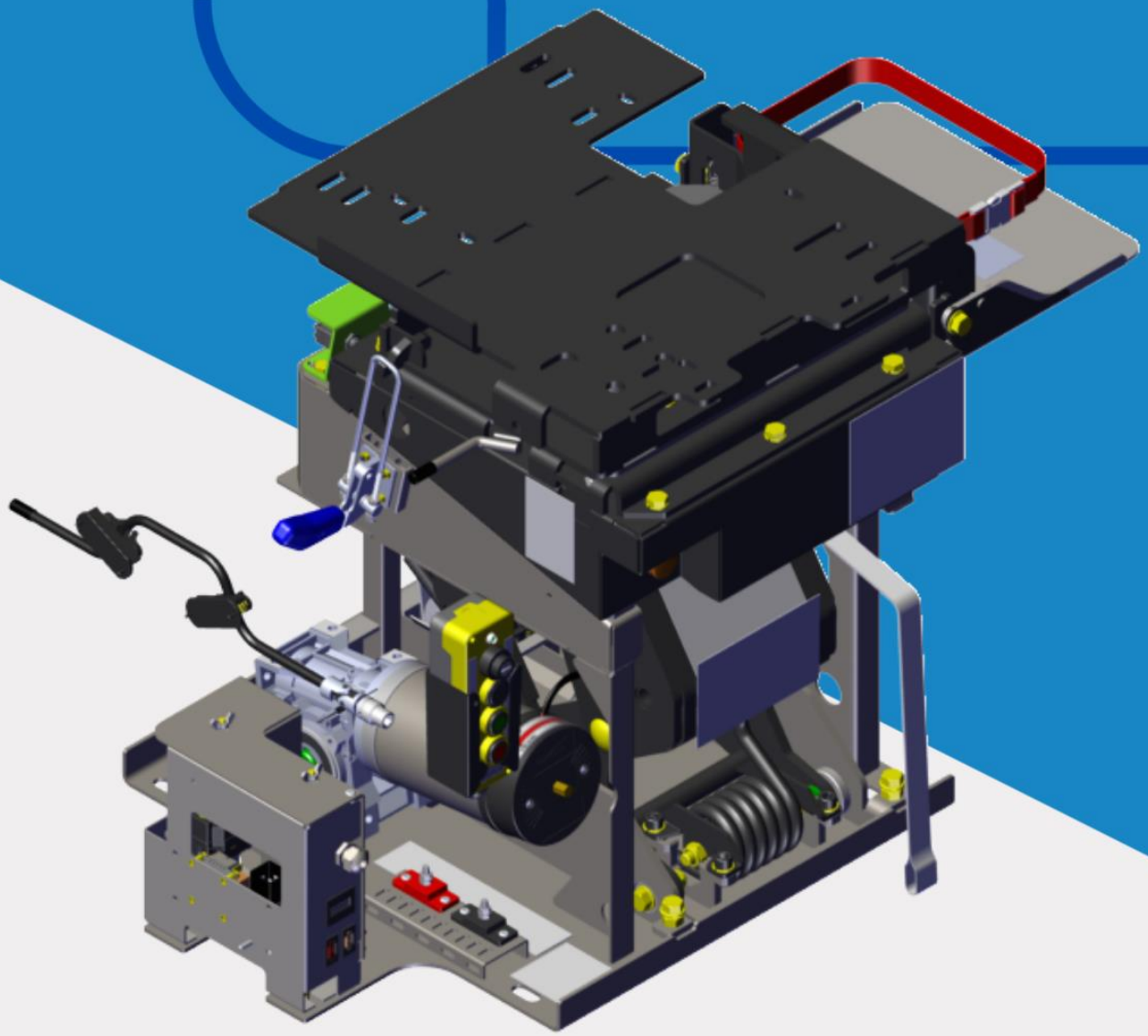
Operation and Installation Manual - Mobile Chair Device - DPM DD- DPM DD



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FOCA MOBILITY
MOBILIDADE INTELIGENTE

Summary

1 – Presentation

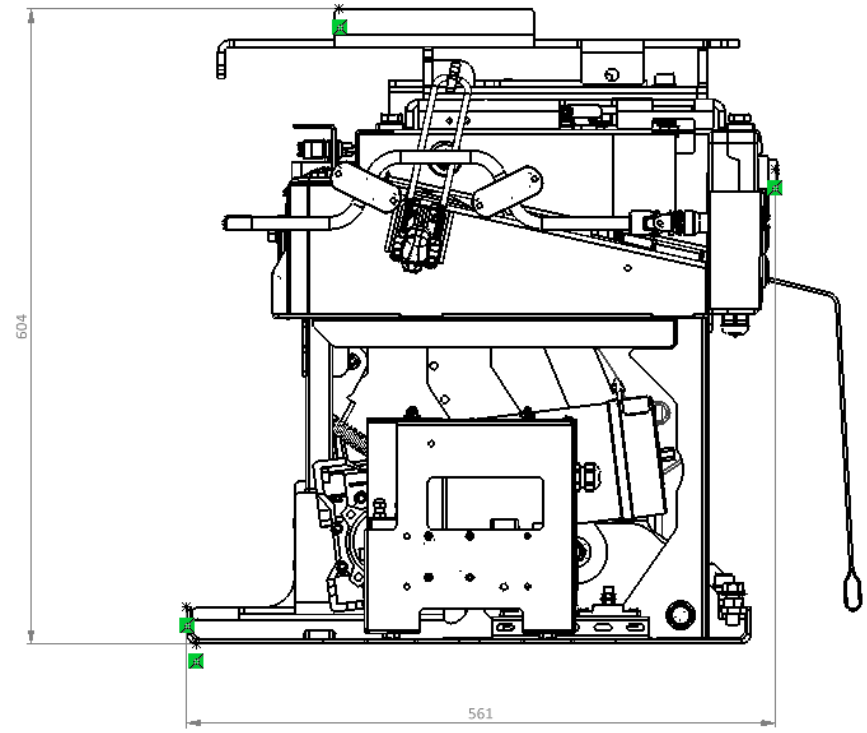
The Double Deck (DD) Mobile Seat Device (DPM) produced by FOCA Mobility is a piece of equipment designed to meet the needs of people with reduced mobility who use public transport. This product was developed based on current standards and legislation, which determine safety, resistance, comfort and accessibility criteria for vehicles of this nature. To attest to compliance with the requirements mentioned in the INMETRO Ordinance, the equipment has a mandatory certification plate.

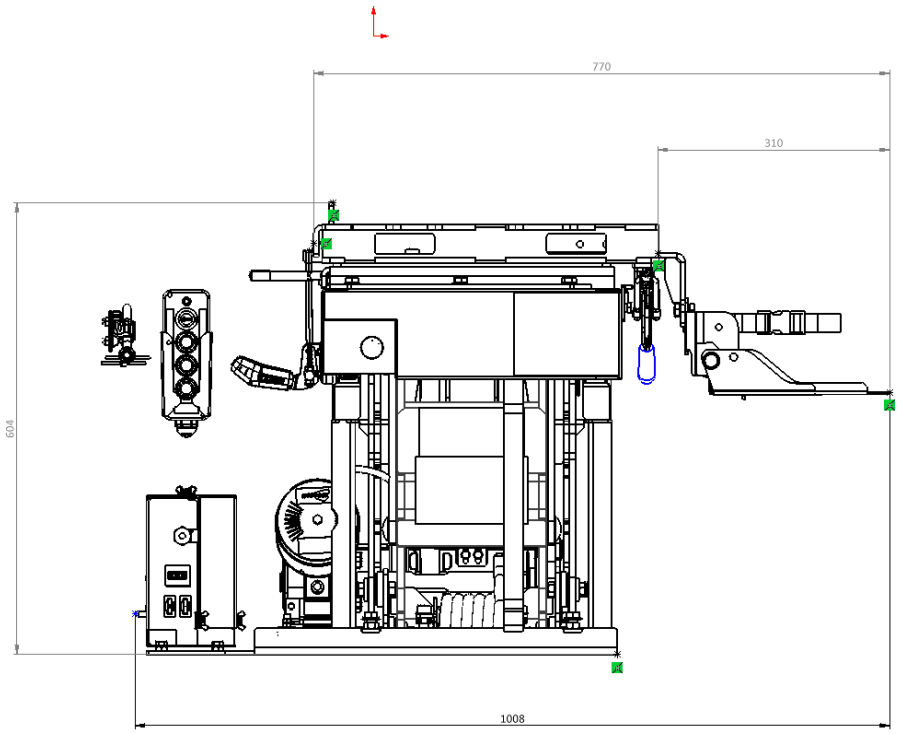
NOTE: The images in this manual are illustrative only and may be changed at any time without prior notice.

1.1– Technical characteristics

System:	Electric;
Finishing:	Epoxy paint;
Drive:	Hydraulic;
Operation:	Remote control with pulsating command;
Movement de sobe/desce:	Hydraulic cylinders;
Fluid:	Hydraulic oil;
Maximum Working Pressure:	172 bar to 210 bar;
Working Temperature:	-10°C to 55°C;
Maximum no-load current:	30 A;
Maximum current with load:	60 A;
Voltage:	24 Vdc or (optional 12 Vdc);
Maximum load capacity :	300 Kg;
Movement Speed:	Maximum of 0.15m/s;
Dimensions (mm):	(H x L x W);
Approximate weight:	100kg

1.2 – Main dimensions

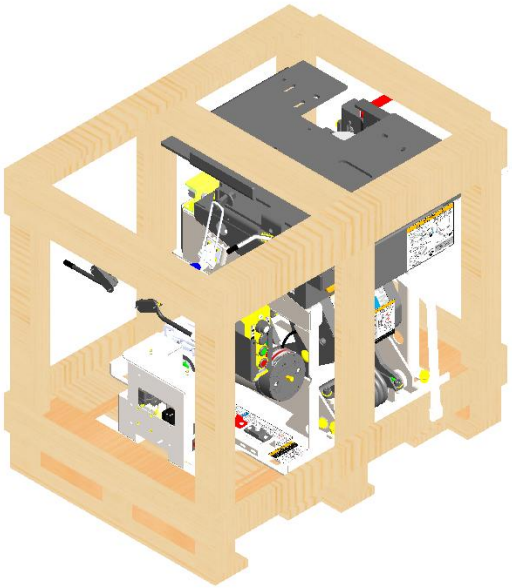




2 – Installation

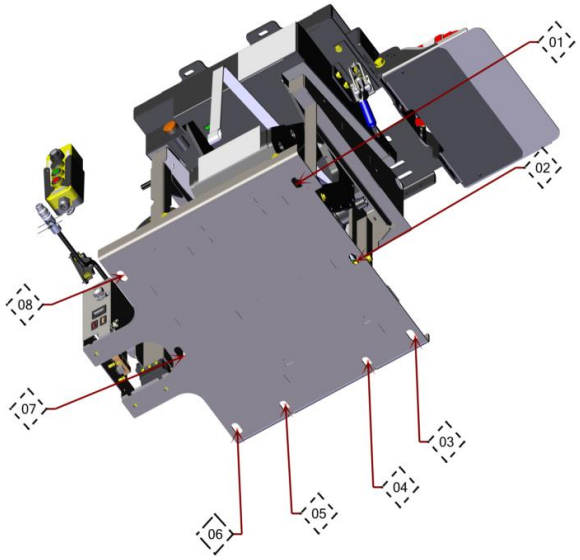
All handling of the Device must be carried out with care and attention, thus preventing damage to the equipment and not posing any risk of accident.

The Mobile Platform Device must be carried on its wooden platform, which can be maintained during the attachment of the equipment to the bus.



2.1 – Preparation for installation

The following measures are indicated for a correct installation, ensuring the functionalities of the *Device* ***Mobile Platform - DPM DD Model***

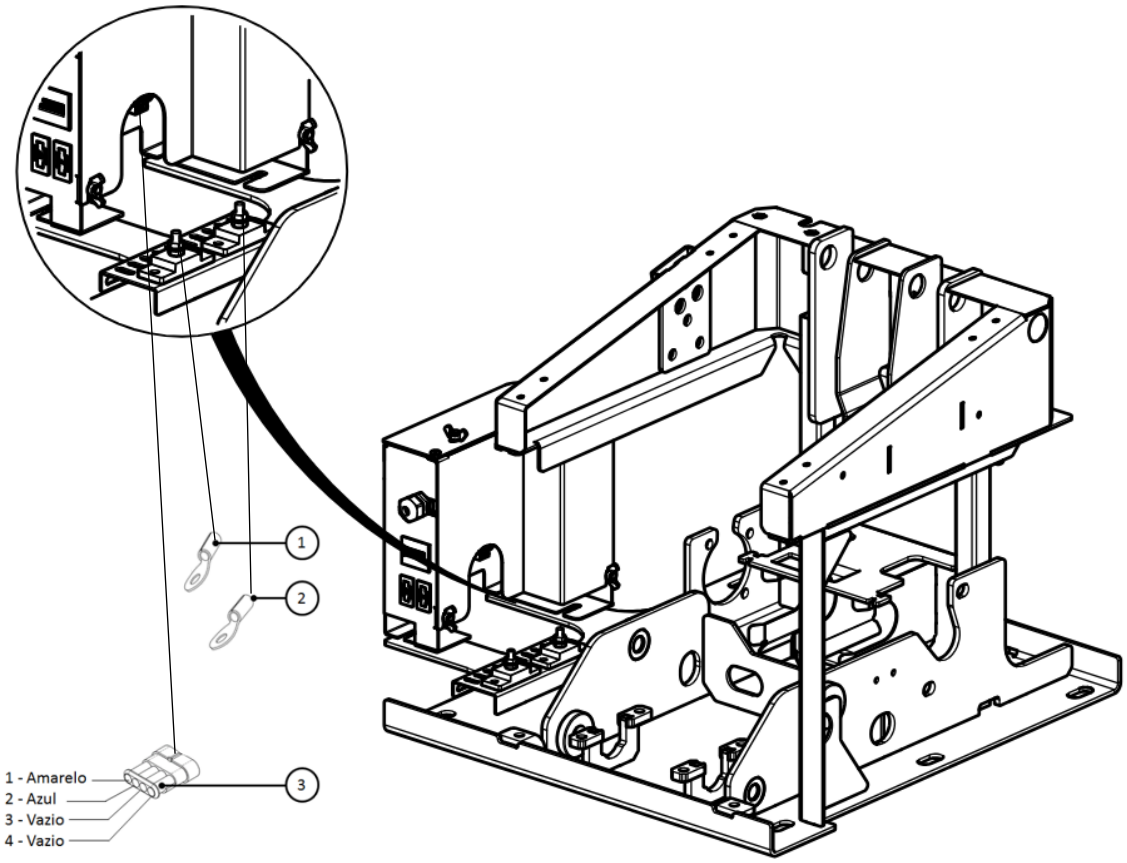


The DPM must be fixed to the vehicle structure through points 1 to 8 shown in the image above. M8 bolts and nuts with resistance class 10.9 must be used. The minimum recommended tightening torque for these screws is 35N.m.

NOTE: The DPM must be fixed in a structure prepared specifically for each type of vehicle or body. This structure is the responsibility of the vehicle or body manufacturer and is not supplied with the DPM.

2.2 – Electrical connection

At the bottom left of the DPM, there are the branch terminals and the wiring harness, where:



1	**Black handle**	Negative DPM power (-battery).
2	**Red Cable**	Positive DPM power (+battery).
3	**Yellow handle**	enables the operation of the elevator. Negative signal (GND) coming from the vehicle.
	Blue Cape	Sends a (positive) signal indicating that DPM is running. It can be used to control door locks and visual and audible vehicle alerts.
	Empty	-
	Empty	-

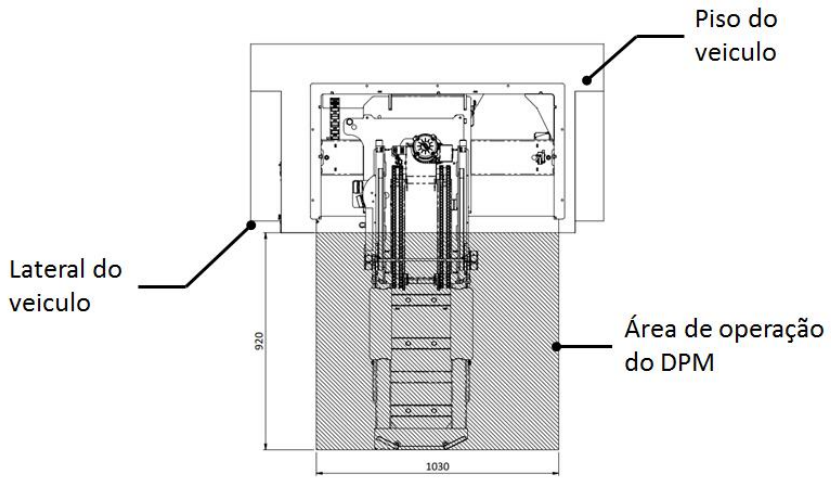
NOTE: The electrical connection shown refers to the FOCA MOBILITY standard. There may be differences depending on the electrical design of each vehicle. If you have any questions or for further clarification, please contact FOCA MOBILITY technical support.

3 – Operation

It is recommended that the operator read the following instructions carefully. Here all the steps for the safe operation of the equipment are clearly described.

Before putting the equipment into operation, it is important to know:

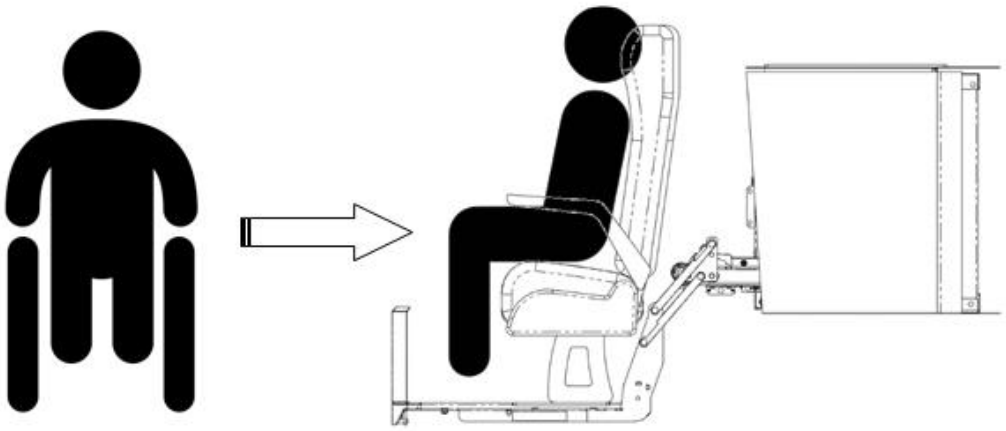
1. The vehicle must have the auxiliary brake on;
2. The vehicle must have the engine running;
3. The elevator access door must be open;
4. The operator must be positioned so that he has a full view of the operation, ensuring assistance and safety of the user;
5. Make sure that there are no people or any obstacles in the operation area, as shown in the following image:



Note: The equipment was developed for the border crossing of people with reduced mobility. It should not be used to move cargo or objects of any nature

3.1 – User positioning

The user must position himself in the seat, with the lower limbs resting on the DPM footrest and with the seat belt buckled.

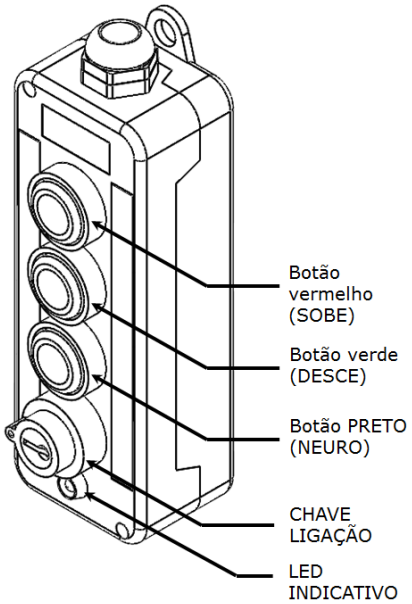


3.2 – Operation Procedure

If the above conditions are assured and as DPM in the transport position, the operation must occur as follows:

	Operation/Operation	**Observation/ Observación**
1.	Start of operation	The operator must position himself on the outside of the vehicle, where he has a full view of the operation;
2.	Removing the Command Control from the Receptacle	The control control is connected to the DPM via a spiral cable that can be extended up to two meters;
3.	Turn the control key to the **ON** or **ON position**	At this point, a green LED lights up on the controller. The LED on indicates that DPM is on and that all control functions are enabled;
4.	Pressing the green button on the control control	At this point, the mobile base will start the downward movement (out of the vehicle).
5.	Pressing the red button on the control	This causes the mobile base to perform the upward movement and return to the transport position (inside the vehicle).
6.	Turn the control switch back to the **OFF** or **OFF position**	At this point the LED will turn off. This indicates that DPM is turned off and the controller has all functions disabled

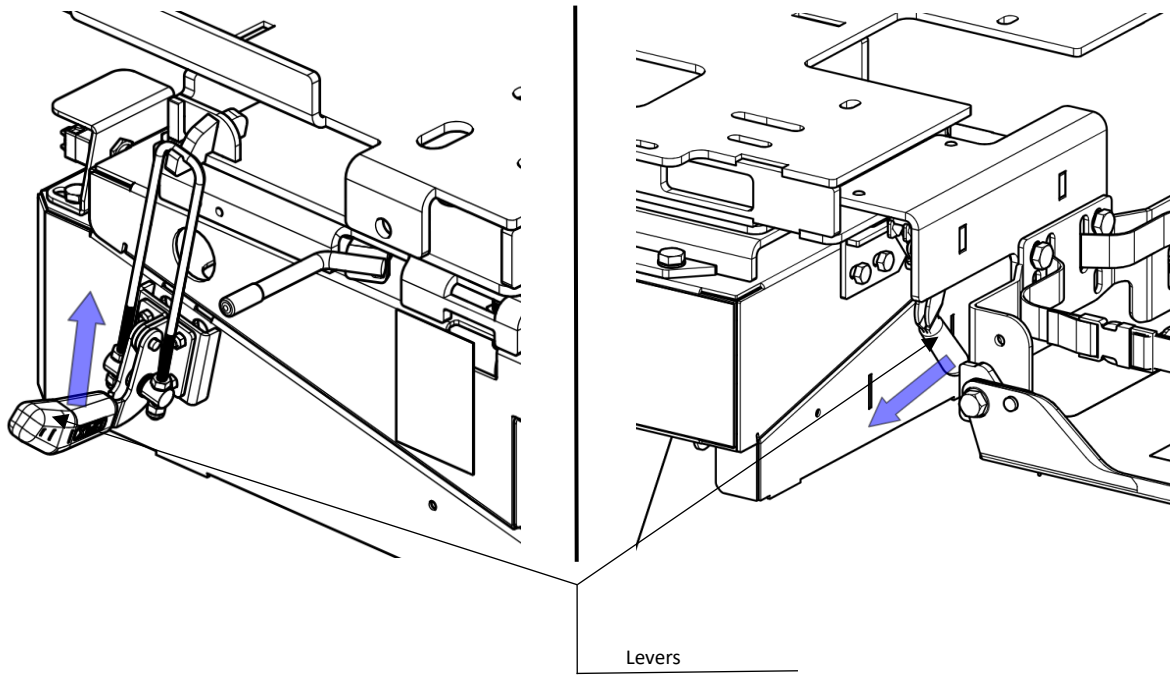
The control commands are pulsed type, that is, the DPM only executes the movements while the control buttons are held down. When you release the buttons, DPM ceases movement.



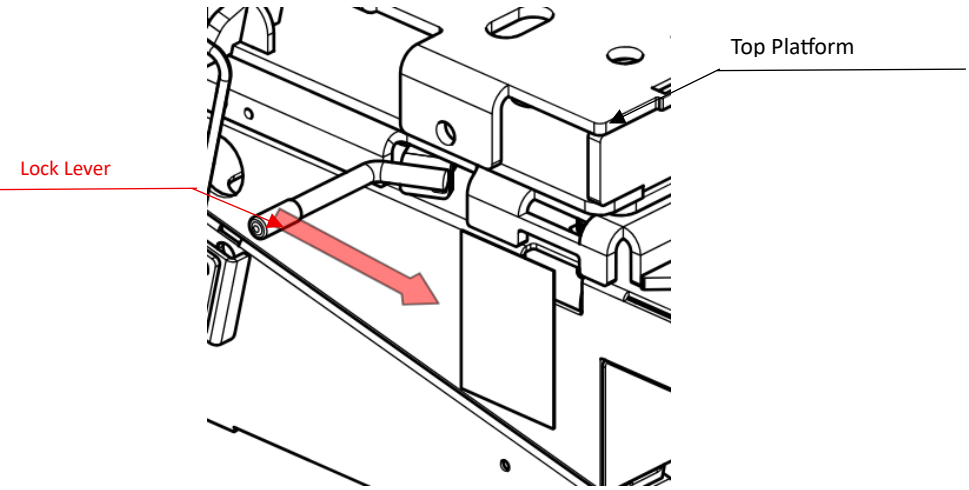
3.3 – Operating Procedures in Case of Failure

In the event of a failure of the electrical circuit of the DPM or the vehicle, the equipment offers an alternative way of operation, through 2 manual turning levers, which are located on the mobile base.

Step 1: Unlock both levers identified in the image, on the side of the DPM, by moving the metal handle out of the holder:



2nd step: Pull and keep the lock lever activated, handle the equipment manually, turning the upper platform and lowering/raising it.

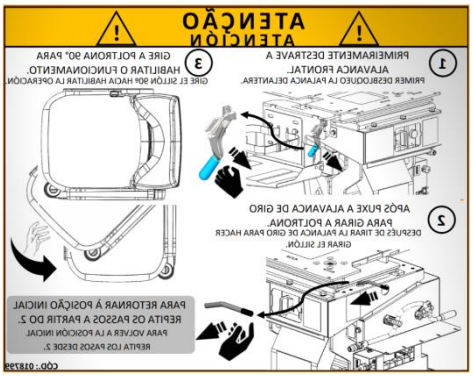
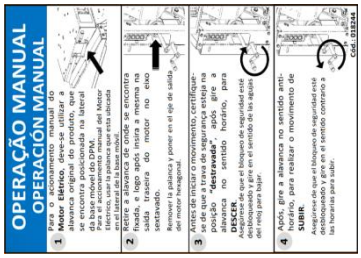


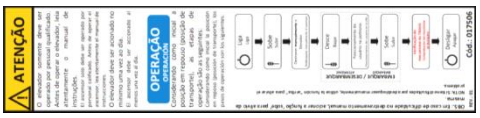
4– Maintenance/Maintenance

4.1- Verification of adhesives and safety devices/ Verification of adhesives and security devices

The DPM DD has several informative adhesive labels fixed at strategic points of the equipment that have the function of guiding and ensuring safe operation. These labels must always be in good condition, so they must be inspected regularly. If necessary, make the replacement.

The following is the list of labels and location of both on the equipment.

No.	Description	Code	Image
1	DPM DD USER GUIDANCE STICKER	018799	
2	MOLA TORCAO ADDUCIVE - UNIFIED DPM DD	018202	
3	MAXIMUM LOAD ADHESIVE - DPM II	017500	
4	MANUAL OPERATING ADHESIVE - DPM-E COMPACT	018244	

5	ADESIVO OPERACAO - DPM DD	015823	
6	ADESIVO ATENCAO DISCONNECT DPM DA ALIMENTAÇÃO	017607	
7	ADJUSTABLE DIRECTION OF ROTATION MANUAL OPERATION DPM-E	018768	
8	ONE-ARM CONTROL STICKER	016429	
9	SEAL STICKER CONTROL EXT AT	8394	

4.2 – Precautions before maintenance

Before any maintenance activity, it must be ensured that the vehicle is fully stopped and that the DPM DD is in the lower boarding position (mobile base of the DPM in the lower position), which is appropriate and safe. However, in the case of maintenance that requires a position other than the recommended one, it must be ensured that it does not pose a risk of accidents.

4.3 – Preventive maintenance

It is recommended to create a periodic preventive maintenance plan that should be carried out according to the time of use or according to the number of operation cycles carried out by the DPM. Annexes 2 and 3 of this manual determine the minimum checks to be carried out on the equipment.

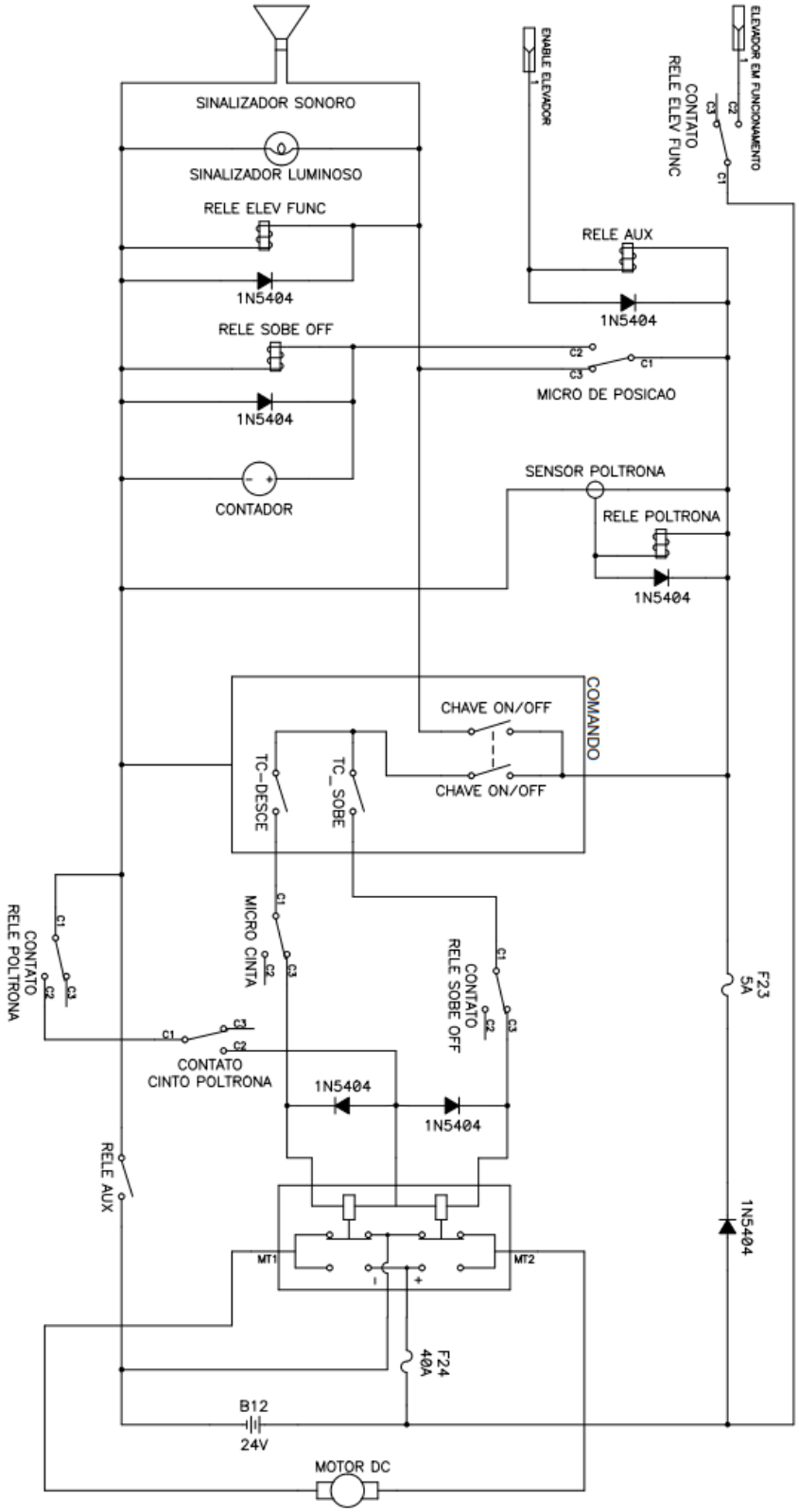
4.4 – Fault diagnosis and solutions

In case of failures in the operation of the equipment, it is recommended to contact the technical assistance of FOCA MOBILITY. However, some failure situations can be easily solved with verification and small interventions as follows:

Problem	Check	Solution
Elevator does not operate	Check if the vehicle is on, if the auxiliary brake is activated and if the dedicated door is open; Check that the pushbuttons on the panel and next to the door are activated; Check if power is arriving at the command control (LED access);	Observe that the power cords are correctly connected; Check the operation of the dedicated door sensor;
Elevator does not complete the cycle of ascent or descent	Check the operation of the micro switches; Observe malfunctions in the articulation arms such as cracks or deformations;	Replace or adjust the micro switches; Replace arms if they have cracks or deformities;
Movable lift base does not lock in the transport position	Observe the presence and adjustment of the manual lock of the mobile base;	Replace or adjust the movable lock mechanism;
Siren and flashlight dead	General condition of the siren and flashlight; General condition of wiring harness connectors and cables;	Replace components; Repair cables or replace wiring harness;

4.5 Electrical circuit

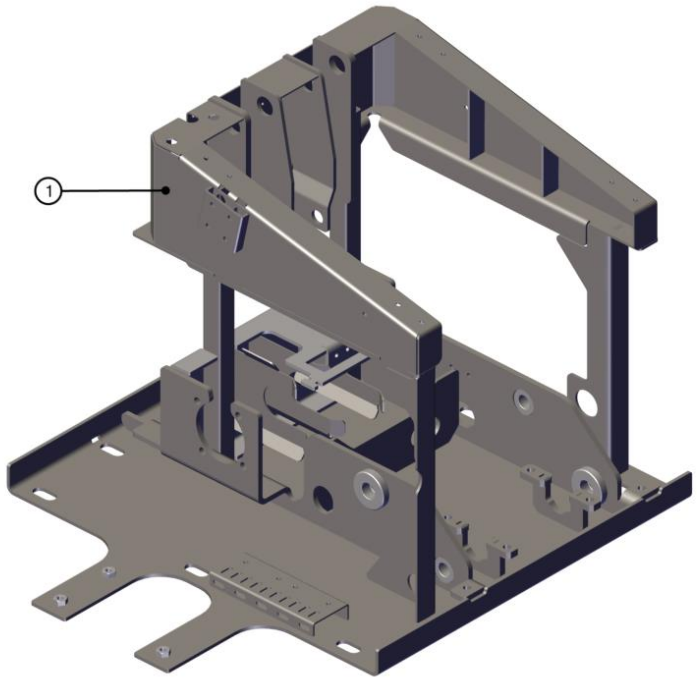
In the following image is the electrical schematic of the DPM – DD



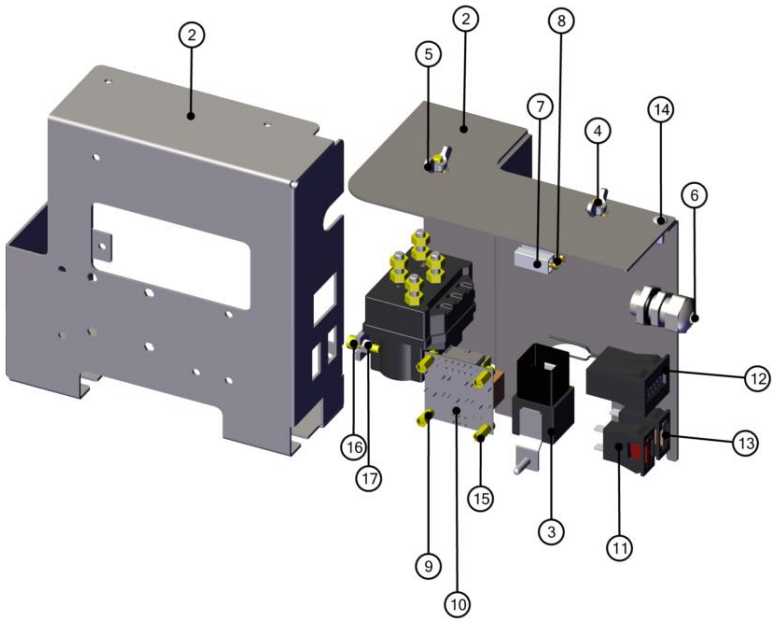
5 – Spare parts

The following is a list of spare parts that can be purchased directly from FOCA MOBILITY's after-sales.

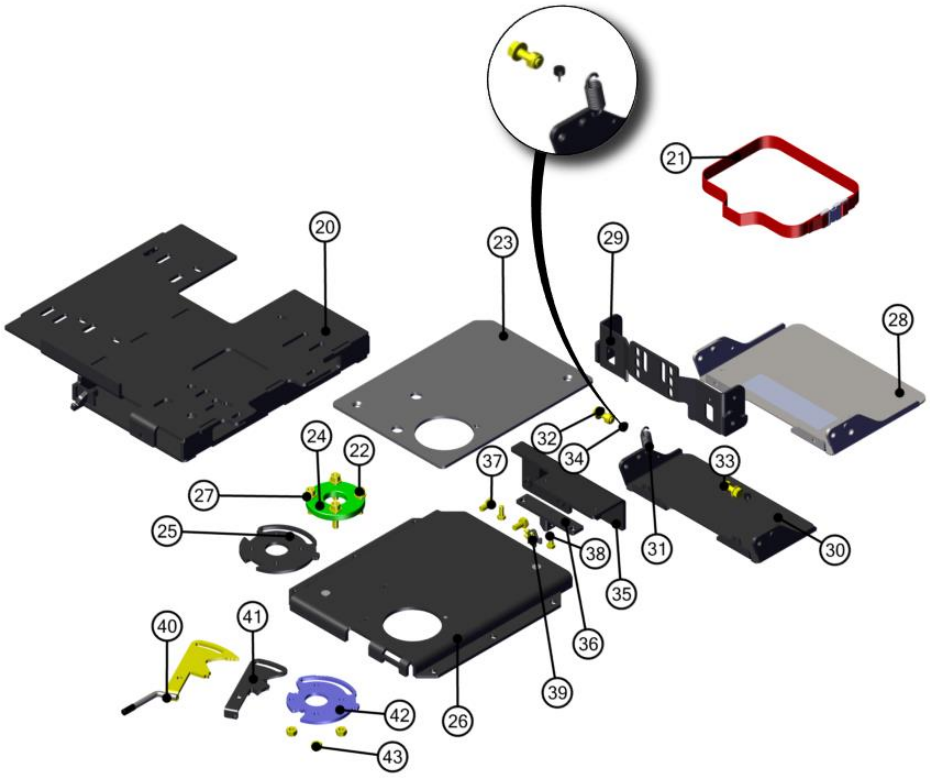
5.1 – Mechanical structure



5.2 – Electrical system

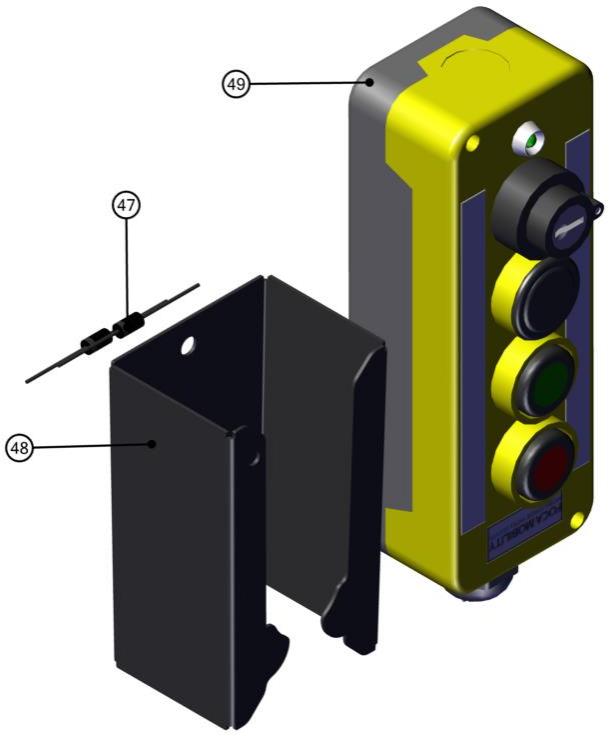


5.3 – Upper Support

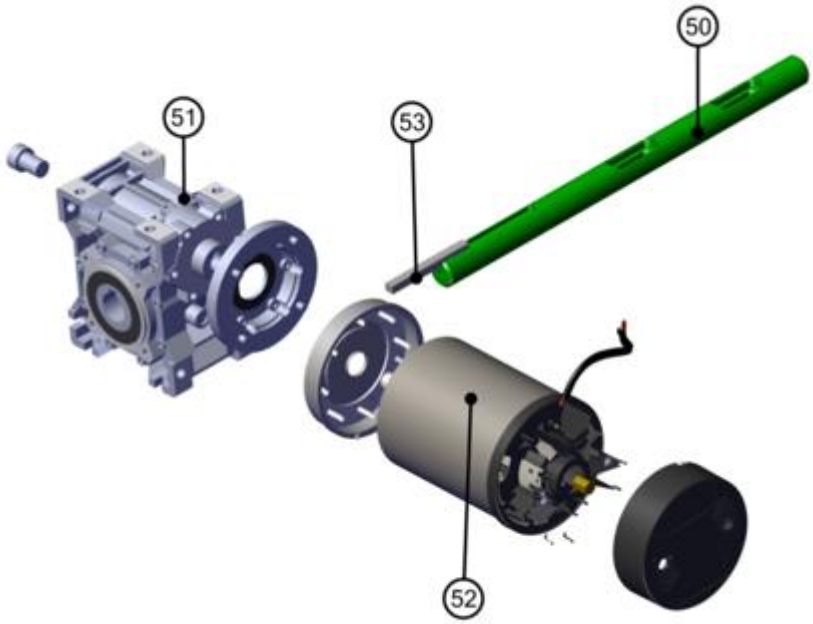


5.4– Mola System

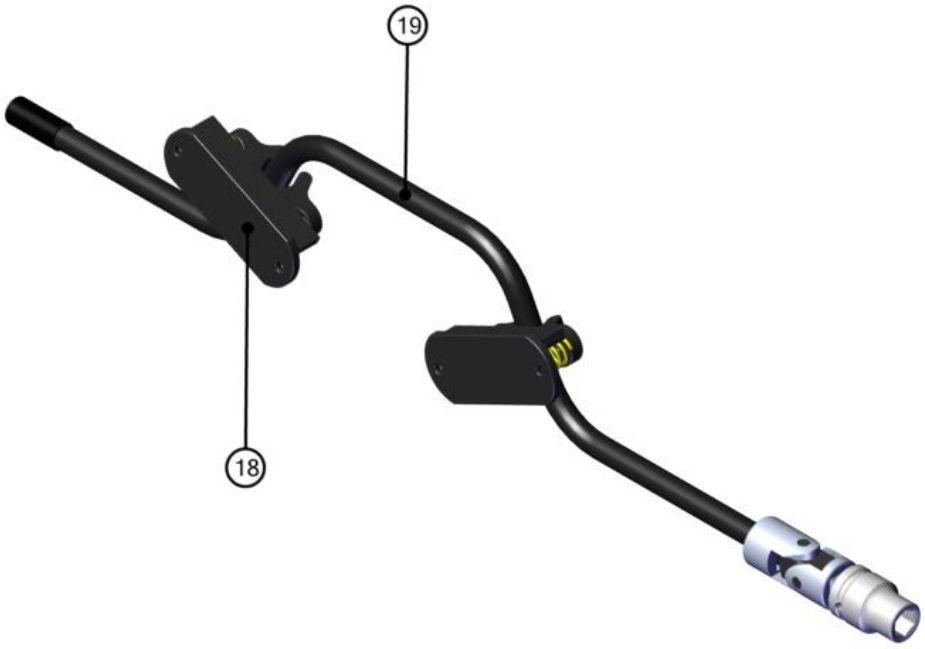
5.5 – Control



5.6– Engine



5.7- Alavanca System



5.8- Internal mechanism

5.9 – Table of replacement codes/ Table of replacement codes

No.	NAME	CODE	QNTD.
1	E CJ SOLD STRUCTURE MEC - DPM-E DD G2 E-COAT	119083	1
2	E CJ MONT CENTRAL ELETRICA DPM-DD E SERIES	119076	1
3	URBAN ELEVATOR AUXILIARY RELAY AS HD	"	1
4	PARAF SEXT ROSCA TOTAL DIN 933 - M6 X 12 ZA	017738	2
5	BUTTERFLY NUT DIN 315 M6 - STAINLESS STEEL	007791	2
6	CABO G 3/8" PRESS - PRETO	001907	1
7	CONNECTOR FOR FEMEA TERMINAL 1V 6.3MM W/ ABA REINFORCED	003990	2
8	6.3MM FEMALE TERMINAL W/ LATCH - 1.0 TO 2.5MM	003991	2
9	REBITE REPUXO SEXT CAB EXTRA-FINA M4 - ZB	008027	4
10	CENTRAL DE RELES 24V - FC-710 - H-NSL SA	018819	1
11	PORTA FUSIVEL - REF. UNIVAL 0300330 P/ PAINEL	000410	2
12	CONT ELETROMEC 12VDC	003716	1
13	FUSIVEL LAMINA 40A LARANJA	018513	2
14	REBITE POP 4,8 X 14MM CORPO/MANDRIL ALUM	000240	2
15	PARAF CAB CIL SEXT INT DIN 912 M4 X 12 - ZA	004128	4
16	PARAF CAB CIL SEXT INT DIN 912 M5 X 16 - ZA	003574	2
17	SEXT SELF-TRAV NUT DIN 985 M5 - INOX	005422	2
18	JEWISH LATCH BASE W/SPRING	016796	2
19	E CJ MONT ARTICULATED CRANK SEAL DPM-E	113546	1
20	E CJ SOLD BASE SUP GIRO POLTRONA - DPM-E DD 500 G2 - E-COAT	119142	1
21	AND CJ FOOTREST STRAP	112780	1
22	PARAF CAB CIL SEXT INT DIN 912 M10 X 40 - ZA	018623	4
23	CH DESLIZE GIRO POLTRONA - DPM-E DD 500	019103	1
24	CENTRAL PACING DISC BASE TURN POLT. - DPM VAN - ZV	018622	1
25	E DISCO FIX ESP BASE GIRO ARMCHAIR DPM-E COMPACT 540 E-COAT	112620	1
26	E CJ SOLD SUP INF GIRO POLTRONA - DPM-E DD 500 E-COAT	114122	1
27	SMOOTH SOCKET DIN 125-1 M10 - ZA	000231	4
28	E CJ SUPPORT INF SUPPORT OF THE FEET - DPM II [MOD 1]	107061	1
29	E CJ SUP TRAS FOOTREST UNIVERSAL - DPM II	107217	1
30	AND CJ SUPPORT SUPPORT PES TURNY - E-COAT	107682	1
31	FOOTREST SPRING - DPM II [MOD 1]	017596	1
32	PARAF CAB SEXT FLANG DIN 6921 M10 X 30 - ZA	004211	2
33	PORCA SEXT AUTO-TRAV DIN 985 M10 - ZA	000262	2
34	RUBBERIZED STOP SBR (REF: CLEUMA E234)	019558	2
35	E SUP FOOTREST ATTACHMENT DPM-E DD 500	114097	1
36	E SET SOLD MOBILE BASE CLAMP DPM-E 540 BED - E-COAT	112866	1
37	PARAF SEXT ROSCA TOTAL DIN 933 M10 X 20 - ZA	017513	2
38	PARAF SEXT DIN 933 M8 X 20 - ZA - ROSCA TOTAL	005524	2

39	CJ COMP 15.10026	"	1
40	AND ARMCHAIR SWIVEL LOCK ROD - DPM-E COMPACT 540	112640	1
41	E TRAVA BASE GIRO ARMCHAIR - DPM-E COMPACT 540	112639	1
42	X	X	X
43	PORCA SEXT AUTO-TRAV DIN 985 M10 - ZA	000262	4
44	PORCA SEXT AUTO-TRAV DIN 985 M12 - ZA	000261	1
45	PARAF SEXT PARTIAL THREAD DIN 931 M12 X 120 - ZA	017507	1
46	E CJ MONT SUP MOLA TORCAO MEC - DPM II	106553	1
47	1N5408 P/CONT DIGITAL CA DIODE 3BR/4BR	004277	2
48	AND SUPPORT SL UNIV CONTROL	105228	1
49	EXT CONTROL SL-ATP / SL-ATH - REF LAY5-EPBK45	006506	1
50	EIXO FIXACAO CINTA - DPM-E-ES	018743	1
51	REDUCER GSA_51_C71_B14_WF1V0H0_1:100	018744	1
52	MOTOR ELETRICO D.C. 24V [IMOTECH - 10.02.044.24] - 500 W	018675	1
53	E CHAVETA DIN 6885 - 8MM X 7MM X 80MM	111326	1
54	E CJ WELDED INNER ARM MECHANISM - DPM-E DD 500 G2 E-COAT	119122	1
55	E CJ WELDED BRACKET SWING STRAP - DPM-E-ES - E-COAT	112739	1
56	E CJ SOLD BALANCIN CINTA - DPM-E-ES - E-COAT	112742	1
57	E CJ BRACO TENSIONADOR CINTA DPM-E DD E-COAT	118623	1
58	E CJ MONT BRACO ARTIC EXT - DPM-E DD 500 G2	119126	1
59	PARAF FRANCES DIN 603 M12 X 50 - ZA - PARTIAL THREAD	007260	2
60	BUCHA ARTICULACAO CINTA DPM-E-ES	018741	2
61	PORCA SEXT AUTOTRAV. FLANGEADA DIN 6926 M12 ZA	018362	2
62	BUCHA DESL 19,05 X 29,3 X 9,75MM- REF.:12FDU06 (BRAUN 24011)	017319	4
63	PARAF SEXT PARTIAL THREAD DIN 931 - M6 X 60 ZA	017708	2
64	PORCA SEXT AUTO-TRAV DIN 985 M6 - ZA	000258	2

6 – Maintenance Plan

It is recommended that equipment be inspected periodically to verify the overall and functional condition of its systems and components. For this, FOCA MOBILITY suggests that the maintenance plan be followed according to Annex 2 of this manual.

7 – Warranty

FOCA MOBILITY, through its specialized technical team, guarantees its customers support services. The support is given for the replacement of components, as well as the labor necessary for repairs of any defects that occurred under normal conditions of use and duly verified as being manufactured.

The warranty of the equipment is determined by component and the period comprised follows the parameters as follows:

Metal structure	02-year warranty against cracks and deformations;
Gearbox motor assembly	01 year warranty against failures;
Sirens, lantern, solenoides, micro chaves	01 year warranty against failures;
Bushings, bearings, rack, pins, chains, cylinders and belts	01 year warranty against failures; NOTE: In general, these components suffer natural wear and need replacement to ensure the safe operation of the equipment;

NOTE: The warranty period is counted from the date of issuance of the product's sales invoice (including the 90 days provided for by law).

The warranty will not be granted if:

Installation	- Installation of the product in disagreement with the recommendations provided for in this manual;
Misuse	- Equipment subjected to loads above the specified capacity; - Equipment used to move loads or objects; - Equipment subjected to cleaning with highly corrosive products that may cause the components to become unusable;
Accident	- In the event of an accident with the vehicle or other equipment present in it that damages the DPM or any of its components;
Changes	- Modifications made to the equipment that alter the original factory characteristics or that are not compatible with the equipment specification; - Removal or alteration of the serial number of the equipment's nameplate;
Installation	- Installation of the product in disagreement with the recommendations provided in this manual;

Abuse	- Equipment subjected to loads in excess of the specified capacity; - Equipment used to move loads or objects; - Equipment subjected to cleaning with highly corrosive products that can render components unusable;
Accident	- In the event of an accident with the vehicle or other equipment present that damages the DPM or any of its components;
Currency exchange	- Modifications made to the equipment that alter the original factory characteristics or are not compatible with the equipment specification; - Removal or alteration of the serial number of the plate with the name of the equipment;

7.1 – Warranty Agreement

The warranty agreement is the way that FOCA MOBILITY uses to register and grant the technical warranty of its entire line. The Warranty Agreement must be completed by the customer and sent back to FOCA-BRAUN, as per Annex 1 of this manual

8 – After Sales and Technical Assistance

FOCA-BRAUN has in its manufacturing unit the After-Sales sector exclusively for the service of its customers and replacement of original parts. It also has a technical team that can offer support by phone and an authorized technical assistance network. In this way, speed and efficiency in service and sending parts to any region is guaranteed.

Contact FOCA-BRAUN:

Factory:

Foca Mobility

Rua Avelino Antunes, 385

Bairro Santa Catarina – 95032-060

Caxias do Sul – RS – Brasil

Phones: (54) 2108 8000 / (54) 2108 8002 / (54) 2108 8038

To access the list of our technical assistance, visit the website:

www.foca.com.br

9 – Annexes

9.1 – Annex 1

Customer Price:

In order for the warranty conditions to be valid, it is essential to correctly fill out this annex when returning it to FOCA MOBILITY Mobilidade do Brasil LTDA.

Customer Name:	
Address:	
Contact Person:	
Telephone:	
Email:	
Vehicle (prefix):	
Body number:	
Model:	
Elevator Serial No.:	
Elevator Purchase NF:	
Vehicle delivery date:	

On the delivery date described above, we received the equipment together with its operating manual, were trained and made aware of the warranty conditions.

_____

Signature of the person in charge at the customer

This warranty agreement must be filled in with the customer's information and returned to FOCA MOBILITY Mobilidade do Brasil LTDA, at the address:

A/C After Sales

FOCA MOBILITY

Rua Avelino Antunes, 385

Bairro Santa Catarina – 95032-060

Caxias do Sul – RS – Brasi

9.2 – Annex 2

Weekly inspection

Feature	Component	Verification	Action required
Mechanic	Up and down movements	Movements should be smooth, without jerks or excessive vibrations.	Arms, bushings and gears must be free of cracks, deformations or excessive wear. Replace or repair if necessary.
	Front wheel lock	Check the operation of the wheel lock.	Replace or repair if necessary
	Rear wheel lock	Check the operation of the wheel lock.	Replace or repair if necessary
	Mechanical lock	Check the operation of the mechanical lock. You must lock and unlock the mobile base.	Replace or repair if necessary
	Currents	Check the condition of the links and pins, which must be free of cracks or deformations.	Replace links or entire chain if necessary
	Manual override	Perform complete manual drive without excessive jerking or vibration	Arms, bushings and gears must be free of cracks, deformations or excessive wear. Replace or repair if necessary.
	Footrest support	Check the general condition of the footrest and the presence of non-slip sandpaper.	Replace or repair if necessary
Electric	Command control	Check the general condition and operation of the pushbuttons.	Replace or repair if necessary
	Microchaves	Check general condition and operation.	Replace microswitches if necessary
	Buzzer	Check the status of the electrical connection and the operation of the buzzer.	Replace buzzer or repair connection if necessary
	Light signal (flashlight)	Check the status of the electrical connection and the operation of the flashlight.	Replace flashlight or repair connection if necessary
	Connection cables	Check the status of the cables and connection to the terminals;	Replace or repair if necessary
Visual	Painting	Observe the condition of the paint and zinc-plated parts, peeling, scratching or oxidation	Touch up with paint if necessary
	Informational labels	Check general condition and presence of all informational labels	Replace or replace if necessary

Weekly Inspection

Feature	Component	Verification	Action Required
Mechanic	Up and down movements	The movements should be smooth, without excessive jerking or vibration.	Arms, bushings, and gears must be free of cracks, deformations, or excessive wear. Replace or repair if necessary.
	Front wheel lock	Check the operation of the wheel lock.	Replaces or repairs if necessary
	Rear wheel lock	Check the operation of the wheel lock.	Replaces or repairs if necessary
	Mechanical lock	Check the operation of the mechanical lock. You must lock and unlock the mobile dock.	Replaces or repairs if necessary
	Currents	Check the condition of the links and pins, which must be free of cracks or deformations.	Change the links or the entire chain if necessary
	Manual override	Performs a full manual transmission without excessive shaking or vibration	Arms, bushings, and gears must be free of cracks, deformations, or excessive wear. Replace or repair if necessary.
	Footrest support	Check the general condition of the footrest and the presence of non-slip sandpaper.	Replaces or repairs if necessary
Electric	Command Control	Check the general condition and operation of the buttons.	Replaces or repairs if necessary
	Microchaves	Check the general condition and operation.	Replace microswitches if necessary
	Zumbador	Check the status of the electrical connection and the operation of the doorbell.	Change the doorbell or repair the connection if necessary
	Light signal (flashlight)	Check the status of the electrical connection and the operation of the flashlight.	Change the flashlight or repair the connection if necessary
	Connection cables	Check the status of the cables and the connection to the terminals;	Replaces or repairs if necessary
Visual	Painting	Look at the condition of the paint and zinc-plated parts, if they have peeled, scratched, or oxidized	Touch up with paint if necessary
	Informational labels	Check the overall status and presence of all information labels	Replace or replace if necessary

9.3 – Annex 3

Preventive maintenance

Every 1000 cycles or 06 months of operation		
Component	**Preventive check**	**Action required**
Footrest support	Check Array Health and Health	Replace or repair components if necessary
Articulation arms	Check for cracks or deformations	Replacing arms in case of cracks or deformations
Command control	Check the general condition and operation of the keys	Override control in cases of downtime
Mechanical locking of the mobile base	Check Lock Operation	Adjusting or replacing the lock in the event of inoperability
Screws and fasteners	Open Verification	Retighten or replace if necessary
Axles and bushings	Check for excessive clearance and presence of counterpins on the shafts	Replace bushings and pins if necessary
Power Cords & Wiring Harness	Check the general condition of cables and connectors	Replace or repair in case of damage
Micro Switches	Check Overall Condition and Operation	Adjust or replace if necessary
Mechanical fixation of the equipment	Check fastening bolts on the vehicle	Retighten or replace screws if necessary
Torsion spring	Check presence and state of conservation	Retighten or replace screws if necessary. **Attention: this component has energy storage when the DPM is in the transport position. Only intervene on this component with the DPM open.**

Preventive maintenance

Every 1000 cycles or 6 months of operation		
Component	**Preventive check**	**Action Required**
Footrest support	Check the health and health of the matrix	Replace or repair components if necessary
Articulating arms	Check for cracks or warping	Replacement of arms in case of cracks or deformations
Command Control	Check the overall condition and operation of the keys	Override control in cases of inactivity
Mechanical locking of the mobile base	How the lock works	Adjusting or replacing the lock in case of inoperability
Screws and fasteners	Open Verification	Re-tighten or re-put it on if necessary
Shafts and bushings	Checks for excessive clearance and pins on the axles	Change bushings and pins if necessary
Power Cords and Wiring Harness	Check the overall condition of cables and connectors	Replace or repair in case of damage
Microswitches	Check overall health and operation	Adjust or change if necessary
Mechanical fixation of the equipment	Check the vehicle's fixing screws	Retighten or replace the screws if necessary
Torsion spring	Check the presence and state of conservation	Retighten or replace the screws if necessary. **Attention: this component has energy storage when the DPM is in transport position. Only intervene in this component with the DPM open.**

9.4 – Annex 4

Revisions table

The Revision tables contain the modifications made by Foca Mobilty's engineering, aiming to improve the product.

PRODUCT	REVISION	DATA	CHANGED	ACCOUNTABLE
DPM DD	0	21/09/2023	Product created	Fernando Tregansin

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