

# PART 4 – VASA TRAINER FOR SWIMMERS

The following sections contains guidelines and tips for using your Vasa Trainer and designing your exercise plan.

- 4.1 Tips for Swimmers** - Key Points to Remember
- 4.2 How to Do the Basic Stroke** - step-by-step instructions for the basic stroke
- 4.3 Stroke Illustrations and Instructions** - step-by-step instructions for each stroke
- 4.4 Pre-Competition Training for Swimmers** - training guidelines to follow
- 4.5 Training Secrets from Coach Shoulberg** - sample workouts from Coach Richard Shoulberg
- 4.6 How one coach got faster swimmers** - sample workout by Coach John Holohan

## 4.1 - TIPS FOR SWIMMERS

The most beneficial uses of the Vasa Trainer for swimmers are:

- A. Increasing stroke-specific strength, power and speed
- B. Increasing swim-specific endurance
- C. Improving stroke technique
- D. Injury prevention and rehabilitation (physical therapy)

### A. INCREASING STROKE-SPECIFIC STRENGTH, POWER AND SPEED

#### Swim-Specific Strength

The best way to increase swim-specific strength is to use the Vasa Trainer 2 to 3 sessions per week for strength training. See the sample workouts from Coach Shoulberg, Coach Holohan and the 10 exercise circuit described later in this manual (see PART 6 - Vasa Trainer Conditioning Circuit - for Competitive Swimmers).

If you follow the 10 exercise Swimming Strength Circuit, make sure to emphasize perfect technique when doing the Butterfly (exercise #2) and the Freestyle (exercise #7). Keep your elbows high and finish each stroke with the hands by the hips. The Leg Plyometrics exercise (exercise #1) will increase leg power for starts and turns. If workout time is limited for this circuit or you cannot do all 10 exercises, then do the following 7 exercises from that circuit: #1-Leg Plyometrics, #2-Butterfly, #3-Super Ab Crunches, #6-Reverse Flys, #7-Freestyle and for injury prevention, do #9-Internal Rotator Cuff and #10-External Rotator Cuff. You can incorporate a stroke Isometric exercise into this circuit. See description on the next page "C. Improving Stroke Technique". Feel free to create a custom strength circuit on your own.

#### Swim-Specific Power and Speed

The best way to train for power and speed is to build up the strength and power on dryland and then transfer this into the stroke in the water with speed and intervals. An excellent way to increase efficient stroke speed and power is to do the Freestyle at race tempo. No matter what the sport, it is essential to progressively perform efficient technique at high tempo rates as you approach a competition season.

Faster starts and more powerful turns in swimming can make all the difference in a race. Plyometrics are a proven way to build explosive power and speed for the legs, trunk and the upper body. See the Leg Plyometric exercises later in this section to increase explosive leg push off power and speed. These exercises are fun, and you will see results fast!

## B. INCREASING SWIM-SPECIFIC ENDURANCE

Freestyle swimming using the pulley cable system (PCS) at a moderate tempo for extended periods will build endurance. Use the PCS to do Freestyle in place for timed sets that simulate race times for specific event distances. So, after a 5 minute warm-up, do the race distance for the projected race time using race stroke rate and tempo, and a incline setting and power cord that will give similar resistance to that of the event in the pool. This will take some experimentation, so start at a mid-height incline setting and a lite power cord. You can add resistance as needed. Work up to doing 3 - 5 race simulations per workout. Another endurance workout would be to build up to 30 minutes of continuous freestyle - see Coach John Holohan's workout later in this section for more ideas.

If you are already in the pool 2 times per day, then do not use the Vasa Trainer for endurance unless you cannot get to the pool or if you have an ear infection, etc. that prevents you from getting in the water. If this is the case, either ask your coach what to do or use the Vasa Trainer as described above.

## C. IMPROVING STROKE TECHNIQUE:

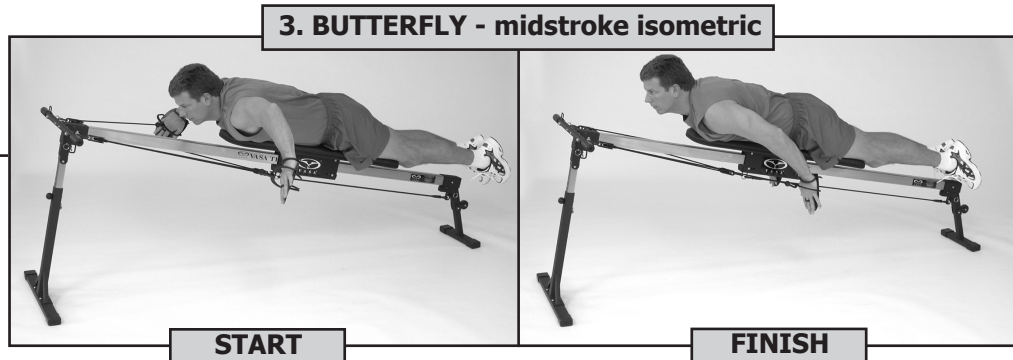
Many top swim coaches use the Vasa Trainer to correct dropped elbows and to teach proper arm position. There are many ways to do it. Here are some ideas:

1. The coaches and athletes at USC (University of Southern California) use the Freestyle technique using the pulley cable system to improve strength, power and technique. They typically do sets of 1 to 2 minutes of high tempo freestyle, 3 times per week. They really emphasize using proper technique and it has helped the swimmers learn to feel proper arm and elbow position in the catch and throughout the stroke. See the images below and Section 4.3 "Stroke Illustrations" for more detailed instructions on doing Freestyle with the PCS.



2. Place a mirror in front so you can see your stroke. Some people put a video camera and TV in front so you can see the stroke. For Butterfly and Freestyle, with either the webbing straps or the pulley cable system, imagine the arms are over a big ball or barrel at the "catch" part of the stroke. Imagine that the bony part of the elbow is like an eye and it should be looking directly out to the side, perpendicular to the monorail, (as opposed to looking down toward the floor, which constitutes a "dropped elbow" and inefficient technique). See Section 4.3 "Stroke Illustrations" for more detailed instructions on technique.

3. The coaches at Stanford University do an isometric exercise to teach technique and prevent injuries. The swimmer holds a mid-stroke position (Butterfly) with elbows high and arms shaped as if over a big ball or barrel. The idea is to do a stroke, lower slowly to this mid-stroke position (see START) and hold until the arms begin to shake (about 10 - 30 seconds), then finish the stroke (see FINISH) and pause for 2 seconds with arms fully extended in the finish position. Then lower back to the mid-stroke position (see START) and hold again. About 10 reps will do the trick. This one is great for strengthening the small muscles of the rotator cuff and upper back as well as improving technique. Make this set part of your strength and injury prevention program. See a more detailed description of this exercise in Section 4.3 "Stroke Illustrations".



#### **D. INJURY PREVENTION AND REHABILITATION:**

The Vasa Trainer has a wide range of resistance options and exercises for Physical Therapy and Rehab. The pulley cable system (PCS) provides the mechanical advantage to safely exercise injured areas, including improving range of motion, strength and flexibility. The PCS allows you to reduce the resistance load in order to provide the appropriate challenge to the muscles and joints without straining. You can make systematic progressions to strengthen the area by gradually increasing the load - by raising the slope, adding stretch cords or power cords, adding weight plates to the weight bracket accessory, or by using the webbing straps instead of the PCS. Swimmers may want to focus on Internal Rotator Cuff and External Rotator Cuff to prevent injuries in the shoulder areas. These exercises can be done while sitting on the machine for strengthening (more resistance), or standing off the machine for rehabilitation (less resistance). See "PART 5 - Vasa Trainer Individual Exercises" for details on these exercises.

## 4.2 - HOW TO DO THE BASIC BUTTERFLY STROKE

There are two parts to the basic stroke: (1) the propulsive stroke and (2) the recovery. The movements are blended together since the entire stroke is smooth and continuous. There is no need to stop at any point of the stroke, unless you are isolating a certain part of the stroke or if you are working on technique aspects of the stroke. Complete the stroke sequence comparing your hand, arm, elbow, and body position to those shown in the pictures on the next page. Improper technique can result in injury or poor results. Ideally, have a coach observe your technique too. You can also use a mirror set up in front of you to view your stroke.

1. To begin the basic stroke, position your body on the padded bench so that your chest is even with the front. Begin the stroke with your elbows in a high position and use your triceps, forearms, shoulders and back muscles to do all the work. Keep your legs straight and feet about eight inches apart to avoid hitting your toes on the top of the rear stanchion as you pull through. Imagine that your arms are reaching forward over a ball or barrel.
2. Halfway through each arm stroke, begin to accelerate the hand. Keep your elbows high, just as you would with the swimming stroke in the water. Imagine that your arms are still over the ball.
3. At the finish of the stroke, your hands accelerate and then pass by your hips, brushing the sides of your hips. Give a final push with your hand and wrist as you complete the stroke, finishing with your arms fully extended. Your fingers should be pointing toward the floor, keeping your wrists flexed at 90 degrees.
4. You should feel tension in the working muscles as you lower yourself down the monorail. To get maximum benefit, lower to the starting position slowly and in control. Surfers: we suggest that you emphasize raising your head and hunching your shoulders for this step.
5. As you recover to the end of the stroke, your arms and hands will move into the start position, ready for the next stroke. If the seat carriage "bumps" the rear stanchion when you return to the start position, either move your body toward the back of the bench or shorten the webbing straps by wrapping them 1 or 2 more times around the strap bar or pull-up bar.

### KEY SAFETY POINTS TO REMEMBER

- The basic butterfly stroke will be twice as hard using the webbing straps than with the pulley cable system (PCS), because the PCS provides a mechanical advantage. Typically you would use a height setting of mid to max when doing butterfly with the PCS, and a height setting of low to max when using the webbing straps, depending on your strength.
- Your hand position in the paddles or handles should be comfortable and stable.
- Keep your elbows in a high position. Always concentrate on simulating perfect stroke technique.
- The stroke should be a continuous and fluid motion up and down the monorail.
- After the forward pull, be sure to keep your hands by your hips until the seat carriage begins to roll back down the monorail. Once you feel it rolling back down, let yourself down slowly, concentrating on the "negative" portion of the recovery. It is important to have complete control of the speed at which you return down the monorail. Use a "1" count on the pull and a "1-2-3" count on the recovery.
- To avoid bumping your feet on the rear stanchion as you pull forward, keep your feet about eight inches apart so that they straddle the monorail as you glide forward. Wear shoes!
- **WARNING:** Never allow the bench to roll back down the monorail rapidly without using your muscles to control the descent. Uncontrolled descent can result in injury.
- During the basic swimming or paddling strokes, your arm, hand, and body position need to simulate proper stroke technique as closely as possible. Ask your coach or a friend who knows proper stroke technique to watch your form while you are using your Vasa Trainer. He or she can point out areas that need correction. You can also place a mirror in front of you (and beside you if possible) to watch your technique as you use your Vasa Trainer to view your technique. Or you may set up a video camera and film your workout in order to critique yourself.

# PROPER BUTTERFLY STROKE TECHNIQUE SEQUENCE

## 1. ENTRY

- Position the top of your chest at the front part of the bench.
- Be sure your arms are fully extended at the start and position your hands and wrists to start the catch phase of your stroke.
- Imagine your arms are extended over a big ball.

## 2. MIDSTROKE

- Keep your elbows high. Imagine there is an eye on your elbow that is looking to the side, perpendicular to the monorail. Also, imagine that your arms are still over the ball. This helps internal rotation.

## 3. FINISH

- Complete the stroke by finishing with your hands by your hips, arms fully extended.
- Press the finish with the heels of your hands. (Don't flick your wrists, keep wrists flexed at 90 degrees).

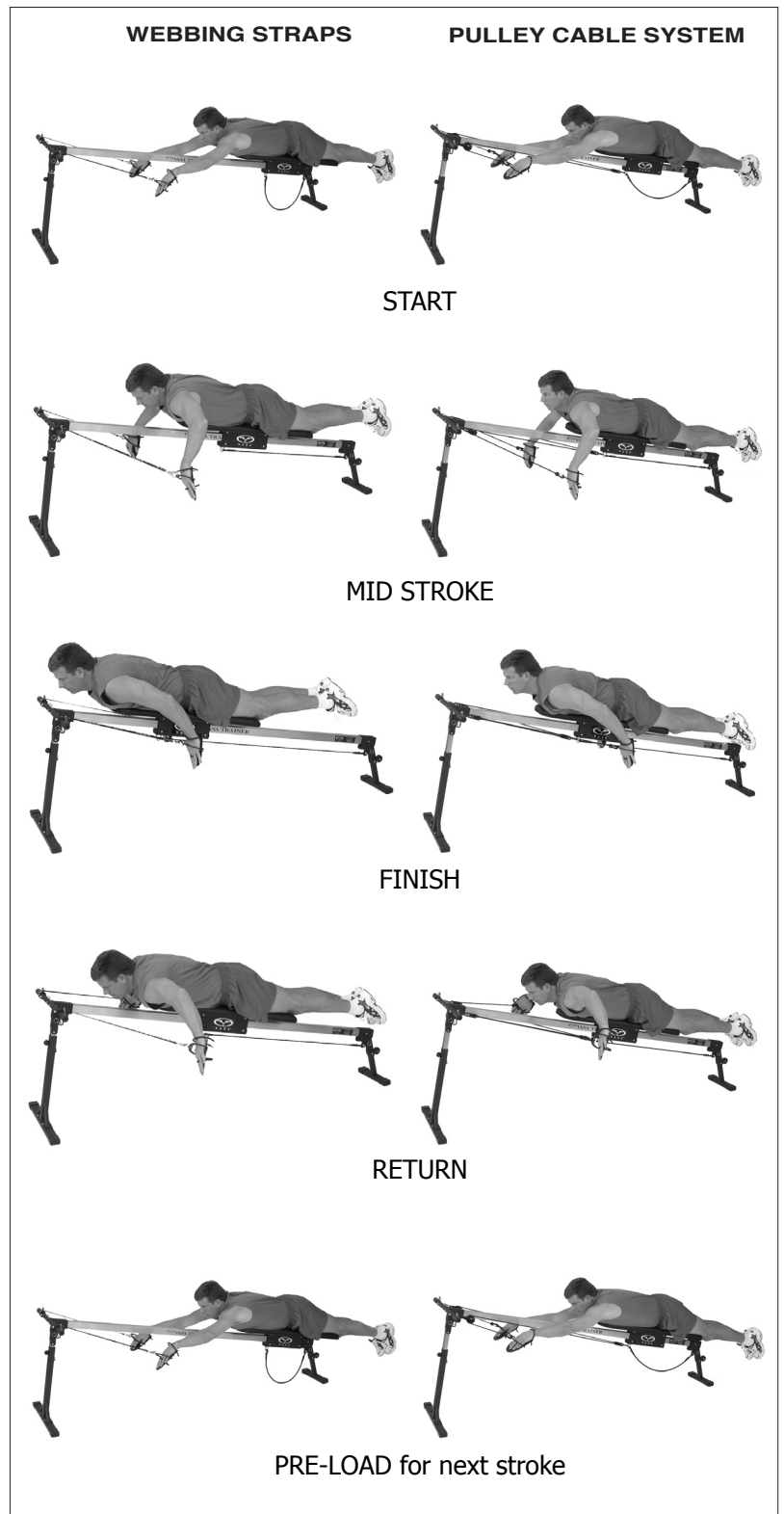
## 4. RETURN

- Lower your body slowly and in control. This accentuates the eccentric or "negative" muscle contraction and builds strength faster.
- Do not let your body roll back down the monorail swiftly. This could result in injury. Instead, lower yourself slowly by counting to 2 or 3.

## 5. PRE-LOAD

- Maintain tension in your muscles as you return to the start position. This will "pre-load" the muscles for the next stroke.

NOTE: If using the pulley cable system (PCS) for this exercise, do not use the freestyle extension loop. Hook the middle pulley on the PCS directly to the U-bolt on the underside of the seat carriage (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).



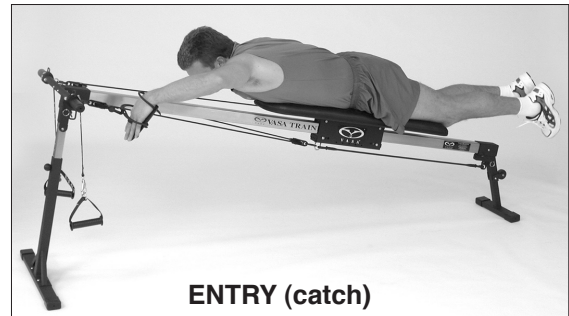
# FREESTYLE ENDURANCE

alternating arms, using pulley cable system

*for building endurance, practicing technique and injury rehabilitation*

## ENTRY (THE CATCH)

- For best results, use a medium to maximum height setting and attach a power cord for more resistance.
- Reach forward and place your hands in the paddles or handles. Start with your right arm forward in the "catch" position, your left arm back in the "finish" position.
- Start the pull with your right arm, keeping your wrist and hand rigid. The left arm will move forward as the right arm moves backward.
- Keep your elbows in a high position. As you pull with the right arm, resist with the left.



ENTRY (catch)

## MID-STROKE (sweep)

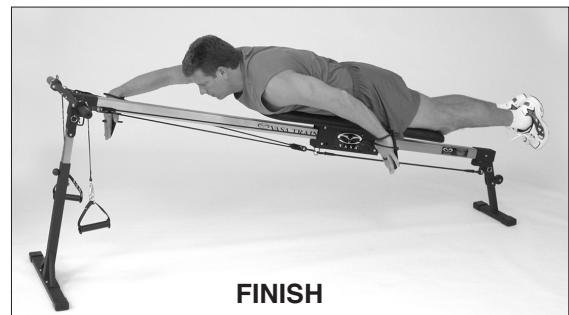
- Sweep your right arm under your body, simulating the same motion used in the water. Your left arm will simultaneously be recovering forward, as in the freestyle.
- Concentrate on feeling the pressure distribution in your arms, shoulders and back.
- Keep your elbows in a high position. If there were an eye on your elbow, it would be looking to the side.



MID-STROKE

## FINISH

- Accelerate as your arm sweeps under your body.
- Sweep your right hand past your hips, just brushing the side of your right hip.
- Finish strongly with a final push of the hand.
- Repeat sequence alternating arms.



FINISH

## TIPS

1. Remember - you will not be moving up and down the monorail when doing continuous freestyle. Your body will stay in one place. The resistance comes from keeping your body suspended partway up the monorail and from the power cord pulling the seat backwards.
2. If it seems "too easy", increase the slope angle or add a more resistant power cord. Remember, the resistance comes from holding your body weight against gravity for timed intervals.
3. If the cord jumps off the pulley wheel while doing continuous freestyle check the following:
  - Be sure to use a smooth cadence during your stroke, keeping the cord tight throughout the range of motion.
  - Check to make sure the eyebolts on your strap bar are loose enough so the pulleys will swivel easily, but tight enough to be secure to the strap bar.
4. If the fittings (clips) on the pulley cord hit the pulley wheels when your arms are fully extended, use the freestyle extension loop. This will "lengthen" the pulley cord, giving you more cord for a full extension (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).



RECOVERY

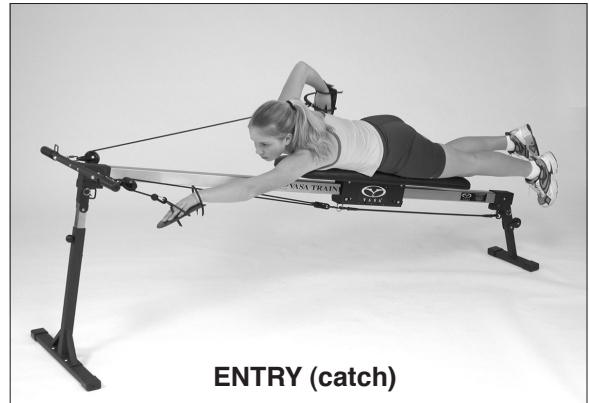
# FREESTYLE with hip rotation

alternating arms, using pulley cable system

*for practicing upper body technique and building core strength*

## ENTRY (the catch)

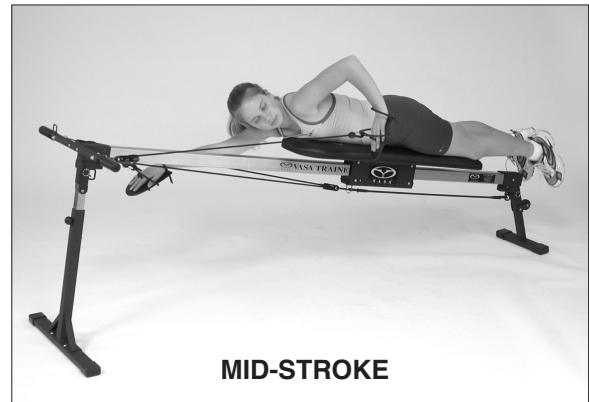
- Lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Reach forward and place your hands in the paddles or handles. Start with your left arm forward in the “catch” position, your right arm back in the “finish” position.
- Start the pull with your left arm, keeping your wrist and hand rigid. As you start the pull with your **left** arm, focus on pressing your **right** hip into the bench and using your abdominals to assist the pull.
- The right arm will move forward as the left arm moves backward.



ENTRY (catch)

## MID-STROKE (sweep)

- Sweep your left arm under your body, simulating the same motion used in the water. Your right arm will simultaneously be recovering forward, as in the freestyle.
- Concentrate on feeling the pressure distribution in your arms, shoulders and back.
- Keep your elbows in a high position. If there were an eye on your elbow, it would be looking to the side.



MID-STROKE

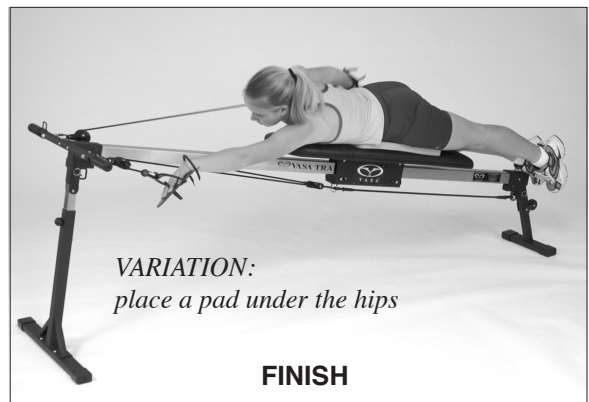
## FINISH

- Accelerate the stroke as your left arm sweeps under your body.
- Sweep your left hand past your hips, just brushing the side of your left hip.
- Finish strongly with a final push of the hand.
- Repeat sequence alternating arms.

## TIPS

- When you pull with the right arm, press your left hip into the bench at the catch part of the stroke. Vice-versa for left arm pulls.
- Concentrate on contracting the same abdominal muscles used in the hip rotation during freestyle swimming.

**VARIATION:** Place a soft 1-2” foam pad between the bench and your body. This decreases stability, so use caution.



*VARIATION:  
place a pad under the hips*

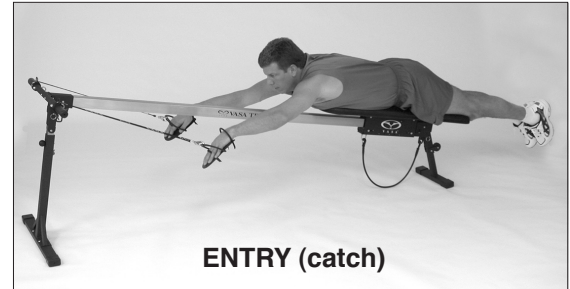
FINISH

# BUTTERFLY

## using webbing straps

### 1. ENTRY

- Hold both paddles and pull the bench halfway up the incline.
- Straddle the bench and lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Extend your arms forward, just as you do in the water.
- Start the pull with both arms, keeping your hands, wrists, and forearms rigid and elbows high. Scull outward.



### 2. MID-STROKE

- Start to scull inward toward and under the monorail, accelerating as you do this phase.
- Be sure to keep elbows high.



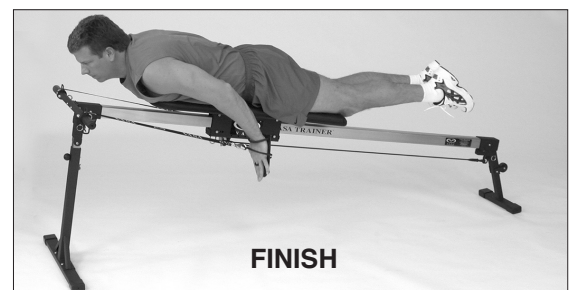
### 3. FINISH

- Accelerate so that your hips move swiftly past your hands.
- Complete the stroke with a strong finish by extending your arms as your hands brush your hips.



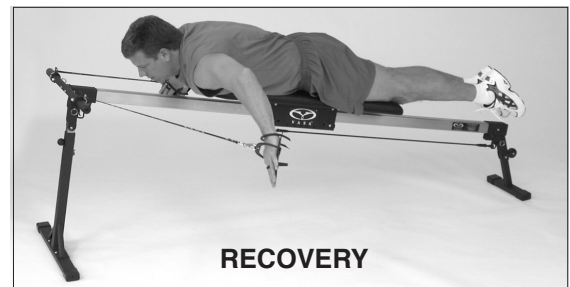
### 4. RECOVERY

- Keep your arms in the finish position until you feel the seat carriage start to roll back down the monorail. Hold for 1 second.
- Slowly let yourself and the padded bench glide back down the monorail, taking care to avoid acceleration or jerky motion. Try to simulate the recovery motion used in butterfly recovery as you slowly lower your body along the monorail. Use a cadence to do complete strokes, such as forward on "1" count, recover on "1-2-3" count. This allows your muscles to benefit from eccentric (or negative) contractions, as well as the concentric (forward or positive) phase of the stroke.



**NOTE:** Using webbing straps will provide greater resistance than using the pulley cable system. If this exercise seems too hard, try it with the pulley cable system.

**CAUTION:** The recovery phase of this stroke can be difficult. We recommend that you start conservatively and gradually increase the repetitions and resistance levels.



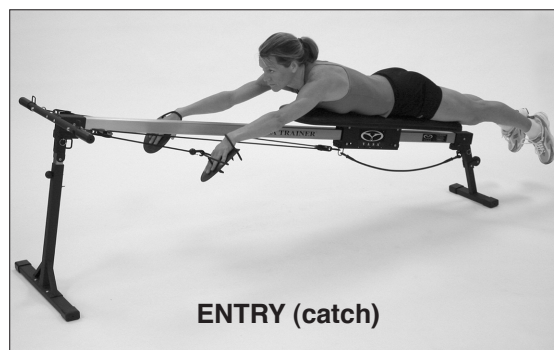


# BUTTERFLY

## using pulley cable system

### 1. ENTRY

- Hold both paddles and pull the bench halfway up the incline.
- Straddle the bench and lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Extend your arms forward, just as you do in the water.
- Start the pull with both arms, keeping your hands, wrists, and forearms rigid and elbows high. Scull outward.



### 2. MID-STROKE

- Start to scull inward toward and under the monorail, accelerating as you do this phase.
- Be sure to keep elbows high.



### 3. FINISH

- Accelerate so that your hips move swiftly past your hands.
- Complete the stroke with a strong finish by extending your arms as your hands brush your hips.



### 4. RECOVERY

- Keep your arms in the finish position until you feel the seat carriage start to roll back down the monorail. Hold for 1 second.
- Slowly let yourself and the padded bench glide back down the monorail, taking care to avoid acceleration or jerky motion. Try to simulate the recovery motion used in butterfly recovery as you slowly lower your body along the monorail. Use a cadence to do complete strokes, such as forward on "1" count, recover on "1-2-3" count. This allows your muscles to benefit from eccentric (or negative) contractions, as well as the concentric (forward or positive) phase of the stroke.

**NOTE:** To increase resistance for this exercise, increase the incline, use webbing straps instead of the PCS, or add power cords or weights.

**CAUTION:** The recovery phase of this stroke can be difficult. We recommend that you start conservatively and gradually increase the repetitions and resistance levels.

**NOTE:** Do not use the freestyle extension loop for this exercise. Hook the middle pulley on the PCS directly to the U-bolt on the underside of the seat carriage (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).



# BUTTERFLY - midstroke isometric

using webbing straps or pulley cable attachment

*for technique training and injury prevention*

## 1. START

- Hold both paddles and pull the bench halfway up the incline.
- Straddle the bench and lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Extend your arms forward, just as you do in the water.
- Pull yourself up the incline to mid-stroke, this is the start position (see START). Hold this position until your arms begin to shake (about 10-30 seconds).
- Concentrate on keeping your elbows high and arms shaped as if over a big ball or barrel.



## 2. FINISH

- Complete the stroke by extending the arms fully towards your hips.
- Hold finish position for 2 seconds with arms fully extended. Then lower back to midstroke/start position. Hold again until arms begin to shake, then pull thru to finish position
- Repeat for 10-15 repetitions.

**VARIATION:** While holding the isometric position, move your hands back and forth, perpendicular to the monorail, closer to your chest, then back towards straight out to sides.

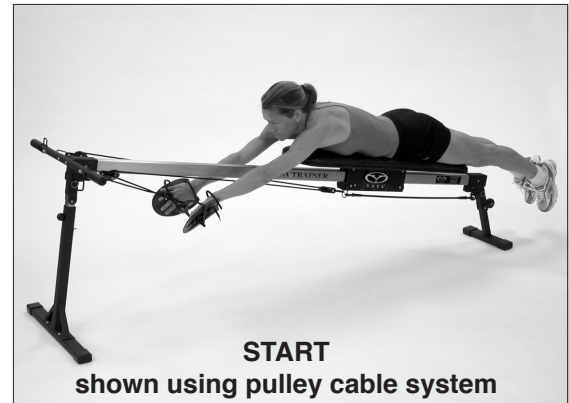


# BREASTSTROKE

using webbing straps or pulley cable system

## 1. ENTRY

- Cross the pulley cord or webbing straps under the monorail and put the left paddle in the right hand, and the right paddle in the left hand. Hold both paddles and pull the bench halfway up the incline.
- Straddle the bench and lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Extend your arms forward, just as you do in the water.
- Start the stroke by pulling outward and away from the monorail with both hands simultaneously. Keep elbows in high position.



## 2. MID-STROKE

- Scull outward and then back inward toward the monorail.
- Sweep under the monorail, accelerating as you scull.
- Concentrate on good form and on feeling the pressure distribution in the correct muscle groups.



## 3. FINISH

- End the pulling phase of the stroke so your hands are just under your stomach.
- Be sure to concentrate on using correct technique for the entire stroke.



## 4. RECOVERY

- Slowly let your body glide back down the monorail, taking care to avoid acceleration or jerky motion. Use a cadence to do complete strokes, such as up on "1" down on "1-2-3". This allows your muscles to benefit from eccentric (or negative) contractions.

**NOTE:** Using webbing straps will provide greater resistance than using the pulley cable system. Use discretion when increasing resistance.

**NOTE:** If using the pulley cable system (PCS) for this exercise, do not use the freestyle extension loop. Hook the middle pulley on the PCS directly to the U-bolt on the underside of the seat carriage (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).

# BACK STROKE - finish segment

using webbing straps or pulley cable attachment

*for stroke segment training*

**SAFETY NOTE:** Before you start this stroke, we recommend that you have someone assist you in getting into the starting position and that you start with very low resistance. Use the Pulley Cable System and put the slope of the monorail at the lowest setting.

## GETTING INTO POSITION

- Hold both paddles and pull the bench halfway up the incline. Straddle the bench facing the back of the Vasa Trainer, then sit on the back edge of the bench.
- Hold your hands at chest level with pulley cord or webbing straps on outside of arms. Lie back on the bench and extend your legs towards the rear. Start with arms bent, hands by chest, pulley cord on outside of arms (see START).

### 1. START

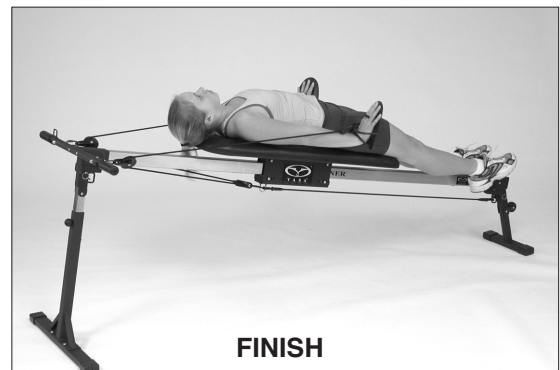
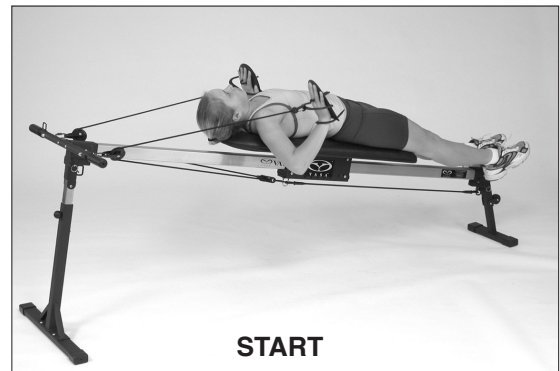
- Start the pull by pushing your hands towards hips, keeping your wrists and forearms strong and rigid.
- Concentrate on simulating the same motion used in the water for this segment of the stroke.

### 2. FINISH

- Complete the stroke by extending the arms fully towards your hips.

### 3. RECOVERY

- Slowly return to the start position, bending arms until your hands are back by your shoulders.



**NOTE:** Do not use the freestyle extension loop on the pulley cable system (PCS) for this exercise. Hook the middle pulley on the PCS directly to the U-bolt on the underside of the seat carriage (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).

# RECOVERY STROKE

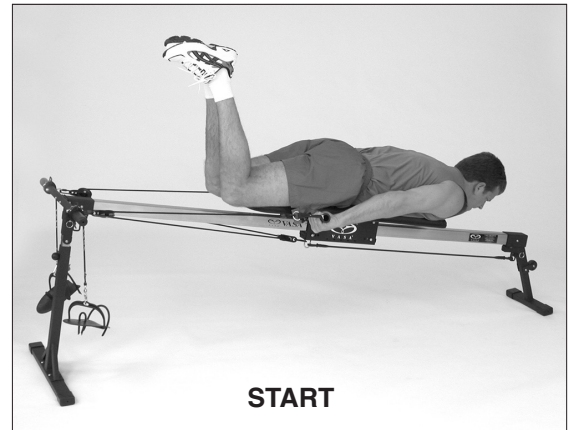
both arms at once, using webbing straps or pulley cable system

*for butterfly, freestyle and surf paddling*

**SAFETY NOTE:** This is a very strenuous exercise. Using webbing straps provides greater resistance than the pulley cable system. Before starting this stroke, we recommend that you have someone assist you and that you start with low resistance. Consider decreasing the slope to level or very slight incline by placing an aerobic step under the rear stanchion.

## 1. START

- Set the front stanchion telescope tube at its lowest setting. If you need less resistance, place an aerobic step under the rear stanchion.
- Hold onto the handles attached to the pulley cable system or webbing straps.
- Sit on the bench facing the rear of the machine, legs straddling the bench.
- Holding the handles, slowly lean forward and lie on the bench, head toward the rear (see START).
- Simulate the recovery stroke for Butterfly & Freestyle by slowly pulling on the handles, moving yourself up the inclined monorail (backwards!).
- Use care to start out slow and smooth, feeling the resistance so you don't overload your muscles.



## 2. MID-STROKE

- Concentrate on keeping your elbows and shoulders high during the recovery.
- Use a steady pace through this phase of the recovery. Accelerate only after you are comfortable doing this exercise.

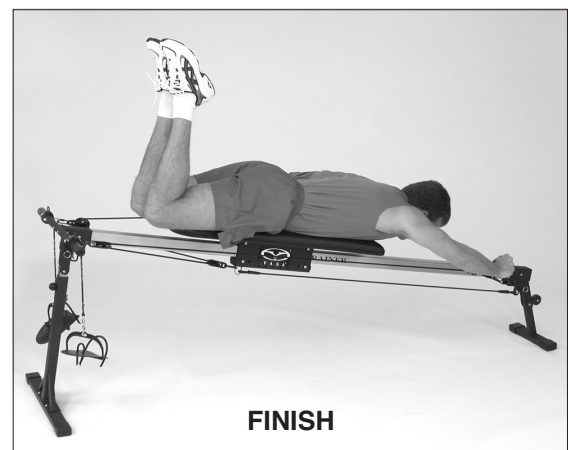


## 3. FINISH

- Accelerate somewhat as your hands come past your head and toward the monorail.
- Finish strongly with a final push from the hands.

## 4. RETURN

- Hold the finish position until the seat carriage starts to roll back down the monorail.
- Slowly let your body and bench glide back down the monorail, taking care to avoid acceleration or jerky motion.
- Use a cadence to do complete strokes, such as up on "1" count, return on "1-2-3" count. This allows your muscles to benefit from eccentric (or negative) contractions, as well as the concentric (pull) phase of the stroke.



# RECOVERY STROKE

alternating arms, using pulley cable system

*for butterfly, and freestyle*

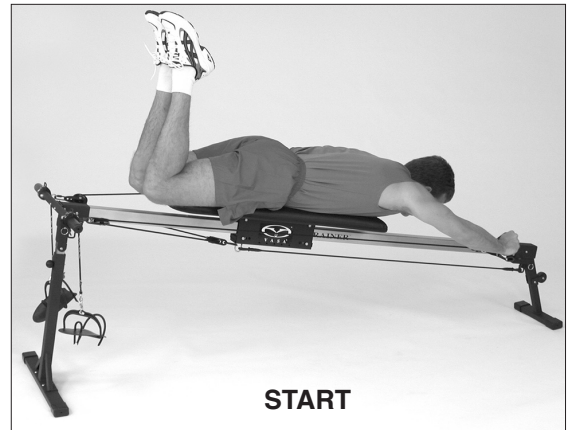
**SAFETY NOTE:** This is a very strenuous exercise. Before starting this stroke, we recommend that you have someone assist you and that you start with low resistance. Consider decreasing the slope to level or very slight incline by placing an aerobic step under the rear stanchion.

## 1. START

- Set the front stanchion telescope tube at its lowest setting. If you need less resistance, you can place an aerobic step under the rear stanchion.
- Hold onto the handles attached to the pulley cable system.

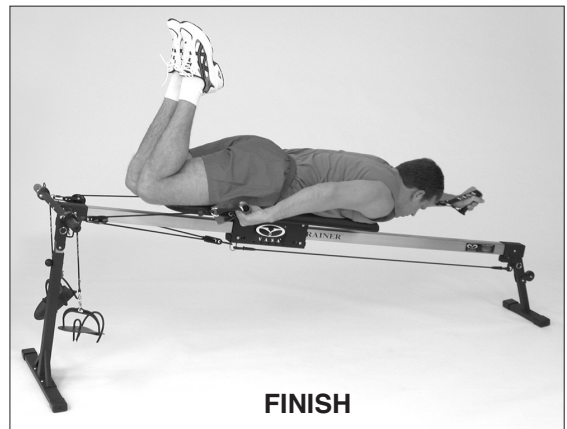
**NOTE:** Taller individuals (6' and taller) may need to attach the freestyle extension loop (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).

- Sit on the bench facing the rear of the machine, legs straddling the bench.
- Holding the handles, slowly lean forward and lie on the padded bench, head toward the rear (see START).
- Simulate the recovery stroke for Surf Paddling & Freestyle by slowly pulling on the PCS, alternating arms.
- Use care to start out slowly and smoothly, feeling the resistance so you don't overload your muscles.



## 2. MID-STROKE

- Concentrate on keeping your elbows and shoulders high during the recovery.
- Use a steady pace through this phase of the recovery. Accelerate only after you have been doing this exercise for a while.

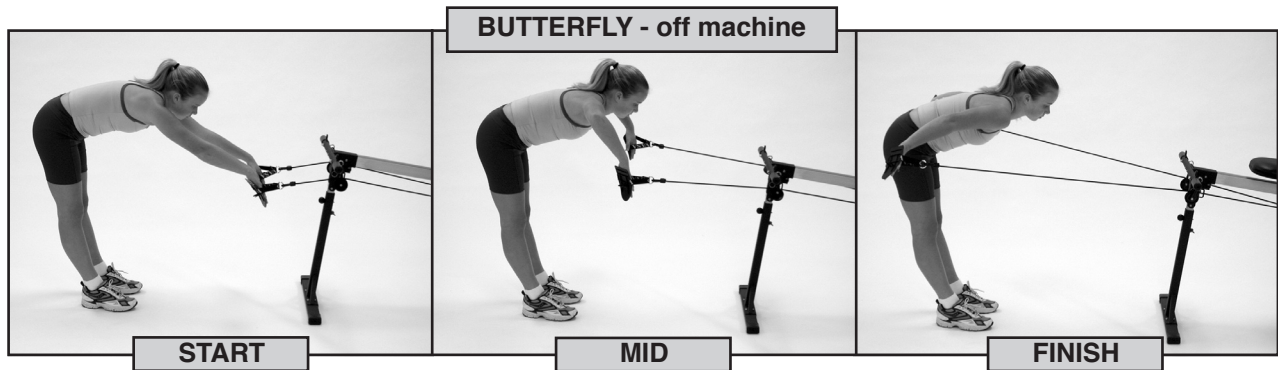


## 3. FINISH

- Accelerate somewhat as your hand comes past your head and toward the monorail.
- Finish strongly with a final push from the hand.

## ADDITIONAL EXERCISES

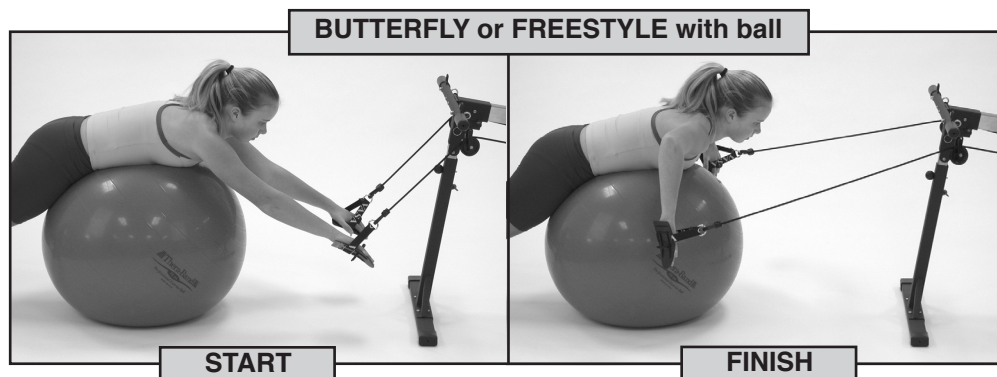
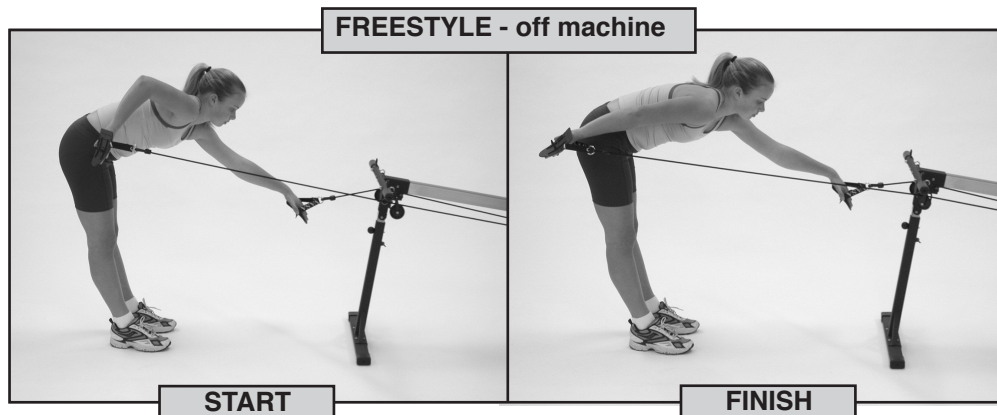
*for swim-specific training*



- Use the pulley cable system and paddles for this exercise. Increase resistance by increasing the angle of the front stanchion and by attaching stretch cords, power cords, or weights to the weight bracket.
- Position yourself just over arms length in front of the Vasa Trainer. Place your hands in the paddles, bend at the waist and fully extend your arms forward (see START).
- Simulate the freestyle or butterfly motion, for the entire stroke, including recovery. Focus on using proper technique by keeping elbows high and finishing the stroke.

**NOTE:** This is a great warm-up exercise to loosen and stretch your muscles before a workout.

**VARIATION:** Can be done lying on a stability or fitness ball (see below).



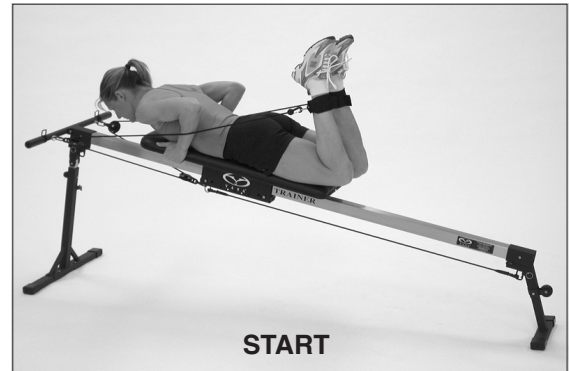
Position the stability/fitness ball about 24-36 inches in front of the Vasa Trainer.  
Lie on the ball using your feet for stability.

# BREASTSTROKE KICK

using ankle straps and pulley cable system

## 1. GETTING INTO POSITION

- Set the front stanchion incline at its lowest setting.
- Connect the pulley cable system or lengthen the webbing straps as far as possible.
- Attach ankle straps to both legs with D-ring in back.
- Straddle the bench while facing forward. Attach the PCS clips to the ankle strap D-rings.
- Hold the front of the bench and lie down with your chest at the front edge of the bench. Hold onto sides of bench with hands and bend your knees (see START).



## 2. START

- Straighten legs by pushing heels toward rear and simulating breast stroke kicking motion.



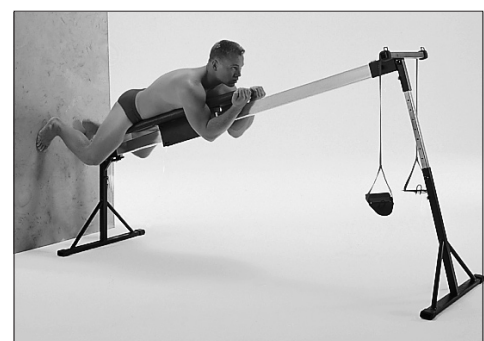
## 3. FINISH

- Slowly return to start position.
- Raise slope for more resistance.

**NOTE:** During this exercise, you may position the pulley cable cord or webbing strap over your shoulder as shown in photos, or you may position the cord between your inner arm and side. Choose whichever position is more comfortable for you.

### VARIATION:

- Lie on your stomach, feet apart on the foot platform or wall. Hold on to the front of the padded bench for stability.
- Kick forward, either slowly or fast as a plyometric, simulating a breaststroke kick motion.
- Use care in returning to the start position.



BREAST STROKE KICK - variation



# LEG PUSH-OFF / PLYOMETRIC SQUAT

both legs, using foot platform accessory

*develop vertical leap, power starts and turns, and strong abdominals*

**NOTE:** We recommend using the foot platform, power cords and the weight bracket for this exercise.

## 1. START

- Attach the foot platform, or move the Vasa Trainer so that the rear stanchion base is 6 to 15 inches away from a solid wall. Keep the rear stanchion parallel to the wall.
- Set the slope of the monorail and connect one or more stretch cords or power cords. Start conservatively! You can raise or lower the slope after you've tried the exercise a few times.
- Lie on the bench, on your back, so that your hips are even with the rear edge of the padded bench. Place feet shoulder width apart on platform. Bend knees to 90 degrees.
- Hold sides of bench with hands for stability and tuck chin to chest. Press low back into bench to protect the back and to work the abdominals. This will give you an awesome abdominal workout while protecting your back from strain. Keep chin tucked to chest and watch feet at all times.
- Using an explosive push, extend legs and point toes to streamline the lower body. Fully extend your legs and feet, making them as streamlined as possible.

**NOTE:** When you first try this exercise, push-off slowly to get a feel for the speed at which you will travel up and down the inclined monorail.



### SAFETY REMINDER:

1. Always wear exercise shoes (no bare feet!).
2. Hold the sides of the bench at all times.
3. Be sure to watch your feet return to the platform.

## 2. RETURN

**CAUTION:** ALWAYS WATCH YOUR FEET RETURNING TO THE WALL!

- The seat carriage will roll to a stop and quickly return down the inclined monorail. Continue to hold on tight to the sides of the padded bench.
- As your feet begin to touch back on the platform or wall, bend your knees and absorb the impact, taking the force in your legs as you slowly return the knees to a 90 degree angle.
- You'll get a greater benefit when you absorb the return forces slowly with your legs, thereby making this phase eccentric or "negative".

**VARIATION:** See **PLYOMETRIC SQUAT - alternating legs** and **PLYOMETRIC SQUAT - single leg** in "PART 5 - Vasa Trainer Individual Exercises".

**CAUTION:** We recommend that you do only 5 - 10 repetitions per set and no more than 3 sets the first 2 - 4 times you do this exercise.

# SQUATS

both legs, using foot platform accessory

*develops strong thigh, buttocks and trunk muscles*

**NOTE:** We recommend using the foot platform, power cords and the weight bracket for this exercise.

## 1. START

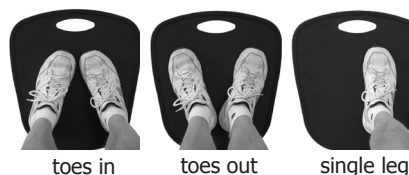
- Attach the foot platform, or move the Vasa Trainer so that the rear stanchion base is 6 to 15 inches away from a solid wall. Keep the rear stanchion parallel to the wall.
- Set the slope of the monorail and connect one or more stretch cords or power cords. Start conservatively! You can raise or lower the slope after you've tried the exercise a few times.
- Lie on the bench, on your back, with your hips at the rear end of the bench. Place feet shoulder width apart on platform. Bend knees to 90 degrees.
- Hold sides of bench with hands for stability and tuck chin to chest. Press low back into bench to protect the back and to work the abdominals.
- Push against foot platform or wall and extend legs until slightly bent. Maintain contact between foot platform or wall and your feet.



## 2. FINISH

- Slowly bend the legs and return to start position.
- For more resistance add power cords and/or weights to the weight plate bracket accessory.

**VARIATION:** See **SQUAT with ball** and **SQUAT with medicine ball** in "PART 5 - Vasa Trainer Individual Exercises".



### SAFETY REMINDER:

1. Always wear exercise shoes (no bare feet!).
2. Hold the sides of the bench at all times.
3. Be sure to watch your feet touch the platform.

# SQUATS

both legs, using foot platform accessory

*develops strong thigh, buttocks and trunk muscles*

**NOTE:** We recommend using the foot platform, power cords and the weight bracket for this exercise.

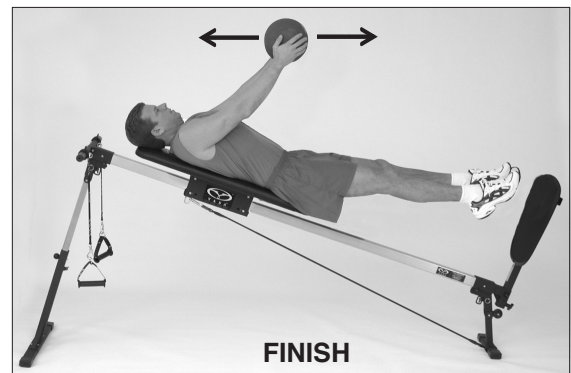
## 1. START

- Attach the foot platform, or move the Vasa Trainer so that the rear stanchion base is 6 to 15 inches away from a solid wall. Keep the rear stanchion parallel to the wall.
- Set the slope of the monorail and connect one or more stretch cords or power cords. Start conservatively! You can raise or lower the slope after you've tried the exercise a few times.
- Lie on the bench, on your back, with your hips at the rear end of the bench. Place feet shoulder width apart on platform. Bend knees to 90 degrees.
- Hold a medicine ball between your hands, extending your arms above chest. Press low back into bench to protect your back and to work your abdominals.
- Push forcefully off the foot platform, holding the medicine ball directly above your chest. Engage your abdominals by trying to keep the ball stable with arms extended at chest height.



## 2. FINISH

- Hold your arms and medicine ball straight above your chest throughout the exercise as best as possible. The ball will tend to move back and forth.
- Absorb the return with your legs, bend legs to 90 degrees and push off again.



**VARIATION:** You can use a light dumbbell or freeweight plate in place of medicine ball. Can be done without the feet leaving the platform, see **Squat with Medicine Ball** in "PART 5 - Vasa Trainer Individual Exercises".

# TRACK START

*develop powerful starts and turns*

## 1. START

- Set the slope of the monorail and connect one or more stretch cords or power cords. Start conservatively! You can raise or lower the slope after you've tried the exercise a few times.
- Stand at the back of the Vasa Trainer and face forward. Place one knee on the bench, with your instep over the back of the bench.
- Place the foot of the other leg on the rear stanchion base bar. Hold the sides of the bench for stability (see START).
- Push the bench up the incline by pushing off of the base bar with your active leg until it is fully extended (see FINISH).
- Slowly return to starting position.
- Repeat equal repetitions for both legs.

**VARIATION:** Increase incline, add stretch cords or power cords, or add weights to weight bracket to increase resistance.



## 4.4 - PRE-COMPETITION TRAINING FOR SWIMMERS

### **STRENGTH TRAINING:** Use correct resistance settings for strength training.

<b>UPPER BODY</b>	<b>SPRINTERS</b>	<b>MIDDLE DISTANCE AND DISTANCE</b>
<b>Frequency:</b>	3 days per week.	3 days per week.
<b>Duration:</b>	3 - 10 sets of 10 - 15 reps.	3 - 10 sets of 25 reps.
<b>Resistance:</b>	Increase load each set.	Increase load each set.
<b>Recovery:</b>	Rest 60 seconds between sets or do another exercise such as leg push-offs, sit-ups, etc.	Rest 60 seconds between sets or do another exercise such as leg push-offs, sit-ups, etc.
<b>Strokes:</b>	Do half the sets in primary stroke & half in other strokes.	Do half the sets in primary stroke & half in other strokes.
<b>Technique:</b>	Pull up on 1 count, lower the body on 3 count for best results. Keep elbows high & finish to hips.	Pull up on 1 count, lower the body on 3 count for best results. Keep elbows high & finish to hips.
<b>Options:</b>	Do some sets of one arm at a time for freestyle. Also, do some segment drills, such as the finish part of the stroke for triceps.	Do some sets of one arm at a time for freestyle. Also, do some segment drills, such as the finish part of the stroke for triceps.
<b>LEGS</b>	<b>SPRINTERS</b>	<b>MIDDLE DISTANCE AND DISTANCE</b>
<b>Frequency:</b>	3 days per week.	3 days per week.
<b>Duration:</b>	3 - 5 sets of 10 - 20 reps.	3 - 10 sets of 25 - 50 reps.
<b>Resistance:</b>	Increase the load for each set.	Constant load for each set.
<b>Technique:</b>	Streamline your lower body as you push off. Tuck your chin into your chest to work your stomach muscles.	Streamline your lower body as you push off. Tuck your chin into your chest to work your stomach muscles.
<b>Options:</b>	Do some sets of one leg at a time.	Do some sets of one leg at a time.

### **AEROBIC ENDURANCE TRAINING:** Use correct resistance settings for endurance training.

<b>UPPER BODY</b>	<b>SPRINTERS</b>	<b>MIDDLE DISTANCE AND DISTANCE</b>
<b>Frequency:</b>	2 days per week, non-strength days.	2 - 3 days per week, non-strength days.
<b>Duration:</b>	5 sets of your longest race time, plus 15 secs.	1 - 3 sets of your longest race time, plus 30 - 60 secs.
<b>Resistance:</b>	Increase the load each set.	Increase the load each set.
<b>Recovery:</b>	Rest 60 seconds between sets or do another exercise such as leg push-offs, sit-ups, etc.	Rest 60 seconds between sets or do another exercise such as leg push-offs, sit-ups, etc.
<b>Strokes:</b>	Do half the sets in your primary stroke and half in other strokes.	Do half the sets in your primary stroke and half in other strokes.
<b>Technique:</b>	Pull up on "1", lower the body on "3" for best results. Keep your elbows high and finish to hips.	Pull up on "1", lower the body on "3" for best results. Keep your elbows high and finish to hips.

## 4.5 - TRAINING SECRETS FROM COACH RICHARD SHOULBERG

**by Richard Shoulberg, Head Coach, Germantown Academy  
U.S. National Women's Coach / Olympic Coach**

In order to get the maximum benefits from the Vasa Trainer, one must use proper technique. I stress that one of the many real values of the Vasa Trainer is that one is able to get the hands underneath the body as he or she moves up the inclined monorail. I cannot do this on my home-made machines. I have the Vasa Trainers right on the pool deck so that while I am coaching swimmers I can still check for proper technique being used by those working on the Vasa Trainers. I often will use a pace clock for work on the Vasa Trainers, much like sets in the pool.

Twenty percent of the training with the Vasa Trainer is done as negative resistance (this is resisting the return of the swim bench as you move back down the monorail) and this is done for Butterfly, Backstroke (using both arms at once), Breaststroke with pull straps criss-crossed under monorail, or recovery work. It is important when doing strength work on the Vasa Trainer that the swimmer return back down the monorail slowly. I recommend that my swimmers use a cadence - up on 1 count, return on 3 - 5 count.

Some of my sprinters do thirty five percent of their Vasa Trainer work as recovery motions (see "PART 4 - Section 4.3 - Stroke Illustrations"). The rest of the training is done in the strokes of choice, as outlined below.

### EXAMPLE WORKOUTS

#### WARM-UP

Before we begin any strength training with the Vasa Trainer, we always warm up with light work using light medicine balls or 5 minutes of "mirror swimming". (Mirror swimming is simulating the swim strokes while you look into a mirror, concentrating on executing perfect technique.)

#### MONDAY, WEDNESDAY, FRIDAY

**Strokes:** Butterfly, backstroke (both arms at one time), breaststroke (criss-cross the pull straps under the monorail), freestyle, or recovery stroke.

**All swimmers:** Start with monorail at lowest angle - call this a "1" setting.

1) Do 12 pulls, with slow, negative returns (up on 1 count, back on 3-5 count).

Rest 25 seconds.

2) Do 12 pulls at the next setting, 1 pin hole up, increasing angle of monorail.

Rest 25 seconds.

3) Repeat this sequence, increasing 1 pin hole setting for each set, until you cannot do 12 pulls.

**Recovery Stroke:** (works best for butterfly, but can be used effectively for all strokes)

Start with the monorail at lowest angle or "1" setting. For weaker swimmers you may need to elevate the rear stanchion of the Vasa until the monorail is level with the floor by placing kick boards or stable boards under the rubber feet.

Repeat the sequence above, doing 12 reps per set until you are fatigued.

Continued on next page...

## TUESDAY, THURSDAY

### **Distance Swimmers:**

Steady work for 16 minutes at one setting in chosen stroke. Increase incline setting for monorail by one setting every three weeks.

### **Middle Distance Swimmers:**

Do 40 reps at an incline setting where you fatigue at 40 reps. Repeat for 5 sets.

### **Sprinters:**

Adjust the monorail to the highest angle where you can still hold perfect technique.

Do 4-8 repetitions, rest and stretch for 2-3 minutes. Repeat for 4 - 10 sets.

**CAUTION:** Freestyle swimmers should use both arms at one time (Butterfly).

## OTHER WORKOUT IDEAS

### **Segment strokes, double arm only:**

The swimmer pulls through a segment of the stroke only. This is one way to concentrate on various parts of the stroke mechanics and improve efficiency or work on technical problems.

Do the following exercises for 8 - 12 repetitions per set.

- 1) Pull through the first 40 degrees only. Pause, return to starting point and repeat for the set.
- 2) Pull through 40 degree to 100 degree portion of range of motion. Pause, return to 40 degree mark and repeat.
- 3) Pull through 100 - 200 degree mark. Pause, return and repeat.

**FINAL NOTE:** We use the above workouts over a 24 week cycle. During a taper, we continue to use the Vasa Trainers, but we reduce work loads from 100% to 80% to 60% to 40% and so on for the weeks before the competition.



*Coach Shoulberg (r) and Vasa President Rob Sleamaker (l) with another Olympic hopeful at Germantown Academy*

### **TECHNIQUE TIP**

#### **Emphasize the "Eccentric Phase" of the Exercise**

Use a rhythm when doing strength training on your Vasa Trainer. U.S. Olympic Swim Coach Richard Shoulberg recommends that you use a fast and powerful stroke going up the inclined monorail and a slow, controlled return coming down the inclined monorail back to the start position. So, you might count like this: up on 1, down on 3 - 5 seconds. The slow return stresses the importance of eccentric muscle contractions, often referred to as "negatives". Eccentric motion will maximize the benefit of each repetition compared to returning down the incline quickly without using your muscles to brake.

## 4.6 - TRAINING SECRETS FROM COACH JOHN HOLOHAN

### Vasa Trainer Program Yields Faster Swimmers

I developed our Vasa Trainer training routine out of a desire to provide our athletes with the best possible training. Our existing program suffered from many limitations including summer only long course training, twelve hours per week of pool time, winter travel restrictions and no convenient or affordable way to strength train. These circumstances had been adequate to develop Junior National qualifiers. However, none of our swimmers had qualified for Senior Nationals and I sensed that our performances were leveling off. I knew strength training would help, yet I did not want to resort to traditional weight training. I wanted something that was stroke specific. I also felt that we needed more time in the water.

I attempted to increase our water time by adding morning practices. The 6:00 AM start time and the 40-minute commute soon proved to be impractical. I reluctantly gave up on morning practices during the school year. These conditions set the stage for developing our Vasa Trainer program.

The Vasa Trainer is convenient, affordable, and specific to swimming and fits almost anywhere. In fact most swimmers can fit one in their home. I believed that we could use the Vasa Trainers to complete our morning workout in the convenience of each swimmer's home. I figured we could complete a morning Vasa Trainer workout in the same amount of time we spent in the car commuting to practice and school. I developed a routine which worked on strength, endurance and distance per stroke. It has worked well. Today we think of the Vasa Trainer as our portable pool and weight room.

We began the Vasa Trainer routine with our top sprinter Kim Black. At that time, I had been coaching Kim for seven years. She had just made her first Junior Nationals cut and was highly motivated to make Seniors and the Olympic trial cuts. I purchased a Vasa Trainer and I put it in Kim's house. The Vasa Trainer started out in the basement but was soon moved to the living room. Believe me, you know that you have a devoted swimming family when Mom lets you put the Vasa Trainer in the living room.

My intention was to use the Vasa Trainer for strength training and as an endurance swimming workout. Therefore, we started with the monorail of the Vasa Trainer set at a low slope and using one stretch cord. This reduced the resistance and allowed Kim to train for longer bouts. Kim started with five minutes of butterfly / 2-arm freestyle stroking. Over a period of months she built up to 30-minutes of continuous stroking, 3x per week. Once she had adapted to this workload, we increased the slope, decreased the time, and again progressed so she could stroke continuously for 30-minutes. This process has been repeated many times and today Kim trains at a moderate slope with two stretch cords. I use the stretch cords rather than increasing the slope of the monorail because I want to better approximate the swimming position. This routine is the foundation of our Vasa Trainer program.

As we approached the championships and the taper, I reduced the 30-minute sets from three times per week to once a week. I replaced the other two sets with one session per week of power training and one session of stroke count work. The power workout consists of 10 sets of 10 repetitions at the highest possible monorail slope setting that allow the athlete to maintain proper stroke. If the stroke technique deteriorates during the last part of this workout, reduce the resistance.

The stroke count set is based on the number of strokes the swimmer takes in their primary event. They complete ten sets of the desired stroke count. As an alternative, I also have them complete as many strokes as possible within their goal time for their primary event. I alternate the stroke count session and goal time session every other week.

As championships approach, I wean them from the Vasa Trainer. Four to six weeks from the championships, they stop using the Vasa Trainer. However, I should note that I individualize as much of our training as possible. This applies to Vasa Trainer workouts. I have had swimmers on Vasa Trainer routines as late as one week before championships.

continued...



At the end of her first season on the Vasa Trainer, Kim Black went from 52.8 to 51.1 in the 100 yard freestyle and from 24.7 to 23.78 in the 50 free. She finished second at Juniors East in the 100 and fifth in the 50 yard free. The following season she went 50.3 in the 100-yard and 22.78 in the 50. She qualified for the Olympic Trials in the 50 and went 26.45 and finished 17th at trials. I should note that Kim had no long course training the six months before the trials.

I was impressed with these results and confident that the Vasa Trainer routine was a large part of why Kim had big drops in her times. I have no "scientific proof", but the addition of the Vasa Trainer routine to her training was the only major change we made. I decided I wanted all our athletes using the Vasa Trainer on a regular basis.

The second swimmer with whom I used this method was a 17 year old high school senior who had been stuck at 55.5 in the 100 yard free and 25.7 in the 50 free. Her goal of making Juniors seemed almost unattainable. I started her on the Vasa Trainer program about 7 months before her high school championship. I used the same gradual progression that Kim had used. At the high school championship, she exceeded all our expectations. She went 52.89 in the 100 and 24.44 in the 50 and made Juniors. She also won the high school swimmer of the meet award and set a section record in the 100 free.

Last year was her first college season. Her college program did not include Vasa Trainer training. Her 100 went back to 55 and her 50 to 24.9. Granted, in the first year of college there are many factors other than a change in strength training, which could effect performance. However, this summer we resumed her Vasa Trainer workouts. By the end of the summer, her times began to come back down. As a coach that's all the proof I need. This year she has continued her routine at school. So far the results are promising. She has already gone faster than last year's tapered and shaved college championship times.

I have had similar results with all our swimmers that have consistently used the Vasa Trainer workout. The routine is mentally and physically difficult. In fact, one of the unintended benefits of this training program has been increased mental toughness and possibly increased tolerance to pain. These factors have also contributed to improvements in performance.

The following is a summary of the results four of our swimmers have had using our Vasa Trainer routine. I have just started using the routine with male swimmers. These results are all with female athletes.

<b>SHORT COURSE YARDS</b>			<b>PRE-Vasa Trainer Times</b>			<b>POST-Vasa Trainer Times</b>		
Name	Age	Stroke	50	100	200	50	100	200
Black, K	17	Free	24.7	52.8	1:55.8	22.79	50.33	1:47.3*
Swimmer 2	17	Free	25.5	55.5	2:00.9	24.44	52.89	1:56.6
Swimmer 3	16	Back	29.8	60.9	2:12.5	27.7	57.3	2:03.7
Swimmer 4	14	Free	29.7	1:02.5	2:12.5	26.6	57.5	2:04.4
<b>LONG COURSE YARDS</b>			<b>PRE-Vasa Trainer Times</b>			<b>POST-Vasa Trainer Times</b>		
Name	Age	Stroke	50	100	200	50	100	200
Black, K	17	Free	27.77	60.9	2:10.5	26.45	57.33	2:01.78
Swimmer 3	16	Back	n/a	1:08.8	2:29.8	n/a	1:05.92	2:25.58

\* Kim's 200 times were done after her first year of college.

\*\* Swimmer 3 did her Vasa Trainer work half freestyle and half backstroke.

**- John Holohan, Swim Coach, Fayetteville, N.Y., November 1998**

# PART 5 – VASA TRAINER FOR SURFERS

**5.1 Tips for Surfers** - key points to remember

**5.2 Power Workout for Surfers** - try this 15 minute workout

**5.3 Surf Paddling Exercises** - improve your strength & power

## 5.1 - TIPS FOR SURFERS

### 1. FOCUS ON PROPER BODY ALIGNMENT.

Keeping your body aligned on the padded bench will help you to become a more efficient and a more powerful paddler. Proper alignment and position strengthens your core muscles and helps to engage the correct muscles for proper paddling technique.



To keep properly aligned:

- tighten your abdominals.
- press your hip region into the bench (keep a concave shape to your core).
- keep your legs tight and straight (feet about 6" apart).

### 2. KEEP YOUR ELBOWS HIGH.

Keeping your elbows in the same position/axis as you pull yourself up engages the proper paddling muscles (triceps, biceps and deltoids).

### 3. PULL UP FAST, LET DOWN SLOW.

Focusing on the "negative or eccentric" part of the exercise (let down slow). Use a fast and powerful stroke going up the incline, and a slow, controlled return. Count "1" on your way up, and "1-2-3" on your way down. Eccentric motion will maximize the benefits of each repetition.

### 4. KEEP YOUR LEGS TIGHT.

Keeping your legs tight and your body in a streamlined position will make you a more efficient paddler (keep your feet about 6" apart, to clear the rear stanchion as you move up and down the inline). Don't relax your legs and let them "dangle", this will put more stress on the lower back. It's OK to bring your legs up so your feet face the ceiling, just remember to continue to tighten your abs to strengthen your core muscles.



surf paddling with legs up

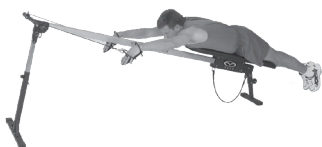
### 5. COMPLETE A FULL RANGE OF MOTION.

Be sure to complete the full range of motion in each stroke, from entry to finish. At the end of each stroke, push with your triceps and bring your hand all the way to your hips (imagine you are reaching into your back pocket).

## 5.2 - POWER WORKOUT FOR SURFERS

This workout focuses on building surf paddling strength so you can catch and ride more waves. Warm up for 5-10 minutes before starting this workout.

1. Start at incline level 1. Complete 10-15 reps of the Surf Paddle Stroke (shown below) focusing on proper paddling technique. Remember to pull up hard and let down slow.
2. After completing your reps at level 1, raise the incline to level 2.
3. Repeat 10-15 reps at each incline level, from level 1 through level 10.
4. After completing your reps at level 10, adjust the incline back to level 9.
5. Repeat 10-15 reps at each incline level, from 9 back down to 1.



**START:** tighten your abs, keep your legs tight and focus on a streamlined body



**MIDSTROKE:** keep your elbows high



**FINISH:** complete a full range of motion, pushing with your triceps, imagine you are reaching into your back pocket



**RECOVERY:** remember slow recover, up on "1", down on "1-2-3".

## 5.3 - SURF PADDLING EXERCISES

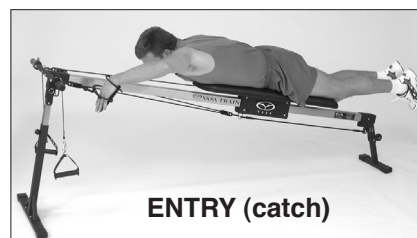
### SINGLE ARM PADDLE

alternating arms, using pulley cable system

*for building endurance, practicing technique and injury rehabilitation*

#### ENTRY (THE CATCH)

- For best results, use a medium to maximum height setting and attach a power cord for more resistance.
- Reach forward and place your hands in the paddles or handles. Start with your right arm forward in the "catch" position, your left arm back in the "finish" position.
- Start the pull with your right arm, keeping your wrist and hand rigid. The left arm will move forward as the right arm moves backward.
- Keep your elbows in a high position. As you pull with the right arm, resist with the left.



ENTRY (catch)

#### MID-STROKE (sweep)

- Sweep your right arm under your body, simulating the same motion used in the water. Your left arm will simultaneously be recovering forward.
- Concentrate on feeling the pressure distribution in your arms, shoulders and back.
- Keep your elbows in a high position. If there were an eye on your elbow, it would be looking to the side.



MID-STROKE

#### FINISH

- Accelerate as your arm sweeps under your body.
- Sweep your right hand past your hips, just brushing the side of your right hip.
- Finish strongly with a final push of the hand.
- Repeat sequence alternating arms.



FINISH

#### TIPS

1. Remember - you will not be moving up and down the monorail when doing continuous single arm paddle. Your body will stay in one place. The resistance comes from keeping your body suspended partway up the monorail and from the power cord pulling the seat backwards.
2. If it seems "too easy", increase the slope angle or add a more resistant power cord. Remember, the resistance comes from holding your body weight against gravity for timed intervals.
3. If the cord jumps off the pulley wheel while doing continuous single arm Paddle check the following:
  - Be sure to use a smooth cadence during your stroke, keeping the cord tight throughout the range of motion.
  - Check to make sure the eyebolts on your strap bar are loose enough so the pulleys will swivel easily, but tight enough to be secure to the strap bar.
4. If the fittings (clips) on the pulley cord hit the pulley wheels when your arms are fully extended, use the freestyle extension loop. This will "lengthen" the pulley cord, giving you more cord for a full extension (see the section "Freestyle Extension Loop" in PART 1 - Assembly for more information).



RECOVERY

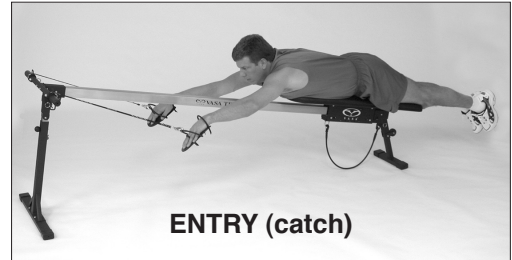
# DOUBLE ARM PADDLE

using webbing straps

*for building strength*

## 1. ENTRY

- Hold both paddles and pull the bench halfway up the incline.
- Straddle the bench and lie face down on the padded bench with the top of your chest even with the front edge of the bench.
- Extend both arms forward.
- Start the pull with both arms, keeping your wrists and hands rigid.



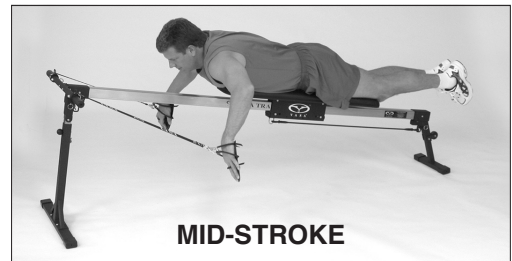
## 2. MID-STROKE

- Keep your elbows in a high position as you pull with both arms.



## 3. FINISH

- Accelerate so that your hips move swiftly past your hands.
- Complete the stroke with a strong finish by extending your arms as your hands brush your hips.

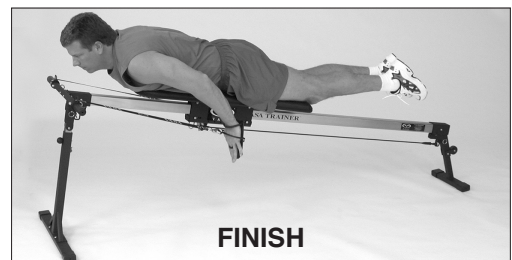


## 4. RECOVERY

- Keep your arms in the finish position until you feel the seat carriage start to roll back down the monorail. Hold for 1 second.
- Slowly let yourself and the padded bench glide back down the monorail, taking care to avoid acceleration or jerky motion. Use a cadence to do complete strokes, such as forward on "1" count, recover on "1-2-3" count. This allows your muscles to benefit from eccentric (or negative) contractions, as well as the concentric (forward or positive) phase of the stroke.

**NOTE:** Using webbing straps will provide greater resistance than using the pulley cable system. If this exercise seems too hard, try it with the pulley cable system.

**CAUTION:** The recovery phase of this stroke can be difficult. We recommend that you start conservatively and gradually increase the repetitions and resistance levels.



# RECOVERY STROKE

both arms at once, using webbing straps or pulley cable system

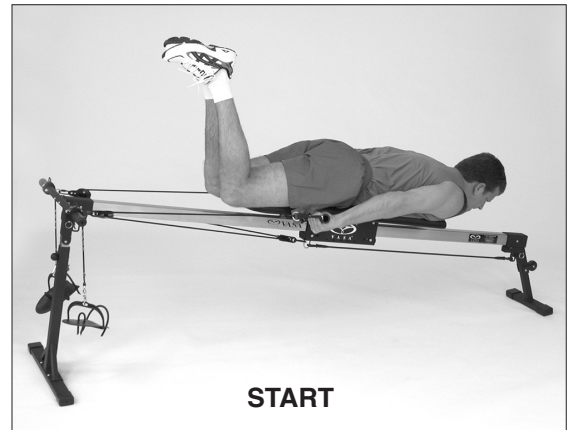
*for surf paddling*

To help prevent the muscles used in the "recovery" phase of the paddling from fatiguing early, incorporate this exercise into your regular workout routine.

**SAFETY NOTE:** This is a very strenuous exercise. Using webbing straps provides greater resistance than the pulley cable system. Before starting this stroke, we recommend that you have someone assist you and that you start with low resistance. Consider decreasing the slope to level or very slight incline by placing an aerobic step under the rear stanchion.

## 1. START

- Set the front stanchion telescope tube at its lowest setting. If you need less resistance, place an aerobic step under the rear stanchion.
- Hold onto the handles attached to the pulley cable system or webbing straps.
- Sit on the bench facing the rear of the machine, legs straddling the bench.
- Holding the handles, slowly lean forward and lie on the bench, head toward the rear (see START).
- Simulate the recovery stroke for Butterfly & Freestyle by slowly pulling on the handles, moving yourself up the inclined monorail (backwards!).
- Use care to start out slow and smooth, feeling the resistance so you don't overload your muscles.



## 2. MID-STROKE

- Concentrate on keeping your elbows and shoulders high during the recovery.
- Use a steady pace through this phase of the recovery. Accelerate only after you are comfortable doing this exercise.

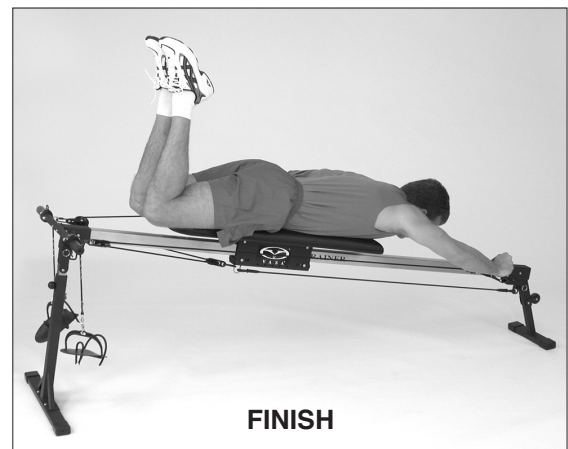


## 3. FINISH

- Accelerate somewhat as your hands come past your head and toward the monorail.
- Finish strongly with a final push from the hands.

## 4. RETURN

- Hold the finish position until the seat carriage starts to roll back down the monorail.
- Slowly let your body and bench glide back down the monorail, taking care to avoid acceleration or jerky motion.
- Use a cadence to do complete strokes, such as up on "1" count, return on "1-2-3" count. This allows your muscles to benefit from eccentric (or negative) contractions, as well as the concentric (pull) phase of the stroke.



## PART 6 – TRAINING & WORKOUTS

Please follow these general guidelines when using your VasaTrainer:

### PCS VS. WEBBING STRAPS

Which system you use will depend on the type and purpose of the exercise. The PCS provides a mechanical advantage, much like a winch or a block and tackle device. This makes exercises at any incline setting 50% less than using webbing straps at the same incline. The PCS also provides a wider range of motion, which makes it more suitable for most exercises in the following sections. If you find the exercise is too easy, you can switch to the webbing straps or adjust resistance by increasing the incline of the monorail, adding stretch cords or power cords, or adding weights to the weight bracket.

### HANDLES VS. PADDLES

Most exercises will be more comfortable performed with the handles rather than the paddles. You may choose to use the paddles for exercises that simulate swim or surf padding strokes. Swim Coaches feel that using the paddles force the athlete to engage the many muscles of the hand that you use while swimming or paddling in the water, resulting in stronger hands and better technique.

### ADDING RESISTANCE

If it becomes easy to do your pre-determined repetitions per set and the entire workout is too easy, it's time to increase the slope, add stretch cords, add power cords, or add weights on the weight plate bracket. See PART 2, Section 2.6 "Adjusting Resistance on the Vasa Trainer" for detailed instructions on how to adjust resistance.

### WARM UP AND STRETCHING

Always warm up with 10 - 20 minutes of light intensity aerobic activity before strength training with the Vasa Trainer. Some excellent exercises for warm up are: Freestyle Endurance and Cardio Pull. Do some stretching after warming up and after completing your workout. You'll find some stretches you may do with your Vasa Trainer later in this section.

### SAFETY

Always practice strict safety when using the Vasa Trainer. See PART 2, Section 2.3 - "Safety and the Vasa Trainer" for guidelines on how to use the Vasa Trainer safely, as well as tips for working with children.

For tips on how to safely get on and off the Vasa Trainer, see PART 2, Section 2.3- "Getting on and off Safely", as well as the instructions on the next page.

### PROPER BREATHING

- Always breath rhythmically during exercise. Holding your breath can be dangerous because it stops the blood flow to your brain and could make you light headed or faint.
- Breathe in and out through both your nose and your mouth in order to get enough oxygen during each breath.
- Exhale when the exercise is the hardest, and inhale when the exercise is the easiest.

### PROPER FORM AND TECHNIQUE

Follow the directions in this manual for performing each exercise in a correct, safe manner. Always use your muscles to control lowering your body down the monorail to the start position. Never allow yourself to return down the monorail in an uncontrolled manner. For exercises you do while lying on your back, press your lower back into the padded bench and tuck your chin to your chest. This will prevent lower back strain and will also give your abdominal muscles a better workout. For any exercises that are labeled ADVANCED, start slowly until you feel comfortable with the motion and follow the tips for safety and stability.

### CHART YOUR PROGRESS

Tracking your improvements on the Vasa Trainer, as in all training, will be a key in reaching your goals. One of the most effective methods for monitoring progress is to keep an accurate training log. A good log can serve to help you monitor the effects of each workout and the stresses associated with training. The sample Vasa training log in this section can serve as a guide for tracking these components in your training program. You are more likely to be satisfied with your exercise program if you keep an effective log.

# VASA STRENGTH TRAINING LOG



DAY/DATE	(1) _/_-			(2) _/_-			(3) _/_-			(4) _/_-			(5) _/_-			(6) _/_-			(7) _/_-			
	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
15																						
15																						
16																						
17																						
18																						

REPS = # OF REPETITIONS      SETS = # OF SETS      RES = RESISTANCE SETTING OR WEIGHTS

# VASA TRAINER CONDITIONING CIRCUIT - for All-Around Athletes

This program is designed to build and maintain effective strength and power to prepare you for all activities. Here is a circuit of exercises you will be able to do with your Vasa Trainer. It's a routine that's simple and effective. Start with the following. Warm-up for 5-10 minutes with cardio-pull or aerobic freestyle.

- **Frequency:** 3 days per week, every other day. Do aerobic training between strength workouts.
- **Resistance:** Start at lowest setting and increase by 1 increment for each additional set until 15 reps are difficult to complete using good form.
- **Rest:** Rest 1-2 minutes between exercises. Do a set of one exercise, rest, then do a set of the next exercise, rest and so on to complete the circuit. Repeat circuit for second and third sets.

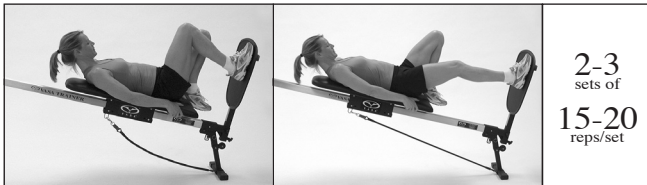
exercises # of sets and reps

## 1. PLYOMETRIC SQUATS



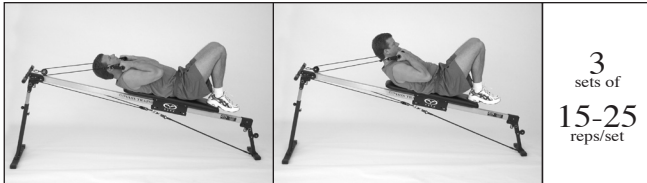
2-3 sets of  
15-20 reps/set

## 2. LUNGES



2-3 sets of  
15-20 reps/set

## 3. RESISTED AB CRUNCH



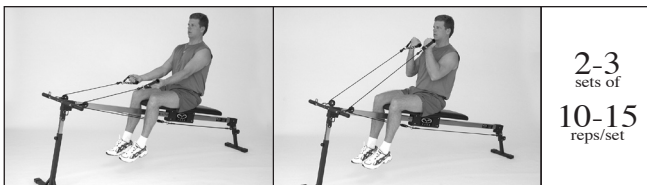
3 sets of  
15-25 reps/set

## 4. CHEST PRESS



2-3 sets of  
10-15 reps/set

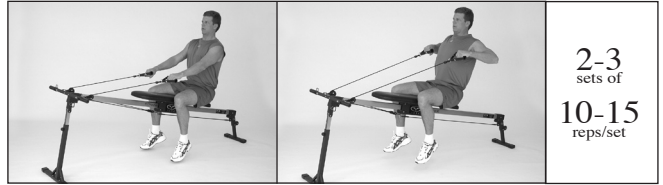
## 5. BICEPS CURLS



2-3 sets of  
10-15 reps/set

exercises # of sets and reps

## 6. SEATED ROWING



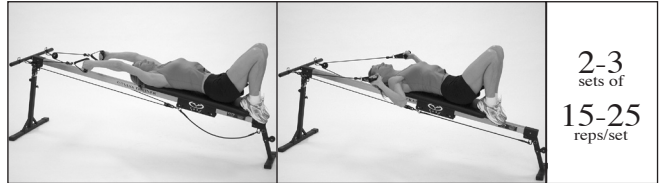
2-3 sets of  
10-15 reps/set

## 7. REVERSE FLYS



2-3 sets of  
10-15 reps/set

## 8. LAT PULLDOWN



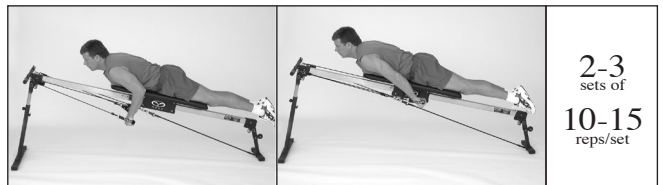
2-3 sets of  
15-25 reps/set

## 9. ASYMETRIC EXTENSION



2-3 sets of  
15-25 reps/set

## 10. TRICEPS EXTENSIONS



2-3 sets of  
10-15 reps/set

More details on each individual exercise at [www.vasatrainer.com](http://www.vasatrainer.com)



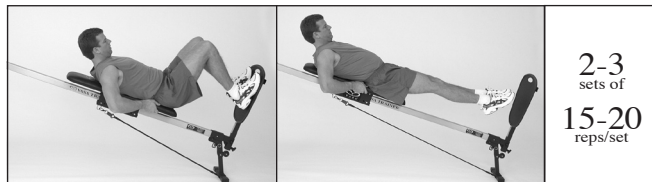
# VASA TRAINER CONDITIONING CIRCUIT- for Swimmers

This program is designed to build and maintain effective swim-specific strength and power to prepare you for competition. Here is a circuit of exercises you will be able to do with your Vasa Trainer. It's a routine that's simple and effective. Start with the following. Warm-up for 5-10 minutes with cardio-pull or aerobic freestyle.

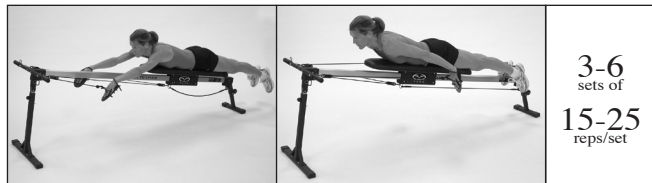
- Frequency: 3 days per week, every other day. Swim or do aerobic training between strength workouts.
- Resistance: Start at lowest setting and increase by 1 increment for each additional set until 15 reps are difficult to complete using good form.
- Rest: Rest 1-2 minutes between exercises. Do a set of one exercise, rest, then do a set of the next exercise, rest and so on to complete the circuit. Repeat circuit for second and third sets.

exercises	# of sets and reps	exercises	# of sets and reps
-----------	--------------------	-----------	--------------------

## 1. PLYOMETRIC SQUATS

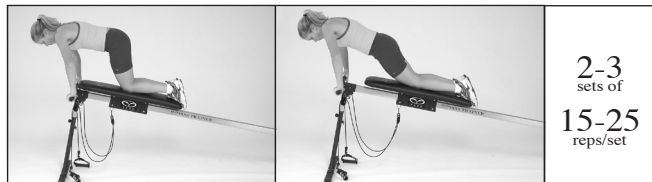


## 2. BUTTERFLY

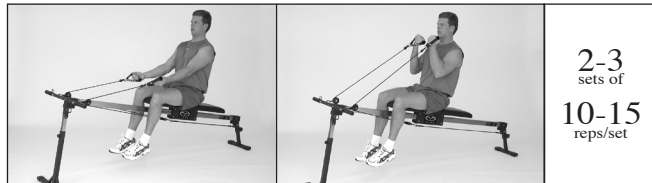


*\* If breaststroke is primary stroke, then do this exercise using breaststroke technique.*

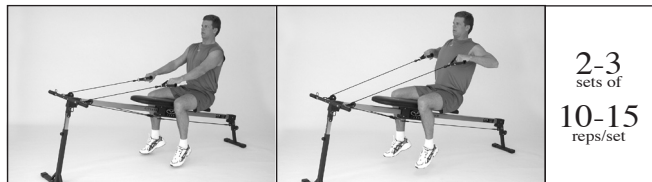
## 3. SUPER AB CRUNCHES



## 4. BICEPS CURLS



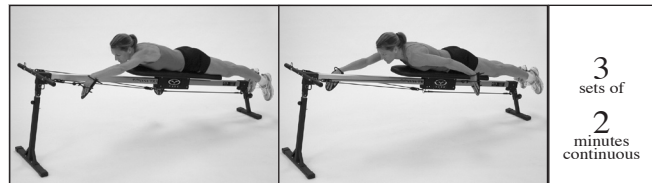
## 5. HIGH LAT ROW (SEATED ROW)



## 6. REVERSE FLYS



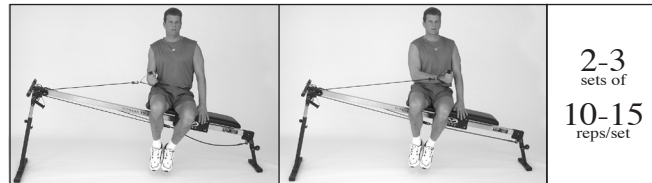
## 7. FREESTYLE ENDURANCE - alternating



## 8. CHEST PRESS



## 9. INTERNAL ROTATOR CUFF - seated



## 10. EXTERNAL ROTATOR CUFF - seated

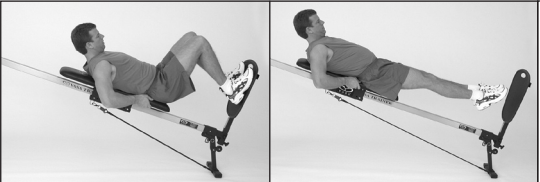


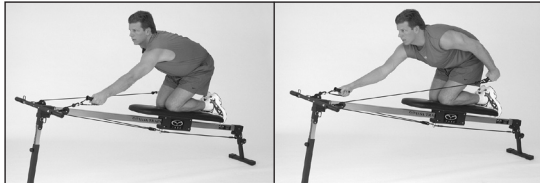
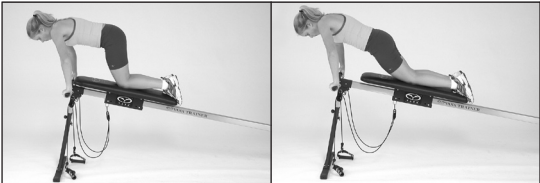
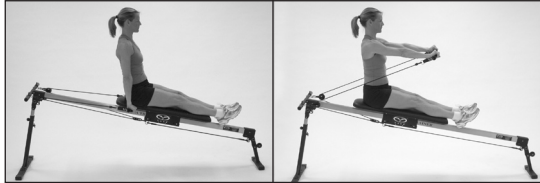






More details on each individual exercise at [www.vasatrainer.com](http://www.vasatrainer.com)

# VASA TRAINER CONDITIONING CIRCUIT- for Nordic Skiers

This program is designed to build and maintain effective ski strength and power to prepare you for competition. Here is a circuit of exercises you will be able to do with your Vasa Trainer. It's a routine that's simple and effective. Start with the following. Warm-up for 5-10 minutes with cardio-pull or aerobic freestyle.

- Frequency: 3 days per week, every other day. Do aerobic training between strength workouts.
- Resistance: Start at lowest setting and increase by 1 increment for each additional set until 15 reps are difficult to complete using good form.
- Rest: Rest 1-2 minutes between exercises. Do a set of one exercise, rest, then do a set of the next exercise, rest and so on to complete the circuit. Repeat circuit for second and third sets.

exercises	# of sets and reps	exercises	# of sets and reps
<b>1. PLYOMETRIC SQUATS</b>	 <p>2-3 sets of 15-20 reps/set</p>	<b>6. REVERSE FLYS</b>	 <p>2-3 sets of 10-15 reps/set</p>
<b>2. LUNGES</b>	 <p>2-3 sets of 15-20 reps/set</p>	<b>7. NORDIC SINGLE POLING - kneeling</b>	 <p>3 sets of 2 minutes continuous</p>
<b>3. SUPER AB CRUNCHES</b>	 <p>2-3 sets of 15-25 reps/set</p>	<b>8. SHOULDER RAISES (poling recovery)</b>	 <p>2-3 sets of 10-15 reps/set</p>
<b>4. NORDIC DOUBLE POLING - kneeling</b>	 <p>3-6 sets of 15-25 reps/set</p>	<b>9. CHEST PRESS</b>	 <p>2-3 sets of 10-15 reps/set</p>
<b>5. BICEPS CURLS</b>	 <p>2-3 sets of 10-15 reps/set</p>	<b>10. RESISTED AB CRUNCH</b>	 <p>3 sets of 15-25 reps/set</p>

More details on each individual exercise at [www.vasatrainer.com](http://www.vasatrainer.com)

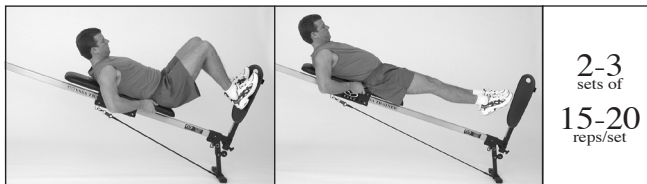
# VASA TRAINER CONDITIONING CIRCUIT- for Surfers

This program is designed to build and maintain effective surfing-specific strength and power to prepare you to catch and ride more waves. Here is a circuit of exercises you will be able to do with your Vasa Trainer. It's a routine that's simple and effective. Warm-up for 5-10 minutes with cardio-pull or aerobic paddling.

- Frequency: 3 days per week, every other day. Swim or do aerobic training between strength workouts.
- Resistance: Start at lowest setting and increase by 1 increment for each additional set until 15 reps are difficult to complete using good form.
- Rest: Rest 1-2 minutes between exercises. Do a set of one exercise, rest, then do a set of the next exercise, rest and so on to complete the circuit. Repeat circuit for second and third sets.

exercises	# of sets and reps
-----------	--------------------

## 1. PLYOMETRIC SQUATS



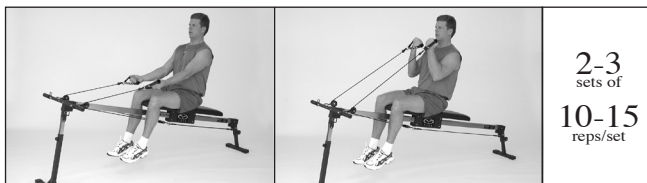
## 2. BUTTERFLY



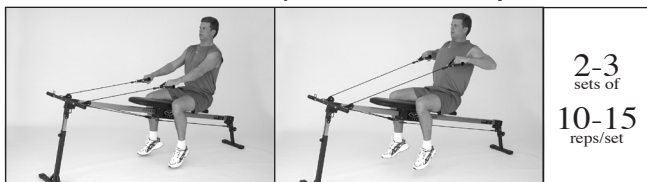
## 3. SUPER AB CRUNCHES



## 4. BICEPS CURLS



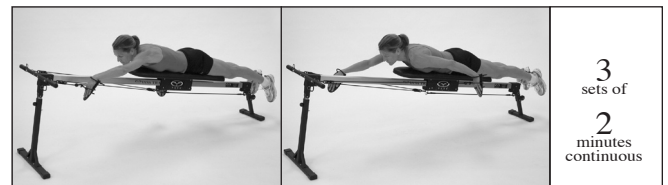
## 5. HIGH LAT ROW (SEATED ROW)



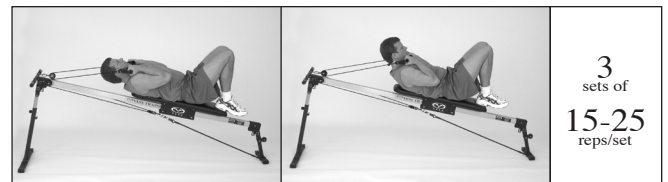
## 6. REVERSE FLYS



## 7. SURF PADDLING



## 8. RESISTED AB CRUNCH



## 9. CHEST PRESS



## 10. SHOULDER RAISES



More details on each individual exercise at [www.vasatrainer.com](http://www.vasatrainer.com)

# VASA TRAINER CONDITIONING CIRCUIT- for Triathletes

This program is designed to build and maintain effective swim, bike and run strength and power to prepare you for competition. Here is a circuit of exercises you will be able to do with your Vasa Trainer. It's a routine that's simple and effective. Start with the following. Warm-up for 5-10 minutes with cardio-pull or aerobic freestyle.

- Frequency: 3 days per week, every other day. Swim or do aerobic training between strength workouts.
- Resistance: Start at lowest setting and increase by 1 increment for each additional set until 15 reps are difficult to complete using good form.
- Rest: Rest 1-2 minutes between exercises. Do a set of one exercise, rest, then do a set of the next exercise, rest and so on to complete the circuit. Repeat circuit for second and third sets.

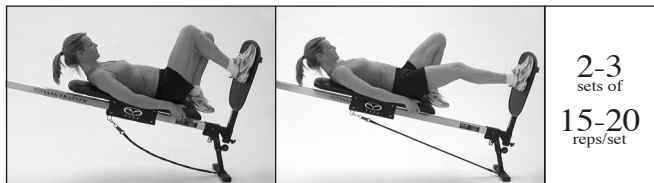
exercises # of sets and reps

## 1. PLYOMETRIC SQUATS



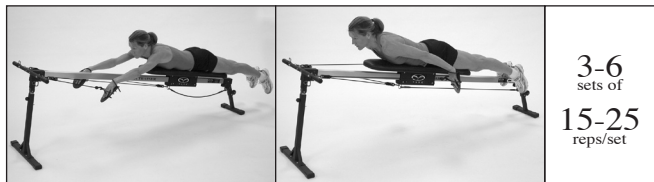
2-3 sets of  
15-20 reps/set

## 2. LUNGES



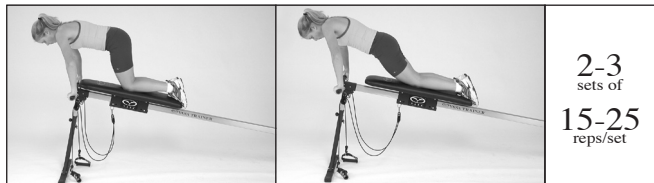
2-3 sets of  
15-20 reps/set

## 3. BUTTERFLY



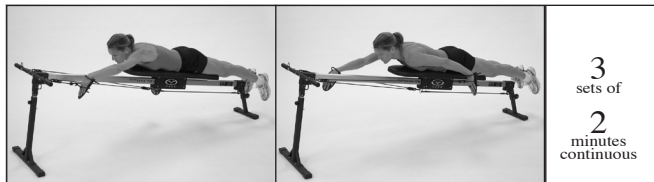
3-6 sets of  
15-25 reps/set

## 4. SUPER AB CRUNCHES



2-3 sets of  
15-25 reps/set

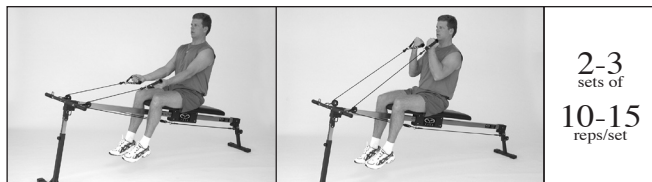
## 5. FREESTYLE ENDURANCE - alternating



3 sets of  
2 minutes continuous

exercises # of sets and reps

## 6. BICEPS CURLS



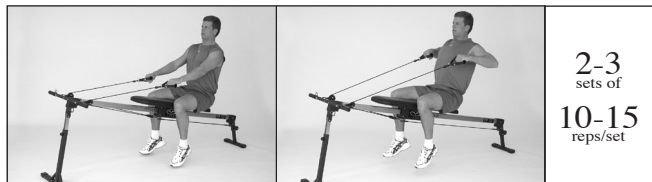
2-3 sets of  
10-15 reps/set

## 7. REVERSE FLYS



2-3 sets of  
10-15 reps/set

## 8. HIGH LAT ROW (SEATED ROW)



2-3 sets of  
10-15 reps/set

## 9. CHEST PRESS



2-3 sets of  
10-15 reps/set

## 10. TRICEP DIPS



2-3 sets of  
10-15 reps/set

More details on each individual exercise at [www.vasatrainer.com](http://www.vasatrainer.com)

## PART 7 – RESOURCES

[www.vasatrainer.com](http://www.vasatrainer.com)

### WEBSITE RESOURCES

Visit our website for more information on any of the categories below and much more.

#### TRAINING

- BY SPORT GROUP
- EXERCISE LIBRARY
- WORKOUTS
- TECHNIQUE WORK
- VIDEO GALLERY

#### PRODUCTS

- ACCESSORIES
- REPLACEMENT PARTS
- UPGRADES
- VASA TRAINERS
- VASA ERGOMETERS
- CONVERSION KITS

#### NEED HELP?

- FREQUENTLY ASKED QUESTIONS
- MAINTENANCE
- WARRANTY INFORMATION

---

### CUSTOMER SUPPORT & SERVICE

**E-Mail:** [info@vasatrainer.com](mailto:info@vasatrainer.com)  
**Phone/Toll-free (US & Canada):** 800.488.VASA (8272)  
**Phone/International:** 1.802.872.7101