



A detailed line drawing of a Fluid FR-E520 rowing machine. The machine is shown from a three-quarter perspective, highlighting its main components: a large flywheel at the front with a needle and scale, a water tank, a drive pin, a sliding seat, and a footplate at the rear. A digital display is mounted on the left side of the frame. The entire machine is supported by a sturdy metal frame with a central pivot point for the seat.

Fluid

FR-E520

Owners Manual

Training with the E520

1. As with any piece of fitness equipment, consult a physician before beginning your E520 exercise program.
2. Follow instructions provided in this manual for correct foot position and basic rowing techniques.



CAUTION

1. The E520 can stand for storage. When doing so, please follow the instructions given on the basic operation section of this manual.

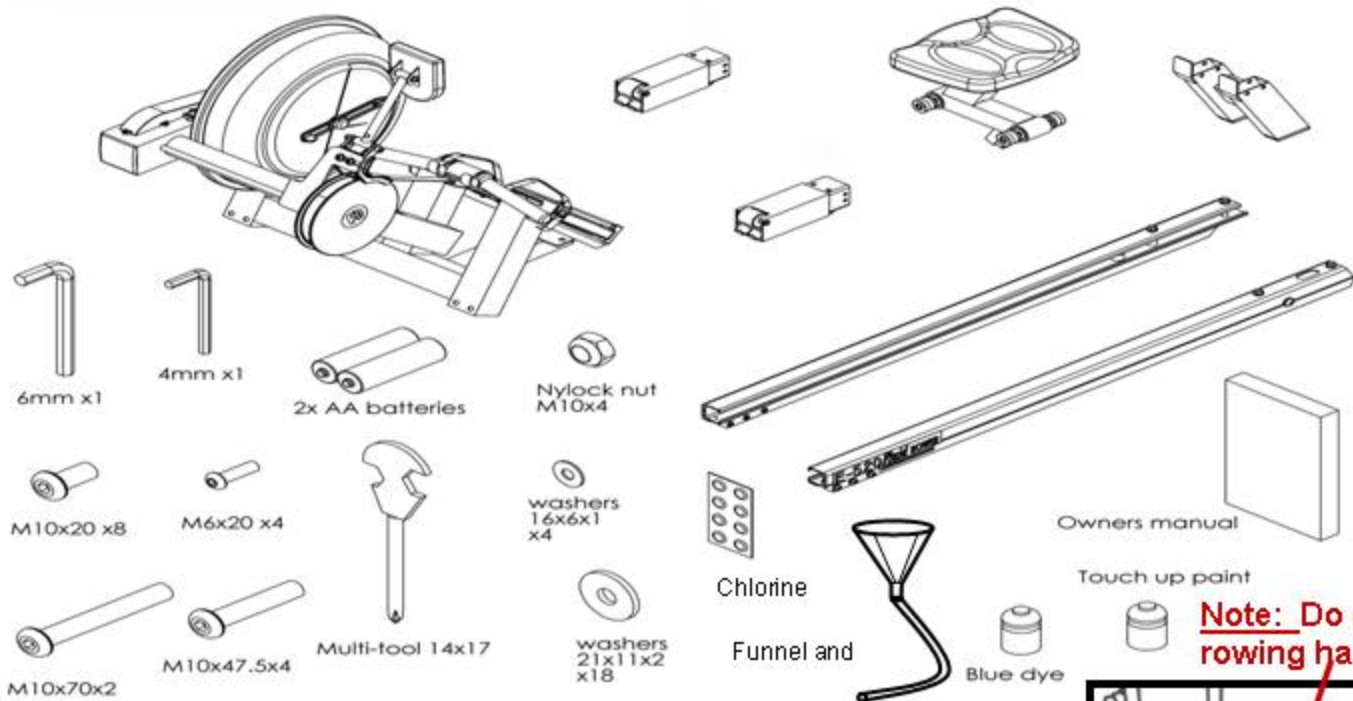


CAUTION

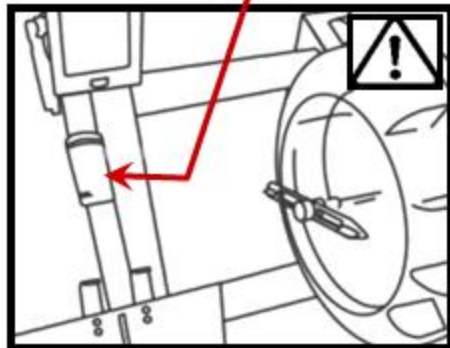
2. Keep hands away from moving parts, as indicated by the warning sticker on the mainframe of your machine and on the rear of the fluid tank.

Contents

1. Contents of E520 Pack.
2. E520 assembly instructions.
3. Tank filling and water treatment.
4. Long term water treatment and basic operation .
5. The E520 Rower Ergometer.
6. How to Row.
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8. Troubleshooting guide.
9. Adjusting the tank drive belt.
10. Replacing the bungee shock cord.
11. Training with the E520
12. Exploded parts diagram and parts list.
13. Warranty.



Note: Do not release rowing handle until



Main frame Parts:

1. Main frame.
2. Front leg x2.
3. Rear leg.
4. Rower Seat.
5. Seat Rail (Left/Right)

Taped inside aluminum rails:

1. M10x70mm bolt x2.
2. 10mm washer x2.
3. Seat Rail spacer x2.

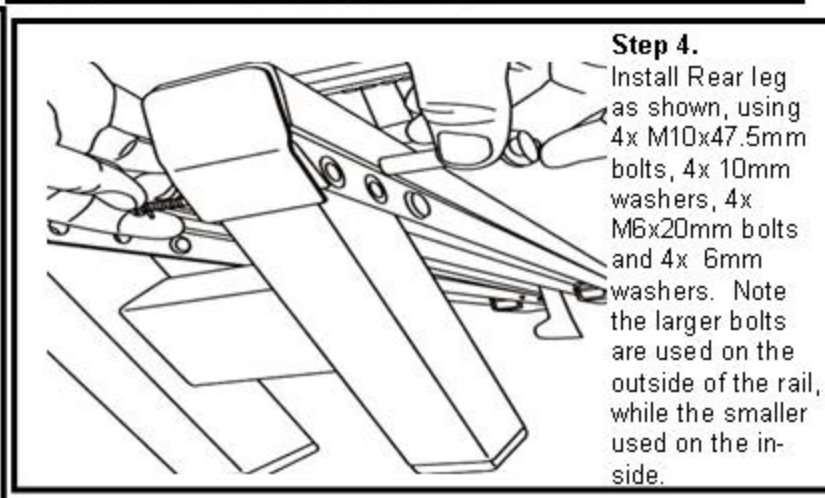
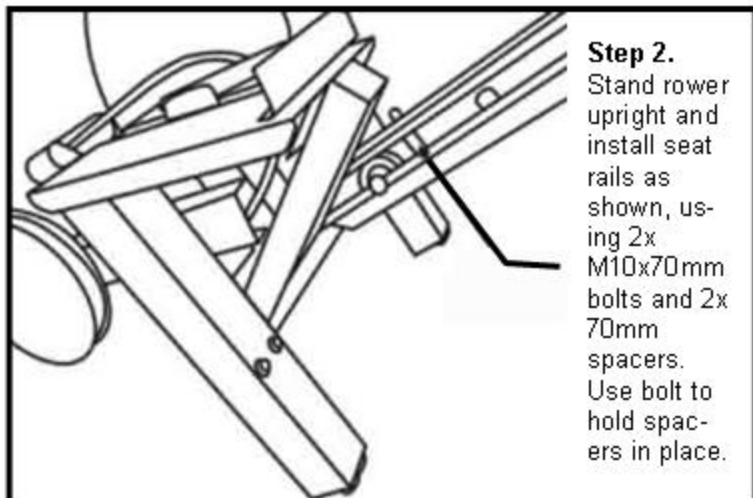
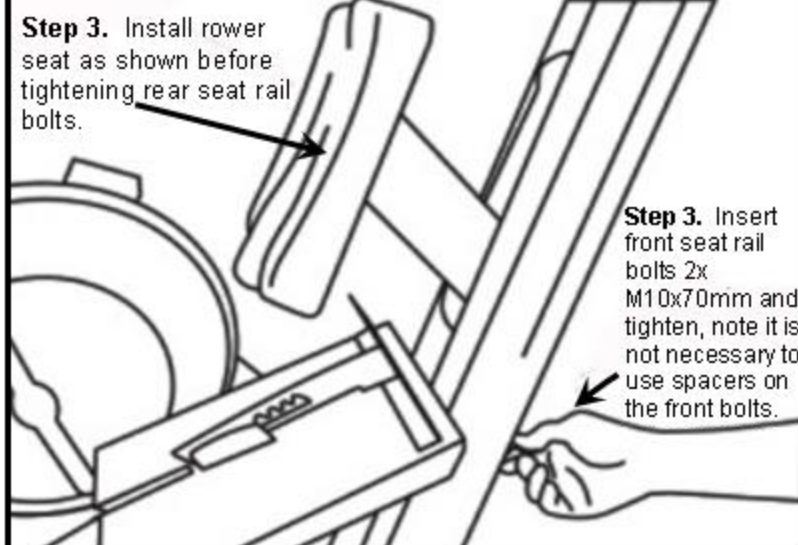
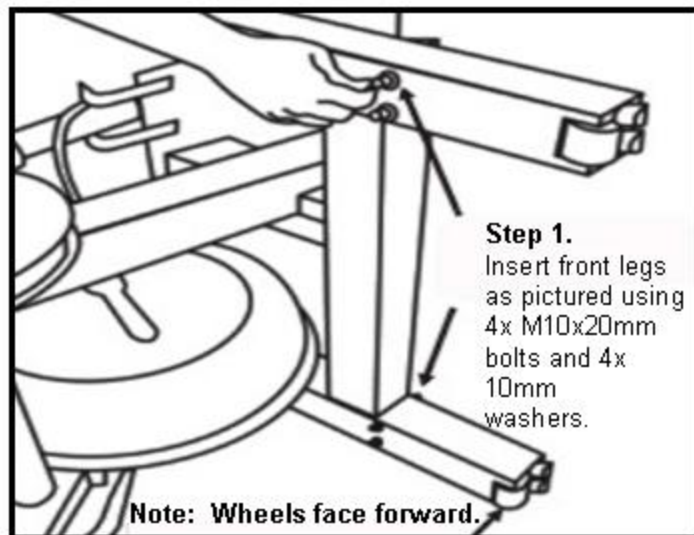
Bolt pack contents:

1. M10x20mm x8.
2. M10x47.5mm x4.
3. M10x70mm bolt x2.
4. M6x20mm bolt x4.
5. M10 washer x18.
6. M6 washer x4.
7. M10 nut x4.

Miscellaneous:

1. Funnel and hose.
2. E520 Owners Manual.
3. 6mm Allen key.
4. 4mm Allen key.
5. Chlorine tablets x8
6. Blue dye.
7. Main frame touch up paint.

Assembly instructions.



Step 5:


Feed bungee through rail.

Step 6:

Engage hook and bolt.
Shake before releasing
tension to ensure hook and
bolt are mated correctly.

Step 7: Lower the
E520 to a normal
operating position and free rowing
handle to complete
the assembly.

Ensure bungee cord is
properly positioned on
the pulley

 Incorrect. Belt return will be slow and
damage to cord will result.

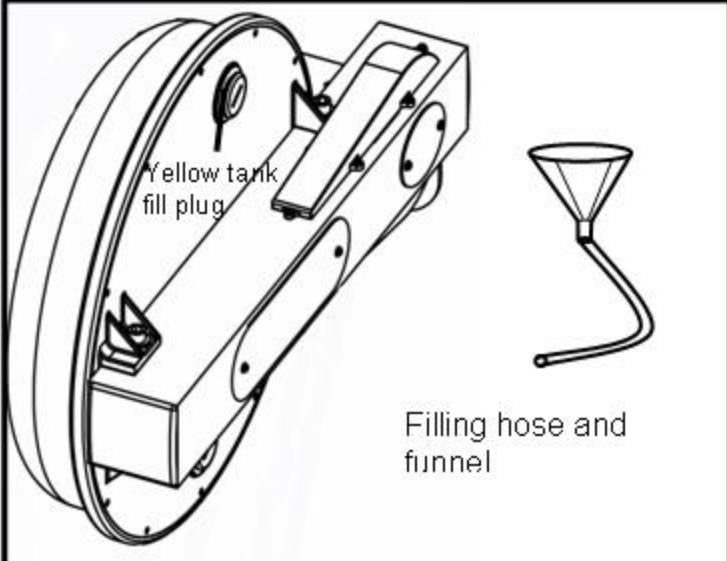
Tank filling and water treatment

Note: A large bucket is required for filling (Not included)

Open the rear upper yellow tank plug and insert hose into tank (rotating the impeller slightly may be necessary to allow the hose to pass), move the tank adjuster handle to level 20 and begin filling. Do not fill the tank higher than the level indicator on the front of the clear shell. A properly filled tank holds approximately 8 liters of water.



Warning: Do not under any circumstances put fingers into the tank. Use the end of the hose to move the impeller should the need arise.



Blue Dye



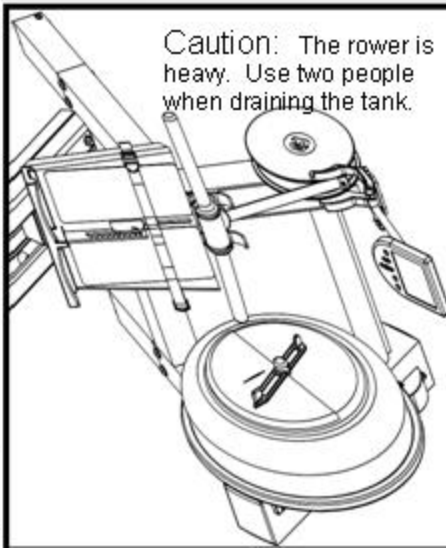
Note: The blue dye is extremely concentrated and will readily stain carpet or clothing.

Water Treatment Procedures:

1. Add Chlorine tablet.
2. **Wait a minimum of 72 hours.** Then add very small amount of blue dye and check for desired color. **Important! Do not add blue dye for at least 72 hours following Chlorine treatment.** The blue dye adds visual appeal as well as cutting down the amount of light affecting the tank water, extending the amount of time between water treatments.



Caution: Use a drop cloth when filling or adding blue dye



Caution: The rower is heavy. Use two people when draining the tank.

Draining the Fluid tank:

When draining indoors, a suitable container capable of holding 8 liters of water is required.

Open the yellow fill plug, and on a protective surface, turn the E520 on its side as shown. Once the rower is in this position, the tank can be easily drained.



Use a drop cloth for splashing and stain protection.

Note: the lower tank plug is permanently sealed.

Long term water treatment and basic operation



CAUTION: Do not fill past the calibration mark as indicated on the tank level sticker or water spillage may occur. See tank filling/water treatment page for details.

Long term water treatment:

Do not use any water treatment other than the tablets supplied with this machine. For replacement tablets, contact your local First Degree Fitness distributor.

Water treatment schedules for the E520 will vary according to the fluid tanks exposure to sunlight, but expect 8-12 months near a bright, sunlit window and 2 years or more for a darker location. At the point of finding the water slightly cloudy, add a Chlorine tablet. Remember to wait 72 hours following the chlorine tablet before adding the blue dye as the Chlorine tablet is extremely concentrated.



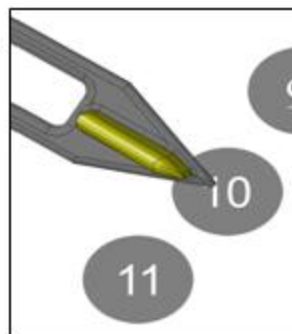
CAUTION: It is strongly recommended that a drop cloth be used under the fluid tank whenever the tank plug is opened for water treatment. The blue dye treated water will readily stain carpet or clothing.

Vertical storage: The E520 can easily be stored in a vertical position. For safety, choose a suitable location, such as a corner of a room. It is recommended that something soft (such as carpet or a small towel) be placed under the rowing pulley of the unit to avoid chipping or floor damage. **Note:** Move with caution as the machine is heavy. Pick up from back and pull at 45 degree angle.

Heel support adjuster: The E520 has a unique and easy to use Heel plate Support system. Simply slide the Heel plate up or down and allow the teeth to lock it into place. This should be adjusted to place the ball of your foot directly under each horizontal foot strap. Tighten to secure before rowing.

Resistance:

Resistance is determined by the level indicator on the front of the tank. Level 1 indicates lightest resistance and level twenty the heaviest. Allow three to four strokes, after moving the level indicator, for the new level to be achieved.

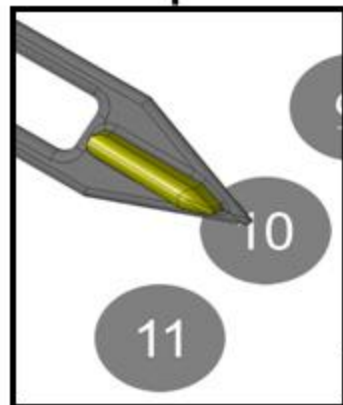


E520 Rower Ergometer.

Quick start provides instant workout information. Just start training to activate. You can choose to change UNITS displayed.

UNITS displays WATTS, SPM, HR, 500/m

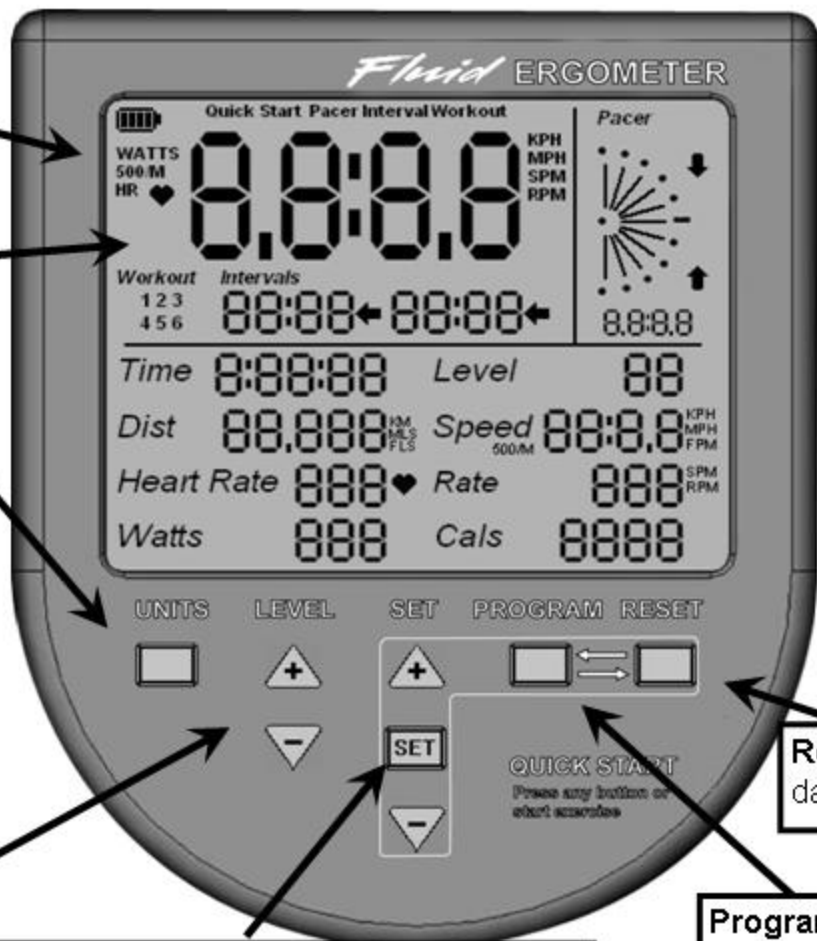
Level Adjustable from 1-20



Set Changes Time, Distance parameters.

Reset Clears data.

Program Clears current exercise program.



Note: For complete operational instructions, please refer to the computer manual, which is included with your E520.

How to row?

1. Begin the stroke comfortably forward and push strongly back with your legs while keeping your arms and back straight.
2. Begin to pull your arms back as they pass over your knees and continue the stroke through to completion rocking slightly back over your pelvis.
3. Return to the starting position and repeat.

How often?

Begin with 5 minute training sessions once a day and aim for around 2:30 to 2:45 for 500m time. Row at a pace that keeps the water circulating continuously between strokes.

Progress a few minutes more each day until you are comfortable with 30-45 minutes training time 3 or 4 times a week.

This will provide aerobic endurance benefits, muscle toning and sufficient calorie burning to form part of a weight loss program.



CAUTION Always consult a doctor before beginning an exercise program. Stop immediately if you feel faint or dizzy



Catch

Comfortably forward with straight back and arms.



Drive

Push with the legs while arms remain straight.



Finish

Pull through with arms and legs rocking slightly back on your pelvis.



Recovery

Upper body tips forward over your pelvis and move forward.







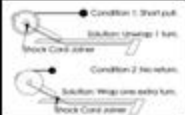

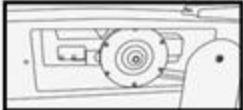
Catch

Catch and begin again.

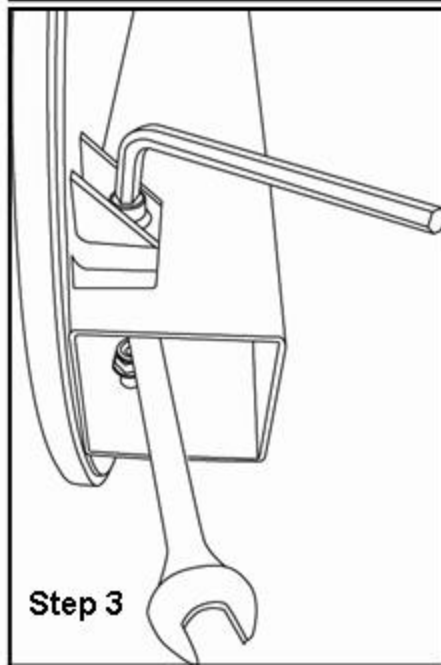
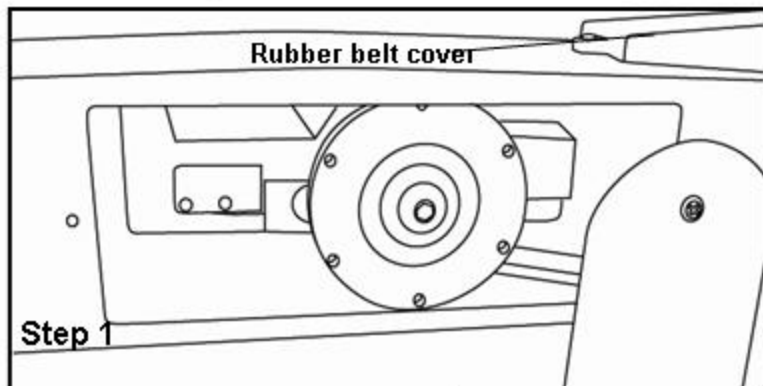
Maintenance chart.

Item	Timeframe	Instructions	Notes
Seat and seat rails.	Weekly.	Wipe seat rails with a clean, dry cloth. Lightly spray the inside of rails with silicone spray.	
Frame.	Weekly.	Wipe down with lint free cloth.	
Tank and water treatment.	12 months to 2 years.	Follow instructions as specified in the "Water Treatment" section of this manual.	
Bungee cord.	Check every hundred hours for correct tension and for signs of wear.	The bungee cord should last for many years. If a bungee cord change is required, please follow the instructions provided in the "Changing the bungee cord" section of this manual.	
Rowing belt.	Check every hundred hours for correct tension and for signs of wear.	The rowing belt should last for many years. If a rowing belt change is required, please contact your local service representative or go online at www.firstdegreefitness.com for further details.	

Troubleshooting Guide

Fault	Probable Cause	Solution
Water changes color or becomes cloudy.	Rower is in direct sunlight or has not had water treatment.	Change rower location to reduce direct exposure to sunlight. Add water treatment and blue dye or change tank water as directed in the water treatment section of this manual. <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>
Rowing stroke return is too light.	Bungee not under enough tension. Rowing belt missing one wrap around rower belt pulley. Bungee has slipped off of bungee pulley wheel.	Cut bungee tie rack and tighten slightly on bungee hook. <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div>  </div> <div>  </div> </div>
Computer screen illuminates, but does not register when rowing.	Loose or failed connection/Sensor gap too wide (see erratic computer display).	Check that the computer lead is connected properly. If connected properly check sensor gap. Contact your local service center if this fails to address the problem.
Rowing belt cannot extend to the end of rowing stroke or no resistance.	Rowing belt needs to be unwrapped 1 turn or, requires an extra wrap on the rower belt pulley	<div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div>  </div> <div>  </div> </div>
The E-520 computer does not illuminate after battery installation.	Batteries installed incorrectly or need replacing.	Reinstall batteries in correct position and try again. If the LCD screen fails to illuminate, try rotating the batteries slightly in the computer. If this fails, contact your local service center.
The E-520 computer display is erratic while displaying SPM and 500meter times.	Gap between sensor and magnetic ring is too wide.	<div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Remove large service cover and check gap between sensor and magnetic ring (should be no more than 2.5mm).</p> </div> </div>

Tank Belt adjustment



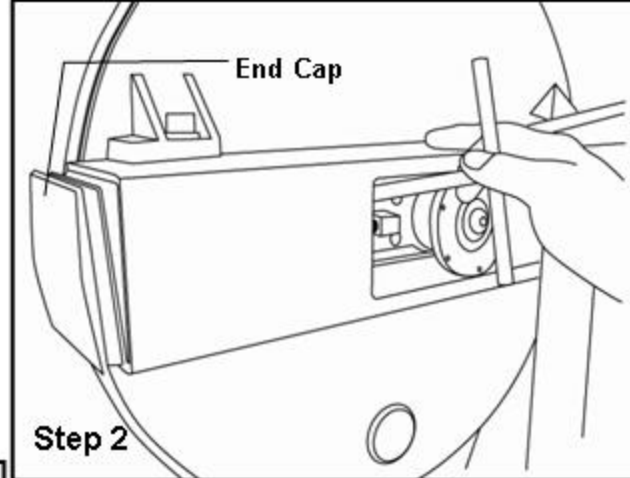
Step 1: Remove large metal inspection plate as shown above.

Step 2: Using a long tool, push out the rear end cap as pictured above right. This will give you access to the tank tensioning bolt (shown above right).

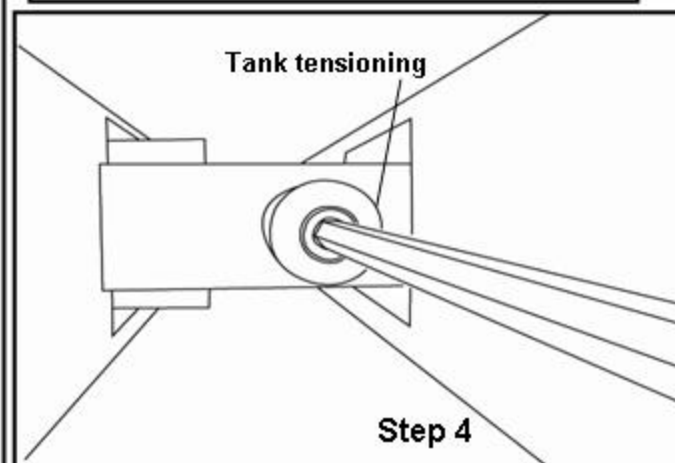
Step 3: Loosen both the rear and front tank bolts slightly as shown left. Remove front rubber belt cover.

Step 4: Using a 6mm Allen key, tighten the belt using the tank tensioning bolt until the belt no longer slips during hard rowing.

Note: Do not over tighten tank bolts.

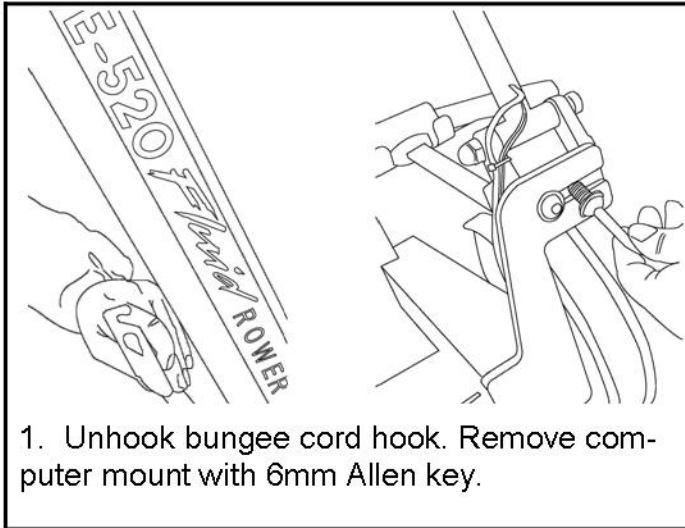


Tip: Twist the belt by hand to gauge tightness. Correct tension should be obtained when no longer able to twist more than 60 degrees.

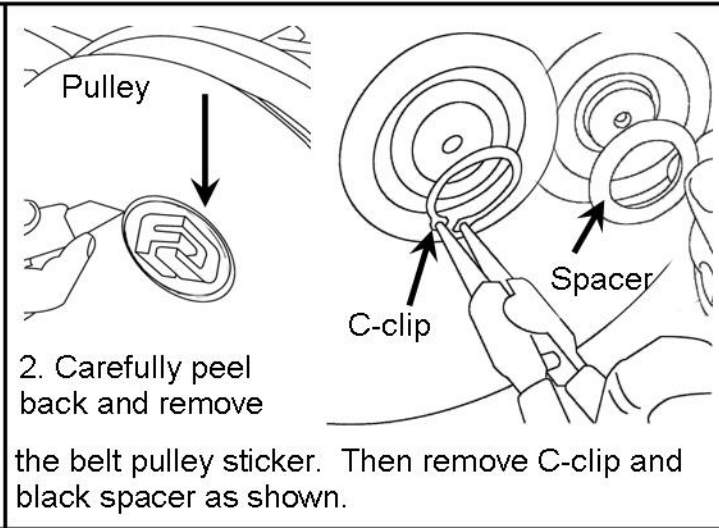


BUNGEE CORD REPLACEMENT. DEALER ASSISTANCE REQUIRED.

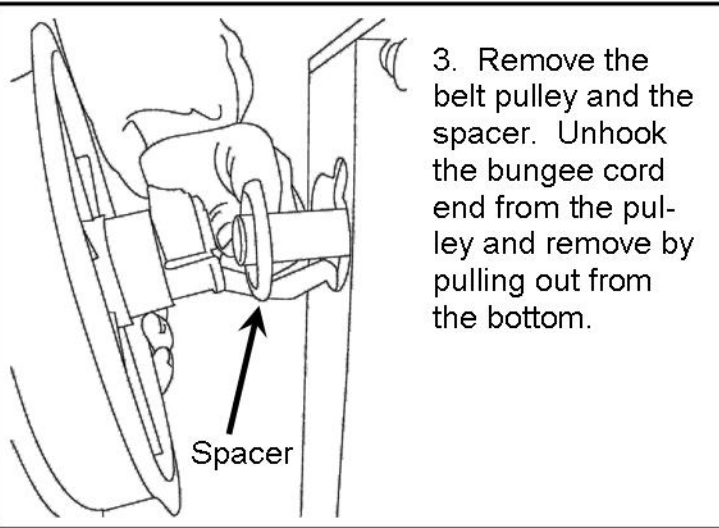
(Expect 2-5 years bungee life in commercial use. Damage during initial rower assembly is not covered under warranty)



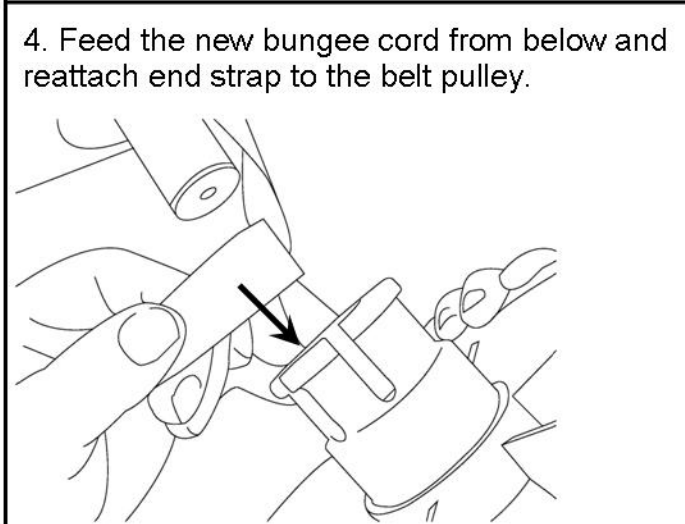
1. Unhook bungee cord hook. Remove computer mount with 6mm Allen key.



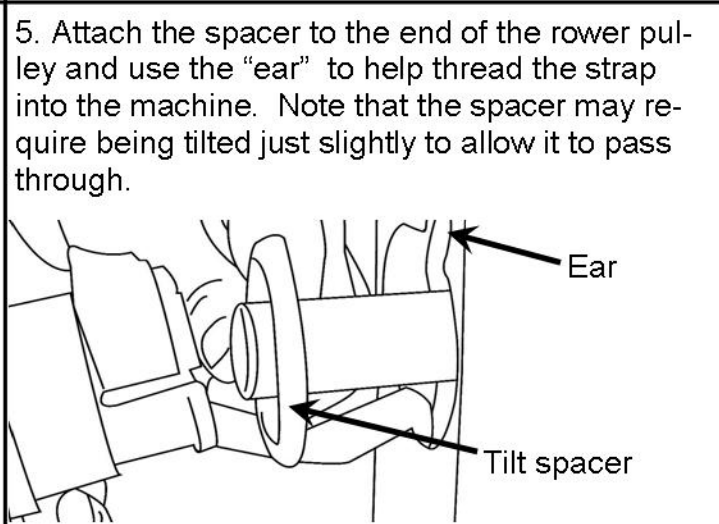
2. Carefully peel back and remove the belt pulley sticker. Then remove C-clip and black spacer as shown.



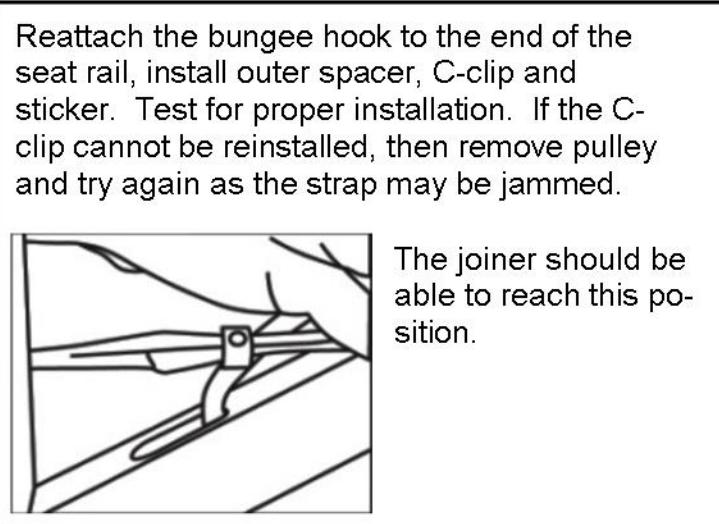
3. Remove the belt pulley and the spacer. Unhook the bungee cord end from the pulley and remove by pulling out from the bottom.



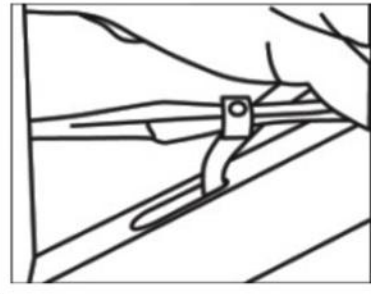
4. Feed the new bungee cord from below and reattach end strap to the belt pulley.



5. Attach the spacer to the end of the rowing pulley and use the "ear" to help thread the strap into the machine. Note that the spacer may require being tilted just slightly to allow it to pass through.



Reattach the bungee hook to the end of the seat rail, install outer spacer, C-clip and sticker. Test for proper installation. If the C-clip cannot be reinstalled, then remove pulley and try again as the strap may be jammed.

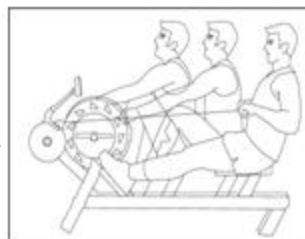


The joiner should be able to reach this position.

Note: A light tap may be required if the black inner spacer will not pass inside the frame.

Reassemble. Note: A tight C Clip mounting indicates the process should be repeated as the belt is jammed up.

Training with the Fluid Rower



- Check with your doctor before beginning an exercise program.
- Follow instructions on rower decal for foot position and always fasten straps.
- Begin with no more than 5 minutes of training on the first day and slowly build your training program.
- Have a training partner observe your rowing form and compare to the decal on your rower.

WELCOME TO ROWING

By First Degree Fitness professional rowing coach Nick Suess

ALL ABOUT ROWING

Rowing is a great sport! I realised this pretty soon after I first took it up forty years ago, and that was long before I ever heard the word "aerobic", or came to realise that rowing is just about the best total-body aerobic exercise you can do. All major muscle groups are called into full use and get a thorough workout. Only swimming is even in the same league. And rowing is non-weight-bearing, which makes it especially suitable for those who are no longer young. I'm still rowing after all these years, still competing as a veteran, and I'm just a kid at that level. I know people still active in the sport at close to 90 years of age.

I have been a rowing coach for a great many years, and during the last couple of decades I have specialised in coaching mature-age beginners, anyone who didn't learn in their teens or early 20s, but who reckons it's a good idea to give it a go. And you're never too old to learn. I've had newcomers in their late 70s who have learnt fast and are having a great time in the sport.

FIRST DEGREE FITNESS – THE FLUID ROWER

And that's why the guys at First Degree Fitness have asked me to join their crew and share my expertise with current and potential customers via their website and this owner's manual for the Fluid Rower. And I'm really happy to do so. If it gets you interested in rowing, that's great. Of course, as someone who is passionate about the sport, I'm hooked on the "real thing", rowing on water, but I realise not everyone gets to do that. However, the Fluid Rowers from First Degree Fitness are excellent machines that can give you the equivalent aerobic exercise and pleasure without you ever getting an oar wet.

The Fluid Rower is an exception amongst the wide array of rowing machines out there. What sets it apart from some of the others is that it has been developed by a team who care about customers getting the most out of it. Rowing is not hard to learn, but what is vital is to get the basics correct early on, rather than persist in poor and potentially harmful technique simply because nobody has shown you otherwise. Rowing on a machine shouldn't be dangerous, but it certainly is hard physical activity, and any activity that stresses the body has the potential to cause injury if it's not done correctly. Correct technique is easy to learn and, just like learning to ride a bike, once you've got it, nothing could feel more natural. So if you are a newcomer to rowing, or have never been coached, please take the time to study these notes.

And please excuse me if my explanations are too "back to basics" for you, but I'm writing this so it will be clear and have meaning for someone who knows absolutely nothing about rowing; someone who is faced with a Fluid Rower for the first time in their life. You want a good workout and you don't want back pain tonight, tomorrow, or next week. How do you start?

BE PREPARED

Firstly ensure you are adequately prepared and in suitable physical condition. If in any doubt at all about this, please seek appropriate medical advice prior to attempting any exercise. Other aspects of being prepared are that you are wide awake and not under the influence of alcohol or mood-affecting drugs, that you are well hydrated and that you have allowed reasonable time to digest your last meal. Always get properly warmed-up prior to serious exercise. If you don't already have your own practised warm-up and stretching routine, talk to a coach or personal trainer on how to avoid niggling injuries arising from suddenly oversteering an unprepared body.

Check that you are suitably clothed. Rowing requires some small specific clothing requirements beyond those of other sports. You will be working out while on a sliding seat, and loose items of clothing, including draw strings, allowed to dangle below waist level can catch in the seat tracks and wheels, damaging clothing and equipment and possibly causing injury. Rowing requires free movement of the hands close to the front of the body. Bulky or baggy tops can inhibit this, and the tips of fingers or thumbs can get caught up in them, again with possible injury resulting. T-shirt and shorts is the simplest and best attire, and if you're well warmed-up you'll not want to wear anything heavier.

And while on fingers and thumbs, long nails can be the cause of very nasty self-inflicted injuries to knees and thighs, so keep nails well trimmed. Rings can also cause problems. Rings on adjacent fingers, or more than one ring on the same finger, have a tendency to chafe against one another. In doing so, they momentarily trap the skin between them, and this accelerates the formation of painful blisters. Some prefer to wear light gloves to protect the hands and excellent rowing gloves are inexpensive and readily available by mail order. For information and pricing, please contact success@scull.com.au.

Finally footwear. The Fluid Rower's footplate is designed to be most comfortable with light running shoes.

GETTING ONTO THE MACHINE

You could just leap on and tug, but getting comfortable, working on good posture, and rehearsing the correct body movements will pay dividends. Firstly just sit down on the seat of the machine, and make sure your weight is well centred and evenly distributed, your head high and your back straight. From long experience of coaching beginner rowers I have observed that a small minority of people have a tendency to drop one shoulder and lean to one side when seated and these folk are invariably unaware they are doing so. If you have a coach (or just some other friendly assistant) they should stand behind your back to check your body is upright and shoulders level, but if you are alone, use visual cues by sighting along the machine. Another option is to place a mirror in front of you to ensure you are sitting correctly.

Next the feet. What is the correct position for the feet? Are the heels together or apart? Are the feet parallel or do they splay out at the toes? There is no correct answer. We are all different. But in general terms, if the feet are too wide apart, then the start of the stroke (known as the "catch") will be awkward and lack strength, and if the feet are too close together, then we have a serious culinary issue for the guys, known as "crushed nuts syndrome", when the legs straighten. How to know what's best for you? Easy. Do something you already know how to do. Step off the machine and simply stand upright with your weight evenly distributed between both feet. Stand nice and tall, as tall as you can go (but avoid the extreme of a stiff military "standing to attention" position and then look down at your feet. They will be at pretty much the correct spacing and angle for you.

Fluid Rower is the only rowing ergometer that allows a wide range of foot positions, and on it you can try and replicate your standing posture. Don't tug the foot straps over tight. They are there to stop you falling over backwards at the end of the stroke, so have them comfortably secured above the balls of your feet

REHERSING THE BODY MOVEMENTS

Just as a theatre director will get an actor to rehearse the required body movements long before the curtain ever goes up on opening night, so we will rehearse the correct body movements before we begin to do serious work on the rower.

Now, because rowing is a "backwards" sport, instead of saying "let's start at the very beginning", we normally start at the end. The coaching process begins at the finish of the stroke, finding out the right position for that. So as explained above, sit on the seat of the rower with your feet in position on the footboard, and your legs straight. Sit with your head high and a nice straight back, ensuring you are not leaning to one side, and your shoulders are level. Fluid Rower is specially designed to have a higher seating position than its competitors, which we find gives better physical and psychological encouragement towards correct upright posture.

And remember that if you are doing this right, your weight should be evenly distributed on the seat, both buttocks supporting equal load. We are still not touching the handle. Now just practice swinging the body from the hips. Not a long way, only about 15 degrees forward of the vertical to 15 degrees back. OK, you don't have an angle protractor handy, nor one locked in your brain, but this is about the angle of a ladder leaning against a wall. Picture that in your mind. And a ladder is STRAIGHT, and so should your back be, not curved, no chin slumping on your chest. Just think about it. Straight ladder leaning forwards, easy swing through the vertical, straight ladder leaning back. Keep your head high at all times and just let your arms swing loose by your sides to ease the movement. Rehearse this motion for a minute until it feels comfortable.

What we are doing here is starting to teach our body a sequence of movements which comprise the rowing stroke, and whilst very simple, these are to some extent counter-intuitive. What does this mean? The body has a natural inclination to do something different, but once it has learnt the new sequence, it remembers it, and that then becomes "natural" for it.

Now we can start using the legs. First of all, do this with the body vertical. Draw your knees up so that your seat slides forwards towards your feet. How far to go? Until the shins are vertical is a good guide. Any less means that you are under-utilising the leg muscles, any more, and it becomes a law of diminishing returns as you go beyond the optimum. Perhaps you don't have the flexibility to get the shins vertical but this will improve over time and practice. If problems in the hip, knee or ankle constrain your leg movement, please seek medical advice on this issue.

Continuity of momentum is very important in rowing and we can learn this right away by swinging the arms as we slide. Swing them back as your legs are straightening and you slide towards "backstops" position, and swing them forwards as your legs compress towards "frontstops" – the start of the stroke. And that extra momentum should make compression a little easier.

There is a popular perception that rowing is a sport that derives all its power from the arms, shoulders and back. And that perception is wrong. All those muscle groups play a part, but this is way overshadowed by the legs, the most powerful muscles in the human body, which you have used since infancy to support your weight, to propel you along, and to take you up stairs and steep hills. And it is those leg muscles which we need to use to the full in this sport. That is why we sit on a sliding seat, and why we need to rehearse this movement to get it correct.

Only the Fluid Rower offers total clear space between the rower's feet and the seat. No awkward bar between the legs, no side rails forcing the feet close together. And interestingly enough, that's exactly what it's like in an Olympic rowing boat. Clear space to offer the rower complete sliding freedom. Its one of the great features that makes a Fluid Rower feel so natural.

So now as you swing backwards and forwards on the slide, sense the power in your legs, which is soon going to be transferred to the handle. The rest of the body, the back, shoulders and arms, are for much of the stroke merely the connecting mechanism between the power of the legs and the handle where your work output is delivered to the machine. Begin to think of it this way and you will progress fast.

OK, it's time to take up that handle!

STARTING TO USE THE HANDLE

Take the handle in both hands. Don't grip it with white knuckles like you are holding on for dear life, but simply curl all the fingers over the top of it and allow them to act as hooks. The thumbs can simply rest lightly on the underneath of the handle. Now look at your wrists. The bones and tendons in the wrists are delicate, so don't overstress them. The wrists should be flat, with a straight horizontal line from the finger knuckles to the elbow. If the wrist is humped or curved down, you will feel it at the end of a workout.

The Fluid Rower handle is ergonomically designed for a comfortable light grip, which should enable a long workout without wrist pain and optimum avoidance of blisters. Now, as you hold the handle, look at your forearms. They should be horizontal and at right angles to the handle, so three sides of a flat rectangle are formed by the two forearms and the handle between them. And this flat rectangle should be maintained throughout the entire stroke cycle.

THE FINISH

Yes, we do the finish first. Take the handle through to the finish position. Your legs are straight, your back is straight and leaning backwards like a ladder at about 15 degrees. Head held high. Pull that flat rectangle into your body so your elbows are at your sides, shoulders back, forearms still horizontal, and the handle about an inch (2 or 3 cm) from your chest. That's the finish position. Memorise it carefully.

THE CATCH

Rowers use the word "catch" for the start of the stroke, when the oars engage the water. The motions for achieving this to maximum effect in a boat are quite complicated, but on land it's far simpler. Compress those legs, shins to the vertical, or as near as you can get. The clever location of the Fluid Rower's tank alongside your right knee offers a useful visual reference point to ensure you are consistently getting the correct compression when working at speed, so note where your knee is in relation to it now while doing this rehearsal work.

Get your back nice and straight and leaning forward like a ladder at 15 degrees. Head high. Arms fully extended. The flat rectangle is now right out in front of you. We will call this position C, for Catch, and you are ready to pull.

But you must learn the correct sequence. In doing this we divide the stroke into three roughly equal sections, which we will call **"drive"**, **"ease through"**, and **"arms finish"**, and the positions that separate them we will call D and E, as shown in this article..

THE DRIVE

This part of the stroke belongs to the legs alone. Envisage a point on the slide, mid way through its travel. Keeping everything else about your posture absolutely constant, push with your legs to bring the seat though to that mid point, and stop there. Now check. Is your back still straight and leaning forwards like a ladder? Head still high, Are your arms still fully extended? Most likely not at the first attempt, so analyse your mistakes and work on them. From my long experience I know that most beginners tend to do one of three things.

The majority begin by bending the elbows and pushing them outwards, so that flat rectangle is now squashed out into an altogether different shape. Your brain is telling you body to do this, so you must tell your brain to do things differently. Keep your arms straight and remember that flat rectangle. Practise it.

Many inexperienced rowers throw their body back first, so by now they are either bolt upright or already leaning backwards. If that is you, form a mental picture of that forward leaning ladder being slid away from the wall without any change in its angle. Once again, you must educate your brain to do it right, and this means practice. Use your legs to drive the seat back half way along its travel, arms still locked out straight, body still leaning forwards like that ladder, back straight, head held high. DRIVE to Position D. Practise it.

EASE THROUGH

The leg muscles continue to work, but now the body joins in. Let's do this in two parts, starting with the body. Go to position D, as described above, sitting at mid slide with the arms straight and the body leaning forward. Then, without moving any other part of the body, swing from the hips to be leaning back at 15 degrees. Get into the swing of it, until it feels natural.

Now lets add the legs. Picture the point where the slide is only 25% of its travel out from the finish, and as you swing the body through, push with the legs to go from that mid slide position to quarter slide. Try and co-ordinate these two movements so they are simultaneous and keep practising this middle third of the stroke until your body has learnt it. Remember that there is still no arm action up to this point. You EASE THROUGH to arrive at Position E with the arms still locked out straight.

ARMS FINISH

The word "arms" is emphasised because, as mentioned earlier, most beginners start bringing the arms in early. Yes, at Position E the arms are still straight but now it's their turn.

Go to Position E, and give a strong positive tug with the arms, retaining that flat rectangle of forearms and handle. So the forearms work like pistons pulling straight back, and the elbows slip past the sides of the body almost brushing the lower ribs. Practice until you get used to it. Now add the legs, simultaneous with the arm tug, just using up that last quarter of slide so the knee joints are straight. The body remains at that backward leaning ladder angle throughout this phase, the back is still straight and the head high. Resist the temptation to drop the chin to the chest as the stroke ends. And that's the FINISH, Position F.

PUTTING IT ALL TOGETHER

Once you have these three phases well rehearsed, start to put them together. Start at the Catch (Position C), do the Drive to Position D, followed without pause by the Ease Through, to end at position E. When you have done this a couple of dozen times and feel comfortable with it, start at Position D, Ease Through to Position E, followed without pause by the Arms Finish, to Position F. Finally do all three together. It's often a help to call out "legs, body, arms" during those three phases. Try to avoid a tendency to "bum shove" in which the rower arrives at a variation on Position D where the legs have already completed their work and are fully straight, but the body has folded forwards and increased the angle to 25 or even 30 degrees. This is then followed by a massive and potentially injurious heave of the back. Just don't do it!

THE RECOVERY

Well, you've done the hard work of the stroke, and all you now need do is get forward again for the next one. We call this the "Recovery". Only two points to remember:

1. Get the sequence right
2. Don't hurry

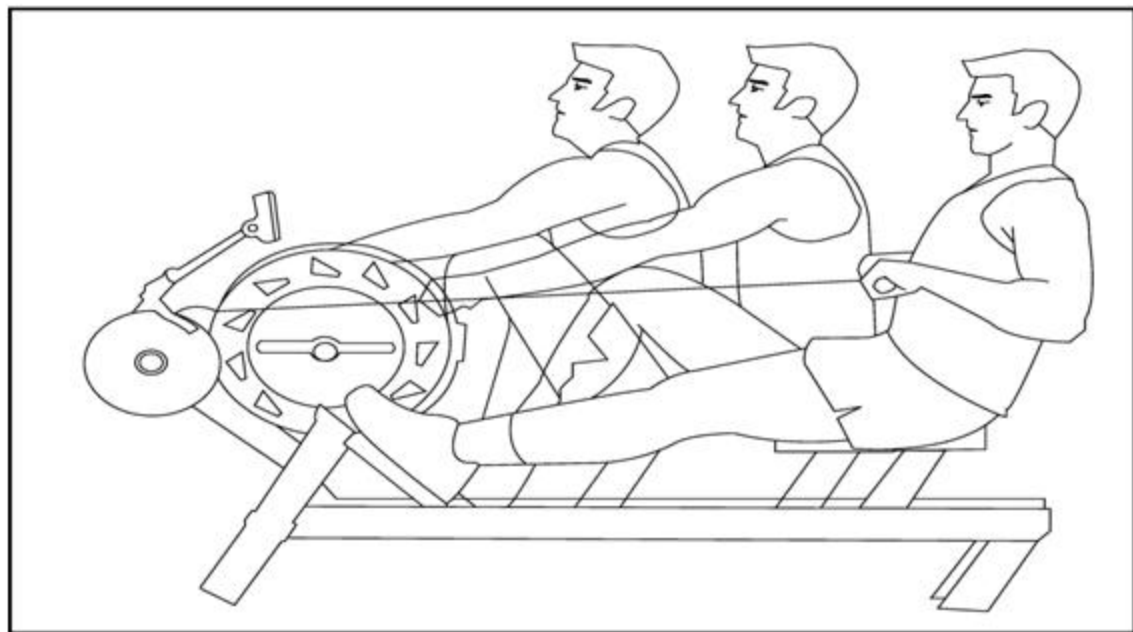
Go into any gym and look at people on the rowing machines. You can instantly spot those who are real rowers, or have been well coached, sorting them out from the rest just by watching the recovery. For the real rowers it's smooth and slick, but very well controlled. You can almost feel them taking their time to wind up the spring for the next burst of power. For the others it's a frantic effort, most especially when you see their hands go up over a hump to avoid colliding with their knees.

Yes, getting the hands past the knees is the trick. How do you do it? Easy. Get the sequence right. Just keep the knees down until the hands are past them. From the Finish, Position F, push the hands quickly away. Don't move any other part of the body. ARMS AWAY to Position A. Now, at this point, as the arms come straight, the forward momentum of hands and handle effectively encourages the body to follow, with the swing of the hips from "ladder" leaning back to "ladder" leaning forward. BODY to Position B. And just look – as if by magic, your hands are now forward of your knees. No need to worry about having to lift them over.

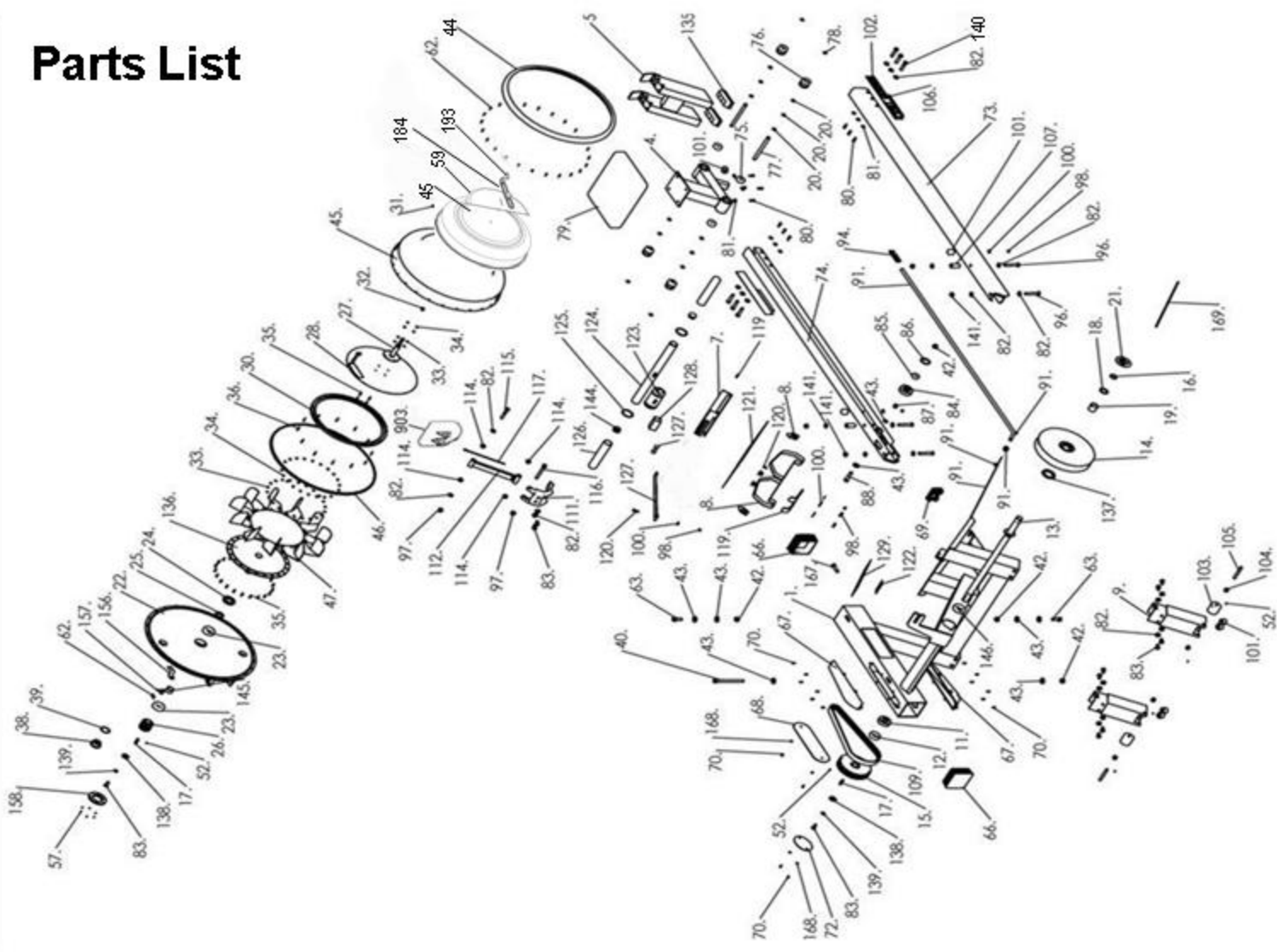
All you now have to do is slide forward to full compression, keeping the arms out straight and the body at its 15 degree lean, straight like a ladder, head high, and you arrive back at the Catch, Position C, to complete the perfect stroke cycle. And here comes the point about not hurrying. Effective rowing is achieved by giving the body a clear rest of a full second through the total recovery phase. The hard work will come soon enough, but excessive fast movement back and forth on the slide would be pretty wearying even if you didn't have a handle to tug on. Rowing coaches talk of "ratio" of the time the oars are in the air compared to their time in the water, and 2:1 is a good target number at all levels from novice to Olympics. Watch an Olympic final and you'll hear the commentators telling you the stroke rating (number of strokes per minute) of the crews, and it's usually a number around 40. That means the stroke cycle takes 1½ seconds, and so at a 2:1 ratio the oars are in the air for one second and in the water for half a second on each stroke. Make your overall recovery time from Finish back to Catch at least 1 second, even when you are going flat out for a medal!

HOW TO THINK OF YOUR ROWING

Rowing is a sport that is highly meditative, with the hypnotic repetition of simple body movements. Note that in describing the sequences we started with C, went D, E, F and continued with A, B and back to C. Why not start at A? Well, the cycle has no beginning or end. It's a bit like the Buddhist concept of Karma, in which life is perceived as an ever-revolving wheel. That rotating water wheel on the Fluid Rower is in many ways indicative that its designers know and understand these principles very well, and gave particular thought to the point I am about to make. You see, experienced rowers mentally work around the rowing cycle in this way. It's not forwards and backwards, it's round and round. This encourages the meditative state of mind which in essence means you finish your workout physically exhausted but mentally refreshed and relaxed and 100% ready for the rest of your day. And this is what Fluid Rower brings to its fortunate owners.



Parts List



Key No	Description	Key No	Description	Key No	Description
1	Bare main frame	47	Impeller blade	106	Rail small decal
4	Seat frame	52	Grub screw M4x6	107	Rail spacer
5	Rear leg	57	Rare earth magnet 4mm	109	PK belt 7 rib 926mm
7	Heel Support bracket	59	Tank level decal.	111	Belt guard aluminum.
8	Ankle strap with buckle	62	tank screw M3x10	112	Computer mount arm.
9	Front leg frame part only.	63	Tank bolt M12x40	114	Bushing
11	Bearing housing	66	100mm end cap	115	M10x80 bolt
12	Bearing NSK 6005zz	67	Rubber cover.	116	M10x60 bolt
13	Main pulley shaft	68	Large side cover.	117	Sensor wiring.
14	Belt pulley	69	75x50mm cap	119	Stainless handle catch. (1 only)
15	Large pk transmission pulley	70	M4x10 screw	120	M6x10 bolt
16	C clip stw-25	72	Small side cover	121	3m foot plate (1 only)
17	Key way 7x7x32	73	Left aluminum seat rail.	122	Frame caution decal
18	Washer steel 40x25.5x2	74	Right aluminum seat rail	123	Handle centre rubber cover
19	INA clutch bearing 25mmx30	75	Bearing NBN6301zz	124	Rower handle.
21	Pulley decal	76	PU seat wheel.	125	Handle rubber cover ring (1 only)
22	Aluminum tank back	77	12mm shaft 12*149	126	Hand grip 28x150 (1 only)
23	Bearing NSK6205ZZ	78	C clip stw-12	127	Rowing belt with end insert.
24	Tank shaft seal housing.	79	Seat	128	Foam handle insert
25	Seal nbr 37x8x30	80	M6x20 seat bolt	129	How to use decal
26	Small pk transmission pulley	81	Seat washer 13x6x1.2	135	Rubber rear leg insert (1 only)
27	Stainless adjuster shaft	82	Washer 21x11x2	136	Impeller centre shaft
28	Stainless backing plate	83	M10x20 bolt	137	Belt pulley spacer
30	Blue poly backing ring.	84	Bungee pulley	138	Shaft washer
31	Grub screw M8x8	85	Bearing NBN-6201 ZZ	139	Spring washer
32	Adjuster O Ring 12x9x1.5	86	C Clip RTW-32	140	10x47.5mm rear leg bolt (takes 6mm insert bolt)
33	Stainless washer 10x4.2x1	87	Spacer 16x12x12.5	141	10mm nylock nut
34	Stainless nut M4	88	Bolt M12x50	144	Rower handle end inserts.
35	Stainless bolt M4	91	Bungee shock cord	145	Bearing spacer
36	Back ring s/s screw m3x20	94	Bungee hook end.	146	NSK 6006 ball bearing
37	Resistance handle decal	96	M10x70 seat rail bolt	156	Sensor bracket
38	Tank plug with breather	97	M10 dome head nut	157	Sensor round, mounts in fdr-3-68
39	Tank plug O Ring 42x26x3	98	M6 nut.	158	Magnet Ring
40	Tank bolt 12x140mm	100	Washer 13x6x1.5	167	Tank Adjuster Bolt.
42	Nut M12	101	Rubber bumper	168	3mm washer
43	Washer 24x13x2	102	Aluminum rail large decal	169	Wiring from computer to lower frame for heart rate optional connection.
44	Tank black outer cover ring.	103	Transport wheel.	184	Tank level resistance handle
45	Polycarbonate tank.	104	Spacer 16x10x12	193	PU Yellow resistance handle cover
46	Tank large seal.	105	Shaft	903	Computer . no h/receiver.

FLUID ROWER (model FR-E520)

INTERNATIONAL WARRANTY – COMMERCIAL USE

First Degree Fitness Limited warrants that the **Fluid Rower (model E520)**, purchased from an authorized agent, is free from defects in materials and workmanship. First Degree Fitness or its agents will, at their discretion, repair or replace parts that become defective within the warranty period.

Metal Frame – 10 Year Limited Warranty

First Degree Fitness will repair or replace the metal Main Frame of the Rower should it fail due to any defect in materials or workmanship within 10 years of the original purchase. Warranty does not apply to frame coating.

Polycarbonate Tank & Seals – 3 Year Limited Warranty

First Degree Fitness will repair or replace the polycarbonate tank or seals should they fail due to any defect in materials or workmanship within 3 years of the original purchase.

Mechanical Components (of a non-wearing nature) – 2 Year Limited Warranty

First Degree Fitness will repair or replace any mechanical component should it fail due to any defect in materials or workmanship within 2 years of the original purchase.

Wearing Components – 2 Year Limited Warranty

First Degree Fitness will repair or replace any component should it fail due to any defect in materials or workmanship within 2 years of the original purchase.

Specific Inclusions

- Bungee recoil cord, belt and pulley
- Hand grips & foot straps
- Seat
- Seat rollers & bearings
- All rubber components
- Computer & speed sensor (excluding replaceable batteries)
- All drive belts & bearings
- Aluminum seat rails

General Exclusions

- Damage to the finish of any part of the machine
- Damage due to neglect, abuse or incorrect use of the machine
- Any charges for freight or customs clearance associated with the return or dispatch of parts
- Any damage to or loss of goods during transport of any kind
- Any labour cost associated with a warranty claim

General Conditions

- The serial number of the machine must be correctly registered with First Degree Fitness Limited or one of its appointed distributors
- First Degree Fitness Limited reserve the right to examine any part where replacement is claimed under warranty
- Warranty period applies only to the original purchaser from the date of purchase and is not transferable
- The product must be returned to your place of purchase in original packaging with transportation, insurance and associated charges paid for by you and risk of loss or damage assumed by you.

First Degree Fitness makes no other warranties except as stated here and expressly disclaims all warranties not stated in this warranty. Neither First Degree Fitness nor its associates shall be responsible for incidental or consequential damages