



Portable VersaPulley PVP Installation and User Instructions.



Made In USA

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What is a VersaPulley?

What Is VersaPulley? The VersaPulley trains “Reactive Strength” it is the link to becoming strong and fast. Reactive Strength is defined as the ability to absorb more force in one direction, and rapidly change and apply more force in the opposite direction (quickly switch from eccentric to concentric), also known as plyometric and/or stretch-shorten cycle. VersaPulley accomplishes this in all 3 planes using MV² technology which is a patented rotating inertial conical flywheel for the resistance.

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 loaded user defined speed, force and range of motion. The flywheel incorporates the strength and speed of reactive strength. Loads on the VersaPulley are similar to Olympic lifts and you can use the VersaPulley in all three planes; vertical, lateral and horizontal. Eccentric exercise has proven to be a well-accepted treatment method for injuries. The VersaPulley is a great tool to have in your arsenal to help improve reactive strength, and for injury prevention. It also compliments traditional explosive Olympic lifts.

Why the Cone?

We know that increasing velocities on weight stacks and free weights produce decreasing forces. The cone shape causes a change in the geometry of the flywheel as it spins to match the pull force to the user’s ability. As a movement is performed during the concentric phase, the cord comes off or unwraps off of the cone shape. During this action the cord pulls on a narrowing diameter (increasing cone rotary inertia--resistance) as it comes off and up the cone until the end of the range of movement. This causes a continuous increase in difficulty or force potential as an increase in velocity/effort is attempted throughout the movement for maximum rate of force development.

Weight Stacks, Pneumatic, Free Weights

The end of motion on the VersaPulley is opposite to that of weight stack or plate loaded machines. On weight stack machines, the start of a concentric motion is a fixed point, with the weight stack down, and the end of motion is a selected point along the range of motion. On the VersaPulley the end of the concentric motion is a fixed point and the end of the eccentric motion varies depending on users motion/limb length preparing and stopping to produce next concentric rep. There is a Plyometric effect at the end of the eccentric contraction (reversal) and start of the concentric contraction. No flying weight stacks, maximal speed and force throughout the range of motion is possible with smooth rhythmic motions creating non-impact Plyometric/Stretch Shorten cycles. By adjusting the position of the handle along the cord an infinite variety of Multi-Plane and Multi-Joint exercises are available. Pneumatic resistance is fast and fixed. There is no inertial eccentric component. With inertial resistance forces are maximally produced by the effort of the user and that inertial energy put into the flywheel must be eccentrically decelerated and stopped in preparation for the next concentric rep. VersaPulley has been found to be an effective loading device comparable to Olympic lifts with significant applications in all planes.

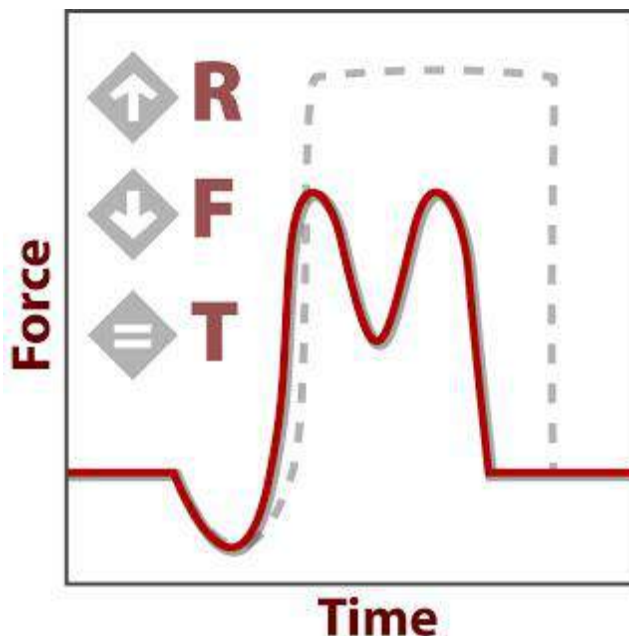
What is Reactive Strength?

Non-Impact Reactive Strength : Your Missing Link

What?

Reactive strength is a unique and often overlooked component of training. It is defined as the ability to absorb more force in one direction, and rapidly change and apply more force in the opposite direction (quickly switch from eccentric to concentric).

The Force Time graph shown to the right shows an athlete who has poor reactive strength, indicated by the large decrease “Force Dip” in the middle. This is a loss of Force or Energy as the athlete makes a transition from one direction to another. The dotted line is an ideal curve, marked by no loss of Force and sufficient reactive strength,



Why?

Reactive strength serves as the link between traditional strength training and high speed skills like sprinting and throwing. Reactive strength is the link between being just strong and being strong and fast. Failing to properly incorporate reactive strength into your training program could be the missing ingredient to improving your performance.

How?

Generally, plyometrics or jumping have been the primary means of improving reactive strength as they require great coordination, nervous system input, and body control. However, these benefits also make such movements difficult to perform frequently due to the stress. Athletes that are in-season, injured, or sore should heed cause from these hard impacts associated with landing and jumping. However, inertia training with a weighted flywheel effectively incorporates the strength and speed balance of reactive strength, as *the goal is to move the cone as fast as possible, stop it and start again*. The unique aspect is the lack of impact, as the feet remain planted on the ground throughout the movements, placing less stress on the joints while still providing a great inertial loaded stretch/shorten stimulus to the muscles and nervous system.

When?

As mentioned, the main benefit of the flywheel is inertia, which is the building of resistance due to increasing speed, like a big rock rolling downhill. This inertia becomes so great that it overloads the muscles to cause eccentric contractions, which has crucial performance and healing benefits.

From a performance standpoint, this eccentric strength determines your finishing movement, or concentric force production. As far as injury prevention, eccentric exercise has proven to be a well-accepted treatment method for injuries

Summary

You need *reactive strength* training to avoid the “Force Dip”, and if you are active, you need to provide *non-impact* eccentric stimulus to avoid and/or prevent injuries.

INTRODUCTION

The VersaPulley is a **Concentric, Eccentric, Plyometric** Power, Strength and Endurance exercise machine that provides accommodating Speed, Force and Range of Motion. The user pulls against the MV^2 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). The goal is to move the flywheel as fast as possible creating inertia, stop it and start again. Reactive strength serves as the link between traditional strength training and high speed skills like sprinting and throwing. Many athletes loose force in their movement due to the lack of Reactive Strength.

A unique aspect of the VersaPulley is the lack of impact, as feet remain planted on the ground throughout the movements, placing less stress on joints and still providing a max inertial stretch shortening stimulus to the muscle and nervous system.

Assembly Instructions

The Portable VersaPulley (PVP) consists of a Resistance Mechanism (RM) mounted on a base with a fixed pulley where all pull angles originate. A single “D” handle and 2 mounting straps are also included.



The PVP can be mounted with the 2 mounting straps to objects such as a basketball post, pillar, weight stack machine, squat rack, chain link fence, thus, the ability of the PVP to be very portable. The preferred position is vertical, with the fixed pulley on top. Mounting on its side is also a good way if the object being mounted to, requires a horizontal orientation. Mounting horizontally also places the fixed pulley at a lower position for low to high movements. It may also be mounted shoulder height or higher for high to low movements. (For detailed mounting instructions see pages 21-22)

VersaPulley Exercise Guide

The range of motion is determined by the placement of the handle along the length of the rope and the position of the user's body. The speed range is determined by the placement of the pulley vertically in positions 1 through 3 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 PVP 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 PVP produces both (pull) concentric and (pull back) eccentric forces in the muscles. All exercises on the PVP 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.

NOTE: *The harder you pull, the harder it pulls back.*

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.



IPU Display

INERTIAL POWER UNIT

(Optional Upgrade Feature)



IPU definition:

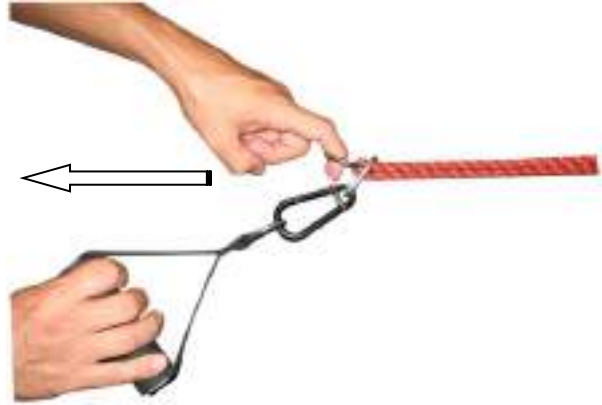
IPU, Inertial Power Unit, is a whole number directly proportional to Work per unit of Time displayed on the VersaPulley and other Inertial Resisted machines manufactured by Heart Rate Inc.

Horse Power is defined as Work per unit of Time that is frequently displayed as Watts which equals one Joule/Sec, or Ft-Lb/Sec, Kcal/Sec, Btu/Sec.. Since these numbers can be confusing to the user the IPU was chosen to represent power exerted by the user on Inertial Resisted machines. It is a number directly proportional to or the Energy exerted by a person exercising to overcome the inertial resistance of a flywheel. The goal is to move the flywheel as fast as possible; this results in a higher IPU power output. Maximal resistance is created when the flywheel is moved faster.

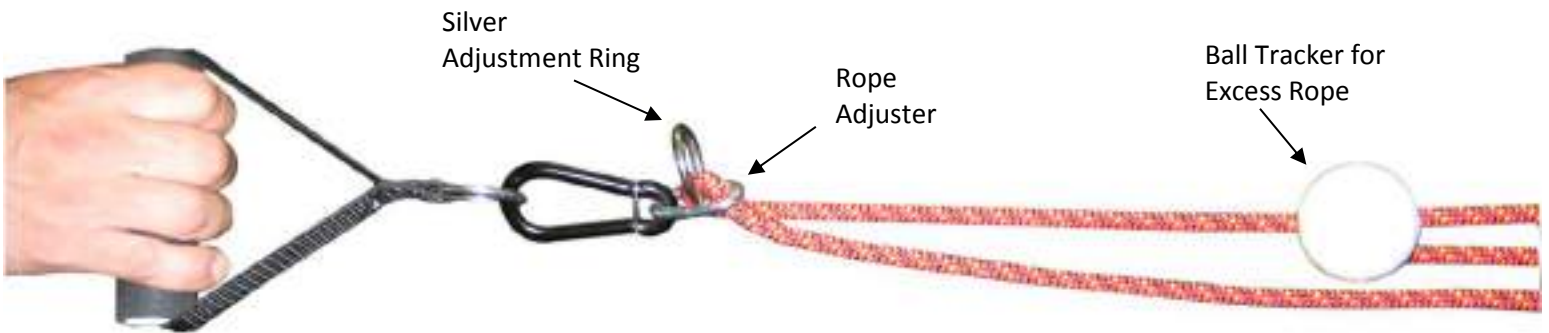
The IPU is automatically calculated and displayed using rotational velocity of the flywheel. The IPU is displayed as a simple easy to remember whole number representing energy. It can be used to monitor the energy exerted stroke by stroke and to measure the increase in energy expenditure capability with follow on workouts.

ADJUSTING THE HANDLE POSITION

Lengthen Rope.



To increase range of motion, relax hand grip, pull ring straight back. This will release friction and allow handle to be positioned for a longer range of motion.



Shorten Rope.



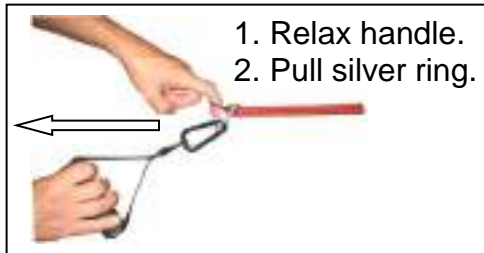
To shorten range of motion, relax hand grip, pull "excess" rope connected to white ball. This will shorten grip, and reduce the range of motion.

QUICK START GUIDE

Set up for 'Rotational Chop' exercise

1. Set pull angle with High/Low pulley on vertical post to thigh high
2. Set desired Speed/Force to #3 on side of machine
3. Set END range of motion - Adjust/Move handle to end of rotational chop movement or End Range of Motion.

To lengthen range of motion.



To shorten range of motion.



Rotational Chop / Start Position
Set high-low to thigh high level.



Rotational Chop / End Position

How to start set for any exercise performed:

1. "First Pull" to get cone started
2. "Second Pull" adjust body for end range of movement desired
3. "Third pull" is your first Rep. You should be in proper position and the cord should be the set length for your desired movement

NOTE: Pull harder with each rep. Control eccentric loading /pull back. It will pull you back, so maintain good balance. Keep tension on cord, no slack in cord, to full end of motion stopping flywheel. Immediately pull again, Start next rep.

IMPORTANT

Cord should remain taut/without slack through-out the movement, keep slack out of cord.

(This promotes a smooth, proper and controlled movement.)

You should perform the full range of motion, do not pause or stop during movement.

(This will allow the machine to work muscles to their full potential—time under tension)

Pre-wrapping the rope and adding weights to fly-wheel.



Turn knob located at top of black cone. This will begin wrapping rope onto cone. Once rope is “pre-wrapped” begin pulling. Just as quick as the rope is being pulled off the cone, it will then reverse and begin to re-wrap in the other direction.

HOW TO OBTAIN A HIGHER ECCENTRIC (PULL BACK) FORCE THAN THE CONCENTRIC (PULL) FORCE.

On a normal pull/pullback cycle, the concentric (pull) and eccentric (pullback) force and range of motion is essentially equal. To increase the eccentric force, decrease the range of motion during pullback on every other rep. This causes the total energy that is imparted over a longer range of motion to be depleted over a shorter range of motion, on every other stroke, thereby requiring a higher eccentric force. By shortening the eccentric stroke lengths, maximal eccentric loads can be attained.

To increase the eccentric load up to maximal, over the full range of motion, use two people to pull (concentric load) and one person to pull back (eccentric load) then alternate. The energy imparted to the resistance mechanism by two people is taken out by one person to produce the eccentric overload.

FLYWHEEL MASS

The mass of the flywheel defines a large range of speed/force curves that can be varied with the speed/force adjuster knob. The entire speed/force envelope can be increased or decreased by increasing or decreasing the flywheel mass as follows:

There are two permanent half moon weights fixed onto the flywheel, with the ability to add two more half moon discs on top with six removable 2” steel flywheel weights provided with the machine. The removable weights can be added in pairs located 180 degrees apart. It is not necessary to change weights after the optimum speed/force envelope has been determined. Try various combinations to customize the flywheel of your choice. In general, very fast sport functional training uses a minimum of weights, normal functional training uses 6 and 8 for the highest forces.

CAUTION: *When changing weights, tie off the pull rope so that no one can rotate the flywheel and be sure that weights are added or removed in opposing pairs.*

MASS (Flywheel weight) CHANGE INSTRUCTIONS

The resistance mechanism in the VersaPulley was designed for a wide range of resistive forces and speeds for a variety of applications from small muscle shoulder rehabilitation to large muscle squats.

At any given flywheel mass the machine automatically adjusts to the power capability of the user. This means that the resistance generated is equal to the force applied by the user at the associated speed that the user can generate.

The mass of the flywheel can be changed by adding or deleting steel blocks or half moon discs in pairs.

The Portable VersaPulley flywheel comes with two fixed half moon weights, two removable half moon 5 lb. weights and six 1 lb. removable weight blocks to modify the force/speed parameters.

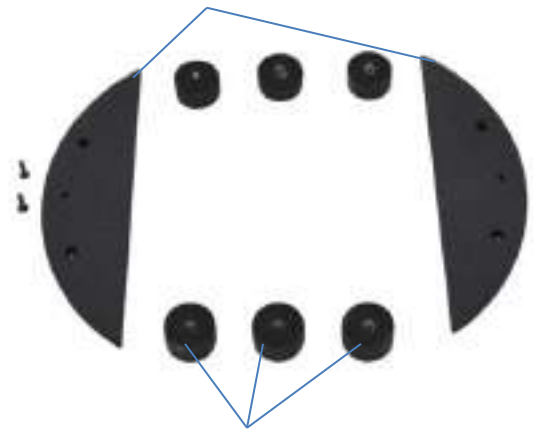
The flywheel has six locations to add or delete 1 lb. steel weights in opposite pairs; Three on left side and three on the right side.

At any flywheel mass the power of the individual is automatically resisted by the resistance mechanism in the machine with a wide selection of forces and speeds.



“Fixed” half moon

2 Removable half moon weights 5 lbs each



6 Removable weights 1 lb. each



**IMPORTANT:
FLYWHEEL WEIGHTS MUST BE ADDED OR DELETED in PAIRS AND IN
DIRECTLY OPPOSITE LOCATIONS.**

VERTICAL, HORIZONTAL and LATERAL MOVEMENT EXERCISES

Here are three "KEY" VersaPulley exercises that focuses on Vertical, Horizontal and Lateral movement planes:

1. Vertical plane

Push Press



2. Horizontal plane

Single Leg Squat to Row



3. Lateral plane

Woodchop





Exercise Routines

There are an endless number of exercise routines that can be performed on the PVP 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.

Exercises performed on the Portable VersaPulley (PVP) are labeled:

(A) = Primary movements

(B) = Secondary movements

This Exercise and Training Guide focuses on the VersaPulley (PVP) with MV² Technology and its unique capability of generating a Maximum Rate of Force Development throughout the full range of motion. Training Athletes to exert maximum force and effort throughout the full range of motion, at faster speeds, is a key to the development of maximum power resulting in a sport specific transfer.

(B) Exercise Name: 1) Acceleration Step Ups

Class: Power/Strength-Maximal Rate of Force Development/Stretch Shorten (Very) Long Response

Objective: To develop Maximum Rate of Force Production.

Starting Position: Facing a stable box 12"-18" high, away from PVP, with perfect posture-stomach tight and hips tall.

Procedure: Facing box, raise right leg. Accelerate the right leg through the box and extend it into triple extension driving up the opposite leg to parallel. Slowly come back down. Finish.

Reset and repeat with opposite leg.

Coaching Key: Perfect posture-stomach tight-keep chest over knee. Get maximum triple extension out of hip, knee and ankle joints.

(B) Exercise Name: 2) Lateral Acceleration Step Ups

Class: Power/Strength-Maximal Rate of Force/Strength Shorten (Very) Long Response.

Objective: To develop a Maximum Rate of Force Development concentrically. Overcoming the eccentric loading on the planted leg for cutting movements.

Starting Position: Face perpendicular to the PVP, outside foot on a stable box 12"-18" high with a waist belt attached to the cord at the inside leg closest to the PVP. Stomach tight with perfect posture.

Procedure: Raise outside leg. Accelerate the outside leg through the box and extend into triple extension, driving up the opposite leg to parallel. Slowly come back down. Finish and reset with opposite leg.

Coaching Key: Perfect posture. Keep chest over the knees, hips back-drive into extension of the hip, knee and ankle.

(B) Exercise Name: 3) Lateral Deceleration Lunges

Class: Power/Strength-Stretch Shorten (Very) long Response.

Objective: To develop deceleration/eccentric aspect of the planted leg for cutting movements and Maximum Rate of Force Development concentrically.

Starting Position: Feet perpendicular to the PVP with waist belt on and attached to the hip closest to the PVP. Standing 3-4 feet away from PVP. Stomach tight. Perfect posture.

Procedure: Step with inside leg toward the PVP decelerating the movement with the hips and legs-weight on the inside ball of the foot. Good positive angles and explosively drive out through the hip, knee and ankle joint. Repeat.

Coaching Key: Perfect posture. Good athletic multi-directional stance. Chest over the knees, hips back; good positive angles with the ground; drive laterally into extension of the hip, knee and ankle.

(B) Exercise Name: 4) Forward Deceleration Lunges

Class: Power/Strength Stretch Shorten (Very) Long Response.

Objective: To develop deceleration /eccentric aspect of the planted leg and maximum rate of force development concentrically.

Starting Position: Perfect Posture. Keep stomach tight facing the PVP. Waist belt on and attached to cord in front and center/center of hips.

Procedure: Step toward the PVP with controlled deceleration of the flexed forward leg. Keep the knee over the toe with perfect posture. Drive back and away from the VP and repeat.

Coaching Key: Keep perfect posture. Bend at the hips and control deceleration of the movement.

(B) Exercise Name: 5) Backward Lunge To Extension-Box

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop a Maximum Rate of Force Development concentrically out of the hips with eccentric loading of the glutes and hamstring.

Starting Position: Facing away from the PVP with the waist belt on and attached to cord at center of back between the hips. Position box approximately 12"-18" high and 12"-18" away from the PVP platform.

Procedure: With perfect posture, drop the back leg into a lunge. Extend forward from the hip, knee and ankle. Swing the rear leg forward with acceleration mechanics touching the top of the box and returning. Repeat.

Coaching Key: Perfect posture. Bend using the hips. Try to re-accelerate from the backward portion of the lunge through acceleration to the box-triple extension.

(B) Exercise Name: 6) Crossover to Extension-Box

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To teach the crossover and maximize the crossover step utilizing Maximal Rate of Force Development and eccentric loading of the PVP to improve crossover and cutting mechanics necessary for development of multi-directional speed.

Starting Position: Place feet perpendicular to the PVP. With waist belt on and attached at the hip closest to MV², with a 12"-18" box stand 12"-18" away from PVP platform.

Procedure: From the multi-directional stance, drive off the inside leg. Extending the hip, knee and ankle. Cross over with the toe up and knee across the outside leg and touching top of box. Slowly decelerate the leg back down and repeat.

Coaching Key: Good athletic stance. Perfect posture. Keep chest over the knees with good positive angles. Toe up knee across on the crossover.

(B) Exercise Name: 7) 45 Degree Squat to Extension

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the hips and legs without vertical loading. Develop Maximum Rate of Force Development concentrically and work on the eccentric aspect of the lowering (preparation) phase.

Starting Position: With waist belt on, face away from the PVP, place the cord at back in the center of the hips facing a box or bench. Lean forward supporting your weight with your hands on a box or bench 24" high.

Procedure: Start at the bottom position in a full squat. Stomach tight. Perfect posture. Extend out from hips, knees and ankles into triple extension and control the descent setting the hips back toward the PVP.

Coaching Key: Perfect posture. Stomach tight. Initiate movement with the hips. Perform a triple hip, knee and ankle extension movement.

(B) Exercise Name: 8) 45 degree One Leg acceleration Extensions

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop Acceleration Mechanics-Strength and power through the hip, knee and ankle joints.

Starting Position: Facing away from the PVP with waist belt on and cord attached at center rear off the hips with hands against a bench or box approximately 30" high leaning at 45 degrees in a split squat/lunge position.

Procedure: Drive off the forward leg and extend from the hip, knee and ankle while swinging the rear leg forward.

Coaching Key: Perfect posture. Stomach tight. Extend out of the hip, knee and ankle. Keep the toe, knee and heel up on the off leg.

(B) Exercise Name: 9) Front Squat to a Press

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the musculature of hips, legs, back and upper body. Develop Maximum Rate of Force Development through extension of hip, knee and ankles.

Starting Position: Facing the PVP holding a straight bar. Adjust cord to shoulder height with elbows up and in. Hold bar at the shoulders.

Procedure: Stomach tight. Perfect posture. Initiate movement of the hips, back and down through a full squat position, accelerating out of the bottom with the gluts. Drive through the hip, knee and ankle joints into extension while pressing the bar above the head.

Coaching Key: Perfect posture. Stomach tight. Initiate movement with the hips. Drive tall with the hips right through the top of the bar.

(B) Exercise Name: 10) Standing Pulls From the Floor

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the musculature of the hips, legs, upper and lower back.

Starting Position: Facing the PVP with the straight bar attached, feet back approximately 18", chest up, arms straight. Drop hip down into a full squat position utilizing the hips and legs.

Procedure: Chest up, stomach tight, drive up and slightly back extending the hips, knees and ankles while pulling the bar into the waist.

Coaching Key: Perfect posture Stomach tight. Initiate movement with the hips. Perform a triple extension of hip, knee and ankle.

Exercise Name: 11) One Leg-Hip Flexion-Box

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response. For unilateral strength and stability.

Objective: To develop closed chain hip extension and open chain hip flexion.

Starting Position: Facing away from the PVP stand on a 10"-18" box with the back leg attached to the PVP cord around the toe. Stabilize yourself with a lateral support apparatus.

Procedure: Perfect posture. Stomach tight. Reaching the back foot down toward the PVP, drive off the leg on the box into extension bringing the opposite ankle, knee and hip into flexion.

Coaching Key: Perfect posture, toe up, heel up, thigh up, extend off the down leg.

Exercise Name: 12) One Leg-Hip Abduction

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response. Stability.

Objective: To develop Closed and Open Chain Abduction.

Starting Position: Facing perpendicular to the PVP with cord attached to outside leg.

Procedure: Reach the outside leg toward the PVP in front of the other leg and then rapidly accelerate abducting the leg away from the body.

Coaching Key: Perfect posture. Stomach tight. Encourage Maximum Rate of Force Development. Try to keep outside leg straight. Note: Most of the work or focus is on the stationary, stabilizing leg. Closed chain, ground based.

Exercise Name: 13) One Leg-Hip Adduction-Closed Chain

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response. Stability.

Objective: To develop Closed and Open Chain Adduction.

Starting Position: Facing perpendicular to the PVP with cord attached to the inside leg, chest up, stomach tight. For balance stabilize yourself against a lateral support apparatus with pulley at knee or chest height.

Procedure: Reach the attached leg out toward the PVP pull leg down and adduct leg across the ground- based leg.

Coaching Key: Perfect posture. Keep leg straight, and toe up. Non-moving, ground-based leg does most of the work.

Exercise Name: 14) One Straight Leg-Hip Extension

Class: Power/Strength – Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.
Unilateral closed chain stability.

Objective: To develop hip extensors needed for maximal and absolute speed and power.

Starting Position: Facing the PVP perfect posture, stomach tight, with cord wrapped around the foot, toe dorsi-flexed, holding onto support apparatus for balance.

Procedure: Perfect posture. Stomach tight; chest height pulley position, allow leg to reach up to the pulley position. Toe dorsi-flexed, aggressively pull the heel down with leg straight utilizing your glutes, hamstrings and low back into extension. Decelerate as you return back up towards starting point, half way in the motion.

Coaching Key: Perfect posture. Stomach tight. Keep leg straight and toe up.

(B) Exercise Name: 15) Standing Shoulder Shrug

Class: Strength/Power. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the trap, shoulder, upper neck and shoulder region. In both concentric and eccentric loading this helps decrease the potential for neck injuries and trains deceleration of the throwing shoulder.

Starting Position: Facing the PVP, pulley fixed at the low position with the straight bar or double (dual) handle, standing 10"-12" from PVP, Chest upright, legs bent, stomach tight.

Procedure: From a semi-squat extend out from the hips, knees and ankles into triple extension. Aggressively shrug the shoulders up to the ears keeping chin tucked in, stomach tight – decelerate on the way back down and repeat.

Coaching Key: Chest up, chin tall, chin tucked in, initiate movement with the hips with triple extension of hip, knee and ankle. Bend leg at ankle, knee and hip to absorb some shock.

Exercise Name: 16) Seated Row With Legs

Class: Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop musculature of the upper back and hips.

Starting Position: With the power attachment in place, cord attached to the lower portion of the cable column. With Chest up and back tight, hold double handles and flex the legs and back.

Procedure: Pull the handles back into the outside of the torso by extending the legs, hips, back and arms. Return to starting position by flexing the hips and knees. Repeat

Coaching Key: Chest up. Stomach tight. Utilize the legs and hips.

Note: The PVP is also a cardio/aerobic workout using faster speeds and lighter loads.

(B) Exercise Name: 17) Seated Row

Class: Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop musculature of the upper back.

Starting Position: Same as 16 with only slight flexing of knees and hips.

Procedure: Chest up, stretch through the scapula. Retract with the shoulder blades (scapula) and pull handle into the outside of the torso, utilizing only back and arms.

Coaching Key: Chest up. Stomach tight throughout retraction.

(A) Exercise Name: 18) Seated One Arm Rotational Row-Parallel

Class: Seated rotational strength and power. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop musculature of the upper torso and integration of the rotational movement of the upper torso of the abdominal, low back and upper back-bicep posterior shoulder.

Starting Position: Start in a similar seated position as in the seated row with the pulley set in the lower position, holding a single handle in one hand.

Procedure: With torso and hand toward the machine, rotate and extend the back while retracting the scapula and pulling the hand into the ribs of the lateral aspect of the torso. Slowly decelerate using the entire torso and upper back and reverse.

Coaching Key: Try to rotate the shoulder, keeping the back tight retracting the scapula. Use a slow deceleration back towards the machine while returning to the start position.

(A) Exercise Name: 19) Seated One Arm Rotational Row-Perpendicular

Class: Seated Rotational Strength and Power. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop musculature of the upper torso and integration of the rotational movements of the upper torso of the abdominals, low back, upper back, bicep and posterior shoulder.

Starting Position: Feet perpendicular to the PVP reach across the body grabbing a single handle attached to the low pulley device.

Procedure: Rotating the shoulder toward the low pulley device, rotate the shoulder back while retracting the scapula and pulling the handle into the lower ribs. Slowly decelerate using the torso and repeat.

Coaching Key: Rotating the torso toward the machine keeping the chest and stomach tight.

(A) Exercise Name: 20) Standing One Arm Rotational Row

Class: Standing Rotational Power and Strength. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the rotational aspect or movement found in multi-directional speed, cutting and any type of hitting or throwing motion.

Starting Position: Feet perpendicular to the PVP cord pulley at the lower setting with one handle.

Procedure: Reach out with the outside arm across the inside leg toward the machine. Keep the chest up while bending the legs and the hips. Explosively turn the inside hip rotating with the glutes and the torso into extension of the hip, knee, and ankle joint, while pulling the handle into the ribs. Slowly decelerate back to the starting position and repeat.

Coaching Key: Chest up, stomach tight, feet just outside the hips. Control the movement, keeping your balance.

(A) Exercise Name: 21) Standing One Arm Rotational Row-Parallel

Class: Standing Rotational Power and Strength. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the rotational aspect or movement found in multi-directional speed, cutting and any type of hitting or throwing motion; as well as development of the hips, quads, hamstrings, low back and upper back.

Starting Position: Standing with feet parallel to the PVP with cord and pulley at low moderate or high position, hold the single handle with one arm.

Procedure: Reaching toward the machine while bending at the hips, keep the center of gravity /center of mass close together while extending out of the glutes, hips and upper back. Rotate with the torso, pulling the hand back into the ribs. Slowly decelerate controlling the movement allowing the hips to absorb the energy.

Coaching Key: Feet just outside the hips, chest up and stomach tight, control the movement keeping your balance, center of gravity/center of mass in proper relationship.

(A) Exercise Name: 22) Standing One Leg, One Arm Rotational Row-Parallel.

Class: Standing Unilateral Rotational Strength and Power. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response. Closed Chain.

Objective: To develop kinetic chain rotational stability and power in hips and upper back.

Starting Position: Facing PVP with cord pulley at waist level. Attach a single handle and stand on the left leg. Grabbing handle with the left arm, right leg suspended, keep chest up, stomach tight and hip bent.

Procedure: Rotate toward the PVP with extension out of the left leg, rotation of the torso, retracting of the scapula and pulling the handle back into the hip.

Coaching Key: Good posture, keeping hip bent. Perform at the pace where you can control and stabilize the movement.

(A) Exercise Name: 23) Standing One Leg, One Arm Rotational Row-Perpendicular

Class: Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: Same as 22, stability, balance, single leg rotational strength and power.

Starting Position: Same as 22 but with feet perpendicular to PVP

Procedure: Reach across body with the outside arm toward PVP keeping the chest up and stomach tight. Rotate out of the inside hip by externally rotating the hip and rotating the torso and pulling the handle into the hip.

Coaching Key: Good posture. Perform at the pace where you can control and stabilize movement.

(A) Exercise Name: 24) Standing Diagonal Lifting-Perpendicular

Class: Standing Diagonal Rotational/Diagonal Power and Strength with Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To functionally develop the musculature of the core, upper back and triceps.

Starting Position: Cord pull at the lowest position. Position both feet perpendicular just outside hip width. Reaching down and across the body, bend the hips and legs, grabbing two handles.

Procedure: Dropping the hips down and keeping the chest up. Extend from the hips and the torso while rotating the inside hip and shoulders diagonally when lifting the handles up and across the body into a pressing

action. Lower the handles in the exact same manner from the top of the press across the chest and down towards the PVP slowing/decelerating the PVP down with the hips, upper and lower back. **Coaching Key:** Feet outside the hips. Chest up and stomach tight. Use your hips to accelerate the PVP keeping the elbow high when pulling across the body.

Exercise Name: 25) Kneeling Diagonal Chops-Perpendicular

Class: Standing Rotational/Diagonal Power and Strength with Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To functionally develop the muscles of the core, upper back and triceps.

Starting Position: Facing perpendicular to the PVP kneel with the inside leg straighter to leverage against the PVP. Cord pulley set to highest level utilizing a rope handle to rotate the shoulders up to the highest point.

Procedure: From kneeling position with arms fully extended reaching up as high as possible toward the PVP pulley attach point. Initiate the movement by retracting the scapulas and pulling the hand in towards the chest while rotating the torso. Finish by fully extending the hands to the floor and combining abdominal flexion with rotation. Slowly return and decelerate through the same pattern.

Coaching Key: Kneel on the outside leg and leverage with the inside leg. Pull the handle down and across the body focusing on using the core.

(A) Exercise Name: 26) One Arm Diagonal Pressing-Perpendicular

Class: Standing Rotational/Diagonal Power and Strength with Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the muscles of the hips and torso in a rotational pattern.

Starting Position: Feet perpendicular to the PVP with inside foot approximately 10" from the mast gripping the handle with the inside arm in a pressing motion.

Procedure: Squat down with the chest up and the stomach tight, drive from the hips rotating the inside leg and shoulder toward the back of the PVP platform. Extend through the hip, knee and ankle. Finish by extending the hand overhead.

Coaching Key: Feet outside the hips, chest up, and hips back to utilize the movement through the handle. Extend through the hip, knee, ankle and shoulder joint at the end range of motion.

(A) Exercise Name: 27) Standing Physio Ball Rotation-Perpendicular

Class: Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop rotational power of the entire body utilizing the hip and torso rotators.

Starting Position: With the PVP pulley attached at waist height hold a physio ball in your arms. Hold the handle with the outside arm that is now hugging the physio ball.

Procedure: Utilizing the legs and torso, rotate the hip and torso holding the handle and rotating the rope around the physio ball, crating an arc to maximize resistance.

Coaching Key: Hug the physio ball holding the handle on the outside of the ball utilizing the hips and torso to rotate around the ball.

(B) Exercise Name: 28) Physio Ball Pull Over Extension

Class: Upper Torso Strength and Power, Flexion. Maximal Rate of Force Development/Stretch Shorten (Very) Long Response.

Objective: To develop the musculature of the abdominals, upper back and triceps.

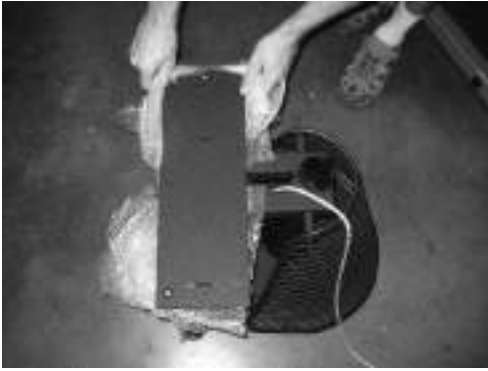
Starting Position: With the PVP pulley attached at the lowest point and the physio ball on the deck, roll down the physio ball with the hips down towards the ground and hands wrapped in the handle of the PVP. Arch back and stretch.

Procedure: Letting the ball support the lower back, reach back toward the PVP and aggressively pull over from the abdominals through the scapula and the arms, extending the rope with the upper back, abdominals and triceps.

Coaching Key: Keep hips down, arch back and stretch fully.

Unpacking and Installation

1



Remove plastic packing material.

2



Untie rope.

3



Make sure pulley/rope are positioned at the top of plate.

4



Mount the back plate to main cross support using provided bolt, washer and nut.

5



Using Allen wrench and 9/16" wrench, Securely attach plate.

6



Next, strap lower part of machine to a post, fence or secure structure.

7



Pull bottom strap through buckle, tightly.

8



Pull strap through slit at top of base plate, then wrap around a post, fence or other secure structure.

9



Insert strap in ratchet buckle.

10



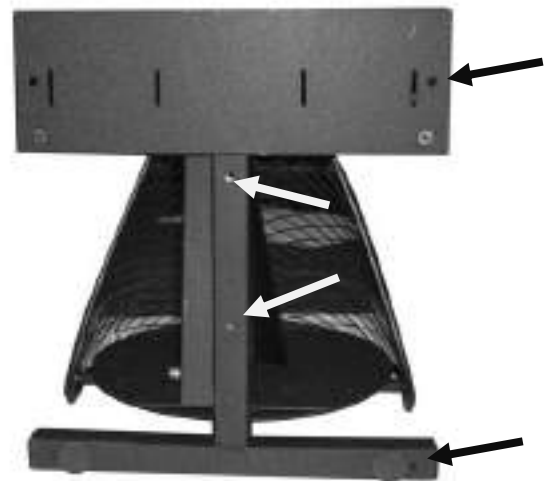
Tighten top strap.

11



After both straps are securely fastened, the machine is ready.

12



For permanent installation, attach to a wall with screws/bolts as shown.

Specifications

Physical Size

Depth 19 inches
Width 18 inches
Height 23.5 inches
Weight 70 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 damage to the rope handle assembly during a sudden stop.

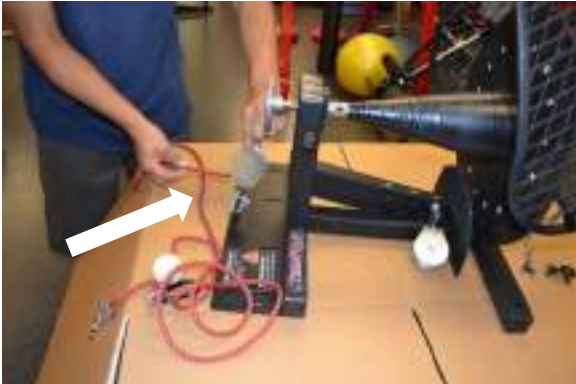
Symptom: If the resistance is not constant when pulling on the rope, the cone and rope may be dirty causing the rope to slip on the cone. The cone and rope need to be cleaned. Use Rubbing Alcohol and a rag to wipe the cone clean of any deposits on it. A soft scouring pad may be necessary to remove stubborn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

Call for assistance if required.
1.800.237.2271

Replacing the Rope.

1. Loosen and remove hex nut with washer using $\frac{1}{2}$ " wrench on both sides of protective front grill.
2. Remove and set aside protective grill.
3. Tilt PVP on to its back side.



4. To begin, put new rope through top pulley.



5. Pull rope through two columns.



6. Put rope through bottom pulley.



7. Measure off 2 feet of rope. This is needed for knot assembly. Tilt PVP back up into standard position.



8. Grasp the measured 2 feet of rope.



9. Wrap rope around cone 1 time.



10. Wrap rope around cone for a second time.



10a.



11. After two wraps around cone, thread the rope underneath the looped rope that is lying against the cone.



11a.



12. Run end of rope through top of hole on cone.



13. Pull the rope tight.



14. Make a knot at the end of the rope.



15. Pull in slack in rope.

THREE YEAR LIMITED WARRANTY

1. Heart Rate, Inc. (H.R.I.) warrants to the original purchaser that the Portable VersaPulley is free from defects in material and workmanship under normal use and maintenance under a three year limited warranty subject to the terms and conditions hereafter set forth. Except for the above warranty, it is expressly agreed that NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE or of a particular use nor any warranty of any kind whatsoever express, implied or statutory is made by H.R.I.

2. This warranty does not cover any damage caused by shipping, miss handling, misuse, tampering, negligence, accidents, abnormal conditions, lack of adequate maintenance or unauthorized service or alterations to the product.

3. Liability of H.R.I. is limited to either repair or replacement of the defective part or the replacement of the machine at the option of H.R.I. on an exchange basis, with the customer bearing all costs of shipping and handling to and from the factory.

4. Length of Warranty, Parts:

ITEM PARTS REPLACEMENT

FRAME AND STEEL STRUCTURE.	3 YEARS
CONE AND FLYWHEEL	3 YEARS
BEARINGS	3 YEARS
PULLEYS	2 YEARS
ROPE	1 YEAR
IPU DISPLAY [upgrade]	1 YEAR

5. Length of Warranty, labor

During the first year, all labor is covered by the warranty. All labor repairs will be performed at the factory on warranty and non-warranty parts.

6. This warranty does not cover paint deterioration, discoloration, chipping, rust or shipping damage.

7. After all of the foregoing conditions have been complied with, if H.R.I. shall thereupon attempt repairs and /or replacements which shall for any reason fail, H.R.I. shall be allowed to continue to attempt to remedy any defects for so long a period of time as, In H.R.I.'s sole judgment, such attempt is justified.

8. The foregoing shall be buyer's sole and exclusive remedy, whether based on tort or otherwise, and H.R.I. shall not be liable for any injuries to persons or property. In no event shall H.R.I. be liable for any other loss or damages except as above set forth.

9. This warranty is expressly in lieu of all other warranties, express or implied, and of all other obligations or liability on the part of H.R.I. No person, firm or corporation is authorized to assume any other liability on behalf of H.R.I.

WARRANTY VALIDATION FORM

To validate your Warranty Registration, please fill out the following form and return it to Heart Rate, Inc.

VersaPulley Model: _____ Machine Serial Number: _____

Name: _____ Title: _____

Facility Name: _____

Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

Number: (____) _____

Email: _____ Fax: (____) _____ Purchase Date: _____

City _____ State _____ Zip _____

I first saw/heard about the VersaPulley: _____

I have seen the VersaPulley advertisements in the following: _____

