

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 - Stroke Illustration & Instruction - Basic strokes & complementary exercises

4.3 - Additional Exercises for Swim-Specific Training

4.4 - Pre-Competition Training for Swimmers - Training guidelines

4.1 - TIPS FOR SWIMMERS

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

- Increasing stroke-specific strength, power and speed
- Increasing swim-specific endurance
- Improving stroke technique
- 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 later in this section as well as conditioning circuits in PART 5.

Swim-Specific Power and Speed

The best way to train for power and speed is to build up the strength and power on dry-land 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. Leg exercises are illustrated in section 4.3.

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 cannot get to the pool or if you have an ear infection, etc. that prevents you from getting in the water, the Vasa Trainer will be an excellent alternative to give you high quality swim-specific endurance workouts. If you are already in the pool 2 times per day, then do not use the Vasa Trainer for endurance.

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 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 in Section 4.2 for detailed instructions on doing Freestyle.
2. Place a mirror in front so you can see your stroke - or use video to self critique or share with a knowledgeable coach/friend. For Butterfly and Freestyle 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).
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 Section 4.2 for detailed instructions on technique.

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 resistance in a variety of ways. 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).

4.2 - STROKE ILLUSTRATION & INSTRUCTION

- General Principles
- Butterfly
- Butterfly - Mid Stroke Isometric
- Freestyle (Freestyle Endurance)
- Freestyle with Hip Rotation
- Breaststroke
- Breaststroke Kick
- Backstroke - Finish Segment
- Recovery Stroke - Both Arms at Once
- Recovery Stroke - Alternating Arms

GENERAL PRINCIPLES

Keep the following points in mind when performing swim strokes on the Vasa Trainer:

1. Your hand position in the paddles or handles should be comfortable and stable prior to starting the exercise.
2. During the basic swimming or paddling strokes, your arm, hand, and body position need to simulate proper stroke technique as closely as possible. Always concentrate on simulating perfect stroke technique. If you can not maintain proper technique due to fatigue, take a rest until you can.
3. Use a mirror or a video camera to self-critique your technique as you workout on your Vasa Trainer. Adjust your form as needed. Share your video with a coach or friend for added input.
4. Keep your feet apart to straddle the monorail - avoid bumping your feet on the rear stanchion as you move. Wear shoes.

WARNING

Never allow the bench to roll back rapidly. **Use your muscles to control the descent.**
Uncontrolled descent can result in injury.

BUTTERFLY USING PCS OR WEBBING STRAPS

- Build endurance, improve technique & injury rehabilitation.

1. ENTRY

- Your arms should be fully extended in the start position, with your hands & wrists at the catch phase of your stroke.
- Imagine your arms are extended over a big ball.

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

- 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. RECOVERY

- 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 on a 3 count.

TIPS

1. To increase resistance for this exercise, increase the incline, use webbing straps instead of the PCS, or add power cords or weight vest.

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: You can use either the PCS or Webbing Straps for this exercise. If using the PCS for this exercise, do NOT use the freestyle extension.



START



MID STROKE



FINISH



RECOVERY

BUTTERFLY - MID STROKE ISOMETRIC USING PCS OR WEBBING STRAPS

🎯 Technique training and injury prevention for the butterfly.

1. START

- Your arms should be fully extended in the start position, with your hands & wrists at the catch phase of your stroke.
- 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 mid stroke/start position. Hold again until arms begin to shake, then pull through to finish position
- Repeat for 10-15 repetitions.



VARIATION

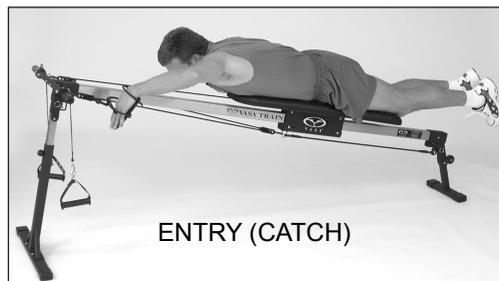
- While holding the isometric position, move your hands back and forth, perpendicular to the monorail (closer to your chest, then out to the side).

FREESTYLE (FREESTYLE ENDURANCE) ALTERNATING ARMS WITH PCS

- Build endurance, improve technique & injury rehabilitation.

1. ENTRY (CATCH)

- 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.



2. MID STROKE (SWEEP)

- Sweep your right arm past 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.



3. 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.



TIPS

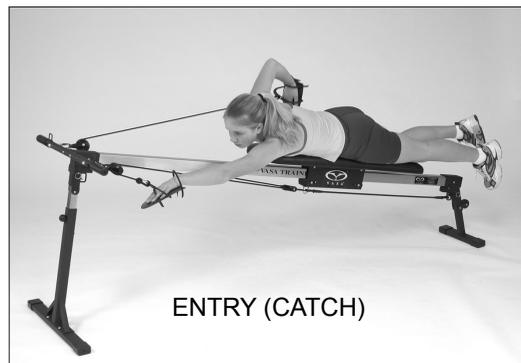
1. You will not be moving up & down the monorail when doing continuous freestyle correctly. Your body will stay in one place. The resistance comes from keeping your body suspended partway up the monorail and/or from the power cord pulling the seat backwards.
2. If it seems “too easy”, increase the slope angle or add a more heavier power cord.
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 handles/paddles hit the pulley wheels when you are fully extended, use the freestyle extension.

FREESTYLE ENDURANCE WITH HIP ROTATION ALTERNATING ARMS WITH PCS

🎯 Technique & timing, build core strength.

1. ENTRY (CATCH)

- 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.



2. MID STROKE (SWEEP)

- Sweep your left arm past 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.



3. FINISH

- Accelerate the stroke as your left arm sweeps past 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

1. 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.
2. 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.

BREASTSTROKE USING PCS OR WEBBING STRAPS

🎯 Technique for backstroke - full stroke.

GETTING INTO POSITION

- Cross the pulley cord or webbing straps under the monorail and put the left hand in the right paddle, and the right hand in the left paddle.

1. ENTRY (CATCH)

- 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

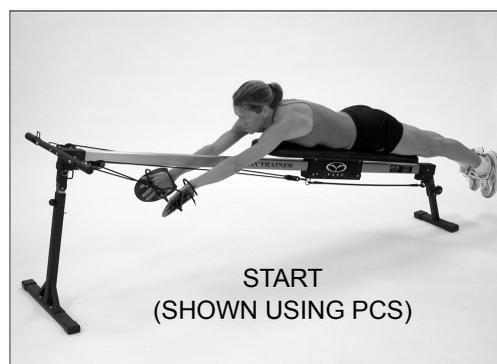
- End the pulling phase of the stroke so your hands are just under your stomach.
- Be sure to concentrate on using correct technique for the entire stroke.

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 a 1 count and down on 3 count. This allows your muscles to benefit from eccentric (or negative) contractions.

TIPS

1. To increase resistance for this exercise, increase the incline, use webbing straps instead of the PCS, or add power cords or weight vest.



NOTE: If using the PCS for this exercise, do NOT use the freestyle extension.

BREASTSTROKE KICK USING ANKLE STRAPS & PCS

- Improve breaststroke kick technique & strength.

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).

1. START

- Start with flexed legs (bent).

2. MID KICK

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

3. FINISH

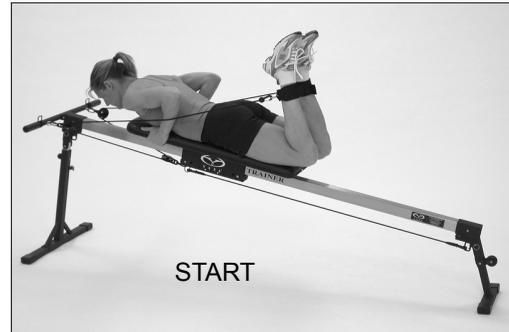
- Slowly return to start position in controlled manner.
- Raise slope for more resistance.

VARIATION

- Lie on your stomach, feet apart on the leg power 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.

TIP

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.



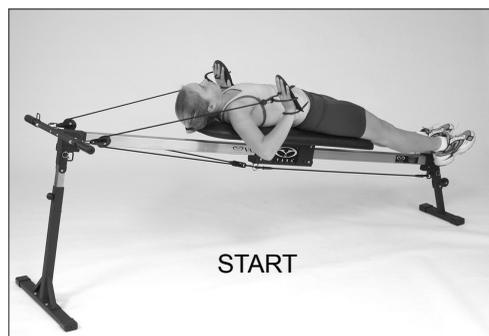
BACKSTROKE - FINISH SEGMENT USING PCS OR WEBBING STRAPS

🎯 Technique for backstroke - isolated portion of stroke.

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 pcs and put the slope of the monorail at the lowest setting.

GETTING INTO POSITION

- 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).

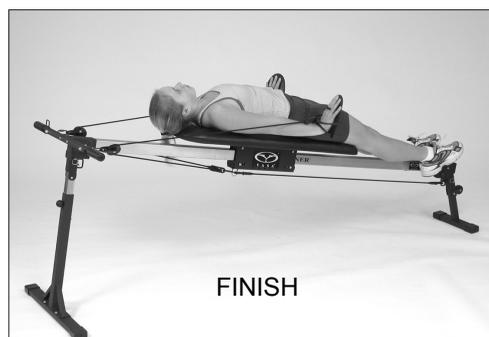


1. START

- 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 for this exercise.

RECOVERY STROKE - BOTH ARMS AT ONCE USING PCS OR WEBBING STRAPS

- Increase recovery strength for butterfly and freestyle training.

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.

GETTING INTO POSITION

- Set the front stanchion incline at its lowest setting.
- Hold onto the handles attached to the PCS or webbing straps & sit on the bench facing the rear of the machine.

1. 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

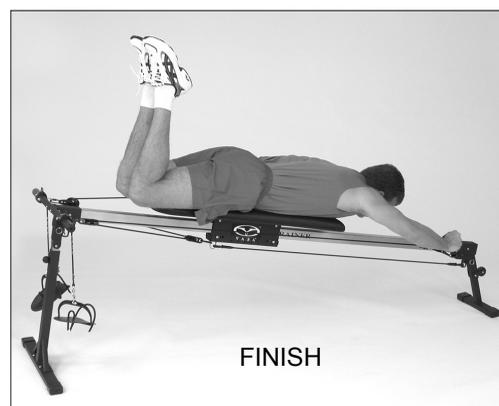
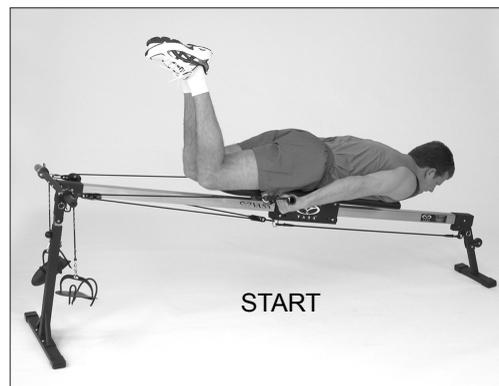
- Concentrate on keeping your elbows and shoulders high during the recovery.
- Use a steady pace through this phase of the recovery. Accelerate only after you are comfortable doing this exercise.

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 then 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 a 1 count and down on 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 PCS

- Increase recovery strength for freestyle & surf paddle training.

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.

GETTING INTO POSITION

- Set the front stanchion incline at its lowest setting.
- Hold onto the handles attached to the PCS & sit on the bench facing the rear of the machine.

1. START

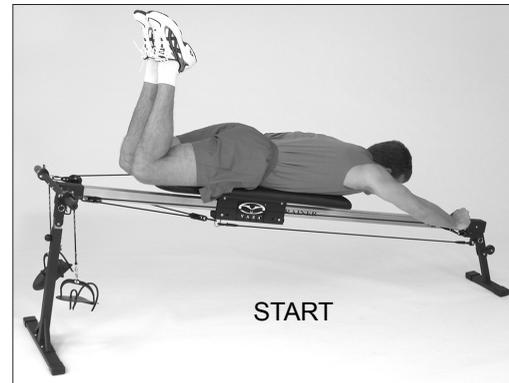
- Simulate the recovery stroke for Freestyle & Surfing by slowly pulling on the handles - alternating arms.
- Use care to start out slow and smooth, feeling the resistance so you don't overload your muscles.

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.

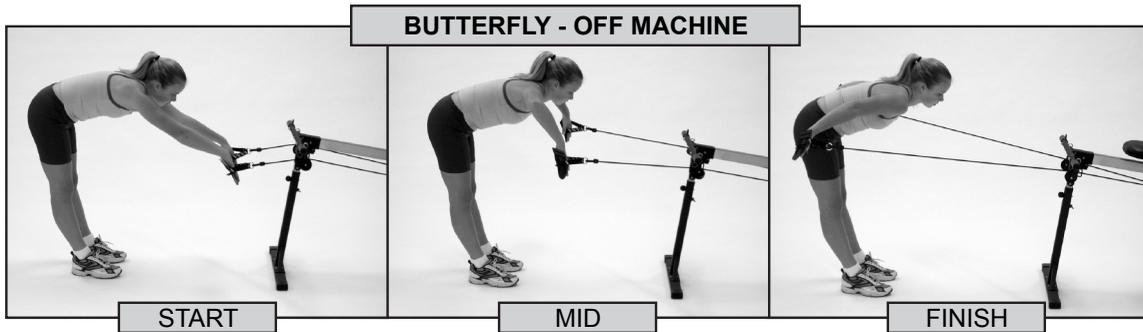
3. FINISH

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



NOTE: Taller athletes (over 6 feet) may need the freestyle extension for this exercise.

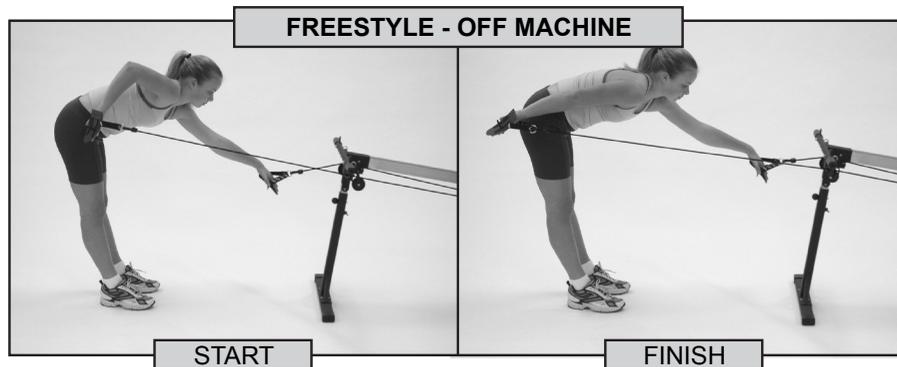
4.3 - ADDITIONAL EXERCISES FOR SWIM-SPECIFIC TRAINING



- 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 weight vest.
- 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.

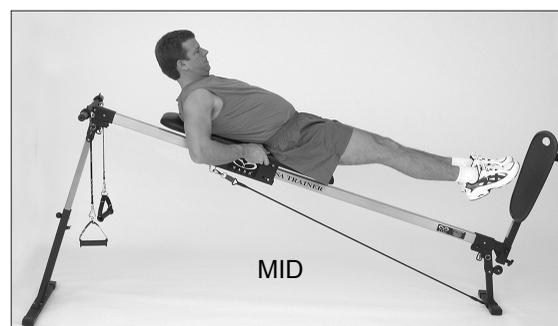
LEG PUSH-OFF / PLYOMETRIC SQUAT USING BOTH LEGS ON THE LEG POWER PLATFORM (ACCESSORY)

- Develop vertical leap, powerful starts & turns, and strong abdominals.

PLEASE NOTE: We recommend using a power cord for this exercise.

GETTING INTO POSITION

- Attach the leg power 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 your resistance - start conservatively! Adjust after testing.
- Position yourself so your hips are even with the rear edge of the bench. Bend knees to 90 degrees & your feet are shoulder width apart on the platform.
- Hold the sides of bench with hands for stability. Tuck chin to chest watching your feet at all times. Press your low back into bench to support your back and to work the abdominals.



1. START

- 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.

2. RETURN

- The seat carriage will roll up & down the monorail. Continue to hold the sides of the 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

- Isolate legs: Right leg only, then left leg only.

SAFETY REMINDERS:

1. Always wear exercise shoes;
2. Hold the sides of the bench at all times;
3. Watch your feet return to the platform.

CAUTION:

When you first perform this exercise:

1. Do a few easy "test" push-offs to get a feel for the speed at which you will travel up & down the monorail;
2. Perform 5-10 reps per set (max 3 sets) the first 2-4 times you do this exercise.

SQUAT

USING BOTH LEGS ON THE LEG POWER PLATFORM (ACCESSORY)

- Increase strength in thighs, buttocks and trunk muscles.

PLEASE NOTE: We recommend using a power cord for this exercise.

GETTING INTO POSITION

- Attach the leg power 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 your resistance - start conservatively! Adjust after testing.
- Position yourself so your hips are even with the rear edge of the bench. Bend knees to 90 degrees & your feet are shoulder width apart on the platform.
- Hold the sides of bench with hands for stability. Tuck chin to chest watching your feet at all times. Press your low back into bench to support your back and to work the abdominals.

1. START

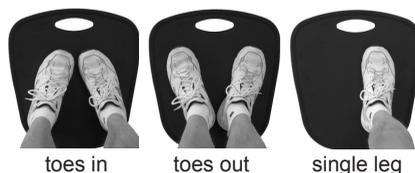
- Push against leg power platform or wall and extend legs until slightly bent. Maintain contact between leg power platform or wall and your feet.

2. FINISH

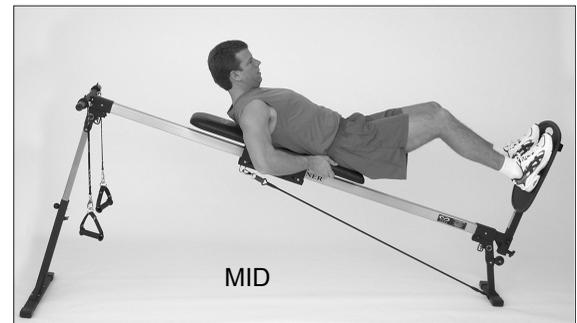
- Slowly bend the legs and return to start position.
- For more resistance add power cords or weight vest.

VARIATION

- Isolate various leg muscles by moving toes in/out/neutral.



NOTE: OLDER MODEL LEG PLATFORM SHOWN



SAFETY REMINDERS:

1. Always wear exercise shoes;
2. Hold the sides of the bench at all times;
3. Watch your feet return to the platform.

CAUTION:

When you first perform this exercise:

1. Perform 5-10 reps per set (max 3 sets) the first 2-4 times you do this exercise.

LEG PUSH-OFF / PLYOMETRIC SQUAT WITH MED BALL USING BOTH LEGS ON THE LEG POWER PLATFORM (ACCESSORY)

- Increase strength in thighs, buttocks and core muscles.

PLEASE NOTE: We recommend using a power cord for this exercise.

GETTING INTO POSITION

- Attach the leg power 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 your resistance - start conservatively! Adjust after testing.
- Position yourself so your hips are even with the rear edge of the bench. Bend knees to 90 degrees & your feet are shoulder width apart on the platform.
- Hold a med ball between your hands, extending your arms above chest. Tuck chin to chest watching your feet at all times. Press your low back into bench to support your back and to work the abdominals.

1. START

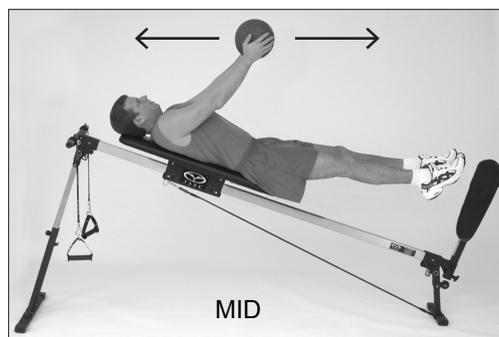
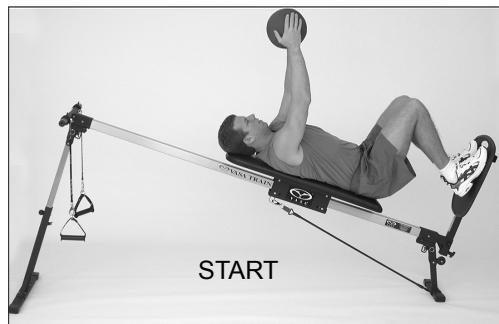
- Push forcefully off the leg power platform, holding the medicine ball directly above your chest. Engage your abdominals by trying to keep the ball stable with arms extended at chest height.

2. FINISH

- Hold your arms and medicine ball straight above your chest throughout the exercise as best a 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

- Use a dumbbell or weight in place of medicine ball.
- Perform the same exercise without the feet leaving the platform.
- Isolate various leg muscles by moving toes in/out/neutral.



SAFETY REMINDERS:

1. Always wear exercise shoes;
2. Watch your feet return to the platform.

CAUTION:

When you first perform this exercise:

1. Do a few easy "test" push-offs to get a feel for the speed at which you will travel up & down the monorail;
2. Perform 5-10 reps per set (max 3 sets) the first 2-4 times you do this exercise.

TRACK START

- 🎯 Develop powerful starts & turns, and increase flexibility.

PLEASE NOTE: We recommend using a power cord for this exercise.

GETTING INTO POSITION

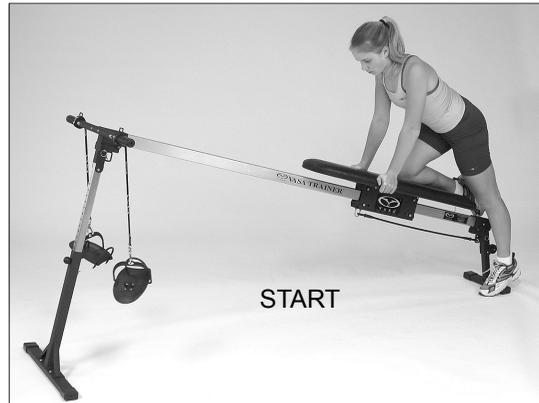
- Stand at the back of the Vasa Trainer and face forward. Place one knee on the bench, with your instep over the back of the bench.
- Place the foot of the other leg on the rear stanchion base bar.
- Hold the sides of the bench for stability (see START).

1. 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 weight vest to increase resistance.



4.4 - PRE-COMPETITION TRAINING FOR SWIMMERS

REMINDER: Use the correct resistance setting for your current fitness & training goal (strength/endurance).

STRENGTH TRAINING

UPPER BODY	SPRINTERS	MIDDLE DISTANCE AND DISTANCE
Frequency:	3 days per week.	3 days per week.
Duration:	3 - 10 sets of 10 - 15 reps.	3 - 10 sets of 25 reps.
Resistance:	Increase load each set.	Increase load each set.
Recovery:	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.
Strokes:	Do half the sets in primary stroke & half in other strokes.	Do half the sets in primary stroke & half in other strokes.
Technique:	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.
Options:	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.

LEGS	SPRINTERS	MIDDLE DISTANCE AND DISTANCE
Frequency:	3 days per week.	3 days per week.
Duration:	3 - 5 sets of 10 - 20 reps.	3 - 10 sets of 25 - 50 reps.
Resistance:	Increase the load for each set.	Constant load for each set.
Technique:	Streamline your lower body as you push off. Tuck your chin into your chest to work your core.	Streamline your lower body as you push off. Tuck your chin into your chest to work your core.
Options:	Do some sets of one leg at a time.	Do some sets of one leg at a time.

ENDURANCE (AEROBIC) TRAINING:

UPPER BODY	SPRINTERS	MIDDLE DISTANCE AND DISTANCE
Frequency:	2 days per week, non-strength days.	2 - 3 days per week, non-strength days.
Duration:	5 sets of longest race time, + 15 secs.	1 - 3 sets of your longest race time, plus 30 - 60 secs.
Resistance:	Increase the load each set.	Increase the load each set.
Recovery:	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.
Strokes:	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.
Technique:	Pull up on 1 count, lower the body on a 3 count for best results. Keep your elbows high and finish to hips.	Pull up on 1 count, lower the body on a 3 count for best results. Keep your elbows high and finish to hips.

PART 5 – TRAINING & WORKOUTS

Please follow these general guidelines when using your Vasa Trainer:

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 weight vest.

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 a weight vest. See Section 2.6 - "Adjusting Resistance on the Vasa Trainer".

WARM UP AND STRETCHING

Always warm up with 10 - 20 minutes of light intensity aerobic activity before strength training with the Vasa Trainer. An excellent warm-up exercise is Freestyle or Surf Paddling. Do some stretching after warming up and after completing your workout. See PART 2, Section 2.4 - "Exercise Tips".

SAFETY

Always practice strict safety when using the Vasa Trainer. For full recommendations on safety considerations, see PART 2, Section 2.3 - "Safety and the Vasa Trainer".

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.

STRENGTH TRAINING LOG



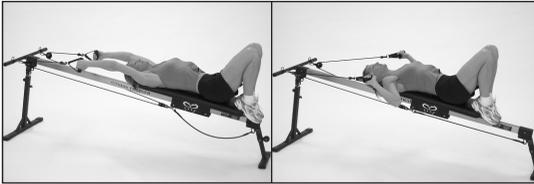
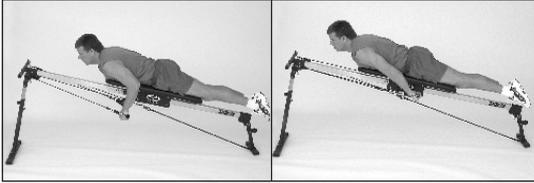
DAY/DATE	(1) _/ _/ _		(2) _/ _/ _		(3) _/ _/ _		(4) _/ _/ _		(5) _/ _/ _		(6) _/ _/ _		(7) _/ _/ _		
	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES	REPS	SETS	RES
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REPS = # OF REPETITIONS SETS = # OF SETS RES = RESISTANCE SETTING

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 aerobic freestyle or surf paddling.

- 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.

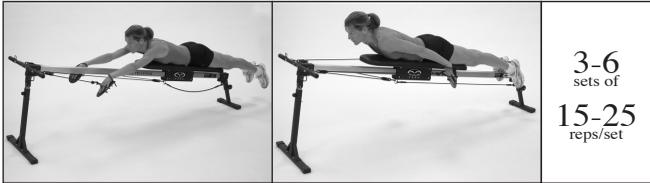
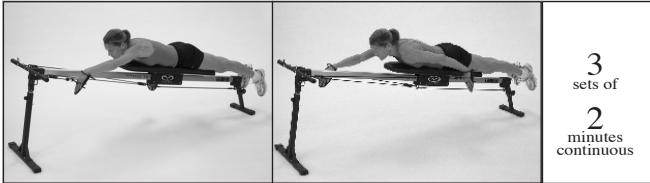
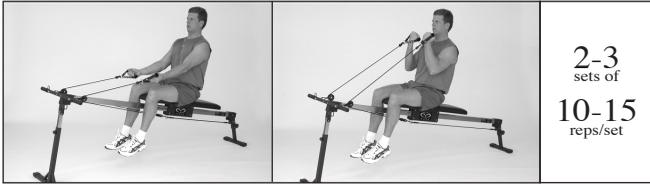
exercises	# of sets and reps	exercises	# of sets and reps
1. PLYOMETRIC SQUATS  <p>2-3 sets of 15-20 reps/set</p>		6. SEATED ROWING  <p>2-3 sets of 10-15 reps/set</p>	
2. LUNGES  <p>2-3 sets of 15-20 reps/set</p>		7. REVERSE FLYS  <p>2-3 sets of 10-15 reps/set</p>	
3. RESISTED AB CRUNCH  <p>3 sets of 15-25 reps/set</p>		8. LAT PULLDOWN  <p>2-3 sets of 15-25 reps/set</p>	
4. CHEST PRESS  <p>2-3 sets of 10-15 reps/set</p>		9. ASYMETRIC EXTENSION  <p>2-3 sets of 15-25 reps/set</p>	
5. BICEPS CURLS  <p>2-3 sets of 10-15 reps/set</p>		10. TRICEPS EXTENSIONS  <p>2-3 sets of 10-15 reps/set</p>	

More details on each individual exercise at 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. Warm-up for 5-10 minutes with freestyle. Emphasize perfect swimming technique.

- 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  <p>2-3 sets of 15-20 reps/set</p>		6. REVERSE FLYS  <p>2-3 sets of 10-15 reps/set</p>	
2. BUTTERFLY  <p>3-6 sets of 15-25 reps/set</p>		7. FREESTYLE ENDURANCE - alternating  <p>3 sets of 2 minutes continuous</p>	
3. SUPER AB CRUNCHES  <p>2-3 sets of 15-25 reps/set</p>		8. CHEST PRESS  <p>2-3 sets of 10-15 reps/set</p>	
4. BICEPS CURLS  <p>2-3 sets of 10-15 reps/set</p>		9. INTERNAL ROTATOR CUFF - seated  <p>2-3 sets of 10-15 reps/set</p>	
5. HIGH LAT ROW (SEATED ROW)  <p>2-3 sets of 10-15 reps/set</p>		10. EXTERNAL ROTATOR CUFF - seated  <p>2-3 sets of 10-15 reps/set</p>	

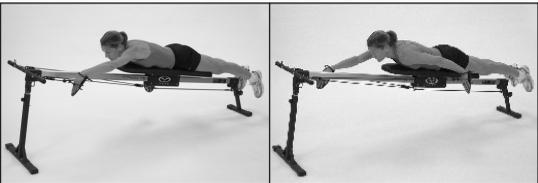
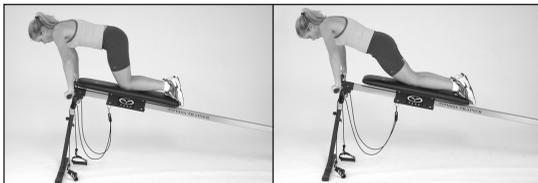
* If breaststroke is primary stroke, then do this exercise using breaststroke technique.

More details on each individual exercise at 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 continuous surf 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.

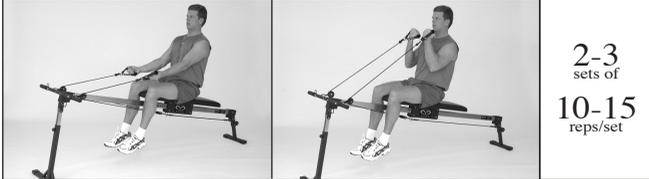
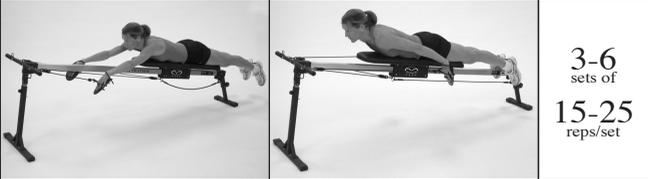
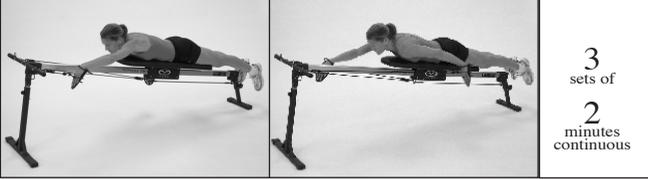
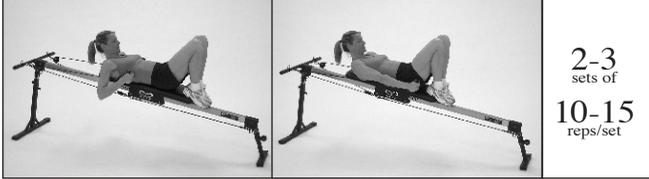
exercises	# of sets and reps	exercises	# of sets and reps
1. PLYOMETRIC SQUATS	 <p>2-3 sets of 15-20 reps/set</p>	6. REVERSE FLYS	 <p>2-3 sets of 10-15 reps/set</p>
2. BUTTERFLY	 <p>3-6 sets of 15-25 reps/set</p>	7. SURF PADDLING	 <p>3 sets of 2 minutes continuous</p>
3. SUPER AB CRUNCHES	 <p>2-3 sets of 15-25 reps/set</p>	8. RESISTED AB CRUNCH	 <p>3 sets of 15-25 reps/set</p>
4. BICEPS CURLS	 <p>2-3 sets of 10-15 reps/set</p>	9. CHEST PRESS	 <p>2-3 sets of 10-15 reps/set</p>
5. HIGH LAT ROW (SEATED ROW)	 <p>2-3 sets of 10-15 reps/set</p>	10. SHOULDER RAISES	 <p>2-3 sets of 15-25 reps/set</p>

More details on each individual exercise at 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. Warm-up for 5-10 minutes with freestyle. Emphasize perfect swimming technique.

- 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 		6. BICEPS CURLS 	
2. LUNGES 		7. REVERSE FLYS 	
3. BUTTERFLY 		8. HIGH LAT ROW (SEATED ROW) 	
4. SUPER AB CRUNCHES 		9. CHEST PRESS 	
5. FREESTYLE ENDURANCE - alternating 		10. TRICEP DIPS 	

More details on each individual exercise at www.vasatrainer.com