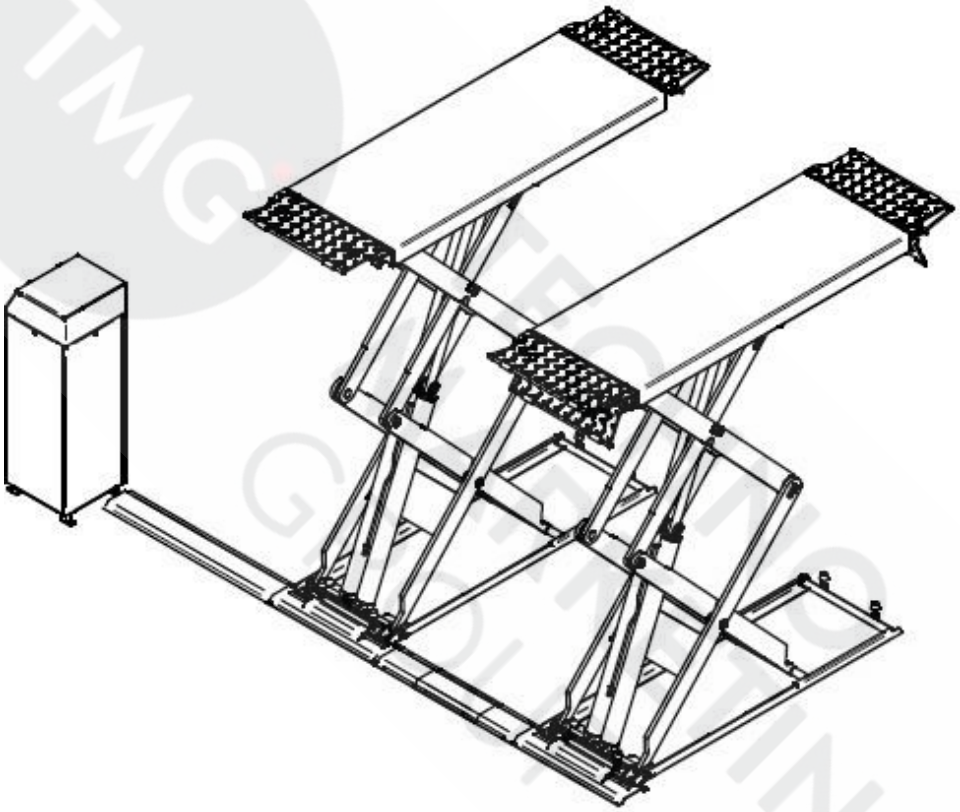
Installation, Operating and Service Manual



SIGMA 320 SIGMA 360 SIGMA 400

LOW PROFILE DOUBLE SCISSOR-LIFT

English

Elaborazione grafica e impaginazione
UTS

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PRINTING CHARACTERS AND SYMBOLS

Throughout this manual, the following symbols and printing characters are used to facilitate reading:

	Indicates the operations which need proper care
	Indicates prohibition
	Indicates a possibility of danger for the operators
	Indicates the direction of access for motor vehicles to the lift
Bold type	Important information

WARNING: before operating the lift and carrying out any adjustment, read carefully chapter 7 "Installation" where all proper operations for a better functioning of the lift are described.

CHAPTER 1 - GENERAL INFORMATION

This chapter contains warning instructions to properly operate the lift and prevent injury to operators or property.

This manual has been written to be used by workshop technicians in charge of the lift (OPERATOR) and routine maintenance technician (MAINTENANCE OPERATOR).
The operating instructions are considered to be an integral part of the machine and must remain with it
for its whole useful life. Read every section of this manual carefully before operating the lift and unpacking, since it gives helpful information about:

- SAFETY OF PEOPLE
- SAFETY OF THE LIFT
- SAFETY OF LIFTED VEHICLES

The company is not liable for possible problems, damage, accidents, etc. resulting from failure to follow the instructions contained in this manual.

Only skilled technicians of AUTHORISED DEALERS or SERVICE CENTRES AUTHORISED by the manufacturer shall be allowed to carry out lifting, transport,assembling, installation, adjustment, calibration, settings, extraordinary maintenance, repairs, overhauling and dismantling of the lift.

The manufacturer is not responsible for possible damage to people, vehicles or objects if said operations are carried out by unauthorised personnel or if the lift is improperly used.

Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

1.1 Manual keeping

For a proper use of this manual, the following is recommended:
Keep the manual near the lift, in an easily accessible place. Keep the manual in an area protected from damp.
Use this manual properly without damaging it.
Do not make any changes to this manual; any modifications and updates shall be made bythe supplying company only.

This manual is an integral part of the lift: it shall be given to the new owner if and when the lift is resold.

Obligations in case of malfunction

In case of machine malfunction, follow the instructions containedin the following chapters.

1.2 Cautions for the safety of the operators

Operators must not be under the influence of sedatives, drugs or alcohol when operating the machine.

Before operating the lift, operators must be familiar with the position and function of all controls, as well as with the machine features shown in chapter "Operation and use".

1.3 Warnings

Unauthorised changes and/or modifications to the machinerelieve the manufacturer from any liability for possible damage to objects or people. Do not remove or make inoperative the safety devices, this would cause a violation of law and regulations on safety at work.

Any other use which differs from that provided for bythe manufacturer of the machine is strictly forbidden.

The use of non genuine parts may cause damage to people or objects.

DECLARATION OF WARRANTY AND LIMITATION OF LIABILITY

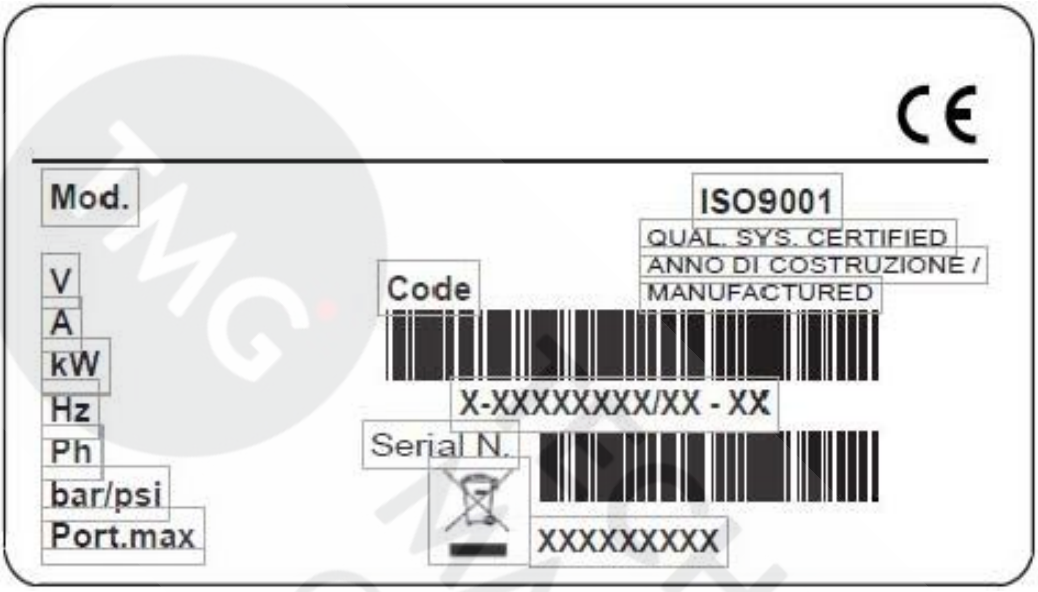
The manufacturer has paid proper attention to the preparation of this manual. However, nothing contained herein modifies or alters, in any way, the terms and conditions of the manufacturer agreement by which this lift was purchased, nor increases, in any way, manufacturer's liability towards the customer.

TO THE READER

Every effort has been made to ensure that the information contained in this manual is correct, complete and updated. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes required due to the development of the product, at any time.

CHAPTER 2 -MACHINE IDENTIFICATION

The identification data of the machine are shown in the label placed on the frame and indicated in the enclosed declaration of conformity.



Use the above data both to order spare parts and when getting in touch with the manufacturer (inquiry). The removal of this label is strictly forbidden.

Machines may be updated or slightly modified from an aesthetic point of view and, as a consequence, they may present different features than those shown, without prejudice to the descriptions contained in this manual.

2.1 Warranty certificate

The warranty is valid for a period of 12 months starting from the date of the purchase invoice. The warranty will become immediately void when unauthorised modifications to the machine or parts of it are carried out.

The presence of manufacturing defects must be verified by the Manufacturer's personnel in charge.

2.2 Technical servicing

For all servicing and maintenance operations not specified or shown in these instructions, contact the Dealer that sold the machine or the Manufacturer's Sales Department.

CHAPTER 3 -PACKING, TRANSPORT AND STORAGE

Only skilled personnel who are familiar with the lift and this manual shall be allowed to carry out packing, lifting, handling, transport and unpacking operations.

3.1 Packing

The lift is delivered as many sub-assemblies. The lay-out is referred to the ordered model.

On-floor installation model:

No. 2 load bearing units, each one with a platform and hydrauliccylinders
No. 1 control unit with hydraulic unit
No. 1 box containing hydraulic lines, connection cables, four rubber blocks, stickers and technical documentation
No. 4 drive-on ramps (2 front and 2 rear ramps) equipped with protective devices to connect platforms

In-ground installation model:

No. 2 load bearing units, each one with a platform and hydraulic cylinders
No. 1 control unit with hydraulic unit
No. 1 box containing hydraulic lines, connection cables, four rubber blocks 40 mm in height, stickers and technical documentation
No. 2 - 3 covers for pit covering

Optional accessories are available on request, to satisfy each customer's requirements (Ref. accessory manual and price lists).
The lift is packed in a single box on a wooden pallet, wrapped up in anti-scratch waterproof material and sealed with 2 metal straps.
The average weight of the package is 1000 kg.

3.2 Lifting and handling

When loading/unloading or handling the equipment at the customer's site, make sure to use suitable loading (e.g. cranes, trucks) and hoisting means. Moreover, make sure to hoist and transport the components in a safe way so that they cannot fall, taking into consideration the package size, weight and centre of gravity and its fragile parts.

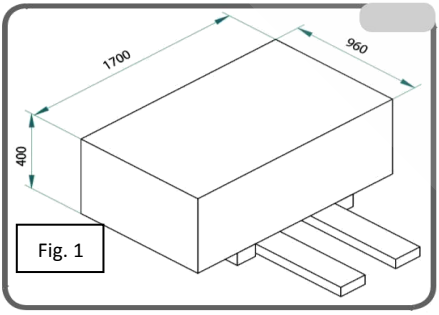


Fig. 1

Hoist and move only one package at a time

3.3 Storage and stacking of packages

Packages must be stored in a covered place, away from direct sunlight andhumidity, at a temperature between -10 °C and +40 °C.

Stacking is not recommended: the package narrow base, as well as its considerable weight and size make it difficult and hazardous to handle.

Should stacking become necessary, never exceed three packages in a stack and ensure their stability by fixing them together with straps, ties or other suitablemeans.

3.4 Delivery and check of packages

When the lift is delivered, check for possible damage due to transport and storage; verify compliance with the manufacturer's order confirmation. In case of transport damage, the customer must immediately inform the carrier about the problem.

Packages must be opened paying attention not to cause injury to people (keep at a safe distance when opening straps) and damage to parts of the lift (prevent objects from falling from the package while opening it).

CHAPTER 4 -MACHINE DESCRIPTION

4.1 Lift (see Figure 2)

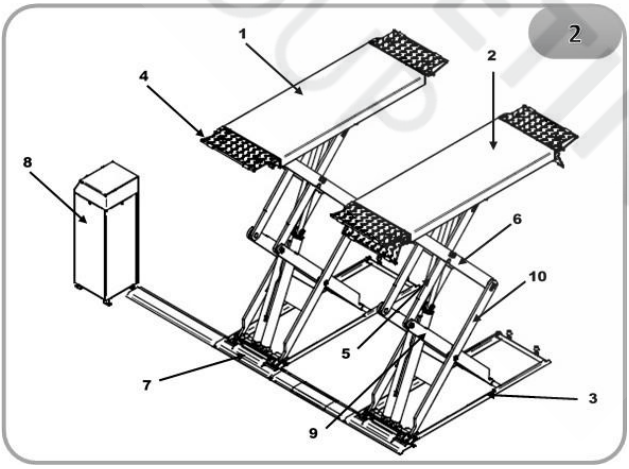
The lift has been designed to lift motor vehicles and make them stand at any level between the minimum and maximum height.

The maximum lifting weight, including any additional load on the vehicle, is specified on the serial plate of the lift.
All mechanical equipment, such as platforms, extensions, base frames and arms have been built in metal sheet in order to make the frame stiff and strong while keeping a lowweight.

The electro-hydraulic operation is described in detail in chapter 8.
This chapter describes the lift, showing its main parts, thereby allowing the user to become familiar with the machine. As shown in figure 2, the lift is composed of two platforms, platform 1 (1) and platform 2 (2) anchored to the ground by means of two base frames (3). The platforms are linked to the base frame by means of a double scissors lifting system. The platforms are 1560 mm long, can reach a length of approx. 2100 mm with two extractable extensions (4) to allow longer wheelbase vehicles to be lifted.

The lifting system of each platform is composed of four arms, two lower (5) and two upper (6) arms, as well as a pair of cylinders, i.e., a primary and a secondary cylinder. Motion is transmitted from the actuators to the arms through a leversystem.
Lift lowering and raising operations are carried out by means of a control unit (8) (fixed to the ground) placed next to the lift.

A sensor (Encoder) is installed inside the scissors of platforms 1 and 2 to stop the lift at a height of 400 mm.
A sensor (Encoder) is installed inside the scissors of platforms 1 and 2 to stop the lift at the maximum height.
Drive-on ramps (7) are present at the base of platform 1 and platform



4.2.1 Control unit for LIFT with mechanical safety devices

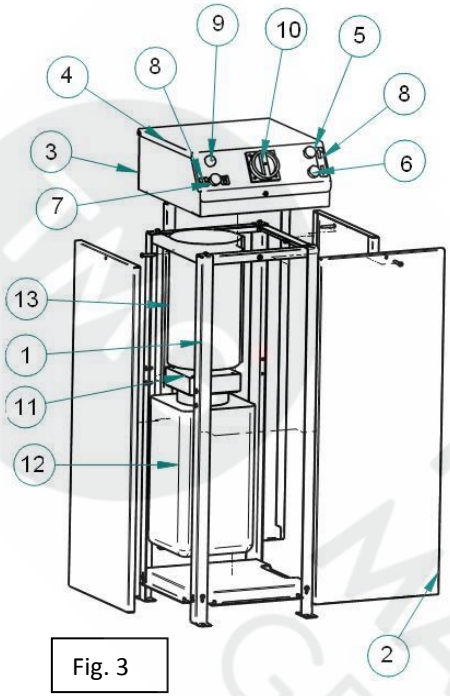


Fig. 3

The control unit is composed of:

1 A supporting frame.
2 Cover panels.
3 A head unit.
4 Control panel.
5 Up button.
6 Down button.
7 End of travel button (last 400 mm)/safety devices.
8 Identification labels and safety labels.
9 Warning light.
10 Main switch.
11 Main hydraulic unit.
12 Oil tank.
13 Electric motor.

4.3 Operation

Platform lifting is carried out by the hydraulic unit which acts upon the primary cylinder.
The platforms are raised simultaneously owing to cross feeding of the hydraulic cylinders.
Lowering, even though electrically controlled, is carried out by the weight of both the platforms and the load lifted.
The hydraulic system is protected by a pressure relief valve thus preventing pressure from exceeding the maximum safety limit.
Lifting and lowering motion of the lift is controlled by the push-buttons on the control panel.
Whenever the lift has to be lowered to the ground and the DOWN button is pressed, the lift will stop at about 400 mm from the ground.
In this way, the operator can verify that neither persons nor objects are within

the safety area.
If so, the SAFETY button can be pressed and the lift be lowered further.

A beep sound is heard during this last travel.

CHAPTER 5 - TECHNICAL SPECIFICATIONS

5.1 Dimensions and main specifications, 3,2 Ton LIFT

(see Figure 4)

Capacity	3200 kg
Maximum lifting height	1955 mm
Minimum height of lift	105 mm
Length of the lift	2204 mm
Width of the lift	2056 mm
Width of platforms	628 mm
Gap between platforms	800 mm
Lifting time	40 s
Lowering time	40 s
Noise level	70 dB(A)/1m
Total weight of the lift	800 kg
Working temperature	-10 ℃ - 40 ℃
Compressed air pressure	4 - 10 bar
Oil tank capacity	15 l

5.1.1 LIFT dimensions and main specifications

3.6 Tonne (see Figure 4.1)

Capacity	3600 kg
Maximum lifting height	1955 mm
Minimum height of lift	110 mm
Length of the lift	2204 mm
Width of the lift	2056 mm
Width of platforms	628 mm
Gap between platforms	800 mm
Lifting time	40 s
Lowering time	40 s
Noise level	70 dB(A)/1m
Total weight of the lift	850 kg
Working temperature	-10 ℃ - 40 ℃
Compressed air pressure	4 - 10 bar
Oil tank capacity	15 l

5.1.2 LIFT dimensions and main specifications

4.0 Tonne (see Figure 4.2)

Capacity	4000 kg
Maximum lifting height	1955 mm
Minimum height of lift	110 mm
Length of the lift	2204 mm
Width of the lift	2056 mm
Width of platforms	628 mm
Gap between platforms	800 mm
Lifting time	40 s
Lowering time	40 s

Noise level	70 dB(A)/1m
Total weight of the lift	880 kgf
Working temperature	-10 ℃ - 40 ℃
Compressed air pressure	4 - 10 bar
Oil tank capacity	15 l

5.2 Electric motor

Type	90LA/4
Power	3 kW
Voltage	230V / 400V
Frequency	50 Hz
No. of poles	4
Speed	1400 rpm
Motor enclosure type	SQUARE FLANGE
Insulation class	IP 54
Amperage	13.5 A at 230 V 7.8 A at 400 V

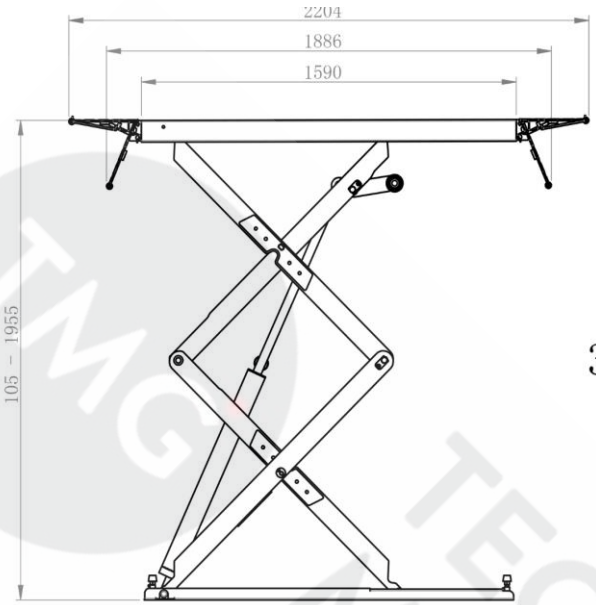
Motor must be connected referring to the attached wiring diagrams.
The motor direction of rotation is shown in the label placed on the motor.

Note: if we receive no specific request, the lift will be provided with a three-phase motor (400V).

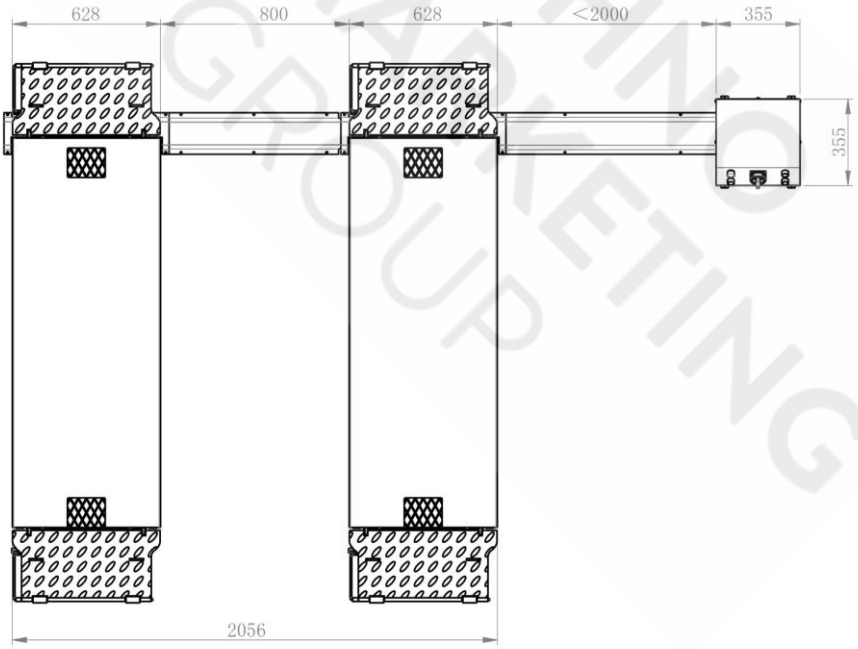
5.3 Pump

Type	gear-type AP100/5
Flow rate	5.8 cm^3/r
Continuous working pressure	250 bar (3000 psi)
Intermittent working pressure	260 bar (3300 psi)
Peak pressure	280 bar (3600 psi)

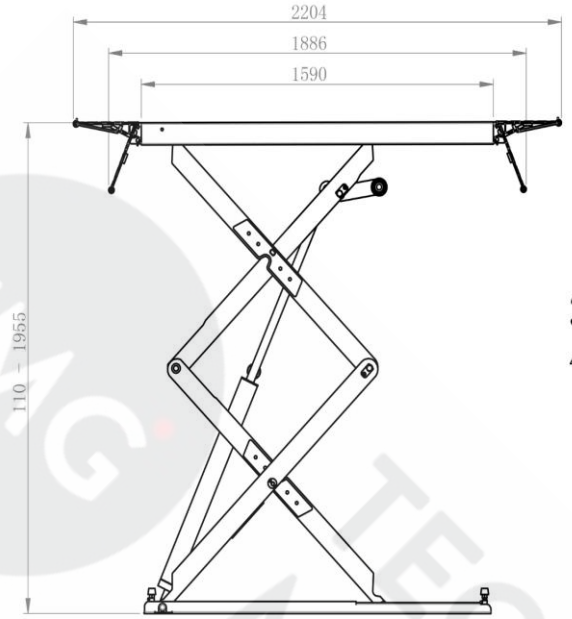
4



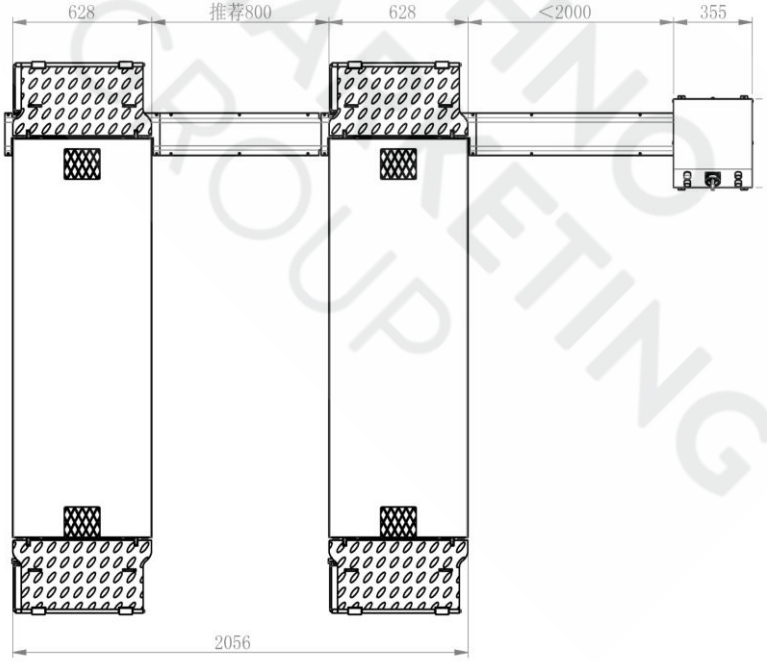
3. 2T



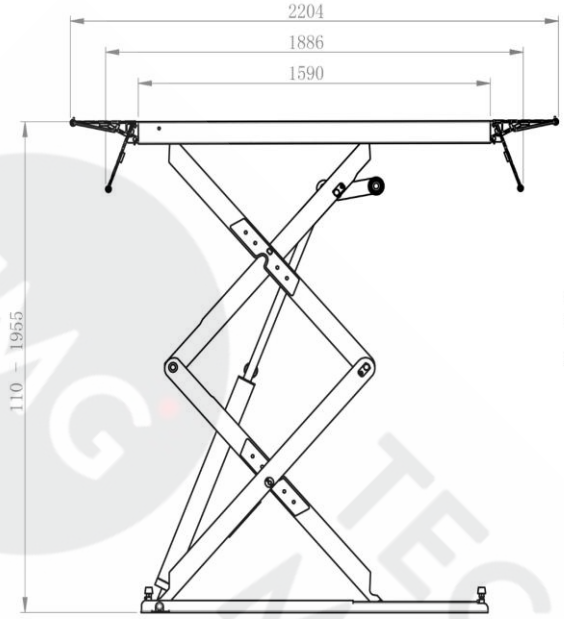
4.1



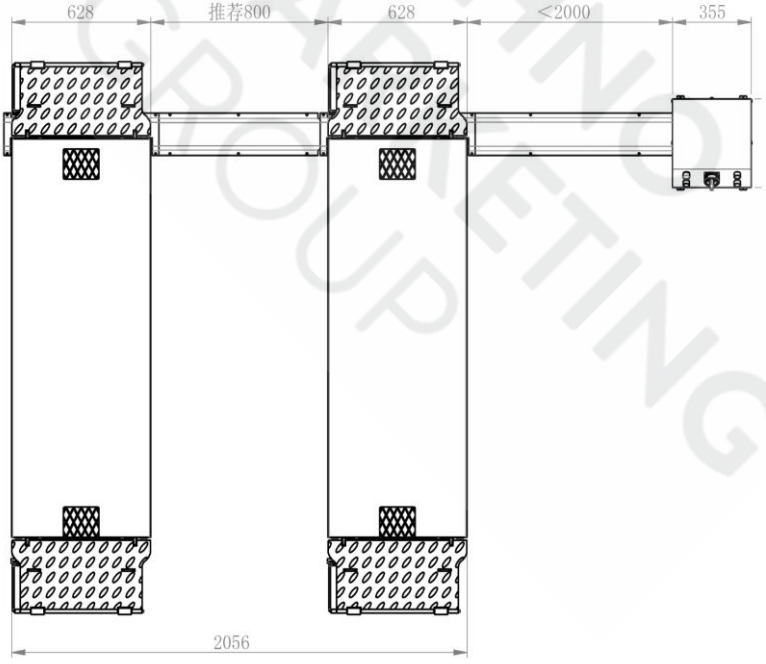
3.6T
4.0T



4.2



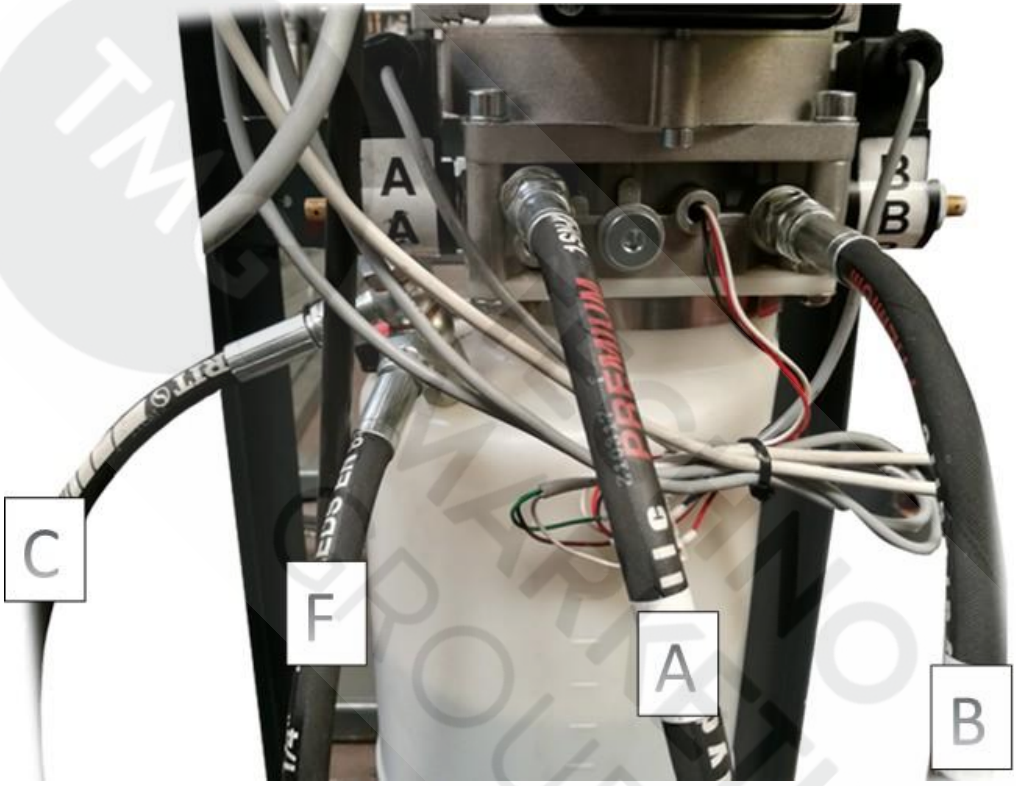
3.6T
4.0T



5.4 Hydraulic valve block for LIFT

The hydraulic control unit consists of a central unit and eight connections, two for the outlet, marked with the letters A and B, two for the return, marked with the letter F and C. (see Fig. 5.1).

Fig. 5.1



5.5 Oil

Use wearproof oil for hydraulic drive, in compliance with standard ISO 6743/4 (HM class). Fina HYDRAN TS 32 or equivalent with features similar to those shown in the table is recommended:

Testing methods	Features	Value
ASTM D 1298	Density at 20 ℃	0.8 kg/l
ASTM D 445	Viscosity at 40 ℃	32 cSt
ASTM D 445	Viscosity at 100 ℃	5.43 cSt
ASTM D 2270	Viscosity index	104 N °
ASTM D 97	Pour point	~ 30 ℃
ASTM D 92	Flash point	215 ℃
ASTM D 644	Neutralization number	0.5 mg KOH/g

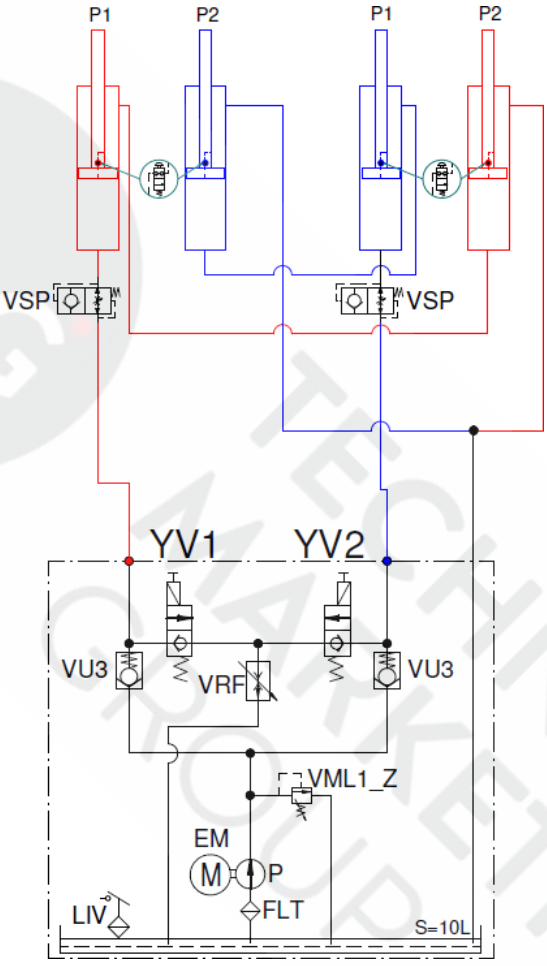
5.6 Recommended hydraulic oil

The recommended hydraulic oil for the lift to be used at standard temperatures (25 ℃ - 30 ℃) is described below.

For non-standard temperatures, contact your dealer for suitable oil.

Brand	Type
AGIP	OSO 32
API	CIS 32
BP	HLP 32
CASTROL	HYSPIN HWS 32
ELF	ELFONA DS 32
ESSO	NUTO H 32
FIAT	HTF 32
FINA	HYDRAN TS 32
IP	HYDRUS 32
Q8	HAYDYN 32
ROL OIL	LI 32
SHELL	TELLUS OIL 32
TOTAL	AZOLLA ZS 32

HYDRAULIC CIRCUIT DIAGRAM FOR LIFT



VSP.....	Parachute Valve
YV2.....	Elektro-Valve
YV1.....	Elektro-Valve
VRF.....	Oil flow-Control
VU3	No return Valve
LIV	Floating level switch

VML.....	Maximun Valve
P.....	Pump
EM.....	Elektro Motor
FLT	Filter
S	Oil Tank

Figure 7 - ELECTRICAL DIAGRAM 3Ph

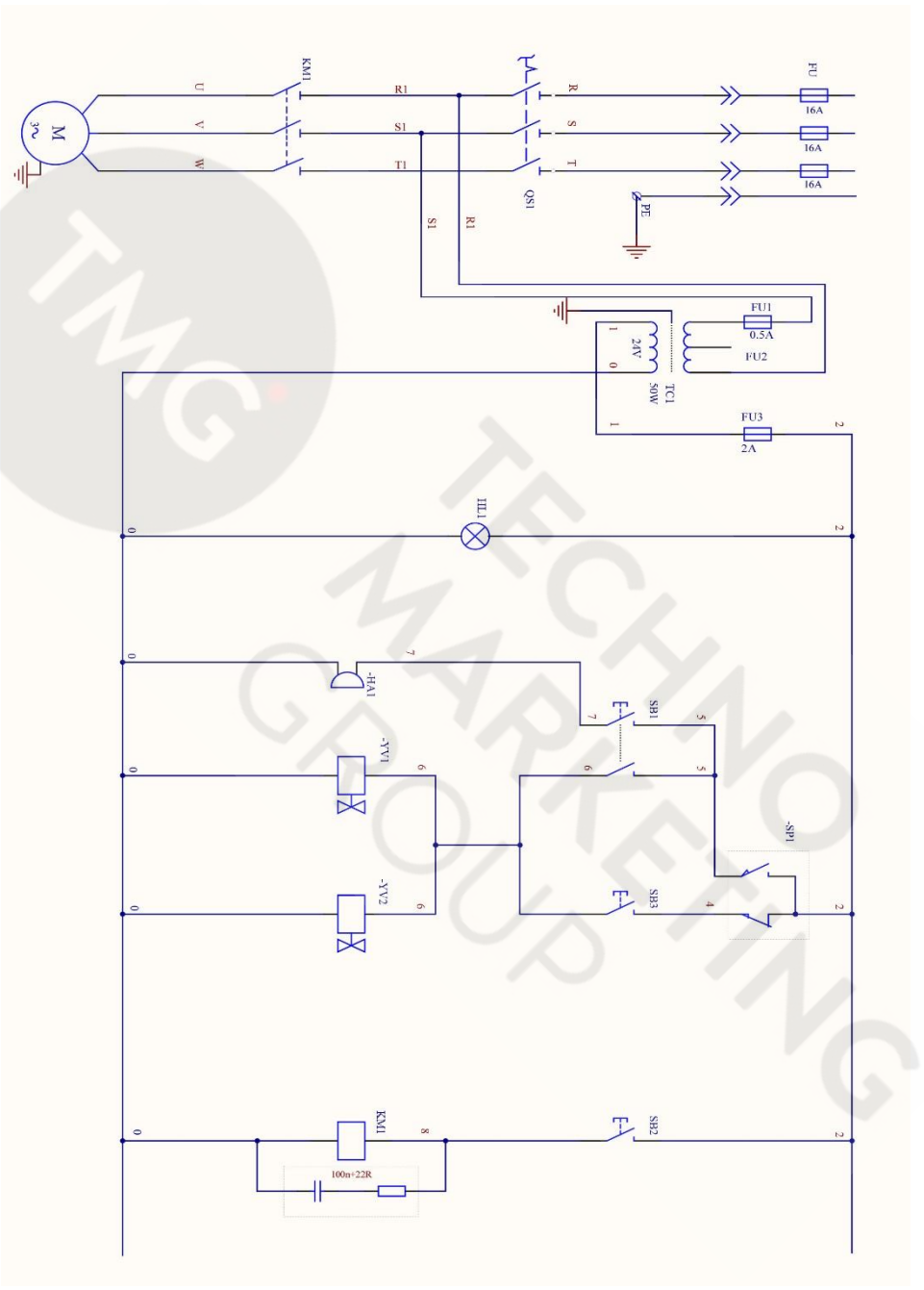
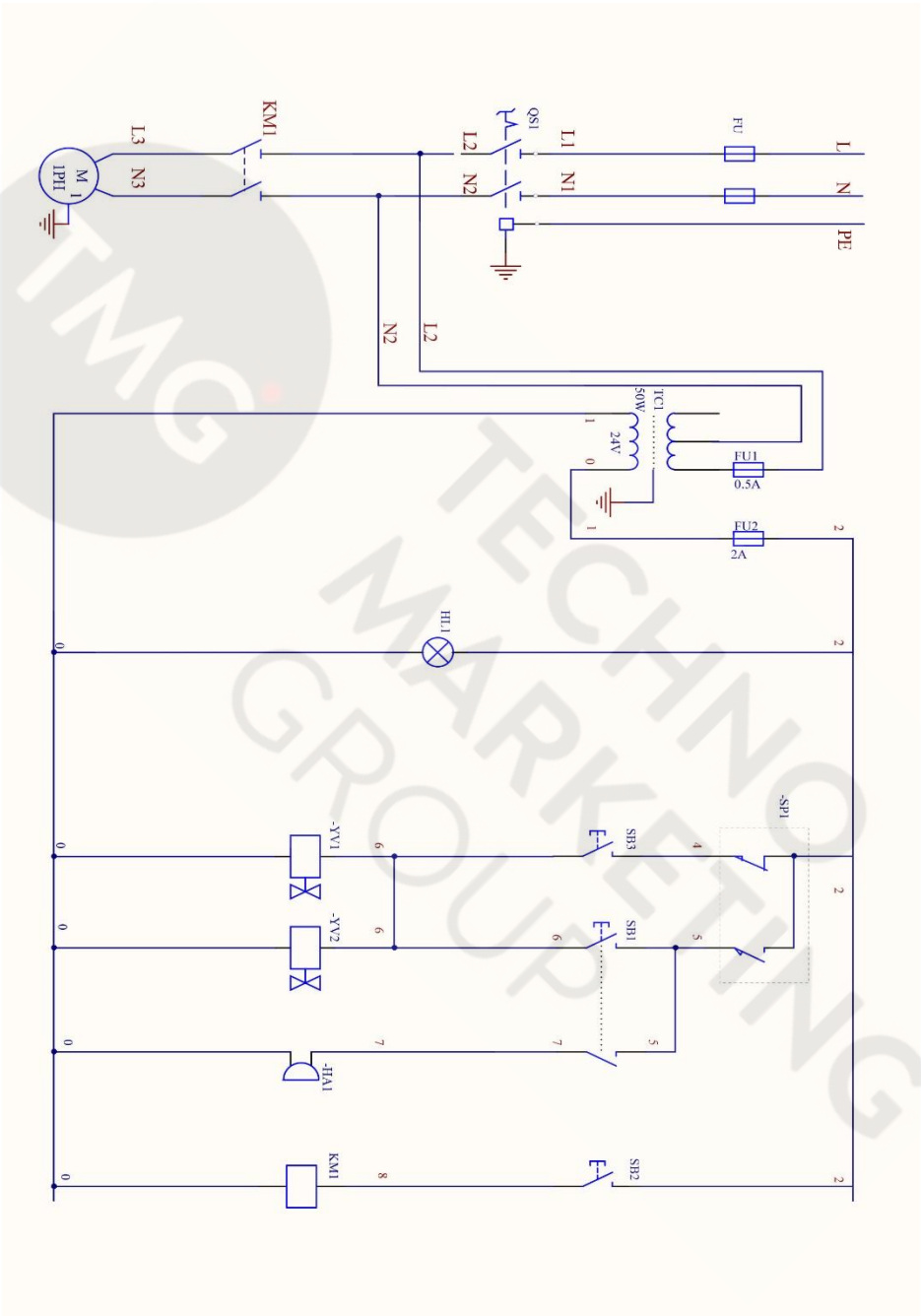


Figure 7 - ELECTRICAL DIAGRAM 1Ph



FU	FUSE gG-500 10.3 x38 16A
FU1	FUSE gG-500 5x20 1A
FU2	FUSE gG-500 5x20 1A
HA1	BUZZER AD16-22SM
HA2	BUZZER AD16-22SM
KM1	AC CONTACTOR CJX2-1801 24ACV
KM2	AC CONTACTOR CJX2-1801 24ACV
M1	TWO-PHASE MOTOR 3.0KW
M2	THREE-PHASE MOTOR 3.0KW
PE	GROUND TERMINAL
QS1	ELECTRIC SWITCH
SQ1	FLOAT SWITCH
SB1	SAFETY DOWN BUTTON LA22C
SB2	UP BOTTON LA22C
SB3	DOWN BUTTON LA22C
SB3	LOCKING UP BUTTON LA22C
TC1	CONTROL TRANSFORMER 200W 400V/24V(110W)/24V(90W)
YV11	DESCENT SOLENOID VALVE
YV12	DESCENT SOLENOID VALVE

YV2	PNEUMATIC SOLENOID VALVE
SW	SELECTION SWITCH LA22C
T1	TIME RELAY ET-41
YVT1	DESCENT SOLENOID VALVE
YVT2	DESCENT SOLENOID VALVE
HL1	WHITE SIGNAL ND16-22DS/4(2)
HL2	WHITE SIGNAL ND16-22DS/4(2)

CHAPTER 6 - SAFETY

Read this chapter carefully and completely because it contains important information about the risks for the operator and the person in charge of maintenance in case of misuse of the lift.

The lift has been designed and built to lift vehicles and make them stand above level in a closed area. Any other use is forbidden, including the following operations:

washing and painting

scaffolding or people lifting

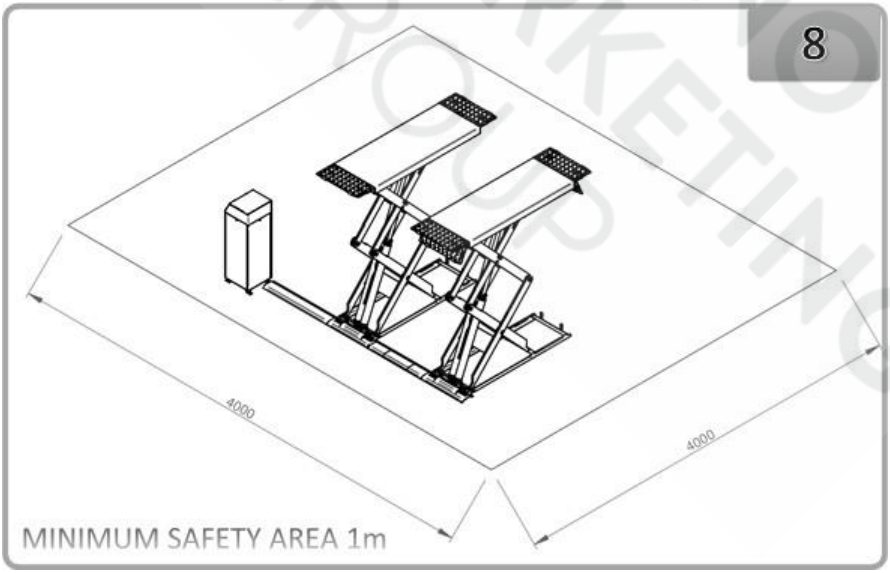
pressing

hoisting

The manufacturer is not liable for any damage or injury to people, vehicles or objects resulting from an improper or unauthorised use of the lift.

For operator and people safety, the safety area shown in Figure 8 must be vacated during lifting and lowering. The lift must be operated only from the operator control panel, as shown. Operator presence under the vehicle, during working, is only admitted when the vehicle is lifted and platforms are stopped.

Never use the lift when safety devices are disabled. Failure to follow these instructions may cause serious damage and injury to people, lift and lifted vehicles.



6.1 General warnings

The operator and the person in charge of maintenance must follow accident-prevention regulations and rules in force in the country where the lift is installed.
They must also carry out the following:

- neither remove nor disconnect mechanical, hydraulic, electric or any other safety devices; carefully follow the safety instructions applied on the machine and included in the manual;
- observe the safety area during lifting;
- make sure the engine of the vehicle is off, the gear engaged and the parking brake put on;
- make sure to lift only intended vehicles, without exceeding the maximum lifting capacity;
- make sure that no one is on the platforms during lifting or standing.

6.2 Risks during vehicle lifting

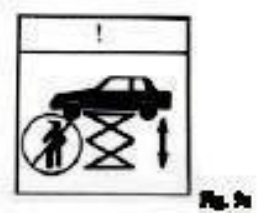
To avoid overloading and possible failure, the following safety devices have been provided:
A pressure relief valve placed inside the hydraulic unit to prevent lift overload.
A special design of the hydraulic system, in case of pipeline failure, to prevent sudden lift lowering.

6.3 Direct risks for people

All risks the personnel could face, due to an improper use of the lift, are described in this section.

6.4 Crushing risks

During lowering of platforms and vehicles, personnel must not be within the area covered by the lowering trajectory. The operator must make sure no one is in a dangerous position before operating the lift.



6.5 Bumping risk

When the lift is stopped at relatively low height for operational reasons, there is the risk of bumping against projecting parts.

Fig. 10

6.6 Risk of vehicle falling from the lift

Vehicle falling from the lift can be caused when the vehicle is improperly placed on platforms, and when its dimensions are incompatible with the lift or by excessive movement of the vehicle.
In this case, immediately go away from the working area.

Fig. 11a

Fig. 11b

Fig. 11c

6.7 Slipping risks

The risk of slipping can be caused by oil or dirt on the floor near the lift.

Fig. 12

	**Keep the area under and around the lift clean. Remove all oil spills.**

6.8 Electrocution risks

Avoid use of water, steam, solvent, paint in the lift area and, in particular, next to the electric panel.

6.9 Risks resulting from improper lighting

Make sure all areas next to the lift are well and evenly lit, according to local regulations in force.

6.10 Risks of component failure during operation

Materials and procedures, suitable for the designed parameters of the lift, have been used by the manufacturer to build a safe and reliable product. Operate the lift only for the use it has been designed for and follow the maintenance schedule described in chapter "Maintenance".

Fig. 13

6.11 Risks for improper use

The presence of unauthorised persons next to the lift and on the platforms is strictly forbidden during lifting as well as when the vehicle has already been lifted.

Fig. 14

	**Any use of the lift other than that herein specified can cause serious accidents to people in close proximity of the machine.**

CHAPTER 7 - INSTALLATION

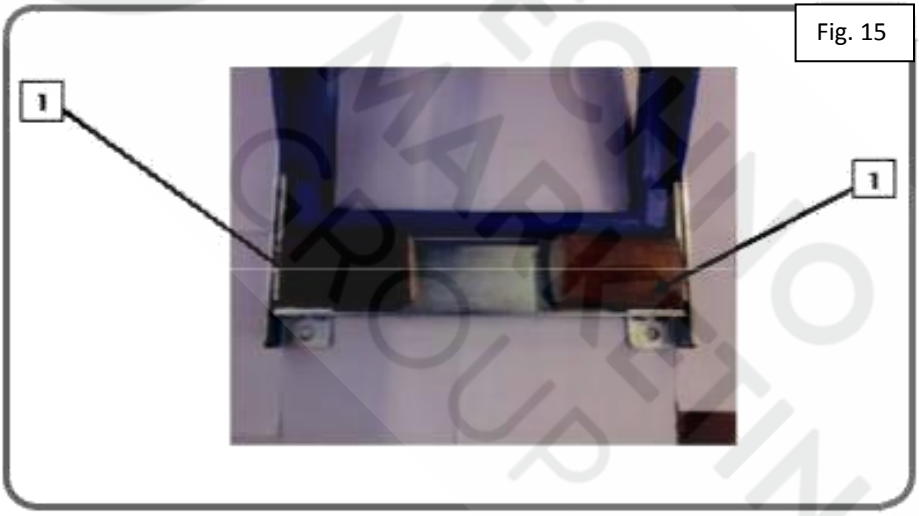
	Only skilled technicians, appointed by the manufacturer or by authorised dealers, must be allowed to carry out installation. Serious injury/damage to people and to the lift may occur if installation operations are carried out by unskilled personnel.

	Before any operation, remember to insert a safety obstacle between the lower arms and the base frame (see Figure 15).

	Before compressed air connection, fill the hydraulic cylinders with oil.

Safety assembly insert: 1 and 2

Fig. 15



Preliminary operations

7.1 Checking for room suitability

The lift has been designed to be used in covered and sheltered places.
The place of installation must not be next to washing areas, painting work stations, solvent or paint deposits. The installation near rooms where a dangerous situation of explosion can occur is strictly forbidden. It is necessary to check compliance with the provisions of regulations on health and safety at work with respect to minimum distance from walls, work or safety areas of other machines or equipment, escape paths, etc.

7.2 Lighting

Lighting must be compliant with the regulations in force in the place of installation. All areas of the lift must be illuminated in an even and sufficient way to ensure the adjustment and maintenance operations provided by this manual, avoiding dark areas, reflections and glare.

7.3 Installation surface or installation pit

The lift must be placed on a sufficiently resistant horizontal surface. The surface and foundations must be suitable for bearing maximum stress values, also in the worst working conditions. In case of in-ground/recessed installation, the finished size of the pit must be verified (as per drawing sent at the time of order). For installation on raised surface, compliance with the maximum load bearing capacity of the surface is recommended.

7.4 Platform assembly and control unit positioning

Unauthorised persons are not allowed during assembly.

Take platforms to the installation site by using hoisting means with a load capacity of at least 500 kg.

To prevent the platform from dropping during transport, it should be lifted according to its centre of gravity.

Always raise platforms by holding them on the underside of the base frames. Position the base frames on the foundations according to the drive-on direction of the lift.

Lift platforms with auxiliary equipment by using strong ropes, slings or chains and insert the safety blocks.

Place the control unit in the required position.

7.5 Hydraulic system connections (see Figure 16 - 16.1)

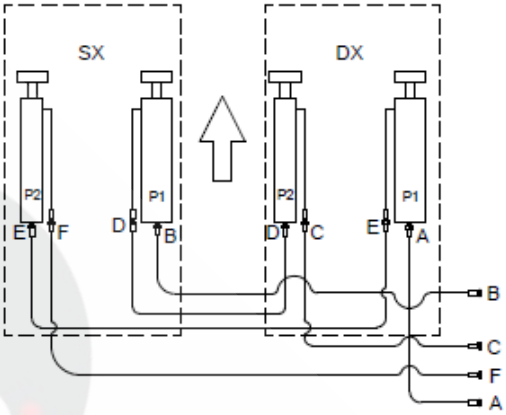
Connect hydraulic hoses to the fittings placed on the fixed platforms referring to the letters shown on them;

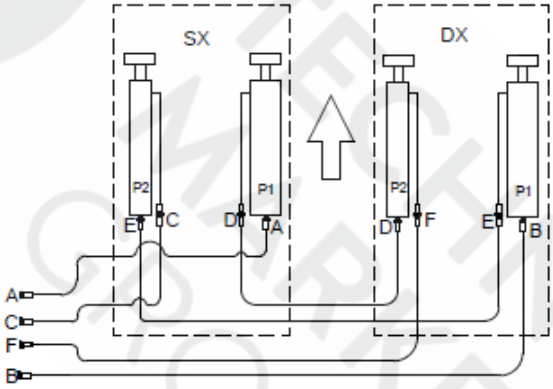
Tighten thoroughly;

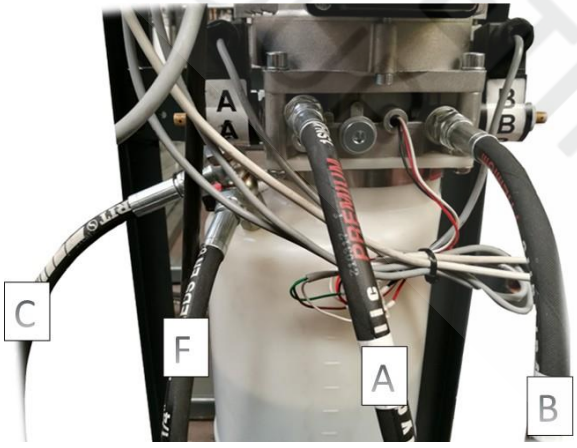
Connect hydraulic hoses to the fittings placed on the hydraulic unit referring to the letters shown on them;

Tighten thoroughly.

Installation of control unit

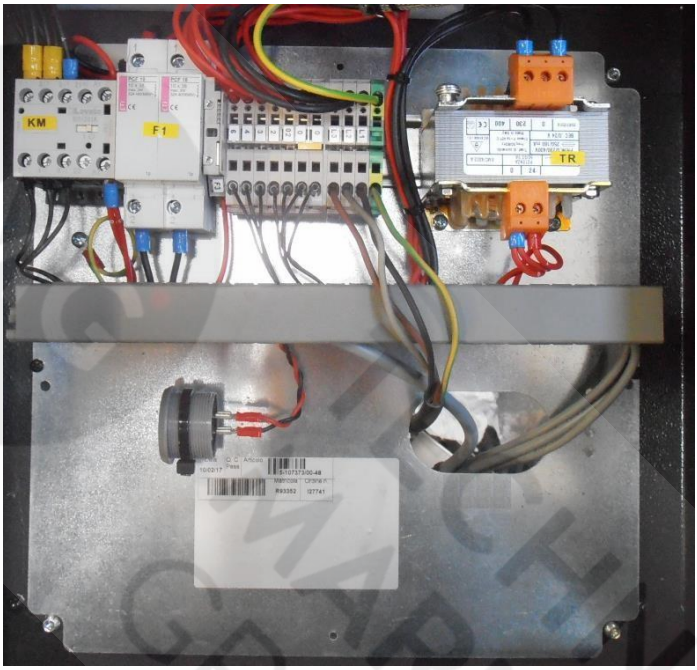






7.6 Electrical system connections for volumetric Lift with mechanical safety devices fig.18

- Connect the power cable correctly;
- Connect the lift to ground.



7.7 Start-up

LIFT WITHOUT MECHANICAL SAFETY DEVICES (FOR INSTALLING TECHNICIANS ONLY)

- Make sure the work area is free;
- ensure that the existing, overall electrical system supply voltage is equal to that of the control unit supplied (230 V or 400 V);
- make sure that voltage arrives at the control unit;
- pour oil into the tank (about 15 liters);
- give power to the bridge at the main switch;
- make sure that the direction of rotation of the motor corresponds with that indicated on the label, if not, invert the phases;
- Press the up button (Figure 17a - pos. 2) and make the bridge to the maximum height;
- bleed the cylinder by pressing the up button Figure 17a - pos.2);

N.B. Wait a few minutes to encourage the leakage air mixt with the oil in the tank.

- press the down button (Figure 17a - pos. 3) the lifts stops automatically

Note: Wait a few minutes to help bleeding any air mixed with the oil in the tank.

7.8 Testing and inspections

7.8.1 Mechanical checks

- Lubricate with grease the sliding block housings positioned under the platforms and on the base frames;
- Lift fixing points to the ground with 8 anchor bolts (min. recommended size ø = 16 mm);
- Clean all parts of the machine;

7.8.2 Hydraulic system check

- Proper oil level in the tank;
- No leakage and blow-by;
- Cylinder operation.

7.9 Set up and adjustments

7.9.1 Check without load

Carry out two or three complete cycles of lowering and lifting and check:
the lift for reaching its maximum height;
the up limit switch for proper operation;
the down limit switch for proper operation;
levelling limit switch for proper operation (both platforms should lower simultaneously);
the buzzer/signalling light for proper operation during the final travel.

	**WARNING: please carefully follow the instructions in the next paragraph in order to avoid lift damage.**

7.10.2 Check with load

Repeat checks provided for by paragraph 7.10.1 with a vehicle on the lift;
In this case some irregularities can occur; so, considering that all adjustments shown are factory-made, the following can be carried out as an exception:

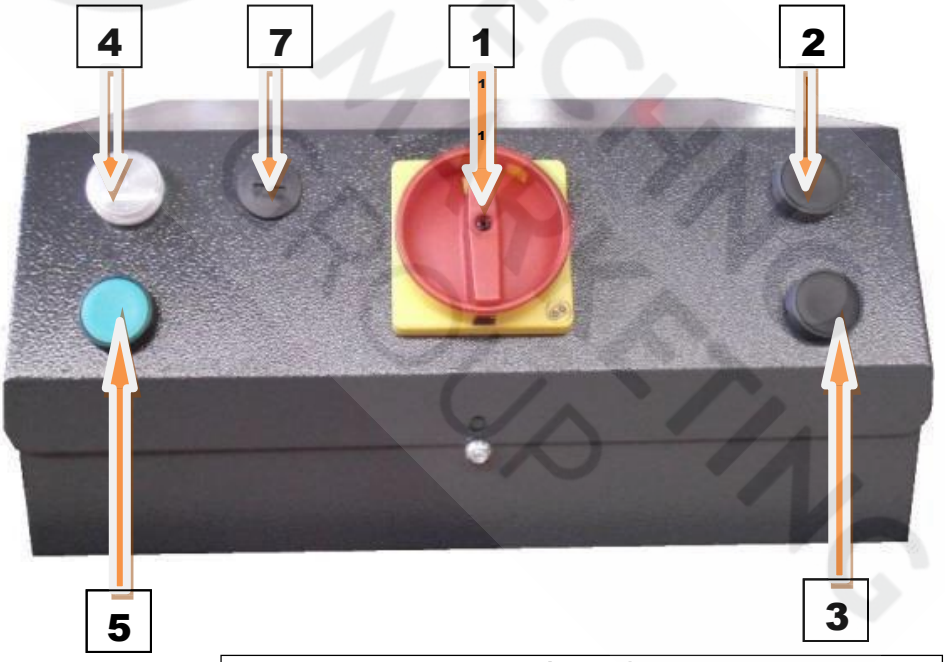
7.10.3 Check nuts and bolts

After carrying out the checks with load, make a visual inspection of the machine and check nuts and bolts proper tightening.

CHAPTER 8 - OPERATION AND USE

8.1 Controls

The controls for using the lift are:
Main switch (1)
The main switch has two positions:
Position 0: the electrical circuit of the lift is not powered; it is possible to secure the switch using a metal padlock to prevent its use. **Position 1**: the electrical circuit of the lift is powered.
UP button (2)
If pressed, it activates the motor and the lift will go up.
DOWN button (3)
If pressed, it activates the down solenoid valve and the lift will go down.
End of travel button (5)
If pressed before safety height detection (ca.400 mm), it activates the acoustic warning signal.
If pressed after safety height detection, it activates the acoustic warning signal and, after a few seconds, the down solenoid valve for the final travel.
NOTE: Press the end of travel button (5) to lower the lift fully.
Internal acoustic
warning signal/buzzer
Warning light (4)



WARNING.
Manual realignment must always be performed with the lift unloaded (with no vehicle)

WARNING:

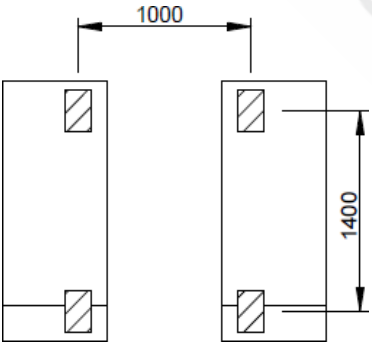
- The operation of the lift is permitted by authorized persons only.
- During the final travel, make sure that the safety area is free.
- Position the vehicle on the pads, making sure that it is aligned and centered with respect to the support points.
- L'the use of accessories not authorized by the manufacturer to change the support distances of the lifting pads is prohibited.
- It shall draw attention to the safe method of carrying the load and to the rule that, after raising a short disteance, the vehicle shall be checked to ensure that it is correctly and safety positioned.
- It shall draw attention to the rule that the load carrying device shall be observed by the operator throughout the motion of the lift.
- It is forbidden for people to stand in the field of motion of the load and the laod carryng device during the movement, if appropriate.
- It is forbidden to climb onto the load carrying device when they are raised unless via a specifically designed access.

8.2 PREPARATION OF THE VEHICLE

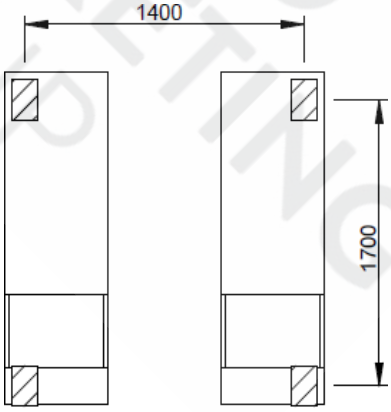
- Place the vehicle in the center of the platforms.
- Place the pads below the positions indicated by the car manufacturer for lifting.

RUBBER BLOCK POSITIONING

<3500 kg

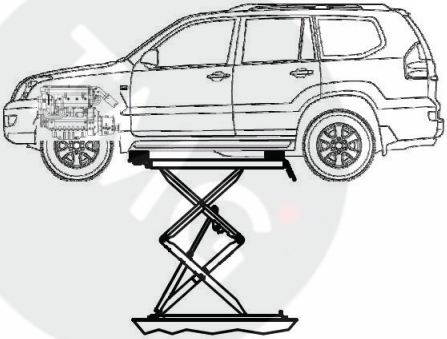


=>3500 kg



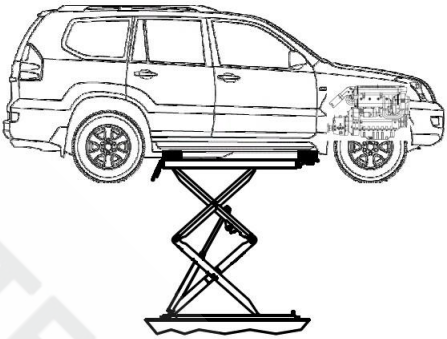
LOAD DISTRIBUTION:

DISTRIBUZIONE DEI CARICHI - LOAD DISTRIBUTION
SOLLEVATORE REVERSIBILE - REVERSIBLE LIFT



3:2 = 3000 kg - 3200 kg

3:1 = 3600 kg - 4000 kg



2:3 = 3000 kg - 3200 kg

1:3 = 3600 kg - 4000 kg

8.3 LIFTING

- Turn the main switch (1) to position 1 and press the up button (2) until the desired height is reached.
- Press the up button [11] and lift for about 30 cm, check that the support points have a correct grip; if correct, continue the climb until the desired working height is reached.

8.4 PARKING

- To park the lift, once it reaches the desired position, release the UP button. The arrest of the movement takes place automatically.

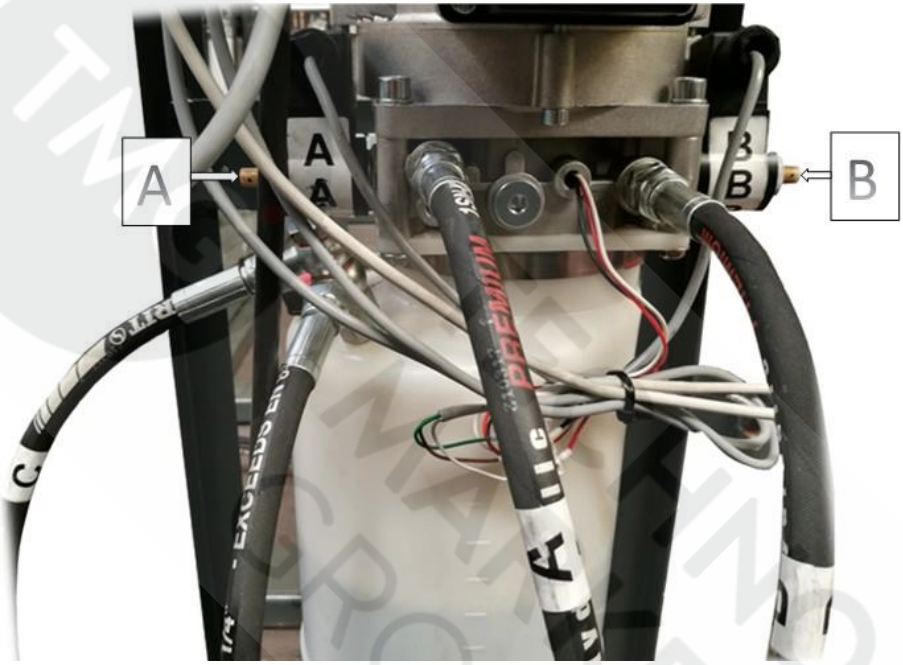
8.5 DESCENT

- To make the descent of the down button (3) must be pressed.
- The lift will drop, under its own weight and of the motor vehicle, to a height of approximately 400 mm safety.
- Ensure that the safety zone is clear, and at this point activate the final run button (5)

8.6 MANUAL DESCENT AND EMERGENCY

In case of absence of power or of failure of the control unit, you can returnthe linkage to the initial position by intervening, with the manual descent, in the following way:

To allow the lift down, it is necessary to press the down button (3) and at the same time press and release immediately the disable button (14).



1. Switch off the power supply using the switch on the electrical panel;
2. Remove the closing panels of the control unit;
3. Remove all obstacles under the footrests.
4. Open the pawls relative to the solenoid valves A and B at the same time taking care to bring down the aligned boards.
5. Carry out the point [4] several times making sure that the lifter slopes smoothly in all its parts until the whole platform is reached on the ground.
6. Remove the vehicle.
7. Restore the conditions of use.
8. Always carry out an unloading lifter; a complete travel (ascent / descent) to verify that all the conditions of use have been correctly restored.

After making a manual lowering, restore the lift in the normal operation conditions. If the manual lowering valve is open, the lift will not lift.

CHAPTER 9 - MAINTENANCE

Only trained personnel who knows how the lift works can be allowed to service the lift.

Properly service the lift as follows: Use only genuine spare parts and suitable tools;
Follow the scheduled maintenance and check periods indicated in the manual;
Discover the reason for possible failure such as too much noise, overheating, oil blow-by, etc.

Refer to the documents supplied by the dealer to carry out maintenance:
Complete functional drawing of electric and hydraulic equipment; exploded view drawings with all data necessary for ordering spare parts;
List of possible faults and relevant solutions.

Before carrying out any maintenance or repair operations, disconnect the power supply, padlock the main switch and keep the key in a safe place to prevent unauthorised persons from switching on the lift

9.1 Ordinary maintenance

The lift must be properly cleaned at least once a month. Use self-cleaning cloths.

The use of water or inflammable liquid is strictly forbidden

Make sure the chrome-plated rod of the hydraulic cylinders is always clean and not damaged. If not, leakage from seals and, as a consequence, possible malfunctions may occur.

9.2 PERIODIC MAINTENANCE

Every 3 months	Hydraulic circuit	Check oil tank level; refill if needed. Check the circuit for oil leakage. Check seals for proper conditions and replace them, if necessary.
	Foundations bolts	Check bolts for proper tightening and tighten with a torque wrench (See table of values)
	Hydraulic pump	Verify that no noise changes take place in the pump of the hydraulic control unit when running and check fixing bolts for proper tightening.
	Safety system	Check safety devices for proper operation.
Every 6 months	Oil	Check oil for contamination or ageing. Contaminated oil is the main reason for failure of valves and shorter life of gear pumps.
Every 12 months	General check	Check all framework components and check mechanisms to verify the absence of any faults and malfunctions.
	Electrical system	A check of the electrical system to verify that control unit motor, limit switches and control panel operate properly must be carried out by skilled electricians.
	Oil+oil filter	Change oil + hydraulic pump filter

CHAPTER 10 - TROUBLESHOOTING

A list of possible troubles and solutions is given below.

Trouble:	Possible cause:	Solution:
The lift does not work	The main switch is not turned on	Turn the switch on.
	There is no power	Restore voltage.
	Electrical cables are interrupted	Replace.
	Fuses are blown	Replace.
The lift does not move up	The motor direction of rotation is not correct	Exchange two phases.
	The oil in the tank is not sufficient	Add hydraulic oil.
	The UP button is faulty	Check UP button and its connection. Replace, if needed.
	Lowering valve stays open	Check and clean if dirty. Replace if faulty.
	The suction pump filter is dirty	Check and clean if necessary.
The lifting capacity is not sufficient	The pump is faulty	Check the pump and replace if needed.
	Oil leakages in hydraulic unit	replace if needed. Check the valve Check the pressure relief valve and the drain solenoid valve.
The lift does not lower when the DOWN button is pressed (without load)	Oil excess in hydraulic circuit	the drain solenoid valve. Press the DOWN button together with the unload button.

Trouble:	Possible cause:	Solution:
The lift does not lower when the DOWN button is pressed	The down solenoid valve does not work properly	Verify if it is powered and check its magnet for damage (replace if disconnected or blown).
	Locking solenoid valve is jammed	Verify if it is powered and check its magnet for damage (replace if disconnected or blown).
	The DOWN button is faulty	Replace the button.
Platforms do not stop in standing position	The lowering and locking solenoid valves stay opened	Verify that solenoid valve sliders are not blocked.
	Leakage in at least two hydraulic pipelines	Check connections for proper tightening and tubes for damage (replace if damaged).
	Two hydraulic cylinders at least are faulty	Check and replace if necessary.
The lift does not lower smoothly (jerky motion)	Air in the hydraulic system	Bleed the hydraulic system.
Lifting is not synchronised	Leakage or air in the hydraulic system	Bleed the hydraulic system.

CHAPTER 11 -LAY-OFF - SCRAPPING

If the lift is to be out of service for a long period, disconnect supplies, empty the tank(s) containing operating liquids and protect any parts which might be damaged by dust.
If the lift is to be decommissioned, it must be made unusable by removing the power unit, composed of hydraulic pump and electric motor, from the control unit.
All parts which might be sources of danger must be rendered harmless. Assess the lift's category according to waste disposal.
Scrap as metal and electronic waste, consigning the various parts of the lift to the appropriate collection centres.
If the lift is classified as special waste, dismantle it and subdivide its parts by type, then dispose of them as required by law.

Environmental information

This product may contain substances that are potentially harmful to the environment and human health unless disposed of properly.
The information provided below is intended to prevent these substances from being released into the environment, and to improve the use of natural resources.
Electrical and electronic equipment must not be disposed of with ordinary municipal solid waste; it must be disposed of separately at authorised facilities.

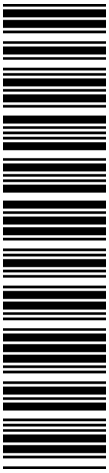
The barred bin symbol affixed on the product and shown in this page is meant to remind users that the product must be disposed of properly at the end of its life cycle. This prevents the inappropriate disposal of the substances contained in this product, or the improper use of parts of this product, and the resulting hazards for the environment and human health. Furthermore, this helps to recover, recycle and reuse many of the materials contained in these products. For this purpose, producers and distributors of electric and electronic equipment organise adequate collection and disposal systems for the equipment itself.

At the end of the product life, contact your distributor for further information on the collection procedures. When purchasing the product, your distributor will inform you about the possibility to hand in an old machine at the end of its life cycle free of charge, provided it belongs to an equivalent type and that it had the same functions as the purchased one.
Anyone disposing of the product otherwise than as described above will be liable to prosecution under the law of the country where the product is disposed of.

We also urge you to adopt other environmentally friendly practices: recycle the internal and external packing materials which come with the product and properly dispose of spent batteries (installed in the product).
With your co-operation, we can reduce the quantity of natural resources used for the production of electrical and electronic equipment, minimise the use of landfill for the disposal of materials and improve the quality of life by avoiding release of potential dangerous substances in the environment.

Notes

IT - Dichiarazione CE di conformità - Dichiarazione di conformità UE *
EN - EC Declaration of conformity - EU Declaration of conformity*
FR - Déclaration EC de conformité - Déclaration UE de conformité*
DE - EG–Konformitätserklärung - EU–Konformitätserklärung*
ES - Declaración EC de conformidad - Declaración UE de conformidad *



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