



Wall Mount VersaPulley



INSTALLATION MANUAL

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Wall Mounted VersaPulley Installation and User Instructions.

What is a VersaPulley?

VersaPulley™ is a High-Low Pulley exercise machine that features an Infinitely Variable Cam and a 100% Compliant MV²™ resistance mechanism.

What is an Infinitely Variable Cam?

An Infinitely Variable Cam (cone) automatically matches the force exerted by the user to the compliant resistance generated by the MV² (flywheel).

What is MV² Resistance?

MV² resistance is based on Newton's Second Law of Physics, applied to rotary inertia, where Force equals Mass times Velocity Squared or $F=MV^2$. The resistance mechanism functions on the basic principle of Rotary Inertia where all the concentric energy to initiate flywheel movement is stored, then released throughout the eccentric contraction, providing a fully compliant user defined speed, force and range of motion.

Introduction

The VersaPulley is a Concentric, Eccentric, Plyometric Power, Strength and Endurance exercise machine that provides accommodating user defined Speed, Force and Range of Motion. The user pulls against the MV² resistance mechanism during the first half of the cycle (Concentric) then the resistance mechanism pulls back against the user in the second half of the cycle (Eccentric). The user PULLS and the machine PULLS BACK. The user imparts energy to a flywheel on the PULL stroke (Concentric) and depletes the imparted energy on the PULLBACK stroke (Eccentric).

Both Single and Tandem Exercise

The VersaPulley exercise machine is the only machine that can be used effectively by one or two people at the same time. Because the compliant resistance is fully accommodating, two people can exercise to their individual user defined levels, at the same time. The machine does not know if one or two people apply the force. For example one person can pull at 100 pounds and the other at 300 pounds or any combination of forces that adds up to 400 pounds. It automatically resists any force applied to it. This buddy workout allows two people to exercise at the same time and both get the same workout as if they were on separate machines

Principle of Operation

As previously stated the MV² resistance mechanism functions on the basic principle of Rotary Inertia where all the energy imparted to a flywheel is stored during the concentric contraction then released during the eccentric contraction. This Patented resistance is unique because a small change in speed results in a large increase in force, unlike that of any other exercise machine. It is this unique relationship between speed and force that automatically loads contracting muscles, through the full range of motion, with any force to which the muscles are capable of generating. MV² compliant resistance provides the ultimate user defined exercise.

Why MV² is Superior

The MV² resistance system bridges the gap between conventional exercise machines by combining Variable Speed with Variable Force over a Variable Range of Motion. Unlike Isokinetic exercise-Constant Speed, Isotonic exercise-Constant Force or Isometric exercise-Constant Distance the MV² provides a VariKineToniMetric Exercise -Variable Speed, Variable Force over a Variable distance. The result is a machine that combines the positive effects of Isokinetic with Isotonic exercises. This adds a completely new dimension to exercise that is not available on any other exercise machine. Namely, it allows for a Rapid Maximum Rate of Force Development throughout the full range of motion for one or two people. In other words it functions like an Infinitely Variable Cam.

It is an accepted fact that the most complete and effective power, strength and endurance exercise should include Concentric, Eccentric and Plyometric muscle stimulation. By definition a concentric contraction is the shortening of muscle fiber under load. An eccentric contraction is a lengthening of a muscle fiber under load. Plyometric exercise is the rapid reversal of a lengthening to a shortening muscle fiber under load. The MV² provides all three of these modalities on every repetition.

Assembly Instructions

The wall mount VersaPulley (VP) consists of a Resistance Mechanism (RM) and a vertically mounted Post with 7 pulley positions. Two spacers and five wood lag screws are provided to mount the RM and Post to a wall.

To install, find a vertical 2 x 4 wood stud or other vertical wood member in the wall where the VP is to be installed. Use a stud finder or tap the wall with a hammer to find the vertical stud by the difference between the sounds of solid or open space. Place the RM on the floor with the flywheel down. Two spacers on the machine are provided to clear the baseboard. Use two lag screws to mount the RM to the selected vertical stud.

Place the Post against the wall directly above the center of the RM with the notches in the chain links pointing towards the ceiling. Secure the Post to the vertical stud with 3 lag screws. This completes dry wall installation.

Installation on concrete or brick walls requires concrete lag expansion joints (which have been included in hardware package). Drill holes, insert expansion joint (see photos on page 8) and when bolts are screwed in the joint expands to secure it to concrete. A concrete drill bit, 5, 3/8" bolt size expansion joints and 5, 3/8" bolts will do the job. General procedure is the same as for other walls.

VersaPulley Exercise Guide.

The range of motion is determined by the placement of the handle along the length of the rope. The speed range is determined by the placement of the pulley in positions 1 through 4 near the cone. The number of weights attached to the flywheel determines the force range.

This Exercise Guide focuses on the unique capability of the VP resistance mechanism to generate a Maximum Rate of Force Development throughout the full range of motion. The mechanism functions like an infinitely variable cam where the resistance of the machine automatically matches the strength of the user from 4 to 400 pounds. Exerting a maximum effort throughout the full range of motion, at faster speeds, is a key to the development of strength, power and endurance.

Exercise on the VP produces both (pull) concentric and (pull back) eccentric forces in the muscles. All exercises on the VP are performed in a rhythmic motion as the rope unwinds and rewinds on the cone. The pull stroke causes the rope to unwind while the pullback stroke rewinds the rope. The harder you pull the harder it pulls back.

The RM resistance mechanism consists of a cone shaped flywheel drive. When the pull motion is initiated the flywheel inertia resists the applied force. When the rope reaches the end position at the top of the cone it continues to rotate to rewind the rope and creates a pullback force essentially equal to the pull force. In other words the energy imparted to rotate the flywheel during the pull stroke is depleted during the pullback stroke. Energy-in equals Energy-out.

To start any exercise set the handle along the length of the rope so that at the end of the pull motion the rope is at the top of the cone. The end of the pull motion is a fixed point. The beginning of the stroke can be varied. To start the exercise the rope should be partially wrapped around the cone. If necessary, twist the knob to place a few turns of rope on the cone. Now pull the handle until the rope totally unwinds on the cone to complete the pull cycle. Then keep an even tension in the rope as it rewinds in the pullback motion. Continue the rhythmic pull and pullback cycles.

CAUTION: Flywheel weights must be added or removed in opposite pairs. This is necessary to maintain a balanced flywheel.

It is recommended that the user experiment with the speed and force settings to find the combinations that best suit their needs.

Types of Training Available

Drop Sets: Performing a rep or a set near maximum load and dropping to a lighter load for additional reps. This is accomplished automatically because as the muscles fatigue the compliant resistance decreases to match the applied force.

Explosive Training:

Is the ability to accelerate a load concentrically and decelerate it eccentrically in fast explosive movements. Exercise speeds are up to 5 times faster than any weight stack machine. Set pulley in cone position 1 and use minimum number of flywheel weights.

Plyometrics:

Load applied to a lengthening muscle prior to reversal with load applied to the same shortening muscle. Pull as fast as possible at end of eccentric contraction.

Super Sets:

Performing several exercise movements for the same muscle group in rapid succession.

Periodization:

Intensities: High intensity reps at 90% of a one rep max, moderate intensity reps at 70% of max, Low intensity reps at 60% of max. Adjust cone pulley and weights to suit.

Exercise Routines

There are an endless number of exercise routines that can be performed on the VP limited only by your imagination. Ten common exercise routines are listed below. When you become familiar with them you can create other exercise motions that fit your needs.

1. Biceps curls. Place the pulley in position 1 on post. Stand facing VP and perform curls using dual handgrips. Muscle: Biceps

2. Triceps pull downs. Place the pulley in highest position. Stand facing VP and perform triceps pull downs using dual handgrips. Muscle: Triceps

3. Standing 45 Degree row. Place the pulley in position 1 on post. Pull dual handgrips to chest high or along side body. Then return with constant force during pullback. Back straight, bend at waist, pulling only with arms and shoulders. Muscle: Biceps, Triceps, Deltoids, Lats.

4. Standing one-arm rotational rows. Place pulley at chest high position and face VP. Hold one handgrip in front of body and simultaneously pull grip and rotate body approximately 90 degrees to end of arm motion. Pulley can be placed between lowest position and chest high for variety. Muscle: Abs, Biceps, Triceps, Shoulder, and Deltoids.

5. Seated rotational rows. Sit in chair facing VP. Place pulley chest high and repeat 3 above. Muscle: Biceps, Lats, Deltoids.

6. Lunges. Face VP and hold dual grips close to the chest. Place one leg forward in the lunge position and push back with the extended leg. Bend the knee with controlled deceleration on the forward lunge. Continue with same leg or alternate legs on every other lunge. Lunges can also be performed by attaching rope to a waist belt. Muscle: Glutes, Hamstrings, Quads, Hip Extension, Core.

7. Diagonal Chops. Position body 90 degrees with VP. Place the pulley at top position. Exercise motion starts with arms extended towards top pulley location. Pull dual handles and rotate body at the waist while arms rotate and move down and extend to lowest position attainable. Repeat right and left facing positions. Muscle: Arms, Chest, Shoulders, Back, Trunk Rotators.

8. Diagonal lifts. Position body 90 degrees with VP. Place the pulley in position 1. Start with arms extended toward the low pulley position, body rotated towards post and bent at the waist. Knees slightly bent. Pull up and across body with arms while rotating body away from VP and straightening legs. End of exercise motion is with arms extended above head, legs straight and body rotated beyond starting 90 Degree start position. Muscle: Hip Rotators, Trunk Rotators, Quads, Arms, Chest, Shoulder, Back.

9. Seated Lat pull. Position a chair in front of VP. Place the pulley at top position. Using dual handgrips keeping back straight, extend arms toward top pulley and retract hands to center or side of mid chest level. Muscle: Lats, Biceps, Core.

10. Clean and jerk. Place pulley in lowest position and face VP. Bend knees slightly with arms extended toward pulley. Start arm motion like a biceps curl and continue upward until arms are fully extended above the head, while straightening legs. Maintain tension back to the start position. Muscle: Arms, Chest, Shoulder, Back, Quads, Glutes, Core.

Specifications

Physical Size

Depth	19 inches
Width	18 inches
Height	16 inches
Height of post	72 inches
Weight	55 pounds

Physical Characteristics

Structural	Steel
Rope, tensile strength	1500 pounds
Pulleys, working load	480 pounds
Standard color	Black

Functional Features

Force developed	1 pound to 400 pounds
Speed	User defined
Range of motion	1 inch to 10 feet
Muscle Action	Concentric, Eccentric, Plyometric
Joint angles	Unlimited Multi-Angular
Plane of motion	Unlimited Multi-Planer

VersaPulley Accommodations

Age	6 years or older
Level of fitness	Sedentary to elite athlete
Height and weight	No limitation
Force application	Closed-Chain through arms, legs, trunk

Maintenance

Caution: Do not release the rope during any exercise motion before finishing the pullback motion. Releasing the rope prior to the pullback phase can cause the ropeman cam to damage the rope during a sudden stop.

Symptom: If the resistance is not constant when pulling on the rope, the cone and rope may be dirty causing the rope to slip on the cone. The cone and rope need to be cleaned. Use Rubbing Alcohol and a rag to wipe the cone clean of any deposits on it. A soft scouring pad may be necessary to remove stubborn grime. Soak a rag in Rubbing Alcohol and clean the rope.

Symptom: Visually inspect the rope. Replace rope if the external braid is cut through or worn through to the core of the rope. The rope used on the VersaPulley is a high quality mountain climbing utility rope. It has a tensile strength of over 1,500 pounds and is expected to last for years.

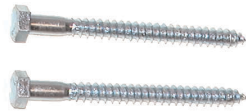
Installation Instructions for Wood and Concrete Walls

Tools Required:

1/2 Inch Concrete Drill
1/2" Wrench
3/16" Wood Drill

Parts Required:

- (2) 5/16 x 3 1/2 Lag Screws
- (3) 5/16 x 2 1/2 Lag Screws
- (5) 5/16 Plain Flat Washers
- (5) 5/16 x 1/4 Lag Expansion Shields / Cement Anchors



(2) 5/16 x 3 1/2 Lag Screws



(3) 5/16 x 2 1/2 Lag Screws



(5) 5/16 Plain Flat Washers



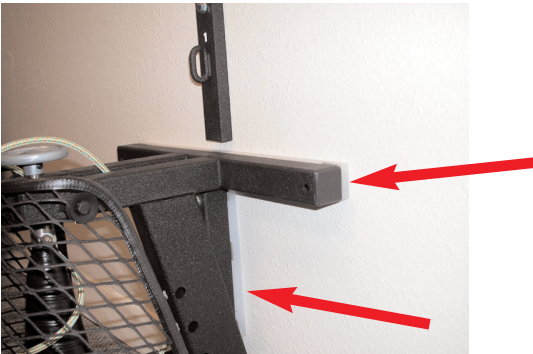
(5) 5/16 x 1 1/4 Lag Expansion Shields / Cement Anchors

Step 1



Select a location with a minimum of four feet of free floor space around machine. Place the machine against the wall.

Step 2



NOTE: If the wall has no baseboard remove the 2 plastic spacers from the back of the machine so that it fits flush against the wall.

For a wall with a wood frame locate a vertical 2x4 wood stud or other vertical wooden member using a stud finder or by tapping the wall with a hammer and using sound to find the stud. Locate the center of the machine on the center of the stud.

Step 3



Concrete or Wood mark the wall with a pencil, in two places, using the two holes in the machine as a guide.

Step 4



Concrete or Wood Place the post over the center of the machine with number 7 at the top (the cut slots in links pointing up). Locate post in a vertical position and mark the wall with a pencil in three places using the holes in the post as a guide.

Step 5



Be sure to mount post with the cut slots in links pointing up.

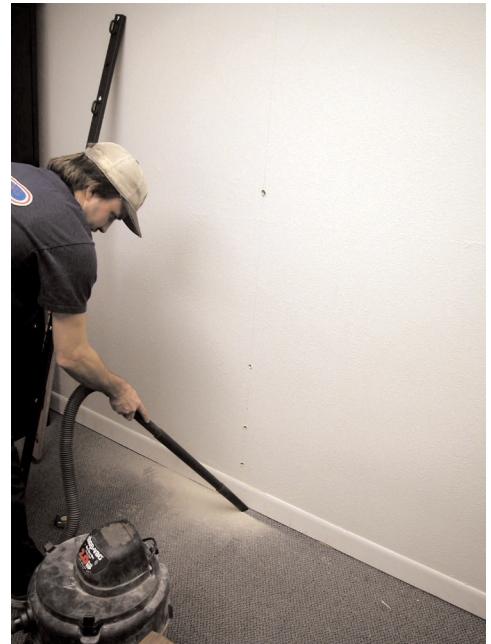
Step 6



For installing in cement wall drill five 1/2" diameter holes, 1 1/2" deep.

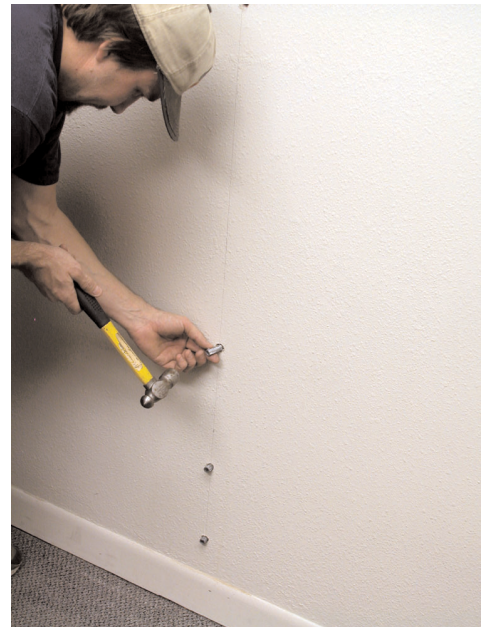
For wood stud installation in a wood framed wall drill five 3/16" diameter holes in center of the stud being sure the machine center and post align with a vertical wood stud.

Step 7



Clean and vacuum up debris from holes in wall and floor.

Step 8



For concrete walls, use hammer to drive five insets into the holes until they are flush with the wall.

Step 9



Fasten the machine to the wall with two long screws and the post with three short screws and five washers.

Step 10



Select and place the pulley on the post in any location from one to seven to complete the installation.

**For Questions or Comments
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