

# *INFI*metric

  

## *by*

### ... A Very Simple Explanation

Like most things of value, INFImetric Exercise was an accidental discovery. We built something else, it produced an unexpected result, and that result pointed our thinking in an entirely new direction.

The Nautilus Compound-position Curling Machine has two separate curling handles, one for each hand. A single curling bar cannot be used in this machine because the two hands do not move in the same direction. And also because a man with long arms cannot curl both arms simultaneously, his hands would hit behind his head.

So a man with long arms curls one arm "up" while the other arm is going "down" in this machine . . . one arm is performing positive work while the other arm is performing negative work. And if the two movements are performed smoothly and in perfect synchronization, as they should be . . . then the weight-stack hangs motionless in the mid-way position. Both arms are working hard, but the weights are not moving.

When the implications of what is actually happening in such a situation are clearly understood, it becomes obvious that the weights are not required, are not necessary to the function of the machine . . . in fact, it becomes possible to actually improve the exercise by removing the weights.

You must understand that both hands move the same weight-stack, and also understand that it is possible to raise (or lower) the weights with both hands at the same time . . . possible, but not necessary; because a compensating redirection sprocket located on top of the weight-stack automatically adjusts for any unevenness of movement on the part of the hands and keeps the chain tight at all times regardless of what your two hands are doing. Thus the weight is always applied to both hands, no matter what relative positions your hands may be in. In effect, it is NOT possible for all of the weight to be thrown on one hand; instead, it is always providing resistance for both hands.

The extreme range of movement in this type of machine made such an arrangement necessary . . . and having built it and used it, we then were literally forced into the discovery of something of great value. Which is exactly the manner in which most inventions come about.

If the redirection sprocket that is normally located above and attached to the weight-stack is moved into the "halfway" position, where it would be if one arm was curled up and the other arm was still straight . . . and if the sprocket is firmly attached to the frame of the machine in that position . . . the weights can then be removed from the machine entirely, since they no longer serve any purpose at all.

It then becomes impossible to curl both arms at the same time; because one arm cannot go up without pulling the other arm down. In order for one arm to be fully bent, the other arm must be perfectly straight. You can have both arms "half" bent . . . but you can not fully bend or straighten both arms together.

When you enter the machine, both curling handles are in the mid-way position. Grip a handle in each hand and then bend one arm fully . . . which action will pull the other arm into a straight position. You are now ready to start the curling exercise.

As you curl one arm you are forced to straighten the other arm . . . so, as one arm performs positive work, the other arm is performing negative work. Regardless of your level of strength you will always be able to provide literally ANY AMOUNT of required resistance . . . because the resistance is coming from your negative working arm, and negative strength is always much higher than your positive strength. You pull with one arm and resist with the other . . . and the result is both positive and negative work throughout a full range of movement. When you become stronger you will then be able to pull harder, but you will always be able to resist more than you can pull . . . because your positive and negative strength levels increase in pace with each other.

Any speed of movement is possible . . . from maximum isometric contraction in any and every position to the fastest movement you are capable of. You have both stretching and pre-stretching in the starting position and heavy resistance in the fully-contracted finishing position. You cannot "cheat" because one arm is moving up while the other is going down . . . so good form during the positive part of the movement assures equally good form during the negative movement.

All of the features of Nautilus Machines except the weights are still required, of course . . . you still must have full-range, rotary form, double direct, omnidirectional, automatically variable, balanced resistance; all of which features are required with or without weights.

For a more detailed explanation write for the free booklet "STRENGTH TRAINING . . . THE PRESENT STATE OF THE ART."

# Exercise NAUTILUS

## Bench - Press Machines

The Nautilus INFImetric Bench-press Machine is the first available model of an entirely new line of heavy-duty exercise machines. Incorporating a number of valuable features that were previously unavailable in any type of exercise equipment.

The first bench-press exercise providing full-range movement for the pectoral muscles, allowing full contraction of the chest muscles in the finishing position . . . as well as full extension and stretching in the starting position.

The first bench-press exercise providing maximum resistance in every position throughout a full range of movement . . . no "sticking points" . . . no areas of little or no resistance.

The first bench-press exercise providing both heavy resistance and real safety . . . totally removing the chance of dropping the weight.

The first bench-press exercise that can be performed with heavy resistance without the need for "spotters."

The first bench-press exercise that provides the ability to make every repetition a "maximum possible" repetition . . . while providing both positive and negative work. The Nautilus staff does NOT recommend training in that fashion; but for those who wish to do so, it is possible to use absolutely maximum resistance in every repetition.

Instead, we suggest the use of seven or eight repetitions that are somewhat below maximum . . . followed by two or three maximum repetitions at the end of a set of about ten repetitions.

Any possible speed-of-movement can be used in this exercise . . . from a static, ZERO speed-of-movement to the fastest speed-of-movement that you are capable of. We suggest a fairly slow speed-of-movement with no jerking . . . with a very brief pause at both ends of each repetition; during which pause the muscles should be relaxed for approximately one second in order to encourage free circulation into the working muscles.

The "stroke" of the machine (the range of movement of the resistance handles) is adjustable in a quick and simple manner; push the left handle to the top position against no resistance, then turn the adjustment wheel with the right hand until resistance is felt against the left arm. That's all there is to it . . . a two-second adjustment makes the machine fit a midget or a giant.

In the three-position model that incorporates flat-bench pressing, incline-bench pressing, and decline-bench pressing, the adjustment of the bench is equally quick and simple . . . two-second adjustment from flat to incline or decline position.

Both models of this machine are fairly large, heavy and extremely rugged pieces of equipment . . . heavy, solid-steel resistance-arms, extra-heavy chain and sprocket drive with a tested strength of 6,100 pounds; the adjustable-bench model of this machine weighs approximately 330 pounds, the flat-bench model a bit less.

Overall construction is of heavy-walled tubing with an outside dimension of one and one-half by three inches, with solid-steel inserts at all points of stress and with solid-steel rotational-axis anchor points. These machines, in fact, are built for the heaviest possible use and should perform perfectly in heavy service almost literally FOREVER. You will eventually wear out the upholstery, although it is of extra heavy quality . . . and you might scratch the painted portions, although it is a very tough automobile-grade finish . . . but you will never wear out the machine. It would, in fact, be difficult if not outright impossible to damage the machines with a sledge-hammer.

Two heavy bolts attach the bench portion of the machine to the main body of the machine . . . so it is a simple matter to remove the bench in order to move the machine through a narrow door. In service, the machine requires a "working area" of approximately 6 feet by 5 feet, only 30 square feet. Shaped in the form of the letter T, the body of the machine can be placed next to and parallel with a wall, so that only the bench protrudes into the room.

**Nautilus**

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