience in the field of mechanical and control engineering and in the development of software guarantees you process reliability and the highest quality in the machining of your workpieces.

Accessories

Tool changing systems

Disk type tool changer with 30 stations are available for our machines.

Oil mist device

The resource-friendly use of lubricants and an oil mist extraction leads to a clean working environment, reduced personnel workload, increased working tool life and a reduction in ancillary costs.

Various processing methods

Wet or dry processing and flushing,

Specials

Saw head for hatching lines
chip conveyor
magnetic filter.

Change cones and collets

Large assortment of change cones and collets are available.

Milling spindle packages

We offer several spindle packages in different performance classes for the most diverse machining tasks.

Measuring systems

OMP 40, MP 15
Tool length measurement Blum Z-Nano
Laser measurement

Training and Service

Our extensive service ensures maximum machine availability and process reliability of your production. Besides the personal on-site service, our online and hotline support helps to keep downtimes of your machine as low as possible. In addition the LANG service range contains equipment upgrades, software updates as well as trainings to ensure an efficient and optimal handling of our milling machines.

