

MYOTHRUSTA Principles

The leg extensors - primarily the gluteus maximus and quadriceps - constitute the body's largest and most powerful muscle group. They are also vitally important for a wide range of athletic and sporting activities.

Traditional methods of developing and strengthening leg extensors include the barbell squat and the leg press and leg extension machines. However each of these has significant limitations. They do not adequately exercise the muscles from full flexion to full extension, and there are also issues associated with adverse loading and excessive shear forces on the lumbar region and knee joints. The MyoThrusta has been designed to overcome these problems.

With an exercise like the squat, or a machine such as the conventional leg press, exercisers attempting heavy loads tend to restrict themselves to modest degrees of hip and knee flexion. This is because as joint flexion increases, the exerciser's capacity to cope with resistance decreases. By contrast, with the MyoThrusta the effective load is automatically reduced when the joints are flexed and increased as they extend.



Operation

The user operates from a supine position so that the action of the extensors can be effectively isolated. The recumbent position also means that the spine can comfortably cope with the compressive forces generated.

The arc through which the foot plate of the machine moves, is designed to closely parallel the path that the feet would normally traverse if moved from flexion to extension without resistance. It also creates a natural tendency for the two joint angles to vary synchronously so that they are effectively sharing the load throughout the exercise movement.

It can be seen that at the start position both hip and knee joints can be tightly flexed. As the feet move forward the trunk and shanks remain virtually parallel until the legs are fully extended. Thus the potential range of movement is from included angles of around 30° to 180°. In fact, by starting with the feet placed low on the footplate it is possible to hyper-extend the hips beyond 180°. Throughout this extreme range of movement high range muscle fibre recruitment is achieved by means MyoQuip's patented BBC technology.

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Multi-Functionality

Selecting different pin positions on the adjustment bar varies the rate at which the effective resistance changes.

With **low-range** pin settings, the increase in effective load from start to finish of the exercise movement is greatly increased. These notch settings are ideal for practising explosive or ballistic movements. When utilising heavy loads there is a “ballistic braking” effect toward the end of the movement, eliminating the need for the exerciser to decelerate.

With **mid-range** pin settings, the effective load from the start of the movement to full lockout is intended to match the body’s capacity to handle resistance, so that the exerciser has to expend basically the same degree of effort throughout the movement.

High-range pin settings are ideal when focus is on overcoming inertia, i.e., moving a heavy load from a position of rest. For example, if the objective is to improve performance in the barbell squat, the additional initial loading conditions allows the leg extensors to operate more effectively in the deep squat position.

Unique Characteristics

- Fully recumbent exercise position.
- Comfortable and natural body position throughout the full range of movement ensuring no adverse loading on spine, hips or knees.
- Exercise movement range from extreme flexion of hip and knee joints to full extension.
- Utilises the patented BBC technology providing effective activation of hip and knee extensors over the full range of movement.
- Synchronised joint angles distribute load evenly between hip and knee extensors.
- Pin adjustment of the rate of change of load providing multi-functionality of the apparatus.
- Intuitive operation - no requirement for instruction in correct technique.
- No danger of exerciser being trapped under excessive load.
- No stress on ankle joint - no imposed dorsiflexion of the ankle.
- Ideal for rehabilitation of hip or knee joints.

Specifications

Dimensions: 260cm x 100cm

Weight: ~120kg

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