



SEAT AND HANDLE MECHANISMS TECHNICAL CERTIFICATION TRAINING

Field Engineering | 2010

LifeFitness
WHAT WE LIVE FOR

Course Objectives

- » Theory of operation
- » Elevation Bikes Seat Mechanisms
- » Classic Bikes Seat Mechanisms
- » Consumer Bikes Seat Mechanisms
- » LeMond Bikes Seat and Handle Mechanisms
- » Common Issues - Elevation Bikes Sea
- » Common Issues - Recumbent Bikes Seat
- » Common Issues - Consumer Bikes Seat
- » Common Issues - LeMond Bikes Seat and Handle

Theory of Operation

- » A cushioned seat is mounted to a seat assembly.
- » Within the seat assembly is the seat adjustment handle.
- » The adjustment handle is connected to a pawl.
- » When the adjustment handle is pulled, this disengages the pawl from the rack and allows the seat to move in the direction of the user's pull or push .
- » When pressure or tension is removed from the adjustment handle, the pawl enters into a different location in the rack. This keeps the seat from moving

Elevation Bikes Seat Mechanisms

Elevation Bikes



Elevation: 95C, 97C



Elevation: 95R

Seats Adjustment

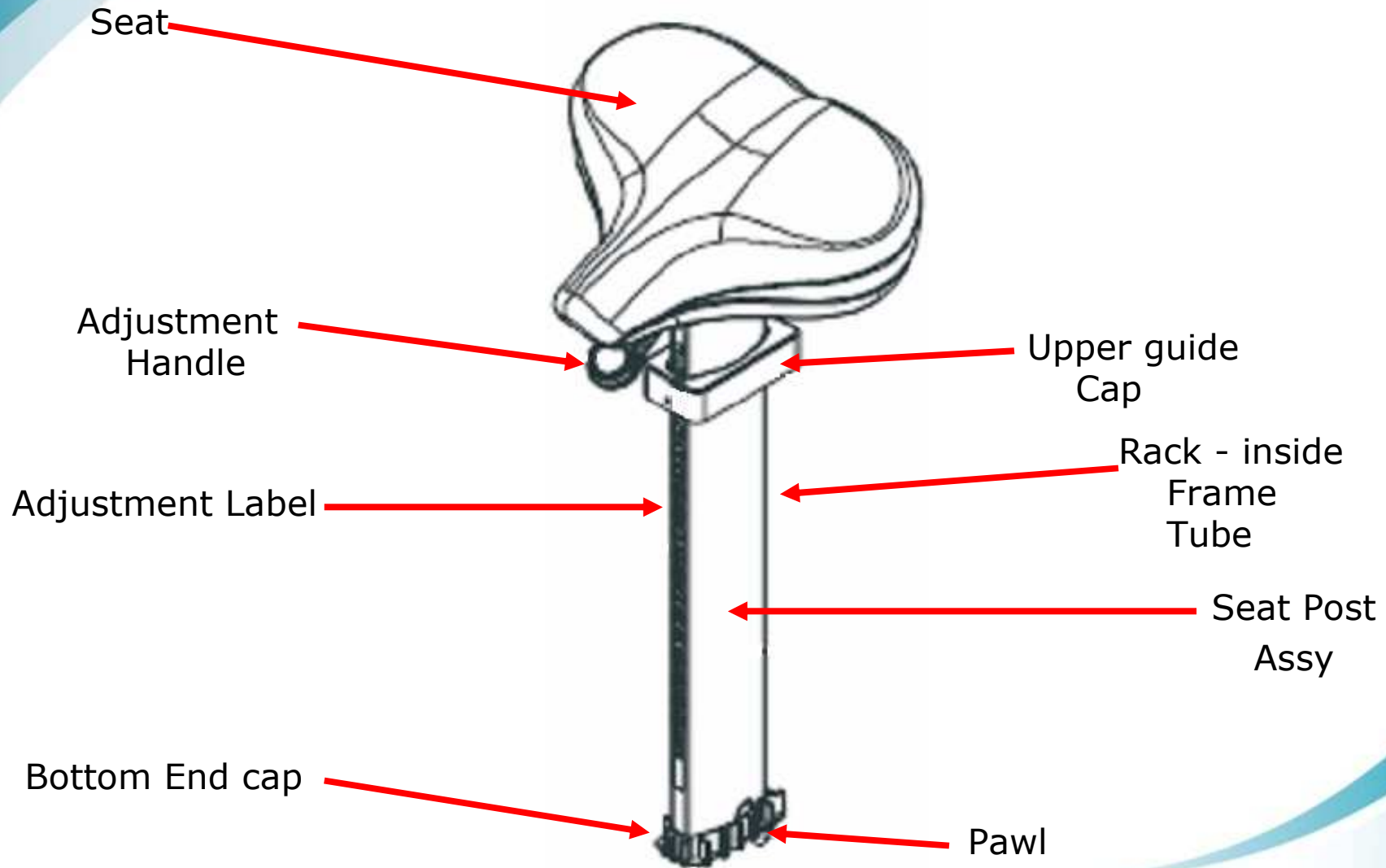
- » Seat adjustment for the Elevation 95C can accommodate users:
 - ◆ 4'-9" to 6'-5"
- » Seat adjustment for the Elevation 97C (XXL) can accommodate users:
 - ◆ 5'-6" to 7'-0"
- » Seat adjustment for the Elevation 95R can accommodate users:
 - ◆ 4'-9" to 6'-5"



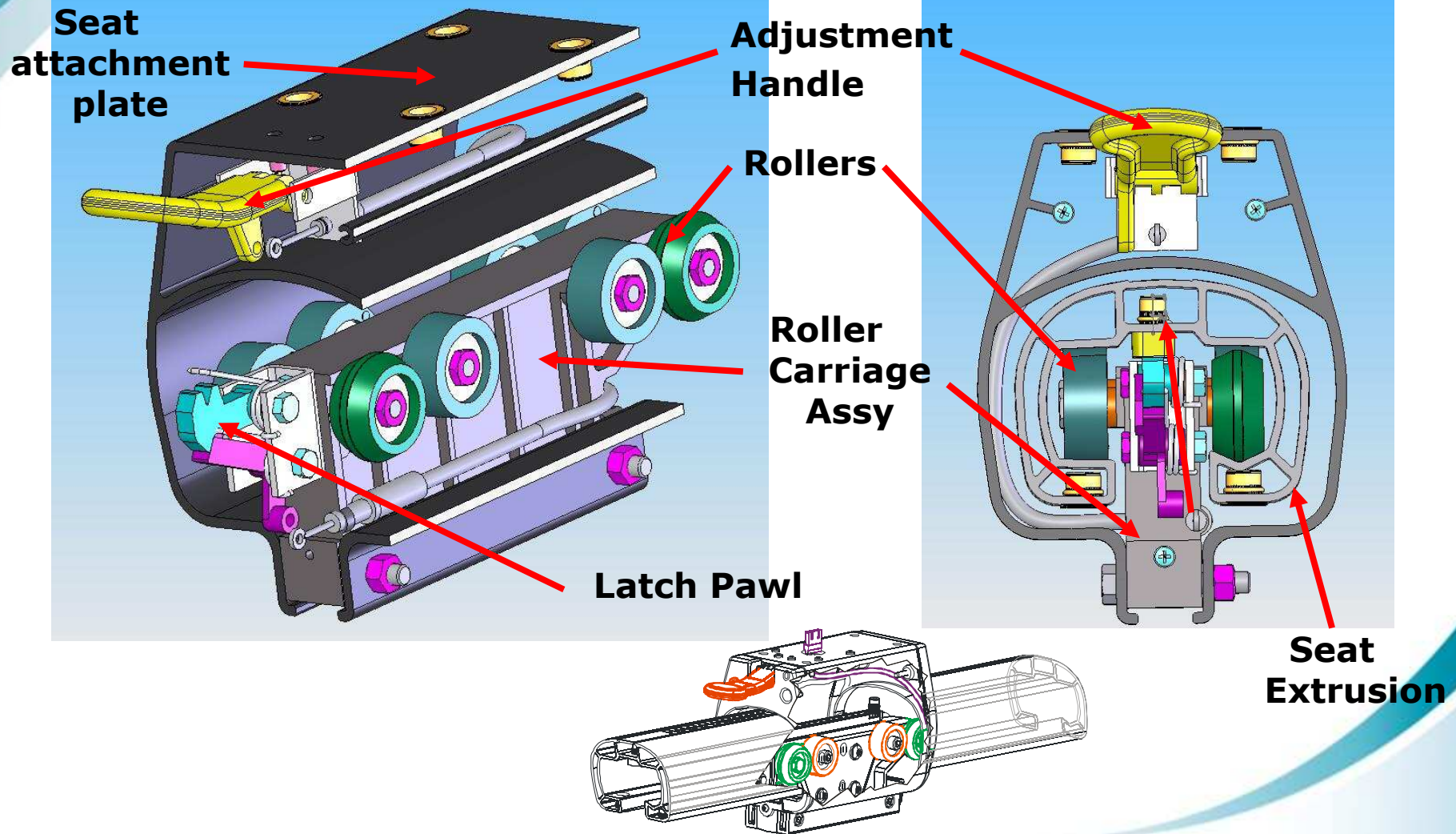
**Elevation
Upright Bike**

**Elevation
Recumbent
Bike**

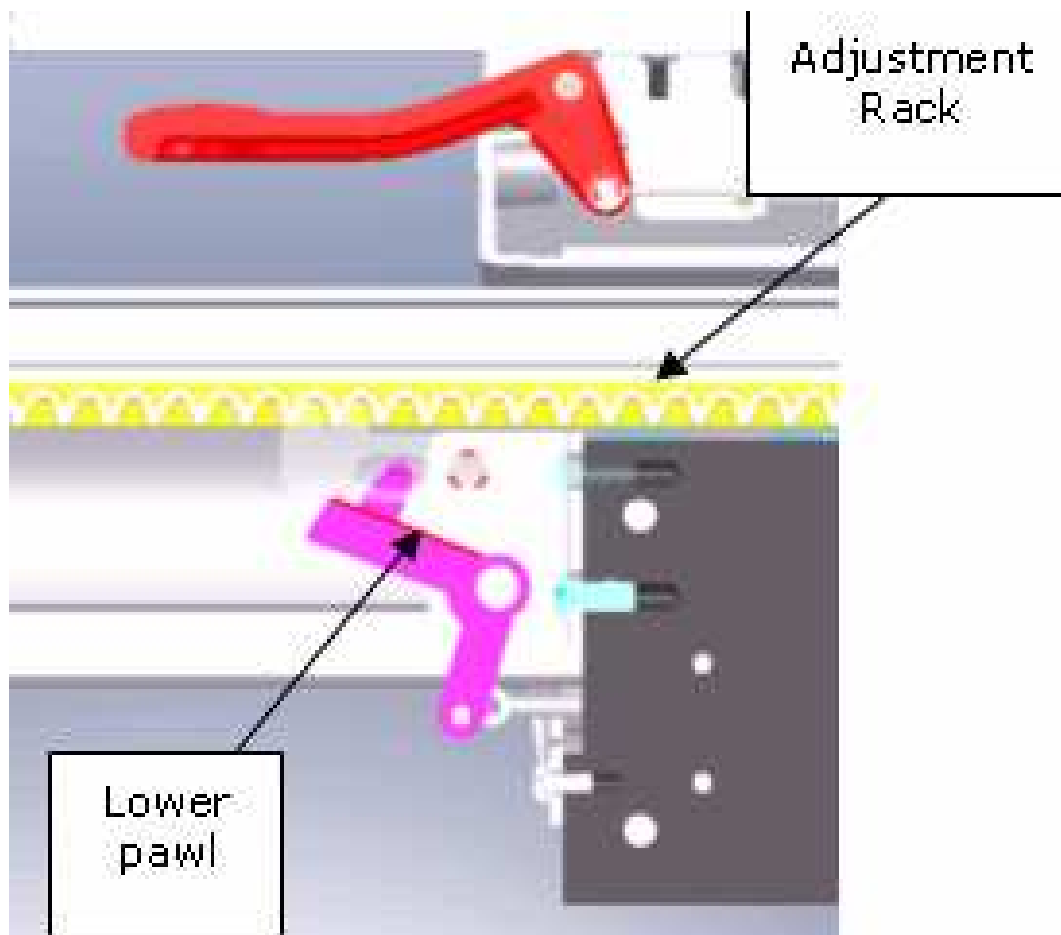
Upright Bikes Seat Components– Visual Representation



Recumbent Bikes Seat Components – Visual Representation (1)

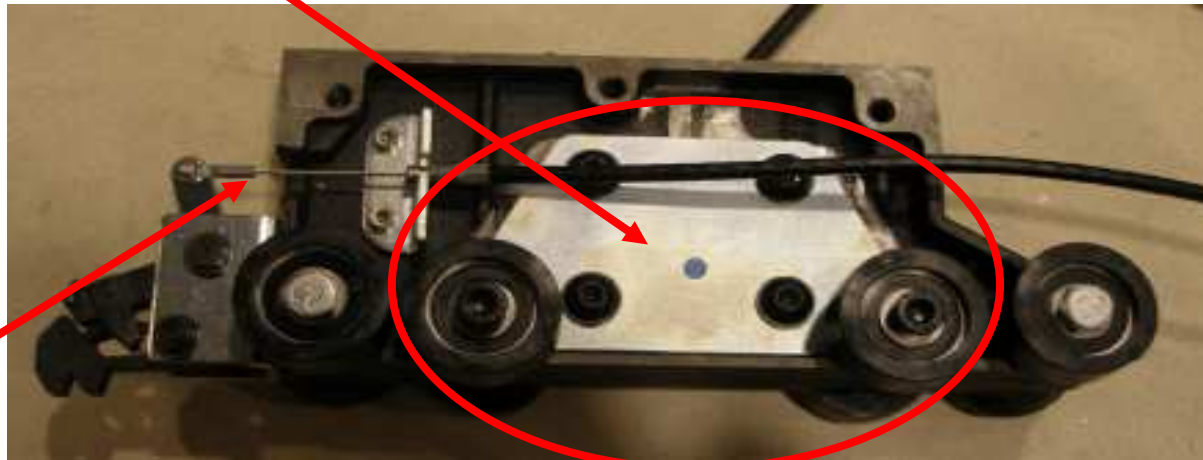


Recumbent Bikes Seat Components – Visual Representation (2)



Elevation Recumbent Bike Carriage Roller Assembly

- » Adjustable Roller Bracket and rollers – Set at the factory to match a particular seat extrusion.
- » A seat carriage assembly and an extrusion are a match pair.
- » Seat adjustment procedure:
 - ♦ LR100921R00



Tension
cable

Classic Bikes Seat Mechanisms

Classic Bikes



Classic: 95C, 97C

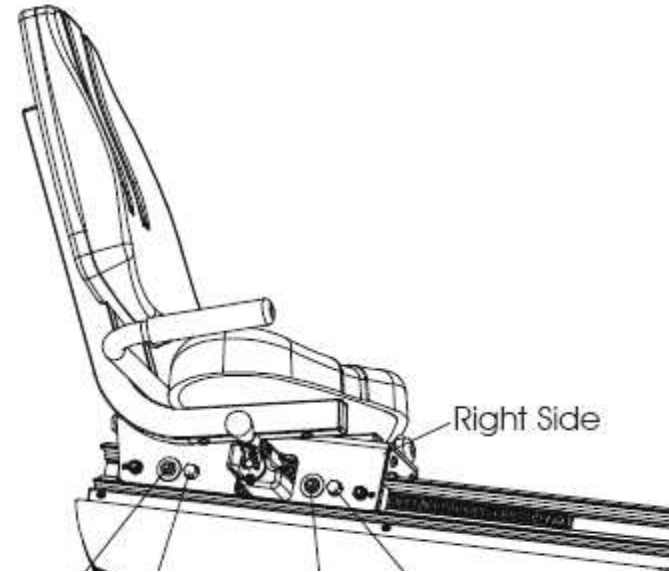


Classic: 95R

Seat Adjustment –Classic Bikes



Classic Upright Bike



Classic Recumbent Bike

- » Classic Upright's seat can adjust to accommodate users:
 - ◆ 4'-9" to 6'-5"
- » Classic XXL Upright's seat can adjust to accommodate users:
 - ◆ 5'-6" to 7'-0"
- » Classic Recumbent's seat can adjust to accommodate users:
 - ◆ 4'-9" to 6'-5"

Upright Seat Components – Visual Representation



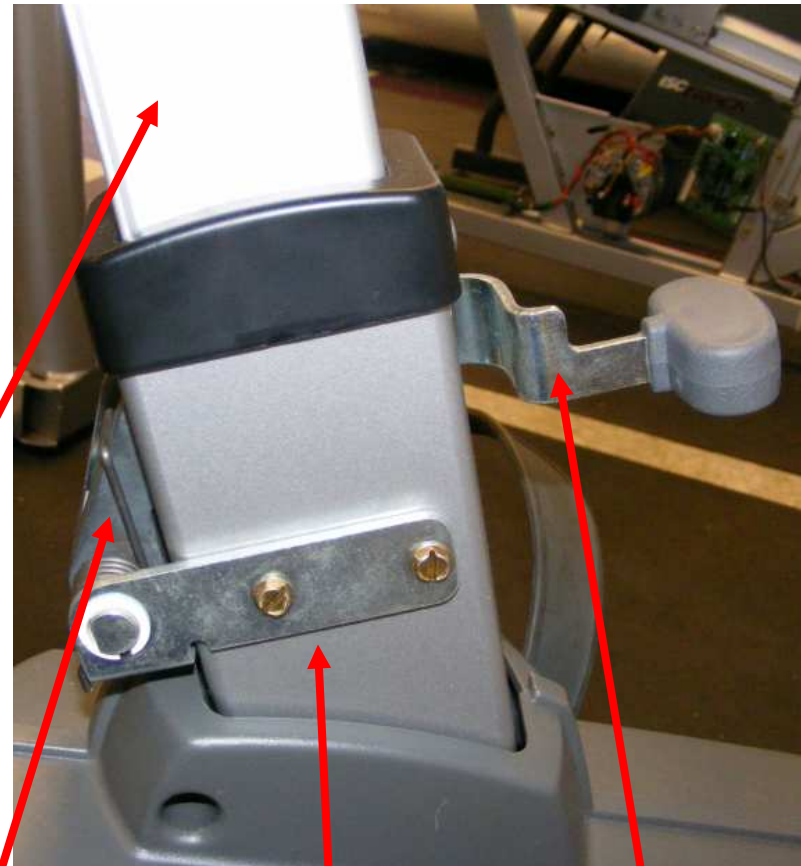
Seat

Rack

Upper Guide
Cap

Seat Post
Assembly

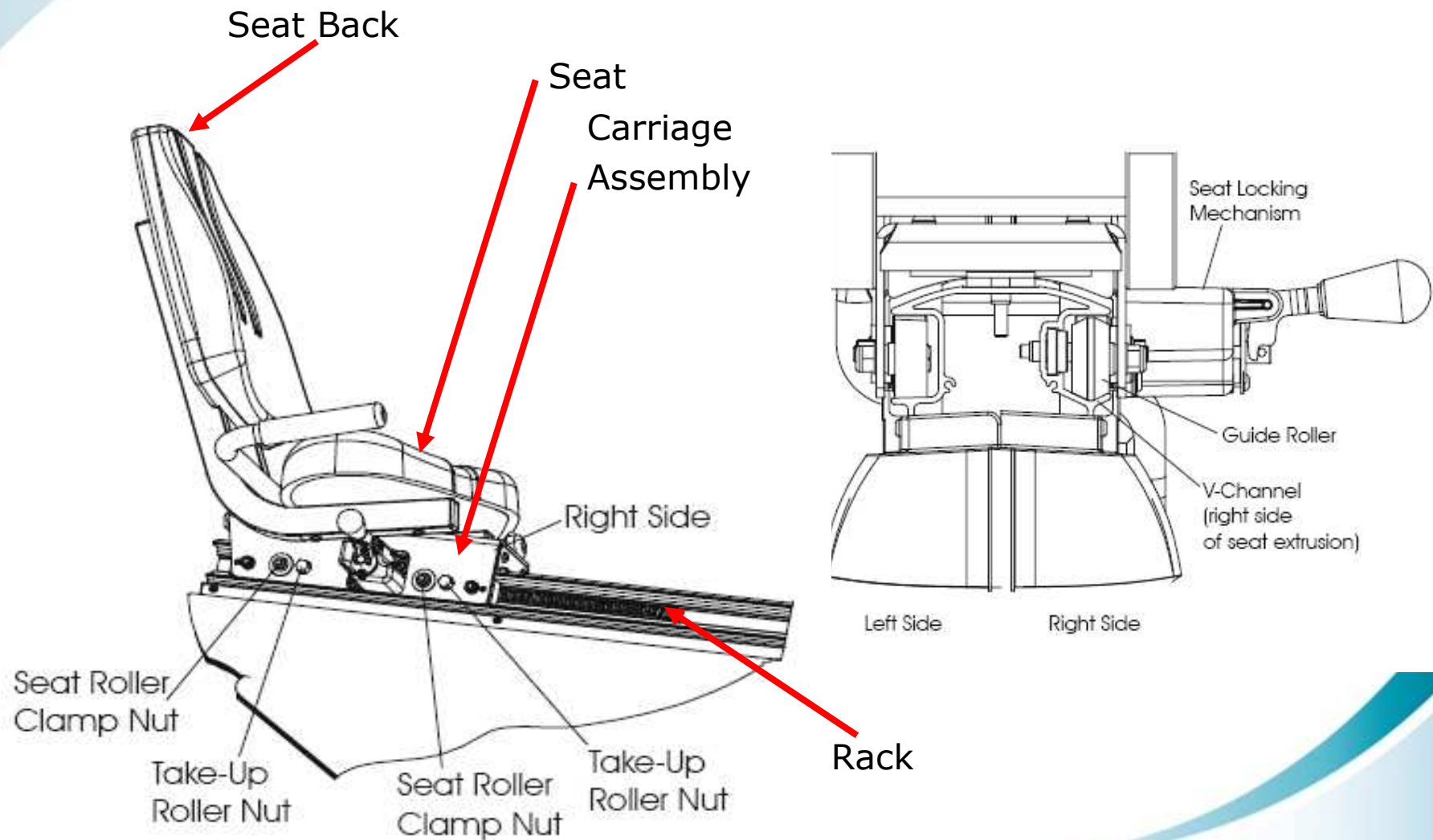
Pawl and
Spring



Frame Tube

Adjustment
Handle

Recumbent Seat Components – Visual Representation



Seat Mechanisms Used on Consumer Bikes

Consumer Bikes

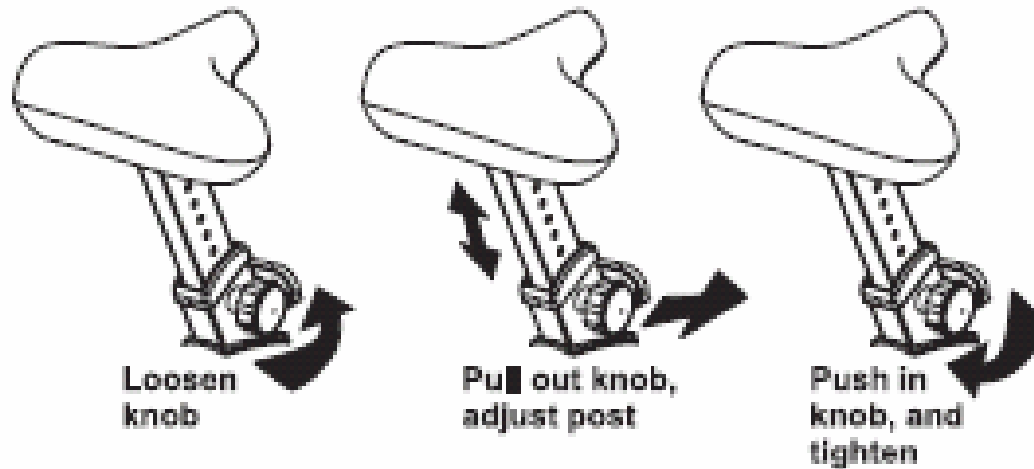


Consumer: C3



Consumer: R3

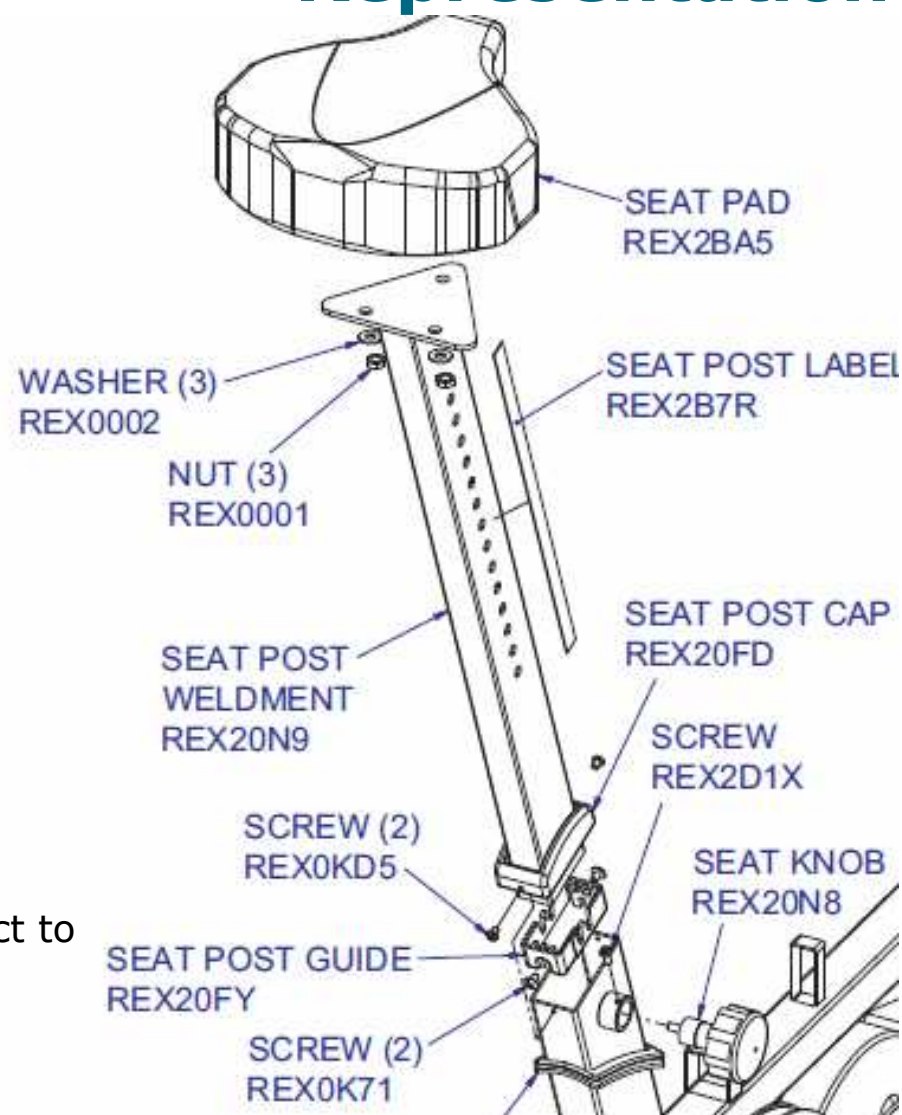
Upright



Consumer Upright Bike

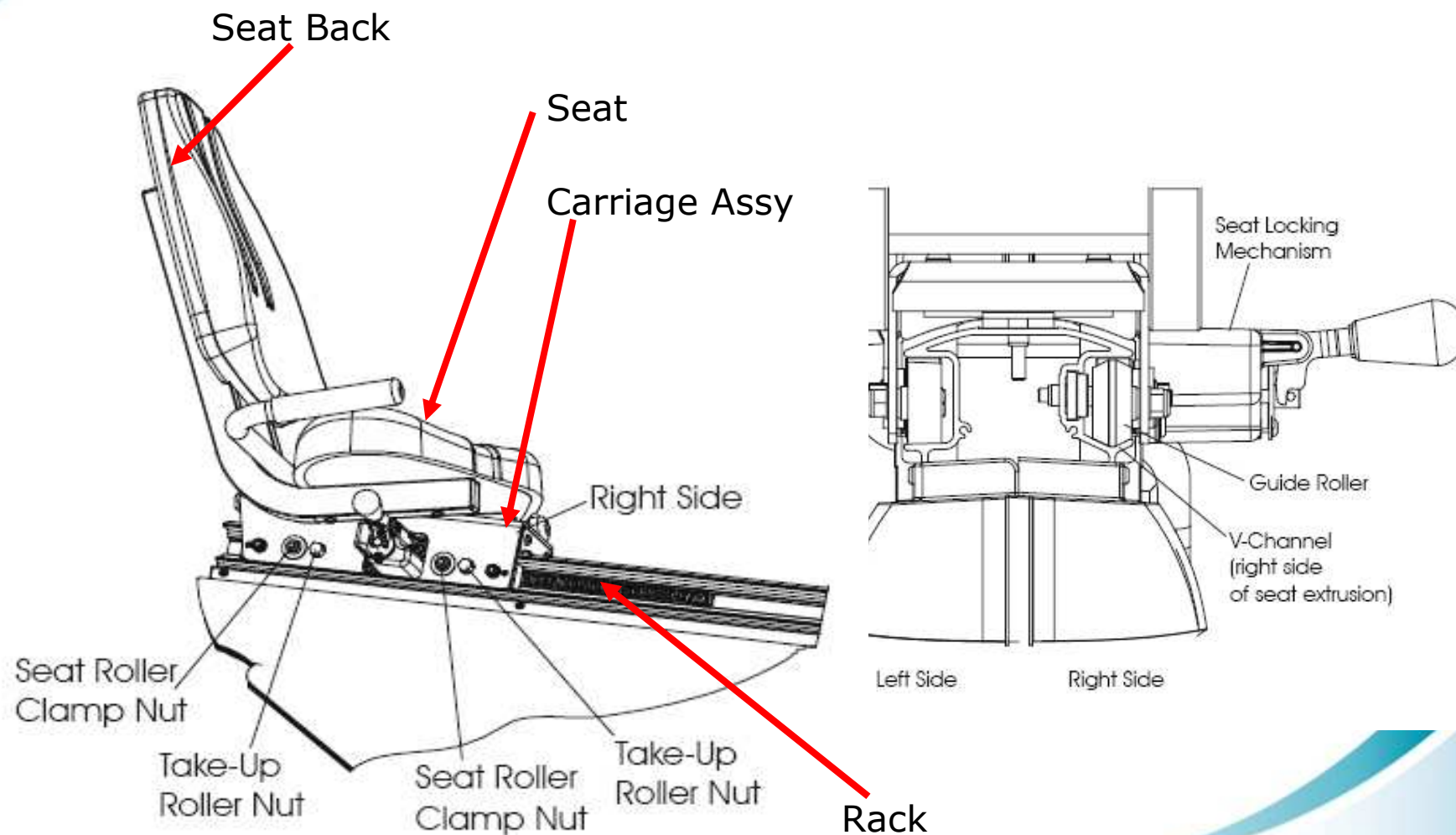
- » A cushioned seat is mounted to a seat assembly.
- » Upright seat uses a dual function adjustment knob.
- » Knob turns to clamp seat tight.
- » Pull to pop pin and adjust height.

Upright Seat Components – Visual Representation



Note: PN's subject to change

Recumbent Seat Components – Visual Representation – Matching Classic Recumbent



LeMond Bikes Seat Mechanisms

LeMond Bikes



RevMaster I



RevMaster II

RevMaster I & II Seats

- » Upright seat post slides up and down through a hole in the frame assembly.
 - ♦ Rev Master I: Adjustment knobs extends a v-shaped bushing to clamp seat tight vertically.
 - ♦ RevMaster II: A cam style bushing and adjustment handle is used lock the seat post in place.
- » The seat itself also adjusts fore and aft through a hole in the seat post assembly.
 - ♦ An adjustment knob turns to clamp seat horizontally.
- » Seat adjustment can accommodate users:
 - ♦ 5'-0" to 6'-4"



RevMaster I



RevMaster II

RevMaster I Handles

- » A cushioned handle bar is mounted to a handle bar post assembly.
- » Handle bar post slides up and down through a hole in the frame assembly.
 - ♦ RevMaster I: Adjustment knobs extends a v-shaped bushing to clamp handle bar assembly tight vertically.
 - ♦ RevMaster II: A cam style bushing and adjustment handle is used lock the handle bar post in place.
- » The handle itself also adjusts fore and aft through a hole in the handle bar post assembly.
 - ♦ An adjustment knob turns to clamp handle bar horizontally.



RevMaster I

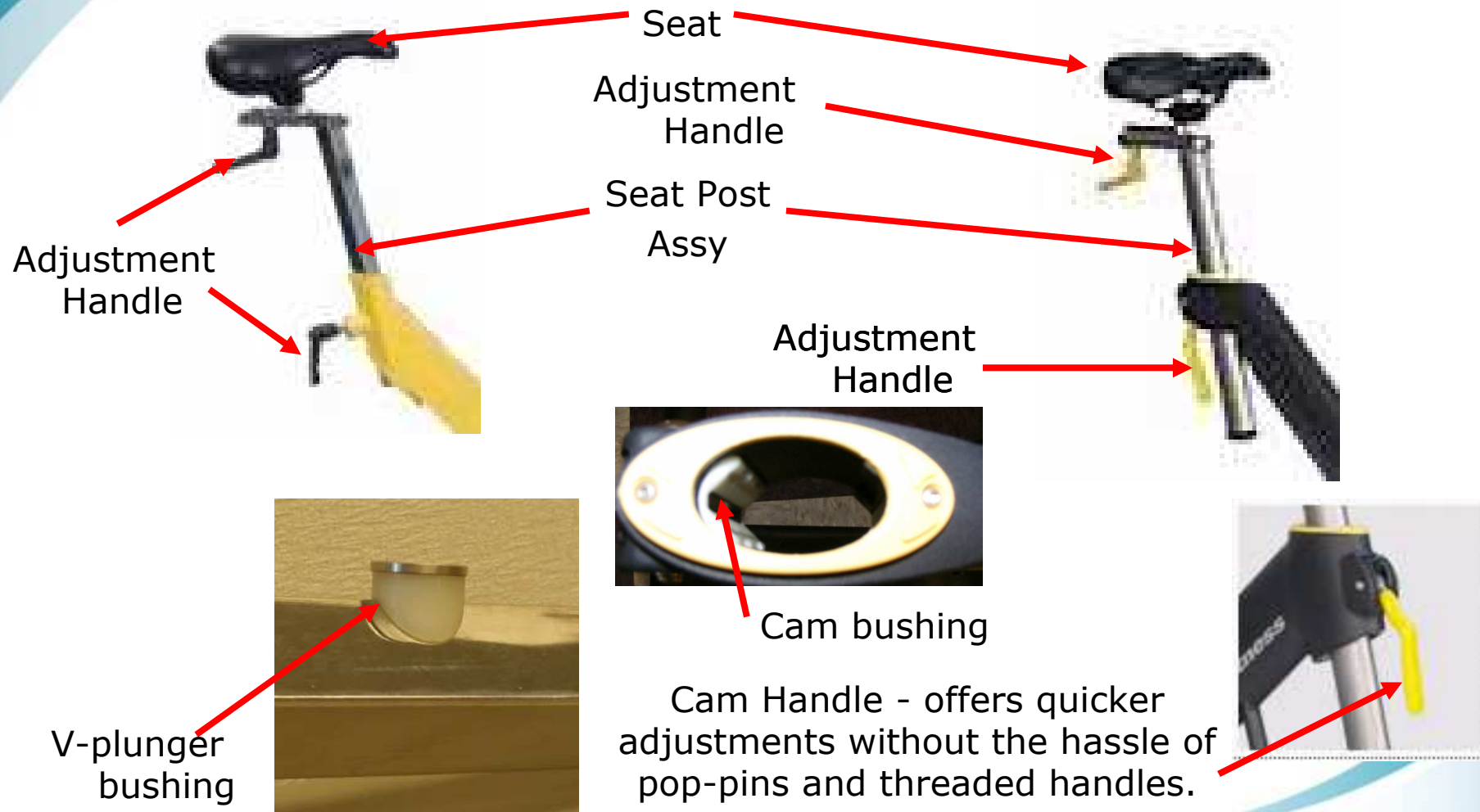


RevMaster II

Seat Components – Visual Representation

RevMaster I Bike

RevMaster II Bike



Handle Components – Visual Representation

RevMaster I Bike

Adjustment
Handle



Handle Bar

Handle Bar
post assy

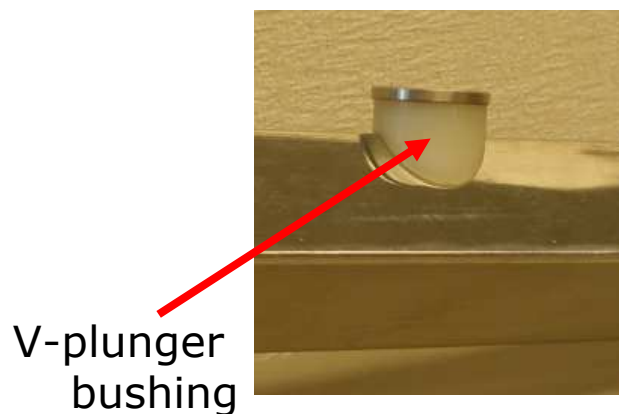
RevMaster II Bike

Adjustment
Handle



Cam bushing

Cam Handle - offers quicker
adjustments without the hassle of
pop-pins and threaded handles.

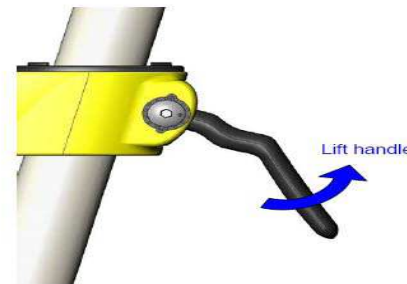


V-plunger
bushing

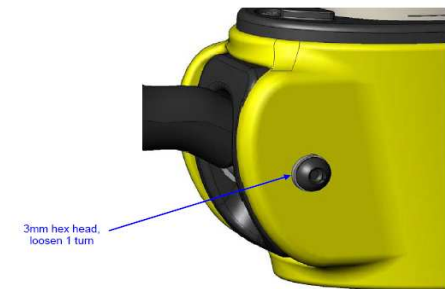
RevMaster II Seat and Handle Adjustments

- » 1. Lift seat handle up completely to release clamping force.
- » 2. Locate smaller 3mm hex bolt at pivot point of adjustment handle and loosen one turn.
- » 3. Disengage 6mm hex bolt on other side from indicator plate and rotate one notch towards (+) sign.
- » 4. Tighten smaller 3mm hex bolt.
- » 5. Test seat clamp – tight enough to hold user but loose enough to operate

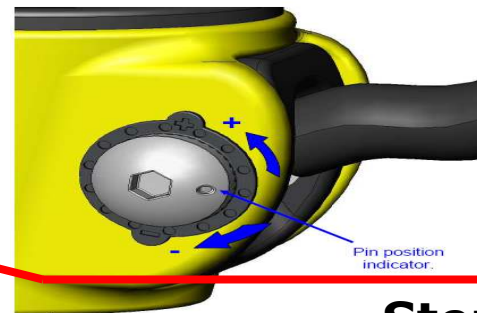
Step 1



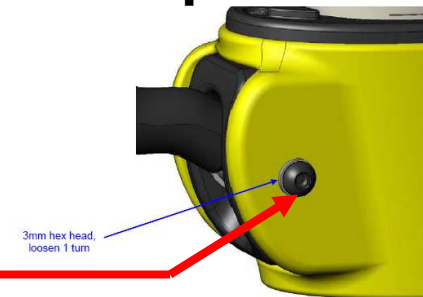
Step 2



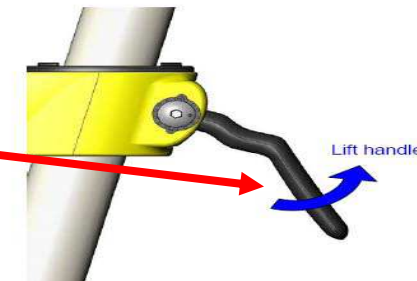
Step 3



Step 4



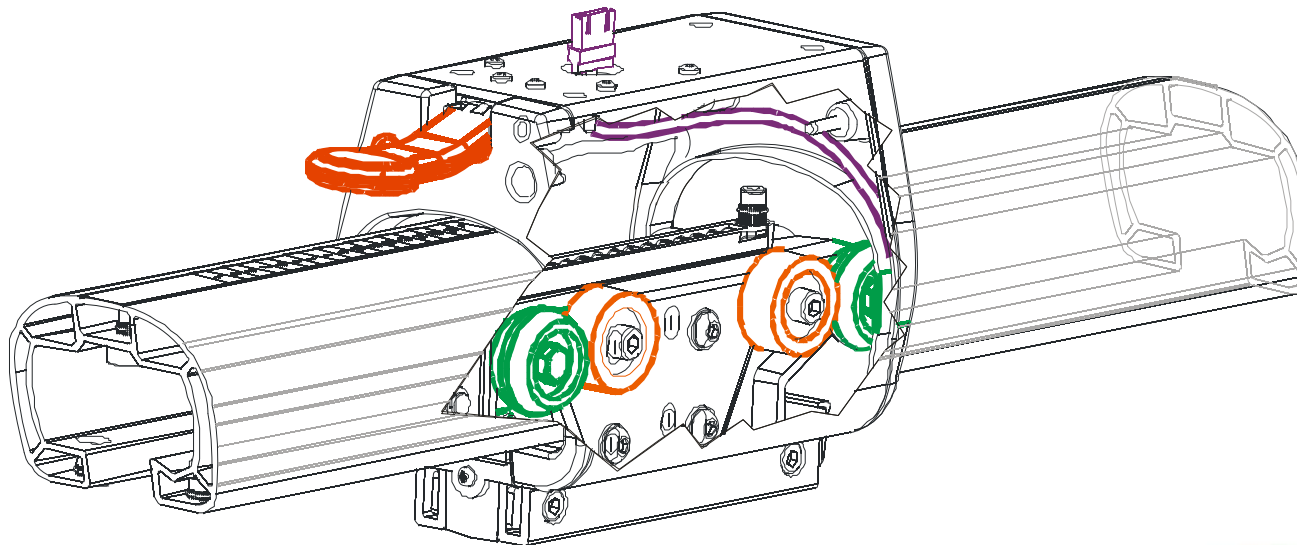
Step 5



Common Issues - Elevation Bike Seat

Recumbent Seat Wobble

- » Issue:
 - ◆ Seat wobbles too much side-to-side or front to back.
- » Probable Cause -
 - ◆ Tolerance stack up in mechanism or wear of the hardware over time
- » Solution:
- » Adjust the seat: Procedure in Technical Bulletin LR100921R00.



Recumbent – Seat Difficult Or Does Not Move

» Issue:

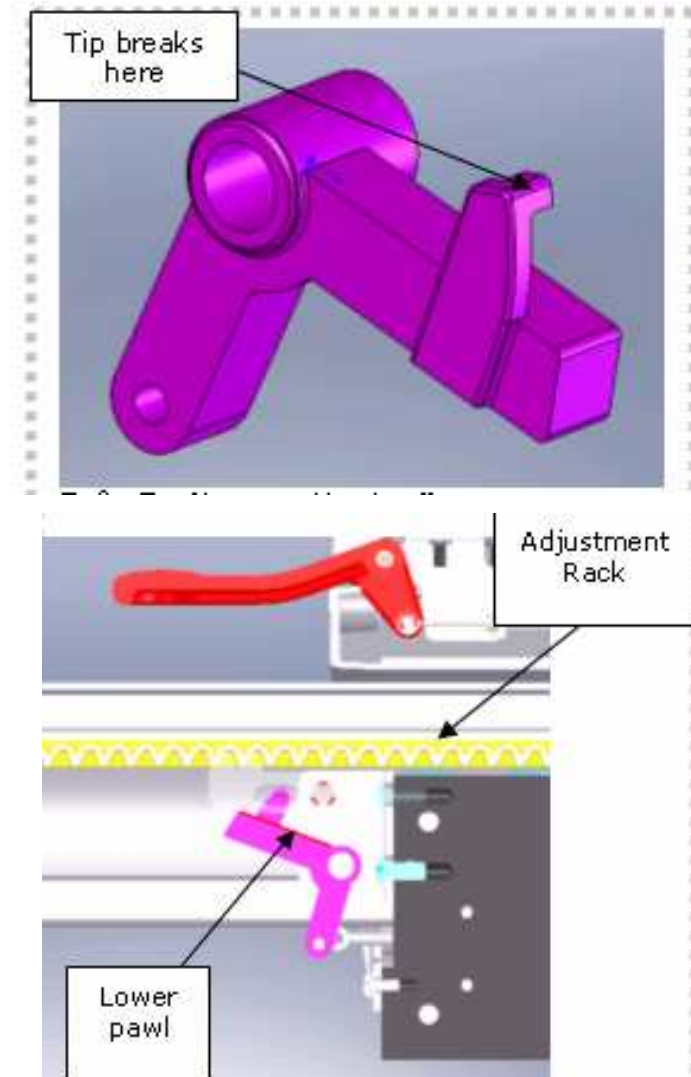
- ◆ Seat is too difficult to move or does not move at all

» Probable cause:

- ◆ “Finger” on the pawl has broken – Serial range ALR100000 to ALR105023

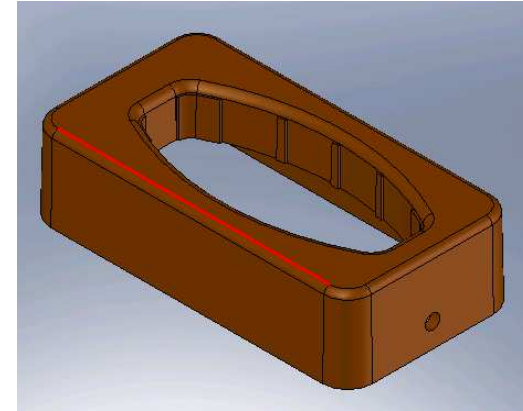
» Solution:

- ◆ Install new lower pawl, torsion spring, and hardware Reference to SB: LC09310801R
- ◆ Order new kit, pn: GK66-00002-0005

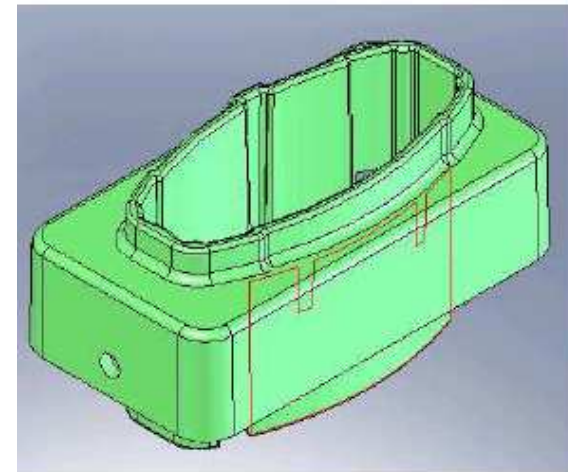


Upright Seat Wobble

- » Issue:
 - ◆ Seat wobbles too much side-to-side or front to back.
- » Probable cause:
 - ◆ Upper guide cap is old design and too loose around the seat post extrusion
- » Solution:
 - ◆ Replace upper guide cap with pn: 0K67-01059-0001
- » Reference:
 - ◆ Service Bulletin: LC09072701R
- » Tip:
 - ◆ Raise and lower seat post assembly 20-30 times to help break-in the new cap



Old Design

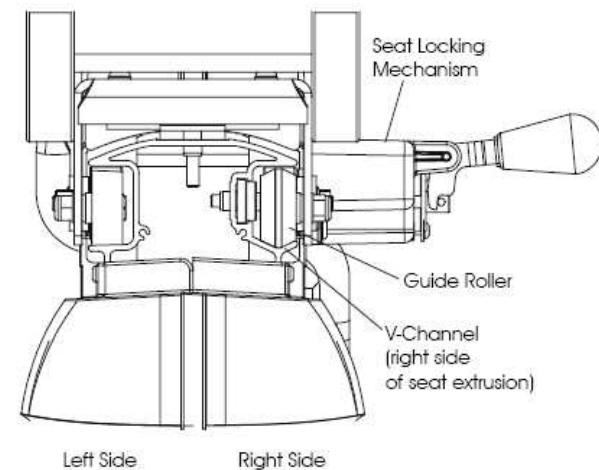
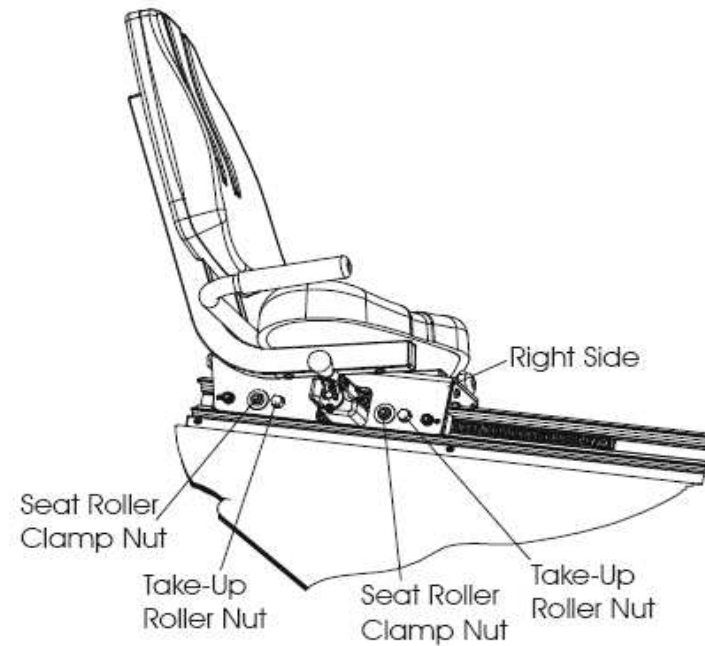


New Design

Common Issues – Classic and Consumer Recumbent Bike Seat

Recumbent Seat Wobble

- » Issue:
 - ◆ Seat wobbles too much side-to-side.
- » Probable cause:
 - ◆ Loose take-up cam roller
- » Solution:
 - ◆ Loosen and retighten take-up cam roller

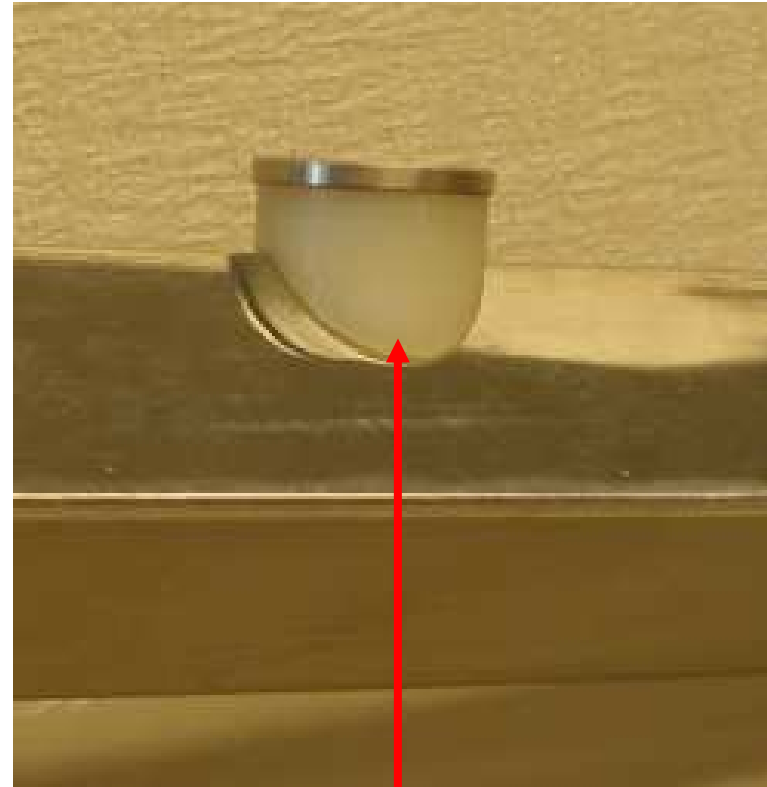


Common Issues - Lemond Bikes Seat and Handle

Rev Master I

Tapping Noise in Seat or Handle Bar

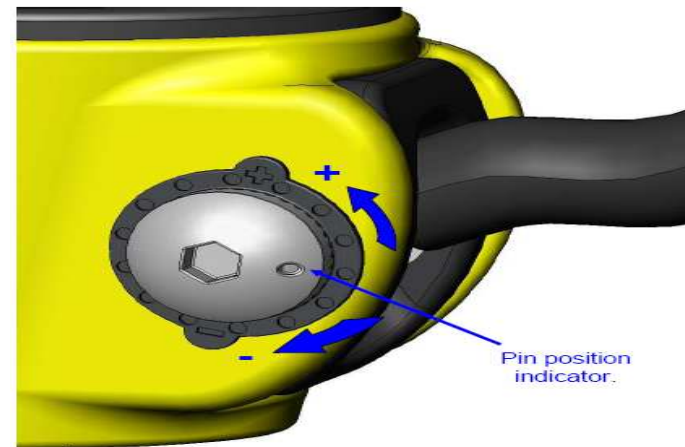
- » Issue:
 - ◆ Tapping noise in the seat and/or handlebar post
- » Probable cause:
 - ◆ Either post wiggle when moved
 - ◆ Worn and/or cracked “v” plunger
- » Solution:
 - ◆ Replace “v” plunger



RevMaster I “v” Plunger

RevMaster II Seat or Handle Moving Down

- » Issue:
 - ◆ Seat or handle move after locked into position
- » Probable cause:
 - ◆ Loose hex bolt
- » Solution:
 - ◆ Tighten the hex bolt one notch clockwise
- » Reference:
 - ◆ Service Bulletin: LM08021501N



Summary

- » What is the fix for seat wobble on Elevation Recumbent bike?
- » What is the purpose of the Upper guide cap on Elevation Upright bikes?
- » What problem is the tightening of the hex bolt fixing on RevMaster II?

Questions





THANK YOU!

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