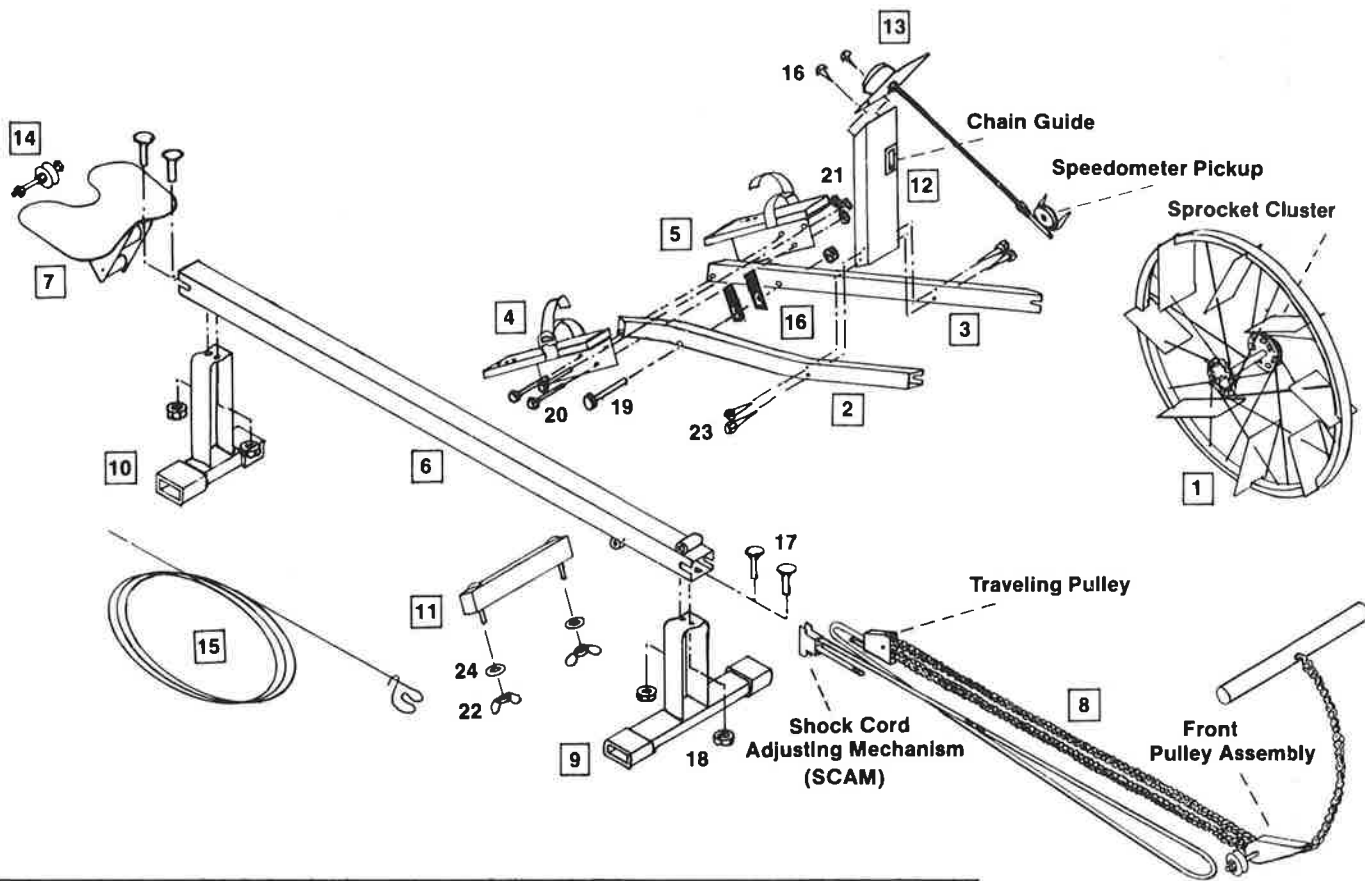


CONCEPT II Rowing Ergometer

JUNE 1983



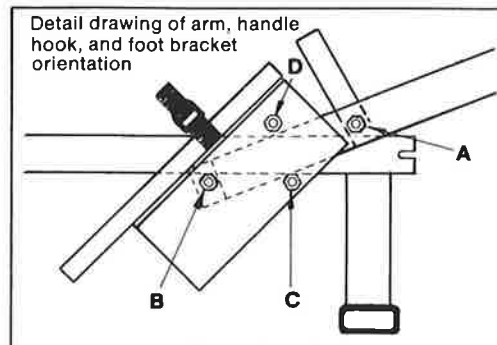
Tools Required for Assembly

- screw driver
- adjustable wrench
- 7/16 box wrench
- 1/2 box wrench
- 3/8 box wrench
- 5/8 box wrench
- flashlight
- wire tool (Included)
- sharp knife

Assembly Instructions

Concept II Rowing Ergometer

- Step 1** Attach the front leg to the front of the monorail (this is the end where the bolt tubes are located). Attach the leg using (2) 3/16-18 threaded studs and (2) 3/16-18 hex nuts. Insert the studs from the INSIDE of the monorail tube, as shown in the assembly drawing.
- Step 2** Slide the seat onto the monorail. The seat must be oriented as shown in the drawing.
- Step 3** Attach the rear leg to the monorail using (2) 3/16-18 threaded studs and (2) 3/16-18 hex nuts. Insert the studs the same as you did for the front leg.
- Step 4** Assemble the bent arm, straight arm, handle hooks, and foot brackets using (1) 3/8-18 hex bolt 4 1/2" long, (3) 3/16 hex bolts 5" long, and (4) 3/16 hex head nuts. See detail drawing for arm, handle hook, and foot bracket orientation. These 4 bolts should be hand tightened only. Do not tighten with a wrench until directed to do so in Step 8.



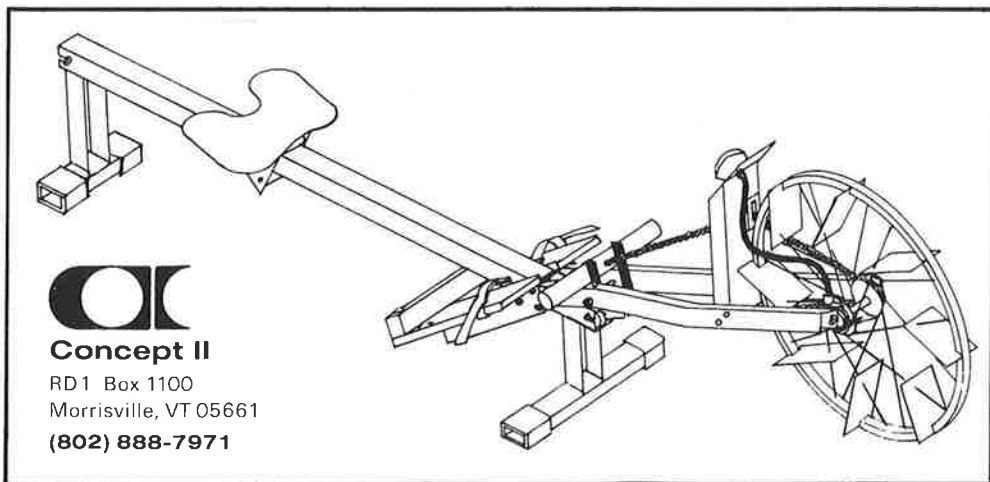
- Assemble in this order:
- A** Place the arms on either side of the monorail and position the two handle hooks as shown in the detail drawing. Note that the handle hooks go between the bolt tubes and the arms, not outside the arms. Insert the 4 1/2" long bolt through the arms, handle hooks, and the top bolt tube on the monorail; thread on a nut loosely.
- B** Insert a 5" long bolt through hole "B" in one foot bracket. Position both arms so holes "B" line up with the lower bolt tube; insert the 5" bolt with foot bracket through these holes. Now place the other foot bracket on the bolt and thread on a nut loosely.
- C** Insert a 5" long bolt through the foot brackets and under the arms and under the monorail; thread on a nut loosely.
- D** Insert a 5" long bolt through the foot brackets and above the arms and above the monorail; thread on a nut loosely.

- Step 5** Attach the chain guide mount board between the arms with (4) 1/4 lag screws 2" long. Be sure to lubricate the threads of these 4 screws with soap for easier installation and to avoid breaking the bolts. Do not tighten the lag screws all the way until directed to do so in Step 8.
- Step 6** Detach the speedometer pickup from the speedometer assembly by unscrewing the knurled collar on the speedometer pickup. Install the speedometer pickup on the side of the flywheel (the side that does not have the sprocket cluster). After removing the wheel axle nut, you will see two washers. **To avoid damage to the speedometer pickup, place one washer on either side of the speedometer pickup when installing the pickup on the axle.** Insert the tabs of the speedometer pickup in two opposing flange holes.

Parts List

- 1 Flywheel Assembly
- 2 Bent Arm
- 3 Straight Arm
- 4 Foot Bracket for Bent Arm
- 5 Foot Bracket for Straight Arm
- 6 Monorail
- 7 Seat Assembly
- 8 Handle, Chain, Shock Cord Assembly
- 9 Front Leg
- 10 Back Leg
- 11 Heel Stop
- 12 Chain Guide Mount Board
- 13 Speedometer Assembly
- 14 Rear Pulley Assembly
- 15 Wire Tool
- 16 Handle Hooks

- Step 7** Mount the flywheel in the slots at the end of the arms. Make sure the sprocket cluster is on the same side as the chain guide. The speedometer pickup cable connection must be oriented upward and inside the bent arm. **To repeat! To avoid damage to the speedometer pickup there must be one washer between the hub and the speedometer pickup and one between the pickup and the bent arm.** Center the wheel between the straight and bent arms and tighten the wheel nuts.
- Step 8** Tighten lag screws on the chain guide mount board. Tighten the (4) bolts attaching the arms and foot bracket assemblies to the monorail making sure to **tighten evenly 1/4 turn at a time.**
- Step 9** The heel stop may now be placed in the desired location using (2) 3/16 wing nuts and (2) washers. Place washers between wing nuts and wood. If the heel stop bolts do not line up with the holes in the footboards, then: 1) loosen the screws holding the boards to the metal foot brackets, 2) put heel stop in place, and 3) tighten the footboard screws.
- Step 10** Mount the speedometer to the top of the chain guide mount board with (2) #10 wood screws 3/4" long. Screw the loose end of the pickup cable into the speedometer pickup cable connection. Make sure the cable is free of the fan blades; if the cable interferes with the fan blades, make a smooth, gradual bend in the cable to clear the path of the blades.



Concept II

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Fasteners Quantity

- | | | |
|----|-----------------------------------|---|
| 16 | #10 wood screws 3/4" long | 2 |
| 17 | 3/16-18 threaded stud 3/4" long | 4 |
| 18 | 3/16-18 hex nut | 4 |
| 19 | 3/16-16 hex head bolt 4 1/2" long | 1 |
| 20 | 3/16-16 hex head bolt 5" long | 3 |
| 21 | 3/16-16 hex nut | 4 |
| 22 | 3/16-16 wing nut | 2 |
| 23 | 1/4 lag screw 2" long | 4 |
| 24 | washers | 2 |

Step 11

Installation of the handle, chain, shock cord assembly: **The routing of the shock cord and chain is very important to the functioning of the machine.** Read these directions and understand them before starting Step 11. This step is accomplished most easily with two people, as follows:

- a) Person #1 insert the wire tool into the monorail with the double hook end sticking out towards the flywheel (front of the machine). Place rear pulley assembly at rear of the ergometer.
- b) Stand face to face and arrange the assembly between the two of you, using your hands as pulleys to **duplicate exactly the routing shown in Fig. 1.**
- c) Person #1 fasten the shock cord loop and shock cord adjustment mechanism (SCAM) to the double hook of the wire tool as shown in Fig. 2, being sure to keep the same orientation as in Fig. 1. Each loop is kept separate by the specially designed double hook to avoid twisting and tangling while the assembly is drawn through the monorail.
- d) Person #2 place shock cord over pulley in front pulley assembly as shown in Fig. 2. With Person #2 holding the front pulley assembly, Person #1 will draw the chain and shock cord through the monorail using the wire tool. The shock cord assembly is drawn through the monorail until the front pulley assembly nears the slots provided for the 1/4" diameter bolt. Secure the front pulley assembly in the slots and tighten the nuts (do not overtighten). Now draw the wire tool out of the rear end of the monorail. Remove the wire tool from the shock cord loop and the SCAM and put the rear pulley assembly into place as shown in Fig. 3. Slip rear pulley assembly into the slots and snug the nut to secure in place.

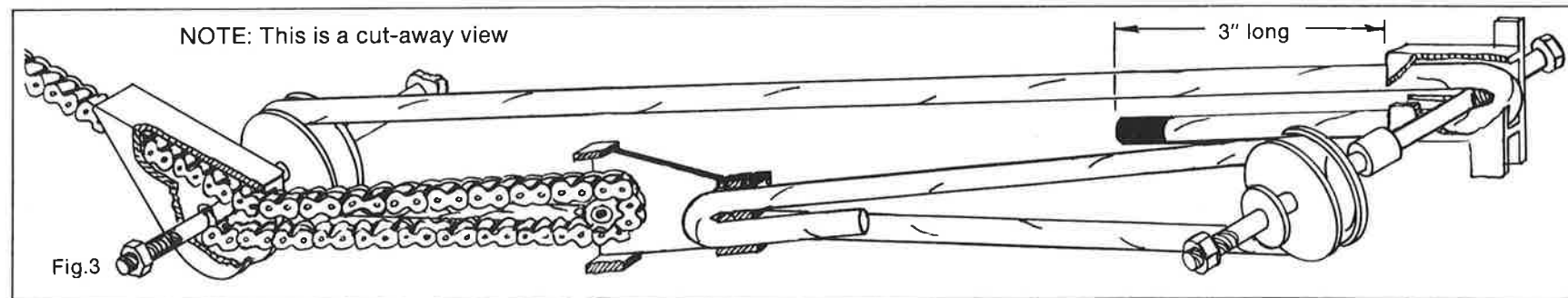
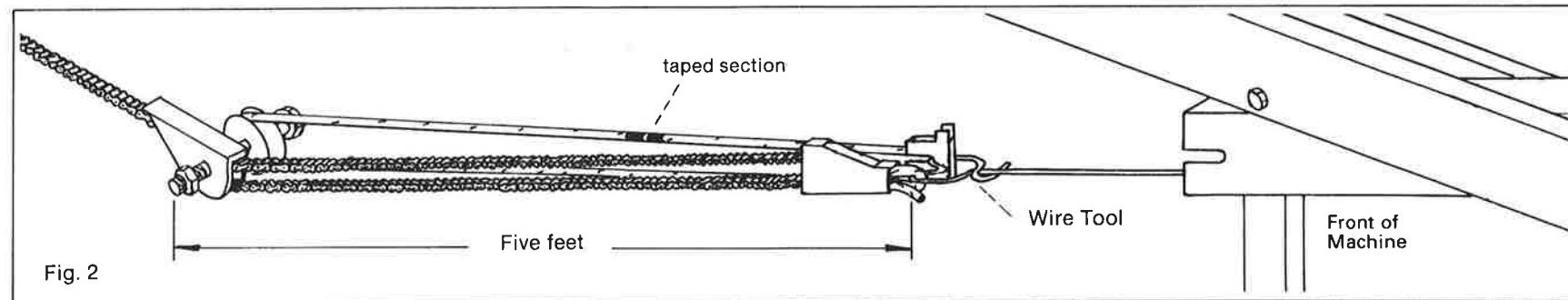
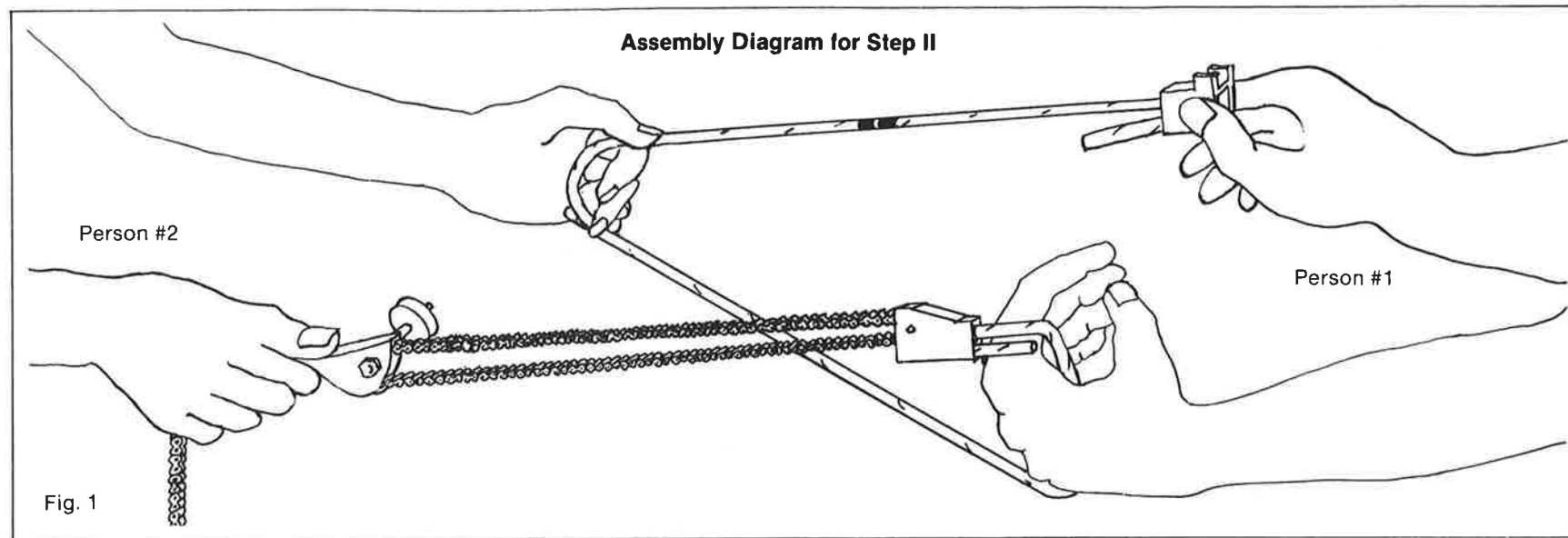
- e) **Check for proper installation of the chain and shock cord.** Person #1 can look into the rear of the monorail while Person #2 shines a flashlight into the front end. This will illuminate the inside of the monorail tube and allow Person #1 to check for proper routing and movement of the chain, traveling pulley, and shock cord. Person #2 should pull on the chain to create tension and movement for Person #1 to observe inside the monorail. Check for smooth rotation of the shock cord pulleys.
- f) Remove the side plate of the chain guide by removing 2 screws (see assembly drawing). Direct the chain through the chain guide and captivate it with the side plate; replace the 2 screws. Place the chain on the middle sprocket.

- g) Now it is time to adjust the shock cord tension. Pull the shock cord adjustment mechanism out the rear end of the monorail. Feed the shock cord through the SCAM until the taped section has passed through (about 2 feet). Cut the shock cord in the middle of the taped section to remove excess cord. Now adjust the shock cord to leave a 3 inch "tail" as in Fig. 3. Because of stretching, you may periodically have to retighten the shock cord to maintain proper return tension. Proper return tension is defined as "just enough force to keep the chain from going slack on the recovery phase of the stroke." This is approximately 5 lbs. at the "catch" and 8 lbs. at the "release" of the stroke.

NOTE: When storing an assembled ergometer, it is advisable to let the "oar handle" rest against the chain guide mount board rather than in the handle hooks provided on the arms of the machine. This will prolong the life of the shock cord.

Step 12

Fine tuning the wheel position: place the chain on the largest sprocket. Hand turn the wheel slowly to check for interference between the fan blades and chain. If there is interference, loosen the flywheel axle nut and reposition the flywheel so it will not interfere. Retighten nuts. Now place the chain on the smallest sprocket. Row the machine a few easy strokes. If the chain rides roughly over the sprocket, loosen the flywheel axle nuts and realign the wheel so that the fan blades come slightly closer to the chain. Retighten nuts.



Maintenance Tips

Lubricate clutch inside sprocket cluster. Using 10 or 20 weight oil (every 1000 hours of use), tip the machine on its side and drip oil into the clearance between the rotating freewheel body and the sprocket cluster.

Wheel bearing maintenance. Every 1000 hours of use (for heavy institutional use this is about once a year), the wheel bearings should be cleaned, adjusted, and repacked using a medium weight lithium-based grease. This can be done by a local bicycle shop; or instructions can be found in a bicycle maintenance book.

Keep bar and seat rollers clean. Wipe the rail and seat rollers regularly to prevent a bumpy ride. This will prolong the life of the seat rollers and monorail.