

A man in a red t-shirt and grey shorts is running on a dirt trail. A black and tan dog is running alongside him. The background features a hilly landscape with green vegetation and distant mountains under a clear sky.

STRENGTH MECHANICS TECHNICAL CERTIFICATION TRAINING

Field Engineering | 2010

LifeFitness
WHAT WE LIVE FOR

Course Objectives

- » Strength Mechanics
 - Look into the engineering and components utilized in our strength products
- » Quick Tips
 - Helpful hints for strength equipment
- » Life Fitness Strength Equipment
 - Past and current Life Fitness and Hammer Strength
- » Summary
 - Reflect on topics covered

Introduction

- » **Life Fitness strength equipment** offers the highest level of design creativity, engineering and quality of its premium products.

This presentation will focus on some of the engineering attributes in which make Life Fitness the Global leader in strength equipment!

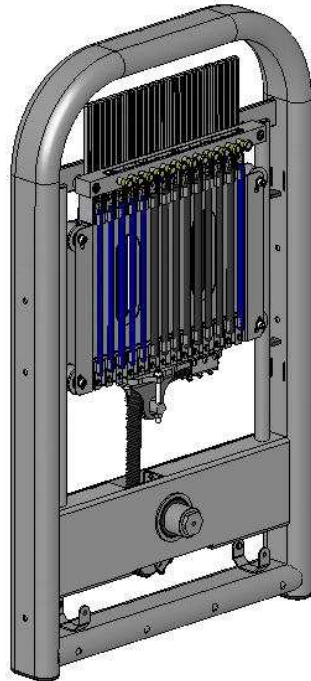


Strength Mechanics

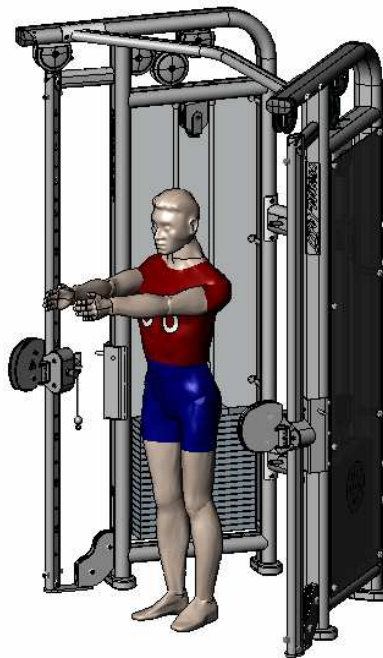
Product Engineering

- » **Definition:** The discipline, art and profession of acquiring and applying technical, scientific, and mathematical knowledge to design and implement materials, structures, machines, devices, systems, and processes that safely realize a desired objective or invention.

Mechanical



Bio



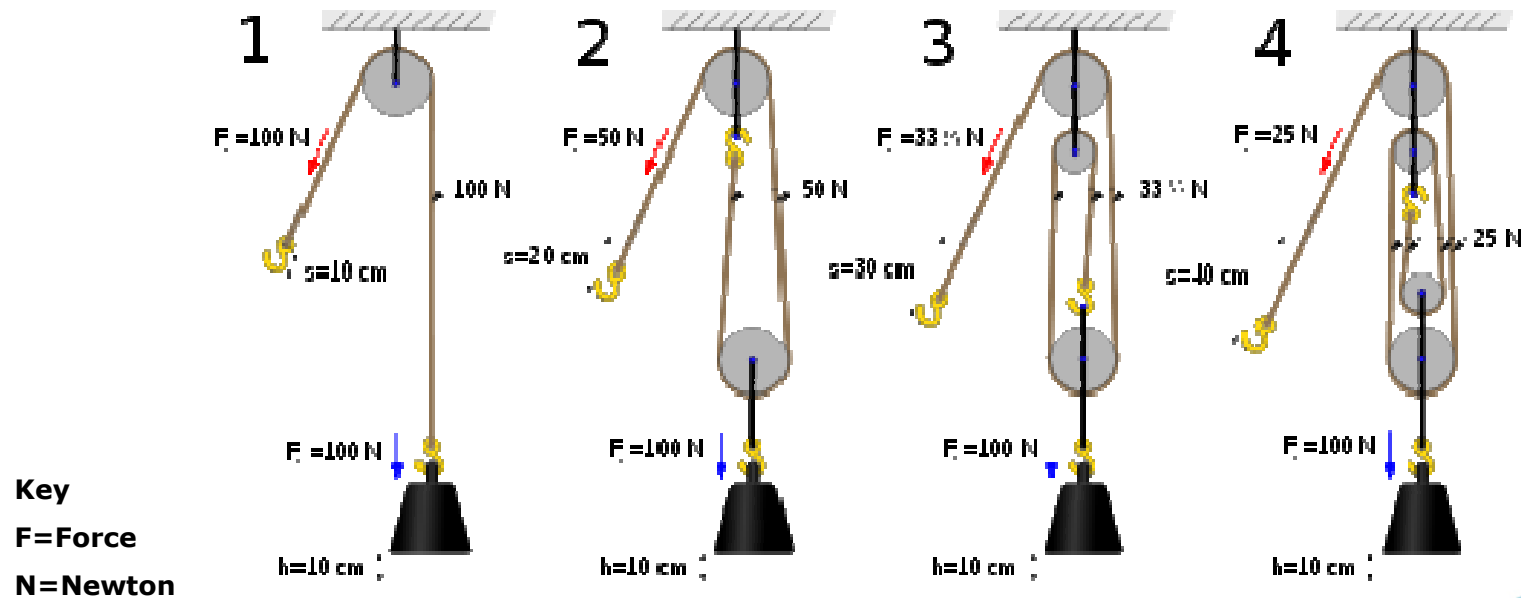
Production



Mechanical Advantage

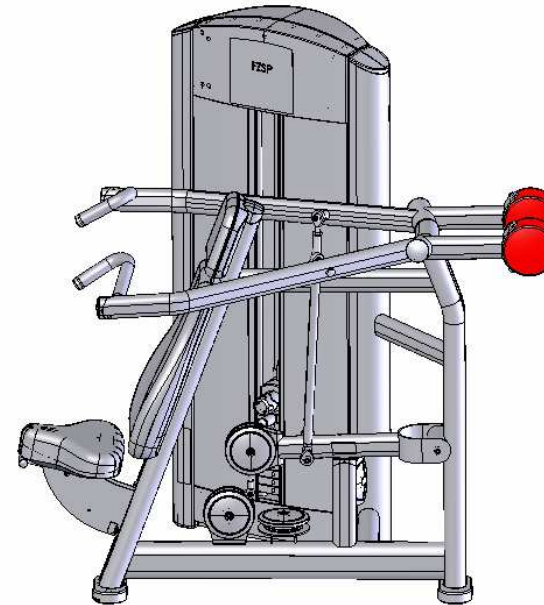
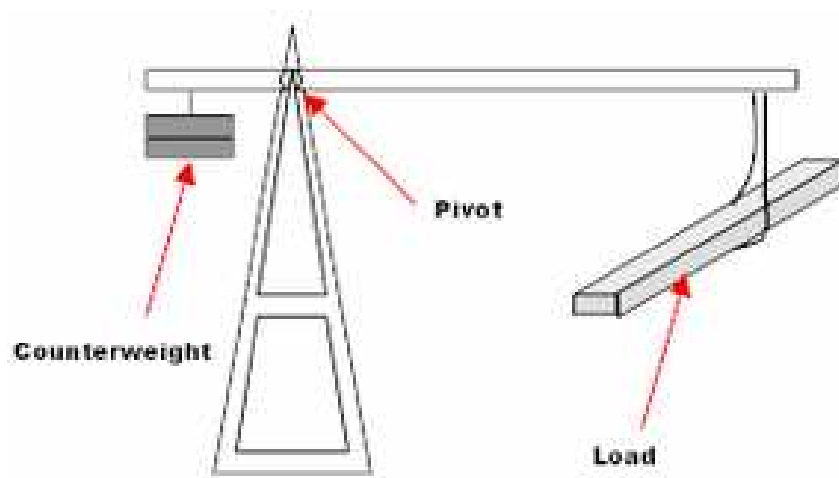
- » **Definition:** mechanical advantage (MA) is the factor by which a mechanism multiplies the force or torque applied to it.

$$MA = \frac{\text{distance over which effort is applied}}{\text{distance over which the load is moved}}$$



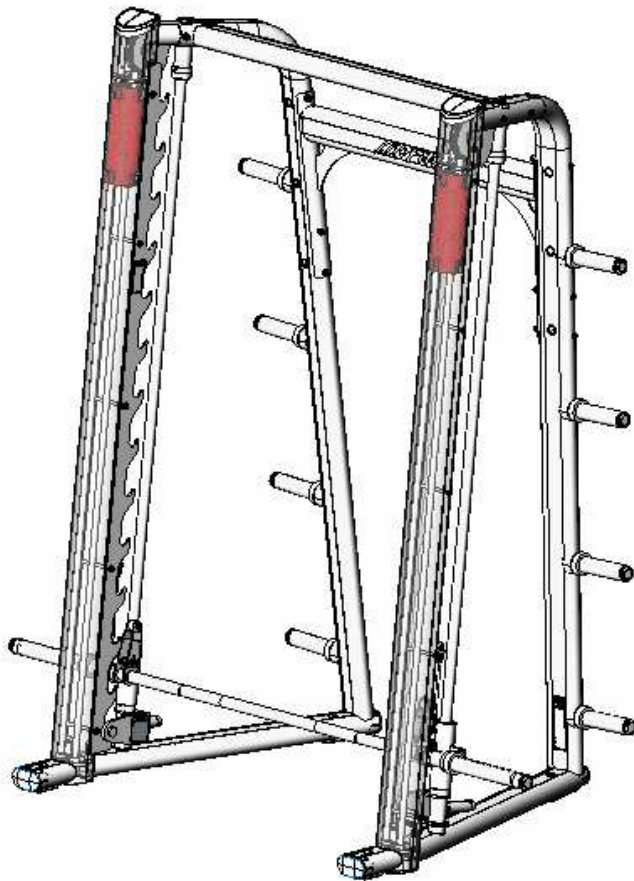
Counterweight

- » **Definition:** A weight used as a counterbalance acting in opposition.
- Reduces starting resistance
- Various sizes and shapes
- Internal and external types
- Permanently pinned portion of weight stack can be counterweight

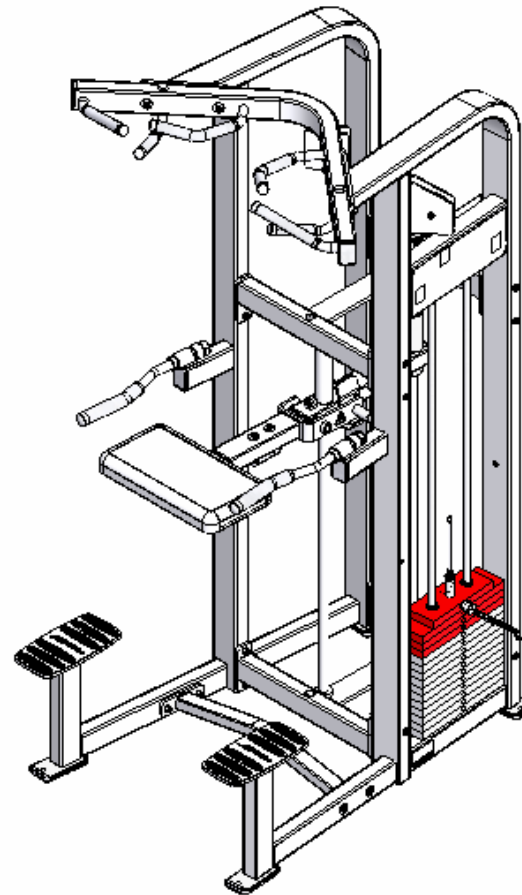


Counterweight

Internal

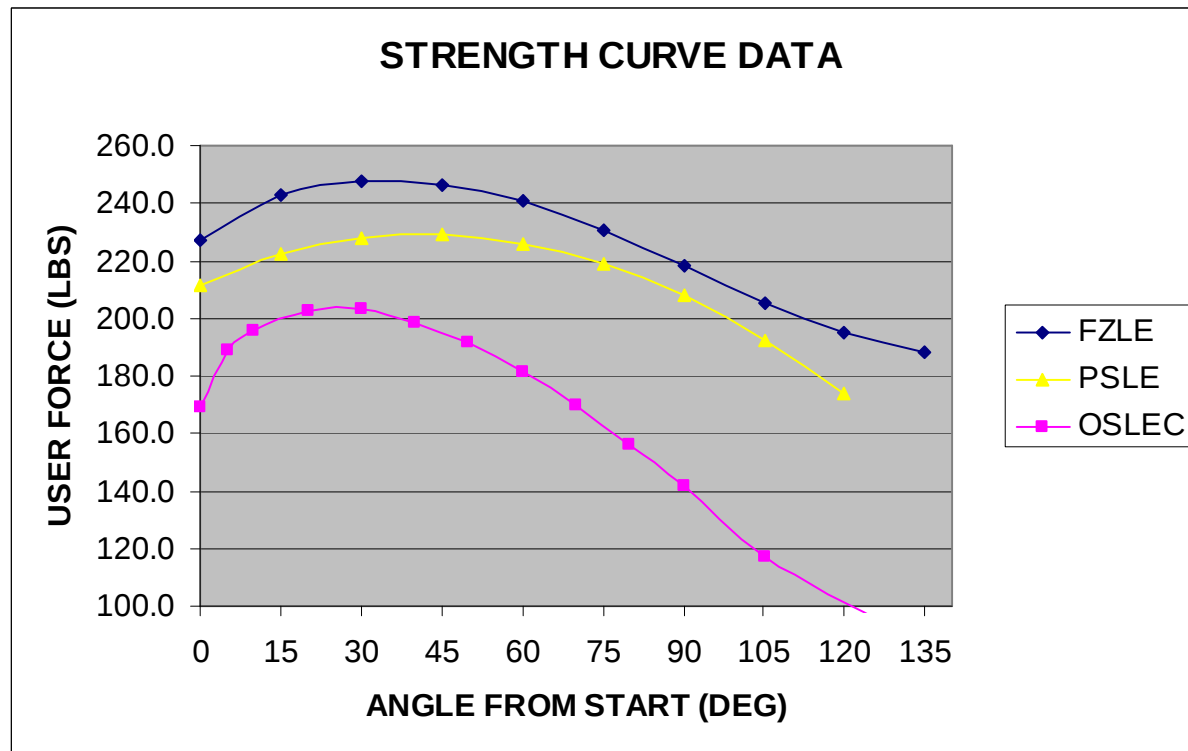


Stack



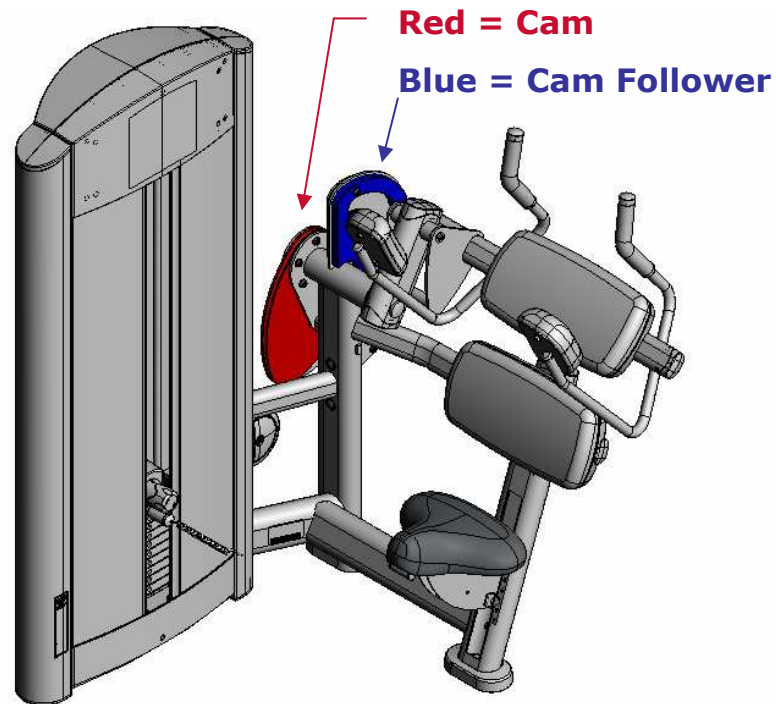
Strength Curve

» **Definition:** Amount of force required to begin initial movement and carry out through end of movement.



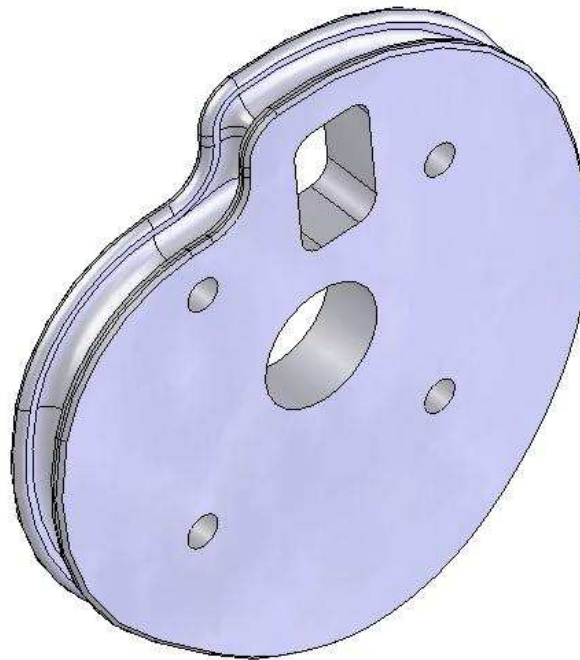
Cam

- » **Definition:** Cam is a rotating piece in mechanical linkage used especially in transforming rotary motion into linear motion or vice versa.
- Cams directly affect the starting resistance.
- LF uses hundreds of cam types and sizes.
- Some units use a cam as well as a cam follower –FZAB for example



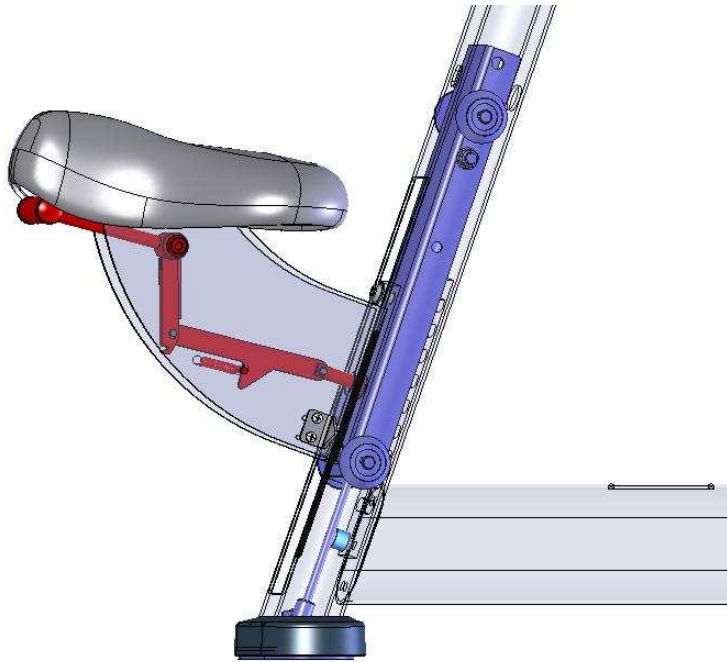
Cam Ratio

- » **Definition:** The cam ratio is the relationship between the circumferences of two connected pulleys.
- Controls unit's "gearing"



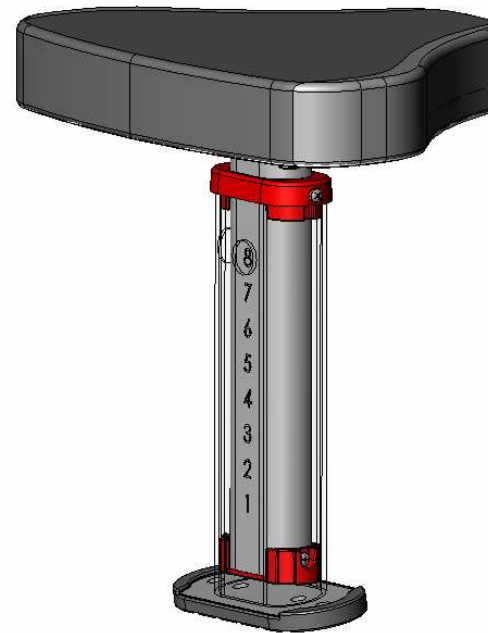
Seat Mechanics

- » **Definition:** Seat mechanics offer adjustable seat positions, usually to raise or lower, for user height ranges.
- Internal and External types



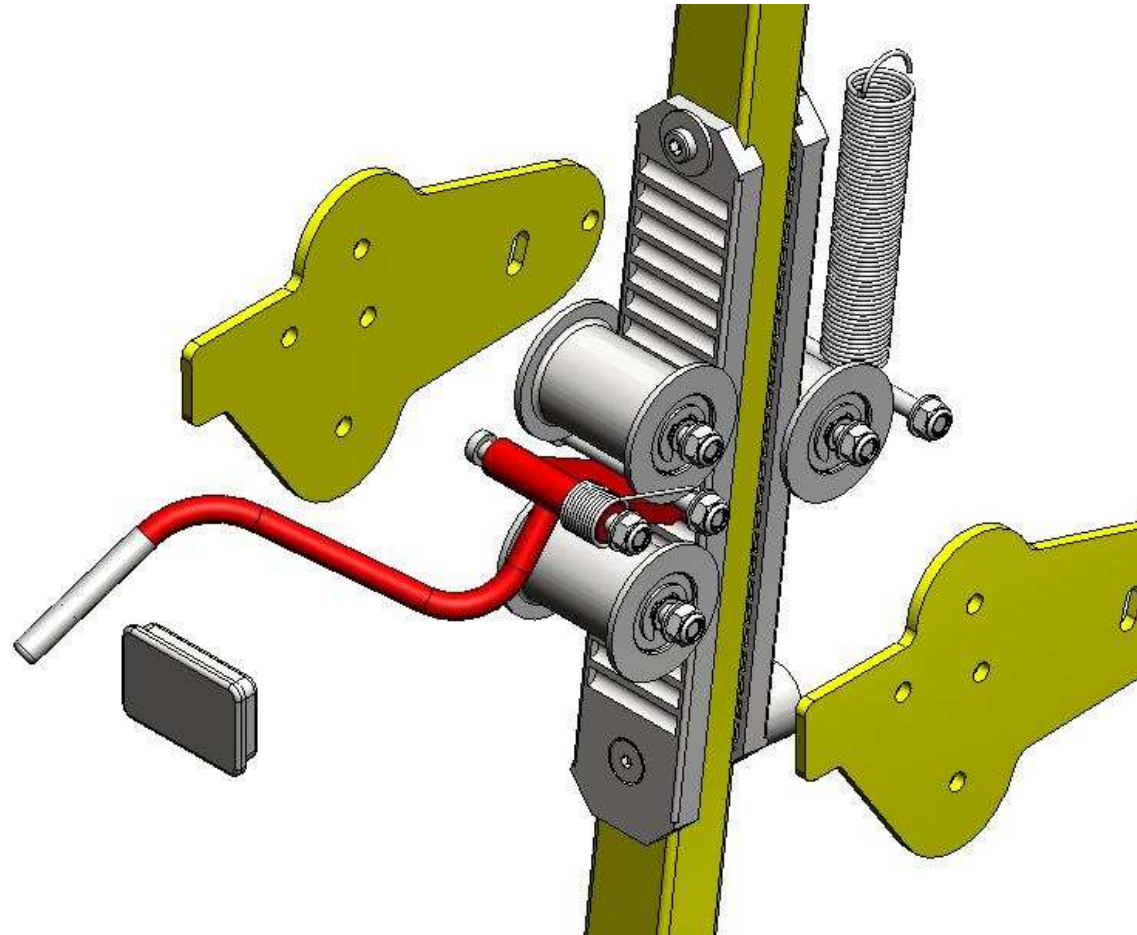
FZ

(internal)



OS

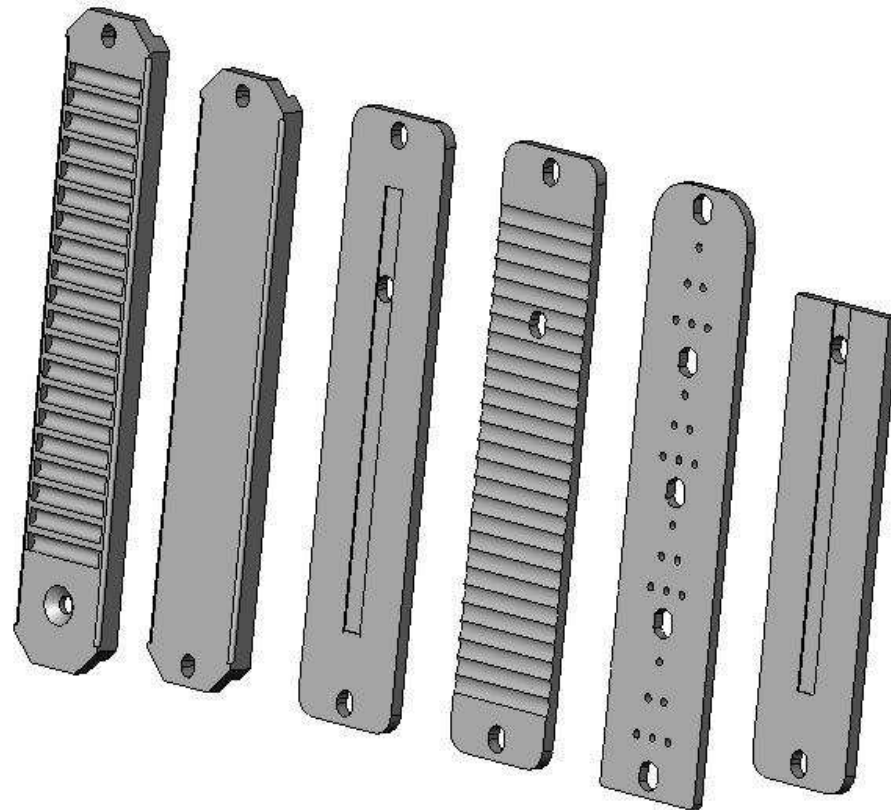
Seat Mechanics



Pro2 SE / MTS (external)

Seat Tracks

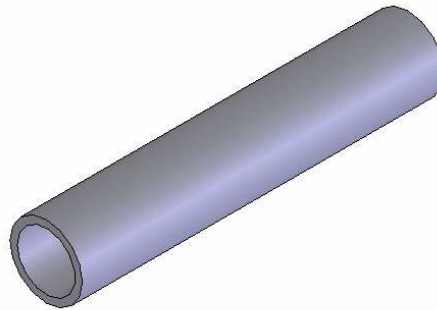
- » **Definition:** Provides pathway for seat to travel; can be flat or serrated for pin/handle to operate in conjunction with.
- Many types and sizes available



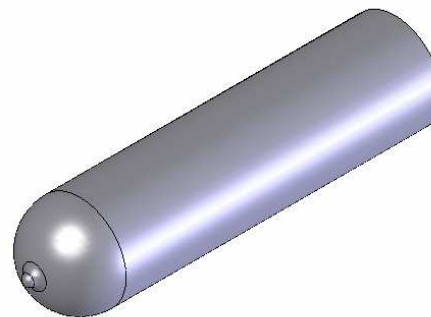
Grips

- » **Definition:** Rubber sheath on the handle that provides protection from friction against the hand.
- Specified rubber compound composite material
- LF uses open end and closed end
- Use copious Lube-N-Glue for install, part number 8574101
- Sand tubing (200 grit) before re-applying

OPEN END-

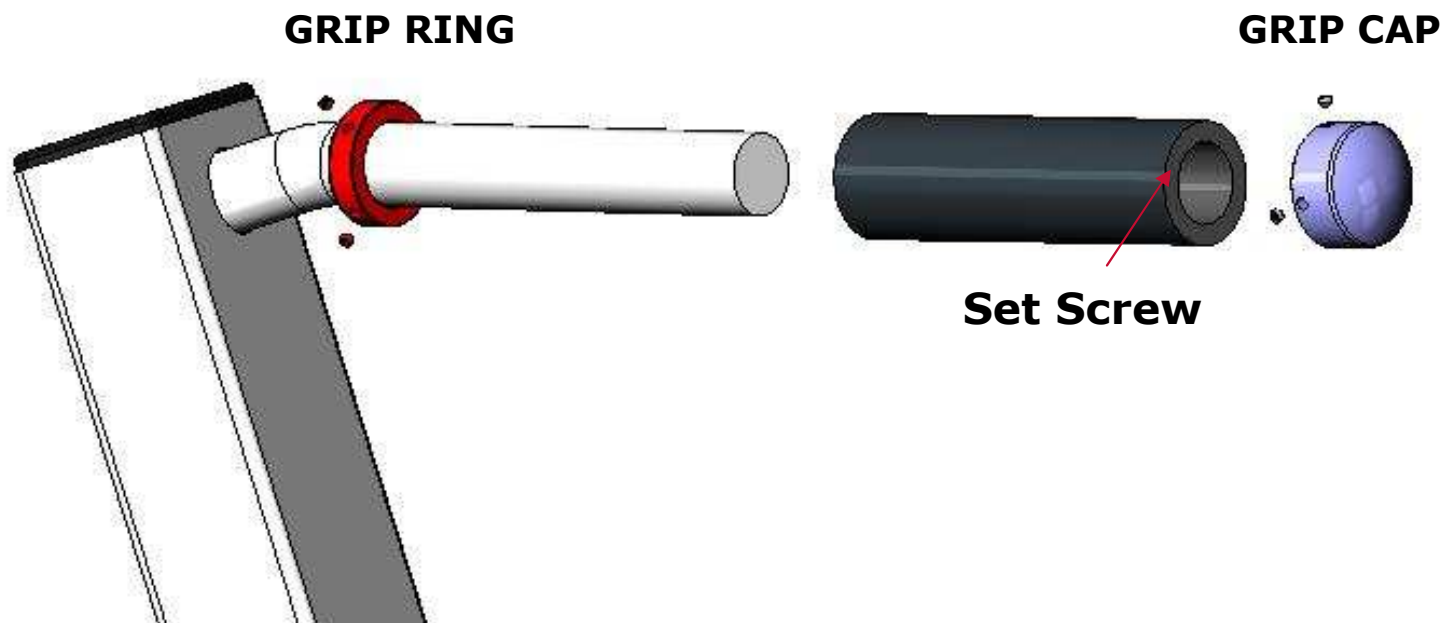


CLOSED END-



Grip Ring and Cap

- » **Definition:** At ends of handgrip that enclose the grip; provide finished look.
- If set screws are listed separately on parts list, they are not included with the Grip Ring or Grip Cap.



Bearings

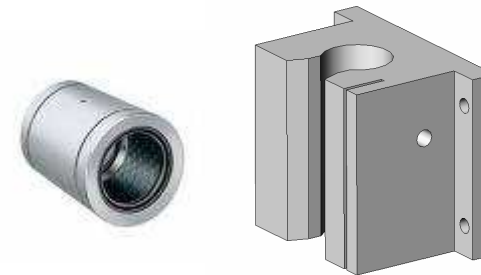
- » **Definition:** Device that allows constrained relative motion between two or more parts.

Types:

- Linear (rolling & plane)
- Pillow Block
- Flange (bushing)
- Rod End (Heim Joint)
- Needle
- Radial



PILLOW BLOCK



LINEAR



HEIM JOINT



RADIAL



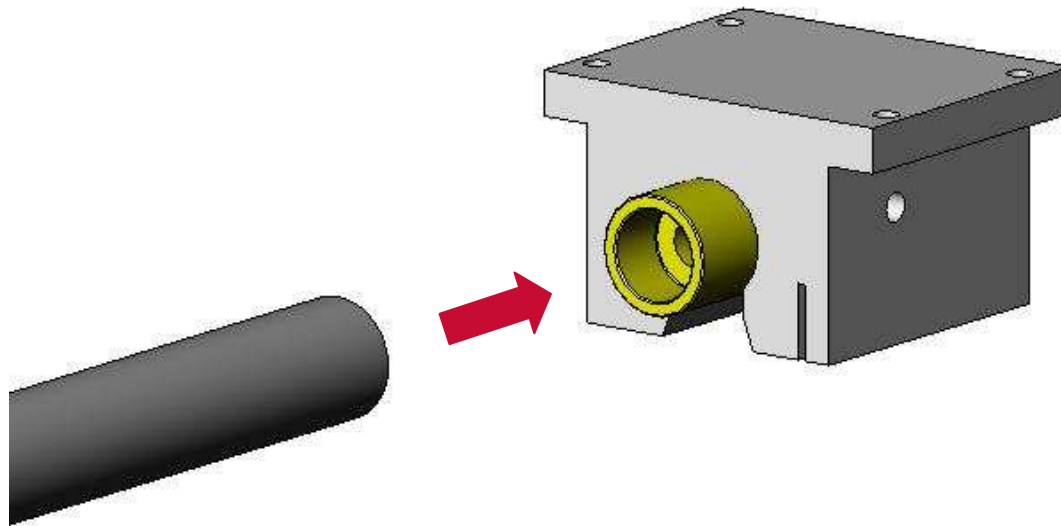
NEEDLE



FLANGE

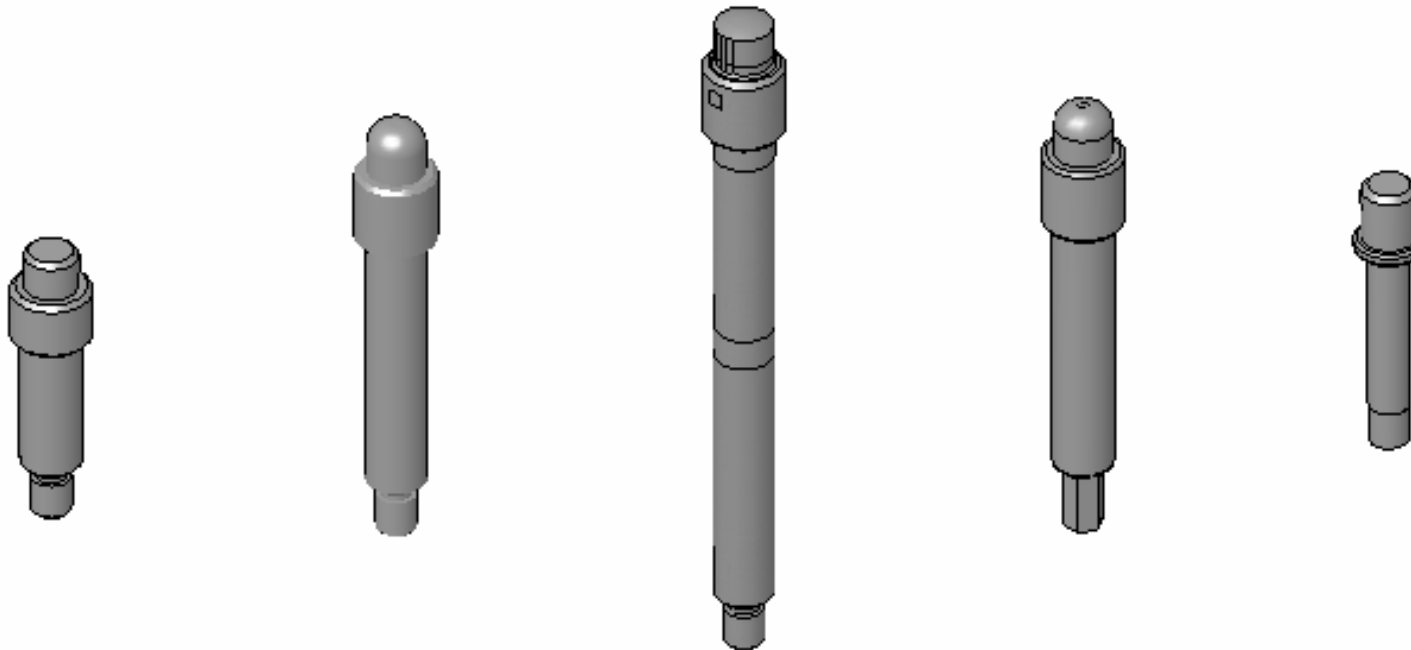
Bearings

- Lubricate bearings as scheduled (owner's manual)
- **Pillow Block** – Limited Radial bearings replacement; sometimes within cast.
- **Flange (bushing)** – Shaft scoring results if dry
- **Linear Bearing** Replacement – always allow shaft to push cardboard tube out/do not remove prior to install.



Pull Pins

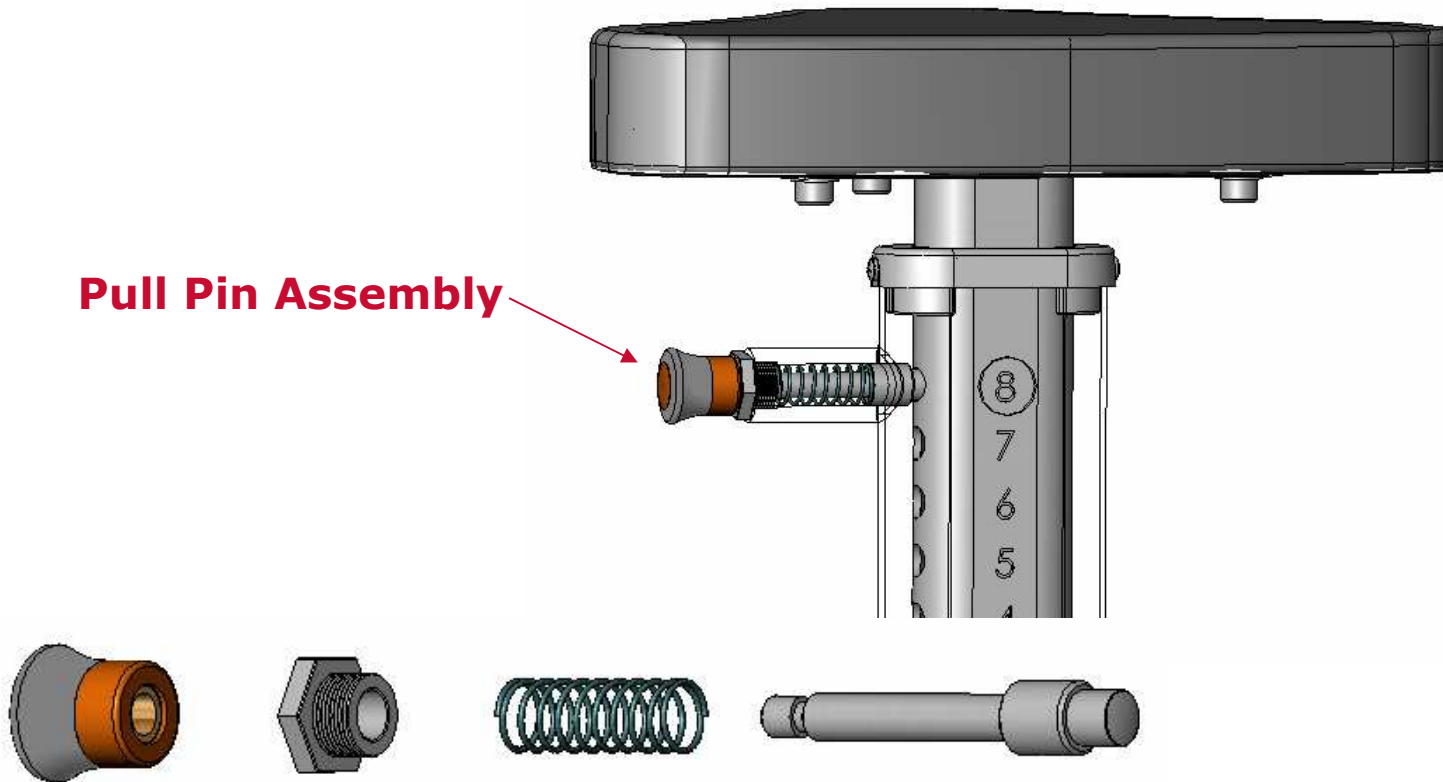
- » **Definition:** A short metal rod, as a linchpin, driven through holes in adjacent parts to keep the parts together.
- Numerous sizes and head types used



Pull Pin Assembly

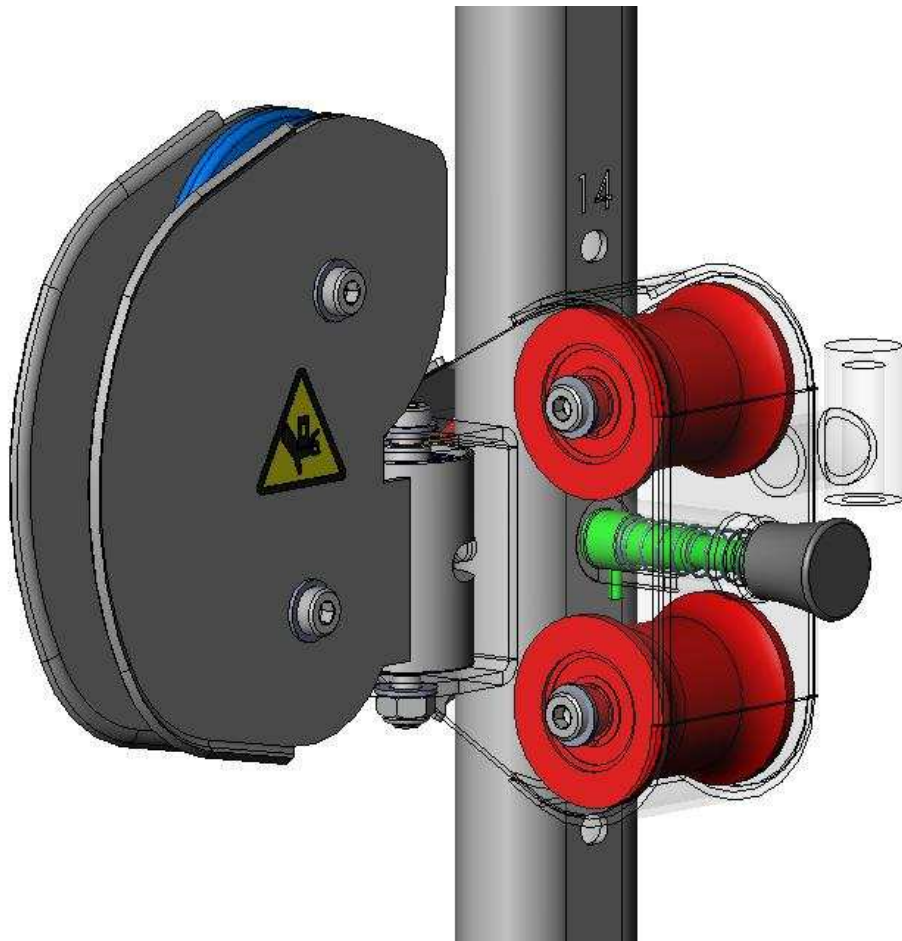
- » **Definition:** Tensioned spring pin/plunger assembly which holds pull pin in place until actuated.

Pull Pin Assembly

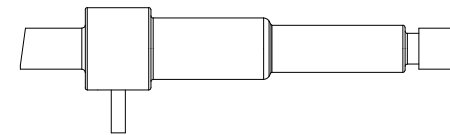


CM/MJ Carriage Pull Pin Assembly

- » **Definition:** Adjustable spring tensioned pull pin assembly supporting carriage to column.



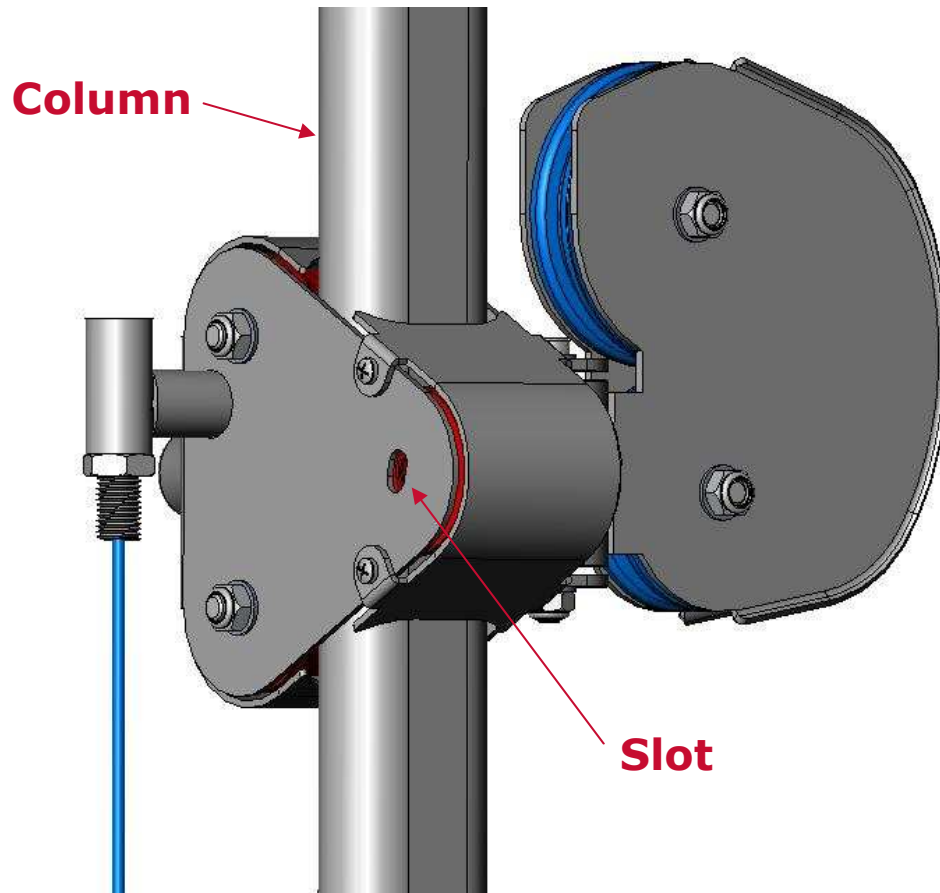
Bulletin CM08100701R



- **Roll-pin to retain placement**
- **Beveled nose**

CM/MJ Carriage Pull Pin Adjustment

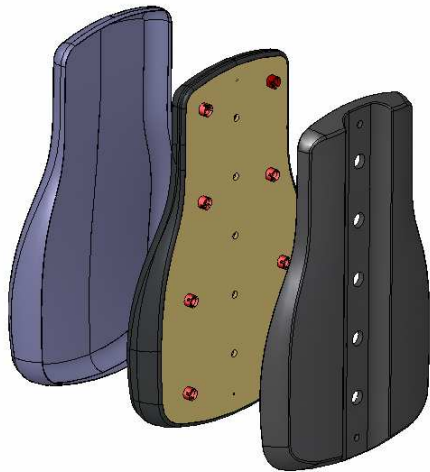
- » **Definition:** Slotted carriage that allows roller to adjust in conjunction with the column.



- » **If carriage is loose, adjust back bolt within slot (*bolt removed for view*).**

Pads

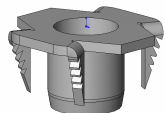
- » **Definition:** Upholstery wrapped padding which protects user from bare elements; aligns user to machine.
- LF Uses two types – molded and convex



MOLDED



CONVEX



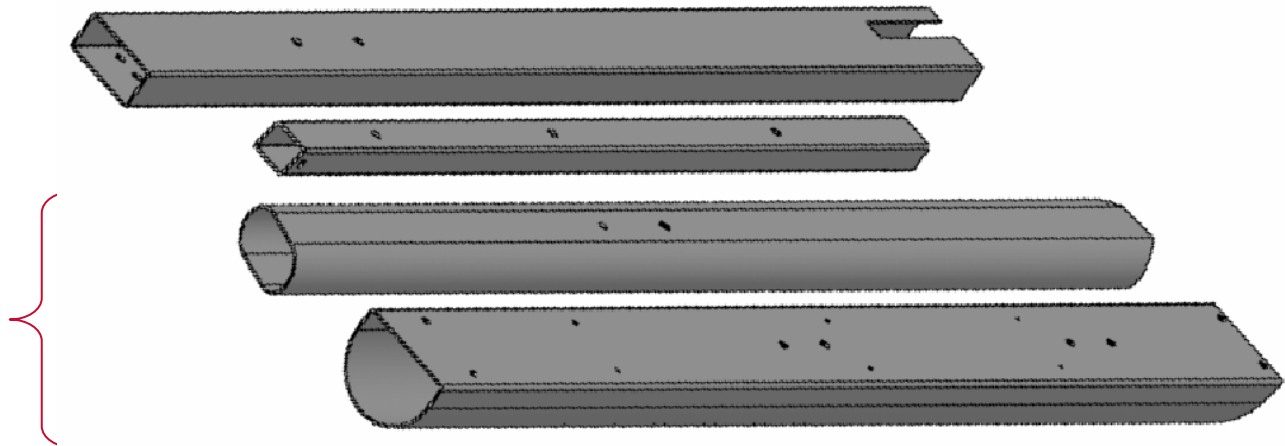
T-NUT

- NOTE: If fastener spins within pad, the T-Nut most likely has broken free. Cut open pad to expose T-Nut; apply pliers to remove.

Metal Tubing

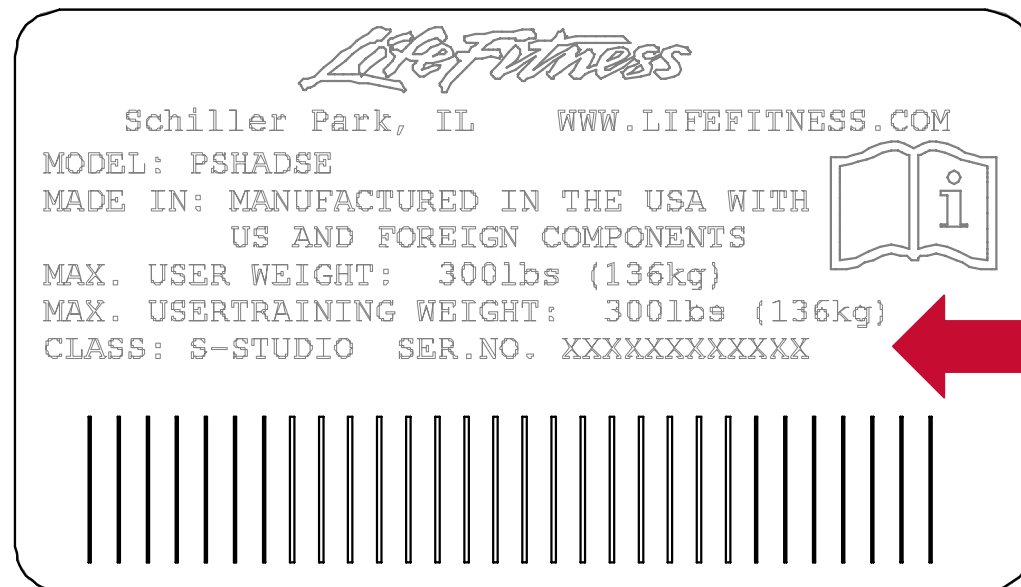
- » **Definition:** Seamless extruded iron alloy consisting mostly of iron with a carbon content.
- Various shapes and sizes
- 11 gauge
- Custom Made Flat Oval Tubing (FLOV)

**FLOV - FZ, S, T, TC,
OS, MJ and CM**



Serial Numbering

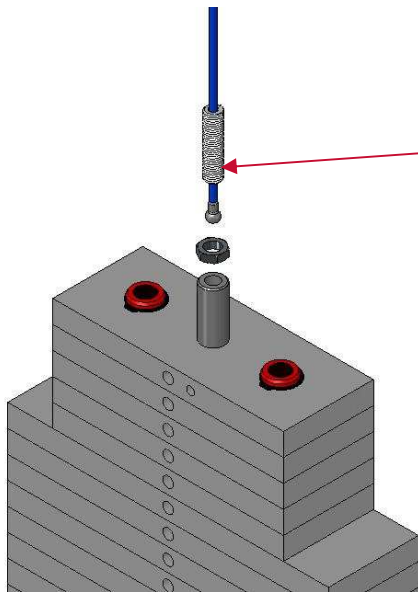
- » **Definition:** Unique number assigned for identification which varies from unit to unit by a fixed discrete integer value.



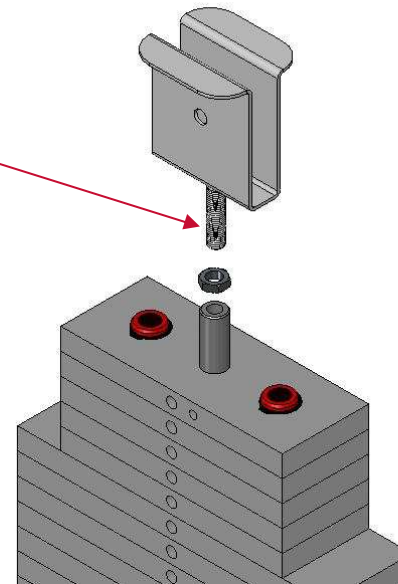
Threaded Cable Terminations

- » **Definition:** Terminals, or ends, that are threaded must be seated by at least $\frac{1}{2}$ " for secure operation.
- Applies to direct link, floating pulley styles as well as main frame
- Bulletin ST07120501N_Cable_Connection_Installation_Guide

Direct Link



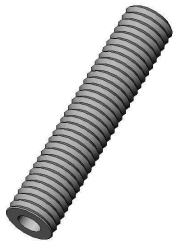
Floating Pulley



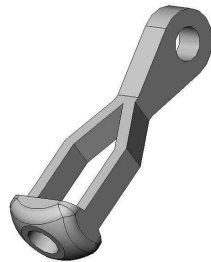
Cable Assemblies

» **Definition:** A linkage between load and user. Consists of wire rope and attached components.

Threaded Plug



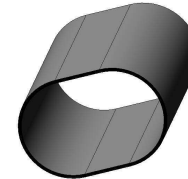
Stake Eye



Nico Crimp



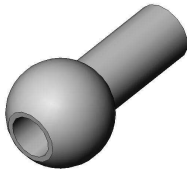
Heat Shrink



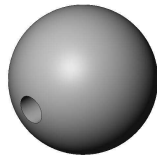
Washer



Ball End



Nylon Ball



Nico Thimble
(Loop End)



Jam Nut



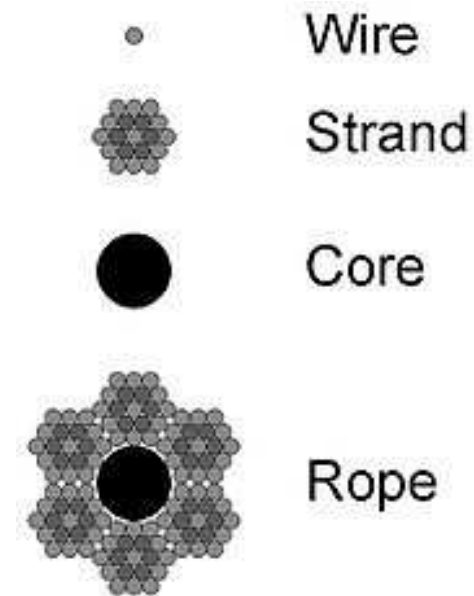
Stud



Wire Rope

- » **Definition:** Several strands laid (or 'twisted') together like a helix. Each strand is likewise made of metal wires laid together like a helix sheathed in a Nylon jacket.
- LF Uses 3 types of wire rope-T1, T2 & T3

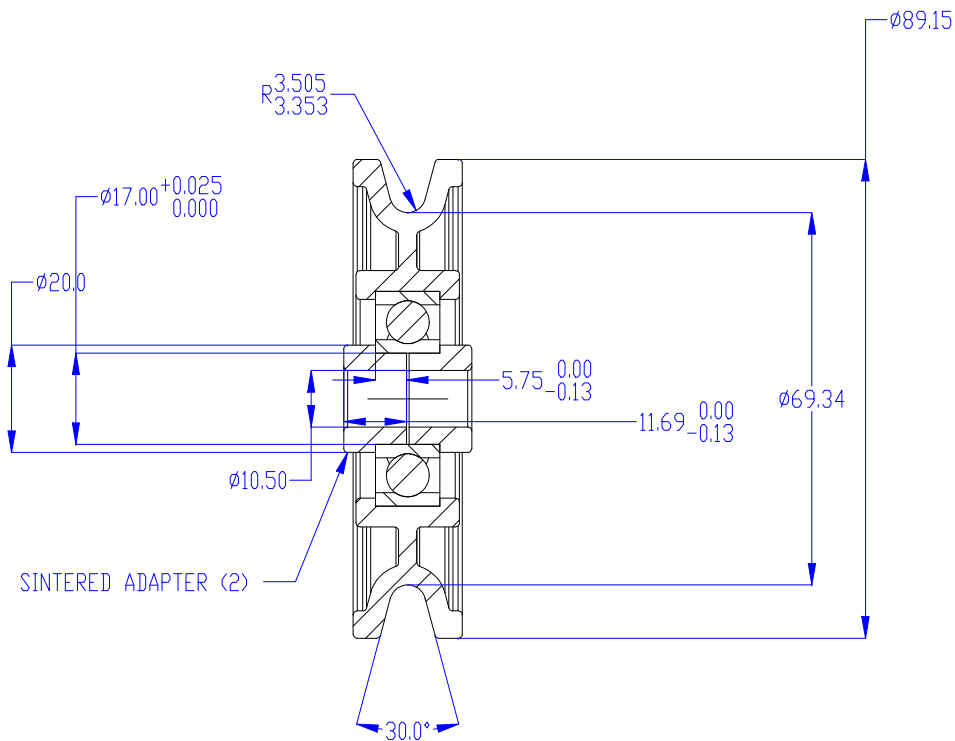
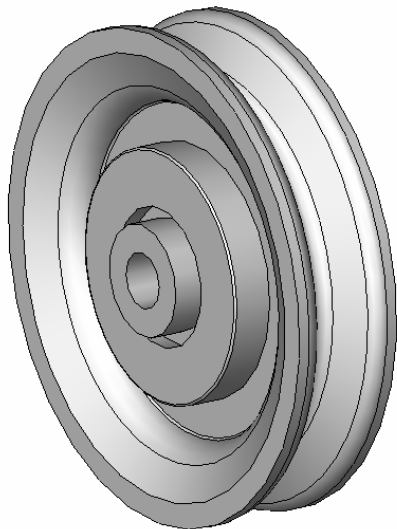
T1	1/8" diameter 7 X 19 coated to 3/16"
T2	1/8" diameter 7 X 19 coated to 3/16", lubricated
T3	3/16" diameter 7 X 19 coated to 1/4", lubricated



- NOTE: Never use T3 wire rope on a 3-1/2" pulley; pulley radius too small.

Pulleys

- » **Definition:** Pulleys are used to change the direction of an applied force, transmit rotational motion, or realize a mechanical advantage in either a linear or rotational system of motion. Two or more pulleys together are called a block and tackle.
- Numerous sizes

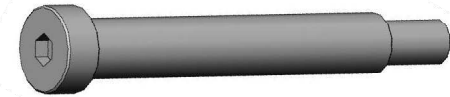


Fasteners

- » **Definition:** A hardware device that mechanically joins or affixes two or more objects together.
- Various styles, sizes and grades.



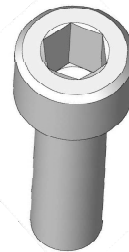
Hex Head Bolt



Shoulder Bolt



Pan Head Screw



Allen Head Screw



Flat Head Screw



Eye Bolt

Shrouds

- » **Definition:** Device used to cover or conceal weight stack with dual purpose - cosmetic/safety.
- Multiple styles and sizes
- Some optional/some standard
- Retro Fitness & Planet Fitness use poly-wrapped artwork



- NOTE: Front FZ shrouds require no tools to remove

Customization

- » **Definition:** Coordinate product to customer image via frame color and labels.
- **Retro Fitness, Planet Fitness & Planet Fitness Express** units use custom paint and poly-wrapped shroud artwork



RETRO FITNESS



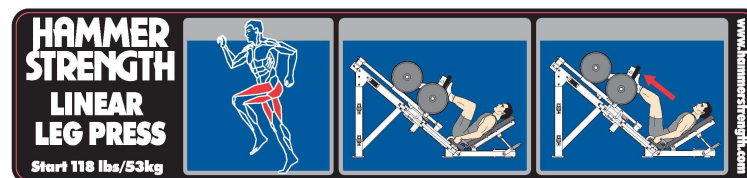
PLANET FITNESS



Note: There are 2 versions of each; refer to parts list.

Placards

- » **Definition:** Label which indicate instructions on usage; pictogram plus text.
- Some multilingual (FZ, PS, & MTS)
- All placards are paperbacked self-adhesive
- Sand (200 grit) and clean surface prior to re-installation



Weight Stack Labels

10 ○	5 ○
25 ○ 25	12 ○ 12
40 ○ 40	19 ○ 19
55 ○ 55	26 ○ 26
70 ○ 70	33 ○ 33
85 ○ 85	40 ○ 40
100 ○ 100	47 ○ 47
115 ○ 115	54 ○ 54
130 ○ 130	61 ○ 61
145 ○ 145	68 ○ 68
160 ○ 160	75 ○ 75
175 ○ 175	82 ○ 82
190 ○ 190	89 ○ 89
205 ○ 205	96 ○ 96
220 ○ 220	103 ○ 103
235 ○ 235	110 ○ 110
250 ○ 250	117 ○ 117
265 ○ 265	124 ○ 124
280 ○ 280	131 ○ 131
295 ○ 295	138 ○ 138
○	○
5 ○ 5	2.5 ○ 2.5
Lbs. ○ Lbs.	Kg. ○ Kg.

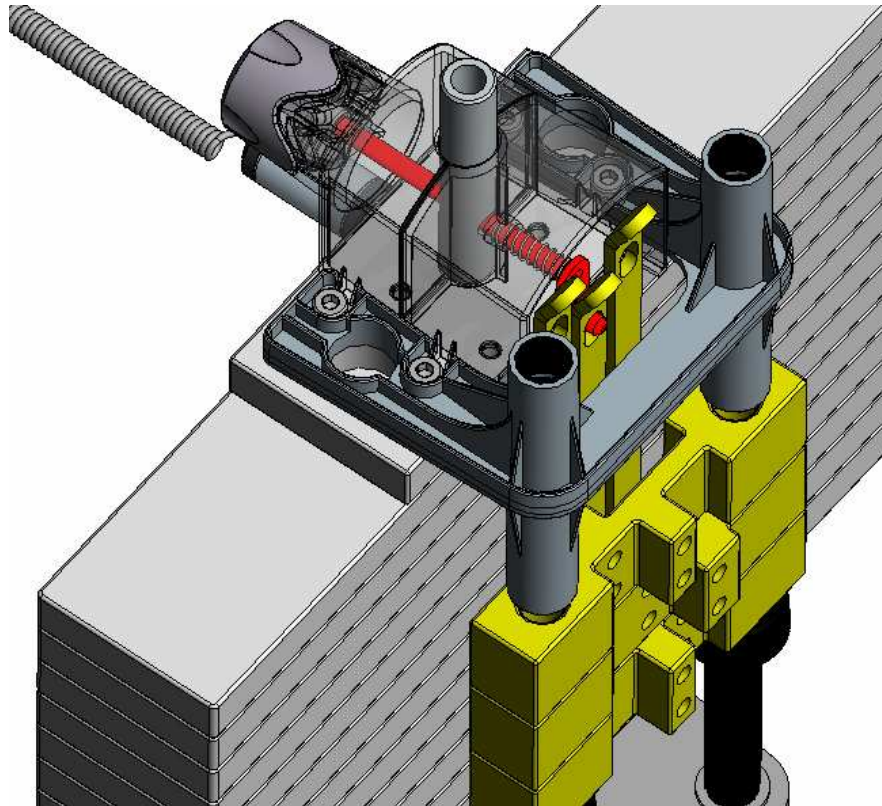
» **Definition:** Label adhered to weight stack which indicates amount of weight selected, usually language specific (Pounds or Kilograms).

- All weight stack labels are paperbacked self-adhesive
- Recognize machine's weight ratio – CMDAP for example uses a 390LB. stack but the 4:1 ratio (MA) is factored in as the label reads 97.5LB. ($390 \div 4 = 97.5$).

← NOTE: Incremental weight stickers included

Incremental Weights

- » **Definition:** Additional weights that can be gradually increased to the load.
- Some integral (FZ, PS & OS); some manual (FS, CM)



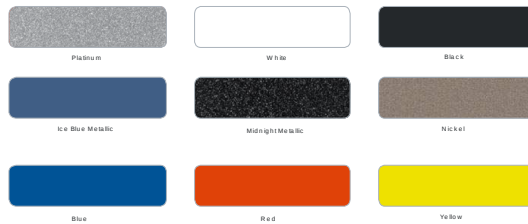
Powder Coat Paint

- » **Definition:** Electro statically charged and sprayed onto the part, cured and baked for adhesion.



Strength Color Chart

Strength Frame Colors



Strength Upholstery Colors



Strength Frame Color Chart

key:
• Standard ◊ Premium + Custom — Unavailable

color	circuit series	signature series		Pro2 se series	Pro2 series	fit series	hamMer strength		
		single stations and cable Motion	benches & racks				Mts	Plate loaded and benches & racks	olyMPic heavy-duty
Platinum	•	•	•	•	◊	•	•	•	•
White	•	•	•	•	•	•	•	•	•
Black	—	•	—	•	◊	—	•	•	•
Ice Blue Metallic	—	◊	—	◊	◊	—	◊	•	—
Midnight Metallic	—	◊	—	◊	◊	—	◊	•	—
Nickel	—	◊	—	◊	◊	—	◊	•	—
Blue	—	+	—	+	+	—	+	•	—
Red	—	+	—	+	+	—	+	•	—
Yellow	—	+	—	+	+	—	+	•	—
Custom	—	+	—	+	+	—	+	+	—

Strength Upholstery Color Chart

key:
• Standard ◊ Premium + Custom — Unavailable

color	circuit series	signature series		Pro2 se series	Pro2 series	Fit series*	Hammer Strength		
		single stations and cable Motion	benches & racks				MTS	Plate loaded and benches & racks	Olympic heavy-duty
Am.Beauty Red	•	•	•	•	◊	—	•	•	◊
Azure	•	•	•	•	◊	—	•	•	◊
Black	•	•	•	•	•	•	•	•	•
Cranberry	•	•	•	•	◊	—	•	•	◊
Graphite	•	•	•	•	◊	—	•	•	◊
Hunter Green	•	•	•	•	◊	—	•	•	◊
Regimental Blue	•	•	•	•	◊	—	•	•	◊
Royal Blue	•	•	•	•	◊	—	•	•	◊
Slate	•	•	•	•	◊	—	•	•	◊
Wheat	•	•	•	•	◊	—	•	•	◊
Burgundy	◊	◊	◊	◊	◊	—	◊	◊	◊
Candy Apple Red	◊	◊	◊	◊	◊	—	◊	◊	◊
Chestnut	◊	◊	◊	◊	◊	—	◊	◊	◊
Concord	◊	◊	◊	◊	◊	—	◊	◊	◊
Crocus	◊	◊	◊	◊	◊	—	◊	◊	◊
Dove Gray	◊	◊	◊	◊	◊	—	◊	◊	◊
Emerald	◊	◊	◊	◊	◊	—	◊	◊	◊
Grotto	◊	◊	◊	◊	◊	—	◊	◊	◊
Gun Metal	◊	◊	◊	◊	◊	—	◊	◊	◊
Imperial Blue	◊	◊	◊	◊	◊	—	◊	◊	◊
Jade	◊	◊	◊	◊	◊	—	◊	◊	◊
Navy	◊	◊	◊	◊	◊	—	◊	◊	◊
Northwoods Green	◊	◊	◊	◊	◊	—	◊	◊	◊
Paprika	◊	◊	◊	◊	◊	—	◊	◊	◊
Plum	◊	◊	◊	◊	◊	—	◊	◊	◊
Putty	◊	◊	◊	◊	◊	—	◊	◊	◊
Space Blue	◊	◊	◊	◊	◊	—	◊	◊	◊
Suede	◊	◊	◊	◊	◊	—	◊	◊	◊
Terra Cotta	◊	◊	◊	◊	◊	—	◊	◊	◊
Turquoise	◊	◊	◊	◊	◊	—	◊	◊	◊
Custom	+	+	+	+	+	—	+	+	+

Premium and custom frame and upholstery colors are available for an additional charge.

Maintenance

ACTION	DAILY	MONTHLY	BI-ANNUALLY	AS NEEDED
CLEAN				
Upholstery	X			
Guide Rods		X		
Shields				X
Hand Grips				X
INSPECT				
Cable	X			
Hardware		X		
Frame			X	
Hand Grips				X
LUBRICATE				
Guide Rods				X

CLEAN

- Upholstery with a mild soap and water (do not use bleach, ammonia, or cleaning agents (Simple Green™))
- Guide Rods with a cotton cloth Hand Grips with a mild soap and water
- Use Gym Wipes™ as recommended

LUBRICATE

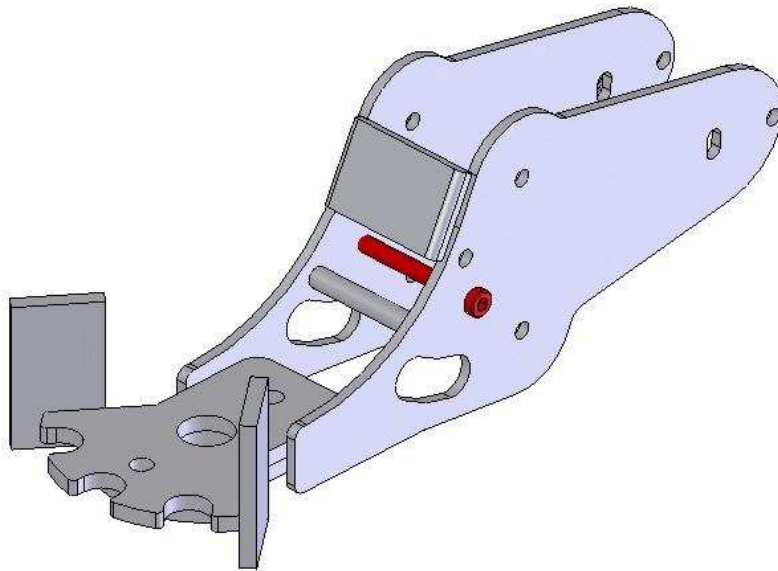
- Guide Rods with a cotton cloth and Break-Free® P/N (SK50-P0005-0000)

INSPECT

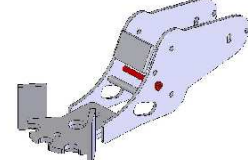
- Cables for wear
- Hardware for looseness
- Frames for wear or damage
- Handgrips for wear or damage

PLAB Service Bulletin

- » New seat carriage design adds a sixth bolt which acts as a stop for the handle; preventing it from over-extending and jamming within the seat track.
- » New seat carriage now has extra bolt which limits handle's range.
- » PL10030801N Service Bulletin



Service Bulletin				
Date 8 March 2010 ☒ original ☐ revised	Problem Code 56301	Warranty ☐ Parts ☐ Labor ☒ Normal warranty	Pages 5	Author T. Sullivan
Document No.: PL10030801N				
Subject: Redesign PLAB Roller Seat				
Time Required: ☐ 15 min ☐ 30 min ☒ 45 min ☐ 1 hr+				
Distribute To: ☒ Internal ☐ Dealer ☐ ISO ☐ Installer				
Life Fitness proprietary and confidential information. For the use of the intended recipient only. Do not reproduce or distribute. Warranty information applies to North American units only. Outside North America, contact the local Life Fitness representative.				
DESCRIPTION New seat carriage design adds a sixth bolt which acts as a stop for the handle; preventing it from over-extending and jamming within the seat track.				
AFFECTED MODELS All Plate Loaded Abdominal machines built before 3/08/10. Serial Number Range PLAB AD 100 - PLAB B03 0328				
SOLUTION Order one each and install new PLAB Seat Weldment - PLAB-SM-1 PLAB SEAT WLDMT 3236217 M10 X 1.5 X 100 SHCS, LOW HEAD 3236601 WASHER, 3/8 SAE STAINLESS STEEL 3236801 NUT, NYLOCK M10 X 1.5 SS 7422001 LABEL, SEAT INST Include frame color with order				
REQUIRED TOOLS One - 7mm Allen Wrench One - 1/8" Allen Wrench Two - 3/4" Box End Wrenches				



Quick Tips

- » Have serial number when calling for service
- » Some units will have multiple serial numbers (tower, shroud, unit, etc.)
- » Lube-N-Glue for grip install, part number 8574101
- » Locktite® 242 for fasteners, part number SK50-P0018-0000
- » 7mm Allen wrench used on most products hardware
- » Leave off last two digits of a seven digit item to see options, if applicable (frame color, language, etc.)

Strength Family

LifeFitness
WHAT WE LIVE FOR

Strength Family

❑ COMMERCIAL PRODUCTS



HAMMER
STRENGTH

- **Signature**
 - **Cable Motion**
 - **Motion-Jungle**
 - **Circuit**
 - **Pro2**
 - **Optima**
 - **Fit**
-
- **8000**
 - **Club**
 - **Pro 9000**
- **Plate Loaded**
 - **MTS**
 - **Benches and Racks**
 - **Heavy Duty Racks**
 - **Training Vest**

Strength Mechanics | Technical Certification Training

❑ CONSUMER PRODUCTS



- **Home Gyms**

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WHAT WE LIVE FOR

Strength Acronyms

Signature

FZ	<i>'Fusion' (Single Station)</i>
S	<i>Signature</i>
CM	<i>Cable Motion</i>
MJ	<i>Multi-Jungle</i>
SPL	<i>Plate Loaded</i>

Circuit

T	<i>'Toaster' (Circuit)</i>
TC	<i>'Toaster' (Circuit) Rev C</i>

Optima

OS	<i>Optima Series</i>
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Pro2

PS	<i>Pro Series</i>
PSxxSE	<i>Pro Series SE Version</i>

Fit

FS	<i>Fit Series</i>
----	-------------------

Parabody

G	<i>Gym</i>
GS	<i>Gym System</i>
LF	<i>Life Fitness</i>

Hammer Strength

BW	<i>Body Weight</i>
FW	<i>Free Weight</i>
GB	<i>Ground Base</i>
HD	<i>Heavy Duty</i>
HS	<i>Hammer Strength</i>
IL	<i>Iso-Lateral</i>
MT	<i>Motion Technology (Paso)</i>
MTS	<i>Motion Technology Selectorized</i>
O	<i>Olympic</i>
OHD	<i>Olympic Heavy Duty</i>
PL	<i>Plate Loaded</i>
TV	<i>Training Vest</i>

Club

CS	<i>Club Series</i>
----	--------------------

8000 Series

8xxx	<i>8000 Series</i>
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Pro 9000

FB	<i>Fixed Bench</i>
PL	<i>Plate Loaded</i>
SL	<i>Strength Lower</i>
SM	<i>Strength Multi</i>
ST	<i>Strength Torso</i>
SU	<i>Strength Upper</i>

Signature Series

» **Single Station**



» **Cable Motion/MJ**



» **Benches and Racks**



Signature Series

Single Station **FZ** (fusion)

- » Front and Rear Shrouds
- » Fully Welded Frame
- » Enclosed Seat Assembly
- » Integrated Head Plate & Inc. Weights
- » Dial-in Incremental Weights
- » Uses 4 guide rods
- » Ships fully assembled - ATO



Origin: Ramsey & Hungary

Signature Series

Single Station

- » FZAB Abdominal
- » FZBC Biceps Curl
- » FZBE Back Extension
- » FZCE Calf Extension
- » FZCP Chest Press
- » FZFLY Fly
- » FZGL Glute
- » FZHAB Hip Abductor
- » FZHAD Hip Adductor
- » FZLE Leg Extension
- » FZLR Lat Raise
- » FZPD Pulldown
- » FZPEC Pectoral Fly
- » FZRW Row
- » FZSLC Seated Leg Curl
- » FZSLP Seated Leg Press
- » FZSP Shoulder Press
- » FZTP Triceps Press
- » FZTR Torso Rotation
- » SSM Signature Smith



Origin: Ramsey & Hungary

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WHAT WE LIVE FOR

Signature Series



Cable Motion/Multi-Jungle
CM MJ



- » **Selectorized Weight Plates**
- » **FLOV Tubing (flat oval)**
- » **Stabilization: User Defined**
(user supports self in appropriate position)
- » **Path of Motion: User Defined**
(user determines arc of movement)
- » **Type of Motion: Independent**
(leg/arms move independently)

Origin: Ramsey & Hungary

Signature Series

Cable Motion/Multi-Jungle CM

- » **CMACO Adjustable Crossover**
- » **CMCC Cable Crossover**
- » **CMCP Chest Press**
- » **CMDAP Dual Adj. Pulley**
- » **CMFCO Fixed Crossover**
- » **CMPD Pulldown**
- » **CMRW Row**
- » **CMSP Shoulder Press**



Origin: Ramsey & Hungary

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WHAT WE LIVE FOR

Signature Series

Multi-Jungle MJ

- » Expandable Core
- » Custom tailored by customer
- » Chooses from 10 stations
- » Comes in four forms:
 - » MJ4 (one core)
 - » MJ8 (two cores)
 - » MJ12S (three cores – Straight)
 - » MJ12V (three cores – V shaped)



Origin: Ramsey & Hungary

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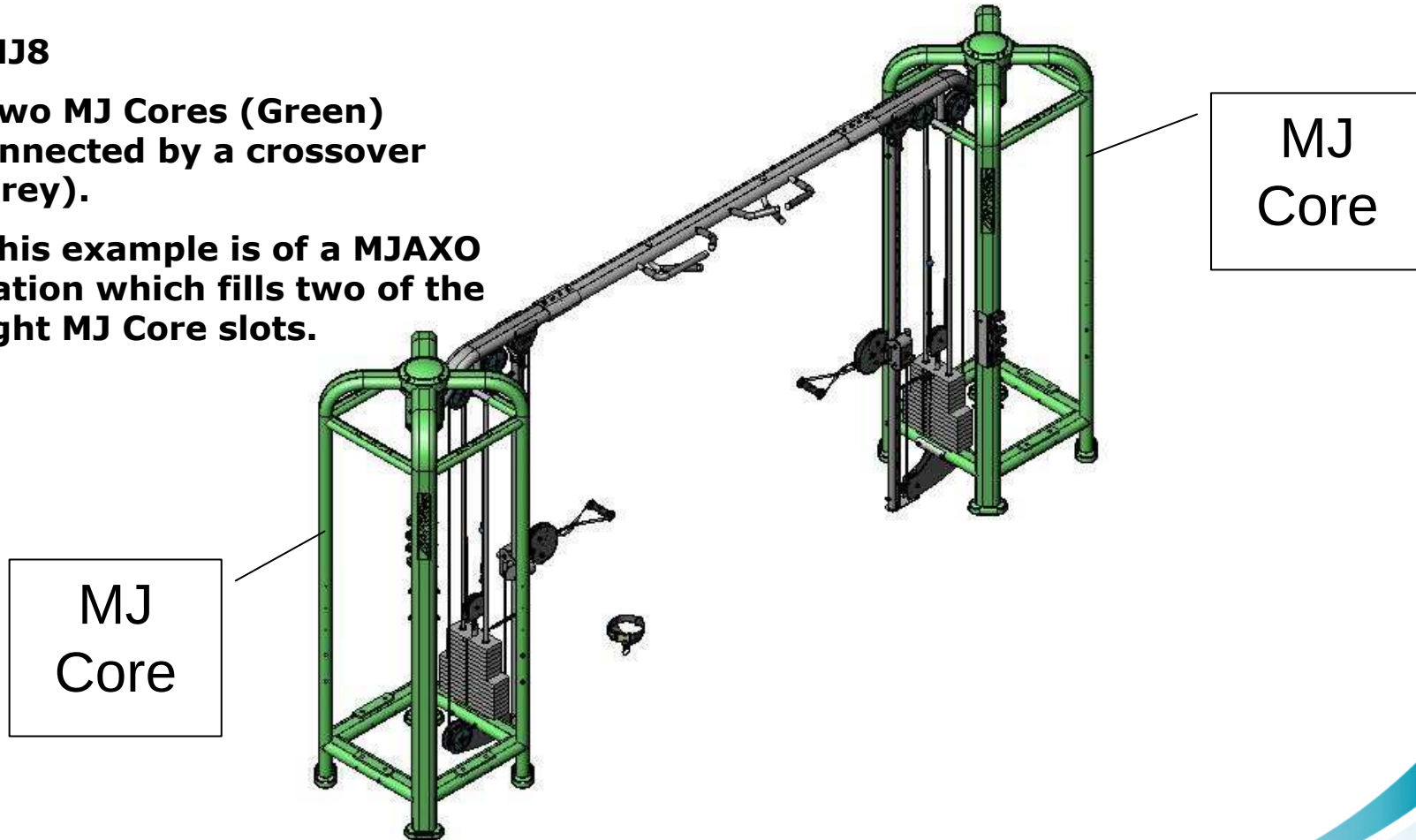
Life Fitness
WHAT WE LIVE FOR

Signature Series

Multi-Jungle

» MJ8

- Two MJ Cores (Green) connected by a crossover (Grey).
- This example is of a MJAXO station which fills two of the eight MJ Core slots.



Origin: Ramsey & Hungary

Signature Series

Cable Motion/Multi-Jungle MJ

- » MJACO Adjustable Crossover
- » MJAP Adjustable Pulley
- » MJAXO Adj. Crossover
- » MJBLNKSHRD Blank Shroud
- » MJFCO Fixed Crossover
- » MJFXO Fixed Crossover
- » MJHAR Handle Acc. Rack
- » MJLP Lat Pulldown
- » MJLPD Dual Pulley Pulldown
- » MJRW Row
- » MJRWD Dual Pulley Row
- » MJTP Triceps Press



Origin: Ramsey & Hungary

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WHAT WE LIVE FOR

Signature Series

Benches and Racks S

- » **Body Weight/Free Weight**
- » **FLOV Tubing (flat oval)**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Dependant**
(requires leg/arms to move together)



Origin: Asia & Hungary

Signature Series

Benches and Racks

S

- »SABC Abdominal Crunch Bench
- »SAC Arm Curl
- »SADB Adj. Incline Bench
- »SBBR Barbell Rack
- »SBWBE Back/Waist Extension
- »SCDLR Dip/Leg Curl
- »SDR1 Single Tier DB Rack
- »SDR2 Two Tier DB Rack
- »SFB Flat Bench
- »SHR Handle Rack
- »SLR Leg Raise
- »SMAB Multi-Adj. Bench
- »SODB Olympic Decline Bench
- »SOBWS Olympic Bench Weight Storage (used with SOFB, SOIB, SODB & SOMB)
- »SOFB Olympic Flat Bench
- »SOIB Olympic Incline Bench
- »SOMB Olympic Military Bench
- »SOSR Olympic Squat Bench
- »SOWT Olympic Weight Tree
- »SUB Utility Bench



Origin: Asia & Hungary

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WHAT WE LIVE FOR

Circuit Series

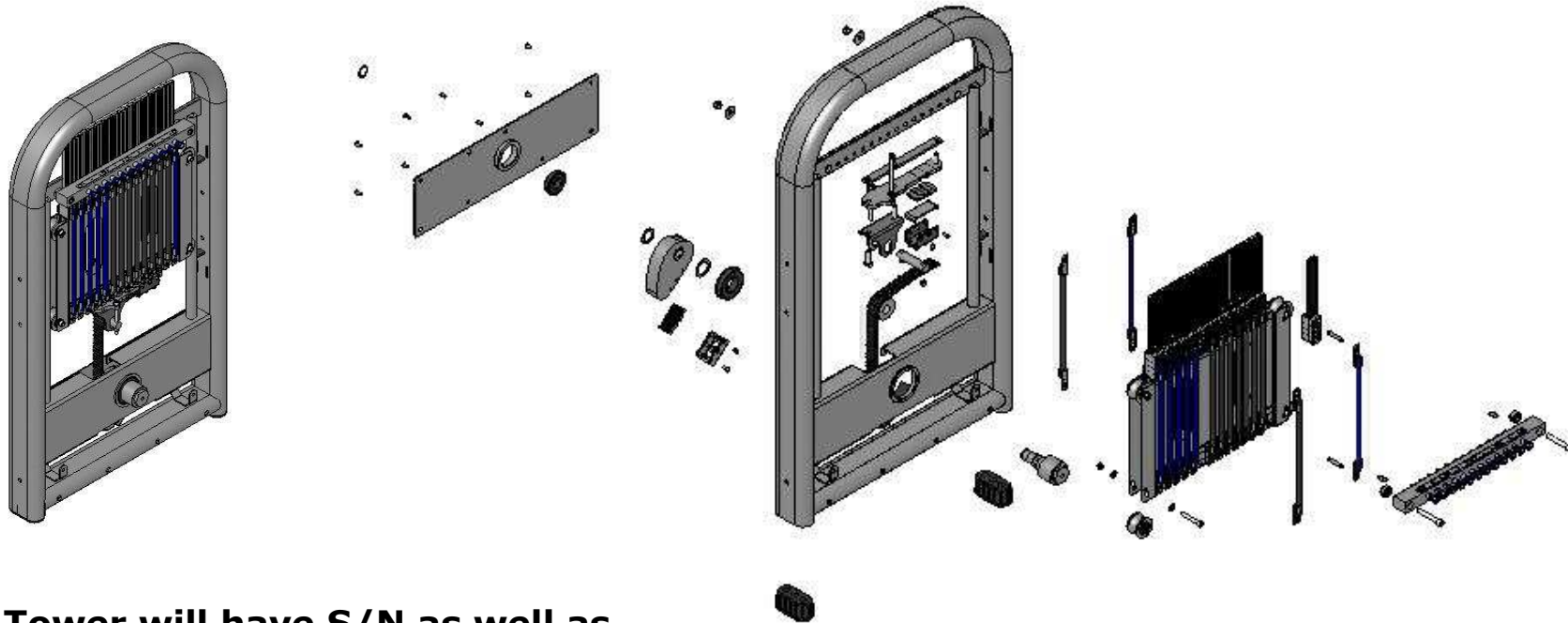


- » **Lifeband Resistance**
- » **FLOV Tubing (flat oval)**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Dependant**
(requires leg/arms to move together)

Origin: Hungary

Circuit Series

Lifeband Resistance Tower



» Tower will have S/N as well as machine's station.

Origin: Hungary

Strength Mechanics | Technical Certification Training

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WHAT WE LIVE FOR

Circuit Series (rev C)

TC



- »TCAB Abdominal
- »TCAAB Ab Bench
- »TCBC Biceps Curl
- »TCCP Chest Press
- »TCLC Leg Curl
- »TCLE Leg Extension

- »TCPD Pulldown
- »TCRW Row
- »TCSL Squat-Lunge
- »TCSP Shoulder Press
- »TCTP Triceps Press
- »TCWHL Wheel Kit

Origin: Hungary

Circuit Series (rev A)

T



- »TAB Abdominal
- »TAAB Ab Bench
- »TBC Biceps Curl
- »TCP Chest Press
- »TLC Leg Curl
- »TLE Leg Extension

- »TPD Pulldown
- »TRW Row
- »TSL Squat-Lunge
- »TSP Shoulder Press
- »TTP Triceps Press

Origin: Hungary

Circuit Series

T vs. TC



T (rev A)

- » Smaller FLOV Tubing
- » Bolt-on Shrouds
- » Black Push Knobs
- » Arctic Silver Frame Color only
- » Regimental Blue UPH only
- » Different Components

TC (rev C)

- » Larger FLOV Tubing
- » Snap-in Shrouds
- » Orange Push Knobs
- » Platinum/White Frame Colors
- » All UPH available
- » Different Components

Origin: Hungary

Optima OS

- » **Selectorized Weight Plates**
- » **FLOV Tubing**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Dependant**
(requires leg/arms to move together)



Origin: Hungary

Optima OS

- » **OSAB Abdominal**
- » **OSADJ Adjustable Bench**
- » **OSBC Biceps Curl**
- » **OSCP Chest Press**
- » **OSDB3 3-Tier Dumbbell Rack**
- » **OSDBV Vertical Dumbbell Rack**
- » **OSLC Leg Curl**
- » **OSLE Leg Extension**
- » **OSLP Leg Press**
- » **OSPD Pulldown**
- » **OSRW Row**
- » **OSSM Smith Machine**
- » **OSSP Shoulder Press**
- » **OSTE Triceps Extension**

Origin: Hungary

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LifeFitness
WHAT WE LIVE FOR

Pro2/Pro2SE Series

PS

- » **Selectorized Weight Plates**
- » **Square Tubing**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Dependant**
(requires leg/arms to move together)
- » **Available in base and more fully featured SE models**



Origin: Ramsey

Pro2 Series



Pro2[†]

- a Lift-and-lock seat mechanism adjusts in 1/2" increments for precise alignment
- b Half-plate (7.5 lbs/3.4 kg) increment weight system
- c Powder coat frame finish, white standard (SE or custom colors available for additional charge)
- d Molded foam cushions covered with black upholstery (SE or custom colors available for additional charge)
- e Easy-to-adjust rotary tibia adjustment
- f Optional rear shroud available

[†] Not available in all European countries.



Pro2 SE

- a Easy-to-adjust spring assisted roller seat adjustment
- b Integrated increment weight system provides convenient method to increase resistance in 5 lbs (2.5 kg) increments
- c Powder coat frame finish (standard, premium, and custom colors)
- d Start position is adjustable in five 10-degree increments
- e Molded foam cushions covered with your choice of 10 standard upholstery colors
- f Remote actuated tibia adjustment mechanism allows adjustment to be easily made from the seated position
- g Full rear weight stack shroud creates a clean and streamlined look throughout your facility (optional full front shroud available)

Pro2 Series

PS

- » **PSAB Abdominal**
- » **PSABC Ab Crunch**
- » **PSADC Assisted Dip Chin**
- » **PSBC Biceps Curl**
- » **PSBE Back Extension**
- » **PSCP Chest Press**
- » **PSFLY Fly**
- » **PSFPD Fixed Pulldown**
- » **PSHAB Hip Abductor**
- » **PSHAD Hip Adductor**
- » **PSHC Horizontal Calf**

- » **PSHG Hip-Glute**
- » **PSLC Leg Curl**
- » **PSLE Leg Extension**
- » **PSLR Lat Raise**
- » **PSPD Pulldown**
- » **PSPEC Pectoral Fly**
- » **PSRW Row**
- » **PSSLC Seated Leg Curl**
- » **PSSLP Seated Leg Press**
- » **PSSP Shoulder Press**
- » **PSTE Triceps Extension**



Origin: Ramsey

Pro2SE Series

PS

- » **PSABSE Abdominal**
- » **PSABCSE Ab Crunch**
- » **PSADCSE Assisted Dip Chin**
- » **PSBCSE Biceps Curl**
- » **PSBESE Back Extension**
- » **PSCPSE Chest Press**
- » **PSFLYSE Fly**
- » **PSFPDSE Fixed Pulldown**
- » **PSHABSE Hip Abductor**
- » **PSHADSE Hip Adductor**
- » **PSHCSE Horizontal Calf**

- » **PSHGSE Hip-Glute**
- » **PSLCSE Leg Curl**
- » **PSLESE Leg Extension**
- » **PSLRSE Lat Raise**
- » **PSPDSE Pulldown**
- » **PSPECSE Pectoral Fly**
- » **PSRWSE Row**
- » **PSSLCSE Seated Leg Curl**
- » **PSSLPSE Seated Leg Press**
- » **PSSPSE Shoulder Press**
- » **PSTESE Triceps Extension**



Origin: Ramsey

Hammer Strength

» Plate Loaded



» MTS



» Benches and Racks



» Heavy Duty Racks



» Training Vest



Hammer Strength Defined

- » **BW** = **Body Weight**
- » **FW** = **Free Weight**
- » **GB** = **Ground Base**
- » **HD** = **Heavy Duty**
- » **HS** = **Hammer Strength**
- » **Iso-Lateral** = **Work arms which move independently**
- » **MTS** = **Motion Technology Selectorized**
- » **PL** = **Plate Loaded**
- » **O** = **Olympic**
- » **OHD** = **Olympic Heavy Duty**
- » **TV** = **Training Vest**

Hammer Strength

- » **Plate Loaded & Selectorized (MTS)**
- » **Square Tubing**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Independent**
(requires leg/arms to move separately)



Origin: Falmouth

Hammer Strength Plate Loaded

» Iso-Lateral Upper Body

- » ILBP Bench Press
- » ILCB Chest/Back
- » ILDCP Decline Press
- » ILDRW D.Y. Row
- » ILPD Front Lat Pulldown
- » ILHR High Row
- » ILHBP Horz. Bench Press
- » ILIP-H Incline Press
- » ILLR Low Row
- » ILROW Rowing
- » ILSP Shoulder Press
- » ILFMP Super Incline Press
- » ILWC Wide Chest
- » ILWPD Wide Pulldown

» Upper Body

- » PL4W 4-Way Neck
- » PLGRIP Gripper
- » PLLR Lateral Raise
- » PLPO Pullover
- » PLBI Seated Biceps
- » PLDIP Seated Dip
- » PLSH Shoulder Shrug



Origin: Falmouth

Hammer Strength Plate Loaded

» Iso-Lateral Lower Body

- » PLABD Abductor
- » PLADD Adductor
- » PLLHP Hack Press
- » ILLC Leg Curl
- » ILLE Leg Extension
- » ILLP Leg Press
- » ILKLC Kneeling Leg Curl
- » PLLE Leg Extension
- » PLLP Leg Press
- » *HSLLP Linear Leg Press
- » PLCALF Seated Calf Raise
- » PLSLC Seated Leg Curl
- » PLSHC Super Horz. Calf
- » PLTIB Tibia Dorsi Flexion
- » PLVSQ V-Squat
- » PLAB Ab. Oblique Crunch



» Ground Base

- » GBCD Combo Decline
- » GBCI Combo Incline
- » GBCT Combo Twist
- » GBJ Jammer
- » GBSL Squat Lunge
- » GBSHP Squat High Pull
- » GBT-L Twist Left
- » GBT-R Twist Right

Origin: Falmouth & Ramsey*

Hammer Strength

MTS

» Motion Technology Selectorized

- » Belt Driven Movement (no cables)
- » Selectorized Weight Plates
- » Dual Weight Stacks (excludes AB)
- » Patented Iso-Lateral™ Movement
- » Integrated Incremental Weights



**Note: Currently Made in Ramsey
Formerly Made in Paso Robles (MT)**

Hammer Strength MTS

» Upper Body

- » MTSAB Abdominal
- » MTSBC Biceps Curl
- » MTSCP Chest Press
- » MTSDP Decline Press
- » MTSFP Front Pulldown
- » MTSHR High Row
- » MTSIP Incline Press
- » MTSRW Row
- » MTSSP Shoulder Press
- » MTSTE Triceps Extension



» Lower Body

- » MTSKC Kneeling Leg Curl
- » MTSLE Leg Extension
- » MTSVS V-Squat

**Note: Currently Made in Ramsey
Formerly Made in Paso Robles (MT)**

Hammer Strength Benches & Racks

» Training Stations

- » FWADJ Adjustable Bench
- » FWMAB Adj. Bench (Pro)*
- » FWDB Decline/Ab. Bench
- » FWFB Flat Bench
- » FWUB75 Utility Bench 75°

» Olympic Stations

- » OBWS Bench WT. Storage
- » ODB Decline Bench
- » OFB Flat Bench
- » OIB Incline Bench
- » OMB Military Bench
- » OPR Power Rack
- » OSR Squat Rack

» Storage Stations

- » FWBAR Barbell Rack
- » FWDWT Deluxe Weight Tree
- » FWDR1 Single DB Rack
- » FWDB2 Double DB Rack
- » FWBPL Large Bumper Plate Storage
- » FWBPS Small Bumper Plate Storage

» Body Weight Stations

- » BWBE Back Extension
- » BWCDL Chin Dip Leg Raise
- » BWGHF Fixed Glute/Ham
- » BWGH Glute/Ham
- » FWAC Seated Arm Curl

Origin: Falmouth & Ramsey*

Hammer Strength Heavy Duty Racks HD

» Racks

- » HDJR Combo Rack (8' & 9')
- » HDHR Half Rack (8' & 9')
- » HDMR Multi-Rack (8' & 9')
- » HDPR Power Rack (8' & 9')

» Optional Equipment

- » HDADJ Adjustable Bench
- » HDSP Spotter Platform
- » HDRTT Reverse Technique Tray
- » HDTT Technique Tray
- » HDUBP Upper Band Pegs
- » HDRBS Reverse Bar Supports
- » HDDIP Dip Attachment



HDPR Shown

Origin: Falmouth

Hammer Strength

Heavy Duty Racks-HD

HDHR
Half Rack



HDCR
Combo Rack



HDMR
Multi Rack



Origin: Falmouth

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WHAT WE LIVE FOR

Hammer Strength Heavy Duty Platforms

» Platforms

- » HD4X8 & HD6X8
- » HDMI4X8 & HDMI6X8
- » HDSI4X8 & HDSI6X8



HD6X8



Ramp Optional

HDMI6X8



HDSI6X8



Origin: US (Connor)

Hammer Strength Heavy Duty Platforms

» Platforms

- » HD4X8 & HD6X8
- » HDMI4X8 & HDMI6X8
- » HDSI4X8 & HDSI6X8

» Optional Attachments

- » 8619901 Ramp

» Optional Center

- » Hammer Logo
- » 1-2 Color Custom Logo
- » 3-4 Color Custom Logo
- » 5-6 Color Custom Logo



Origin: US (Connor)

Hammer Strength Heavy Duty Platforms Issues

» If lip between center and sides, loosen hardware to see if platform lays flat.



Fit Series

» Multi-Use



» Dual Machines



» Benches and Racks



» PTO Product

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Origin: Asia

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WHAT WE LIVE FOR

Fit Series FS

- » **Selectorized Weight Plates**
- » **Square Tubing**
- » **Stabilization: Machine Defined**
(supports user in appropriate position)
- » **Path of Motion: Machine Defined**
(machine controls arc of movement)
- » **Type of Motion: Dependant**
(requires leg/arms to move together)
- » **Multi-Use and Dual-Exercise machines**



Origin: Asia

Fit Series

» Multi-Use

- » FSF3 Fit 3 (LC/LP)
- » FSFCM1 Fit Series 1.0 CM
- » FSDAP Dual Adj. Pulley
- » FSSM Smith
- » CSPR Power Rack

» Dual Machines

- » FSABBA Ab/Back
- » FSBT Biceps/Triceps
- » FSFLY Fly
- » FSHAA Hip Ab/Ad
- » FSLCE Leg Curl/Ext.
- » FSLPC Leg Press/Calf
- » FSLR Lat Pull/Low Row
- » FSMP Multi Press

» Benches and Racks

- » CS45X 45° Back Ext.
- » CSAAB Adj. Ab Bench
- » CSAJB Adj. Bench
- » CSDB3T 3 Tier DB Rack
- » CSDBH Hexagon DB Rack
- » CSDBS Saddle DB Rack
- » CSDBV Vertical DB Rack
- » CSFB Flat Bench
- » CSOFB Olympic Flat Bench
- » CSOIB Olympic Incline
- » CSPT Olympic Plate Tree
- » CSVKR Vert. Knee Raise

Origin: Asia

Fit Series

FS

»Multi-Use Exercise Machines

- »Economical
- »Space efficient
- »Multi-User



FSDAP

- Adjustable Pulley Design



FSF3

- 3 Station Gym

Origin: Asia

Fit Series

FS

»Dual Exercise Machines

»Economical

»Space efficient



FSABBA

- Abdominal Crunches
- Back Extension



FSMP

- Chest Press
- Shoulder Press

Origin: Asia

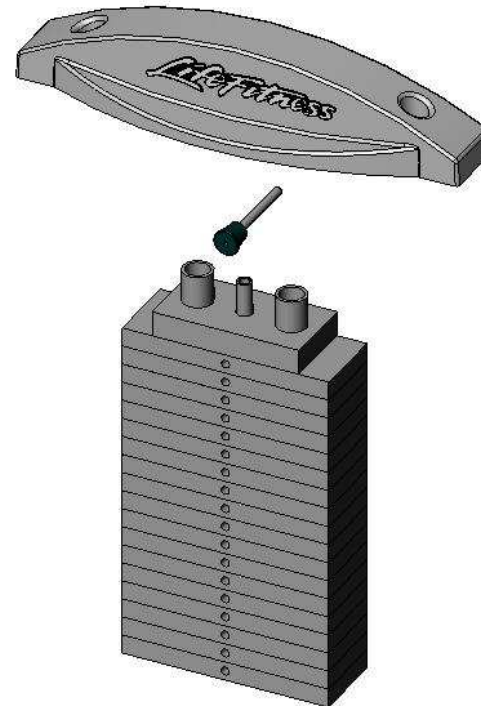
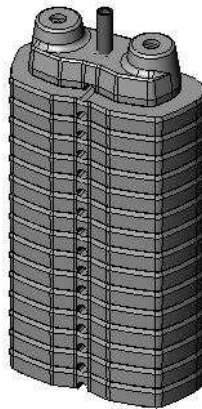
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WHAT WE LIVE FOR

Fit Series

ev 1

» Rev 2



» Differences:

- Kidney Shaped Weight Plates
- Different Cable (due to plate thickness)
- Weight Stack Pin
- Tower Cap
- Can be reverse compatible – Serial number can be misleading. Must determine type of weight plates to correctly service.

Origin: Asia

Home Gyms

G

» **G2 Home Gym**

Was GS2

» **Optional Equipment**

- » **GLP Leg Press**
- » **G2-GLPA Leg Press Adapter (exclusive)**
- » **GSWGT-50 50 lb. Add-on Kit**

» **Note: Steel shroud now included**



Origin: Asia

Home Gyms

G

» **G3 Home Gym**

Was CM3

» **Optional Equipment**

» **GLP Leg Press**

» **G3-GLPA Leg Press Adapter (exclusive)**

» **GSWGT-50 50 lb. Add-on Kit**

» **Note: Steel shroud now included**



Origin: Asia

Home Gyms

G

» **G4 Home Gym**

Was GS4

» **Optional Equipment**

- » **GLP Leg Press**
- » **G4-GLPA Leg Press Adapter (exclusive)**
- » **GSWGT-50 50 lb. Add-on Kit**

- » **Steel shroud now included**



Origin: Asia

Home Gyms

G

» **G5 Home Gym**
Was LFG5

» **Optional Equipment**
» **GADJ Adj. Bench**



LIFE FITNESS

Origin: Asia

Home Gyms

G

» **G7 Home Gym**
Was LFG7

» **Optional Equipment**

» **GADJ Adj. Bench**



LIFE FITNESS

Origin: Asia

Summary

- » What is the actually lifted weight if the user has connected 6 15lbs plates and the weight moves 10" when the user pulls the handle 30"?
- » What is used to insure that the user starts the weight load from zero on most of the Strength machines?
- » What is Lube-n-Glue used for on Strength machines?
- » What is the minimum requirement for secured seating of the cable terminals, or ends?
- » What is the proper way of installing a linear bearing in relationship to the shaft?

Questions





THANK YOU!

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WHAT WE LIVE FOR