Palazzani
INDUSTRIE

PALIFT - DIVISION

RAGNO XTJ 43

USE AND MAINTENANCE MANUAL

Original copy

RAGNO	**XTJ 43 / C**
SERIES NUMBER	**PT 3582**
YEAR OF PRODUCTION	**2016**
MANUAL N°	**NM 665**

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This manual contains all the information necessary for the operators for the normal and planned use of Palazzani products.
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The owner Company enforces its rights according to the law.
The documents are prepared in accordance with section 1.7.4 of the EC Directive 2006/42 / EC (Directive on the approximation of the laws of the member states relating to machinery).
Any request of additional copies of this manual or further technical information about it, shall be sent to the distributor/sales representative or directly to Palazzani.
Palazzani Industrie thanks you for purchasing its product and invites you to read this manual and other attached manuals or documents.
In the manual you will find all needed information for a correct use and service of the supplied machine.
A careful attention to follow the instructions and the the reading of this manual in every part is strictly necessary.
You are also invited to contact Palazzani Industrie or local Dealer directly for spare parts enquiries, suggestions on any special equipment choice or, simply, for any indication regarding the ordered machine.
The manual is identified by a unique code, divided in chapters and paragraphs numbered progressively.
Figures are numbered progressively for every chapter and are identified by the description.
The specific equipments instruction manuals are attached to this manual.
The documents provided with the machine is composed of this Use and Maintenance Manual, the equipments Manual and the Manuals of machines or semi-machines and of the items listed in this documents which are integral part of the Use and Maintenan-

ce Manual and for which the same recommendations/indications of this Manual are valid.

Conformity of the instructions

These warning and use instructions of the machine are conforming to the CE Directive 2006/42/CE, Annex I essential requirement of safety and health 1.7.4.

The following technical standards have been consulted:
EN ISO 12100 Safety of machinery. - General principles for design - Risk assessment and risk reduction.
UNI 10653 Technical documentation - Quality of product technical documentation.
EN 82079 Preparation of instructions - Structuring, content and presentation

Organisation of the manual

The Use and Maintenance manual, and warnings of the machine is composed as follows:

A) General Manual composed of the following sections:
1. General warning
2. Machine description
3. General description and technical data
4. Movement
5. Safety
6. Description of the controls and signals
7. Functioning and use
8. Diagnostics
9. Procedures of intervention in imergency
10. Ordinary and programmed maintenance
11. Machine demolition and disposal
12. Spare parts
13. Attached documents

B) Instruction manuals edited by the relative Manufacturers for the main commercial systems bought by the Manufacturer and integrated with the machine.

Warranty

The guarantee by Palazzani Industrie S.p.A. covers the defected materials and execution.

- GUARANTEE DURATION: the guarantee covers all reparations of Products fulfilled within the terms indicated in the sale contract.
- GUARANTEE OBJECT: the guarantee is applied to the Products and their parts, marked by serial numbers or other identifying systems used by the Company.

- The guarantee expires in case of intervention on the supplied machine by non-authrrized persons.

The above described guarantee is valid in case of any different agreement between the manufacturer and the Customer.

Instruction Manual scope

The manual and the CE Certificate too are integral part of the machine and must be always attached also in case of transfer or resale. It is a customer/buyer duty to keep this document intact and available for the User, to allow its consultation during the entire life of the product itself.

In case these documents are lost, it is possible to require a copy to the Manufacturer, specifying exactly the model, serial number and year of manufacturing.
The manual reflects the state of the art at delivery, the undersigned Company reserves the right to make any changes to its products if considered useful, without any obligation to update manuals and systems on the previously manufactured products.

This Instruction manual provides all specific information needed for the correct use of your Palazzani Industrie machine.
THE BUYER MUST OBLIGATORILY HAVE READ THE MANUAL TO ALL USERS AND MAINTENANCE STAFF, ENSURE THAT IT IS UNDERSTOOD.

Language of the manual

The original manual is in English.

Any translation in different languages must be done from the original instructions.
The Manufacturer is responsible of the information contained in the original Instructions; any different tranlsation can not be completely verified, therefore in case of incongruence it is necessary to refer to the text in original language or to contact our Technical Department.

Some symbols are used in the Manual to evidentiate some particularly aspects and to drive the reader attention.
The following table describes the meaning of some symbols used which are conforming to standard EN ISO 7010

SIMBOLO	SIGNIFICATO	NOTE
	Danger	Indicating danger with risk of accident, even mortal, of the staff. Keep the max attention to the texts showing this symbol
	Attention	Indicating warning of possible deterioration or danger to the machine, equipments or other personal object of the customer/user. Keep attention to the texts showing this symbol
	Important	Obligation of a special behaviour or activity for a safe machine managing or for information to the staff
	Additional information. Note	The texts including complementary information show this symbol. These information are not directly linked to the description of a function or with the procedure development. They can refer to other complementary documents, such as Instruction Manuals for attachments, technical documents or other sections of the present manual.

Sommario

1. GENERAL CHARACTERISTICS

1.1. INTRODUCTION

"Ragno" is the most proper aerial access platforms for aerial work and difficult access thanks to its stowed dimensions and light weight.
One of the "Ragno" peculiarities is the stabiliser set-up possibility to be rotated and articulated independently, always granting the working area automatic limiting system in safety conditions.
Powered by standard dual power: no-noise thermic power pack for robust external working and electric motor(s) for quiet and smoke-free indoor operations, it solves any issue linked to environment.
The machine is available in rubber-tracked crawler version particularly fit for irregular grounds, being capable of climbing steps or steep slopes. It is equipped with a wide range of optional equipments which meet every application need.
The platform is not electrically isolated but it is being designed to operate outdoor.

1.2. DESCRIPTION

"Ragno" unit mainly consists of a frame with 4 articulated stabilizing legs, hydraulically controlled, a turntable slewing on a ball bearing ring.
Steel made multi-telescopic boom is hinged to the turntable and it supports the aerial cage, with an hydraulically articulating jib. All movements are actuated by hydraulic cylinders, or hydraulic motors
The machine is mounted on rubber tracks, completely integrated with the supporting frame.
Three power packs are mounted: el.motor 220V, el.motor 380V and no-noise diesel engine, all driving the platform movements alternatively and both source are able to the boom mouvements and travelling. The machine has two complementary control panels. One in the cage, which is used for aerial work.
The ground control panel is used for the travelling and stabilizer positioning, and, if allowed, the boom mouvements, as well as the emergency operations.

1.3. DIRECTIVE AND RULES

2006/42/CE Directive indicates the conditions to deliver the machine in EU market.
The machine supplied by Palazzani Industrie is a machine complying one of the machines category listed in the Directive attachment IV. Palazzani applies the procedure of conformity evaluation with CE exam method as per attachment IX, to comply with the conformity.
To comply with the conformity of the machine to the Directive dispositions, Palazzani fulfils the risks analysis to verify the respect of safety and health essential subjects indicated in the Directive, further than performing the tests and check required in the applied rules, before delivering the machine.

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The manufacture technical report is issued conforming with attachment VII of Directive 2006/42/CE and it is available for the inspecting institutes under justified request, as required by the law dispositions in force.
Palazzani Industrie provides, therefore, to supply the machine to the market, compelte of:

- CE Mark
- CE Declaraion of Confomity
- Instructions and warning Manual

The machine/equipment supplied is designed, manufactured and tested in conformity with the following EU directives:

- Machine Directive 2006/42/CE concerning the Member States laws regarding the machines;
- Electromagnetic Compatibility Directive 2004/108/CE;
- Acoustic Emission Directive 2004/14/CE.

With particular reference to the following dispositions: EN ISO 12100:2010, UNI EN 280:2013
With the machine it is provided the CE Declaration of Conformity to the safety essencial requests as per Directive 2006/42/CE (attachment II, point A), the Directive on Electromagnetic Compatibility 2004/108/CE and the directive on Acoustic Emission 2000/14/CE.

1.4. LIFE CYCLES

Applying the rule UNI EN 208:2013 to calculate the strenght under effort, the “heavy duty” application has been considered, which means in a life duration of 1000.000 cycles of load (i.e. 10 years duration, considering 50 working week per year, 40 hours per week and 5 loading cycles per hour).

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1.5. DIMENSIONS AND PERFORMANCES

Machine in transfer position

Min. height	2280 mm
Lenght	8520 mm
Width (without cage)	1350 mm
Total weight	10900 kg
Max pressure on the ground of track	0.57 kg/cm^2
Max. working height	43 m
Max. cage floor height	41 m
Max. outreach (basket border)	17.5 m
Max cage working load	230 kg (330kg optional)
Max. horizontal pull	400 N
Aerial cage dimensions (A x B)	2.4 x 0.7 m - h 1.1 m.
Min steering radius	5700 mm
Max. selfpropelling speed	2.25 km/h
Superable slope	40 %
Max. lateral slope (with tracks)	15 %
Turntable slewing	±330° (360° continui optional)
Cage rotation	90° + 80°
Hydr. system working pressure with diesel engine	220 bar
Hydr. system working pressure with el. motor	180 bar
Max. admitted wind speed	45 km/h
Max. admitted chassis slope	2°

Technical data - time

	DIESEL
Stabilizing legs lowering (to floor touch)	40 sec.
Stabilizing legs raising	25 sec.
Boom lifting (completely retracted)	60 sec.
Boom lowering (completely extended)	60 sec.
Telescopic boom extension	100 sec.
Telescopic boom return	80 sec.
Jib lifting	60 sec.
Jib lowering	60 sec.
Right-left turning (1 turn)	220 sec.

Transfer speed:

10 m slow	120 sec.
10 m fast	15 sec.

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Time are considered with empty cage, worm oil and max joystick activation.
A 10% tolerance on this value is acceptable. Time and dimensions are indicative and Palazzani SpA may change the value for internal causes.

Main mechanic components

Tracks type:	SAMPIERANA PT70G43
Breakes:	negative and automatic, with hydraulic releasin
Cage levelling reductor:	PALAZZANI
Turntable rotation motoreductor:	DINAMIC OIL RE242TS-MD-MLG 200

Main hydraulic components

Diesel engine pump	PLP 20.16/20.11,2D
220V el.motor pump	PLP 20.4D
Turntable slewing device	ATTUATORE MOVECO 168°
Proportional electrodistributor	BOSH REXROTH
Overcenter valves on pistons	OIL CONTROL/ HAWE
Filters	IN SENT WITH FULL CAPACITY Filtering 25 micron
Oils: hydraulic system	BP ENERGOL HLP HM 46
reducers	IP PONTIAX FZG85W/90
diesel engine	See manufacturer book
Grase	IP AUTO GREASE MP
Hydraulic oil tank	150 liters

!	**ATTENTION** For filling-up, it is recommended to use the above specified oil types exclusively - in case of oils with corresponding characteristics, it is advisable to make a complete change.

Main electric components

Electrical motors	2.2 kW 220 V a.c.
Generator	(optional) 5 kW 230 V a.c.
Battery	n° 2 100 A/h 24V
Battery charger	220 V ac - 24 V dc - 6 A
Radio control	Hetronic

Engine	diesel intake
Brand	PERKINS 404C-22
Fuel	diesel
Regimen	2600 rpm.
Transmission	neutral

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Noise lowering solutions	original cover by phonoabsorbing panel
Net power	35,7 kW at 2600 rpm
Fuel tank	115 liters

Phonometric tests (Directive 2000/14/CE)

Measured sound power level	LwA = 77 dB
Guaranteed sound power level	LwA = 102 dB

Vibrations

Operator hand/arm	< 2,5 m/sec^2 of A(8)
Operator body	< 0,5 m/sec^2 of A(8)

Gas emissions (exhaust gas)

The engine power is less than 19 kW, therefore not subject to Directive CE97/68, however the Manufacturer complais from now with the above mentioned Directive, granting 3A forcasted on 2011.

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1.6. DIMENSIONS

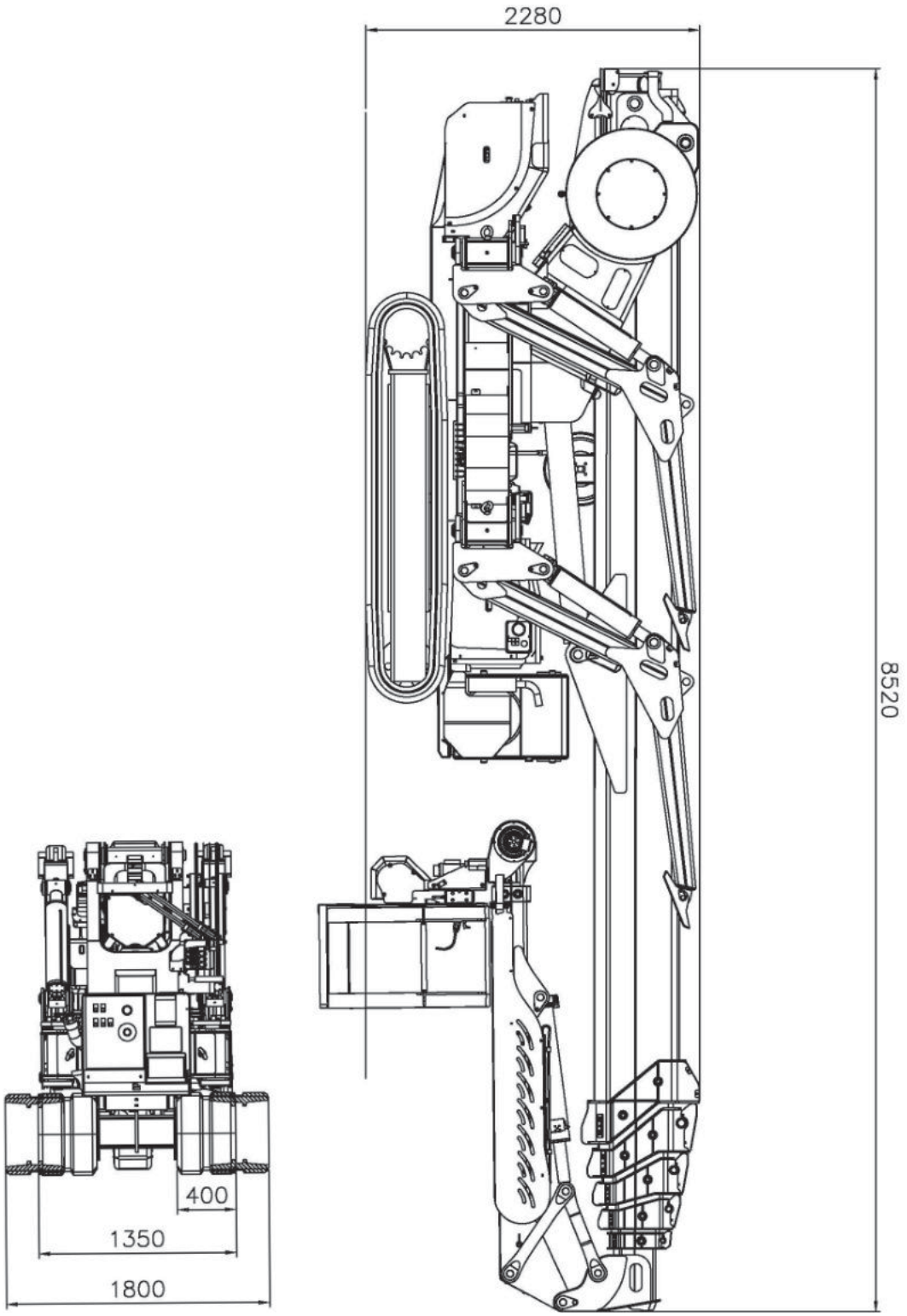

Fig. 1.1

Specific weight during transfer 0.78 kg/cm^2

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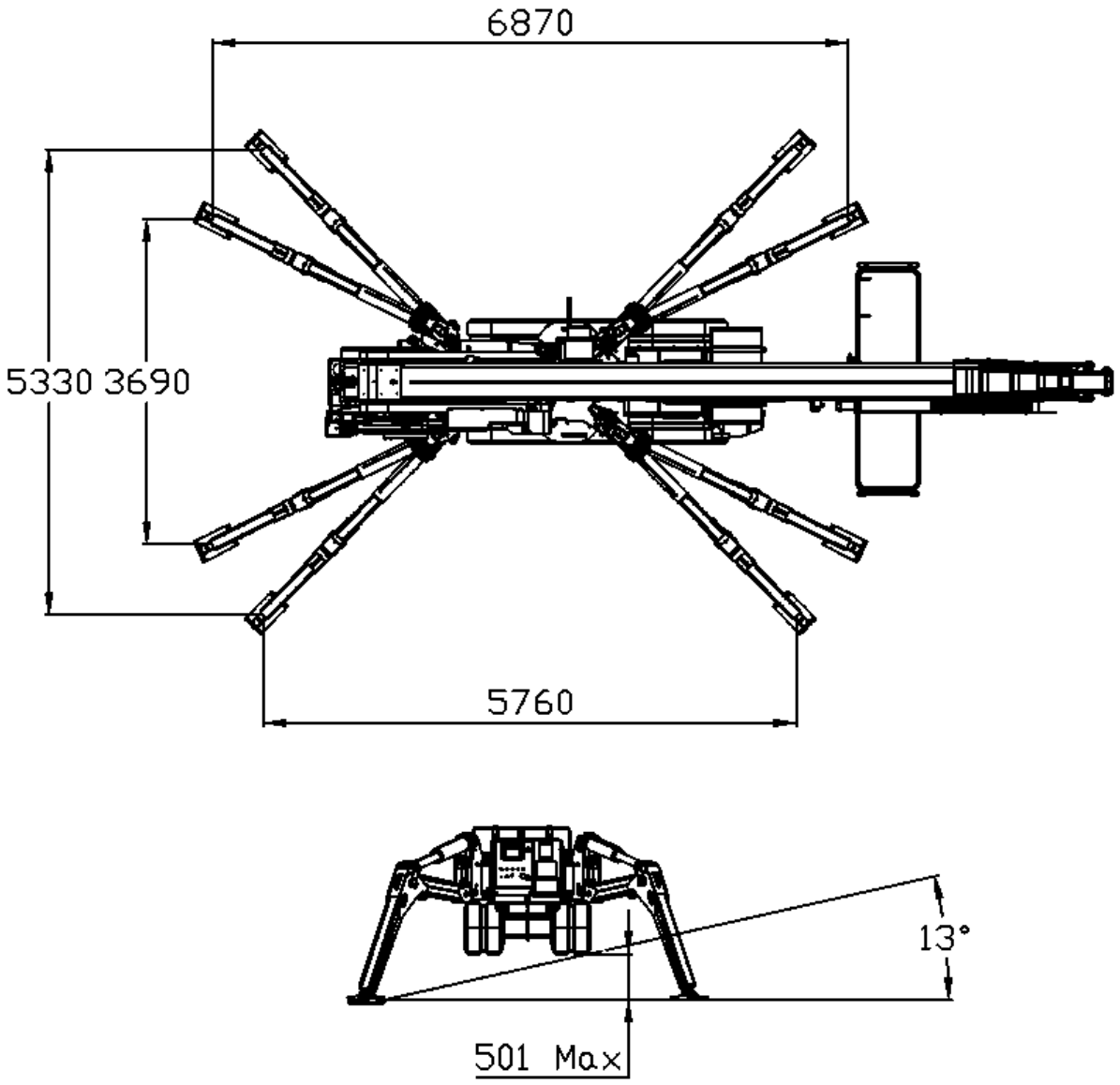

Fig. 1.2

Max loading on a stabiliser KN 35

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1.7. WORKING AREA

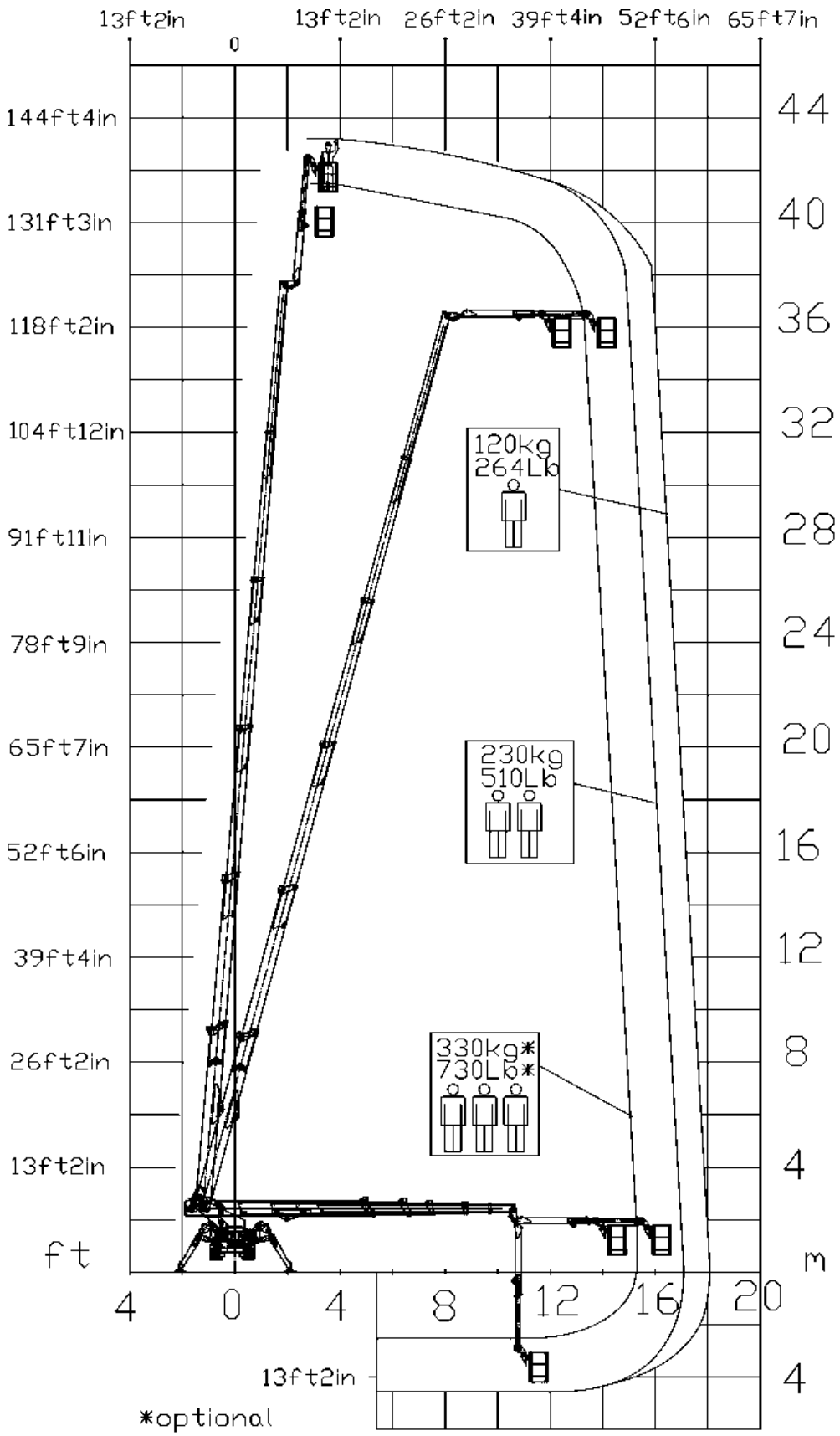

Fig 1.3

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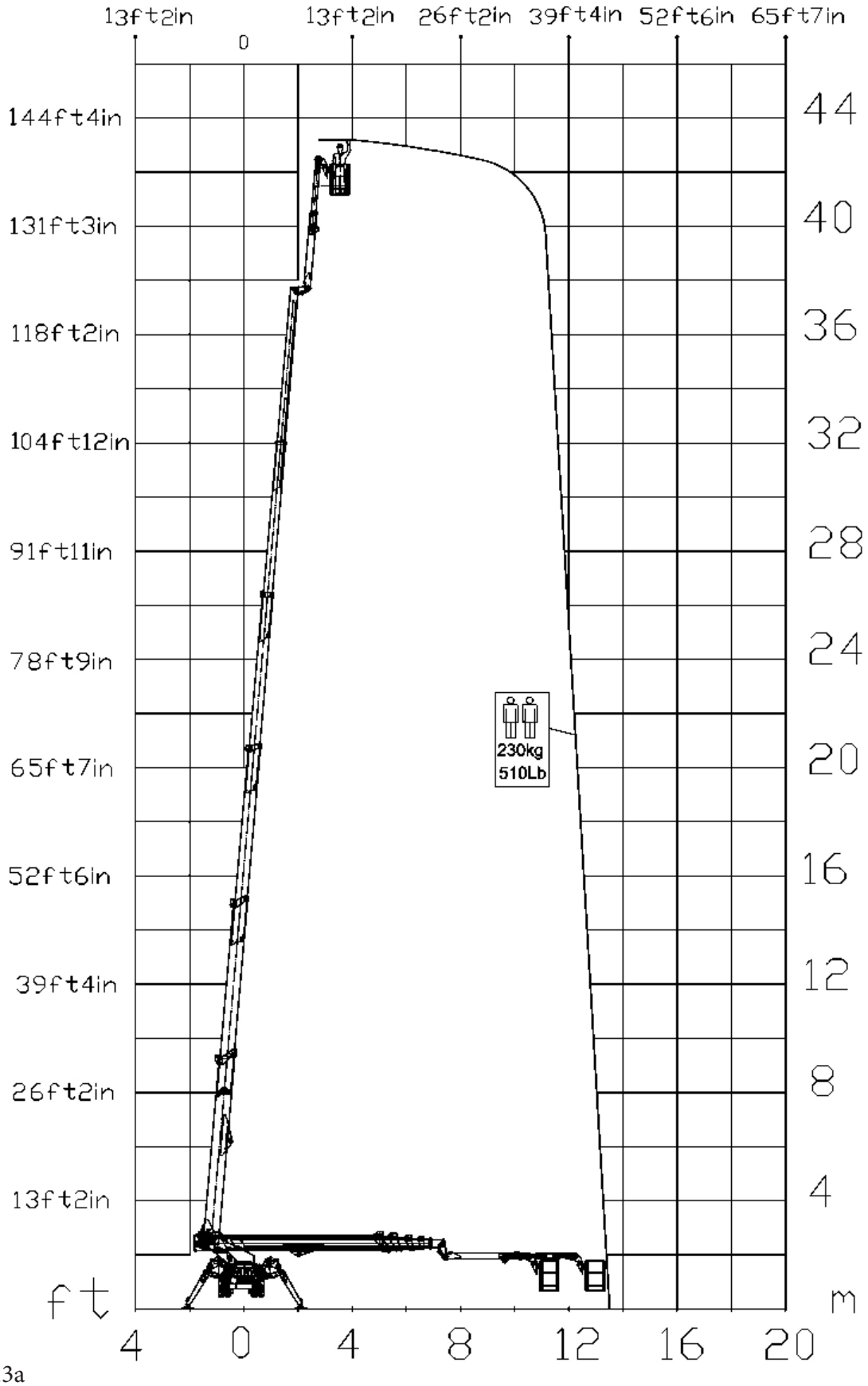

Fig 1.3a

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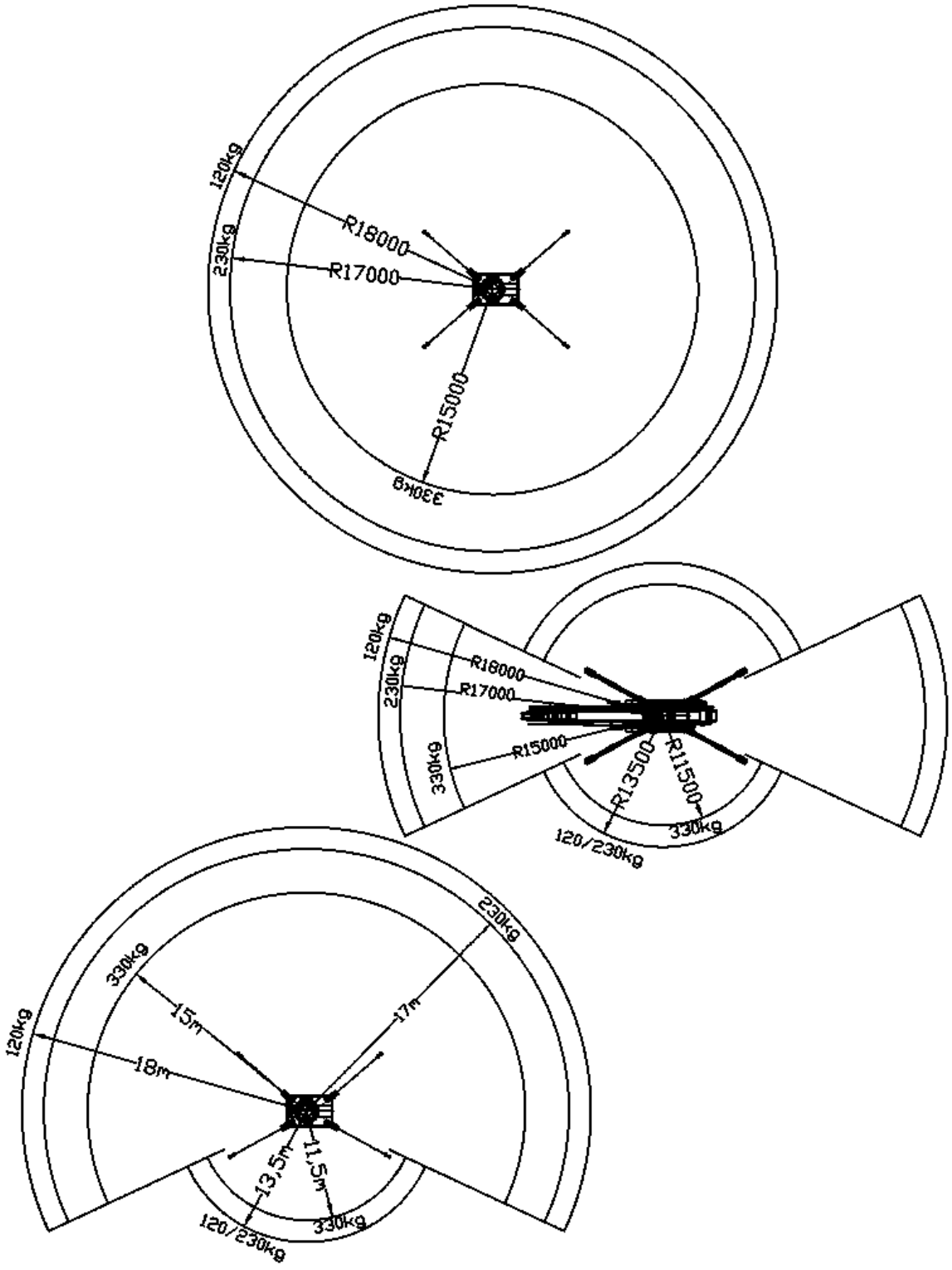

Fig. 1.4

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1.8. TRANSPORT

"Ragno" platform is authorized to road running, only under particular conditions and, therefore, it must be transported by lorry.

	Attention The machine has no homologation for traffic road circulation

Loading\unloading operations are possible with loading ramps.
The loading ramps must have a proper load capacity according to the machine (see chapt 1) and the sufficient length to not exceed about 40% slope.

It is suggested to load the machine with the cage towards up, to get better stability and to avoid diesel engine fuel. Since the fuel suction is positioned in the rear side of the machine, in case the ramp is faced with the cage toward down, the machine would be unstable, the eventual lack of fuel could stop the engine.

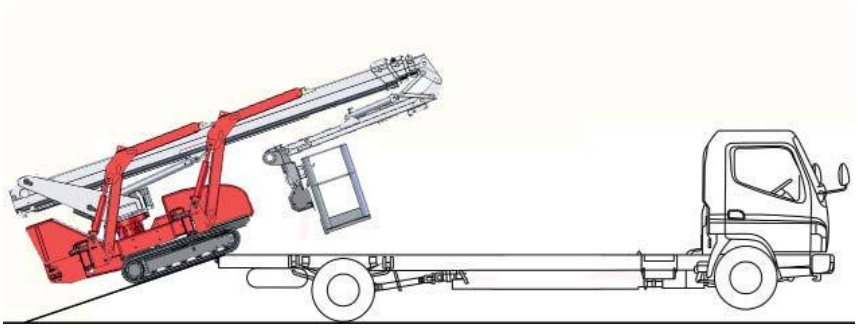

Fig. 1.5

To drive to the ramp, lift the cage to avoid any contact against the ramp, as shown in drawing 1.5. See the cage lifting without stabilization procedures, indicated in the paragraph 3 (button FN).
When the machine is in the truck bed, fix it to the lorry bed eyes bolts, by means of 4 M20 turnbuckles as in Fig. 1.6 and fix the boom and jib using one belt like showed in Fig. 1.6a.

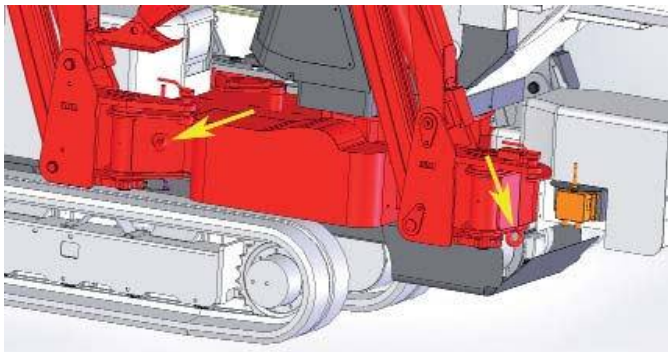

Fig. 1.6

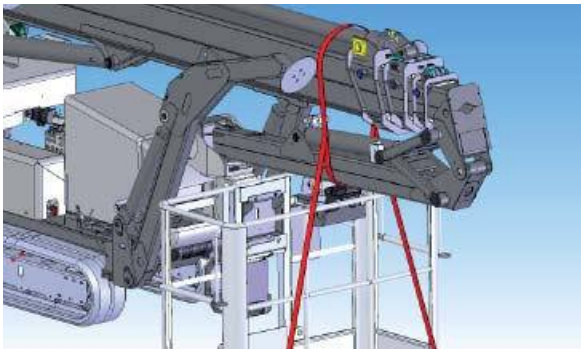

Fig. 1.6a

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With crane:

!	**Attention** Is required to lower all the stabilizers for 10 cm using the FN button (like showed in chapt. 3.11), before lifting the equipment.

- using a 4-arms harness of proper capacity and lenght, fix the hooks in the holes on top of the stabilizers (Fig. 1.7)
- lift the machine for load or unloading
- sollevare l'attrezzatura per caricarela o scaricarla dall'autocarro.

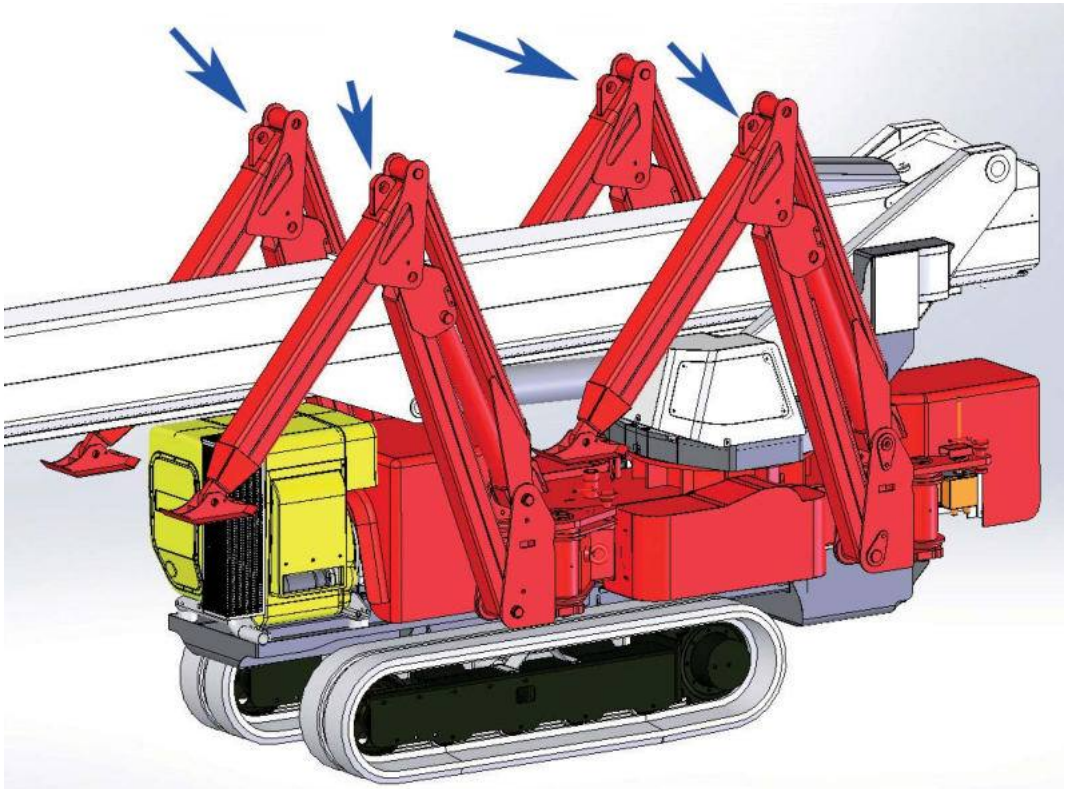

Fig. 1.7

The logistic personnel must be trained persons, instructed about the loading/unloading of the machine. Proper procedures and tools must be used for a safe lifting operation.

!	**Attention** **Strictly follow the indications and warning here below to grant stability and to avoid any risk related to the machine handling.**

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- Do not fulfill any manoeuvre if not authorized by skilled personnel
- Important: use ropes or chains be of proper capacity according to the machine weight
- Attention do not stay under suspended loads

	**Note** **machine lifting/handling operations must be fulfilled exclusively by specialized and trained personnel, skilled to the loads handling.**

	**DANGER** **BEFORE THE MACHINE USE, CHECK THE STATUS AND THE CORRECT FIXING OF THE MACHINES AND OF LIFTING EQUIPMENTS. USE HARNESS AND PROPER EQUIPMENTS.**

Wear safety gloves obligatorily

Wear safety shoes obligatorily

Always check ropes and chains before using. A periodic check is necessary in any case.

It is forbidden staying under suspended loads

	**ATTENTION** **If obstacles or anything don't allow a perfect visibility during manoeuvres, extra personnel must be present out of the lifting machine actio, to give indications.**

	**DANGER** **NEVER STAY UNDER THE SUSPENDED LOADS. NEVER HANDLE THE LOAD OVER PERSONNEL OPERATING IN THE WORKING SITE/FACILITY.**

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1.9. MAIN GROUPS OF THE PLATFORM

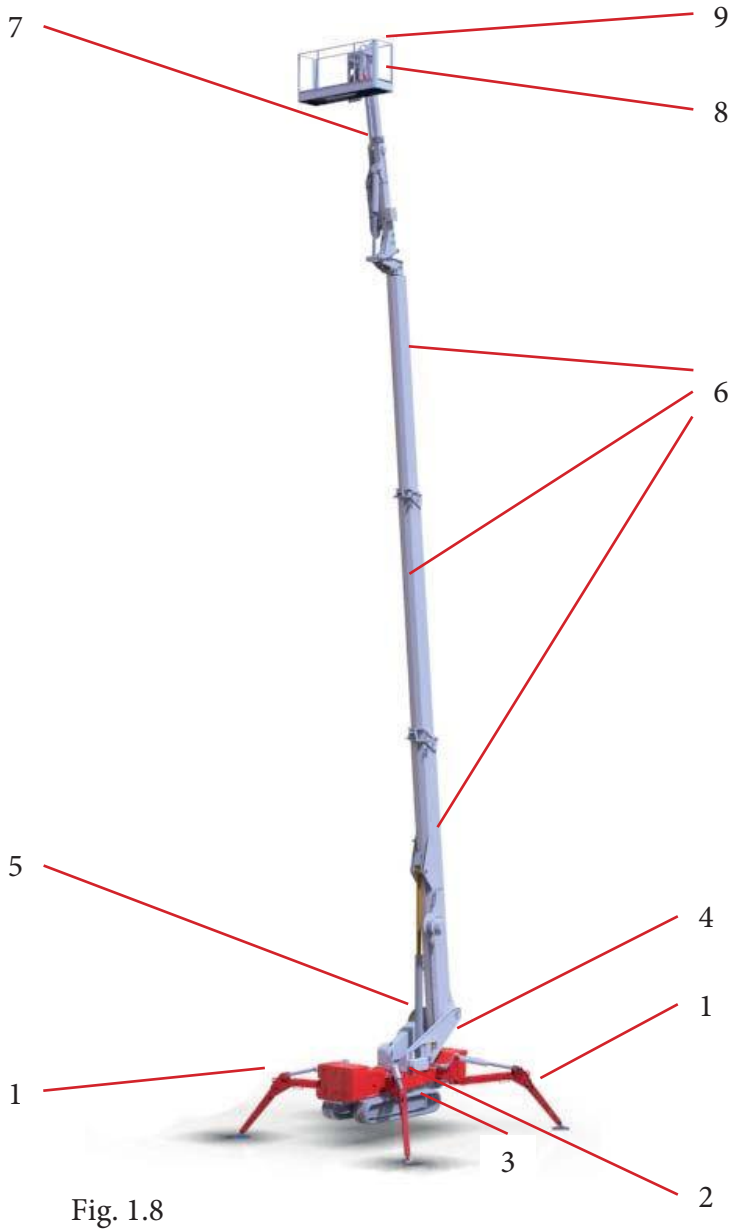

Fig. 1.8

1) Stabilizers
2) chassis
3) tracks or wheels
4) main electrical box
5) turret
6) telescopic boom extension
7) jib
8) cage
9) cage control panel

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2. SAFETY DIRECTIONS

2.1. GENERAL SAFETY INFORMATION

The user has the responsibility to provide the personnel all necessary instructions about any possible accident risks, safety devices and general rules about safety in accordance with the EU directives and Country laws where te machine is used.
The authorized personnel must know all position and functioning controls and machine characteristics.
This manual has to be read totally, as well as all attachment which are part of the manual.
In case of any doubt on the correct instructions understanding, contact the manufacturer PALAZZANI INDUSTRIE S.p.A. to get the needed explanations.

	ALL PERSONS OPERATING WITH THE MACHINE MUST READ THE INFORMATIONS IN THIS MANUAL CAREFULLY AND UNDERSTAND, IN PARTICULAR THE SAFETY INSTRUCTIONS LISTED IN THIS CHAPTER.

	**DANGER** TAMPERING OR NOT AUTHORIZED SUSBTITUTION OF ONE OR MORE PARTS OF THE MACHINE, THE USE OF EQUIPMENTS WHICH MODIFY THE MACHINE USE AND SPARE PART REPLACED WITH DIFFERENT MATERIALS FROM THE SUGGESTED ONE CAN CAUSE ACCIDENT RISK AND ARE FORBIDDEN.

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2.2. PERSONNEL TRAINING

Operators need to be trained to the use and maintenance by qualified personnel as indicated in the agreement State Regions dated 22 February 2012.

!	**ATTENTION** THE MACHINE IS FOR TO PROFESSIONAL USE EXCLUSIVELY

	**NOTE** **THE RULES OF THIS MANUALS CAN NOT COVER PARTICULAR SITUATIONS WHIC CAN OCCUR DURING THE DIFFERENT INSTALLATION AND/OR FUNCTIONAL PHASES**

	**ATTENTION** Do not perform any manoeuvre in case the reactions due to the controls are unknown.

	**ATTENTION** NEVER USE a damaged or modified machine (in respect to the original configuration). In presence of damages or variations in respect to the original configuration, inform inmediately the safety responsible about the noticed non-conformity.

	**ATTENTION** In case a plate or safety decal are worn, damaged or are not perfectly readeable, inform inmediately the safety responsible, who will have to replace them inmediately.

	SMOKE IS NOT ALLOWED During the operations, the operator hands must be free from other and dangerous objects, to be reactive in case of need. For this reason, during the machine use smoke is not allowed

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2.3. DESTINATION TO USE

This machine is designed and manufactured as aerial work platform, to lift persons to the working sites and let them work from the cage, with the possibility to enter andexit from the cage only from the ground and when booms are not extended.

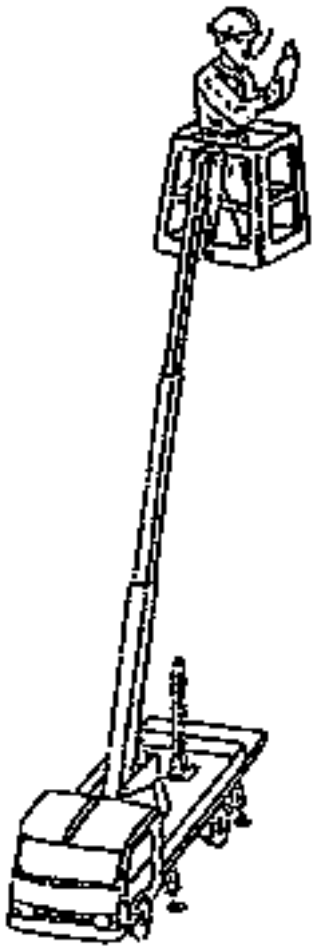

Fig. 2.1

2.4. SPECIAL INDICATIONS

Although the platform is specifically designed for personnel hoisting and aerial work, it can be used exclusively by trained operators, working in conformity with general safety standards and following the specific instructions of this manual.

	NOTA Read carefully the directions for use and maintenance.

During sloping transfer, keep the cage towards the slope by keeping away from scarps, landslide zones, deep holes and study the way considering the necessary steering radius.
Use the transfer controls, away from the base machine, by using the belt.
In cold temperatures, start the engine and let the oil warming for 5 min before the first manoeuvres which need slow speed.

The platform must be stabilised on compact ground - otherwise it is always recommended to place wooden boards under stabilising-legs, to increase the contact area and to reduce the specific pressure on the ground.

	DANGER Never go in or out the cage when it is in aerial position or extended. Enter the cage only when it is in parking position.

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!	**ATTENTION** Before completing the stabilising manoeuvre, check that the platform is perfectly levelled - 2° max. slope is admitted, as per fig. 2.3 (the bubble must be positioned inside the external ring).

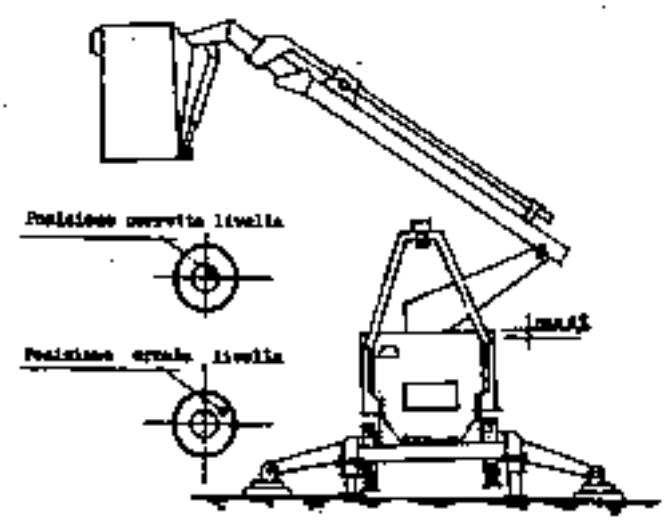

Fig. 2.2

⚠	**DANGER** Before approaching basements or attic floors, verify if platform weight and legs pressure can be supported.

⚠	**DANGER** Before moving the boom, verify that nobody is under the platform working area. For long term operations or where it is possible, delimitate the area where the machine boom operats with some chains and indications plates.

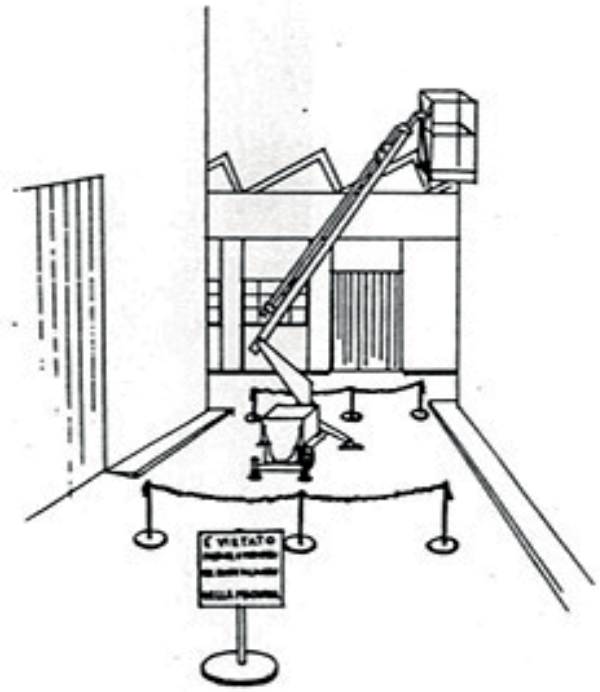

Fig. 2.3

!	**ATTENTION** Before using the platform, verify the correct functioning of the safety decives. Inform the technical responsible in case of noise, vibrations or anomalous machine behaviours.

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DANGER
Never use the platform as an elevator or to handle persons to different floors.

DANGER
When working near overhead electric lines, it is necessary to operate with a particular caution, to avoid any accidental contact of the boom or of the cage (Fig. 2.4).
Here below the table of safety distances from electric as per D.Lgs 81/2008

Nominal tension [kV]	Min. distance [m]
Un < 1	3,5
1 < Un < 30	3,5
30 < Un < 132	5
Un > 132	7

DANGER
This machine is <u>not</u> electrically insulated.
Avoid any contact with electric lines

For special applications that need the connection to the ground, use the screw on the chassis (Fig. 2.5).

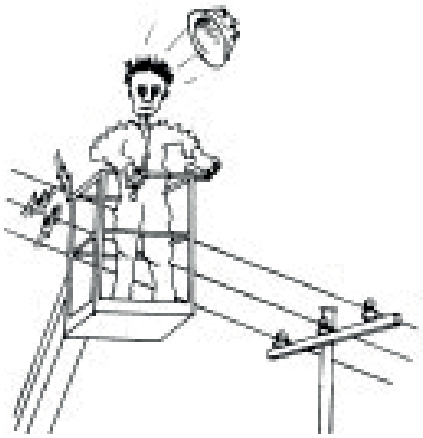

Fig. 2.4

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Fig. 2.5

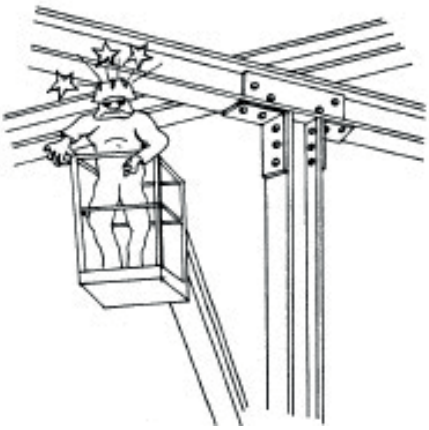

Fig. 2.6

!	**ATTENTION** The lifting persons cage is equipped with hooks for the safety belts for the max number of operators allowed in the cage. The locking points are to be considered as work restraint system, which prevent the operator from falling down the platform and not a fall arrest stystem which stop the operator from the falling down. Every anchor contact is designed to grant one person only, without succeeding 3 kN static force, within this data no permanent deformations is granted.

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DANGER
During the whole staying in the cage, it is forbidden to lift on the footboards , cage sides or any other object to increase the working height; operators must always work with their feet on the cage floor (Fig. 2.7).
It is forbidden also to lean over the cage or, if necessary, it is obligatory to do it maintaining the foots on the cage floors and check that the safety belt is well locked (Fig. 2.8).

Fig. 2.7

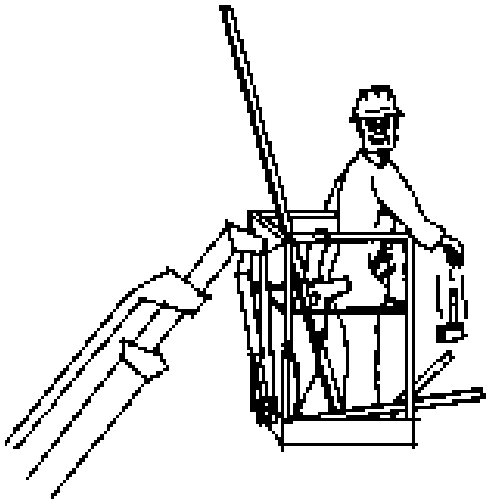

Fig. 2.8

DANGER
Do not throw materials or tools from the cage to the ground and vice versa - use the service rope.
Unused tools in the cage must be laid on the cage floor, or stowed in special pockets fixed to the cage sides.

DANGER
Do not place flags or large stripes on the aerial cage, which increase the surface exposed to the win.

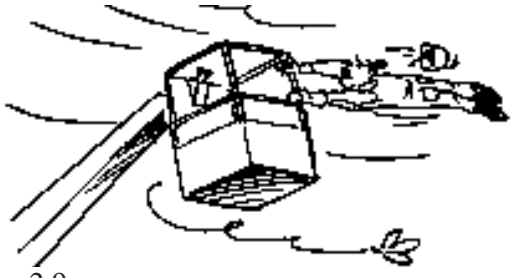

Fig. 2.9

DANGER
Do not use the platform in case of wind speed over 12.5m/s (45 km/h).

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In the following schedule it is indicated the “Beaufort scale” that gives indications about evaluation of the wind speed.

Number of Beaufort	Wind speed (km/h)	Description	Ground conditions
0	0	Calm	Smoke vertically climbs
1	1-6	Drivel of wind	Wind movement visible from the smoke.
2	7-11	Light breeze	You feels the wind on the naked skin. The leaves rustle.
3	12-19	Tense breeze	Leaves and smaller branches in constant movement.
4	20-29	Moderate wind	Lifting of dust and paper. The branches have shaken.
5	30-39	Tense wind	The bushes oscillate with leaves. They forms small waves in the inland waters.
6	40-50	Fresh wind	Movement of big branches. Difficulty to use the umbrella.
7	51-62	Strong wind	Whole shaken trees. Difficulty to walk against wind.
8	63-75	Storm	Twigs torn by the trees. Generally it is impossible to walk against wind.
9	76-87	Strong storm	Light damages to the structures (fireplaces and tiles removed).
10	88-102	Storm	(Rare in dry land) Eradication of trees. Considerable structural damages.
11	103-117	Violent storm	Vast structural damages.
12	>117	Hurricane	Huge and wide damages to the structures.

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⚠	**DANGER** Avoid any contact against fixed, or mobile structures (buildings, etc) or moving objects (cars, etc).

⚠	**DANGER** Never exceed the max admitted safe working load, avoid to load material during work condition. The use of the platform as a crane is forbidden, if not expressly indicated by the manufacturer.

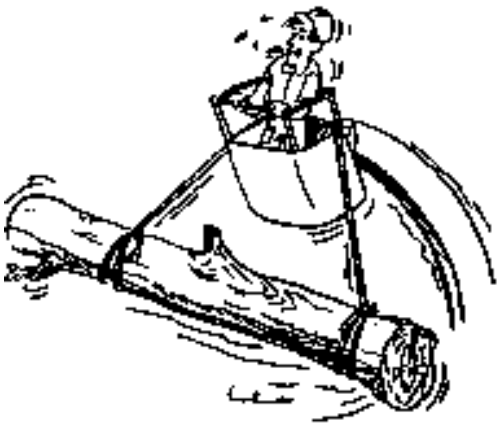

Fig. 2.10

⚠	**DANGER** Do not modify the electro hydraulic plant or the regulations to get higher performances.

2.5. IMPROPER USE

- If not explicitly indicated by the customer and indicated in the Use Manual, it is forbidden to use the platform as a crane, with or without the connected cage
- The strains induced to the frame due to the weigh lifting may cause serious damage to the parts and affect the arms stability itself or the chains endurance.
- It is forbidden to drive the platform, if the boom is not lowered on its rest position. The machine stability may be seriously affected.
- Any modification of the speed of the booms movements is forbidden, in order to avoid vertical and horizontal accelerations exceeding the designed ones
- It is forbidden to mount any superstructure (flags, posters) in the cage, increasing the resistance to the wind n the aerial cage which could overturn or collaps the machine
- It is forbidden to extend the telescopic booms if the wind speed is over 12.5 m/s (45 km/h)

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2.6. USE IN ANOMALOUS BUT PREDICTABLE CONDITIONS

- Outcoming the area automatic limits is severely forbidden
- Manual intervention on the hydraulic controls is allowed exclusively for an intervention in emergency – it is forbidden to follow this procedure for an increase of the performances of the platform
- In case of a failure in the electric plant, the emergency operations will allow every maneuver (see the chapter about the emergency operations).
- Platform must be directly controlled by the operator on the aerial cage – operation from the ground is admitted only for particular situations and for emergency interventions (maintenance interventions, machine resetting, staff education, short use with an assistant previously authorized by the boss, when persons not prepared are present in the cage).

2.7. USE IN CRITICAL CONDITIONS

- When the expanding of the tracks (wheels) is provided, always manoeuvres with extended tracks (wheels) and shrink them when manoeuvring on plain terrain only, for pass trough narrow passages.
- When the platform is driven on irregular ground, with important side slopes (15-20%), Lower the outriggers to few cm from the ground to avoid the complete machine overturn
- Driving on a slope up and down, the cage side of the platform must be always uphill positioned, lower the speed when you are off road
- When the platform is stabilized on a garage slope, it is advisable to place wooden boards under the lower legs, avoiding any sliding possibility; make sure that the machine does not slip and operate oblique or upward.

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2.8. USE WITHOUT CAGE

In the event that it's necessary to disassemble the basket to go across narrow passages, or to further reduce the height of the equipment, follow the following instructions:

- unscrew the two lower handler completely and unscrew the two upper handler a little bit (Fig. 2.12).
- lift the cage and remove it

Fig. 2.11

!	**ATTENTION** When replacing the cage be careful that the two lower hanlder are completely screwed and the two upper handler are against the cage in order to limiting the cage play during the machine use.

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2.9. RISKS, PROTECTIONS, WARNINGS, CAUTIONS

In the designing phase all parts and areas subject to risks have been evaluated and all necessary precautions have been taken consequently to avoid any risks to persons and damages to the machine components as indicated in the previous paragraphs.

	**ATTENTION** PERIODICALLY CHECK ALL SAFETY DEVICES FUNCTIONING. DO NOT REMOVE THE FIXED OR MOBILE PROTECTIONS FROM THE MACHINE. DO NOT INTRODUCE EXTRA OBJECTS OR EQUIPMENTS IN THE MACHINE WORKING AREA.

Although the machine is equipped with the safety systems mentioned above, some risks which can not be eliminated still remain and are reducible by means of corrective actions and correct mandatory operating modes for anyone operating on the machine.
Here below a summary of the risks remaining in the machine during:

- Normal functioning
- Adjusting and start-up
- Maintenance
- Cleaning

2.9.1. Danger for the operator

During the normal use of the machine, the operator doesn't risk any danger, since the movements whch can cause risks conditions are controlled by the electro-mechanic system installed in the machine.

The risks related to:

- operator disattention,
- non-compliance with the information and instructions contained in this manual,
- deliberate tampering of the machine or of the safety devices,
- tampering of fixed and movable guards,

these actions can not find total intrinsic protection, due to the construction type of the machine.

2.9.2. Residual risks generated by the elements under pressure

After pressing the emergency stop, all dangerous movements are depressurized, but all hydraulic hoses and cylinders that hold loads, remain under pressure.

2.9.3. Residual risks during maintenance

During the machine maintenance, pay attention to avoid the risk to enjure:

- arms (abrasion on mechanical parts),
- legs (mechanical parts falling if not properly hold),

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- eyes (dangers generated by pression flows and elements in tension),
- head (hit with some machine parts).

Read the description in paragraph 2.9.2 carefully, most of all regarding the elements remaining under pressure with the pneumatic energy sectioned.

	**SHOCK HAZARD** **During the troubleshooting or during a maintenance operation, make sure the machine is not connected to electricity, because the risk of electric shock can be caused by direct contact or by indirect contact.**

	**ATTENTION** Before plugging to electricity, be sure there's no maintenance intervention on and anybody is operating with the machine

2.9.4. Explosive atmosphere

The machine is not designed to work in explosive or classified environments. The machine is not suitable therefore to operate in areas:

- totally or partially exposive
- classified
- with presence of corrosive atmosphere
- with presence of gas and/or powder concentrations
- with presence of oil concentrations high presence
- with burning risk related with any
- in cui siano presenti atmosfere corrosive
- in cui siano presenti alte concentrazioni di gas e/o polvere
- with fire hazard arising from any material or source of ignition.

!	**ATTENTION** It is strictly forbidden to use the machine in all above mentioned areas

2.9.5. Slipping

Possible lubricants leaking can cause the staff slipping

!	**ATTENTION** Access those area with non-slip and always cleaned shoes; inspect them periodically depending on usage.

2.9.6. Stumbeling

The not in order deposit of material can typically create a tripping hazard and limitate the partial or total emergency exit in case of need.

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Ensure the operational areas, transit areas and emergency exits to be free from obstacles and to fulfil the compliance requirements.

2.9.7. Circuits failure

Because of possible faults, the circuits / control components, the safety components and the power components can partially lose their efficacy with a consequent lowering of the security level:

- periodically check the functioning status of the machine devices/components.

2.9.8. Lightening

The operator must provide an adequate lighting system on the areas of maintenance of the machine and comply with the local laws in force and according to the Directives.
In case of power failure, it is recommended an average illuminance of at least 400 lux.
If an 'extra lighting is necessary, for exceptional rare maintenance operations, take into account the character of extreme rarity of these cases and use safety portable lamps (powered at 24 Vdc, not supplied with the machine).
Any ligthening is supplied with the machine

2.9.9. Risk of scalding/burn

Due to the temperature present on engines there is a potential risk of burn during the normal use and in particular during their maintenance operations.

- Inform the maintenance staff about the maintenance activities or machine use.
- Access those areas waiting the above mentioned parts cooling before and with proper protecting gloves, with the max attention.

2.9.10. Risks due to movement

The machine loading/unloading operations by means of lifting equpments, from container to the box, expose the operators to the risks of suspended loads or crush.
Those operations must be executed exclusivally by specialized staff for lifting equipments use, properly trained on that scope.

	**ATTENTION** **Before operating, read carefully chapter 3 of the manual**

2.9.11. Risks for the exposed persons

The exposed persons are third persons not engaged in the machine operation, therefore persons working near the machine or visitors.
During the machine use and maintenance, fence all the working area exposing eventually prohibiting plates

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	**ALT** **Keep exposed persons at a safety distance from the dangerous areas**

2.10. ADDITIONAL WARNINGS

	**DANGER** **The hydraulic flow at high pressure output can cause damage to things and people.** **Make sure all connections to the fluidic circuit are well connected and tightened to the actuators througth pipes and fittings certified and suitable for the pressures.**

	**DANGER** **During the machine operation and maintenance, wear helmets, safety shoes, protective gloves, protective clothing and safety glasses complying with the essential safety requirements set by EU Directives 89/656 / CEE and 89/868 / CEE and applicable laws in the country where it is required / used**

	**DANGER** Never perform any routine or extraordinary maintenance with the hydraulic energy circuits in pressure and even less with electricity connected. De-energize all the power supply circuits always in advance.

	**DANGER** Following the e-energization of the power supplies, ensure that there are no residual pressure in the circuit. Always release the residual pressure.

!	**ATTENTION** Ensure that all personnel involved in the maintenance and use of the machine is properly trained in accordance with the correct procedures on safety and operation. Ensure that all personnel is aware of the residual risks arising from the use of the machine.

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!	**ATTENTION** Ensure that all protective devices are connected and in good function. Never modify or bypass any safety devices of the machine.

!	**ATTENTION** Both during during the maintenance and operational phases it is recommended to pay attention to the temperature of engines that can be more than 50 ° C in normal operation.

!	**ATTENTION** The machine can not be used by unprofessional staff, or not previously trained to the use, informed about the remaining risks of the machine and trained on safety and correct operating methods.

	**DANGER** Do not use the machine in aerial work when the wind speed exceeds 12.5 m / s (45 km / h)

2.11. STAFF PROTECTIVE EQUIPMENT

For operator safety reasons, PPE (or other available equipment) are compulsory for the use of the machine.

The manufacturer requires the customer to use the machine with PPE complying with Directive 89/686 / EEC as amended, relating to personal protective equipment properly CE marked.

The operator must comply with Directive 89/656 / EEC defining the methods of use of personal protective equipment at work.

Since all contexts where the machine work are not known, it must be underlined that the above mentioned PPE refer only to the use of the machine: the employer must prescribe any additional PPE in accordance with the needs of the environment in which the machine operates.

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PPE for the operator and maintenance staff		
Identifying symbol	**Description**	**Note**
	SHOES	Constant use of safety shoes as required by the safety rules in force
	SUITABLE CLOTHING	**Suitable clothing**, such as working suit: it is forbidden to wear wide sleeves, ties and clothings which can easily catch the elements in movement.
	PROTECTIVE GLOVES	**Protective gloves** for hands, to handle waste materials manually
	HELMET	**Protective helmet** to use during the machine lifting operation and preventing any risks of crush by suspended loads

	**ATTENTION** Use gloves with attention. The gloves can become a source of risk as they can get caught in any moving parts.

	**ATTENTION** If headphones are used, the operator must pay even more attention as one of the senses of perception of danger (hearing) fails. Please observe the surrounding environment, since visual perception must compensate the hearing loss.

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2.12. ENVIRONMENTAL CONDITIONS

2.12.1. Operating environment

The machine is designed to work both indoors and outdoors, thus subjected to normal atmospheric phenomena.
The limits of use are:

Environment temperature:	min -10°C max 40°C
Relative humidity:	min 5% max 90% without condensate
Altitude:	2000 m
Max wind speed:	12,5 m/s (45 km/h)
Floor vibrations:	none

The use of the machine, of their control systems and equipment operated under different conditions than those listed is not allowed.

In particular, in the working environment, there haven't to be:

- Exposure to corrosive fumes;
- Exposure to abrasive dust;
- Exposure to explosive mixtures of dust or gas;
- Exposure to salted air;
- Exposure to vibration, shock or abnormal shocks;
- Presence of nuclear radiation, ionizing.

	**WARNING** If the ambient temperature is below 5 ° C, before any movement, run the engine for a few minutes. Start moving the platform with small movements to heat up the hydraulic oil.

	**DANGER** Before any movement, check that the safety limit switches and emergency stop buttons are clean and free from snow or ice

	**WARNING** Protect the ground control panel from rain and snow. When the cage controls are not used, especially in rainy days, keep the protective cover closed.

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2.12.2. Conditions of storage

The machine must be stored in environments that do not meet the conditions set forth in the previous paragraph.
Particularly:

Environmental temperature:	min -30°C max 60°C
Relative humidity:	min 5% max 90% senza condensa
Altitude:	2000 m
Floor vibrations:	none

IMPORTANT
After a long period of inactivity of the machine, check all safety devices indicated in Chapter 5 at first use

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3. NORMAL WORK CONDITIONS

3.1. MAIN CONTROL DESK

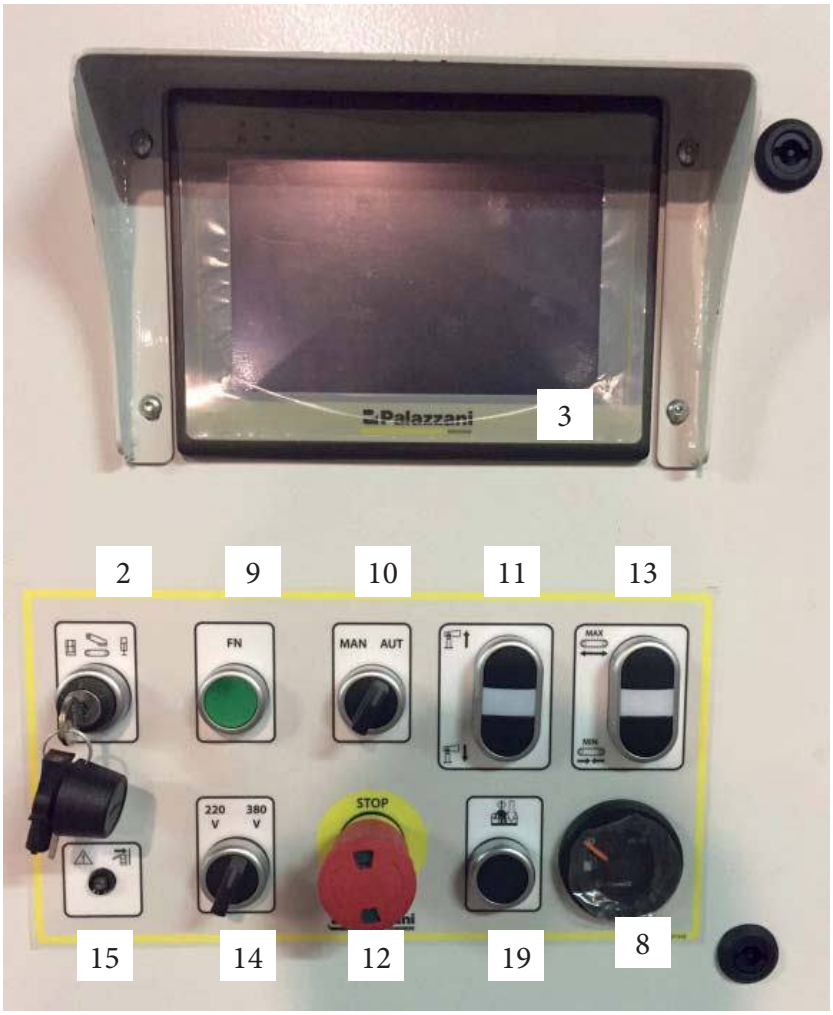

Fig. 3.1

Motore Hatz

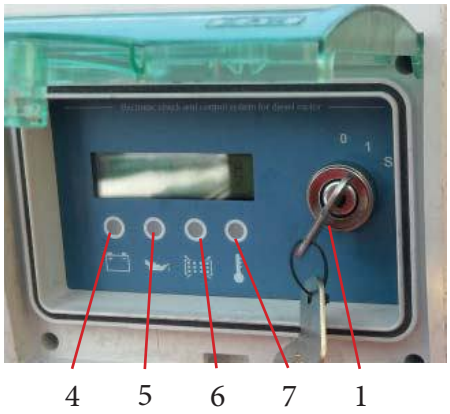

Fig. 3.2

Motore Perkins

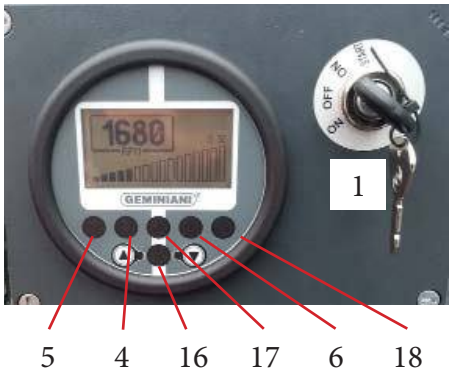

Fig. 3.3

1. Main key
3. Display
5. Oil lamp
7. Motor oil Temperatur
9. FN button
11. Rapid stabilization selector
13. Open-Close track*
15. System allarm / max outreach lamp
17. Water temperature lamp
19. Emergency pump button

2. Movements selector
4. Battery lamp
6. Air filter lamp
8. Fuel level
10. Type of stabilization selector
12. Emergency stop
14. Selector 220V /380V*
16. Plugs lamp

18. Perkins engine alarms lamp

* optional

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3.2. GROUND CONTROL PANEL

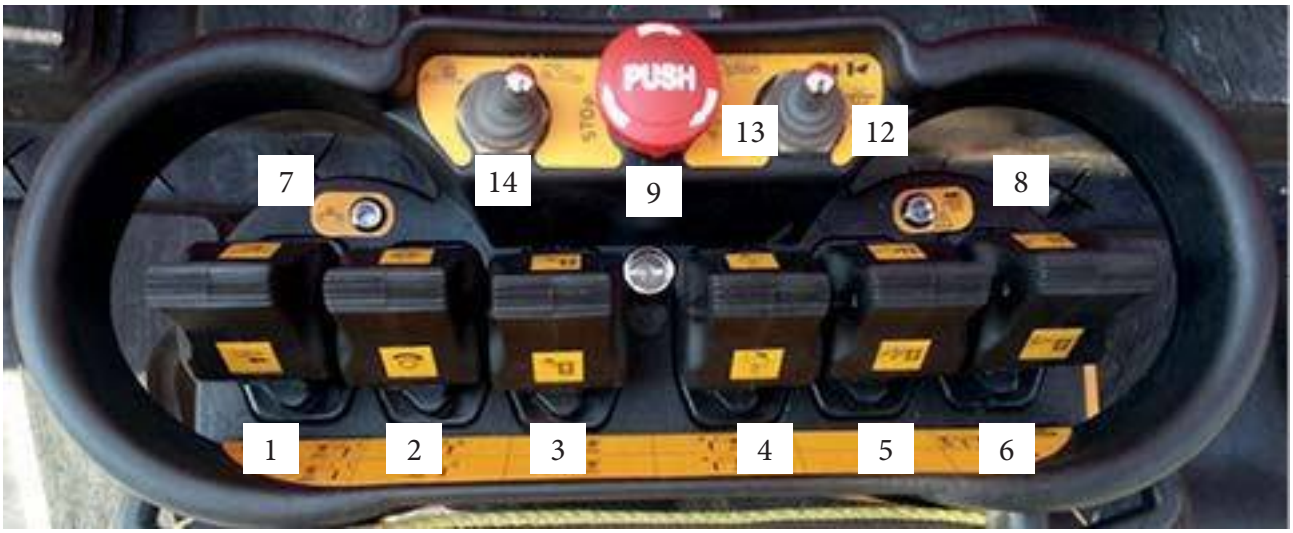

Fig. 3.4

To take a frequency: Turn ON the remote transmitter from the selector 15 and move the selector 12 to the right for 2-3 times.

1. Joystick boom extention/return – stabilizer 1- left track
2. Joystick turntable rotation - stabilizer 2
3. Joystick jib extention/return - stabilizer 3
4. Joystick cage rotation - stabilizer 4
5. Joystick jib opening / closing
6. Joystick boom lifting / lowering - proportional stabilizers – right track
7. Controls activation lamp
8. Limitator activation / system alarms lamp
9. Emergency button
10. Start diesel engine
11. Stop diesel engine
12. Self-centering switch / radio frequency activation / other functions
13. Slow/fast transfer switch (speed change: optional)
14. Slow/fast transfer switch (engine rpm)
15. Radiocontrol activation switch

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3.3. CAGE CONTROL PANEL

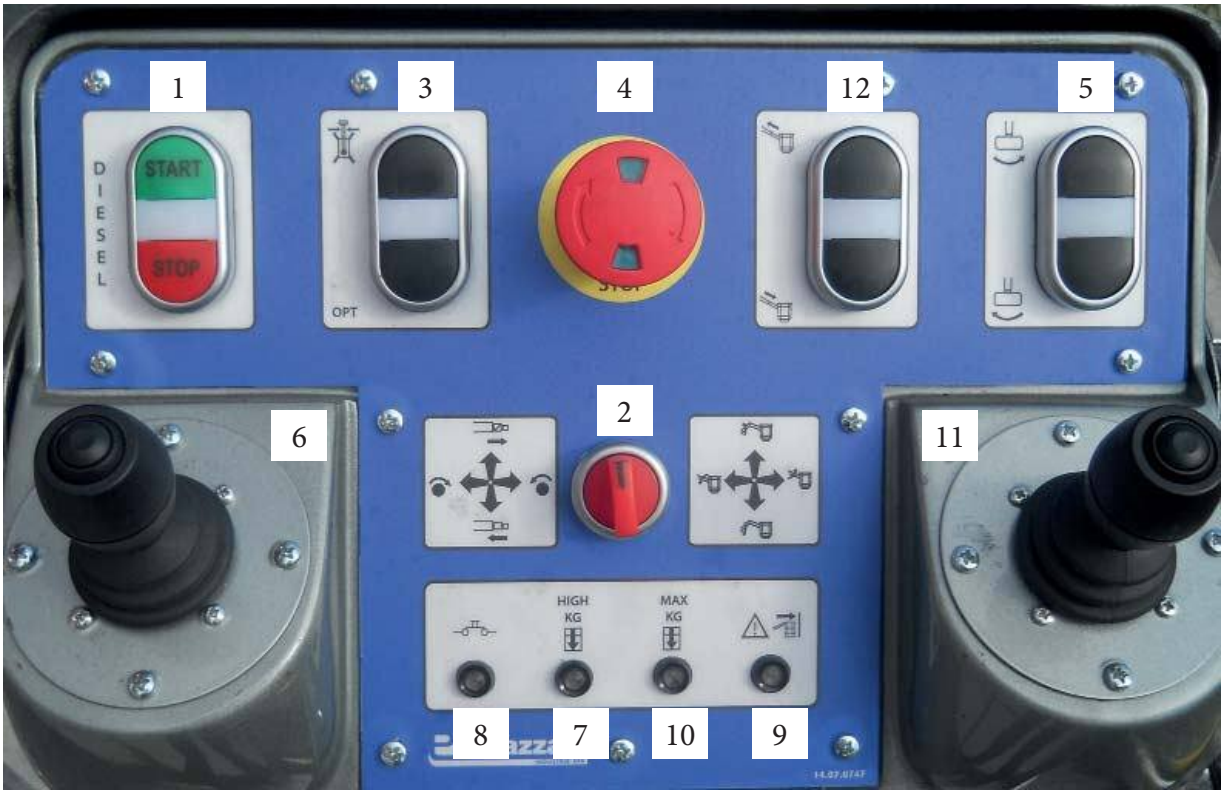

Fig. 3.5

1. Pulsente start/stop motore
2. Selettore accensione generatore (optional)
3. Automatic centering of the turntable
4. Emergency stop
5. Cage rotation selector
6. Joystick turntable rotation - boom extention/return
7. High weight range lamp
8. Controls activation lamp
9. System error / max. outreach lamp
10. Cage overload lamp
11. Boom lifting/lowering joystick - jib opening/closing
12. Jib extention/return selector (only for XTJ models)

!	**ATTENTION** Push one of the two switches, located over joystick 6 and 11 in fig 3.5, to activate the aerial works controls from the cage. Push the same switches to activate the cage rotation and the jib extending/ retraction (only models XTJ).

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3.4. PLATFORM STARTING PROCEDURE

Especially after a period of inactivity, before starting the engine it is recommended to check all the safety devices and controls.
Some of these controls can be fulfilled with the machine off, other controls after the stabilisers positioning. For the first ones:

1) check the fuel level;
2) check the hydraulic oil level;
3) check the electrolyte level and batteries charge;
4) check the track condition;
5) check the stop buttons on the two controls panels of the main dashboard
6) check the booms extension chains integrity and tension (the chains must remain tense to the touch and not loosen during boom extension and retraction).

	WARNING: Don’t start the platform in case of any irregularity

3.5. USE WITH DIESEL ENGINE

The machine has 2 or 3 power sources (380V motor is optional); one is independent generated by the diesel engine.
This is used for the machine downloading from the truck and for the long transfers towards the working sites.
It can be used also for aerial work if the noise and gas emissions are not dangerous for the working site.
The diesel engine offers the advantage of faster movements of tracks and boom and energy saving.

To start the activity with this power source, proceed as following:

- Turn on the engine from the main desk (part 1 Fig. 3.2 or Fig. 3.3) in 1 position (oil and tension lamps switches on).
- Turn the key to start the engine
- Leave the engine turning some minutes (at least 5 minutes in witnter temperatures)
- If it turns off after few minutes, wait at least 20 seconds before restarting it, because the protection of its switch prevent from near restarting
- The engine is adjusted at a constant speed for aerial working, while during the transfer the tracks increases the rpm automatically if the speed selector switch on the controls panesl is on “rabbit”
- To stop it, push the red “STOP” button situated on one of the controls sites or reset the key on the general panel; remember to unlock the “STOP” button, sligthly rotating it otherwise the engine don’t turn on from any other manoeuvring site.

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- The engine can be started also by the ground controls panel throught switch 10 of fig. 3.4.

	**WARNING** Exhaust pipe is not protected and burns also on the upper part of the diesel engine. During work with diesel engine in enclosed spaces, exhaust gas must be removed by means of an appropriate hose of a suitable material.

	**FIRE AND EXPLOSION RISKS** • Fuel of the engine can cause fires and explosions • Stop the engine before the refuelling • No smoking during the refuelling • All necessary protections must be activated in case of weldings, or free flames • Clean the machine from oily materials and deposits or inflammable residual with non inflammable solvent. • Also batteries can explode in presence of sparks or free flames: air the site and most of all do not put the battery in charge in these conditions. • The exhaust gas can contain sparks, therefore air the working site if any vapours, gas or inflammable liquids are present. • Eventual hydraulic oil or fuel leakage must be eliminated in phase of scheduled maintenance.

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3.6. PLATFORM WORKING WITH ELECTRIC MOTORS

The use of this power source is suggested when working indoor or where noise pollution is not admitted, or when energy saving is important.

The machine is equipped with 2 types of electric motors:
- 220V Monophase
- 380V threephase (optional in some spider models)

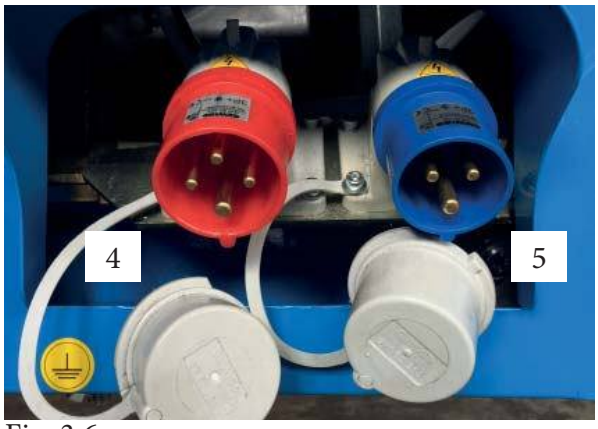

Fig. 3.6 a

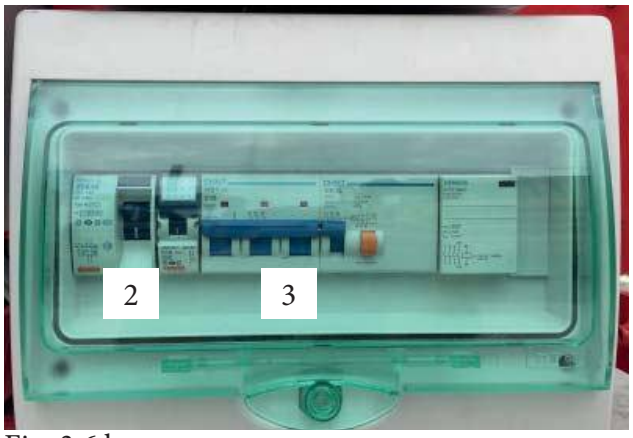

Fig. 3.6 b

Fig. 3.6 c

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1. Differential switch + automatic for the cage socket
2. Differential switch + automatic for 220V electric motor
3. Differential switch + automatic for 380V* electric motor
4. Electric socket for 380V* motor
5. Electric socket for 220V motor

*only with 380V engine (optional).

To work with this source of energy, follow these instructions:

- turn the key (part 1 Fig. 3.2 or 3.3)
- connect the plug of Fig. 3.6a to the net (16A socket). The red socket is for the 280V and the blu one is for 220V.
- select the engine to enable using the selector 14 of Fig. 3.1
- acting on any lever of the controls panel, the electric motor starts automatically and all movements are possible
- if the machine is not used for some seconds, the motor automatically stops. In alternative it can be switched off with “STOP” button or turining the key of the main panel on OFF
- to restart it, unlock the stop button and move any joystick for a while

NOTE:
For the efficient functioning of magnetothermic differentials switch (life-savers) on the machine, the electricity plug must be **safely** connected to the ground and be on a normal box; do not use flying cables sometimes existing on the working sites.
For a better efficiency of the differential switch, connect to the ground, with the pile shoe, the chassis of the machine througth the screw shown in Fig. 2.6.
During the machine transfer on the ground, pay attention not to crush the source cable with the wheels or crawlers and not to exceed the cable lenght. Furthermore the source cable does not have to be 15mt longer and the section must be suitable for the loading.

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3.7. PLATFORM SELFPROPELLING

To travel follow these instructions:

- Turn on the engine from the main desk (Part 1 Fig. 3.2/3.3)
- Turn the key of the commands selections (Part 2 Fig. 3.1) on turntable symbol (central position)
- Activate the radio connection between transmitter and receiver (note on a fig.3.4)
- Use the left and right joystick (Parti 1 e 6 Fig. 3.4) to control the track
- It is possible to rotate the machine on itself, actioning the two above mentioned levers in opposite direction, one forward and the other backward
- transfer always with tracks in enlarged position. Use the narrow position only to pass througth corridors or narrow spaces and flat grounds

It is possible to intervene on the transfer speed of the equipment in two different ways:
1) increasing the rpm througth the selector 14 Fig. 3.4
2) actionning the selector 13 Fig. 3.4: in central position the speed is high, while on the left side the tracks motors displacement is reduced

!	**ATTENTION** It is forbidden to travel with people or loads in the basket.

!	**ATTENTION** “Rabbit” option corresponds to the max speed and it’s for long transfer on flat grounds and free from obstacles. “Snail” option corresponds to the min speed, which can be always switched to the fast speed, and it’s for transfer on slopes, indoor or on paths with obstacles (i.e. inside a workshop or a museum, etc).

	**IMPORTANT** Climb slopes up and down with the boom upstream and slow down on bumps overcoming, to avoid strong oscillations of the boom

	**IMPORTANT** During transfer in an area opened to traffic, it is necessary to install a “working site” with fiends and tools, to avoid collisions when the machine is not equipped with signaling devices

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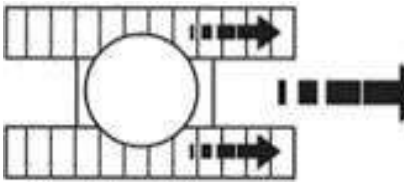
Information
Often it is necessary to get the authorization from the local Authorities to build up the working site

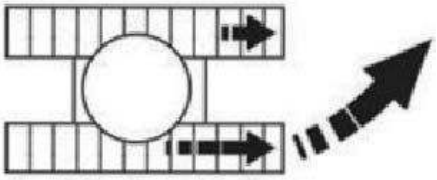
If the area of transfering is public, it must be short in any case, done on favourable time and if necessary with the Police approval.

Information
Following some suggestions about the travelling

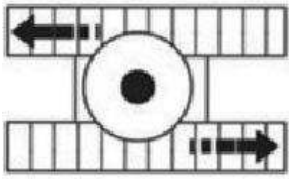
Straight travelling:
to travel straight, move the tracks with the same speed and the same direction.



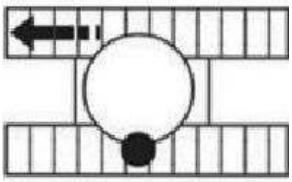
Broad steering:
To make a broad steering, move both tracks in the same directions, but with different speeds.



Steering on the spot:
To steering on the spot, move the tracks in opposite directions with the same speed.



Steering with one track:
Palazzani Industrie does not recommended this maneuver because it increase the tracks usury and the possibilities of climb of the chain on the sprocket



ATTENTION
The pins control bypass function is allowed only for the stabilizers lowering, without touching the ground. **THE MACHINE LEVELING WITHOUT PINS IS NOT ALLOWED**

IMPORTANT
In steering phase, use the selector 13 Fig. 3.14 to facilitate the manoeuvre.

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	**INFORMATION** Keeping pushed the button 12 of fig. 3.4 for 5 seconds to enable the **assisted travelling**. When this function is enabled, you can control both tracks using the right track joystick only (it's very useful when the machine has to travel in delicate operations like stairs, rampws ecc..). To deactivate this function keep the button 12 of fig. 3.4 pushed for 5 seconds.

3.8. TRACKS ENLARGING (in models where this function is available)

Transfer must be **always** be fulfilled with enlarged tracks, to get the sufficient stability also on uneaven grounds or slopes.
It is possible, however, in some particular situations such as doors or narrow corridors passages, etc, to transfer with narrow tracks; but in these cases the ground must be solid, flat and uniform.
To enlarge or tighten the tracks, it is necessary to lift the tracks from the ground by means of the stabilizers (see paragraph 3.13). Once the tracks are up, select the controls key on stabilizers (Part 2 Fig. 3.1), act on switch pos. 13 Fig. 3.1 and contemporarely act on the accelerator lever Part 6 Fig 3.4 to enlarge the tracks. To tighten them act on the switch in the opposite direction.

3.9. STEERING

Steering is made by one track slide in respect to the other and it is necessary, therefore, to redue the speed of the right track or left track by using the two transfer levers.
As already mentioned, the breake space can be reduced and the machine can rotate on itself actionning levers 1 and 6 Fig 3.4 one forward and the other one backward. This operation, however, must be done only if necessary and on flat and regular floor (asphalt, pavement, etc)

3.10. AUTOMATIC BRAKE

The breaking is automatically granted by negative mechanic brakes with hydraulic unlock. The transfer control release makes inmediately interveening the brake througth the overcenter and anticavitation valves situated on the transfer motors.
On slope up and most of all down, choose "Snail" speed with the selector 14 Fig. 3.4 for a firm brake and parking.

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3.11. SPECIAL FUNCTION BUTTON FN

On the main desk there is a button with name FN (Part 9 Fig. 3.1), with this switch you can:
1) lifting and lowering the boom when the machine is on the tracks
2) move the stabilizers without pins

Function 1

In case of a particularly important slope or truck loading ramps, the boom can be lifted of the needed angle to avoid the cage touching the ground, even without give pressure to the stabilizers, with the extensions boom totally retracted.
Follow these instructions:

- turn on the diesel motor
- check the key selector (parte 2 Fig. 3.1) it's to be in the center position
- press FN button on the main desk (Parte 9 di fig. 3.1) and make the maneuver to move the main boom from the control panel (part.6 Fig. 3.4).
- when the operation is ended, repeat the opposite manoeuvre to get the boom back to horizontal position.

	**Information** The system stops the boom lifting automatically if the safety limit is exceeded. To proceed with the boom lifting manoeuvre, push the self-center button on the radioncontrol too at the same time (Fig. 3.4 part 12).

	**DANGER** Transfer with the lifted boom only on flat floor and with slow speed. Do not transfer on slopes even if light.

Function 2

There are particular situation during travelling, where it may be necessary to move down the stabilizers without inserting the pins on some models, also to reduce the max height, or in case of steep grounds.
In this case, it can be useful to lower the stabilizers to few cm from the ground, since if the machine loose stability because of the inertia forces, the stabilizers can lay on the ground and avoid the machine overturning.
Normally the stabilizers movement is allowed only when the articulations pins are inserted, or when this selector is activated.

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To move the stabilizers without pins, follow this instructions:

- turn on the diesel motor
- move the key selector (Part 2 Fig. 3.1) to the “stabilizers” position (on the right)
- check the green light on the turntable, this means that the boom is in center position, lowered and retracted
- press the FN button on the desk (Part 9 Fig. 3.1) and in the same time move the stabilizers like a normal situation (using the control proportional lever and the stabilizers joysticks which must be moved).

3.12. LEVELLING THE MACHINE

Depending on the different needs, the stabilizers can be set-up on the ground with different positions, rotating their supports which connect them to the chassis. Once the desired position is decided, the pins must be inserted in the appropriate
holes and the locking pin of the above mentioned supports to the chassis to manoeuvre the boom (Fig. 3.7).

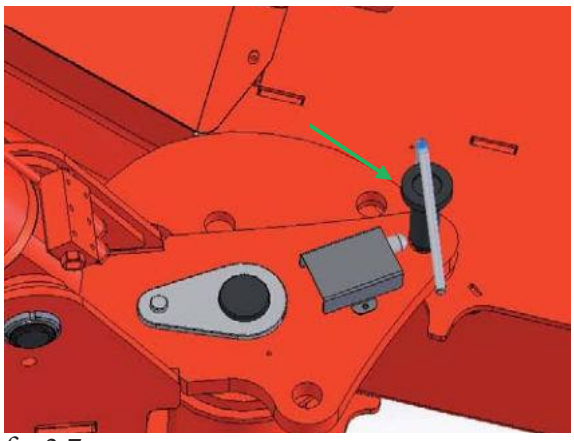

fig 3.7

IMPORTANT
It’s important to consider the relationship between the working area and the position of the stabilizers in order to stabilize the platform in the best way.

DANGER
In case of floors and basements, check if the slab capacity supports the pressure on the stabilizer. This data is indicated in the sticker on every stabilizer.

If possible, the best stabilizers set-up is always the larger one, which allows a more homogeneous working area over the 360°.

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Now it is possible to position the stabilisers on the ground acting as following:

- select the controls key part. 2 of fig. 3.1 on the “stabilizers” symbol (right position)
- check the green lamp in the turntable, it must switched on, to confirm that the boom is in central, low and retracted position (Fig. 3.9).
- be sure that all stabilizers pins are correctly inserted (Fig. 3.7).
- set the selector n°10 di fig. 3.3 on the needed set-up mode
- if the automatic stabilization is enabled, it is sufficient to only activate the accelerationlevel part. 1 of fig. 3.4 towards the stabilizers lowering direction. The stabilizers start to lowering till the complete stabilization. Otherwise if the stabilization is in manual mode use the joystick level 6 of fig. 3.5, but this time the sabilizers must be moved one by one using the other 4 joysticks on the control panel.

⚠	**DANGER** It’s forbidden and very dangerous use the platforms with the spirit bubble over 2° (Fig. 3.8)

Use wooden plates to make the ground more solid, which must be wide enought to avoid dumping and high no more than 20 cm.
It can be necessary to position the stabilisers on different height levels (i.e. on stairs, sidewalks, slopes, etc.) and this is easy because the stabilisers can lower independently.

Fig. 3.8

!	**ATTENTION** Always check the chassis flatness, if you used the automatic stabilization also.

!	**ATTENTION** Always check that the plates are solidly positioned on the ground (it is dangerous to put them on gutters, near scarps, on soft or water grounds, etc.)

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To retract the stabilizers, check that the green light on the turntable (Fig. 3.9) is lighted on. Turn the key 2 of fig. 3.1 on stabilizer symbol, use the accelerator level part. 6 of fig. 3.4 and the level from 1 to 4 to the lifting of stabilizers direction until the stabilizers are retracted. This operation can be done in automatic mode using the selector on the main desk (11 fig. 3.1) or the control panel at ground if the selector 10 of fig. 3.1 is on “AUT”.

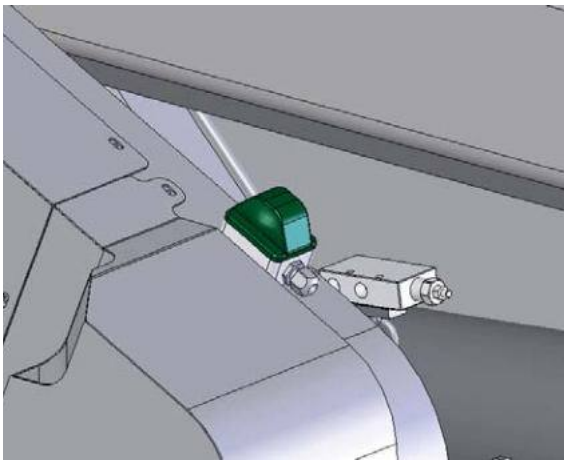

Fig 3.9

	DANGER The max slope between the two support planes of the stabilizers plates can not exceed 5°, independently from the escarpement, to avoid the machine sliding due to the limited friction resistance (Fig. 3.10)**.**

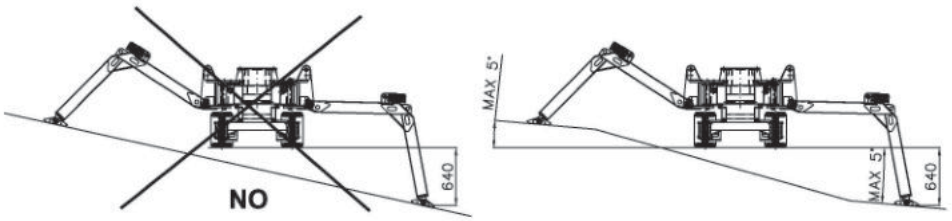

Fig 3.10

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3.13. AERIAL WORK

Access to the platform

!	**ATTENTION** Do not start an aerial work without an assitant from the ground, whose presence is compulsory to recover the cage to the ground in case of controls system defeat.

	**DANGER** Operators must not exit and access from the cage from high position.

	**DANGER** Stay on the cage only for lifting and working in high position. During the transfer, operators must not stay on board.

Protections don't grant all risks from a possible overturn. If the light and the overloading acoustic alarm activates, quickly download the exceeding load.
If the cage has to lift beyond an obstacle (river, difficult ground..) it is advisable to try before with a similar weight (ie. 2 persons) and check if the boom reaches the wished position without stopping.

After positioning the stabilisers on the ground and leveling the chariot, the machine is ready for aerial work; the controls panel at the cage must be activated by means of the proper selector, first (part 2 Fig. 3.1 left position).

	**IMPORTANT** Before performing any turntable movement, take the rotation locking pin off Fig. 3.11

From the controls panel at the cage, the boom movements are allowed. In fig. 3.5 all manoeuvres are indicated, with the relative joysticks. It is, however, possible to activate the controls of the aerial movement also from a different position, with the proper key (in case of maintenance, settings, training course, etc.).

Fig. 3.11

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	DANGER Fix the safety belt to the anchor rings (with a rope not longer than 1 meter) before performing any movement (Fig. 3.12).

Act on the choosen control panel levers, to perform the movements, avoiding sudden manoeuvres.
First lift the first boom around 45° and than open the jib to get away from the boom; then you can procede with turntable rotation and telescopic extensions.

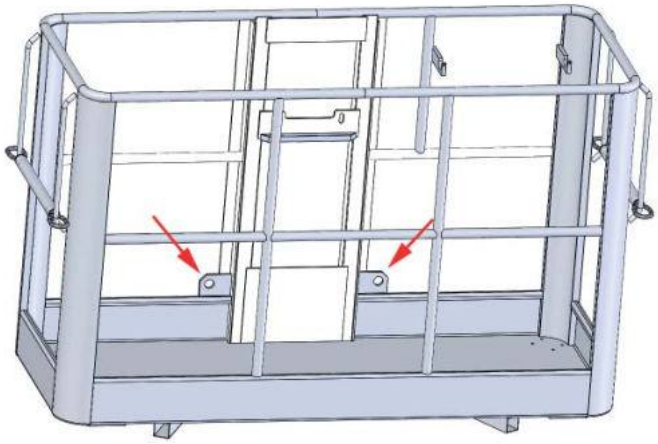

Fig 3.12

Do not make abrupt manoeuvres or sudden inversions in movements to not counterblow the cage.
The more the telescopic are extended the lower must be the transfer.
To go back to rest position, retract the extension completely, close the jib, straighten the cage eventually rotated, put the chassis on axle rotating the turntable and lower with the first boom until the green light switch on (Fig. 3.9).
The above mentioned green light activates only when the booms are:
completely retracted, on the longitudinal axle in respect to the chassis towards the diesel engine. From this moment it is possible to lift the stabilisers selecting the stabilisers symbol with the key Fig. 3.1 part 2 and proceding as described in the dedicated paragraph.

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3.13.WORKING AREA AUTOMATIC LIMITING DEVICE

The platform is equipped with an intelligent automatic limiting device, that control the outreach depending on some factors:

- stabilizers position
- weight in the cage
- boom position in respect to the stabilizers
- boom angle
- boom extension.

Into the software there are some tables where for each boom angle, corresponds an extension value; when the extension value reach the maximum value of the table, the red light on the control panel in the basket turns on (Fig. 3.5 pos. 9) and also the light on the ground control panel (Fig. 3.4 pos. 8).
The only manoeuvres always forbidden from the maximum outreach situation are: boom lowering and extension; sometimes the turntable rotation is forbidden also, but it depends from the boom and stabilizers position.
Act on the remaining manoeuvres to establish the complete functions, retract the extension and lift the boom until the red lights on the stabiliser and on the control panel are off.

	**DANGER** This limiting device is vital for the machine and operators; do not try to by-pass or deactivate it or modify its setting to avoid dumping or breaking risks with disastrous consequences to people and things. The area set by the manufacturer is the max reachable in safety conditions; intervene on the system or safety devices to increase it is to be considered a suicide whish by the operator.

!	**ATTENTION** Do not load material on the cage when the boom is already extended; if it is necessary to do that (i.e. disassembling or substitutions) check if the red light is on on the manoeuvre panel and load small weight every time without exceeding the nominal load.

	**DANGER** When the red light is on do not load further weight and act the telescopic retraction for first until its switching off.

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3.14. LOAD LIMITING DEVICE

The machine is equipped with movements and capacity in the cage limiting devices; This device avoids the overcoming of nominal capacity and if this would happen, it will cause the stop of all manoeuvres and the switching on of an acoustic and luminous alarm on the cage.
To re-start all movements, take off the excess load, wrongly loaded. If this is not possible, for example because of an entrapment of the cage in the branches of a tree, it's necessary to operate using the emergency instruction of the chapter 5.

3.15. CAGE ROTATION

The basket has a rotation movement on the vertical axis. This movements is activated by a joystick on the control panel (Fig. 3.4 part 4) or by a selector on the cage controls panel (Fig. 3.5 part 5). For obtaining a complete rotation, keep the jib horizontal to avoid contacts between the cage and the boom; remember to return to the orthogonal position to the boom before lowering to rest.

3.16. AUTOMATIC CAGE ORIENTATION

The cage can rotate on the horizontal axe to grant a constant leveling with ideal plane. This movement is automatic and obtained by an electronic pendulum with a proportional electrovalve which send the oil from the main circuit to the cage orientation hydraulic motor. The system is managed by a special electronic inclinometer.

	**INFORMATION** As already mentioned, the cage is assisted by an electronic device which activates during the boom movements. To avoid the cage horizontality loss, if there's no a defeat, it is useful to act the lever smoothly during the jib manoeuvres. If the cage exceeds 8° of inclination, all boom movements stop to give to the system the time to level the cage.

	**INFORMATION** In case the cage inclination exceeds the safety level, all machine movements stop and the emergency manoeuvres described in chapt. 5 are possible.

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3.17. ELECTRIC CURRENT GENERATOR (OPTIONAL)

The generator is actioned exclusively by the diesel engine, providing 220 V AC monophase, for a real power of 1,5 CV, which is more than sufficient to use tools, small compressors and water pumps, both from the ground and from the cage.
It's possibile to turn on the generato by the selector of Fig. 3.5, when the diesel engine is running, the stabilizers are on the ground and the key mouvements selector is on the basket symbol.
It's better to check weekely the proper working of all the safety switches (Fig. 3.6): turn on the generator, push the test button and verify that electic current does not arrive at the plug on the cage. In case of an electricity lost and differential intervention, make the electric system controlled by a skilled person.

3.18. INTERCOM (OPTIONAL)

Using the Intercom is possible to communicate between the people in the cage (Fig. 3.13) and the people on the ground (Fig. 3.14).

Fig. 3.13

Fig. 3.14

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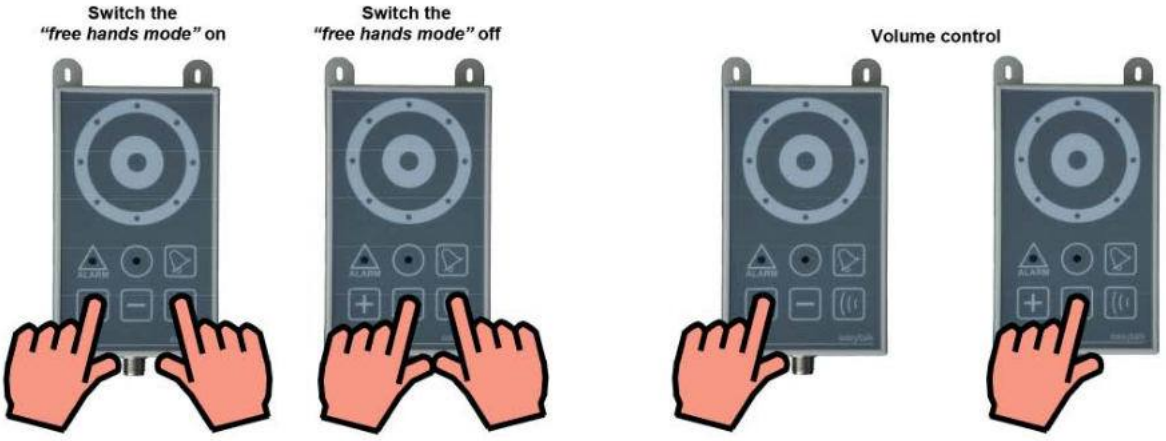

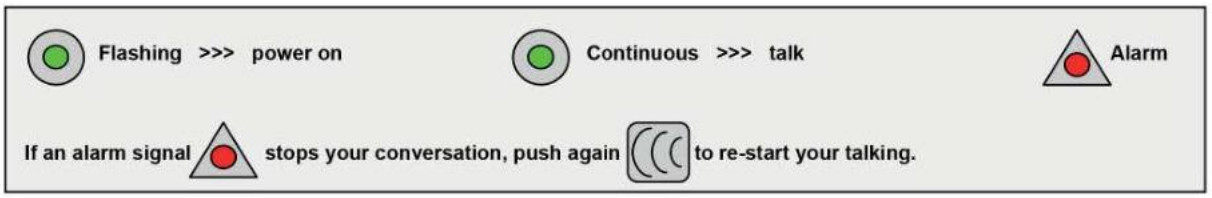

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3.19. MANEUVERS AND GROUND CONTROL PANEL

Before start a new work or after a long stop period, it's better to proceed with some visual check to control the proper working of the equipment.

Follow these instructions:

- check the display of the machine, it must show the actual stabilizers position
- check the green lamp on the enabled control panel (Fig. 3.1 pos. 2). Try to enable the other control panel and check again the lamps.
- check the green lamp on the turntable, it must be on (Fig. 3.9)
- lift the boom till this green lamp turns off. Lower the boom till the lamp switch on again. Now try to rotate the turntable till the lamp turns off.
- when that lamp is switched off, try to move the stabilizers (**it must not be possible**)
- open the jib slightly and extend the boom until it stops when the red light on the control panel (Fig. 3.4 pos.8).
- now try to lift up the boom and after lower it (if the lamp is still switched on, this operation must not be possible).
- verify the green lamp on the control panel: it must be turned on also when the red one is switches on
- try the buttons to turn on and off the engine

3.20. MANEUVERS AND CAGE CONTROL PANEL

After checked the ground control panel, check the one on the basket follow these instructions:

- try all the movements just described
- extend the telescopic thill the red lamp on the control panel switches on (fig. 3.5 pos. 9). Now check the impossibility to make the descent and telescopic extensions maneuvres.
- verify the cage rotation
- verify the emergency STOP: make a manoeuvre and push the stop button, the machine has to turns on
- connect external line on the plug and verify that el.motor runs and turns off if you turn on the diesel
- check the load limiting device: put 120 Kg in the basket and verify that the red lamp and the acustic signal are blinking. In this situation every maneuver is inhibited

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3.21. SPECIAL DIRECTIONS

Transport on the vehicle

The machine has a modest transfer speed, therefore the transferring on working site must be done on truck.

The machine can be loaded with the boom above the cabin if the truck is not equipped with a crane, pallet holder or protection nets, sor with the boom toward the back.

In this case put the indication of leaning loads from on the boom extremity. Transport should be on a truck equipped for this purpose, because the platform is equipped with connections corresponding to the truck ones and this keep the fixing time shorter and the transport safer.

To these connections must be hooked some tensioners, while the truck must have some eyebolts to connect the other end of the tensioners.

Cold weather

In favourable climate conditions act with a special procedure, most of all in first engine starting:

- start diesel engine and let it run almost 5'; in case the engine stops, wait almost 30 seconds before re-start it (there is an internal interlock to avoid multiple starts)
- after this time, accelerate it moving the selector on the "hare" symbol to enable the fast travelling
- act slowing during the first operations in order to give time to the hot oil coming from the pump, to fill the cylinders
- leave the engine turning for the first 15 min even if the aerial work does not requires it
- the first movements during the first drives can be not linear, but as soon as all the oil will reach the proper temperature, all the movements will return regular

Driving on a slope

In case of slope grounds, first select the slow speed "snail" and observe the following:

- keep the booms extremities towards the slope
- to travel on a slope, proceed slowly to avoid the abrupt change of slope. In some cases is very useful lower the stabilizers till some centimeters near the ground, in this way if the machine overturns the legs will touch the ground avoiding the overturning.
- recommended to take the boom as low as possible
- do not control the machine staying closed to the track, take the sufficient safety distance

Lights

For night working or in few lighted sites, use the electric socket on the cage to light a lamp max 60W to 220v c.a.

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3.22. DISPLAY TOUCH SCREEN

On the main electrical box (Fig. 3.3) there is a touch screen display very useful during the operations with the machine.
The home page changing automatically according to the conditions of the platform: if it's in travelling mode the display shows the Fig. 3.15 .
On the bottom, the display shows a message that inform the operator about the conditions of the machine and helps the operator with important tips.

Fig. 3.15

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If the platform is working with the boom, the display shows the screen of Fig. 3.16.

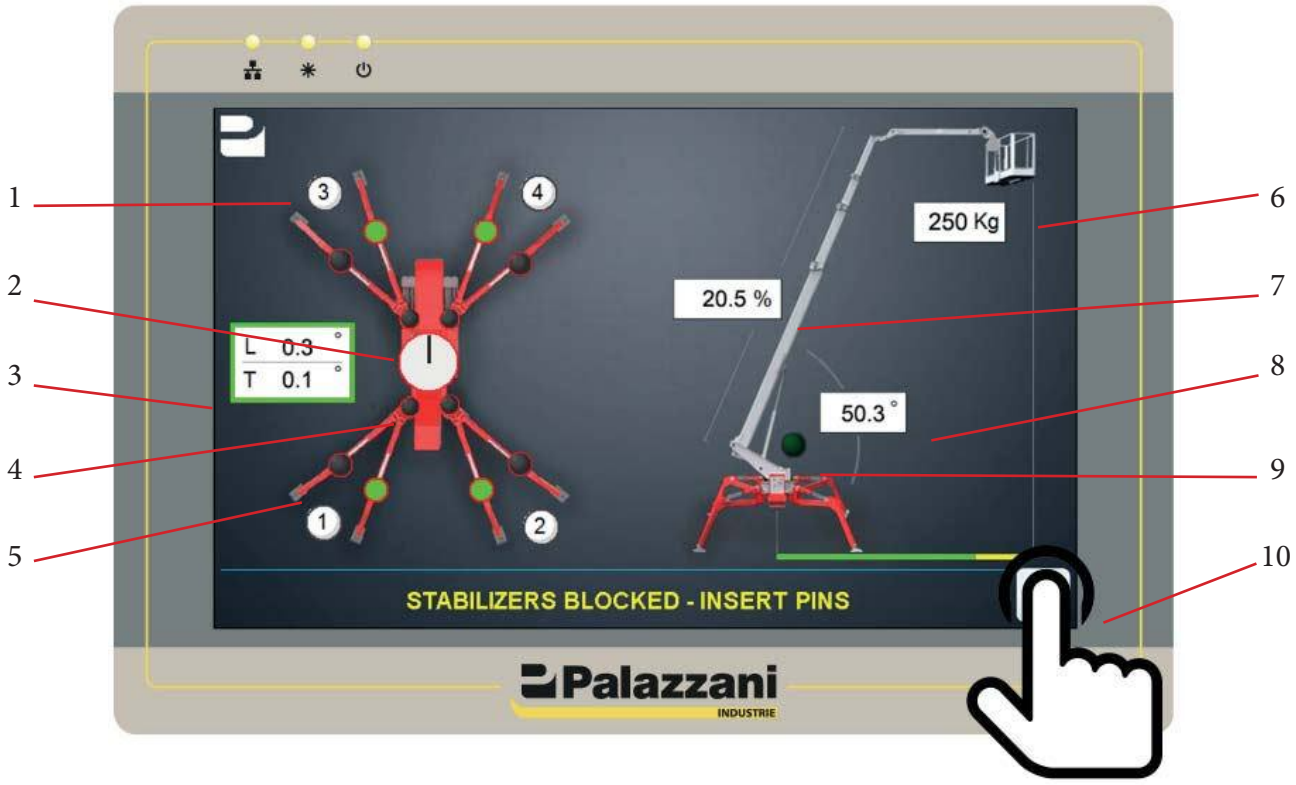

Fig. 3.16

This page shows a lot of informations, infact from this page you can understand:

1) If the stabilizers pressure on the ground is correct
2) The position of the boom on 360°
3) The chassis angles (green is the chassis level is good)
4) If the stabilizers pins are inserted
5) If the stabilizers configuration is large or narrow
6) The weight in the basket
7) The boom extention in percentange
8) The boom angle
9) In the green lamp for the stabilizers mouvements on the turntable is turned on.
10) Page change

The botton in the lower right corner pos. 10 Fig. 3.16 opens the main menù of the system (Fig. 3.18) where you will find four different areas:

- Test
- Diagnostic
- Alarms
- Preferences

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Fig. 3.17

TEST
From this menù is possible to test limit switches and sensors of the machine (like showed in the chapter 6).

DIAGNOSTIC
This menù is very useful for the the troubleshooting in case of failure of the machine.

ALARMS
From this page you can check all the alarms occurred on the machine in the last 60 days.

PREFERENCES
From this page you can change some basic settings like the language, the time, the hours…

On the lower right corner, are showed the working hours of the machine.
The screen of Fig. 3.18 is showed when there is a failure on the machine. In this case call a technician to solve the problem.

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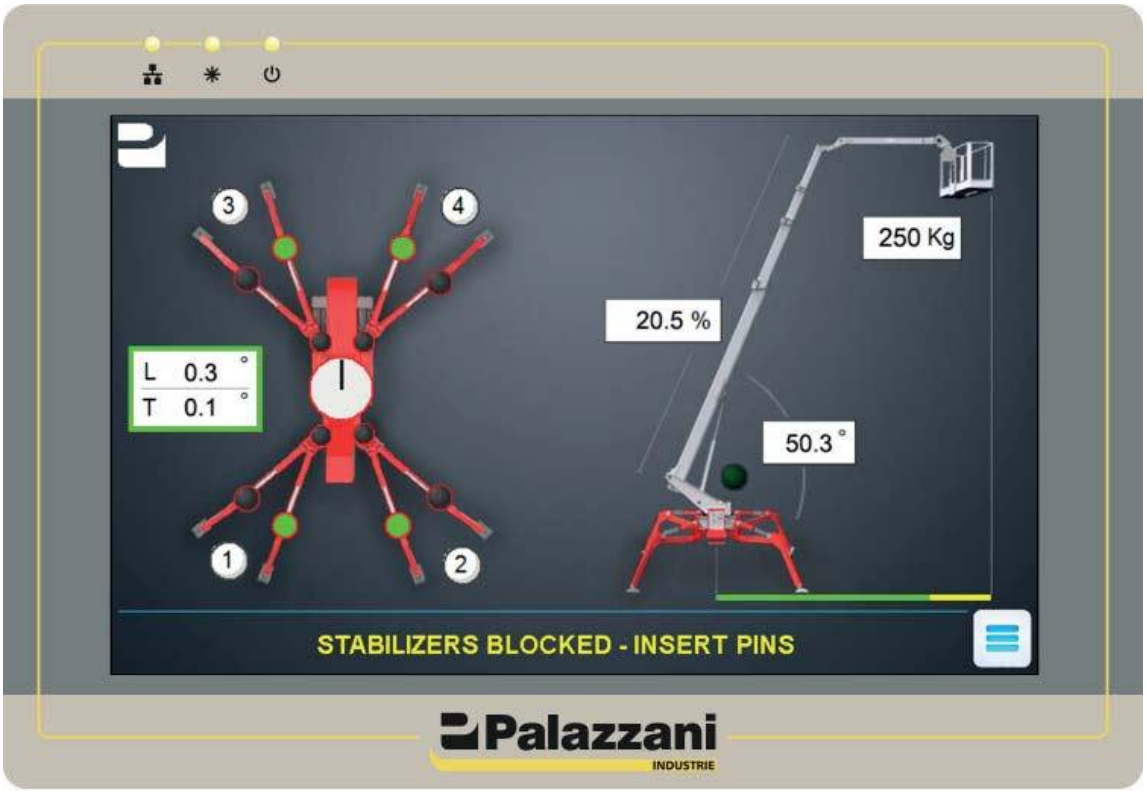

Fig. 3.18

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4. EMERGENCY CONDITIONS

4.1. DEFINITION

Intervention under emergency conditions is the recovery of the personnel blocked on the cage in aerial position, for a sudden illness, or for a breakdown.
The reasons for a recovery can be of two kinds: illness of the people driving the cage or machine damage (due to a lack of the engine power, settling of the pumps, battery or flexible pipes damage, electric failures).
In this last case, the persons on the platform may have become unable to move but can use the emergency devices placed near them.
Any other emergency situation (fire, earthquake, etc.) is not considered, as the machine is not designed for fire-fighting and for rescue service.
Time for the recovery operations is not necessarily short.

	**Information** To perform some emergency maneuvers, may be necessary the help of more people.

4.2. EMERGENCY CONDITIONS

The platform is provided with safety devices protecting the personnel during the normal work and also allowing the recovery in case of a possible breakdown.
Main emergency devices are: dual power source, dual control stations, emergency stop push buttons, intercom communication system, supplementary hand pump, direct control of electro-distributor valves.

1. Rules to follow during the emergency operations

Platform is provided with several devices for aerial cage recovery. Therefore, it is recommended to follow these directions, avoiding operators descent by cables, along the boom, etc. **IT'S VERY DANGEORUS!!!**

	**Danger** **In case the operator on the aerial cage is seized by a sudden illness, before touching the platform, be sure that boom or cage are not in contact with live electric lines.** **DON'T TOUCH THE PLATFORM, ALSO FOR PERSONS AT GROUND THERE IS A SERIOUS ELECTROCUTION HAZARD**

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	Important When the emergency recovery ends, call the responsible in order to do check the machine by a qualifier technician, and give him more informations as possible about the machine condition when the failure occoured.

2. Hydraulic power

In case of a breakdown of diesel engine, it is recommended to connect the electric motor to a feeding line, so operators have an alternative power source at their disposal also in emergency; on the contrary, in absence of electric energy, the power source can be replaced with the starting of the diesel engine.
In both cases the work can continue and all safety devices are regularly working.

3. Controls

Turning the selecting key on turntable symbol, assistant can operate any movement for normal aerial work, or for re-entry in emergency, from the ground control panel.
In this case, all safety devices are regularly working.

4. Emergency stop

Emergency red push button is mounted on all control stations and, when pressed, it allows to stop the energy source activated at that moment.
Push-button is of self-retaining type and permanently cuts re-starting system from any control station if it has not been re-set by rotation.

	Information If you do not succeed in starting the diesel or the electric engine, check whether one of these “stop” buttons has been left stuck down or not.

5 Upper Controls Exclusion

In case of a breakage of hydraulic hose running along the boom and feeding electro-distributor valves mounted on the jib, recover the people on the basket would be impossible. In this situation, you must turn off the engine by an emergencyy stop and act in order to close the tap “upper controls exclusion”.
With the close tap, the maneuvers: basket rotation, automatic levelling, jib opening and closing will be impossible. For all the other movements, follow the instructions in this chapter.

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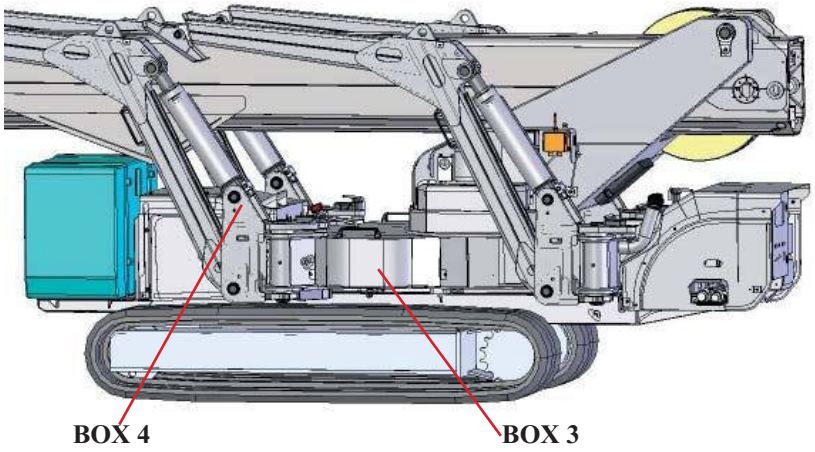

Fig. 4.1

In the pictures 4.1 and 4.1a are showed all the boxes where are located the emergency valves.
Every electro-valve is named with the word EV and a number.

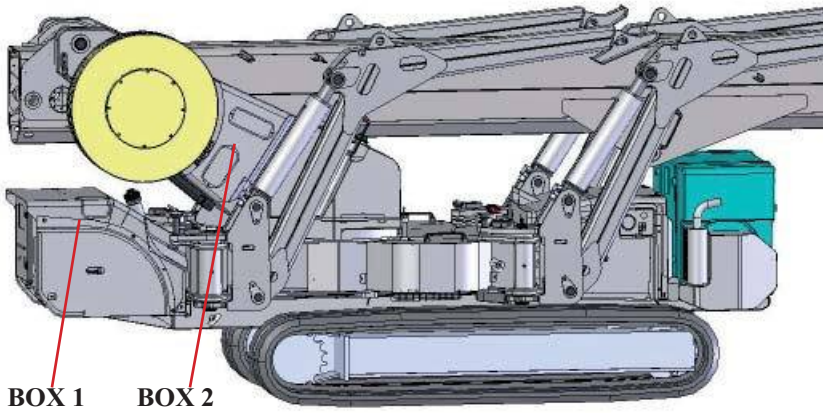

Fig. 4.1a

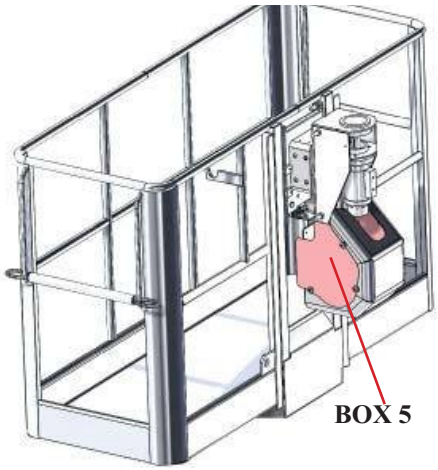

Fig. 4.1b

Box 1: hydraulic distributor for the tracks and proportional oil for stabilizers
Box 2: hydraulic distributor for the boom, EV23, EV26, EV10, upper moviment exclusion
Box 3: EV3, EV9
Box 4: EV6, EV11, EV12, EV13, EV14, EV7
Box 5: EV15, EV16, EV17

6. DC pump for emergency (optional)

In case of failure, is possible to recovery the boom using the the DC pump like a source of energy (it is connected directly to the equipment batteries).
To start the electrical engine, press the optional button.
DC pump can work for some minutes for every hour quarter, so it is important to take some beaks during the recovery, in order to not heat the electrical motor.

It must be used for the emergency operations only.

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4.3. PERSONS RECOVERY FROM THE CAGE IN EMERGENCY

Machine working

It is possible to recovery personnel on the aerial cage turning the key to "turret" symbol (Fig. 3.1 part 2); in this case you can working because all the safety devices are working regularly.

Anomaly to the electric plant

In this case engines and pumps are working regularly, but is not possible to make every movement of the machine for a failure in the electrical plant.

During the emergency recovery, the basket levelling system is disabled.

Following the istructions to recover the basket:

- open the boxes and remove the protections
- remove the safety lock from EV9, insert it and screw completely the pin in the center (Fig. 4.3)

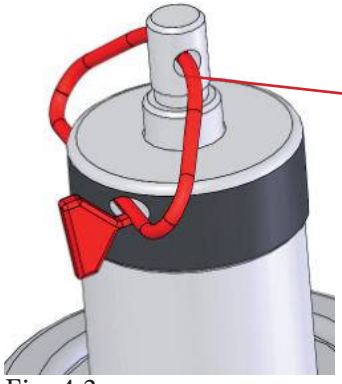

Fig. 4.3

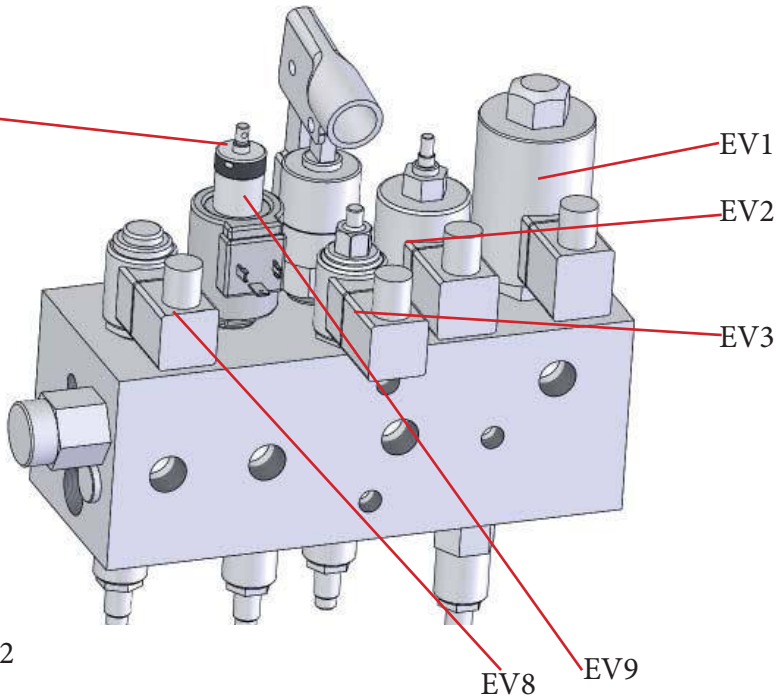

Fig 4.2

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- **Telescopic in**

While the engine is running, open the box 2 containing the levers to move the boom and act on VD4 to put the telescopic in (Fig. 4.4) till the end of the extensions. check the green sticker on the box 2 to know exactly the operation of every lever.

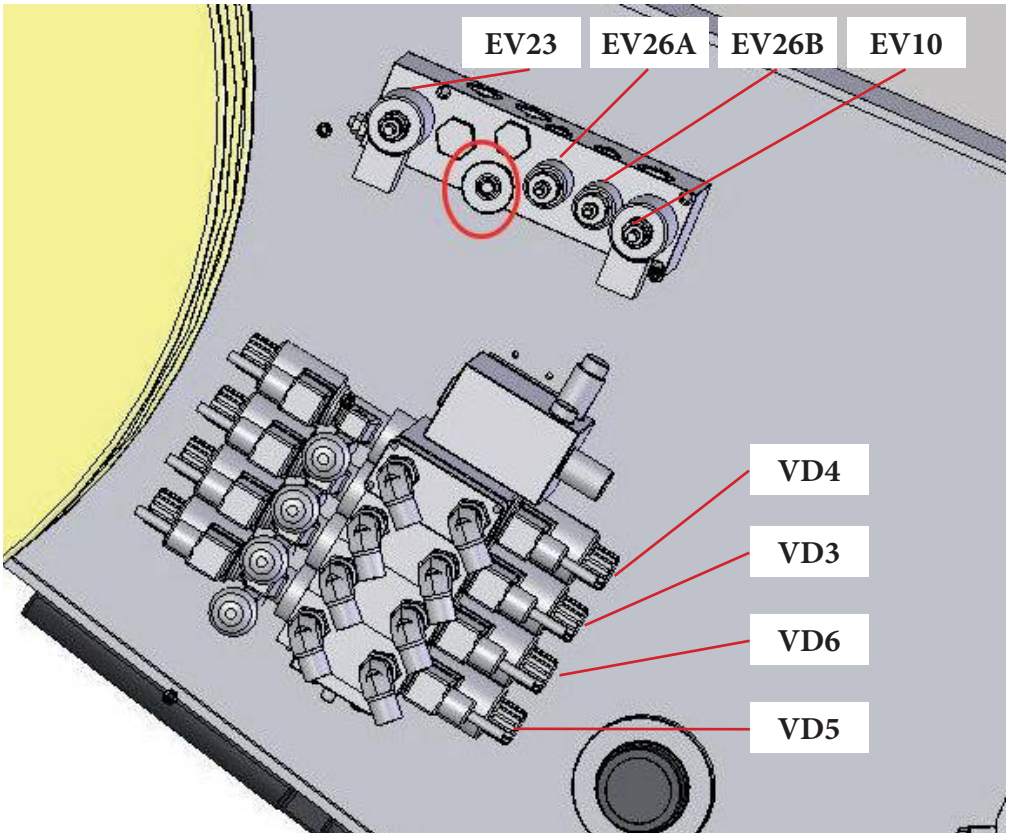

Fig. 4.4

- **Boom lowering**

To lower the boom, move the lever VD3 of the distributor and in the same time press the electrovalve EV23 (fig.4.4). Using the hydraulic levers of the distributor, you are excluding all the safety devices of the machine, so recovery interventions must be executed exclusively by specialized personnel, authorized by the employer

- **Turntable rotation**

To rotate the turret, use the lever VD5 of the distributor and in the same time press the electrovalve EV26A or EV26B depending on the direction of the movement.
Every electrovalve works for one direction only, so if the maneuver doesn't work, be sure to press the right one.

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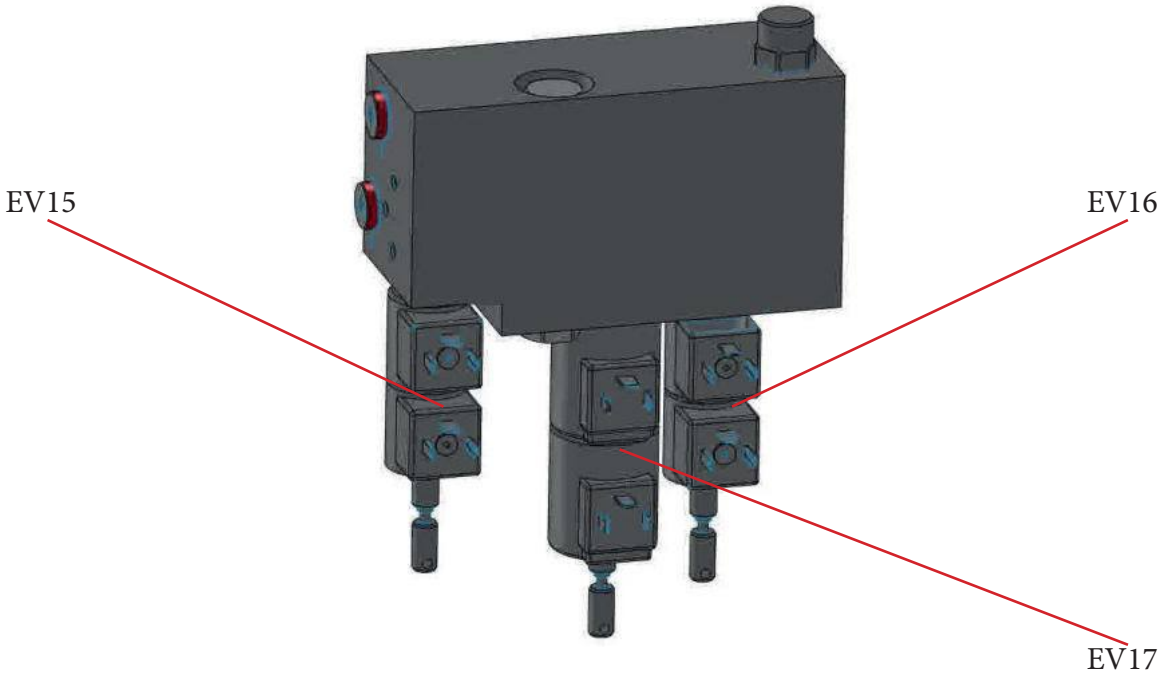
ATTENTION!

During the boom emergency movements, the basket levelling is not automatic, but the operator must do it manually acting on the electrovalve EV16; you must pull or push the electrovalve pin to level the basket in one direction or in the other one.
This operaion works if the operator on the ground is moving the boom or the jib only.
If you need to move the levelling only, keep pushed the electrovalve EV10 (Fig. 4.4) and in the same time the valve EV16. When the basket reaches the right level, you can release it. When the electrovalve EV10 is pushed manually, you can also press the valve EV15 to rotate the basket and EV17 to extent and retract the jib (Fig. 4.5).



Once the operation has been completed, inform the responsible personnel so that they control the machine, also informing about how the machine has been used and in which conditions the failure has occurred.

The manual activation of the electrovalves EV09 and EV23 must be justified on the register of the machine manual, and the valves must be locked again with the lead wire before start the work.
Tampering unjustified of these valves will void the manufacturer's responsibility.

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Recovey by electro pump

In case of a total breakdown including diesel and AC motors, it is necessary to generate the hydraulic power using the emergency electro pump.
This is a little pump connected directly to the batteries, it is useful in the emergency case to recovery the boom is there are no other energy sources available.


Fig. 4.6

In order to recover the cage using the emergency pump, you need to close completely the tap indicated in picture 4.4 and keep pushed the button on the main electrical box (Fig. 4.6). Now follow all the instructions of the previous paragraph (Anomaly in the electric plant).

!	**ATTENTION** After using the emergency electro pump, please check the integrity and the voltage of the batteries.

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Recovey by hand pump

In case of a total breakdown including diesel and AC motors, it is necessary to generate the hydraulic power using the emergency electro pump.
This is a little pump connected directly to the batteries, it is useful in the emergency case to recovery the boom is there are no other energy sources available.

In order to recover the cage using the emergency pump, you need to close completely the tap indicated in picture 4.4 and keep pushed the button on the main electrical box (Fig. 4.6). Now follow all the instructions of the previous paragraph (Anomaly in the electric plant).

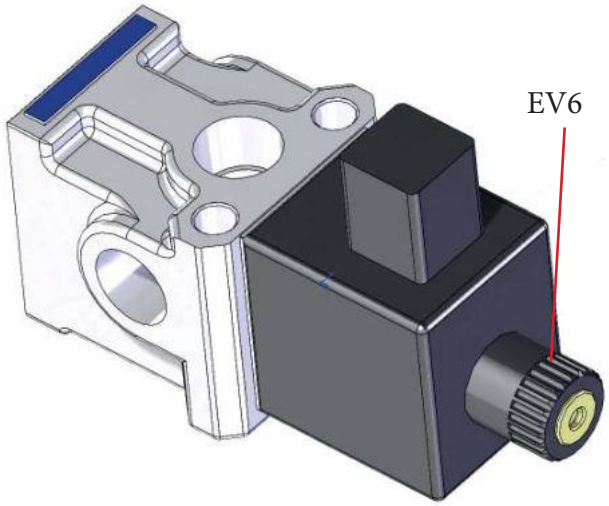

Fig. 4.7

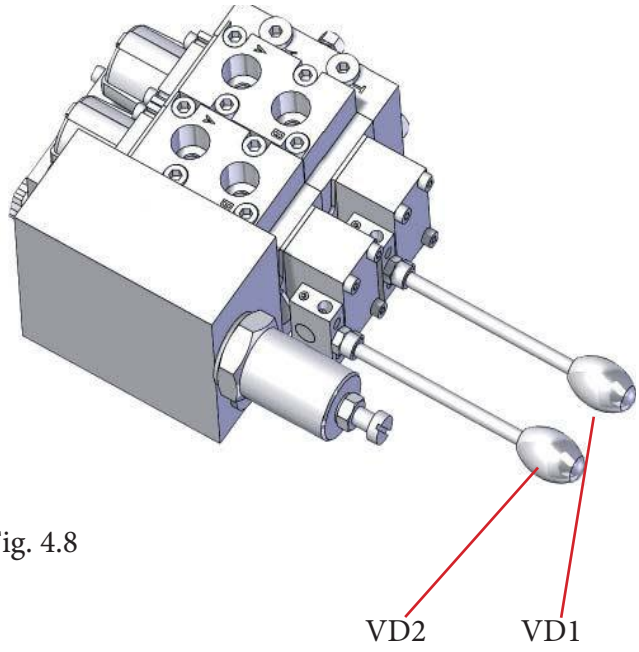

Fig. 4.8

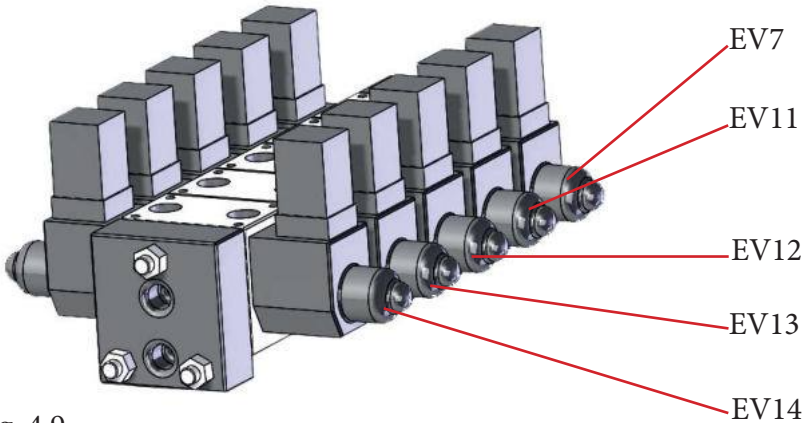

Fig. 4.9

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!	**ATTENTION** After using the emergency pump, please check the integrity and the voltage of the batteries.

4.4. STABILIZERS RECOVERY

This operation is not included in the emergency procedures because the arm has to be laid down already and the people kept back from the cage; anyway, it may be necessary to close the stabilizers for loading onto a lorry.
Recovery has to be executed following this path:

1. insert manually the valve EV09 (fig. 4.2)
2. check the valve EV3 (fig. 4.2) it must be activated or the pin must be unscrewed
3. insert EV06 screwing the pin completely (fig. 4.7)
4. From the tracks distributor (fig.4.8), move the right track lever VD1 forward and in the same time press one of the stabilizers electrovalves from EV11, EV12, EV13 ed EV14, one by one till complete the recovery (Fig. 4.9)

4.5. TRAVELLING

This operation also is not included in the emergency procedures, but sometimes it can be necessary to move the platform in order to not obstruct the passage.

- follow the instructions of the previous paragraph till the point 2
- act on the tracks or wheels levers VD1 and VD2 on the distributor of picture 4.8 to travel.

4.6. QUICK TROUBLESHOOTING FOR THE OPERATOR

ATTENTION! If you notice a malfunction or irregular maneuvers of the equipment, use it only to bring it back to its rest position. Contact immediately the responsable to do check the machine by a qualifier technician.
If the machine doesn't turn on, verify that:

- there is current on the net
- the main key of the machine is in ON position
- there is fuel in the tank
- the battery is connected and charge
- the key rotate regurarly in the main switch
- all the emergency buttons of the machine are free
- the condition needs a the special fuel additive for the low temperatures
- the AC switches are all in ON position
- there are no system alarms on the display.

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If the travelling doesn't work, verify that:

- the selector key is in the center
- one or more stabilizers are on the ground
- are there oil leaking or some damaged components
- there are no system alarms on the display.

If the boom movements doesn't work, verify that:

- the control panel on the ground is enabled (key pictures 3.1 position 2)
- the red lamp on the control panel is not switched on
- the hydraulic oil level is good
- all the stabilizers pin are correctly placed
- the chassis angle is into the safety value (2°)
- all the stabilizers are on the ground with a good pressure
- there are no system alarms on the display.
- In case of vibrations or irregular movements, verify that:
- telescopic boom sections are greased
- the chains of the booms are regularly tensed and hydraulic oil level is regular
- after a repair intervention, the presence of air is possible in the hydraulic system - in this case, it is recommended to make two complete movements sequences, to end stroke, starting from stabilizing legs

 A lot of checks can be made from the touch screen display on boards.
For more informations about that, check the manual part regarding the display.

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5. MAINTENANCE AND CHECK-UP

Foreword

It is recommended that the maintenance is carried out by personnel which:

- is specifically prepared
- knows the manual
- is authorized by the boss
- intervenes only following the producer's guideline

Any intervention has to be carried out by:

- a producer authorized workshop
- expert personnel instructed by the producer.

5.1. ORDINARY MAINTENANCE - GENERAL INFORMATIONS

Advise for a correct maintenance, which guarantees long life performance:

- place the machine on plain ground
- take off the key or attach a sign saying "do not start the engine"
- disconnect the electrical supply from the machine if it is connected to the net
- before to open the engine or the hydraulic system, always clean the area
- never leave the engine or parts open longer than necessary for reparation and keep them safe from powder and rain
- only use lubrificants specified by the producer
- take note of any recommendation by the operators, in order to check any disorder, also to avoid more serious damage
- do not use the equipment in case it has not been repaired completely or all the safeties are not operational
- the personnel assigned to maintenance must know this manual and must wear protection clothes and devices
- do not allow reparations by personnel which has not been authorized by the producer
- do not use spare parts different from the original, otherwise producer's responsibility decays
- do not use this equipment for different purposes, as who does it, becomes its producer
- do not apply mods to the machine (bigger cage, longer hand extension, more powerful engine, highest speed of work, etc.) because also in this case, who does it, becomes its producer with all the responsibility that follow
- respect the programmed repair terms and keep track of them on the register
- keep information of any failure on the register and any reparation intervention.

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5.2. HYDRAULIC OIL FEATURES

The oils used in this equipment are:

Hydraulic system	BP ENERGOL HLP – HM 46
Reducers / bridges	FZG 85 W/90
Frame grease / turntable	AUTOGREASE MP
Boom grase	NILS NILEX EP2

Topping up using different oils is allows but not recommended.

It is suggested that you completely replace the oil with the one you are using for other machines because of saving matters, provided it has similar features.
We do not give names of alternative products because of the constant name changing by other producers.

The features requested for an oil to be suitable are the following:

Hydraulic system	ISO - VG 46
Reducers and bridges	ISO - VG 11,0 ÷ 13,5

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5.3. DAILY CHECK

Before starting any intervention, set close the machine, engine off, disconnected from the power source and possibly clean;

A DIRTY MACHINE DOES NOT ALLOW A CORRECT INSPECTION.

Check:

1. Absence of damage to the equipment due to transport; parts missing or damaged, oil leaks, damaged tyres, disconnected cables
2. The engine oil level through the engine stick (see the engine manufacturer manual attached) and the fuel level through the indicator Fig. 5.1

Fig. 5.1

3. Depending from the installed indicator, check that: the hydraulic oil level reach the middle of the optic signal when the machine is in transport position with the indicator of Fig. 5.2a; or reach the MAX value of the indicator of Fig. 5.2b.

Fig. 5.2 a

Fig. 5.2 b

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4. The interlock between stabilizeers and arms: when the stabilizers are lifted up check that the arm manoeuvre can't be execute. When the stabilizers are set to the ground and the boom not in transport position, try to turn the key on the stabilizers symbol and check that the stabilizers do not move.
5. The outreach limiting system in this way:
   - set the stabilizers in the narrowest hole
   - With the boom horizontale between the stabilizers 3 and 4, extend the boom and verify that the maneuver stops when the outreach limiting system intervenes. In this condition the red lamp on the ground control panel must turn on and the extention and the lowering of the boom should not work.
6. The emergency arrest buttons are positioned in every command position. By arming the emergency button, every machine movement has to becomes disabled.
7. The sealing of the main boom locking valve as following: with the engine off and the boom in transport position (pay attention to the cage not touching the ground), open the hydraulic distributor cover, action the boom lowering lever (see sticker) and check if the boom remains motionless. If there's any movement, even slow, of the boom, do not use the machine
8. that moving the boom to the rest position (in the center, lowered and with the extensions completely in) the green light for the stabilizers permission is turned on. Verify also that in case of one condition is not satisfied (in the center, lowered and with the extensions completely in) the light turns off and the stabilizers movements doesn't work.

	**IMPORTANT** It is recommended not to start the machine before checking that the command devices are functioning. If the machine is used rarely, the check must be done before the machine is started.

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5.4. WEEKLY CHECK

The cleaning must be done weekly also to better find liquids leaking or loosened tightening.

Any intervention has to be carried out by:

- When the diesel engine is running, check the hydraulic pressure level, by completely retiring one of the stabilizers and checking if this corresponds to the value shown in chapter 1.
- the integrity of the extension boom chains and the connections (belleville washers, nuts and cotter pins)
- Check the tracks tension, (only for the track version). If they're inflected, it is recommended to put them under tension by using a greasing pump (6bar), as shown in Fig. 5.3. As the machine is raised up, the sagging of the rubber crawler is adjusted to about 10 to 15 mm (Fig 5.3a)

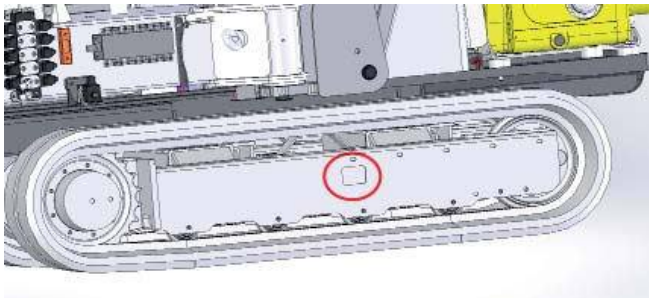

Fig.5.3

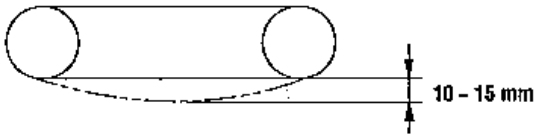

Fig.5.3a

- Check the level of the endothermal engine fumes and its noise level.
- Check the correct manual pump functioning, it is enough to pump some seconds without making any maneuvers and check if the pressure increase during pumpin
- check the instruction plates are legible and not damaged, in contrary case substitute them
- Check that the ground and cage commands are functioning. Using the controls the movement must be correct.
- Grease all the articulations arms, cylinders, stabilizers and the cage. Before applying the greasing pump, clean the greasers and then keep on greasing until the old grease comes out.
- Execute all the checks as shown in the previous paragraph
- the right operation of the block valve on the boom lifting cylinder in this way:

1. fift up the boom till about 10°
2. turn off the engin and act on the boom lifting level on the hydraulic distri
butor moving the lifting and the lowering maneuver alternately; verify that the boom doesn't lower.

Inform the responsible personnel about any failure encountered.

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5.5. QUARTERLY CHECK

The quarterly check must be done when the machine is clean and has to be registered.
The operator is recommended to wear gloves, glasses, proper clothes and to have his hair protected.
Pay attention when using compressed air or water under high pressure and check no other people are in that area; it is better that only one person make the ordinary check.
If the work has not been completed, leave a sign on the machine in order not to allow its usage.
When opening the hoods from the engine, the batteries and the hydraulic main circuit, be aware of this:

- The batteries are not covered and so it is recommended not to allow flames or fires near them. It is also recommended to wear glasses
- The temperature in some parts may overcome the ordinary level, so it is recommended not to touch any part without gloves

It is recommended to execute these operations:

- Check the inspection register to verify the completeness of the previous maintenance operations
- Check all the safety devices electrically and mechanically like showed in the paragraph 5.13
- Daily and weekly execute all the maintenance operations.
- Grease the telescopic extensions of the arms using a brush
- Lubricate chain for the boom extension with a brush and check it (see paragraph 5.12)
- Check the state of the oil in the tank: it must be coloured in light yellow; it must not present foam or look milky because of the presence of water
- Verify the absence of oil leaks or damage to flexible pipes in the articulations of the arms or inside the frame (lift the machine on the stabilizers and look beneath the chassis)
- Check the oil levels and the amount of hours the thermal engine has been running; therefore execute all the maintenance operations or the needed replacements. Clean the edge of the caps in order not to let powder in
- Check the level of the electrolyte in the batteries
- Inspect the arms next to the pivots or the sliding pads, in order to verify the absence of damages in the joins, maybe caused by crashes or by unusual vibrations
- Put the tracks under tension using the greasing pump (see previous chapter)
- Using a dynamometrical wrench, check the bolts of the slewing (see the following table)

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COPPIE DI SERRAGGIO (kgm)											
Classe della vite		Diametro della vite									
ISO	DIN	M 10	M 12	M 14	M 16	M 18	M 20	M 22	M 24	M 27	M 30
8,8	8G	4	7	12	18	26	33	44	57	80	105
10,9	10K	6	8,5	15	22	32	41	53	69	100	127
12,9	12K	8	10	18	26	38	49	63	82	115	150

- Check the oil level in the reducer gear for the cage levelling by means of the special display Fig. 5.4 and Fig. 5.5.

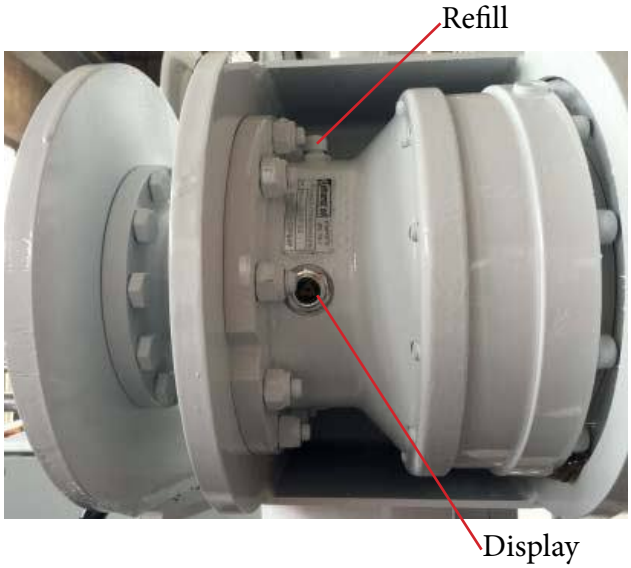

Fig. 5.4

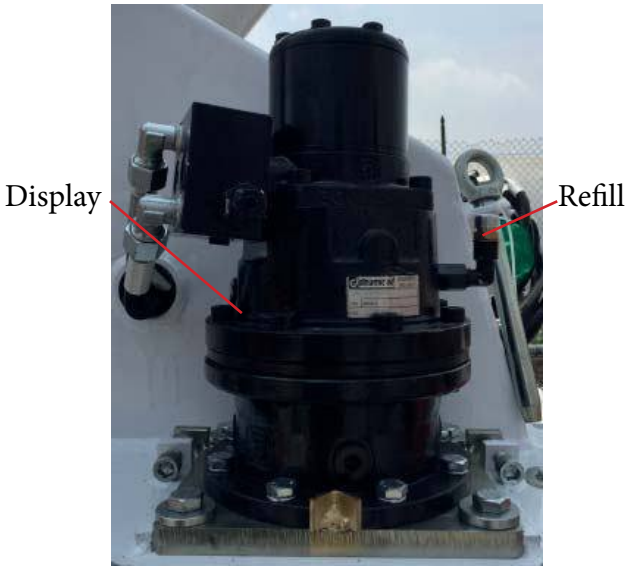

Fig. 5.5

When the display is in horizontal position, the oil level has to be at the middle. If not refill by means of the dedicate cap

- Check the play of the reducer and the slewing
- Check all the microswitch (stabilizers pins, stabilizers articulations...)

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- Check the correct functioning of the outreach limiting device in this way:
  - select the large position for all the stabilizer
  - set up the machine lifting up the tracks about 15/20 cm
  - remove every weight from the basket
  - open the jib and lower the boom horizontal
  - with the boom horizontal, extend it till the stop of the extention and the lowering of the boom
  - in these conditions, verify that the distance between the turntable center and the basket border (R1, look Fig. 5.6) is the same of the value written in the chapter 1 with a tollerance of 30 cm

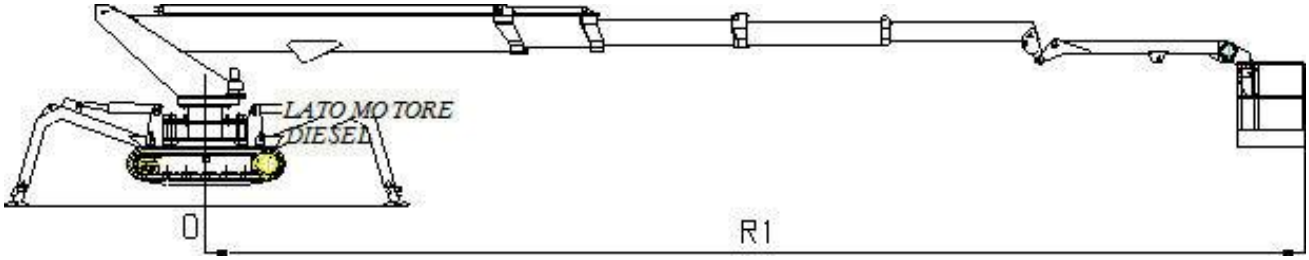

Fig. 5.6

!	**WARNING!** If during the check, the outreach is more than the value of the chapter 1, do not use the equipment and contact Palazzani Industrie.

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5.6. SIX-MONTH MAINTENANCE

In addition to the quarterly checks, it is necessary to evaluate the situation and the enviroment where the machine operated, specially if it's close to the sea, if it worked in particularry aggressive enviroments or if the equipment remeined outside subject to the weather.

- check if the hydraulic circuit flow has foam or has a dark coloration
- check the usury of the extention chains (paragraph 5.12) and grease them
- check the usury and the situation of the tracks
- check the welding, should not be rusty or have cracks
- check the conditions of the protection paint and, if necessary, fix it, in order to prevent rust formation
- Check the possible presence of paint blisters on the cylinders and on the arms and make sure it is not because of any structural subsidence
- Set the engine following the proper manual
- Check the usury of the chromium plated stems of the cylinders, especially if near the sea
- Once the machine is parked and the engine is not running, check the stabilizers in search of any subsidence; the replacement must be instantaneous
- Check the signs on the command panels, the instruction plates and the emergency signs and replace the ones damaged
- refill the slewring reducer and the tracks engines
- clean and check all the microswitches of the machine

!	**ATTENZIONE!** Avvertire il responsabile di eventuali anomalie riscontrate.

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5.7. ANNUAL MAINTENANCE

Besides the checks described in the previous section, check the following:

- the chains tension and if necessary set them by acting on the bolts of Fig. 5.7; with the boom in horizontal position, extend it for 10 cm and re-entry; Loosen the upper bolts until the chain is loose and then screw until the chain becomes a little tight (for more details look the paragraph 5.12)
- grease the chains and check there is no rust (look paragraph 5.12)
- check the plays in the manoeuvres: the arm in the turntable, the cage at the end of the arm, stabilizers over the support plan and between them, turntable.
- check that the slewing screws are well tightened

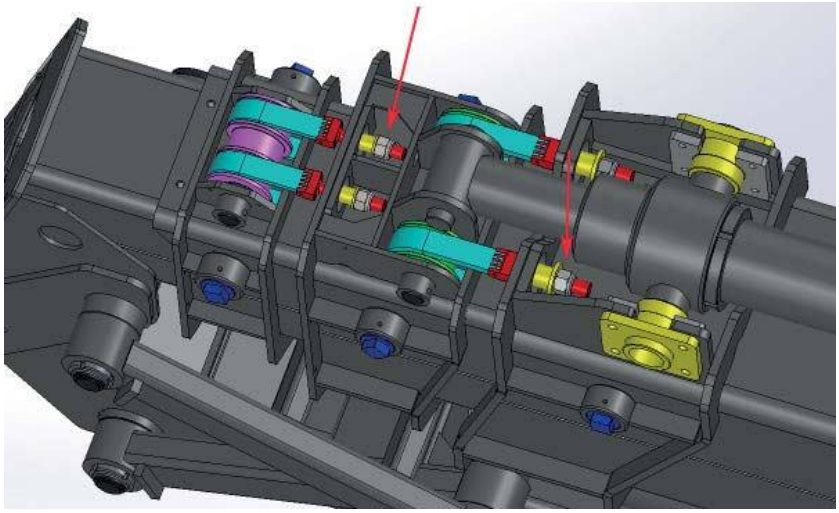

Fig. 5.7

- check the basket support and the usury of the basket levelling system bushings.
- replace the engine oil filters if not done previously following the producer's recommendations
- replace the flexible damaged pipes.

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5.8. FOUR_YEAR MAINTENANCE

Besides the recommendations in the previous paragraph:

- check the extension chains and if damaged, prepare them for replacement
- hydraulic oil replacement
- cylinders resistance and valves check. Put the cylinders under pressure and, after at least 1 hour, check that no subsidence has taken place
- check the cylinders stems surface
- flexible pipes and articulations replacement
- check the condition of the levers on the hydraulic distributors
- check the articulations pivots iron rings
- replace the turntable rotation reducer oil
- filters replacement (cartridge)
- dismount and check the chains, particularly the booms connections and the not accessible areas. Substitute the defeated parts if any.

We remind you that these checks are just recommendations.
The operator must inform and the maintenance operator must provide for lubrication, refillments, replacements etc.

!	**WARNING!** Inform the responsible personnel of any problem encountered.

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5.9. EXTRAORDINARY MAINTENANCE

As described above, in hostile work conditions it may be necessary to anticipate the programmed maintenance operations. For example, the saltiness damages on paint, chains, cylinders stems; the wind, when carrying sand, may damage the hydraulic oil or the command panels. It is also recommended not to leave the machine outside for a long time: water may penetrate and damage electric equipment and cause rust formation.
In other situations too the operator must intervene immediately: pump replacement, perforated tyres, damage of flexible pipes, damage of batteries, weldings, etc ...
In case of battery damage we recommend the maximum care because the electrolyte is dangerous for people and for the environment.
Wear glasses to avoid squirts into the eyes and wear glasses to avoid skin damage.
Use these protections also when treating oil. The oil acts as human fat solvent and a constant exposition to it may cause dermatitis or serious irritation. In case of any contact with the eyes rinse copiously with water and if the irritation persists, contact a doctor.
Moreover, before manipulating these products, read carefully the producer's recommendations about its usage.
Before welding, disconnect both the battery poles. Connect the mass onto the element where you have to execute the soldering and never onto a hydraulic circuit element.

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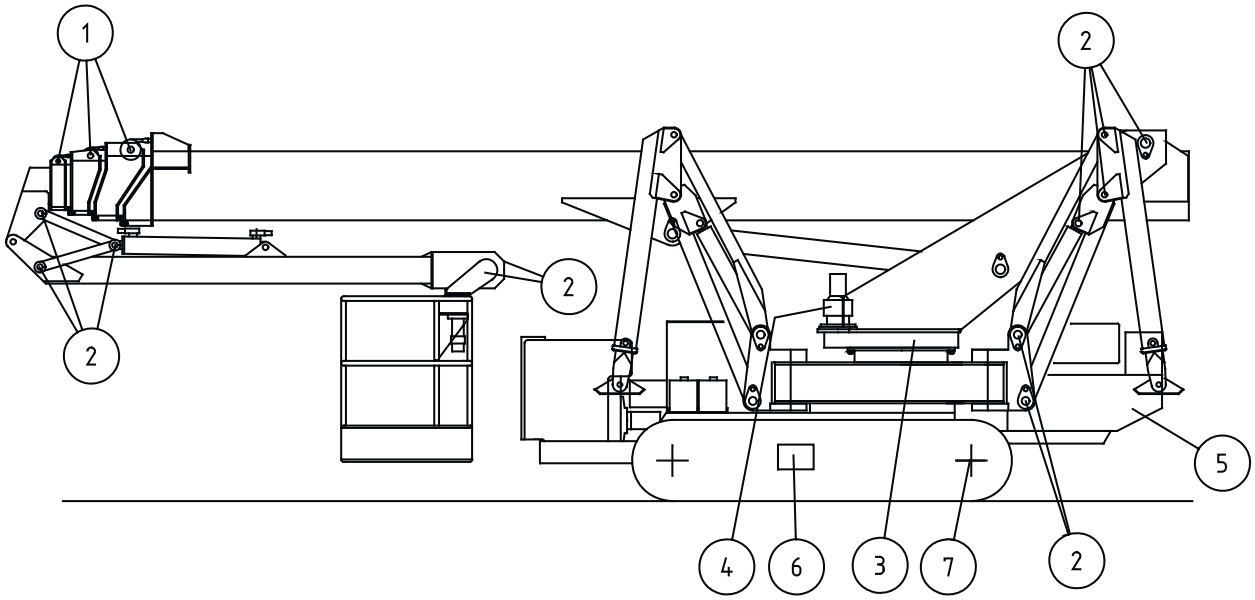
LUBRICATION SCHEME



1) SLIDING PADS GREASING
   Lubricant NILS NILEX EP2
2) VARIOUS PIVOTS GREASING
   Lubricant AUTO GREASE MP
3) SLEWRING GREASING
   Lubricant AUTO GREASE MP
4) ROTATION REDUCER
   Lubricant PONTIAX FZG 85W/90
5) HYDRAULIC OIL TANK
   Lubricant BP ENERGOL HLP – HM 46
6) DEVICE FOR PUTTING TRACKS UNDER TENSION
   Lubricant AUTO GREASE MP
7) TRACKS ENGINES
   Lubricant PONTIAX FZG 85W/90

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5.10. CONTROLLO AL CIRCUITO OLEODINAMICO

These are the recommended checks for the hydraulic circuit:

- oil in the tank: through the level visually
- diesel engine pumps efficiency: when the engine is running, commute the command key to “stabilizers”, activate a stabilizer until it is completely retired and check that the pressure is within the maximum value shown in chapter 1. When the stabilizers are under pressure, start the generator and check the voltage is 220V + 10%.
- electric engine pump efficiency. When the engine is running, turn the key onto “stabilizers” and move a stabilizer until it’s completely retired; then check the pressure value is within the maximum shown in chapter 1.
- filters efficiency. Open the engine hood and after a few minutes (10 minutes during the cold season) check the indicators are not on the red.
- maximum pressure valves. Using the thermal engine and moving the arms until they’re completely retired, the manometer should show the maximum value as shown in chap 1.
- flexible pipes: check if they’re not damaged or blistered near the hose fitting, damages in the metallic/textile stranded wire or permanent foldings. The black surface film sealing is not dangerous for the pipe
- cylinders locking valves. Put the stabilizer cylinders under pressure, after lifting the lifting cylinder, jib open (and then closed): mark the stems with a tape and measure the distance from a point (as the flange thread) to the plaster. The subsidence allowed is none within 15 minutes, 1mm after an hour.
- Oil leaks: Maximum allowed is few on the stems and on the spiral pipes.

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5.11. GENERAL ELECTRIC SYSTEM AND BATTERY RECHARGER CHECK

The machine mounts a rectifier for the battery charge, set in the general electric frame (box1).
This rectifier is automatically fed by the plug (both 220 V or 380 V) for the equipment starting.
Also the diesel engine contributes to the battery charge, when it is running.
Thus, it is necessary to keep the electrolyte level in the batteries checked and keep the positive poles greased.
We've seen that it is fundamental to check the safety devices correct functioning, many of which are electric and may simulate manoeuvre mistakes.
Often, the electric plant check corresponds to the searching for a failure, given that these parts are the most exposed to injuries due to rain, powder, vibrations etc.
The maintenance employee has to be specifically instructed, but above all precise and respectful of the electric parts and their connections.
We remind you some important things.

- the microswitches, the relays, the diode valves and the condensers may be similar but connected each other in different ways. We recommend to replace them with parts that has the same brand and the same code; try to remember the colour of the cables or the terminal numbers not to make connections mistakes
- do not take off more than one relay at a time, check it and if necessary replace it with an equal one
- the microswitches have a symbol representing a little arrow inside a circle or this P. They're just in case of emergency and cannot be replaced with other similar parts which do not have this symbol
- Be careful with NA or NC connections
- Always re-connect the grounding cables and the equipotentiality cables
- The emergency stop buttons must be repaired immediately when a failure is encountered.
- Follow carefully the scheme and do not operate any modification that may damage or commit the entire machine functioning.
- After any intervention check all the machine emergency functions

N.B. The access to the inside of the electric plant wrappings is recommended to be executed by instructed personnel only.

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5.12. CHAIN CHECK

The chain for the boom extension are Fleyer type and for safety factor are fitted in couple with separate link and a device that assure the approximately equal tension on the chains.
The chains need of periodical maintenance; every 3 month.

Maintenance
For proper operation of the chains and moving parts must always be maintain appropriate lubrication conditions.
To lubricate chains, extend the arm horizontally, making sure to support end with a crane with adequate capacity (see Fig. 5.9). In this way the chains extension are available for maintenance and inspections.

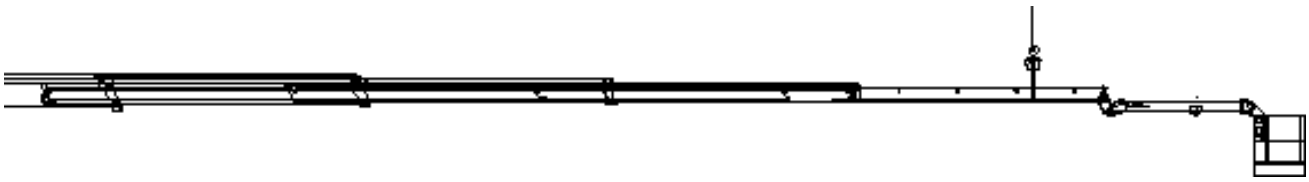

Fig. 5.9

The lubricant has two main tasks: Action anti-friction, protective action.
The lubricant is usually applied brushstrokes on the surface of the plates, it must penetrate inside the plates to reach the area of wear between the pin and hole plates.
If on the chain there are abrasive particles (e.g. sand), before oiling must be carefully cleaned by washing with appropriate solvent. Oiling dirty the chains means pushing the abrasive material in the joints, triggering phenomena of abrasive wear.
The type of lubricant to use is a normal mineral oil with viscosity about ISO VG 46 – 460.
Keep in mind that more viscous oils are suitable for low ambient temperatures.
An oil very fluid, penetrates in the joints better, but resists less, compared with more viscous lubricants. A compound with very viscous contrast has difficulties to penetrate the joints and thus may not allow the lubricant effect desired.
Perform lubrication every 200 hours or every 12 weeks

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Check

For each intervention lubrication must be recorded, if necessary, the chain tensioning system must be checked for abnormalities of alignment between the chain and pulley system attack. The misalignments are very dangerous because they can induce high overstressing the chains.

Check for wear elongation

To control the elongation due to wear is necessary to establish a registration form.
Since probably will not wear the uniform along the entire length, the measure must be made for features that are appropriately identified. (Break the chain length in 5 sections)
It should be recognized that the original measure serves as a reference for subsequent ones and should be kept in mind that all subsequent measurements must be made on the same traits.
After a few measures you can identify which traits are more subject to the phenomenon of wear, and then subsequent measurements can be restricted only to these traits.
The measurement can be made or slide gauge long enough or line graph. The reference may be either the head of the pins or the profile of the plate.
The maximum elongation is conservatively set at 2%.

Check wear plates profile

After identifying the length of chain where this phenomenon is more evident, with a gauge should be recognized the actual height of the plate eyelet and compared with the initial one. They set the limit on the maximum acceptable wear (see Fig. 5.10):

Wear on one side	$[(H - H1) / H] \times 100 < 2\%$
Wear on two side	$[(H – H2) / H2] \times 100 < 3.5\%$

The high specific pressures between the plate and pulleys can cause plates, as well as wear, even consummation of the material on the edge of the plate that can lead to blocked joints. If you encounter locked joints, the chain must be replaced.

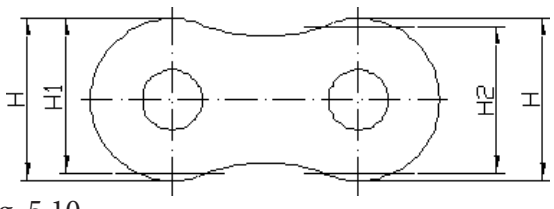

Fig. 5.10

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Wear on the side chain

This wear is caused by improper interaction with the chain pulleys or guide elements side. If the consumption over the heads of pins exceed 25% of the projection of rewriting or on the outside of the plate more than 20% of the thickness (see Fig. 6.14), the chain must be replaced before applying the new, the cause of this malfunction must be sought.

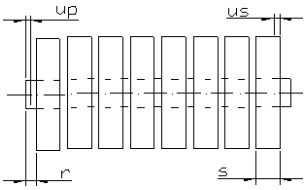

Fig. 5.11

Consumption rate head pin up / r x 100 < 25%
Consumption percentage edge plate us / s x 100 < 20%

These checks should be performed every 3 months.

After four years of the chains must be dismantled and inspected in the attacks on the arm and in areas not normally accessible and, if damaged, replace.

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5.13. SAFETY DEVICES CHECK

On the machine are installed some safety devices that need a periodical check and maintenance.

MECHANICAL CHECK OF MICROSWITCHES AND SENSORS

For every microswitch, check:
1) the integrity of the microswitch head and clean it from dirt
2) the right tighness on the fixing screws
3) the right elettrical connection (by plug or wires)

On board are installed the following safety microswitches:
- n°4 microswitches to detect the stabilizer on the ground (Fig. 12 - A)
- n°4 microswitches to detect the configuration of the stabilizer, large or narrow (Fig. 12 - B)
- n°4 microswtiches to detect the stabilizers pins (Fig. 12-C)

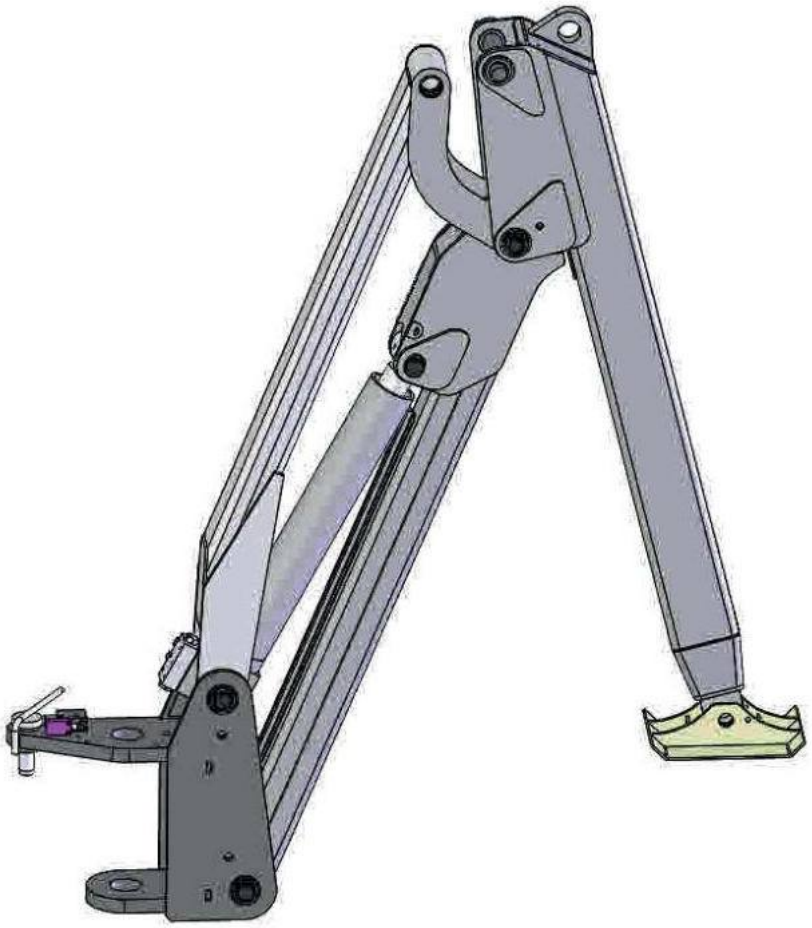

Fig. 5.12

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- **Stabilizers on the ground microswitches (Fig. 5.13)**

The head of the microswitch must be free when the stabilizer is on the ground and and it must be pressed when the stabilizer is lifted.

- **Stabilizers position microswitches (Fig. 5.14)**

The head of the microswitch must be free when the stabilizer is in the large position and it must be pressed when the stabilizer is in the narrow position.

- **Stabilizers pins microswitches (Fig. 5.15A, 5.15B)**

The head of the microswitch must be free when the pin is in, and it must be pressed when the pinis out.

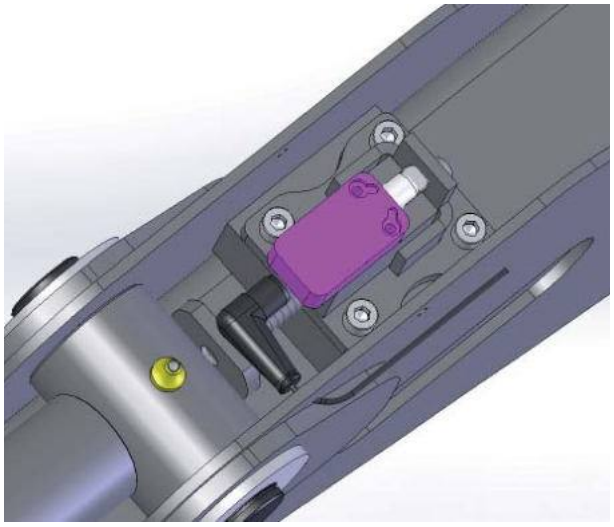

Fig. 5.13

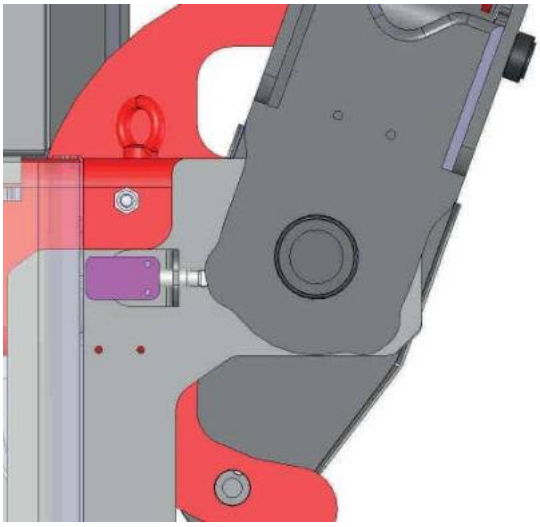

Fig. 5.14

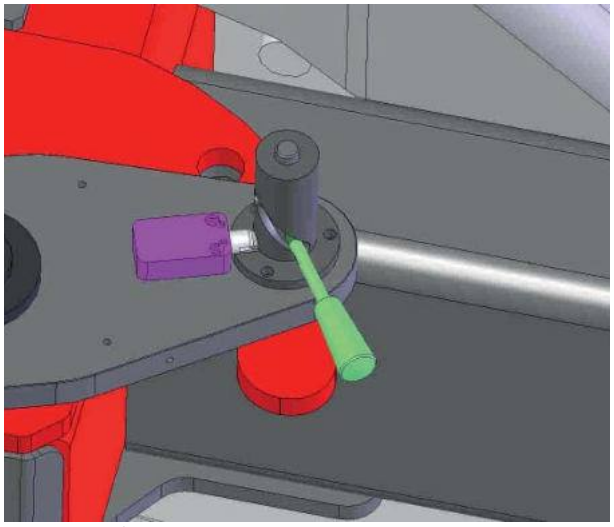

Fig. 5.15A

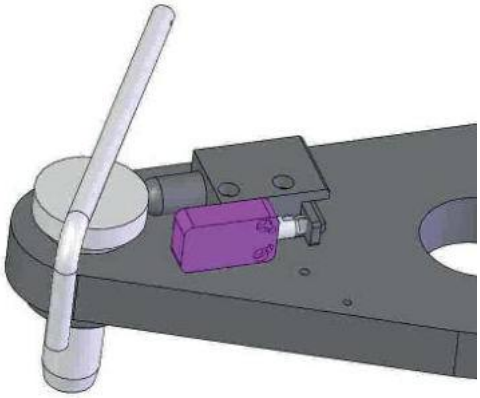

Fig. 5.15B

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The safety sensor that need mechanical maintenance are:
- turntable encoder
- extension sensor

- **Turntable encoder**

check the two encoders on the turntable after desmounting the cover (Fig. 5.16).
The plastic gear must be connected securely to the sensor without show particular plays or usury. Tight all the screws and clean it from dirt.

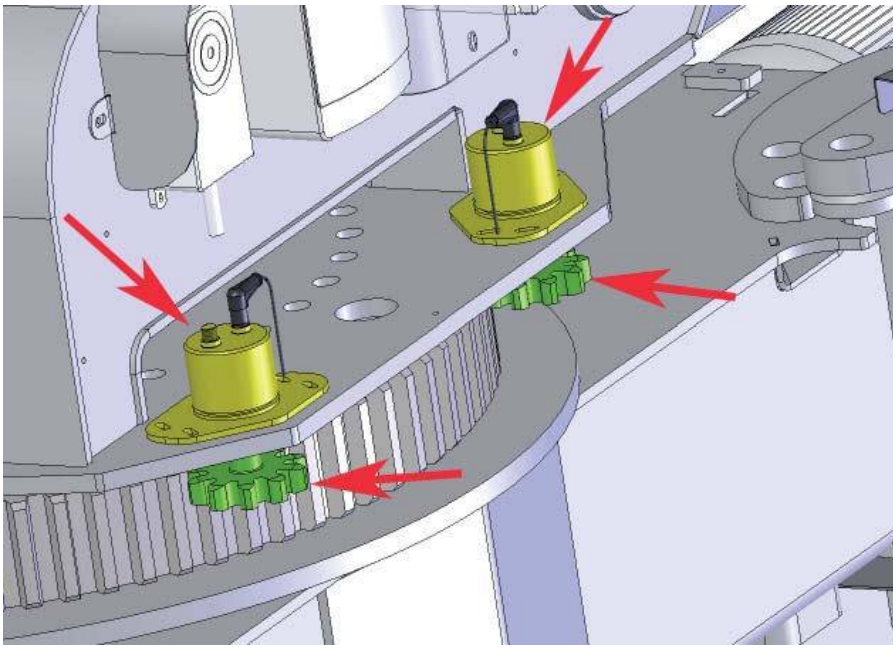

Fig.5.16

For the machine with the other type of turret (with the endless screw), check the tightness of the encoder mounted on the rotation block like shows in Fig. 5.17.
Check the integrity of the linking shaft between the encoder and the turret system; if there are deformations or cracks, do not use the equipment and contact Palazzani Industrie.

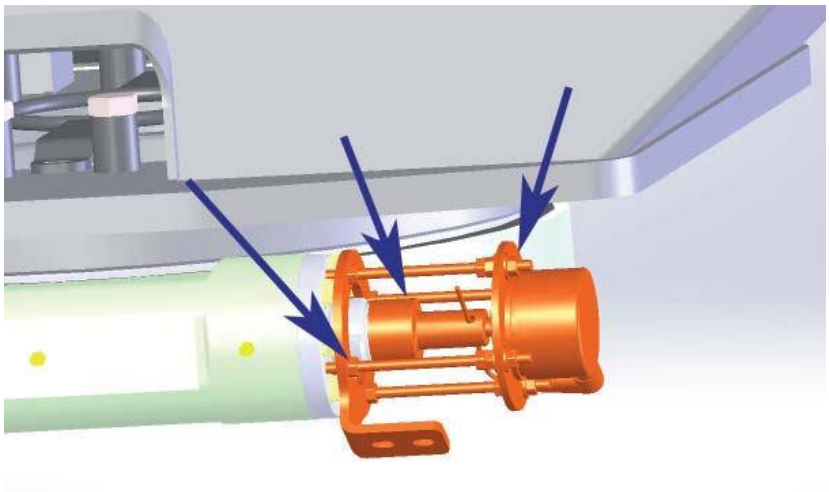

Fig. 5.17

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- **Boom extension sensor**

into the boom there are a length sensor to check the extension of the telescopic boom (Fig. 5.17). Check the tightness of the sensor screws, integrity of the alluminium tape and the connection between the tape and the first extension.
Clear from the dirt that can hinder the sliding of the tape.

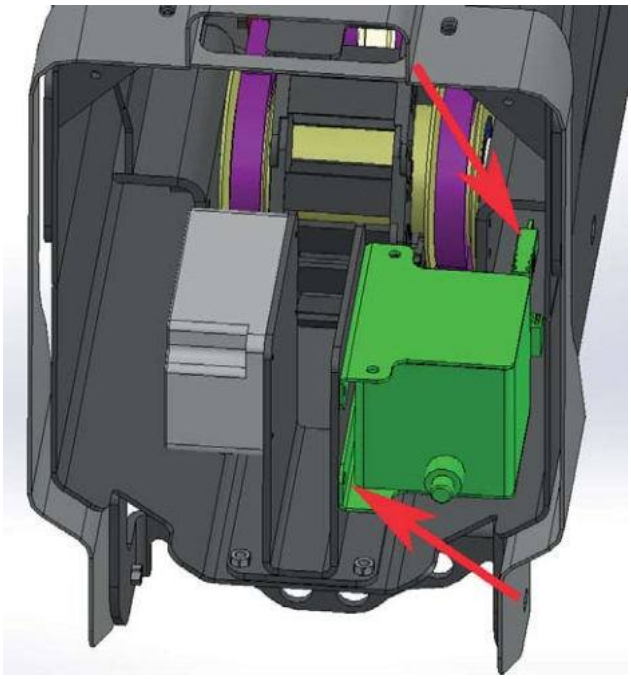

Fig. 5.18

ELECTRICAL CHECK FOR MICROSWITCHES AND SENSORS

To check if the microswitches and sensors are working property, there is a particolar feature on the touch screen display.
To view the TEST pages, press the button MENU' (Fig. 5.19) then press TEST (Fig.5.20).

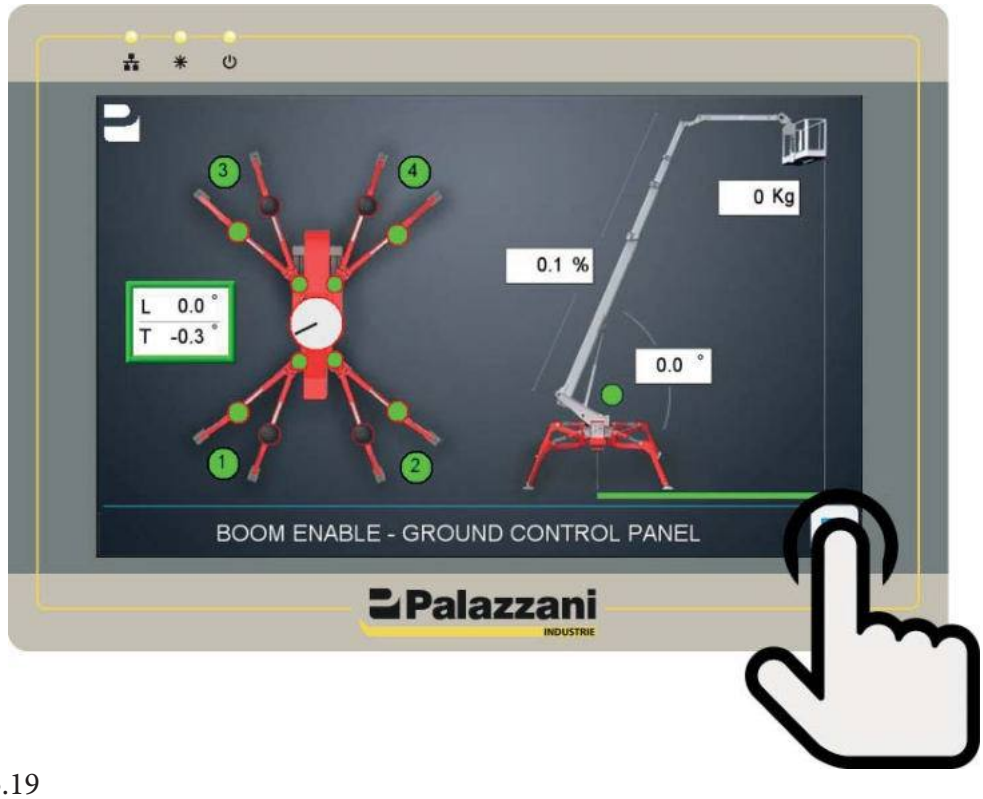

Fig. 5.19

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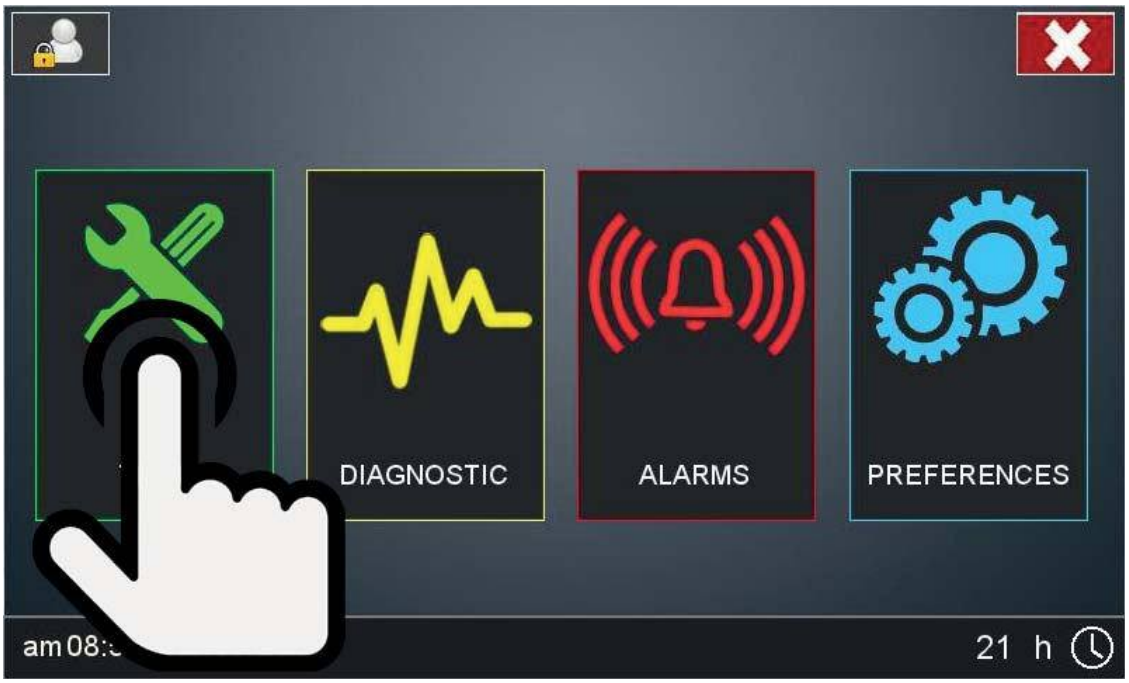

Fig. 5.20

From the microswitches page (Fig. 5.21) is possible to check the proper operation of the following signals:
- microswitches for the configuration of the stabilizers on the right side (stab. 2 and 4)
- microswitches for the configuration of the stabilizers on the left side (stab. 1 and 3)
- stabilizers pins

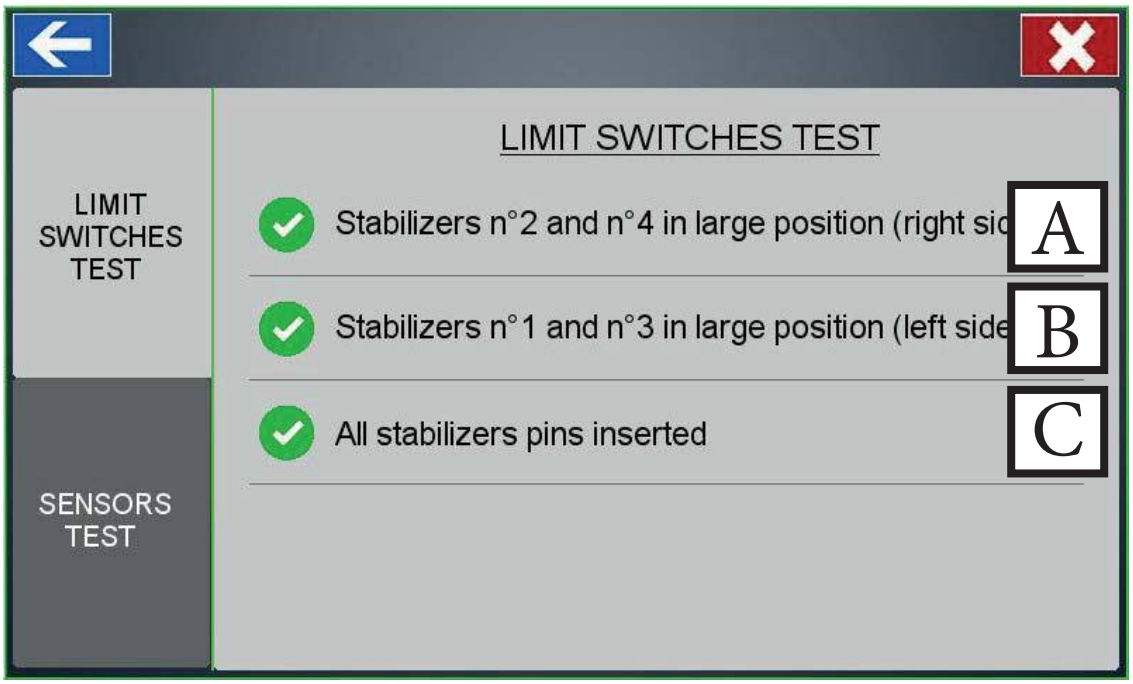

Fig. 5.21

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- **Right side stabilizers configuration test (Fig. 5.21 - A)**

This test is used to check if the microswitches that detect the position of the stabilizers n°2 e n°4 (right side of the machine) are working property.
To do this test, set the stabilizers with the configurations of the following table and check that for all the 4 situations, the display shows the same symbol of the table.

STABILIZER 2	STABILIZER 4	SYMBOL
LARGE	LARGE	
LARGE	NARROW	
NARROW	LARGE	
NARROW	NARROW	

- **Right side stabilizers configuration test (Fig. 5.21 - B)**

This test is used to check if the microswitches that detect the position of the stabilizers n°1 e n°3 (left side of the machine) are working property.
To do this test, set the stabilizers with the configurations of the following table and check that for all the 4 situations, the display shows the same symbol of the table.

STABILIZER 1	STABILIZER 3	SYMBOL
LARGE	LARGE	
LARGE	NARROW	
NARROW	LARGE	
NARROW	NARROW	

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- **Stabilizers pins test (Fig. 5.21 - C)**

This test is used to check if the microswitches on the stabilizers pins are working property. To do this test, set the stabilizers pins with the configurations of the following table and check if for both situations, the display shows the same symbol of the table.

PINS	SYMBOL
ALL THE STABILIZERS PINS COMPLETELY IN	
ONE ORE MORE STRABILIZERS PIN NOT COMPLETELY IN	

!	**WARNING!** Inform the responsible personnel of any problem encountered.

Clicking on *SENSORS TEST* you can check if all the safety sensors of the machine are working property (Fig. 5.22 and 5.23).

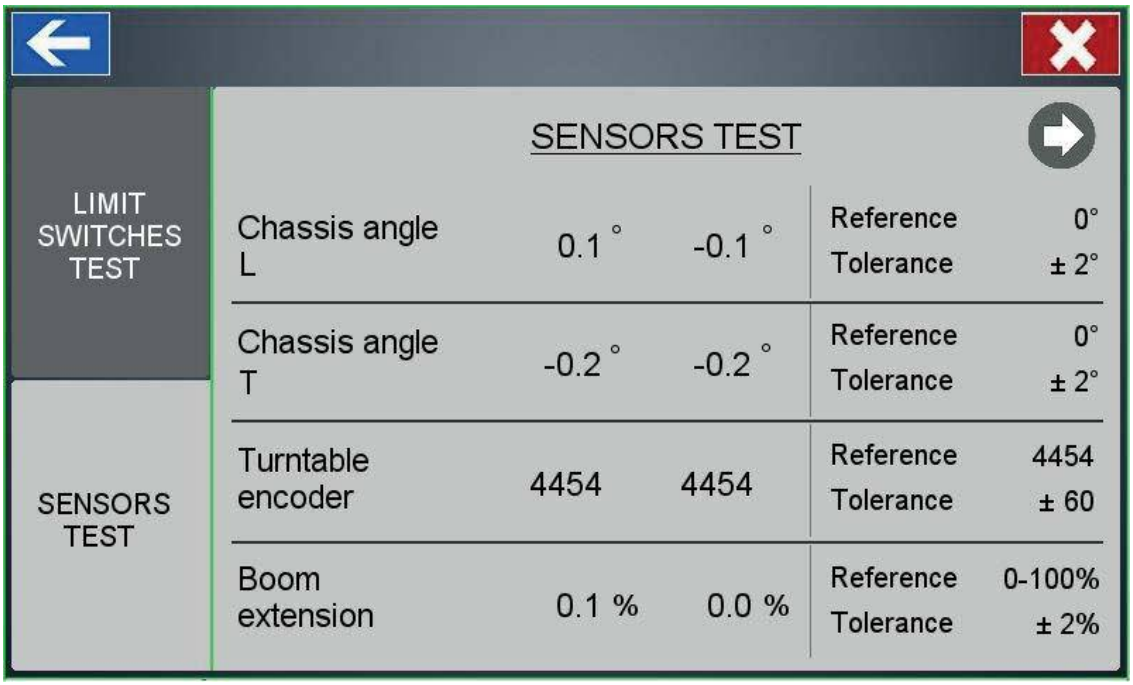

Fig. 5.22

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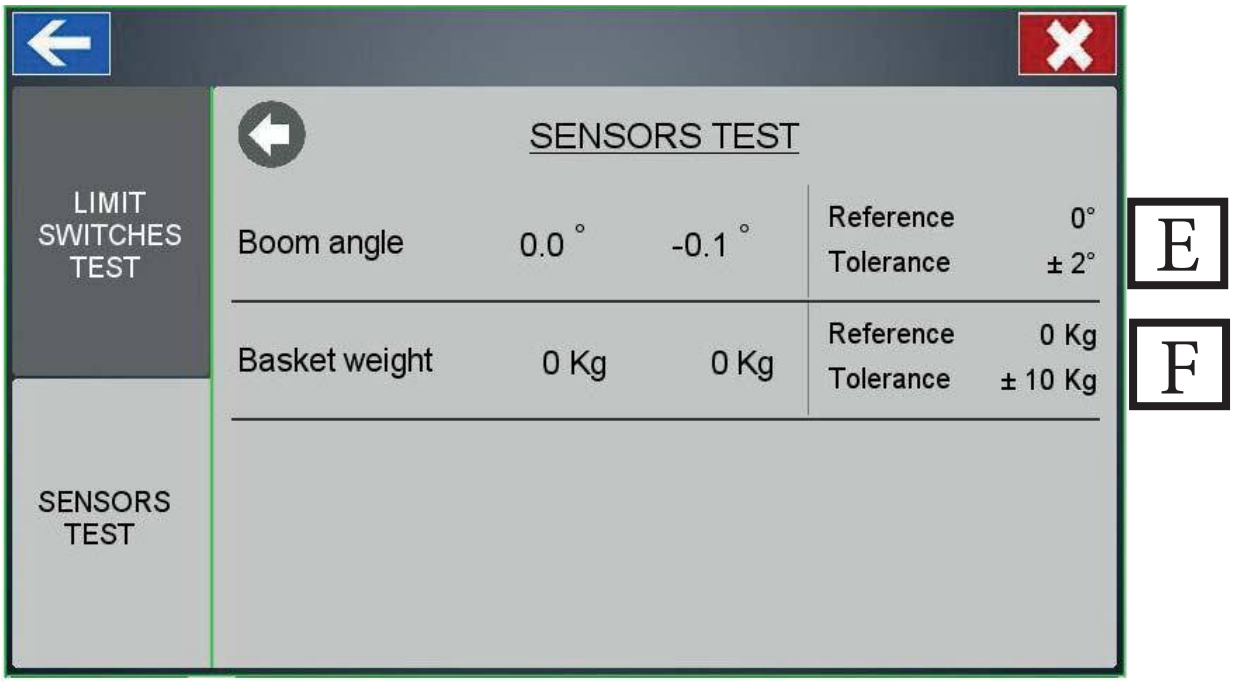

Fig. 5.23

- **Chassis inclinometer test**

Follow these instructions to check the inclinometer on the chassis:
1) put an additional bubble on the chassis and set up the machine checking it
2) now from the display, check the value of the angle L (Fig. 5.21 - A) and the angle T (Fig. 5.21 - B). All four values must be around the reference value.
If the difference betweeen the sensor value and the reference is less than the tollerance, the sensor is working fine.

- **Encoder test**

Follow these instructions to check the turnable encoders:
1) move the boom perfectly to the center
2) check both encoders values (Fig. 5.21 - C).
Both values must be around the reference value.
If the difference betweeen the sensor value and the reference is less than the tollerance, the sensor is working fine.

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- **Extension sensor test**

Follow these instructions to check the extension sensor:
1) put the telescopic completely in
2) check from the display the extension values (Fig. 5.21 - D). Both must be around 0%.
3) extend completely the telescopic
4) check from the display the extension values (Fig. 5.21 - D). Both must be aroung 100%.
If the difference betweeen the sensor value and the reference is less than the tollerance, the sensor is working fine.

- **Boom inclinometer check**

Follow these instructions to check the boom inclinometer:
1) Put an additional bubble on the boom and move it to 0° (checking the bubble)
2) now check the angle boom values from the display (Fig. 5.22 - E).
Both must be around the reference value (0°).
If the difference betweeen the sensor value and the reference is less than the tollerance, the sensor is working fine.

- **Basket load cell check**

Follow these instructions to check the basket load cell:
1) remove all the additional loads from the basket (it muste be empty).
2) now check the basket weight values from the display (Fig. 5.21 - F).
Both must be around the reference value (0 Kg).
If the difference betweeen the sensor value and the reference is less than the tollerance, the sensor is working fine.

!	**WARNING!** Inform the responsible personnel of any problem encountered.

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6. PLATFORM ASSIGMENT AND DEMOLITION

6.1. ASSIGMENT

In case of assigment of the machine to another user, remember that toward the new buyer, the old owner becomes for law the manufacturer if he has made changes to the original machine.
If he made no changes, he has to deliver it in absolute efficency status regards safety devices, control panels and the integrity of structures.
Is essential deliver also this "Operation and maintanance manual" and the the Conformity Declaration because it's part of the machine.
He has to check that all the warning and directions plates be still perfectly readable and the CE Mark must be evidenced.

6.2. DEMOLITION

6.2.1. WASTE MATERIAL DISPOSAL

The machine, during its normal use, doesn't involve enviromental contamination but during the complete use period it produce some waste material in particular conditions, like oils and the filter replacement or the oil filling.
For the disposal of these materials, every nations has particular regulations to safeguard the enviroment.
It's up to each customer to be aware of the laws in force in his country and work to comply with these laws in accordance with the instructions given in the specifications of the products used.

!	**CAUTION** **WE RECALLS OBSERVANCE OF APPLICABLE LAW OF MINERAL OIL DISPOSAL**

i	**SUPPLEMENTARY INFORMATION** ADDITIONAL INFORMATIONS ABOUT THE DISPOSAL OF OILS CAN BE FOUND ON THE SAFETY DATA SHEET OF SUBSTANCES.

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The disposal of toxic waste in stages of collection, transport, treatment, understood as processing operation necessary for the recovery, activity is of public interest subject to compliance with the following general principles:

- It must be avoided any harm or danger to the health, safety and the safety of the community and the individual.
- It must be ensured that the requirements of hygiene and avoid any risk of pollution of air, water, soil and subsoil.

Systems of recovery and recycling of materials and energy must be promoted, with the observance of economic criteria and efficient.

6.2.2. INDICATIONS FOR SPECIAL WASTE

Are special waste residues from industrial processes, the material from the demolition of machinery and obsolete.
The manufacturer has to provide the disposal of special waste, also toxic and harmful, directly or by contribution of waste to those who menage the public service with which it has concluded a special agreement.
Each country is required to provide to the region all the informations available to waste disposal in its territory.

IMPORTANT INFORMATION FOR THE USEER UNDER DIRECTIVE "RAEE" 2012/19/ue (REPEALING DIRECTIVE 2002/96/CE AND THE 2003/108/CE) ABOUT WASTE OF ELECTRICAL AND ELECTRONICS EQUIPMENT.

According to the Directive "RAEE" 2012/19/UE if the component/equipment purchased is marked with the symbol of a trash on wheels with a bar, it means that at the end of its life, it must be collected separately from other waste.
The recycling of this equipment reached the end of his life is menaged and organized by the manufacturer. The user who wishes to dispose of this equipment must contact the manufacturer.

!	**CAUTION** **IMPROPER DISPOSAL OF THE PRODUCT BY THE HOLDERS IMPLIES THE APPLICATION OF AFMINISTRATIVE SANCTIONS PROVIDED BY THE LAW.**

!	**CAUTION** **IF THE SYMBOL OF THE TRASH ON THE WHEELS IS NOT SHOWED ON THE COMPONENT, IT MEANS THAT THE MANUFACTURER IS NOT RESPONSABLE ABOUT THE DISPOSAL.**

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6.2.3. DEMOLITION

The macine is made with material that has no particular safety issue for man during the demolition, in particular:

- Steel: all the machine parts like boom, supports, base, structure ecc..
- Plastic: lamps and button bodies, tracks / wheels and other electrical components.
- Glass: display and lamps.
- Copper: cables and boards.
- Lead / acid batteries for the starting or for traction.

The user accordance with CE or according to the laws in force in your country will have to deal, for the conservation and environmental protection, disposal and elimination of the materials composing the machine.

Before demolishing the machine, the user must provide the to the manufacturer all the technical informations showed on the CE plate.

For scrapping the machine or parts of it, you should take all safety precautions necessary to avoid the risks associated with decommissioning.

In particular, special precautions should be taken during the steps of:

- Trasport and handling.
- Dismantling.
- Separation of materials.

For transactions involving the separations of materials and their recycling or final disposal, reference should be made to the Laws of the National and Regional governing disposal of industrial solid waste and hazardous substances.

After dismantling the machine as recomended, you must segregate the various materials in accordance with the prescribed rules of the country whre the machine must be eliminated.

The operations described below are only to authorized personnel and authorized for this purpose:

- create sufficient space around the machine to perform all movements without risk to personnel
- if necessary, unplug the supply cable from the device first disconnecting the power conductiors, then the earth.
- Only after all the above tasks have been effected, proceed to disassemble the machine from top to bottom paying particular attention to groups / machine parts subject to fall by gravity and to all parties could be present where product residue .
- For disassembly of parts to trade (machines and / or units) that are part of the machine provided by Pallazzani Industries refer to the manufacturer’s manual .

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After dismatling the machine according to the previous procedure, all the various materials must be segregate with the prescribed rules of the country where the machine must be eliminated.

- remove the mobile parts and separate the various components by type of materials. Separe the parts by type of material that must be recycled (plastic, metal etc..). Entrust the disposal of material obtained from demolishing the companies responsible
- remove and handle the various parts of the machine from work by taking all necessary precautions
- before to lift big parts, verify the correct attachment of lifting devices and use only adequate slings and equipment.

	**DANGER** **The possible loss of parts of components during removal way be a serious danger for operators.**

	**HAZARDOUS SUBSTANCES** **The disposal of hazardous waste must be made in compliance with National and Regionals laws giving waste to disposal sites belonging to the Consortium authorized waste oil disposal.**

	**Disposal Electrical and Electronic Equipment (WEEE) under the ROHS Directive.** **The electrical and electronic equipment (WEEE) showing this symbol must be recycled.**

If the used materials, lubricants and water condensation are not disposed of according to the laws and regulations, there may be residual risks such as:

- enviromental pollution
- intoxication of the people responsible for disposal.

	**OPERATING NOTE** For further questions about the procedure of the machine demolition or topics not covered in this document, contact the manufacturer.

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6.3. CONTROL REGISTER

This control register is released by PALAZZANI INDUSTRIE S.p.A. to the user of the Ragno mentioned on the cover, in accordance with Annex I della Direttiva 2006/42 CE.

6.3.1. Storage instructions

This register must be considered like a part of the Operation Manual and it must be with the machine for all its life, till the final disposal.

6.3.2. Instructions for completing

These instructions are provided in accordance with the regulations known before the marketing date of this Ragno. New regulations could be intervene to change the obligations of the user.

This register is prepared to annotate the following events about the machine life:

- property transfer
- replacement of engine, gears, structural elements, safety devices and components
- failure of a certain size and relative repairs
- scheduled maintanance of the chapter 5 of this manual.

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DELIVERY OF RAGNO ..... TO THE FIRST OWNER

Ragno model ..... serial n° ....., year of manufacture .....
has been delivered by Palazzani Industrie S.p.A., on ..... to
.....
.....
in conformity with contractual conditions agreeded upon and with tecnical, dimentional and working characteristics described by the operational manual and by the summary of this register.

. .....

FOLLOWING CHANGE OF PROPERTY

On ..... the property of Ragno ..... is transferred to:
.....
.....
It is certified that, under this date, technical, dimentional and working characteristics of the platform are exactly corresponding to ones described by the operational manual and that eventual modifications have been annotated on this register.

Seller Buyer

....

FOLLOWING CHANGE OF PROPERTY

On ..... the property of Ragno ..... is transferred to:
.....
.....
It is certified that, under this date, technical, dimentional and working characteristics of the platform are exactly corresponding to ones described by the operational manual and that eventual modifications have been annotated on this register.

Seller Buyer

....

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ENGINE REPLACEMENT

Date: ..... Serial n° .....
Manufacturer: .....
kW: ..... rpm: .....
REPLACED BY THE ENGINE:
Date: ..... Serial n° .....
Manufacturer: .....
kW: ..... rpm: .....
Cause of replacement:
.....
.....

Responsible of the replacement User

....

ENGINE REPLACEMENT

Date: ..... Serial n° .....
Manufacturer: .....
kW: ..... rpm: .....
REPLACED BY THE ENGINE:
Date: ..... Serial n° .....
Manufacturer: .....
kW: ..... rpm: .....
Cause of replacement:
.....
.....

Responsible of the replacement User

....

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GEARS REPLACEMENT

On: .....
Element description: .....
.....
Manufacturer: ..... Supplied by: .....
Cause of replacement:
.....
.....
.....

Responsible of the replacement User

....

GEARS REPLACEMENT

On: .....
Element description: .....
.....
Manufacturer: ..... Supplied by: .....
Cause of replacement:
.....
.....
.....

Responsible of the replacement User

....

Tel. 0039 030 6857073 - Fax 0039 030657079 info@palazzani.it - www.palazzani.it

SAFETY DEVICES REPLACEMENT

On: .....
Element description: .....
.....
Manufacturer: ..... Supplied by: .....
Cause of replacement:
.....
.....
.....

Responsible of the replacement User

....

SAFETY DEVICES REPLACEMENT

On: .....
Element description: .....
.....
Manufacturer: ..... Supplied by: .....
Cause of replacement:
.....
.....
.....

Responsible of the replacement User

....

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PERIODICAL CHECK-UP

User is obligated to follow the check-up and maintanance program described by the operational manual of the platform.

N°	DATE	DESCRIPTION OF THE INTERVENTION	SIGNATURE

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HYDRAULIC WINCH APPLICATION

RAGNO XTJ 43/C	**CRAWLER VERSION**
SERIAL N° OF THE MACHINE	**PT3582**
YEAR OF CONSTRUCTION	**2016**
SERIAL N° OF THE WINCH	**2315016**

ATTENTION

THIS APPENDIX REFERS TO THE USE OF THE MACHINE AS SPIDER CRANE.

FOR THE INFORMATION NOT MENTIONED IN THIS APPENDIX, PLEASE REFER TO THE USE MANUAL OF THE MACHINE OF SAME S/N.

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SUMMARY

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A1 DIMENSIONS

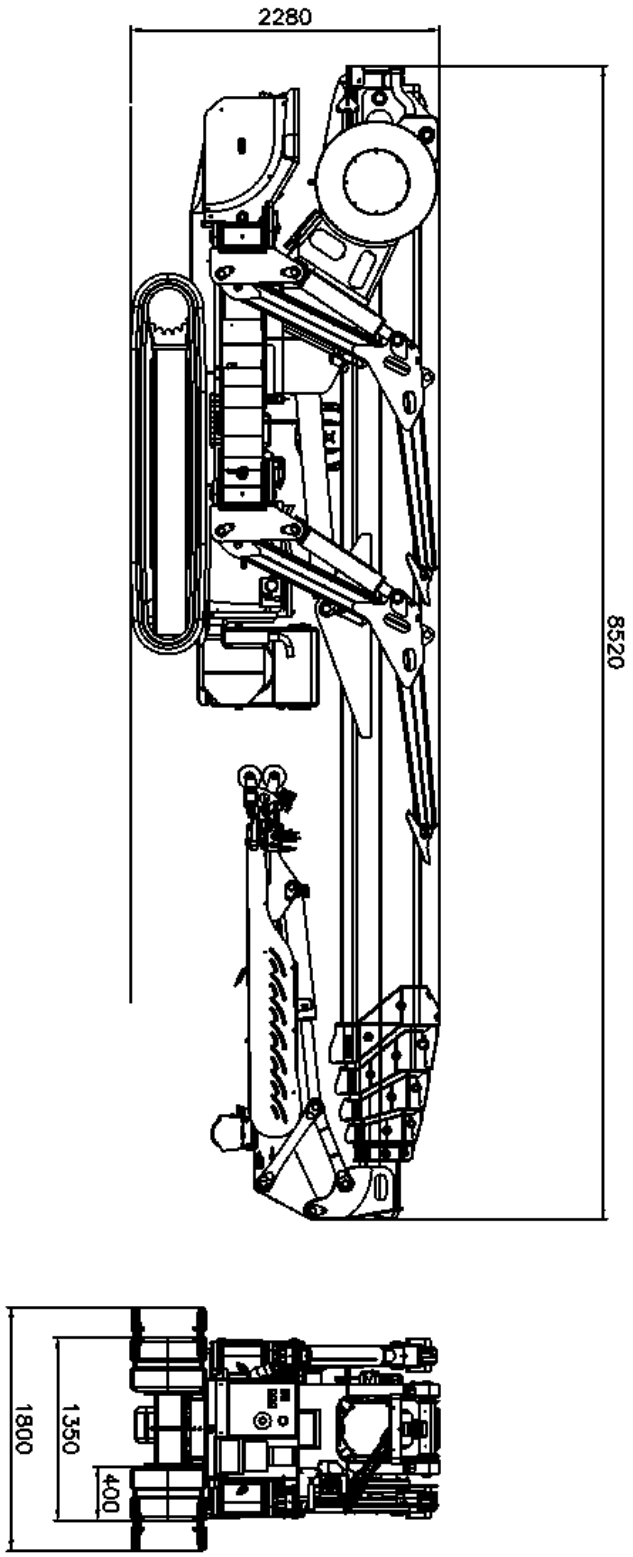

Fig. 1

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A2 WORKING AREA

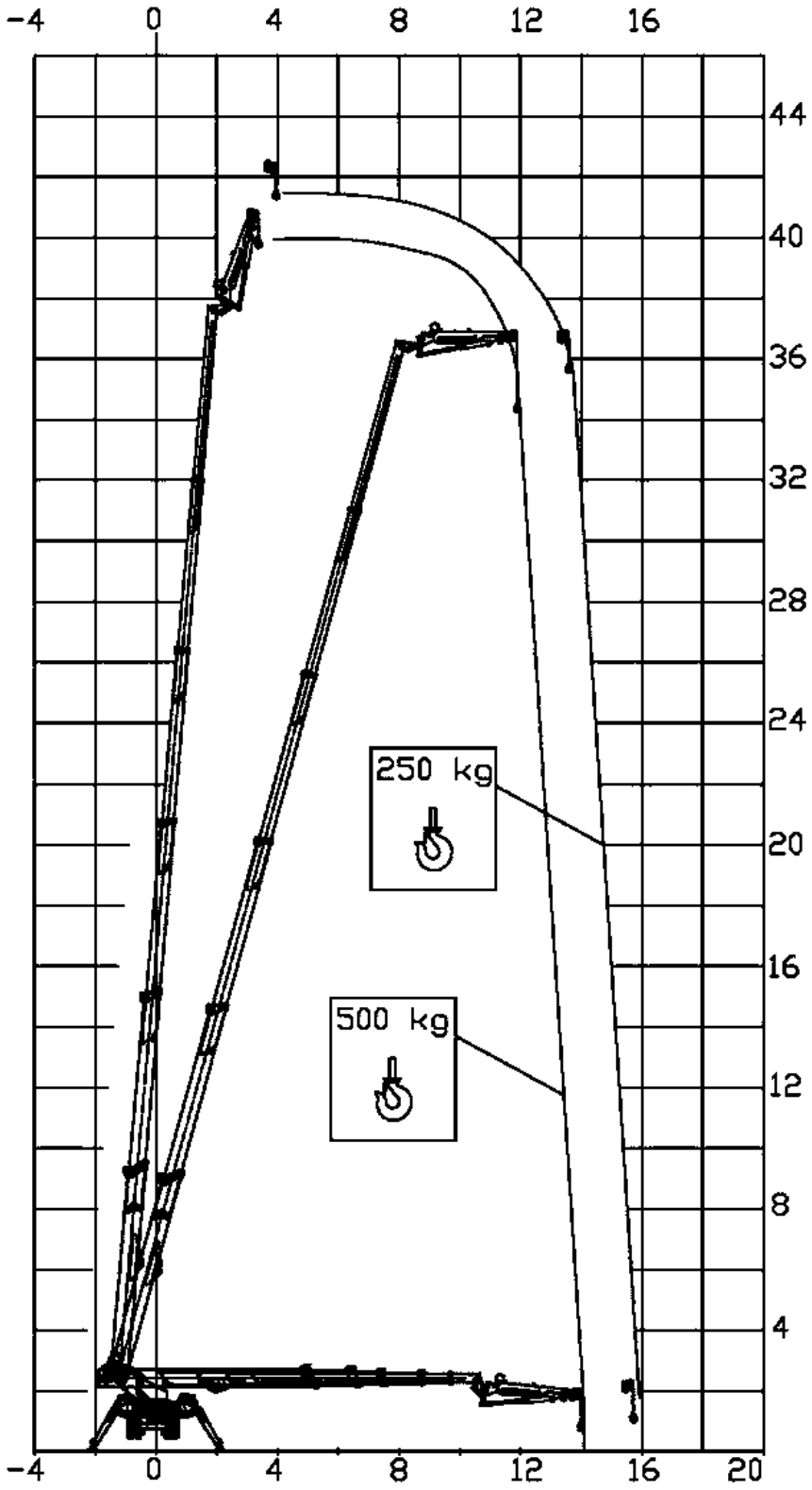

Fig. 2

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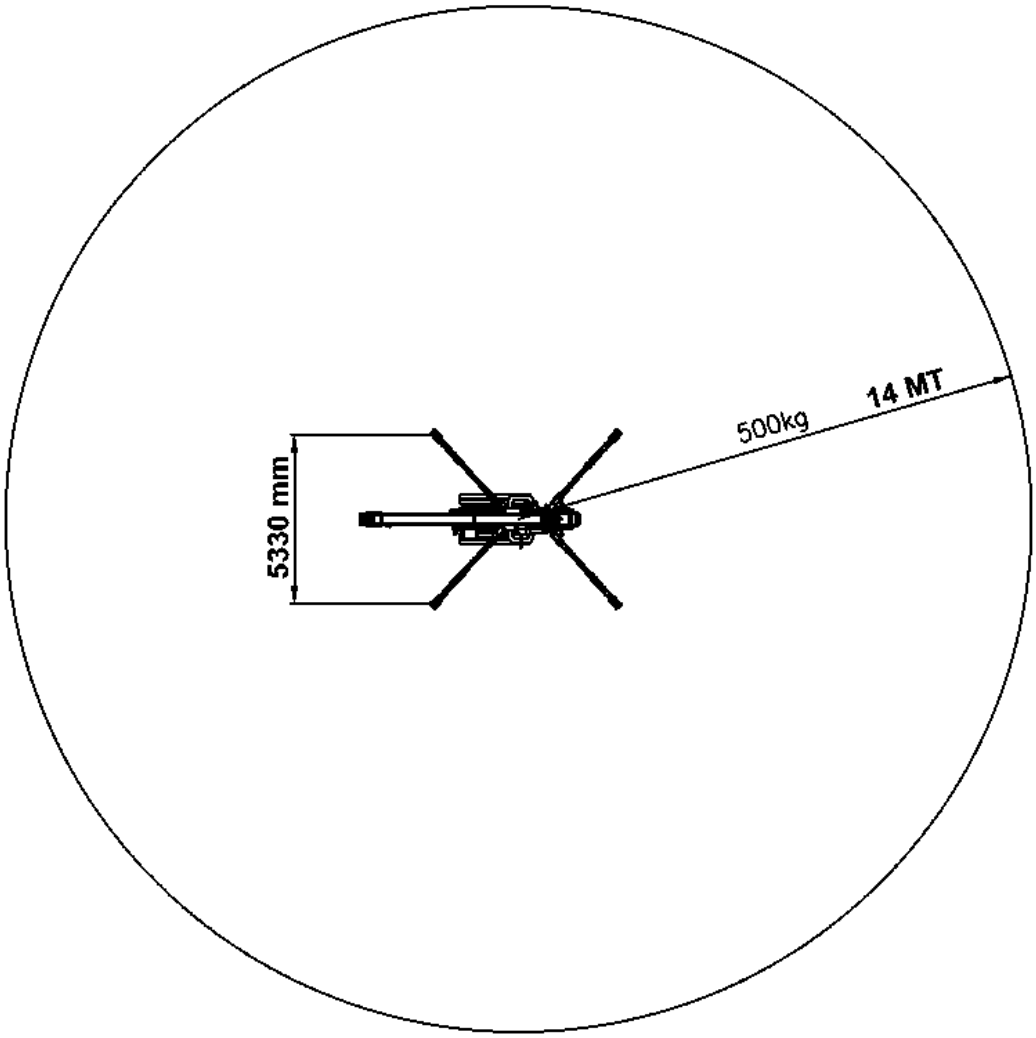

Fig. 3

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A3 DESCRIPTION AND USE

The machine mainly consists of a frame with 4 articulated stabilizing legs, hydraulically controlled, a turntable slewing on a ball bearing ring.
Steel made multi-telescopic boom is hinged to the turntable and it supports the aerial cage, with an hydraulically articulating jib. All movements are actuated by hydraulic cylinders, or hydraulic motors
The machine is mounted on rubber tracks, completely integrated with the supporting frame.
Two power packs are mounted: el.motor 220V and no-noise diesel engine, all driving the platform movements alternatively and both source are able to the boom mouvements and travelling.
The machine has two complementary control panels.
One in the cage, which is used for aerial work.
The ground control panel is used for the travelling and stabilizer positioning, and, if allowed, the boom mouvements, as well as the emergency operations.

The crane is designed for loads lifting by means of a hook and for a limited cycles; in respect of UNI ISO 4301-1, the classification is Q1 U2, therefore with a load spectrum factor of Kp = 0.125. In conclusion, the crane class is A1.

The crane is designed in accordance to UNI EN 13000, therefore it is not for operating cycle with bucket, magnet or similar job.

The max wind speed allowed during the use of the crane is 12 m/s and the lifting load doesn't have a surface exposed to the wind over 1,2 m^2/t.

The attachment operator must be trained and skilled for the mobile cranes use, with the authorization according to the national laws.

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A4 FITTING OF THE WINCH

Before mounting the winch is necessary to remove the basket.

!	**ATTENTION** **It is strictly forbidden to use in any way the whinch when the cage is attached**

To remove the basket, take the wheeled support in the working area, put the basket on the support gently, with the jib in vertical position, as shown in Fig. 4.

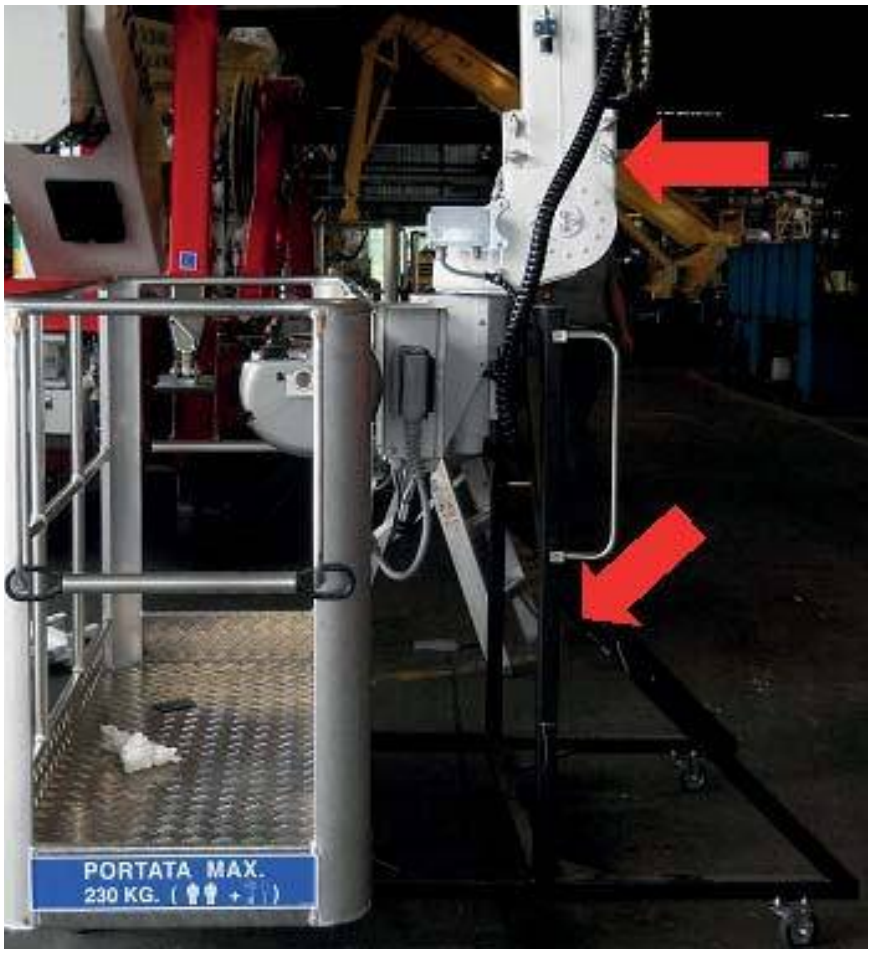

Fig. 4

Disconnect the electrical and hydraulic connections indicated in Fig. 5 (electric connections are green, hydraulic connections are yellow).
Remove the cotter pins, pull out the pin as shown in Fig.6 and slightly lift the arm up to release the jib on the side resting on the support.

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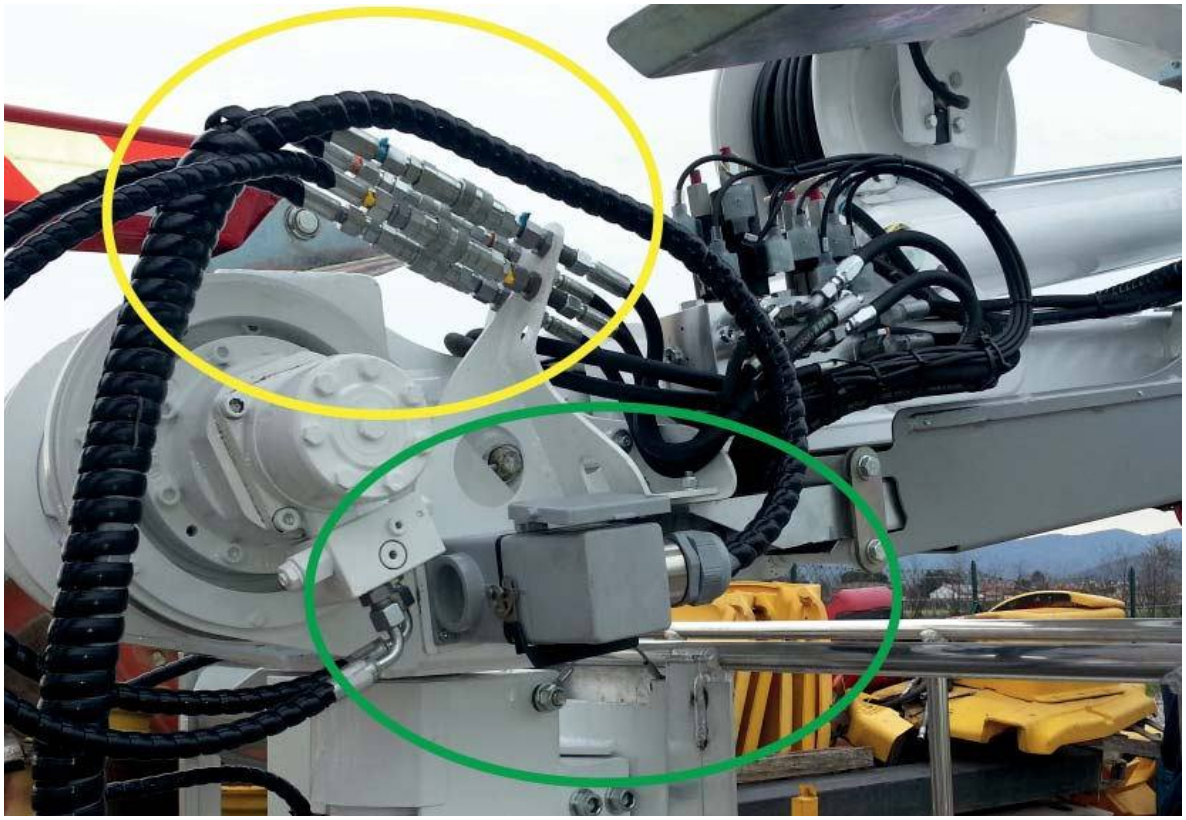

Fig. 5

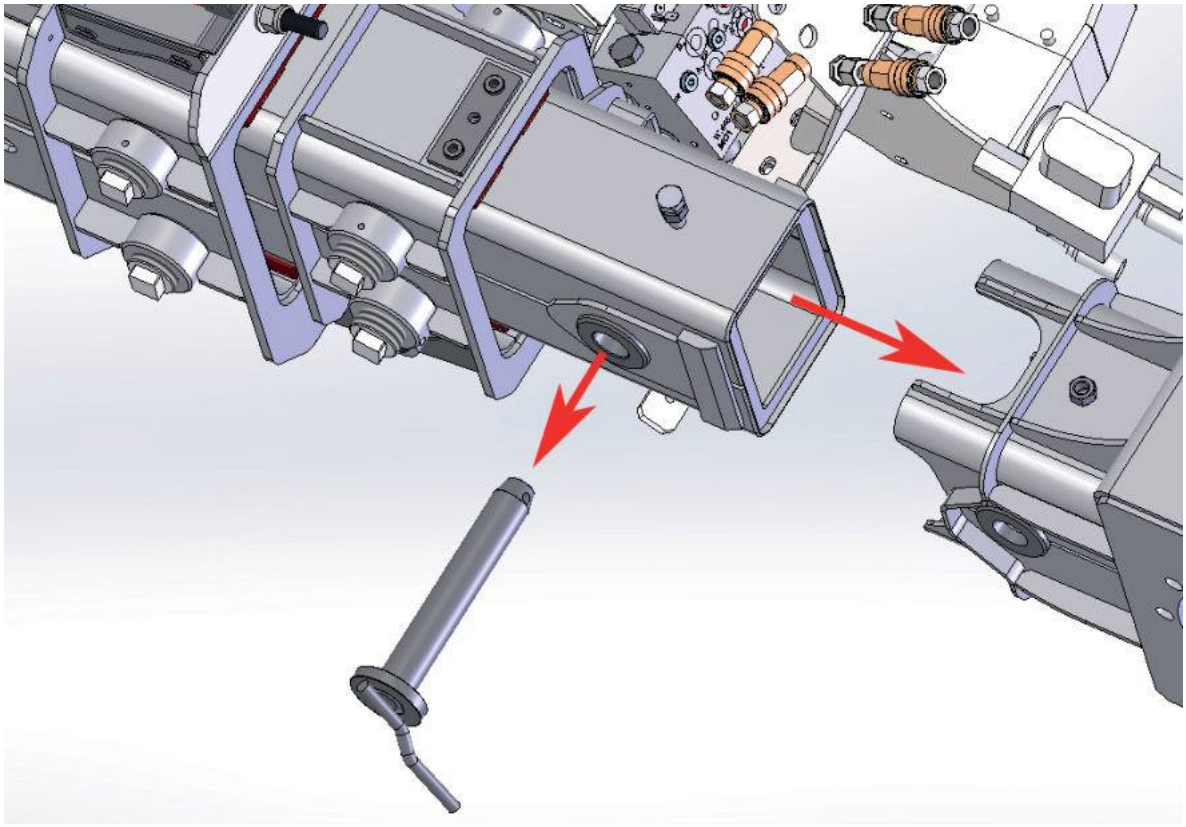

Fig. 6

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Mount the winch to the base of the jib through the 2 pins of Fig. 7, and connect the cotter pins to avoid the pins going out accidentally.

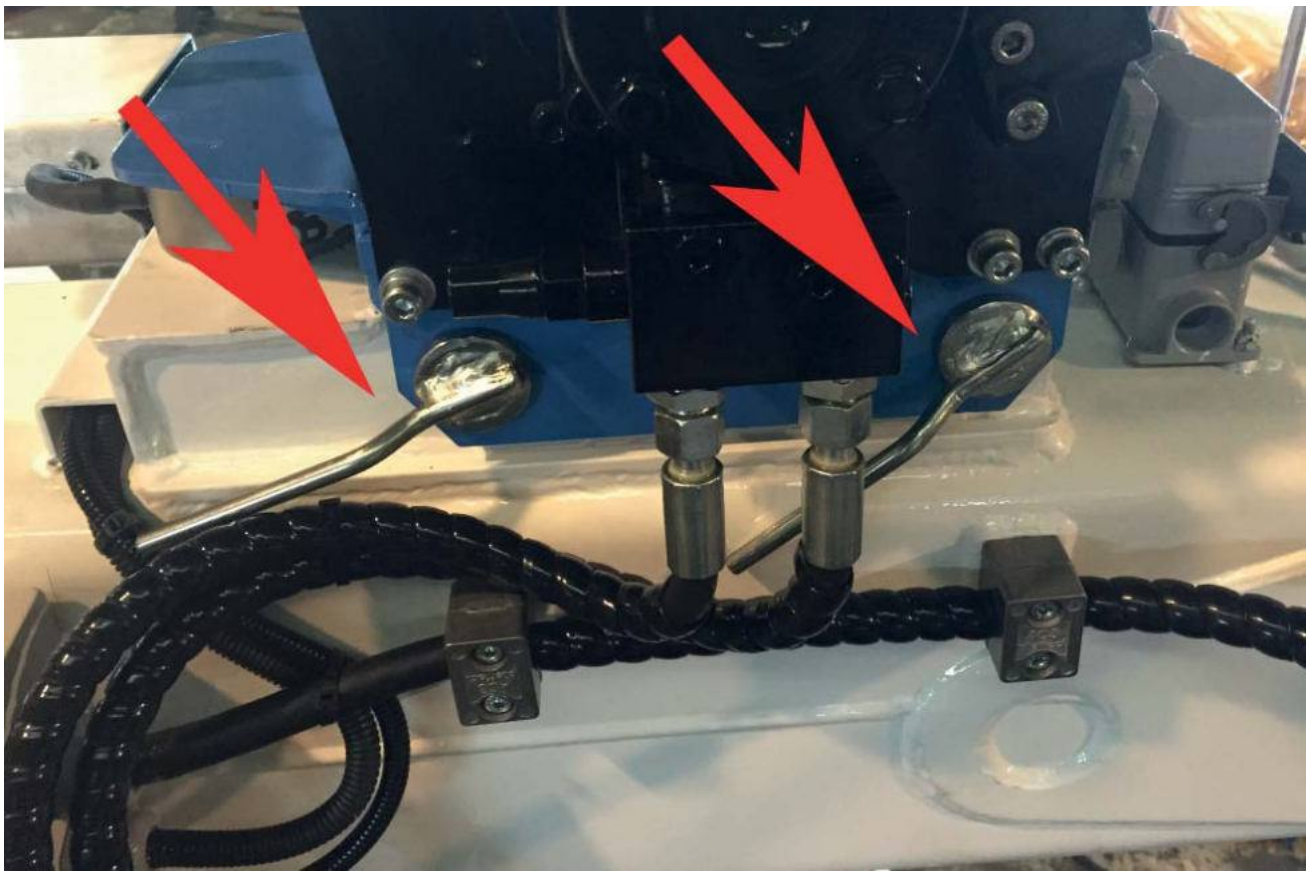

Fig. 7

Mount the pulleys.

!	**ATTENTION** **It is strictly forbidden to use the winch without having fitted the pulleys first. They assure the proper functioning of the lifted load limiter. Without the pulleys, the load limiter does not work properly and there is a risk of machine overturning or structural parts breaking.**

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To mount the pulleys, just insert the support at the jib and fix it with the proper pin and cotter pin (Fig. 8).

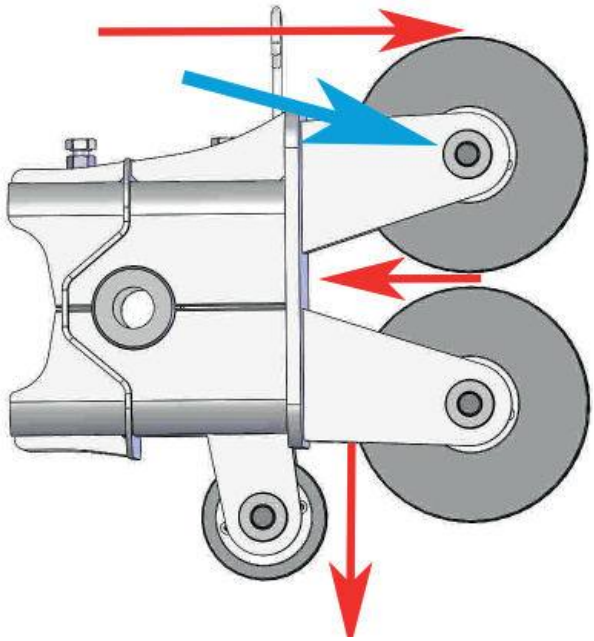

Fig. 8

After mounting the support, pass the rope as indicated by the red arrows of Fig. 8, disassembling the upper pulley (blue arrow Fig. 8).
To complete the installation, connect the power plug of Fig. 9 and the hydraulic connections identified with colored bands.

Fig. 9

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A5. USE OF THE WINCH

After mounting the winch and pulleys, you can use the winch with the controls used for the rotation of the basket indicated in Fig.10.

Fig. 10

!	**ATTENTION** **To control the turntable rotation, set up the machine with ALL stabilizers in wide position. On the contrary, the turntable rotation manoeuvre is not allowed.**

!	**ATTENTION** **Retract the jib completely to use the winch**

!	**ATTENTION** **Move the jib in horizontal position, to use the winch (and to extend the boom)**

!	**ATTENTION** **If the winch is overloaded, all manoeuvres are off to allow the rope lowering.** **In this situation, the red lamp on the control position is on and still.**

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SI

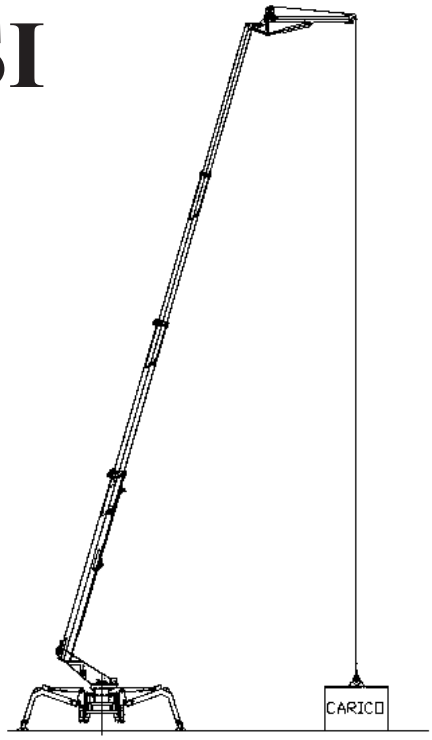

Fig 11a

NO

Fig 11b

SI

Fig 12a

NO

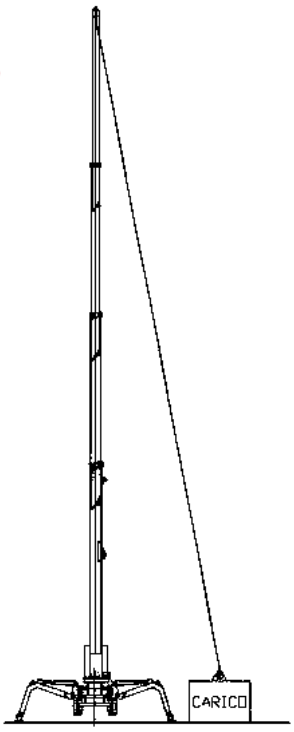

Fig 12b

⚠	**DANGER** **When the machine lifting loads, position the return pulleys in the top of the jib perpendicular to the load to be lifted, in order to have a vertical pull. It is forbidden to use the winch with oblique pulls**

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During the use of the hydraulic winch, on the display of the main desk, will be shown in the real time the weight of the lifted load (Fig. 13).

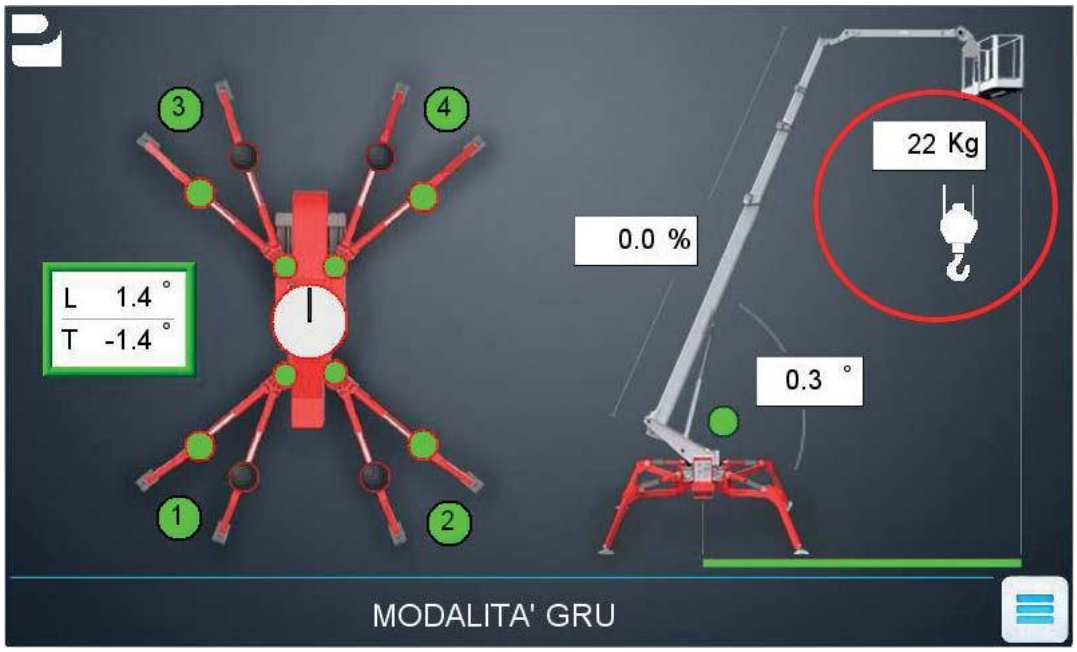

Fig. 13

The winch is equipped with two end-of-strokes, to check the completely rope lowering and lifting. To bypass these switches, push the green button situated on the left side of the transmitter (Fig. 14).

Fig. 14

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Palazzani
INDUSTRIE

RAGNO
XTJ 43

VERSIONE CINGOLATA – CRAWLER VERSION – EXECUTION SUR CHENILLE

Catalogo parti di ricambio
Spare parts catalogue
Ersatzteilkatalog
Catalogue de pièces dètachès
Catàlogo de piezas de repuestos

NR 116 A 15

I — ***ISTRUZIONI PER ORDINARE***

Per evadere correttamente i vostri ordini, fornite i seguenti dati:

- **Ragione sociale**
- **Indirizzo**
- **Modo di spedizione**
- **Modello della macchina e numero di matricola**
- **Codice del pezzo**
- **Quantità dei pezzi**

GB — ***INSTRUCTIONS FOR ORDERING***

To ensure your order is processed correctly, please supply all the following information:

- **Name of company**
- **Address**
- **Preferred method of despatch**
- **Model of machine and serial number**
- **Part number**
- **Quantity of parts**

D — ***ANWEISUNGEN FUR DIE BESTELLUNGE***

Um Ihre Bestellungen richtig abzufassen, alle nachstehenden Angaben auffuhren:

- **Firma**
- **Anschrift**
- **Den Versandtyp**
- **Maschinentyp und Seriennummer**
- **Die bestllnummer**
- **Die Anzahl der Teile**

F — ***INSTRUCTIONS POUR LES COMMANDES***

Pour libeller correctements vos commandes, donner toujours les indications qui suivent :

- **Raison sociale**
- **Adresse**
- **Le mode d'expèdition**
- **Modele**
- **Le code article**
- **La quantitè de pièces**

E — ***INSTRUCCIONES PARA LOS PEDIDOS***

Para redactar correctamente sus pedidos, tendràm que indicar los datos siguientes :

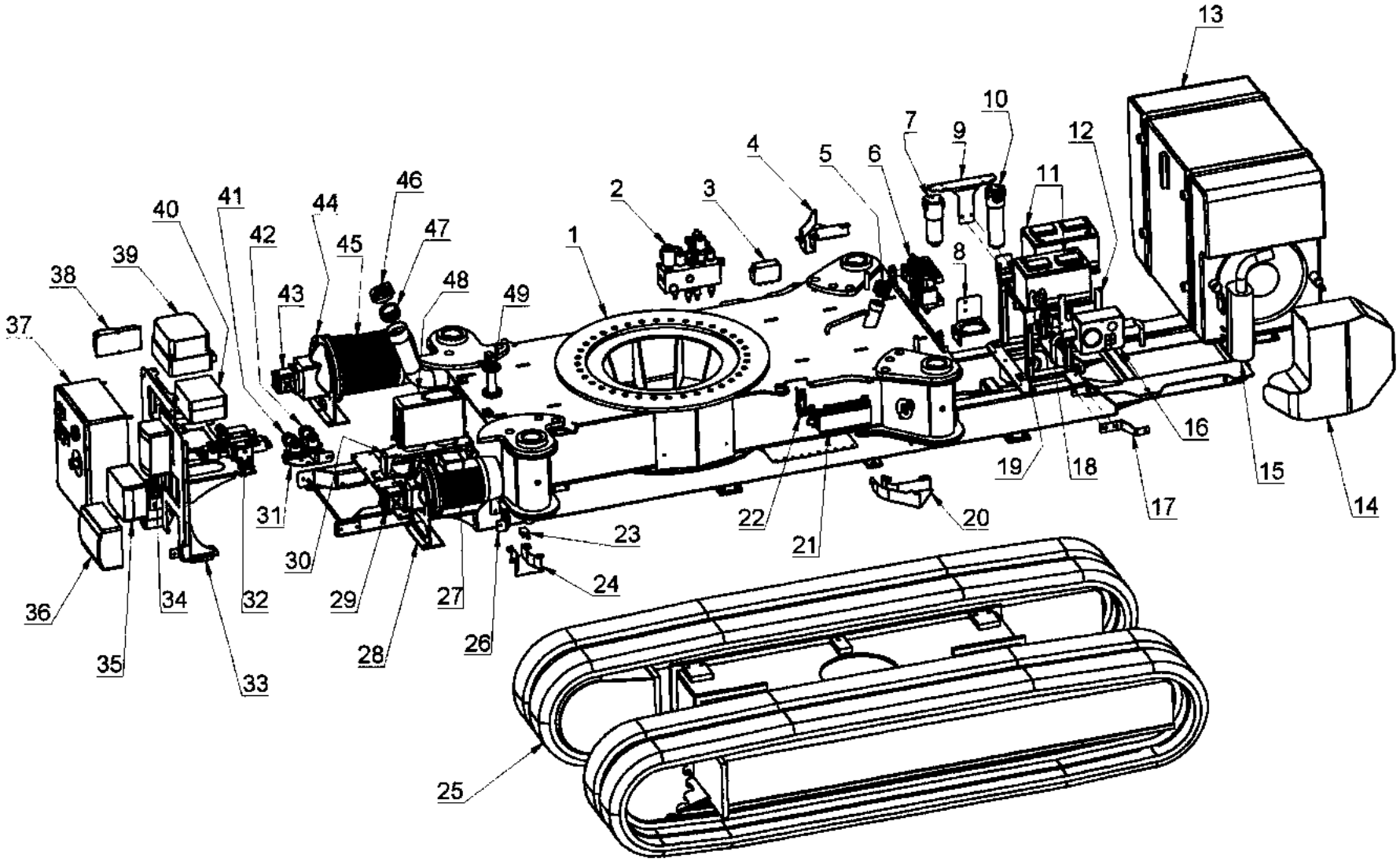
- **Razòn social**
- **Senas**
- **Modo de expediciòn**
- **Modelo de la maquina y nùmero de serie**
- **El còdigo articulo**
- **La cantidad de piezas**

I	***INDICE DELLE TAVOLE***		
TAV. 01	TELAIO		
TAV. 02	TORRETTA		
TAV. 03	STABILIZZATORE		
TAV. 04	CARTER		
TAV. 05	CILINDRO SFILO JIB		
TAV. 06	CILINDRO JIB		
TAV. 07	CILINDRO SOLLEVAMENTO		
TAV. 08	CILINDRO SFILO BRACCIO		
TAV. 09	CILINDRO STABILIZZATORE		
TAV. 10	BRACCIO SOLLEVAMENTO		
TAV. 11	1°A PROLUNGA		
TAV. 12	2°A PROLUNGA		
TAV. 13	3°A PROLUNGA		
TAV. 14	4°A PROLUNGA		
TAV. 15	5°A PROLUNGA		
TAV. 16	BRACCIO JIB		
TAV. 17	PROLUNGA JIB		
TAV. 18	GRUPPO CESTO		

TELAIO
CHASSIS
CHASSIS
CHASSIS
CHASIS

TAV. 01

XTJ 43



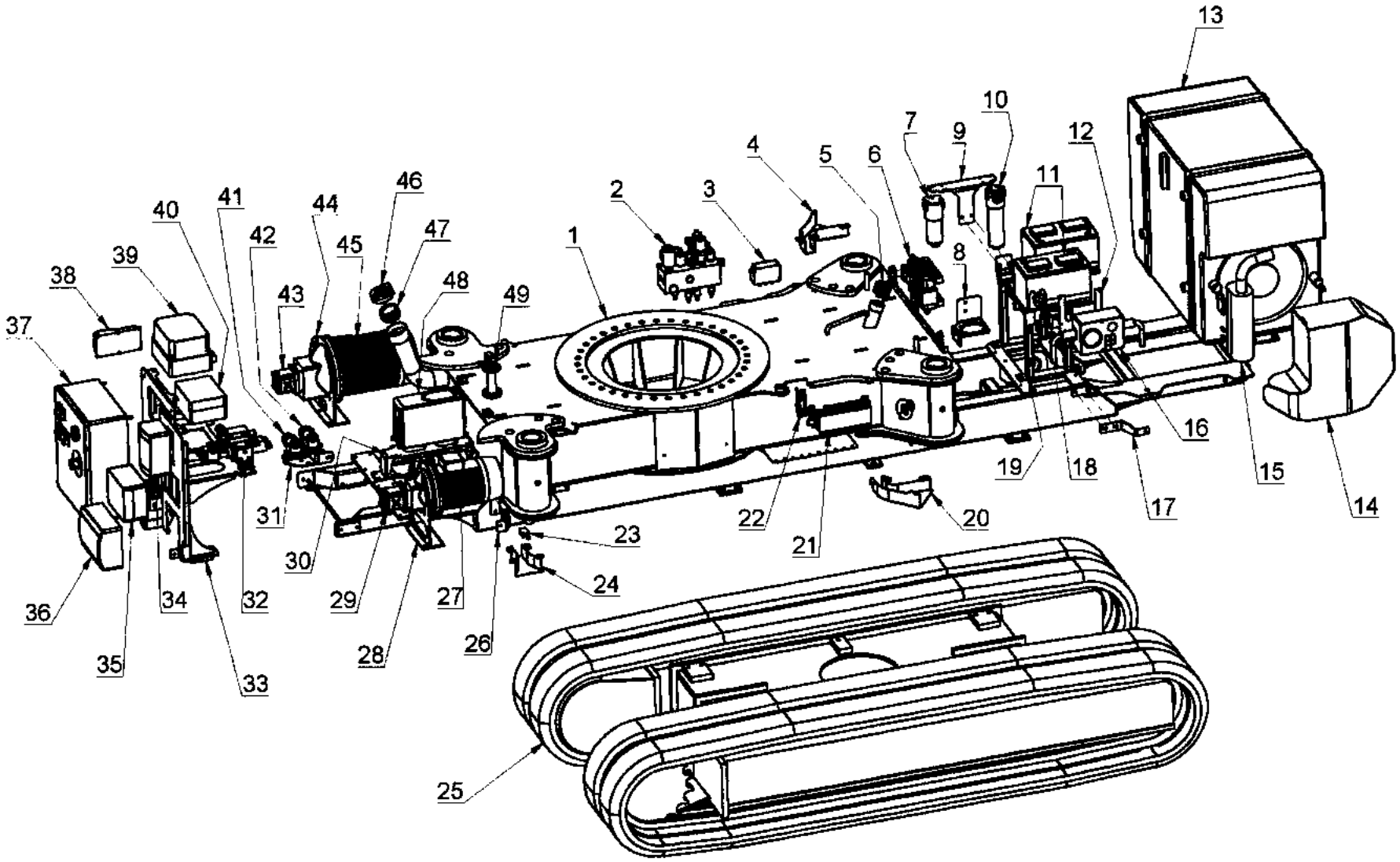
RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0011	1	TELAIO	CHASSIS	CHASSIS	CHASSIS	CHASSIS	
2	/	1	DISTRIBUTORE MOVECO	CONTROL VALVE	STEUERVENTIL	DISTRIBUTEUR	DISTRIBUDOR	
3	/	1	SENSORE ANGOLARE	BOX	BOX	BOITE	CAJA	
4	13.110.0068	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
5	55.03.0380	1	TAPPO	PLUG	VERSCHL.STOPPEN	BOUCHON	TAPON	
6	/	1	DISTRIBUTORE	CONTROL VALVE	STEUERVENTIL	DISTRIBUTEUR	DISTRIBUDOR	
7	50.12.0261	1	FILTRO OLIO	FILTER	FILTER	FILTRE	FILTRO	
8	13.103.0113	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
9	13.103.0111	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
10	50.12.0283	1	FILTRO OLIO	FILTER	FILTER	FILTRE	FILTRO	
11	55.19.0014	2	BATTERIA	BATTERY	BATTERY	BATTERIE	BATERIA	
12	13.110.0047	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	55.28.0560	1	MOTORE DIESEL	DIESEL ENGINE	MOTOR	MOTEUR	MOTOR	
14	05.103.0027	1	CARTER MOTORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
15	/	1	MARMITTA	PIPE	EISENRHOR	TUYAU	TUBO	
16	/	1	SCATOLA ACCENSIONE	BOX	BOX	BOITE	CAJA	
17	13.103.0114	2	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
18	14.12.0123	1	STACCA BATTERIE	BATTERY SWITCH	BATTERIE SCHALTER	BATTERIE INTER.	BATERIA INTERUT.	
19	13.103.0110	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
20	13.110.0067	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
21	/	1	SCATOLA FUSIBILI	BOX	BOX	BOITE	CAJA	
22	55.04.0010	1	LIVELLO OLIO	INDICATOR	ANZEIGER	INDICATEUR	INDICATOR	
23	/	4	FINECORSA	PROXIMITY	PROXIMITY	PROXIMITY	PROXIMITY	
24	13.110.0069	2	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
25	55.28.0565	1	SOTTOCARRO	CHASSIS	CHASSIS	CHASSIS	CHASSIS	
26	13.103.0128	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
27	55.28.0284	1	MOTORE 220V	ENGINE 220V	MOTOR 220V	MOTEUR 220V	MOTOR 220V	
28	08.14.2430	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
29	/	1	POMPA	PUMP	PUMPE	POMPE	BOMBA	
30	13.110.0025	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
31	13.110.0070	1	SUPPORTO PRESE	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
32	/	1	DISTRIBUTORE	CONTROL VALVE	STEUERVENTIL	DISTRIBUTEUR	DISTRIBUDOR	
33	13.110.0015	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
34	/	1	CENTRALINO	BOX	BOX	BOITE	CAJA	

XTJ 43	TAV. 01

TELAIO
CHASSIS
CHASSIS
CHASSIS
CHASIS

TAV. 01

XTJ 43

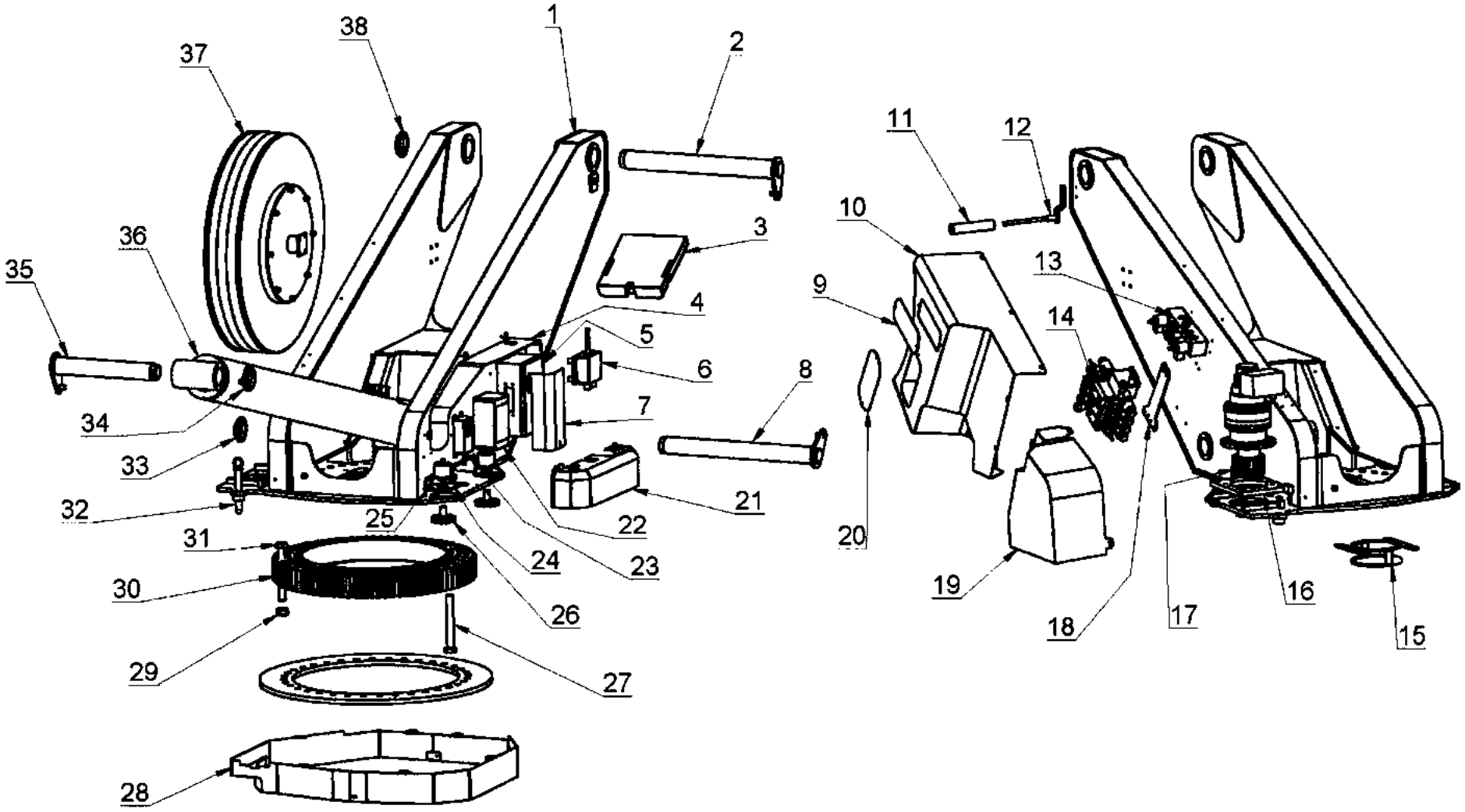


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
35	/	1	CASSETTA	BOX	BOX	BOITE	CAJA	
36	/	1	CENTRALINO	BOX	BOX	BOITE	CAJA	
37	/	1	CASSETTA COMANDI	BOX	BOX	BOITE	CAJA	
38	/	1	CARICABATTERIE	BOX	BOX	BOITE	CAJA	
39	/	1	TRASFORMATORE	BOX	BOX	BOITE	CAJA	
40	/	1	CASSETTA	BOX	BOX	BOITE	CAJA	
41	14.12.0370	1	PRESA 220V	BOX 220V	BOX 220V	BOITE 220V	CAJA 220V	
42	/	1	PRESA 380V	BOX 380V	BOX 380V	BOITE 380V	CAJA 380V	
43	/	1	POMPA	PUMP	PUMPE	POMPE	BOMBA	
44	08.14.2429	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
45	55.28.0325	1	MOTORE 380V	ENGINE 380V	MOTOR 380V	MOTEUR 380V	MOTOR 380V	
46	55.03.0268	1	TAPPO GASOLIO	PLUG	VERSCHL.STOPPEN	BOUCHON	TAPON	
47	55.03.0256	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
48	/	1	INVERTER	BOX	BOX	BOITE	CAJA	
49	14.12.0800B	1	GALLEGGIANTE	INDICATOR	ANZEIGER	INDICATEUR	INDICATOR	

TORRETTA
TURNTABLE
TURM
TOURELLE
TORRE

TAV. 02

XTJ 43

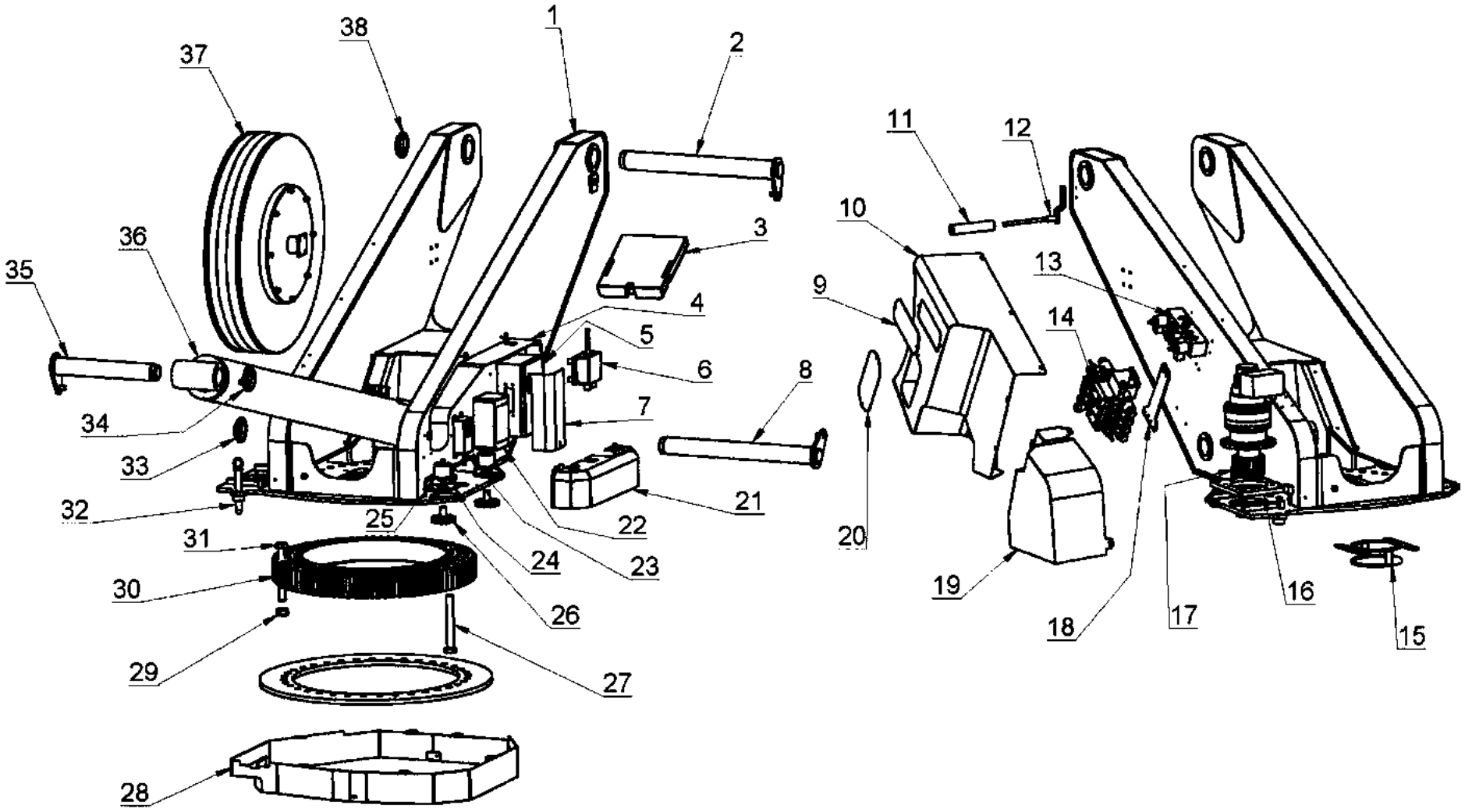


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0009	1	TORRETTA	TURNTABLE	TURM	TOURELLE	TORRE	
2	07.14.1088	1	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
3	55.28.0525	1	PORTA DOCUMENTI	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
4	13.110.0029	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
5	/	1	CASSETTA	BOX	BOX	BOITE	CAJA	
6	/	1	RICEVENTE	BOX	BOX	BOITE	CAJA	
7	13.110.0031	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
8	07.14.1087	1	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
9	05.110.0020_5	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
10	05.110.0020	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
11	13.110.0059	1	BUSSOLA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
12	13.103.0151	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	/	1	BLOCCO MOVECO	BOX	BOX	BOITE	CAJA	
14	/	1	DISTRIBUTORE	CONTROL VALVE	STEUERVENTIL	DISTRIBUTEUR	DISTRIBUDOR	
15	13.103.0149	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
16	13.103.0142	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
17	/	1	RIDUTTORE	MOTOR	MOTOR	MOTEUR	MOTOR	
18	13.99.0012	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
19	05.110.0019	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
20	05.110.0020_7	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
21	13.110.0027	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
22	/	1	CENTRALINO	BOX	BOX	BOITE	CAJA	
23	/	1	INTERFONICO	BOX	BOX	BOITE	CAJA	
24	13.103.0120	2	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
25	/	2	SENSORE ANGOLARE	BOX	BOX	BOITE	CAJA	
26	13.103.0141	2	INGRANAGGIO	GEAR	FAGGERATE	ENGRANAGES	ARTES	
27	19.01.0437	36	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
28	13.110.0036	1	CARTER RALLA	CRANKCASE	GEHAUSE	CARTER	CARTER	
29	19.02.0010	72	DADO	NUT	MUTTER	ECROU	TUERCA	
30	55.28.0562	1	RALLA	SLEWING REAR RING	SATTELKUPPLUNG	COURONNE DE ROTATION	RUEDA	
31	19.01.0437	36	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
32	07.103.0011	1	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
33	50.09.0087	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
34	50.09.0087	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
35	07.14.1086	1	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	

TORRETTA
TURNTABLE
TURM
TOURELLE
TORRE

TAV. 02

XTJ 43

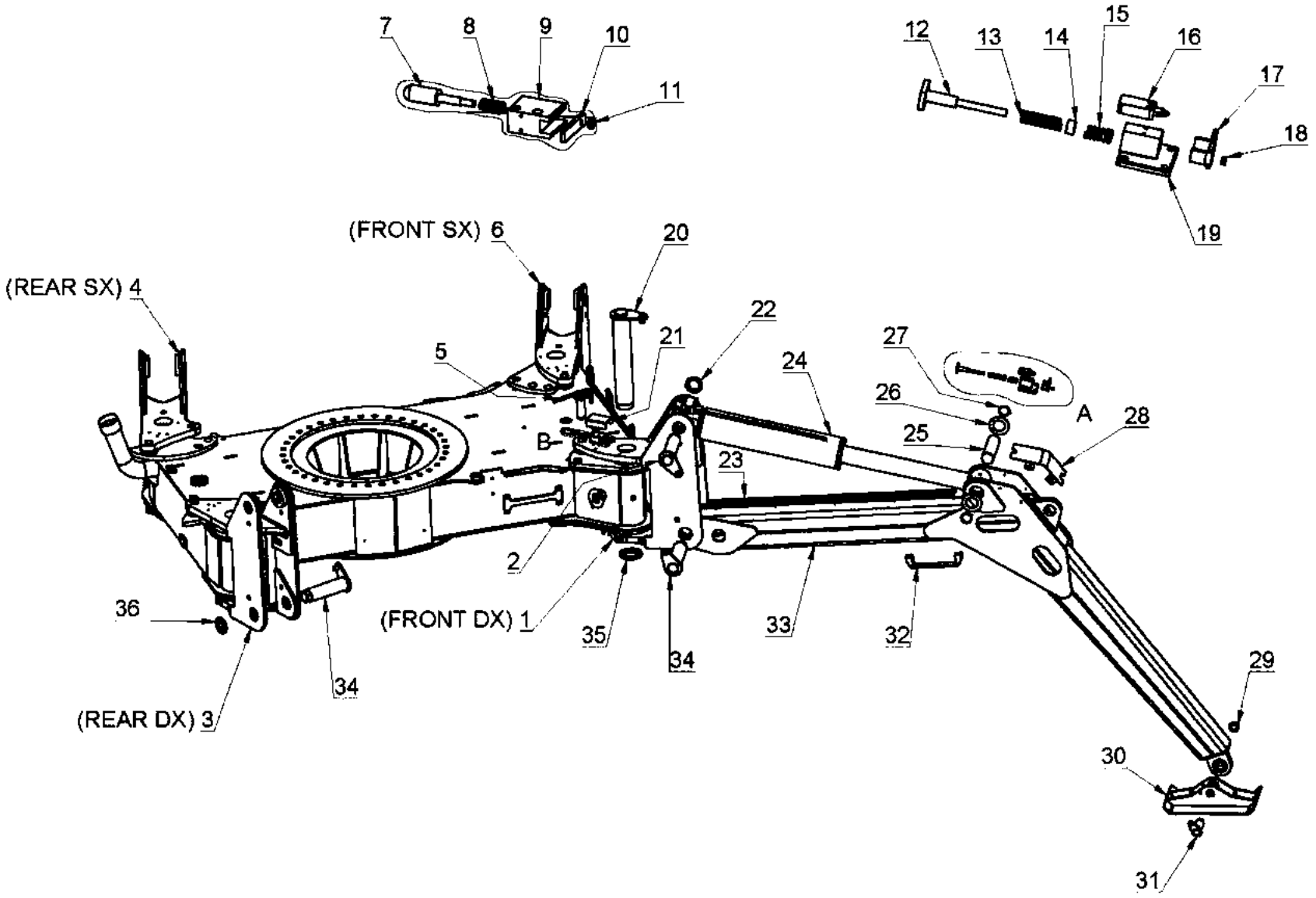


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
36	01.01.0787	1	CILINDRO SOLL.	CYLINDER	HUBZYLINDER	VERIN	CILINDRO	
37	55.28.0332A	1	AVVOLGITUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
38	50.09.0086	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	

STABILIZZATORE
OUTRIGGER
STUTZEN
BEQUILLE
ESTABILIZADOR

TAV. 03

XTJ 43

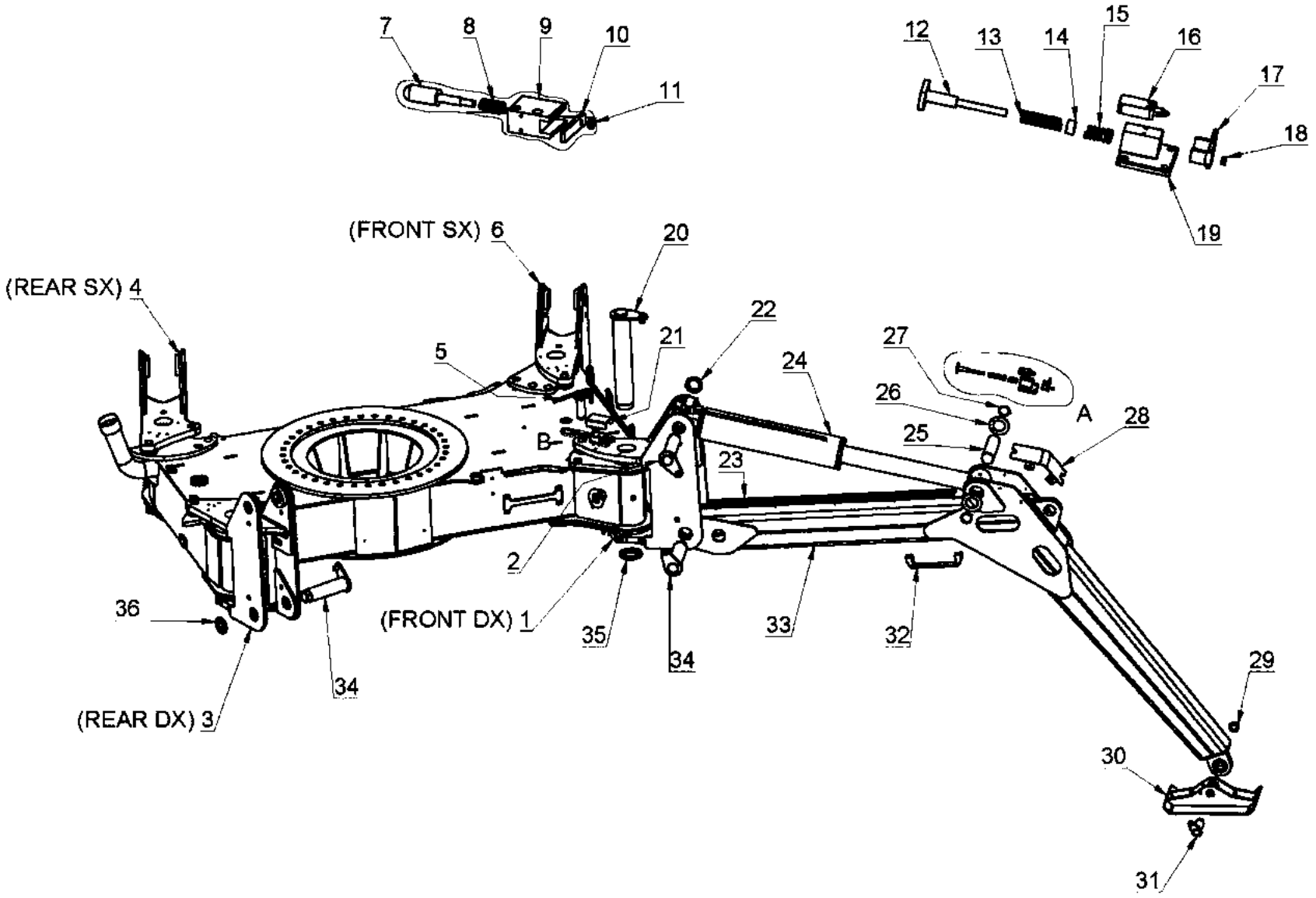


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0013	1	SUP. ANTERIORE DX	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
2	07.14.1091	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
3	05.110.0014	1	SUP. POSTERIORE DX	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
4	05.110.0016	1	SUP.POSTERIORE SX	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
5	07.14.1070	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
6	05.110.0015	1	SUP. ANTERIORE SX	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
7	13.92.0002B	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
8	14.01.0186	4	MOLLA	SPRING	FEDER	RESSORT	MUELLE	
9	13.92.0002A	4	MASSELLO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
10	13.92.0002C	4	PIATTO	PLATE	BEFESTIGUNGSSCHEIBE	PLAT	PLATO	
11	19.02.0004	4	DADO	NUT	MUTTER	ECROU	TUERCA	
12	08.14.2955	4	STANTUFFO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	14.01.0183	4	MOLLA	SPRING	FEDER	RESSORT	MUELLE	
14	08.14.2955B	4	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
15	14.01.0184	4	MOLLA	SPRING	FEDER	RESSORT	MUELLE	
16	/	4	FINECORSA	PROXIMITY	PROXIMITY	PROXIMITY	PROXIMITY	
17	08.14.3525	4	PIATTO	PLATE	BEFESTIGUNGSSCHEIBE	PLAT	PLATO	
18	19.02.0005	4	DADO	NUT	MUTTER	ECROU	TUERCA	
19	13.101.0050	4	MASSELLO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
20	07.14.1090	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
21	13.92.0001	4	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
22	50.09.0084	4	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
23	13.110.0014	4	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
24	01.01.0782	4	CILINDRO STABILIZ.	CYLINDER	HUBZYLINDER	VERIN	CILINDRO	
25	07.14.1089	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
26	55.11.0288	8	RONDELLA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
27	55.07.0076	8	SEEGER	WASHER	SCHEIBE	RONDELLE	ARANDELA	
28	13.110.0013	4	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
29	50.09.0066	4	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
30	05.14.1690	4	PIATTELLO	PLATE	BEFESTIGUNGSSCHEIBE	PLAT	PLATO	
31	07.14.1072	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
32	55.03.0143	4	MANIGLIA	HANDLE	HANDGRIFF	POIGNEE	MANIJA	
33	05.110.0017	4	BRACCIO STABILIZ.	BOOM	AUSLAGER	FLECHE	PLUMA	

STABILIZZATORE
OUTRIGGER
STUTZEN
BEQUILLE
ESTABILIZADOR

TAV. 03

XTJ 43

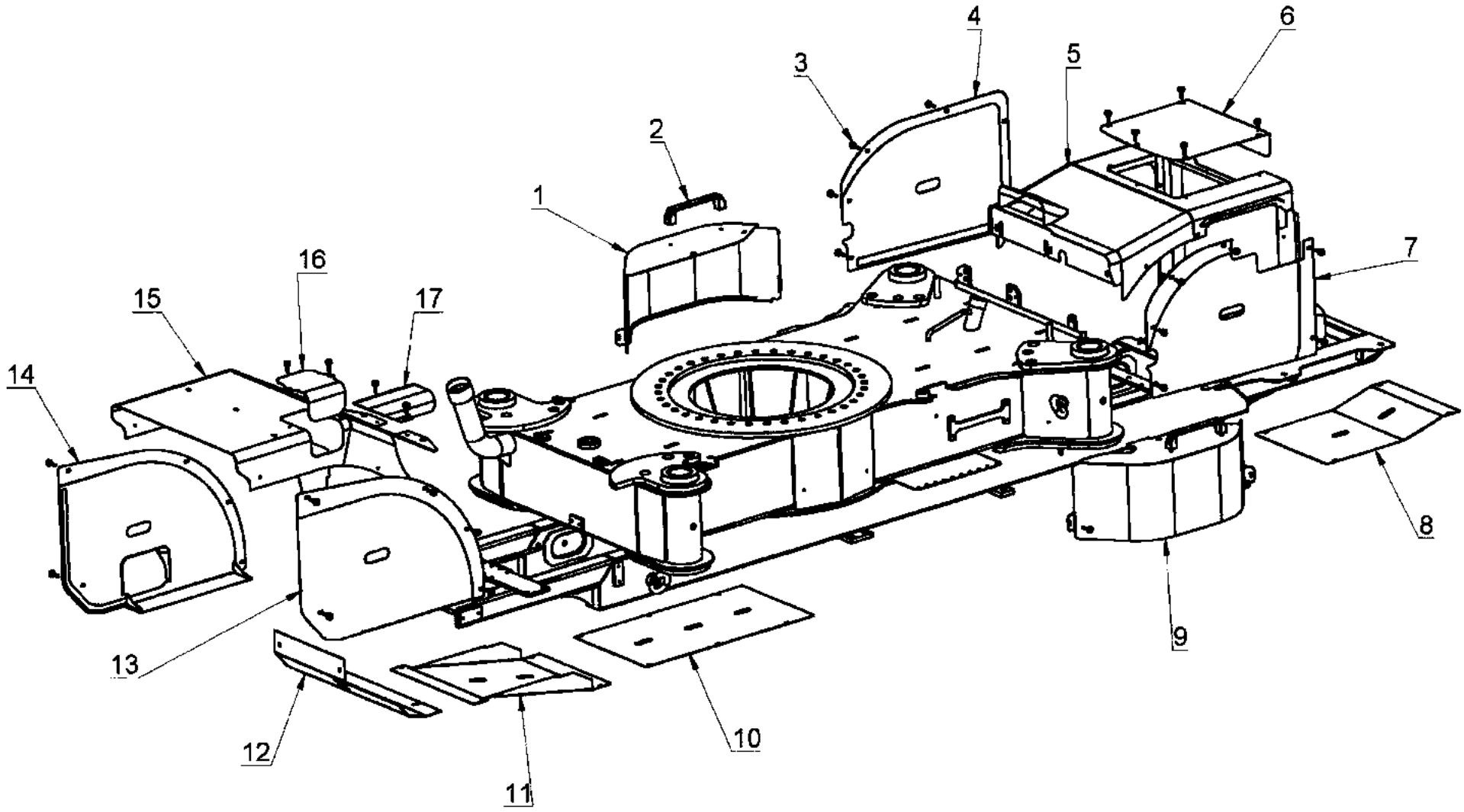


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
34	07.14.1092	4	PERNO	PIN	ZAPFEN	GOUPILLE	PASADOR	
35	50.09.0086	4	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
36	50.09.0062	4	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	

CARTER
CRANKCASE
GEHAUSE
CARTER
CARTER

TAV. 04

XTJ 43

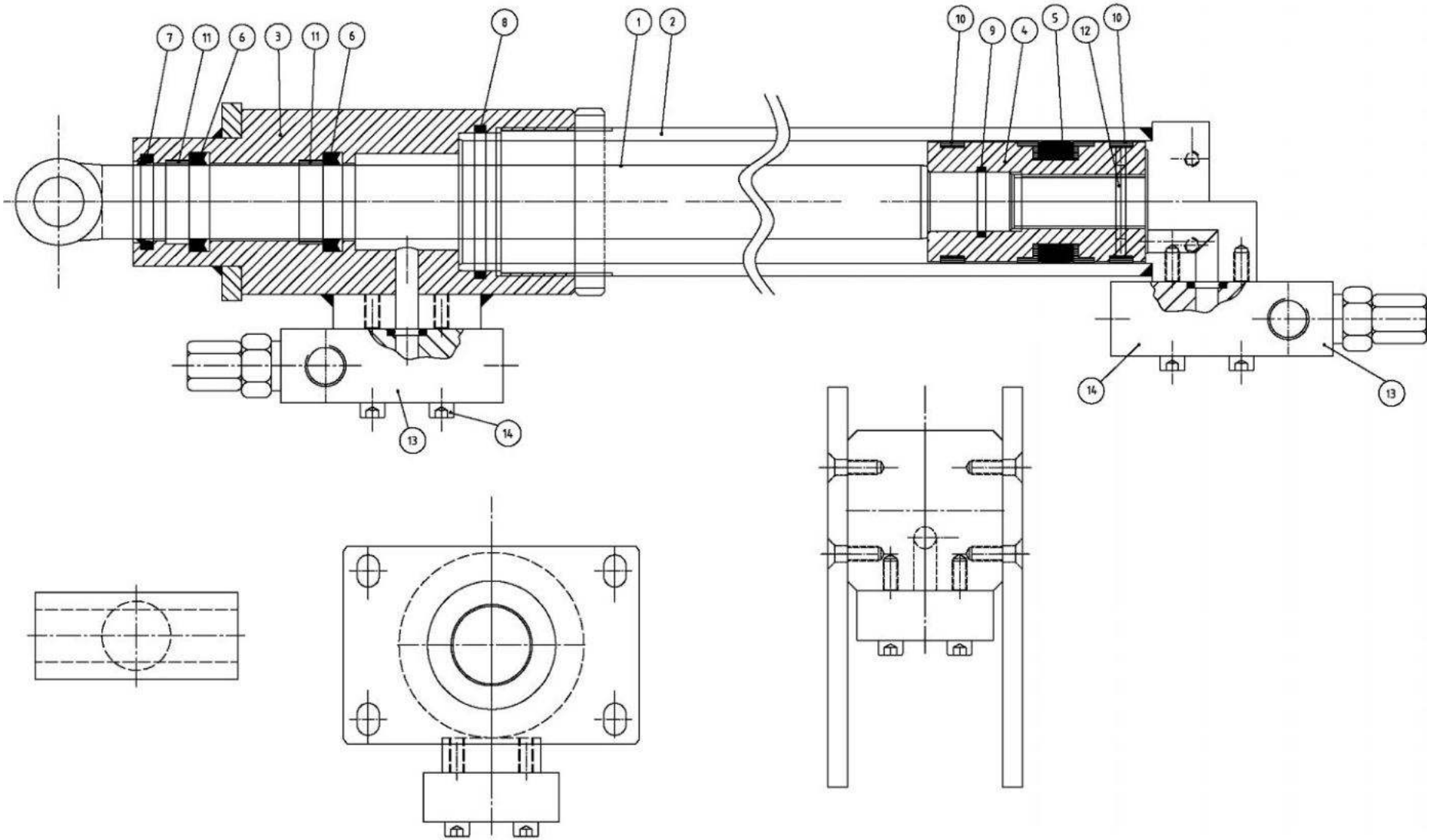


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0010	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
2	55.03.0143	2	MANIGLIA	HANDLE	HANDGRIFF	POIGNEE	MANIJA	
3	55.03.0173	35	VOLANTINO	SCREW	SCHRAUBE	VIS	TORNILLO	
4	05.103.0024_3	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
5	05.103.0024	1	CARTER ANTERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
6	05.103.0024_4	1	CARTER SUPERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
7	05.103.0024_2	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
8	13.103.0115	1	CARTER ANTERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
9	05.110.0018	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
10	13.103.0107	1	CARTER INFERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
11	13.110.0020	1	CARTER INFERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
12	13.110.0016	1	COPERTURA CAVI	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	05.110.0022_3	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
14	05.110.0022_2	1	CARTER LATERALE	CRANKCASE	GEHAUSE	CARTER	CARTER	
15	05.110.0022	1	CARTER POSTERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
16	05.103.0025_4	1	CARTER SUPERIORE	CRANKCASE	GEHAUSE	CARTER	CARTER	
17	05.103.0025_5	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	

CILINDRO SFILO JIB
EXTENSION CYLINDER JIB
VERLANGERUNG ZYLINDER JIB
VERIN DE TELESCOPAGE JIB
CILINDRO DE LA EXTENSION JIB

TAV. 05

XTJ 43

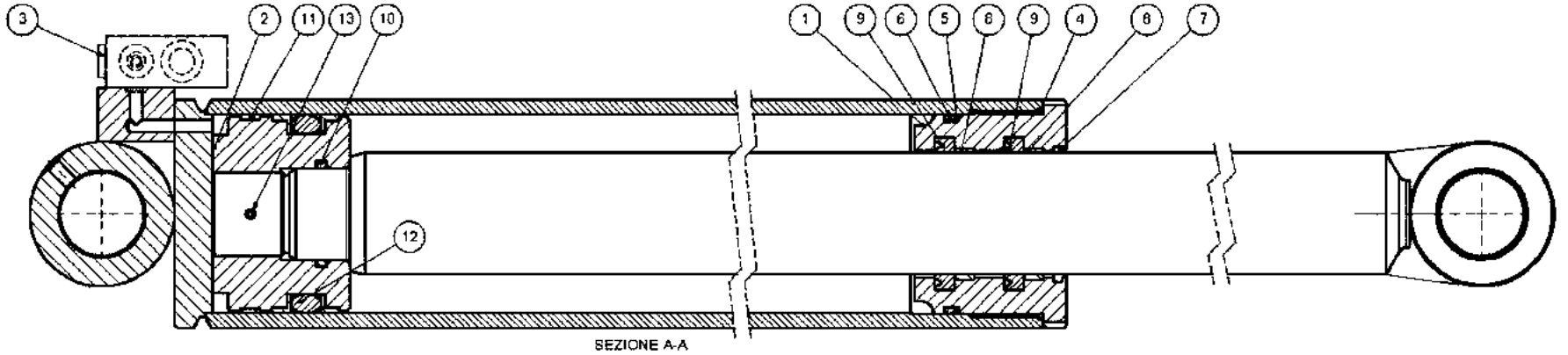


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	01.10.0873	1	STELO	ROD	SHAFT	TIGE	VASTAGO	
2	01.09.0740	1	CAMICIA	CYLINDER LINER	MANTEL	EXTERIEUR DU PISTON	EXTERNO PISTON	
3	01.15.1083	1	TESTATA	BEARING	LAGERBOCK	PALIER	PALIER	
4	01.15.1084	1	STANTUFFO	PISTON	KOLBEN	PISTON	PISTON	
5	18.04.0084	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
6	/	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
7	18.06.0045	1	RASCHIATORE	SCRATCHER	SCHABEINSEN	RACLEUR	RASPADOR	
8	18.01.0053	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
9	18.01.0026	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
10	18.05.0050	2	ANELLO DI GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
11	/	2	ANELLO DI GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
12	55.09.0022	1	SPINA ELASTICA	SCREW	SCHRAUBE	VIS	TORNILLO	
13	/	2	VALVOLA	VALVE	VENTIL	SOUPAPE	VALVULA	
14	19.01.0235	8	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
15	08.14.2135	1	PATTINO	SLIDING BLOCK	GLEITENDER BLOCK	COULISSEAU	BLOQUE QUE RESBALA	
-	01.01.0784	1	CILINDRO COMPLETO	PISTON	VOLLZYLINDER	PISTON	PISTON	

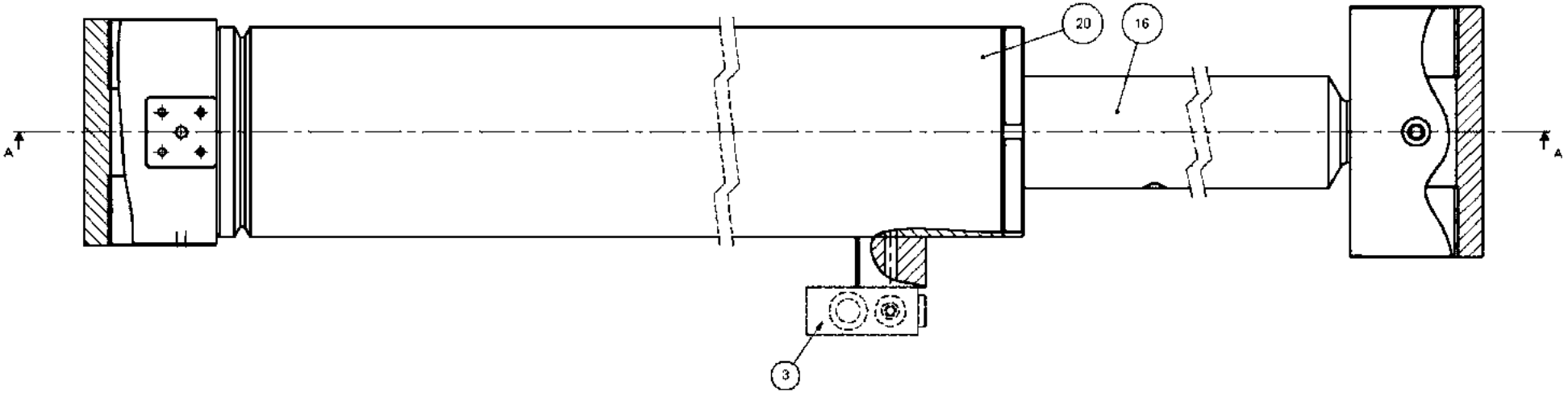
CILINDRO JIB
CYLINDER JIB
ZYLINDER JIB
VERIN JIB
CILINDRO JIB

TAV. 06

XTJ 43



SEZIONE A-A

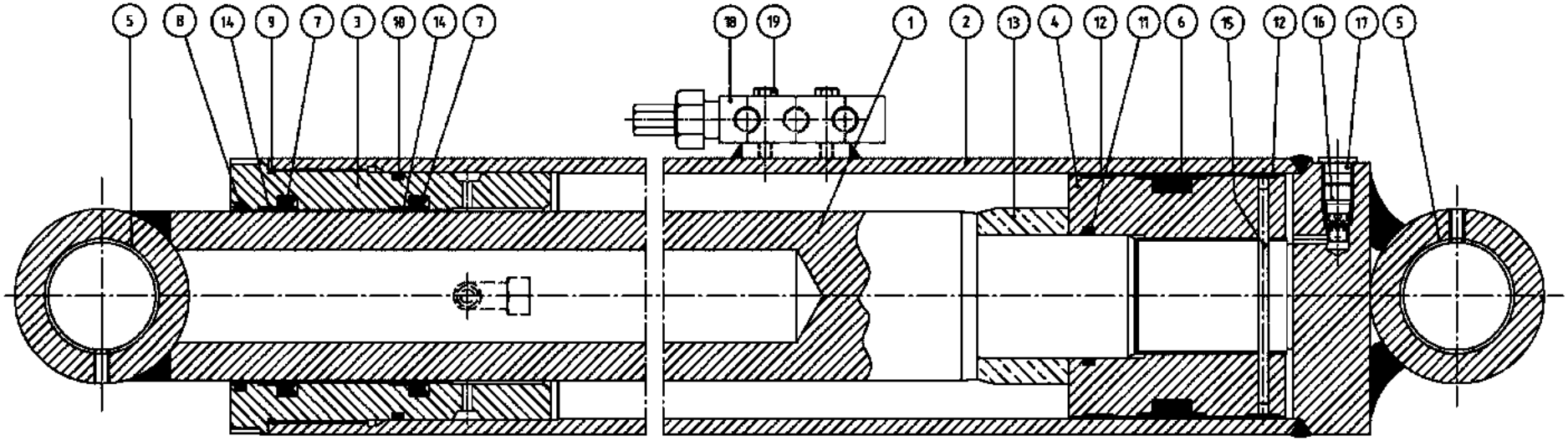


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	01.15.1067	1	BUSSOLA GUIDA	BUSHING	BUCSHE	BAGUE	BUJE	
2	01.15.1068	1	STANTUFFO	PISTON	KOLBEN	PISTON	PISTON	
3	/	2	VALVOLA	VALVE	VENTIL	SOUPAPE	VALVULA	
4	18.01.0176	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
5	18.01.0204	1	ANELLO DI GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
6	18.01.0095	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
7	18.06.0037	1	RASCHIATORE	SCRATCHER	SCHABEINSEN	RACLEUR	RASPADOR	
8	18.05.0056	2	ANELLO DI GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
9	18.05.0082	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
10	18.01.0228	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
11	18.05.0078	1	ANELLO DI GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
12	18.04.0035	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
13	/	1	SPINA ELASTICA	SCREW	SCHRAUBE	VIS	TORNILLO	
14	01.10.0872	1	STELO	ROD	SHAFT	TIGE	VASTAGO	
15	01.09.0739	1	CAMICIA	CYLINDER LINER	MANTEL	EXTERIEUR DU PISTON	EXTERNO PISTON	
-	01.01.0783	1	CILINDRO COMPLETO	PISTON	VOLLZYLINDER	PISTON	PISTON	

CILINDRO SOLLEVAMENTO
LIFT CYLINDER
HUBZYLINDER
VERIN DE LEVAGE
CILINDRO ELEVACION

TAV. 07

XTJ 43

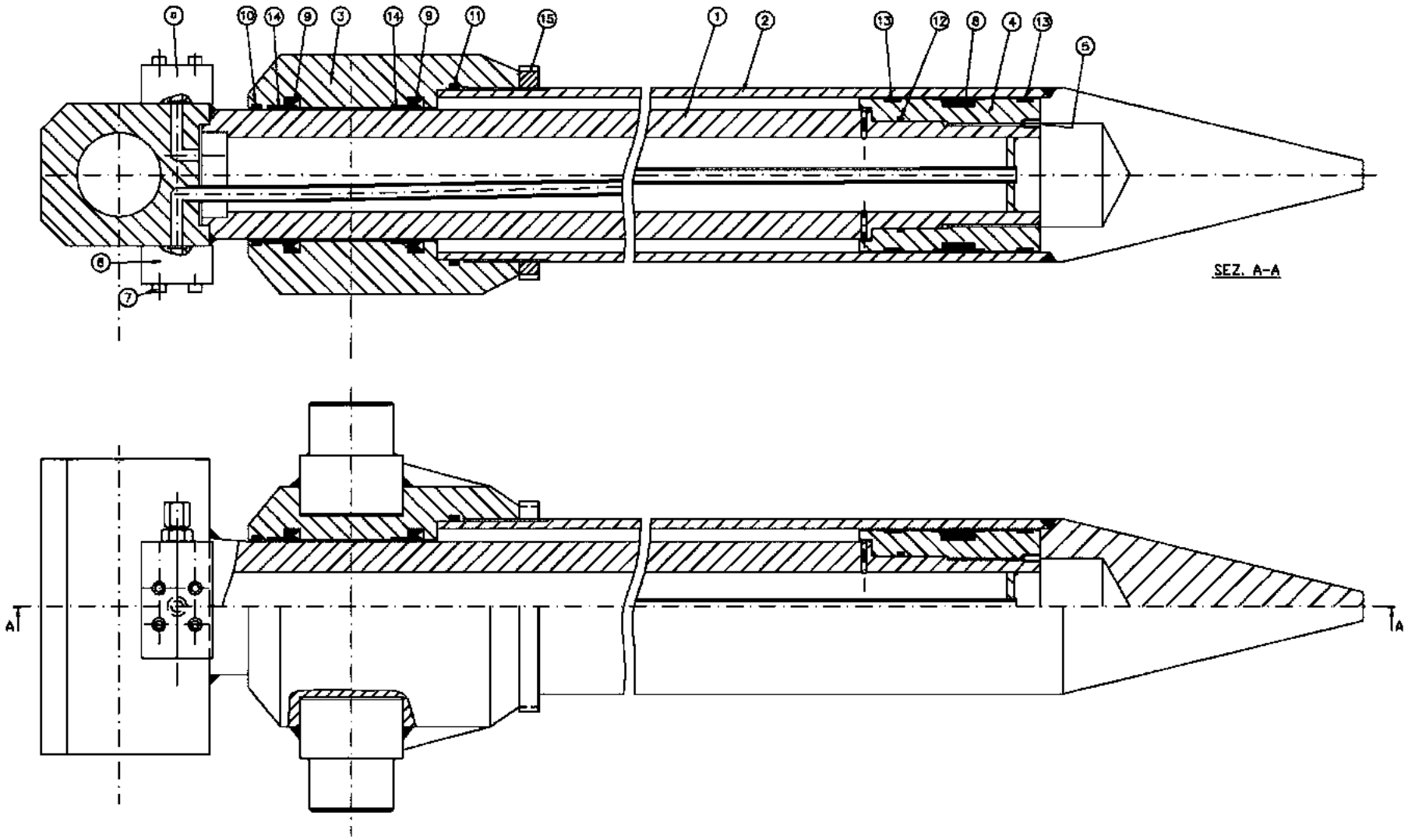


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	01.10.0876	1	STELO	ROD	SHAFT	TIGE	VASTAGO	
2	01.09.0742	1	CAMICIA	CYLINDER LINER	MANTEL	EXTERIEUR DU PISTON	EXTERNO PISTON	
3	01.15.0984	1	BUSSOLA GUIDA	BUSHING	BUCSHE	BAGUE	BUJE	
4	01.15.0984	1	STANTUFFO	PISTON	KOLBEN	PISTON	PISTON	
5	/	4	BOCCOLA	BUSHING	BUCSHE	BAGUE	BUJE	
6	18.04.0065	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
7	18.05.0092	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
8	18.06.0008	1	RASCHIATORE	SCRATCHER	SCHABEINSEN	RACLEUR	RASPADOR	
9	18.01.0184	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
10	18.01.0115	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
11	18.01.0075	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
12	18.05.0110	2	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
13	01.15.0985	1	BUSSOLA	BUSHING	BUCSHE	BAGUE	BUJE	
14	18.05.0094	2	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
15	/	1	SPINA ELASTICA	SCREW	SCHRAUBE	VIS	TORNILLO	
16	/	1	VALVOLA	VALVE	VENTIL	SOUPAPE	VALVULA	
17	50.06.0030	1	TAPPO	PLUG	VERSCHL.STOPPEN	BOUCHON	TAPON	
18	/	1	VALVOLA	VALVE	VENTIL	SOUPAPE	VALVULA	
19	19.01.0021	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
-	01.01.0787	1	CILINDRO COMPLETO	PISTON	VOLLZYLINDER	PISTON	PISTON	

CILINDRO SFILO BRACCIO
EXTENSION CYLINDER BOOM
VERLANGERUNG ZYLINDER AUSLEGER
VERIN DE TELESCOPAGE FLECHE
CILINDRO DE LA EXTENSION PLUMA

TAV. 08

XTJ 43

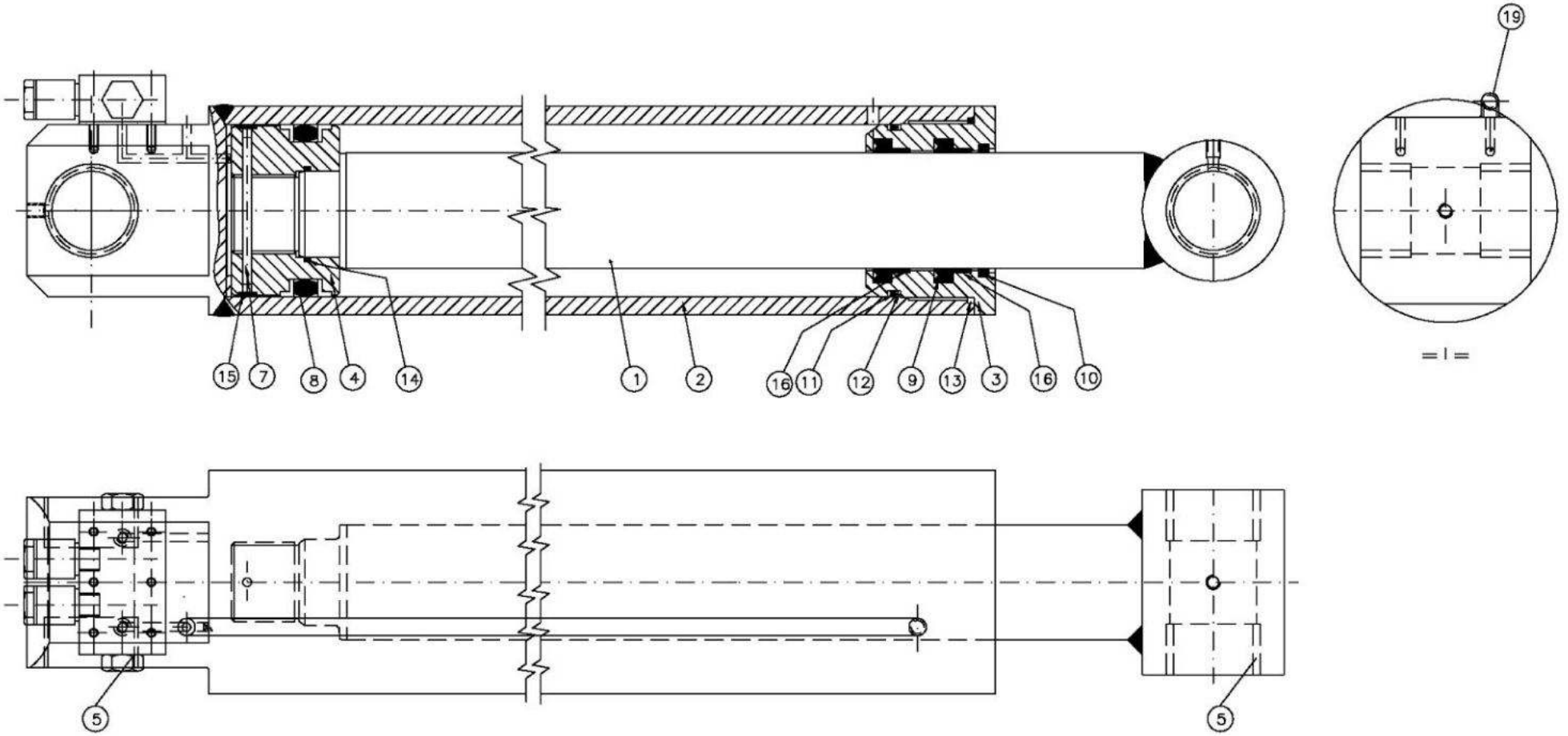


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	01.10.0875	1	STELO	ROD	SHAFT	TIGE	VASTAGO	
2	01.09.0741	1	CAMICIA	CYLINDER LINER	MANTEL	EXTERIEUR DU PISTON	EXTERNO PISTON	
3	01.15.0981	1	TESTATA	PISTON	KOLBEN	PISTON	PISTON	
4	01.15.0983	1	STANTUFFO	PISTON	KOLBEN	PISTON	PISTON	
5	19.01.0345	1	GRANO FERMO	SCREW	SCHRAUBE	VIS	TORNILLO	
6	/	2	VALVOLA	VALVE	VENTIL	SOUPAPE	VALVULA	
7	19.01.0236	8	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
8	/	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
9	/	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
10	/	1	RASCHIATORE	SCRATCHER	SCHABEINSEN	RACLEUR	RASPADOR	
11	/	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
12	/	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
13	/	2	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
14	/	2	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
15	01.15.0982	1	GHIERA	WASHER	UNTERLEGSCHEIBE	RONDELLE	ARANDELA	
-	01.01.0786	1	CILINDRO COMPLETO	PISTON	VOLLZYLINDER	PISTON	PISTON	

CILINDRO STABILIZZATORI
OUTRIGGER CYLINDER
STUTZEN ZYLINDER
VERIN BEQUILLE
CILINDRO ESTABILIZADOR

TAV. 09

XTJ 43

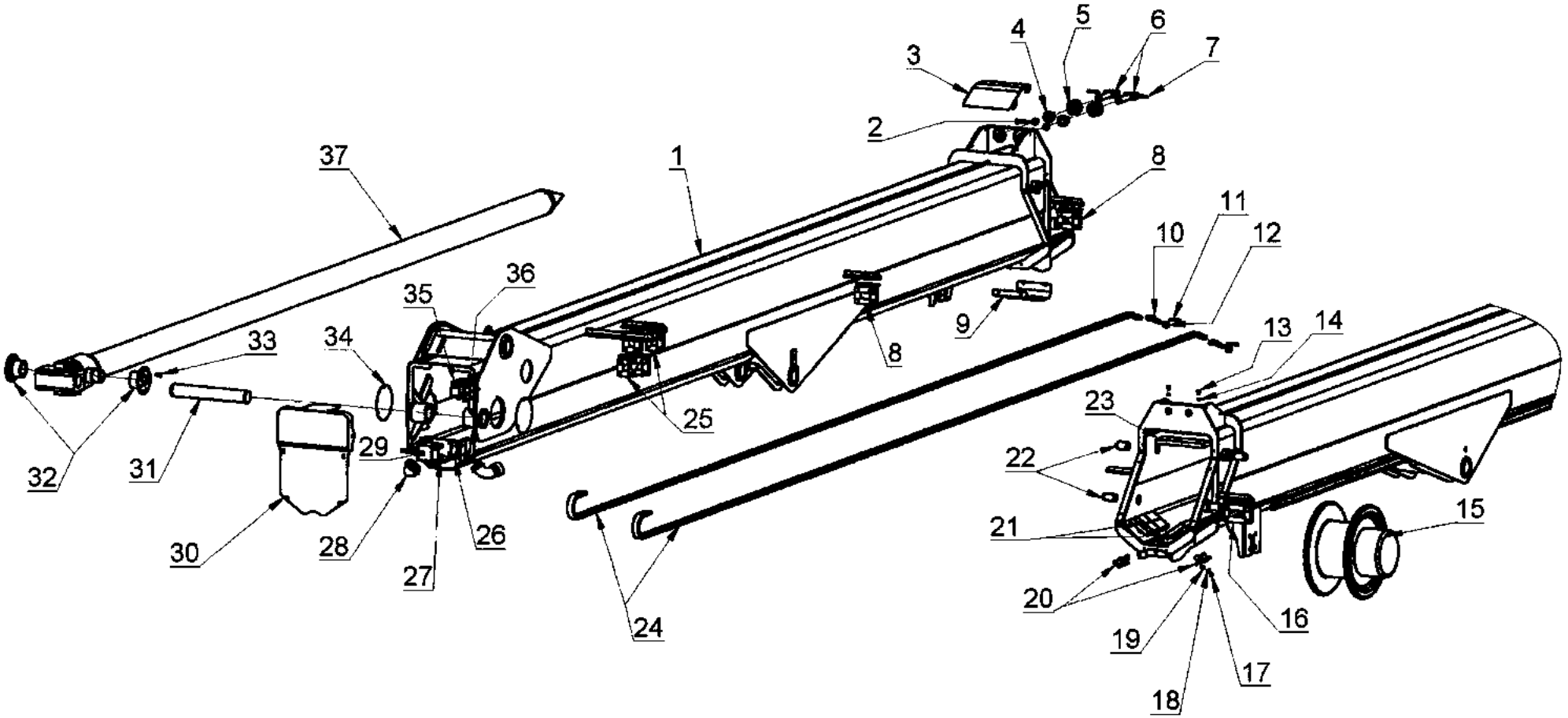


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	01.10.0871	1	STELO	ROD	SHAFT	TIGE	VASTAGO	
2	01.09.0738	1	CAMICIA	CYLINDER LINER	MANTEL	EXTERIEUR DU PISTON	EXTERNO PISTON	
3	01.15.0987	1	BUSSOLA	BUSHING	BUCSHE	BAGUE	BUJE	
4	01.15.0986	1	STANTUFFO	PISTON	KOLBEN	PISTON	PISTON	
5	08.14.2549	4	BRONZINA	BUSHING	BUCSHE	BAGUE	BUJE	
6	-	-	-	-	-	-	-	
7	/	1	SPINA ELASTICA	SCREW	SCHRAUBE	VIS	TORNILLO	
8	18.04.0059	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
9	18.05.0082	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
10	/	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
11	18.01.0087	2	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
12	/	1	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
13	/	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
14	18.01.0058	1	GUARNIZIONE	OR JOINT	DICHTUNGSRING	JOINT OR	JUNTA OR	
15	18.05.0064	1	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
16	18.05.0056	2	ANELLO GUIDA	DRIVING RING	LEITUNGSRING	BAGUE DE GUIDE	ANILLO DE GUIA	
19	/	1	TUBO IDRAULICO	HOSE	SCHLAUCH	DURITE	TUBO	
-	01.01.0782	1	CILINDRO COMPLETO	PISTON	VOLLZYLINDER	PISTON	PISTON	

BRACCIO SOLLEVAMENTO
LIFTING BOOM
AUSLEGER
BRAS LEVAGE
PLUMA

TAV. 10

XTJ 43

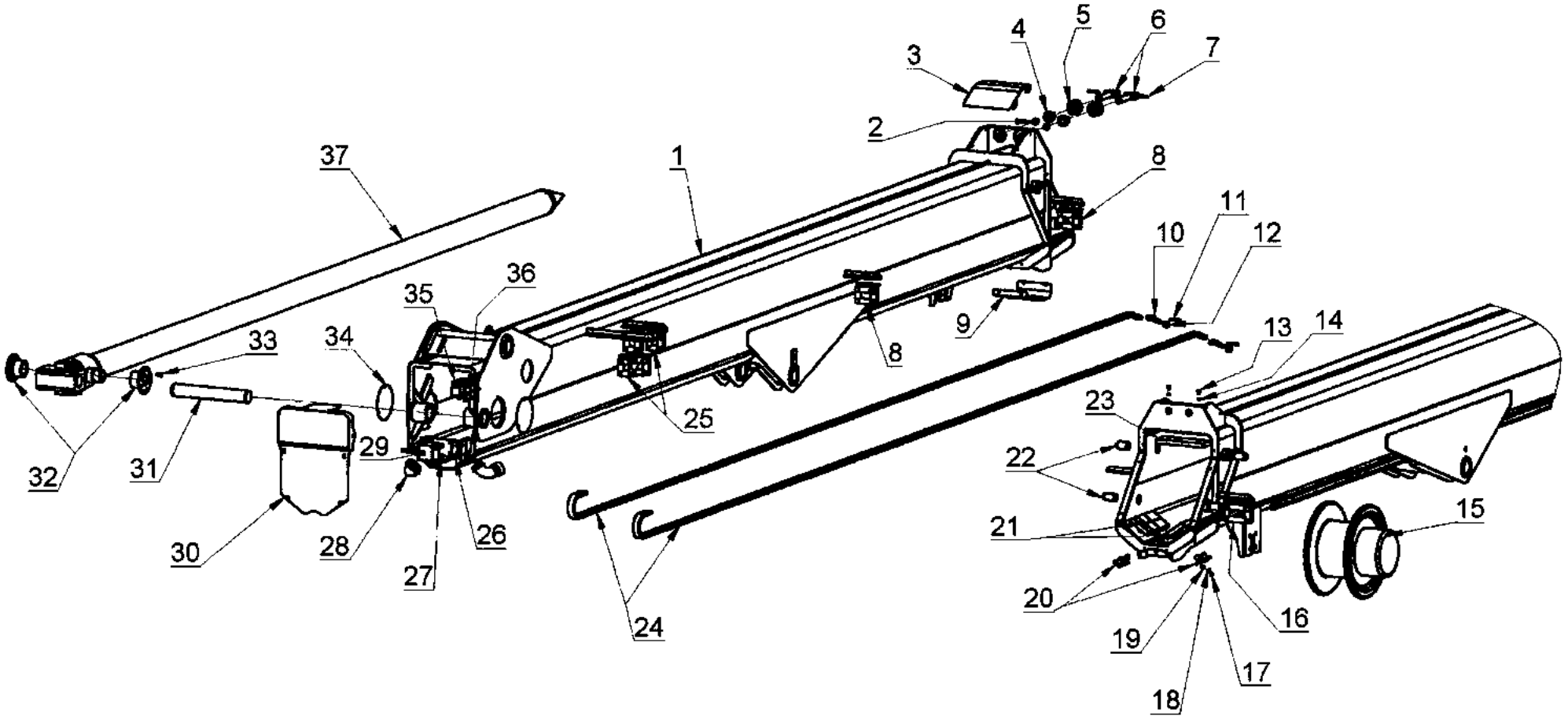


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0001	1	BRACCIO SOLLEV.	LIFTING BOOM	AUSLEGER	BRAS LEVAGE	PLUMA	
2	19.02.0072	2	DADO	NUT	MUTTER	ECROU	TUERCA	
3	13.110.0002	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
4	08.14.1904	2	BOCCOLA	BUSH	BUCHSE	DOUILLE	BUJE	
5	55.13.0014	14	MOLLA A TAZZA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
6	08.14.2508	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
7	07.14.1082	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
8	55.28.0270B	2	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
9	13.110.0004	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
10	13.103.0005	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
11	55.28.0431	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
12	19.02.0037	2	DADO	NUT	MUTTER	ECROU	TUERCA	
13	19.01.0308	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
14	55.12.0009	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
15	/	1	AVVOLGICAVO	BOX	BOX	BOITE	CAJA	
16	55.28.0270C	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
17	19.01.0034	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
18	55.12.0004	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
19	55.14.0005	2	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
20	08.14.1921	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
21	08.14.2523	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
22	13.103.0028	4	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
23	08.14.2512	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
24	55.28.0339	/	CATENA LL 1288	CHAIN	KETTE	CHAINE	CADENA	
25	55.28.0270A	4	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
26	13.103.0117	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
27	/	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
28	/	2	GUIANA PROTETTIVA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
29	/	1	SENSORE POSIZIONE	BOX	BOX	BOITE	CAJA	
30	13.110.0061	1	COPERCHIO	COVER	DECKEL	COUVERCLE	CUBIERTA	
31	07.14.1085	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
32	08.14.1912	2	FLANGIA	BRIDE	FLANSCH	FLANGE	PLETINA	
33	19.01.0252	16	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
34	13.110.0003	2	COPERCHIO	COVER	DECKEL	COUVERCLE	CUBIERTA	
							XTJ 43	**TAV. 10**

BRACCIO SOLLEVAMENTO
LIFTING BOOM
AUSLEGER
BRAS LEVAGE
PLUMA

TAV. 10

XTJ 43

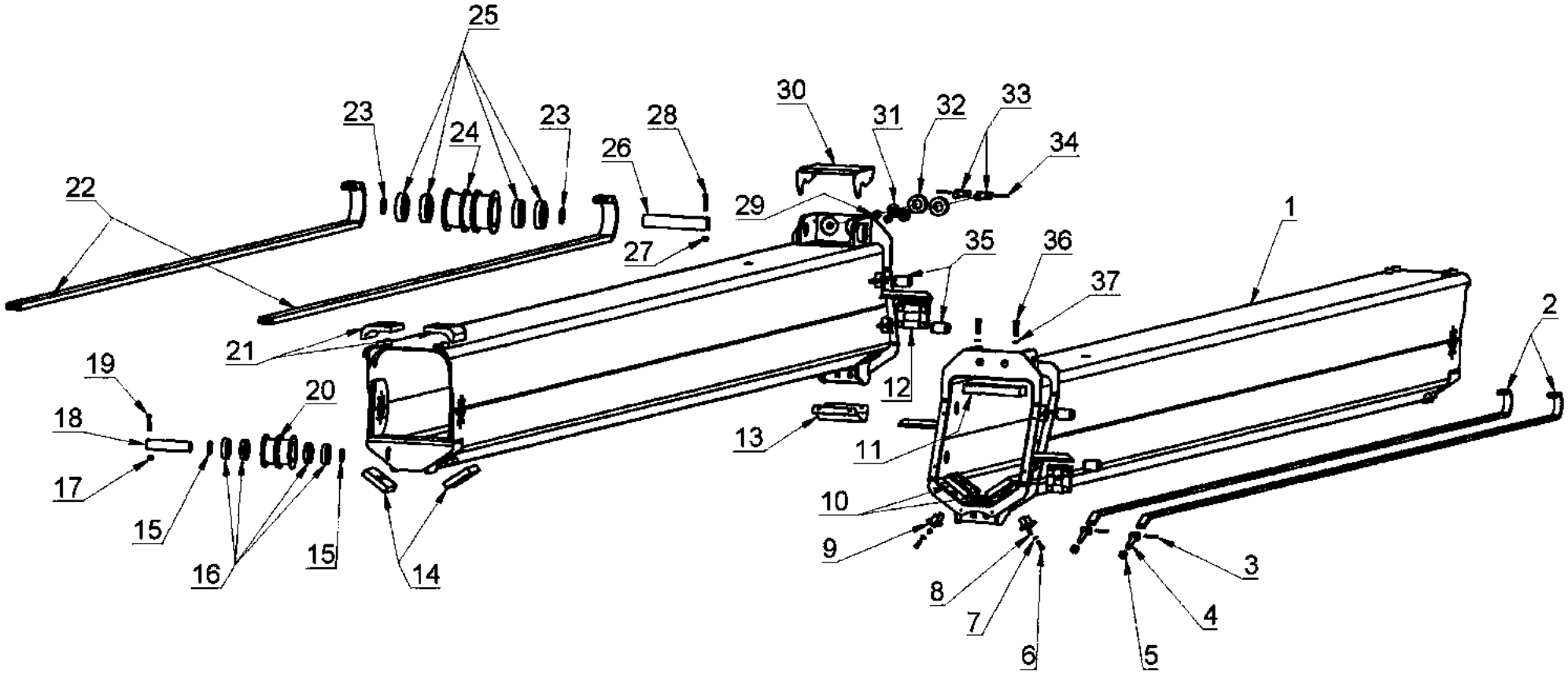


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
35	/	1	INCLINOMETRO	BOX	BOX	BOITE	CAJA	
36	13.110.0052	1	STAFFA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
37	01.01.0786	1	CILINDRO SFILO	EXTENSION RAM	VERLANGERUNG	VERIN DE TELESCOPAGE	CILINDRO EXTENSIONES	

1°a PROLUNGA
1° BOOM
1° AUSLAGER
1° BRAS
1° PLUMA

TAV. 11

XTJ 43

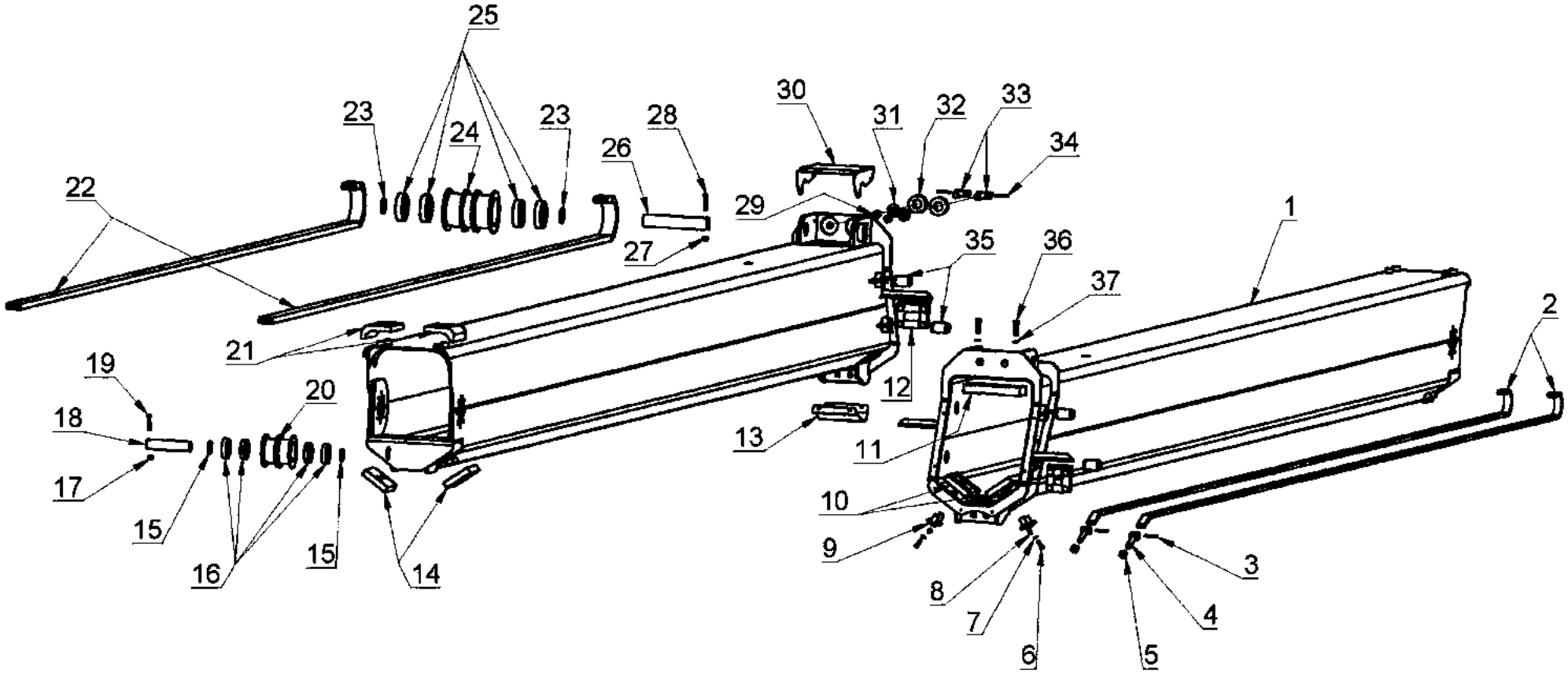


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0002	1	1°a PROLUNGA	1° BOOM	1°AUSLEGER	1° BRAS	1° PLUMA	
2	55.28.0046	/	CATENA UF1588 C	CHAIN	KETTE	CHAINE	CADENA	
3	55.28.0098	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
4	13.103.0012	/	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
5	19.02.0037	/	DADO	NUT	MUTTER	ECROU	TUERCA	
6	19.01.0034	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
7	55.12.0004	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
8	55.14.0005	2	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
9	08.14.1921	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
10	08.14.2446	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
11	08.14.2509	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
12	55.28.0270B	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	13.110.0008	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
14	08.14.2537	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
15	08.14.1909	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
16	49.02.0036	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
17	19.02.0023	1	DADO	NUT	MUTTER	ECROU	TUERCA	
18	07.14.0934	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
19	19.01.0024	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
20	08.14.1880	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
21	08.14.2538	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
22	55.28.0561	/	CATENA LH 1666	CHAIN	KETTE	CHAINE	CADENA	
23	08.14.1908	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
24	08.14.1884	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
25	49.02.0027	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
26	07.14.0930	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
27	19.02.0023	1	DADO	NUT	MUTTER	ECROU	TUERCA	
28	19.01.0025	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
29	19.02.0041	2	DADO	NUT	MUTTER	ECROU	TUERCA	
30	13.110.0011	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
31	08.14.2449	2	BOCCOLA	BUSH	BUCHSE	DOUILLE	BUJE	
32	55.13.0017	10	MOLLA A TAZZA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
33	08.14.2448	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
34	55.28.0571	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
							XTJ 43	**TAV. 11**

1°a PROLUNGA
1° BOOM
1° AUSLAGER
1° BRAS
1° PLUMA

TAV. 11

XTJ 43

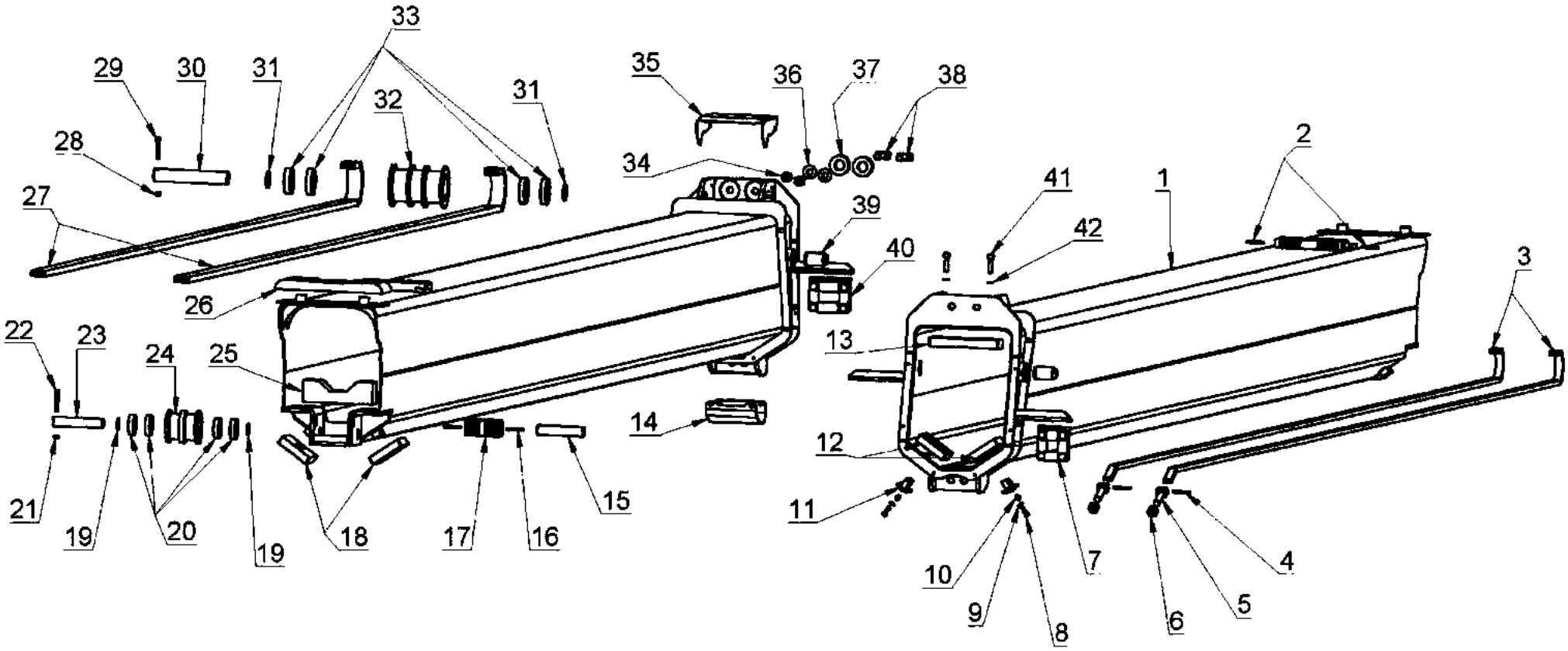


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
35	13.103.0028	4	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
36	19.01.0308	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
37	55.12.0009	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	

2°a PROLUNGA
2° BOOM
2° AUSLAGER
2° BRAS
2° PLUMA

TAV. 12

XTJ 43

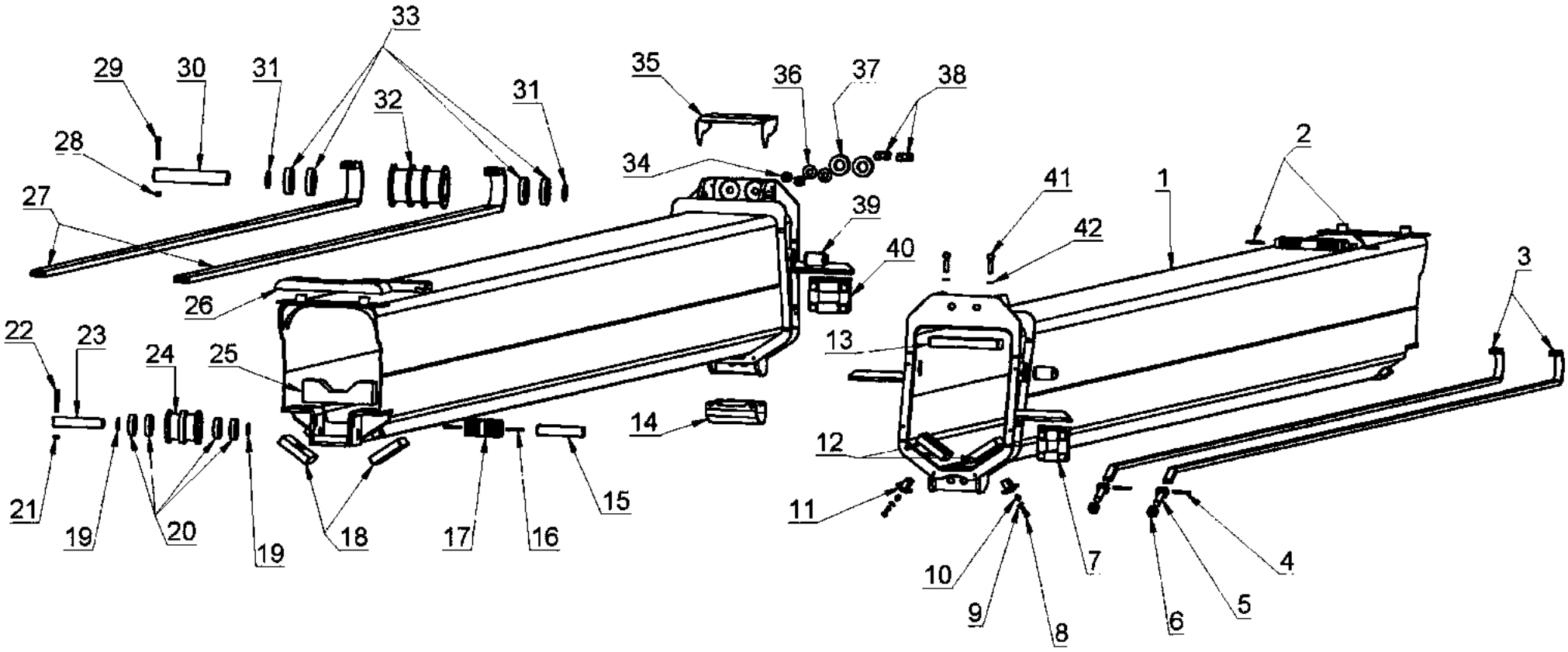


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0003	1	2°A PROLUNGA	2° BOOM	2°AUSLEGER	2° BRAS	2° PLUMA	
2	07.14.1082	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
3	55.28.0056	/	CATENA UF 1566	CHAIN	KETTE	CHAINE	CADENA	
4	55.28.0102	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
5	13.103.0017	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
6	19.02.0037	2	DADO	NUT	MUTTER	ECROU	TUERCA	
7	55.28.0270A	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
8	19.01.0019	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
9	55.12.0004	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
10	55.14.0005	2	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
11	08.14.2522	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
12	08.14.2520	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
13	08.14.2510	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
14	13.110.0010	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
15	07.14.0938	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
16	55.28.0431	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
17	08.14.2004	1	PETTINE	SCALLOP	JAKOBSMUSCHEL	COQUILLE	VIEIRA	
18	08.14.2535	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
19	08.14.1910	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
20	49.02.0001	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
21	19.02.0022	1	DADO	NUT	MUTTER	ECROU	TUERCA	
22	19.01.0008	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
23	07.14.0935	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
24	08.14.1881	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
25	08.14.2543	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
26	08.14.2536	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
27	55.28.0545	/	CATENA LH 1266	CHAIN	KETTE	CHAINE	CADENA	
28	19.02.0023	1	DADO	NUT	MUTTER	ECROU	TUERCA	
29	19.01.0024	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
30	07.14.0931	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
31	08.14.1909	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
32	08.14.2442	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
33	49.02.0036	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
34	19.02.0037	2	DADO	NUT	MUTTER	ECROU	TUERCA	
							XTJ 43	**TAV. 12**

2°a PROLUNGA
2° BOOM
2° AUSLAGER
2° BRAS
2° PLUMA

TAV. 12

XTJ 43

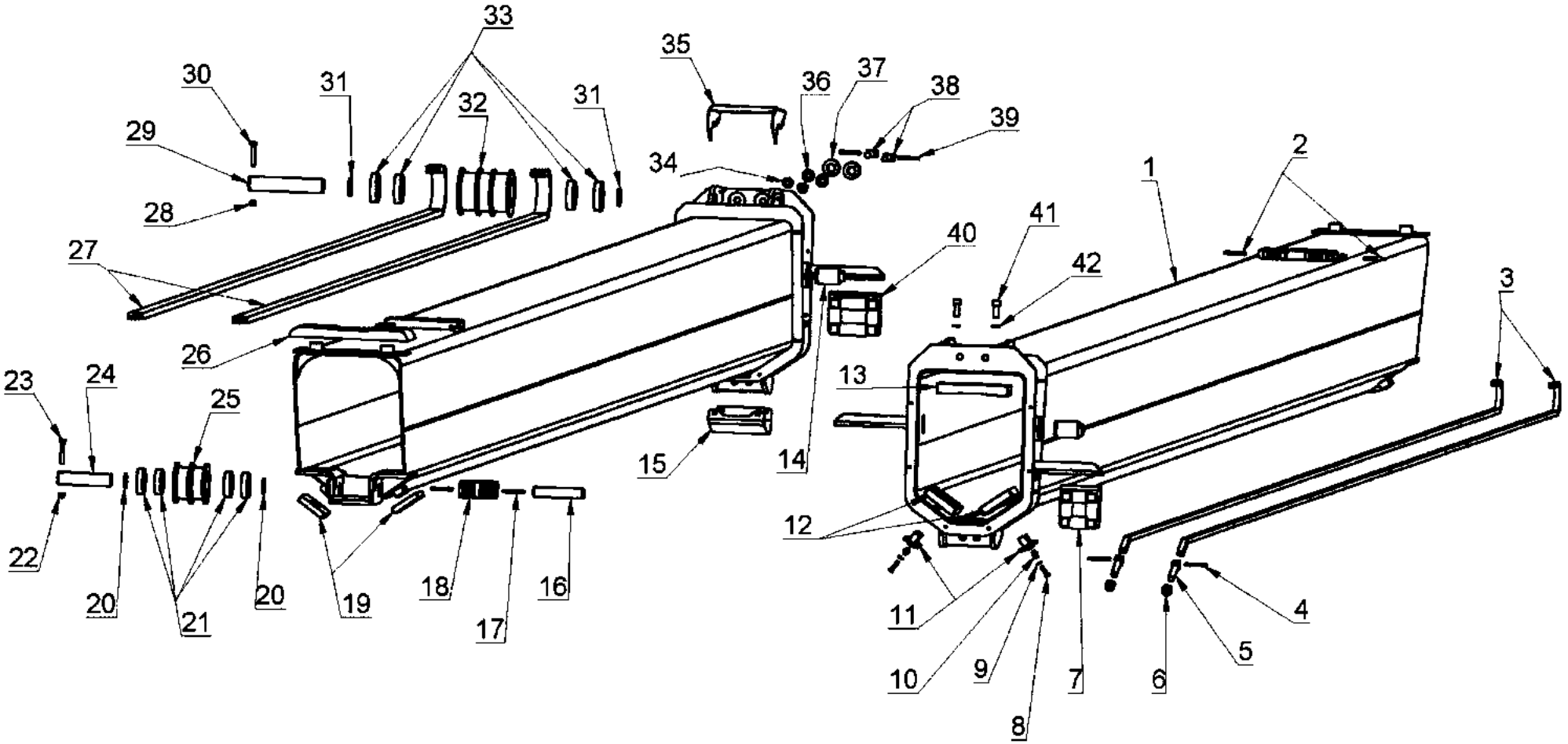


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
35	13.110.0032	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
36	08.14.2524	2	BOCCOLA	BUSH	BUCHSE	DOUILLE	BUJE	
37	55.13.0028	10	MOLLA A TAZZA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
38	08.14.2506	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
39	13.103.0028	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
40	55.28.0270B	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
41	19.01.0049	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
42	55.12.0006	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	

3°a PROLUNGA
3° BOOM
3° AUSLAGER
3° BRAS
3° PLUMA

TAV. 13

XTJ 43

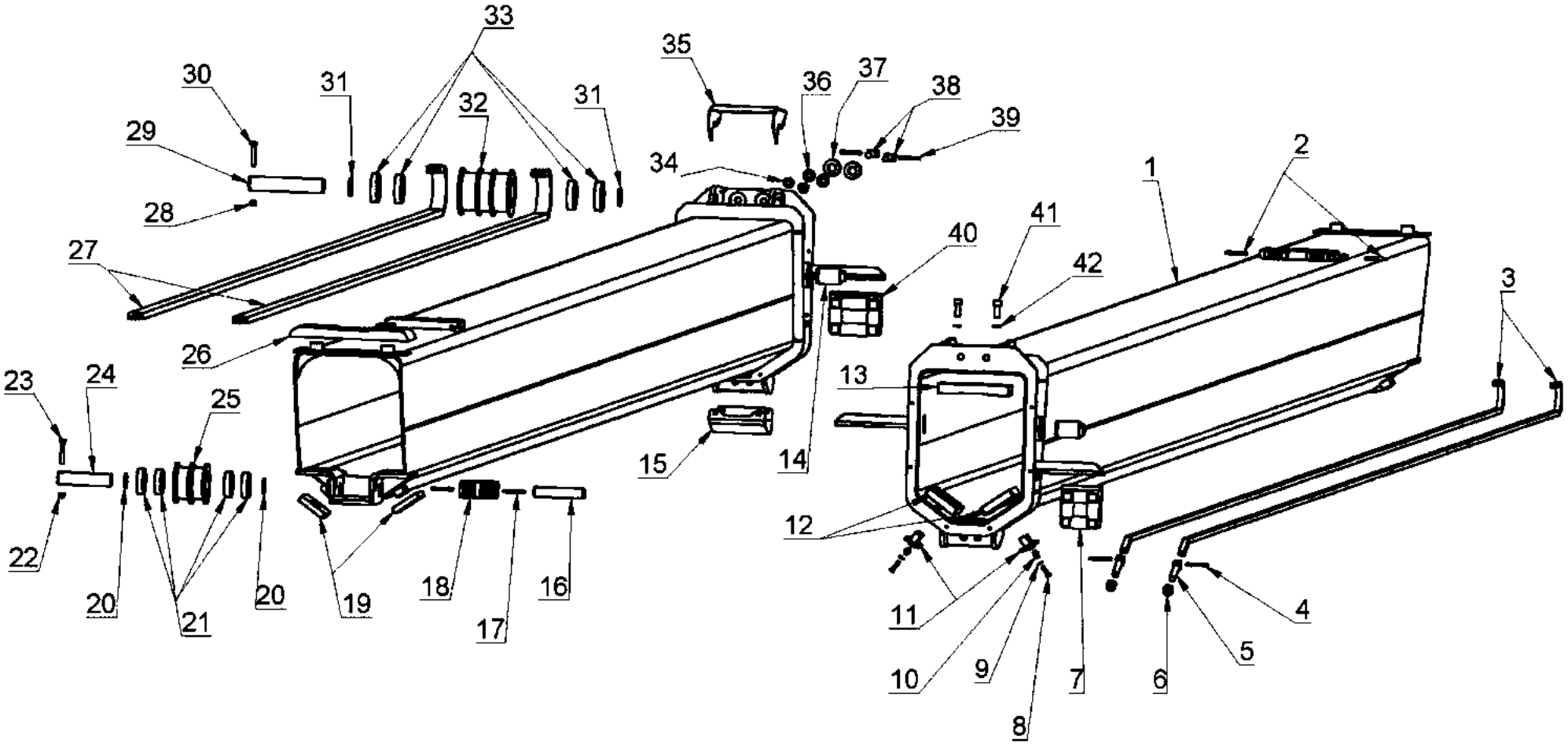


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0004	1	3°A PROLUNGA	3° BOOM	3°AUSLEGER	3° BRAS	3° PLUMA	
2	55.28.571	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
3	55.28.0564	/	CATENA UF 1244 C	CHAIN	KETTE	CHAINE	CADENA	
4	55.28.572	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
5	08.14.2571	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
6	19.02.0035	2	DADO	NUT	MUTTER	ECROU	TUERCA	
7	55.28.0270A	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
8	19.01.0019	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
9	55.12.0002	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
10	55.14.0005	2	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
11	08.14.1919	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
12	08.14.2521	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
13	08.14.2511	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
14	13.103.0028	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
15	13.110.0028	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
16	07.14.0939	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
17	55.28.0098	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
18	08.14.1889	1	PETTINE	SCALLOP	JAKOBSMUSCHEL	COQUILLE	VIEIRA	
19	08.14.2532	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
20	08.14.1910	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
21	49.02.0001	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
22	19.02.0022	1	DADO	NUT	MUTTER	ECROU	TUERCA	
23	19.01.0008	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
24	07.14.0936	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
25	08.14.1882	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
26	08.14.2534	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
27	55.28.0339	/	CATENA LL 1288	CHAIN	KETTE	CHAINE	CADENA	
28	19.02.0022	1	DADO	NUT	MUTTER	ECROU	TUERCA	
29	07.14.1083	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
30	19.01.0010	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
31	08.14.2519	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
32	08.14.2513	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
33	49.02.0002	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
34	19.02.0035	2	DADO	NUT	MUTTER	ECROU	TUERCA	
							XTJ 43	**TAV. 13**

3°a PROLUNGA
3° BOOM
3° AUSLAGER
3° BRAS
3° PLUMA

TAV. 13

XTJ 43

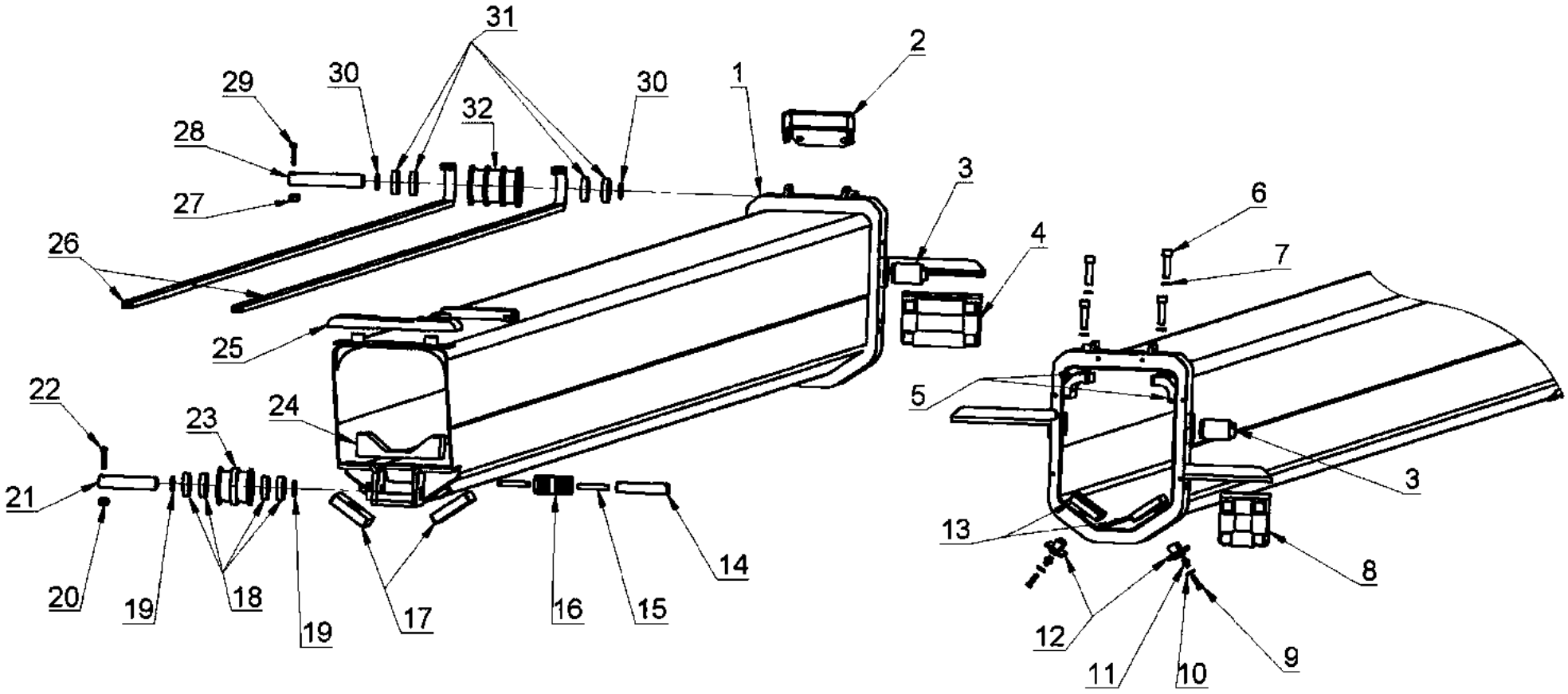


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
35	13.110.0033	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
36	08.14.2503	2	BOCCOLA	BUSH	BUCHSE	DOUILLE	BUJE	
37	55.13.0030	14	MOLLA A TAZZA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
38	08.14.2504	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
39	55.28.0571	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
40	55.28.0270B	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
41	19.01.0050	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
42	55.12.0006	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	

4°a PROLUNGA
4° BOOM
4° AUSLAGER
4° BRAS
4° PLUMA

TAV. 14

XTJ 43

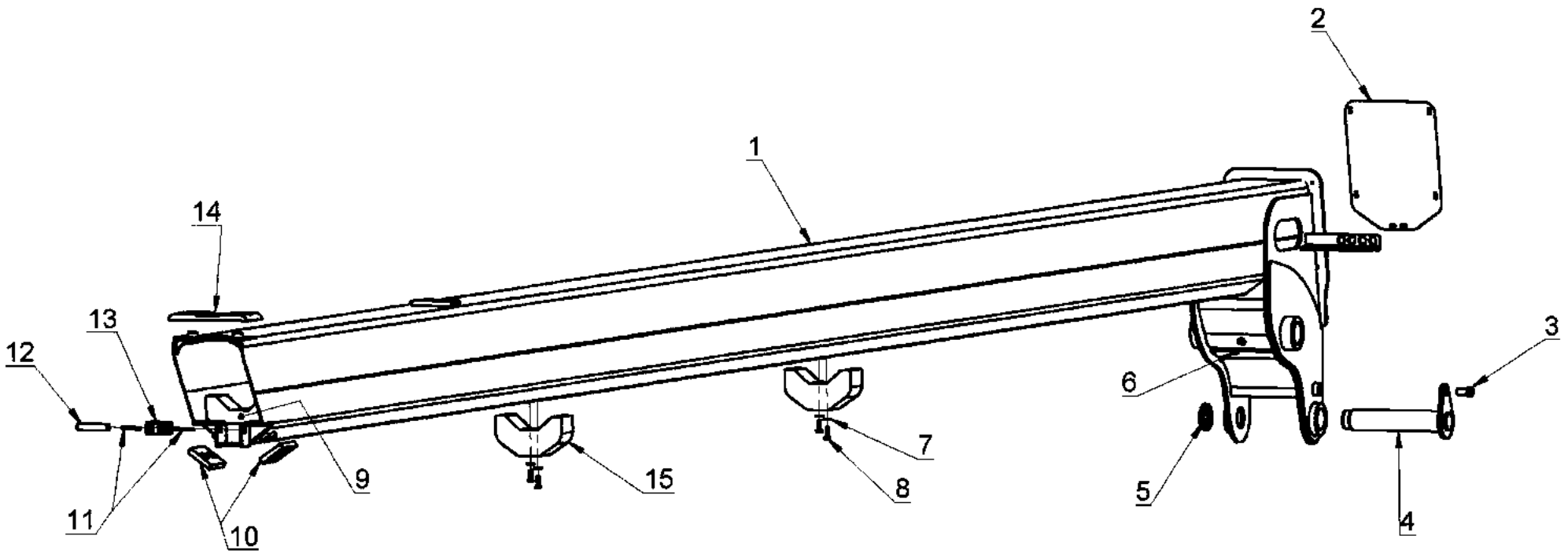


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0005	1	4°A PROLUNGA	4° BOOM	4°AUSLEGER	4° BRAS	4° PLUMA	
2	13.110.0034	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
3	13.103.0028	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
4	55.28.0270C	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
5	13.110.0030	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
6	19.01.0240	4	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
7	55.12.0002	4	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
8	55.28.0270A	1	GUIDA TUBO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
9	19.01.0019	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
10	55.12.0002	2	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
11	55.14.0005	2	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
12	08.14.2505	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
13	08.14.2501	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
14	07.14.0940	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
15	55.28.102	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
16	08.14.1890	1	PETTINE	SCALLOP	JAKOBSMUSCHEL	COQUILLE	VIEIRA	
17	08.14.2529	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
18	49.02.0042	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
19	08.14.1911	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
20	19.02.0022	1	DADO	NUT	MUTTER	ECROU	TUERCA	
21	07.14.0937	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
22	19.01.0007	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
23	08.14.1883	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	
24	08.14.2017	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
25	08.14.2531	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
26	55.28.0563	/	CATENA UF 1266	CHAIN	KETTE	CHAINE	CADENA	
27	19.02.0022	1	DADO	NUT	MUTTER	ECROU	TUERCA	
28	07.14.0933	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
29	19.01.0007	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
30	08.14.1911	2	DISTANZIALE	SPACER	ABSTANDSTUECK	ENTRETOISE	SEPARADOR	
31	49.02.0042	4	CUSCINETTO	BALL BEARING	EINGEDENK	ROULEMENT	COJENETE	
32	08.14.2500	1	RULLO CATENA	ROLL	ROLLER	ROULEAU	RODILLO	

5°a PROLUNGA
5° BOOM
5° AUSLAGER
5° BRAS
5° PLUMA

TAV. 15

XTJ 43

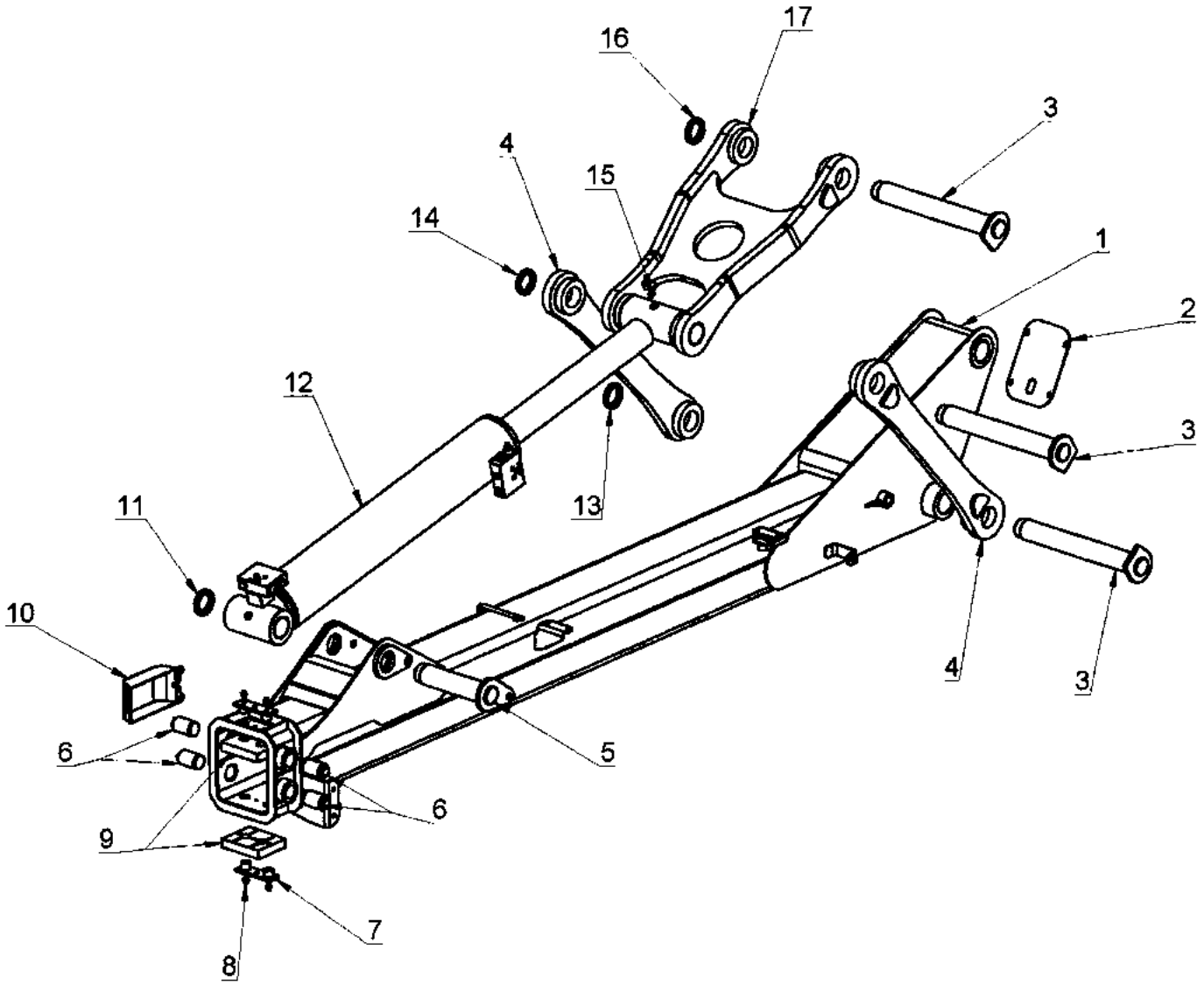


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0006	1	5° PROLUNGA	5° BOOM	5°AUSLEGER	5° BRAS	5° PLUMA	
2	13.110.0062	1	COPERCHIO	CRANKCASE	GEHAUSE	CARTER	CARTER	
3	19.01.0080	1	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
4	07.103.0001	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
5	50.09.0084	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
6	55.14.0002	1	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
7	55.12.0004	4	GROWE	WASHER	SCHEIBE	RONDELLE	ARANDELA	
8	19.01.0254	4	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
9	08142541	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
10	08.14.2539	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
11	55.28.0572	2	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
12	07.14.0941	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
13	08.14.2579	1	PETTINE	SCALLOP	JAKOBSMUSCHEL	COQUILLE	VIEIRA	
14	08.14.2540	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
15	08.14.2541	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	

BRACCIO JIB
BOOM JIB
AUSLAGER JIB
BRAS JIB
PLUMA JIB

TAV. 16

XTJ 43

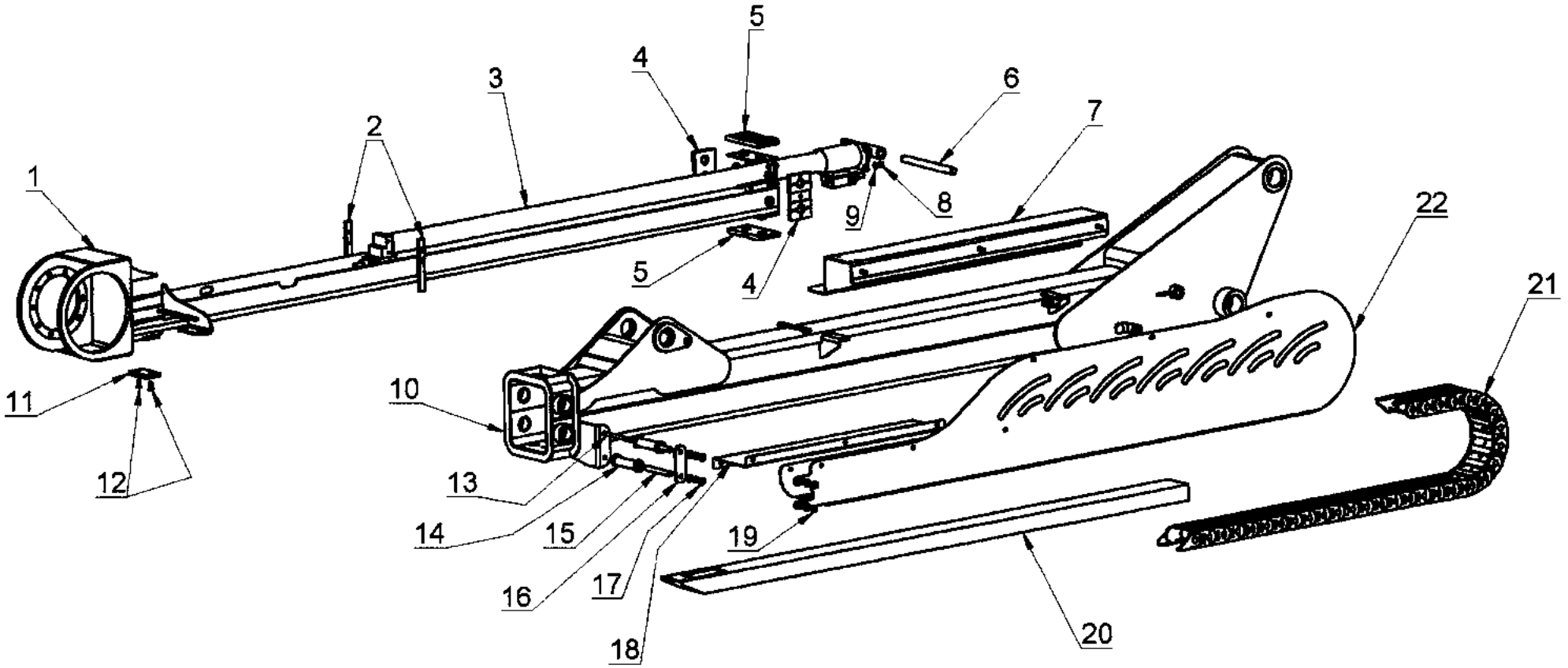


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0007	1	BRACCIO JIB	BOOM JIB	AUSLEGER JIB	BRAS JIB	PLUMA JIB	
2	13.110.0023	1	COPERCHIO	CRANKCASE	GEHAUSE	CARTER	CARTER	
3	07.103.0002	3	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
4	05.103.0009	2	TIRANTE	ROD	PLEUELTANGE	TIRANT	BIELA	
5	07.103.0012	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
6	13.103.0028	4	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
7	08.14.2526	2	FERMA PATTINO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
8	55.14.0005	4	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
9	08.14.2525	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
10	13.80.0031	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	
11	50.09.0084	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
12	01.01.0783	1	CILINDRO JIB	JIB RAM	VERLANGERUNG	VERIN JIB	CILINDRO JIB	
13	50.09.0084	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
14	50.09.0084	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
15	55.14.0002	1	INGRASSATORE	GREASE FITTING	FETT-NIPPEL	GRAISSEUR	ENGRASADOR	
16	50.09.0084	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
17	05.103.0008	1	SNODO JIB	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	

PROLUNGA JIB
1° BOOM JIB
1° AUSLAGER JIB
1° BRAS JIB
1° PLUMA JIB

TAV. 17

XTJ 43

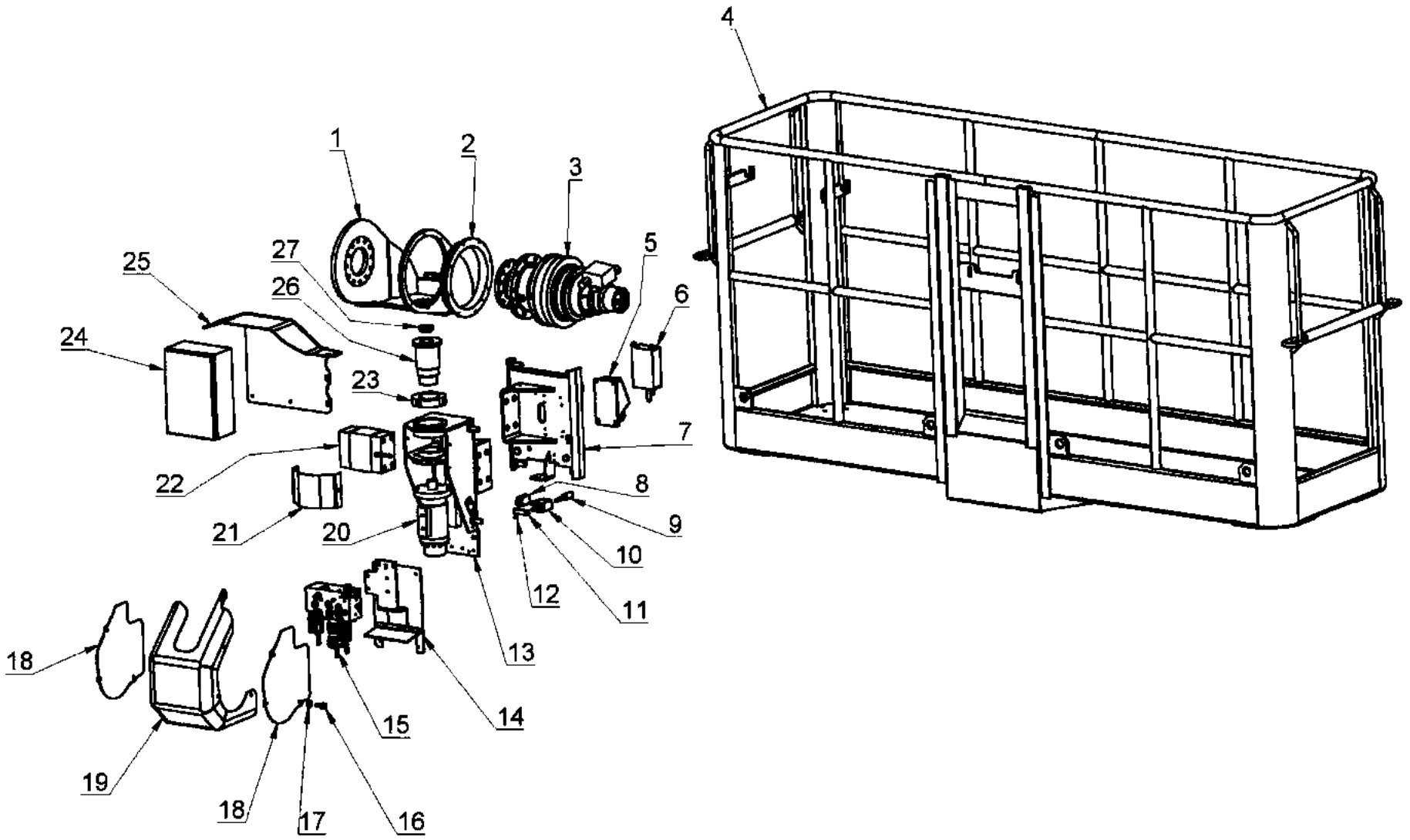


RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.110.0008	1	PROLUNGA JIB	1° BOOM JIB	1°AUSLEGER JIB	1° BRAS JIB	1° PLUMA JIB	
2	13.110.0017	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
3	01.01.0784	1	CILINDRO SFILO JIB	EXTENSION RAM	VERLANGERUNG	VERIN DE TELESCOPAGE	CILINDRO EXTENSIONES	
4	08.14.1928	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
5	08.14.2527	2	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
6	07.103.0009	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
7	13.110.0019	1	SOSTEGNO CATENARIA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
8	19.01.0019	4	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
9	19.02.0023	4	DADO	NUT	MUTTER	ECROU	TUERCA	
10	05.110.0007	1	BRACCIO JIB	BOOM JIB	AUSLEGER JIB	BRAS JIB	PLUMA JIB	
11	13.110.0024	1	PATTINO	LINING	GLEITENDER BLOCK	GOUJON	TACO	
12	19.01.0434	2	VITE	SCREW	SCHRAUBE	VIS	TORNILLO	
13	08.14.1158	1	BUSSOLA	BUSH	BUCHSE	DOUILLE	BUJE	
14	08.14.1159	2	RULLO	ROLL	ROLLER	ROULEAU	RODILLO	
15	08.14.1158	1	BUSSOLA	BUSH	BUCHSE	DOUILLE	BUJE	
16	08.14.1157	1	PIATTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
17	55.11.0004	8	RONDELLA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
18	13.110.0022	1	COPERCHIO	CRANKCASE	GEHAUSE	CARTER	CARTER	
19	19.02.0005	4	DADO	NUT	MUTTER	ECROU	TUERCA	
20	13.110.0018	1	ASTA CATENARIA	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
21	55.28.0388	/	CATENARIA JIB	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
22	13.110.0021	1	CARTER	CRANKCASE	GEHAUSE	CARTER	CARTER	

GRUPPO CESTO
GROUP CAGE
GRUPPE WARENKORB
GROUPE NACELLE
GRUPO QUERDA

TAV. 18

XTJ 43



RIF	CODICE	N°	DESCRIZIONE	DESCRIPTION	BENNENNUNG	DESIGNATION	DENOMINACIONES	ANNOTAZIONI
1	05.103.0023	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
2	13.77.0003	1	FLANGIA	BRIDE	FLANSCH	FLANGE	PLETINA	
3	/	1	RIDUTTORE	SLEWING OIL	MOTOR	ENGRANAGE ROTATION	MOTOR	
4	05.78.0007	1	CESTO	CAGE	WARENKORB	NACELLE	QUERDA	
5	/	1	PRESA 220V	BOX 220V	BOX 220V	BOX 220V	BOX 220V	
6	/	1	INTERFONICO	BOX	BOX	BOX	BOX	
7	05.62.0005	1	SUPPORTO ATTACCO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
8	/	1	FINECORSA	PROXIMITY	PROXIMITY	PROXIMITY	PROXIMITY	
9	13.92.0002B	1	PERNO	PIN	BOLZEN	GOUPILLE	PASADOR	
10	13.92.0002A	1	MASSELLO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
11	13.92.0002C	1	PIATTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
12	19.02.0004	1	DADO	NUT	MUTTER	ECROU	TUERCA	
13	05.14.1848	1	SUPPORTO CESTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
14	13.110.0060	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
15	/	1	DISTRIBUTORE	CONTROL VALVE	STEUERVENTIL	DISTRIBUTEUR	DISTRIBUDOR	
16	55.03.0173	6	VOLANTINO	SCREW	SCHRAUBE	VIS	TORNILLO	
17	55.11.0027	6	RONDELLA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
18	13.92.0022	2	LAMIERA LATERALE	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
19	13.92.0020	1	CARTER	COVER	DECKEL	COUVERCLE	CUBIERTA	
20	/	1	ATTUATORE	ACTUATOR	MOTOR	MOTEUR	MOTOR	
21	08.14.2717	1	CARTER	COVER	DECKEL	COUVERCLE	CUBIERTA	
22	/	1	CELLA MOBA	CELL	ZELLE	CELLULE	CELULA	
23	08.14.2315	1	GHIERA	WASHER	SCHEIBE	RONDELLE	ARANDELA	
24	/	1	CASSETTA	ELECTRIC BOX	ELECTRIC BOX	ELECTRIC BOX	ELECTRIC BOX	
25	13.101.0085	1	SUPPORTO	SUPPORT	LAGERUNG	SUPPORT	SOSTEN	
26	08.14.2314	1	ALBERO	GEAR	WELLE	PIVOT	ARBOL	
27	08.14.2610	1	TAPPO	COVER	DECKEL	COUVERCLE	CUBIERTA	

NOTE

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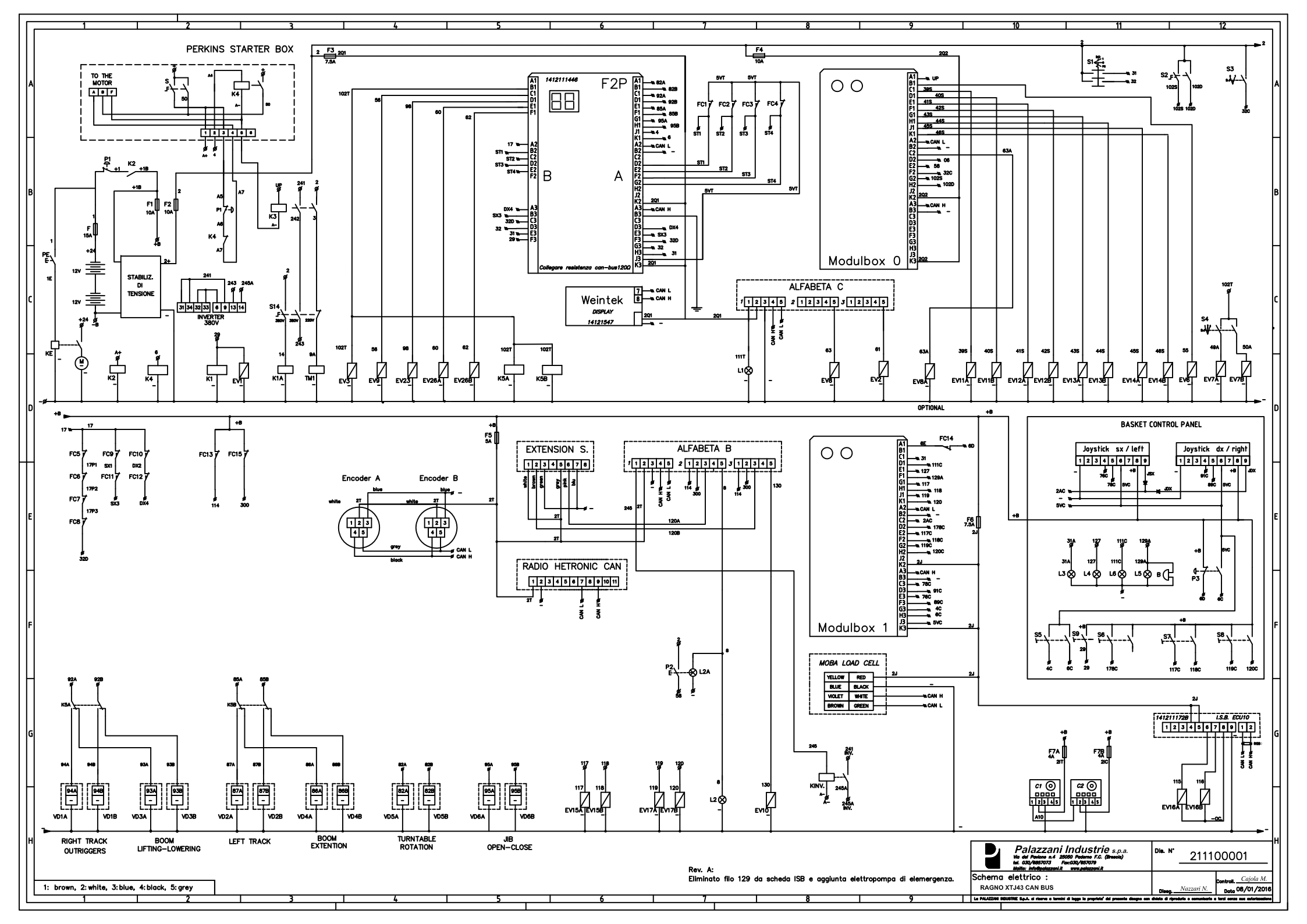
Tel. ++39 030 6857073 – Fax ++39 030 657079
Mailto: info@palazzani.it - www.palazzani.it


PERKINS STARTER BOX
TO THE MOTOR
STABILIZ. DI TENSIONE
INVERTER 380V
F2P
1412111446
Collegare resistenza can-bus120Ω
Modulbox 0
Modulbox 1
Weintek
DISPLAY
14121547
ALFABETA C
ALFABETA B
EXTENSION S.
RADIO HETRONIC CAN
Encoder A
Encoder B
OPTIONAL
BASKET CONTROL PANEL
Joystick sx / left
Joystick dx / right
MOBA LOAD CELL
YELLOW
RED
BLUE
BLACK
VIOLET
WHITE
BROWN
GREEN
I.S.B. ECU10
1412111728
RIGHT TRACK OUTRIGGERS
BOOM LIFTING–LOWERING
LEFT TRACK
BOOM EXTENTION
TURNTABLE ROTATION
JIB OPEN–CLOSE
1: brown, 2: white, 3: blue, 4: black, 5: grey
Rev. A:
Eliminato filo 129 da scheda ISB e aggiunta elettropompa di elemergenza.
Palazzani Industrie s.p.a.
Via del Pavione n.4 25050 Paderno F.C. (Brescia)
tel. 030/6867033 Fax:030/6857079
Mailto: info@palazzani.it www.palazzani.it
Dis. N° 211100001
Schema elettrico :
RAGNO XTJ43 CAN BUS
Disegn. Nazzari N.
Controll. Cajola M.
Data 08/01/2016
Le PALAZZANI INDUSTRIE S.p.A. si riserva a termini di legge la proprieta' del presente disegno con divieto di riprodurre o comunicarlo a terzi senza sua autorizzazione

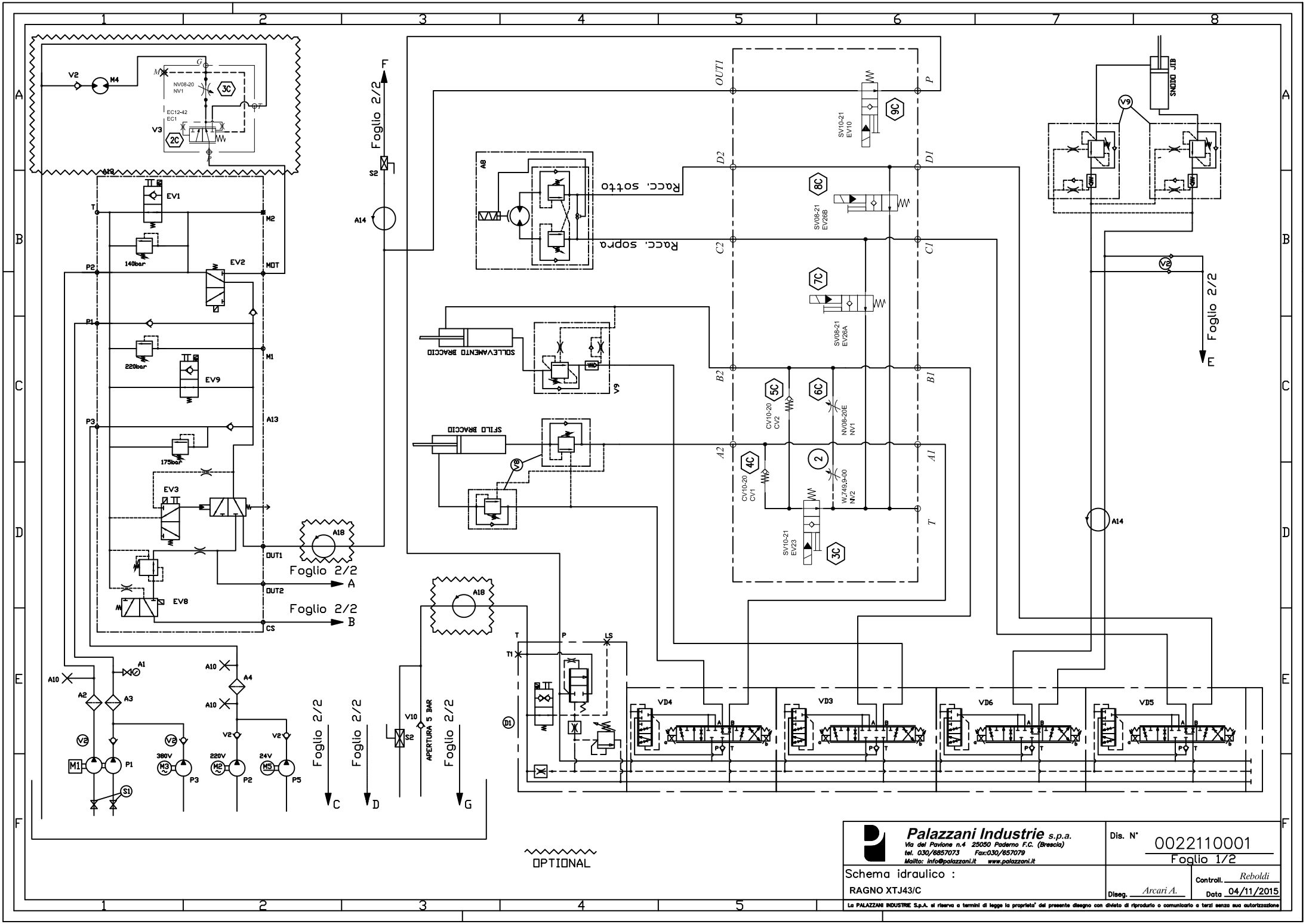
RAGNO XTJ43
ELECTRICAL DIAGRAM 0211100001 rev. A

NAME	DESCRIPTION
B	BUZZER ON THE BASKET CONTROL PANEL
EV1	GENERATOR ELECTROVALVE
EV2	SECOND PUMP ELECTROVALVE
EV3	OIL TO THE GROUND / BOOM ELECTROVALVE
EV6	OIL TO STABILIZER ELECTROVALVE
EV7A	ENLARGEMENT TRACKS ELECTROVALVE
EV7B	ENLARGEMENT TRACKS ELECTROVALVE
EV8	THIRD SPEED ELECTROVALVE
EV9	DRAIN OIL ELECTROVALVE
EV10	OIL TO THE BASKET ELECTROVALVE
EV11A	STABILIZER 1 LIFTING ELECTROVALVE
EV11B	STABILIZER 3 LOWERING ELECTROVALVE
EV12A	STABILIZER 2 LIFTING ELECTROVALVE
EV12B	STABILIZER 3 LOWERING ELECTROVALVE
EV13A	STABILIZER 3 LIFTING ELECTROVALVE
EV13B	STABILIZER 3 LOWERING ELECTROVALVE
EV14A	STABILIZER 4 LIFTING ELECTROVALVE
EV14B	STABILIZER 4 LOWERING ELECTROVALVE
EV15	BASKET ROTATION ELECTROVALVE
EV16	BASKET LEVELLING ELECROVALVE
EV17	JIB EXTENTION ELECTROVALVE (ONLY XTJ SERIES)
EV23	DRAIN OIL ELECTROVALVE
EV26A	TURNTABLE ROTATION DRAIN OIL ELECTROVALVE (DIRECTION A)
EV26B	TURNTABLE ROTATION DRAIN OIL ELECTROVALVE (DIRECTION B)
F	BATTERY FUSE – 15A
F1	MAIN FUSE – 10A
F2	STABILIZED LINE FUSE – 10 A
F3	FLOWCONTROL FUSE – 7.5A
F4	MODULBOX AND ALFABETA (GROUND) FUSE – 10 A
F5	TURNTABLE ELECTRICALL BOX FUSE - 5 A
F6	JIB ELECTRICAL BOX FUSE - 7.5 A
F7A	INTERCOM PROTECTION FUSE – 4A
F7B	INTERCOM PROTECTION FUSE – 4A
FC1	STABILIZER 1 ON THE GROUND LIMIT SWITCH
FC2	STABILIZER 2 ON THE GROUND LIMIT SWITCH
FC3	STABILIZER 3 ON THE GROUND LIMIT SWITCH
FC4	STABILIZER 4 ON THE GROUND LIMIT SWITCH
FC5	STABILIZER 1 PIN LIMIT SWITCH
FC6	STABILIZER 2 PIN LIMIT SWITCH
FC7	STABILIZER 3 PIN LIMIT SWITCH
FC8	STABILIZER 4 PIN LIMIT SWITCH
FC9	STABILIZER 1 LARGE POSITION LIMIT SWITCH
FC10	STABILIZER 2 LARGE POSITION LIMIT SWITCH
FC11	STABILIZER 3 LARGE POSITION LIMIT SWITCH
FC12	STABILIZER 4 LARGE POSITION LIMIT SWITCH
FC13	NOTABLE POINT LIMIT SWITCH
FC14	BASKET CONNECTED MICRO SWITCH
FC15	JIB RETRACTED MICRO SWITCH
KE	EMERGENCY PUMP CONTACTOR
K1	GENERATOR RELAY
K1A	SWITCH 220V / 380V RELAY
K2	MAIN RELAY
K3	STARTING ELECTRICAL MOTORS RELAY
K4	STOP PERKINS MOTOR RELAY
K5A	SWITCH DISTRIBUTORS SIGNALS RELAY
K5B	SWITCH DISTRIBUTORS SIGNALS RELAY
L1	ALLARMS / OUTRIGGERS LAMP ON THE MAIN ELECTRICAL BOX
L2	LAMP FOR THE STABILIZERS MOVEMENTS ON THE TURNTABLE
L2A	LAMP FOR THE STABILIZERS MOVEMENTS ON FN BUTTON
L3	BASKET CONTROL PANEL ENABLED LAMP
L4	HIGH WORKINK RANGE LAMP ON THE BASKET CONTROL PANEL
L5	OVERLOAD LAMP ON THE BASKET CONTROL PANEL

L6	ALLARMS / OUTREACH LAMP ON THE BASKET CONTROL PANEL
PE	EMERGENCY PUMP BUTTON
P1	EMERGENCY BUTTON ON THE MAIN ELECTRICAL BOX
P2	FN BUTTON
P3	EMERGENCY BUTTON ON THE BASKET CONTROL PANEL
S1	KEY MOVEMENTS SELECTOR
S2	DIRECT STABILIZATION SELECTOR
S3	AUTOMATIC / MANUAL STABILIZATION SELECTOR
S4	ENLARGEMENT TRACKS SELECTOR
S5	START / STOP SELECTOR ON THE BASKET CONTROL PANEL
S6	AUTOMATIC CENTERING SELECTOR ON THE BASKET CONTROL PANEL
S7	BASKET ROTATION SELECTOR ON THE BASKET CONTROL PANEL
S8	JIB EXTENTION SELECTOR ON THE BASKET CONTROL PANEL
S9	GENERATOR SELECTOR (OPTIONAL)
S10	SWITCH 220V-380V
MA1	LEFT JOYSICK ON THE BASKET CONTROL PANEL
MA2	RIGHT JOYSTICK ON THE BASKET CONTROL PANEL
VD1	RIGHT TRACK ELECTROVALVE (DISTRIBUTOR)
VD2	LEFT TRACK ELECTROVALVE (DISTRIBUTOR)
VD3	BOOM LIFTING/LOWERING ELECTROVALVE (DISTRIBUTOR)
VD4	BOOM TELESCOPIC IN/OUT ELECTROVALVE (DISTRIBUTOR)
VD5	TURNTABLE ROTATION ELECTROVALVE (DISTRIBUTOR)
VD6	JIB OPENING/CLOSING ELECTROVALVE (DISTRIBUTOR)

ELECTRONIC DEVICES

NAME	DESCRIPTION
F2P	FLOWCONTROL-2P
MOD-00	MODULBOX IN THE MAIN ELECTRICAL BOX
MOD-01	MODULBOX IN THE JIB ELECTRICAL BOX
ALF-00	ALFABETA ON THE CHASSIS
ALF-01	ALFABETA ON THE BOOX
ECU10	BASKET LEVELLING DEVICE
ENC.A	TUIRNTABLE ENCODER A
ENC.B	TUIRNTABLE ENCODER B
C1	INTERFONICO ON THE GROUND
C2	INTERFONICO ON THE BASKET
CCM	LOAD SENSOR MOBA


V2
M4
NV08-20
NV1
3C
EC12-42
EC1
V3
2C
EV1
M2
140bar
EV2
MOT
P2
P1
M1
220bar
EV9
P3
A13
175bar
EV3
A18
OUT1
Foglio 2/2
A
OUT2
Foglio 2/2
B
EV8
CS
A10
A1
A2
A3
A4
M1
P1
S1
380V
M3
P3
220V
M2
P2
24V
M5
P5
V2
V3
Foglio 2/2
C
Foglio 2/2
D
V10
S2
APERTURA 5 BAR
Foglio 2/2
G
A18
T
T1
P
LS
D1
VD4
VD3
VD6
VD5
A
B
P
T
OUT1
P
D2
D1
C2
C1
B2
B1
A2
A1
T
9C
SV10-21
EV10
8C
SV08-21
EV26B
7C
SV08-21
EV26A
5C
CV10-20
CV2
6C
NV08-20E
NV1
4C
CV10-20
CV1
2
W.749.9-00
NV2
3C
SV10-21
EV23
A8
Racc. sotto
Racc. sopra
SOLLEVAMENTO BRACCIO
V9
SFILO BRACCIO
S9
A14
Foglio 2/2
F
SNODO JIB
V9
V8
A14
OPTIONAL
Palazzani Industrie s.p.a.
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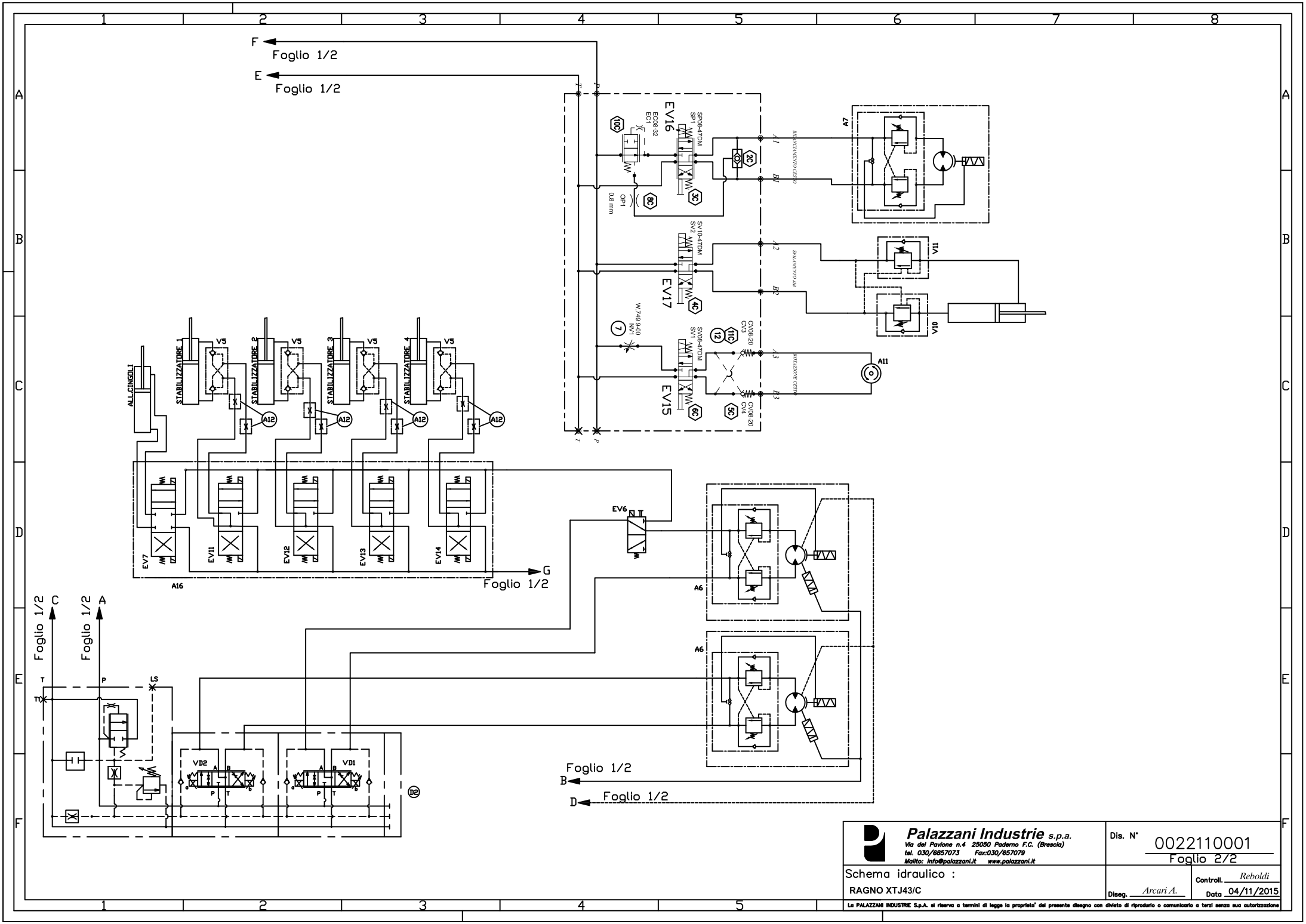
Mailto: info@palazzani.it www.palazzani.it
Dis. N° 0022110001
Foglio 1/2
Schema idraulico :
RAGNO XTJ43/C
Diseg. Arcari A.
Controll. Reboldi
Data 04/11/2015
La PALAZZANI INDUSTRIE S.p.A. si riserva a termini di legge la proprieta' del presente disegno con divieto di riprodurlo o comunicarlo a terzi senza sua autorizzazione



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Dis. N° 0022110001
Foglio 2/2

Schema idraulico :
RAGNO XTJ43/C

Diseg. Arcari A.
Controll. Reboldi
Data 04/11/2015

RAGNO XTJ 43/C DIS. 0022110001

POS	qnt	DENOMINAZIONE
A1	1	MANOMETRO 0 - 250 bar ø 80 con rubinetto 1/4" gas
A10	3	PRESA PROVA PRESSIONE TRONCHETTO ø12
A11	1	ATTUATORE ROTANTE ARM30/168/F cod.H.807/168F1A1F
A12	8	RACCORDO 337/F/006 FORO Ø 1
A13	1	BLOCCO HIGHT FLOW MOVECO
A14	1	AVVOLGITORE IDRAULICO 4 TUBI
A16	1	BLOCCO ELETTROVALVOLE 5 ELEMENTI LC
A16	1	BLOCCO SICUREZZA MOVECO
A17	1	BLOCCO CESTO MOVECO
A18	1	COLLETTORE ELETTRO-IDRAULICO
A2	1	FILTRO IN MANDATA FILTRO FMPO653BAG2A25NPO1
A3	1	FILTRO IN MANDATA 25 micron 40 lt/min. 1/2" gas
A4	1	FILTRO HF705-10.040-SB025-GD-B HHQ00047
A6	2	Motori originali cingoli
A7	1	MOTORE IDRAULICO MGLR 300 AS + freno xf30 ei 6b + valvola controllo
A8	1	MOTORIDUTTORE MD111NS7,2+MLG400 VBO35 MD (Rot. Torretta)
D1	1	DISTRIBUTORE PROPORZIONALE LC 4 ELEMENTI
D2	1	DISTRIBUTORE PROPORZIONALE LC 2 ELEMENTI
EV6	1	DEVIATORE A TRE VIE 24V
M1	1	MOTORE TERMICO HATZ 2L 41 C insonorizzato 24V
M2	1	MOTORE ELETTRICO 220 V - 2,2 Kw monofase
M3	1	MOTORE ELETT.0132S B5 4P 380TRIF.5,5KW
M4	1	MOTORE PLM20.8SO-82E2-LEA/EA-N-EL 02002879
M5	1	ELETTROPOMPA DI EMERGENZA 24V
P1	1	POMPA DOPPIA PLP20.16/20.11,2D/FS EL 66610535
P2	1	POMPA PLP 20.4 DO - 82E2 - LEA / EA N - EL
P3	1	POMPA PLP20.11,2D0-82E2-LEA/EA COD.02004642
S1	2	RUBINETTO
S2	1	RUBINETTO ALTA PRESSIONE
V10	1	VALVOLA VBSO SEC 30-4,2:1-20-D 04520403992000E FLANGIATA
V11	1	VALVOLA DI BLOCCO NON FLANGIATA
V12	1	VALVOLA DI BLOCCO VSO DEL 14
V13	1	VALVOLA HMP - 012/210 22
V16	1	VALVOLA REGOLATRICE DI FLUSSO VRF 1/4"
V2	5	VALVOLA UNIDIREZIONALE CD 3/8" gas
V3	1	VALVOLA PER LIMITATORE MOVECO
V5	4	VALVOLA DI BLOCCO VSO-DE-FC2 055344000201000
V8	2	VALVOLA VBSO SEC 30-4,2:1-20-D 04520403992000E FLANGIATA
V9	3	VALVOLA OVERCENTER + BLOCCO
V10	1	VALVOLA UNIDIREZIONALE 1/2 5 BAR