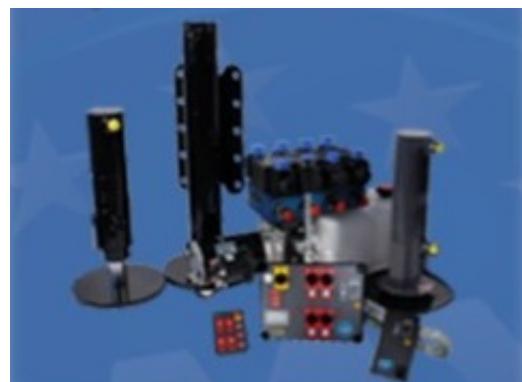




MULTI-LIFT SYSTEM



INSTRUCTIONS MANUAL INSTALLATION - USE - MAINTENANCE



STABILIZER PARKING SYSTEM FOR VEHICLES

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BOTH INSTALLER AND USER MUST READ THE FOLLOWING MANUAL CAREFULLY TO ENSURE
CORRECT USE AND MAXIMUM EFFICIENCY OF THE EQUIPMENT

INTRODUCTION

SMV recommend that users scrupulously follow the instructions set out in this Manual.

The symbols in the manual are used to focus the attention of the user on safety standards in force and on how to use the equipment properly and carry out correct maintenance.

Definitions:



Danger!

This symbol is used for safety messages or instructions or, in any case, when potentially dangerous or harmful situations arise.

☞ Warning

This symbol appears on safety messages with precautions to be taken to avoid damage to the machine or for important messages to the operator.

This instructions manual should be considered an integrated part of the machine and must remain with the machine for its entire lifespan.

The instructions manual must be kept in a place that is easily accessible to operators and must be preserved from any form of deterioration.

The manual must be read carefully by the operator before using the equipment and before carrying out maintenance, paying maximum attention to the messages in which the danger symbol appears: these contain the necessary instructions for the correct use of the machine under maximum safety conditions.

RESPONSIBILITY AND GUARANTEE

SMV reserve the right to carry out any modifications and improvements to the machine that are held necessary over time and without prior notice.

Products manufactured by SMV are guaranteed against any breakdowns that can be attributed to manufacturing defects or materials used.

SMV guarantee their manufactured products against conformity defects from the delivery date to the first end user (DIRECTIVE 1999/44/CE OF THE EUROPEAN PARLIAMENT AND COUNCIL 25th May 1999).

☞ Warning

The Guarantee does not cover materials in everyday use such as the brushes on direct current motors, filters, start up relays. The Guarantee does not apply to products that have been supplied with sealed pressure modulating valve and sent back with the seal removed.

The Guarantee does not cover direct current motors that will not start up while charging with voltage that is too low, discharged batteries or unsuitably sized electrical circuits.

The manufacturer will not accept responsibility for damage caused to the machine itself, animals, people and any kind of guarantee will become automatically null and void unless the following rules are adhered to:

any mechanical intervention under guarantee must be carried out by a Technical Assistance center authorised by SMV or at our manufacturing plant, where the products must be sent, once authorised by us, in free port with suitable packaging.

The guarantee will be considered null and void in the event of imprudent use, tampering, modifications and/or repairs carried out by unauthorised persons.

☞ Warning

ATTENTION! The guarantee will become automatically null and void under the following circumstances:

- installation and start up procedures have not been followed according to instructions set out in this manual;
- original SMV spare parts have not been used;
- the presence of hydraulic fluid that is not compatible with the contamination class indicated in this manual is detected;
- breakdown caused by wrong dimensioning of the electrical command system is detected;
- the maintenance program in the present manual has not been followed;
- damage to the product is revealed because it has been dropped or it has been stocked in a warehouse without following instructions.

SMV are available to carry out repairs to their own products even after the guarantee has expired.

SMV will carry out repairs after many years of use (as long as it is economically viable).

Availability of spare parts designed and manufactured by SMV is guaranteed up to 5 years from the product being out of production.

Availability of general components used is ensured until supplies run out.

The cost of repairs to our products no longer under guarantee, is normally calculated once repairs have been carried out.

Any request for estimates must be made expressly at the moment in which the product to be repaired is delivered.

Each product rendered for servicing must be accompanied by the following:

1. Detailed delivery note, as set out according to the law;

Covering letter indicating the fault found and the details of a technician responsible for providing any clarifications needed.

☞ Warning

The Declaration of Conformity will automatically become null and void if any modifications are carried out without prior written notice to the manufacturer and guarantees of any nature and responsibility of the above will become null and void.

USING THE INSTRUCTIONS MANUAL

SMV recommend that users scrupulously adhere to the instructions set out in this Manual. Before carrying out work of any kind on components applied to the equipment read the following Instructions Manual carefully. This Instructions Manual is written for **specialised and competent personnel** and provides instructions for correct use of the product. This Instructions Manual cannot substitute the professionalism and competence of the installer. This Instructions Manual may undergo modifications and additions thanks to continuous updating and development of the product but cannot be classed as out of date or obsolete.

Warning

SMV will not accept responsibility under the following circumstances:

inappropriate use of equipment, meaning any use that is not expressly specified in this Instructions Manual concerning assembly and installation by unauthorised and non-expert personnel; incorrect assembly and installation defects and problems caused by the electrical current, failure to adhere to or irregular servicing of equipment program as specified unauthorised repairs or modifications, failure to adhere to or irregular servicing of equipment as specified in the periodical maintenance program, unauthorised repairs or modifications, failure to comply with instructions, use of non-original spare parts and non-specific spare parts for the type of system used, use of equipment for purposes other than those specified, heavier loads, greater performance requirements and longer operating times than those specified in the TECHNICAL CATALOGUES of SMV.

Competent Persons

A person who, thanks to technical training and studies and personal experience can be defined as having sufficient knowledge of the sector.



Danger!

Inappropriate use and the wrong choice of product (including accessories) can result in serious injury to persons and damage to objects. This Instructions Manual and enclosures, Technical Catalogues along with other information provided by SMV and Authorised Servicing and Assistance Centres aim to provide further data and information to users who are competent and familiar with the sector (or have competent personnel at their disposition).

It is very important that users analyse all possible problems related to the application of the equipment in each particular case and that the user carries out his own analysis with adequate testing. Moreover, the user is responsible for ensuring that all safety measures and warnings related to the application of this equipment have been followed (as specified by the Directive in force).

METHOD OF USE

The levelling system for camper vans, motor-homes, trailers etc. provides stability and levelling of the vehicle on four hydraulic feet, exploiting the run provided by suspensions and shock absorbers. Once levelled on its four feet, the vehicle becomes much more stable and no longer experiences annoying rocking caused by walking. On 4 feet, 95% of vehicle weight is removed from the suspensions and leaf springs, providing these parts with a longer lifespan. Levelling allows all equipment to work correctly (fridge, hobs, water discharge) and for the occupants to sleep comfortably, eliminating annoying sloping of the vehicle. Last but not least, once parked, it is an excellent thief-proof mechanism and useful in avoiding tyre deformation when garaging for long periods. The system can be assembled with three types of jacks: swing jacks (sliding or telescopic), fixed vertical jacks, fixed vertical telescopic jacks.

☞ Warning

The system has a lifting capacity of 8 tons: this, compared with various other manual or electric parking systems, allows you to increase your stability exploiting the entire weight of the vehicle.

Compared with other electro-mechanical systems, this system is much faster but, at the same time, more gradual and sensitive in its movements, exploiting the control that it is given by the hydraulic fluid. All things considered, the weight of the system is acceptable given that the heavy parking feet, characteristic of other systems, have been completely eliminated.

Levelling is carried out in less than a minute whereas electro-mechanical systems take from 4 to 5 minutes.

With the remote control you can level yourself in any position from inside or outside the vehicle.

You can check the position of each foot from the manually operated control panel.

While the vehicle is moving ,with the system in the off position, any anomalies will be signalled by a buzzer and a led light controlled by an electronic system. To avoid accidental use, the remote control is programmed to turn itself off automatically after a variable pre-set time lapse.

All maneuvers MUST be carried out with the engine switched off, significantly curbing the functioning time : absorption ratio.

THE SYSTEM INCLUDES

- 4 hydraulic jacks
- 1 hydraulic power pack
- 1 emergency pump
- 1 electronic control panel
- 1 remote control
- 1 black box for control of jacks
- 4 integrated check valves
- 4 mechanical limit switches
- 1 tube and tube fittings kit



Different attachment points and fixing systems are used according to the type of chassis.

CHASSIS: IVECO ISUZU DUCATO MERCEDES FORD RENAULT MAN etc.

The system is removable at any time and can be reused on a new vehicle. The weight of the system does not modify the weight distribution on the axles and does not influence the driving trim.

As a rule of thumb, the weight varies according to the type of model from a minimum of 60 kg to a maximum of 85 kg.

Once the vehicle is in the right position **pull on the handbrake and switch off the engine.**

In the case of AL-KO chassis, it is only necessary to put the vehicle into gear without pulling on the handbrake to avoid the vehicle moving forward when the system is functioning.

Ensure that there are no persons, obstacles and/or animals under the camper van and that the terrain is compact.

Do not use the system close to the roadside, near precipices or on crumbly or steep slopes. In the correct position and with the control panel switched to ON we can start stabilizing by lowering the hydraulic feet.

Warning

ALL 4 FEET MUST ALWAYS BE DOWN IN ORDER TO STABILIZE THE VEHICLE WITH THE TYRES PLACED FIRMLY ON THE GROUND.

The system stabilizes and levels by operating 2 stabilizers at the same time, providing 2 support points and easy levelling reference.

The 2 front, 2 back and 2 side cylinders on the right and left hand sides and all cylinders in the exit phase and entry phase can be operated using the remote control. Only use single control buttons in the event of an emergency.

With the fixed control panel it is possible to operate 1/2 feet at a time lifting or lowering the corresponding switch.

The small panel "black box" comprising 1 yellow led, 1 red led for mechanical limit switches and 2 acoustic sounds will inform you continuously on the functioning of the system.

The red and yellow leds on the fixed control panel check the position of each jack.

Operating the system with the vehicle ignition key and engine switched off.



Danger!

STOP THE MANOEUVRE IMMEDIATELY AND VERIFY THE CAUSE OF THE PROBLEM.

In the case of “fixed” vertical jacks we will only see the red led of the mechanical switch limit light up.

When the jacks move, the corresponding red leds light up on the receiver.

With the autolevel system we will see on the receiver the autolevel movements.

Once the vehicle has been levelled, the system is switched off by pressing OFF on the receiver.

In the event of system breakdown, use the emergency pump to put the stabilizers back in their original position.

The system is equipped with independent check valves and, in the event of a breakage of a service pipe, you will still have 3 support points.

When you wish to start driving again and you turn the ignition key to start up the engine, if one or any of the jacks is not completely retracted the buzzer will sound and the red led will light up.

Check the position of the jacks on the panel and only when all 4 red led lights are off will the system be ready for driving the vehicle.



Danger!

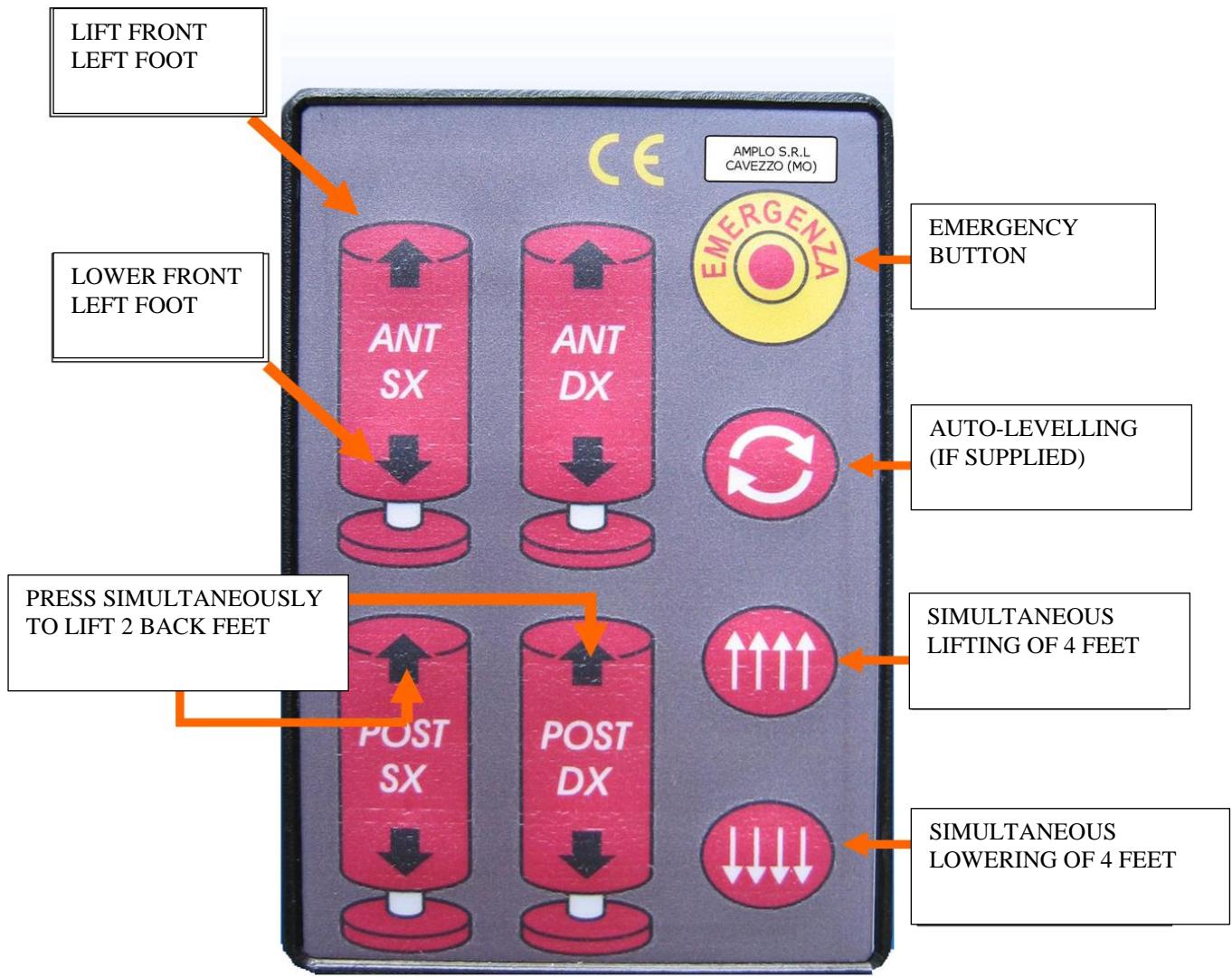
BEFORE DRIVING VEHICLE CARRY OUT A VISUAL CHECK THAT ALL 4 STABILIZERS ARE IN THE RETRACTED POSITION.



Danger!

DO NOT USE THE SYSTEM FOR MAINTENANCE – LYING UNDER THE VEHICLE WITH THE SYSTEM FUNCTIONING IS FORBIDDEN

USING THE REMOTE CONTROL



Commands are transferred by pressing the various operating buttons on the remote control.

The remote control has a pre-set functioning time. Once the time has run out it is necessary to reset the ON-OFF receiver.

For correct use of the system carefully follow these instructions:

- Park the vehicle in a safe place, turn off engine, pull on the handbrake.
- Check that there are no obstacles and lower the 4 feet to the ground.
- Locate the longitudinal level and begin levelling the 2 feet most distant from each other.
- Locate the side level by pressing the 2 lateral cylinder buttons and you will be level stabilized in a few seconds.
- Once you have finished the manoeuvre, turn the control panel to OFF.
- Only use individual control buttons for small corrections, if necessary.

If for some reason the tyres are off the ground, use the 2 buttons simultaneously to lower them and only when all the tyres are resting on the ground should you use the button for automatic levelling of all the cylinders.

Warning

Improper use of these buttons could cause damage to the structure and to persons.

SMV DECLINE ALL RESPONSIBILITY FOR ANY DAMAGE CAUSED BY IMPROPER USE OF THE SYSTEM.

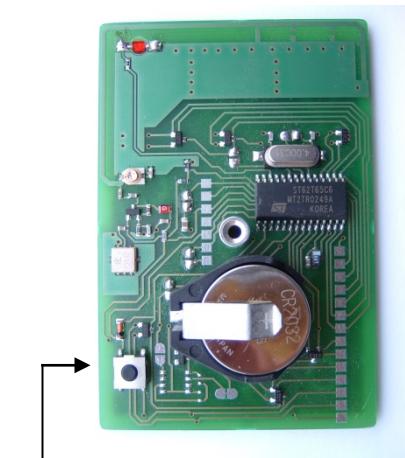
REPLACING THE REMOTE CONTROL BATTERIES

MODELS TXE-B (434,42 MHZ) TXE-G (433,42)

- Remove the screw at the back of the remote control using a philips screwdriver .
- Lift the printed circuit out by gently pushing the screwdriver inside the hole.
- Remove the two batteries.
- Insert 2 new lithium CR 2032 (3 volt) batteries, one at a time, with polarity end (+) upwards.
- Press any button to check if the red LED light flashes.
- If the red transmission LED light does not flash, remove the replacement batteries and reinsert them, then press any button to see if the LED flashes.
- If the LED flashes, close the remote control transmitter following the above steps in reverse order.



A	B	C
D	E	F
G	H	I
L	M	N



Press this button only to change combination

PLEASE NOTE: the remote control with the receiver switched to ON is programmed to function for a pre-set time, at the end of which it switches itself off automatically. To turn it on again it must be reset by pressing the ON/OFF receiver.

ABSOLUTE "MUST NOTS"!



- Use of the machine for unauthorised manoeuvres , improper use and lack of periodical maintenance can determine serious danger for persons as well as compromising proper functioning and the intrinsic safety of the machine.
- The following list of actions, which obviously cannot completely cover the entire potential range of possible "misuse" of the machine, include, however, those actions that can be defined "within reason" the most predictable and are to be considered absolutely prohibited.
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IMPROPER AND PROHIBITED USE

- NEVER turn on the machine while personnel are in the service area of the machine
- NEVER allow the machine to be used by unqualified or untrained personnel or by persons under the age of 18.
- NEVER use the machine for anything other than it has been designed for, avoid use for any other function.
- NEVER use the machine in areas or places that it has not been designed for.
- NEVER undertake the functional/performance characteristics of the machine and/or its components.
- NEVER modify the safety equipment settings and/or tamper with the machine.
- NEVER force the machine beyond operating capacity.
-
-

IMPROPER USE

- NEVER operate if not equipped with suitable individual protective devices.
- NEVER use the machine or carry out maintenance in badly lit and/or difficult conditions of visibility.
- NEVER carry out temporary or emergency repairs that do not follow instructions.
- NEVER use spare parts that are non-original or not recommended by the manufacturer.
- NEVER have maintenance and repairs carried out by personnel that have not been trained by the manufacturer.
- NEVER use the machine if it does not carry out all its functions perfectly.

☞ Warning The manufacturer declines all responsibility for damage caused to persons and/or things caused by improper, inadequate use or negligence towards the system.

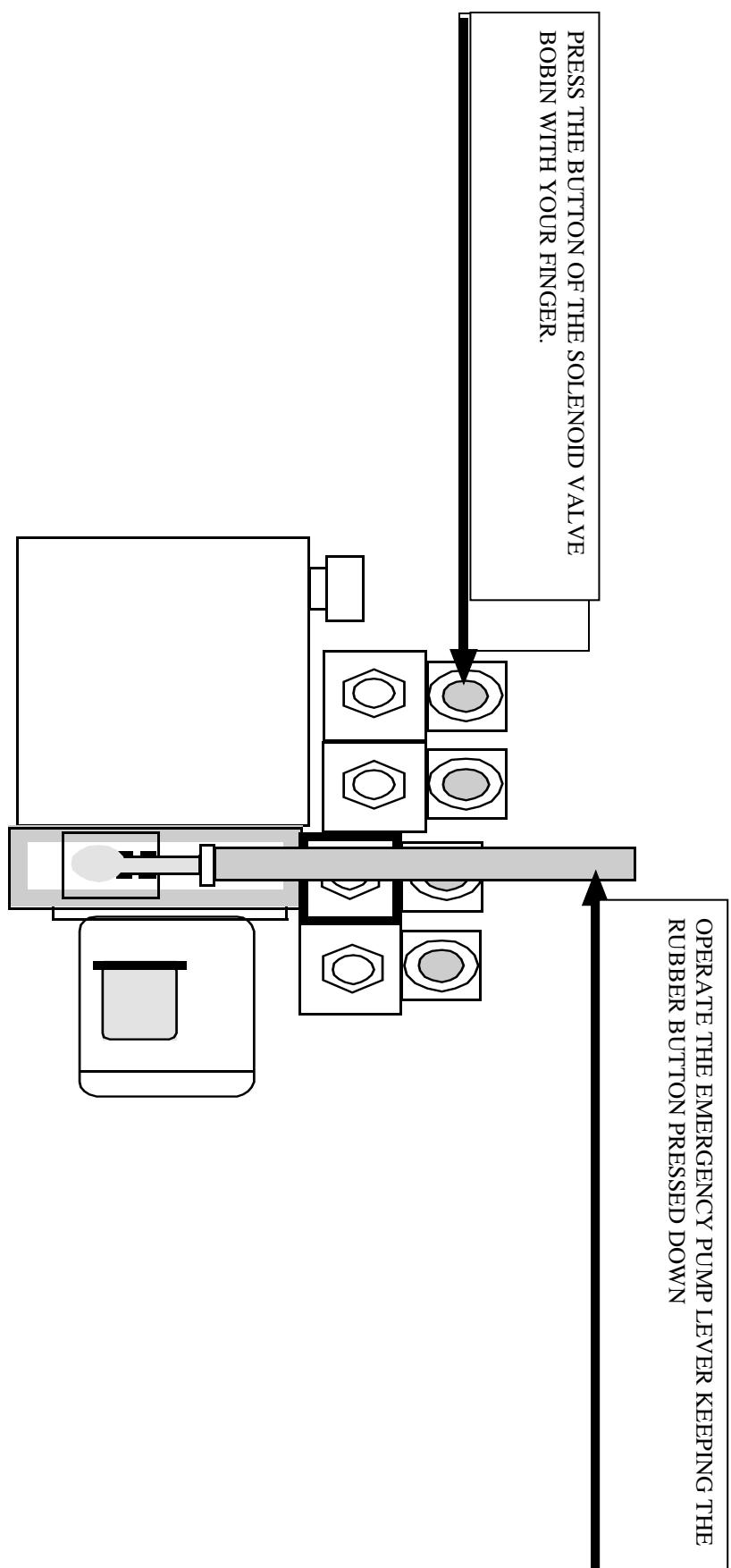
TROUBLESHOOTING

POSSIBLE CAUSE	SOLUTION
Remote control with flat batteries	Replace batteries
Remote control with malfunctioning buttons	Replace remote control
Incorrect pressure on buttons	Press exactly in the centre of the button
The remote control doesn't carry out command	Check if the programmed automatic cut off time is over. Reset the ON-OFF switch
Vehicle battery flat	Recharge battery. Check that there is a tension of 11-12V in the battery terminals 17(+) e 12(-) when the electric motor of the hydraulic power pack starts up .
Power supply connections not working efficiently	Use a suitable section cable:25mm ² by up to 10mt. Length For >10mt length section.35 mm ² Check earthing well
Other radio broadcasting at 433MHz (visible if the RECEPTION led is flashing when the remote control is not in use)	Use manual commands or wait until the disturbance ends.
Broken electrical control panel	Replace electrical board

EMERGENCY MANOEUVRE

THE JACKS CAN BE RETRACTED, IF NECESSARY, USING THE MECHANICAL FORCE OF THE PUMP IN THE POWER PACK COLLECTOR. PUSH THE RUBBER BUTTONS LOCATED ON THE METAL RINGS OF THE SOLENOID VALVES ONE AT A TIME, OPERATING THE PUMP LEVER SIMULTANEOUSLY AND THE JACKS WILL RETRACT TO THE CLOSED POSITION

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GENERAL SAFETY MEASURES

All installation, assembly, maintenance and disassembly operations of the equipment and components used with the equipment must be carried out fully respecting safety measures: there must never be any pressure (zero pressure) inside the hydraulic circuit and no weight of any kind must be placed on the jack springs or the control unit used (zero load).

Warning

Do not tamper with any kind of valve or joint in the system. Do not attempt to modify the anchorage brackets on the jacks or modify the chassis fixing points supporting the load.

ATTENTION REGARDING ELECTRICAL COMPONENTS

Before carrying out any kind of operation or work on the hydraulic power pack, engines and any other kind of electrical device must be disconnected from the electrical current; all electrical connecting and disconnecting must be carried out by competent and specialised personnel. A safety device (fuse, relay) is supplied together with the hydraulic power pack and the electrical system. Before carrying out any work, motors or devices other than electrical ones (pneumatic, hydraulic, mechanical etc.) must always be disconnected from their electrical current and placed in a condition so that they cannot produce energy and, thus movement, even accidentally.

Warning

Use protective safety equipment;

Work in conditions of maximum hygiene;

Work under maximum safety conditions;

Use suitable and clean instruments, equipment and work benches;

During the following operations:

- engine start-up

- every day work

- maintenance

- regulating and air release of the system

- work on and operating of valves and various control elements

- leaking and splattering of hydraulic fluid in the system may occur if work is done on the hydraulic tube fittings

Ensure that there is no pressure in the circuit.

Empty the system completely before changing the hydraulic fluid.



Danger!

Hydraulic fluid can be a health hazard. Contact with the eyes or the skin can cause serious damage.

Scrupulously follow the protective and safety indications imposed by the hydraulic fluid manufacturer shown on the technical and toxicological product diagram.

Hydraulic fluid can be a polluting product. Avoid hydraulic fluid leakages by using basins and use oil-absorbing products in the event of accidental leakages of the hydraulic fluid.

DISPOSAL OF HYDRAULIC FLUID

Hydraulic fluids have special waste disposal rules: disposal of hydraulic fluid into the environment is prohibited by law, thus disposal must adhere to manufacturer indications and laws concerning this subject.

CHOICE OF HYDRAULIC FLUID

Any mineral based hydraulic fluid is suitable for use. When choosing a hydraulic fluid, it is necessary to keep in mind optimum temperature/viscosity when the system is functioning, operating data and the temperature of the environment. Specific synthetic or glycol water oils may be used if authorised by the technical department but their use must be evaluated each time.

WARNING! CHANGE THE OIL AFTER THE FIRST 100 HOURS OF SERVICE OR AFTER THE FIRST 1000 OPERATING CYCLES AND THEN EVERY 3000 HOURS

CLEAN THE PUMP SUCTION FILTER (OR, IF NECESSARY, DISCHARGE FILTER) AT THE SAME TIME AS THE OIL IS CHANGED AND, IF NECESSARY, REPLACE IT WITH A NEW ONE.

WARNING: THE FLUIDS USED MUST CORRESPOND TO THE CONTAMINATION CLASS SPECIFIED IN THE FOLLOWING TABLE

CONTAMINATION – FILTRATION

SYSTEM TYPE	MINIMUM VALUE REQUIRED	RECOMMENDED VALUES		
VALVE TYPE	NOMINAL FILTRATION (micron)	ABSOLUTE FILTRATION GRADE/LEVEL ISO4572 BETAx 75	CONTAMINATION CLASS SECOND ISO4406	NAS1638
System or components operating at HIGH PRESSURE >250 bar High frequency cycles	10	X= 10-12	17/14	8
System with components that are HIGHLY sensitive to contaminants.				
PROPORTIONAL VALVES				
Systems or components operating at MEDIUM PRESSURE < 250 bar	15	X= 12-15	18/14	9

DISPOSAL OF HYDRAULIC POWER PACK

The hydraulic power pack is made up mainly of aluminium alloy, steel alloy and plastic. These materials can be disposed of as with any normal metal or plastic after careful emptying of the hydraulic fluid (to be disposed of according to law) from the various components such as: pumps, tanks, tubes, filters, valves, etc...

TRANSPORT AND STORAGE

The hydraulic power pack and its components must be managed with care and attention. Certain parts, particularly exposed parts that stick out, may be subject to breakages such as the cap of the fill/bleed plug on the tank or the electrical connection box located on alternating current motors.

Another “weak” point is, without a doubt, the tank, which is subject to knocks and bumps, if made of sheet metal, or to breakages if made of plastic.

Particular attention should be paid towards the flange, its valves and its controls, as they are particularly subject to knocks and bumps. When the hydraulic power pack is equipped with blocks, they must be protected from knocks and bumps and dangerous bending, which could cause irreversible damage.

Because the motor is the heaviest part of the hydraulic power pack, it is essential that it be stored in a horizontal position (never vertically with the tank under the motor).

Hydraulic power packs must be stored in a protected (possibly closed) environment, away from humidity and adverse weather conditions, at a temperature of between -15°C a 50°C.

The tank must be emptied of hydraulic fluid.

The hydraulic power pack must be protected from dust and external agents using nylon sacks or similar protective covering.

When the tank is not supplied or not directly assembled on the power pack, it is indispensable to protect the exposed parts, particularly filters and tubes.

Moreover, the exposed parts must be protected from loss of hydraulic fluid from the power pack and from foreign bodies which could compromise good working order and the lifespan of the equipment.

The hydraulic power pack cannot be stored for a period longer than a year, in that, not being able to store it full of oil, the gaskets could dry.

DESCRIPTION, ASSEMBLY AND INSTALLATION

The versatile and modular nature of the SMV hydraulic system, gives rise to a compact, versatile and easy-to-install unit.

An essential condition for ensuring that the hydraulic power pack and the system to which it is applied work well, is that assembly and installation are carried out under conditions of **maximum cleanliness**.

The power pack must be assembled so that it is accessible to commands, inspection, repairs, maintenance or assembly of accessories; however, it is essential that the power pack is assembled in a position that ensures it is protected from accidental knocks and bumps and away from possible physical contact with persons, as the temperature reached could cause burns.

The power pack must be fixed to the equipment or vehicle using “solid” fixing points such as the chassis side-members, loadbearing chassis, bulkheads etc... and not in contact with protective sheet metal or parts that might vibrate, transmit or amplify noise and vibrations.

In order to obtain good performance from your hydraulic power pack all the assembly and start up phases must be carried out correctly.

PROCEDURAL STANDARDS FOR CORRECT INSTALLATION

FILLING TANK

If the power pack is supplied with the tank, fill it with hydraulic oil filtered during racking to a filtration value of 25 micron or lower and check the level using the level rod located on the filling cap or by using the visual level, if present. If the power pack is not equipped with a tank, install the collector in its dedicated space checking that the collector ring on the connection interface is tight enough; then fill as indicated above.

ELECTRICAL CONNECTION

Read the hydraulic diagram and the electrical diagram, if provided (for further information please contact our technical department);

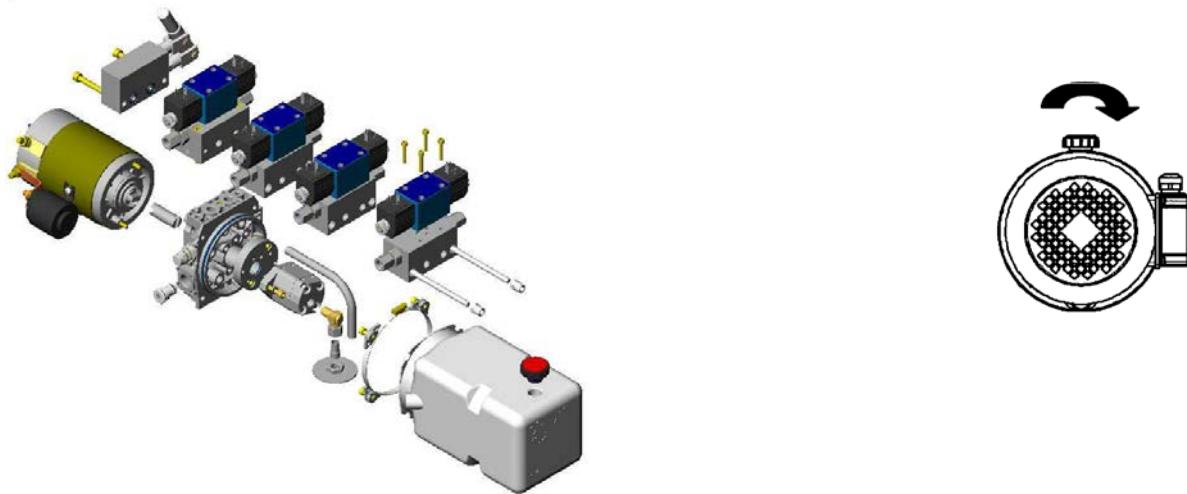
Check that the dimensions of the electrical system are suitable for the electrical input of the various uses (motor-valves-electrical panel-relay-etc.).

When first starting up the motor, check that the pump rotates in the correct direction. Check that the motor voltage and the electrical components respond to conformity requirements.

ROTATION DIRECTION

In the case of direct current motors, the rotation direction is established by the manufacturer during the assembly phase.

In our case, the rotation direction needs to be verified.



CONNECTING UP WORKING PARTS

Avoid, at all times, the removal of plastic caps that act as protection for the outlets until the electrical current cables are connected.

Connect the cables making sure that the entire operation is carried out in conditions of complete cleanliness: we remind you that starting up fittings with dents on the male thread causes chipping in the seat and is the main cause of **solenoid valve blockages** or **leakages of the check valves**.

Moreover, we advise you to carefully check the cleanliness of all tubes (both rigid and flexible) and of the various working parts (jacks, hydraulic motors).

Warning

DURING INSTALLATION, CLEANLINESS IS THE MAIN ASSURANCE FOR THE GOOD WORKING ORDER OF YOUR HYDRAULIC SYSTEM.

SYSTEM START UP

Once the system has been started up, check the exact functioning of all the command switches and the calibration of the adjustable valves, using the pressure gauge outlet. If not specified when ordered, the pressure gauge plug should be inserted to complete the system. In this case, it should be inserted taking the signal next to the valve that is being checked.

If it is necessary to regulate the pressure relief valve, be extremely careful not to screw the register beyond the calibration limit of the spring.

SCREWING THE PRESSURE RELIEF VALVE TO THE LIMIT SWITCH WILL CAUSE SERIOUS DAMAGE TO ALL THE SYSTEM COMPONENTS (pump breakage and risk of tubes and collectors bursting);

We remind you that safety regulations in force specify that the pressure relief valve of the power pack must be lead sealed to avoid tampering with the pre-established calibration. We invite you, therefore, to carry out lead sealing of the pressure relief valve if the power pack is not delivered with the seal already in place

☞ Warning

The Guarantee does not apply to products that have been supplied with the pressure relief valve sealed and sent back with the seal removed

During the filling phase, ensure that the oil level in the tank is not affected by blow by (if necessary, top up the level).

☞ Warning

Check that the tank size is correct.

When the system is first switched on, the air contained in the circuit must be bled to avoid the formation of foam in the tank and any unwanted and uncontrolled movement of the working parts;

After carrying out testing a few times, check the level and the state of the oil in the tank (check that there is no foam present) and the tightness of various fittings (check for the presence of any blow by and eliminate).

Actuators must be connected with tubes that have a diameter that corresponds to or is larger than the connection inlet of the power pack. As a rule, adhere to the following fluid speed parameters inside the tubes:

delivery: 4=6 m/s , return: 1.5=3 m/s . Particularly with hydraulic power packs, which have small displacement pumps (05 power unit), it is necessary, in the start up phase, to opt for priming of the pump by momentarily loosening the check cap and, if necessary, the pressure relief valve.

The temperature that tanks and motors can reach (especially in direct current), in many cases, go beyond the “Burns threshold”, as defined by the UNI EN 563 standard; because “the reduction of the surfaces temperature” (UNI EN 563, appendix “C”) cannot be pondered as a technical solution, the user must evaluate protective measures (screens or barriers), warning signals and individual protective measures (gloves).

CONTROL AND MAINTENANCE

Safety and the good working order of the system also depend on correct and scheduled maintenance .

☞ Warning

After a brief period of running in of the system, check that the screws, nuts, fittings and tubes are correctly tightened: vibrations can cause dangerous loosening of the above mentioned components.

- Check the correct functioning of the jacks and the chassis brackets.
- Check that there are no oil leakages in the hydraulic system
- Check that the micro-mechanics and position sensors are functioning by checking the LEDS on the receiver.
- Check that the buzzer on the black box is functioning by turning the vehicle ignition key to give +12 to the control panel
- Check that the emergency hand pump is functioning

MAINTENANCE AND DIAGNOSIS OF MAIN TROUBLESHOOTERS

- a) Replace oil after the first 100 Hours of service or after the first 1000 cycles and then every 3000 Hours. For particular and heavy use (automatic and continuous service systems), the oil must be replaced more frequently.
- b) Clean the pump suction filter (or, if necessary, the discharge filter) at the same time as the oil is replaced and, if necessary, replace with a new filter.
- c) The guarantee of the Bosch Rexroth – Oil Sistem product will expire if manufacturer specifications are not followed.

☞ Warning

ALL OPERATIONS DESCRIBED IN THIS MANUAL MUST BE CARRIED OUT BY PROPERLY TRAINED AND SPECIALISED PERSONNEL. (CONTACT THE SUPPLIER IF NECESSARY).

BREAKDOWN	PROBABLE CAUSES	POSSIBLE SOLUTIONS
<i>Pump does not supply the required flow</i>	<ul style="list-style-type: none"> - blocked filter - air intake in the suction tube -Collector leakage caused by fusion defect - Breakage of coupling for pump-motor connection - Damage to pump-collector connection gasket - Worn out pump 	<ul style="list-style-type: none"> - disassemble and clean (or replace) - Check closure grip -Replace collector - Disassemble and replace - Disassemble collector pump and replace gasket - Replace
<i>Pump does not supply the right pressure</i>	<ul style="list-style-type: none"> - Calibration error on pressure relief valve (calibration too low) 	<ul style="list-style-type: none"> - Re-set required calibration
<i>Pump does supply the right pressure</i>	<ul style="list-style-type: none"> - Worn out pump - Insufficient motor power - Excessive loss of charge in circuit 	<ul style="list-style-type: none"> - Replace - Assemble more powerful motor - Check for possible bottlenecks or excessive oil viscosity
<i>Pump does not supply the right pressure</i>	<ul style="list-style-type: none"> - Leakage from the valves 	<ul style="list-style-type: none"> - Check that the valves are tightened
<i>Valve blockages or leakages</i>	<ul style="list-style-type: none"> - <i>Leakage - check valve</i> - Electric seat valve leakage - Electric valve excitation faulty - Blockage of slide valve caused by Dirt in the circuit 	<ul style="list-style-type: none"> - Disassemble and blow (replace if necessary) - Disassemble and blow (replace if necessary) - Check that the minimum required voltage is reaching the bobin Minimum required voltage (90% of normal voltage) - Disassemble and blow (replace if necessary) - Try to add filtering elements to the circuit, to obtain better filtering (25 micron)

SYSTEM ASSEMBLY

Nr. 4 hydraulic jacks

Nr. 1 hydraulic power pack

Nr. 1 electric control panel with manual buttons and circuit

Nr. 1 remote control

Nr. 1 black control box

Nr. 1 electric cable with connectors and power supply

Nr. 4 mechanical limit switches

Nr. 4 cabling sets for connecting limit switch and receiver

Nr. 1 cabling set for connecting electric control panel and hydraulic power pack

Nr. 1 hydraulic tube kit R 7 3/16

Nr. 1 tube fittings kit

accessories not included in standard equipment:

1 section 25 mm² cable for red battery

1 section 25 mm² cable for black battery

6 Ø 8 x 25 crimp terminals

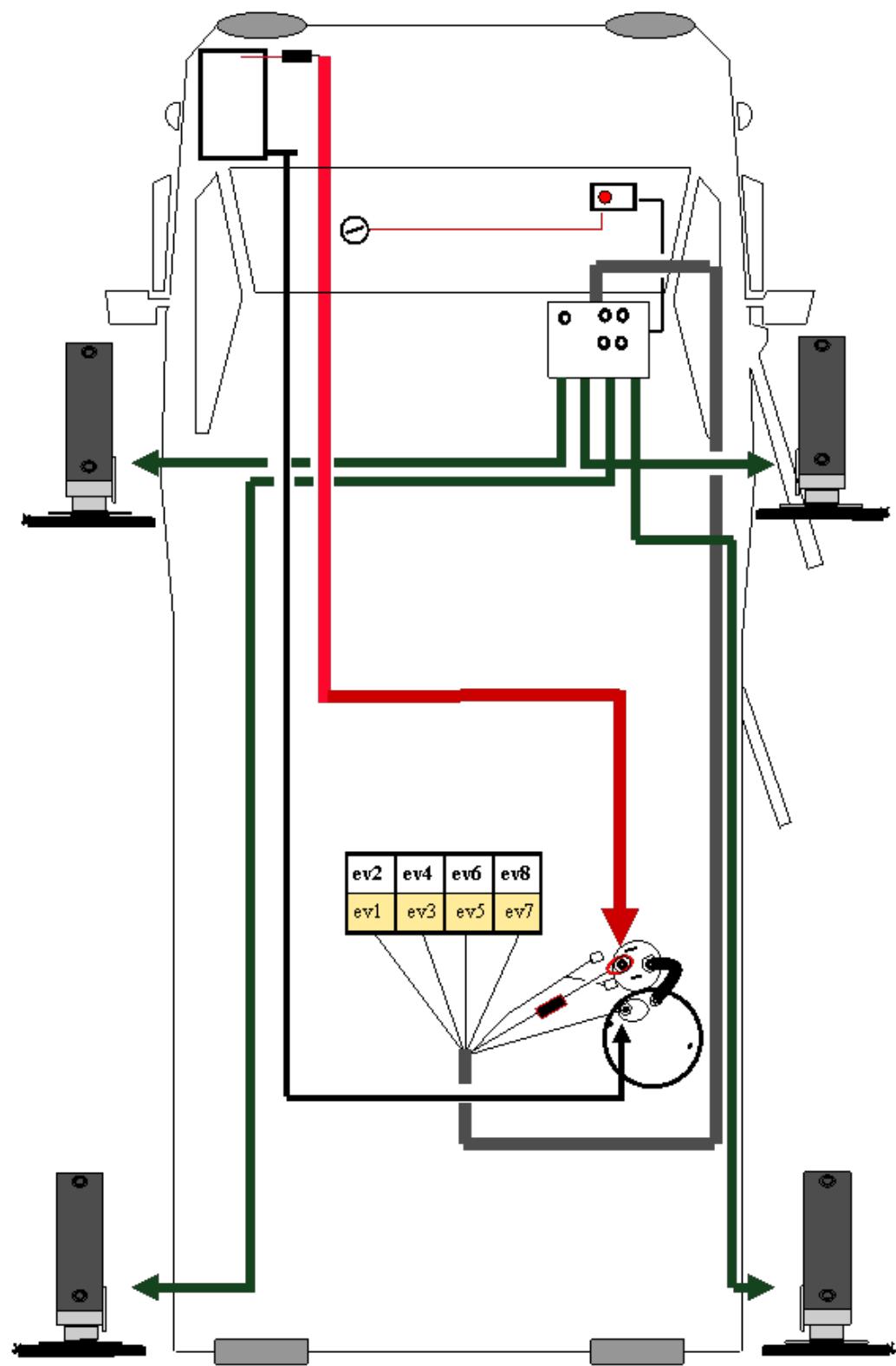
1 fuse holder with 100A fuse

Inspect the vehicle onto which the system is to be assembled identifying the anchoring points for the following parts :
jack brackets, hydraulic power pack, control panel, black box.

Warning

Check the positioning of the various hydraulic tubes and electric cables and avoid positioning them too close to the exhaust and gas pipes.

SIMPLIFIED ELECTRIC DIAGRAM



It is often necessary to personalise the type of anchoring brackets used on the chassis because of different vehicle disposition.

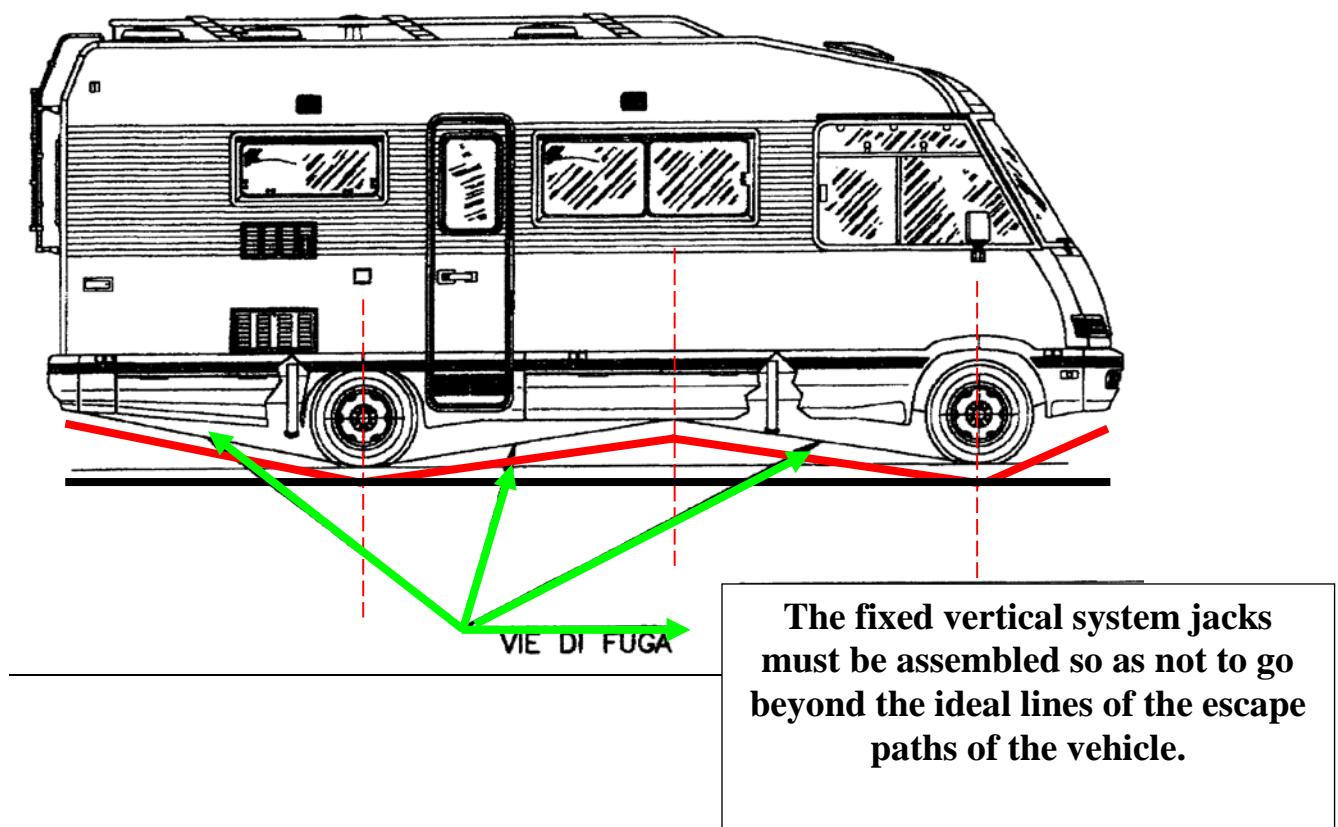
Brackets must always be anchored to the supporting chassis in a structural way.

In the event of difficulty or doubt in deciding on the correct position for brackets please consult our technical department.

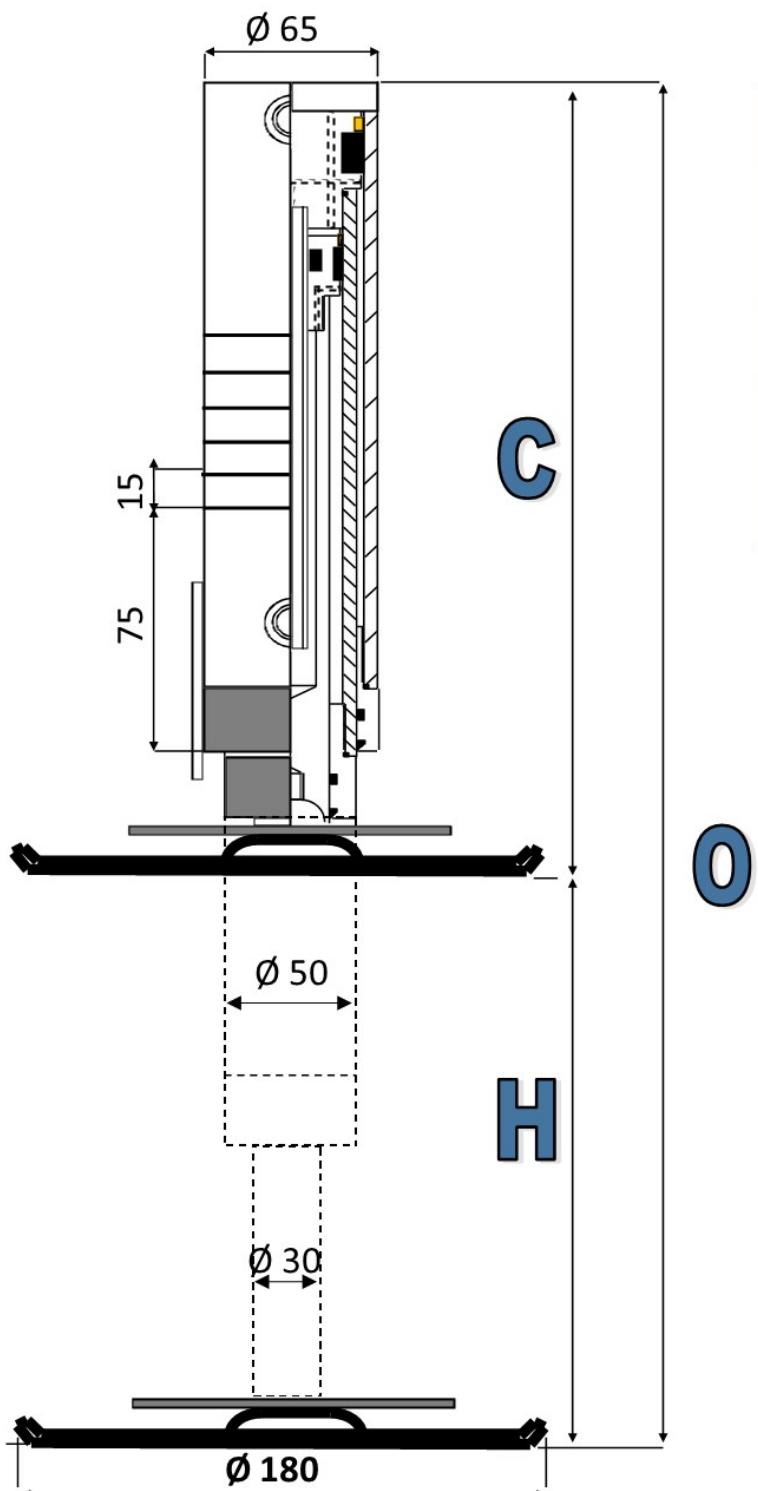
Once the anchorage points have been identified, the space occupied by the jack in its horizontal position when the vehicle is in motion must be considered.

Always follow manufacturer instructions when boring holes or carrying out welding on the chassis for anchoring the various brackets.

DIAGRAM OF ESCAPE PATHS



DOUBLE EFFECT TELESCOPIC JACKS



C	O	H
280	545	265
300	605	305
335	710	375
385	860	475
400	905	505

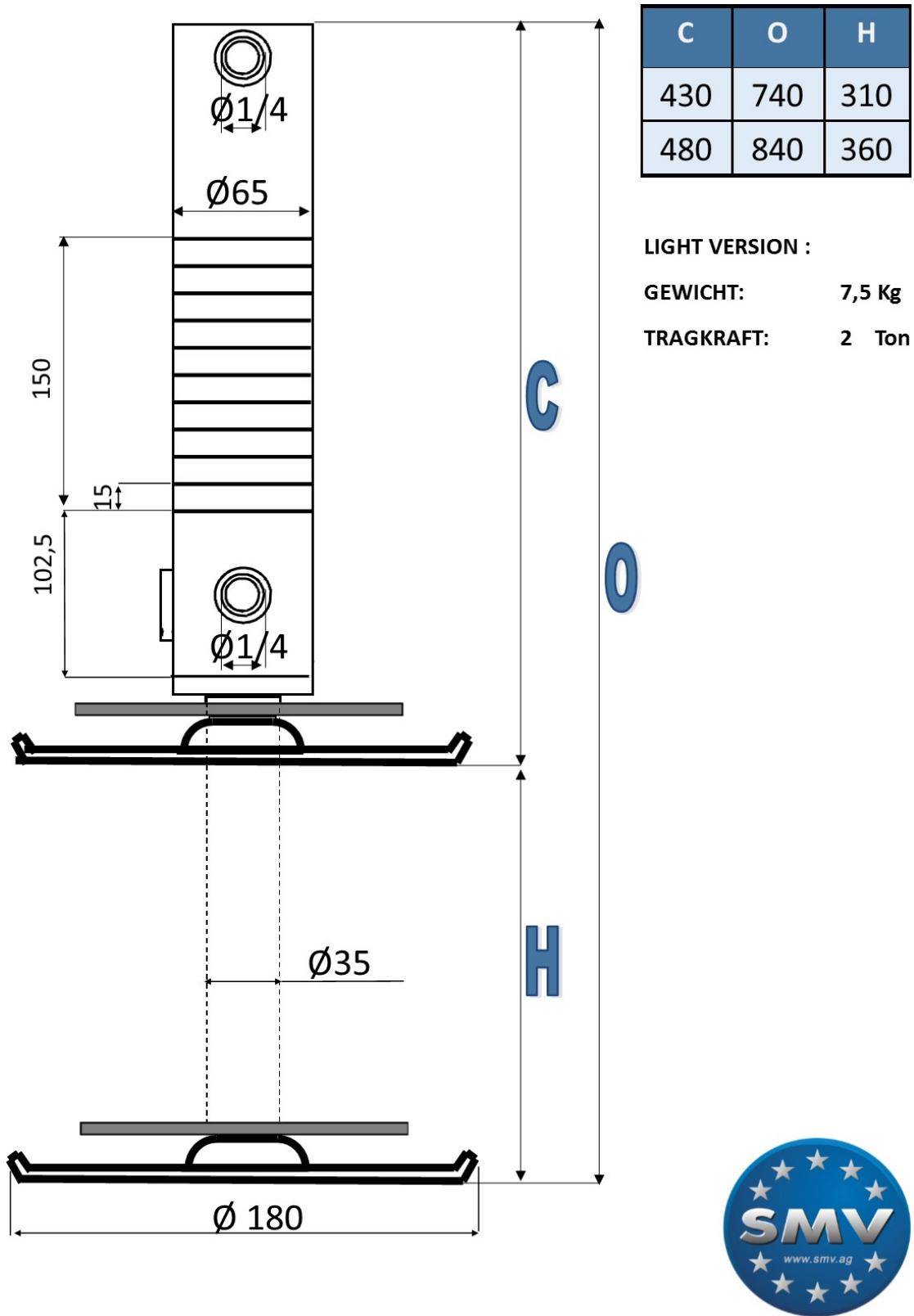
LIGHT VERSION :

GEWICHT: 7,5 Kg

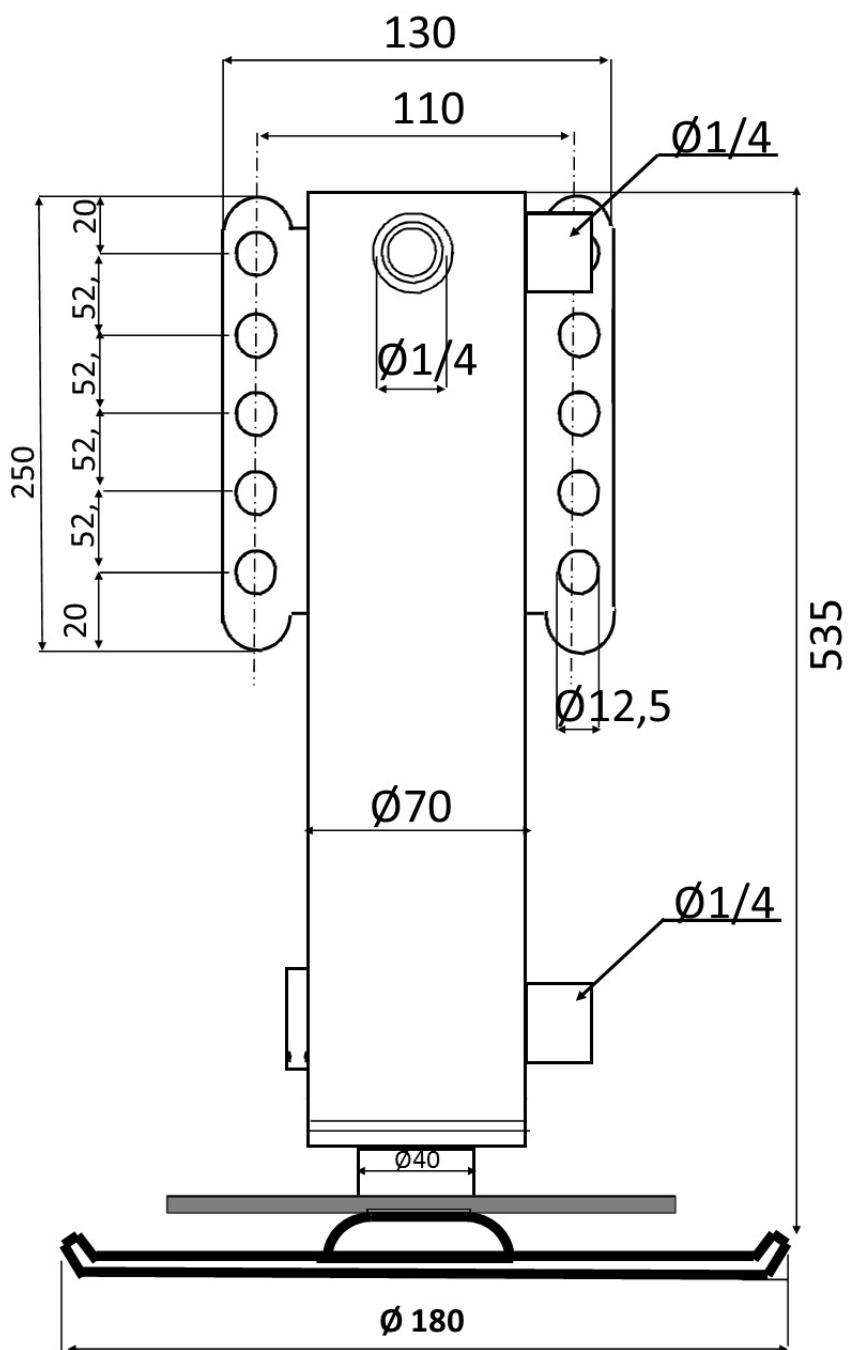
TRAGKRAFT: 2 Ton



DOUBLE EFFECT EASYHUB



HEAVY JACKS



HEAVY VERSION : 60-40-535 - HUB 400

GEWICHT: 12,5 Kg

TRAGKRAFT: 4,5 Tonnen



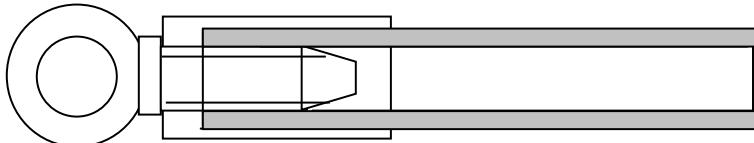
HYDRAULIC TUBE FITTING

It is important to be equipped with a suitable tool for cutting the tube so that the cut is carried out properly for the tube to be inserted into the recoverable bushing.

tubo R 7 1/4 - 3/16

Both the bushing and the insert must be greased or oiled

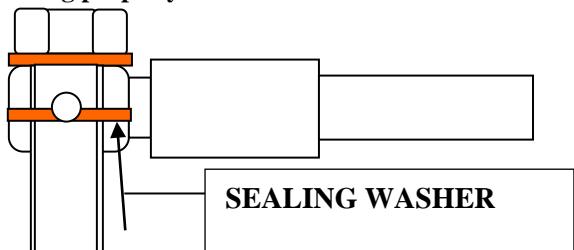
Use only original SMV tube fittings



Insert the bushing into the tube and screw tighten in an anticlockwise direction until reaching its mechanical stop. Screw the tube fitting in a clockwise direction inside the bushing until you reach the end of thread without interruption. If the need to modify the direction arises the tube fitting can be unscrewed to a maximum of 1 full turn.

Warning

It is absolutely necessary for this procedure to be carried out according to instructions in order to seal the tube fitting properly.



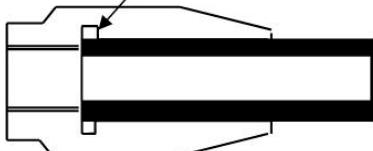
Tighten all the tube fittings with the corresponding washers on the jacks.

You are advised to leave the length of the tubes on the power pack side, which helps make maintenance tasks easier.

Warning

Avoid narrow bends and traction on the hydraulic tube during folding of jacks.

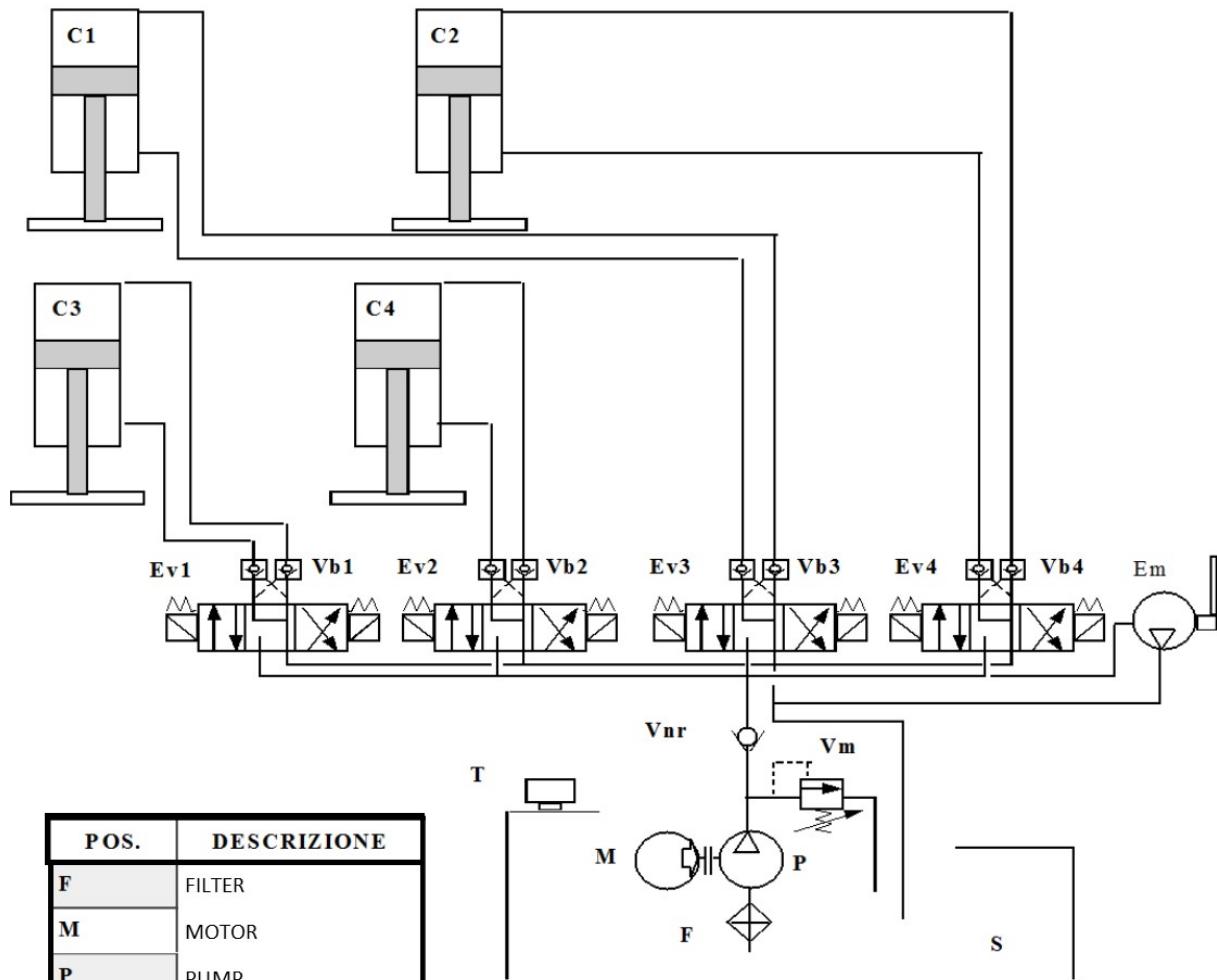
THE TUBE MUST REACH ITS MECHANICAL STOP



HYDRAULIC TUBE FITTING

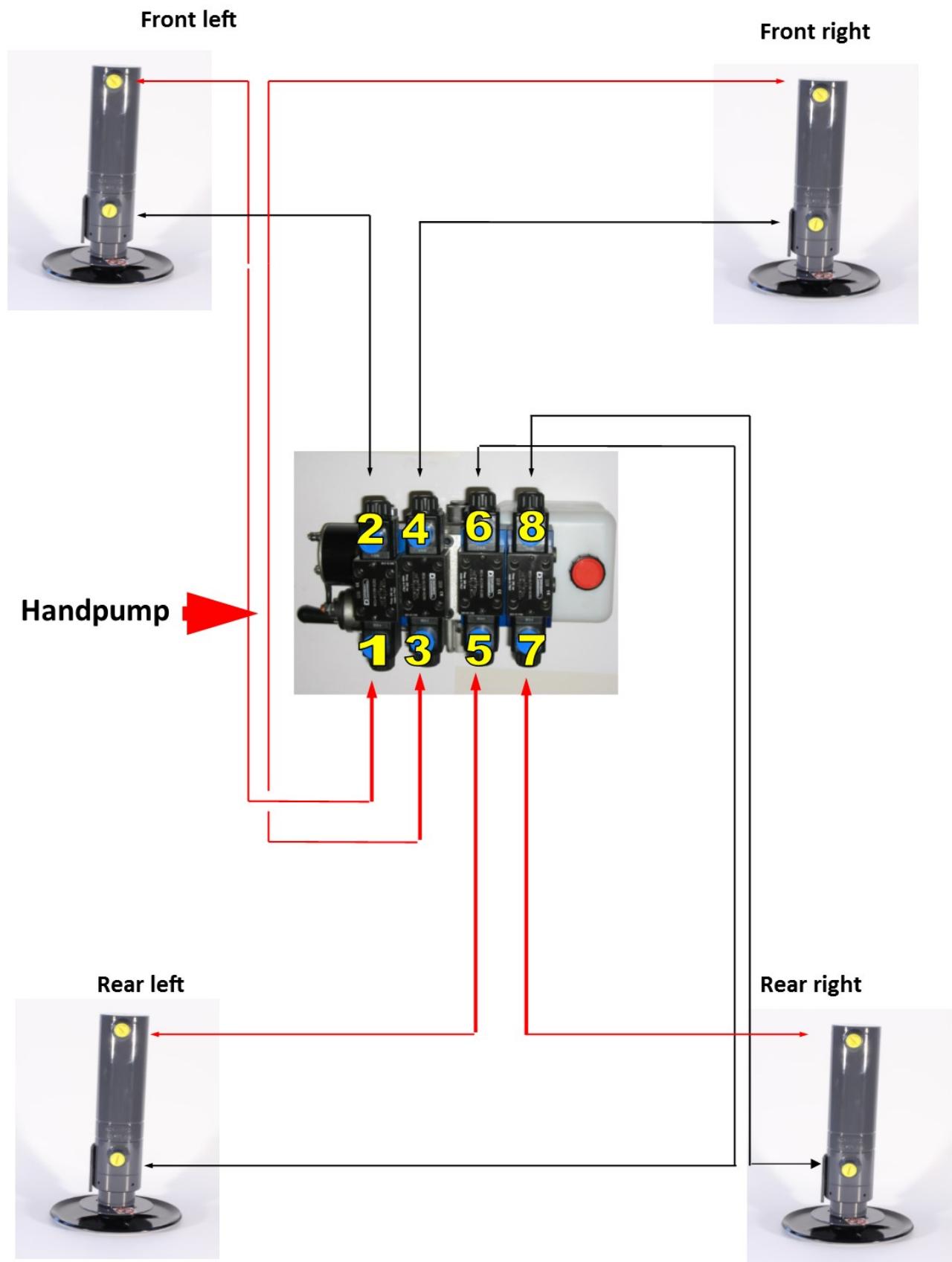


HYDRAULIC SCHEME

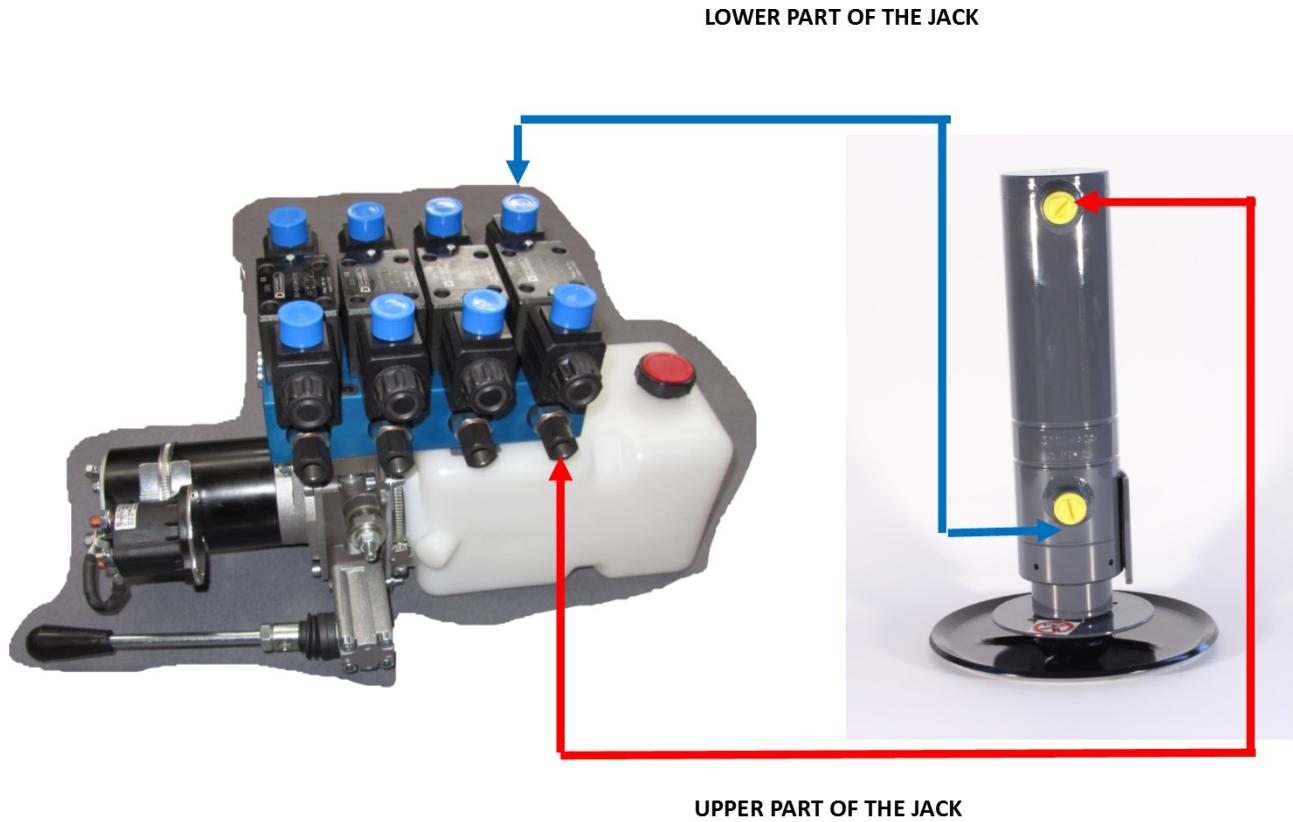


POS.	DESCRIZIONE
F	FILTER
M	MOTOR
P	PUMP
Vm	RELIEF VALVE
Vnr	NON RETURN VALVE
Ev1-2-3-4	SOLENOID VALVE
Vb1-2-3-4	CHECK VALVE
Em	EMERGENCY PUMP
C1-2-3-4	HYDRAULIC JACKS
S	TANK
T	VENT CAP

CONNECTING HYDRAULIC TUBES



CONNECTING HYDRAULIC TUBES



When assembling tubes be careful not to confuse the various connections.

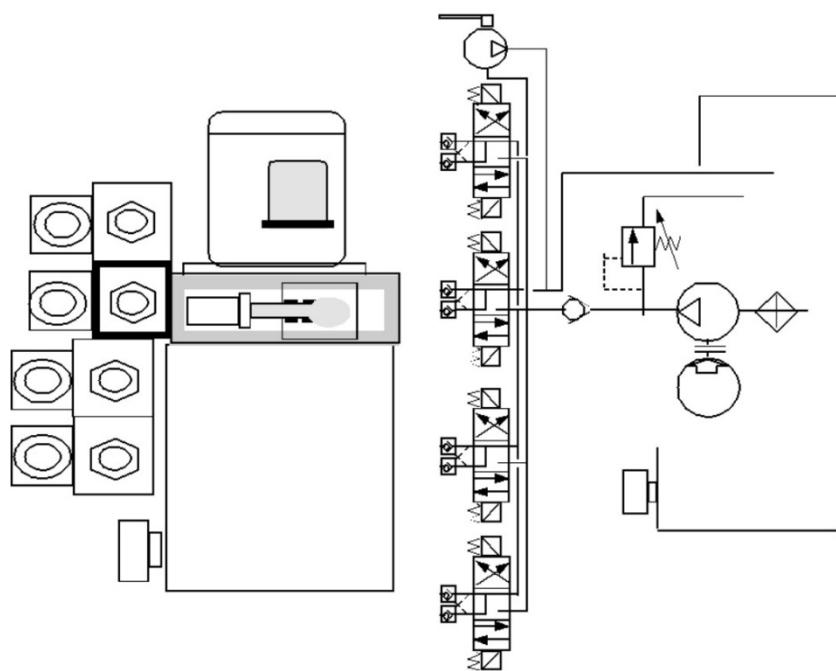
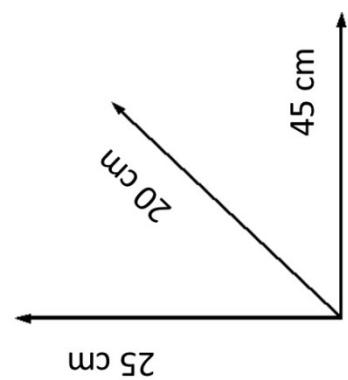
A double effect jack corresponds to each block.

All the tubes that go on the lower part of the jacks must be connected on the operating side of the emergency pump.

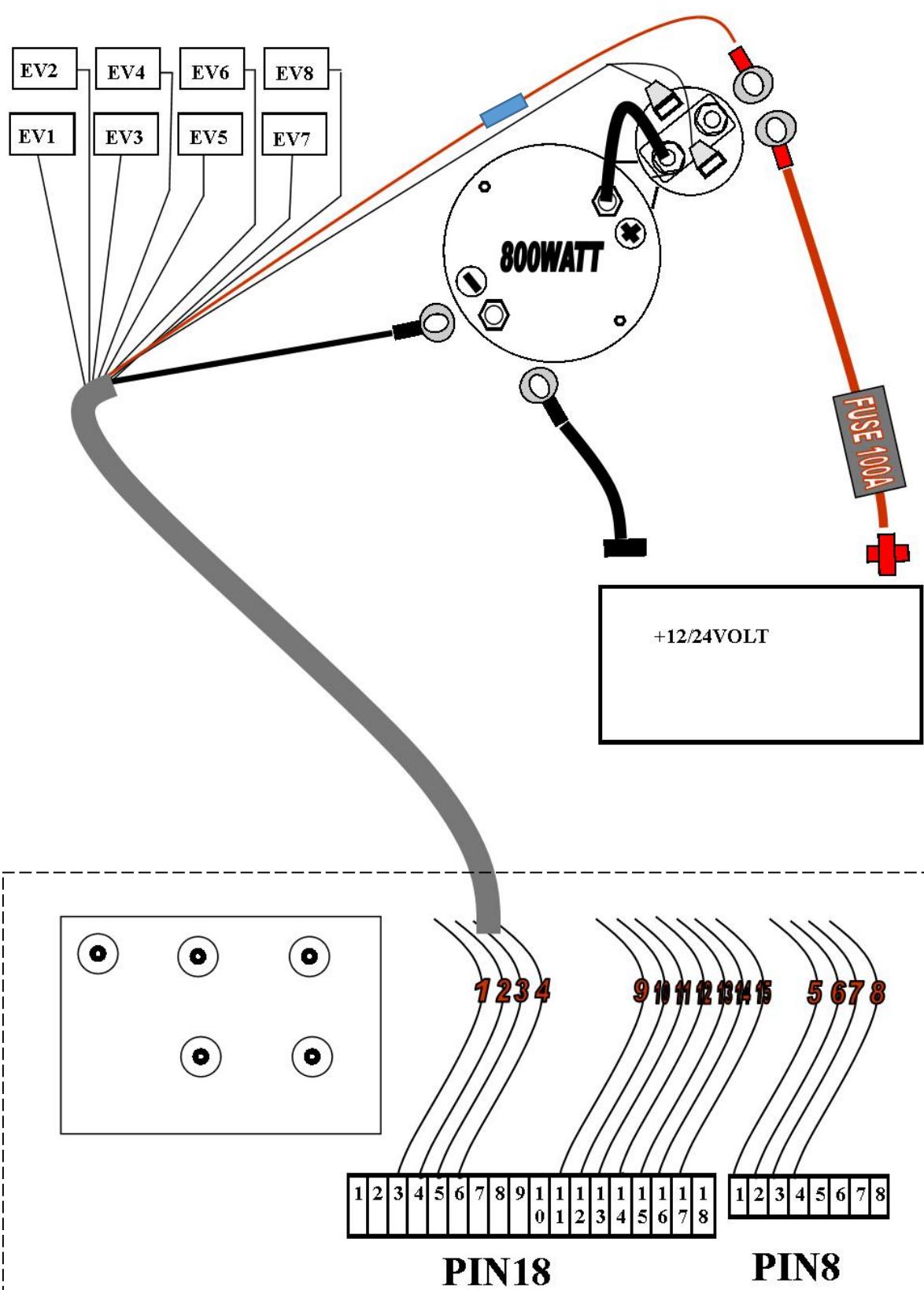
All the tubes that go on the upper part of the jacks must be connected on the opposite side.

You are advised to number the tubes corresponding to the jacks (example 1-2/3-4/5-6/7-8).

DIMENSIONS

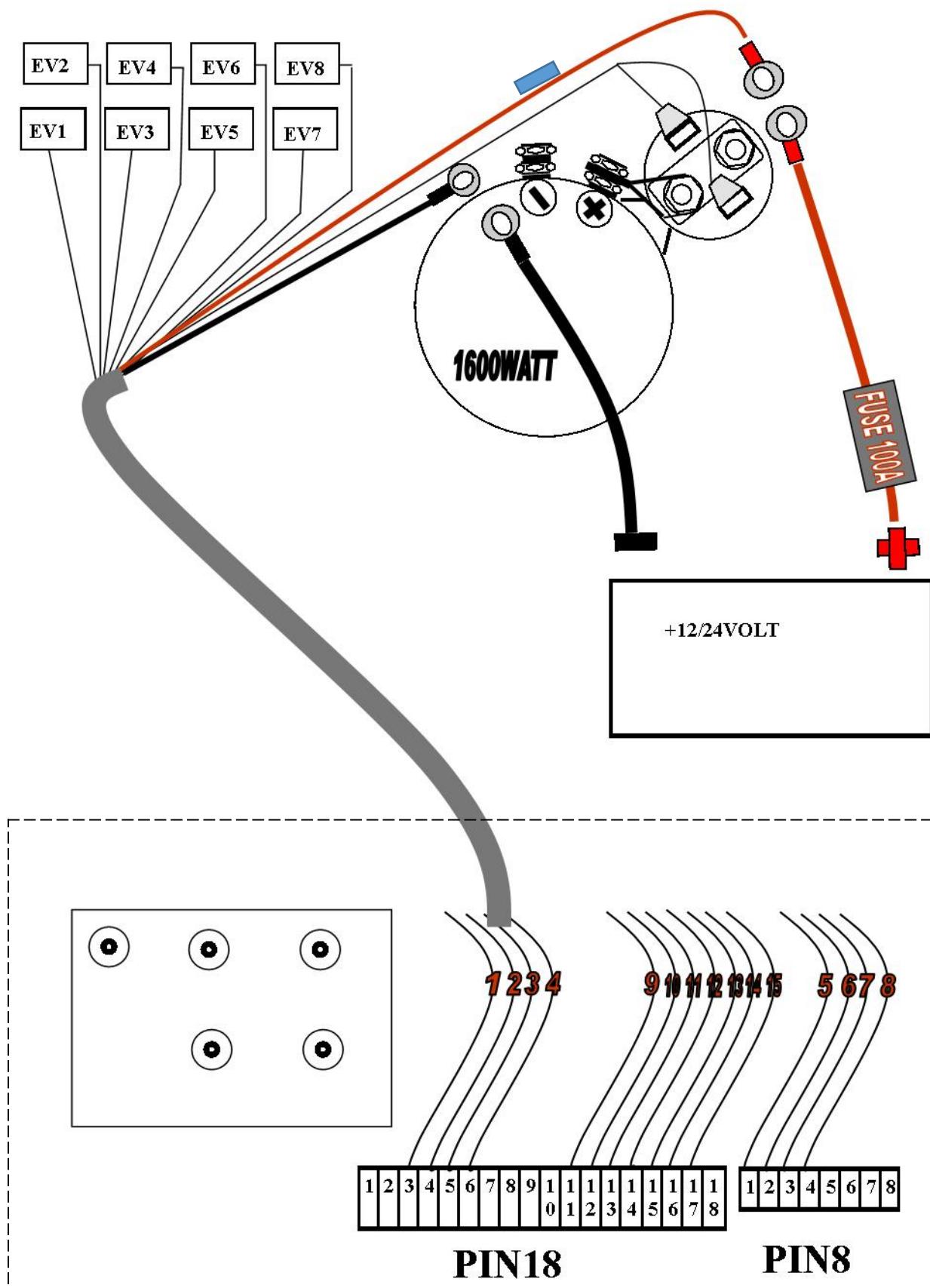


ELECTRIC CABLING ON HYDRAULIC POWER PACK WITH 800 WATT-12V MOTOR



IMPORTANT: POWER CABLE FROM BATTERY SECTION 25 mm²

ELECTRIC CABLING ON HYDRAULIC POWER PACK WITH 1600 WATT-12V MOTOR



IMPORTANT: POWER CABLE FROM BATTERY SECTION 25 mm²

RECEIVER MODEL RXVESNS-05-B/G



This unit is designed to be used for the control of solenoid valves which operate the hydraulic drives installed on motor vehicles (market place vans, motorhomes, auto market, trailer motors with closure devices for awnings etc) or on applications that use battery power.

This receiver is used with **MOD. TXB/TXG** remote controls.

The unit is equipped with a main power switch. If the unit is installed in a place that is not easily accessible, a section 2x2.5 mm² cable, to which a supplementary switch to turn on/off the device at a distance, can be connected to the J3 connector.

On request, it is possible to carry out customized pad printing of the controls on the unit.

The unit is covered by a 24-month guarantee from its manufacturing date, if installed and used according to the instructions below.

INSTALLATION PROCEDURE

- 1) Remove the nylon screws from the unit cover to which the control circuit is fixed. Fix the base of the waterproof holder, using screws, inside the vehicle according to the reference positions. Lay out the connection cable from the «solenoid valve block» to the fixing point of the waterproof case. Insert the cable into the cable gland supplied for approximately 20 cm, then tighten the cable gland.
- 2) Connect the numbered cables to the J1 terminal board.

Connections to J1 (18 pins) terminal board

TERMINAL NUMBER	Cable no.	Connections
1		
2		
3	1	EV 1
4	2	EV 2
5	3	EV 3
6	4	EV 4
7		
8		
9		

Connections to J2 (8 pins) terminal board

Terminal no.	Cable no.	Connections	Terminal no.	Cable no.	Connections
10			1	5	EV 5
11	9	PUMP	2	6	EV 6
12	10	EARTH (-)	3	7	EV 7
13	11	EARTH (-)	4	8	EV 8
14	12	COMMON +	5		
15	13	COMMON +	6		
16	14	BATTERY +12/24 V	7		
17	15	BATTERY +12/24 V	8		
18					

EV1, EV2 CONTROL THE FRONT LEFT JACK.

EV3, EV4 CONTROL THE FRONT RIGHT JACK.

EV5, EV6 CONTROL THE BACK LEFT JACK.

EV7, EV8 CONTROL THE BACK RIGHT JACK.

3) CONNECT THE NUMBER-CODED CABLES TO THE J2 TERMINAL BOARD

There is a small bridge on the J3 terminal board. If necessary, connect a key switch or remote switch, eliminate the bridge and connect the two 2.5 mm² section wires.

4) Connect the solenoid valve control and power supply +12/24V cables as follows:

- Connect the number-coded caps to the corresponding solenoid valves.
- Connect the faston terminals labelled «POMPA» (PUMP) to the remote control switch of the pump.
- Connect the cable with a yellow grommet (Ø 8mm) labelled «MASSA» (EARTH) to the earth.
- Connect the cable with a yellow grommet (Ø 8 mm) labelled «+12/24V» to the power supply BATTERIA +12/24V (BATTERY +12/24V).

5) Insert two nylon screws in the lower holes of the control unit cover and screw tighten them in the holes at the base of the waterproof case so as to be able to use them as hinges. At this point, insert the J1 female connector into the corresponding male connector located on the printed circuit.

6) **Program the remote control combination and the operating time as follows :**

- Turn on the unit by means of the power switch (ON).
- Press the black programming button located on the back of the printed circuit, then release it.
- Press the button corresponding to the operating time limit that you wish to set once (see table below)
- Wait until the “RICEZIONE” (“RECEIVER”) LED turns itself off and then turns itself on again, then press the same button again.
- Turn off the device and then turn on again to check that programming has been carried out correctly.

If programming has not been carried out correctly, repeat procedure from point 6.

It is also possible to set a time lapse in which the device remains operative from the time it is switched on or from the last remote control button pressed, as indicated in the table below.

Button	A	B	D	N	E	G	I	H	L	C-F-M
Time (minutes)	1	10	15	20	30	45	60	120	180	No time limit

EXAMPLE A

If button **B** is pressed during the programming phase, the unit will remain operative for 10 minutes from when it is switched on or from the last time the button was pressed.

EXAMPLE B

If button **C** is pressed during the programming phase, the control unit will remain continuously operative.

Once the pre-programmed time has elapsed, it will no longer be possible to operate any of the solenoid valves by means of the remote control, they can only be operated using the switches on the control panel. It is strongly recommended that you set an operating time limit to avoid accidental or unintentional operation of the remote control which could result in damage to people or objects. When the «ricezione» (“reception”) led on the unit is off, it cannot be operated by remote control. To re-set, lower the main switch to the OFF position and after a few seconds turn the switch back to the ON position.

Each time a remote control button or a manual switch on the control panel is pressed, the corresponding solenoid valve as well as the pump will be enabled.

- 7) Close the waterproof case using the two remaining screws.
- 8) Install the inductive and mechanical sensors onto the hydraulic jacks.

- Connect the inductive and mechanical sensors with the connection cables supplied and insert the connectors into the sockets located in the lower part of the power pack following the sequence.

OPERATION OF MECHANICAL SWITCHES

When the contact of one or more mechanical sensors (MEC. EV 1-2 – MEC. .EV 3-4 – MEC. EV 5-6 – MEC. EV 7-8) is closed, the corresponding red light on the control unit will light up. Operation can be carried out using the remote control only if the contact of the corresponding limit switch is closed (red LED on). N.B.: it is always possible to operate manually whether the red LED is on or off.

OPERATION WITH "BLACK BOX"

Mechanical sensors: the red LED of the black box and the corresponding buzzer are only activated when the ignition key of the vehicle is turned and if the contact of one or more mechanical limit switches is closed. The buzzer will stop and the red LED will turn itself off only if the vehicle ignition key is removed (the positive pole of the black box is powered by this key), or if the contacts are open (all red LEDs off). The red LED and buzzer on the black box can be activated by the mechanical limit switches even if the control unit switch is in the OFF position.

After use, always switch the control unit switch to the OFF position.

OPERATION OF SECURITY RELE'

Every time the ignition key is turned, the security relè installed on board cut the alimentation to the control unit (when the ignition is activated and the motor of the vehicle runs all the controls are switched OFF, we can't use our level system).

- 9) After use, always switch the control unit switch to the OFF position.

OPERATING THE REMOTE CONTROL

The remote control has **twelve** keys. The following procedure is used to control the **8 solenoid valves**, individually, in pairs etc.

Remote control Button	Operation
A	EV 1
B	EV 3
D	EV 2
E	EV 4
G	EV 5
H	EV 7
I	EV 1 + EV 3 + EV 5 + EV 7
L	EV 6
M	EV 8
N	EV 2 + EV 4 + EV 6 + EV 8
F	Autolevel Button

Remote control Button	Operation
A + B	EV 1 + EV 3
D + E	EV 2 + EV 4
G + H	EV 5 + EV 7
L + M	EV 6 + EV 8
A + G	EV 1 + EV 5
B + H	EV 3 + EV 7
D + L	EV 2 + EV 6
E + M	EV 4 + EV 8
C	Emergency- Remote control suspends all operations and control unit will not work with remote control

With this software version, by pressing remote control buttons A,B,G,H,I the corresponding exits will be activated provided that the contacts of the mechanical limit switches are closed.

Exit	Mechanical limit switches	Operation
EV1	MEC. EV1	EV1 activated only if MECH. EV1 contact is closed (red LED rouge ON).
EV3	MEC. EV3	EV3 activated only if MECH. EV3 contact is closed (red LED rouge ON).
EV5	MEC. EV5	EV5 activated only if MECH. EV5 contact is closed (red LED rouge ON).
EV7	MEC. EV7	EV7 activated only if MECH. EV7 contact is closed (red LED rouge ON).
POMPE	MEC. EV1 – MEC.EV3 MEC. EV5 – MEC. EV7	Is activated only if at least one of the EV exits is enabled.

CONNECTING UP BLACK BOX

Connect the 1 mm² red wire to the ignition key (+15 V) by means of a 500 mA fuse.

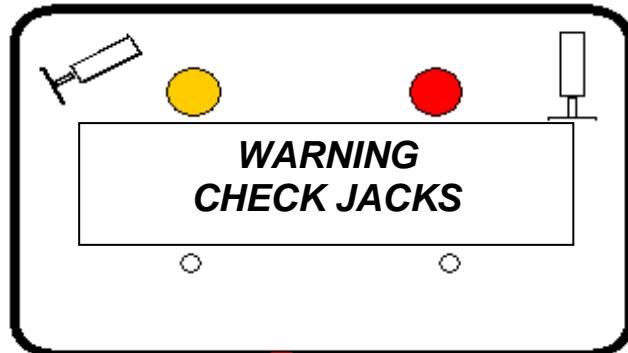
In this way, if any LED (EV 1-EV 2 etc.) is activated by a limit switch (connected to the RXVESNS-05 control unit), the corresponding LED and buzzer will be activated.

The red LED lights up and the buzzer sounds when the ignition key is turned with one or more limit switches having their contact closed and connected to earth.

N.B.: Carry out periodic check up on the good working order of the buzzer and corresponding LEDs



DASHBOARD CONTROLLER – SMALL BLACK BOX



+12-VOLT red under key wire

BLACK WIRE WITH TELEPHONE JACK TO RECEIVER

CONTROLLER OPERATION WITH MECHANICAL LIMIT SWITCHES

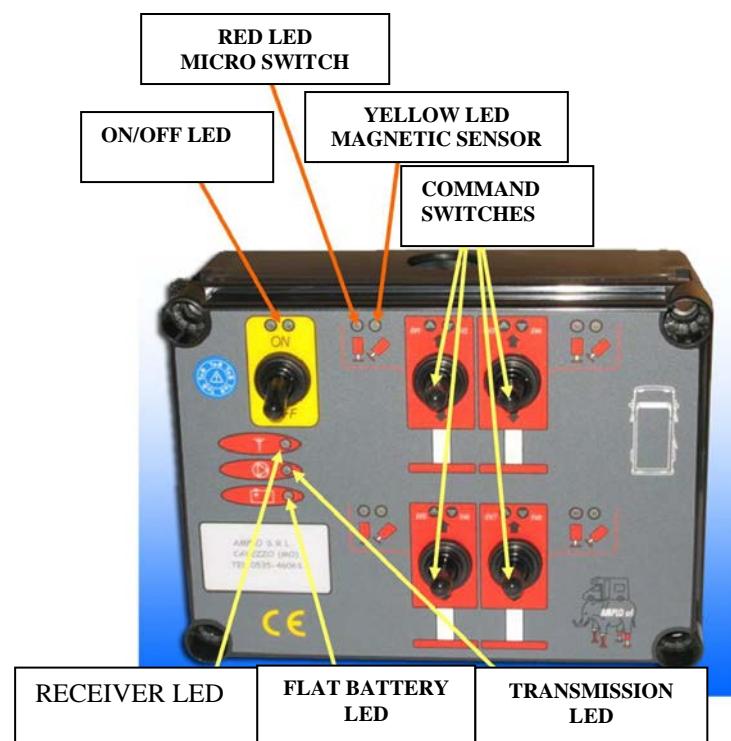
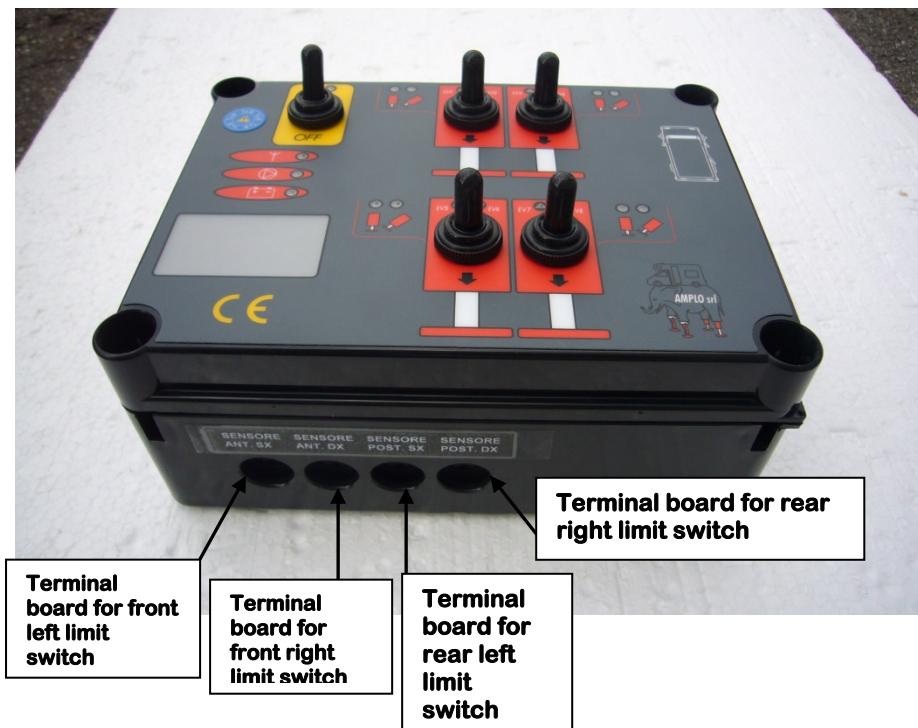
Switch on the control box (ON) with the vehicle parked: the red LED will not light up and the buzzer will not sound. (If the same operation is carried out with the engine switched on, the red LED will light up and the buzzer will sound until the engine is switched off).

When the ignition key is turned for driving the vehicle, if a jack is not in the correct position, the red LED will light up and the buzzer will sound.

When driving, the control unit must be switched to OFF and the +15 (D+) under key controller will verify the limit switch status.

BEFORE DRIVING CHECK THAT ALL THE JACKS ARE RETRACTED IN THE DRIVING POSITION

CONTROL UNIT





**OPTIONAL - Handbrake
SUPPLEMENTARY BUZZER**

Terminal board for the warning buzzer and
LED accessory for the limit switch position
("black box")



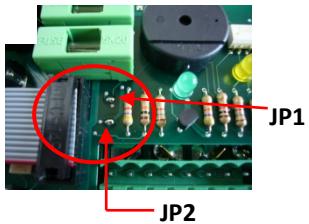
OPTIONAL – Cable for connection Handbrake

Fuse 500 mA

Fuse 1 AT

Fuse 15 A

Hole to access button below for
programming the control unit.



Jumper on board:

IMPORTANT: to activate the hand-brake function, remove jumper JP2 by touching the 2 pads with the soldering tip to remove solder.

CONTROL MODE

	BLACK BOX	BLACK BOX + JACK PLUG (WHITE WIRE)	JACK PLUG (BROWN WIRE)	JACK PLUG (BROWN + WHITE WIRE)
Jumpers	JP1 open JP2 closed	JP1 closed JP2 closed	JP1 closed JP2 closed	JP1 closed JP2 open
Control enabled		+		+
	FACTORY SETTING	NOTE: wire with jack plug + 500 mA fuse required.	NOTE: wire with jack plug + 500 mA fuse required.	NOTE: wire with jack plug + 500 mA fuse required.

The LED of the icon turns on when key +15 is ON and one or more jacks are down.

The LED of the icon turns on when the hand-brake is not engaged.

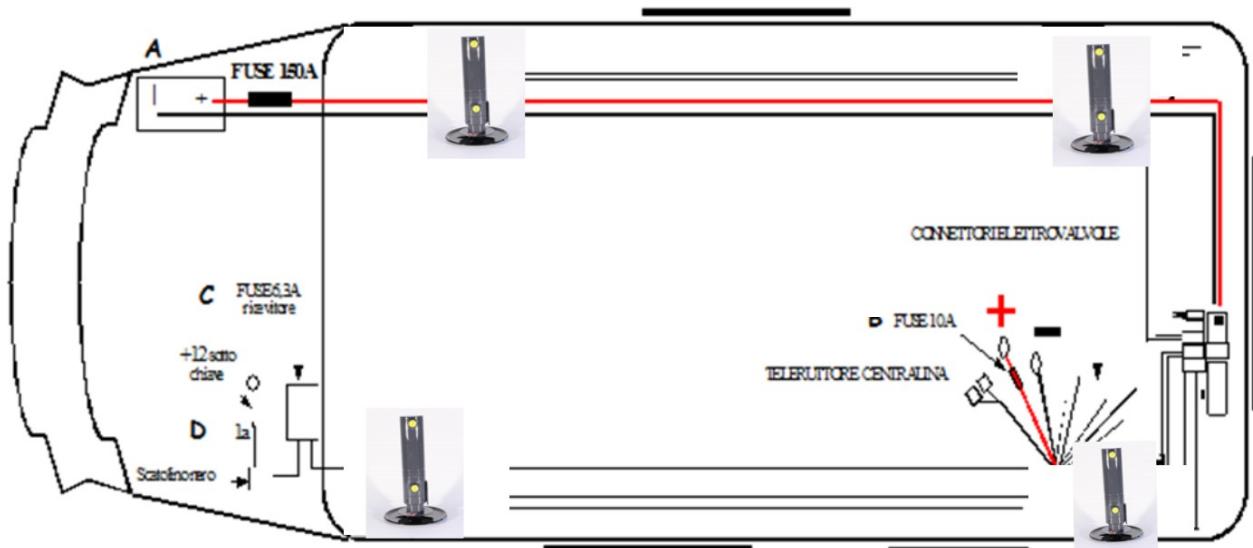


Mechanical limit switch

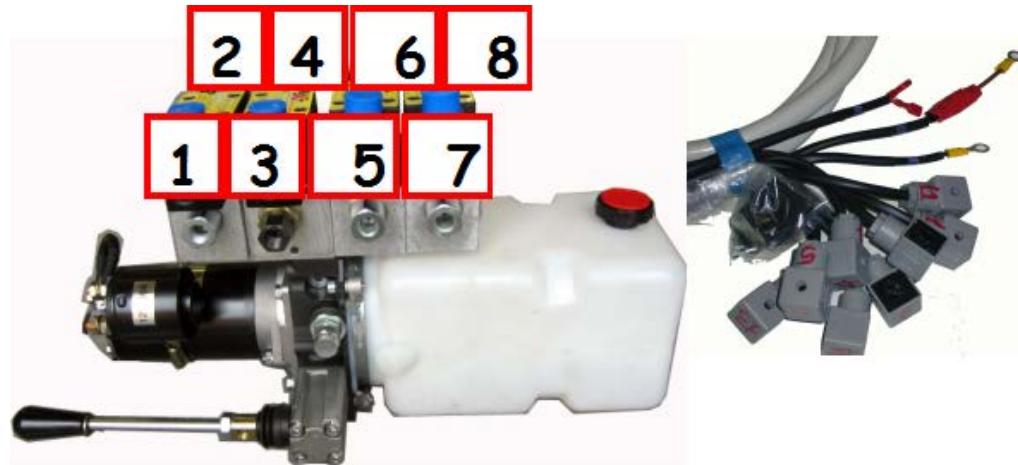


Connection cables for mechanical limit switch

ELECTRO-HYDRAULIC SYSTEM SCHEME



- A:FUSIBILE 150A SU CAVO POSITIVO DA BATTERIA
- B:FUSIBILE 10A SU CABLAGGIO RICEVITORE
- C:FUSIBILE 6,3A SU SCHEDA RICEVITORE
- D:FUSIBILE 1A SU +12 SOTTO CHIAVE



Follow the number-coded sequence of the solenoid connectors as shown below:

1 - 3 - 5 - 7

2 - 4 - 6 - 8

As shown in the figure above, besides connecting up the hydraulic system we must also connect up the electrical system which includes various cables and various sets of cables to be connected:

- Connect up the positive red cable and the negative black cable from the vehicle battery to the hydraulic control unit. The cables must be a 25 mm² section and the positive wire protected with a fuse.
 - prepare the cabling of the electronic control unit with the connectors to be inserted into the solenoid valves following the number-coded sequence as shown in the above figure.
 - Assemble the mechanical limit switches on the jacks using the connection set between the jack and the electric receiver panel.

- connect +12 volt red wire of the black box under ignition key, insert the protective fuse on the cable in a way that it can be easily inspected.

Insert the plugs of the 4 limit switches into the receiver box manually checking the correct sequence: front left – front right – back left – back right with the red LEDs on the electric panel.

Once hydraulic tubes and electrical wiring cables have been lodged under the chassis with cable ties and you have checked that all the fittings with washers have been tightened the system can be started up.

Fill the tank with hydraulic oil checking the level visually, then levelling can be started.

In the initial work phase of the jacks you will notice a jerking movement in the jack because of the air inside the jack.

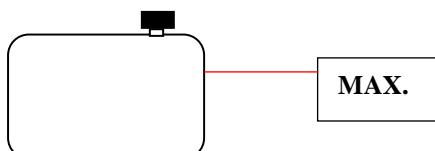


During this operation it is imperative that you do not stand close to the jacks, because if the fittings have not been properly assembled pressurised liquid could be sprayed out.

Continue topping up with oil until all the jacks have come to the end run.

The bleeding of air takes place automatically after the first complete cycle of the system.

At this point retract all the jacks and verify the oil level; top up, if necessary.



AUTOLEVEL SYSTEM



SETUP AND PROGRAMMING PROCEDURE (FOR INSTALLER ONLY)



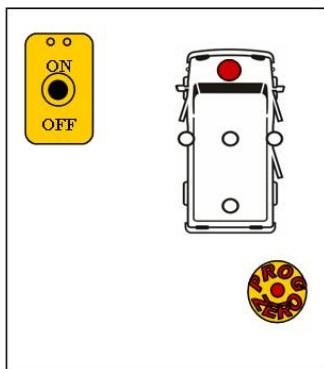
Led



Ceci signifie : **Voyant allumé**

******FOLLOW THIS PROCEDURE STEP BY STEP TO ENTER THE PROGRAMMING MODE******

SETTING UP THE POSITION OF CENTER BUBBLE LEVEL



It must first memorize the Zero level and for this it is necessary that the vehicle will be level in manual mode with the remote control. Use the remote control to find the horizontal position by checking with a "spirit level".

To save the zero level: the switch on-off of the small interior panel must be OFF.



Press PROG button and hold for 2 seconds and at the same time, turn the main switch on the control panel to ON. After 3 seconds, a beep sounds. The buzzer will continue to sound and a first GREEN LED lights in the middle by default and some bright lights flash. When the GREEN LED in the center FIXED ZERO level is stored.

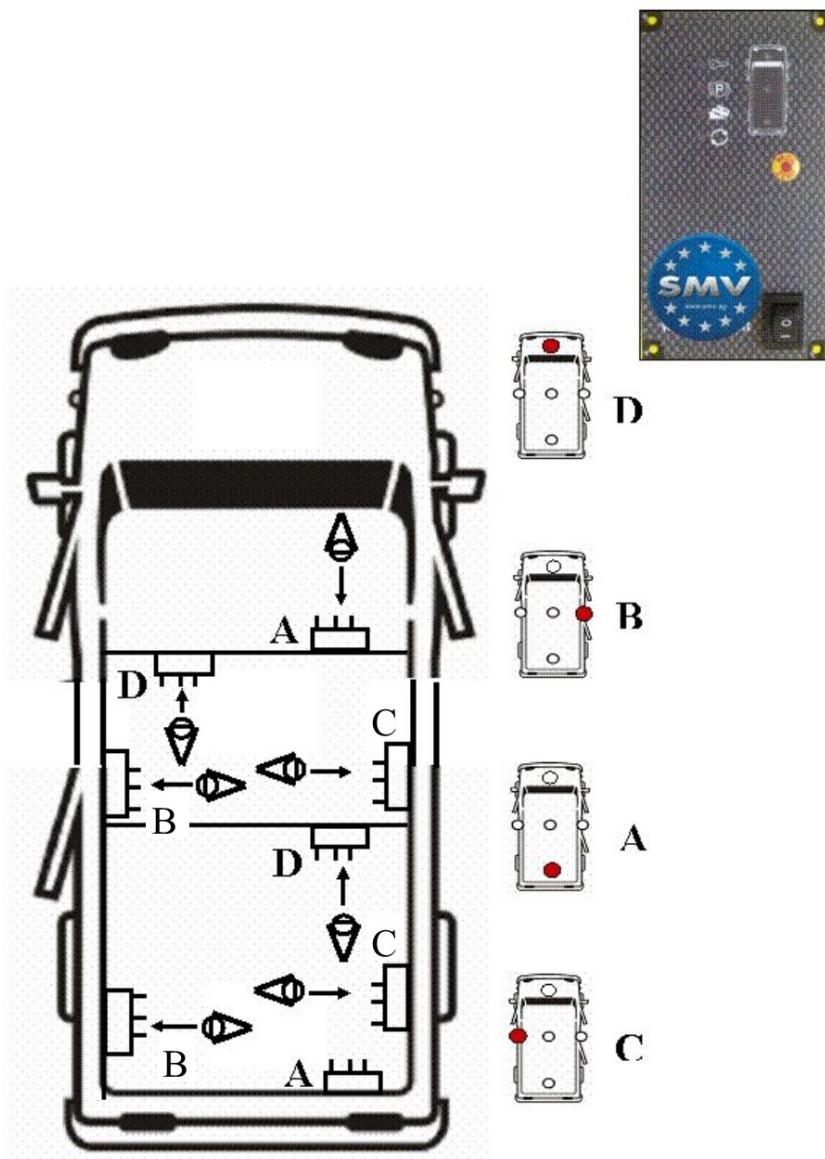
You must turn the switch to OFF.



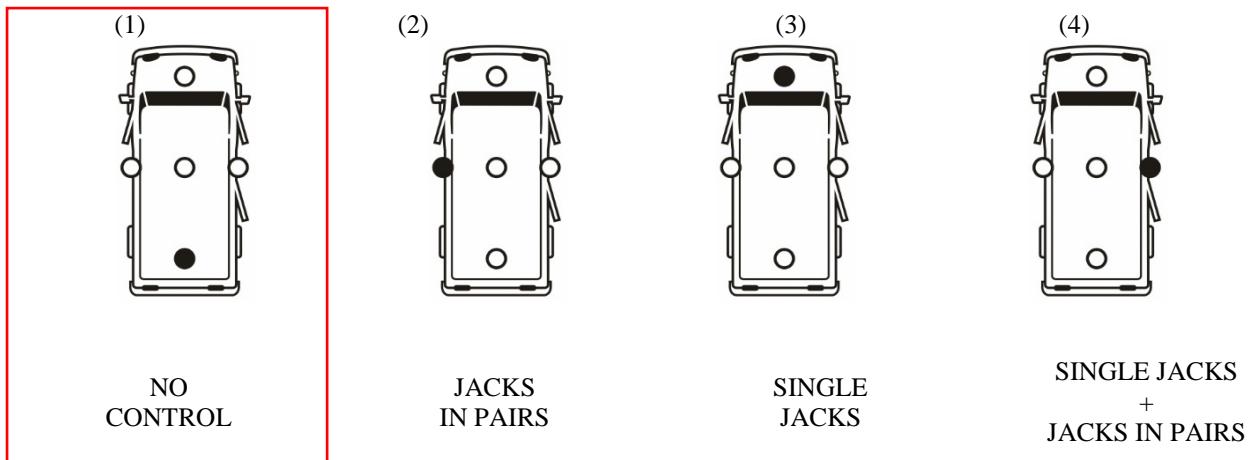
To enter the programming mode, Press PROG button and hold for 2 seconds and at the same time, turn the main switch on the control panel to ON. After 3 seconds, the first beep sounds, keep the button pressed and wait the second beep. Release PROG button and wait for the first LED to light up. Now you have entered the programming software.

Seven steps of programming will take place one after the other. They always occur in the same order of 1 to 7. Each stage has multiple choice. To familiarize yourself with the programming, move around the board continuously by gently pressing the yellow button until you have made your choice. To validate a program, you must release the yellow button and wait the confirmation beep.

1) SELECT THE MOUNTING POSITION OF THE SMALL PANEL INSIDE THE MOTORHOME BY PRESSING THE PROGRAMMING BUTTON TO TOGGLE BETWEEN THE DIFFERENT MODES. TO SELECT THE POSITION CHECK THE DIAGRAM.

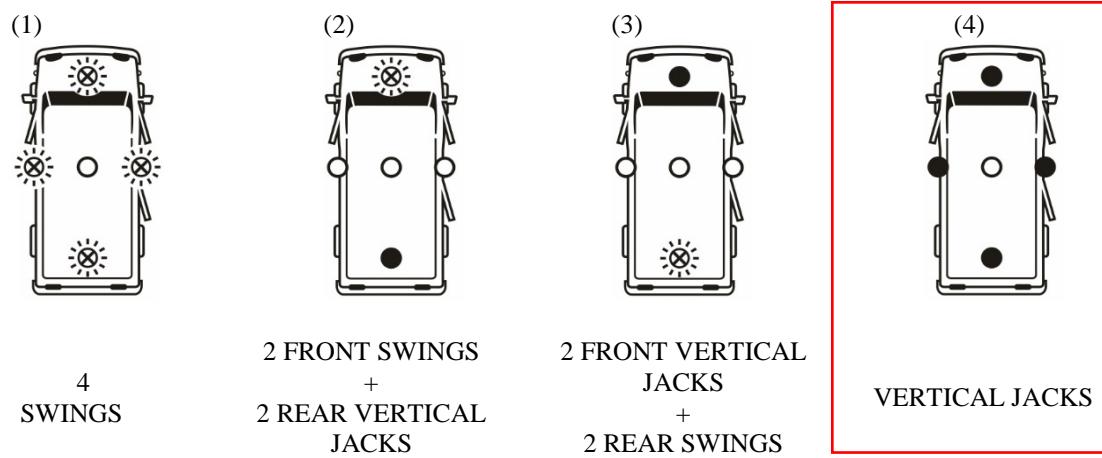


2) SELECT THE LAY-DOWN CONTROL AFTER LEVELLING BY PRESSING THE PROGRAMMING KEY TO TOGGLE BETWEEN DIFFERENT MODES



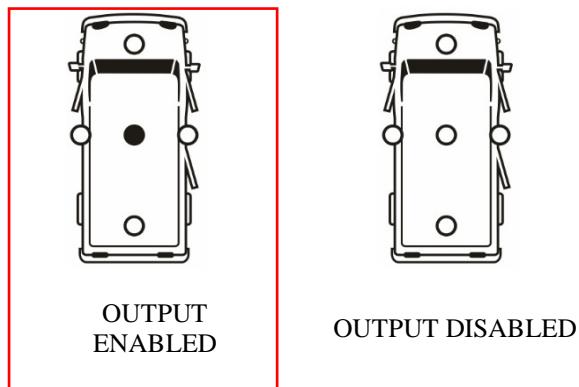
A beep sounds.

3) SELECT THE TYPE OF INSTALLED JACKS BY PRESSING THE PROGRAMMING KEY TO TOGGLE BETWEEN THE MODES.



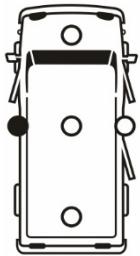
A beep sounds.

4) PRESS THE PROGRAMMING KEY TO SELECT THE AUX. OUTPUT REQUIRED (EXTERNAL BUZZER)



A beep sounds.

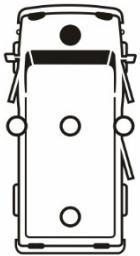
5) SELECT THE LENGTH OF FINAL LEVELLING PULSES (recommended values are 2 – 3 - 4)
BY PRESSING THE PROGRAMMING KEY TO TOGGLE BETWEEN DIFFERENT MODES.



VALUE 2 (recommended)

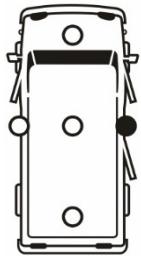
3,5 Ton

A beep sounds.

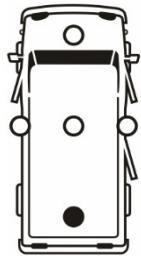


**VALUE 3
(recommended)**

ALKO 5 Ton

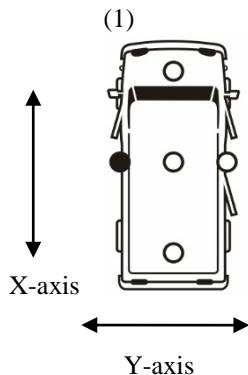


**VALUE 4
(recommended)**
Motorhome very heavy
8 Ton

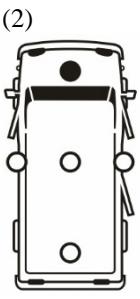


VALUE 1
Motorhome
very light
Remorque

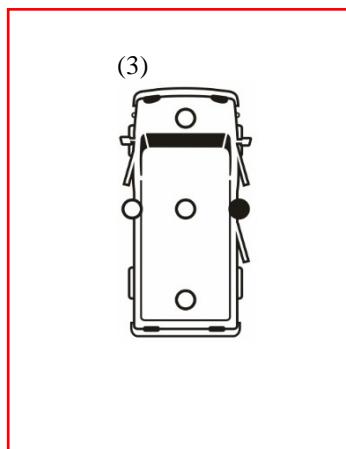
6) SELECT THE PRIORITY OF THE LEVELLING THRESHOLDS OF Y-AXIS BY PRESSING THE PROGRAMMING KEY TO TOGGLE BETWEEN DIFFERENT MODES.



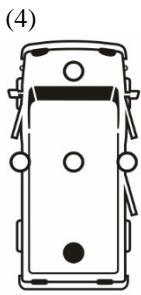
THRESHOLD 1
ca. 1cm DIFFERENCE



THRESHOLD 2
ca. 2cm DIFFERENCE



**X-AXIS IS ALWAYS
LEVELLED FIRST
(especially for ALKO)**



**Y-AXIS LEVELLING HAS
PRIORITY**

A beep sounds.

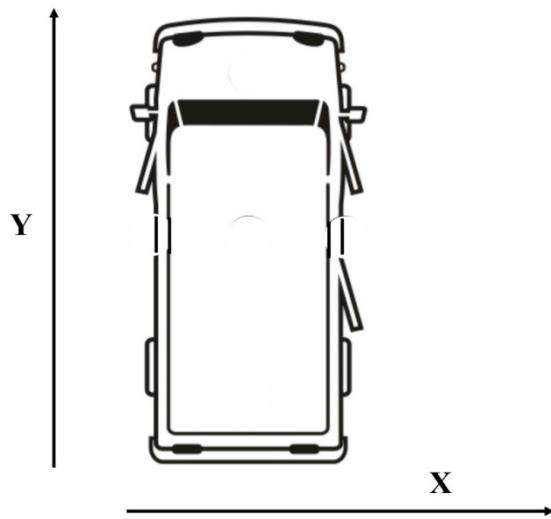


If $(H+1\text{CM}) = K$ it is the same, axis X or Y (1)

If $(H+2\text{CM}) = K$ first X axis (2)

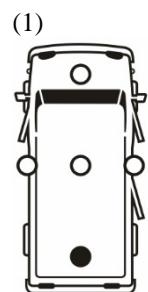
ALKO Chassis with heavy vehicle FIRST ALWAYS X axis (3)

FIRST ALWAYS Y axis (4)

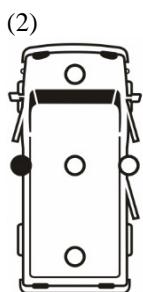


7) SELECT THE MAX. INCLINATION REQUIRED BY PRESSING THE PROGRAMMING KEY TO TOGGLE BETWEEN MODES (WARNING !!)

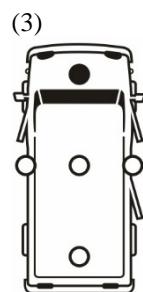
- a) THE INCLINATION SHOULD ALLOW THE LEVELLING OPERATION WITHOUT LIFTING THE WHEELS FROM THE GROUND!!!!!!
- b) THE SET VALUE SHOULD BE LOWER THAN THE MAX. JACK STROKE (at least 4 cm)



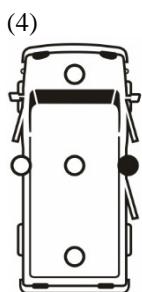
$\sim +/-1,5^\circ$



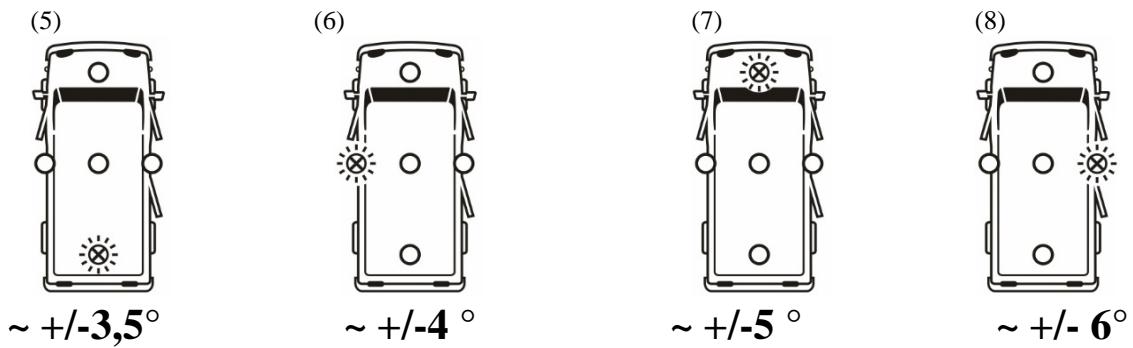
$\sim +/-2^\circ$



$\sim +/-2,5^\circ$

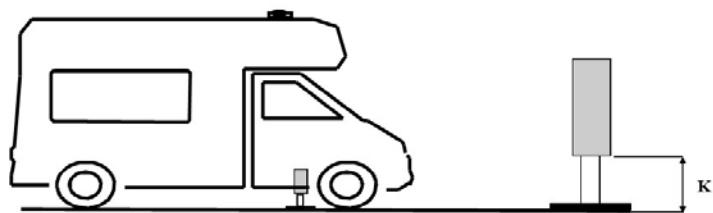


$\sim +/-3^\circ$



ABOUT STEP 7 OF THE PROGRAM

Measure the stroke you need to touch the ground with the front jacks on a flat surface and note this length (for example 20cm=K)



Now tilt the camping car moving the front jacks and take the measurement of the stroke you need without lift the tyres and note this length (for example 28cm=T)

The range we can use finding the level without lift the tyres from the ground will be (T-K=8cm)

This corresponds to value (7) of step (7) of the program

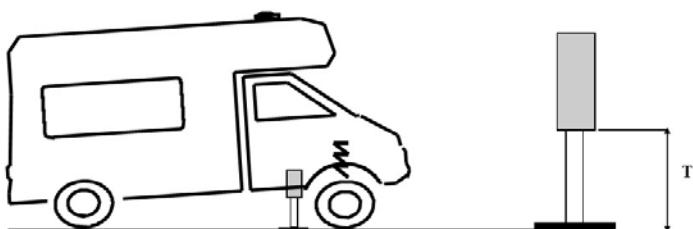
New camping car tend to be very tilted forward and often you can see your vehicle lifted off the ground using the autolevel system.

YOU MUST STABILIZE THE VEHICLE WITH ALL THE TYRES PLACED FIRMLY ON THE GROUND

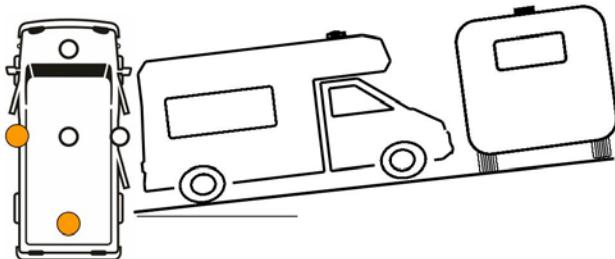
If you decide to chose the maximum value(8) you have pay attention at the stroke of the jacks.

In this case if one jack arrives at the end of its stroke the system will continue to work finding the zero without reaching it.

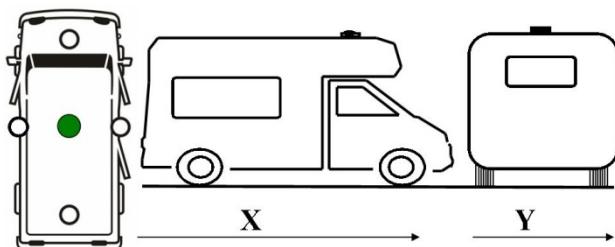
YOU MUST IMMEDIATELY STOP THE SYSTEM WITH THE EMERGENCY BUTTON ON THE REMOTE CONTROL



LED DISPLAY



Yellow leds are lighting when the camping car is not good levelled.

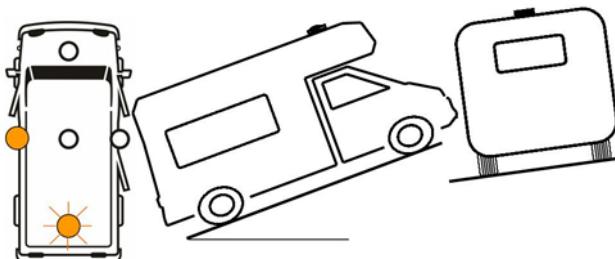


Green led is lighting and the buzzer stop ringing, the camping car is levelled.

AUTOLEVEL SYSTEM DOESN'T WORK IF...

1° CONDITION

IF SOMEONE OF THE FOUR YELLOW LEDS INDICATING THE POSITION OF CENTER BUBBLE LEVEL IS BLINKING.



PRESSING THE KEY, THE RED LED NEAR THE ICON TURNS ON, AND THE SYSTEM BLOCKS (NO ALARM SOUND). TO RESET THE SYSTEM, SET THE MAIN SWITCH IN OFF POSITION AND THEN IN ON POSITION.

LEVELLING OPERATION CAN BE MADE ONLY BY MEANS OF THE REMOTE CONTROL, AS LONG AS IT IS POSSIBLE

2° CONDITION

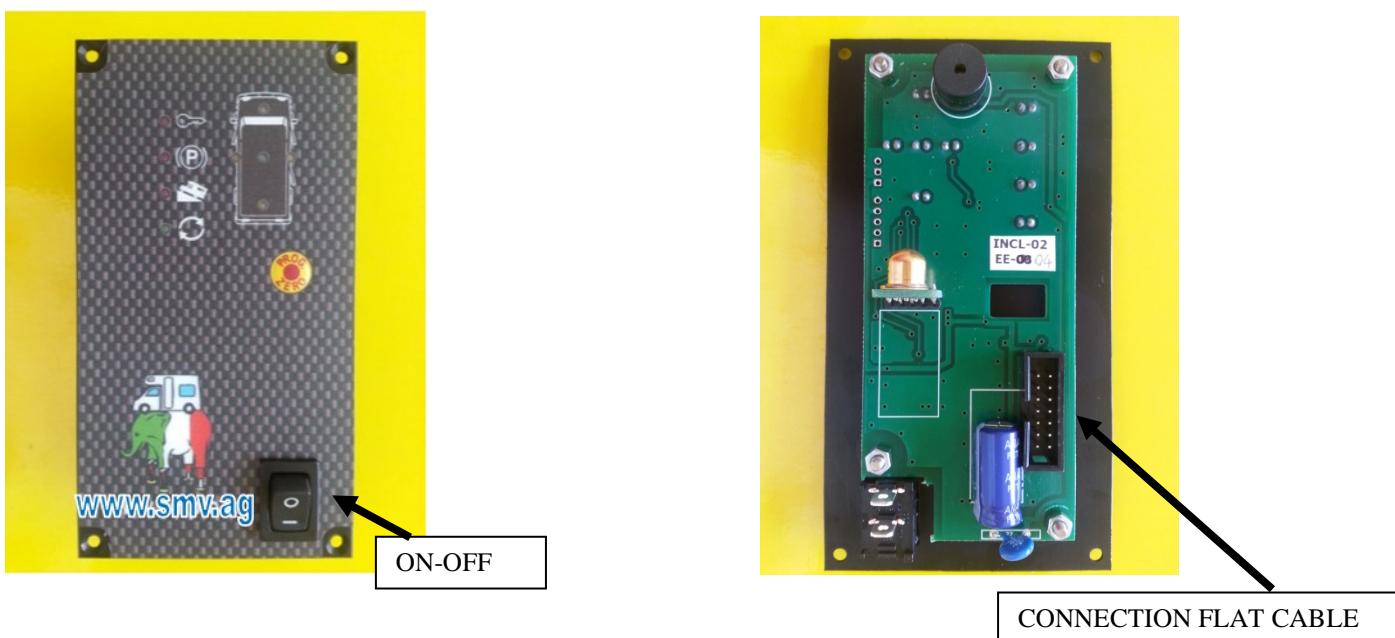
IF THE IGNITION KEY IS TURNED OR THE VEHICLE'S MOTOR IS RUNNING, THE LED CORRESPONDING TO  ICON TURNS ON. IN THIS CONDITION YOU CAN USE THE REMOTE CONTROL TO CONTROL THE JACKS, BUT IF YOU PRESS THE AUTOLEVEL BUTTON

 , THE SYSTEMS BLOCKS. TURN THE CONTROL PANEL OFF AND ON, ENGAGE THE HAND-BRAKE, DO NOT TURN THE IGNITION KEY AND PROCEED WITH THE AUTOLEVELLING OPERATION.

ADDITIONAL OPTION WITH HAND-BRAKE

IF HAND-BRAKE IS NOT ENGAGED, THE LED CORRESPONDING TO  ICON TURNS ON AND THE AUTOLEVEL SYSTEM IS BLOCKED. IF YOU WANT TO LEVEL THE CAMPING CAR IN THIS POSITION, YOU HAVE TO USE THE REMOTE CONTROL IN MANUAL MODE.

SMALL PANEL



TECHNICAL SPECIFICATIONS

Battery power supply:

from 12 VCC to 24 VCC

Max. power consumption:

150 Watt (max. 4 solenoid simultaneously)

Max. power on singole channel:

50 Watt

Fuses:

on cable 15 AT (blade-fuse, faston 6,3 mm)

Operating frequency:

on printed circuit 15 AT (blade-fuse, faston 6,3 mm)

Power modules:

on printed circuit 1AT (5x20)

Pollution level:

434,42 MHz / 433,42 MHz

short-circuit and overload protected.

2

Installation class (overvoltage):	1
Operating temperature:	-20°C/+55°C
Size (L x H x P)	193 mm x 145 mm x 80 mm
Cable length :	4 - 6 - 8 metri
Cable section:	1,5 mm ²

Technical notes on the waterproof case

Conformity to CEI-670, IEC 695-1-2 standards
The case is sealable

Accessories

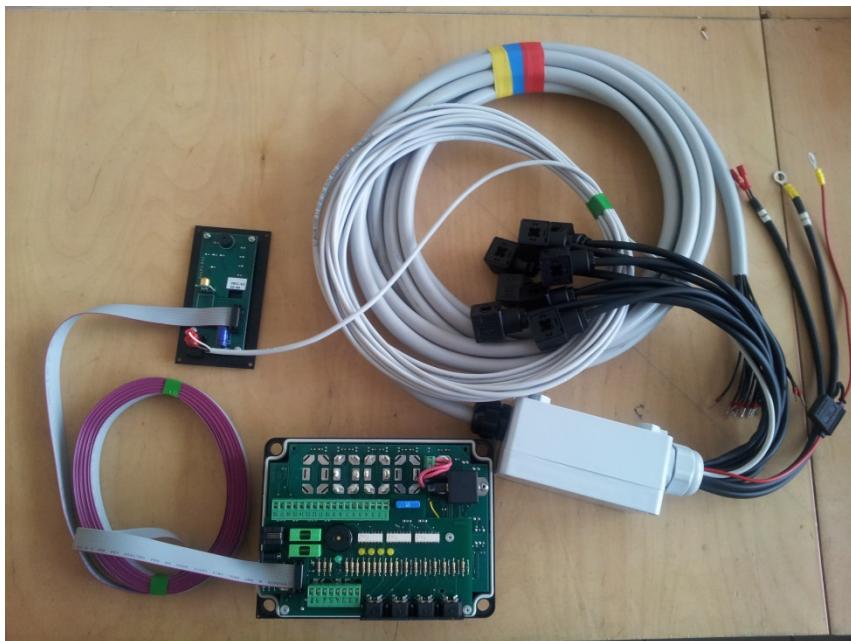
Remote switch
Selector key
External Buzzer
Internal buzzer
Black box for remote signalling the status of 8 limit switches

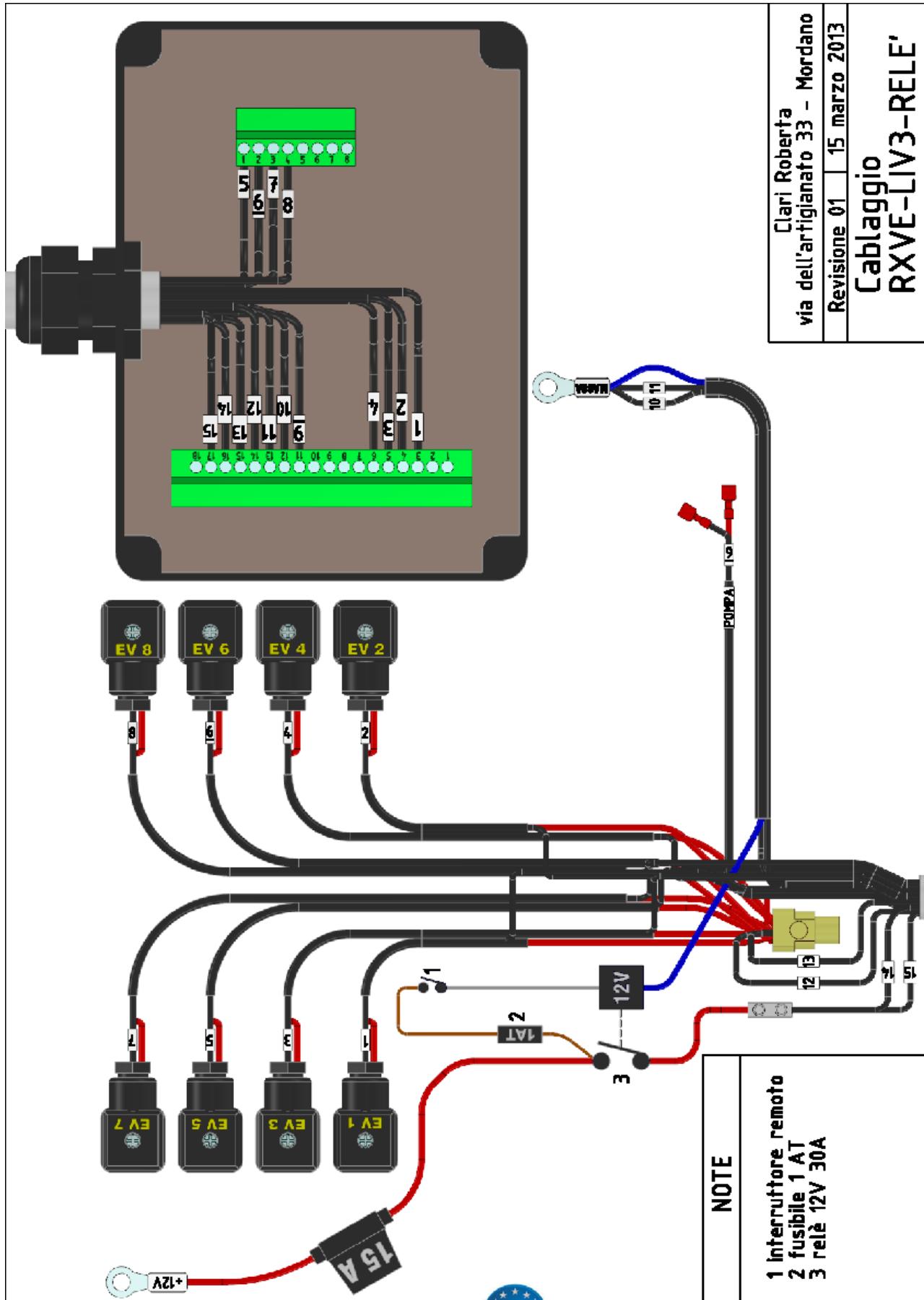
Note: install the unit in a place that is protected from adverse weather conditions.

ADVISE

Must use the system with switch OFF engine.

At the end of the level procedure, switch OFF the control panel.





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