

IMAGING ERGOMETRY

Angiography

MRI Ergometry

Echo Cardiology

Nuclear Medicine

Radiology

Lode the standard in Ergometry

Since Mr. Freerk Lode produced the first electro-magnetically braked bicycle ergometer in 1952, accuracy, reliability and durability have formed the basis for all further developments. Whereas Lode BV initially only specialised in the field of cardiology and pulmonary function, it has since grown to become a multifunctional specialist in the complete spectrum of medical ergometry. Lode is world renowned as a manufacturer of high quality ergometers and the Lode brand stands for accuracy, durability and ergonomic design. The range of Lode products varies from bicycle and treadmill ergometers to arm ergometers, recumbent ergometers, supine ergometers and ergometry software.

Thanks to Lode's many years of experience in production of medical ergometers and the continuous development to meet changing market demands, Lode is a flexible and reliable partner. In consultation with clients, specific ideas and requirements can be translated into a custom-made product. This has resulted in Lode also becoming a much requested supplier for various specialised ergometry projects. Before leaving the factory all Lode ergometers are dynamically calibrated and, of course, all units are produced under the strictest quality control conditions. Lode is ISO 9001:2000, ISO 13485:2003 and FDA certified and fulfills the EU Medical Device Directive MDD 93/42/EEC. Over years of use, service costs are almost negligible. In other words: **Lode, the standard in Ergometry.**

Angio

The Angio is an ergometer that can be used for both arm and supine ergometry. Thanks to the compact design, the ergometer can be used in settings in which standard ergometers cannot be used. The workload of the Angio is adjustable in a range from 7 – 1000 watt. The ergometer is equipped with both analog and digital interfaces.

Fixation set for instrument rail

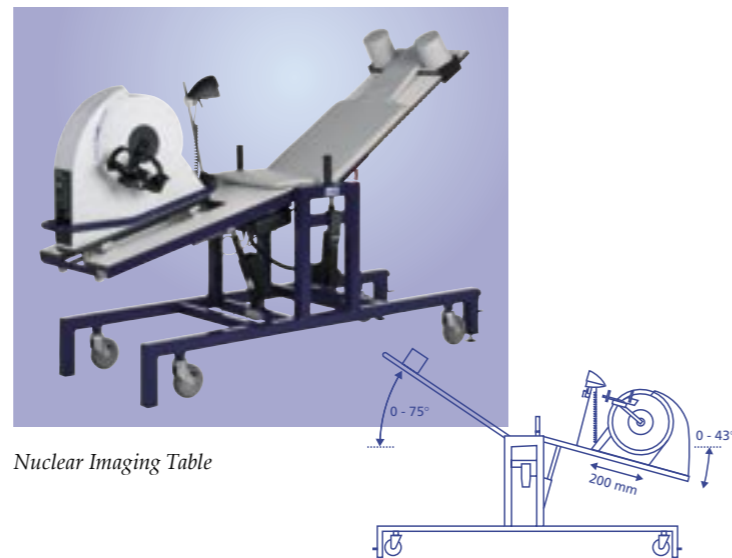
Multifunctional set to mount the Angio ergometer easily on all Imaging, Physiotherapy and Examination tables that have a standard instrument rail.



Angio with fixation set for instrument rail

Nuclear Imaging Table

Due to the various adjustment possibilities of the back and leg support and the movement range of the Angio ergometer, this table offers optimal patient comfort. The stability of the design and the construction make it comfortable to use for both the test subject and the operator. The back support is X-ray permeable.



Nuclear Imaging Table

Echo Cardiac Stress Table

The Echo Cardiac Stress Table can be used for echo cardiology. By using a remote control, the test subject can be placed in a supine position with an additional 45 degrees rotation over the longitudinal axis. This transversal slope to the left brings the heart in the optimal position for the echo research and researcher. Due to a removable part of the back support (near the heart) a better view from the backside is possible. The back support is adjustable and the Angio can be slid back and forward to suit the leg length.



Echo Cardiac Stress Table

MRI Ergometer

The Lode MRI Ergometer is a MR compatible ergometer which allows physiological exercise testing with the major upper leg muscle. Now it is possible to use an ergometer in the magnet without interference on the MRI experiment. Proper cardiac MR images will be obtained during exercise with heart rates above 100 bpm.

The Lode MRI Ergometer meets the following necessary physiological requirements:

- Dynamic cycling exercise.
- Major upper leg muscles active.
- Supine position.
- Comfort of patient:
 - Controlled increase in cardiac output and myocardial oxygen demand.
 - Stepwise and linear increments and decrements of power and heart rate.
 - Individual preference of pedaling speed.

The MRI Ergometer is compatible with various MR magnets of Siemens, Philips and GE.



MRI Ergometer



Modern designed meter for easy read-out of both the actual rpm and workload



Optional adjustable cranks



Optional Programmable Control Unit with 2 displays



Up/down movement of the MRI ergometer

IMAGING ERGOMETRY SYSTEMS

	ANGIO with fixation set	ANGIO with Nuclear Imaging Table	ANGIO with ECST	MRI Ergometer Circular	MRI Ergometer Up/Down	MRI Ergometer Push/Pull
BRAKING SYSTEM, electro-magnetic - workload continuous - workload peak (max. 6 minutes) - workload increments - workload accuracy	eddy current 7 – 750 watt 1000 watt 1 watt < 100W ± 3W 100 – 500W ≤ 3% 500 – 1000 W ≤ 5% 30 – 150 dynamic	eddy current 7 – 750 watt 1000 watt 1 watt < 100W ± 3W 100 – 500W ≤ 3% 500 – 1000 W ≤ 5% 30 – 150 dynamic	eddy current 7 – 750 watt 1000 watt 1 watt < 100W ± 3W 100 – 500W ≤ 3% 500 – 1000 W ≤ 5% 30 – 150 dynamic	eddy current 10 – 300 watt n/a 1 watt 10 – 100W ± 5W 100 – 300W ≤ 5%	eddy current 5 – 100 watt n/a 1 watt 5 – 50W ± 5W 50 – 100W ≤ 5%	eddy current 5 – 100 watt n/a 1 watt 5 – 50W ± 5W 50 – 100W ≤ 5%
- rpm independent - calibration				25 – 80 dynamic	5 – 60 dynamic	5 – 60 dynamic
WORKLOAD CONTROL - hyperbolic - linear - fixed torque - heartrate controlled	yes yes yes yes	yes yes yes yes	yes yes yes yes	yes yes yes	yes yes yes	yes yes yes
OPERATION - operation modus	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital	Manual, Analog, Terminal, optional: Protocols (24 free, HRC, Åstrand) analog + digital
- interface						
POSITIONING - sitting height (mm) - backpanel (upwards) - legpanel (downwards) - transversal slope (sideways) - Angio adjustability range (mm)	n/a n/a n/a n/a width: 580 – 860 height: 20 – 120	740 0 – 75° 0 – -43° n/a 200	635 0 – 32° n/a 0 – 45° 400	n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a	n/a n/a n/a n/a n/a
DISPLAY - display settings - workload - rpm digital - rpm bargraph - heart rate - target heart rate - timer - distance - torque - blood pressure - energy - SpO ₂	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes yes yes yes optional optional	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes yes yes optional optional	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes yes optional optional	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes optional	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes optional	LCD 2x16 char. custom selectable yes yes, 0 – 255 yes, 0 – 180 yes yes yes yes optional
AVAILABLE OPTIONS - Lode Ergometry Manager - programmable control unit - programmable control unit + SpO ₂ - blood pressure module - BPM headphone set - 0-Watt start-up system - heart rate - adjustable cranks - support for control unit - access step - arm support - pedal shoes (pediatric) - pedal shoes (extra large) - rebuild set	yes yes yes yes yes yes yes yes yes yes yes yes yes	yes yes yes yes yes yes yes yes yes yes yes yes yes	yes yes yes yes yes yes yes yes yes yes yes yes	yes yes yes yes yes yes yes yes yes yes yes yes	yes yes yes yes yes yes yes yes yes yes yes yes	yes yes yes yes yes yes yes yes yes yes yes yes
OTHER SPECIFICATIONS - dimensions: L x W x H in cm - dimensions: L x W x H in inch - weight excl. Angio - weight incl. Angio - power requirements	72 x 77 x 73 28 x 30 x 28 8 kg 41 kg 115/230 VAC 50/60 Hz (130 VA)	204 x 60 x 128 80 x 24 x 50 108 kg 141 kg 115/230 VAC 50/60 Hz (130 VA)	212 x 75 x 118 83 x 30 x 46 116 kg 149 kg 115/230 VAC 50/60 Hz (130 VA)	135 x 50 x 50 53 x 20 x 20 37 kg 115/230 VAC 50/60 Hz (130 VA)	135 x 50 x 50 53 x 20 x 20 37 kg 115/230 VAC 50/60 Hz (130 VA)	135 x 50 x 50 53 x 20 x 20 37 kg 115/230 VAC 50/60 Hz (130 VA)
STANDARDS & SAFETY NORMS	CE / ISO 9001 / ISO 13485 / FDA 510 (K) / IEC 60601-1 / DIN VDE 0750-23813405					



CORIVAL ERGOMETERS

VALIANT TREADMILLS

EXCALIBUR SPORT ERGOMETERS

ANGIO ARM ERGOMETERS

CALIBRATOR

rpm = revolutions per minute
HRC = Heart Rate Controlled
n/a = not applicable
changes without prior notice

IMAGING ERGOMETRY

- Accurate ergometer 7 - 1000 watt
- Multiple supine ergometry settings
- Digital and analog interface
- Clear read-out of rpm and workload



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Lode
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