

Texas Department of Public Safety
Concept 2 Rower Instructor Training
External Law Enforcement Agencies



2020

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Testing Protocol

Prior to engaging the protocol, the certified tester must weigh the employee and record the employee's weight for entry onto the ETR-164 form. If the employee removes his or her shoes prior to stepping on the scale, then the tester will record the weight as it appears on the scale. If the employee steps on the scale with his or her shoes still on, then the certified tester will deduct 2 lbs. from the displayed weight and record this value on the ETR-164 form.

Once the employee's weight has been recorded, the certified tester must then view a valid ETR-162 from the employee to ensure that he or she has been medically cleared to participate in PRT testing. After recording the date of the employee's ETR-162, and entering the date onto the ETR-164 form, the certified tester shall return the ETR-162 to the employee. Certified testers should not retain or submit ETR-162s. Per Chapter 08.14.02 A, *"...a copy of the ETR-162, Preventive General Health Screening Form must be on file, dated within 12 months from the date of the PRT attempt, and approved for participating by the employee's physician."*

A certified Row Tester cannot test himself or herself for purposes of meeting the required testing. Per Chapter 8 of the General Manual: (CH. 08.14.02 1. C-D).

"All commissioned employees, including commissioned Department Certified Fitness Testers, are to be tested by a Department Certified Fitness Tester who has a current active CPR/AED certification or Department approved equivalent. A Department Certified Fitness Tester is a tester who has successfully completed training in any of the following formats:

- 1) DPS Fitness Institute: Physical Fitness Testing and Assessment Instructor Development Program. This tester can perform the Standard PRT testing; Concept II Row testing (2000m, 4-minute, 500 meter), and the Combat Fitness Evaluation.*
- 2) Concept II Rower Tester Training Course: This tester can perform the Concept II Row Testing (2000m, 4-minute, 500 meter)."*

Texas DPS Row Test Protocols

Exemption Package Option:

If an employee chooses to participate in the Incentive Package Option the following Policy will be followed: **Chapter 8.14.05 – General Manual: Awards and Incentives**

a. *“This incentive will only apply to the Fall Testing cycle. This incentive during the fall testing cycle will qualify for both hours earned and exemption from testing for the spring cycle. An employee that did not participate in the fall incentive may participate in the spring and earn only additional hours as long as it does not surpass the 32 cumulative hours.*

b. *The employee that participates in the spring test cycle may not earn exemption from the Fall Test cycle. They must still test in the fall cycle to qualify for the exemption.”*

For the purpose of the department’s mandatory fitness testing requirement/policy, the 2000 meter, 500 meter, and 4-Minute row tests will be conducted with a standardized damper setting of 5.

a. *“For employees who wish to participate in the incentive program and believe they can achieve a better VO2 max percentage and thus a greater incentive award, they can complete a separate 2000 meter, 500 meter, or 4-Minute row test on a damper setting of their choosing administered by a Department certified row tester. This voluntary row test cannot be substituted for the standardized row test; it can only be taken in addition too. The employee must have successfully passed a required Department fitness assessment during the testing period before being eligible to take the incentive-only row test. The employee will receive the highest earned incentive.”*

Reporting Spring Exemption: (Chapter 08.14.05 E)

If an employee is successful in earning the spring exemption, the Department certified fitness tester will document the result on the ETR-164 Physical Fitness Incentive Spring Exemption. Once all signatures are obtained, the Department certified tester will send a pdf copy of the completed ETR-164 to the Fitness and Wellness Unit Inbox, PhysicalFitness@dps.texas.gov.

Texas DPS Row Test Protocols

2000m Test Screen

In order to have a successful VO2 Row test the employee must perform the 2000 meters in the following manner:

The Concept 2 Rower Certified Tester will set up the testing screen on the PM-Monitor System. The following is the procedure for setting up the 2000 meter testing screen:



Test Screen for 2000 meters

In the first picture you have the Main Menu – The Tester will press the “Select Workout” button;

In the second picture, the Tester will press the “Standard List” button;

In the third picture, the Tester will press the “2000m” button;

The fourth picture, is the 2000 meter testing screen.

A 2000 meter test cannot be completed on any other screen. If a test is completed on any other screen, the test will be voided and considered a failed attempt.

The 2000 meter test takes place at the **level 5** or damper setting 5 on the flywheel.

2000 meter VO2 Row Test

For the 2000 meter protocol, Certified Testers need to:

1. See the completed ETR-162 form and ensure that the employee is approved for testing
2. Weigh the person before being tested (Do not use the weight on the ETR-162)
3. Ensure that the employee's weight, age, and gender are recorded on the ETR-164
4. Set the PM Monitor as noted on page 3
5. Instruct the employee to begin the test and to utilize maximum effort to cover the 2000 meters
6. The damper setting for the 2000 meter row test must be set at **level 5** on the flywheel
7. Upon completion of the 2000 meters, and with a sense of urgency, direct the commissioned employee to begin handcuffing 1st in the vertical or standing position, followed by the prone handcuffing. There is no time limit on the handcuffing just a sense of urgency to facilitate this law enforcement skill set; to include verbal skill sets.
8. Record the finish time for the 2000 meters on the ETR-164
9. Sign the ETR-164 and obtain the signature of the employee who was tested
10. Send ETR-164 to the Physical Fitness inbox at Physicalfitness@dps.texas.gov in the format "Last name, First name date of test attempt" (e.g. Doe, John 030120XX; Doe, Jane 101220XX).

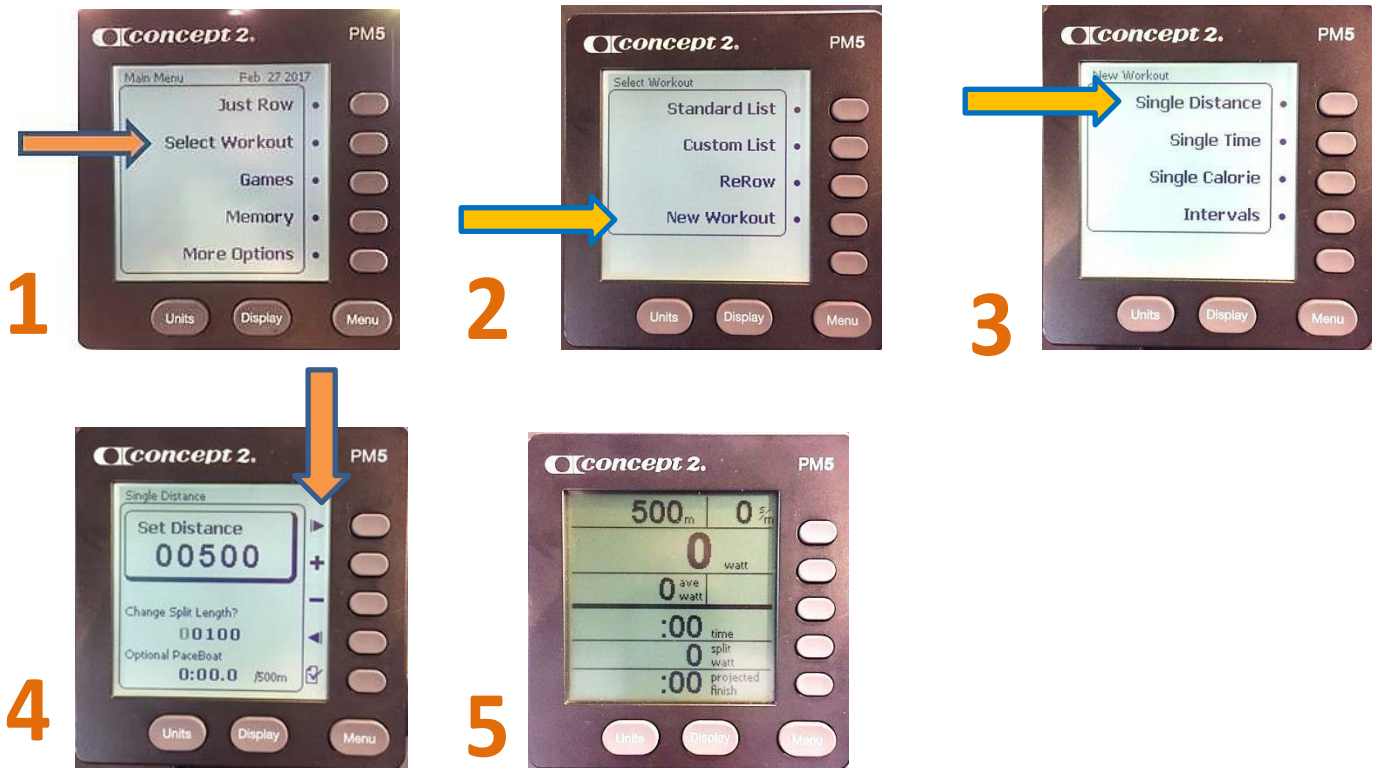
The 2000 meter Row Test is an Age and Gender test:

Notice: *Once the employee begins the test, by pulling on the handle, he or she should remain in constant and continuous motion until the 2000 meter test is complete; however, it is imperative the employee understands that if he or she pauses or stops during the 2000 meter test, this action will go to his or her disadvantage because the time clock will continue to count down. If the employee stops his or her motion on the rower the test is over.*

*****If your facility does not have the Kuff-man Dummy, and you will be placing handcuffs on people, ensure that the commissioned employee is guided to the prone position as not to fall on the person being handcuffed. This practice is in place to ensure that the risk of injury is nil. In the standing position and prone position, the person being handcuffed may wear tape around the wrist to prevent abrasions or pinching. Upon the completion of the handcuffing requirement, please ensure that the handcuffs are removed immediately*****

Texas DPS Row Test Protocols

500m Test Screen



500 Meter Test Screen

In the first picture you have the Main Menu – Tester will press the “Select Workout” button;

In the second picture, the Tester will press the “New Workout” button;

In the third picture, the Tester will press the “Single Distance” button;

In the fourth picture, the Tester will use the right and left arrows and the plus or minus button to select “500.”

When “500” is selected press the

The fifth picture is the 500m testing screen.

500 meter Row Test

For the 500 meter protocol, Certified Testers need to:

1. See the completed ETR-162 form and ensure that the employee is approved for testing
2. Weigh the person before being tested (Do not use the weight on the ETR-162)
3. Ensure that the employee's weight, age, and gender are recorded on the ETR-164
4. Set the PM Monitor to Single Distance and set the distance to 500 meters (See Pg. 5)
5. The damper setting for the 500 meter row test must be set at **level 5** on the flywheel
6. Instruct the employee to begin the test and to utilize maximum effort to cover the 500 meters
7. Upon completion of the 500 meters, and with a sense of urgency, direct the commissioned employee to begin handcuffing 1st in the vertical or standing position, followed by the prone handcuffing. There is no time limit on the handcuffing just a sense of urgency to facilitate this law enforcement skill set; to include verbal skill sets.
8. Record the finish time for the 500m on the ETR-164
9. Sign the ETR-164 and obtain the signature of the employee who was tested
10. Send ETR-164 to the Physical Fitness inbox at Physicalfitness@dps.texas.gov in the format "Last name, First name date of test attempt" (e.g. Doe, John 030120XX; Doe, Jane 101220XX).

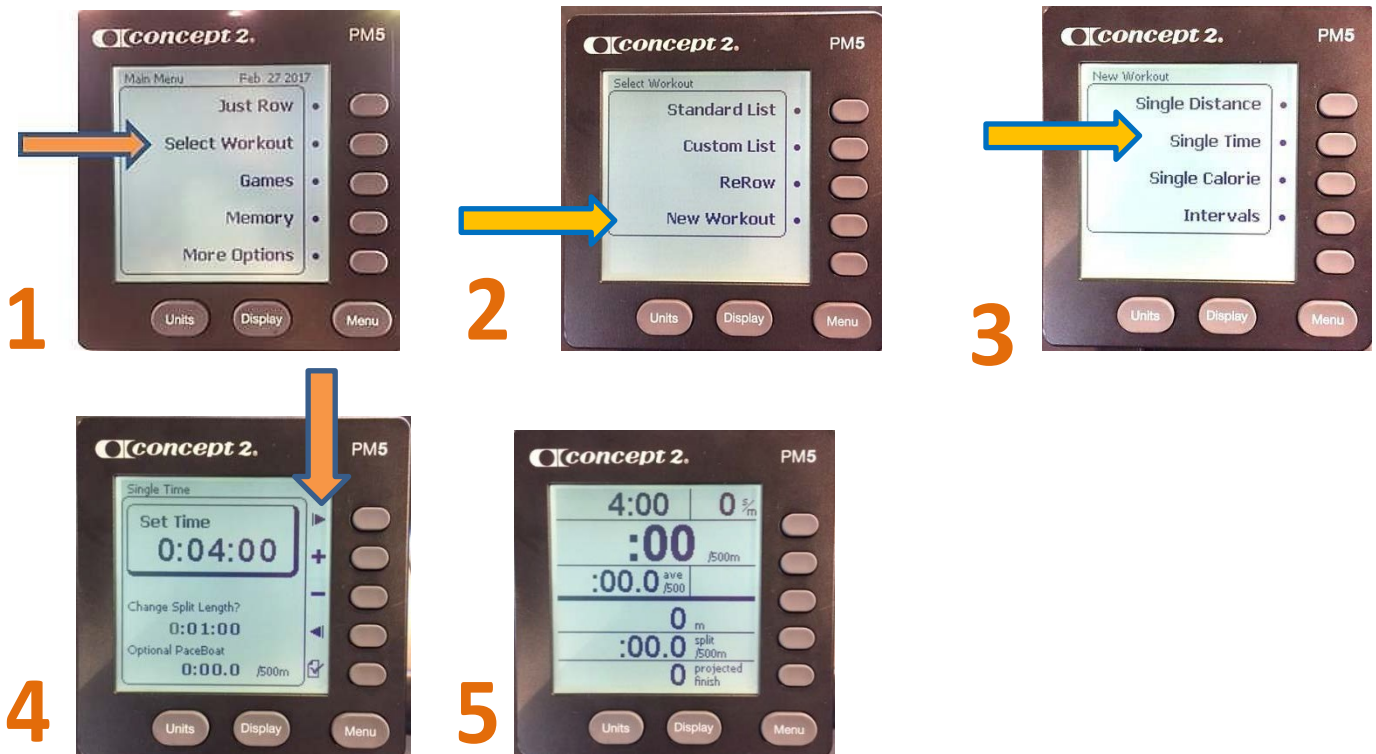
The 500 meter Row Test is a Gender test:

1. Females range is 1:55 to 2:25
2. Males range is 1:30 to 2:00

Notice: *If your facility does not have the Kuff-man Dummy, and you will be placing handcuffs on people, ensure that the commissioned employee is guided to the prone position as not to fall on the person being handcuffed. This practice is in place to ensure that the risk of injury is nil. In the standing position and prone position, the person being handcuffed may wear tape around the wrist to prevent abrasions or pinching. Upon the completion of the handcuffing requirement, please ensure that the handcuffs are removed immediately.*

NOTE: *In order to reduce the risk of injury and to prevent falling off the seat of the rower; when conducting this test the employee performing the 500 meter sprint should focus on form and technique. The more efficient the technique and form the more production in power. This test should not be performed in a manner that causes the flywheel end of the rower machine to lift off the ground. If the flooring does not provide for traction to prevent the rower from sliding then a certified row tester may provide resistance to prevent the sliding. Do not stand to the side of the flywheel where the damper is located. Stand to the opposite side.*

4 Minute Test Screen



In the first picture you have the Main Menu – Tester will press the “Select Workout” button;

In the second picture, the Tester will press the “New Workout” button;

In the third picture, the Tester will press the “Single Time” button;

In the fourth picture, the Tester will use the right and left arrows and the plus or minus button to select “4:00.”

When “4:00” is selected press the

The fifth picture is the 4:00 minute test screen.

4 Minute Row Test

For the 4 Minute Row protocol, Certified Testers need to:

1. See the completed ETR-162 form and ensure that the employee is approved for testing
2. Weigh the person before being tested (Do not use the weight on the ETR-162)
3. Ensure that the employee's weight, age, and gender are recorded on the ETR-164
4. Set the PM Monitor to Single Time and set the time to 4–Minutes (4:00) (See Pg. 7)
5. The damper setting for the 4-Minute Row Test must be set at **level 5** on the flywheel
6. Instruct the employee to begin the test and to utilize maximum effort to cover the 4-Minutes
7. Upon completion of the 4-Minute test, and with a sense of urgency, direct the commissioned employee to begin handcuffing 1st in the vertical or standing position, followed by the prone handcuffing. There is no time limit on the handcuffing just a sense of urgency to facilitate this law enforcement skill set; to include verbal skill sets.
8. Record the meter distance for the 4-Minute test on the ETR-164
9. Sign the ETR-164 and obtain the signature of the employee who was tested
10. Send ETR-164 to the Physical Fitness inbox at Physicalfitness@dps.texas.gov in the format “Last name, First name date of test attempt” (e.g. Doe, John 030120XX; Doe, Jane 101220XX).

The 4-Minute Row Test is an Age and Gender test:

*Females - \leq 135 lbs. is lightweight (lwt)

*Males - \leq 165 lbs. is lightweight (lwt)

Notice: *If your facility does not have the Kuff-man Dummy, and you will be placing handcuffs on people, ensure that the commissioned employee is guided to the prone position as not to fall on the person being handcuffed. This practice is in place to ensure that the risk of injury is nil. In the vertical or standing position, the person being handcuffed may wear tape around the wrist to prevent abrasions or pinching. Upon the completion of the handcuffing requirement, please ensure that the handcuffs are removed immediately.*

NOTE: *In order to reduce the risk of injury and to prevent falling off the seat of the rower; when conducting this test the employee performing the 4 - Minute sprint should focus on form and technique. The more efficient the technique and form the more production in power. This test should not be performed in a manner that causes the flywheel end of the rower machine to lift off the ground. If the flooring does not provide for traction to prevent the rower from sliding then a certified row tester may provide resistance to prevent the sliding. Do not stand to the side of the flywheel where the damper is located. Stand to the opposite side.*

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Notice:

When to stop a row test: A certified row test must stop when any of the following are observed:

- 1) Employee cannot stay balanced on the seat
- 2) Employee begins to exhale with a whistle sound
- 3) Employee is compromising form and technique that elevates the risk of injury
- 4) Skin turns ashen and displays signs of other health complications
- 5) Employee is no longer rowing with a continuous flow

If a tester stops a row test for health concerns, employee should be recommended to see their primary care physician. *This list is not all inclusive*

AED/CPR/First Aid Training that deal with signs and symptoms of distress are relevant and will also be applied when any PRT testing is being conducted; and actions will be taken that are necessary to deal with the distressed situation. When conducting any physical testing, a current non-expired AED will be present and the operator will be current on his or her AED/CPR certifications.

Concept 2 Rower / VO2 Introduction

Alternative Physical Fitness Testing

The Concept 2 Rower develops all three energy systems of the body: ATP-PCr, Anaerobic Glycolysis (LAT System), and the Oxidative (Aerobic System); it primarily focuses on conditioning the aerobic and anaerobic states of the human body.

The Rower is the only tool to measure the VO2max from the horizontal plane outside of water, which is significant because we want to target exercise options that focus on low-impact and our efforts to further reduce injuries. VO2max is a measure of the body's capacity for aerobic work and, thus, can be a predictor of a person's potential for endurance. VO2max is a scientifically accepted measure of cardio respiratory fitness. Of course, there are other factors that come into play: the individual's training, genes, body weight, muscle volume, etc. A person's age is also a factor, as most people see a decline of 1% a year in VO2max after age 50.

Technically, VO2max stands for maximal oxygen uptake and refers to the amount of oxygen your body is capable of utilizing in one minute. The units are: ml O2/kg-min—VO2max generally requires the collection and analysis of inhaled and exhaled gases during exercise to exhaustion (**V.02 Max**). This is usually done in a lab, and always under the supervision of professionals. Unfortunately, this kind of testing is not widely available to the general public.

Due to the extensive research and development of the indoor rowing Concept 2 Rower, it is now possible to get a very good estimation of a person's VO2max simply by rowing his/her best 2000 meters on the Concept 2 Rower. Using the 2000 meter time, combined with **weight, age and gender**, a person can calculate his/her VO2max to within 1.0-1.5% error factor (as compared to the **V.02 Max** measurement). The age, weight and gender formula chart is based on data points collected from 1962 to the present in lab VO2max tests using the indoor rower.

Safety & Maintenance

Using the Detachable Monorail:

1. Important Safety Notes:
 - a. Always have the frame lock in the locked position when the flywheel and monorail sections are connected. Failure to do so may result in injury if the unit is lifted or moved.
 - b. To avoid possible injury, use caution while attaching the monorail section to the flywheel section and while operating the frame lock.
 - c. DO NOT stand rower up on end as the rower may tip over.

Using the Handle Hooks:

1. Place the handle in the handle hooks to make it easier to reach when you are seated on the rower;
2. NOTE: It is best to let the handle rest against the fan cage rather than in the handle hooks when the machine is not in constant use (i.e. overnight; between workouts). This will prolong the life of the shock cord.

Concept 2 Rower:

1. Use of this machine with a worn or weakened part, such as the chain, sprockets, chain/swivel connector, handle U-bolt or shock cord, may result in injury to the user;
2. When in doubt about the condition of any part, Concept 2 strongly advises that it be replaced immediately.
3. Use only genuine Concept 2 parts.
4. Use of other parts may result in injury or poor performance of machine.
5. To avoid possible injury, use caution while attaching the monorail section to the flywheel section and while operating the frame lock.
6. The machine should be used on a stable, level surface.

SAFETY:

1. Do NOT let the handle fly into chain guide.
2. Place handle against the chain guide or in handle hooks before letting go.
3. Pull straight back with both hands.
4. Never twist chain or pull from side to side.
5. Do not row with one hand only. Abuse of the chain can result in injury.
6. Keep clothing free from seat rollers.
7. Keep children and fingers away from seat rollers. Seat rollers can cause injury.
8. Perform proper maintenance as described in the maintenance section of the manual (page 8).
9. ALWAYS PUT THE FRAME LOCK IN THE LOCKED POSITION BEFORE MOVING THE INDOOR ROWER.

Maintenance:

1. DAILY:

- A. WIPE MONORAIL WITH A CLOTH OR NON-ABRASIVE SCOURING PAD AFTER USE

2. Every 50 hours of use (Weekly):

- a. Clean and lubricate the chain with the oil provided (or 20w Motor oil or 20w 3-in-1 oil).

3. Every 250 hours of use (Monthly):

- a. Inspect chain for stiff links. If thorough lubrication does not help, the chain should be replaced.
- b. Inspect chain-handle connection for wear. If the hole has become elongated, or the U-bolt is worn halfway through, the entire connection should be replaced.
- c. Tighten the shock cord if the handle does not return all the way to the fan enclosure.
- d. Check the socket screws used to install the front legs for tightness.
- e. Loosen or tighten the nuts on the performance monitor arm joints as necessary.
- f. Check for dust inside the flywheel with flashlight. Vacuum if needed.

4. IMPORTANT:

- a.** The monitor is a sealed unit. Do not take apart. Any attempt to disassemble will void warranty.
- b.** Contact Concept 2 for problems with this part.

PM-Monitoring System

The PM allows you to access menu option for training and testing:

- 1. Change Units:**
 - a. Allows you to select meters, pace, watts or calories.
 - b. Push this button at any time while setting up a workout, rowing or viewing results.

- 2. Change Display:**
 - a. Allows you to choose another display.
 - b. Push this button any time while rowing.
 - c. Each time you press CHANGE DISPLAY a new display is shown.

- 3. MENU/BACK:**
 - a. Turns on the monitor and displays Main Menu or the previous menu.
 - b. After a workout, press this button to end the workout and return to the MAIN MENU.

- 4. Battery Information:**
 - a. The PM uses two (2) alkaline D-Cell (LR20) batteries.
 - b. When you are rowing, the flywheel provides a portion of the power to extend battery life.

- 5. Cleaning the PM:**
 - a. Use a cloth lightly dampened with water only.
 - b. DO NOT spray with a cleaner or leave in the rain.

- 6. Troubleshooting:**
 - a. If the PM malfunctions or does not “wake up”, try one of the following:
 1. Insert a paperclip into the reset hole on the back and press LIGHTLY.
 2. Remove the batteries for 30 seconds and insert two (2) new alkaline D-Cell (LR20) batteries.

 - b. **To change language:**
 1. Press MENU/BACK until screen stops changing.
 2. Press fifth grey button on right, then press second grey button on right twice, and select your language.

 - c. If your computer does not recognize that your PM is connected to it try one of the following:
 1. Use another computer and/or USB cable.
 2. Remove batteries for 30 seconds then reinsert batteries and try again.

Training on the Concept 2 Rower

Before your first row:

1. Consult your physician. Be sure that it is not dangerous for you to undertake a strenuous exercise program.
2. Carefully review the rowing technique. Improper technique such as extreme layback or jumping off the seat can result in injury.
3. Start each workout with several minutes of easy rowing for a warm-up.
4. Start your exercise program gradually. Row no more than 5 minutes the first day to let your body adjust to the new exercise.
5. Gradually increase your rowing time and intensity over the first 2 weeks. Do not row at full power until you are comfortable with the technique and have rowed for at least a week. Like any physical activity, if you increase the volume and intensity too rapidly, fail to warm up properly, or use poor technique, you will increase the risk of injury.
6. The best damper setting for great cardiovascular workout is in the range of 3-5. Rowing with the damper setting too high can be detrimental to your training program because it may reduce output and increase your risk of injury.
7. Aim for a stroke rate (SPM) of between 24 and 30 spm (strokes per minute).

PROPER ROWING TECHNIQUE

There are two parts to the rowing stroke, the DRIVE and the RECOVERY, but the movements are blended together to make the stroke smooth and continuous. There should be no stopping at any point in the stroke. Improper technique can lead to injury.

1. **The CATCH:**

- a. The rower reaches forward with knees bent, arms extended, and body leaning toward the flywheel.
- b. The DRIVE is begun with the legs and the back doing all the work.
- c. NOTE: The arms are straight and the shoulders are relaxed.

2. **The DRIVE:**

- a. During the DRIVE, the rower straightens the legs and swings the back through the vertical position.
- b. Halfway through the DRIVE, the arms are still straight and the shoulders are relaxed.

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3. **The FINISH:**

- a. At the finish of the DRIVE, the handle is pulled by the arms and shoulders into the abdomen.
- b. The legs are straight and the body is leaning back slightly.
- c. NOTE: The height of the handle is neither at the chest nor in the lap.

4. **The RECOVERY:**

- a. The RECOVERY is begun by extending the arms and swinging the body forward at the hips.
- b. This puts the handle in front of the knees to avoid interference between the knees and hands as the seat moves forward.

5. **The CATCH:**

- a. The body is drawn forward with the legs to the starting position for the next stroke.
- b. The rower is now ready to begin the next drive.
- c. Remember that your body should never come to a complete stop.

WORKOUT INTENSITY

The harder you pull, the more resistance you will feel. This is because the Concept 2 Rower uses wind resistance, which is generated by the spinning flywheel. The faster you get the wheel spinning, the more resistance there will be.

You can row as hard or as easy as you wish. The indoor rower will not force you to row at any set intensity level. It is up to you. As you put more effort into your rowing, you will go faster, produce more watts, and burn more calories. All of these outputs will be measured and displayed by the PM-Monitoring System.

The damper setting is like bicycle gearing. It affects the feel of the rowing but does not directly affect resistance. The recommended damper setting is 3-5 for the best aerobic workout.

You can view your performance in pace, watts and calories. The PM displays your output in a choice of units and display options.

Texas DPS Row Test Protocols

TABATA PROTOCOL

The Tabata principle for the track work can be applied to the Concept 2 rower. Once you have been introduced to the Concept 2 rower and learned technique, you can begin to experience the benefit of rower training due to its low impact status.

Example of a TABATA protocol for the rower:

Week 1:

Monday: 8 sets of 20:10 (20 seconds of all out rowing at your top speed; followed by a 10 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Tuesday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

Wednesday: 10 sets of 20:10 (20 seconds of all out rowing at your top speed; followed by a 10 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Thursday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

Friday: 12 sets of 20:10 (20 seconds of all out rowing at your top speed; followed by a 10 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Saturday and Sunday: Rest and Recover

WEEK 2:

Monday-Wednesday-Friday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

Tuesday and Thursday: 10 sets of 30:10 (Tuesday) and 12 sets of 30:10 (Thursday) (30 seconds of all out rowing at your top speed; followed by a 10 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

WEEK 3:

Monday-Wednesday-Friday: 8 sets of 40:20 (Monday); 10 sets of 40:20 (Wednesday); and 12 sets of 40:20 (Friday) (40 seconds of all out rowing at your top speed; followed by a 20 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Tuesday and Thursday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

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WEEK 4:

Monday-Wednesday-Friday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

Tuesday and Thursday: 10 sets of 50:20 (Tuesday) and 12 sets of 50:20 (Thursday) (50 seconds of all out rowing at your top speed; followed by a 20 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

WEEK 5:

Monday-Wednesday-Friday: 8 sets of 60:20 (Monday); 10 sets of 60:20 (Wednesday); and 12 sets of 60:20 (Friday) (60 seconds of all out rowing at your top speed; followed by a 20 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Tuesday and Thursday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.









WEEK 6: (Re-assessment period on the Concept 2 rower or PRT Protocol)

Monday-Wednesday-Friday: 8 sets of 20:10 (Monday); 10 sets of 20:10 (Wednesday); and 12 sets of 20:10 (Friday) (20 seconds of all out rowing at your top speed; followed by a 10 second slow pace) whatever your top rowing output recorded determines your slow pace. **For example:** if your top wattage was recorded at 300w then your slow pace would be 150w.

Tuesday and Thursday: Cross-training at least 2 protocols at 10 to 12 minutes apiece.

Concept 2 Rower Sprint Pyramid Training

2nd Protocol after Tabata Sprinting

100m		: 20s		:30s	recovery
200m		: 40s		1:00	recovery
300m		: 60s		1:30	recovery
400m		1:30		1:30	recovery

First pyramid up (above) then reverse the order and pyramid down.

Be sure to mix up the 2nd protocol, meaning that you should breakdown the sprint pyramids to include a training cycle at 500m thru 1000m; 1100m thru 1500m; and 1500m thru 2000m. Do not forget to pyramid down as well.

Some days you may want to start with pyramiding down then up.

The times listed above can help you determine how long it should take at higher distances. For example: 600m should be covered in 2 minutes; 900m should be covered in 3 minutes; and 1200m should be covered in 4 minutes.

Concept 2 Rower Tabata Sprint Training

Week 1:

20:10 **20 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 5

Week 2:

30:10 **30 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 5

Week 3:

40:20 **40 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 5

Week 4:

50:20 **50 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 5

Week 5:

60:20 **60 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 5

Week 1: **Re-assessment at 2000 meters (checking progress)**

20:10 **20 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 6

Week 2:

30:10 **30 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 6

Week 3:

40:10 **40 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 6

Texas DPS Row Test Protocols

Week 4:

50:20 **50 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 6

Week 5:

60:20 **60 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 6

Week 1 **Re-assessment at 2000 meters (checking progress)**

20:10 **20 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 7

Week 2:

30:10 **30 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 7

Week 3:

40:10 **40 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 7

Week 4:

50:10 **50 seconds sprinting** (fast row for highest wattage) followed by **10 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 7

Week 5:

60:20 **60 seconds sprinting** (fast row for highest wattage) followed by **20 seconds jog** (slow row half the wattage). Monday: 8 sets; Wednesday: 10 sets; Friday: 12 sets

DAMPER SETTING: 7

You continue until you reach the level 10 on the Damper setting and complete one cycle at level 10 before final re-assessment. This is 21-week training cycle. This cycle can be flexible In terms of the more advanced athlete jumping to a higher damper setting earlier.

If you have an I-phone, there is a "**Tabata Pro**" app that can aid you in the Tabata sprinting.

References

Concept II Rower Inc. http://www.concept2.com/files/pdf/us/indoor-rowers/D1_UsersManual.pdf

Tabata I, Irisawa K, Kouzaki M, Nishimura K, Ogita F, Miyachi M. *Metabolic Profile of High Intensity Intermittent Exercises*. Medical Science Sports Exercise 1997 Mar; 29(3):390-5.

Tabata I, Nishimura K, Kouzaki M, Hirai Y, Ogita F, Miyachi M, Yamamoto K. *Effects of Moderate-Intensity Endurance and High-Intensity Intermittent Training on Anaerobic Capacity and VO₂max*. Medical Science Sports Exercise 1996 Oct; 28(10):1327-30. PMID: 8897392.

FORTNER, H. A. et al. (2013) *Differential Response to Tabata Interval versus Traditional Kettlebell Training Protocol*. In International Journal of Exercise Science: Conference Proceedings (Vol. 9, No. 1, p. 21)

MCBRIDE, G. et al. (2014) *Effects of a Short Term, Short Duration, High Intensity Exercise Intervention on Body Composition and Intra-Abdominal Fat*

MCRAE, G. et al. (2012). *Extremely low volume, whole-body aerobic-resistance training improves aerobic fitness and muscular endurance in females*. Applied Physiology, Nutrition, and Metabolism, 37 (6), p. 1124-1131

BEASHEL, P. and TAYLOR, J. (1996) *Advanced Studies in Physical Education and Sport*. UK: Thomas Nelson and Sons Ltd.

BEASHEL, P. and TAYLOR, J. (1997) *The World of Sport Examined*. UK: Thomas Nelson and Sons Ltd.

BIZLEY, K. (1994) *Examining Physical Education*. Oxford; Heinemann Educational Publishers

DAVIS, B. et al. (2000). *Physical Education and the Study of Sport* UK London: Harcourt Publishers Ltd.

GALLIGAN, F. et al. (2000) *Advanced PE for Edexcel*. Oxford; Heinemann Educational Publishers

McARDLE, W. et al (2000). *Essentials of Exercise Physiology* 2nd ed. Philadelphia: Lippincott Williams and Wilkins

CHU, D. (1996). *Explosive Power and Strength*. USA; Human Kinetics Publishers Inc.

DICK, F. (1987) *Sprints and Relays*. 5th Ed. UK; BAAB

McNAB, T. (1989) *Speed*. UK; BPC Printec Ltd.

DINTIMAN, G. et al. (1998) *Sports Speed*. USA; Human Kinetics Publishers, Inc.

