ALE / AT UL DRIVER

RUN EXCITE - 2008

(D446 – D448 – D449)

SERVICE & MAINTENANCE MANUAL

REV. 1.3

TECHNOGYM®
The Wellness Company

The information contained in this manual is intended for QUALIFIED TECHNICIANS who have completed a specific TECHNOGYM training course and are authorized to perform machine start-up and adjustment procedures as well as extraordinary maintenance or repairs which require a thorough knowledge of the machine, its operation, its safety devices and working procedures.

CAREFULLY READ THE INFORMATION CONTAINED IN THIS MANUAL BEFORE PERFORMING ANY MAINTENANCE PROCEDURES ON THE MACHINE

DANGEROUS VOLTAGES PRESENT

NOTE
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1. GENERAL NOTICES

1.1. INTRODUCTION

This document is reserved for Technogym Service technicians, and is intended to provide authorized personnel with the necessary information to correctly carry out repairs and maintenance. A thorough knowledge of the technical information contained in this manual is essential for completing the professional training of the operator.

In order to facilitate consultation, the paragraphs are accompanied by schematic drawings which illustrate the procedure being described.

This manual contains notices and symbols which have a specific meanings:

WARNING: non observance may result in accident or injury.

ATTENTION: non observance may cause damage to the machine.

Information about the operation in progress.

Observation about the operation in progress.

1.2. RECOMMENDATIONS

Technogym recommends the following steps for planning repair procedures:

- Carefully evaluate the customer's description of the machine malfunction and ask all the necessary questions to clarify the symptoms of the problem.

- Clearly diagnose the causes of the problem. This manual provides the fundamental theoretical basis, which must then be integrated by personal experience and attendance at the training courses periodically offered by Technogym.

- Rationally plan the repair procedure so as to minimize the downtime necessary for procuring spare parts, preparing tools, etc.

    - Access the component to be repaired, avoiding any unnecessary operations. In this regard it will be useful to refer to the disassembling sequence described in this manual.

1.3. GENERAL RULES FOR REPAIR PROCEDURES

1. Always mark any parts or positions which may be confused with each other at the time of reassembly.

2. Use original Technogym spare parts and lubricants of the recommended brands.

3. Use special tools where specified.

4. Consult the Technical Newsletters, which may contain more up-to-date information on adjusts and maintenance than those contained in this manual.

5. Before starting the repair procedure, make sure that the recommended tools are available and in good condition.

6. For the procedures described in this manual, use only the specified tools.

☛ **The tool sizes quoted in this manual are expressed in mm.**

2. TECHNICAL CHARACTERISTICS

This manual will be taken into account only the models currently in production. As for the previous models do refer to specific technical assistance.

2.1. PRODUCT CODES

The machine codes take into account all the possible variants and options available for the products. The machine code, which does not include the SN, consists of 16 alphanumeric characters arranged as follows:

Caratteristic	Description	key to values
1,2,3	Machine type	**D44** = Run Excite
4	Product version	**6** = 500 **8** = 700 **9** = 900
5	Type of power supply	**E** =.ALE Driver (220Vac) **U** = AT UL Driver (100-220Vac) **M** = Medical Device (220Vac)
6	Type of Display	**L** = LED **D** = Active WTV + Digital TV
7	Integrated accesories	**N** = None **T** = TGS reader **I** = iPod **A** = TGS+iPod Docking Station
8, 9	Color of the frame	**AL** = Alluminium
10, 11	Color of the paddings	**00** = None
12	Color of the guards	**0** = None
13	TV standard receiver	**0** = None **D** = DVB-T **A** = ATSC **I** = ISDB-T
14,15	Language	**00** = WTV models **BR** = Portoguese **CN** = Chineese **DA** = Danish **DE** = German **ES** = Spanish **FR** = French **IT** = Italian **JP** = Jiapanese **NL** = Dutch **RU** = Russian **TR** = Turkish **UK** = British english **US** = American english

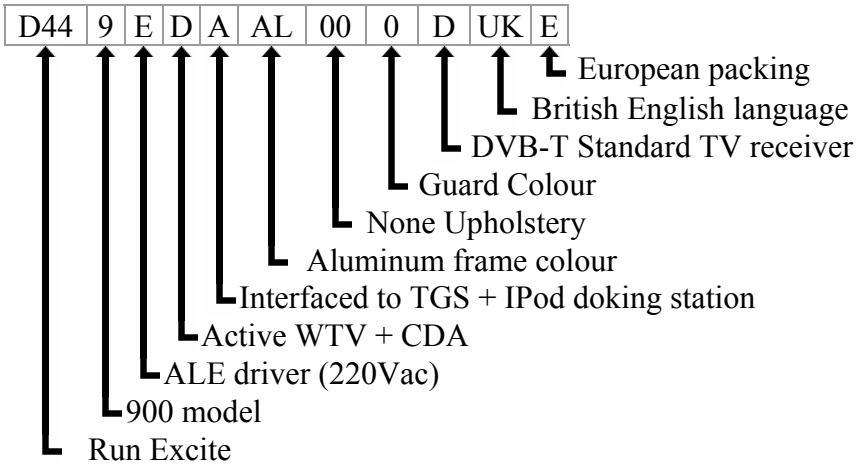
Caratteristic	Description	key to values
16	Type of packaging	**I** = Italy **E** = International Standard **S** = Overseas International **U** = Overseas US / JP

The above coding is used for the entire Excite line. For this reason, options not relevant to the Run machine have also been included.

For example, a possible product code would be:

D449EDAAL000DUKE

which is interpreted as follows:



2.2. AVAILABLE VERSION

Is avalable 5 different version of equipement, identified by:

- ***Run 500***: *Equipment with LED display*
- ***Run 700***: *Equipment with LED display*
- ***Run 700E***: *Equipment with Wellness TV Touch screen display*
- ***Run 900***: *Equipment with LED display*
- ***Run 900E***: *Equipment with Wellness TV Touch screen display*

all of which have the same structure but are differentiated by certain features and functions.

SPECIFICATIONS	***500***	***700***	***700E***	***900***	***900E***
Power requirement	*180-265Vac ("E" vers.); 90-265Vac ("U" vers.); 50-60Hz It is advisable 16A dedicated socket each machine*				
Power Engine (peak)	*6.0 HP (AC) 4400 Watt*				
Stand-by consumption (LED)	*11.3 VA (110 Vac) 21.6 VA (220 Vac)*				
Stand-by consumption (WTV)	*43.7 VA (110 Vac) 61.5 VA (220 Vac)*				
Max energetic comsumption	*1800W*	*2200W*		*2500W*	
Fast track Control	*NO*	*YES*			
Speed	*0.8-20Km/h (0.5-11.2 mph)*	*0.8-23Km/h (0.5-13.8 mph)*		*0.8-25Km/h (0.5-15.6 mph)*	
Incline	*0-15%*			*018%*	
Max user weight	*220Kg*				
Fast track Control	*NO*	*YES*			
HR monitoring	*Hand sensor, Telemetry*				
Goal Oriented Display	*YES*				
Calorie Coach	*YES*				
Runner Detection System	*YES*				
Fan Display integrated	*NO*	*YES*			
Plug&Play System	*YES*				
Wellness System	*Optional*				
Goal Training®	*Time, Distance, Calorie*				
Total number of program:	*11 - Quick Start, Goal, CPR, Profili 6.*	*14-Quick Start, Goal, CPR, Profili 6, Manual, Training zone, Weight Loss*		*14 - Quick Start, Goal, CPR, Profili 6, Manual, Training zone, Weight Loss*	*16 - Quick Start, Goal, CPR, Profili 6, Customer Speed, Custom Pace, Ripetute, Training Zone, Weight Loss*

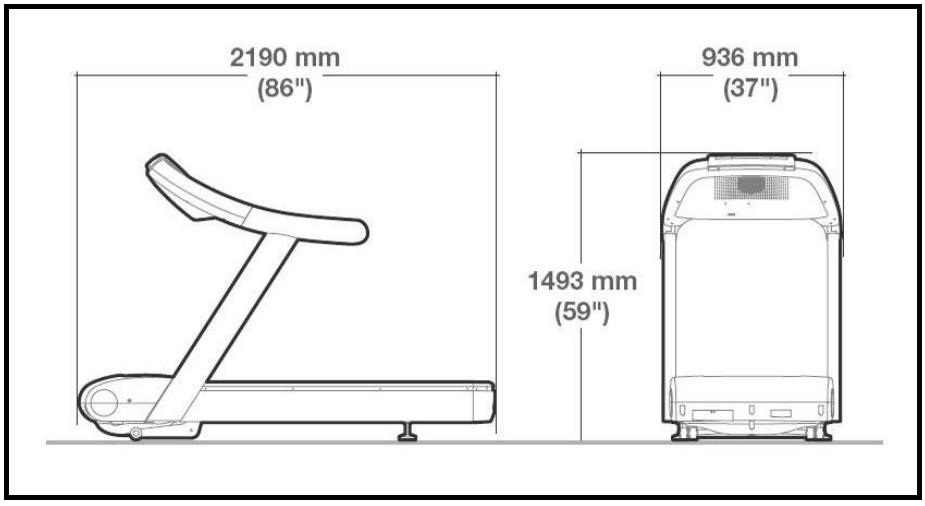
SPECIFICATIONS	*500*	*700*	*700E*	*900*	*900E*
Sub maximal test:	*Fitness Test*	*Fitness Test*		*3 – Fitness test, Single stage, Multistage*	
Maximal test:	*NO*			*8 – Test massimale Technogym, Test massimale custom, Bruce, Bruce modificato, Naughton, Balke e Ware, Astrand modificato, Costill e Fox.*	
Military test: (US Army)	*NO*			*7 – Gerkin Protocol, Air Force PRT, Army PFT, Marine Corps PFT, Federal Law Enforcement PEB*	
Language available:	*Inglese, italiano, Tedesco, Spagnolo, Francese, Olandese, Portoghese, Giapponese, Cinese, Russo, Tusco, Danese*				

2.3. AMBIENT SPECIFICATIONS

Temperature	*Operating*	*from 5° to 35° C*
	Storage	*from -10° to 70° C*
Humidity	*Operating*	*from 30% to 80% non-condensing*
	Storage	*from 5% to 85% non-condensing*

2.4. MECHANICAL CHARACTERISTICS

Dimension (WxLxH)	940x2190x1500 mm - (37”x86”x59”)
Running susface (WxL)	1520x520 mm - (20.5”x60”)
Weight	195 Kg - (390 lbs)
Running surface H from round:	280 mm - (8”)



2.5. CONFORMITY TO REGULATIONS

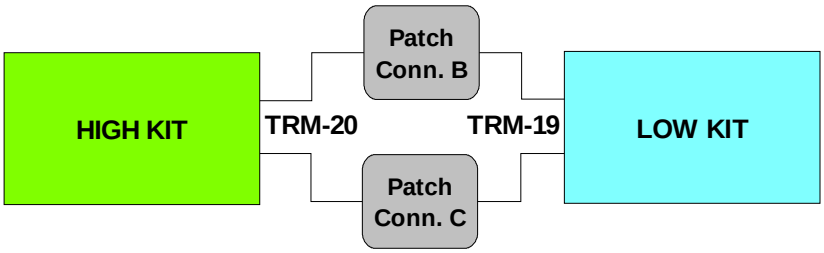
	Europe	***Medical Europe***	***USA***
Standards	EN60335-1 EN61000-6-1 EN55022 classe A EN61000-3-2 EN61000-3-3 EN957-1 EN957-6 classe SB	EN60601-1 EN60601-1-2 EN957-1 EN957-6 classe SB	UL 2601-1 FCC15
Directives	73/23/CEE 89/336/CEE 98/37/CEE	93/42/CEE	

Inoltre:

- *Risk category under 93/42/CEE :* ***Class IIA****;*
- *Electrical isolation class under EN60601-1:* ***Class I;***
- *Applied parts:* ***Type B*** *(not for European models)****;***
- *Applied parts of the heart rate monitor transmitter:* ***Type BF****;*
- *Protection rating:* ***IP20.***

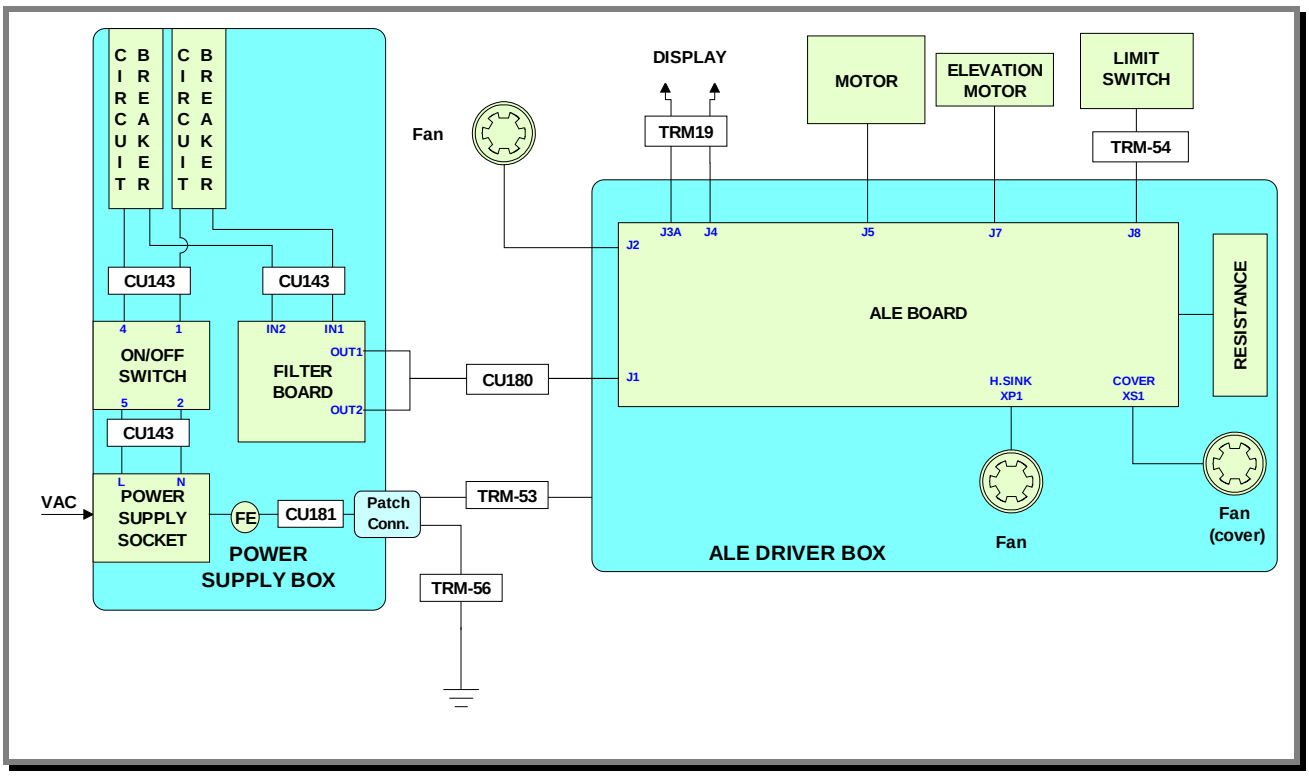
2.6. WIRING DIAGRAM

The machine consists of 2 assemblies which are connected together as illustrated below:

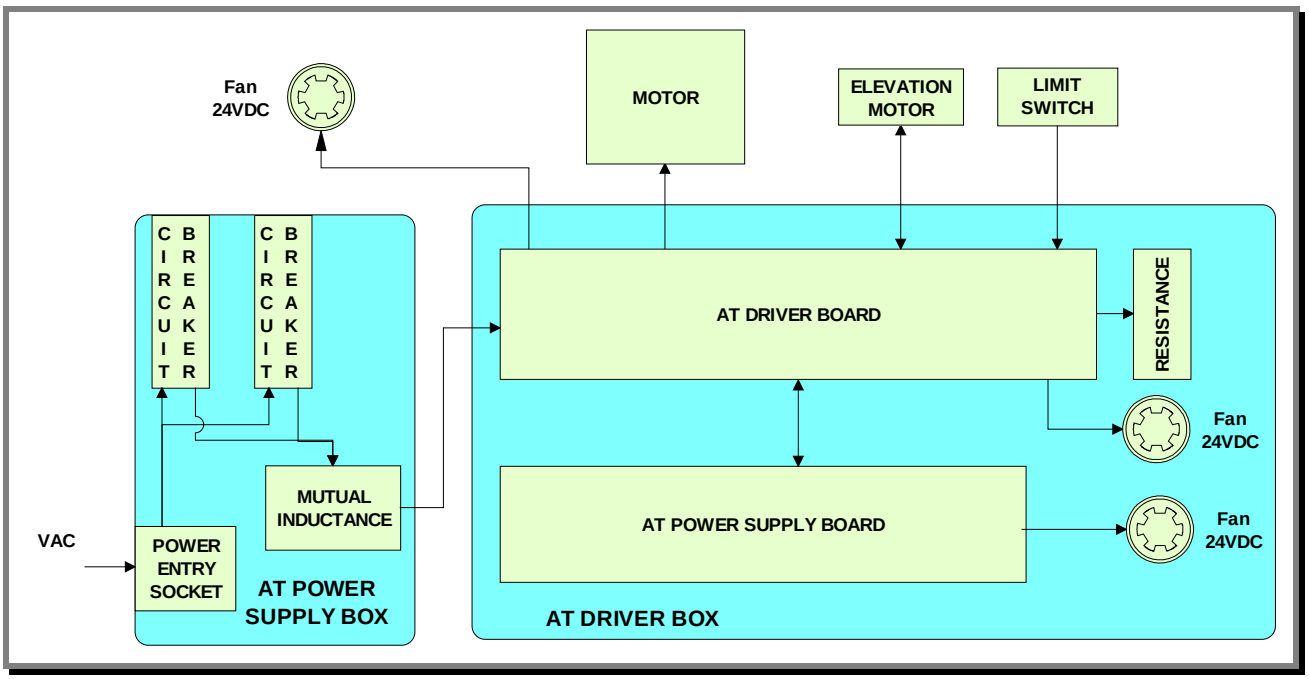


Depending on the model, these 2 assemblies can have the different configurations illustrated below.

2.6.1. LOW KIT – ALE

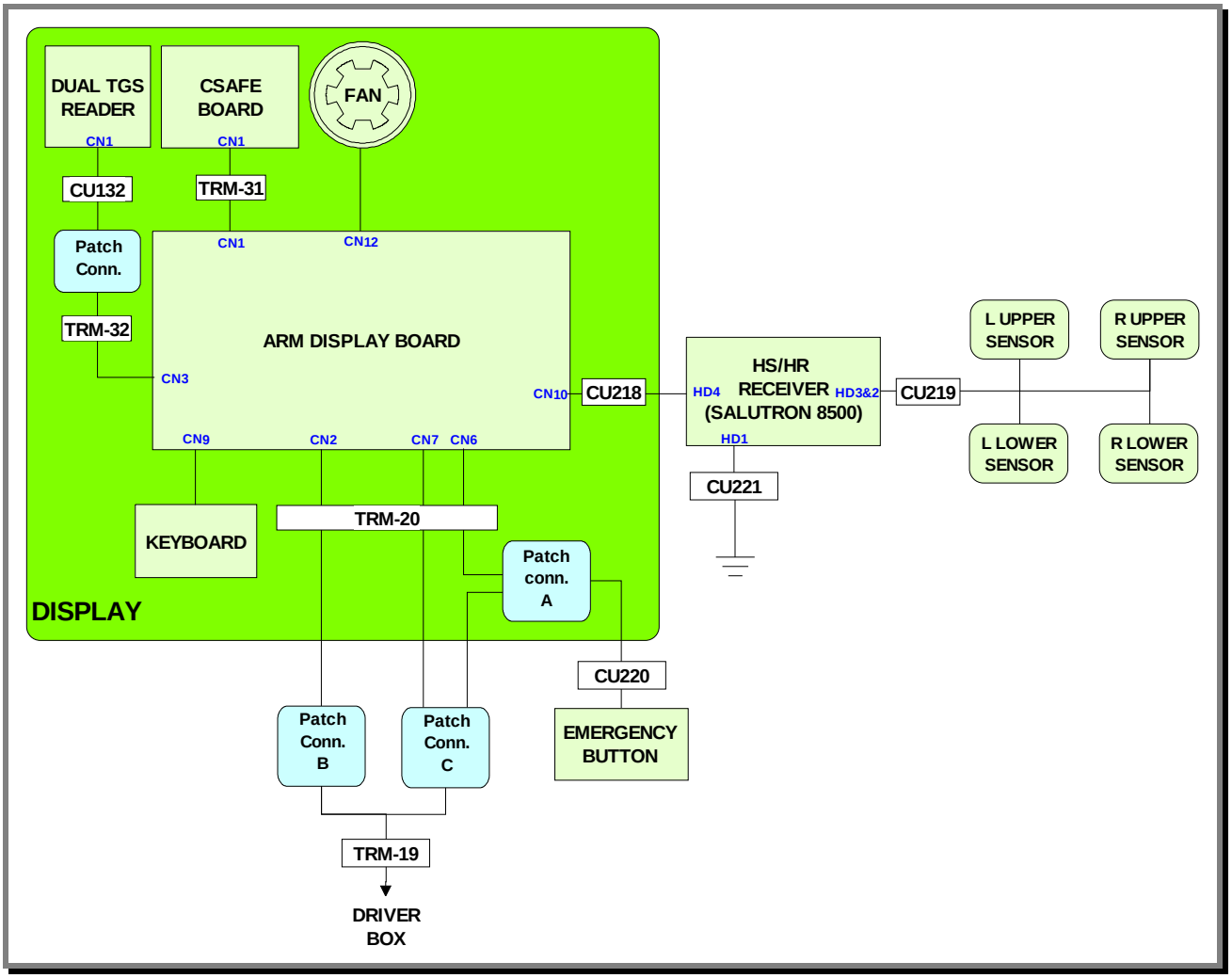


2.6.2. LOW KIT – AT UL

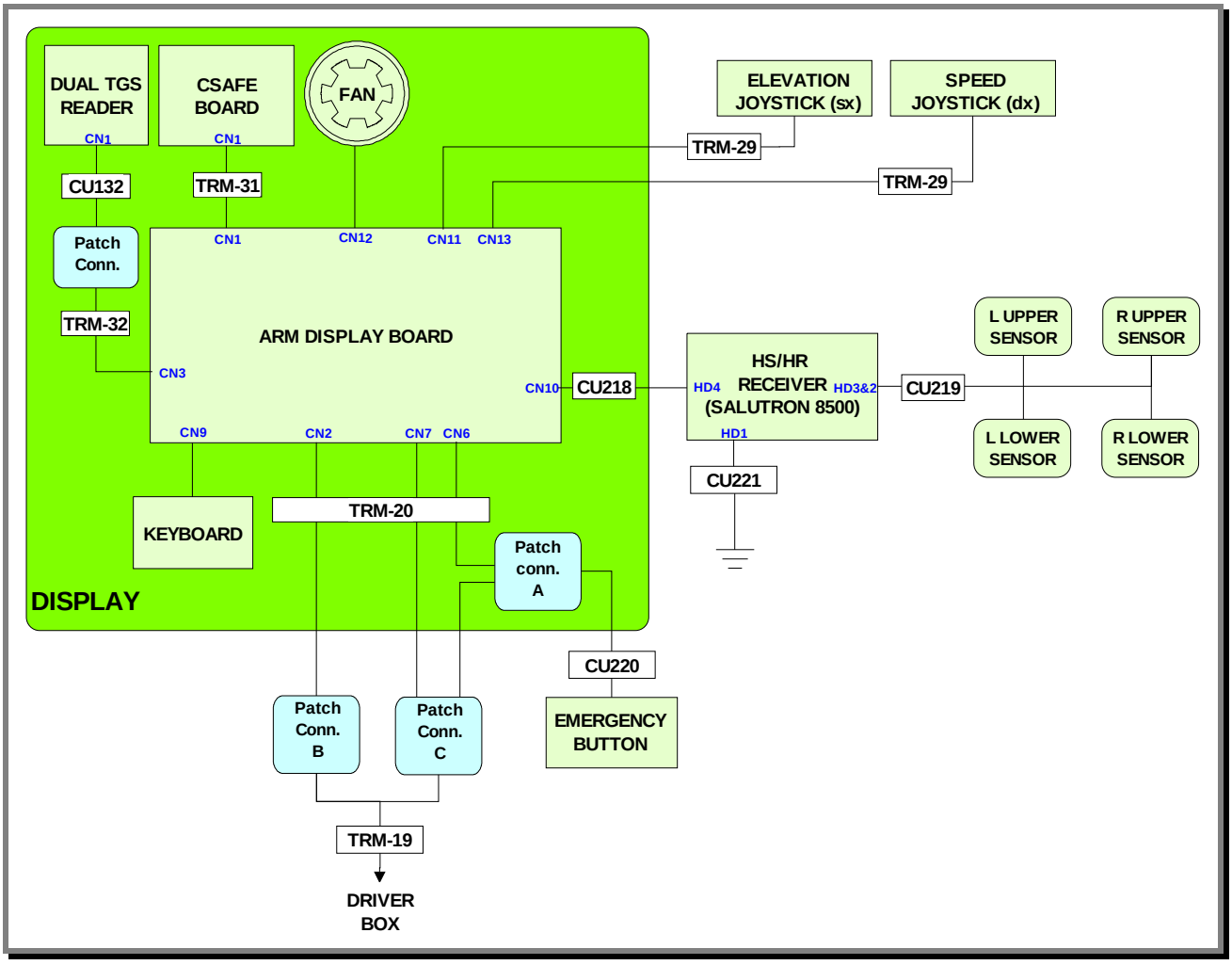


2.6.3. HIGH KIT: LED VERSION –ARM BOARD

2.6.3.1. 500 model

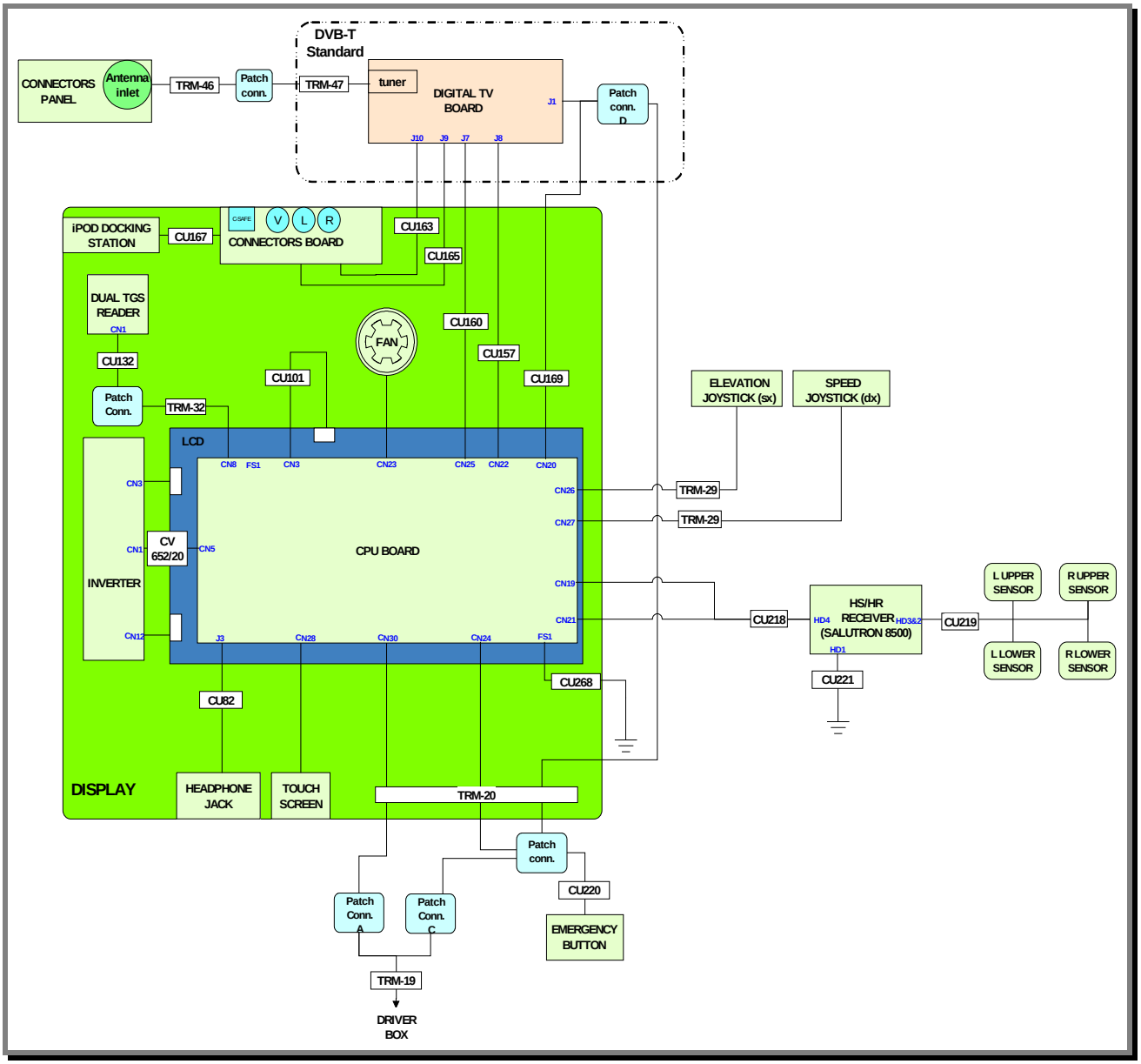


2.6.3.2. 900 and 700 Models

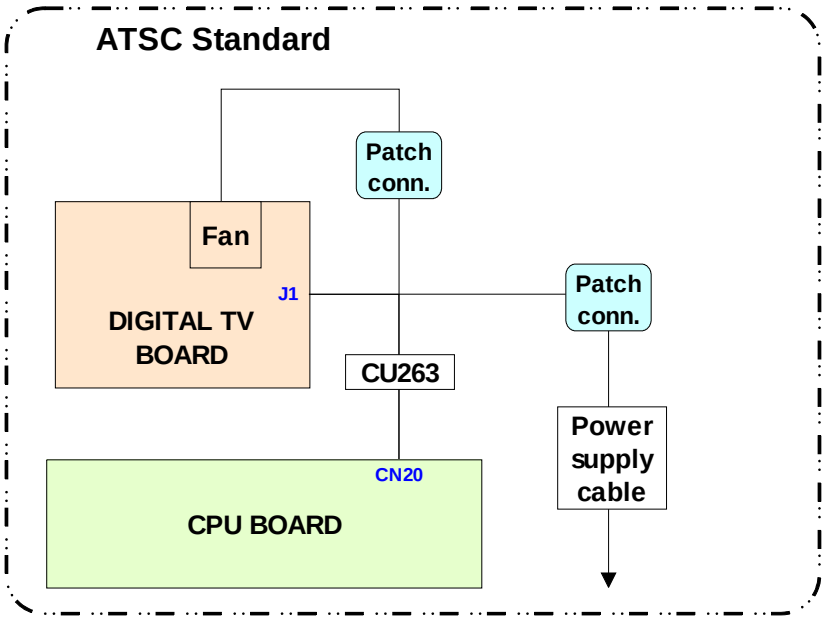


2.6.4. HIGH KIT: WELLNESS TV DIGITAL VERSION – NEW UB

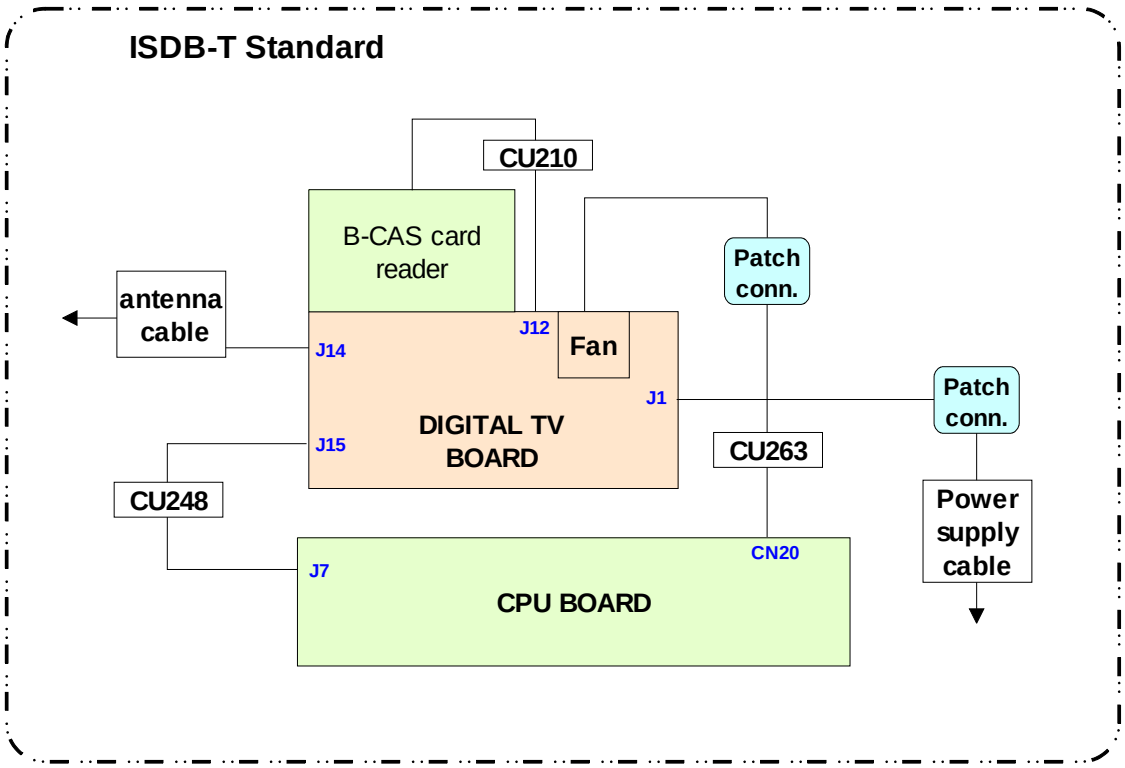
2.6.4.1. 700 and 900 models DVB-T Digital Tuner



2.6.4.2. 700 and 900 models ATSC Digital Tuner



2.6.4.3. 700 and 900 models ISDB-T Digital Tuner



2.7. CABLES

The connectors indicated in the following pages, refer to 700 model's LED Boards, unless otherwise indicated.

The color of the cables can be changed, refer in particular to the Pin Out.

2.7.1. TRM CABLES

TRM-19: Low Driver-Display communication and power supply cable (ALE/AT UL driver board - Patch connectors)			
Patch conn. B	**Signal**	**Color**	**ALE/AT UL driver J4**
1	*NC*	*Green-White*	*1*
2	*NC*	*Green*	*2*
3	*Digital Gnd*	*Orange-White*	*3*
4	*Download*	*Blue*	*4*
5	*Reset*	*Blue-White*	*5*
6	*Digital Gnd*	*Orange*	*6*
7	*485 Tx/Rx +*	*Brown-White*	*7*
8	*485 Tx/Rx -*	*Brown*	*8*
Patch conn. C	**Signal**	**Color**	**ALE/AT UL driver J3**
2	*Gnd +12 Vdc*	*Gray*	*2*
3	*Gnd +5 Vdc*	*Black*	*3*
4	*-sensing +5 Vdc*	*White*	*4*
6	*+12 Vdc*	*Orange*	*6*
7	*+5 Vdc*	*Red*	*7*
8	*+sensing +5 Vdc*	*Yellow*	*8*
9	*Emergency*	*Purple*	*9*
10	*Reset*	*Blue*	*10*
11	*+12 Vdc isolated*	*Red*	*11*
12	*Gnd +12 Vdc isolated*	*Black*	*12*

TRM-20: Low Driver-Display communication and power supply cable (Patch connector – Display Board – Patch connector)					
Patch conn. C	**Signal**	**Color**	**Display Board**		**Patch conn. A**
			CN7	**CN6**	
2	*Gnd +12 Vdc*	*Gray*	*2*	*-*	*-*
3	*Gnd +5 Vdc*	*Black*	*3*	*-*	*-*
4	*-sensing +5 Vdc*	*White*	*4*	*-*	*-*
6	*+12 Vdc*	*Orange*	*6*	*-*	*-*
7	*+5 Vdc*	*Red*	*7*	*-*	*-*
8	*+sensing +5 Vdc*	*Yellow*	*8*	*-*	*-*
9	*Emergency*	*Purple*	*-*	*4*	*-*
10	*Reset*	*Blue*	*-*	*5*	*-*
11	*+12 Vdc isolated*	*Red*	*-*	*1*	*-*
12	*Gnd +12 Vdc isolated*	*Black*	*-*	*6*	*-*
		Black	*-*	*-*	*1*
-	*HW Emergency*	*Gray*	*-*	*2*	*2*
-	*SW Emergency*	*Gray*	*-*	*3*	
Patch conn. B	**Signal**	**Color**	**Display Board CN2**		
1	*NC*	*Green-White*	*1*		
2	*NC*	*Green*	*2*		
3	*Digital Gnd*	*Orange-White*	*3*		
4	*Download*	*Blue*	*4*		
5	*Reset*	*Blue-White*	*5*		
6	*Digital Gnd*	*Orange*	*6*		
7	*485 Tx/Rx +*	*Brown-White*	*7*		
8	*485 Tx/Rx -*	*Brown*	*8*		

TRM-29: Joystick cable (Display Board/CPU – Micro Joystick (↑/↓ or +/-))				
Display Board: CN11/CN13 CPU board: CN26/CN27	**Signal**	**Color**	**Micro ↑/+**	**Micro ↓/-**
1	*Value 1 reference*	*White*	*-*	*C*
2	*Value - (incline ↓ or speed -)*	*Brown*	*-*	*NA*
3	*Value 2 reference*	*Green*	*C*	*-*
4	*Value + (incline ↑ or speed +)*	*Yellow*	*NA*	*-*

TRM-31: CSafe cable board (Display Board – CSafe Board)			
Display Board CN1	**Signal**	**Color**	**CSafe Board CN1**
1	*Digital #1*	*Flat cable*	*1*
...	*...*	*...*	*...*
14	*Digital #14*	*Flat cable*	*14*

TRM-32: TGS reader Signal Cable (Display Board/CPU – TGS reader)			
Disp. Board: CN3 CPU board: CN8	**Signal**	**Color**	**TGS reader CN1**
1	*+12 Vdc power supply*	*Yellow*	*1*
3	*Rx*	*White*	*8*
5	*Tx*	*Green*	*7*
9	*Gnd*	*Brown*	*3*

TRM-54: Limit Switch cable (ALE/AT UL Driver – Linit Switch)			
ALE/AT UL driver J8	**Signal**	**Color**	**Limit Switch**
3	*Contact*	*White*	*Faston*
8	*Reference*	*Brown*	*Faston*

2.7.2. CU CABLES

CU127: CSafe/USB input cable (CPU Board – AUX input board)			
CPU Board CN25	**Signal**	**Color**	**AUX input board CN6**
1	*Digital #1*	*Flat cable*	*1*
…	*…*	*…*	*…*
14	*Digital #14*	*Flat cable*	*14*

CU132: TGS signal cable (Patch Conn.– Dual TGS reader)			
Patch	**Signal**	**Color**	**Dual TGS reader CN1**
1	*Power supply +12 Vdc*	*Black*	*1*
8	*RX*	*Green*	*2*
7	*TX*	*Black*	*3*
3	*GND*	*Black*	*8*

CU157: AUX signal cable (CPU Board –Digital TV board)			
CPU Board CN22	**Signal**	**Color**	**Digital TV Board J8**
1	*GND video*	*Black*	*7*
2	*Video signal*	*White*	*6*
3	*GND audio L*	*Black*	*3*
4	*Audio L signal*	*White*	*2*
5	*Audio R signal*	*White*	*4*
6	*GND audio R*	*Black*	*5*

CU160: CSafe cable signal – iPod – Video (CPU Board– Digital TV Board)			
CPU Board CN25	**Signal**	**Color**	**Digital TV Board J7**
1	*+8Vdc*	*Black*	*1*
2	*+8Vdc*	*Black*	*2*
3	*+8Vdc*	*Black*	*3*
6	*RX - TX*	*Black*	*7*
7	*TX - RX*	*Black*	*6*
8	*CTS*	*Black*	*8*
9	*+5Vdc*	*Black*	*9*
10	*+5Vdc*	*Black*	*10*
11	*GND CDA presence*	*Black*	*11*
12	*GND play presence*	*Black*	*12*
13	*GND*	*Black*	*13*
14	*GND*	*Black*	*14*

CU163: Signals Audio/Video cables (Digital TV Board – AUX Board)			
Digital TV Board J10	**Signal**	**Color**	**AUX Board**
1	GND video	Black	1
2	Signal Video	Black	2
3	GND audio L	Black	3
4	Audio L signal	Black	4
5	Audio R signal	Black	5
6	GND audio R	Black	6
-	n.c.	Black	7

CU165: Cavo di segnale CSafe – iPod – Video (Scheda TV Digitale – Scheda AUX)			
Digital TV Board J9	**Signal**	**Color**	**AUX Board**
1	+8Vdc	Black	1
2	+8Vdc	Black	2
3	+8Vdc	Black	3
6	RX	Black	7
7	TX	Black	6
8	CTS	Black	8
9	+5Vdc	Black	9
10	+5Vdc	Black	10
11	GND CDA presence	Black	11
12	GND play presence	Black	12
13	GND	Black	13
14	GND	Black	14
15	n.c.	Black	-

CU167: iPod signal cable (AUX Board– Docking Station)			
AUX Board	**Signal**	**Color**	**Docking Station**
1	+V bus USB	Black	14
2	GND bus USB	Black	13
3	TX - RX	Black	11
4	RX – TX	Black	12
5	CTS	Black	10
6	+5Vdc	Black	9
7	GND	Black	8
8	GND	Black	7
9	Gnd video	Black	6
10	Video Signal	Black	5
11	Gnd audio L	Black	4
12	Audio L signal	Black	3
13	Audio R signal	Black	2
14	Gnd audio R	Black	1

CU169: Display power supply cable (CPU Board – Digital TV Board– Patch)				
Patch	**Signal**	**Color**	**CPU Board CN20**	**Digital TV Board J1**
1	GND	Yellow/Green	1	-
2	GND 12Vdc	Black	2	-
3	GND 5Vdc	Black	-	2
4	sensing GND 5V	Black	-	4
5	n.c.	-	-	-
6	+12Vdc	Red	6	-
7	+5 Vdc	Red	-	1
8	sensing + 5V	Red	-	3

CU180: High tension power supply cable (Filter Board –AL/AT ULE Driver)			
Filter Board	**Signal**	**Color**	**ALE/AT UL driver J1**
OUT	Line	Brown	1
OUT	Neutral	Blue	2

CU210: B-CAS Board signal cable (Digital TV Board –B-CAS board card reader)			
Digital TV Board	**Signal**	**Color**	**B-CAS board card reader**
1	n.c.	-	-
2	n.c.	-	-
3	Data out	Black	4
4	Clock	Black	6
5	n.c.	-	-
6	Reset	Black	2
7	GND	Black	5
8	+5 Vdc	Black	1
9	GND	Black	7
10	Card detection	Black	8

CU218: HS/HR receiver signal cable (HS/HR receiver- Display Board/CPU)				
HS/HR receiver HD4	**Signal**	**Color**	**Display Board:CN10 CPU:CN21**	**CPU Board CN19**
1	Reference	Green	6	-
2	Power Supply +5 Vdc	Brown	1	-
3	Pulse Out	White	5	-
-	RST Cardio	Black	4	7

CU219: Hand Sensor cable (HS/HR receiver– Hand Sensor)						
HS/HR receiver HD3&2	Signal	Color	Sensors			
			DX 1	DX 2	SX 1	SX 2
1	Right sensor signal	White	up	up	-	-
2	Sensors signal reference	Brown	down	down	-	-
3	GND	Shield	-	-	-	-
4	Left sensor signal	White	-	-	up	up
5	Sensors signal reference	Brown	-	-	down	down
6	GND	Shield	-	-	-	-

CU220: Emergency button cable (Patch – Emergency button)			
Patch	Signal	Color	Emergency button
1	Power Supply +12 Vdc	White	Faston Com 1
2	RX	Brown	Faston Com. 2

CU263: Display power supply cable (CPU board – Digital TV Board–Patch)					
Connettore Volante	Signal	Color	CPU board CN20	Digita TV board J1	Fan
1	GND	Yellow/Green	1	-	
2	GND 12Vdc	Black	2	-	2
3	GND 5Vdc	Black	-	2	
4	sensing GND 5V	Black	-	4	
5	n.c.	-	-	-	
6	+12Vdc	Red	6	-	1
7	+5 Vdc	Red	-	1	
8	sensing + 5V	Red	-	3	

2.7.3. OTHER CABLES

CV-652/20: Inverter supply cable (CPU board - Inverter)			
CPU board CN5	**Signal**	**Color**	**Inverter CN1**
9	*+12Vdc*	*Black*	*1*
1	*Reference GND*	*Black*	*2*
5	*EN (Power Supply +3.3 Vdc)*	*Black*	*3*
8	*Reference GND*	*Black*	*4*
10	*+12Vdc*	*Black*	*5*
3	*Reference GND*	*Black*	*6*

Slope motor cable (Slope Motor–ALE/AT UL driver)			
Slope Motor	**Signal**	**Color**	**ALE/AT UL driver J7**
cable connected internally	*Power Supply +12 Vdc*	*Black*	*1*
	Power Supply -12 Vdc	*Black*	*2*
	n.c.	-	*3*
	GND	*Black*	*4*
	Power Supply +5 Vdc	*Rosso*	*5*
	Impulse OUT	*Bianco*	*6*

Belt motor cable (ALE/AT UL driver – Motor)			
ALE/AT UL driver J5	**Signal**	**Color**	**Motor**
1	*U*	*Black 1*	*cable connected internally*
2	*V*	*Black 2*	
3	*W*	*Black 3*	
4	thermal cutout +	*Black 4*	
5	thermal cutout -	*Black 5*	
6	*Gnd*	*Black 6*	

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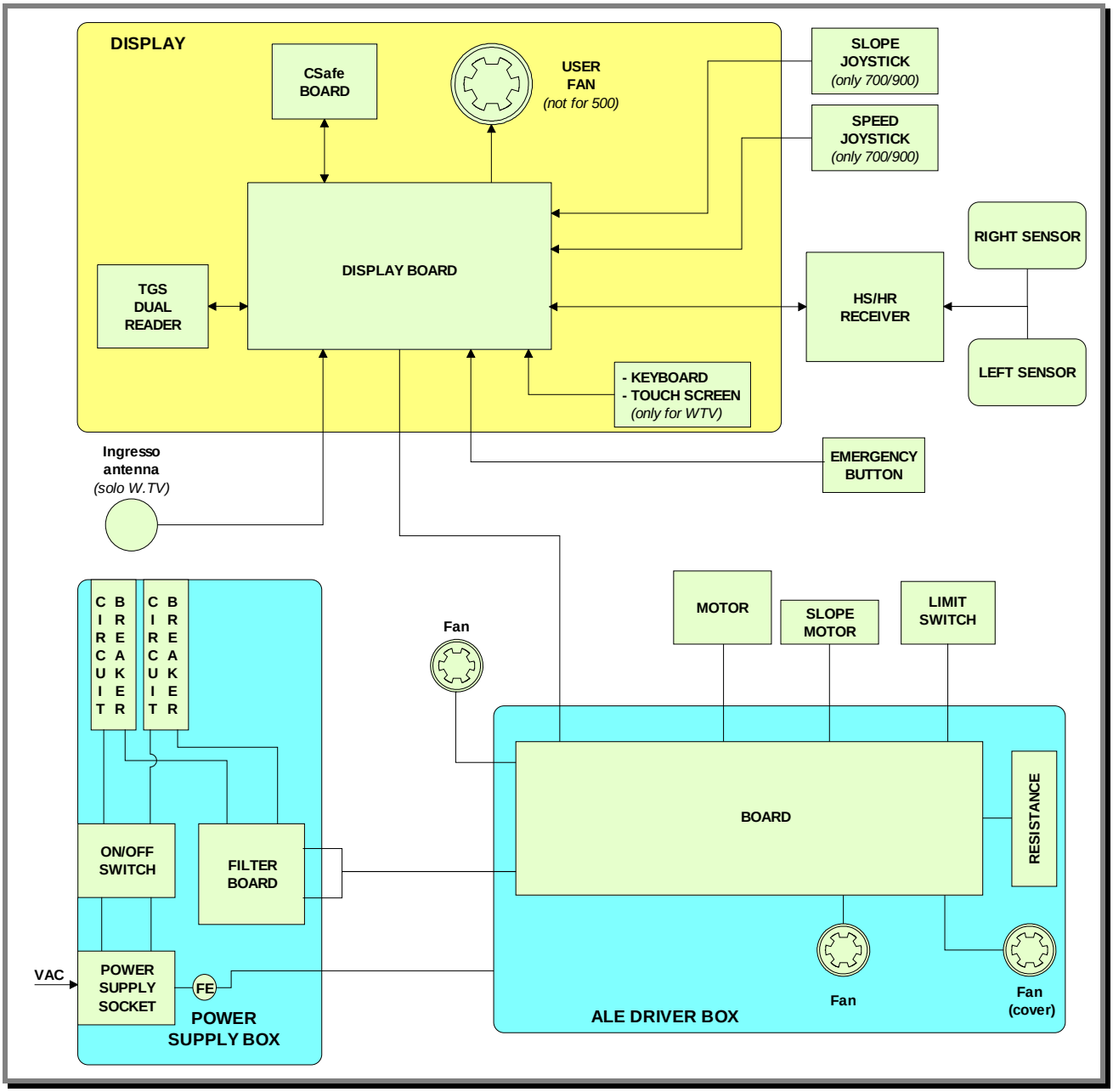
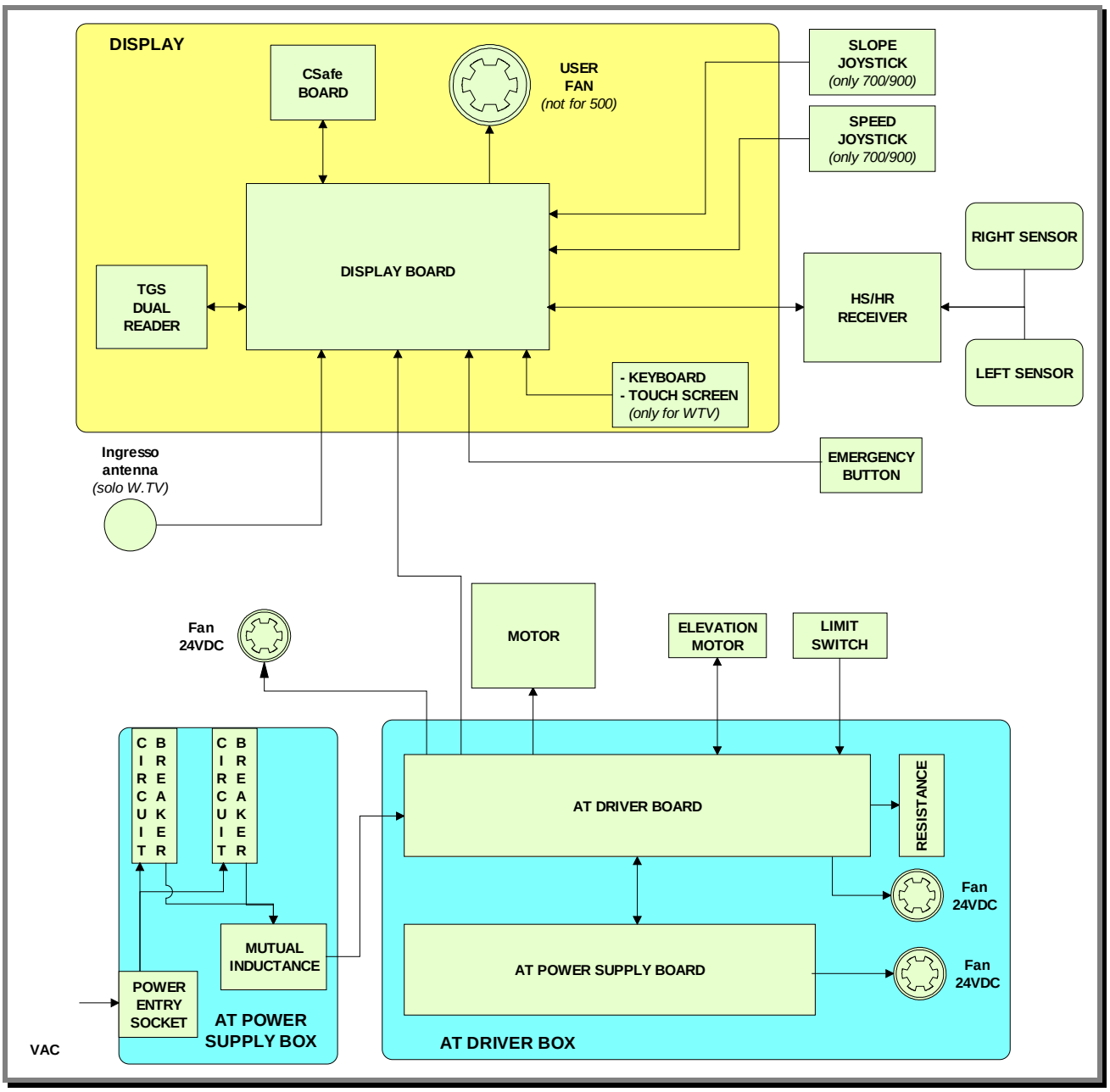
3. PRINCIPLES OF OPERATION

3.1. BLOCK DIAGRAM

3.1.1. BLOCK DIAGRAM ALE DRIVER



3.1.2. BLOCK DIAGRAM AT UL DRIVER



3.1.3. 500 LED ARM DISPLAY BOARD

The display contains only one board which comprises the CPU, an ARM microprocessor, its logic circuits and a FLASH EPROM containing the operating program for the machine moreover, acts as the interconnection hub for all the components of the display and serves as the point of connection with the ALE/AT UL driver.

The main functions of the board are:

- Manage and process signals from:
  - *Keyboard;*
  - *HS/HR receiver;*
  - *Csafe board;*
  - *TGS reader (where present).*
- Distributes to the display the voltages received from the driver box;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling the belt and elevation motors;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling emergency signals;
- Illuminates the LEDs and 7-segment displays used for the exercise feedback.

The board includes the following indicator LEDs:

LED mane	Color	Description
LED1	**Yellow**	*if ON the **+12Vdc** supply provided by the driver box, correctly reaches the board.*
LED2	**Green**	*if ON the **+5Vdc** supply provided by the AT UL driver box, correctly reaches the board.*

3.1.4. 700/900 LED ARM DISPLAY BOARD

The display contains only one board which comprises the CPU, an ARM microprocessor, its logic circuits and a FLASH EPROM containing the operating program for the machine moreover, acts as the interconnection hub for all the components of the display and serves as the point of connection with the ALE/AT UL driver.

The main functions of the board are:

- manages and process signals from:
  - *Keyboard;*
  - *HS/HR receiver;*
  - *Joystick speed and slope;*
  - *Csafe board;*
  - *User fan;*
  - *TGS reader (where present).*
- Distributes to the display the voltages received from the driver box;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling the belt and elevation motors;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling emergency signals;
- Illuminates the LEDs and 7-segment displays used for the exercise feedback

The board includes the following indicator LEDs:

LED mane	Color	Description
LED1	**Yellow**	*if ON the **+12Vdc** supply provided by the driver box, correctly reaches the board.*
LED2	**Green**	*if ON the **+5Vdc** supply provided by the AT UL driver box, correctly reaches the board.*

3.1.5. WELLNESS TV DISPLAY BOARD - DIGITAL TV (700E/900E)

3.1.5.1. CPU board

The board is called "Unified Board", it is the circuit board which incorporates the CPU, its control logic, the FLASH EPROM containing the operating program of the machine.
It is the circuit board which acts as the interconnection hub for all the components of the display and serves as the point of connection with the digital TV Board and the ALE/AT UL driver.

The main functions of the board are:

- manages and process signals from:
  - *LCD;*
  - *Touch screen;*
  - *Jack cuffie;*
  - *Input AUX board;*
  - *HS/HR receiver;*
  - *Joystick speed and slope;*
  - *User fan;*
  - *TGS reader (where present);*
  - *iPod docking station (where present).*
- Distributes to the display the voltages received from the driver box;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling the belt and elevation motors;
- Exchanges, over the RS-485 serial link to the driver box, commands for controlling emergency signals;
- Manage the display of images on LCD.

Sulla scheda è presente anche un LED di segnalazione:

LED mane	Color	Description
D41	**Green**	*if ON the **+12Vdc** supply provided by the driver box, correctly reaches the CPU board.*

ed 1 faston:

Name	Description
J2	denotes a ground node on the circuit board.

3.1.5.2. Digital TV board

It's the circuit board which contains the decoder and all the components needed to receive and manage the aerial antenna signal.
Directly to this board it is connected the antenna cable. Here it's signal is amplified, divided between the video and audio signal, codified by the decoder and managed by the tuner which allows to tune the TV and radio channels.
Due to its positioning on the rear display support, just over the AUX input board, it is also used as a "bridge" for the signals between AUX input board and iPod docking station, and CPU board.

3.1.5.3. LCD Inverter

This device powers the LCD Display lamps. It receives DC power supplies (12 Vdc supply and 3.3 Vdc enable signal) from the CPU Board, and generates the AC voltage (380 Vac) needed to power the LCD.

3.1.5.4. Touch screen interface board

This is the board that controls the 4-wire resistive Touch Screen and interfaces the Touch Screen to the CPU Board.

3.1.5.5. Input AUX / CSafe board

It is the circuit Board which allows audio and video external sources to be displayed on the LCD base band. The board manages also the functions of the CSafe Board, detailed in the following pages, and provides 3 RC connectors and the RJ45 connector for the CSafe communication.

3.1.5.6. iPod docking station

It is the device that allows to plug & store iPod models, in a safe docking station and to control it from the ACTIVE Wellness TV interface.
With the docking station, developed for the full compatibility with iPod, it is possible to power, recharge and fully control it from the touch screen of the machine.

In the following table, all the compatible iPod models:

iPod 5st gen.	*iPod Classic*	*iPod mini*
iPod Nano	*iPod Touch*	*iPhone*

3.1.5.7. Jack cuffie

The machine display has one jack for connecting headphones. The jack is connected on a stereo output of the CPU Board.

3.1.6. CSAFE BOARD

This board makes available a communication port, on 2 externally accessible connectors, which can be used for connecting compatible CSafe devices such as the CardioTheater readers. This connector is situated on the back of the display. Another free connector is available on the board.

These connectors can also be interfaced, using a special cable, to an external PC for programming the FLASH EEPROM.

3.1.7. DUAL TGS READER

It's the device which allows the machine to interact with the Wellness System.
This board enables the machine to read the user's TGS key for performing workouts programmed with the propers SW of the Wellness System.
With Dual TGS reader it is possible to use both the Botom and the Mifare TGS keys.

3.1.8. HS/HR SALUTRON 8500 RECIEVER

This board manages the signal received from the telemetric transmitter used by the person exercising. It receives the power supply signal from the Display Board and outputs a negative logic pulse for every heart beat that is detected: the signal level is normally 5 Vdc, with a pulse at 0 Vdc (having a width of approximately 30 msec) at each heart beat.
The receiver reception area is approximately with a 90 cm radius. If there is electromagnetic noise (produced by high voltage lines, radio transmitters, monitors, motors etc.) within this area, the receiver becomes saturated and no longer receives any signal.
The Salutron 8500 models, manage both the telemetric transmitter and the hand sensors signals, in the same way.
On the receiver it is present a jumper (**JP1**) which allows to set the heart rate data acquisition priority as follow:

JP1 **CLOSED** = Chest strap priority
JP1 **OPEN** = Hand Sensor priority

The standard configuration of the receiver is with chest strap priority.

3.1.9. JOYSTICK

Only on the 700 and 900 models, there are 2 joysticks for adjusting the elevation and the speed. These joysticks in fact send the display board the same signals produced by pressing the "+" and "-" or "↑" and "↓" keys on the keyboard.

3.1.10. EMERGENCY BUTTON

This is the user safety device. It consists of 2 microswitches connected in series, which can be tripped either by pressing the emergency button or by pulling a cord clipped to the garment of the person exercising.

The emergency switch, which provides a NC contact, acts on both the display board and the AT UL driver. When the emergency is tripped the AT UL driver disables the operation of the tread belt and elevation motors. The display board also detects tripping of the emergency switch, upon which it interrupts the exercise and shows the "PRESS ANY KEY…" message on the display.

To resume normal machine operation, it is necessary to press any key on the display.

3.1.11. BELT MOTOR

An asynchronous three-phase motor which, by means of a pulley and poly-v belt, turns the driving roller of the tread belt. Each motor phase is equipped with a normally-closed thermal cutout which opens when the temperature exceeds a preset threshold, in order to safeguard the integrity of the motor. The 3 thermal cutouts are connected in series and reach the AT UL driver as a NC external input signal. When this contact opens, the AT UL driver generates an alarm.

It is equipped with a high inertia flywheel, to permit more gradual deceleration of the tread belt in the event of a power outage or emergency stop.

ATTENTION: dangerous voltages are present at the motor and flywheel.

The tread belt motor has a power of 4.4 KW (6 Hp).

3.1.12. ELEVATION MOTOR

This is a linear actuator equipped with 24 Vdc motor, integral reduction gear and a rod that is pushed backward and forward by the motor. This rod acts upon a frame connected to the front wheels of the machine: when the rod moves so does the frame, thereby lowering raising the machine.
The actuator has a built-in Hall effect sensor which acts as an encoder, generating pulses when the motor moves. This furnishes a feedback signal on the motor movements, which is used for tracking the position of the rod and hence the elevation of the machine.
This is also a Limit switch of the race which determines the lowest position, "feeling" the front wheel in the position of slope = 0

3.1.13. LIMIT SWITCH

This is a NC microswitch which defines the zero-reference position for the elevation mechanism: the switch is positioned so that it is pressed by the machine during the reset procedure, thereby defining the reference position.

3.1.14. ALE DRIVER

This is the electronic device that receives the line voltage and, through a PFC module, it rectifies the voltage to the 400 Vdc used to generate the 3 phase voltage for the belt motor. It generates the DC voltages to power up all the other devices of the machine.
It's the device that acts as an interconnection hub for the main components of the lower assembly, and serves as the point of connection with the display. In fact:

- *it supplies the +5Vdc and +12Vdc voltages to the display;*
- *it supplies the tread belt motor with a variable-frequency sinusoidal voltage: varying the frequency varies the speed of rotation of the motor, and consequently the speed of the tread belt;*
- *it supplies the elevation motor and the fans with 24 Vdc voltage;*
- *it exchanges, over the RS-485 serial link to the CPU board, the commands for controlling the tread belt and elevation motors;*
- *it exchanges, over the RS-485 serial link to the CPU board, the error signals pertaining to the tread belt and elevation motors;*
- *it exchanges, over the RS-485 serial link to the digital plan board, the commands for viewing and configuring the inverter parameters;*
- *it exchanges, over the RS-485 serial link to the digital plan board, the commands for viewing the errors logged by the inverter.*

From the outside the following indicator LEDs are visible:

LED name	Color	Description
H6	**Green**	+5 Vdc
H3	**Green**	+12 Vdc
H4	**Green**	+24 Vdc
H5	**Blue**	400 Vdc

The board includes the following indicator LEDs visible when the driver cover is removed:

LED name	Color	Description
ALARM	**Red**	*If ON indicates that the AT UL driver has detected an error (EdC) when it was moving the elevation motor. This LED stay ON for about 1 second and then goes OFF.*
EN_UP	**Green**	*if ON indicates that the motor has received the supply voltage for movement in the upward direction*
EN_DOWN	**Red**	*if ON indicates that the motor has received the supply voltage for movement in the downward direction*
TACHO	**Green**	*functioning of elevation motor encoder: if blinking, indicates that the board is receiving the pulses from the encoder*
DWN_SW	**Green**	*status of Limit switch contact: if ON indicates that the microswitch is pressed*

3.1.14.1. Fans

There are 2 fans powered with 24 Vdc used to cool down the ALE driver.

3.1.14.2. Breaking resistor

It is a 150 Ohm used by the ALE driver board to dissipate the energy produced by the motor when it is working as a generator.

3.1.15. POWER SUPPLY BOX

It is a box that contains:

- *Power entry socket;*
- *ON-OFF switch;*
- *2 circuit breakers that check the overload on line and neutral;*
- *a mutual inductance.*

3.1.16. AT DRIVER

This is the electronic device that acts as an interconnection hub for the main components of the lower assembly, and serves as the point of connection with the display. In fact:

- Controls the motors:
  - > it exchanges, over the RS-485 serial link to the digital plan board, the commands for controlling the tread belt and elevation motors;
  - > it supplies the tread belt motor with a variable-frequency sinusoidal voltage: varying the frequency varies the speed of rotation of the motor, and consequently the speed of the tread belt;
  - > it exchanges, over the RS-485 serial link to the digital plan board, the error signals pertaining to the tread belt and elevation motors;
  - > it exchanges, over the RS-485 serial link to the digital plan board, the commands for viewing and configuring the inverter parameters;
  - > it exchanges, over the RS-485 serial link to the digital plan board, the commands for viewing the errors logged by the inverter.

- Receives the mains voltage at its inputs and outputs the DC supply voltages for the machine circuit boards listed below:

Supply voltage	Connector	Description
+24 Vdc	XU1	Power supply for the fans of the electrical box
+5 Vdc	XU1	Power supply for belt and elevation motor encoders
+5 Vdc +12 Vdc	XU2	Power supply for display

The board includes the following indicator LEDs:

LED name	Color	Description
H2	**Green**	+5 Vdc
H3	**Green**	+12 Vdc
H4	**Green**	+24 Vdc
H5	**Red**	400 Vdc

It contains:

- The AT driver board
- The AT power supply board
- 2 fans
- A breaking resistor

3.1.16.1. AT driver board

It is the upper board of the assembly and it is the heart of the driver: it does everything was described above for the AT driver except the function of the AT power supply board described below. In details:

- It receives the line voltage and, through a PFC module, it rectifies the voltage to the 400 Vdc used to generate the 3 phase voltage for the belt motor and to power up the AT power supply board.
- Internally it houses an inverter to control the belt motor;
- Internally it houses a DC driver to control the elevation motor.

The board includes the following indicator LEDs visible when the AT driver cover is removed:

LED name	Colour	Description
ALARM	**Red**	*If ON indicates that the AT driver has detected an error (EdC) when it was moving the elevation motor. This LED stay ON for about 1 second and then goes OFF.*
EN_UP	**Green**	*if ON indicates that the motor has received the supply voltage for movement in the upward direction*
EN_DOWN	**Red**	*if ON indicates that the motor has received the supply voltage for movement in the downward direction*
TACHO	**Green**	*functioning of elevation motor encoder: if blinking, indicates that the board is receiving the pulses from the encoder*
DWN_SW	**Green**	*status of Limit switch contact: if ON indicates that the microswitch is pressed*

3.1.16.2. AT power supply board

It is the lower board of the assembly and it receives the 400 Vdc from the AT driver board and outputs to the AT driver board the low voltages used by the machine.

3.1.16.3. Fans

There are 2 fans powered with 24 Vdc used to cool down the AT driver.

3.1.16.4. Breaking resistor

It is a 150 Ohm used by the AT driver board to dissipate the energy produced by the motor when it is working as a generator.

3.1.17. POWER SUPPLY BOX

It is a box that contains:

- *Power entry socket;*
- *ON-OFF switch;*
- *2 circuit breakers that check the overload on line and neutral;*
- *A mutual inductance.*

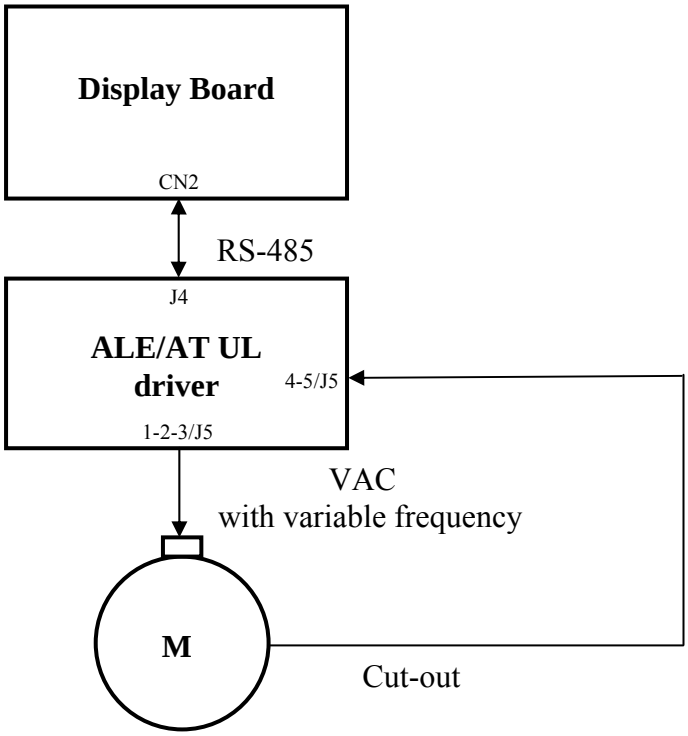
3.2. TREAD BELT MOTOR DRIVE

3.2.1. MECHANICS

The tread belt is actuated by the motor through a linkage consisting of the motor pulley, the driving roller and the belt which connects them. In this way, a given belt motor speed corresponds to a predetermined linear tread belt speed.

3.2.2. CONTROLS

The control block diagram is as follows:



To actuate the motor, the display board communicates with the ALE/AT UL driver via the RS-485 serial link. Based on the commands received, the AT UL driver drives the motor by applying a variable frequency sinusoidal voltage: the frequency determines the speed of rotation of the motor and hence the linear tread belt speed.

During its movement, the ALE/AT UL driver continually checks the motor by monitoring its current draw as well. If any problems are detected (low voltage, overcurrent, SW or HW inverter, etc....) it halts the motor and sends an alarm signal to the display board, which displays a "THE EQUIPMENT IS BLOCKED" which may lead to different error codes stored by the driver.

In addition, to protect the motor from overheating, each motor phase has a thermal cut-out connected in series. If the temperature exceeds the threshold value, the thermal cut-outs open and interrupt the circuit. The ALE/AT UL driver detects this condition as the opening of a NC external contact. In such a case the ALE/AT UL driver halts the motor and outputs an alarm signal to the display board which displays the "THE EQUIPMENT IS BLOCKED" message.

3.2.3. THE SIGNALS INVOLVED

The machine uses the following control signals:

- **RS-485 Signal**
  This is a digital signal exchanged between the ALE/AT UL driver and the display board.

- **Variable frequency VAC signal**
  This is the variable alternating-voltage signal output by theAT UL driver (pins 1-2-3 connector J5) to supply the motor. Increasing the frequency of this signal increases the motor speed. The frequency of the sinusoidal supply voltage sent by theAT UL driver to the motor can be viewed on the display using the inverter manual test described at the paragraph: 6.2.2.2 "Man. Inverter Test".

- **Thermal cut-out signal**
  Each motor phase is equipped with a normally-closed thermal cutout which opens when the temperature exceeds a preset threshold. The 3 thermal cutouts are connected in series and exit the motor via a 2-wire cable connected to the ALE/AT UL driver (pins 4-5 of connector J5).

  When this input signal is an open contact, the ALE/AT UL driver detects the alarm, halts the motor and sends an alarm signal over the RS-485 line to the display board.

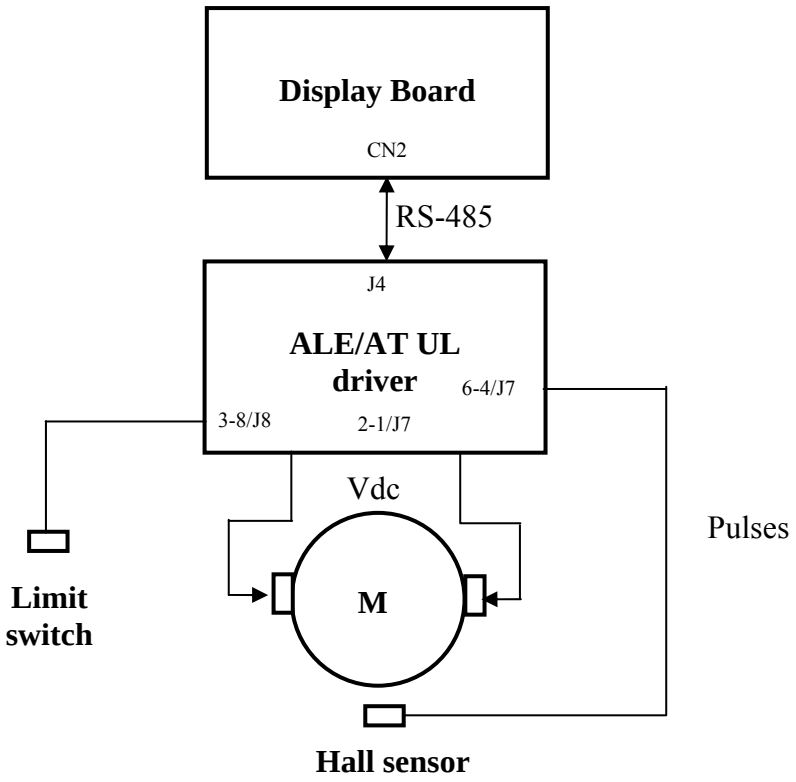
3.3. ELEVATION MOTOR DRIVE

3.3.1. MECHANICS

The machine incline is varied by moving a frame connected to the front wheels by means of the elevation motor rod. The motor movement is detected by a hall sensor which provides the motor motion control signal: each motor revolution generates a predetermined number of pulses and produces a known displacement of the rod and hence of the machine incline. The direction of rotation of the motor determines whether the machine moves up or down.

3.3.2. CONTROL

The control block diagram is as follows:



To actuate the motor, the display board communicates over the RS-485 serial link with the ALE/AT UL driver. Based on the commands received, the ALE/AT UL driver, by means of a relay on the board that switches, applies a +24 or -24 Vdc voltage to the motor. When the motor is powered, it starts turning.

To control the incline position, the machine reads the signals outputted by:

- *a limit switch which defines a zero-reference position, acquired by the machine during its power-on reset procedure. In normal condition, the limit switch outputs a NC contact that goes open when it is pressed.*

☛ **WARNING: when the limit switch outputs an open contact (limit switch pressed, broken or cable disconnected), the down movement is disabled.**

If, during the elevation motor operation, the ALE/AT UL drives detects problems on these signals and in particular:

- *if no pulses arrive to the ALE/AT UL driver for a time period of approximately 1.5 sec;*
- *if the limit switch outputs an open contact and it doesn't change if the elevation is moved upward more than 2%.*

Then:

- *the ALE/AT UL driver locks out with error code "EdC";*
- *the machine displays the error message "GRADIENT NOT WORKING" and halts all movements of both the elevation and tread belt motors;*
- *The parameter Par 07 is set to 1 to disable the usage of the elevation motor.*

If an exercise is started, the machine will resume operation with only the tread belt motor enabled. Only if the machine is turned off and on again, it will reset the Par 07 to 0 and will restart using the elevation motor too.

3.3.3. THE RESET PROCEDURE

On power-up, the machine performs a reset procedure in order to determine the zero-reference position for the incline. The procedure consists of the downward movement of the machine until the limit switch is tripped, then it moves upward of a number of pulse defined in the elevation table until the reference "horizontal position". All movements for reaching different elevations will be variations relative to this reference.

3.3.4. THE SIGNALS INVOLVED

The machine uses the following control signals:

- **RS-485 Signal**
  This is a digital signal exchanged between the ALE/AT UL board and the display board.

- **Motor voltage signal (Vdc)**
  This is the DC voltage generated by the ALE/AT UL driver (pins 2 and 1 of connector J7) for supplying the elevation motor. Its absolute value is 24 Vdc and, depending on its polarity, it causes the motor to rotate in either a clockwise or anticlockwise direction. The incline of the machine will increase or decrease accordingly.

- **Pulse signal**
  This is a square wave signal with frequency 50 Hz (T=20 msec) and 50% duty cycle generated by the Hall sensor when the elevation motor moves. This signal enters the ALE/AT UL driver (pins 6 and 4 of connector J7) and provides the feedback of the motor movement.

  This signal alternates between a low value of 0 Vdc and a high value of 5 Vdc. When measured with a multimeter, this signal is at either 0 or 5 Vdc when the motor is stopped, while during motor movements it is approximately 2.5 Vdc.

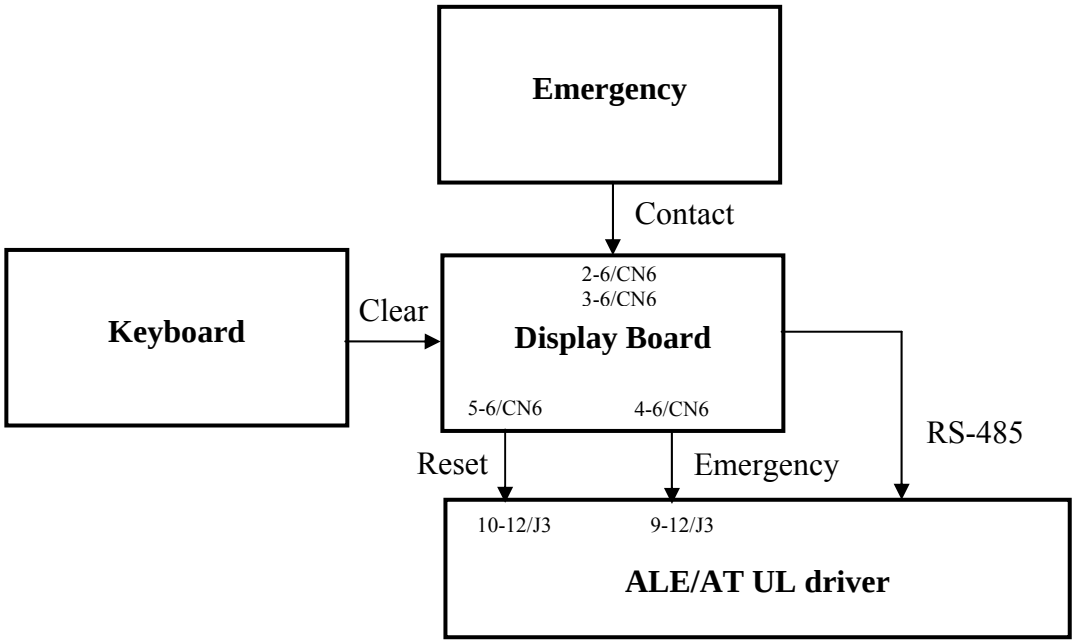
  In order to function correctly, the Hall sensor requires a +5 Vdc supply voltage which it receives from the elevation board (pins 5 and 4 of connector J7).

- **Limit switch signal**
  The limit switch is a NC contact entering the ALE/AT UL driver (pins 3 and 8 of connector J8), which opens when the machine pressed it during the power-on reset procedure.

3.4. EMERGENCY STOP MANAGEMENT

3.4.1. CONTROL

The control block diagram is as follows:



When the user presses the emergency button, the display board stops the exercise, displays the message "PRESS ANY KEY …" and sends to the ALE/AT UL driver the Emergency signal and the commands for halting the motors over the 485 serial link. When the ALE/AT UL driver receives these signals, it stops driving both the tread belt and elevation motors.

ATTENTION: the "PRESS ANY KEY…" message is displayed even in case the serial communication between the upper assembly and the lower assembly is lost.

Once the ALE/AT UL driver has received an alarm signal, even if the emergency reverts to the non-tripped state, the alarm condition will persist until the display board sends the reset signal resulting from any key being pressed. This forces the ALE/AT UL driver to reinstate the serial communication to the display board and after that to redo the reset procedure.

If the serial communication fails, the machine will try several time to reinstate it. Each attempt is recorded increasing the value of the COM.FAUL counter that can be checked as indicated at paragraph: 9.4.4.3 "COM.Fault". After about 30 seconds it will interrupt and will display the error message "THE EQUIPMENT IS BLOCKED (COM)".

3.4.2. THE SIGNALS INVOLVED

The machine uses the following control signals:

- **Emergency contact**
  This is the contact provided by the 2 emergency stop microswitches. They provide a NC contact which opens when the emergency is pressed. This signal enters the display board (pins 3-6 and 2-6 of connector CN6).

- **RS-485 Signal**
  This is a digital signal exchanged between the inverter and the display board.

- **Emergency signal**
  This is the signal generated by the display board (pins 4 and 6 of connector CN6), sent to the ALE/AT UL driver (pins 9 and 12 of connector J3). This signal is 0 Vdc under normal conditions, and goes to 11.9 Vdc in the emergency condition.

- **Reset signal**
  This is the signal generated by the display board (pins 5 and 6 of connector CN6), sent to the ALE/AT UL driver (pins 10 and 12 of connector J3) to signal to the lower assembly the resumption of normal operation following an emergency condition. This signal is 0 Vdc under normal conditions and goes to approximately 8 Vdc for few seconds when the user presses a key.

  When this happens, the display board resets the Emergency signal to 0 Vdc, thereby enabling the ALE/AT UL driver to operate.

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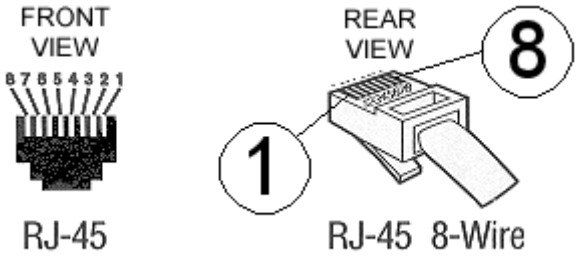
4. ACCESSORIES

4.1. CARDIO THEATER CONNECTION

The machine can be connected to the CardioTheater by means of the RJ45 connector on the CSafe board. The CardioTheater unit must be provided with a power cable having the following pin-out:

RJ45 Connector	Signal
5	+5 Vdc
7	Ground

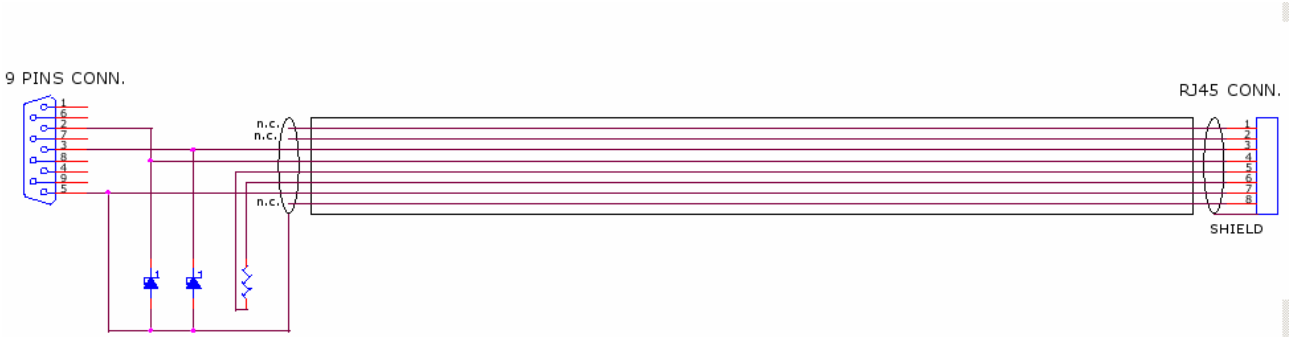
ATTENTION: for the numbering of the pins, on RJ45 connector, please refer to the diagram below:



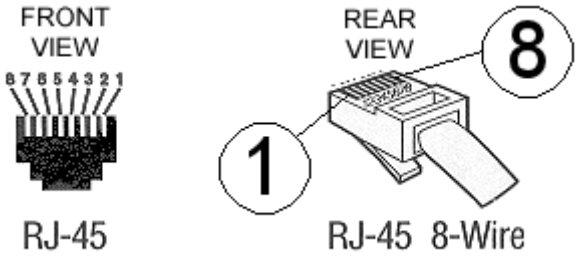
4.2. PC LINK FOR PROGRAMMING

The machine can be connected to a PC for programming by means of the RJ45 connector on the CSafe board.

The cable to use must be wired as follows:

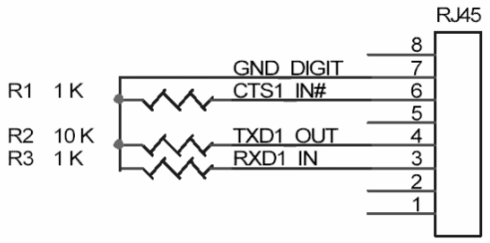


ATTENTION: for the numbering of the pins, on RJ45 connector, please refer to the diagram below:



When programming the machine sometimes it is necessary to fit plug into the free RJ-45 port on the back of the display, to avoid any type of interference during the operation.

The wiring diagram of the RJ-45 plug is as follows:



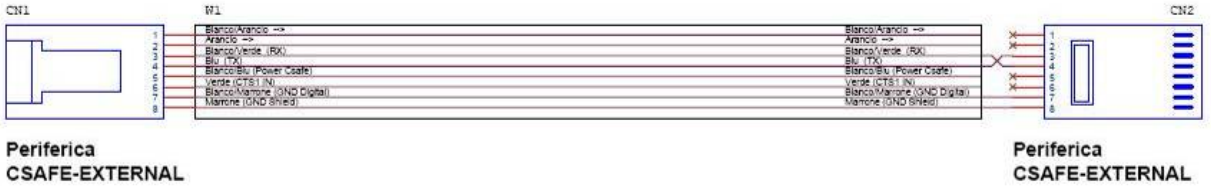
Programming cable and plug can be ordered using the code **R0002534AB**.

4.3. CABLE FOR EXCHANGING TV CHANNEL TUNING DATA BETWEEN TWO MACHINES

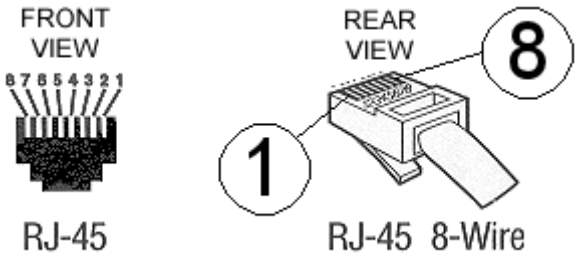
The connection between two machines for transferring the TV channel tuning data is effected via a special cable, connected to the RJ45 connectors of the CSafe boards.

The cable to use (code **0WC00644AA**) must be wired as follows:

Cable			
CSafe board RJ45	***Signal***	***Color***	***CSafe board RJ45***
3	*Tx*	*White*	*4*
4	*Rx*	*Brown*	*3*
7	*Digital Ground*	*Green*	*7*
8	*Shield Ground*	*Yellow*	*8*

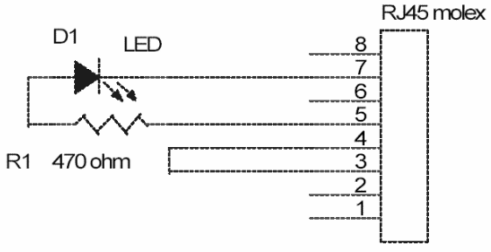


ATTENTION: for the numbering of the pins, on RJ45 connector, please refer to the diagram below:



4.4. MONITOR PLUG FOR CSAFE PORT

When the plug code **0WC00639AA** is fitted into any one of the CSafe ports on the machine, the corresponding LED should illuminate to indicate the presence of the 5 Vdc supply on the port.
During the CSafe port test function, the plug connects the transmit channel directly to the receive channel, thereby producing a positive test outcome if the port is functioning correctly.



4.5. WELLNESS TV UPGRADE KIT

There are upgrade kits available for converting Excite machines from the version with traditional LED Display to the Wellness TV Display version with ACTIVE TV interface and integrated digital TV decoder. The kit also includes all the cables and connectors required for the input of the antenna signal.
The table below gives the codes of the kits, to be chosen according to the TV standard used in the installation country:

MACHINE	TV STANDARD	CODE
RUN 700	DVB-T	A0000406-D
RUN 900	DVB-T	A0000407-D
RUN 700	ATSC	A0000406-A
RUN 900	ATSC	A0000407-A
RUN 700	ISDB-T	A0000406-I
RUN 900	ISDB-T	A0000407-I

In the following table you can find the list of the analogyc and digital TV standard of the different countries.

COUNTRY	Digital TV	Analogue TV	COUNTRY	Digital TV	Analogue TV
ALBANIA	DVB-T	PAL B/G	***LUXEMBOURG***	DVB-T	PAL B/G
ANGOLA	DVB-T	-	***MALAYSIA***	DVB-T	PAL B
AUSTRALIA	DVB-T	PAL B/G	***MALTA***	DVB-T	PAL B/G
AUSTRIA	DVB-T	PAL B/G	***MAURITIUS***	DVB-T	SECAM B
AZERBAIJAN	DVB-T	-	***MEXICO***	ATSC	NTSC M
BAHAMAS	ATSC	NTSC M	***MONACO***	DVB-T	SECAM/PAL L/G
BAHRAIN	DVB-T	PAL B	***MOROCCO***	DVB-T	SECAM B
BELGIUM	DVB-T	PAL B/G	***NETHERLANDS***	DVB-T	PAL B/G
BERMUDA	DVB-T	NTSC M	***NEW ZEALAND***	DVB-T	PAL B/G
BRAZIL	ISDB-T	PAL M	***NIGERIA***	DVB-T	-
BULGARY	DVB-T	SECAM D/K	***NORWAY***	DVB-T	PAL B/G
CANADA	ATSC	NTSC M	***OMAN***	DVB-T	-
COLOMBIA	ATSC	NTSC M	***PHILIPPINES***	DVB-T	NTSC M
CYPRUS	DVB-T	PAL B	***POLAND***	DVB-T	PAL D/K
CZECH REPUBLIC	DVB-T	SECAM/PAL D/K	***PORTUGAL***	DVB-T	PAL B/G
DENMARK	DVB-T	PAL B	***P.R.CHINA***	DVB-T	PAL D/K
EGYPT	DVB-T	SECAM B	***QATAR***	DVB-T	-
FAROE ISLANDS	DVB-T	PAL B	***ROMANIA***	DVB-T	PAL G
FINLAND	DVB-T	PAL B/G	***RUSSIA***	DVB-T	SECAM D/K
FRANCE	DVB-T	SECAM E/L	***SAUDI ARABIA***	DVB-T	SECAM B
GERMANY	DVB-T	PAL B/G	***SERBIA***	DVB-T	-
GHANA	DVB-T	-	***SINGAPORE***	DVB-T	PAL B
GREECE	DVB-T	PAL B/G	***SLOVAKIA***	DVB-T	-
HONG KONG	DVB-T	PAL I	***SLOVENIA***	DVB-T	-
HUNGARY	DVB-T	PAL B/G & D/K	***SOUTH AFRICA***	DVB-T	PAL I
INDIA	DVB-T	PAL B	***SOUTH KOREA***	ATSC	NTSC M
INDONESIA	DVB-T	PAL B	***SPAIN***	DVB-T	PAL B/G
IRAN	DVB-T	SECAM H	***SWEDEN***	DVB-T	PAL B/G
IRELAND	DVB-T	PAL I	***SWITZERLAND***	DVB-T	PAL B/G
ISRAEL	DVB-T	PAL B/G	***SYRIA***	DVB-T	-
ITALY	DVB-T	PAL B/G	***TAIWAN***	DVB-T	NTSC M
JAPAN	ISDB-T	NTSC M	***TUNISIA***	DVB-T	SECAM B
JORDAN	DVB-T	PAL B	***TURKEY***	DVB-T	PAL B
KAZAKHSTAN	DVB-T	-	***U.S.A.***	ATSC	NTSC M
KENYA	DVB-T	PAL B	***UAE***	DVB-T	PAL B/G
LATVIA	DVB-T	-	***UNITED KINGDOM***	DVB-T	PAL I

LEBANON	DVB-T	-	***URUGUAY***	DVB-T	PAL N
LIBYA	DVB-T	-			

4.6. NIKE+GYM IN EXCITE LINE

"**Nike+Gym**" is a new function for ACTIVE Wellness TV machines with iPod docking station that brings together Apple, Nike and Technogym, by integrating the existing Nikeplus function into Excite machines.
This function allows the data of training sessions on Excite machines to be transferred to the iPod inserted in the docking station. The training data can subsequently be uploaded from the iPod to the Nikeplus.com website, from where it can be viewed and saved.

In order to use this function, the machine must be equipped with a docking station with SW version ≥ 5. 0 (the docking station SW version can be checked in the pharagraf: 3.1.5.6 "iPod docking station") and a display SW version that supports it.

The lowest SW versions compatible with "Nike+Gym" are listed in the table below:

Active WTV SW version	*Digital TV + Salutron HR receiver*
RUN	46.15.1

At present, this function is only compatible with the iPod Nano 3G model (third generation).

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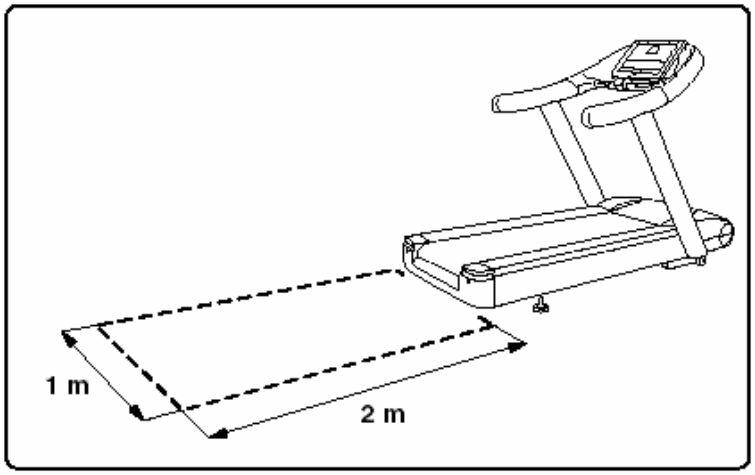
5. INSTALLATION INSTRUCTIONS

5.1. SPECIFICATIONS AND REQUIREMENTS

For correct machine installation, make sure that:

1. The machine is installed on a level surface that is free of vibrations and has sufficient carrying capacity for the combined weight of the machine and user.
2. The place of installation is free of dust and sand.
3. The place of installation meets the operating temperature and humidity conditions specified in paragraph: 2.3. “Ambient specifications”.
4. The machine is not positioned close to sources of heat, sources of electromagnetic noise (television sets, electrical motors, antennas, high voltage lines, household appliances, etc...) or medical equipment.
5. Each machine must have a dedicated supply line.
6. The socket outlet and other devices on the dedicated line should be appropriately sized for the required load 16 A.
7. The socket outlets must be earthed.
8. No multiple connections are permitted on the earth and/or the neutral cables.
9. The ratio between the length and cross section ratio of the cables must be sufficient to assure a maximum voltage drop of 4% of nominal value at full load at the socket outlet.
10. Position the mains lead of the machine where it will not be underfoot.
11. There is plenty of free space around each item of equipment and a free space of 2x1 min front of the machine as shown in the picture:



12. To eliminate any interference with the cardio receiver, no transmitters should be placed less than 1 meter from the display.

5.2. SPECIFICATIONS AND REQUIREMENTS TO INSTALL A WELLNESS TV MACHINE

You can find below the data useful for antenna technician, in order to check if the antenna signal is suitable for Excite Wellness TV machines.

THE VALUES IN THE FOLLOWING TABLES MUST BE MEASURED DIRECTLY ON THE ANTENNA INLET CONNECTOR OF THE MACHINE.

WARNING: If the machine is not connected to a terrestrial antenna—or if it is but the antenna signal line is interrupted by devices such as TV distribution units, modulators, etc… The machine will not be able to receive a usable antenna signal for radio channel tuning.

RADIO SIGNAL: On machines with Digital TV receiver, it is possible only the tuning of the digital band and not the analogue one.

5.2.1. DIGITAL SIGNAL

DVB-T	
Level	*Higher than* ***-65 dBm*** *(44 dBµV) (-16 dBmV)*
Quality	*CH B.E.R. <* 10^{-3} *(Channel Bit Error Rate)* *Or* ***C/N (Carrier to Noise ratio)*** *Modulation type 16 QAM: >* ***13 dB*** *Modulation type 64 QAM: >* ***23 dB***

ATSC	
Level	*Higher than* ***-65 dBm*** *(44 dBµV) (-16 dBmV)*
Quality	***CH B.E.R****. <* 10^{-3} *(Channel Bit Error Rate)* *or* ***C/N (rapporto Carrier to Noise)*** *>* ***23 dB***

ISDB-T	
Level	*Higher than* ***-65 dBm*** *(44 dBµV) (-16 dBmV)*
Quality	***CH B.E.R****. <* 10^{-3} *(Channel Bit Error Rate)* *or* ***C/N (rapporto Carrier to Noise)*** *Modulation type 16 QAM: >* ***13 dB*** *Modulation type 64 QAM: >* ***23 dB***

Regarding the quality of the signal, it's more relevant the CH.B.E.R. value instead of the C/N.

5.2.2. ANALOGUE SIGNAL

ALL STANDARD	
Level	*Higher than* ***-50 dBm*** *(59 dBµV) (-1 dBmV)*
Quality	*S/N (Signal to Noise ratio)* *Higher than +50 dB*

WARNING: If the machine is not connected to a terrestrial antenna—or if it is but the antenna signal line is interrupted by devices such as TV distribution units, modulators, etc… The machine will not be able to receive a usable antenna signal for radio channel tuning.

5.3. INSTALLATION

To correctly install the machine, proceed as follows:

1. Ensure that the specifications and requirements for installation have been met (*see paragraph 5.1. "Specifications and requirements"*.)

2. Position the machine as specified above, on a level surface that is free of vibrations and has sufficient carrying capacity for the combined weight of the machine and user.

3. The machine is shipped partially assembled and packed in a carton fixed to a wooden pallet. Follow the assembly procedure described in the Installation Instructions supplied with each machine.

4. Connect the mains lead to the power inlet socket on the machine.

5. Place the on/off switch in the "0" position.

6. Plug the mains lead into the wall outlet.

7. Connect the antenna cable to the wall outlet (*only for Wellness TV models*).

5.4. FIRST POWER-ON

After completing the installation procedure, the machine is ready to be powered up. To turn on the machine, simply toggle the on/off switch from the "0" position to the "1" position.

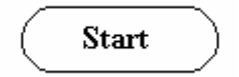
During power-up the machine resets the incline. After completing the power-on reset, the machine goes into standby, awaiting a keyboard command.

To check the correct operation of the machine:

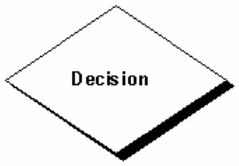
- *get on the machine;*
- *press the "Quick Start" key to begin exercising and check that the tread belt motor starts;*
- *press the "+" and "-" keys on the keyboard and check that the tread belt speed varies accordingly;*
- *press the "↑" and "↓" keys and check that the incline varies accordingly;*
- *press the emergency button and check that the tread belt stops;*
- *put on the heart rate meter and check that the machine correctly reads the heart rate value;*
- *grasp the sensors and check that the machine correctly reads the heart rate value;*
- *check that the speed and elevation joystick works properly (only 700/700E - 900/900E models).*

6. TROUBLESHOOTING

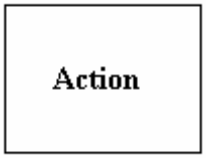
The troubleshooting procedures are illustrated by means of flow diagrams. To facilitate interpretation of these diagrams, the following standard box shapes are used:



This type of box is the START point of the troubleshooting procedure. It typically contains a description of the problem or malfunction.



This type of box represents a decision point in the troubleshooting procedure. It typically contains a description of the CHECK to be made, with an outcome that is either a positive (YES) or negative (NO) response.



This type of box is a step in the troubleshooting procedure where an ACTION must be carried out. It typically contains a description of the ACTION necessary to resolve the problem Therefore, after executing the specified ACTION:

1. *Check whether the problem has been resolved;*
2. *If the problem persists, it is recommended to resume the troubleshooting procedure from the point before the action was carried out.*

A circled number (such as that shown on the left) next to a box of the troubleshooting procedure indicates that more detailed instructions for performing that particular check or action are provided below the flowchart.

A circled letter (such as that shown on the left) is used to mark a point in the procedure. Typically, this indicator is used in page changes.

The connectors indicated in the following pages, refer to 700 model's LED Boards, unless otherwise indicated.

6.1. TROUBLESHOOTING SERVICE MENU: ACTIVE WELLNESS TV MODELS

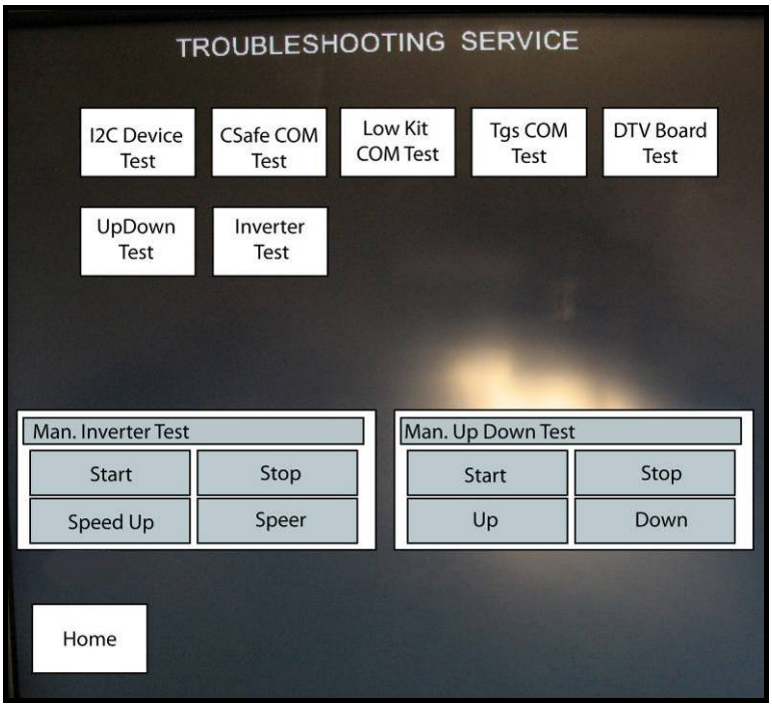
This section can be used to test the operation of certain machine components (AC/DC Motors, LED display, keyboard, serial ports, Low Kit). It is invoked, pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

To access the menu, type in the password **2411** and press **ENTER** key to confirm or **BACK** key to back forward.

At this point the machine display will shows the different parameters of the menu.
To exit the TROUBLESHOOTING menu press **HOME** key.

Here below have been detailed all the parameters of the menu.



6.1.1. I2C DEVICE TEST

The I2C Device test checks the communication following the 32K and 256K memories. The test can have two outcomes:

- **"Test Successful":** Signifies that data packets were successfully transmitted and received toward the display board.
- **"EEPROM Error"**: Signifies that the display board has communication problems with the memories.

6.1.2. CSAFE COM TEST

The test checks the communication on CSafe ports. The test can have two outcomes:

- **"Test Successful":** This means that the test was completed successfully, i.e. that serial communications on the selected port are correct.
- **"Error COM1":** This means that the outcome of the test was negative.

The "CSafe COM test" done on a machine which CSafe port is not plugged with the monitor plug described at paragraph 4.4. "Monitor plug for CSafe port".

6.1.3. LOW KIT COM TEST

The test checks the communication with the Low kit. The test can have two outcomes:

- **"Test Successful":** This means that the test was completed successfully, i.e. that serial communications on the selected port are correct.
- **"Error COM2":** This means that the outcome of the test was negative.

6.1.4. TGS COM TEST

The test checks the communication with the TGS reader. The test can have two outcomes:

- **"Test Successful":** This means that the test was completed successfully, i.e. that serial communications on the selected port are correct.
- **"Error COM3":** This means that the outcome of the test was negative.

The "TGS COM test" done on machine not provided with the key reader gives a fail outcome.

6.1.5. DTV BOARD TEST

It's a command that allows to divert the serial communication, usually between the Digital TV boardand the CPU board, on the external CSafe port.
This function wich allows to connect an external device to the Digital TV board is not used at the moment.

Once the function has been launched it is necessary to switch off and switch on again the machine to reinstate the correct connection.

6.1.6. INVERTER TEST

The inverter test checks the condition of the ALE/AT UL driver. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** This means that the test was completed successfully and the inverter is not in an error condition.
- **"Inverter Error, press Enter to continue":** This means that the test was not completed successfully, i.e. that the serial link is inactive and/or the inverter is in an error condition.
-

6.1.7. UPDOWN TEST

The UpDown test checks whether the number of pulses output by the encoder corresponds to the values of the UpDown table stored in the low kit. During the test, the machine incline is moved from 0 to 15% (18% on 700 and 900 model) and then back to 0. Each incline position is converted into a number of pulses and compared with the value in the UpDown table.

Two messages appear during the test:

- "Incline =15%": This message appears during the upward movement, when the machine incline reaches 15%.
- "Incline =3%": This message appears during the downward movement, when the machine incline reaches 3%.

The test can have two outcomes:

- **"DC Error (Up/Down), press Enter to continue":** The message indicates that the values do not correspond. The specific message (Up or Down) indicates whether the error occurred during the upward (Up) or downward (Down) movement of the test.
- **"Test Successful, press Enter to continue":** This message indicates that the test was completed without errors.

6.1.8. MAN. INVERTER TEST

The manual inverter test displays the values output by the inverter drive during movements of the tread belt motor. The values displayed are:

- *Tread belt motor drive frequency (x100);*
- *Current (x10);*
- *Voltage.*

During the test it is possible to change the speed using the + and – speed keys, to see the change in the values of frequency, current and voltage.

6.1.9. MAN. UPDOWN TEST

The manual UpDown test displays the values output by the elevation motor drive during machine incline movements. The values displayed are:

- *Machine incline position;*
- *Number of pulses generated by the elevation motor encoder;*
- *State of limit switch: if it is pressed, "MIN" is shown, nothing in the other condition.*

During the test it is possible to vary the incline using the ↑ and ↓ elevation keys, to check that the values vary accordingly.

6.2. TROUBLESHOOTING MENU FOR 700-900 LED MODELS

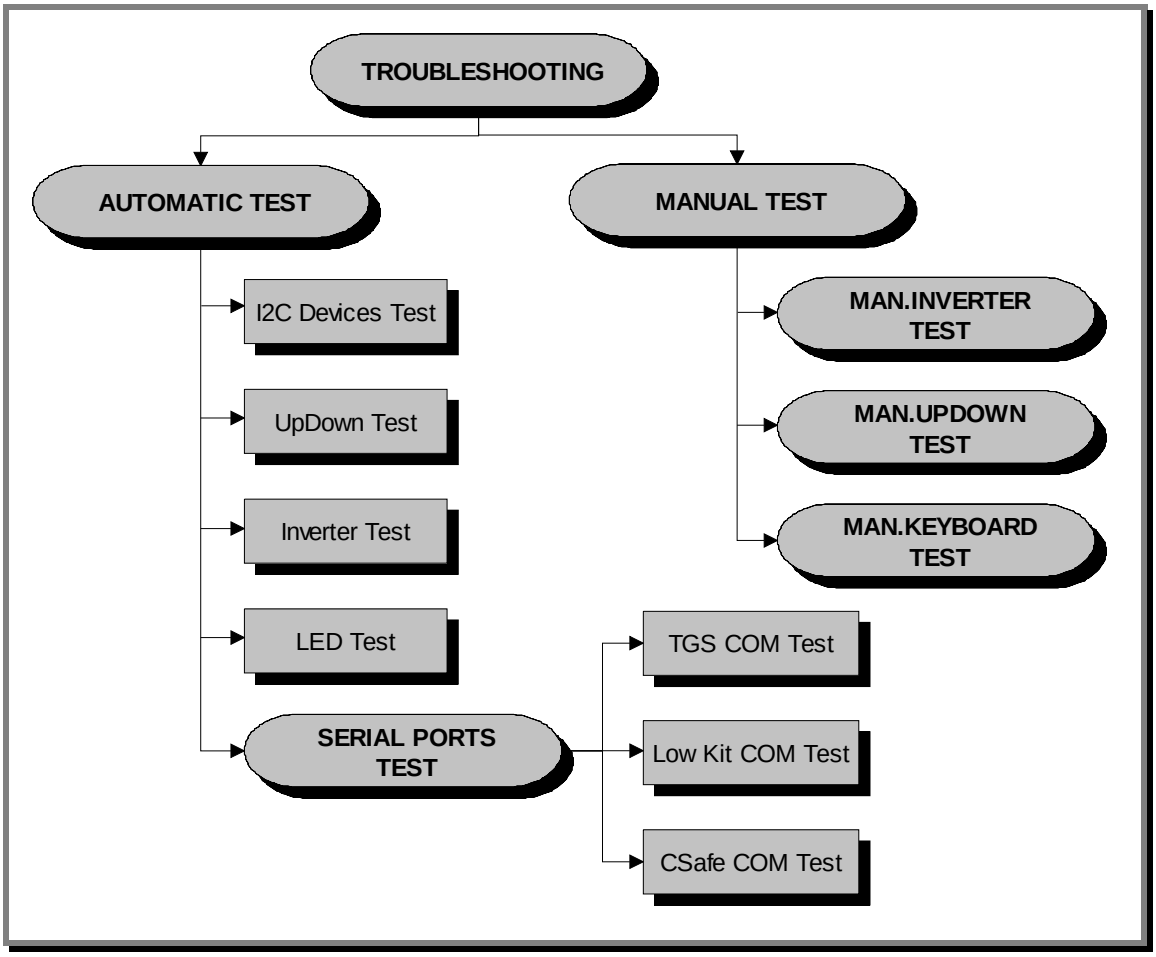
This section can be used to test the operation of certain machine components (AC/DC Motors, LED display, keyboard, serial ports, Low Kit). It is invoked, when the machine is in standby mode, simultaneously press the keys **369** for 700 LED models, whereas on 700 Wellness TV models the keys **0369** must be pressed one after the other. The following prompt appears on the display:

ENTER PASSWORD:

To access the procedure, type in the password **2501** which protects against unauthorized access and press the "Enter" key to confirm. At this point there are two options available:

1 = Tech Config
2 = Troubleshooting

Press numeric key **2** to access the menu for configuring technical parameters; the machine display will begin showing the current configuration, structured as in the diagram below:



To scroll through the list of available functions, press the + or – effort level keys to display the next or the preceding item; confirm the choice by pressing **ENTER**. To cancel the operation, press the **CLEAR** key for a few seconds.

*The tests are divided into two groups: **Automatic** and **Manual**, and the prompt for a choice appears immediately on accessing the troubleshooting menu.*

6.2.1. AUTOMATIC TEST

The tests grouped under this section conduct checks on the machine's operation in a fully automatic manner. After selecting the desired test using the + and – effort level keys, press **ENTER** to initiate the test and then await the result. Press **ENTER** again to continue, and use the **CLEAR** key to return to the higher menu level, holding it down for a few seconds. The various tests are described below.

6.2.1.1. I2C Devices Test

The I2C Devices test checks the communication following the 32K and 256K. The test can have outcomes:

- **"Test Successful, press Enter to continue"**: Signifies that the transmission and reception of data packets between the I2C devices and the display board was completed successfully.
- **"EEPROM Error, press Enter to continue"**: Signifies that the display board is having problems communicating with its memories.

6.2.1.2. UpDown Test

The UpDown test checks whether the number of pulses output by the encoder corresponds to the values of the UpDown table stored in the low kit. During the test, the machine incline is moved from 0 to 15% and then back to 0. Each incline position is converted into a number of pulses and compared with the value in the UpDown table.

Two messages appear during the test:

- "Incline =15%": This message appears during the upward movement, when the machine incline reaches 15%.
- "Incline =3%": This message appears during the downward movement, when the machine incline reaches 3%.

The test can have two outcomes:

- **"DC Error (Up/Down), press Enter to continue":** The message indicates that the values do not correspond. The specific message (Up or Down) indicates whether the error occurred during the upward (Up) or downward (Down) movement of the test.
- **"Test Successful, press Enter to continue":** This message indicates that the test was completed without errors.

6.2.1.3. Inverter Test

The inverter test checks the condition of theAT UL driver. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** This means that the test was completed successfully and the inverter is not in an error condition.
- **"Inverter Error, press Enter to continue":** This means that the test was not completed successfully, i.e. that the serial link is inactive and/or the inverter is in an error condition.

6.2.1.4. LED Test

The LED test checks the functioning of the display by lighting all the LEDs in the matrix. It also tests the buzzer, varying the frequency to produce different tones of sound.

The test does not produce a result message, so the user must visually check the outcome.

6.2.1.5. Serial Ports Test

The serial ports test checks the following communication ports:

- *CSafe COM test;*
- *Low Kit COM test;*
- *TGS COM test.*

Using the + and – speed keys, select the desired test item and confirm by pressing **ENTER**. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** This means that the test was completed successfully, i.e. that serial communications on the selected port are correct.
- **"COMx Error, press Enter to continue":** This means that the outcome of the test was negative: the message will specify COM1 in the case of the CSafe COM test, COM2 in the case of communications with the low kit, or COM3 in the case of the TGS COM test.

The "TGS COM test" done on machine not provided with the key reader gives a fail outcome. The same if the "CSafe COM test" is done on a machine which CSafe port is not plugged with the monitor plug described at paragraph: 4.4. "Monitor plug for CSafe port".

6.2.2. MANUAL TEST

The tests grouped under this section conduct checks on the machine's operation in a fully automatic manner. After selecting the desired test using the + and – effort level keys, press **ENTER** to initiate the test and then await the result. To exit test mode, press and hold down the **CLEAR** key for a few seconds.

6.2.2.1. Man. Keyboard Test

The manual keyboard test checks the functioning of all the keys on the keyboard. After accessing the test by pressing **ENTER**, the message "**Press all buttons (beep=OK)**" appears on the display. Pressing each key will produce an audible signal; if a key does not produce the beep it means it is not working properly.

On Wellness TV machines, pressing the keys does not produce an audible signal, but if the key is working correctly it lights up green.

6.2.2.2. Man. Inverter Test

The manual inverter test displays the values output by the inverter drive during movements of the tread belt motor. The values displayed are:

- *Tread belt motor drive frequency (x100);*
- *Current (x10);*
- *Voltage.*

During the test it is possible to change the speed using the + and – speed keys, to see the change in the values of frequency, current and voltage.

6.2.2.3. Man. UpDown Test

The manual UpDown test displays the values output by the elevation motor drive during machine incline movements. The values displayed are:

- *Machine incline position;*
- *Number of pulses generated by the elevation motor encoder;*
- *State of limit switch: if it is pressed, "MIN" is shown, nothing in the other condition.*

During the test it is possible to vary the incline using the ↑ and ↓ elevation keys, to check that the values vary accordingly

6.3. TROUBLESHOOTING MENU SERVICE PER MODELLO 500

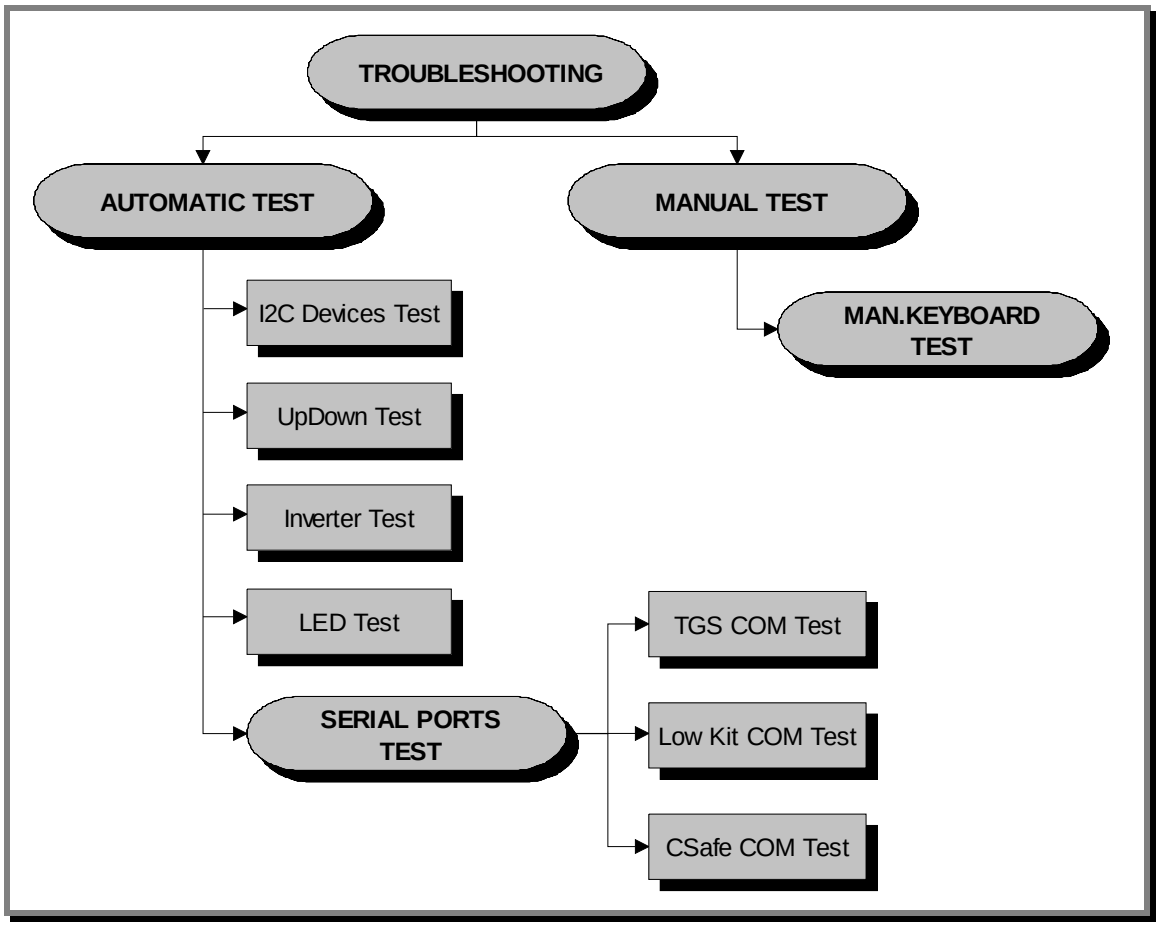
This section can be used to test the operation of certain machine components (AC/DC Motors, LED display, keyboard, serial ports, Low Kit). It is invoked, when the machine is in standby mode, by simultaneously pressing the keys **ENTER**, ↑, **CLEAR**. The following prompt appears on the LED display:

ENTER PASSWORD:

To access the procedure, insert the password **2501** which protects against unauthorized access and press **ENTER** to confirm. To enter the password without the numeric keypad, enter one digit at a time using the ↑ and ↓ keys to change the value and the **+/- GOAL** keys to scroll to the next character. At this point there are two options available:

↑ = Tech Config
↓ = Troubleshooting

Press the number key 2 to access the troubleshooting menu, which is structured as shown in the figure below.



To scroll through the list of available functions, press the + or – speed keys to display the next or previous item. Confirm the choice by pressing **ENTER**. To cancel the operation, press the **CLEAR** key for a few seconds.

The tests are divided into two groups: Automatic and Manual. The machine prompts for a choice immediately upon accessing the troubleshooting menu.

6.3.1. AUTOMATIC TESTS

The tests grouped under this section conduct checks on the machine's operation in a fully automatic manner. After selecting the desired test using the + and – speed keys, press **ENTER** to initiate the test and then await the result. Press **ENTER** again to continue, or press the **CLEAR** key for a few seconds to return to the higher menu level. The various tests are described below.

6.3.1.1. I2C Device Test

The I2C Device test checks the communication following the 32K and 256K memories. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** Signifies that data packets were successfully transmitted and received toward the display board.
- **"EEPROM Error, press Enter to continue"**: Signifies that the display board has communication problems with the memories.

6.3.1.2. UpDown Test

The UpDown test checks whether the number of pulses output by the encoder corresponds to the values of the UpDown table stored in the low kit. During the test, the machine incline is moved from 0 to 15% and then back to 0. Each incline position is converted into a number of pulses and compared with the value in the UpDown table.

Two messages appear during the test:

- *"Incline =15%": This message appears during the upward movement, when the machine incline reaches 15%.*
- *"Incline =3%": This message appears during the downward movement, when the machine incline reaches 3%.*

The test can have two outcomes:

- **"DC Error (Up/Down), press Enter to continue":** The message indicates that the values do not correspond. The specific message (Up or Down) indicates whether the error occurred during the upward (Up) or downward (Down) movement of the test.
- **"Test Successful, press Enter to continue":** This message indicates that the test was completed without errors.

6.3.1.3. Inverter Test

The inverter test checks the condition of theAT UL driver. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** This means that the test was completed successfully and the inverter is not in an error condition.
- **"Inverter Error, press Enter to continue":** This means that the test was not completed successfully, i.e. that the serial link is inactive and/or the inverter is in an error condition.

6.3.1.4. LED Test

The LED test checks the functioning of the display by lighting all the LEDs in the matrix. It also tests the buzzer, varying the frequency to produce different tones of sound.

The test does not produce a result message, so the user must visually check the outcome.

6.3.1.5. Serial Ports Test

The serial ports test checks the following communication ports:

- *CSafe COM test;*
- *Low Kit COM test;*
- *TGS COM test.*

Using the + and – speed keys, select the desired test item and confirm by pressing **ENTER**. The test can have two outcomes:

- **"Test Successful, press Enter to continue":** This means that the test was completed successfully, i.e. that serial communications on the selected port are correct.
- **"COMx Error, press Enter to continue":** This means that the outcome of the test was negative: the message will specify COM1 in the case of the CSafe COM test, COM2 in the case of communications with the low kit, or COM3 in the case of the TGS COM test.

The "TGS COM test" done on machine not provided with the key reader gives a fail outcome. The same if the "CSafe COM test" is done on a machine which CSafe port is not plugged with the monitor plug described at paragraph: 4.4. "Monitor plug for CSafe port

6.3.2. MANUAL TEST

This section groups together tests for manually checking the operation of certain peripheral devices. After selecting the desired test item using the **+** and – speed keys, press **ENTER** to access the tests. To exit test mode, hold down the **CLEAR** key for a few seconds.

The various manual tests are described below.

6.3.2.1. Man. Keyboard Test

The manual keyboard test checks the functioning of all the keys on the keyboard. After accessing the test by pressing **ENTER**, the message "**Press all buttons (beep=OK)**" appears on the display. Pressing each key will produce an audible signal, if a key does not produce the "beep" it means it is not working properly.

6.3.2.2. Man. Inverter Test

The manual inverter test displays the values output by the inverter drive during movements of the tread belt motor. The values displayed are:

- *Tread belt motor drive frequency (x100);*
- *Current (x10);*
- *Voltage.*

During the test it is possible to change the speed using the + and – speed keys, to see the change in the values of frequency, current and voltage.

6.3.2.3. Man. UpDown Test

The manual UpDown test displays the values output by the elevation motor drive during machine incline movements. The values displayed are:

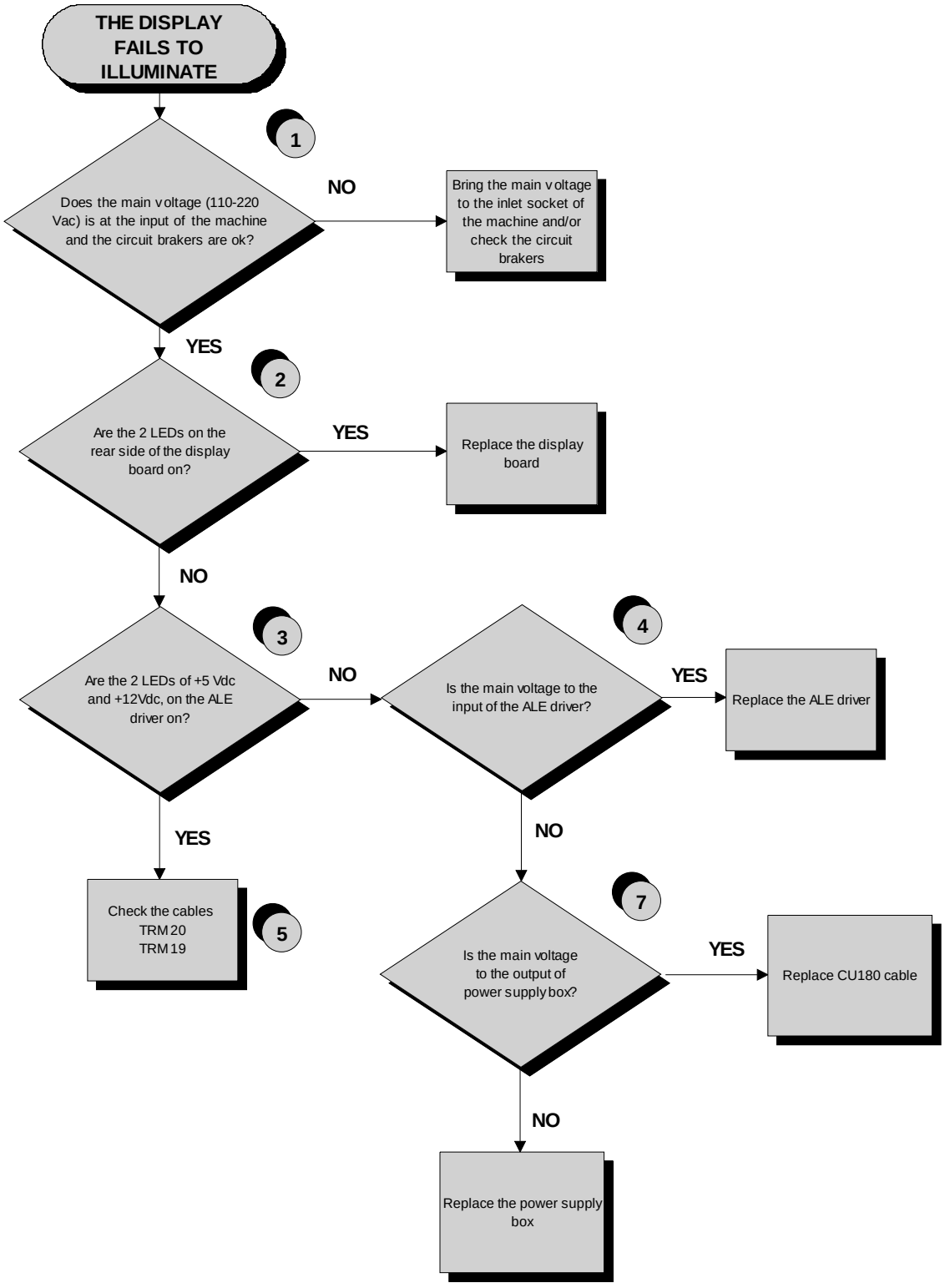
- *Machine incline position;*
- *Number of pulses generated by the elevation motor encoder;*
- *State of limit switch: if it is pressed, "MIN" is shown, nothing in the other condition.*

During the test it is possible to vary the incline using the ↑ and ↓ elevation keys, to check that the values vary accordingly.

6.4. THE DISPLAY FAILS TO ILLUMINATE

6.4.1. LED MODELS (500 – 700 – 900)

This error occurs when the power supply voltage does not reach the upper assembly.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

To speed up the troubleshooting procedure, check the state of the power indicator LEDs on the various circuit boards.

(1) *Slightly lift the Faston connectors on the machine power inlet socket. Place the tester probes across the live and neutral pins on the same connector. The measured voltage should be approximately 220 VAC/110 VAC.*

(2) *Check if the **LEDs 1** and **2** (+5Vdc and +12Vdc), on the ARM board are on.*

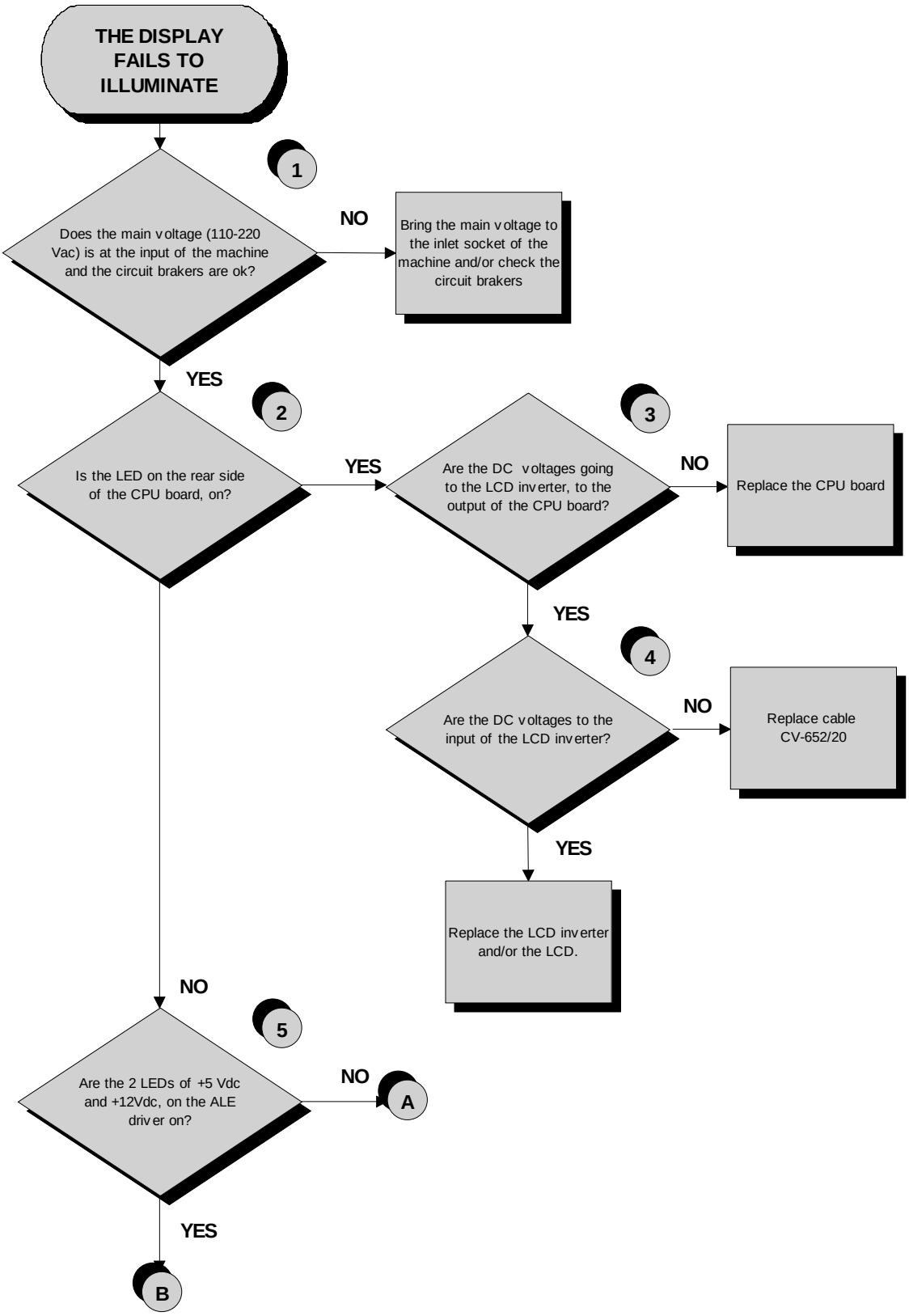
(3) *Check if the **LEDs H6** and **H3** (+5Vdc and +12Vdc)on the **ALE** driver are on, and LEDs **H2** and **H3** fot **AT UL** driver.*

(4) *Check if the main voltage (220Vac/110Vac) is on the pins **1** and **2** of the **J1** connectors of the **ALE** and **AT UL** driver.*

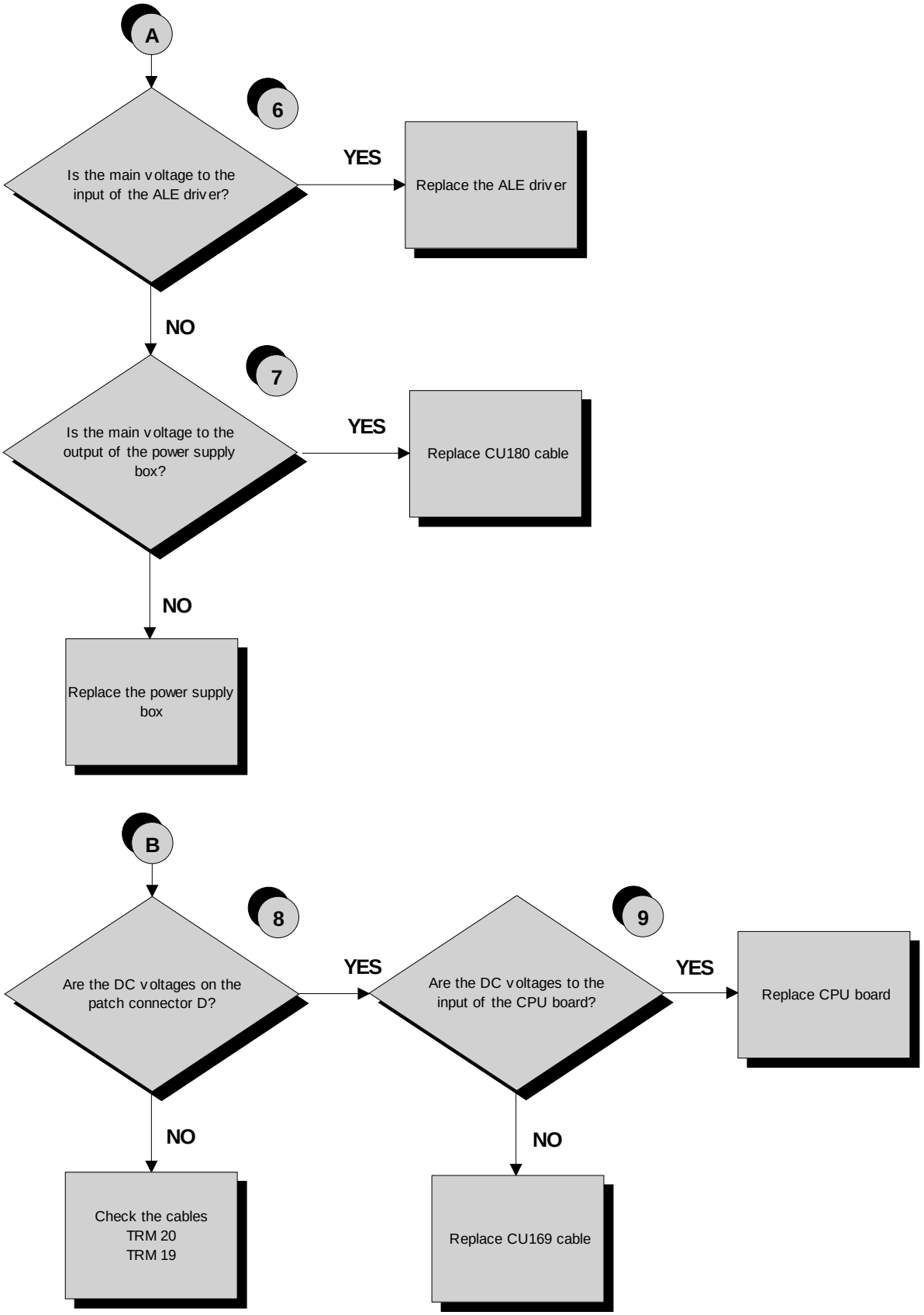
(5) *Check the continuity of the power supply signals on the **TRM19** and **TRM20** cables, by referring to paragraph: 2.7. "Cables" and replace what's defective.*

6.4.2. WELLNESS TV MODELS (700E – 900E)

This error occurs when the power supply voltage does not reach the upper assembly.



Continued on the following page.


A
6
Is the main voltage to the input of the ALE driver?
YES
Replace the ALE driver
NO
7
Is the main voltage to the output of the power supply box?
YES
Replace CU180 cable
NO
Replace the power supply box
B
8
Are the DC voltages on the patch connector D?
YES
9
Are the DC voltages to the input of the CPU board?
YES
Replace CPU board
NO
Check the cables
TRM 20
TRM 19
NO
Replace CU169 cable

Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

To speed up the troubleshooting procedure, check the state of the power indicator LEDs on the various circuit boards.

(1) *Slightly lift the Faston connectors on the machine power inlet socket. Place the tester probes across the live and neutral pins on the same connector. The measured voltage should be approximately 220 VAC/110 VAC.*

(2) *Check if the **LED 1** (+12Vdc), on the CPU board is on.*

(3) *Check if the +12Vdc is on Pin **1-9** and **3-10** of **CN5** connector on the CPU board. Check if the 3.3 Vdc is on Pin **1-5** of **CN5** connector on the CPU board.*

(4) *As for step above, on **CN1** connector of the LCD inverter.*

(5) *Check if the **LEDs H6** and **H3** (+5Vdc and +12Vdc) on the **ALE** driver, are on, and LEDs **H2** and **H3** fot **AT UL** driver.*

(6) *Check if the main voltage (220Vac/110Vac), is on Pin **1-2** of **J1** connector on **ALE** and **AT UL** driver.*

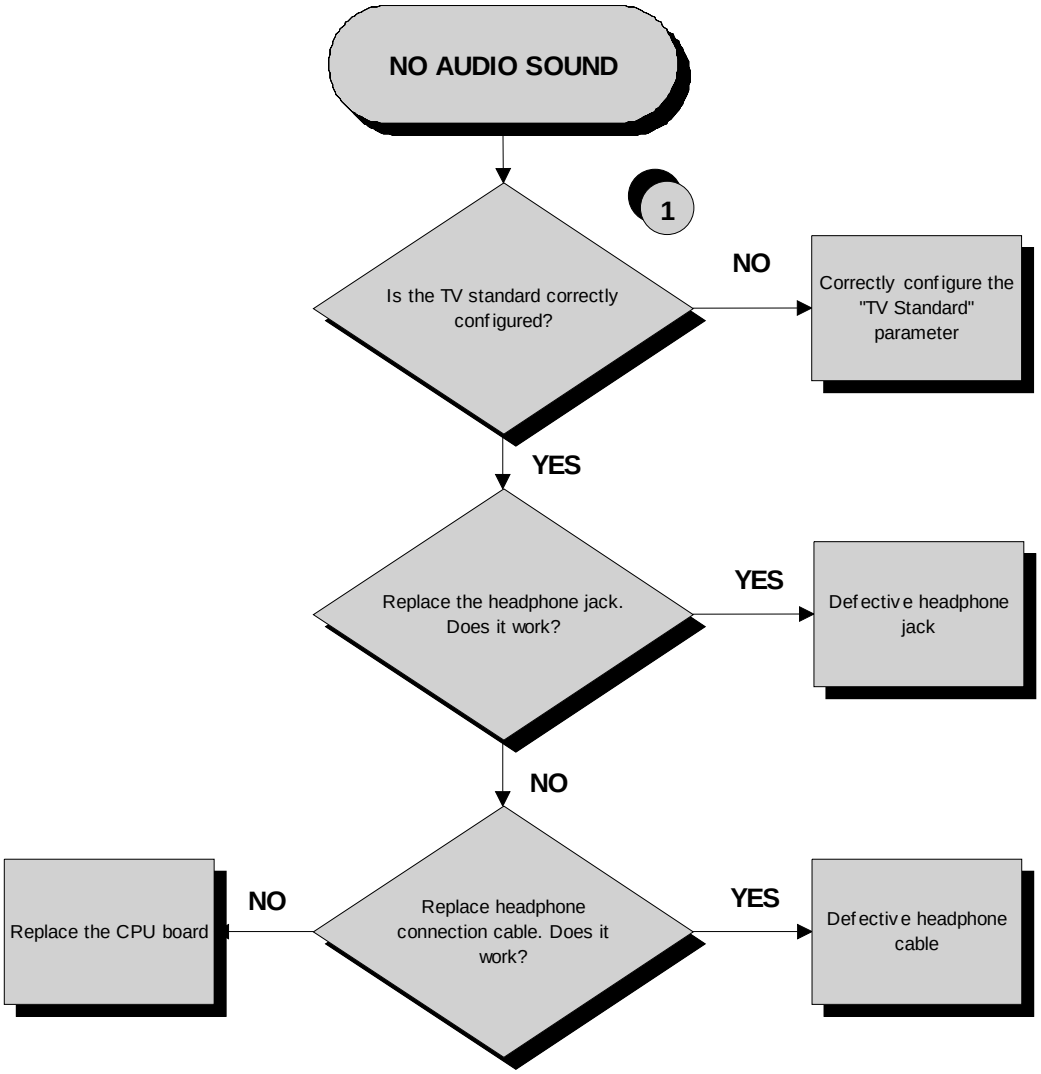
(7) *Check if the main voltage (220Vac/110Vac), is on fastons **OUT1** and **OUT2** on the filter board of the power supply box.*

(8) *Check the continuity of the power supplì signals on the **TRM19** and **TRM20** cables, by referring to paragraph: 2.7. "Cables" and replace what's defective.*

(9) *Check if the 12Vdc is to the input of CPU board, on Pin **2** and **6** of **CN20** connector.*

6.5. NO AUDIO SOUND

This error can be due to incorrect machine configuration, or to problems with the audio signal.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

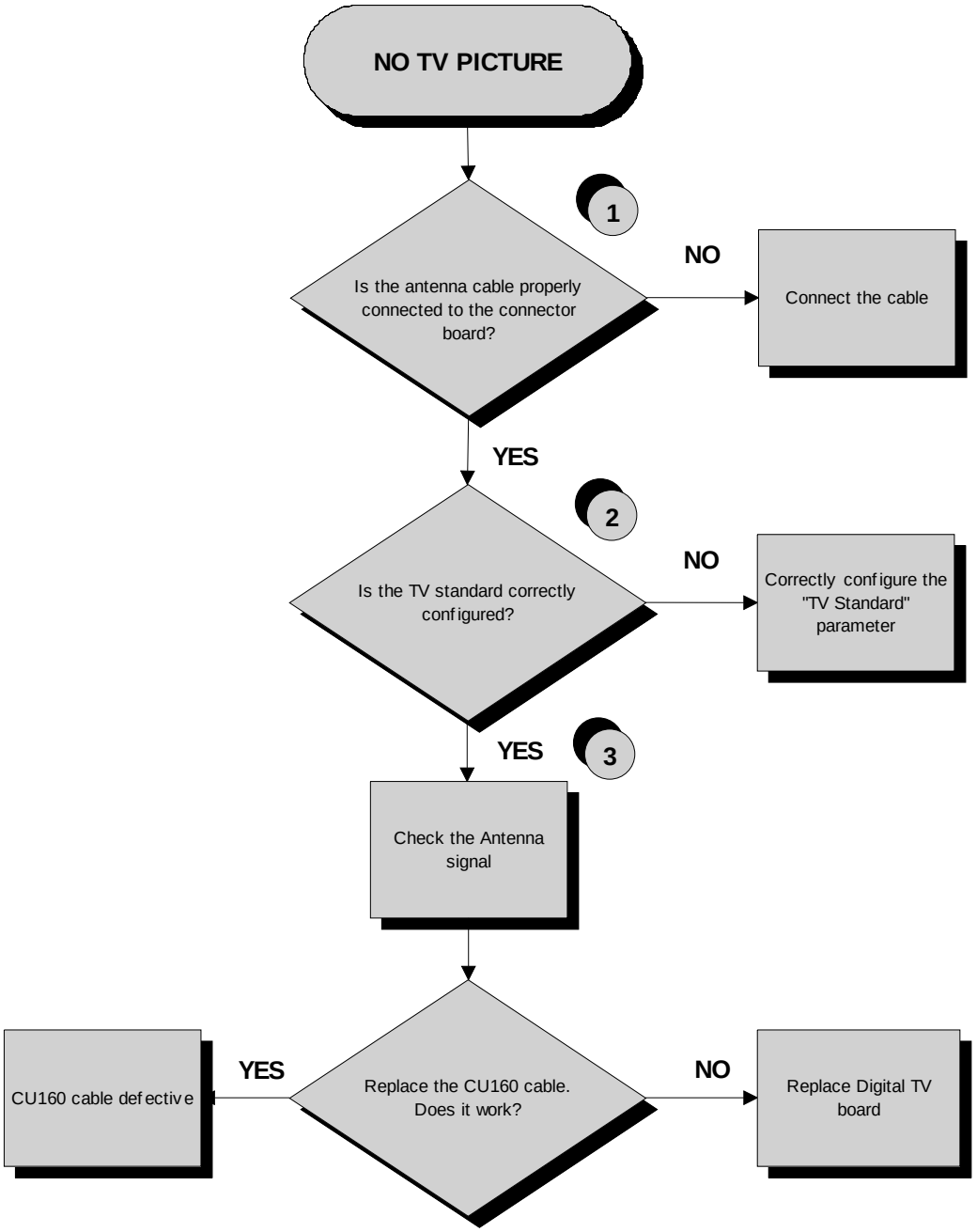
(1) *Carry out the configuration procedure described in paragraph: 0"TV Standard".*

6.6. NO TV PICTURE

Check that the machine is connected to an antenna signal.

This error can be due to incorrect machine configuration, or to problems with the antenna signal.

<u>NOTE ONLY FOR MODEL WITH STD TV ISDB-T (JAPAN)</u>: Before to carry out the following troubleshooting, check that the B-CAS card is correctly inserted on the TV Digital Board.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Check that the antenna cable is correctly connected to the **TUNER** on Digital TV board.*

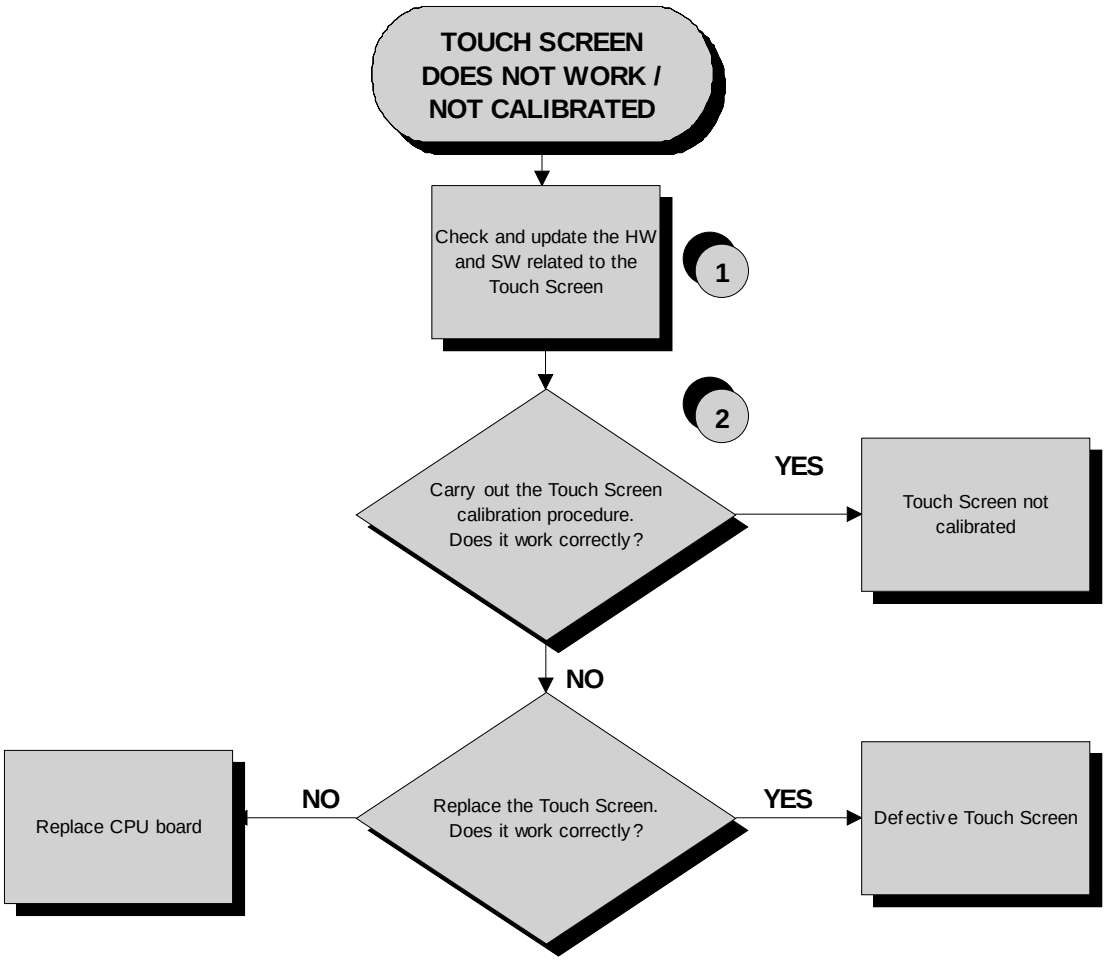
(2) *Carry out the the configuration procedure as detailed at paragraph: 5.2. "Specifications and requirements to install a Wellness TV machine"*

(3) *Check that the antenna signal matches with the minimal requested specifications detailed at paragraph: 5.2. "Specifications and requirements to install a Wellness TV machine".*

If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

The TV channels table has to be both on the Digital TV and CPU board. This means that in case even also only one of the 2 boards is being replaced, it is necessary to search or transfer from another machine and memorise again the TV channels list.

6.7. THE TOUCH SCREEN DOES NOT WORK / IT'S NOT CALIBRATED



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *It's recommended to upgrade the HW and SW of machine display to the last version, due to the steady work on the product for its improvement. Please refers to the proper section of the TG Direct web site: "Parts catalogue" and "Product release".*

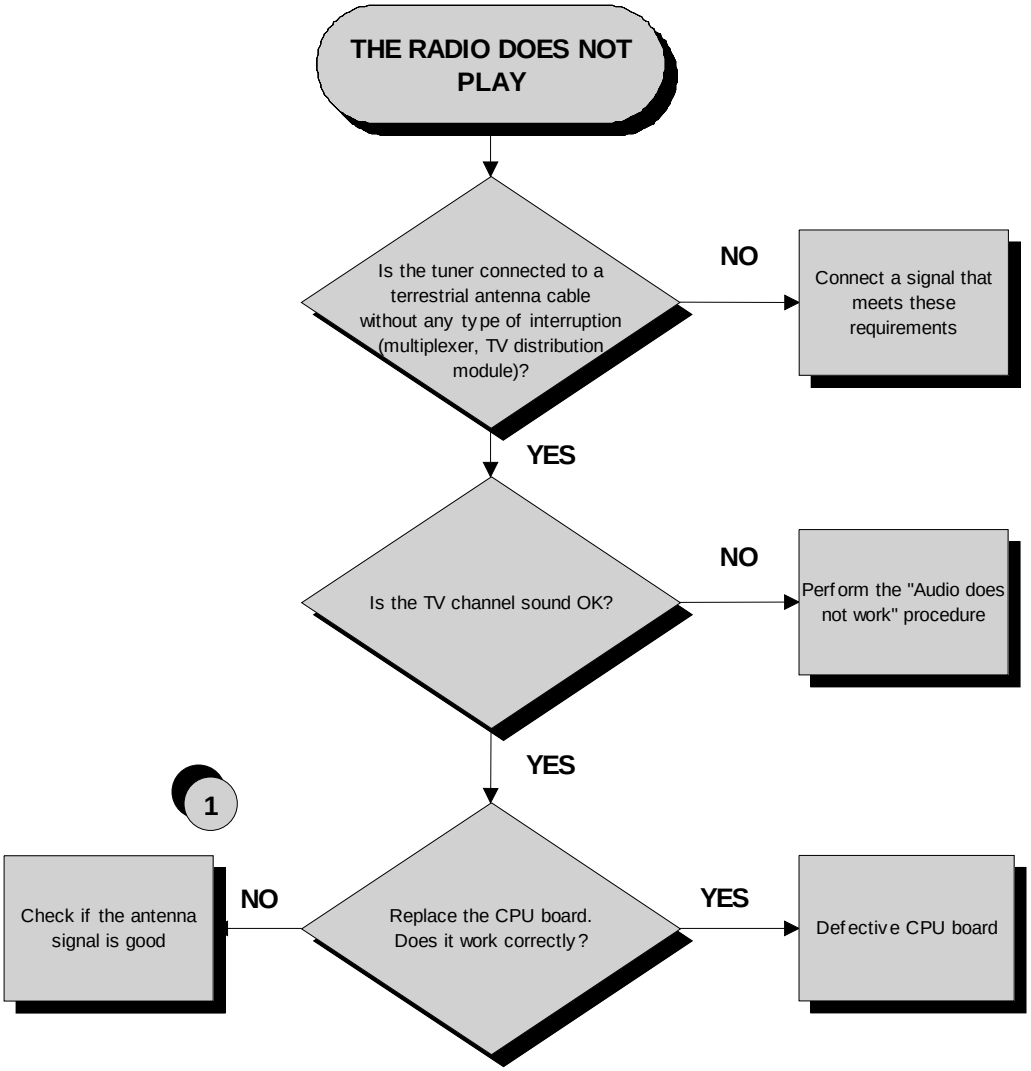
(2) *Carry out the Touch Screen calibration procedure as detailed at paragraph: 9.9. "Touch screen calibration".*

6.8. THE RADIO DOES NOT PLAY

The radio signal can only be acquired from an aerial antenna signal. If the machine is connected to a digital source (or to a satellite antenna) it will be impossible to use the radio function.

If ACTIVE Wellness TV interface is installed, check that the parameter: 9.3.20. "Radio", is correctly set.

It is now possibile only the tuning of the digital band and not more the analogue one.



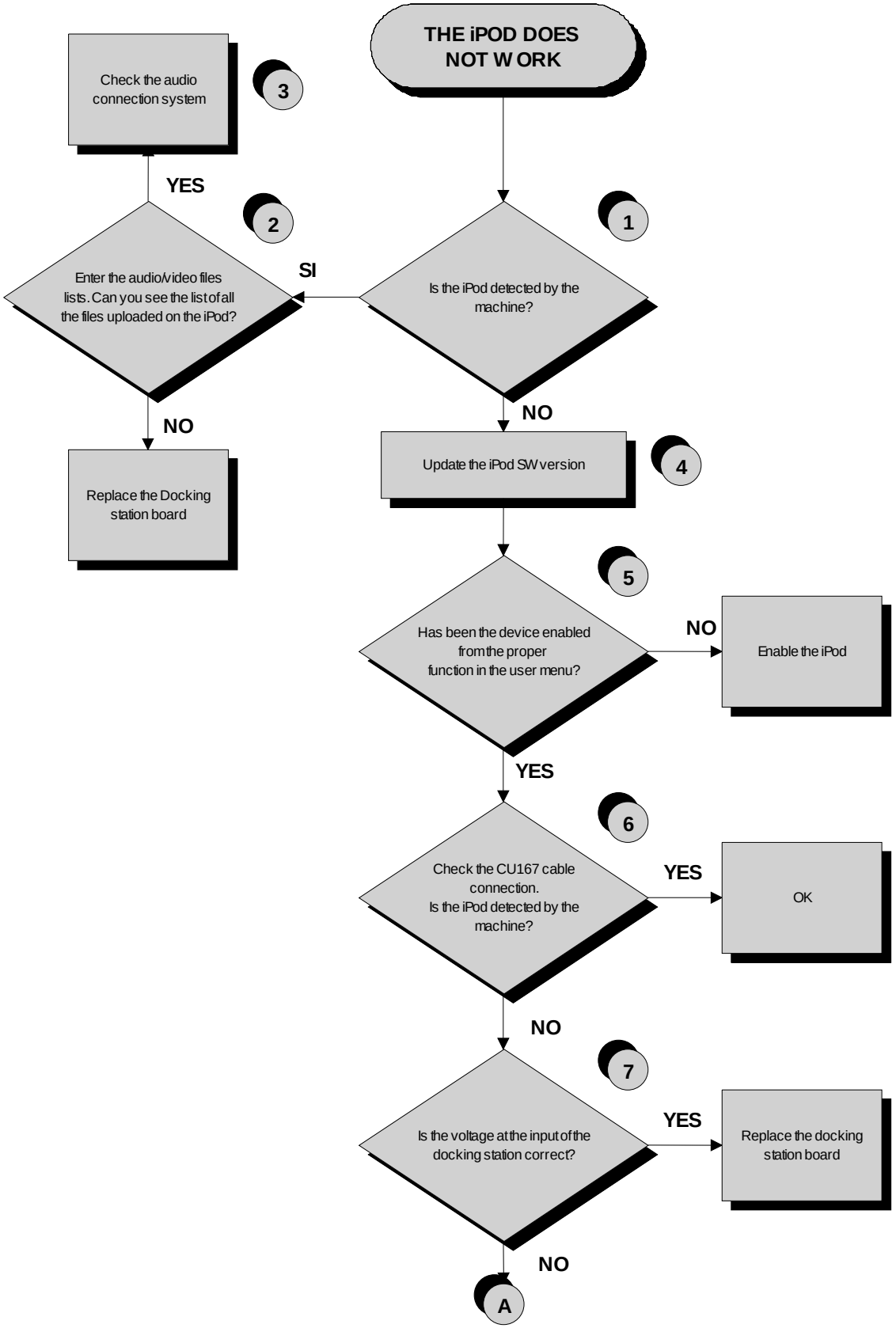
Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Chech that the antenna signal matches with the minimal requested specifications detailed at paragraph: 5.2. "Specifications and requirements to install a Wellness TV machine".*

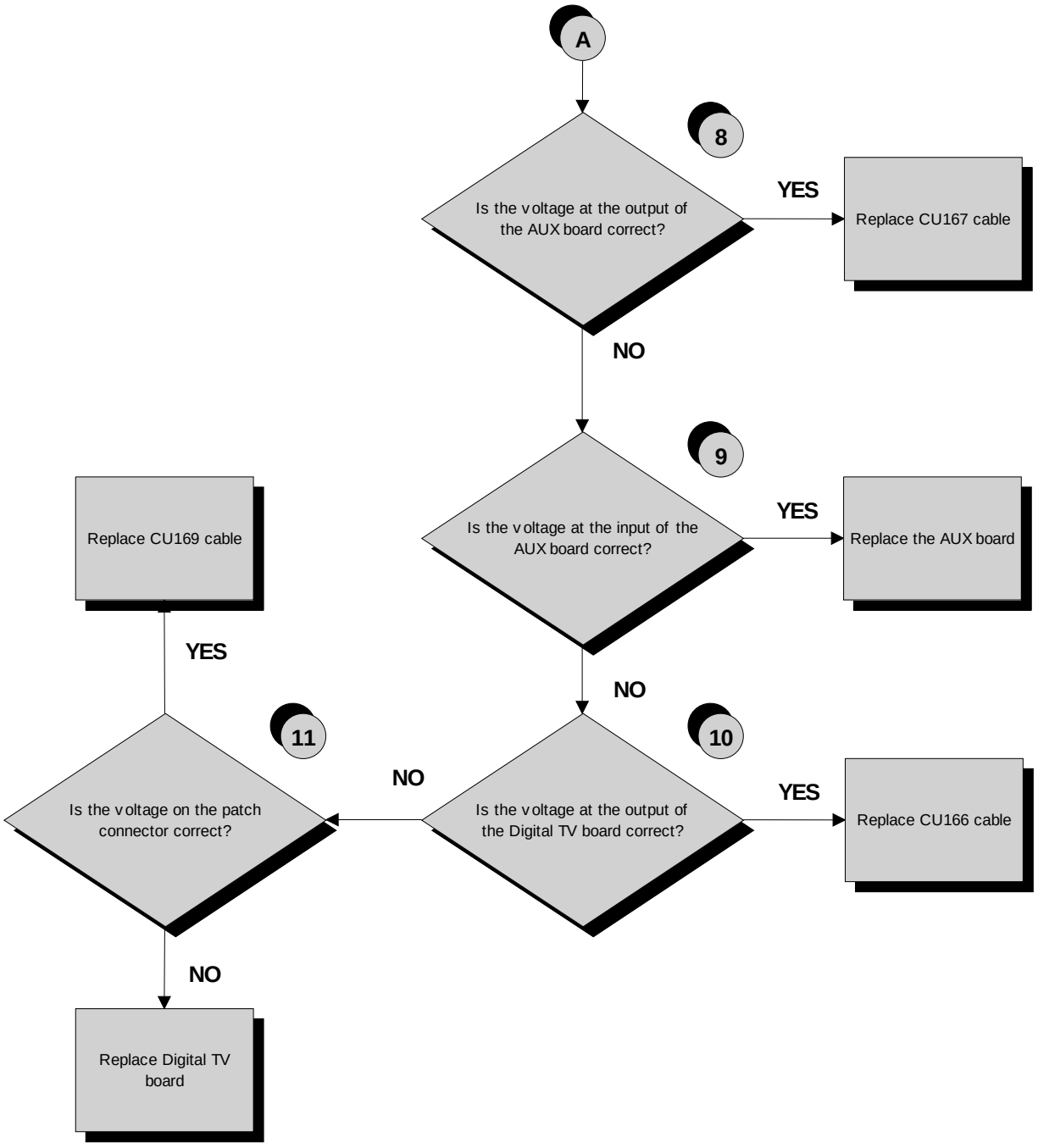
If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

The TV channels table has to be both on the Digital TV and CPU board. This means that in case even also only one of the 2 boards is being replaced, it is necessary to search or transfer from another machine and memorise again the TV channels list.

6.9. THE IPOD DOES NOT WORK



Segue nella pagina successiva.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Switch on the machine, connect the iPod on the docking station and check that the device is correctly detected by the machine.*

(2) *Check that the audio/video files uploaded in the iPod are visible and selectable through the WTV interface.*

(3) *Carry out the troubleshooting procedure at the paragraph: 5.2. "Specifications and requirements to install a Wellness TV machine"*

(4) *To update the iPod SW you just need to connect to iTunes and it automatically upgrades to the last version.*

(5) *Enable the iPod control as detailed at paragraph:9.3.21. "iPod connection option" in the user menu.*

(6) *The **CU167** cable has identical connectors on either end then it can sometimes be connected the wrong way round. Check that the connector marked with a blue sign is connected on the AUX connectors board.*

(7) *Place the tester probes across pins **8 - 9** of the connector on the docking station board where the **CU167** cable is connected. The measured value should be 5 Vdc.*

(8) *As for step (7) but across pins **6 - 7** of the connector on the AUX connectors board where **CU167** is connected.*

(9) *As for step (7) but across pins **9/10 - 13** of the connector on the AUX connectors board where **CU166** is connected.*

(10) *As for step (7) but across pins **9/10 - 13** of the connector **J9** on the Digital TV board.*

(11) *Place the tester probes across pins **3 - 7** on patch connector of **CU169** cable. The measured value should be 5 Vdc.*

If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

6.10. THE DISPLAY SHOWS “PRESS A KEYS…”

This error message can be caused by:

- *loss of communication between the lower and upper assemblies;*
- *the user has pressed the emergency button;*
- *detective emergency button: the micro switch is opened.*

To In order to reinstate normal operation, simply press any key. If communication between the upper and lower assemblies is not immediately re-established, the message will remain on the display while the machine continues trying for 30 seconds, after which the “THE EQUIPMENT IS BLOCKED” message will appear.

The machine keeps count of the attempts to reinstate communication by incrementing the COM.FAULT parameter, which can be viewed using the procedure described in paragraph 9.4.4.3 “COM.Fault”.

6.11. "THE EQUIPMENT IS LOCKED (COM)" MESSAGE ON DISPLAY

In the case of the equipment locked with error "The gear is locked" check the cause of the reported in parentheses below:

- ***(COM), for errors related to serial communication;***
- ***(EMER), for errors related to emergency button;***
- ***(cod. error), for errors generated by Low Kit.***

This error message can be caused by:

- *loss of communication between the lower and upper assemblies;*
- *theAT UL driver has detected an error condition, causing it to generate an alarm and store the error code in memory.*
- *problem on the emergency button.*

To optimize the troubleshooting procedure, follow the steps below:

1. Access the item "**TROUBLESHOOTING→AUTOMATIC TEST→ SERIAL PORTS TEST→Low Kit COM Test**". If the outcome of the test is negative, check the components of the link between the upper and lower kit, in particular:

   - *check that the wiring of the various cables (TRM-19 and TRM-20) is not damaged, in particular the cables of the "emergency signal" and of the "reset" by referring to paragraph: 2.7. "Cables", using the Test Box Excite.*
   - *try replacing each of the circuit boards in turn (display board or digital plan board and ALE/AT UL driver board) and check whether the communication works.*

   If the outcome of the test is OK move on to step 2.

2. Access the item "**TROUBLESHOOTING→AUTOMATIC TEST→Inverter Test**". If the outcome of the test is negative, check the error code stored in the "**ERRORS LOG**" and perform the corresponding troubleshooting procedure, if the outcome is OK advance to step 3.

3. The machine lockout problem has to do with the handling of the emergency signal:

   - *check that the emergency button is not pressed;*
   - *check that the cord, linked to the emergency button, is not to taut so that it keep the emergency button contact open;*
   - *check that all the cables linked to the emergency device management are properly connected and in a good state of wear.*

WARNING: if the display board detects an error condition during the tread belt motor movement, it displays the error message and turns off the AC motor by the ALE/AT UL driver.

6.12. ALE DRIVER ERROR

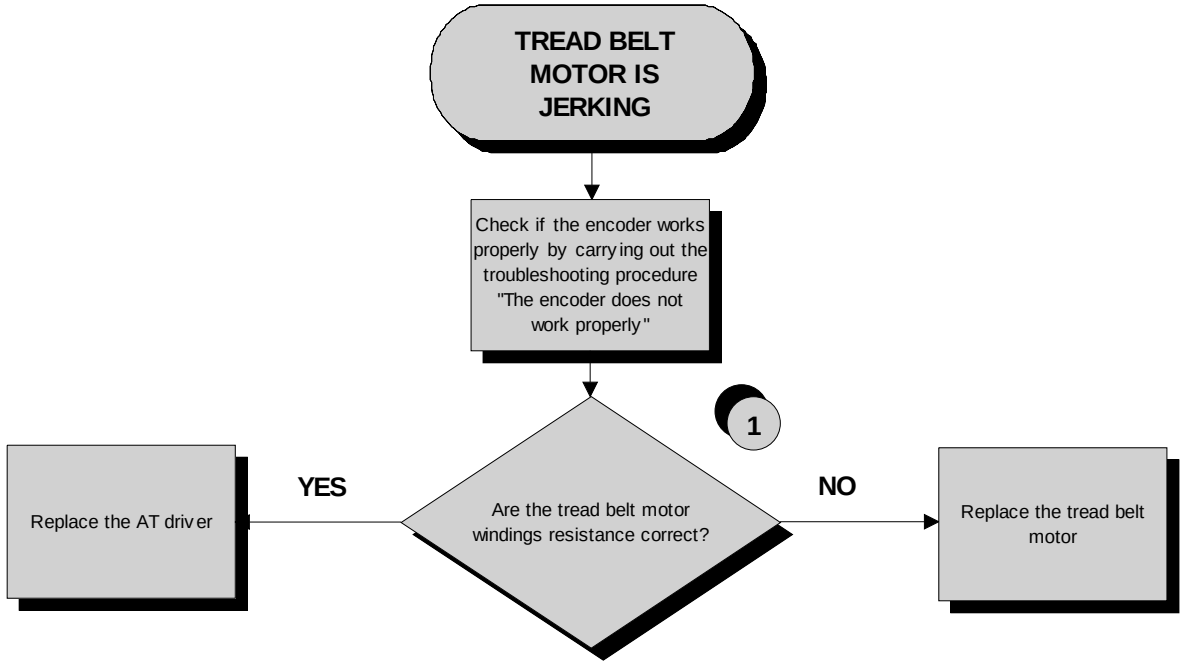
When the ALE/AT UL driver detects an error, it stops and interrupts the power supply to the tread belt and elevation motor. An error code identifying the fault condition is saved in the error history log. In addition, it sends an error status signal to the display board via the serial link. Upon receiving this error signal, the display board halts the exercise and shows the "THE EQUIPMENT IS BLOCKED" message on the display.
The errors logged by the inverter can also be viewed as described in paragraph 9.4.4. "Errors log".
The following table shows the correspondence between the numbers, codes and possible solution:

Error code	*Description*	*Possible solution*
1/OH	OVERHEATING of the heat sinks of the low kit driver and of the PFC.	• Check the running belt • Check the running deck • Check the fans • low kit driver
2/OC	OVERCURRENT, even if only temporary, on the inverter output.	• Check the running deck • low kit driver • Check P409 (torque) = 100-115
3/UU	UNDERVOLTAGE condition, due to an even temporary drop in line voltage.	• Bad power distribution line of 110/220 V AC • Voltage NOT constant
4/OU	OVERVOLTAGE	• Voltage NOT constant • Braking resistor
5/ST	SERIAL TIMEOUT, there is no signals exchange between high kit and low kit	• Check the serial communication
6/PE	EEPROM error: is generated when there is an error detected in the data stored on the Eprom.	• low kit Driver
7/EdC1	ELEVATION MOTOR ENCODER error.	• Check Up/Down Troubleshooting
8/EdA	BELT MOTOR ENCODER error.	• Encoder • low kit Driver • Check P409 (torque) = 100-115
9/OtM	BELT MOTOR THERMAL CUT-OUT open.	• Update ALE driver SW • Check motor casing fan • Check the running belt • Check the belt motor
10/Oli	Inverter overload caused by a DC current exceeding, for the maximum allowed time (I2t), the maximum permissible threshold for the inverter.	-
11/OLm	Motor overload caused by a DC current exceeding, for the maximum allowed time (I2t), the maximum permissible threshold for the motor in question.	-
12/OLr	Braking resistor overload.	• Check the resistor=150 Ω • low kit Driver

Error code	*Description*	*Possible solution*
19/EM	EMERGENCY. Is generated when low kit drive receives a software emergency signal that is not accompanied by a hardware emergency signal	-
20/SFAn	LOW KIT DRIVER COVER PLATE FAN. This error is genereted if there is a mulfunction on the fan mounted on the driver's cover plate, for at least 5 sec.	• low kit driver cover plate fan
21/PFAn	LOW KIT DRIVER INTERNAL FAN. This error is genereted if there is a mulfunction on the internal low kit driver fan, for at least 5 sec	• low kit driver internal fan
22/IMV	INVERTER POWER SUPPLY: This error is generated if a voltage <156 VAC for at least 1 sec. when the AC motor is working or for at least 10 sec. when AC motor is not working.	-
23/SHC	SHORT CIRCUIT. Is generated in the event of a short circuit between a motor phase and earth.	• Check the belt motor
24/OHS	OVERHEATING of the dissipator sensor: This error is genereted if a mulfunction of the dissipator sensor last more than 1 sec.	• low kit driver

6.13. TREAD BELT MOTOR IS JERKING

The probable cause is a disconnected phase either at the ALE/AT UL driver board output or on the motor;



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Check parameter P409 as detailed at paragraph 9.4.6.2 "Config. registers".*

(2) *Disconnect the cable from the motor and place a tester across its terminals U-V, U-W and V-W. The measured value of the resistance should be 1.9 Ohm.*

6.14. "GRADIENT NOT WORKING" MESSAGE ON THE DISPLAY

If the elevation does not work and there is no error message on the display, the elevation movement may have been disabled in the configuration menu. For further details, refer to paragraph 9.2.12. "Enable up/down motor".

Check parameter PAR 09 is settingAT UL *15 (1,5 Sec.).*

This parameter defines the time window within which the inverter expects to receive a sufficient number of pulses from the elevation motor, before generating an error condition.

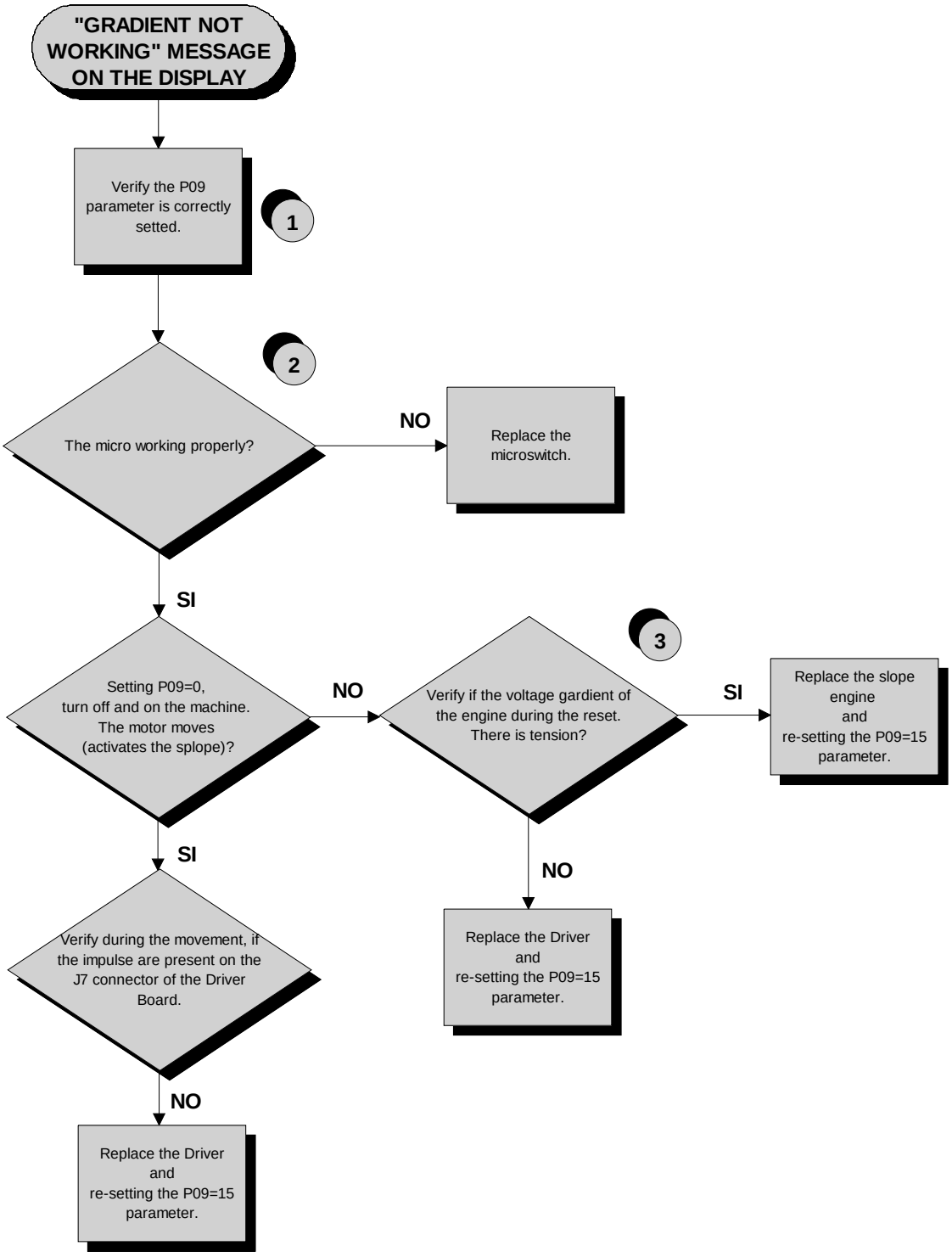
1. *This error message indicates that the machine is unable to control the elevation motor. The error is produced when the inverter does not receive pulses from the motor encoder, after having enabled it. In this case the machine disables any movement and sets the parameter PAR 07 to 1.*

2. *The error message may be caused by a problem with the lower limit switch. In fact if the limit switch malfunctions or accidentally remains in the open-contact state, rather than in the normally closed state, the error is not generated immediately but will occur as soon as the elevation is increased beyond 1%. At this point, the elevation function will be locked out and parameter PAR 07 set to 1.*

3. *The error message may be due to a misalignment of the elevation motor encoder. In fact, if the encoder of the elevation motor is not correctly positioned, the motor will fail to produce a pulse. At this point, the elevation function will be locked out and parameter PAR 07 set to 1.*

When the machine is switched on again, the parameter PAR 07 is automatically reset to 0 and the machine performs the reset procedure. If the error does not happen anymore, supposing it was generated by a noise, the machine restarts to work properly.

It might also be helpful to refer to the theoretical explanation of the elevation control, provided in paragraph: 3.3. "Elevation motor drive".


"GRADIENT NOT WORKING" MESSAGE ON THE DISPLAY
Verify the P09 parameter is correctly setted.
1
2
The micro working properly?
NO
Replace the microswitch.
SI
Setting P09=0, turn off and on the machine. The motor moves (activates the splope)?
NO
3
Verify if the voltage gardient of the engine during the reset. There is tension?
SI
Replace the slope engine and re-setting the P09=15 parameter.
SI
NO
Replace the Driver and re-setting the P09=15 parameter.
Verify during the movement, if the impulse are present on the J7 connector of the Driver Board.
NO
Replace the Driver and re-setting the P09=15 parameter.

Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

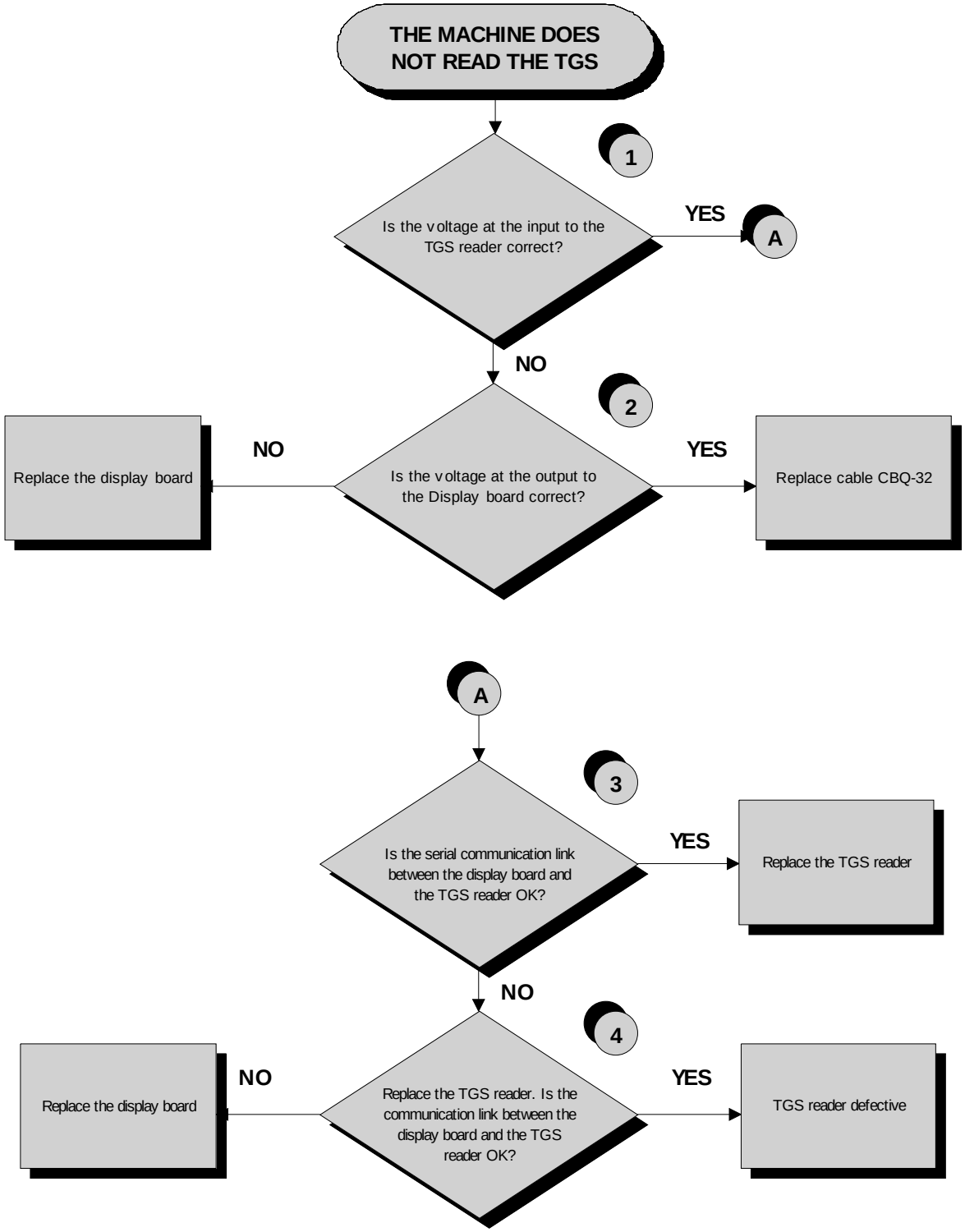
(1) *Check the parameter setting as detailed in paragraph: 9.2.12. "Enable up/down motor".*

(2) *Open the ALE/AT UL driver cover plate and press manually the limit switch. When the limit switch is pressed,* ***DWN-SW*** *LED has to be ON while has to be OFF if released.*

(3) *Place the tester probes across pins* ***6*** *and* ***4*** *of connector* ***J7*** *on the* ***ALE*** *and* ***AT UL*** *driver board. The measured value should be approximately 2.5 Vdc. If an oscilloscope is available, it is possible to view the pulses produced by the encoder itself.*

6.15. THE MACHINE DOES NOT READ THE TGS

The machine displays this error if the TGS reader is not working properly, or if it is not supplied by the display board.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Place the tester probes across pins **1** and **8** of connector **CN1** of **CU132** cable of the TGS reader. The measured value should be +12 Vdc.*

(2) *As for step (1) but across pins **1** and **9** of connector **CN7** of **TRM32** cable on the display board.*

(3) *Use the serial communications test described at paragraph: 6.2.1.5 "*Serial Ports Test*".*

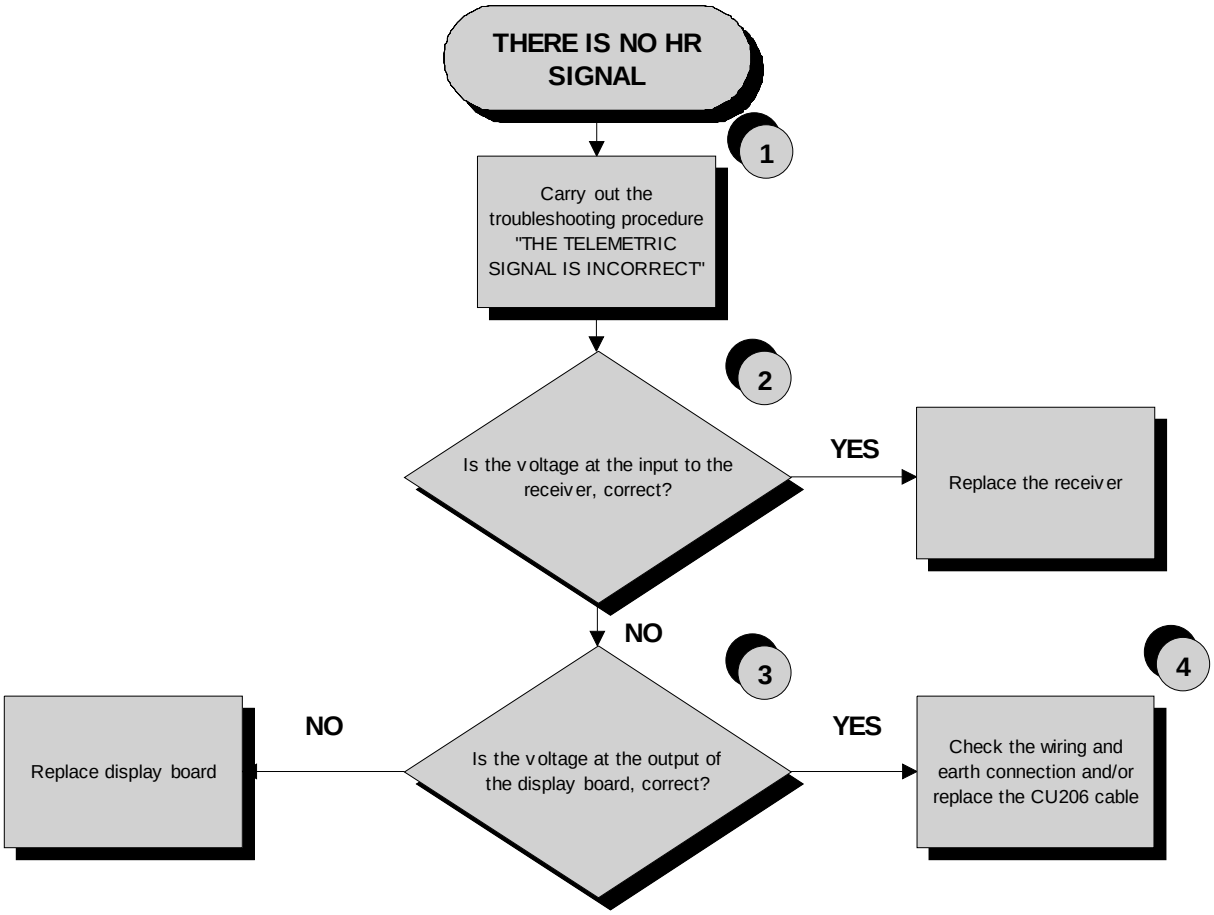
If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

6.16. THERE IS NO HEART RATE SIGNAL

6.16.1. SALUTRON TELEMETRIC RECEIVER

The machine displays this error if:

1. *electromagnetic noise saturate the HR receiver which does not display any value due to a specific SW filter which cut every signal, greater than 220 bpm;*
2. *the receiver is not working properly;*
3. *the receiver is not supplied by the display board.*



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Carry out the troubleshooting procedure* ***Errore. L'origine riferimento non è stata trovata.****"****Errore. L'origine riferimento non è stata trovata.****".*

(2) *Place the tester probes across pins* ***1*** *and* ***2*** *of the* ***CU218*** *cable on* ***HD4*** *connector of the receiver. The measured value should be +5 Vdc.*

(3) *As at step (2) but on pin* ***1*** *and* ***6 CU218*** *cable on* ***CN10*** *connector of the display board or* ***CN19/21****, of the CPU board.*

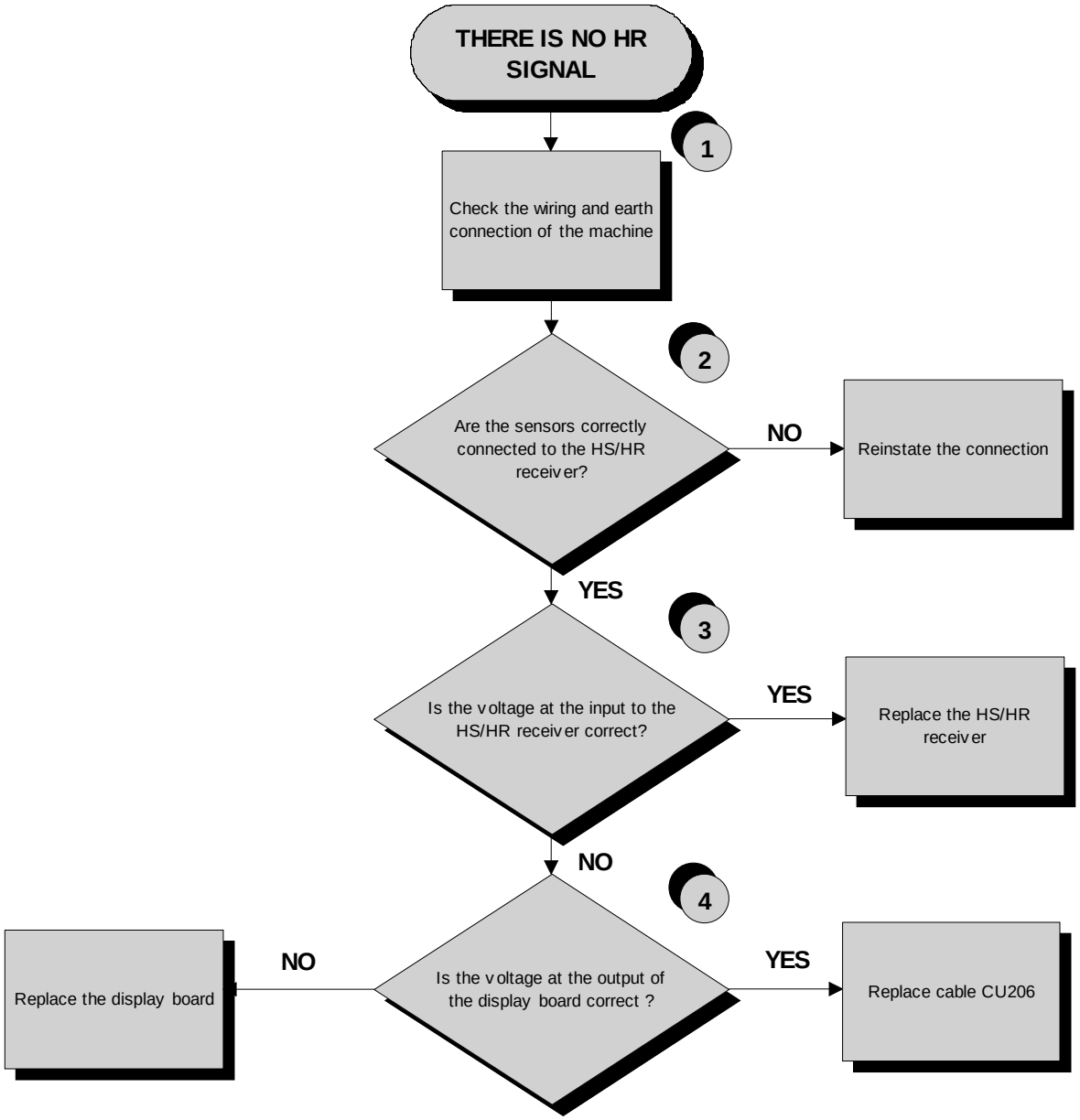
(4) *Check the earthing of the machine using a tester to measure the resistance between the ground pin on the power supply cable and the ground node to which the hand sensor are connected inside the display. The value must be less than 1 Ohm.*

If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

6.16.2. HAND SENSOR

The machine displays this error if the HS/HR receiver is not working, or if it is not supplied by the display board.

For an easier and quicker diagnosis of the problem, we recommend to use the functions of Test Box Excite.



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Check the earthing of the machine using a tester to measure the resistance between the ground pin on the power supply cable and the ground node to which the receiver is connected inside the display. The value must be less than 1 Ohm.*

(2) *Check the connections, referring to paragraph: 2.6. "*Wiring diagram*"*

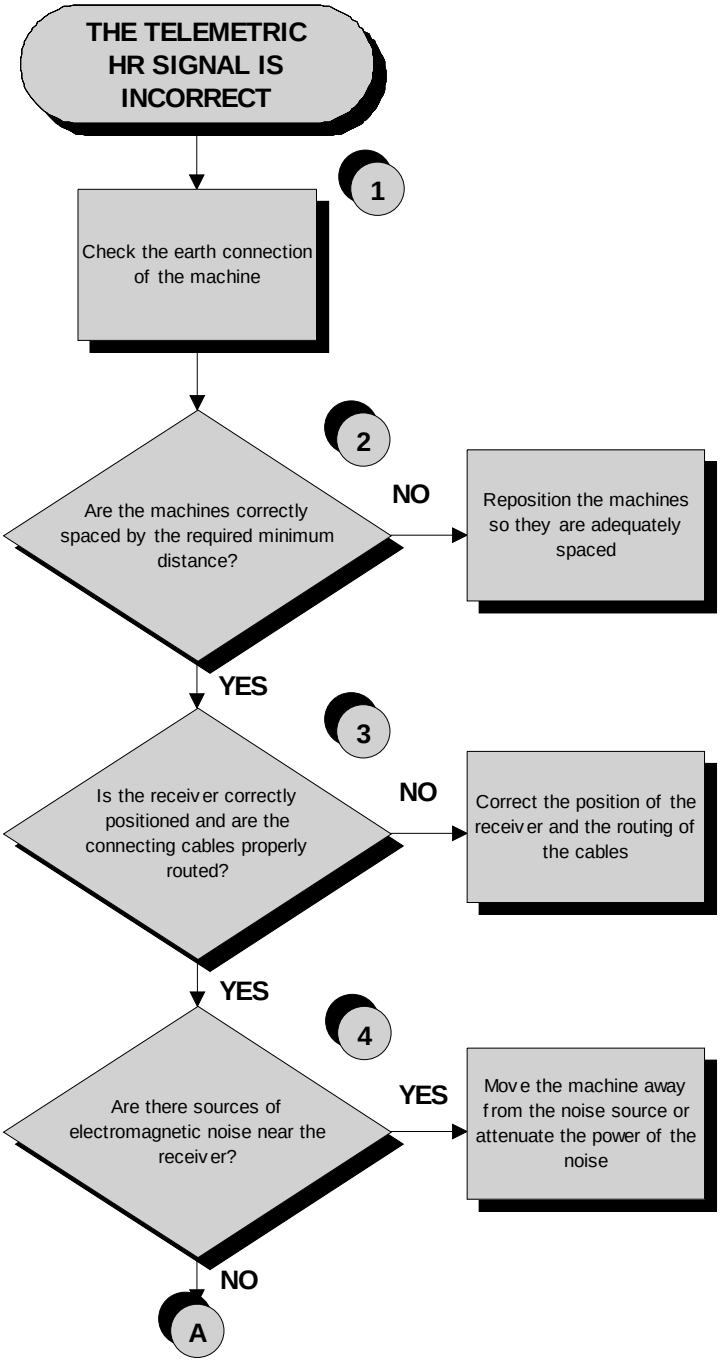
(3) *Place the tester probes across pins **1** and **2** of the **CU218** cable on **HD4** connector of the receiver. The measured value should be +5 Vdc.*

(4) *As at step (3) but on pin **1** and **6 CU218** cable on **CN10** connector of the display board or **CN19/21**, of the CPU board.*

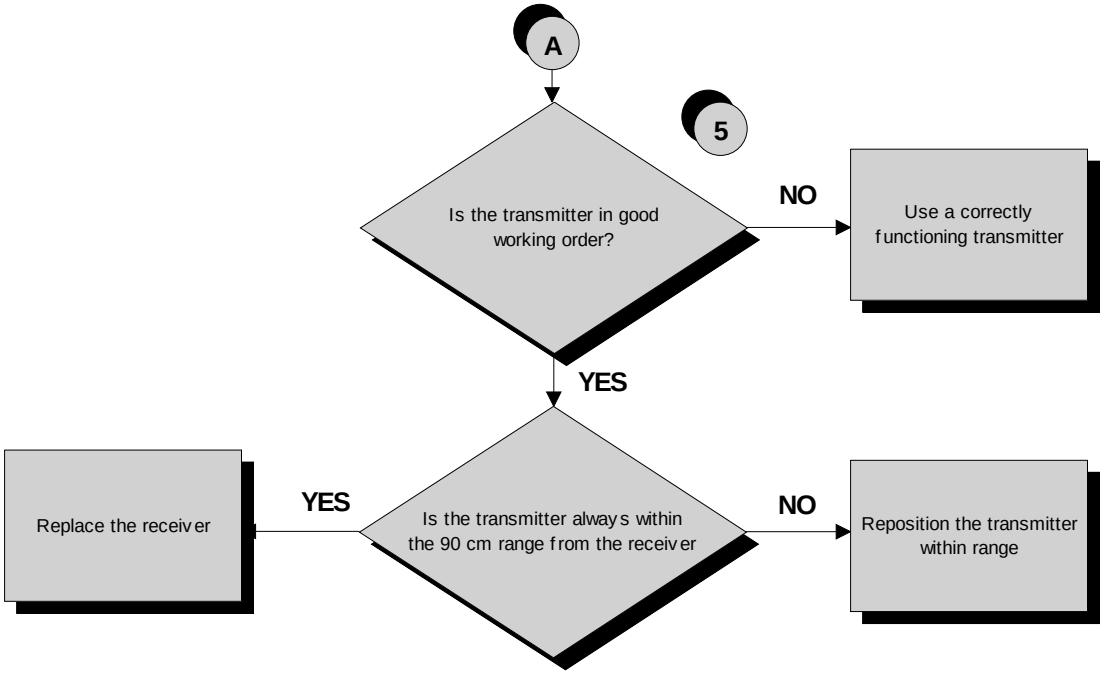
If you replace Display board/Brake board, check that its SW version is updated, otherwise install the last version.

6.17. THE TELEMETRIC HEART RATE SIGNAL IS INCORRECT

The machine displays this error if the receiver is disturbed by sources of electromagnetic noise.



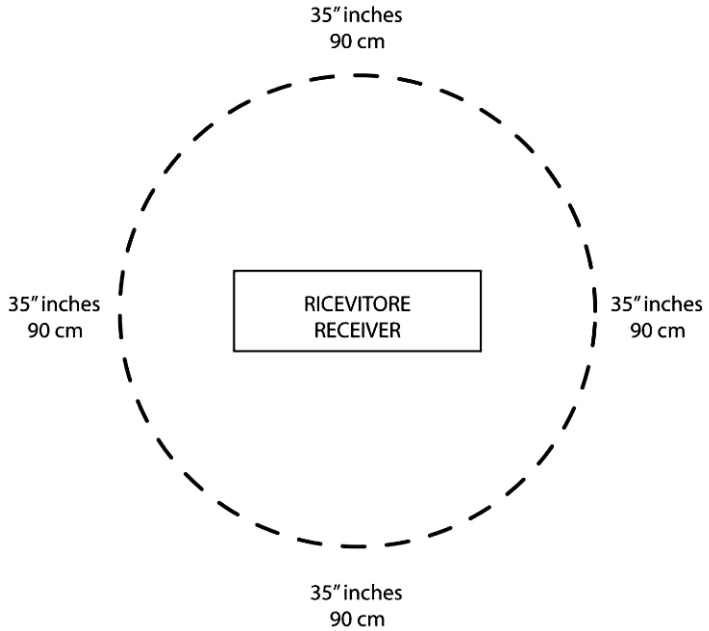
Continued on the following page



Follow the procedure step by step to correctly diagnose the problem. Take particular care with the checks highlighted by circled numbers, which are described in detail below:

(1) *Check the earthing of the machine using a tester to measure the resistance between the ground pin on the power supply cable and the ground node to which the receiver is connected inside the display. The value must be less than 1 Ohm.*

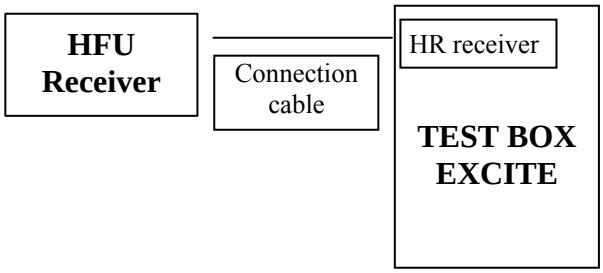
(2) *For machine positioning layouts, use the following diagram as a reference, where the value in the diagram indicates the medium distance for signal reception during the exercise (± 4" inches or 10 cm).*



Dove il raggio indica la distanza nedia di ricezione durante l'esercizio (con una precisione di circa ± 10 cm – 4" inches).

(3) *Check that the cardio receiver has been assembled properly as described in the procedure: 7.9. "*HS/HR reciever (salutron 8500) disassembly*".*

(4) *To check for electromagnetic noise near the machine, use Test Box Excite as detailed here below. You can use one of the following cables* ***ELT-16*** *(0WC00518AB),* ***CBQ-28*** *(0WC00390AC) or* ***TRM-28*** *(0WC00336AC) as connection cable.*



The circuit lights the LED for each heart beat and/or disturbance received: in this way it is possible to determine whether there is any interference, and identify its sources.

(5) *Check the battery power level, using a tester if possible. Otherwise use a receiver or another reference machine to check the operation up to a distance of about 90 cm from the receiver.*

7. PART DISASSEMBLY

7.1. DISPLAY DISASSEMBLY

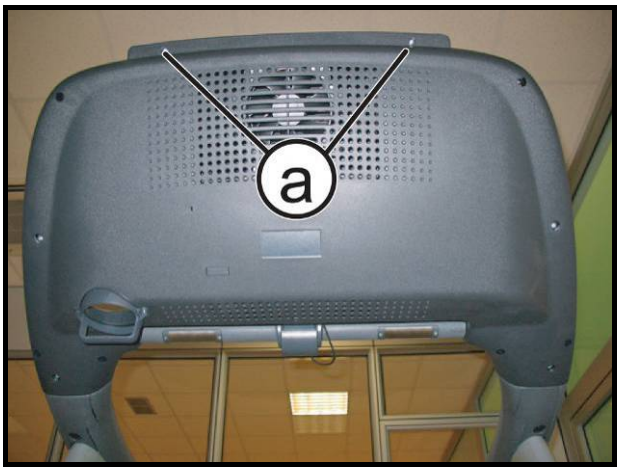


Figure7.1-1

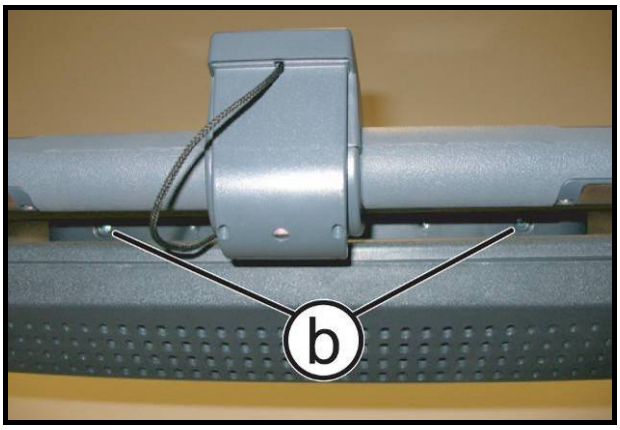


Figure7.1-2

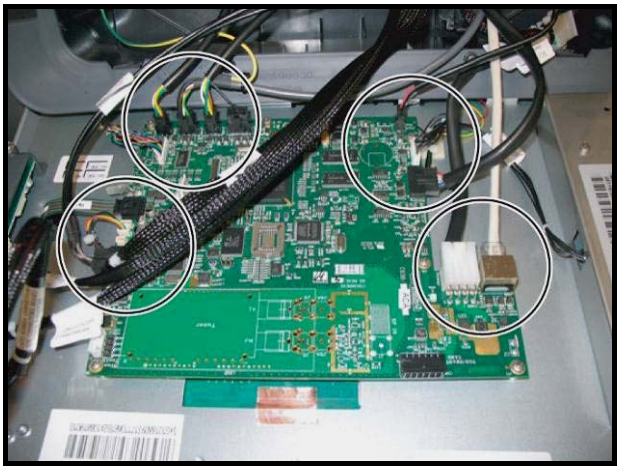


Figure7.1-3

1. Turn off the machine and unplug the mains lead from the wall outlet.
2. Back off the 2 screws **(a)** with a medium Phillips screwdriver.
3. Back off the 2 screws **(b)** with a medium Phillips screwdriver.

For remove the display:

4. Unplug the connectors of display board, as indicated in the figure at left.
5. Remove the display.

To reassemble the display, carry out the above steps in reverse order.

7.2. DISASSEMBLING THE CIRCUIT BOARDS OF THE DISPLAY

7.2.1. LED VERSION

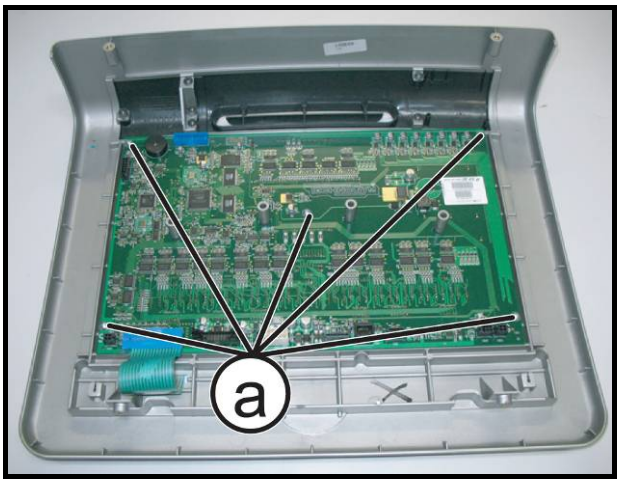


Figure7.2-1

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

Place the display on a work bench.

1. Back off the 5 screws **(a)** with a medium Phillips screwdriver and remove the Display Board.

To reassemble the Display Board, carry out the above steps in reverse order.

7.2.2. 700E AND 900E WELLNESS TV (UB) VERSION

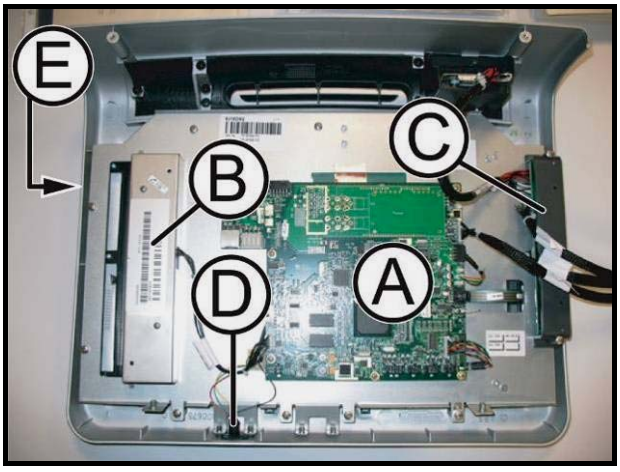


Figure7.2-2

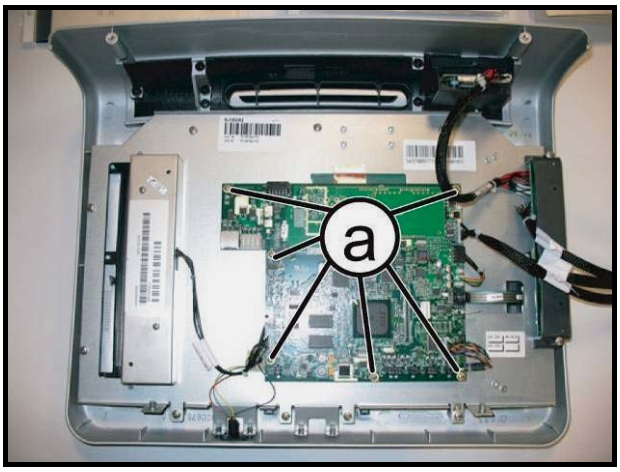


Figure7.2-3

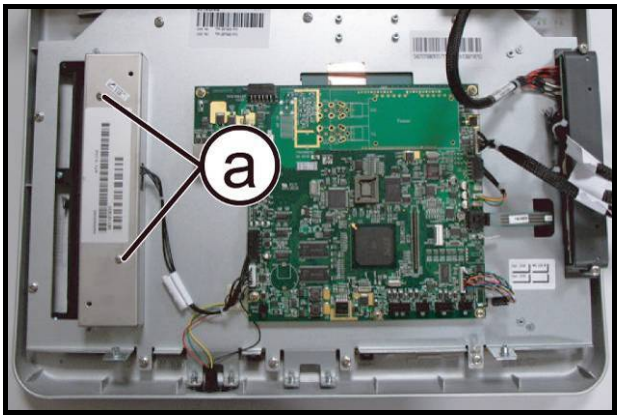


Figure7.2-4

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

Place the display on a work bench.

It is now possible to disassemble its circuit boards:

- The CPU board **(A)**,
- The LCD inverter **(B)**,
- The input AUX board**(C)**,
- The Headphone Jack **(D)**,
- The LCD and Touch Screen **(E)**.

*CPU board **(A)**:*

1. Disconnect the cables from LCD, LCD inverter, Touch Screen and Headphone Jack.
2. Back off the 6 screws **(a)** with a small Phillips screwdriver.
3. Remove the CPU board.

*LCD Inverter **(B)**:*

1. Back off the 2 screws **(a)** with a small Phillips screwdriver.
2. Remove the inverter protection guard.
3. Disconnect the LCD inverter from CPU board.

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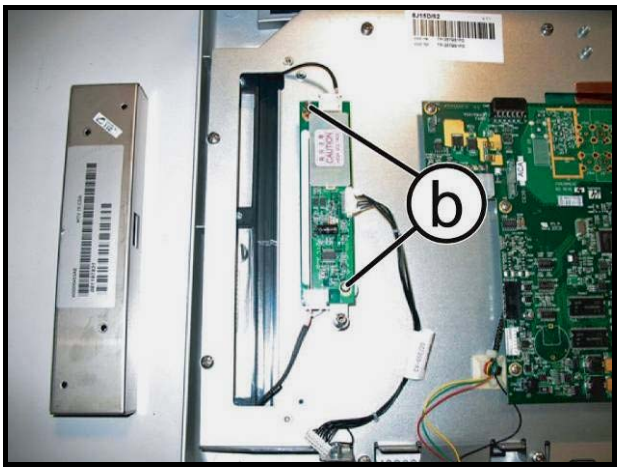

Figure7.2-5

4. Disconnect the 2 connectors of the cables which connect the LCD inverter to the LCD.
5. Unscrew the two threaded spacers **(b)**, between the LCD inverter and the display plate.
6. Remove the LCD inverter.

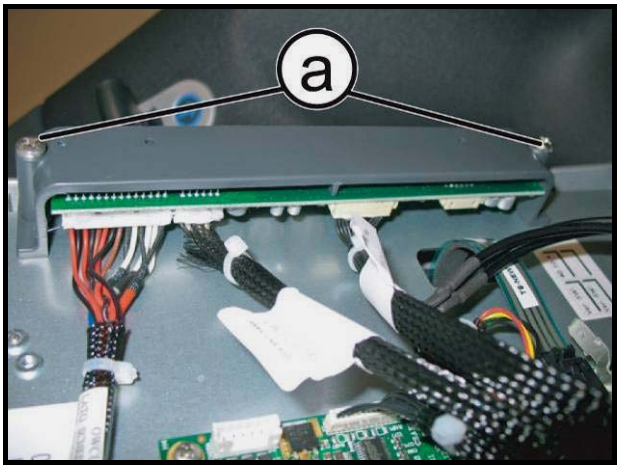

Figure7.2-6

*Input AUX board **(C)**:*

1. Back off the 2 screws **(a)** with a medium Phillips screwdriver.

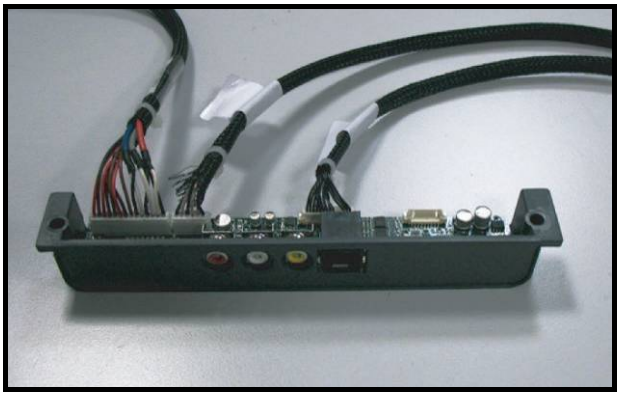

Figure7.2-7

2. Disconnect the 3 cables which connect it to the CPU board.

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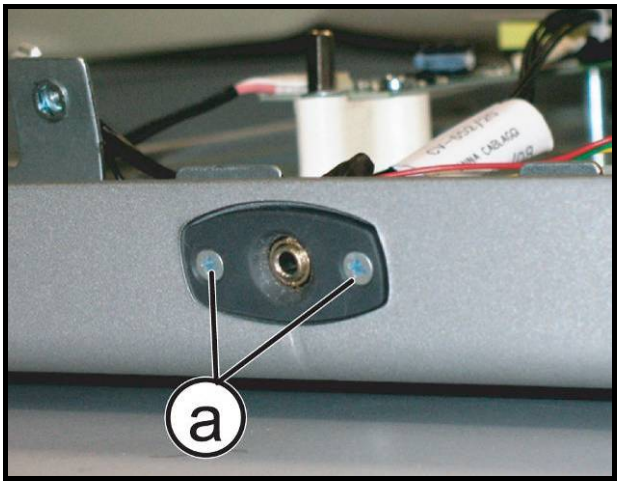

Figure7.2-8

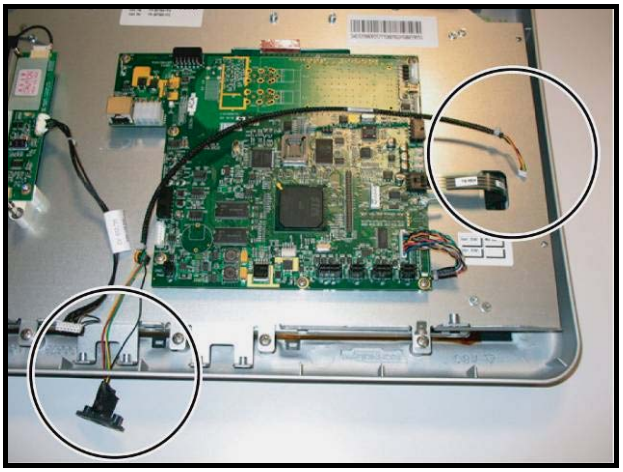

Figure7.2-9

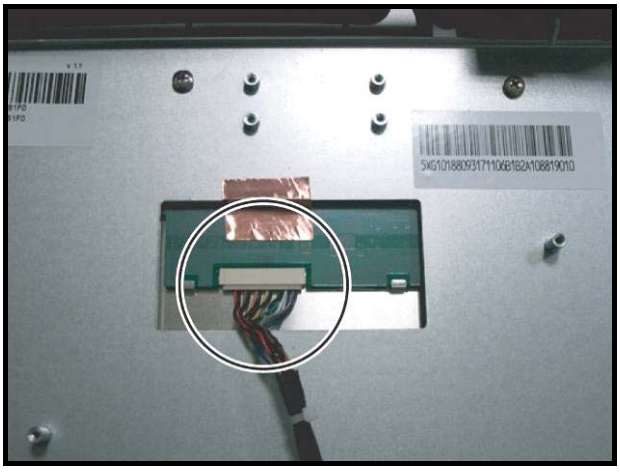

Figure7.2-10

*Headphone Jack **(D)**:*

1. Back off the 2 screws **(a)** fixing the headphone to the display, with a small Phillips screwdriver.

2. Disconnect the connector highlighted in the figure to side.

*LCD and Touch Screen **(E)** disassembly:*

Carry out the disassembly operations of CPU, as highlighted in Figure7.2-3.

1. Disconnect the connector highlighted in the figure to side.

Continued on following page →

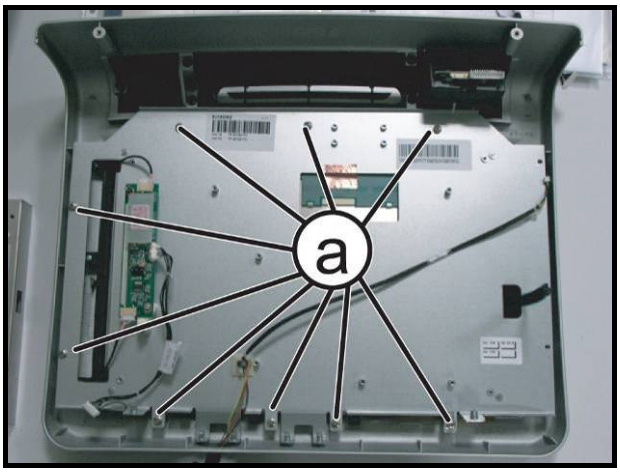

Figure7.2-11

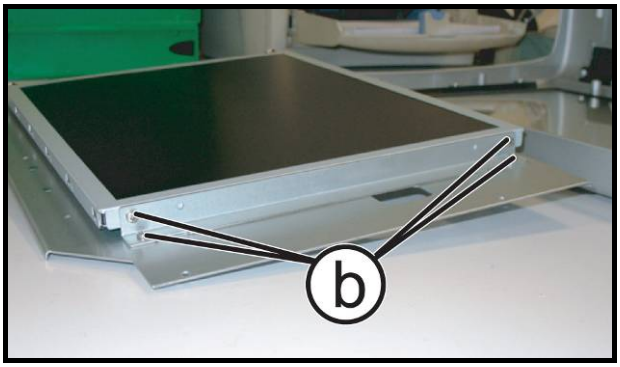

Figure7.2-12

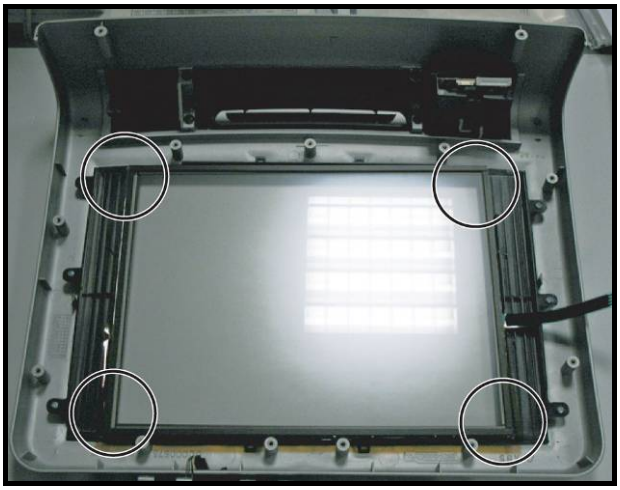

Figure7.2-13

2. Back off the 9 screws **(a)** that fix the display plate on the casing, with a small Phillips screwdriver.

3. To remove the LCD, back off the screws **(b)** with a small Phillips screwdriver, on both sides.

4. The Touch Screen is placed into the display cover, as shown in the figure to side.

WARNING: The incorrect positioning of the Touch Screen in its housing, could cause its breakage during the tightening of the screws. Be careful to place and to check the correct position of the T.S., as shown in the figure.

To reassemble the LCD Touch Screen, carry out the above steps in reverse order.

Carry out the Tuoch Screen calibration after the display reassembly, as descrided in the paragraph: 9.9. "Touch screen calibration".

7.3. C-SAFE BOARD DISASSEMBLY

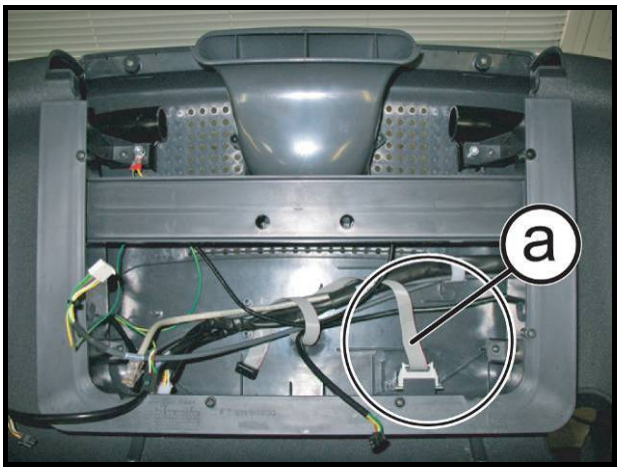

Figure7.3-1

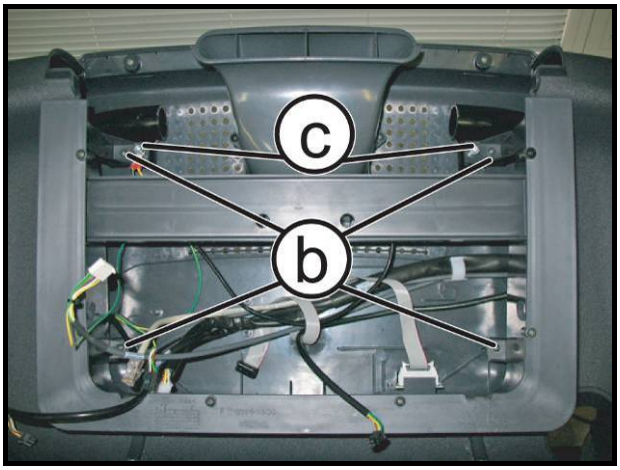

Figure7.3-2

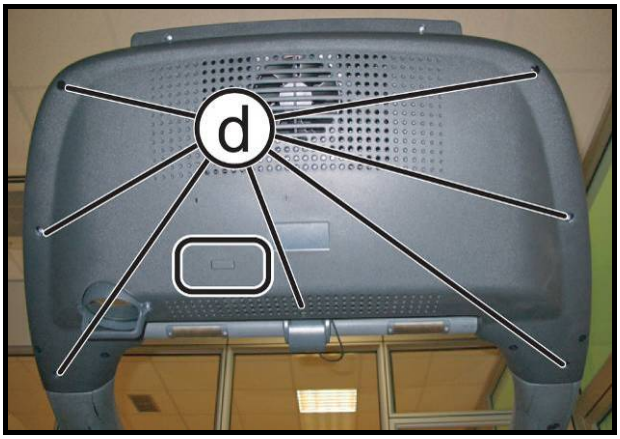

Figure7.3-3

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

1. Disconnect the serial cable **(a)** from C-Safe board highlighted in the figure.
2. Back off the 4 screws **(b)** with a medium Phillips screwdriver, witch fining the che frontal structure.
3. back off the 2 screws **(c)**, with a 6mm hexagonal wrench.
4. Back off the 7 screws **(d)** with a medium Phillips screwdriver.
5. Remove the display front support.
6. Remove the C-Safe board from the display rearsupport, highlighted in the figure on left side.

To reassemble the C-Safe board, carry out the above steps in reverse order.

7.4. DIGITAL TV BOARD DISASSEMBLY

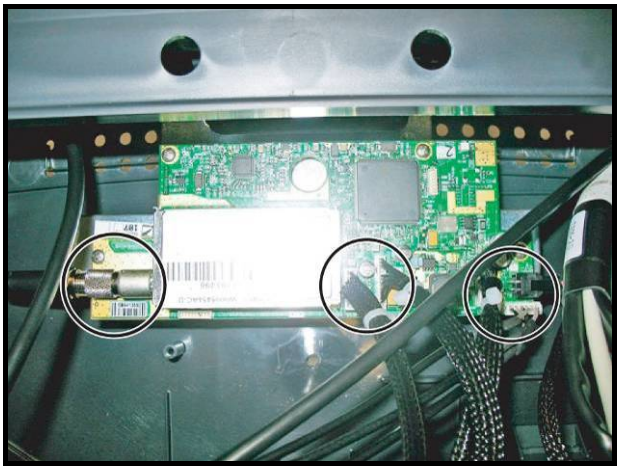

Figure7.4-1

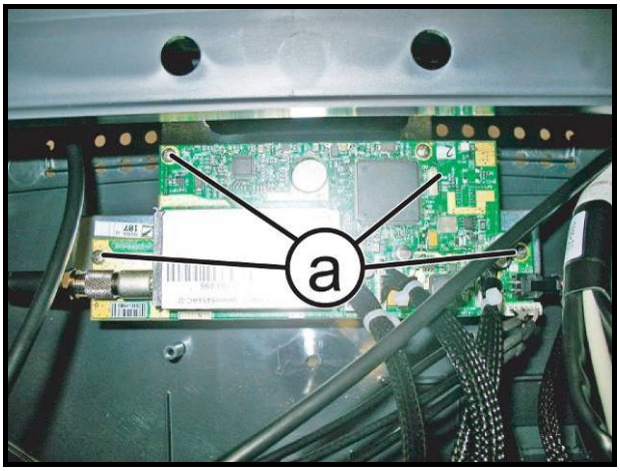

Figure7.4-2

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

1. Disconnect the connectors highlight in the figure on left side.

2. Back off the 4 screws **(a)** with a small Phillips screwdriver..

To reassemble the Digital TV board, carry out the above steps in reverse order.

7.5. DOCKING STATION DISASSEMBLY

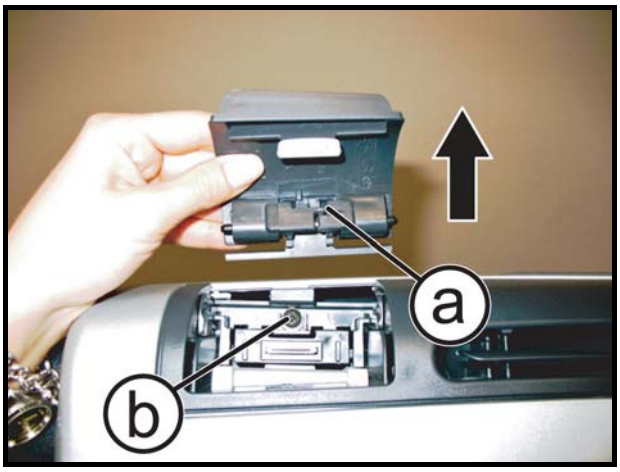

Figure7.5-1

1. Open the docking Station cap **(a)** and lightly force on a side to extract it from its display support.
2. Back off the screw **(b)** with a mediun Phillips screwdriver.

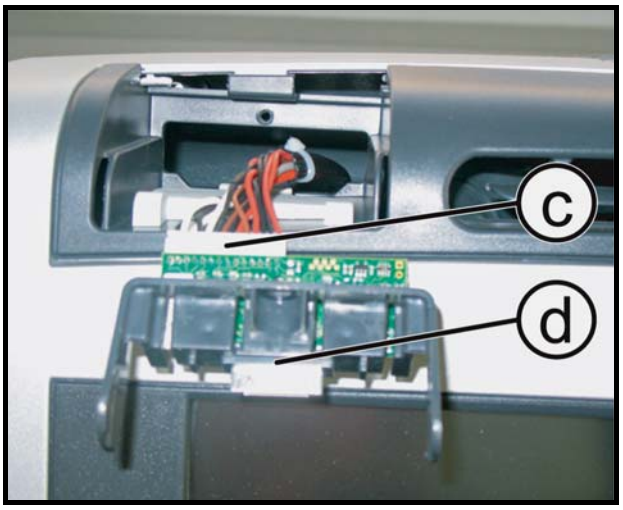

Figure7.5-2

3. Remove the Docking Station **(d)** and disconnect the connector **(c)**..

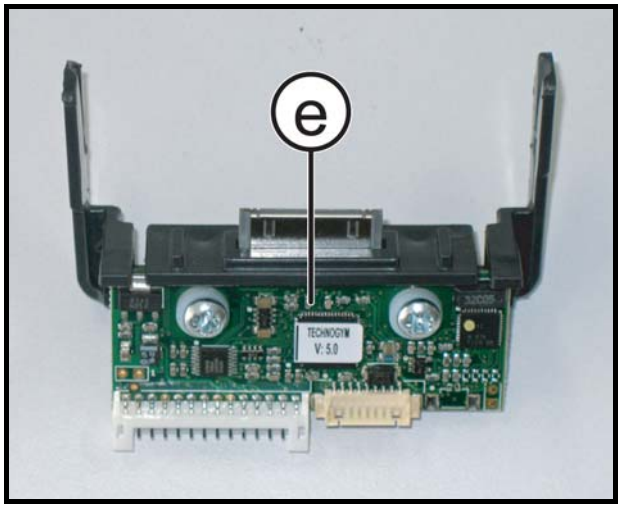

Figure7.5-3

4. Remove the board **(e)** if is necessary.

To reassemble the Docking Station, carry out the above steps in reverse order.

7.6. KEYBOARD DISASSEMBLY

Figure7.6-1

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

1. Disconnect the connector of keyboard.

With the display on a work bench:

2. Use a sharp tool to lift up and detach a corner of the keyboard

To assemble a new keyboard, with the display on a work bench:

1. Remove the backing film from the adhesive.
2. Apply the adhesive part, starting from the left and working toward the right, without bending the keyboard.
3. Insert the connector in the special slot on the display and connect it to the display board.
4. Remove the protective film.

When reassembling the keyboard, make sure that none of the keys are bent or remain pushed in.

The keyboard assembly procedure can only be carried out once, because disassembly damages the tracks and keys. After reassembly the display, check with the Key Board Test manual the proper functioning of new keyboard, as descripted at the pharagaf: 6.3.2.1 "Man. Keyboard Test".

7.7. DISPLAY FAN DISASSEMBLY

Only for 700 / 700E and 900 / 900E models.

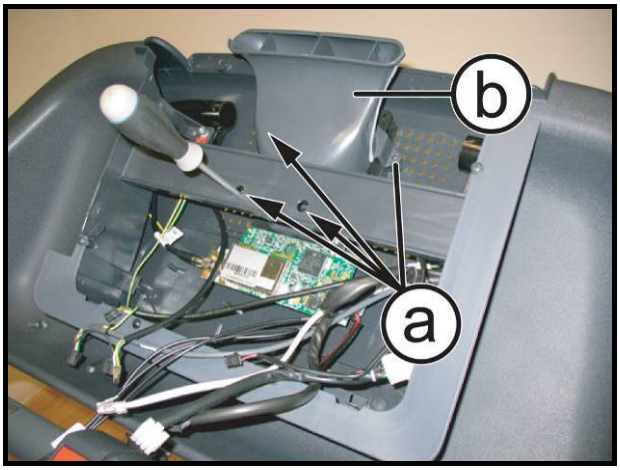

Figure7.7-1

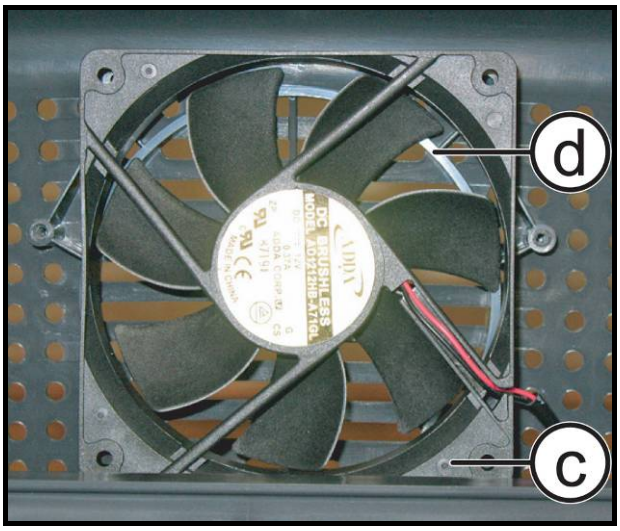

Figure7.7-2

Carry out the operations described in paragraphs: 7.1. "Display disassembly".

1. Back off the 4 screws **(a)** using a medium Phillips screwdriver, as shown in the figure on left side.
2. Remove the plastic air duct **(b)**.
3. Remove the fan **(c)** from the rearsupport of the display **(d)**.

To reassemble the Fan, carry out the above steps in reverse order.

7.8. EMERGENCY BUTTON DISASSEMBLY

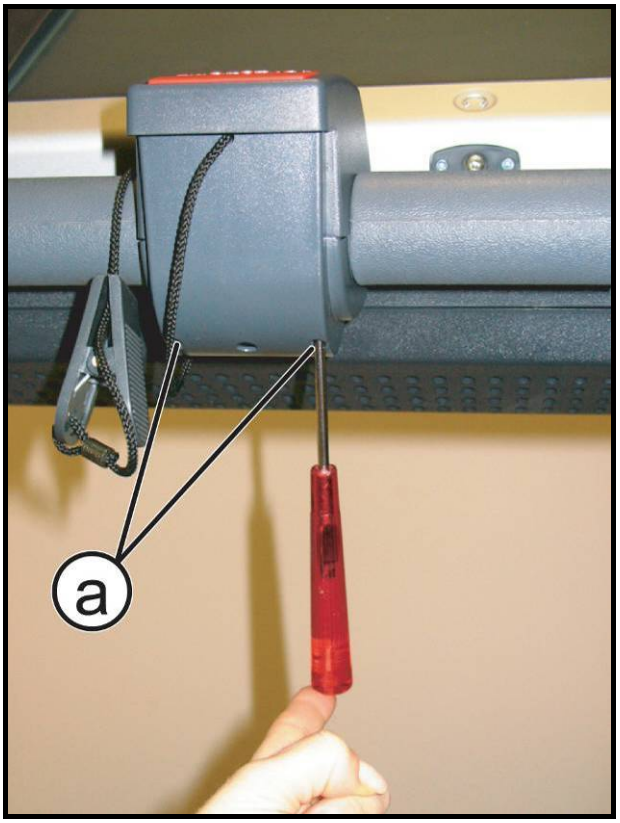

Figure7.8-1

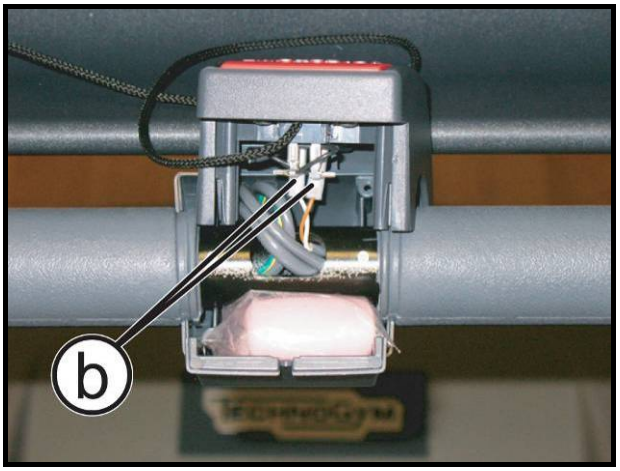

Figure7.8-2

1. Turn off the machine and unplug the mains lead from the wall outlet.
2. Back off the 4 screws **(a)** using a small Phillips screwdriver.
3. Lift up the upper guard with emergency button.
4. Disconnect the 2 faston **(b)** from the emergency button.
5. Remove the emergency button.

To reassemble the emergency button, carry out the above steps in reverse order.

7.9. HS/HR RECIEVER (SALUTRON 8500) DISASSEMBLY

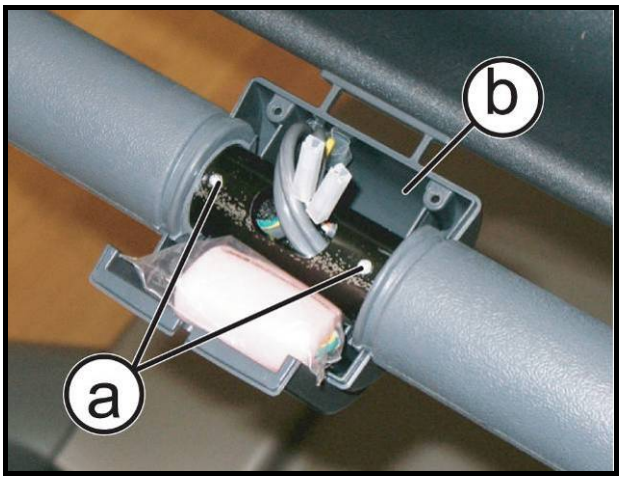

Figure7.9-1

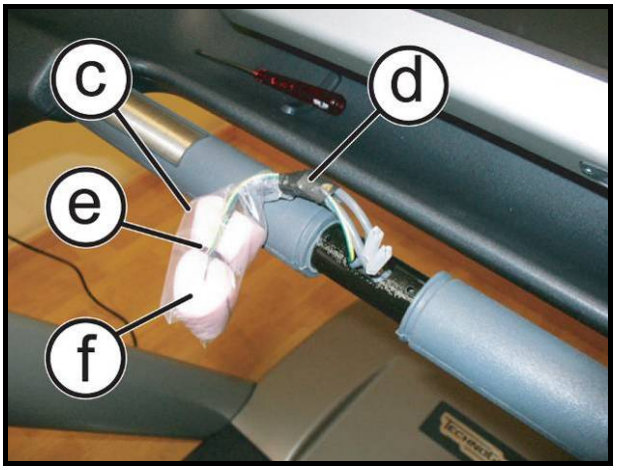

Figure7.9-2

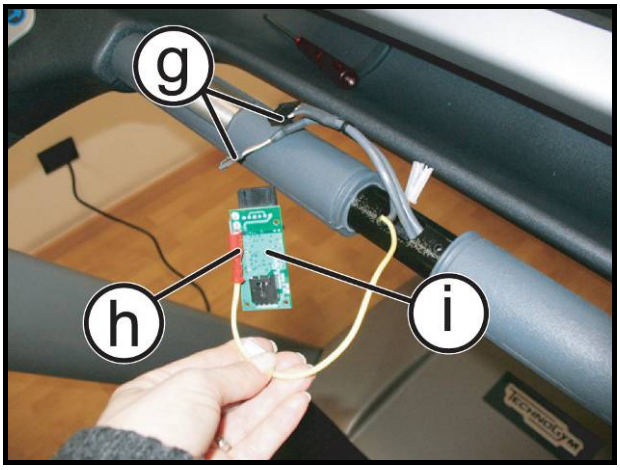

Figure7.9-3

*Carry out the operations described in paragraphs: 7.8. "*Emergency button disassembly*".*

1. Back off the 2 screws **(a)** with a small Phillips screwdriver.
2. Remove the lower guard **(b)**.
3. Remove the adhesive type **(d)** carefully and remove the plastic bag **(c)**.
4. Cut the cable tie **(e)** and remove the protection sponge **(f)**.
5. Disconnect the 2 connectors **(g)** and the faston **(h)**, from the HHS/HR receiver **(i)**.

Continued on following page →

Figure7.9-4

To reassemble the cardio receiver, carry out the above steps in reverse order.

Before to put the receiver again in the protective sponge, take care the receiving coil must be oriented upward and toward the user, as shown in the figure on left side.

7.10. HAND SENSORS DISASSEMBLY

Only for 700 / 700E and 900 / 900E models.

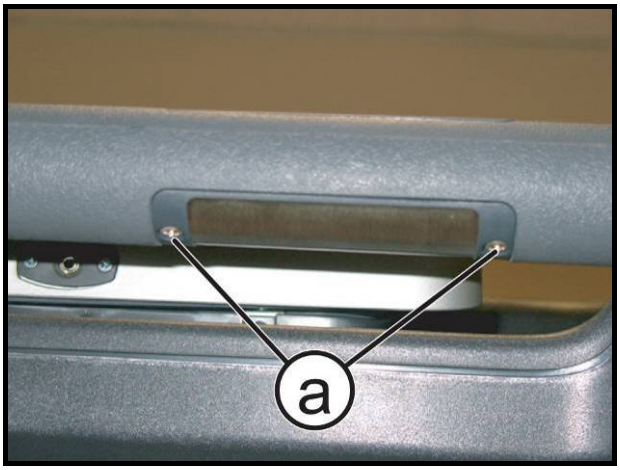

Figure7.10-1

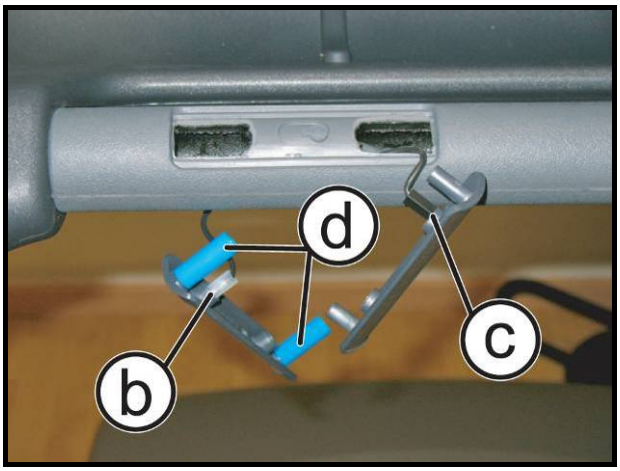

Figure7.10-2

1. Turn off the machine and unplug the mains lead from the wall outlet.

For each sensor:

2. Back off the 2 screws **(a)** with a small Phillips screwdriver.

3. Lift up the upper sensor and extract the lower one. Disconnect the fastons **(b)** and **(c)**.

4. Remove the two sensors.

During the reassembling of the hand sensor plates, use the plastic guide pins (d), to prevent squeezing the cables.

To reassemble the hand sensors, carry out the above steps in reverse order.

7.11. JOYSTICK DISASSEMBLY

Only fir 700 / 700E and 900 / 900E models.

Figure7.11-1

1. Press on both sides of the joystick lever, at the point indicated by the arrow, and pull component **(a)** upward.

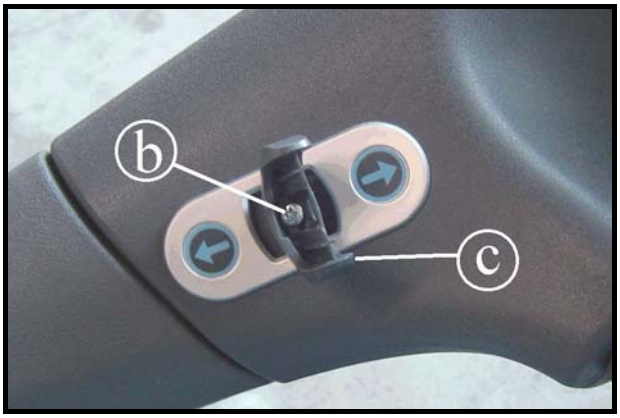

Figure7.11-2

2. Back off the screw **(b)** using a small Phillips screwdriver.
3. Remove the joystick lever **(c)** by pulling upward.

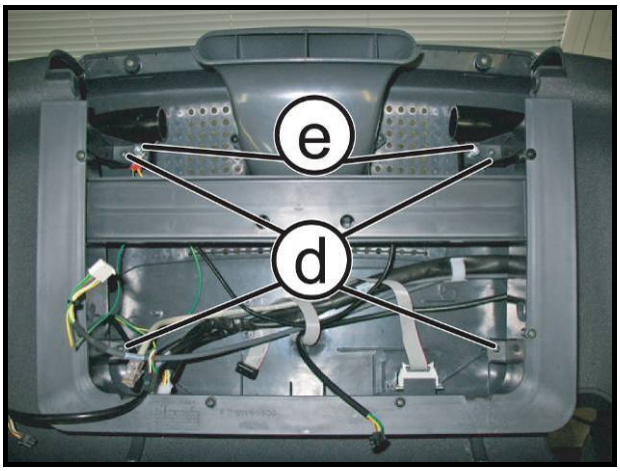

Figure7.11-3

Carry out the procedure described in paragraph: 7.1. Display disassembly".

4. Back off the 4 screws **(d)** using a medium Phillips screwdriver.
5. Back off the 2 screws **(e)** using a 5mm hexagonal wrench.

Continued on following page→

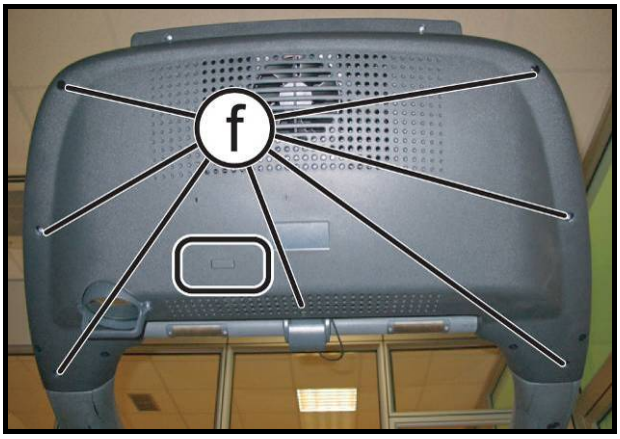

Figure7.11-4

6. Back off the 7 screws **(f)** using a medium Phillips screwdriver.
7. Remove the front display support.

Figure7.11-5

8. Unplug the faston connected to the joystick and indicated in the figure.
9. Back off the 4 screws **(g)** using a 4mm hexagonal wrench.
10. Remove the main body of the joystick from the machine.

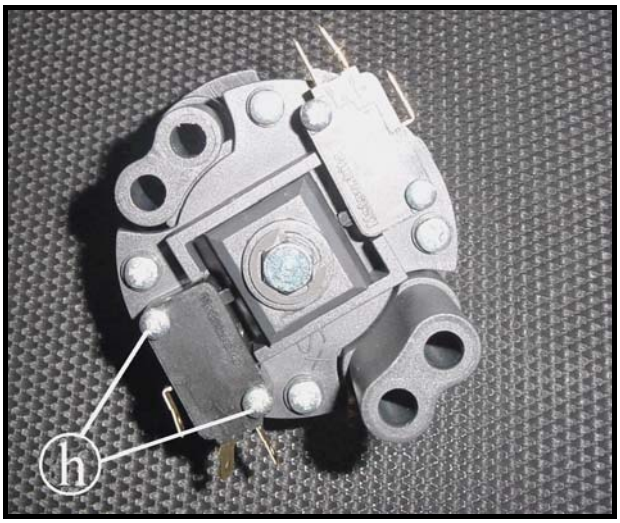

Figure7.11-6

11. Back off the 2 screws **(h)** using a small Phillips screwdriver to remove the micro switch.

To reassemble the various components, carry out the above steps in reverse order.

7.12. MOTOR GUARD DISASSEMBLY

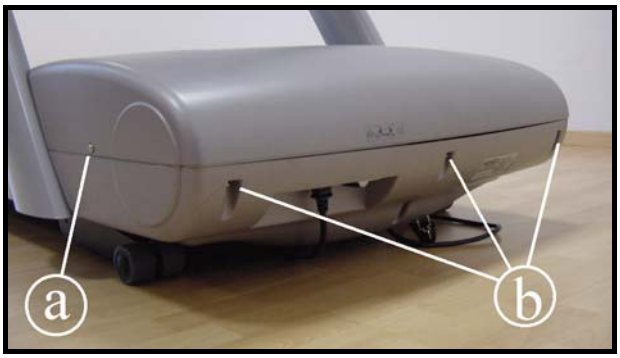

Figure7.12-1

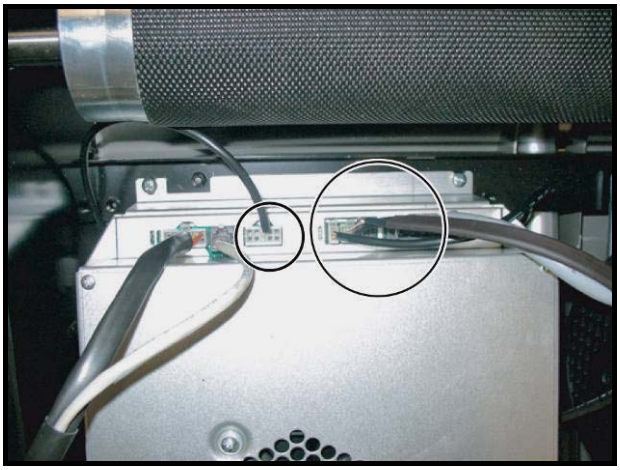

Figure7.12-2

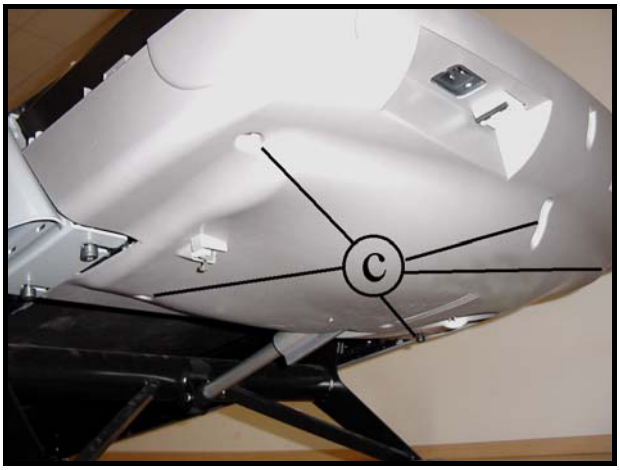

Figure7.12-3

1. Bring the machine at the maximum elevation.
2. Turn off the machine and unplug the mains lead from the wall outlet.
3. Back off the 2 screws **(a)** on either side of the machine through a ¼ turn, using a medium flat-blade screwdriver.
4. Back off the 3 screws **(b)** through a ¼ turn, using a medium flat-blade screwdriver.
5. Remove the top part of the motor guard.
6. Disconnect the fan cable and the limit switch connectors, highlited in the figure.
7. Back off the 5 screws **(c)** using a 4mm hexagonal wrench.

Continued on following page→

Figure7.12-4

On both sides of the machine:

8. Back off the screw **(e)**, using a 4mm hex wrench.

9. Back off screw **(d)** using a 4mm wrench and remove the lower part of the motor guard from the bottom.

To reassemble the motor guard, carry out the above steps in reverse order.

7.13. FAN AND LIMIT SWITCH DISASSEMBLY

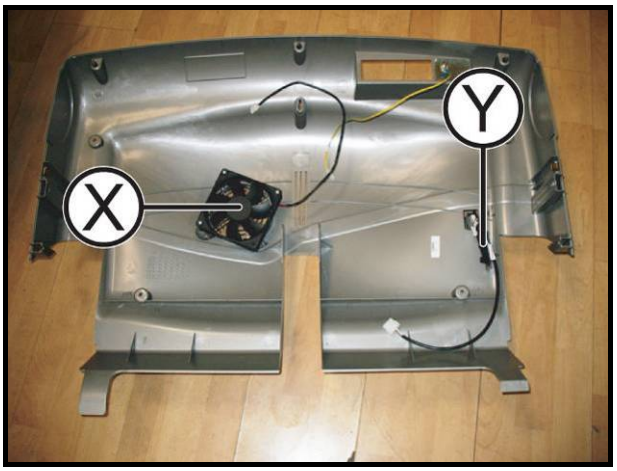

Figure7.13-1

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly".

There are now accessible:

- The motor fan **(X)**,
- The limit switch **(Y)**.

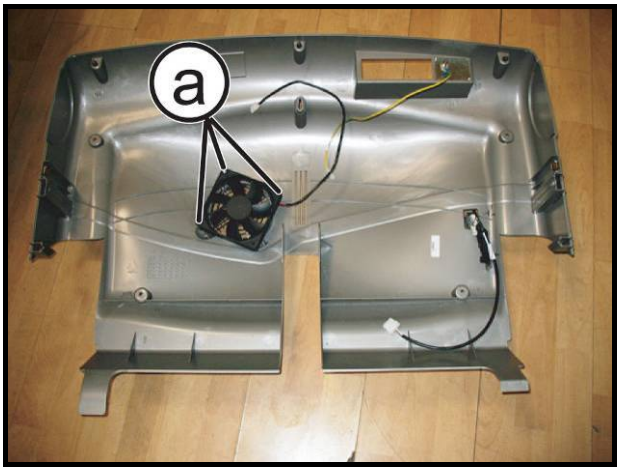

Figure7.13-2

*Motor fan disassembly **(X)**:*

1. Back off the 3 screws **(a)** using a medium Phillips screwdriver.
2. Remove the fan.

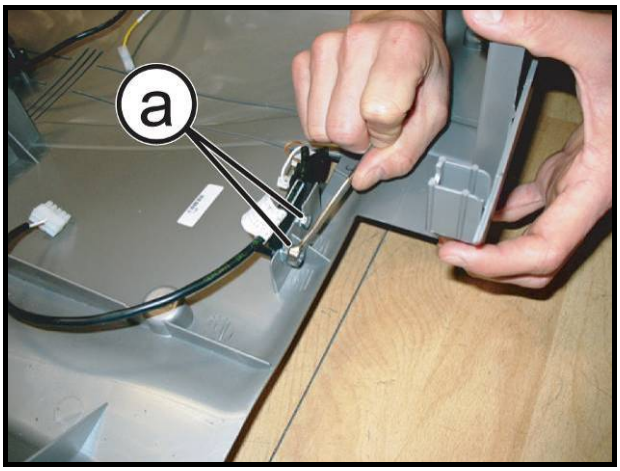

Figure7.13-3

*Limit switch disassembly **(Y)**:*

1. Loosen the 2 bolts **(a)** with a 8mm hexagonal wrench and remove the limit switch from the guard.

To reassemble the fan and the limit switch, carry out the above steps in reverse order.

After the limit switch reassembly, check its position, as described at paragraph: 8.4. "Limit switch position".

7.14. ALE DRIVER DISASSEMBLY

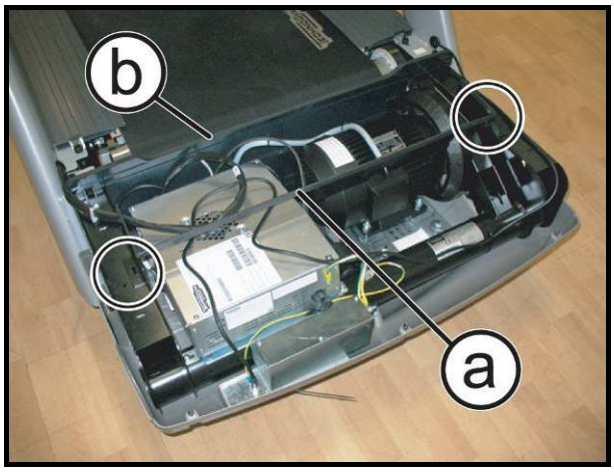

Figure7.14-1

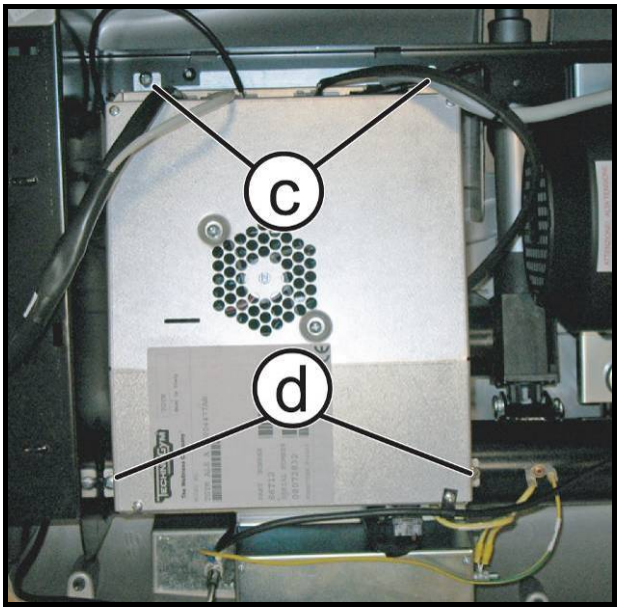

Figure7.14-2

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly", only as far as removing the upper guard.

1. Remove the fit protection **(a)**, extracting the 2 clip highlight in figure.
2. Remove the dust guard **(b)**.
3. Loosen the 2 screws **(c)** with a medium Phillips screwdriver.
4. Back off the 2 screws **(d)** with a medium Phillips screwdriver.

Continued on following page →

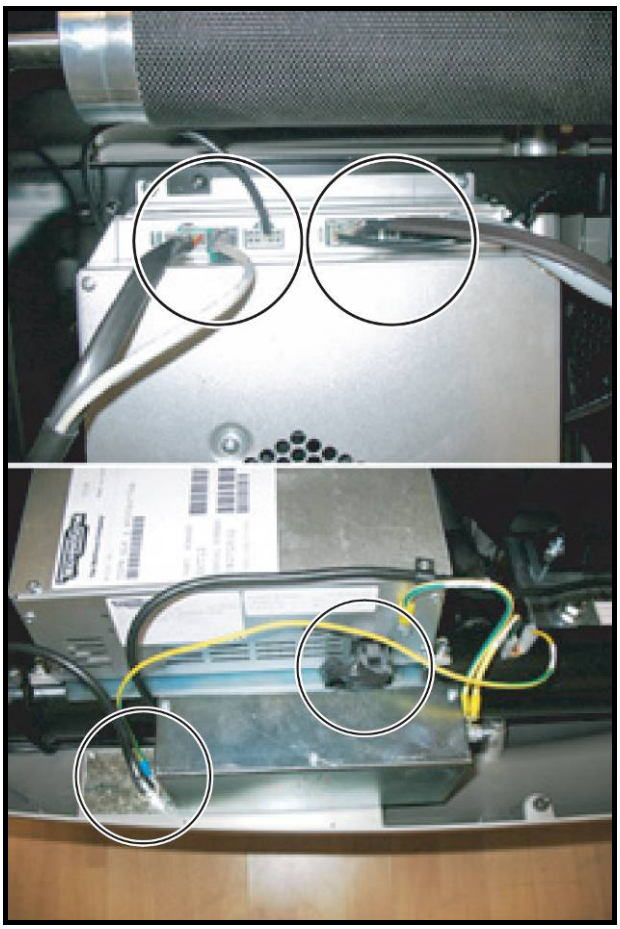

Figure7.14-3

5. To completely remove the driver box from the machine, unplug the cables shown in the figure on left side:

   - *Power supply cable;*
   - *Serial comm. Cable;*
   - *Limit switch cable;*
   - *Ground connection cable;*
   - *Fan cable;*
   - *Tread belt motor cable;*
   - *Elevation motor cable;*
   - *Antenna inlet connector (only WTV models).*

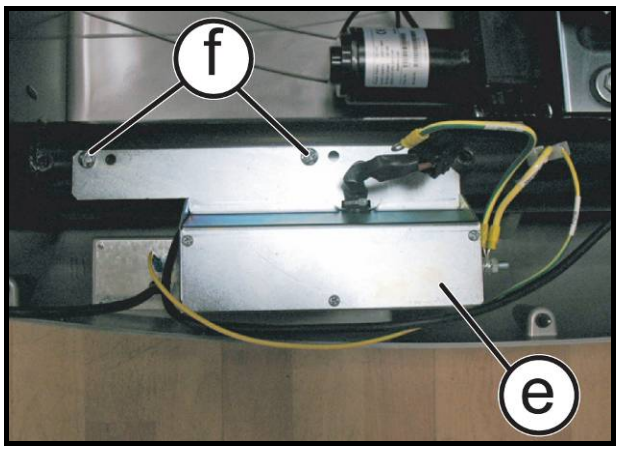

Figure7.14-4

6. Remove the electrical box **(e)** backing off the 2 screws **(f)**, with a medium Phillips screwdriver.

To reassemble the Low Kit driver, carry out the above steps in reverse order.

7.15. ALE DRIVER COMPONENTS DISASSEMBLY

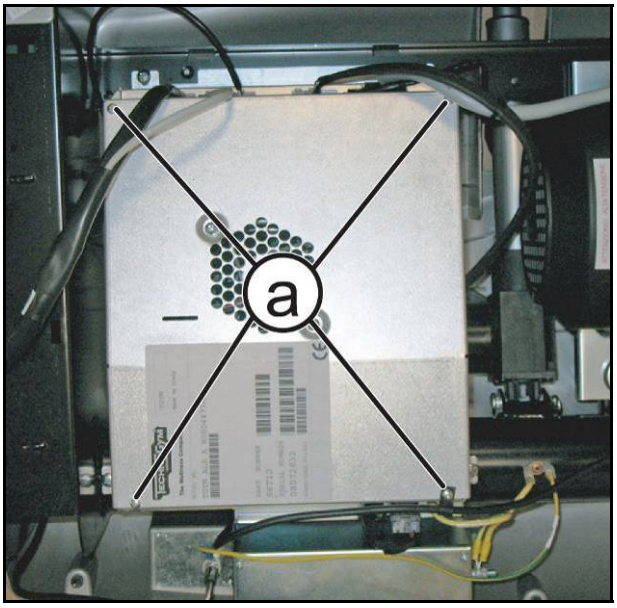

Figure7.15-1

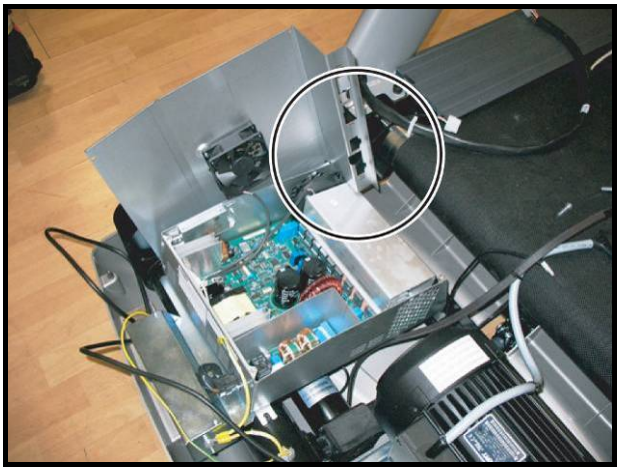

Figure7.15-2

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly", only as far as removing the upper guard.

1. Back off the 4 screws **(a)**, with a medium Phillips screwdriver.

2. Lift up the cover and put it on a box side through the slot on it, as shown in the figure on left side.

3. Now it is possible to:

   - *Replace the 5 fuses,*
   - *Remove the fan on the top,*

For other operations it is necessary to remove the electronics from the machine and bring it on a work bench, as detailed in paragraph: 7.14. "ALE driver disassembly".

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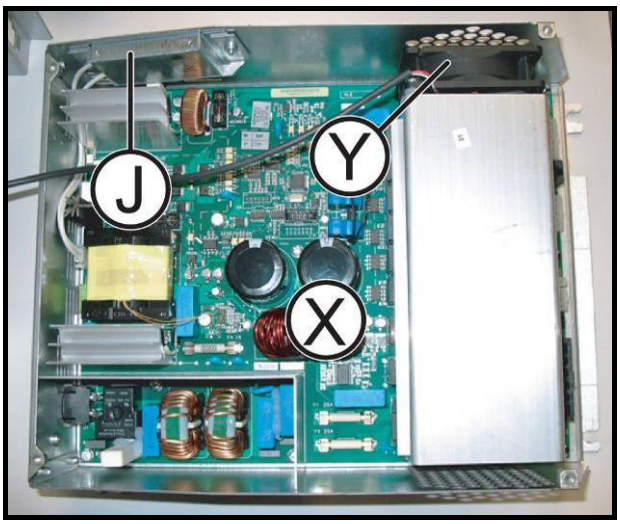

Figure7.15-3

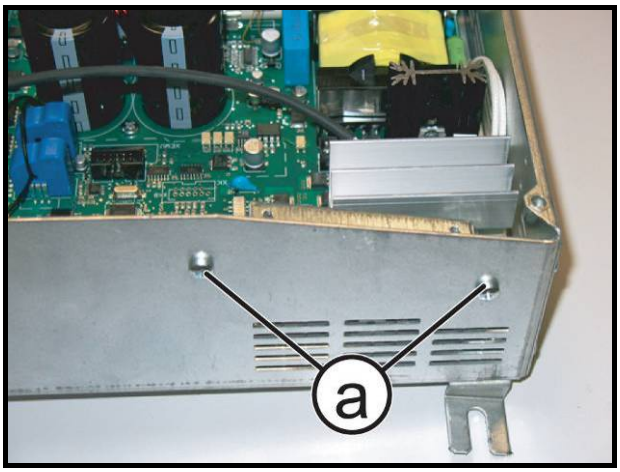

Figure7.15-4

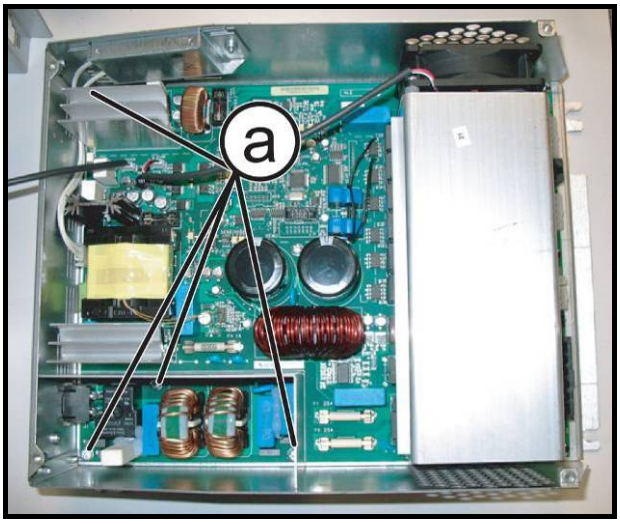

Figure7.15-5

With the Low Kit driver on a bench it is possible to remove:

- *The ALE driver board **(X)**,*
- *The fan **(Y)**,*
- *The resistance **(J)**.*

*Removing resistance **(J)**:*

1. Back off the 2 screws **(a)** with a medium Phillips screwdriver.
2. Remove the resistance.

*Removing ALE driver **(X)**:*

1. Back pff the 4 screws **(a)** with a medium Phillips screwdriver.
2. Remove the driver.

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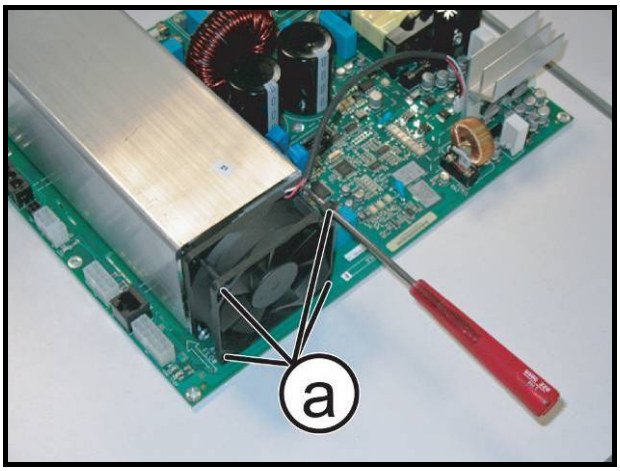

Figure7.15-6

*Removing fan **(Y)**:*

1. Back off the 2 screws **(a)** with a small Phillips screwdriver, as shown in a figure on left side.

2. Remove the fan.

7.16. AT UL DRIVER DISASSEMBLY

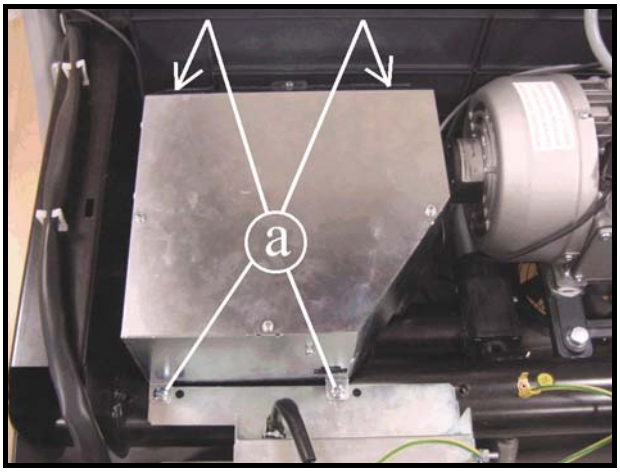

Figure 7.16-1

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly", only as far as removing the upper guard.

7. Back off the screws **(a)** using a medium Phillips screwdriver.

8. Remove the entire box from its compartment in the machine.

9. Disconnect the cables entering the electrical box:

   - *Power supply cable from the power supply box;*
   - *Cable connecting upper and lower assemblies (TRM-19);*
   - *Limit switch cable (TRM-54);*
   - *Ground connection cable;*
   - *Fan cable (TRM-05);*
   - *Tread belt motor cable (TRM-06);*
   - *Tread belt motor encoder cable (TRM-07);*
   - *Elevation motor cable (TRM-08).*

To reassemble the electrical box, carry out the above steps in reverse order.

7.17. AT UL DRIVER COMPONENTS DISASSEMBLY

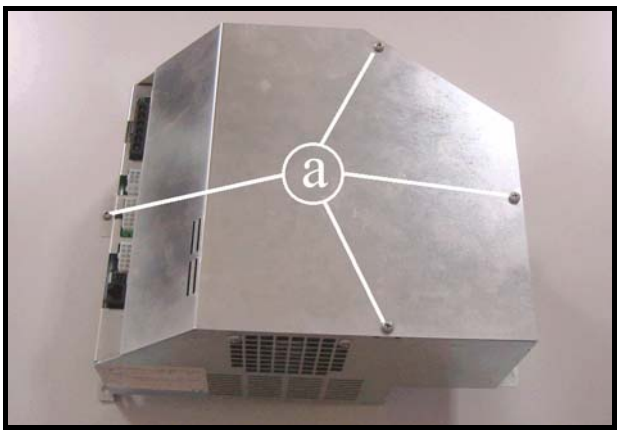

Figure 7.17-1

With the Low Kit driver on a bench it is possible to remove:

1. Back off the 4 screws **(a)** using a medium Phillips screwdriver.
2. Lift up the cover.

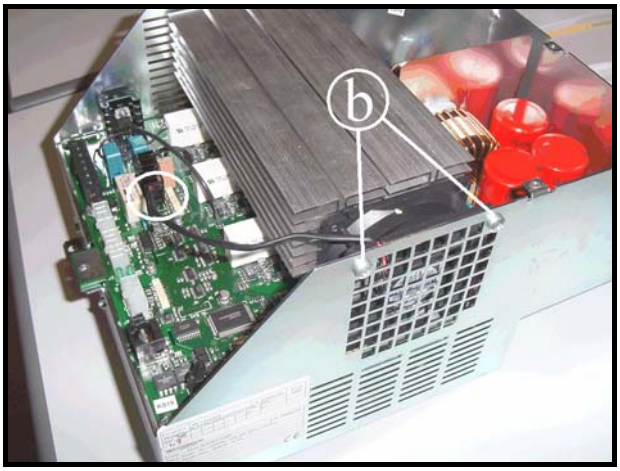

Figure 7.17-2

1. Unplug the fan cable from the AT driver board.
2. Unscrew the two screws **(b)** using a medium Phillips screwdriver.
3. Remove the fan.

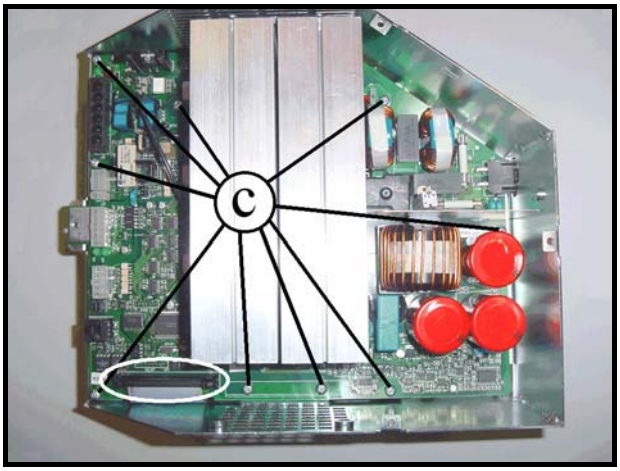

Figure 7.17-3

AT UL driver board:

1. Unplug the flat cable coming from the AT UL power supply board, shown in the picture.
2. Unscrew the screw **c** using a medium Phillips screwdriver.
3. Lift up the board paying attention to the cables connected on the lower side.

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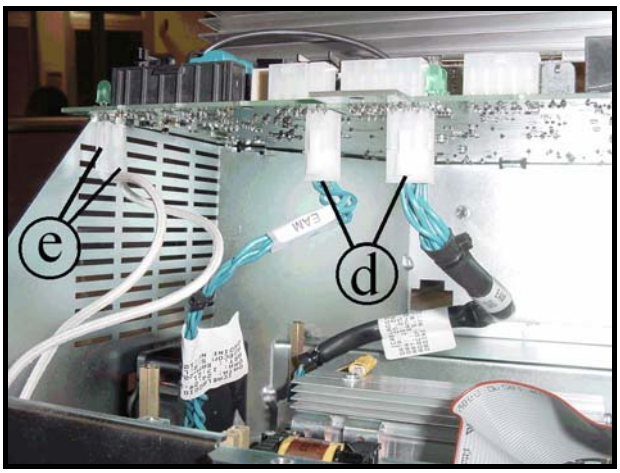

Figure 7.17-4

4. Unplug the two cables **(d)** coming from the AT power supply board.
5. Unplug the faston **(e)** of the two cables coming from the resistance.
6. Remove the AT UL driver board.

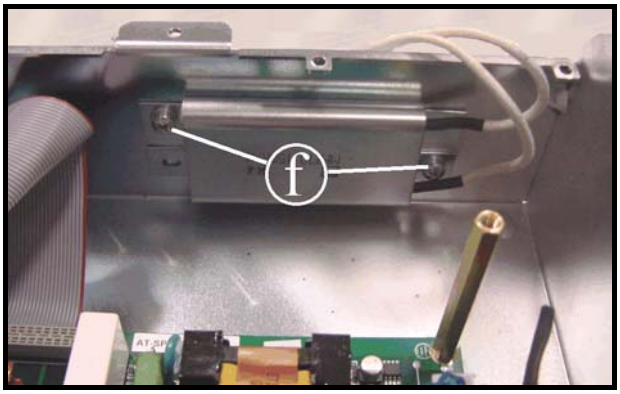

Figure 7.17-5

Resistance:

1. Unscrew the two screw **(f)** using a Phillips screwdriver.
2. Remove the resistance.

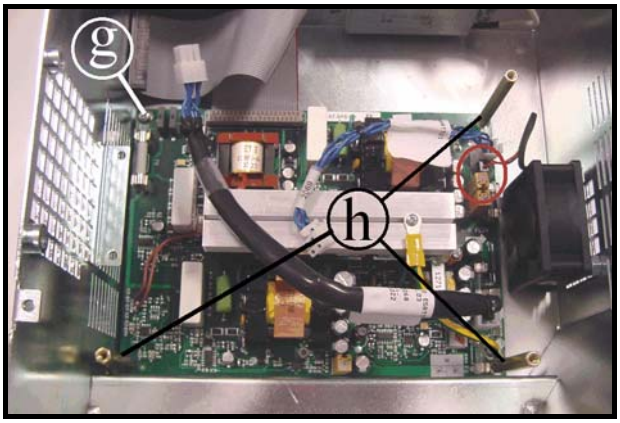

Figure 7.17-6

AT power supply board:

1. Unplug the cable coming from the fan.
2. Unscrew the screw **(g)** using a Phillips screwdriver.
3. Unscrew the spacer **(h)** using a 7mm wrench.
4. Remove the board.

To reassemble the electronics boards, carry out the above steps in reverse order.

7.18. AT UL DRIVER POWER SUPPLY BOX DISASSEMBLY

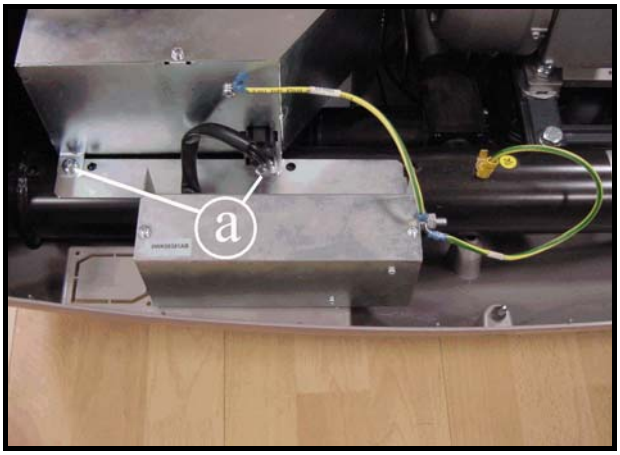

Figure 7.18-1

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly", only as far as removing the upper guard.

1. Unplug the power supply cable from the AT UL driver box.
2. Unplug the two ground cable from the AT UL driver box and from the frame.
3. Back off the two screws **(a)** using a medium Phillips screwdriver.
4. Remove the power supply box.

To reassemble the power supply box, carry out the above steps in reverse order.

7.19. TREAD BELT MOTOR DISASSEMBLY

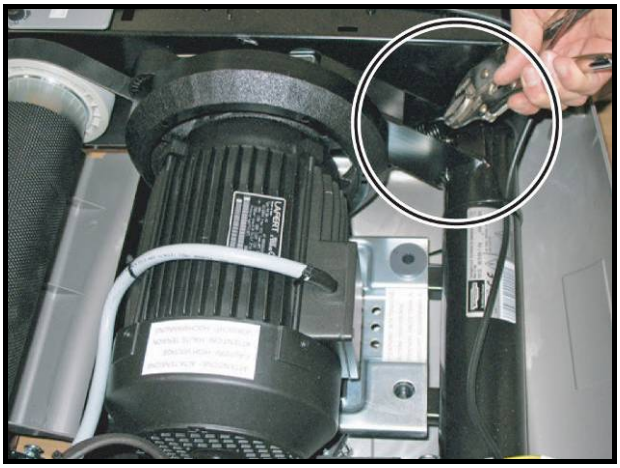

Figure7.19-1

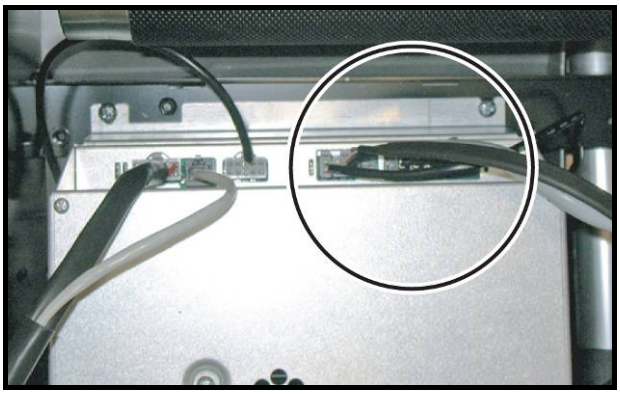

Figure7.19-2

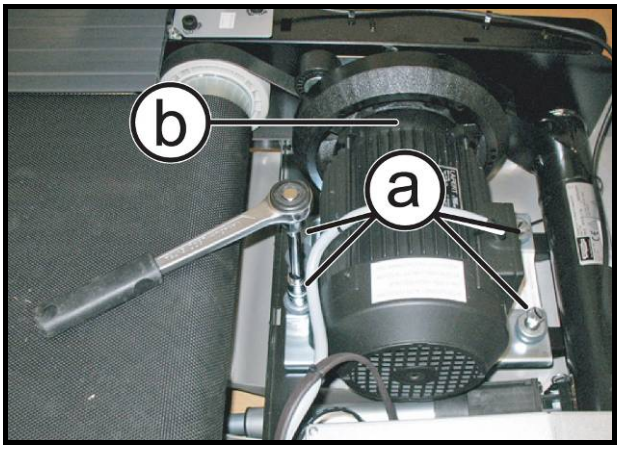

Figure7.19-3

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly", just to remove the upper guard.

1. Release belt tension disconnecting the spring of the tension mechanism.

2. Disconnect the tread belt motor connector, highlighted in the figure, from the low kit driver.

3. Back off the 4 screws **(a)** which are fixing the tread belt motor at the machine frame, using a 17mm socket wrench.

4. Remove the tread belt motor **(b)**.

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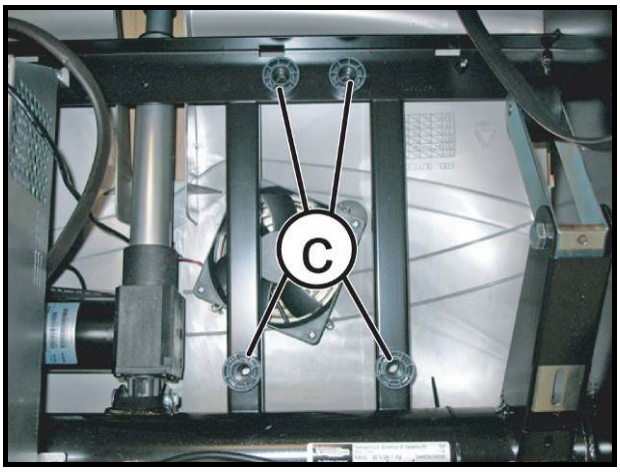

Figure7.19-4

To reassemble the motor belt, carry out the above steps in reverse order.

Be careful to correctly position the spacers (c) shown in the figure and their washers.

ATTENTION: After the tread belt motor re-assembly, check the alignment of the belt, as described in paragraph: 8.3. "Aligning the tread-belt motor drive-belt".

7.20. ELEVATION MOTOR DISASSEMBLY

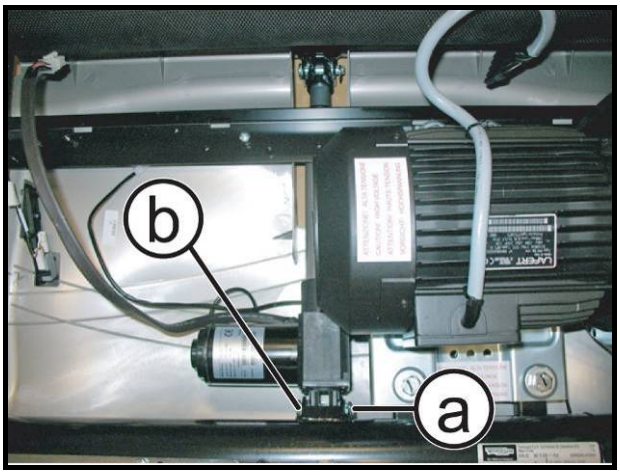

Figure7.20-1

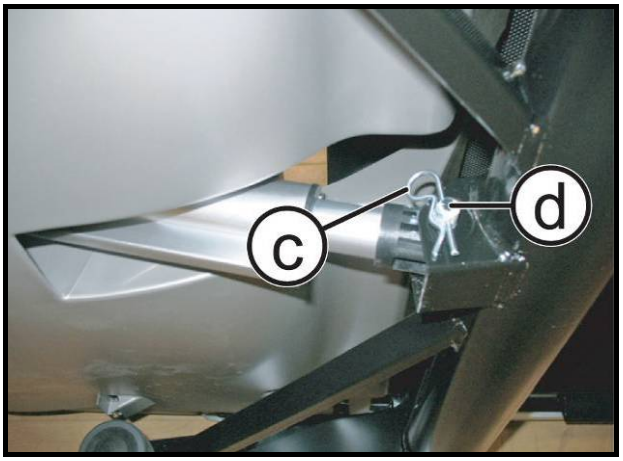

Figure7.20-2

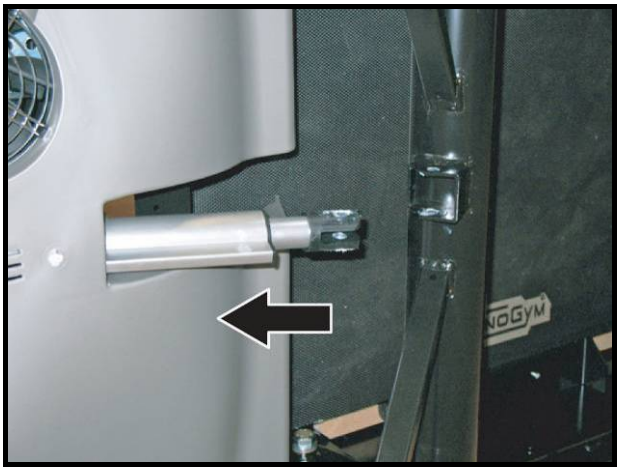

Figure7.20-3

Carry out the procedure described in paragraph: 7.12. "Motor guard disassembly" just to remove the upper guard and the procedure described in paragraph: 7.14. "ALE driver disassembly".

1. Remove the split pin **(a)** and then the pin **(b)** securing the elevation motor assembly to the machine frame.

2. Turn the machine over on one side.

3. Remove the split pin **(c)** and then the pin **(d)**, fixing the elevation to the Up/Down frame.

4. Remove the elevation motor from the inside of the guard, as indicated by the arrow.

To reassemble the elevation motor, carry out the above steps in reverse order.

7.21. TREAD BELT GROUP AND MOTOR BELT DISESSEMBLY

With these operations it is possible to disassemble:

- *footrest;*
- *driving roller;*
- *tread belt motor drive-belt;*
- *running deck;*
- *driven roller;*
- *tread belt;*
- *shock absorbers.*

In order to carry out these operations, it is necessary to slacken the tread-belt tension. If the belt has to be used again, follow the instructions given in paragraph: 8.1. "Trade belt tensioning" to correctly re-tension the tread belt.

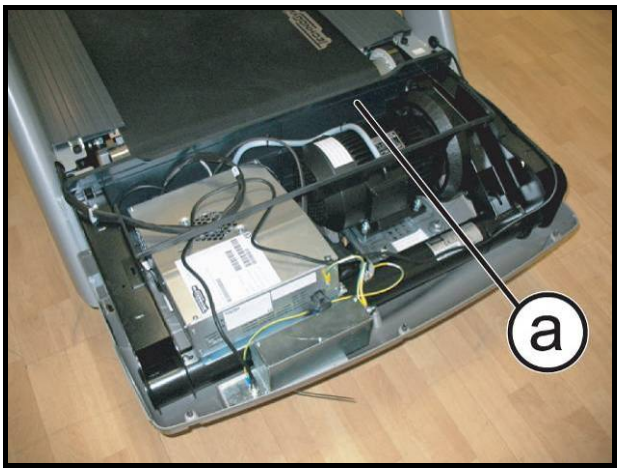

Figure7.21-1

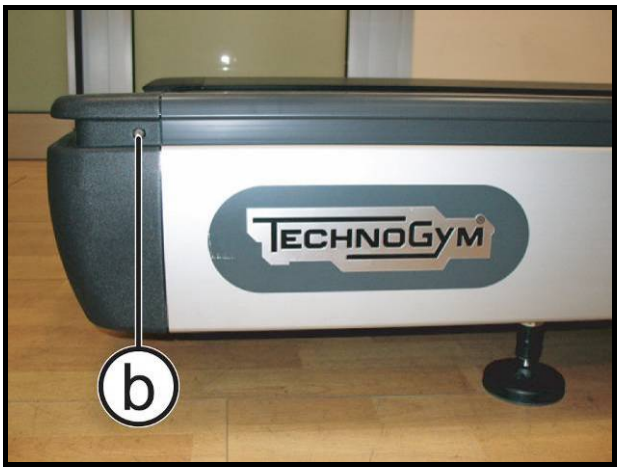

Figure7.21-2

Carry out the procedure described in paragraph: 7.12. Motor guard disassembly", just to remove the upper guard.

1. Remove the dust guard **(a).**

2. Loosen the 2 screws **(b)** (*one on each side*) using a 4mm hexagonal wrench.

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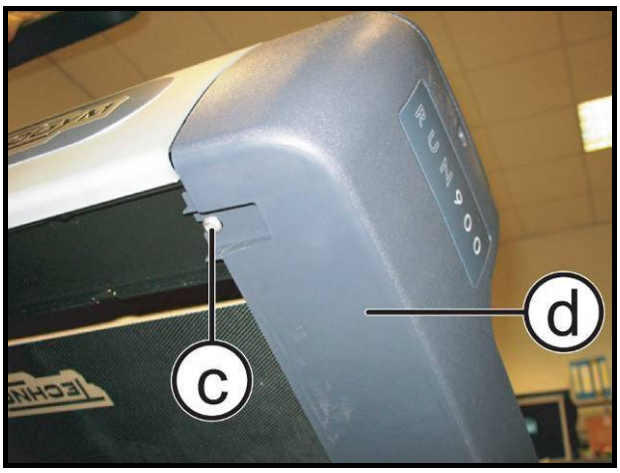

Figure7.21-3

3. back off the 2 screws **(c)** (*one on each side*) with a 4mm hexagonal wrench.

4. Remove the rear plug **(d)**.

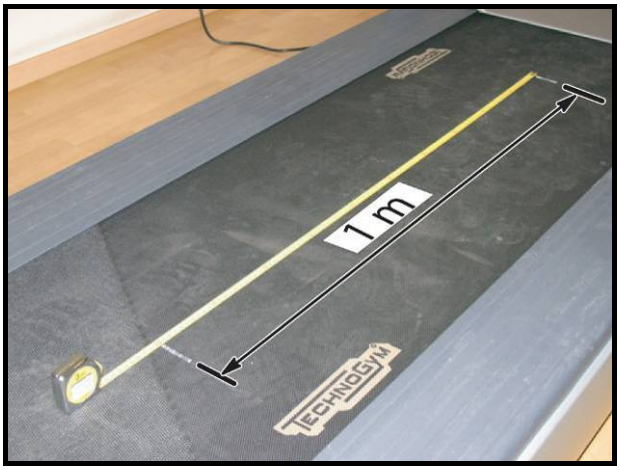

Figure7.21-4

Before loosen the tension of the trade belt, make two reference marks spaced exactly 1 meter apart, so you can then properly tension it again.

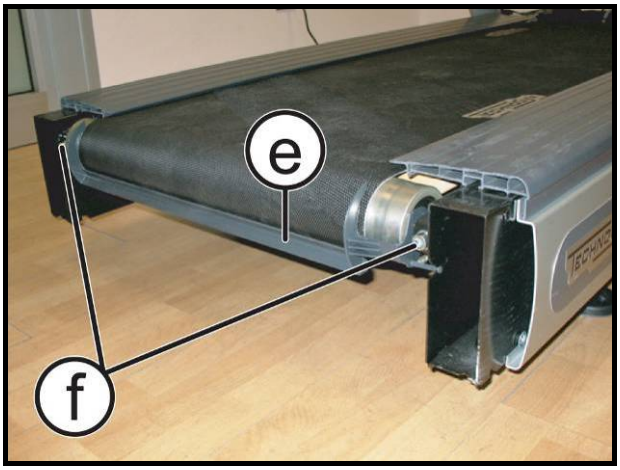

Figure7.21-5

5. Remove the plastic protection **(e)**.

6. Loosen the trade belt tension, backing off the 2 bolts **(f)** with a 8mm hexagonal wrench.

Take care that the roller is always approximately parallel with the one on the front, to counteract the tension exerted by the belt on the roller bearings.

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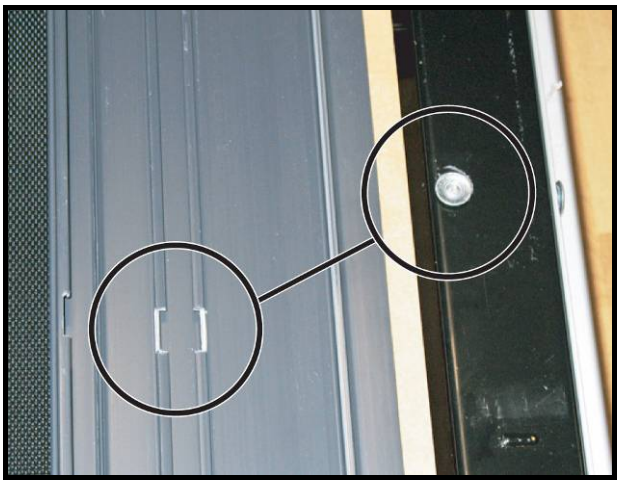

Figure7.21-6

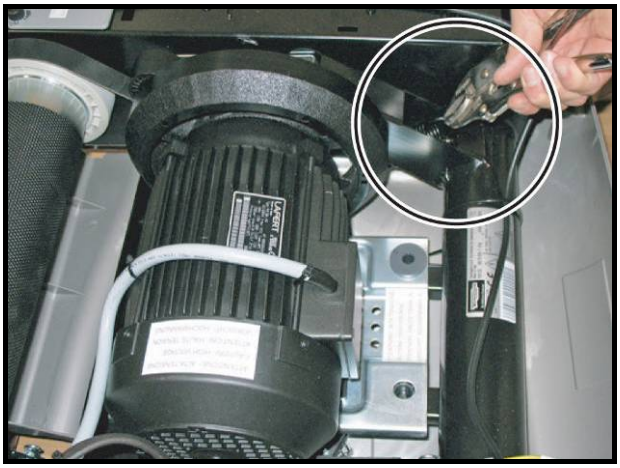

Figure7.21-7

7. Remove the footrest pullinig it out from the rear side of the machine. You need to find the correct point where the slots on the lower side of the footboard are aligned with the head of the screws on the frame (see picture on the left).

8. Unhook the belt tensioning mechanism spring from the frame.

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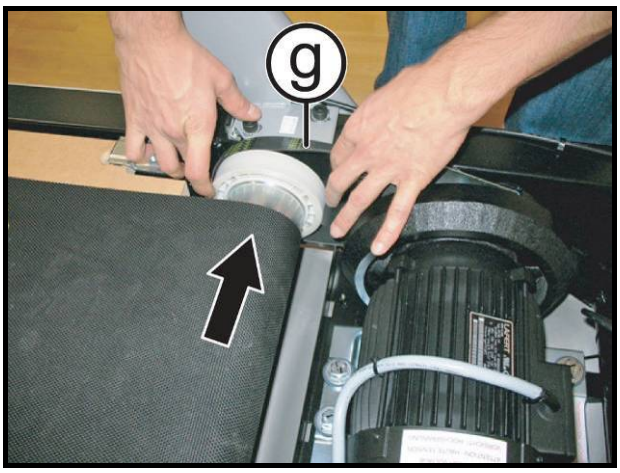

Figure7.21-8

9. Remove the motor belt **(g)** from pulley.

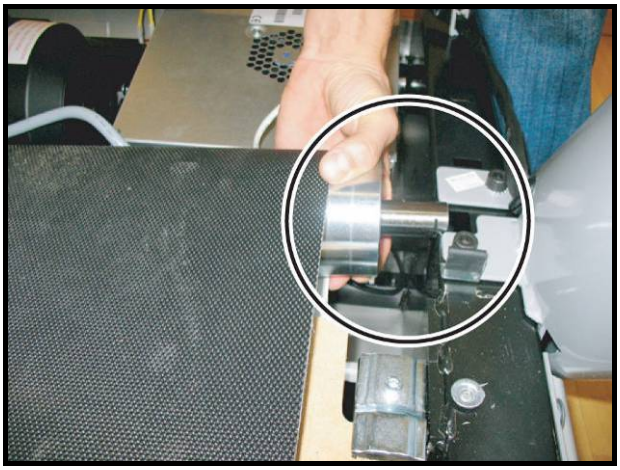

Figure7.21-9

10. Be careful to the slot on the opposite side of the motor roller, as shown in the figure.

11. Remove the roller.

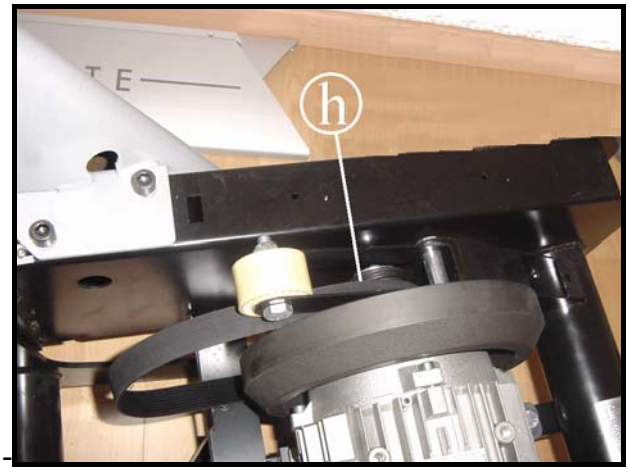

Figure7.21-10

12. Remove the motor belt **(h)** from the motor pulley.

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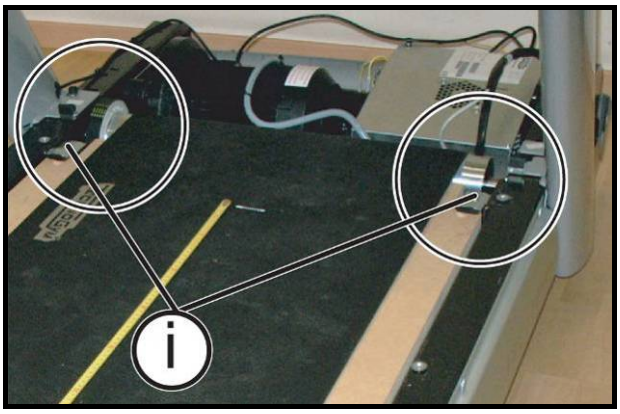


Figure7.21-11

13. Back off the 2 screws **(i)** with a 5mm hexagonal wrench and remove the running deck stops.

14. Remove the running deck.

ATTENTION: During reassembly, lock down the screws (i) using torque wrench set for 9 Nm.

15. Back completely off the bolts which are fixing the rear roller on the frame.

16. Remove the rear roller as indicated by with arrows.

17. Remove the belt.

Figure 7.21-12

ATTENTION: When reassemble the tread belt pay attention to put it on in correctly, because it can not turn in the wrong way. Check that the arrow marked inside on the tread belt junction is facing backside (when the junction is above the running deck).

ATTENTION: At the end of the procedure, check the alignment of the motor drive-belt, the tension and alignment of the tread belt and the height adjustment of the running deck, carry out the procedure as described at the paragraph: 8.1. "Trade belt tensioning", 8.2. "Centering the tread belt" and 8.3. "Aligning the tread-belt motor drive-belt".

Continued on following page→

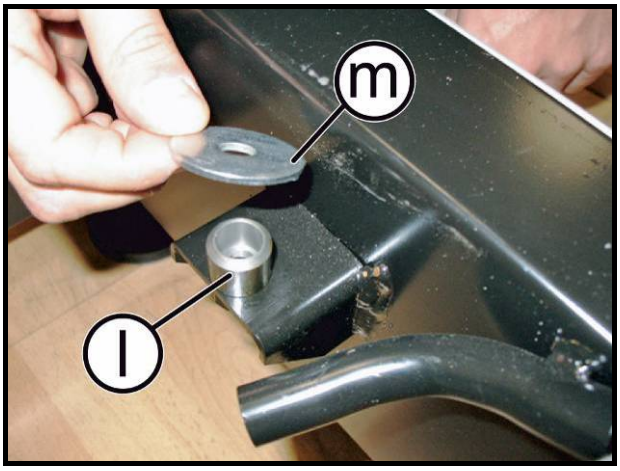


Figure 7.21-13

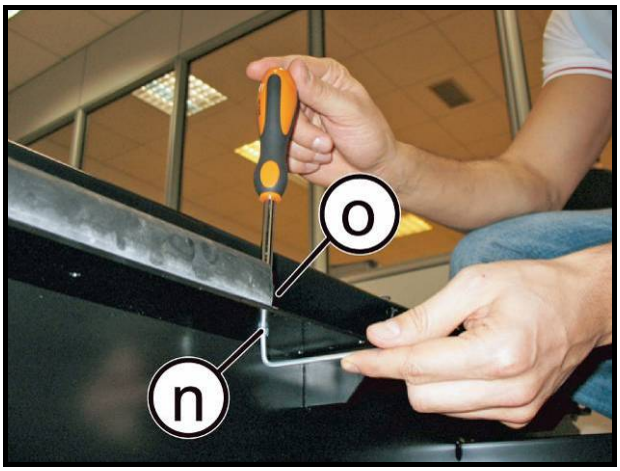


Figure 7.21-14

ATTENTION: When reassembling the running deck, remember to insert the bushing (l) and the washer (m) on the rear supports, as shown in the figure.

18. Back off the 2 screws **(n)** which are fixing the shock absorbers to the frame with a 4mm hexagonal wrench, locking the nut **(o)** with a 7mm wrench, as shown in the figure.

ATTENTION: Insert again the spacers, during the reassembly

To reassemble the various components, carry out the above steps in reverse order.

8. ADJUSTMENTS

8.1. TRADE BELT TENSIONING

Make a different mode if the tape tension is new or already existing:

Figure 8.1-1

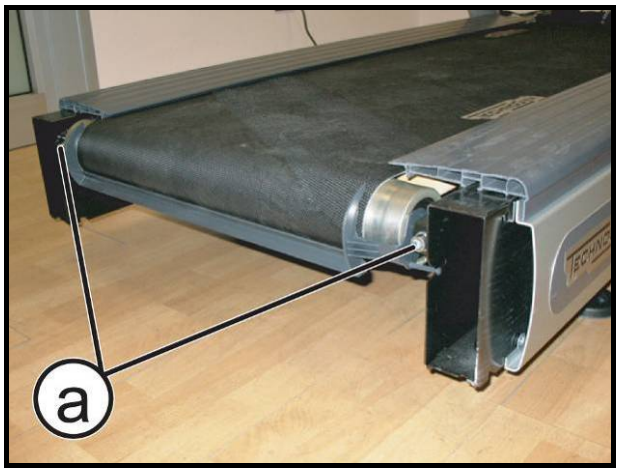


Figure 8.1-2

NEW belt tension:

1. After replacing the tread belt, place a tape measure in the center of the tread belt and use a pen (*or white corrector*) to make two reference marks spaced exactly **1m** apart.

2. Lock down by turns the screws **a** until the distance between the reference marks increases by **5 mm**. Take care that the roller is always approximately parallel with the one on the front, to counteract the tension exerted by the belt on the roller bearings.

After completing this procedure, any further adjustments should be performed using only the left-hand tension screw.

ATTENTION: After completing this procedure, check the centering of the tread belt as instructed in paragraph: 8.2. "Centering the tread belt".

Continued on following page →

Figure 8.1-3

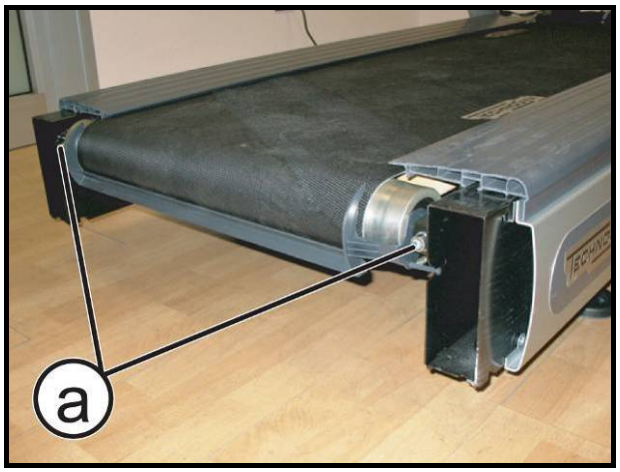


Figure 8.1-4

USED belt tension:

1. Before slackening the tread belt that needs to be re-tensioned, place a tape measure along the centre of the tread belt and use a pen to make two reference marks spaced exactly **1 meter** apart.

2. After reassembling the used tread belt, lock down by turns the screws **a** until the distance between the two reference marks made previously on the tread belt are once again spaced 1 meter apart.

Take care that the roller is always approximately parallel with the one on the front, to counteract the tension exerted by the belt on the roller bearings.

ATTENTION: After completing this procedure, check the centering of the tread belt as instructed in paragraph: 8.2. "Centering the tread belt".

This procedure is normally carried out after replacing the rear or driving roller, or in cases where a used tread belt needs to be reassembled: it is not possible to carry out the procedure described in paragraph: 8.1. "Trade belt tensioning", because the tread belt is not elastic.

8.2. CENTERING THE TREAD BELT

Figure 8.2-1

1. Start the machine at a speed of 10 km/h.

2. Observe the movement of the tread belt, correcting any tendency to shift to the right or left exclusively by adjusting the left tension screw **(a)**. Locking down this screw favours shifting of the belt to the right and vice versa.

3. Gradually increase the speed to 16 km/h, making any small adjustments that are necessary until the tread belt is perfectly centred.

8.3. ALIGNING THE TREAD-BELT MOTOR DRIVE-BELT

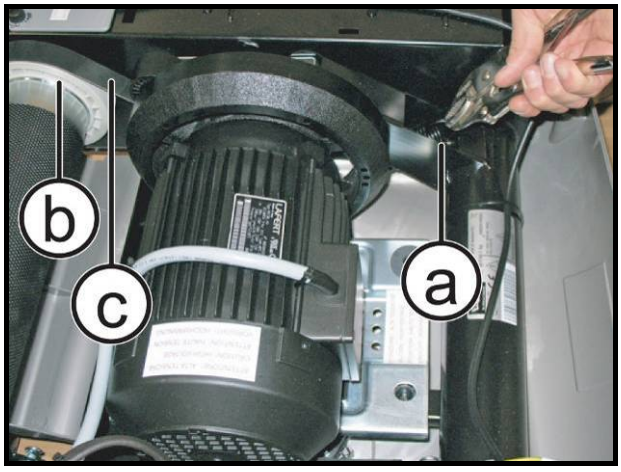


Figure 8.3-1

Carry out the procedure described in paragraph: 7.12. Motor guard disassembly", only as far as removing the upper guard.

1. Remove the dust guard.
2. Release the spring **(a)** of the belt tensioning mechanism.
3. Use a straight reference rod, resting it on the pulley **(b)** of the motor roller to align the belt **(c)** by shifting it within the races of the two pulleys.
4. After having aligned the belt, reassenbly the tension spring.

8.4. LIMIT SWITCH POSITION

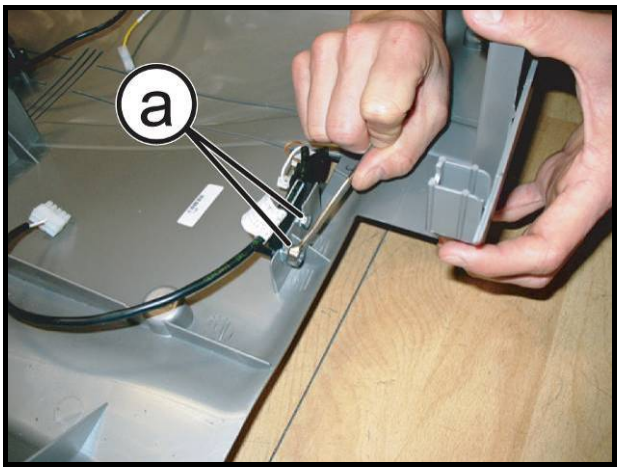


Figure 8.4-1

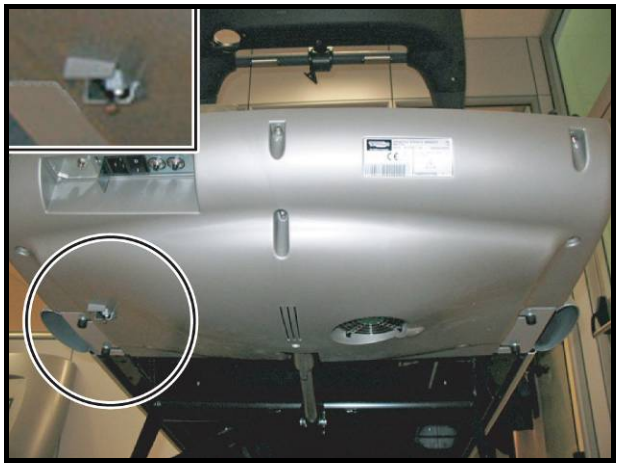


Figure 8.4-2

Carry out the procedure described in paragraph: 7.12. Motor guard disassembly".

1. Loosen the 2 screws **(a)** fixing the limit switch to the casing.

2. Adjust the position of the limit switch so that it touches the guard without to be pressed.

Take care the limit switch lever is not pressed on the guard.

3. After making the adjustment, lock down the screws **(a)** backed off previously.

8.5. THE MACHINE IS NOT FLAT

This problem may be due to the positioning of the machines on a not flat surface.
To level the machine, you may adjust the height of the levelling foot as illustrated below:

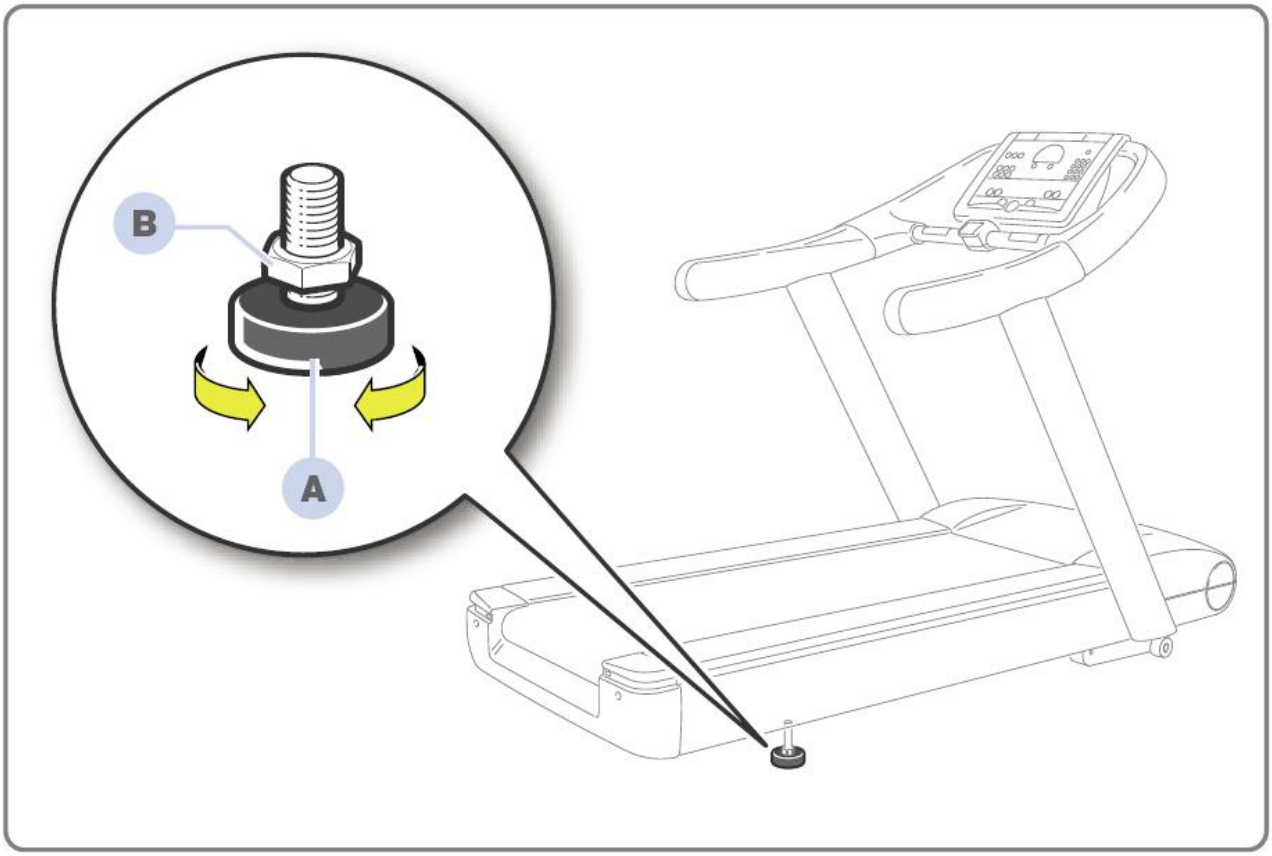


Figura 8.5-1

The equipment is levelled by adjusting the rear foot on the side shown in the illustration:

1. Screw the foot **(a)** in or out until the frame is in a stable position;

2. Thinten up the lock nut **(b)** after adjusting.

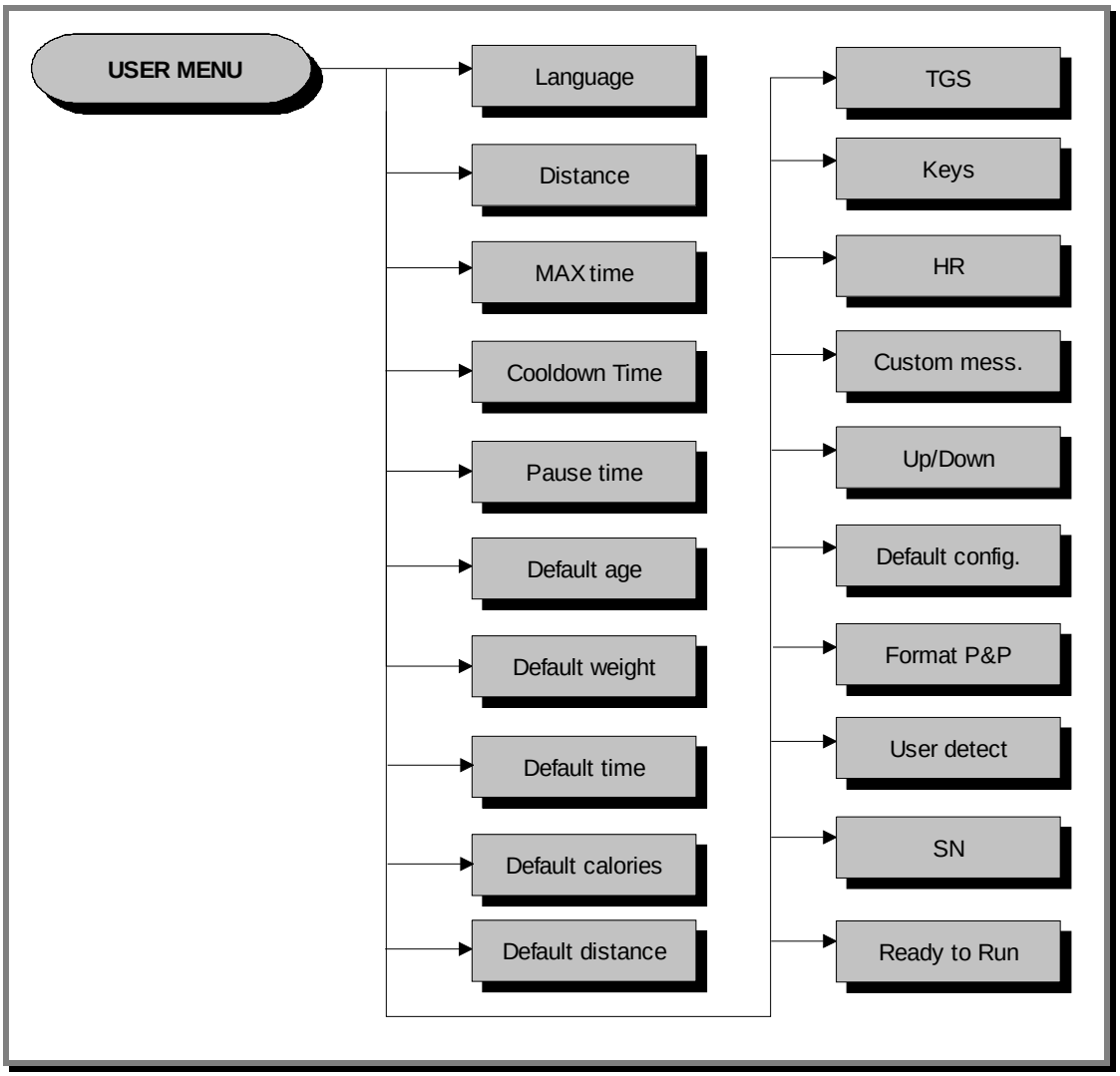
9. MACHINE CONFIGURATION

9.1. USER MENU CONFIGURATION FOR 500 LED MODELS

The machine configuration procedure is invoked, when the machine is in standby mode, by simultaneously pressing the keys **ENTER**, ↑, **CLEAR**. The following prompt appears on the display:

ENTER PASSWORD:

To access the procedure, type in the password **2406** and press **ENTER** to confirm. To enter the password, increase or decrease the displayed value using the ↑ and ↓ keys, or use the **+/- (GOAL)** keys to scroll through and modify the individual digits.
At this point the machine display begins showing the current configuration, structured as in the diagram below:



9.1.1. LANGUAGE

After selecting a language from the list of those available, all messages subsequently displayed by the machine will be in the chosen language. To change the selection, when the LED matrix shows the current setting:

LANGUAGE : xxx

Press the +/- **GOAL** keys to select the desired language from the options available. Press **ENTER** to confirm the choice, use the + or – speed keys to move to the next or previous parameter.

9.1.2. UNITS OF MEASUREMENT

It is possible to choose between EUROPEAN units (kg and km) or IMPERIAL units (pounds and miles). To change the selection, when the display shows the current setting:

UNITS : xxx

Press the **+/- GOAL** keys to select the desired unit of measurement from the options listed in the table below:

UNITS	
KG	*<default>*
POUNDS	

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

9.1.3. MAXIMUM EXERCISE TIME

It is possible to set a maximum duration for each exercise, ranging from 1 to 9999 minutes. To change the setting, when the display shows the currently selected duration:

MAX. DURATION : xxx

Press the **ENTER** key to change the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 9999.

9.1.4. COOLDOWN TIME

It is possible to set the cooldown time for each exercise, ranging from 5 to 180 seconds. To change the setting, when the display shows the currently selected maximum time:

COOLDOWN TIME xxx

Press the **ENTER** key to change the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 60.

If you are exercising with a TGS key, the cooldown will be stopped if you extract the key.

9.1.5. PAUSE TIME

It is possible to set a maximum pause time for each exercise, ranging from 10 to 999 seconds. To change the setting, when the display shows the currently selected maximum time:

PAUSE TIME xxx

Press the **ENTER** key to change the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 60.

9.1.6. DEFAULT AGE

It is possible to set the default age for a generic user, ranging from 10 to 99 years. To change the setting, when the display shows the currently selected default age:

DEFAULT AGE xx

Press the **ENTER** key to change the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 30.

9.1.7. DEFAULT WEIGHT

It is possible to set the default weight of a generic user in KG, with values ranging from 10 to 999. To change the setting, when the LED matrix shows the current setting:

DEFAULT WEIGHT : KG xxx

Press the **ENTER** key to change the parameter: the current value of the parameter will start to blink, at this point press the **CLEAR** key to erase the current value and then enter one digit at a time using the ↑ and ↓ keys to change the value and the +/- **GOAL** keys to scroll to the next character.

Press **ENTER** to confirm the changes made, and use the + or – speed keys to move to the next or preceding parameter.

The default value of this parameter is 70.

9.1.8. DEFAULT DURATION

It is possible to set a maximum duration for the exercise session, with a value ranging from 1 to 999 minutes. To change the setting, when the display shows the current duration:

DEFAULT DURATION MIN. xxx

Press the **ENTER** key to change the parameter: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 15 minutes.

9.1.9. DEFAULT CALORIES

It is possible to set the default calories for an exercise session, with a value ranging from 10 to 999. To change the setting, when the display shows the current value:

DEFAULT CALORIES xxx

Press the **ENTER** key to modify the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 300.

9.1.10. DEFAULT DISTANCE

It is possible to set the default distance for an exercise session, with values ranging from 1 to 999. To change the setting, when the display shows the current value:

DEFAULT DISTANCE KM xxx

Press the **ENTER** key to modify the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the **+** or **–** effort level keys to move to the next or preceding parameter.

The default value of this parameter is 10.

9.1.11. ENABLE TGS

It is possible to enable or disable the use of the TGS reader. To change the selection, when the display shows the current setting:

TGS : xxx

Press the **+/- GOAL** keys to select the desired option out of those listed in the table below:

TGS	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the operation, use the **+** or – effort level keys to move to the next or preceding parameter.

9.1.12. ENABLE KEYBOARD

It is possible to disable the keyboard so that the machine can only be used with the TGS. To change the selection, when the display shows the current setting:

KEYS : xxx

Press the **+/- GOAL** keys to select the desired option out of those listed in the table below:

KEYS	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the operation, use the **+** or – effort level keys to move to the next or preceding parameter.

9.1.13. MODIFIABLE TARGET HEART RATE

It is possible to enable or disable modification of the target heart rate during a constant heart rate exercise. To change the selection, when the LED matrix shows the current value:

HR: xxx

Press the +/- **GOAL** number keys to select the desired option out of those listed in the table below:

HR
MODIFIABLE <*default*>
NOT MODIFIABLE

Press **ENTER** to confirm the selection, use the + or – speed keys to move to the next or preceding parameter.

9.1.14. ENABLE CUSTOM MESSAGES

It is possible to configure whether a custom message is displayed when the machine is in the standby state. To change the selection, when the LED matrix shows the current setting:

CUSTOM MESS. : xxx

Press the +/- **GOAL** number keys to select the desired option out of those listed in the table below:

CUSTOM MESS.	
YES	<*default*>
NO	

Press **ENTER** to confirm the selection, use the + or – speed keys to move to the next or preceding parameter.

9.1.15. ENABLE UP/DOWN MOTOR

This parameter enables or disables use of the machine incline. To change the selection, when the LED matrix shows the current setting:

UP-DOWN: xxx

Press the +/- **GOAL** keys to select the desired option out of those listed in the table below:

UP-DOWN	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the selection, use the + or – speed keys to move to the next or previous parameter.

9.1.16. RESETTING PARAMETERS TO DEFAULT VALUES

It is possible to reset the user menu parameters to their default values. To select the function, when the display shows:

DEFAULT CONFIG.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter. If the **ENTER** key is pressed the display will show:

CONFIRM ?

press **ENTER** to confirm, or cancel by pressing the **CLEAR** key for a few seconds.

9.1.17. FORMAT P&P KEY

This function formats a TGS key for Plug&Play mode operation. To select the function, when the display shows:

FORMAT P&P

Press **ENTER** to confirm. At the end of the formatting procedure, hold down the **CLEAR** key for a few seconds to exit. The **CLEAR** key can be pressed at any time to interrupt the procedure and revert to standby mode.

9.1.18. USER DETECT

This function is able to detect the presence of a user running on the tread belt during an exercise session. It is possible to configure a minimum speed at which the machine will determine that the user has stopped running on the treadmill, and interrupt the exercise session if the condition persists for one minute. To change the setting, when the LED matrix shows the current duration:

USER DETECT: xxx

Press the **ENTER** key to change the parameter: when the current parameter value starts to blink, press the **CLEAR** key to erase the current value and then use the number keys to enter the desired new value.

Press **ENTER** to confirm the selection; use the + or – speed keys to move to the next or preceding parameter.

The default value of this parameter is 5.0 km/h

The minimum threshold speed for the user detect function is 3.0 km/h. Entering any value lower than this will have the effect of disabling the user-detect function.

If the unit of measurement is setted to IMPERIAL units (miles / pound), the default value for this parameter is 3 mph while the minimum speed is 2 mph.

At the end of the format procedure, hold down the **CLEAR** key for a few seconds to exit. The **CLEAR** key can be pressed at any time to interrupt the procedure and revert to standby mode.

9.1.19. SERIAL NUMBER

This parameter shows the serial number of the machine.

SN:xxxxx

9.1.20. READY TO RUN

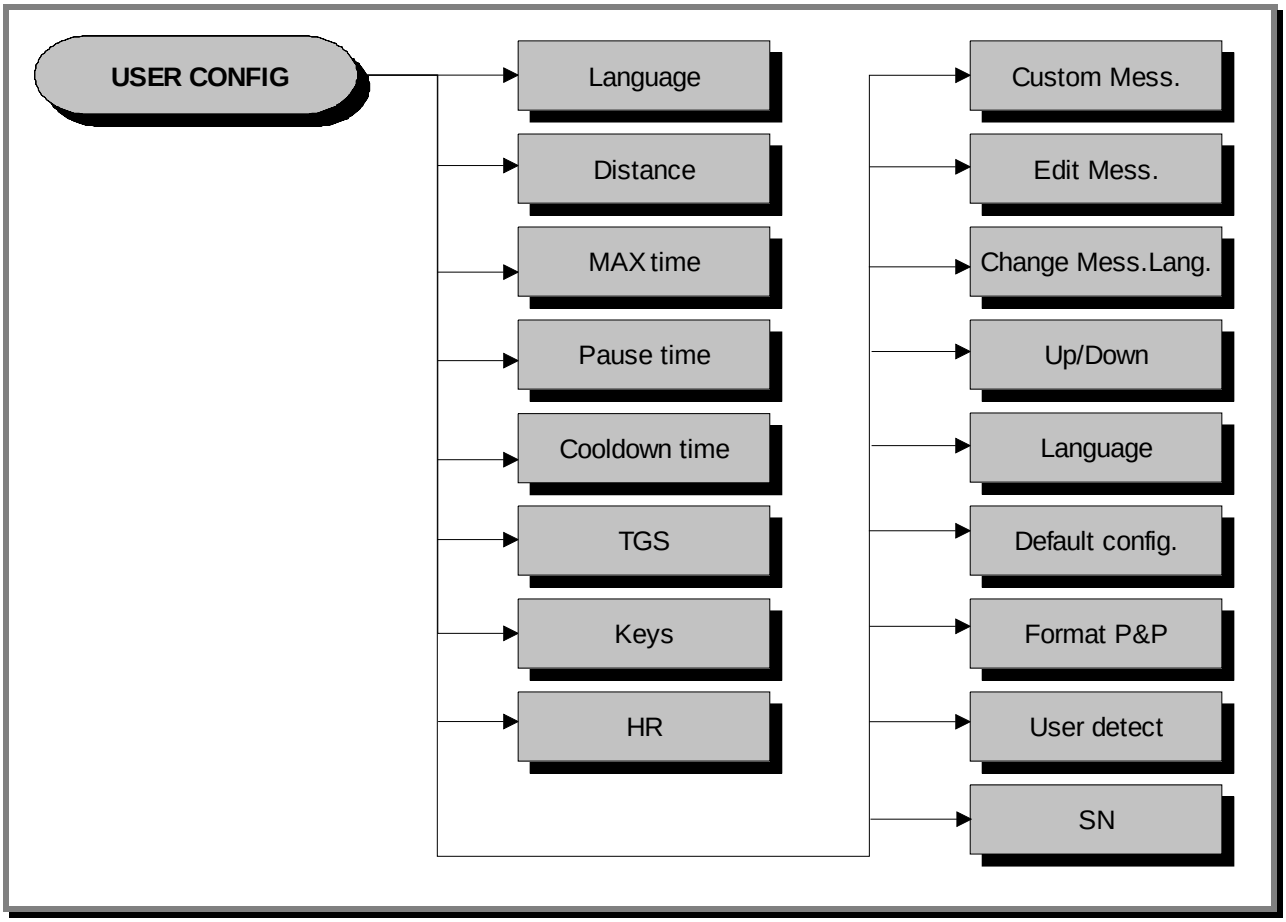
Feature not available on this product.

9.2. USER MENU CONFIGURATION FOR LED MODELS (700 AND 900)

The machine configuration procedure is invoked, when the machine is in standby mode, by simultaneously pressing the keys **369**, whereas on 700 Wellness TV models the keys **0369** must be pressed one after the other. The following prompt appears on the display:

ENTER PASSWORD:

To access the procedure, type in the password **2406** and press **ENTER** to confirm. At this point the machine display begins showing the current configuration, structured as in the diagram below:



9.2.1. LANGUAGE

After selecting a language from the list of those available, all messages subsequently displayed by the machine will be in the chosen language. To change the selection, when the LED matrix shows the current setting:

LANGUAGE : xxx

Press the +/- **GOAL** keys to select the desired language from the options available. Press **ENTER** to confirm the choice, use the + or – speed keys to move to the next or previous parameter.

9.2.2. DISTANCE

It is possible to choose between EUROPEAN units (kg and km) or IMPERIAL units (pounds and miles). To change the selection, when the LED matrix shows the current setting:

DISTANCE : xxx

Press the **+/- GOAL** keys to select the desired unit of measurement from the options listed in the table below:

DISTANCE	
KM	*<default>*
MLS	

Press **ENTER** to confirm the selection, use the **+** or **–** speed keys to move to the next or preceding parameter.

9.2.3. MAXIMUM EXERCISE TIME

It is possible to set a maximum duration for the exercise in minutes, with values ranging from 1 to 9999. To change the setting, when the LED matrix shows the current maximum time limit:

MAX TIME: xxx

Press the **ENTER** key to modify the parameter: when the current value of the parameter starts to blink, press the **CLEAR** key to erase the current value and then use the number keys to enter the desired value.

Press **ENTER** to confirm the selection, use the **+** or **–** speed keys to move to the next or preceding parameter.

The default value of this parameter is 9999.

9.2.4. PAUSE TIME

It is possible to set a maximum duration of the pause for every exercise in seconds, with values ranging from 10 to 999. To change the setting, when the LED matrix shows the current maximum pause time:

PAUSE TIME : xxx

Press the **ENTER** key to change the parameter: the current value of the parameter will start to blink, at this point press the **CLEAR** key to erase the current value and then use the number keys to enter the desired new value.

Press **ENTER** to confirm the changes made, and use the + or – speed keys to move to the next or preceding parameter.

The default value of this parameter is 60.

9.2.5. COOLDOWN TIME

It is possible to set the cooldown time for each exercise, ranging from 5 to 180 seconds. To change the setting, when the display shows the currently selected maximum time:

COOLDOWN TIME xxx

Press the **ENTER** key to change the value: The current parameter value starts to blink on the display; use the ↑ and ↓ keys to increase or decrease the value, or use the **+/- GOAL** keys to scroll through and modify the individual digits.

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

The default value of this parameter is 60.

If you are exercising with a TGS key, the cooldown will be stopped if you extract the key.

9.2.6. ENABLE TGS

It is possible to enable or disable the use of the TGS reader. To change the selection, when the display shows the current setting:

TGS : xxx

Press the **+/- GOAL** keys to select the desired option out of those listed in the table below:

TGS	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

9.2.7. ENABLE KEYBOARD

It is possible to disable the keyboard so that the machine can only be used with the TGS. To change the selection, when the display shows the current setting:

KEYS : xxx

Press the +/- **GOAL** keys to select the desired option out of those listed in the table below:

KEYS	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

9.2.8. MODIFIABLE TARGET HEART RATE

It is possible to enable or disable modification of the target heart rate during a constant heart rate exercise. To change the selection, when the display shows the current setting:

HR : xxx

Press the +/- **GOAL** number keys to select the desired option out of those listed in the table below:

HR	
MODIFIABLE	<*default*>
NOT MODIFIABLE	

Press **ENTER** to confirm the operation, use the + or – effort level keys to move to the next or preceding parameter.

9.2.9. ENABLE CUSTOM MESSAGES

It is possible to configure whether a custom message is displayed when the machine is in the standby state. To change the selection, when the LED matrix shows the current setting:

CUSTOM MESS. : xxx

Press the +/- **GOAL** number keys to select the desired option out of those listed in the table below:

CUSTOM MESS.	
YES	<*default*>
NO	

Press **ENTER** to confirm the selection, use the + or – speed keys to move to the next or preceding parameter.

9.2.10. EDIT MESSAGES

It is possible to modify the custom messages; press **ENTER** to invoke a submenu which displays the first custom message, then use the +/- speed keys to move to the other messages. Press the **ENTER** key again to begin editing a message, or hold down the **CLEAR** key for a few seconds to return to the upper menu level. While editing a message, move the cursor using **+/- GOAL**, select the desired letter using the +/- speed keys and use **CLEAR** to enter a blank space character. Press **ENTER** to save the modified message, or hold down the **CLEAR** key to cancel and return to the upper menu level.

9.2.11. CHANGE MESSAGGES LANGUAGES

It is also possible to display the custom standby messages in the language selected with the preceding parameter. To extend the language setting to the predefined custom standby messages, when the LED display is showing the current selection:

CHANGE MESS. LANGUAGE

Press **ENTER** to confirm the operation, use the **+** or – effort level keys to move to the next or preceding parameter.

9.2.12. ENABLE UP/DOWN MOTOR

This parameter enables or disables use of the machine incline. To change the selection, when the LED matrix shows the current setting:

UP-DOWN: xxx

Press the **+/- GOAL** keys to select the desired option out of those listed in the table below:

UP-DOWN	
ENABLED	<*default*>
DISABLED	

Press **ENTER** to confirm the selection, use the **+** or **–** speed keys to move to the next or previous parameter.

9.2.13. ENABLE MULTI-LANGUAGE MODE

The machine can be configured to allow selection of the language at each session. To change the selection, when the LED matrix shows the current setting:

LANGUAGE : xxx

Press the **+/- GOAL** number keys to select the desired option out of those listed in the table below:

LANGUAGE	
FIXED	<*default*>
OPTIONAL	

Press ENTER to confirm the selection, use the + or – speed keys to move to the next or preceding parameter.

9.2.14. RESETTING PARAMETERS TO DEFAULT VALUES

It is possible to reset the user menu parameters to their default values. To select the function, when the LED matrix shows:

DEFAULT CONFIG.

Press **ENTER** to confirm the operation, use the **+** or **–** speed keys to move to the next or preceding parameter. If the **ENTER** key is pressed the LED matrix will show:

CONFIRM ?

press **ENTER** to confirm, or cancel by pressing the **CLEAR** key for a few seconds.

9.2.15. FORMAT P&P

This function formats a TGS key for Plug&Play mode operation. To select the function, when the LED matrix shows:

FORMAT P&P

press **ENTER** to confirm. At the end of the format procedure, hold down the **CLEAR** key for a few seconds to exit. The **CLEAR** key can be pressed at any time to interrupt the procedure and revert to standby mode.

9.2.16. USER DETECT

This function is able to detect the presence of a user running on the tread belt during an exercise session. It is possible to configure a minimum speed at which the machine will determine that the user has stopped running on the treadmill, and interrupt the exercise session if the condition persists for one minute. To change the setting, when the LED matrix shows the current duration:

USER DETECT: xxx

Press the **ENTER** key to change the parameter: when the current parameter value starts to blink, press the **CLEAR** key to erase the current value and then use the number keys to enter the desired new value.

Press **ENTER** to confirm the selection; use the **+** or **–** speed keys to move to the next or preceding parameter.

The default value of this parameter is 5.0 km/h

The minimum threshold speed for the user detect function is 3.0 km/h. Entering any value lower than this will have the effect of disabling the user-detect function.

If the unit of measurement is setted to IMPERIAL units (miles / pound), the default value for this parameter is 3 mph while the minimum speed is 2 mph.

At the end of the format procedure, hold down the **CLEAR** key for a few seconds to exit. The **CLEAR** key can be pressed at any time to interrupt the procedure and revert to standby mode.

9.2.17. SERIAL NUMBER

This parameter shows the serial number of the machine.

SN:xxxx

9.3. USER MENU CONFIGURATION FOR 700 E 900 WELLNESS TV MODELS

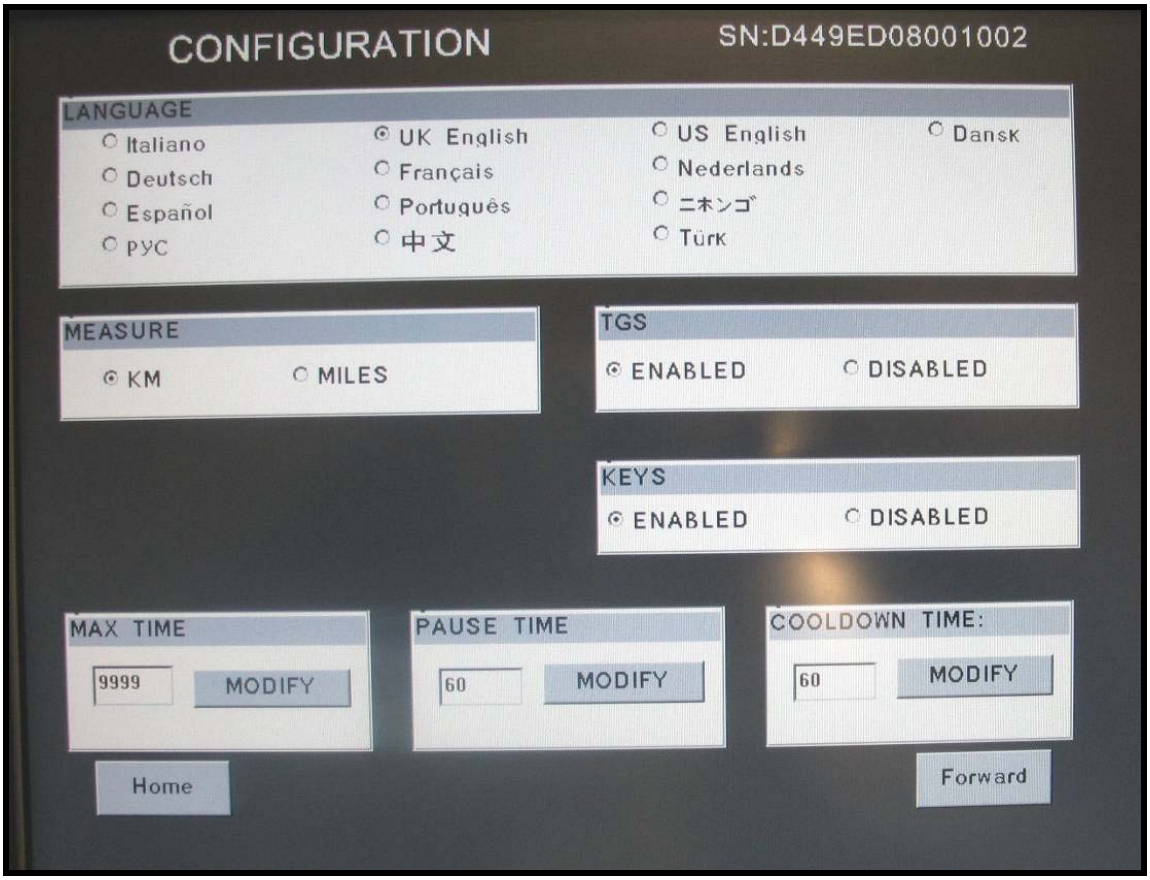
The machine configuration procedure is invoked, when the machine is in standby mode, by pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

To access the menu, type in the password **2406** and press **ENTER** key to confirm or **BACK** key to back forward.
At this point the machine display will shows the different parameters of the menu, collected in different pages, which can be scrolled with the **FORWARD** and **BACK** keys.
To exit the configuration press **HOME** key.

Pressing "HOME" in any page, all changes made up to that moment are saved; you cannot exit without saving. In case of errors the initial Technogym settings can be restored using the "DEFAULT CONFIG." parameter.

Here below have been detailed all the parameters of the menu.



9.3.1. SERIAL NUNBER

In the top right hand corner of the windows it is displayed the SN of the machine, loaded at the end of the production line.

9.3.2. LANGUAGE

After selecting a language from the list of those available, all messages subsequently displayed by the machine will be in the chosen language. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.3. MEASURE (DISTANCE)

It is possible to choose between EUROPEAN units (kg and km) or IMPERIAL units (pounds and miles). To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

MEASURE	
KM	*<default>*
MILES	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.4. ENABLE TGS

It is possible to enable or disable the use of the TGS reader. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

TGS	
ENABLED	<*default*>
DISABLED	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.5. ENABLE KEYBOARD

It is possible to disable the keyboard so that the machine can only be used with the TGS. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

KEYS	
ENABLED	<*default*>
DISABLED	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.6. MAXIMUM EXCERCISE TIME

It is possible to set a maximum duration for the exercise in minutes, with a value ranging from 1 to 9999. To change the setting, press the **MODIFY** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

The default value of this parameter is 9999.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.7. PAUSE TIME

It is possible to set a maximum pause time for each exercise in seconds, with values ranging from 10 to 999. To change the setting, press the **MODIFY** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

The default value of this parameter is 60.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

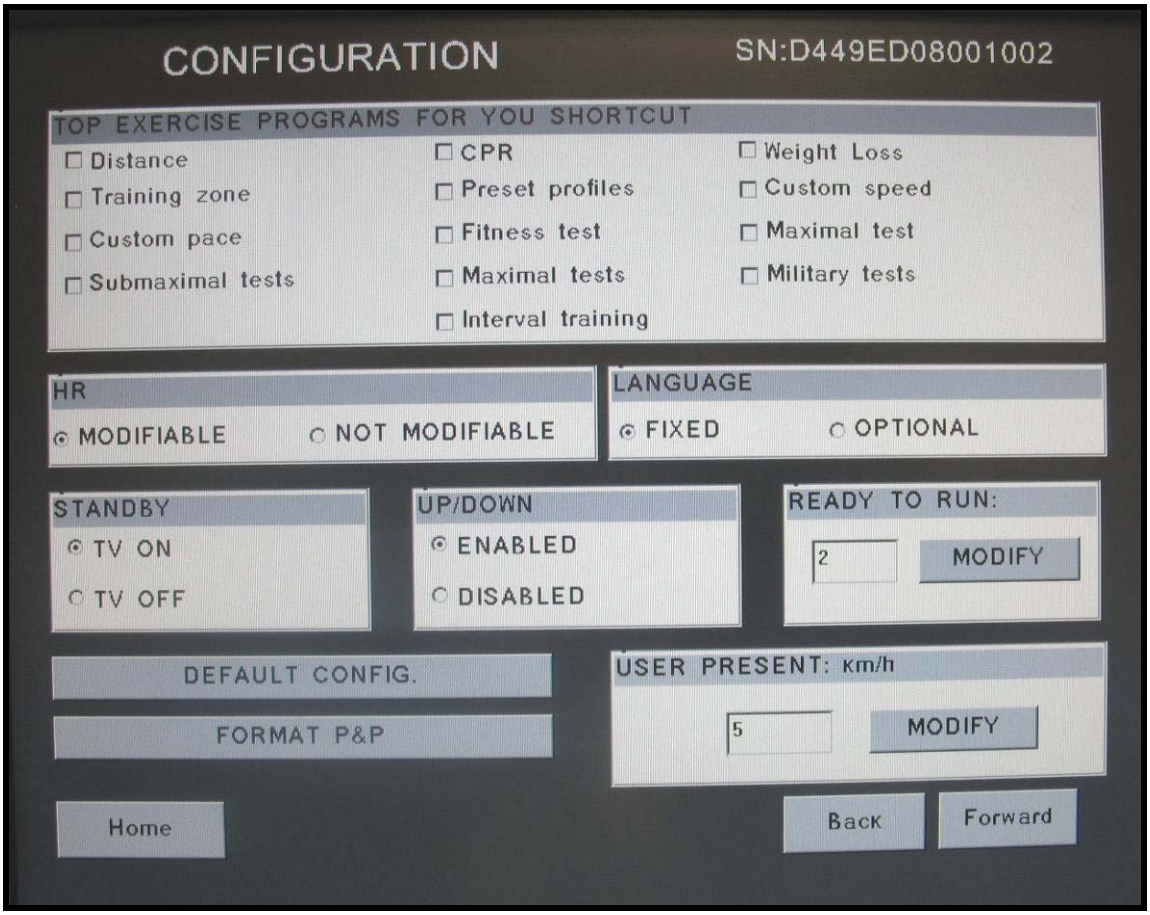
9.3.8. COOLDOWN TIME

It is possible to set the cooldown time for each exercise, ranging from 5 to 180 seconds.
To change the setting, press the **MODIFY** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

The default value of this parameter is 60.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

If you are exercising with a TGS key, the cooldown will be stopped if you extract the key.



9.3.9. TOP EXERCISE PROGRAMS FOR YOU SHORTCUT

It is possible to choose 2 extra training programs, from the list of those available, which will be displayed in the main page with the fixed ones “TIME” and “CALORIES”. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.10. MODIFIABLE TARGET HEART RATE

It is possible to enable or disable modification of the target heart rate during a constant heart rate exercise. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

HR
MODIFIABLE <*default*>
NOT MODIFIABLE

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.11. STANDBY

It is possible to enable or disable the TV screen during the standby mode. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

STANDBY
TV ON <*default*>
TV OFF

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.12. ENABLE MULTI-LANGUAGE MODE

The machine can be configured to allow selection of the language at each session. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

LANGUAGE	
FIXED	<*default*>
OPTIONAL	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.13. UP/DOWN

This parameter enables or disables use of the machine incline. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

UP/DOWN	
ENABLED	<*default*>
DISABLED	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.14. READY TO RUN

Feature not available on this product.

9.3.15. USER DETECT

This function is able to detect the presence of a user running on the tread belt during an exercise session. It is possible to configure a minimum speed at which the machine will determine that the user has stopped running on the treadmill, and interrupt the exercise session if the condition persists for one minute. To change the setting, when the LED matrix shows the current duration:

USER DETECT: xxx

It is possible to set this parameter, ranging from 0 to 25 Km/h.

The default value of this parameter is 5.0 km/h

The minimum threshold speed for the user detect function is 3.0 km/h. Entering any value lower than this will have the effect of disabling the user-detect function.

If the unit of measurement is setted to IMPERIAL units (miles / pound), the default value for this parameter is 3 mph while the minimum speed is 2 mph.

9.3.16. RESETTING PARAMETERS TO DEFAULT VALUES

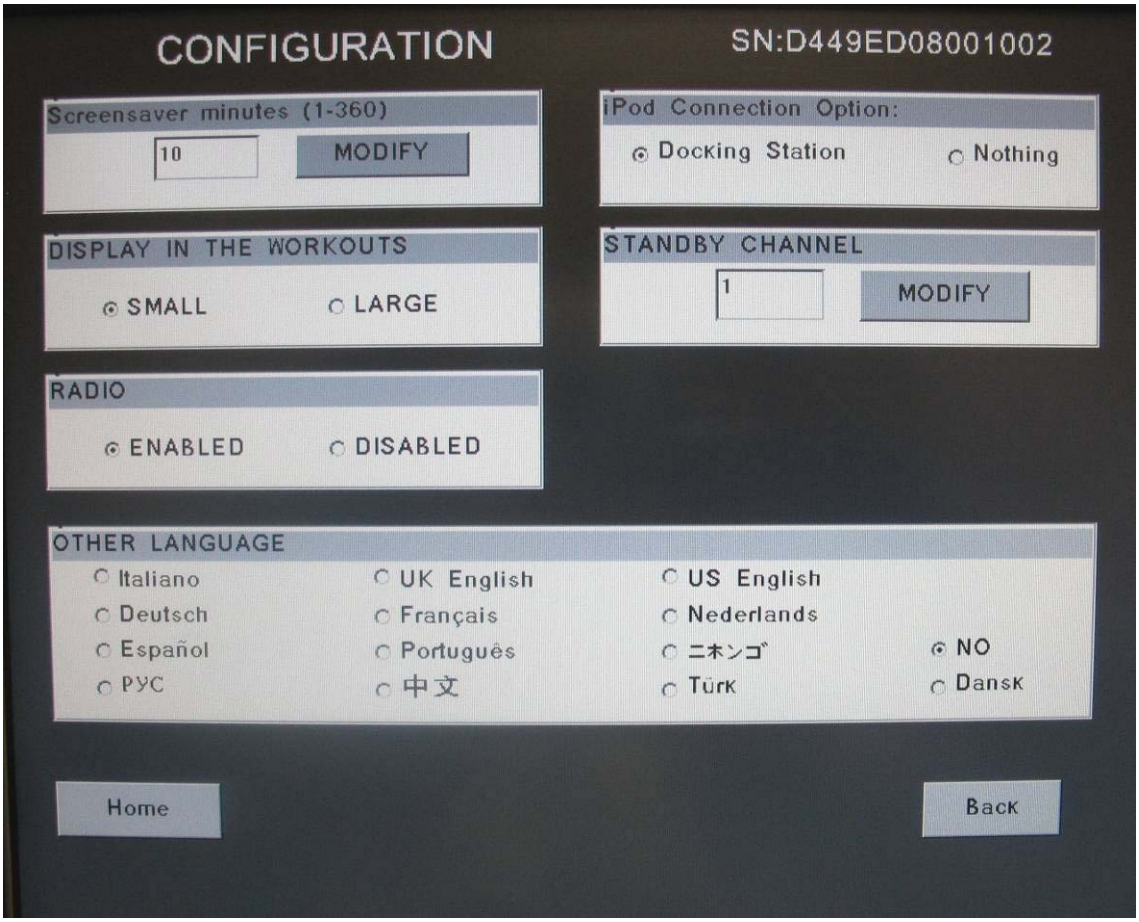
It is possible to reset the user menu parameters to their default values.
To select the function, press **DEFAULT CONFIG**.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.17. FORMATTA CHIAVE P&P

This function formats a TGS key for Plug&Play mode operation. To select the function, press "**FORMAT P&P**" key.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.



9.3.18. SCREEN SAVER MINUTES

It is possible to configure the amount of time, in minutes, the machine will wait before activating the screen saver, with values ranging from 10 to 360.
To change the setting, press the **MODIFY** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

The default value of this parameter is 10.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.19. DISPLAY IN THE WORKOUT

It is possible to configure the size of the exercise data during the workout. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

DISPLAY IN THE WORKOUT	
SMALL	*<default>*
LARGE	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.20. RADIO

It is possible to enable or disable the radio function on the machine. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

RADIO	
YES	*<default>*
NO	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.21. iPOD CONNECTION OPTION

It is possible to set the machine for controlling the iPod through the display. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

iPOD CONNECTION OPTION	
DOCKING STATION	*<default>*
NOTHING	

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.22. STANDBY CHANNEL

It is possible to set the channel which is displayed on the TV, when the TV is in standby. To change the setting, press the **MODIFY** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.3.23. OTHER LANGUAGE

It is possible to set a shortcut for a second language different from the one set at “LANGUAGE” parameter, displayed in the top left hand corner of the main page.
To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.4. SERVICE MENU CONFIGURATION LED MODEL

The configuration procedure is invoked when the machine is in standby mode, using a different procedure for the 500 and 700 models.

- **Accessing configuration of 500 models**

Simultaneously press the **ENTER**, ↑, **CLEAR** keys. The following prompt appears on the display:

ENTER PASSWORD:

To access the procedure, type in the password **2501** which protects against unauthorized access and press "Enter" to confirm. To enter the password, increase or decrease the displayed value using the ↑ and ↓ keys, or use the **+/- GOAL** keys to scroll through and modify the individual digits.
At this point there are two options available:

↑ = Tech Config
↓ = Troubleshooting

Press numeric key ↑ to access the menu for configuring technical parameters; the machine display will begin showing the current configuration, structured as in the diagram below:

- **Accessing configuration of 700 and 900 models**

Simultaneously press the keys **369** for 700 LED models, whereas on 700 Wellness TV models the keys **0369** must be pressed one after the other. The following prompt appears on the display:

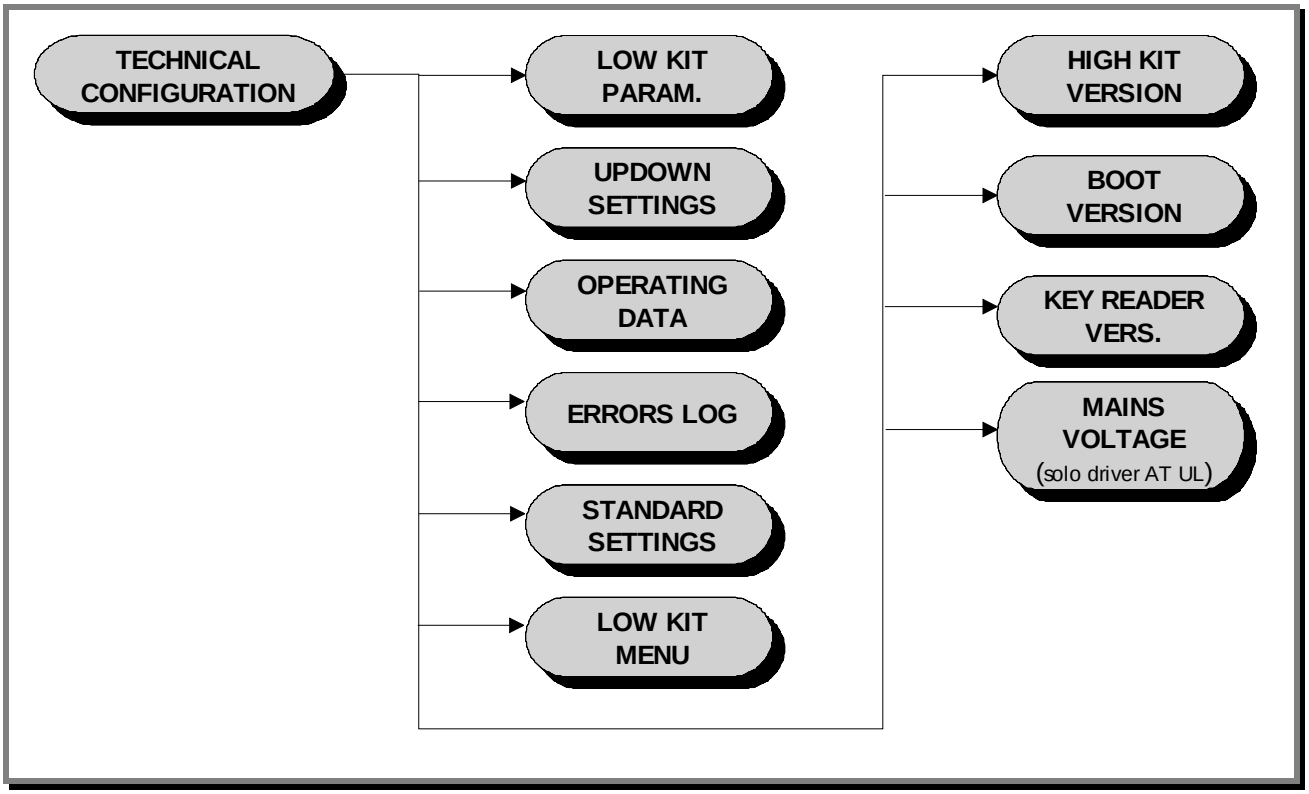
ENTER PASSWORD:

To access the procedure, type in the password **2501** which protects against unauthorized access and press the "Enter" key to confirm. At this point there are two options available:

1 = Tech Config
2 = Troubleshooting

Press numeric key **1** to access the menu for configuring technical parameters; the machine display will begin showing the current configuration, structured as in the diagram below:

- **Configuration**



To scroll through the list of parameters, press the + or – effort level keys to display the next or the preceding item.

To modify a parameter value, it is necessary to press the **ENTER** key: when the current parameter value starts to blink, press the **CLEAR** key to erase the current value and then use the number keys to enter the desired new value. Save the changes made by pressing the **ENTER** key.

To cancel the operation, press the **CLEAR** key for a few seconds.

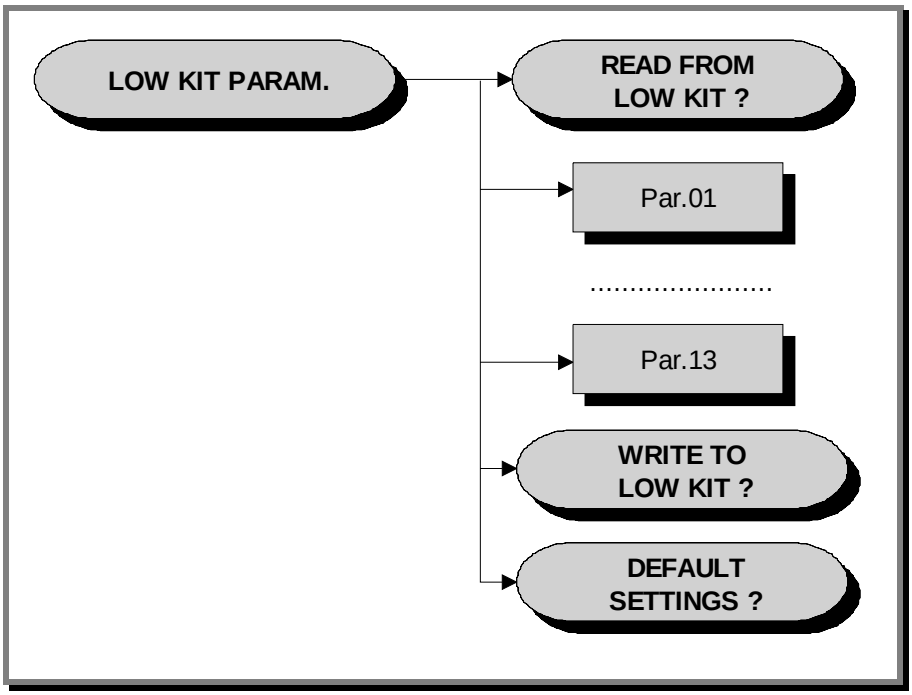
The various parameters are described below.

9.4.1. LOW KIT PARAMETER

This function provides access to parameters used for modifying certain settings of the lower assembly. To access this menu, when the display shows:

LOW KIT PARAM.

press **ENTER**. This function is structured as follows:



In addition to the 13 configuration parameters, this function also includes the 3 sub-functions described below:

9.4.1.1. Read from low kit

To read the parameter values from the low kit memory and view them on the display, scroll using the +/- keys until the display shows:

READ FROM LOW KIT ?

press **ENTER** to read the errors from the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.1.2. Write to low kit

To write the values of the currently displayed parameters to the low kit, scroll using the +/- keys until the display shows:

WRITE TO LOW KIT ?

press **ENTER** to write the parameters to the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.1.3. Default Setting

To load the default parameter values, scroll using the +/- effort level keys until the display shows:

DEFAULT SETTING ?

press **ENTER** to write the default values to the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

To write these parameters to the low kit, use the "Write to low kit" function.

9.4.1.4. Table of configuration parameters

Display parameter	*Description*	*Range*	*Default values*
Par 01	*Default linear speed*	*n.m.*	*8*
Par 02	*Default acceleration and deceleration*	*n.m.*	*100*
Par 03	*default slope setpoint*	*n.m.*	*0*
Par 04	*PID proportional gain*	*n.m.*	*7*
Par 05	*PID Integral gain*	*n.m.*	*150*
Par 06	*S Ramp Type*	*n.m.*	*0*
Par 07	*Flag DC motor encoder signal alarm action*	*0 - 1*	*0*
Par 08	*Watchdog serial communication*	*n.m.*	*0*
Par 09	*DC motor encoder error timeout 1 cnt = 100 msec*	*0 - 255*	*15*
Par 10	*Flag signal receiving Sw Emergency and not receiving Emergency Hw*	*-*	*0*
Par 11	*roll diameter*	*n.m.*	*91*
Par 12	*roller diameter*	*n.m.*	*200*
Par 13	*Flag posting warning signal AC motor encoder*	*0 - 1*	*0*

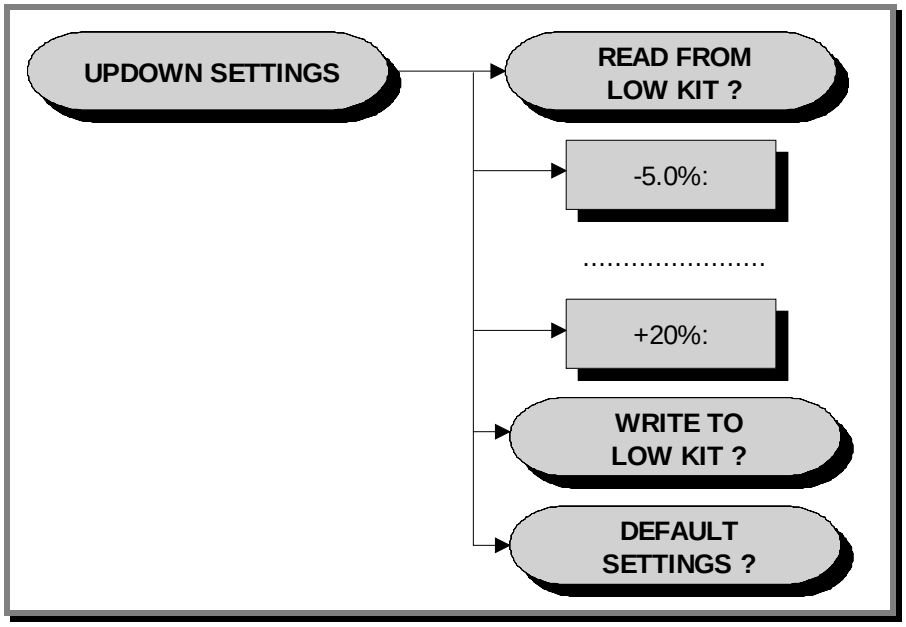
n.m = Value not modifiable.

9.4.2. UPDOWN SETTINGS

This function allows access to the parameters in the UpDown table which define the number of encoder pulses that correspond to different machine incline positions. To access this menu, when the LED display shows:

UPDOWN SETTINGS

press **ENTER**. This function is structured as follows:



In addition to the 50 configuration parameters, this function also includes the 3 sub-functions described below:

9.4.2.1. Read from low kit

To read the parameter values from the low kit memory to view them on the display, scroll using the +/- keys until the LED display shows

READ FROM LOW KIT ?

press **ENTER** to read the parameters from the low kit, then return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.2.2. Write to low kit

To write the values of the currently displayed parameters to the low kit, scroll using the +/- keys until the LED display shows:

WRITE TO LOW KIT ?

press **ENTER** to write the parameters to the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.2.3. Default setting

To load the default parameter values to the display, scroll using the +/- keys until the LED display shows:

DEFAULT SETTING ?

press **ENTER** to load the default parameter values, and return to the upper menu level by pressing **CLEAR** for a few seconds.

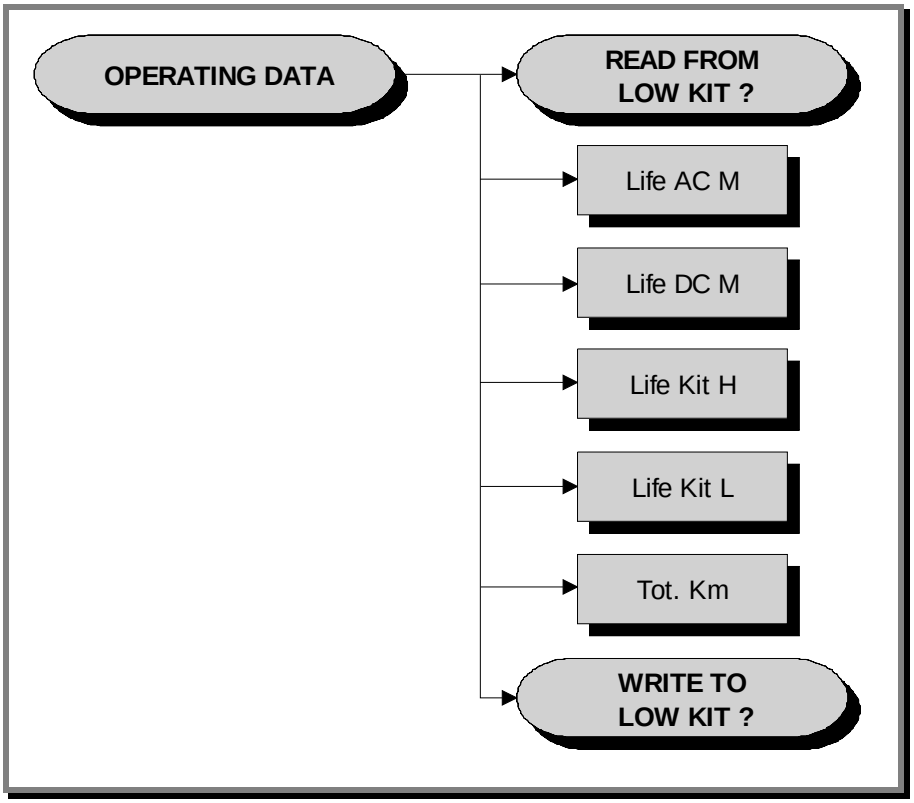
To write these parameters to the low kit, use the "Write to low kit" function.

9.4.3. OPERATING DATA

This function makes it possible to access the machine usage data stored in the low kit. To access this menu, when the display shows:

OPERATING DATA

press **ENTER**. This function is structured as follows:



In addition to the machine usage data, this function also includes the 2 sub-functions described below:

9.4.3.1. Read from low kit

To read the parameter values from the low kit memory and view them on the display, scroll using the +/- keys until the display shows:

READ FROM LOW KIT ?

press **ENTER** to read the errors from the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.3.2. Write to low kit

To write the values of the currently displayed parameters to the low kit, scroll using the +/- keys until the display shows:

WRITE TO LOW KIT ?

press **ENTER** to write the new data to the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.3.3. Machine usage data

The machine usage data on the display is updated every 10 minutes. This means that, whenever the machine is switched off, any data modified after the last memory update will be lost.

MESSAGE ON DISPLAY	DESCRIPTION
Life AC M:	Minutes x 10 of tread belt motor operation
Life DC M:	Minutes of elevation motor operation
Life Kit H:	Minutes x 10 of operation of the upper assembly
Life Kit L:	Minutes x 10 of operation of the lower assembly
Tot. Km:	Total km travelled

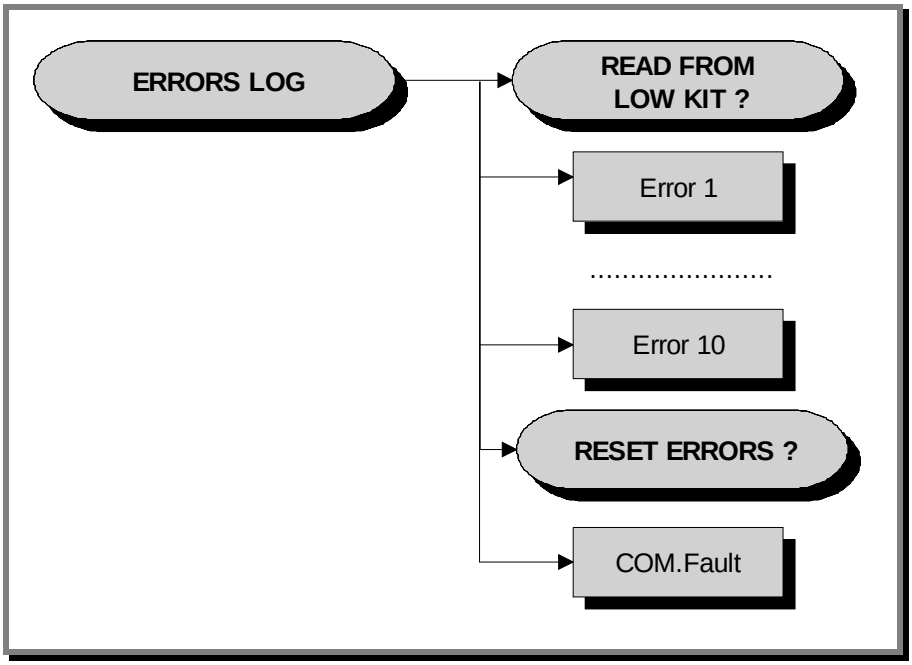
By selecting one of the items in the above table it is possible to modify its content, but only after having cleared its value. When the **ENTER** key is pressed the message "Reset life..." appears, followed by the name of the selected item; pressing **ENTER** again resets the value of the selected item, while pressing **CLEAR** reverts to the preceding value.

9.4.4. ERRORS LOG

This function accesses the machine's error history log. To access this menu, when the display shows:

ERRORS LOG

press **ENTER**. This function is structured as follows:



In addition to the error history log, this function also includes the 2 sub-functions described below:

9.4.4.1. Read from low kit

To read the errors stored in low kit memory and view them on the display, scroll using the +/- keys until the display shows:

READ FROM LOW KIT ?

press **ENTER** to read the errors from the low kit, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.4.2. Reset Errors

To clear the error history in both the low and high kit memory, scroll using the +/- keys until the display shows:

RESET ERRORS ?

press **ENTER** to clear the error history logs, and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.4.3. COM.Fault

This is a counter that display the number of errors in serial communication between the upper and the lower kit. This counter increase each time a communication fault is detected. Scroll using the +/- keys until the display shows:

COM.FAULT X

To reset it press **ENTER**, the LED display shows:

RESET COM.FAULT?

press **ENTER** to reset and return to the upper menu level by pressing **CLEAR** for a few seconds.

9.4.4.4. View Errors

For every error generated by the machine, the error history log records the information in the table below:

- *Error number;*
- *Error code;*
- *Tension at the error moment;*
- *Current when the error occurred*
- *Speed at the error monent Km/h.*

The correspondence between error codes and descriptions is given in the table below:

Error code	***Description***
1/OH	OVERHEATING of the heat sinks of the low kit driver and of the PFC.
2/OC	OVERCURRENT, even if only temporary, on the inverter output.
3/UU	UNDERVOLTAGE condition, due to an even temporary drop in line voltage.
4/OU	OVERVOLTAGE
5/ST	SERIAL TIMEOUT, there is no signals exchange between high kit and low kit
6/PE	EEPROM error: is generated when there is an error detected in the data stored on the Eprom.
7/EdC1	ELEVATION MOTOR ENCODER error.
8/EdA	BELT MOTOR ENCODER error.
9/OtM	BELT MOTOR THERMAL CUT-OUT open.
10/Oli	Inverter overload caused by a DC current exceeding, for the maximum allowed time (I2t), the maximum permissible threshold for the inverter.
11/OLm	Motor overload caused by a DC current exceeding, for the maximum allowed time (I2t), the maximum permissible threshold for the motor in question.
12/OLr	Braking resistor overload.
19/EM	EMERGENCY. Is generated when the low kit drive receives a software emergency signal that is not accompanied by a hardware emergency signal

Error code	*Description*
20/SFAn	LOW KIT DRIVER COVER PLATE FAN. This error is genereted if there is a mulfunction on the fan mounted on the driver's cover plate, for at least 5 sec.
21/PFAn	LOW KIT DRIVER INTERNAL FAN. This error is genereted if there is a mulfunction on the internal low kit driver fan, for at least 5 sec
22/IMV	INVERTER POWER SUPPLY: This error is generated if a voltage <156 VAC for at least 1 sec. when the AC motor is working or for at least 10 sec. when AC motor is not working.
23/SHC	SHORT CIRCUIT. Is generated in the event of a short circuit between a motor phase and earth.
24/OHS	OVERHEATING of the dissipator sensor: This error is genereted if a mulfunction of the dissipator sensor last more than 1 sec.

Use the + effort level key to advance to the next error, otherwise the message with the details of the current error will continue to reappear.

9.4.5. STANDARD SETTINGS

This function simultaneously resets the User menu, low kit, UpDown table parameters to their default values and the operating data of the machine. To access this menu, when the LED display shows:

STANDARD SETTING

press **ENTER**, the following message appears:

CONFIRM ?

Press **ENTER** again to reset all parameters to their default values, or return to the upper menu level by pressing **CLEAR** for a few seconds.

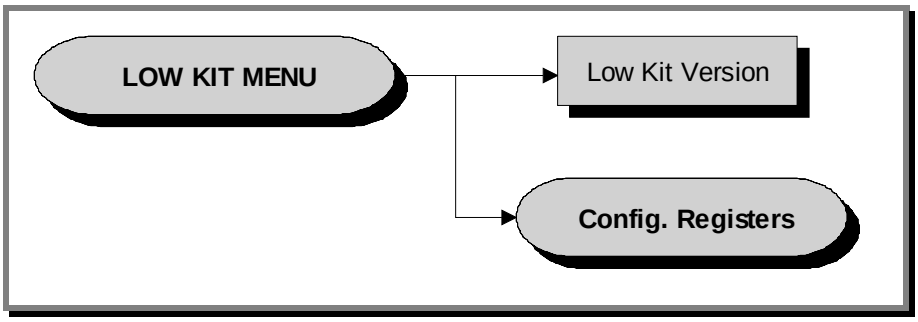
This function does not alter the language and the TV standard setting.

9.4.6. LOW KIT MENU

This function directly accesses the firmware of the inverter. To access this menu, when the LED display shows:

LOW KIT MENU

press **ENTER**. This function is structured as follows:



9.4.6.1. Low kit version

This function displays the inverter firmware version. To access this menu, when the LED display shows:

LOW KIT VERSION

press **ENTER**, the following message appears:

H:x L:x B:x

Which identifies the firmware version.

AT drivers for European and US market, use the same SW, nevertheless the first character among the three which identify the SW version, changes according to the HW mounted on the machine. In particular you can find:

- **2.x.x if the AT driver on the machine is that for European market.**
- **4.x.x if the AT driver on the machine is that for US market.**

9.4.6.2. Config. registers

This function displays the parameter values of type b, C, D, F, P, H and S. To access this menu, when the LED display shows:

CONFIG REGISTERS

press **ENTER**, the following message appears:

ADDRESS: X

where X is the address identifying anAT UL driver parameter, as detailed in the tables at the end of the paragraph.

Press **ENTER** to change the address and select a different parameter, or press + to read the value of the currently selected parameter, the following message will appear:

READ FROM LOW KIT ?

press **ENTER** to load the parameter value, the following message will appear:

VALUE: Y

press **ENTER** to begin editing the parameter value. When finished, press + and the following message will appear:

WRITE TO LOW KIT ?

press **ENTER** to confirm writing the changes to the low kit; at the end of this operation the following message reappears:

ADDRESS: X

Although the changes made to the parameters come into effect immediately, they are not automatically stored in permanent memory; this requires a specific write operation effected using the command C-0: at address 800 write the value "1", following the detailed instructions provided in paragraph 9.4.6.2 "Config. registers".

To return to the upper menu level press **CLEAR** for a few seconds.

MENU –A–							
Par.	***Address***	***Description***	***Value***	***Par.***	***Address***	***Description***	***Value***
A-0	1200	PID mode (700/900)	1	A-59	1218	PID min neg err	50
		PID mode (500)	0	A-100	1219	Set Linear speed	0
A-1	1201	PID ref sel	5	A-101	1220	Set Acc Dec	100
A-2	1202	PID fbk sel	4	A-102	1221	Set Incline ref	0
A-3	1203	PID digital ref	0	A-105	1222	Def Linear speed	8
A-4	1204	PID activat mode	0	A-106	1223	Def Acc Dec	100
A-5	1205	PID-Encoder sync	1	A-107	1224	Def Incline ref	0
A-6	1206	PID err sign rev	0	A-110	1225	Pulley Ratio	200
A-7	1207	PID Integ init en	0	A-111	1226	Roller Diameter	91
A-8	1208	PID update time	0	A-115	1227	DCMot EncTimeout	250
A-50	1209	PID Prop gain 1	7			DCMot EncTimeout	15
A-51	1210	PID Int tconst 1	150	A-116	1228	Fan command dly	3
A-52	1211	PID Deriv gain 1	0	A-117	1229	ACMot EncToller	50
A-53	1212	PID Prop gain 2	0				0(OFF)
A-54	1213	PID Int tconst 2	9999	A-118	1230	Check RunnerBand	10
A-55	1214	PID Deriv gain 2	0	A-119	1231	Check RunnerSpd	50
A-56	1215	PID high limit	80	A-120	1232	Curr clamp thr	200
A-57	1216	PID low limit	-80	A-121	1233	Check RunnerDly	60
A-58	1217	PID max pos err	50				

MENU –C–							
Par.	***Address***	***Description***	***Value***	***Par.***	***Address***	***Description***	***Value***
C-0	800	Save parameters	0	C-41	805	Save pars to key	0
C-1	801	Recall param	0	C-100	806	Measure stator R	0
C-2	802	Load default	0	C-200	807	Reset AC Flag	0
C-20	803	Alarm clear	0	C-201	808	Reset DC Flag	0
C-40	804	Recall key prog	0				

MENU –D–							
Par.	*Address*	*Description*	*Value*	*Par.*	*Address*	*Description*	*Value*
D-0	1	Output frequency	0	D-200	26	An in 1 cnf mon	0
D-1	2	Frequency ref	0	D-201	27	An in 1 monitor	0
D-2	3	Output current	0	D-202	28	An in 1 term mon	0
D-3	4	Output voltage	0	D-210	29	An in 2 cnf mon	0
D-4	5	DC link voltage	400	D-211	30	An in 2 monitor	0
D-5	6	Power factor	100	D-212	31	An in 2 term mon	0
D-6	7	Power [kW]	0	D-220	32	An in 3 cnf mon	0
D-7	8	Output speed	0	D-221	33	An in 3 monitor	0
D-8	9	Speed ref	0	D-222	34	An in 3 term mon	0
D-20	57	Actual speed	0	D-300	35	EncPulse/Sample	0
D-21	58	Actual incline user	0	D-301	36	Encoder freq	0
D-22	59	Actual ENC1 pos	0	D-302	37	Encoder speed	0
D-23	60	Crossed distance	0	D-350	38	Option 1 state	0
D-24	61	Reserved	-	D-351	39	Option 2 state	0
D-25	62	Flag status	0	D-352	40	Par port state	0
D-26	63	Actual ENC2 pos	0	D-400	41	PID reference	0
D-27	64	Actual speed from Fenc	0	D-401	42	PID feedback	0
D-30	70	Reserved	-	D-402	43	PID error	0
D-50	10	Heatsink temp	0	D-403	44	PID integr comp	0
D-51	11	Drive OL	0	D-404	45	PID output	0
D-52	12	Motor OL	0	D-800	46	Error 1	0
D-53	13	Brake res OL	0	D-801	47	Error 2	0
D-100	14	Dig inp status	0	D-802	48	Error 3	0
D-101	15	Term inp status	0	D-803	49	Error 4	0
D-102	16	Vir dig inp stat	0	D-950	50	Drive rated cur	100
D-120	17	Exp dig inp stat	0	D-951	51	SW version 1\2	200h
D-121	18	Exp term inp	0	D-952	52	SW version 1\2	80h
D-122	19	Exp Vir dig inp stat	0	D-953	53	power ident code	0h
D-150	20	Dig out status	0	D-954	54	param ident code	0h
D-151	21	Drv dig out sta	0	D-955	55	regul ident code	3/8h
D-152	22	Vir dig out sta	0	D-956	56	Startup id code	0h
D-170	23	Exp Dig out status	0	D-957	71	Drive type	2
D-171	24	Exp Drv dig out sta	0	D-999	99	Display test	-
D-172	25	Exp Vir dig out sta	0				

MENU –F–							
Par.	*Address*	*Description*	*Value*	*Par.*	*Address*	*Description*	*Value*
F-0	300	Motorpot ref	0	F-110	321	Frequency ref 10	0
F-10	301	Acc/Dec time mp	50	F-111	322	Frequency ref 11	0
F-11	302	Motorpot offset	0	F-112	323	Frequency ref 12	0
F-12	303	Mp output mode	0	F-113	324	Frequency ref 13	0
F-13	304	Mp auto save	1	F-114	325	Frequency ref 14	0
F-20	305	Max ref freq	1150	F-115	326	Frequency ref 15	0
F-21	306	Min ref freq	0	F-116	327	Jog frequency	10
F-50	307	Ref 1 channel	8	F-200	328	Ramp resolution	0
F-51	308	Ref 2 channel	0	F-201	329	Acc time 1	3000
F-60	309	MltFrq channel 1	3	F-202	330	Dec time 1	3000
F-61	310	MltFrq channel 2	3	F-203	331	Acc time 2	50

MENU –F–							
Par.	*Address*	*Description*	*Value*	*Par.*	*Address*	*Description*	*Value*
F-100	311	Frequency ref 0	0	F-204	332	Dec time 2	50
F-101	312	Frequency ref 1	0	F-205	333	Acc time 3	50
F-102	313	Frequency ref 2	0	F-206	334	Dec time 3 / FS	50
F-103	314	Frequency ref 3	0	F-207	335	Acc time 4 / Jog	50
F-104	315	Frequency ref 4	0	F-208	336	Dec time 4 / Jog	50
F-105	316	Frequency ref 5	0	F-250	337	Ramp S-shape	0
F-106	317	Frequency ref 6	0	F-260	338	Ramp extens src	0
F-107	318	Frequency ref 7	0	F-270	339	Jump amplitude	0
F-108	319	Frequency ref 8	0	F-271	340	Jump frequency 1	0
F-109	320	Frequency ref 9	0	F-272	341	Jump frequency 2	0

MENU –I–							
Par.	*Address*	*Description*	*Value*	*Par.*	*Address*	*Description*	*Value*
I-0	100	Dig input 1 cfg	1	I-313	140	An out 2 filter	0
I-1	101	Dig input 2 cfg	0	I-350	141	Exp an out 1 cfg	0
I-2	102	Dig input 3 cfg	0	I-351	142	Exp AnOut 1 offs	0
I-3	103	Dig input 4 cfg	0	I-352	143	Exp AnOut 1 gain	100
I-4	104	Dig input 5 cfg	0	I-353	144	Exp AnOut 1 filt	0
I-5	105	Dig input 6 cfg	0	I-400	145	Inp by serial en	0
I-6	106	Dig input 7 cfg	0	I-410	146	Exp in by ser en	0
I-7	107	Dig input 8 cfg	0	I-420	147	Out by serial en	0
I-50	108	Exp dig in 1 cfg	0	I-430	148	Exp OutBySer en	0
I-51	109	Exp dig in 2 cfg	0	I-450	149	An out by ser en	0
I-52	110	Exp dig in 3 cfg	0	I-500	150	Encoder enable	1
I-53	111	Exp dig in 4 cfg	0	I-501	151	Encoder ppr	720
I-100	112	Dig output 1 cfg	48	I-502	152	Enc channels cfg	1
I-101	113	Dig output 2 cfg	48	I-503	153	Enc spd mul fact	100
I-102	114	Dig output 3 cfg	48	I-504	154	Enc update time	0
I-103	115	Dig output 4 cfg	48	I-600	155	Serial link cfg	6
I-150	116	Exp DigOut 1 cfg	48	I-601	156	Serial link bps	4
I-151	117	Exp DigOut 2 cfg	48	I-602	157	Device address	1
I-200	118	An in 1 Type	1	I-603	158	Ser answer delay	1
I-201	119	An in 1 offset	0	I-604	159	Serial timeout	0
I-202	120	An in 1 gain	100	I-605	160	En timeout alm	1
I-203	121	An in 1 minimum	0	I-700	161	Option 1 type	0
I-204	122	An in 1 filter	1	I-701	162	Option 2 type	0
I-210	123	An in 2 Type	1	I-750	163	SBI address	3
I-211	124	An in 2 offset	0	I-751	164	CAN baudrate	0
I-212	125	An in 2 gain	100	I-752	165	SBI Profibus mod	2
I-213	126	An in 2 minimum	0	I-753	166	SBI CAN mode	0
I-214	127	An in 2 filter	1	I-760	167	SBI to Drv W 0	0
I-220	128	An in 3 Type	1	I-761	168	SBI to Drv W 1	0
I-221	129	An in 3 offset	0	I-762	169	SBI to Drv W 2	0
I-222	130	An in 3 gain	100	I-763	170	SBI to Drv W 3	0
I-223	131	An in 3 minimum	0	I-764	171	SBI to Drv W 4	0
I-224	132	An in 3 filter	1	I-765	172	SBI to Drv W 5	0
I-300	133	Analog out 1 cfg	0	I-770	173	Drv to SBI W 0	1
I-301	134	An out 1 offset	0	I-771	174	Drv to SBI W 1	2
I-302	135	An out 1 gain	100	I-772	175	Drv to SBI W 2	3
I-303	136	An out 1 filter	0	I-773	176	Drv to SBI W 3	4
I-310	137	Analog out 2 cfg	2	I-774	177	Drv to SBI W 4	5
I-311	138	An out 2 offset	0	I-775	178	Drv to SBI W 5	6
I-312	139	An out 2 gain	100				

MENU –P–							
Par.	*Address*	*Description*	*Value*	*Par.*	*Address*	*Description*	*Value*
P-0	400	Cmd source sel	3	P-281	446	Brake res value	150
P-1	401	RUN input config	0	P-282	447	Brake res power	5
P-2	402	Reversal enable	1	P-283	448	Br res thermal K	160
P-3	403	Safety	1	P-300	449	DC braking level	0
P-20	404	Mains voltage	220	P-301	450	DCB lev fac src	0
P-21	405	Mains frequency	60	P-302	451	DC braking freq	0
P-40	406	Motor rated curr	70	P-303	452	DC braking start	0
P-41	407	Motor pole pairs	2	P-304	453	DC braking stop	0
P-42	408	Motor power fact	78	P-320	454	Autocapture mode	0
P-43	409	Motor stator R	100	P-321	456	Autocapture Ilim	120
P-44	410	Motor cooling	1	P-322	457	Demagnetiz time	8
P-45	411	Motor thermal K	30	P-323	458	Autocap f scan	10
P-60	412	V/f shape	1	P-324	459	Autocap V scan	2
P-61	413	Max out voltage	230	P-325	460	Enc for FlyRes	0
P-62	414	Base frequency	600	P-326	461	Fre for FlyRes	0
P-63	415	V/f interm volt	115	P-340	462	Undervoltage thr	50
P-64	416	V/f interm freq	300	P-341	463	Max pwrloss time	0
P-80	417	Max output freq	100	P-342	464	UV alarm storage	1
P-81	418	Min output freq	0	P-360	465	OV prevention	0
P-100	419	Slip compensate	90	P-380	466	Autoreset attmps	0
P-101	420	Slip comp filter	3	P-381	467	Autoreset clear	10
P-120	421	Manual boost [%]	30	P-382	468	Autoreset delay	50
P-121	422	Boost factor src	0	P-383	469	Autores flt rly	1
P-122	423	Auto boost en	1	P-400	470	Ext fault mode	0
P-140	424	Magn curr gain	30	P-420	471	Volt reduc mode	0
P-160	425	Osc damping gain	10	P-421	472	V reduction fact	100
P-180	426	SW clamp enable	1	P-422	473	V fact mult src	0
P-200	427	Ramp CurLim mode	0	P-440	474	Frequency thr 1	0
P-201	428	Curr lim in ramp	170	P-441	475	Freq prog 1 hyst	5
P-202	429	En lim in steady	0	P-442	476	Frequency thr 2	0
P-203	430	Curr lim steady		P-443	477	Freq prog 2 hyst	5
P-204	431	Curr ctrl P-gain		P-460	478	Const speed tol	5
P-205	432	Curr ctrl I-gain		P-461	479	Const speed dl	1
P-206	433	Curr ctr feedfwd		P-480	480	Heatsnk temp lev	70
P-220	434	En DC link ctrl		P-481	481	Heatsnk temp hys	5
P-221	435	DC-lnk ctr Pgain		P-500	482	Switching freq	9
P-222	436	DC-lnk ctr Igain		P-501	483	Sw freq reduc en	0
P-223	437	DC-link ctr FF		P-520	484	Overmod max lev	0
P-240	438	OverTorque mode		P-540	485	Out Vlt auto adj	0
P-241	439	OT curr lim thr		P-560	486	Deadtime cmp lev	9
P-242	440	OT level fac src		P-561	487	Deadtime cmp slp	50
P-243	441	OT signal delay		P-580	488	Startup display	1
P-260	444	Motor OL prot en		P-600	489	Speed dsply fact	100
P-280	445	Brake res OL en		P-999	490	Param prot code	0

9.4.7. HIGH KIT VERSION

This function displays the SW version of the display. To do this, when the LED display shows:

HIGH KIT VERSION

press **ENTER**, the message that identifies the SW version, will appear.

9.4.8. BOOT VERSION

This function displays the BOOT version. To do this, when the display shows:

BOOT VERSION

press **ENTER** to display the message which identifies the BOOT version.

9.4.9. KEY READER VERSION

This function displays the SW version of the TGS reader. To do this, when the LED display shows:

KEY READER VERS.

press **ENTER**, the message that identifies the SW version, will appear.

9.4.10. MAINS VOLTAGE

This function allows the user to choose the proper power supply voltage for the machine. To change the selection when the LED matrix shows the current setting:

MAINS VOLTAGE: XXX

Press the +/- **GOAL** keys to select the desired voltage setting from the options available. Press **ENTER** to confirm the choice, use the + or – speed keys to move to the next or previous parameter.

The alternatives are:

Mains Voltage
NO SET
100 VAC
120 VAC
230 VAC

Choosing “NO SET” value, when the machine is switched on it is necessary to insert the power supply voltage provided by the electrical mains line.

☞ **REMEMBER to properly set the parameter each time you replace the Display.**

9.5. SERVICE MENU CONFIGURATION FOR WELLNESS TV MODELS

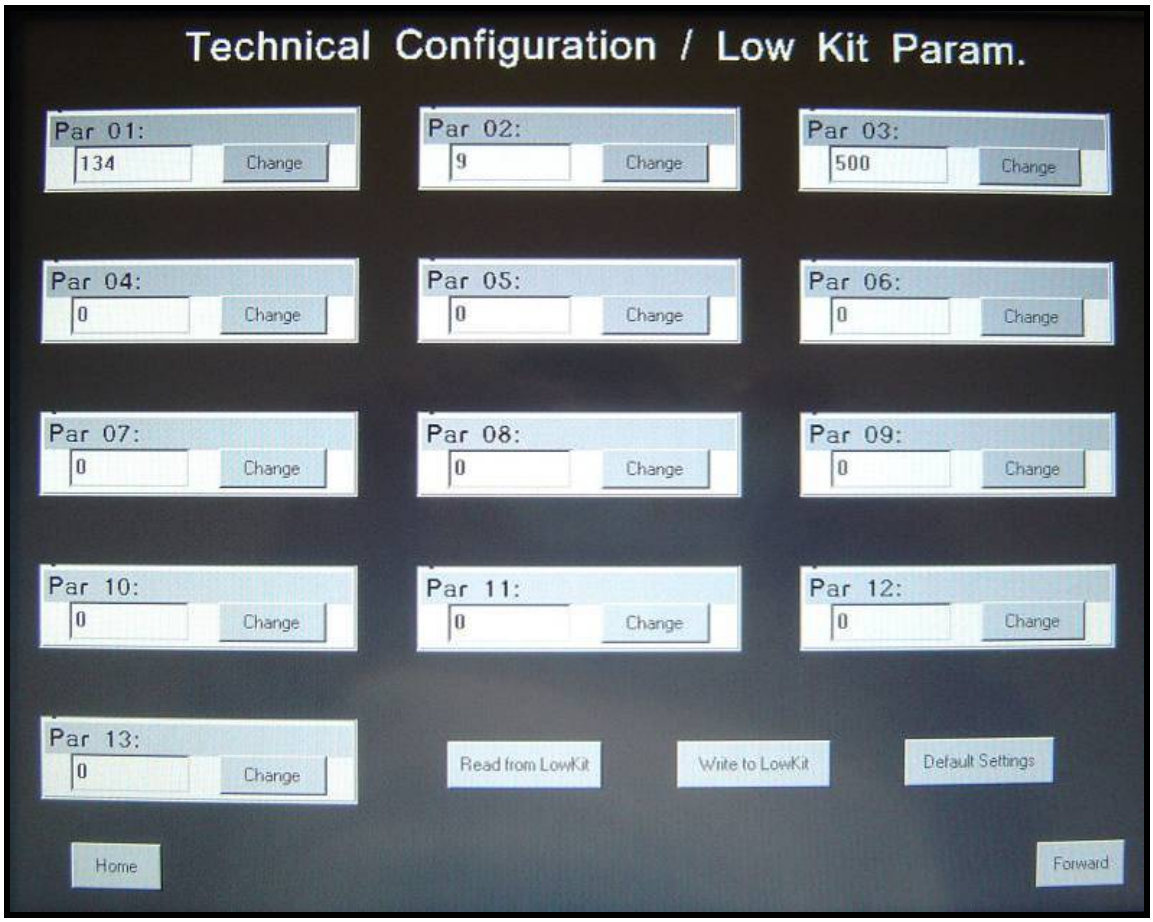
The machine configuration procedure is invoked, when the machine is in standby mode, by pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

To access the menu, type in the password **2501** and press **ENTER** key to confirm or **BACK** key to back forward.
At this point the machine display will shows the different parameters of the menu, collected in different pages, which can be scrolled with the **FORWARD** and **BACK** keys.
To exit the configuration press **HOME** key.

Pressing "HOME" in any page, all changes made up to that moment are saved; you cannot exit without saving. In case of errors the initial Technogym settings can be restored using the "STANDARD SETTINGS." parameter.

Here below have been detailed all the parameters of the menu.



9.5.1. LOW KIT PARAMETER

This function provides access to parameters used for modifying certain settings of the lower assembly. To access this menu, when the display shows:

In addition to the 13 configuration parameters, this function also includes the 3 sub-functions described below:

9.5.1.1. Read from low kit

To read the parameter values from the low kit memory and view them on the display, press **READ FROM LOW KIT** key.

9.5.1.2. Write to low kit

To write the values of the currently displayed parameters to the low kit, press **WRITE TO LOW KIT** key.

9.5.1.3. Default Setting

To load the default parameter values, press **DEFAULT SETTING** key.

9.5.1.4. Table of configuration parameters

To correctly display the parameter values, you need to load them from the low kit, using the "Read from low kit" function.

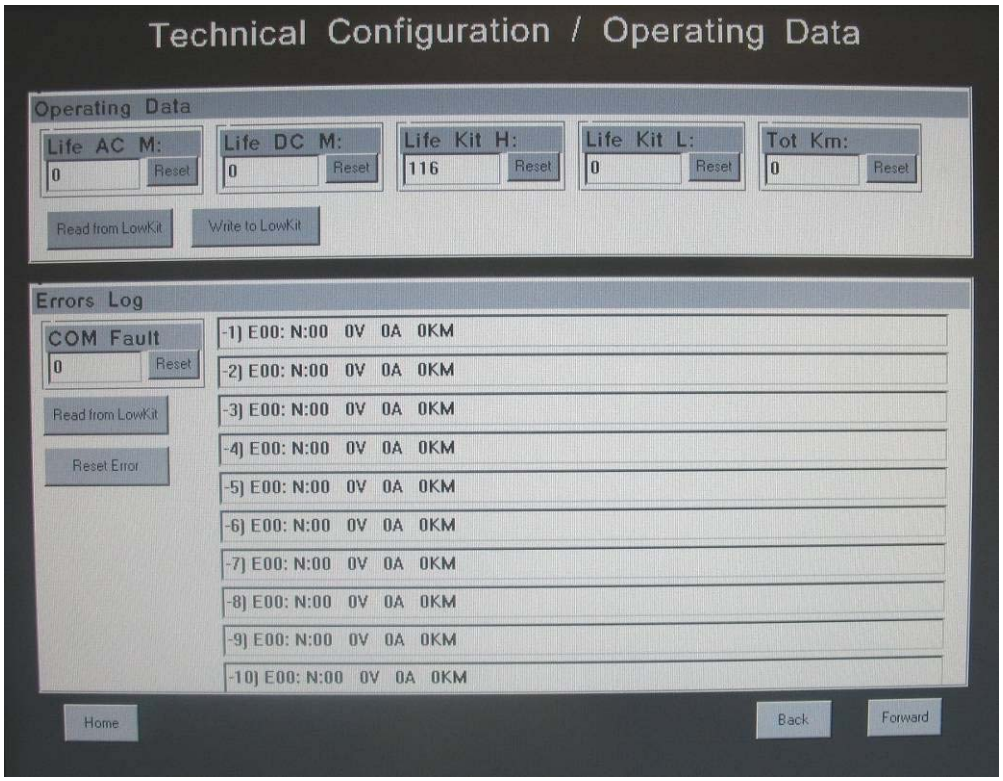
To change the setting, press the **CHANGE** key and insert the value using the numeric keyboard. Press **ENTER** key to confirm or **BACK** key to back forward.

After any changes to the parameter values, you need to load them in the low kit using the "Write to low kit" function.

Parameter	*Description*	*Range*	*Default values*
Par 01	Default speed for Quick Start workout. [Km/h*10]	n.m.	8
Par 02	Default acceleration and deceleration for tread belt motor. [Km/h*100/sec]	n.m.	100
Par 03	Default zero reference position for tread-belt incline. [*2]	n.m.	0
Par 04	PID proportional gain. [*100]	n.m.	7
Par 05	PID Integral gain. [*100]	n.m.	150
Par 06	Ramp Type	n.m.	0
Par 07	Error status on DC motor encoder	0 - 1	0
Par 08	Serial communication timeout [10*msec]	n.m.	0
Par 09	DC motor encoder error timeout. [msec]	0 - 255	15
Par 10		-	0
Par 11	FREE	n.m.	91
Par 12	Driving roller diameter. [mm]	n.m.	200
Par 13	Pulley ratio	0 - 1	0

n.m = Value not modifiable.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.



9.5.2. OPERATING DATA

This function makes it possible to access the machine usage data stored in the low kit.

In addition to the machine usage data, this function also includes the 2 sub-functions described below:

9.5.2.1. Read from low kit

To read the parameter values from the low kit memory and view them on the display, press **READ FROM LOW KIT** key.

9.5.2.2. Write to low kit

To write the values of the currently displayed parameters to the low kit, press **WRITE TO LOW KIT** key.

The machine usage data on the display is updated every 10 minutes. This means that, whenever the machine is switched off, any data modified after the last memory update will be lost.

To correctly display the parameter values, you need to load them from the low kit, using the "Read from low kit" function.

MESSAGE ON DISPLAY	DESCRIPTION
Life AC M:	Minutes x 10 of tread belt motor operation
Life DC M:	Minutes of elevation motor operation
Life Kit H:	Minutes x 10 of operation of the upper assembly
Life Kit L:	Minutes x 10 of operation of the lower assembly
Tot. Km:	Total km travelled

By pressing the **RESET** key on the side of the value, it is possible to reset the value of the selected item.

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.5.3. ERRORS LOG

This function accesses the machine's error history log.

In addition to the error history log, this function also includes the 3 sub-functions described below:

9.5.3.1. Read from low kit

To read the parameter values from the low kit memory and view them on the display, press **READ FROM LOW KIT** key.

9.5.3.2. Reset Errors

To clear the error history in both the low and high kit memory, press **RESET ERRORS** key.

9.5.3.3. COM.Fault

This is a counter that display the number of errors in serial communication between the upper and the lower kit. This counter increase each time a communication fault is detected.

To reset this counter, press **RESET** key on the side of the value.

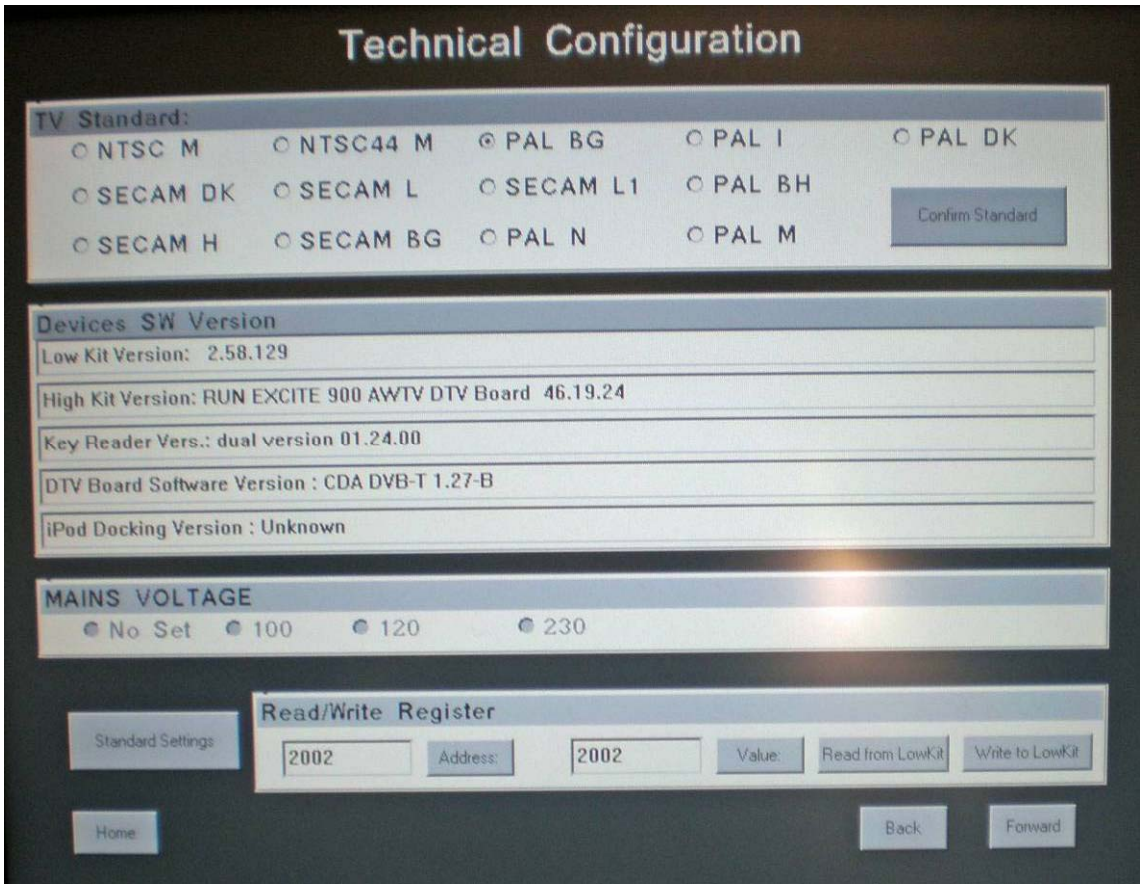
To correctly display the parameter values, you need to load them from the low kit, using the "Read from low kit" function.

For every error generated by the machine, the error history log records the information in the table below:

- *Error number;*
- *Error code;*
- *Tension at the error moment;*
- *Current when the error occurred*
- *Speed at the error monent Km/h.*

The correspondence between error codes and descriptions is given in the "Service & maintenance manual".

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.



9.5.4. DEVICES SW VERSION

This function allows to display:

- *the low kit SW version (H:x L:x B:x);*
- *the display SW version;*
- *the key reader SW version;*
- *the Digital TV board SW version;*
- *the iPod docking station SW version;*

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

AT drivers for European and US market, use the same SW, nevertheless the first character among the three which identify the SW version, changes according to the HW mounted on the machine. In particular you can find:

- **2.x.x if the AT driver on the machine is that for European market.**
- **4.x.x if the AT driver on the machine is that for US market.**

9.5.5. STANDARD SETTINGS

This function allows you to reset the usage data of the machine and simultaneously set the default values of the parameters of the inverter. To make the restoration of values, press the **STANDARD SETTINGS** button

This function does not change the language and standard television set.

9.5.6. MAINS VOLTAGE

This function allows the user to choose the proper power supply voltage for the machine. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

Mains Voltage
NO SET
100 VAC
120 VAC
230 VAC

Choosing "NO SET" value, when the machine is switched on it is necessary to insert the power supply voltage provided by the electrical mains line.

REMEMBER to properly set the parameter each time you replace the Display.

9.5.7. READ/WRITE REGISTER

This function allows to displays and to modify the parameter values of type A, C, D, F, P, H and S.

To display a parameter value

1. Press **ADRESS** button;
2. input the desired parameter address, referring tot o tables at paragraph 9.4.6.2 "Config. registers";
3. Press **READ FROM LOW KIT button**;
4. the value set for the parameter will be displayed in the **VALUE** field.

To modify a parameter value:

1. Press **ADRESS** button;
2. input the desired parameter address, referring tot o tables at paragraph 9.4.6.2 "Config. registers";
3. press **VALUE button**;
4. input the desired value for the parameter;
5. press **WRITE TO LOW KIT button**;

Although the changes made to the parameters come into effect immediately, they are not automatically stored in permanent memory; this requires a specific write operation effected using the command C-0: at address 800 write the value "1", following the detailed instructions provided in paragraph 9.4.6.2 "Config. registers".

9.5.8. TV STANDARD

This function allows to display/configure the TV Standard on the machine. To change the selection, select the desired option among the ones in the list, directly touching on the Touch Screen.

NTSC M	*NTSC44 M*	*PAL B/G*	*PAL I*	*PAL D/K*
SECAM D/K	*SECAM L*	*SECAM L1*	*PAL B/H*	*PAL M*
SECAM H	*SECAM B/G*	*PAL N*		

Selected as a function of the country where the machine is installed according to the following table:

COUNTRY	Digital TV	Analogue TV	COUNTRY	Digital TV	Analogue TV
ALBANIA	DVB-T	PAL B/G	***LUXEMBOURG***	DVB-T	PAL B/G
ANGOLA	DVB-T	-	***MALAYSIA***	DVB-T	PAL B
AUSTRALIA	DVB-T	PAL B/G	***MALTA***	DVB-T	PAL B/G
AUSTRIA	DVB-T	PAL B/G	***MAURITIUS***	DVB-T	SECAM B
AZERBAIJAN	DVB-T	-	***MEXICO***	ATSC	NTSC M
BAHAMAS	ATSC	NTSC M	***MONACO***	DVB-T	SECAM/PAL L/G
BAHRAIN	DVB-T	PAL B	***MOROCCO***	DVB-T	SECAM B
BELGIUM	DVB-T	PAL B/G	***NETHERLANDS***	DVB-T	PAL B/G
BERMUDA	DVB-T	NTSC M	***NEW ZEALAND***	DVB-T	PAL B/G
BRAZIL	ISDB-T	PAL M	***NIGERIA***	DVB-T	-
BULGARY	DVB-T	SECAM D/K	***NORWAY***	DVB-T	PAL B/G
CANADA	ATSC	NTSC M	***OMAN***	DVB-T	-
COLOMBIA	ATSC	NTSC M	***PHILIPPINES***	DVB-T	NTSC M
CYPRUS	DVB-T	PAL B	***POLAND***	DVB-T	PAL D/K
CZECH REPUBLIC	DVB-T	SECAM/PAL D/K	***PORTUGAL***	DVB-T	PAL B/G
DENMARK	DVB-T	PAL B	***P.R.CHINA***	DVB-T	PAL D/K
EGYPT	DVB-T	SECAM B	***QATAR***	DVB-T	-
FAROE ISLANDS	DVB-T	PAL B	***ROMANIA***	DVB-T	PAL G
FINLAND	DVB-T	PAL B/G	***RUSSIA***	DVB-T	SECAM D/K
FRANCE	DVB-T	SECAM E/L	***SAUDI ARABIA***	DVB-T	SECAM B
GERMANY	DVB-T	PAL B/G	***SERBIA***	DVB-T	-
GHANA	DVB-T	-	***SINGAPORE***	DVB-T	PAL B
GREECE	DVB-T	PAL B/G	***SLOVAKIA***	DVB-T	-
HONG KONG	DVB-T	PAL I	***SLOVENIA***	DVB-T	-
HUNGARY	DVB-T	PAL B/G & D/K	***SOUTH AFRICA***	DVB-T	PAL I
INDIA	DVB-T	PAL B	***SOUTH KOREA***	ATSC	NTSC M
INDONESIA	DVB-T	PAL B	***SPAIN***	DVB-T	PAL B/G
IRAN	DVB-T	SECAM H	***SWEDEN***	DVB-T	PAL B/G
IRELAND	DVB-T	PAL I	***SWITZERLAND***	DVB-T	PAL B/G
ISRAEL	DVB-T	PAL B/G	***SYRIA***	DVB-T	-
ITALY	DVB-T	PAL B/G	***TAIWAN***	DVB-T	NTSC M
JAPAN	ISDB-T	NTSC M	***TUNISIA***	DVB-T	SECAM B
JORDAN	DVB-T	PAL B	***TURKEY***	DVB-T	PAL B
KAZAKHSTAN	DVB-T	-	***U.S.A.***	ATSC	NTSC M
KENYA	DVB-T	PAL B	***UAE***	DVB-T	PAL B/G
LATVIA	DVB-T	-	***UNITED KINGDOM***	DVB-T	PAL I
LEBANON	DVB-T	-	***URUGUAY***	DVB-T	PAL N
LIBYA	DVB-T	-			

Press **HOME** to confirm and save, **FORWARD** or **BACK** to scroll the pages.

9.6. TV MENU CONFIGURATION FOR WELLNESS TV MODELS

9.6.1. TUNING TV CHANNELS

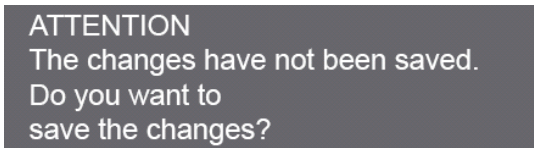
The machine configuration procedure is invoked, when the machine is in standby mode, by pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

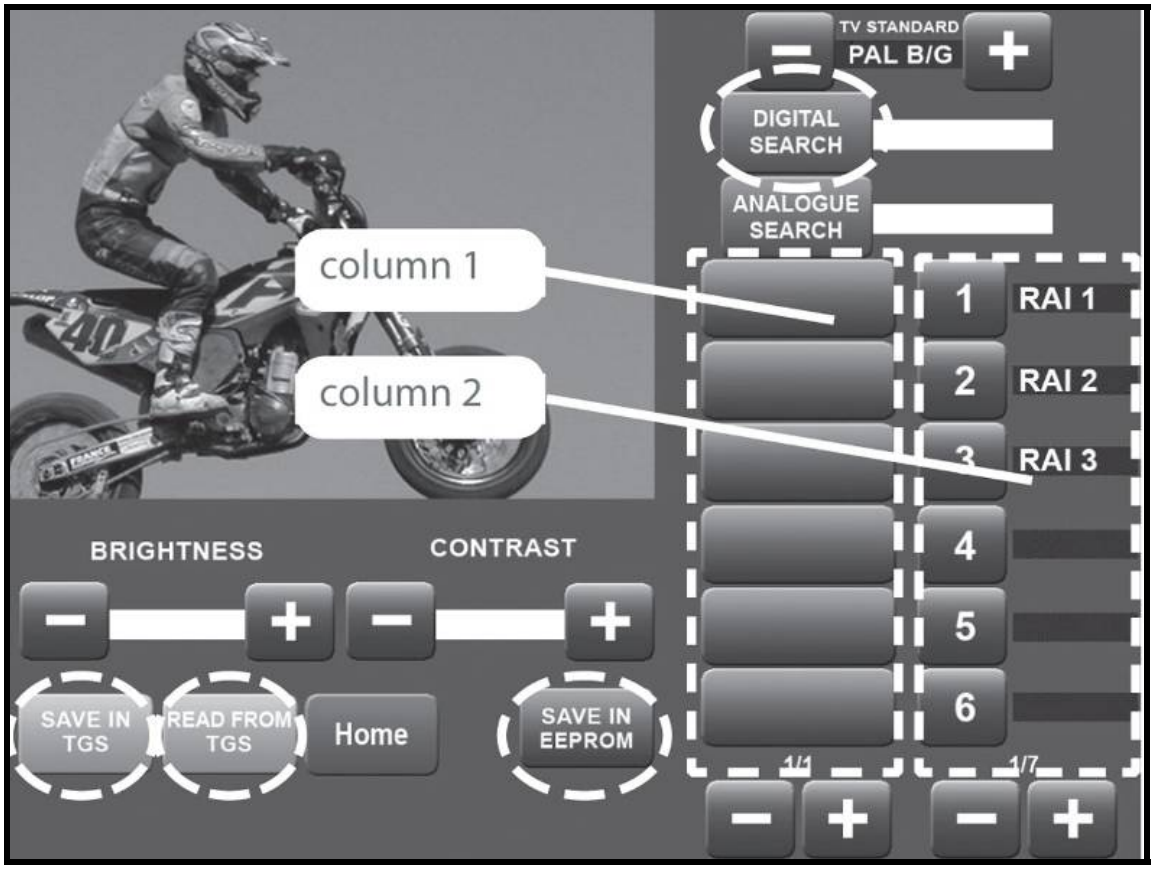
To access the menu, type in the password **2407** and press **ENTER** key to confirm or **BACK** key to back forward.

At this point the partial screen TV is displayed on the machine display, as shown in the picture below.

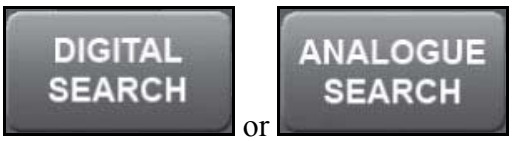
To permanently save the changes which are going to be made in this page, press "SAVE IN EEPROM" key. To go back to the home page press "HOME" key and the configuration will be available until the machine is restarted. This is why the following confirmation message is displayed:



Press "YES" to save the changes permanently or "NO" to continue.



It is possibile to search TV channels on the digital or on the analogue band, by pressing on the proper buttons:



The default TV standard is the one set at paragraph: 9.5.8. "TV Standard", of the service menu.

It is anyway possibile to store channels transmitted with different TV standard, changing this parameter, using keys + and – , in the proper menu

.

A. To tune and memorise Digital TV channels, proceed as follow

1. Press DIGITAL SEARCH. In this phase, a temporary list of TV channels found, will be stored and visualized in *column 1*.
2. Wait the search stops or stop it by pressing STOP SEARCH key. The channels found in the meantime can be memorised.
3. Use the keys under the list of channels in *column 1*, to scroll through the pages with the channels found during the search, while use the keys under the list of numbers in *column 2*, to scroll through the pages with the numbers and names associated to the channels.
4. Once you have found a channel to memorise, select it in *column 1*, then press the number that you want to associate it with, in *column 2*.

   If a channel has already been mmemorised under that number, the old channel will be overwritten with the new one.
5. Repeat the procedure above for each channel you want to memorise.
6. In this way the channels will remain in the memory until the equipment is switched off (*RAM memory*); to permanently memorise the changes (*in EPROM*) press SAVE IN EPROM key.
7. Exit with “HOME” key.

Up to 190 TV channels can be memorised, a further channel is reserved for the A/V signals from DVD player, VHS or from the game console.

B. To tune and memorise Analogue TV channels, proceed as follow

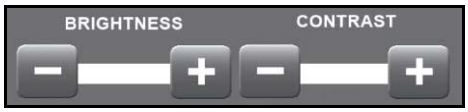
1. Press ANALOGUE SEARCH. In this phase, a temporary list of TV channels found, will be stored and visualized in *column 1*.
2. Wait the search stops or stop it by pressing STOP SEARCH key. The channels found in the meantime can be memorised.
3. Use the keys under the list of channels in *column 1*, to scroll through the pages with the channels found during the search, while use the keys under the list of numbers in *column 2*, to scroll through the pages with the numbers and names associated to the channels.
4. Select the channel frequency between the ones visualized in *column 1* (it will be displayed), then press the number that you want to associate it with, in *column 2*.
5. An alphanumeric keypad is displayed, to associate a name to the memorised channel.
6. Press the ENTER (↵) key: the keypad will disappear and the name will be displayed next to the numbere.

   If a channel has already been mmemorised under that number, the old channel will be overwritten with the new one.
7. Repeat the procedure above for each channel you want to memorise.
8. In this way the channels will remain in the memory until the equipment is switched off (*RAM memory*); to permanently memorise the changes (*in EPROM*) press SAVE IN EPROM key.
9. Exit with "HOME" key.

To transfer TV channels tuning data from a machine to another one, please refer to paragraph 9.8. "Transferring the tuning data"

WARNING: If there are problems with the digital signal reception, check the aerial antenna connection.

9.6.2. WELLNESS TV ADJUSTMENTS



The keys in the figure at left can perform certain adjustments on the Wellness TV. In particular, it is possible to:

- *Increase or reduce the brightness of the LCD.*
- *Increase or reduce the contrast of the LCD.*

Then:

1. Press the "**SAVE IN EEPROM**" key to permanently save the configuration.

2. Exit with the "**HOME**" key.

9.7. RADIO MENU CONFIGURATION FOR WELLNESS TV MODELS

9.7.1. TUNING RADIO CHANNELS

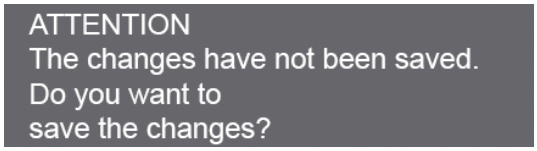
The machine configuration procedure is invoked, when the machine is in standby mode, by pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

To access the menu, type in the password **2408** and press **ENTER** key to confirm or **BACK** key to back forward.

At this point the partial screen TV is displayed on the machine display, as shown in the picture below.

To permanently save the changes which are going to be made in this page, press "SAVE IN EEPROM" key. To go back to the home page press "HOME" key and the configuration will be available until the machine is restarted. This is why the following confirmation message is displayed:



Press "YES" to save the changes permanently or "NO" to continue.

To tune and memorise radio channels, proceed as follow:

It is now possibile only the tuning of the digital band and not more the analogue one.

1. Press AUTOMATIC SEARCH. In this phase, a temporary list of TV channels found, will be stored and visualized in *column 1*. In *column 2* there are the number of the channels.

2. Wait the search stops or stop it by pressing STOP SEARCH key. The channels found in the meantime can be memorised.

3. Use the keys under the list of channels in *column 1*, to scroll through the pages with the channels found during the search, while use the keys under the list of numbers in *column 2*, to scroll through the pages with the numbers and names associated to the channels.

4. Once you have found a channel to memorise, select it in *column 1*, then press the number that you want to associate it with, in *column 2*.

   If a channel has already been mmemorised under that number, the old channel will be overwritten with the new one.

5. Repeat the procedure above for each channel you want to memorise.

6. In this way the channels will remain in the memory until the equipment is switched off (*RAM memory*); to permanently memorise the changes (*in EPROM*) press SAVE IN EPROM key.

7. Exit with “HOME” key.

9.8. TRANSFERRING THE TUNING DATA

The TV and radio channel tuning data can be transferred from one machine to the other in 2 ways:

- *using a TGS key;*
- *connecting two machines using a CSafe connection (recommended mode).*

NOTE: In this way the channels will remain in the memory until the equipment is switched off (*RAM memory*); to permanently memorise the changes (*in EPROM*) press SAVE IN EPROM key.

9.8.1. USING THE TGS KEY

On the already tuned machine:

1. Enter the configuration menu of the channels that are to be transferred.
2. Insert the TGS key into the reader on the machine;
3. Press the "**SAVE IN TGS**" button, this will cause all the channel configuration data to be saved to the key.

   Up to 45 channels can be memorised in the TGS key; if there are more channels to be memorised, a message indicates the number of TGS keysrequired. The TGS keys must be inserted one at the time as requested by the messages, until all the channels have been memorised.

4. Exit the menu by pressing the "**HOME**" key.

On the machine to be tuned:

1. Enter the configuration menu of the channels that need to be tuned.
2. Insert the TGS key to which the tuning data was saved.
3. Press the "**READ FROM TGS**" button.
4. Save the data uploaded to the machine by pressing "**SAVE IN EEPROM**".
5. Exit the menu by pressing the "**HOME**" key.

9.8.2. USING THE CONNECTING CABLE VIA CSAFE

Disable the TGS reader (if present on the machine) through the proper function in the User Menu: 9.3.4. "Enable TGS" before to carry out the following procedure.
Remember to enable it again at the end of the data transfer.

1. Connect the two machines together using the proper cable described at paragraph: 4.3. "Cable for exchanging TV channel tuning data between two machines".

2. On both machines, enter the configuration menu of the channels that need to be tuned.

3. Press the "**READ FROM TGS**" button on the machine to be tuned. While "**WAITING**" appears on the machine display, move on the machine from which you want to transfer the channels and press the "**SAVE IN TGS**" button.

4. Store the data transferred on the machine being tuned by pressing "**SAVE IN EEPROM**".

5. Exit the menu on both machines by pressing "**HOME**".

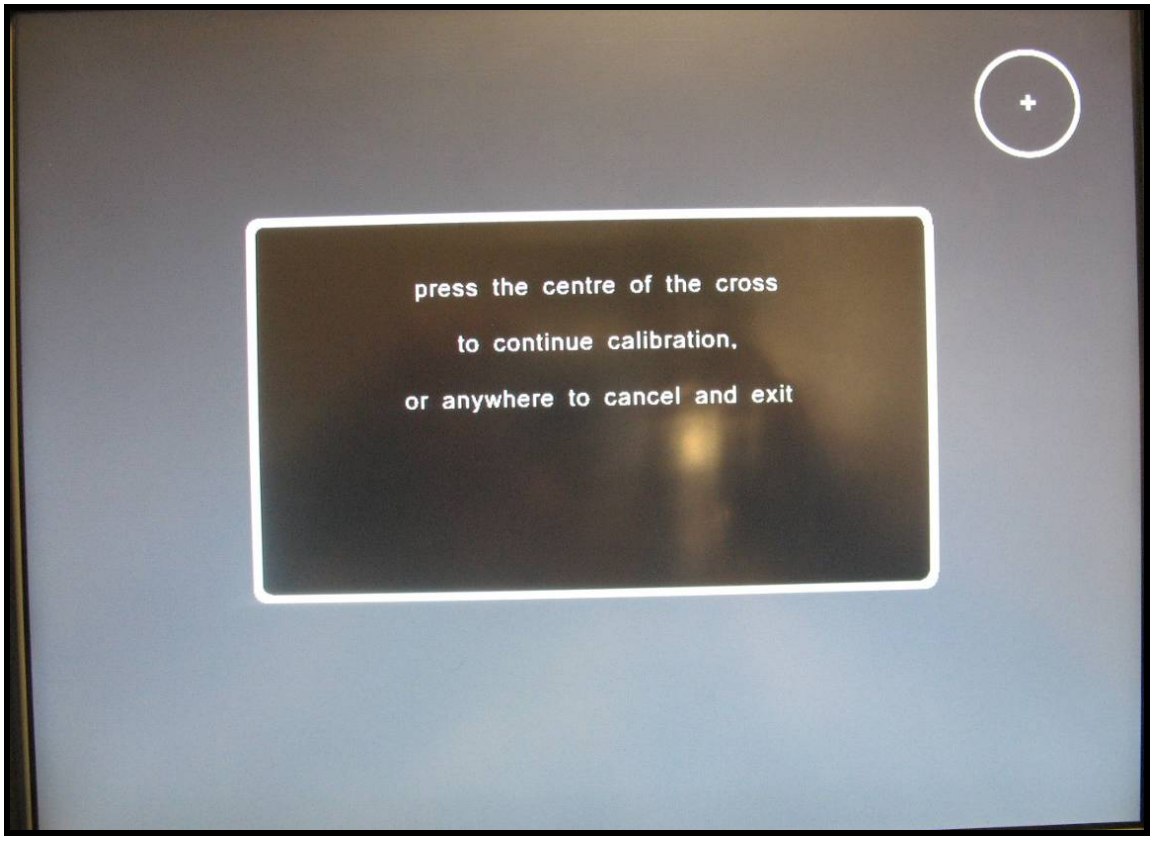
9.9. TOUCH SCREEN CALIBRATION

The machine configuration procedure is invoked, when the machine is in standby mode, by pressing the top right hand, the bottom left hand and the bottom right hand corner in sequence, as shown in the picture below.

The machine display will shows a window from where you can access the different configuration menus, using the proper password.

To access the menu, type in the password **2409** and press **ENTER** key to confirm or **BACK** key to back forward.

At this point the following screenshot appears on the display:



Tap the centre of the + which appears on the screen, using an object that is pointed but not sharp.

The procedure must be repeated three times, with the + appearing in three different positions.
At the end, the message **"Calibration successful"** will appear if the procedure was correctly carried out, or **"Calibration incomplete"** if the procedure was not completed properly, after which the machine reverts to standby mode.

During the machine power-up sequence, while the message showing the installed software version is scrolling, pressing any point on the touch-screen for more than 6 seconds will automatically invoke the calibration procedure as soon as the software version display finishes. Upon exiting the calibration procedure (successfully or unsuccessfully), the machine automatically reverts to the standby state.

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10. FUNCTIONAL TEST MD MODELS

Every time maintenance and/or repairs are performed on a machine, it is necessary to carry out a series of mechanical and electrical tests to ensure:

- *that the medical device is working properly;*
- *that the medical device is working safely;*
- *that the exercises are performed according to the biomedical specifications for which the medical device was designed.*

Technogym ensures its own safety standards by means of the following tools and activities:

- *ISO 9001/2000 certification of the company;*
- *certification of the device in compliance with medical regulations 60601-1 and 60601-1-2;*
- *electrical testing of each device manufactured, according to the provisions of the aforementioned standards;*
- *training of technical staff who perform technical service;*
- *use of checked and tested original Technogym spare parts for all service operations;*

10.1. ELECTRICAL SAFETY TEST

Based on the risk analysis carried out by the After Sale department regarding installation and technical service, it is still necessary to use a tester to perform a safety test on the grounding ring.

This test must ensure a continuous earth connection (resistance less than 4 Ohm) between the grounding pole of the mains lead (connected to the machine) and the 6 points listed below:

- *screw fastening the display rear casing to the frame*
- *screw fastening the uprights to the frame;*
- *screw fastening the rear casing to the frame;*

For more complete explanations, see the boxes in the figure below.

First of all check the continuity of the Tester. It should be more or less 0Ω.

10.2. MECHANICAL SAFETY TEST

10.2.1. CHECKING THE ASSEMBLY OF THE TREAD-BELT COMPONENTS

Check that the following have been correctly assembled: tread belt, running deck and rollers. In particular, make sure that:

- *The tread belt has been properly assembled, and its tension correctly adjusted it.*
- *The running deck is in good condition and has been correctly assembled.*
- *The front and rear rollers have been correctly assembled and do not produce any unusual noise during operation.*
- *The footboard have been correctly assembled.*

10.2.2. CHECKING THE ASSEMBLY OF THE GUARDS

Check the correct assembly of the machine guards, making sure they are all in place and correctly secured so that no part of the machine is left exposed that may cause injury to the user.

10.3. START-UP CHECK

Following installation and after every technical intervention on the machine, plug it into a power outlet, set the power switch to ON.

During power-up the machine resets the incline. After completing the power-on reset, the machine goes into standby, awaiting a keyboard command.

To check the correct operation of the machine:

- *get on the machine;*
- *press the "Quick Start" key to begin exercising and check that the tread belt motor starts;*
- *press the "+" and "-" keys on the keyboard and check that the tread belt speed varies accordingly;*
- *press the "↑" and "↓" keys and check that the incline varies accordingly;*
- *press the emergency button and check that the tread belt stops;*
- *put on the heart rate meter and check that the machine correctly reads the heart rate value;*
- *grasp the sensors and check that the machine correctly reads the heart rate value;*

10.4. LIST OF CRITICAL SPARE PARTS

Technogym medical devices are identified by "Serial N" plates that allow them to be tracked throughout the useful life-span of the device. Just as for products, there is also a list of so-called "critical" components which, through the Serial N, must be guaranteed as traceable.

The list of these critical components is shown in the table below.

CODE	*COMPONENT*
0WR00233AC	*Elevation motor*
0WR00500AA	*Tread belt motor*
W0004467AC	*AT – MED power supply box*
W0004100AF	*AT – MED driver*
0WK00429AC	*Display board 500*
0WQ00348AA	*C-Safe board*
0WR00633AA	*Salutron 8500 receiver*
-	Display program – SW version
-	Driver box – SW version

If a critical component listed in this table is replaced during a repair, maintenance or refurbishment, this fact must be noted in the "**Service report**" by recording the tracking information for the new component.

11. SCHEDULED MAINTENANCE

To keep the machine in perfect working order and forestall possible problems it is necessary to carry out the scheduled maintenance operations described below. The maintenance operations can essentially be classified according to the frequency with which they need to be performed and the operations require different levels of operator qualification:

- ***Daily*** *maintenance operations;*
- ***Weekly*** *maintenance operations;*
- ***Monthly*** *maintenance operations;*
- ***Twice yearly*** *maintenance operations.*

The operations require different levels of operator qualification. The following paragraphs describe the recommended procedures.

11.1. DAILY MAINTENANCE OPERATIONS

These operations can be carried out by the machine owner and do not require any special skills.

*The **daily** machine maintenance consists of simple external cleaning, for the purposes of general hygiene.*

For the daily maintenance of the machine, proceed as follows:

11.1.1. SETTING UP THE OPERATION

1. Turn off the machine by placing the switch in position 0 (OFF).
2. Unplug the mains lead from the wall outlet.

11.1.2. EXTERNAL CLEANING OPERATIONS

1. Using a cloth moistened with a neutral detergent (non acidic), clean the entire machine, taking care not to rub too vigorously, especially on the keys of the display.

Never spray the cleaning product directly on the machine.

WARNING: do not use alcohol, petrol or other chemical products.

11.2. WEEKLY MAINTENANCE OPERATIONS

These operations can be carried out by the machine owner and do not require any special skills.

*The **weekly** machine maintenance operations consists of simple cleaning, lubrication and checking the emergency stop to ensure the correct and safe functioning of the machine.*

For the weekly maintenance operations, proceed as follows:

11.2.1. CHECKING THE "EMERGENCY STOP"

1. With the machine turned on and moving at a speed of approximately 5 km/h (3 mph), trip the emergency stop and check that the machine halts, displaying the "PRESS A KEY" message.

11.2.2. COMPLETE OPERATION

1. When the machine is switched on, check that it performs the power-on self test procedure which:

   - *sounds the buzzer;*
   - *resets the incline.*

   At the end of which the machine goes into standby, awaiting a keyboard command.
2. To check the correct operation of the machine:

   - *get on the machine;*
   - *press the "Start" key to begin the exercise and check that the tread belt motor starts;*
   - *press the "+" and "-" keys on the keyboard and check that the tread belt speed varies accordingly;*
   - *press the "↑" and "↓" keys and check that the incline varies accordingly;*
   - *put on the heart rate meter and check that the machine correctly reads the heart rate value;*
   - *grasp the sensors and check that the machine correctly reads the heart rate value.*

11.3. MONTHLY MAINTENANCE OPERATIONS

These operations can be carried out by the machine owner and do not require any special skills.

*The **monthly** machine maintenance operations consists of simple cleaning, lubrication and checking the state of wear to ensure the correct and safe functioning of the machine.*

For the monthly maintenance of the machine, proceed as follows:

11.3.1. INTERNAL CLEANING OPERATIONS

1. Turn off the machine by placing the switch in position 0 (OFF).
2. Unplug the mains lead from the wall outlet.
3. Open the motor guard.
4. Use a vacuum cleaner to clean the interior, paying particular attention to the tread belt motor and the electronic circuit boards.

WARNING: when carrying out these operations, be careful not to damage the cables.

5. Move the machine and clean the floor underneath using a vacuum cleaner.

11.3.2. CHECKING THE STATE OF WEAR

1. With the machine stopped, check the state of wear of the entire surface of the tread belt, turning it by hand. If any anomalies are found, call in an authorized Technogym service technician.

11.3.3. CHECKING THE OPERATION OF THE CARDIOTESTER RECEIVER

1. Using a separate heart rate monitor, put on the transmitter band and check that the machine and the separate monitor both measure the same heart rate, and that when the band is disconnected the machine does not receive any signal.
2. Using a heart rate frequency simulator, check that the machine detects the variations in the heart rate.

11.3.4. CHECKING THE OPERATION OF THE HAND SENSOR RECEIVER

Only on the 700 / 700E and 900 / 900E models.

1. Using a separate heart rate monitor, grasp the hand sensors and check that the machine and the separate monitor both measure the same heart rate, and that when the sensors are released the machine does not receive any signal.

11.4. TWICE-YEARLY MAINTENANCE OPERATIONS

These operations can only be carried out by a qualified technician specifically trained by Technogym and authorized to carry out machine installation and adjustments, as well as special maintenance operations or repairs which require special knowledge of the machine, its operation, safety systems and working procedures.

*The **six-monthly** maintenance operations involve checking the functioning, wear and tension of the mechanical components so as to ensure the correct and safe operation of the machine.*

For the six-monthly maintenance of the machine, proceed as follows:

11.4.1. CARRYING OUT THE MONTHLY MAINTENANCE PROCEDURE

1. Carry out the procedure described in paragraph 11.3. “Monthly maintenance operations”.

11.4.2. CHECKING THE WORKING CONDITIONS

1. Check that the machine is connected directly to the wall outlet, without any extension cords, and that the outlet is correctly earthed.
2. Using a multimeter, check that the machine earth node is correctly connected to earth.

11.4.3. CHECKING THE WIRING AND CONNECTIONS

1. Open all the machine guards.
2. Check the condition of all the cables:

   - *External conditions;*
   - *Possible rusting of the connectors;*
   - *Electrical continuity of the individual wires;*
   - *Isolation of the individual wires toward ground.*

   Repair and/or replace any non-conforming wires.

3. Check the condition of the fuses using a tester.

11.4.4. CHECKING THE WEAR AND LUBRICATION OF THE TREAD BELT AND RUNNING DECK

1. Disassemble the rear and driving rollers, the running deck and the tread belt.
2. Check the state of wear of both the running deck and the tread belt. Replace if there are evident signs of wear.
3. Using a clean cloth, wipe the entire surface of the running deck and the underside of the tread belt.

WARNING: NOT lubricate.

4. After reassembling the machine, start walking on it at a speed of approximately 3 km/h, being careful to tread on the full width of the belt so as to distribute the oil over its entire surface.

11.4.5. CHECKING THE WEAR OF THE DRIVING ROLLER

1. With the rear and driving rollers, running deck and tread belt disassembled, check the state of wear of the driving roller. Replace if there are evident signs of wear.
2. With the machine in motion, check the noisiness of the bearings. Replace in the event of excessive noise.

11.4.6. CHECKING THE WEAR OF THE REAR ROLLER

1. With the front and rear rollers, running deck and tread belt disassembled, check the state of wear of the rear roller. Replace if there are evident signs of wear.
2. With the machine in motion, check the noisiness of the bearings. Replace in the event of excessive noise.

11.4.7. CHECKING THE SHOCK ABSORBERS

1. With the front and rear rollers, running deck and tread belt disassembled, check the condition of the shock absorbers on either side of the running deck. Replace if they are cracked or show signs of breakage.

11.4.8. CHECKING THE TREAD BELT MOTOR DRIVE-BELT

1. Turn off the machine by placing the switch in position 0 (OFF).
2. Unplug the mains lead from the wall outlet.
3. Open the motor guard.
4. Check the state of wear of the tread belt motor drive-belt, turning it by hand using the motor flywheel. Replace if there are evident signs of wear.

11.4.9. CHECKING AND CENTERING THE TREAD BELT

1. With the machine stopped, check the tension over the entire surface of the tread belt, turning it by hand. If any anomalies are found, call in an authorized Technogym service technician.
2. With the machine moving at a speed of approximately 10 km/h, check the centering of the tread belt. If any anomalies are found, call in an authorized Technogym service technician or make the adjustment.

11.4.10. CHECKING THE DISPLAY

1. Check the operation of all the keys on the keyboard.
2. Check the operation of all the LEDs and the buzzer.
3. Check the operation of all Touch Screen.

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12. APPENDICE

12.1. UPDATING THE SW

To upgrade the SW of the machine you must change the contents of Display/CPU board FLASH EPROM, using an external PC and the SW "Service Excite Loader", which will connect to the CSafe board of the machine, located at the rear of the panel.

The PC can only update the FLASH EPROM during machine power up, before the self-test sequence begins.

After the Display SW update it is necessary to restore all the parameters to the default values following the detailed instructions provided in paragraph 9.2.14. "Resetting parameters to default values".

After the lower electronic SW update it is necessary to restore all the parameters to the default values following the detailed instructions provided in paragraph 9.4.2.3 "Default setting".

12.2. REQUIRED TOOLS

The following tools are required for carrying out the various disassembly, adjustment and maintenance action on the machine:

- *Small Phillips screwdriver;*
- *Medium Phillips screwdriver;*
- *7mm wrench;*
- *15mm wrench;*
- *17mm wrench;*
- *3mm Allen T-wrench;*
- *4mm Allen T-wrench;*
- *6mm Allen T-wrench;*
- *13mm socket wrench;*
- *Snap ring pliers;*
- *Bicycle pedal extractor;*
- *Torque wrench;*
- *Flatness comparator.*

The tool sizes are expressed in mm.

You can order a complete set of hexagonal wrenches consisting of 7 pieces: 2, 2.5, 3, 4, 5, 6 and 8mm. The code to be used is R0003677AA.

- *PC equipped with Service Excite Loader*
- *Serial communication cables for Excite Loader (cod. **R0002534AB**);*
- *Excite Test box (cod. **H0003180AA-UK**).*

- *Clean Well bottle (cod. **0V000356AA**).*
- *Touch up paint "AL" color (**RAL 9006**) ml.10, to retouch the frame (cod. **0P051P**).*
- *Spray can "AL" color (**RAL 9006**) ml.400, to retouch the frame (cod. **0V000190AA**).*

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