



The Isomed Multi-functional Rehabilitation machine

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fasttwitchisokinetics.com

Fast Twitch Sports Software

Fast Twitch Isokinetic



ISOMED

FEATURES

- » Rotary and Linear Motion Hydraulic Resistance System
- » Computer Managed Training System
- » Touch Screen Control
- » Displays 80 Individual Fields of Data
- » Heavy duty Frame and Handle bar
- » Multi bench position.
- » Adjustable Angle Bench (-30 deg– 90 deg)
- » Footrest and stabilising straps
- » Counter thrust platform
- » Adjustable height, position and support
- » Unilateral and Bilateral Exercise system
- » Speeds range from 2 degrees/second to 600 degrees /second
- » Torque from 10nm to 1500nm
- » The System is Isokinetic and Isometric and Isotonic

ADDED FEATURES

- » Eccentric function measures 5nm to 700nm (newton metre)

FUNCTIONS

- » Dual Independent Concentric
- » Concentric/Eccentric Mode

REPORTS

- » Strength
- » Torque
- » Endurance
- » Power
- » Range of Motion
- » Comparison
- » Eccentric Load Report

FOOTPRINT

- » Width 3.0m. Length 3.0m Height 2.1m. Weight 300kg

Resistance Training

Movement will aid in the healing process of connective tissue, only if that movement generates sufficiently controlled stress which promotes correct alignment of collagen fiber and not the continual breakdown of fibers as they are laid down. This will result in a smaller but stronger scar and reduce the incidence of unwanted adhesions occurring. Movement will also promote the release of synovial fluid in the joint thus decreasing the chance of adhesions within the joint and that condition known as “Joint Gumming”. If too much stress is placed on healing structures too early, especially in the case of post surgical grafts, these structures can be further damaged, thus increasing the overall healing time. The benefits of hydraulic resistance training for safe injury rehabilitation have been known and utilized for some time.

The accommodative nature of hydraulic resistance allows the body's own pain/reflex feedback mechanism to control the amount of stress placed on healing structures. As pain or reflex inhibition occurs the muscles generating the movement automatically decrease their contractions thus decrease the resistance placed back on them and the injured connective tissue. Therefore, it is possible to safely begin limited restricted movement at the very early stages of rehabilitation. Advanced stages of rehabilitation may require eccentric resistance which is also available. Other advantages of hydraulic resistance exercise over isotonic exercise for rehabilitation are:

1. Hydraulics removes the “end point loading” which is associated with anti-gravity resistance mechanisms. Where there is an impending directional change there is a moment in which the weight is decelerated, held isometrically, then re-accelerated eccentrically. This point quite often coincides with the mechanical disadvantage and if movement becomes ballistic in nature then the deceleration forces are transferred onto the ligaments which control range of motion. Because

hydraulic resistance is dependent on movement or resistance, at the end point there is no movement, therefore no resistance, just smooth deceleration and smooth acceleration.

2. The ability to alter the minimum resistance being placed in opposing muscle groups allows for specific training of a group of muscles while the opposing group simply moves through a range of motion. This is particularly useful in the case of knee rehabilitation, where it is often of advantage to work the hamstring group at a higher intensity than the quadriceps.
3. Accommodative resistance allows the muscles to contact at an even intensity throughout the entire movement as the resistance adopts to the changing length tension and mechanical advantage of the muscles involved.
4. Hydraulics allows exercise to be performed at a much faster pace than isotonic resisted movements without any decrease in safety. This allows for end-stage rehabilitation training to prepare athletes for return to participation by training them at speeds of movement closer to that at which they compete, without the ballistic deceleration problems of free weights.
5. The hydraulic system makes it possible for people with back problems to exercise safely. Due to proper body positioning, the back is stabilized thus allowing the participant to exercise the usually weak muscles of the legs and upper body which aids in the prevention of further back problems and reduces the load on injured tissues.
6. Hydraulics, by nature, provides a very safe and effective means to re-strengthen injured areas, from the very early stages, right through to end-stage conditioning for return to participation.



Incline Bench



Accessory Stand



Range of Motion clutch Adjusts to 360 degrees



Adjustable Column Remote electronic positioning



Shoulder Flexion and Extension



Shoulder abduction and adduction for right and left hand positioning



Pectoral function Unilateral and Bilateral



Abdominal Trunk Flexion and Extension



Abdominal Trunk



Knee Flexion and Extension



Hip Flexion and Extension



Hip Abduction and Adduction



Shoulder Extension



***Shoulder Internal and External Rotation
Right and left hand***



***Elbow Flexion and extension Also
reverse curl both right and left
Unilateral and Bilateral***



***Pectoral function Also pullover shoulder
extension***



***Ankle Plantar and Dorsi Flexion Internal
and External Rotation***



***Pronation and Supination Inversion
and Eversion***

COMPARISON REPORT

ATHLETE DETAILS

	Initial	Final
Name	Sharni Layton	Sharni Layton
Date	24/02/2010	19/04/2012
Time	02:09 AM	07:07 AM
Height		
Weight		
Age		

Days between tests	785 Day(s)
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EXERCISE DETAILS

	Initial	Final
Exercise Name	Squat	Squat
Set Sequence	2	2
Number of Repetitions	12	10
Duration	11.92	9.56
Dial Extension	6	6
Dial Flexion	1	1

COMPARISON REPORT

PERFORMANCE TABLE - STRENGTH (REP)

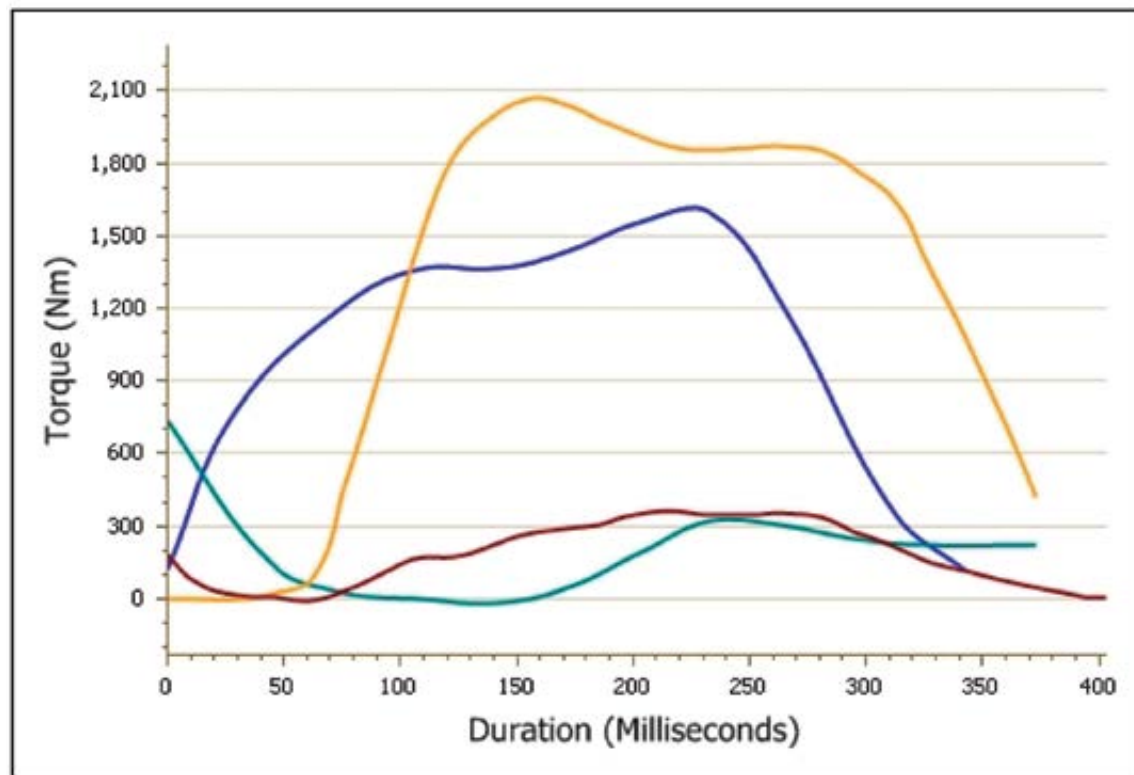
	Initial	Final	Change
Max Peak Torque (Ext)	1602	2068	466
Max Peak Torque (Flx)	733	362	-371
Max Peak Speed (Ext)	91	60	-31
Max Peak Speed (Flx)	107	72	-35
Time to Peak Torque (Ext)	0.23	0.16	-0.08
Time to Peak Torque (Flx)	0.00	0.22	0.22
Angle at Peak Torque (Ext)	12	4	-8
Angle at Peak Torque (Flx)	15	6	-9

PERFORMANCE TABLE - ENDURANCE (SET)

	Initial	Final	Change
Avg Peak Torque (Ext)	1456	1879	423
Torque Fatigue Ratio (Ext)	002%	009%	7
Avg Peak Torque (Flx)	309	325	16
Torque Fatigue Ratio (Flx)	-005%	009%	14
Avg Peak Speed (Ext)	59	55	-4
Speed Fatigue Ratio (Ext)	-010%	003%	13
Avg Peak Speed (Flx)	64	67	3
Speed Fatigue Ratio (Flx)	-006%	002%	8
Avg Time to Peak Torque (Ext)	0.40	0.30	-0.10
Avg Time to Peak Torque (Flx)	0.26	0.22	-0.04
Avg Stroke Time (Ext)	0.51	0.49	-0.02
Avg Stroke Time (Flx)	0.51	0.54	0.03

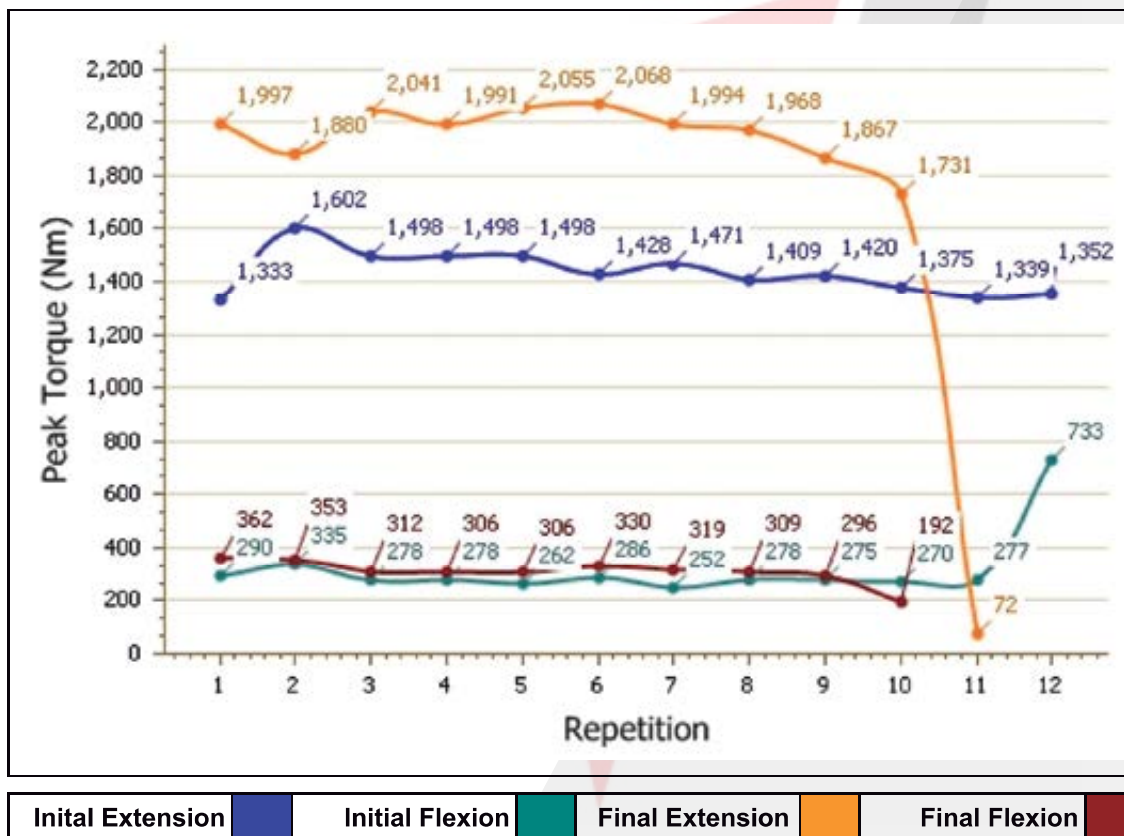
TORQUE REPORT

Strength curve (of Max Peak Torque)



TORQUE REPORT

Endurance Bar Chart



ISOMED IN ACTION

<https://www.youtube.com/watch?v=QU2JO79aY4o>

<https://www.youtube.com/watch?v=lcHaj4rZKto>

<https://www.youtube.com/watch?v=1ICOXZfe8RI>

<https://www.youtube.com/watch?v=uNnAP1dRsO8>

<https://www.youtube.com/watch?v=aQPLt5B5xsw>

https://www.youtube.com/watch?v=E_GOQIm-_n0



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