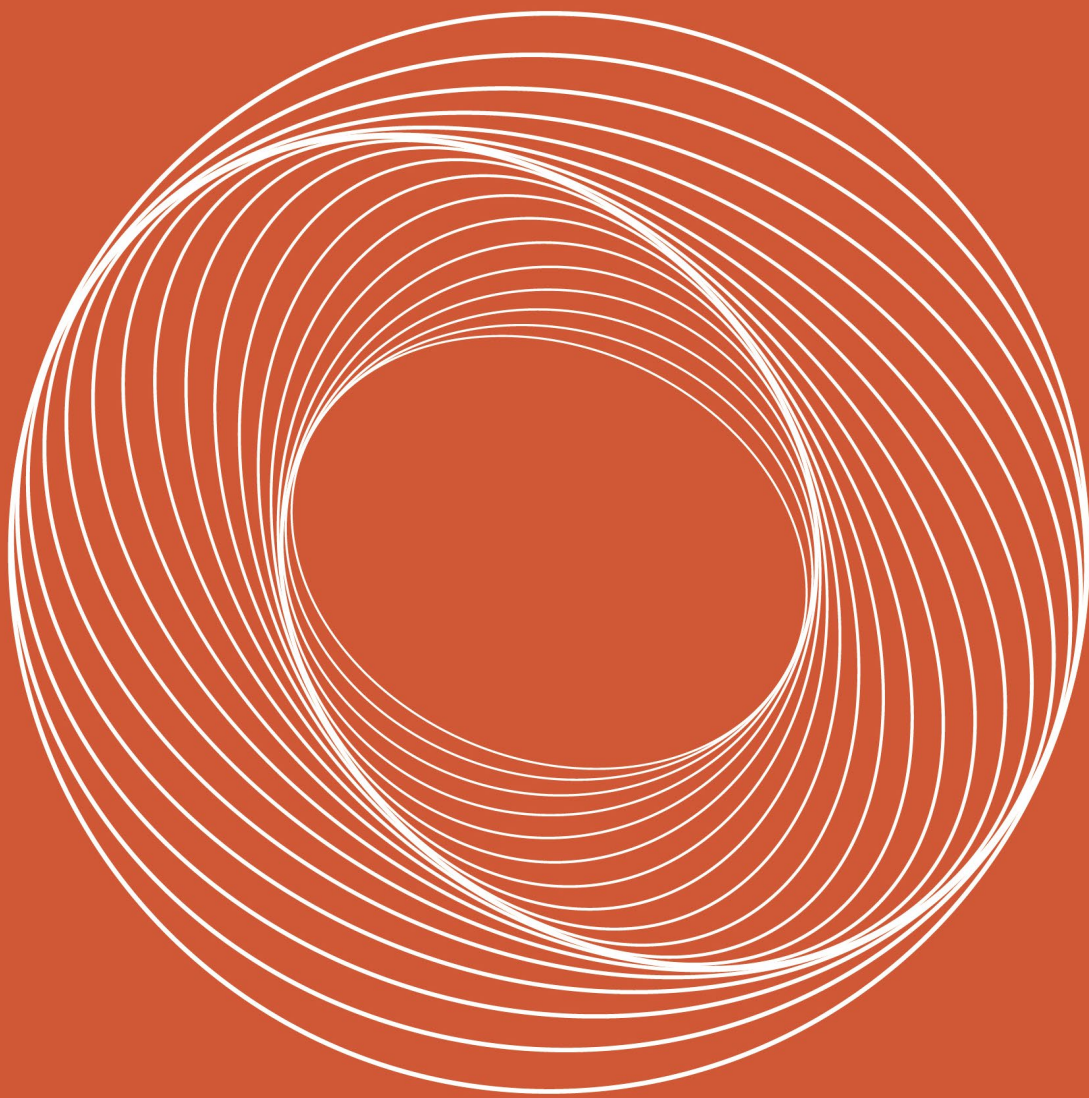




isoforce

Multiaxial progression

Test and Target

Neuromuscular testing with isoforce generates comprehensive reports that are easy to read and interpret. With a wide variety of available test modes, many parameters such as power, endurance, work, or the level of spasticity can be evaluated. Isoforce helps to set specific and realistic rehabilitation or training goals and records progress effectively.

Treat

Restore range of motion, coordination, flexibility, strength, and endurance. The different exercise modes make the system suitable for every stage of the rehabilitation cycle. No matter what type of muscle contraction (concentric/eccentric) or exercise mode (isometric, isotonic, isokinetic, or CPM) you need, isoforce offers the possibility to implement them all.

Evaluate and Prevent

Progress can be effectively monitored during training or rehabilitation programs. Retesting during the sports season provides valuable training insights and helps reduce the risk of injuries.



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Multi joint rehabilitation system

Different resistance modes

More than 20 joint movement patterns

OPERATION MODES

Concentric isokinetic

Concentric isokinetic is the mode used in traditional isokinetic testing. This test is the most reliable and precise method for quantifying strength. Research has demonstrated a strong correlation between isokinetic concentric testing and athletic performance.

Concentric isokinetic is also a useful tool for rehabilitation. The resistance adapts to muscle weakness or muscle pain, making this mode safe for training.

Eccentric isokinetic

Eccentric isokinetic can bring functional benefits superior to those of the concentric isokinetic.

Eccentric contractions are the strongest contractions the human body can perform.

These actions produce greater loading of the elastic musculoskeletal components and are utilized in many dynamic movements.

Continous passive motion

CPM is widely used in the first stages of rehabilitation for a wide variety of pathologies. It helps maintain flexibility, increase ROM, reduce stiffness and consequent pain, and maintain muscle tone. Apart from the traditional therapeutic applications, CPM can be used for evaluating the spasticity of neurological patients.

Isometric

Isometric contractions are active contractions used both for training and testing to minimize atrophy and assess the status of a muscle or a muscle group. They train the muscle without straining the joint. Isometric testing offers information about neuromuscular activation, as well as the status of the involved muscle.

Isotonic

Isotonic muscle testing completes isokinetic testing by providing valuable information on functional muscle characteristics, such as fatigue and power.

Comparison of muscle performance under different loads is possible through the bilateral comparative report. The system allows for setting different loads for eccentric and concentric contractions, providing a pathway for plyometric and eccentric strength development.



Features

Reliable

Self sensor calibration during power-on, real time online position, sensor and status monitoring.

Stabilization

Flexible Velcro bands:
Inexpensive to replace,
can be combined for all
sizes. Extra anchoring points.

Technically robust

Maintenance-free locking
mechanisms.

Dynamometer Motor Protection
(linear design, shaft coupling).

Interchangeable electronic parts.

Position and Alignment

Stepless setting of
dynamometer rotation and
height, seat rotation,
horizontal position, bottom
seat settings, laser pointer
for quick alignment.

isoforce

Tailored to your needs

Selection of frequency among
200, 1000, and 2000Hz of real
samples.

Customized ranges of speeds,
max. torque, ROM, and modes
(code protected).

Multi-field patient
database with filtering.

Easy synchronization with
EMGs without any need of
expensive toolkits.

Safe

Automatic release of the
dynamometer in case of loss of
power.

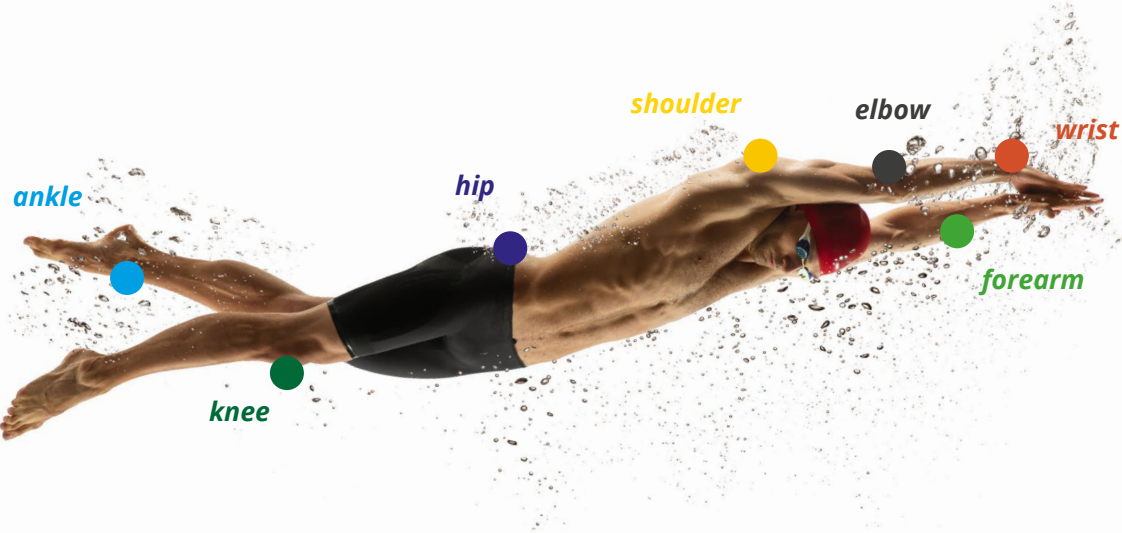
Three levels of ROM limitations,
system imposed depending
on the performed pattern,
software-set by the user,
mechanical.

Torque limits on con, ecc, and
cpm leading to doubling the
speed, instantly stop the
motion, and return to initial
position respectively. No need
to restart the system after.

Inconvenience button for
patient or operator to
immediately power-off system.

Patterns

Plantar Dorsi flexion prone		Inversion Eversion	Internal External rotation in 90°		Adduction Abduction horizontal
Internal External rotation seated		Pantarflexion Dorsiflexion	Flexion-adduction Extension abduction		Extension Flexion
Extension Flexion		Extension Flexion	Pronation Supination		External Internal rotation
Adduction Abduction		Extension Flexion seated	Extension Flexion		Adduction Abduction seated
Internal External rotation		Knee internal External rotation	Pronation Supination		Int. & Ext. rotation in 90° abduction
Internal External rotation seated		Radial Ulnar deviation	Extension Flexion		Int. & Ext. rotation standing



Adapters

ADL5		ADK2 optional	ADA1		ADT1	ADS1		ADS2
ADL1		ADL2	ADK1		ADW1	ADS3		ADS4
ADL3		ADL4						

The wide variety of optional add-ons

Broadens the therapeutic and rehabilitation possibilities of isoforce

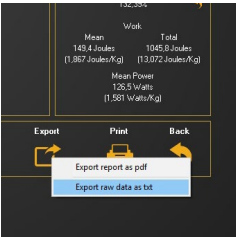
- Occupational therapy adapters
- Closed kinetic chain adapter for upper and lower limbs
- Trunk adapter
- Pulley adapter
- Pediatric adapters

 Pulley adapter	 Leg press
 Adapter trolley	 Trunk adapter

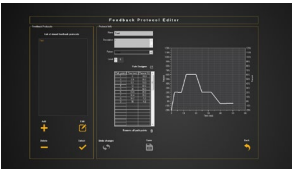
Work simulation / Occupational therapy

WSA27		WSA40	WSA23		WSA24	WSA20	
WSA29		WSA22	WSA26		WSA28		

Advanced software features



Export raw data in .xls, .pdf, txt. Zoom and cursor tools for curve analysis.



Biofeedback in real time with different exercise modes and report of the trainings results.



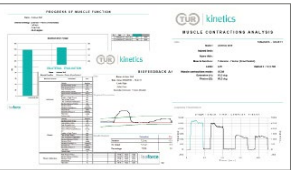
Torque limits (CON, ECC & CPM), threshold (ECC). Constriction time (ISOM). Soft stops (CON, ECC, ISOT & CPM), selection of frequency rate.



Intuitive, self-explanatory software.



Change of resistance modes and settings with one click.



5 printable report types: Analytical reports for each side under each resistance, bilateral reports, both numerical and graphical, progress reports to track improvements over time, exercise overview reports for a summary of training activities.

Reviews



The isoforce Isokinetic System has become an indispensable tool in our biomechanics lab. Its ergonomic design and great usability have greatly expedited our research on muscle performance and movement analysis. With its intuitive interface and robust capabilities, the Isoforce enables our team to gather comprehensive data with ease, giving us the possibility to make meaningful contributions to the field of biomechanics and clinical practice.

Department of Sports Health Sciences
Associate Professor



Implementing isoforce isokinetic technology in our clinic has revolutionized our approach to rehabilitation. Its precise and adjustable resistance levels allow for tailored treatment plans for each patient, promoting faster recovery and optimal outcomes. We've witnessed remarkable improvements in strength, range of motion, and overall patient satisfaction since integrating isoforce into our practice.

Konstantinos Georgilakis
CEO - Body Health Center Berlin

Universität Rostock



We have been using the isoforce isokinetic system in our Applied Human Movement Sciences working group since 2013 for clinical and scientific research purposes. Among other achievements, our working group recently published a scientific paper titled "Reliability of Muscle Strength and Hamstrings to Quadriceps Strength Imbalance Ratios During Concentric, Isometric, and Eccentric Maximal Voluntary Contractions Using the Isoforce Dynamometer" in the prestigious Journal of Sport Medicine. In addition, we successfully use the system for clinical applications in the context of rehabilitation. Operation of the Isoforce system is easy to learn and clearly structured.

-Prof. Dr. med. Dipl.-Ing. Rainer Bader Leiter Forschungslabor
Forschungslabor für Biomechanik & Implantattechnologie

Technical Specifications

Resistance modes

isokinetic:
concentric / concentric
eccentric / eccentric
combination of eccentric & concentric
continuous passive motion (cpm)
cpm / concentric, cpm / eccentric
isometric
isotonic
biofeedback in real time

Optional Accessories

Trunk Flexion / Extension
Lower / Upper limb closed kinetic chain
Work Simulation
Pulley adapter
Anti Shear

Technical Specifications

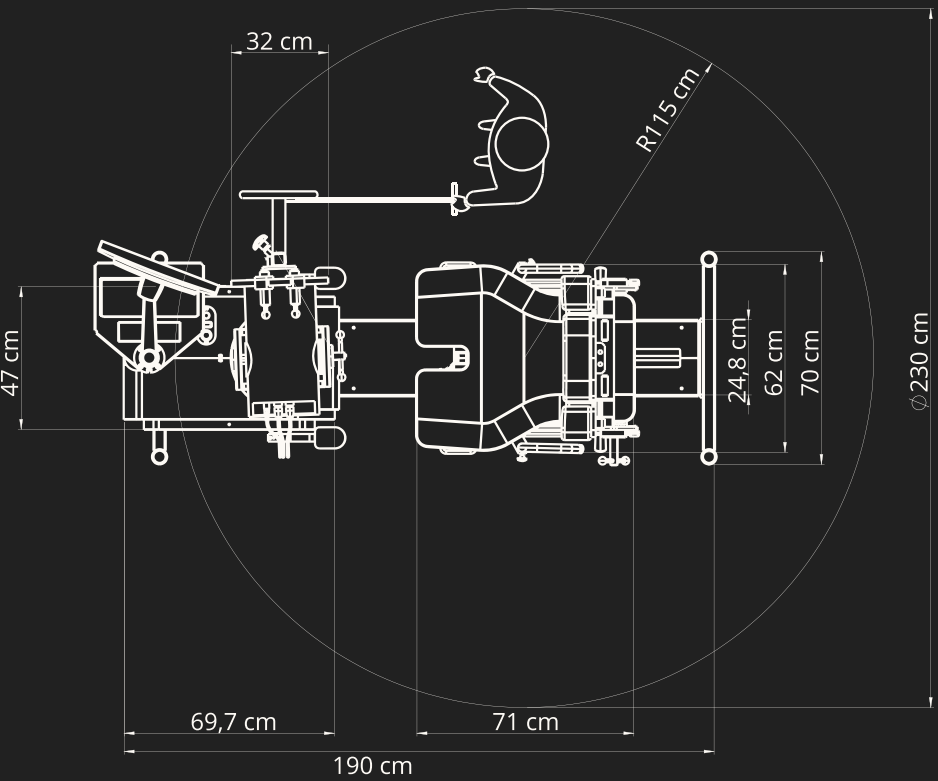
ROM: up to 360°
Max. peak torque: 700 Nm
Angular velocity: 0,25°/s - 540°/s
Dynamometer type: servo motor

Functional Features

Dynamometer: electrical lifting, tilting, rotation
Chair: electrical movements for horizontal, translation, bottom seat for / afth, back seat inclination, bottom seat tilt, rotation.

Computer

Operation System: windows 11 or later
CPU: Intel
Monitor: LCD19" (touch screen optional)
UPS: optional
Dimensions: 2000 / 700 / 1700mm (l / b / h)
Dimensions (seat horizontal) 2600 / 700 / 800mm (l / b / h)





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