PLURIMA

the smart multistation

Technical Service Guide

Rev. 2.1

TECHNOGYM
The Wellness Company™

Summary

The information in this manual is aimed at QUALIFIED TECHNICAL PERSONNEL, who have been specifically trained by TECHNOGYM and are qualified to carry out fine tuning and start-up of the equipment, as well as major maintenance work and repairs, requiring in-depth understanding of the equipment, how it works, its safety devices and maintenance procedures.

READ ALL THE INFORMATION IN THIS DOCUMENT VERY CAREFULLY BEFORE CARRYING OUT ANY SERVICE WORK ON THE EQUIPMENT.

	**DANGEROUS VOLTAGE LEVELS EVEN WHEN THE EQUIPMENT IS SWITCHED OFF**

WARNING

The information contained in this document may be changed without prior notification.

Technogym does not issue guarantees of any kind regarding this material. Technogym will not be held responsible for any errors contained herein or for any accidental damage or damage consequent to the supply, services or use of this material.

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1. GENERAL WARNINGS

1.1 Introduction

This document has been prepared specifically for **Technogym After Sales Service** with the aim of providing authorised personnel with the information for carrying out maintenance and repair operations in the correct manner. A thorough understanding of the technical data contained herein is absolutely fundamental in order for the operator to achieve the highest level in professional training.

To make the text more readily understandable, the paragraphs have illustrations and diagrams which highlight the specific subject matter.

This manual includes informative notes with specific meanings:

ATTENTION: REGULATION WHICH MAY LEAD TO INJURY IF NOT COMPLIED WITH.

WARNING: *REGULATION WHICH MAY CAUSE DAMAGE TO THE EQUIPMENT IF NOT COMPLIED WITH.*

CAUTION: Information regarding the operation in progress.

Detail regarding the operation in progress.

1.2 Useful advice

Technogym advises you to plan your technical assistance task in the following way:

- *Carefully assess the impressions reported by the Customer regarding the equipment's operating faults and ask questions suitable to clarify the signs of the defect.*
- *Be clear in your diagnosis of the reasons for the fault. You can pick up the basic theory from this manual, but this needs to be bolstered by your own personal experience and by taking part in the training courses organised periodically by Technogym.*
- *Plan the repair work in a rational manner so as to avoid wasting any time, e.g. collecting spare parts, preparing tools and equipment etc.*
- *Gain access to the part that needs to be repaired and limit yourself to the essential operations. On this point, it will be extremely helpful if you consult the dismantling sequences shown in this manual.*

1.3 General regulations regarding service work

1. Always mark components or positions which might easily be confused with each other during re-assembly.
2. Use original Technogym spare parts and recommended brand lubricants.
3. Use special tools when specified to do so.
4. Consult the Technical Newsletters as they might contain more up-to-date details on regulation and servicing procedures compared to those in this manual.
5. Before undertaking any work, check that the recommended tools are available and that they are in good condition.
6. With regard to the procedures given in this manual, only use the tools that have been indicated.

Tool sizes in this manual are expressed in mm.

2. TECHNICAL CHARACTERISTICS

2.1 MACHINE CODING

The PLURIMA machine coding is an alphanumeric code of 15 characters that has the following structure:

Characters	Description	Values and Meaning
1,2	*Line*	*MF = Plurima*
3,4,	*Model*	*20 = Solo (Leg Press / Calf)* *25 = Tower* *30 = Wall* *35 =Tower (W. Leg Press)* *40 = Wall (W. Leg Press)* *65 = Twin (Press / Overhead / Core)* *70 = Twin (High / Low Pull / Leg Press)*
5,	*Weight stack configuration*	*0 = Standard*
6,	*Certification*	*E = CE*
-	*-*	*-*
7,8,	*Frame colour*	*GV = Aluminium*
9,10,	*Padding Colour*	*V0 = Black*
11,12,	*Guard colour (plastic)*	*GZ = Dark grey*
13,14,	*Guard colour*	*R0 = Renault*
15.	*Packaging*	*S = Overseas Packaging*

For example, one possible code number could be the following:

MF200E-GVV0GZR0S

2.2 Serial Number (SN) structure

The Serial Number is made up of alphanumeric characters as follows:

Characters	Description	Values and Meaning
1,2,3,4,5,	*Type of product*	*MF = Plurima*
		20 = Solo (Leg Press / Calf) *25 = Tower* *30 = Wall* *35 =Tower (W. Leg Press)* *40 = Wall (W. Leg Press)* *65 = Twin (Press / Overhead / Core)* *70 = Twin (High / Low Pull / Leg Press)*
		0 = Standard
6,7,	*Year of production*	*2012*
8,9,10,11,12,13.	*Progressive*	*000001*

For example, one possible code number could be the following:

MF 20 0 12 000001

2.3 Environmental characteristics

Temperature	*In operation*	*from 5° to 35°C*
	In storage	*from -20° to 55°C*
Dampness	*In operation*	*from 30% to 80% without condensation*
	In storage	*from 5% to 85% without condensation*

2.4 Compliance with regulations

The equipment complies with the following directives:

Directive	Europe	USA
EMC	*NA (only mechanical)*	
Electrical Safety	*NA (only mechanical)*	
Mechanical Safety	*EN957-1*	
	EN957-2	

2.5 MECHANICAL CHARACTERISTICS

2.5.1 CONFIGURATIONS

2.5.1.1 MF30 - WALL

(3 Modules in line) **Core & Leg Extension/Curl** **Press & Overhead Press** **High & Low Pull**	
	
Machine total weight	**630 Kg - 1389 lbs**
Weight stack - **Core & Leg Extension/Curl**	60 Kg - 120 lbs
Weight stack - **Press & Overhead Press**	60 Kg - 120 lbs
Weight stack - **High & Low Pull**	70 Kg - 140 lbs
Minimum Operational Space	9.5 sq.m - 102 sq.ft

2.5.1.2 MF40 - WALL

(3 Modules in line)

Leg Press & Calf

Press & Overhead Press

High & Low Pull

Machine total weight	**700 Kg - 1544 lbs**
Weight stack - **Leg Press & Calf**	80 Kg - 160 lbs
Weight stack - **Press & Overhead Press**	60 Kg - 120 lbs
Weight stack - **High & Low Pull**	70 Kg - 140 lbs
Minimum Operational Space	10.8 sq.m - 116 sq.ft

2.5.1.3 MF25 - TOWER

(3 Modules Triangle)

Core & Leg Extension / Curl

Press & Overhead Press

High & Low Pull

Machine total weight	**605 Kg - 1334 lbs**
Weight stack - **Core & Leg Extension/Curl**	60 Kg - 120 lbs
Weight stack - **Press & Overhead Press**	60 Kg - 120 lbs
Weight stack - **High & Low Pull**	70 Kg - 140 lbs
Minimum Operational Space	9.4 sq.m - 101 sq.ft

2.5.1.4 MF35 - TOWER

(3 Modules Triangle)

Leg Press & Calf

Press & Overhead Press

High & Low Pull

Machine total weight	**675 Kg - 1488 lbs**
Weight stack - **Leg Press & Calf**	80 Kg - 160 lbs
Weight stack - **Press & Overhead Press**	60 Kg - 120 lbs
Weight stack - **High & Low Pull**	70 Kg - 140 lbs
Minimum Operational Space	10.9 sq.m - 117 sq.ft

2.5.1.5 MF65 - TWIN

(2 Modules) **Press & Overhead Press** **Core & Leg Extension / Curl**	
	
Machine total weight	**430 Kg - 948 lbs**
Weight stack - **Press & Overhead Press**	60 Kg - 120 lbs
Weight stack - **Core & Leg Extension/Curl**	60 Kg - 120 lbs
Minimum Operational Space	6 sq.m - 65 sq.ft

2.5.1.6 MF70 - TOWER

(2 Modules)

High & Low Pull

Leg Press & Calf

Machine total weight	**510 Kg - 1125 lbs**
Weight stack - **High & Low Pull**	80 Kg - 160 lbs
Weight stack - **Leg Press & Calf**	70 Kg - 140 lbs
Minimum Operational Space	7.2 sq.m - 78 sq.ft

2.5.1.7 MF20 - SOLO

(1 Module) **Leg Press & Calf**	
	
Machine total weight	**275 Kg - 606 lbs**
Weight stack - **Leg Press & Calf**	80 Kg - 160 lbs
Minimum Operational Space	3.5 sq.m - 38 sq.ft

2.6 FOOTPRINT

2.6.1.1 MF20 - SOLO

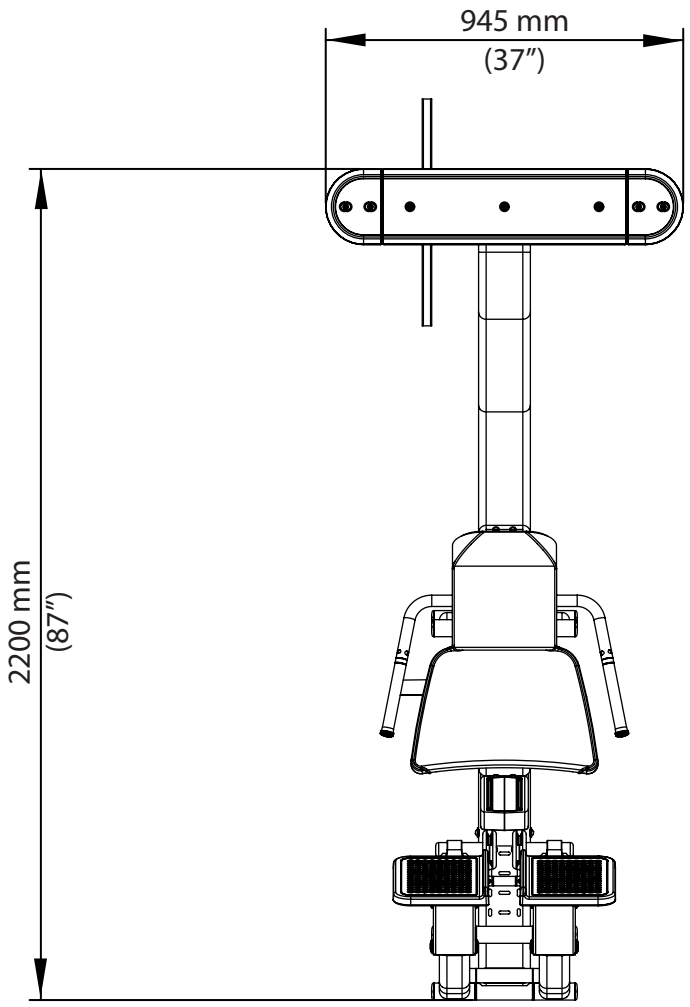

Figura 1

2.6.1.2 MF25 - TOWER

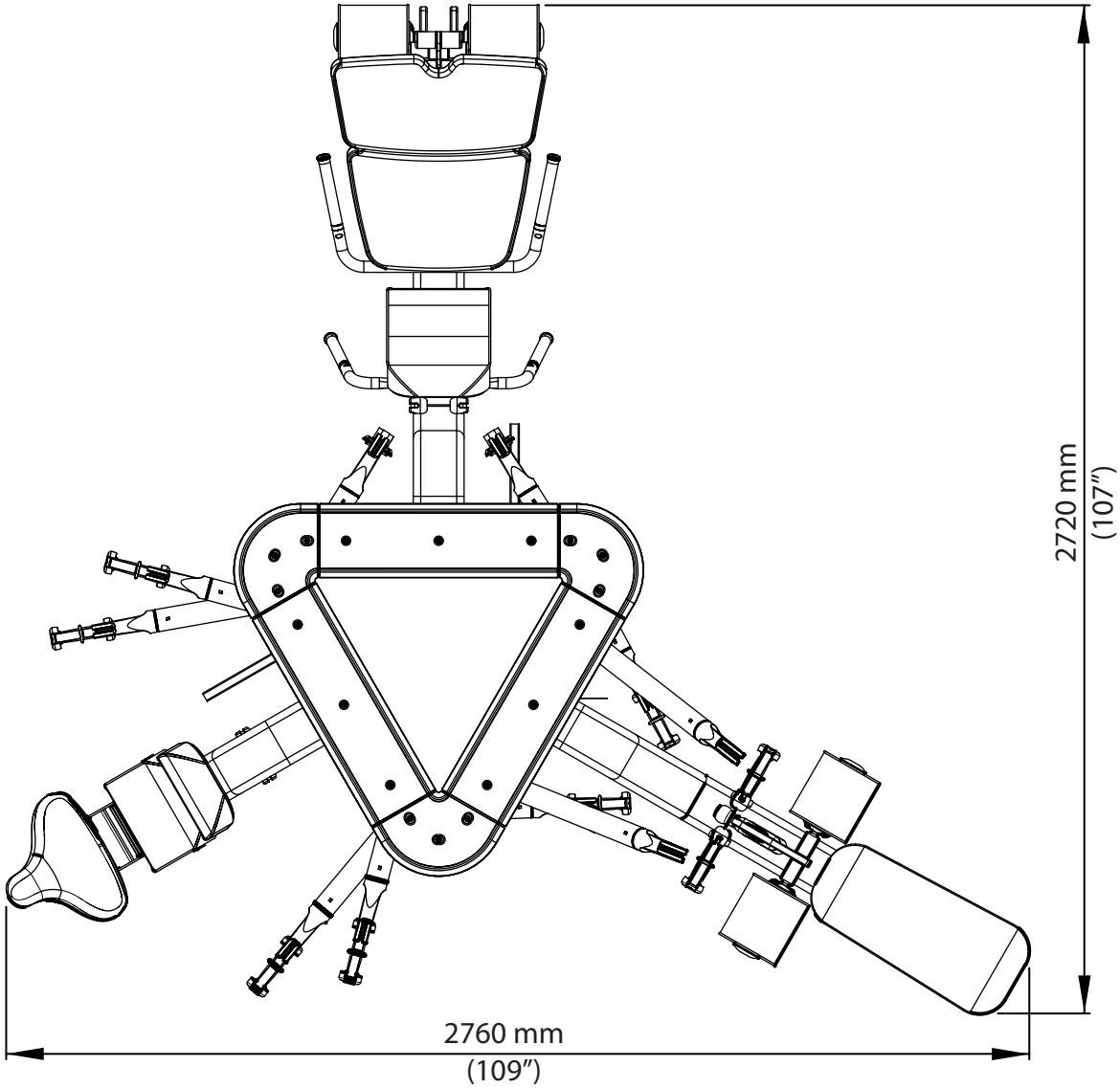

Figura 2

2.6.1.3 MF30 - WALL

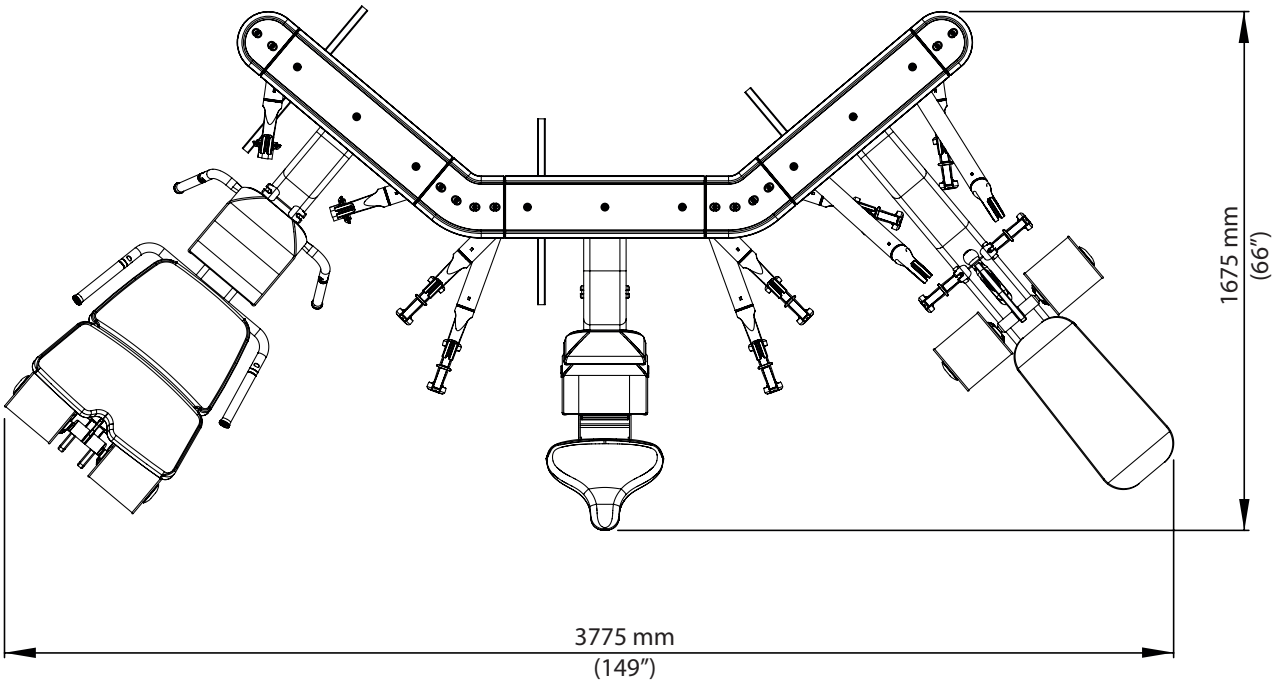

Figura 3

2.6.1.4 MF35 - TOWER

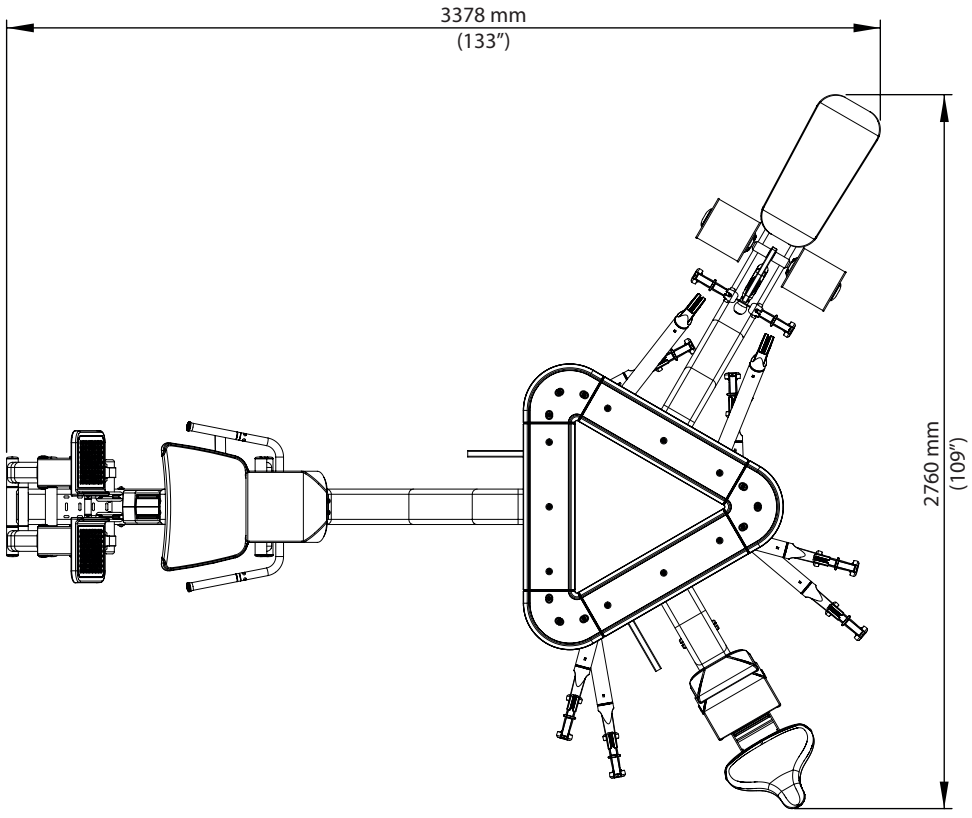

Figura 4

2.6.1.5 MF40 - WALL

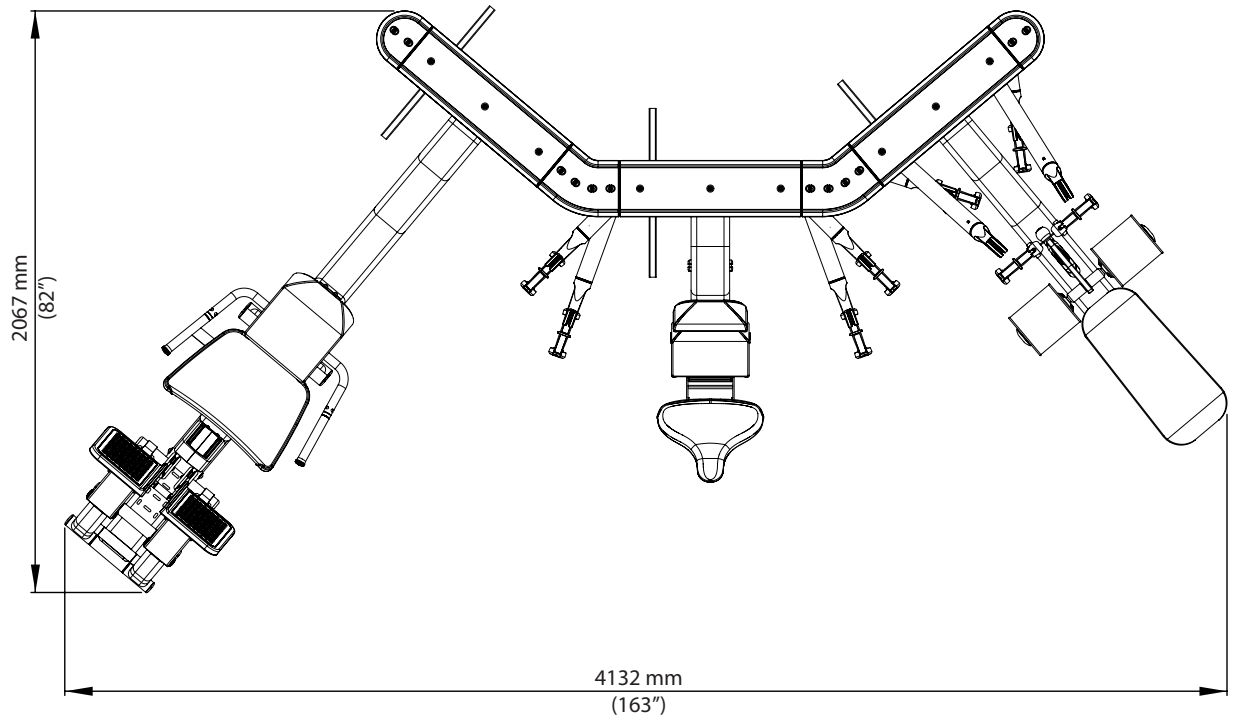

Figura 5

2.6.1.6 MF65 - TWIN

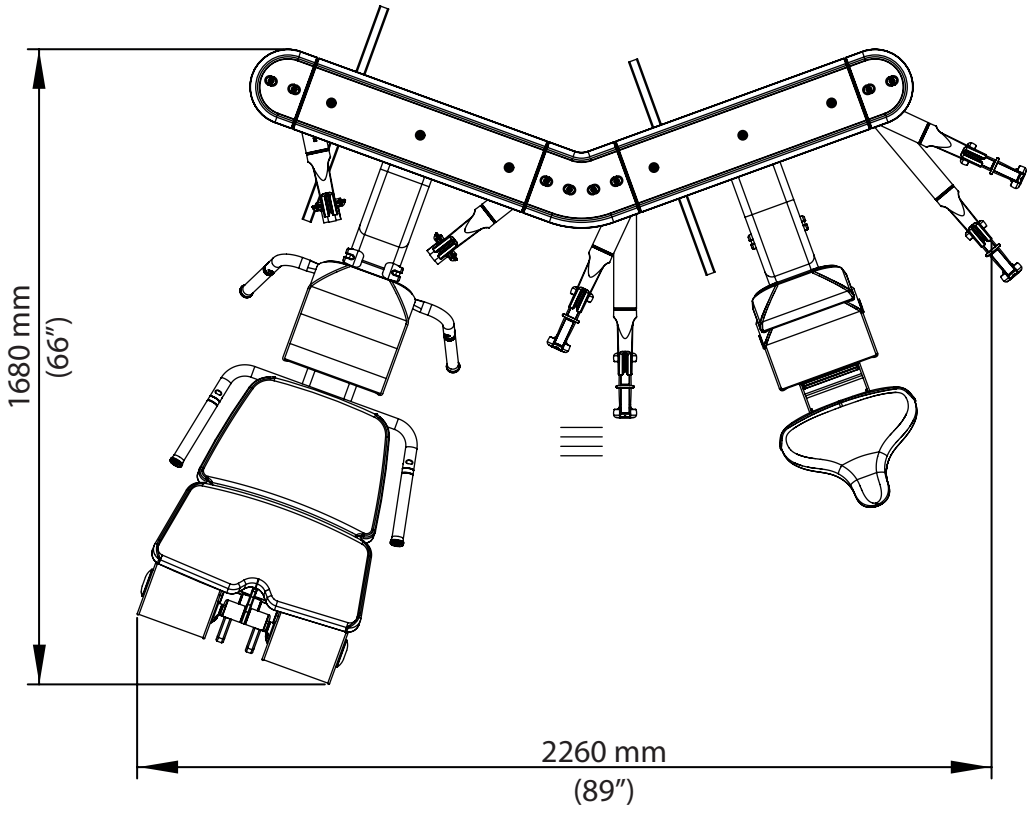

Figura 6

2.6.1.7 MF70 - TWIN

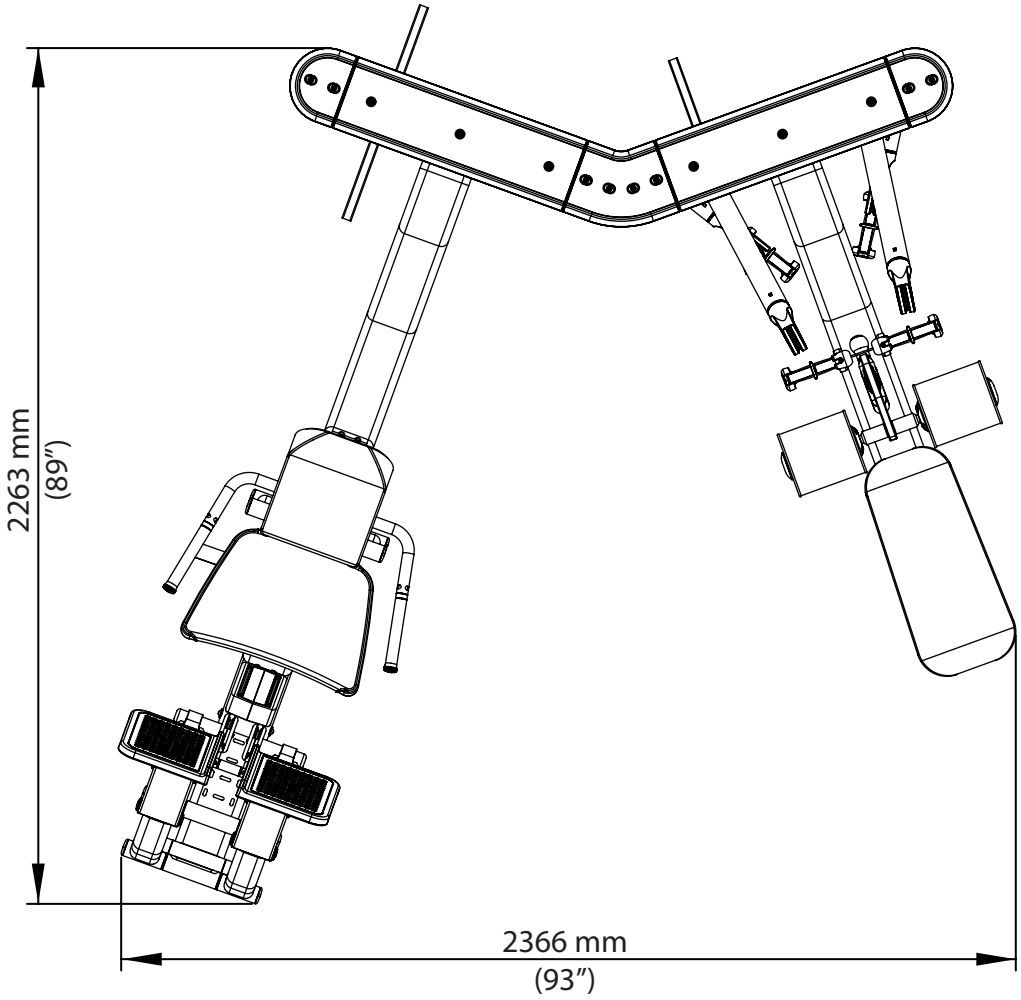

Figura 7

2.7 PACKAGING DIMENSIONS

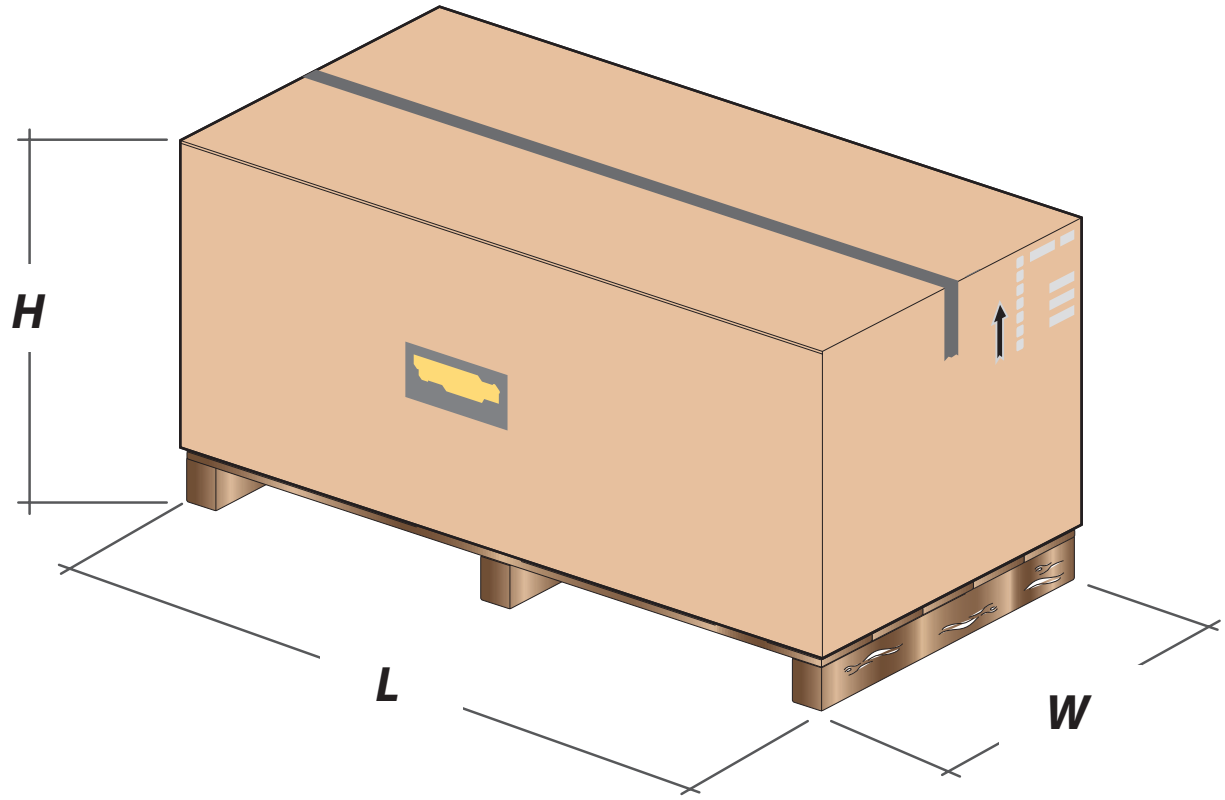

Figura 8

Cod.	MACHINE	H	L	W
MF20	SOLO	1066 mm - 42″	2030 mm - 80″	1122 mm - 44″
MF25	TOWER	2090 mm - 82.3″	2020 mm - 79.5″	1175 mm - 46.3″
MF30	WALL			
MF35	TOWER			
MF40	WALL			
MF65	TWIN	1785 mm - 70.3″	2010 mm - 79″	1100 mm - 43″
MF70	TWIN			

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3. MACHINE HANDLING AND INSTALLATION

3.1 INSTALLATION SPECIFICATIONS AND REQUIREMENTS

Refer to the MACHINE INSTALLATION MANUAL.

In order to install the equipment correctly, you need to make sure that:

1. The equipment is installed on a flat surface, with no vibrations and sufficient load bearing capacity to allow for the weight of the user too.
2. The environment is not dusty or sandy.
3. The requirements regarding temperature and humidity levels are complied with. See paragraph: "2.3 Environmental characteristics" to page 6

3.2 LIFTING AND HANDLING

Due to its weight, dismantle and reassemble the equipment in order to move it to the desired location.

Refer to the MACHINE INSTALLATION MANUAL.

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4. ACCESSORIES

There are no accessories.

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5. HOW TO REMOVE...

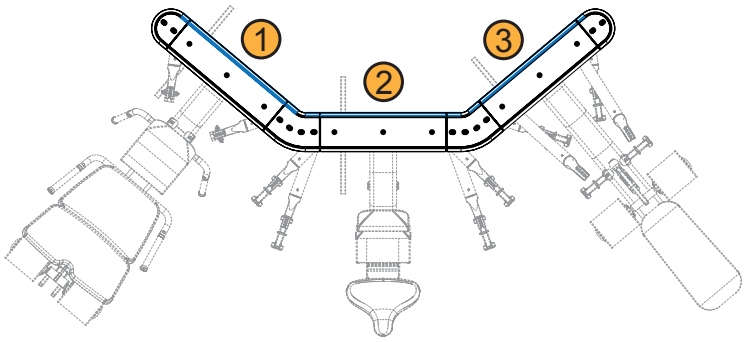
5.1 OPENING LEG PRESS CONFIGURATION GUARDS

Operation description:	Action:
Opening LEG PRESS configuration guards	1. Gain access from the top panel and unscrew the screws (using a 4 mm Allen wrench.) 2. Remove the top guards of the panel and the columns. 3. Loosen the top screw of the columns (using a 8 mm Allen wrench) and slightly extend them. 4. Unscrew the screws of the rear panel (using a 4 mm Allen wrench.) 5. Remove the rear panel upwards and towards you.

5.2 OPENING TOWER CONFIGURATION GUARDS

Operation description:	Action:
Opening TOWER configuration guards	*Operate on the machine having the column divided into 2 parts on its right side.* 1. Unscrew the top screws and the bottom screws (using a 4 mm Allen wrench), remove the columns guards, both on the right and on the left, as well as the central guard on the weight stack. 2. Unscrew the screws that anchor the central guards of the other two weight stacks (using a 4 mm Allen wrench.) 3. Unscrew the screws of the upper guard (using a 4 mm Allen wrench.) 4. Remove the top brackets that anchor the machines to each other. 5. Unscrew the screws that anchor the column on the right side of the High Pull (using a 8 mm Allen wrench) and remove the column. 6. Unscrew the screws that anchor the half-column on the left side of the High Pull (using a 8 mm Allen wrench) and remove the column. 7. Remove the hinge pins of the High Pull with the Overhad Press (using a hammer). It is now possible to rotate the machine to access it. *When refitting grease the pins.*

5.3 OPENING WALL CONFIGURATION GUARDS

Operation description:	Action:
Opening WALL configuration guards	 **DISMANTLING PANELS (1) AND (3):** 1. Remove the top and the bottom guards of the side column. 2. Gain access from the top panel and unscrew the screws (using a 4 mm Allen wrench.) 3. Remove the top screws of the column (using a 8 mm Allen wrench) and remove it. 4. Unscrew the screws of the rear panel (using a 4 mm Allen wrench) and remove the rear panel upwards and towards you. **DISMANTLING PANEL (2):** *Remove panel (1) or (3).* 1. Remove the top guards and the bottom guards of the central column (using a 4 mm Allen wrench.) 2. Unscrew the 2 top screws of the column (using a 8 mm Allen wrench). 3. Remove the column. 4. Unscrew the screws of the rear panel (2) (using a 4 mm Allen wrench) and remove the panel upwards and towards you.

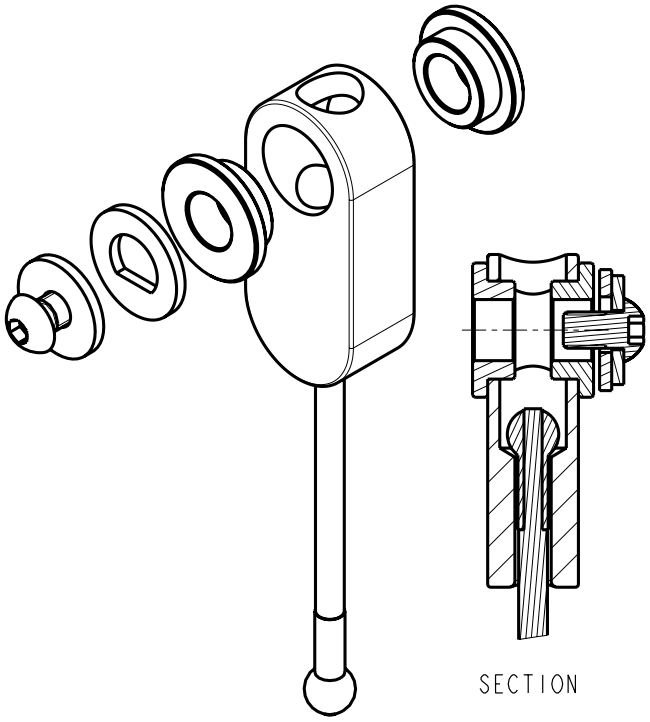
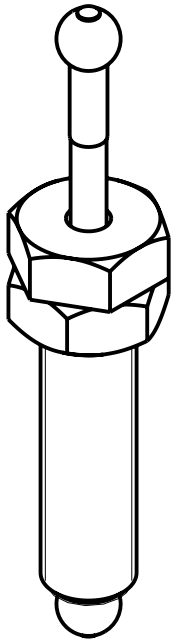
5.4 DISMANTLING AND REPLACING THE HANDLES TOP CABLE

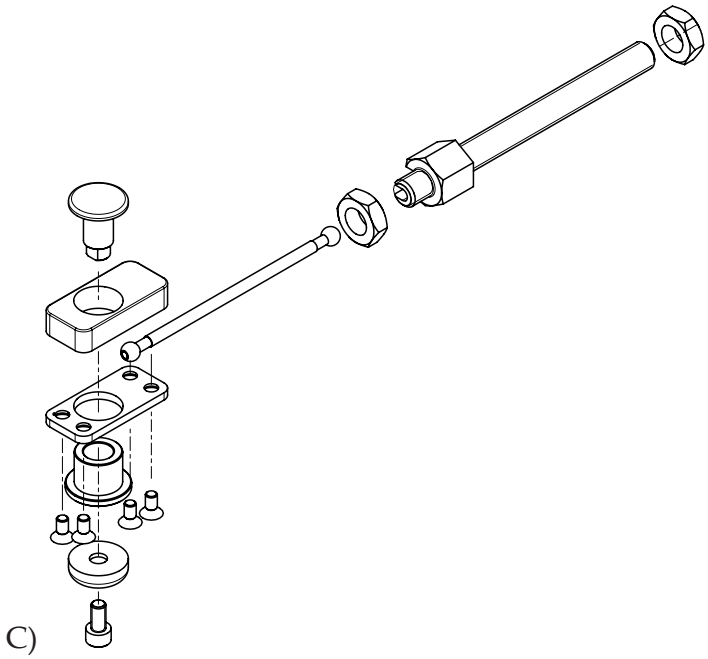
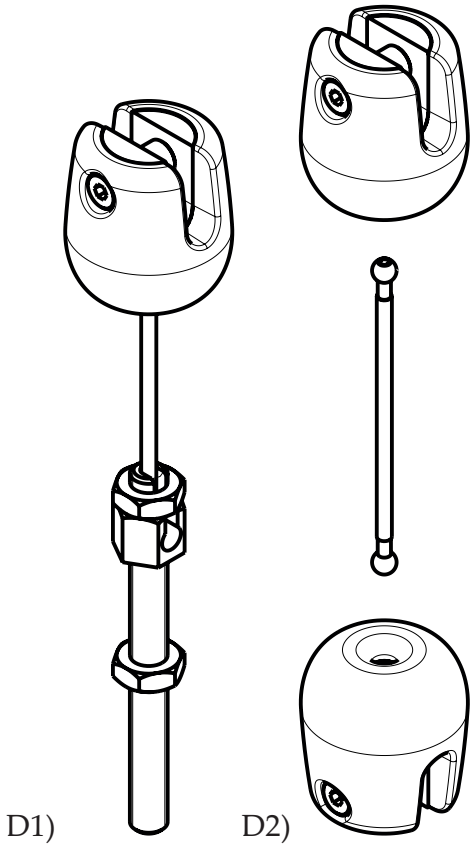
Operation description:	Action:
Dismantling and replacing the handles top cable "7. Cables" to page 37	**ONCE THE GUARDS HAVE BEEN REMOVED:** 1. Free the crimped cable by pulling it from its end (D2) (using a 4 mm Allen wrench.) 2. Loose the pulleys and remove the cable.

5.5 DISMANTLING AND REPLACING THE BOTTOM HANDLES CABLES

Operation description:	Action:
Dismantling and replacing the bottom handles cables "7. Cables" to page 37	**ONCE THE GUARDS HAVE BEEN REMOVED:** *Raise the first plate to slacken the tension on the cable.* 1. Free the cable by pulling it from one of the rubber handles' end (D1). 2. Free the crimped cable from its housing (using a 17 mm and a 19 mm spanners as well as a 4 mm Allen wrench). 3. Loosen the screws of the pulley cable (using a 6 mm Allen wrench and a 17 mm spanner). 4. Remove the cable and replace it.

5.6 CRIMPING

Operation description:	Action:
Crimping *Leg Press (lower cable)*	 A)
Crimping Leg Press (top cable)	 B)

Operation description:	Action:
Crimping Leg Extension	 C)
Crimping Handles	 D1) D2)

5.7 GENERIC DISMANTLING

Operation description:	Action:
Dismantling the weight stack	**ONCE THE GUARDS HAVE BEEN REMOVED:** 1. Loosen the grub screws of the vibration dampers (using a 4 mm Allen wrench). 2. Drop the two bars right to the ground and incline them towards you. 3. Slip off the plates of the weight stack.
Dismantling the pivoting handle	1. Unscrew the handle pin (using a 5 mm Allen wrench). 2. Remove the handle and its components.
Dismantling the padding	1. Unscrew the rear screws of the padding (using a 6 mm Allen wrench.) 2. Remove and/or replace the padding.
Dismantling the selection knob	1. Remove the yellow cap (a) using a small flat head screwdriver. 2. Unscrew the screw (using a 4 mm Allen wrench.) 3. Remove the knob. 4. Remove the pin and the spring.
Dismantling roller pads and bearings	1. Unscrew the screw (using a 5 mm Allen wrench.) 2. Remove the spacers and the roller pad.

5.8 Leg Press

Operation description:	Action:
Dismantling the platform leverages	**LIFT THE FIRST PLATE OF THE WEIGHT STACK:** 1. Unscrew the screws of the platforms (using a 5 mm Allen wrench). 2. Using a rubber hammer slip off the pin and the platform. 3. At the bottom of the lever, remove the stoppers (using a flat head screwdriver) and take out the screws (using a 5 mm Allen wrench). 4. Remove the lever.

Operation description:	Action:
Dismantling the selection pin	**BRING THE SEAT ALL THE WAY BACK** 1. Unscrew the front screw of the selection plate (using a 4 mm Allen wrench.) 2. Take the pin out of the selection plate in a forwards direction. 3. Remove the lever screw (using a 4 mm Allen wrench), blocking the pin on the opposite side (using a Phillips screwdriver.)

Operation description:	Action:
Dismantling the gas spring	**BRING THE SEAT TO THE UNLOADING POSITION (ALL THE WAY FORWARD):** 1. Unscrew the fixing bolts and screws (using a 13 mm spanner and a 4 mm Allen wrench) and remove the gas spring.

5.9 Low Pull

Operation description:	Action:
Dismantling roller pads adjustment system	1. Move the rollers to position 5. 2. Through the hole in the frame, unscrew the screw that anchors the moving assembly (using a 5 mm Allen wrench.) 3. By pulling the knob, slide out and remove the moving assembly.

5.10 OVERHEAD PRESS

Operation description:	Action:
Dismantling adjustable seat	1. Remove the sliding bearings (using a 4 mm Allen wrench.) 2. Unscrew the side screws that support the pin and the spring (using 4 mm Allen wrench); then remove the seat. 3. Unscrew the screws of the spring guard (using a Phillips screwdriver) and remove the guard.

5.11 Leg Extension / Leg curl

Operation description:	Action:
Dismantling backrest adjustment system	1. Unscrew the screws (using a 6 mm Allen wrench), at the rear of the backrest adjustment extrusion and take it off. 2. Remove the selector cap (using a small flat head screw-driver) and unscrew the screws underneath (using a 4 mm Allen wrench). 3. Unscrew the screws of the end-of-run buffers (using a 5 mm Allen wrench) and remove them.

Operation description:	Action:
Dismantling roller top lever	1. Remove the upholstery from its support. 2. Disconnect the steel cable from the lever. 3. Remove the plastic plug. 4. Unscrew the screws (using a 5-6mm Allen wrench). 5. Remove the lever.

Operation description:	Action:
Dismantling pin to change from Leg Curl to Leg Extension	1. Disassembly the right lever and the left lever. 2. Tilt the upholstery in Leg Curl position. 3. Remove the bush below the upholstery (screwdriver). 4. Unscrew the grubs screws that fixing the pin on which the wheel upholstery. 5. Remove the two plastic plugs. 6. Remove the screws that secure the pin to the frame. 7. Remove the pin. 8. Pull the knob to select and remove the pin from the frame. 9. Loosen the screw that fixing the support in to the plate.

6. ADJUSTMENTS AND TROUBLESHOOTING...

Description of the problem:	Cause:	Action:
The weight stack does not slide fluidly	*Problem caused by the poor lubrication of the bars or dirt that accumulates because of dust and oil.*	*Using a paper towel damp with ethyl alcohol, clean the weight stack bars of dust and any small incrustations.* *Put the crosspiece back on and put some drops of oil supplied in the Box Service on the cross-piece bushing.* *Move the crosspiece up and down making sure to evenly distribute the oil along the entire length of the bars.* *Dry the excess oil on the bushings with a dry cloth.*

WARNING: *IF THE BARS AND THE BUSHINGS ARE PARTICULARLY DIRTY, AND IF ONLY THE CROSSPIECE OR JUST ONE PLATE ARE SELECTED, THESE MAY NOT REST PROPERLY ON THE WEIGHT STACK AND REMAIN RAISED BY A FEW CENTIMETRES. THEREFORE IT WILL BE NECESSARY TO CAREFULLY CLEAN AND LUBRICATE THE BARS AND THE INNER PART OF THE BUSHING.*

WARNING: *DO NOT USE TOO MUCH OIL AND CAREFULLY DRY THE EXCESS SINCE IT COULD CAUSE DUST TO ACCUMULATE.*

Description of the problem:	Cause:	Action:
The weight stack cable is not taut	*Problem caused by the stretching of the weight stack cable, especially during equipment initial use.*	*Use the cable tension adjustment system:* *Check the tension of the cable by carrying out some repeated movements with a minimum weight and then slowly rest the crosspiece on the weight stack. The crosspiece should stay resting on the weight stack with the cable slightly strained.*
If the cable is new, before adjusting its tension carry out a couple of repeated movements with a maximum workload to tug and settle the cable.		
Adjusting roller play	*Problem caused by worn bushing or bearings.*	*Use the 2 bushing screws to adjust the play between the tube and the extrusion.* *Replace the bearings.*
Adjusting lever play	*Problem caused by the excessive play of the bearings.*	*Replace the bearings.*
Adjusting backrest play	*Problem caused by the worn bushings that guide the sliding extrusion of the backrest.*	*Move the backrest guide adjustment screw.*
The equipment is not level	*This problem may be due to the positioning of the machine on a surface that is not flat.*	*Use the foot adjustment.*

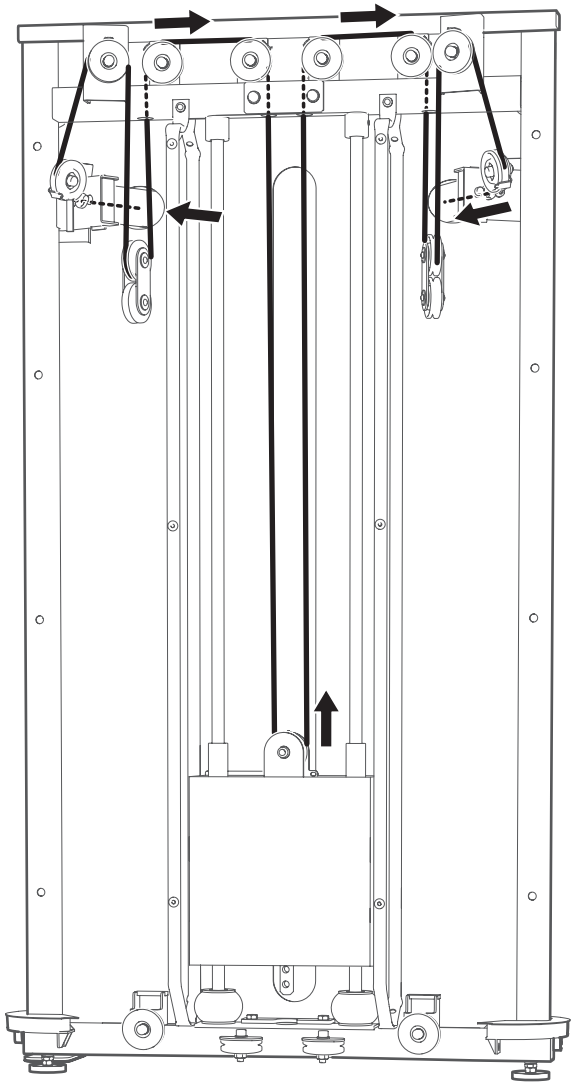
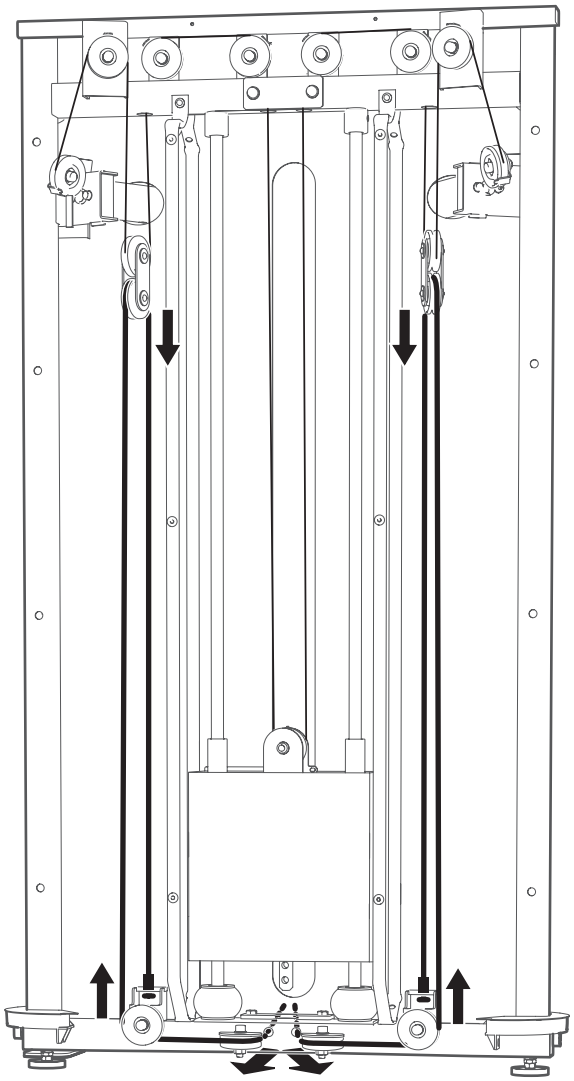
7. CABLES

7.1 LENGTH OF WEIGHT STACK CABLES

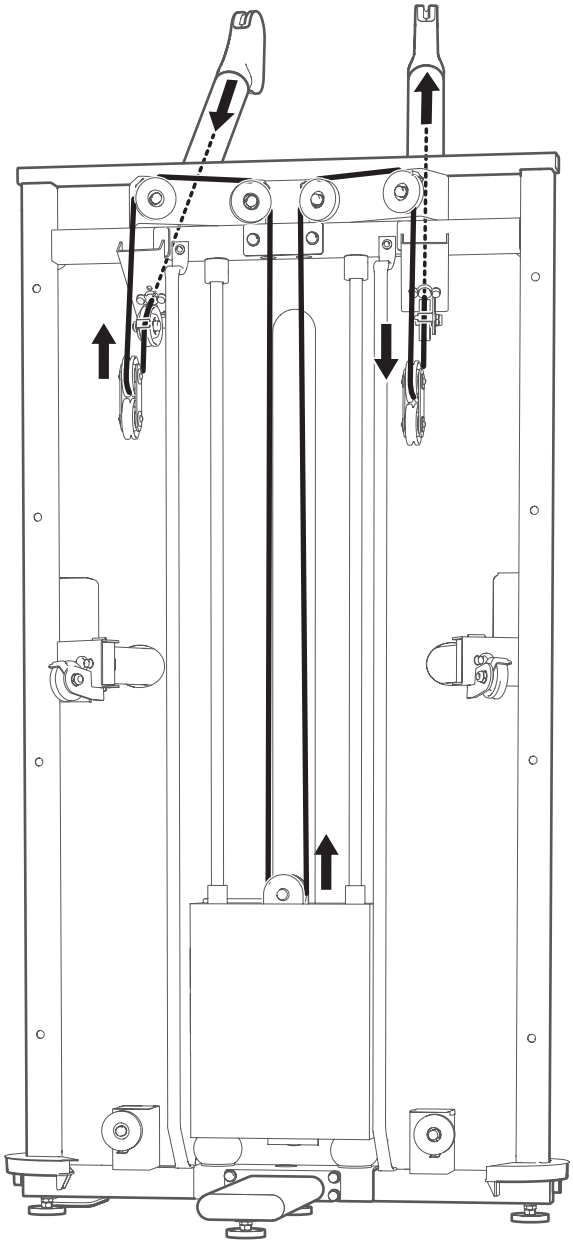
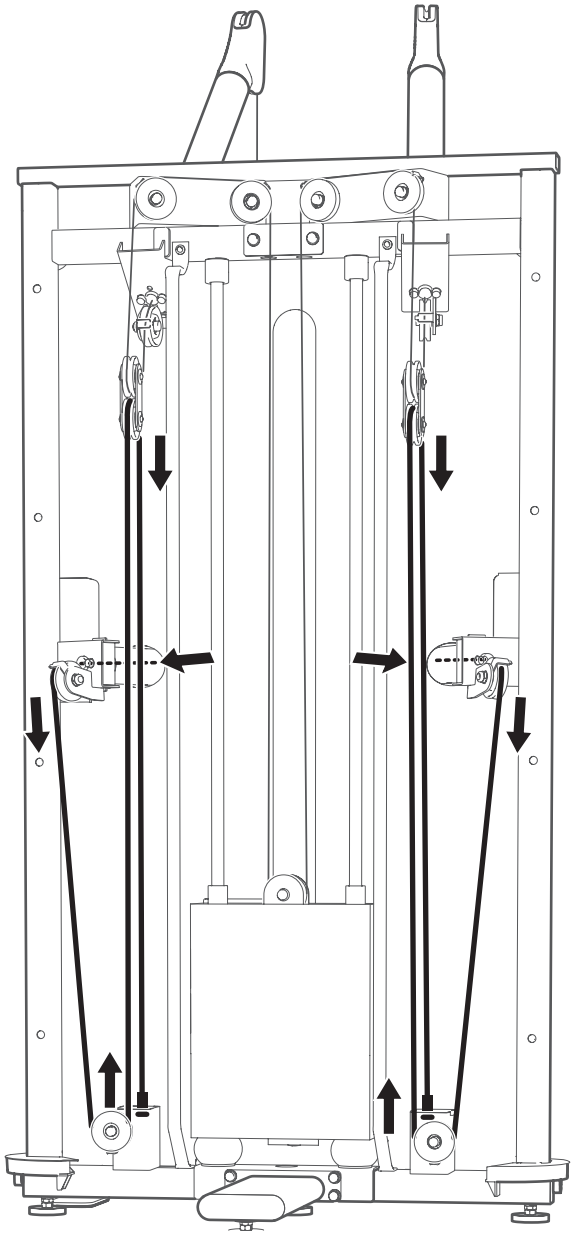
For the cable codes, refer only to the SPARE PARTS CATALOGUE, which can be downloaded from TG DIRECT.

Model	Length	Diameter Ø crimping
Press & Overhead Press	*5830 mm*	6.5 mm
	3660 mm	6.5 mm
High & Low pull	**5250 mm**	6.5 mm
	3660 mm	6.5 mm
Core & Leg Extension - Curl	**5890 mm**	6.5 mm
	4070 mm	6.5 mm
Leg Press	**3350 mm**	8.5 mm
	3790 mm	8.5 mm

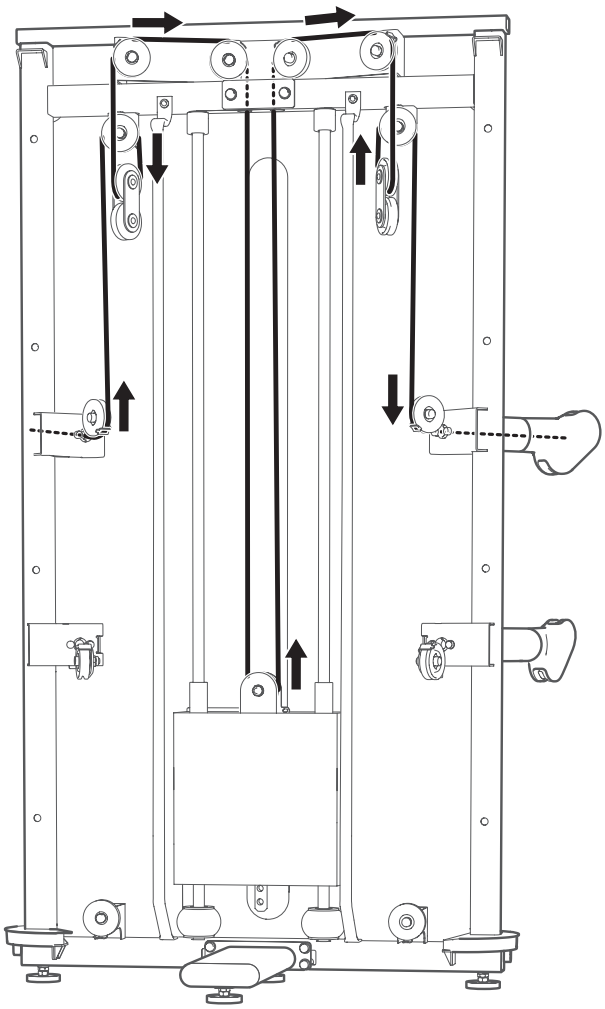
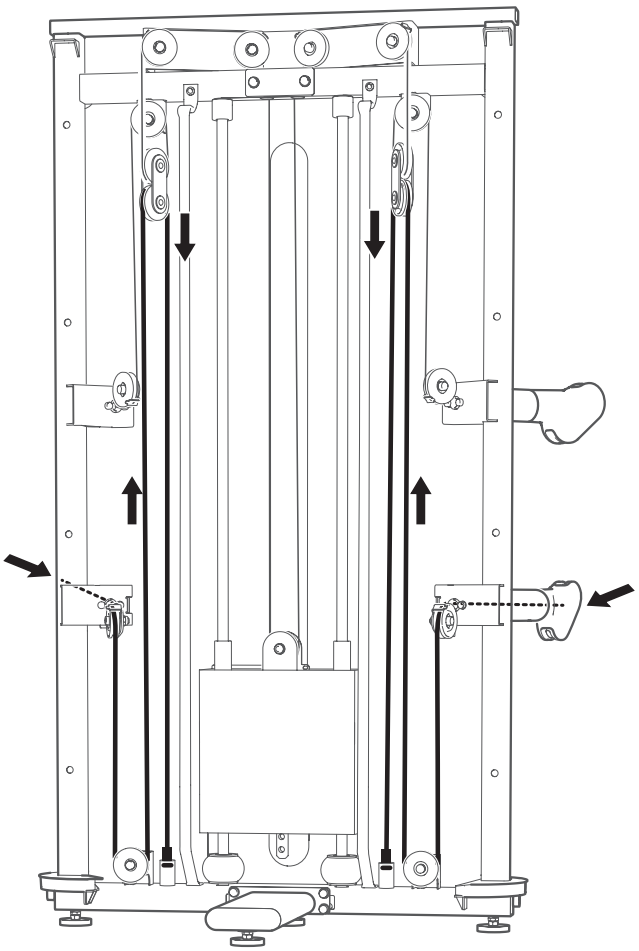
7.2 CORE - LEG CURL - LEG EXTENSION

TOP cable	BOTTOM cable
	

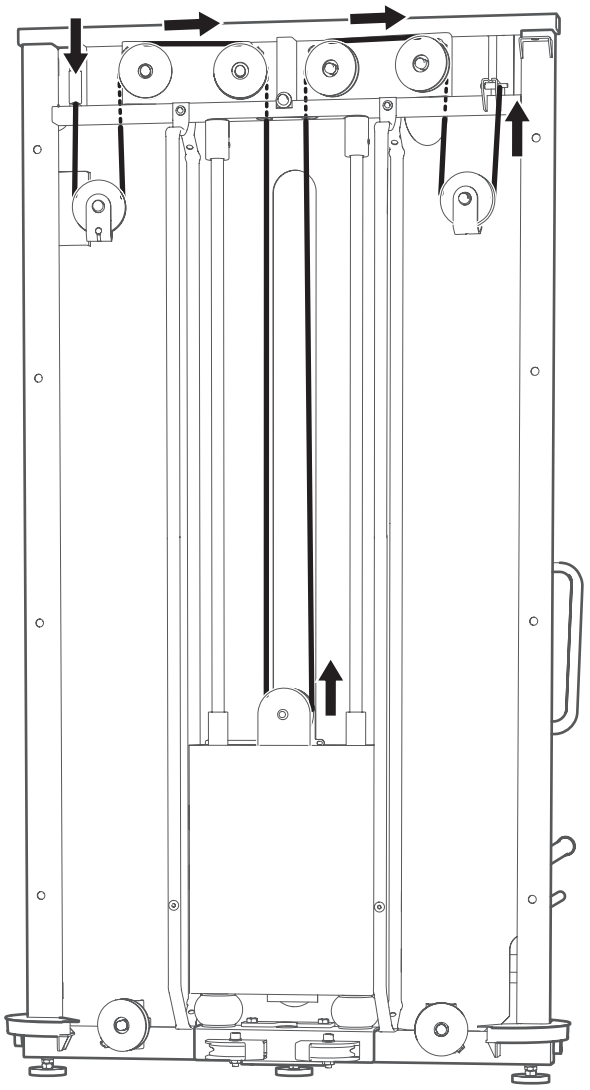
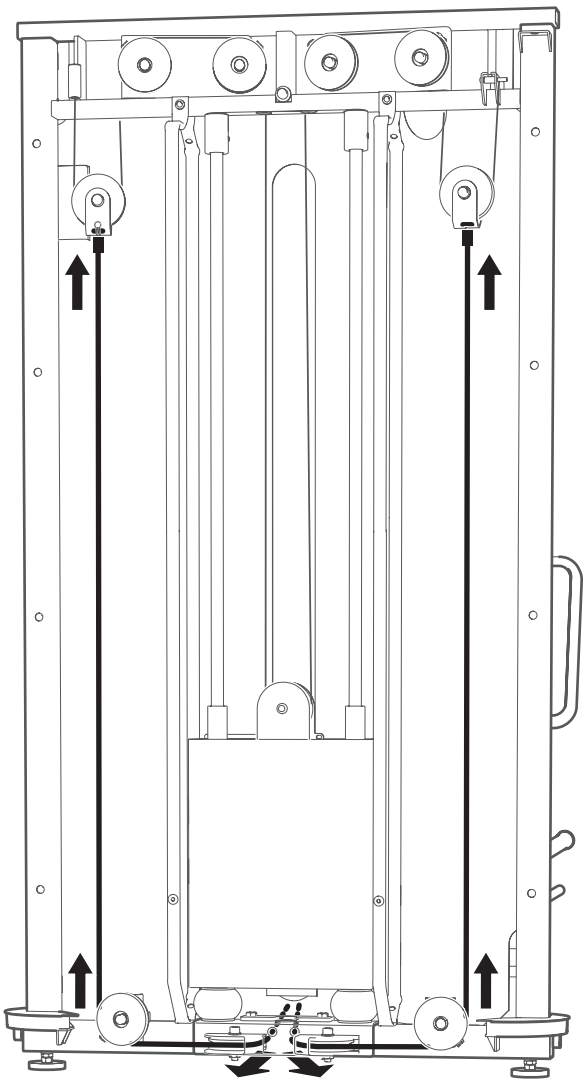
7.3 High Pull - Low Pull

TOP cable	BOTTOM cable
	

7.4 Press - Overhead Press

TOP cable	BOTTOM cable
	

7.5 Leg Press - Calf

TOP cable	BOTTOM cable
	

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8. PLANNED MAINTENANCE

To keep the equipment perfectly efficient, periodic planned maintenance must be carried out to avoid possible problems.

The operations can be divided according to the type of work and to the personnel who must perform it:

ROUTINE maintenance to be performed during preventive maintenance operations.	**MAJOR maintenance**
ROUTINE maintenance operations: can be performed by the owner of the machine and do not require any particular technical expertise; they are simple operations for the purposes of observing good hygiene practices. *ROUTINE maintenance operations must also be performed by Technogym service personnel during planned maintenance.* *Refer to the USER manual.*	*MAJOR maintenance operations: must only be performed by a Qualified Technician specially trained by Technogym to work on the specific equipment; authorised to carry out fine tuning of the equipment, maintenance and repair work, testing of operation and wear of the mechanical parts in order to ensure perfect and safe operation of the equipment.* *Refer to the PLANNED MAINTENANCE manual, which can be downloaded from TG DIRECT.*
ROUTINE MAINTENANCE: **No technical specialisation required.**	**MAJOR MAINTENANCE** **Performed ONLY by a Qualified Technician authorised by Technogym and in accordance with the maintenance envisaged in the preventive maintenance contract.**

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9. TOOLS TO BE USED

The tools listed in the TG SERVICE TOOLS BOX LIST, available on TG DIRECT, are required to perform all dismantling, adjustment and maintenance operations on the equipment.

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