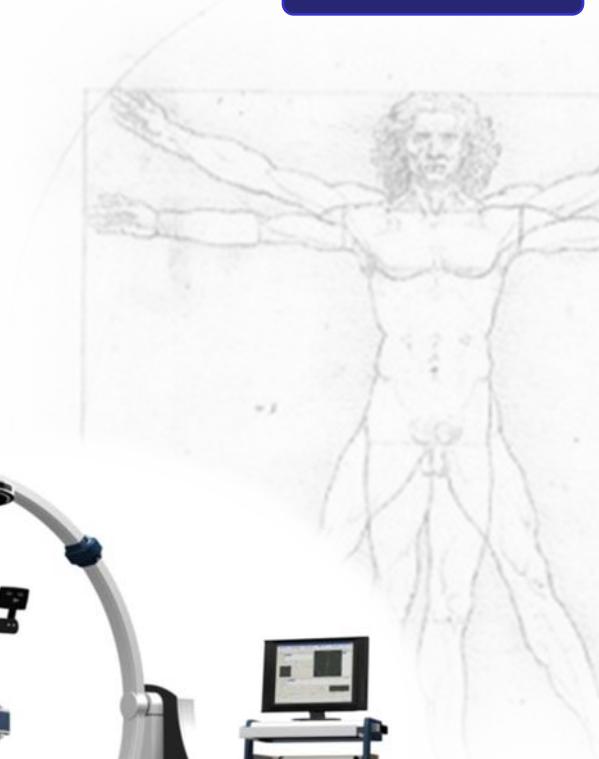


# 3D – N E W T O N

## [ 3D Spatial circuit exercise system ]

### INDICATIONS



- Stabilize spinal muscle
  - Stabilize deep part, contract muscle simultaneously
  - Spinal multifidus, musculus transversus abdominis
  - Iliopsoas, Quadratus Lumborum
  - Increase tension of Transverse Abdominis Increase distraction force of spinal by increasing internal pressure of stomach
- Evaluate muscular power and posture maintenance
  - Evaluate posture and muscular power
  - Evaluate muscular fatigue
  - Analyze posture maintenance
- Vitalize sense-exercise system
  - Stimulate sensational organization
  - Vitalize reflective contraction of muscle
  - Improve balance and stabilization
- Application
  - Stabilize after acute low back pain or spinal surgery
  - Chronic backache and degenerative patient
  - Spondylolisthesis and spondylolysis
  - Scoliosis and unbalanced posture
  - Parallel posture maintenance for athletics
- Automated exercise and evaluation system
  - Real time monitoring on digital laser displacement sensor
  - Customized exercise protocol based on automated computer system



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## 3D space rotation exercise system

Realize 3D solid exercise of 360 degree with slope of 0~60

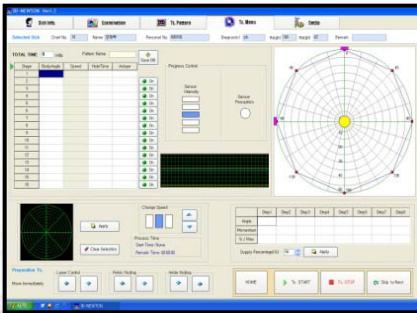
- Vitalize sensation. motive nerve
- Stimulate sensational organizations
- Stabilize balance of spinal
- Strengthen muscles on deep parts of spinal

## Intelligent muscular power evaluation system

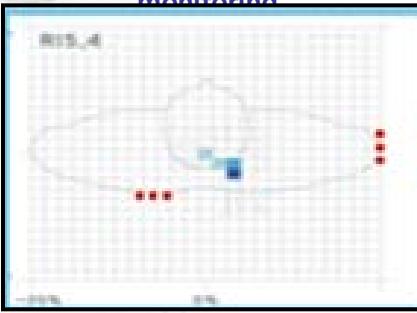
- Multiple direction muscular power Test
- Muscular power evaluation for individual customized exercise
- Compare results before / after exercise



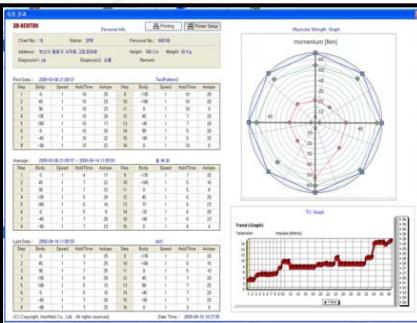
$$F = G \frac{m \cdot m}{r^2}$$



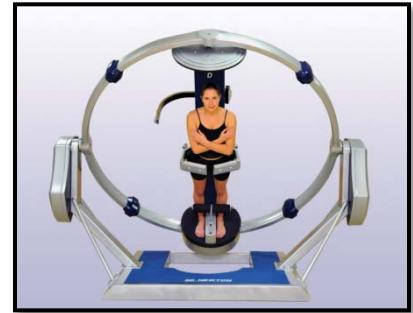
User oriented interface, customized protocol and monitoring



Data collection using digital laser muscular measure



$F_1 = m \cdot g - m v^2 - m \frac{v^2}{r}$  이 된다.  
여기서  $r^2 = k^2$ 라는 관계를 대입하면  
 $F_1 = m \cdot g - \frac{m v^2}{k^2} - \frac{m v^2}{k^2}$  이 된다.  
즉  $m$ 으로  $F_2$ 를 구하면  
 $F_2 = m \cdot \frac{4 \pi^2}{k^2} = \frac{4 \pi^2}{k^2} m$  이 된다.



Various degree from 0 -360



Various grade control from 0-60degree

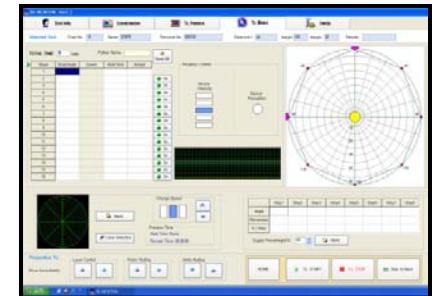
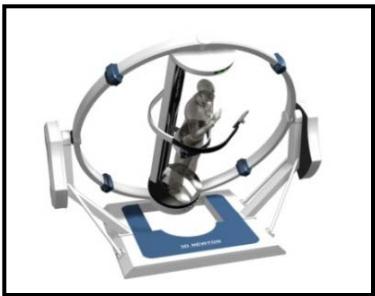
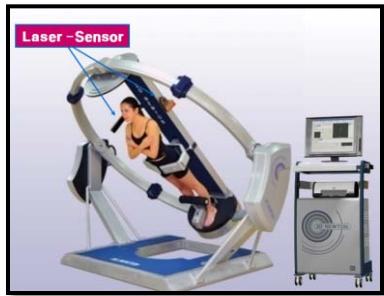


System to monitor 3D spatial exercise system and muscle in real time

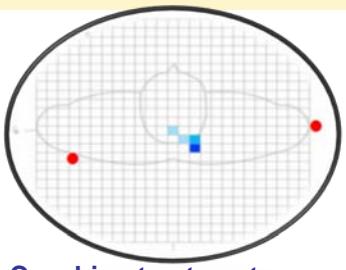
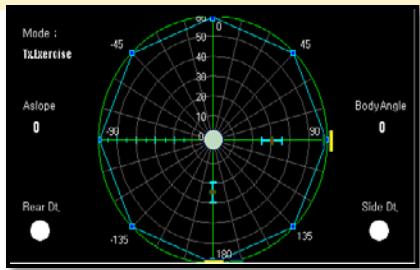


# Characteristics of 3D-NEWTON

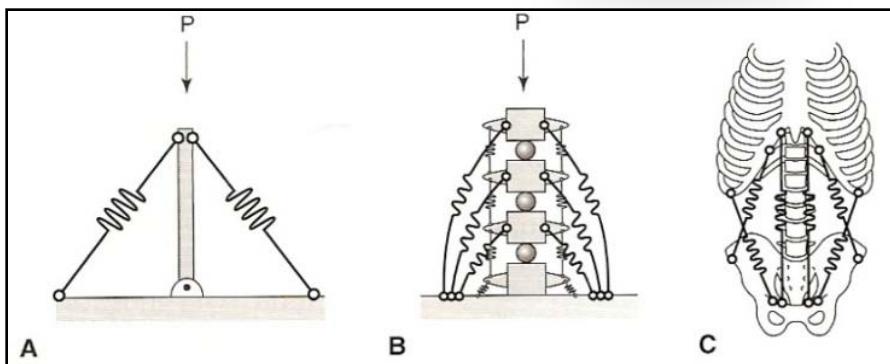
TRAINING SOLUTION  
Surgical bio-skills laboratories



Visual both sided communication system based on real time monitoring (Obtained 2010 medical new technology – Ministry of health and welfare)



Communication window of coaching treatment



- ✓ Visual bio feedback between machine and patient in real time, objective effect on patient, quantitative treatment efficiency
- ✓ Set customized protocol with user oriented interface
- ✓ Various applications with customized exercise program
- ✓ Real time coaching function through location check
- ✓ Collect objective data through digital laser monitoring system
- ✓ Output results of test in multi-direction graph
- ✓ Compare and anticipate results before/ after exercise with bio feedback function



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