

Valid for models:

PM 4021 - 4521 - 5021 P

PM 4022 - 4522 - 5022 P

PM 4023 - 4523 - 5023 P

PM 4024 - 4524 - 5024 P

Original instructions in English

SERIE 4 - 4,5 - 5 P

- G108 -

INSTRUCTION AND WARNINGS

Valid with the serial number

G.108.0001

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1.1 - Purpose of the manual

The instructions manual contains information which is essential for the correct use of the crane (1) (hereinafter also referred to as the machine).

Its purpose is to inform the operator (2) of the instructions to follow and the fundamental criteria to apply in all machine use or maintenance operations.

Before starting up the machine for the first time, the operator must have read and understood the instructions contained in this manual, in particular those highlighted with the various symbols.

The manual is an integral part of the machine and must always be kept with it for future reference until it is scrapped.

If the machine is resold, the seller is bound to provide the new owner with the manual.

The information contained herein is arranged in chapters, in a sequential order according to subject matter.

The indexes, both alphabetic or analytic, allow the user to refer to the different subjects quickly and easily.

The original instructions are supplied by the manufacturer in english language.

To fulfil legal or commercial requirements, the original instructions may be supplied by the manufacturer in other languages.

It is strictly forbidden to use the manual for anything other than the machine's use and maintenance.

1.2 - Manufacturer's details and machine identification data

- Manufacturer's details

PM Group S.p.A.

Via Verdi, 22

41018 San Cesario sul Panaro - Modena (Italy)

tel. +39 059 936811

fax. + 39 059 936800

e-mail: info@pm-group.eu

(1) The term "crane" refers to the trade name given to the machine (from the crane series) stated on the title page.

(2) The term "operator(s)" refers to the person(s) possessing the necessary expertise to use, inspect and carry out routine maintenance on the machine.

- Machine identification data

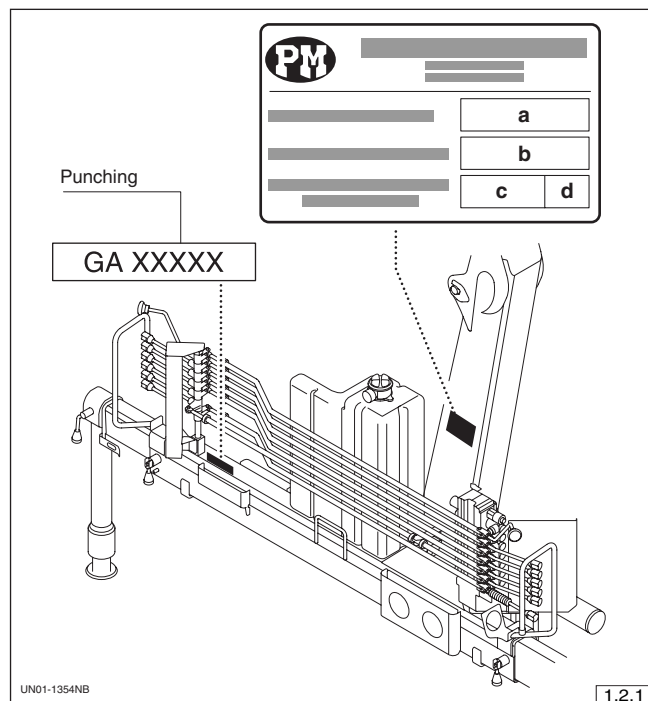


Plate details

- a** = Crane model
- b** = Serial number
- c** = Year of manufacture
- d** = Conformity "CE" stamp

1.2

1.3 - Symbology

The symbols used in this manual are intended to highlight potentially hazardous operations.

To guarantee safe working conditions, the instructions highlighted by these symbols must always be followed.



HAZARD !

This indicates information or procedures which, if not complied with exactly, cause death or serious injuries.



WARNING !

This indicates information or procedures which, if not complied with exactly, could cause death or serious injuries.



CAUTION !

This indicates information or procedures which, if not complied with exactly, could cause slight injuries or damage to the machine.



Information

This indicates useful and important information or procedures.



WARNING !

For the sake of clarity when outlining procedures to carry out, some illustrations show the machine with the guards, casings or panels removed.

Never use the machine without all the casings and guards in place.

1.4 - Technical service

Technical service requests must be addressed to the manufacturer's Technical Assistance Service (T.A.S.) or to the nearest Authorised Workshop.

1.5 - Enclosed documentation

- "EC" conformity declaration
- Warranty booklet
- Machine certificate of origin (only for markets requiring it).

1.6 - Disclaimer

The manufacturer is relieved of all responsibility in the event of:

- failure to follow the instructions either partly or in full;
- misuse of the machine;
- unauthorised alterations or work carried out on the machine;
- failure to comply with the highway code and regulations concerning transportation when moving the machine from one site to another;
- lack of maintenance;
- use of non-original spare parts or those which are not designed specifically for the model;
- exceptional weather conditions.

2 Technical information

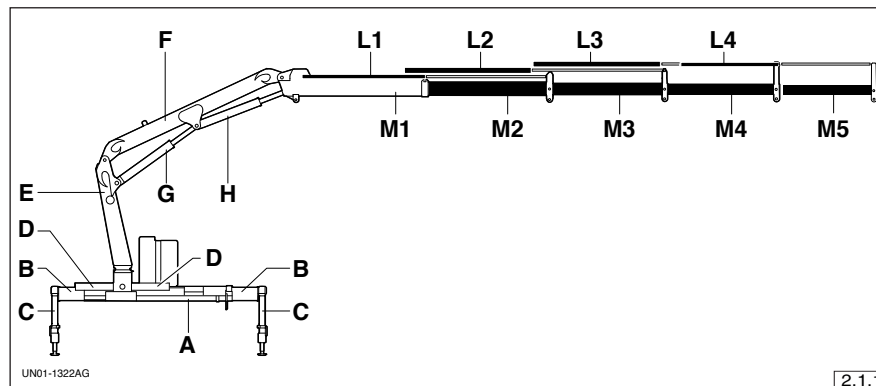
2.1 - Description of the crane

The crane is composed of a base inside which there is a rotating column with a system of articulated arms at its end.

The crane is driven by hydraulic energy generated by a motor and a pump.

This crane series is available in various models, which differ mostly in the number of extendable arms.

2.1.1 - Basic crane main parts



Key to the main parts

Ref.	Part	4021 4521 5021 P	4022 4522 5022 P	4023 4523 5023 P	4024 4524 5024 P
A	Base	•	•	•	•
B	Stabiliser arm	•	•	•	•
C	Stabiliser jack	•	•	•	•
D	Rotation jack	•	•	•	•
E	Column	•	•	•	•
F	Main arm	•	•	•	•
G	Main jack	•	•	•	•
H	Secondary jack	•	•	•	•
L1	1st arm extension jack	•	•	•	•
L2	2nd arm extension jack		•	•	•
L3	3rd arm extension jack			•	•
L4	4th arm extension jack				•
M1	Secondary arm	•	•	•	•
M2	1st hydraulic extension arm	•	•	•	•
M3	2nd hydraulic extension arm		•	•	•
M4	3rd hydraulic extension arm			•	•
M5	4th hydraulic extension arm				•

2.2 - Conditions of use

2.2.1 - Designated use

The crane is designed for the vertical lifting, handling and positioning of free loads (3), in compliance with the values given in the capacities diagram and handling speeds not exceeding the maximum prescribed limits (see specifications).

The cranes are designed in compliance with harmonised standard EN 12999, class H1-B3, which provides for non-continuous use, with a hook, for a maximum of 400 lifting cycles per week and a load equalling 3/4 of the load indicated in the relative diagram.

To use the machine with loads other than those for which it is designed, it is the user's responsibility to first contact an authorised workshop to check whether a downgrade is necessary.

2.2.2 - Inadmissible uses

It is forbidden to use the machine in areas where there is a risk of fires or explosions.

It is forbidden to use the crane to pull out poles, uproot trees and lift fixed loads.

It is forbidden to use the machine to lift people, with the exception of cases in which the crane is fitted with a specially designed operator's platform approved by the manufacturer.

It is forbidden to use the crane with fixed load-hoisting accessories such as hooks, bucket, grabs etc unless the accessories are authorised by the manufacturer.

It is forbidden to use the machine as a recovery means for towing broken-down vehicles.

It is forbidden to drag or push loads.

Before performing a rotation manoeuvre, the load must be lifted off the ground.

It is forbidden to lift the base truck with the stabilisers to change the tyres.

It is forbidden to lift the base truck with the stabilisers in order to move the vehicle if stuck in areas of loose ground.

It is forbidden to fit removable clamping accessories such as jibs, manual extensions etc if:

- ◆ they are not approved by the manufacturer;
- ◆ they are not designed specifically for the model in question.

(3) The term "free load" means loads whose movement is not limited.

2.3 - Safety devices



HAZARD !

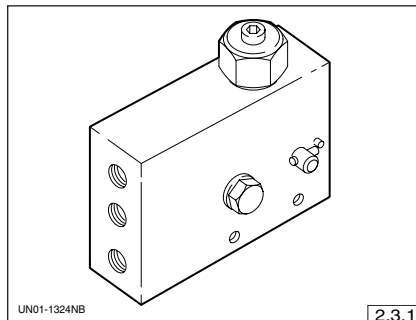
Never tamper with any of the safety devices.



Information

The safety devices on the accessories are outlined in the paragraph describing each accessory.

2.3.1 - Load limiting device (PM 4,5 - 5 P series)



The load limiting device automatically prevents loads exceeding the nominal load to be handled in order to safeguard the structure and stability of the crane-truck set.

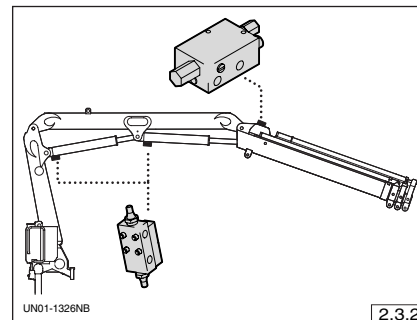
Only manoeuvres to bring the load nearer to the column axis are permitted.



Information

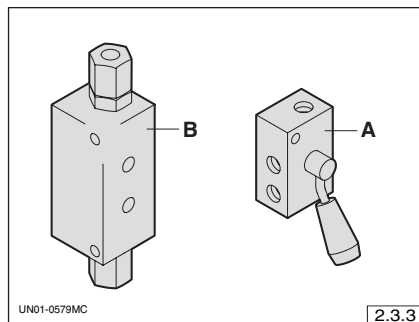
The presence of the load limiting device does not relieve the operator of the responsibility for ensuring the maximum loads are not intentionally exceeded.

2.3.2 - Load support valves



These prevent the loads dropping unexpectedly to the ground as a result of a broken line or a sudden pump failure.

2.3.3 - Stabiliser valve



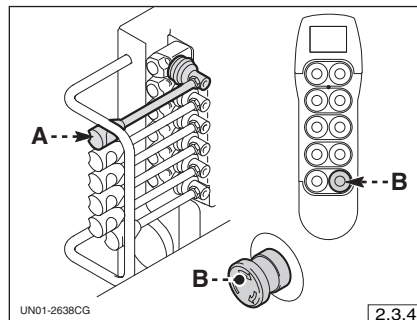
A - Lock-out valve with cock

B - Lock-out valve

This is fitted on each of the crane's stabiliser jacks.

It locks the stabiliser jack (in the position it is in at that precise moment) in the event of a broken line or that the oil delivered to the jack is suddenly cut off.

2.3.4 - Emergency stop device



A - Safety lever

B - Emergency stop and transmitter unit off button (PM 5 P series).

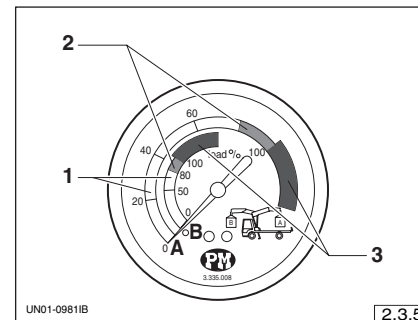
Use the device to stop all the crane's movements in the event of an emergency. Reposition the lever "A" to switch the crane to operative mode or switch on again the transmitter unit (PM 5 P series).



WARNING !

Remove or eliminate the hazardous situation before restoring the crane to its operative condition.

2.3.5 - Load gauge (PM 4 - 4,5 series)



This displays the correct load in all the work areas.

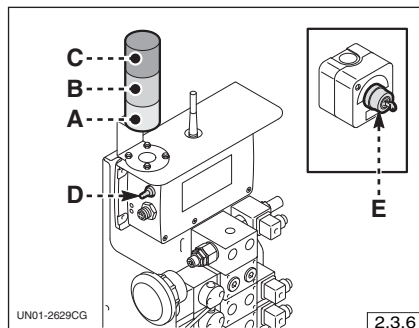
A - Scale for work area with full load

B - Scale for work area with limited load (not active on this model)

The scales are subdivided into coloured sectors showing:

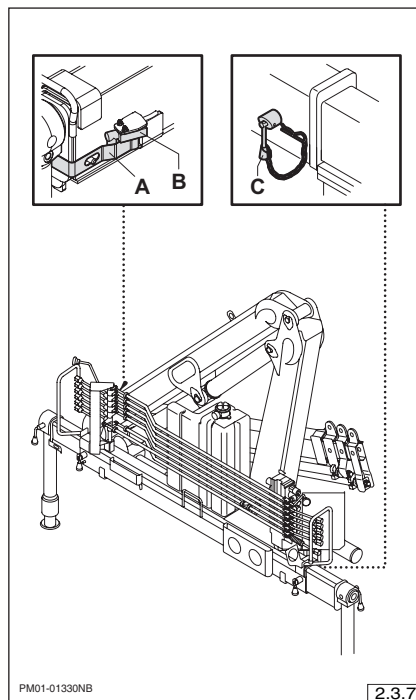
- 1) green section = loads within the values stated on the load diagrams
- 2) orange section = load limit
- 3) red section = load exceeds load diagram values - crane lock.

2.3.6 - Signal lights (PM 5 P series)



- A** - green light.
This signals that the receiver unit has been activated (see "Description of controls and signal lights on wireless control"):
- with selector "D" in "REMOTE" position for radio controls "SCAN-RECO";
 - with switch "E" in "Radio" position for radio control "HETRONIC".
- B** - orange light.
This signals that 90% of the load that can be lifted is reached.
- C** - red light.
This signals that 100% of the load that can be lifted is reached.

2.3.7 - Safety devices for travelling on public roads



The devices keep the crane within the vehicle's profile when travelling on public roads.

- A** - automatic device to prevent the extension of the outrigger arms;
- B** - microswitch to control the automatic device "A";
- C** - mechanical device to prevent the accidental extension of the outrigger arms.

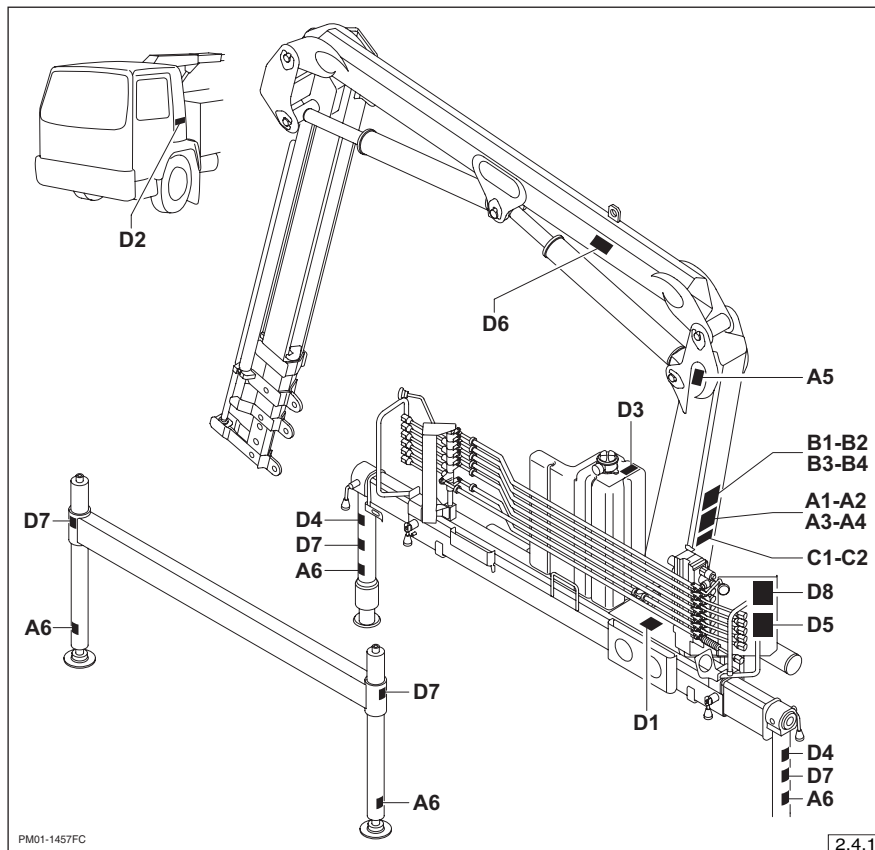
2.4 - Safety recommendations and information



WARNING !

Always comply with the safety recommendations on the plates.

Check that the plates are always present and legible; if not replace them with new ones in the same position.



2.4.1

- Hazards signs



A1 = Risk of electric shocks (*).

Always keep a safe distance from electricity lines.



A2 = Risk from overhanging loads (*).

Take care not to walk or stand under overhanging loads.



A3 = Dangerous manoeuvre signal (*).

Operate the crane so that it opens and closes on the opposite side to the trajectory travelled by the main arm.



A4 = Obstacle risk signal (*).

Watch out for max. admitted heights when travelling on public roads.

(*) Signals grouped together on one plate.



A5 = Risk of lacerations signal.

This indicates a risk of lacerations to the hands caused by moving parts.



A6 = Risk of crushing.

Lower limbs could be crushed by stabiliser jacks when in use, take care.

- Prohibition signs



B1 = No entry ().**

It is forbidden to both move around and stop in the crane's operating range.



B2 = Prohibited use ().**

It is forbidden for unauthorised persons to use the machine.



B3 = No water jets ().**

It is forbidden to use pressurised water on the electrical components.



B4 = Prohibited use ().**

Use of the machine is prohibited if the stabilisers have not been positioned correctly.

(**) Signals grouped together on one plate.

- Obligation signs



C1 = Instruction Manual plate (*)**.

This indicates that the operator must read the instruction manual carefully before using the machine.



C2 = Individual safety gear plate (*)**.

This indicates that the user is under obligation to wear the safety helmet when operating the machine.

(***) Signals grouped together on one plate.

- Information signs



D1 = Dead centre indication plate.

Shows the side at which the crane rotation, both clockwise and anti-clockwise, ends.



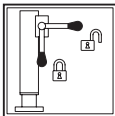
D2 = Power takeoff plate.

Reminds the operator to switch off the power takeoff during transfers.



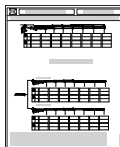
D3 = Oil tank plate.

Indicates the hydraulic oil tank.



D4 = Lever position plate on outrigger valve.

This shows the position the lever must be in to enable movement of the free or locked jack.



D5 = Capacities diagram plate.

This shows the performance of the machine and accessory when present.



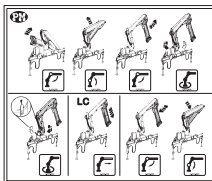
D6 = Hoisting points plate.

Indicates the hoisting hooks attachment points.



D7 = Max. stabiliser pressure signal.

Make sure the pressure on the ground does not exceed the max. limit stipulated.



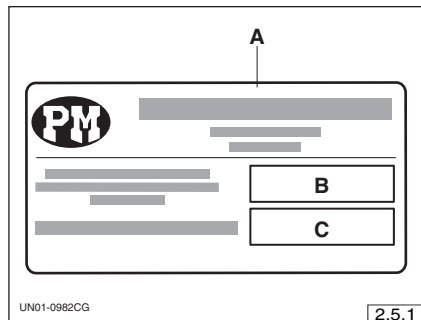
D8 = Crane opening/closing plate.

Indicates the order of the actions to set the crane in the working or resting positions.

2.5 - Accessories

2.5.1 - Additional crossmember

- Identification detail

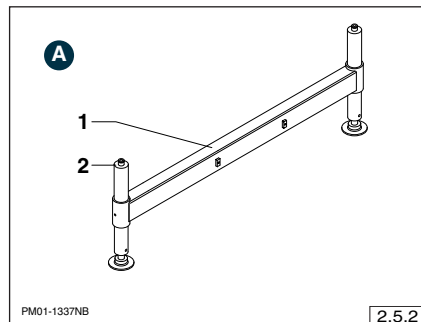


- A)** Manufacturer identification
B) Additional crossmember model
C) Number of manufacture

- General description

The additional crossmember is only fitted when the crane's stabiliser jacks alone cannot guarantee the crane/truck unit's stability.

- Main parts



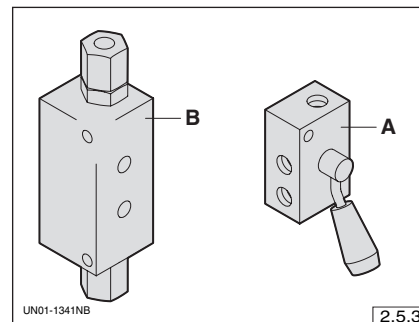
- 1** - Crossbeam
2 - Stabiliser jack

- Installable crossbeams

- A** - Fixed crossbeam

- Safety devices

Stabiliser valve

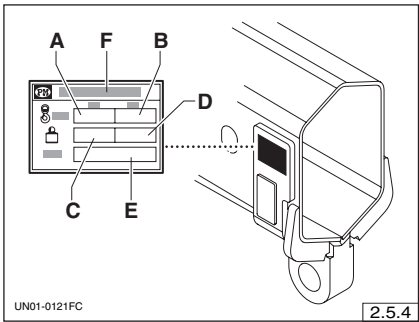


- A** - lock-out valve with cock
B - lock-out valve

This is fitted onto each outrigger jack. It locks the stabiliser jack (in the position it is in at that precise moment) in the event of a broken line or that the oil delivered to the jack is suddenly cut off.

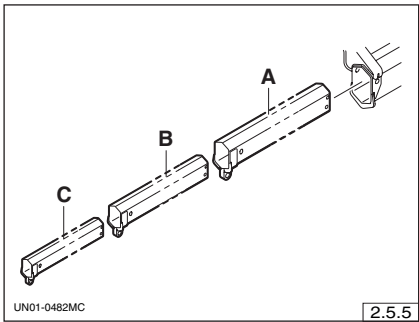
2.5.2 - Manual extensions

- Identification details



- A) Max. admissible design capacity (kg)
- B) Max. admissible design capacity (lbs)
- C) Extension weight (kg)
- D) Extension weight (lbs)
- E) Identification code
- F) Manufacturer

- Installable extensions

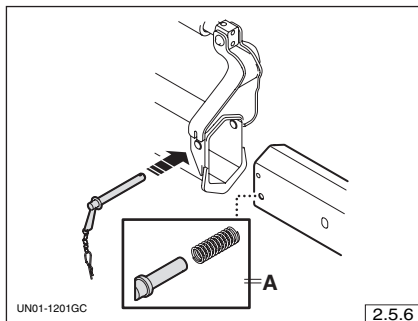


Manual extensions on basic machine

Pos.	Model				Weight kg (lbs)
	4021 4521 5021 P	4022 4522 5022 P	4023 4523 5023 P	4024 4524 5024 P	
A	•	-	-	-	25 (55)
B	•	•	-	-	17 (38)
C	•	•	•	-	10 (22)

- Safety devices

Safety pin



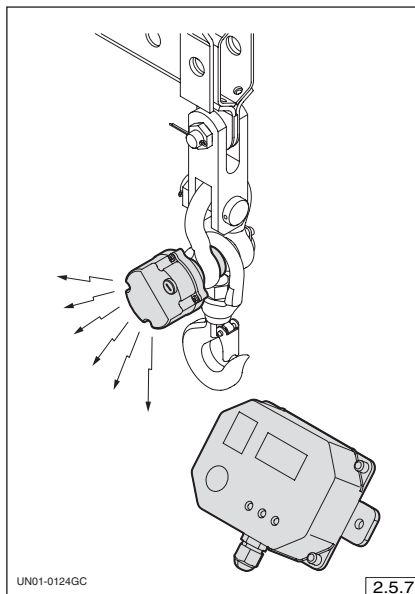
Device “A” prevents the extension dropping to the ground accidentally during its extension.



WARNING !

The device is not scaled to withstand hoisting loads, therefore each extension must be locked in position (extended or retracted) with the relative safety pin.

Manual extension load limiting device (available on request)



This prevents manual extension overloading (see para. “Use of the load limiter for manual extensions”).

2.6 - Noise level

Tests carried out have measured a sound pressure level below 70 Db (A).

The tests have been carried out without considering the power source (vehicle's engine) as it is not part of the supply.

The installer should ask the truck's manufacturer for information about the noise level and transfer the said information to the operator.

2.7 - Vibrations

Vibration effects on the operator are considered not significant as the machine is used for short periods of time.

2.8 - Gas emissions

- Gases produced by the combustion of the fuel used by the truck endothermic engine.
- Fuel vapours emitted during refuelling.

2.9 - Electromagnetic compatibility

All the machine's components which are subject to the Directive on electromagnetic compatibility comply with the said directive.

2.10- Residual dangers

Dangers of a mechanical nature.

Contact with the articulated parts of the machine could result in limbs being crushed or lacerated.

Dangers of thermal nature.

Contact with the machine's hot parts could result in burns.

Fire hazard.

Fuel leaking from the tank, during use or when refilling, can create a fire hazard.

Risk of fluid ejection at high pressure.

The breakage of a pipe or blow-by under oil pressure could create risk of lesions and skin infections.

Risk of slipping and falling.

Oil, grease, snow and ice on the entrance steps of the maneuvering stations and on the work platform floor can cause the operator to slip and fall.

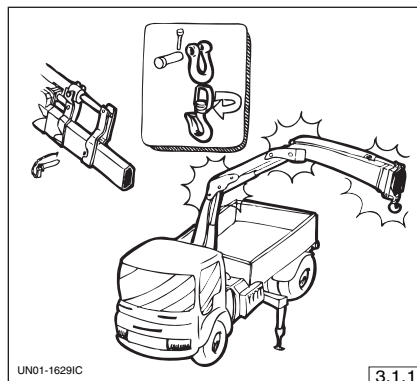
3 Safety

3.1 - Safety regulations



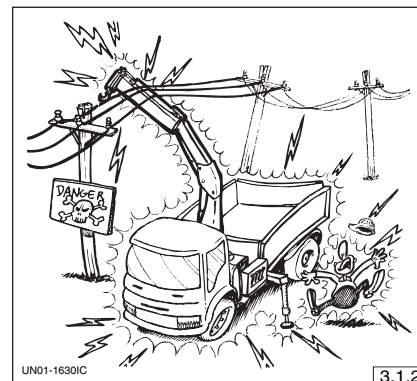
WARNING !

Read the instructions contained in this manual carefully, in particular those concerning safety and the signs affixed to the machine.



Before operating the crane

- ◆ Check the degree of wear of the accessories' lock pins;
- ◆ make sure the hook is fitted with a nut and that it rotates freely without excess play;
- ◆ make sure the hook is fitted with the safety device to prevent cables being released accidentally and that the said safety device is intact;
- ◆ carefully check the load harnesses and the chains, cables and straps are in good condition and that they are suitable for the load to be lifted;
- ◆ make sure the hoses are in good condition and that no oil leaks are present.



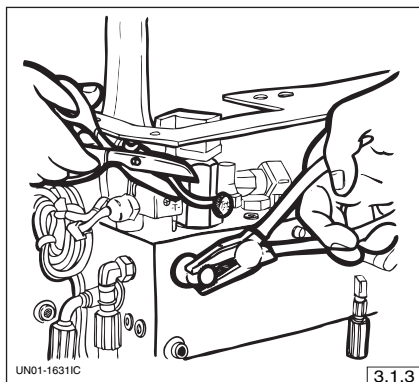
HAZARD !

Do not operate the machine in the vicinity of power lines.

To operate the crane in the vicinity of power lines, always refer to your superiors or the competent authority for special instructions.

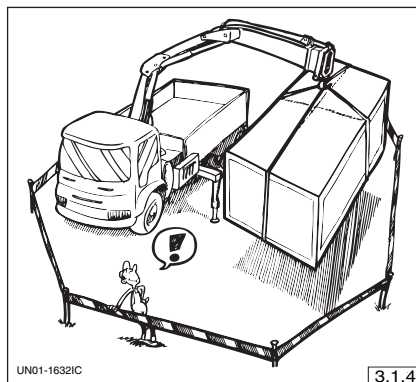
Obtain clear instructions regarding the way in which the work must be carried out. Said procedures must be studied for each particular situation and complied with exactly.

When carrying out maintenance work on power lines, you are advised to connect the metal parts on the vehicle to the earth, observing the relative regulations in force.



WARNING !

Do not remove the lead seals on the valves.



Cordon off the work area to prevent access by unauthorised persons. The operator must ensure no-one stops or moves around in the work area.

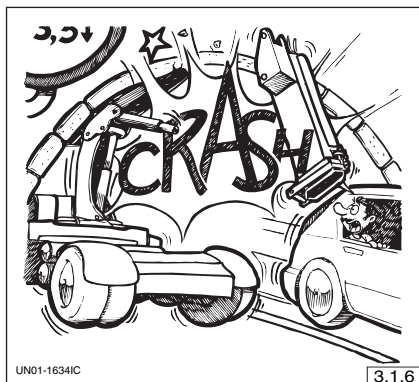


HAZARD !

It is strictly forbidden to move the load over the vehicle's manoeuvring area.

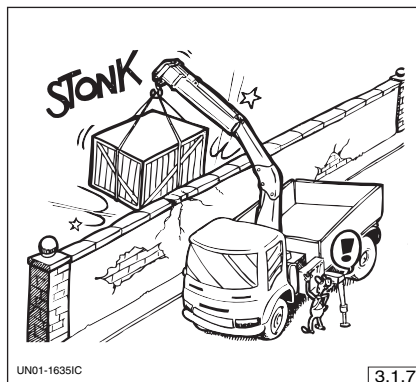
When this is unavoidable, operate the machine using the controls on the opposite side, assisted by other personnel on the ground to perform the necessary manoeuvres, or use suitable accessories provided for this purpose, such as:

- remote controls
- raised seat
- raised control station.

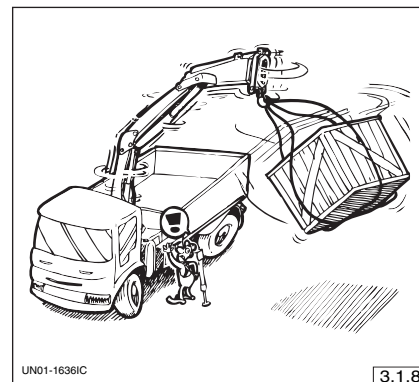


WARNING !

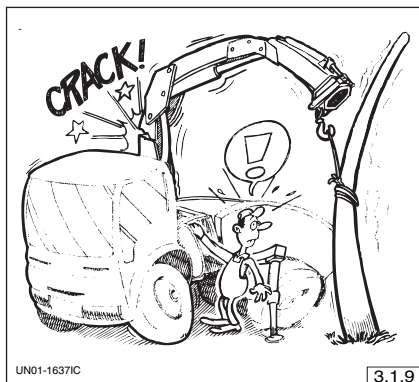
Always follow the Highway Code, in particular with regards to height limit signs.



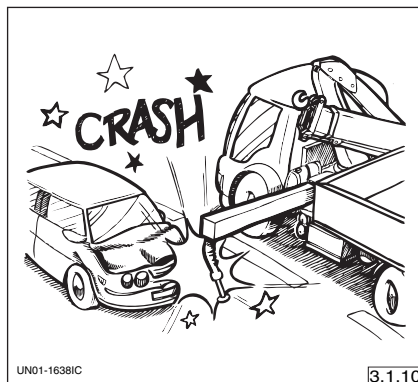
Do not operate the crane in poor visibility conditions. The operator must always have a perfect view of the work area.



Use short harnesses and operate the levers smoothly and gently to prevent the load swinging dangerously.

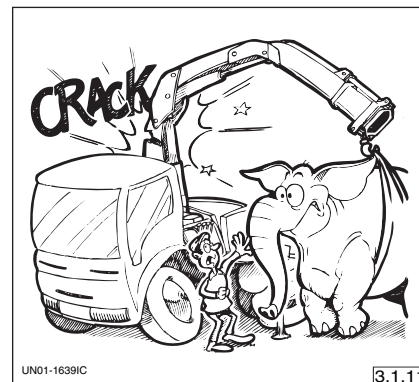


Do not use the crane to remove poles, uproot trees or lift fixed loads.



WARNING !

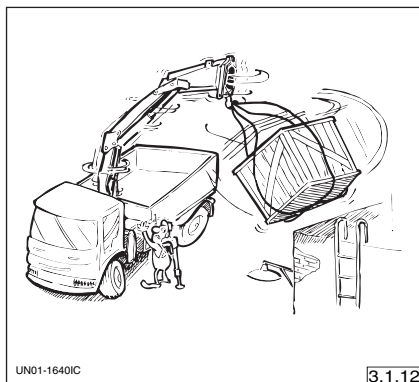
Before driving the vehicle, ensure all the lock devices are engaged.



WARNING !

Never lift loads exceeding the limits stipulated in the loads diagrams.

Make sure the loads are less than those indicated on the diagrams in relation to the outreach.



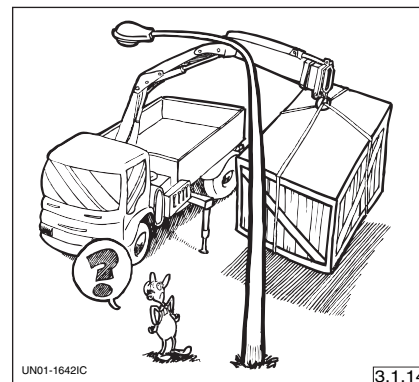
HAZARD !

Never swing the load to place it beyond the permitted outreach indicated in the load diagram.



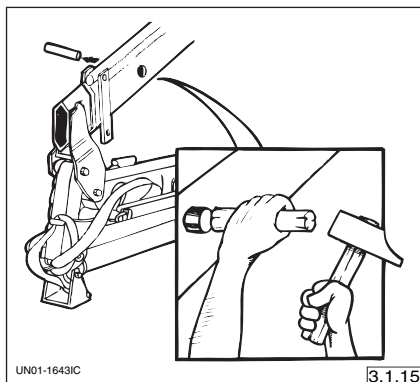
WARNING !

Never drag loads, lift them upwards.



WARNING !

In the presence of objects obstructing the crane's range of action, take precautions to prevent collisions.



WARNING !

When fitting and removing the accessories' lock pins, use equipment made of soft materials to prevent the risk of being hit by flying splinters caused by the striking of the tool.



WARNING !

Never use the crane during a storm.



HAZARD !

It is forbidden to operate the crane when the wind reaches a speed of 10.8 m/s (grade 6 on the Beaufort scale).

To calculate the wind speed, please refer to the table below.

- Beaufort scale -

Wind force		Wind speed		Effect of the wind on land	
Beaufort number	Description of the wind	m/s	Km/h (Mp/h)		
0	Calm	from 0 to 0,2	1 (0)	Calm, smoke rises straight up	
1	Light air	from 0,3 to 1,5	from 1 to 5 (from 1 to 3)	Wind direction indicated by the movement of smoke only, not by the weathervane	
2	Light breeze	from 1,6 to 3,3	from 6 to 11 (from 4 to 7)	Wind can be felt on the face, leaves rustle, weathervane moves	
3	Gentle breeze	from 3,4 to 5,4	from 12 to 19 (from 8 to 12)	Leaves and small branches move, pennants unfold	
4	Moderate breeze	from 5,5 to 7,9	from 20 to 28 (from 13 to 18)	Wind lifts dust and loose paper, moves branches and thin poles	
5	Fresh breeze	from 8,0 to 10,7	from 29 to 38 (from 19 to 25)	Small broadleaves begin to wave, slight foam appears on lakes	
DANGER!	6	Strong breeze	from 10,8 to 13,8	from 39 to 49 (from 25 to 31)	Poles move greatly, whistling along telephone lines, use of umbrellas is difficult
	7	Near gale	from 13,9 to 17,1	from 50 to 61 (from 32 to 38)	All the trees move, it is very difficult to move against the wind
	8	Gale	from 17,2 to 20,7	from 62 to 74 (from 39 to 46)	Tree branches are broken, walking in the open air is particularly difficult
	9	Strong gale	from 20,8 to 24,4	from 75 to 88 (from 47 to 55)	Slight damage to houses (chimney pots and roof tiles are blown off)
A	10	Storm	from 24,5 to 28,4	from 89 to 102 (from 56 to 64)	Trees are uprooted, considerable damage to houses

3.2 - Operator's qualifications and behaviour

The use of the crane is restricted solely to personnel meeting the following minimum requirements:

- ◆ specifically employed personnel;
- ◆ apprentices under direct supervision of the specifically employed personnel;
- ◆ staff members employed for the machine's maintenance and testing (when their skills are required);
- ◆ crane inspectors.

Only the persons listed above may access the crane's work area, and only for the purpose of fulfilling their functions. In any case, they must always advise the operator or person in charge of their presence.

- Operator's qualifications

To operate the crane, the following requirements must be met:

- ◆ possession of the necessary psychophysical qualities to ensure the operator is neither a risk to himself or to others;
- ◆ ability to understand the descriptions and illustrations in the instructions manual (including the figures and diagrams contained therein) and the symbols and instructions on the plates affixed to the machine;
- ◆ familiarity with and ability to implement the emergency procedures;
- ◆ ability to operate the machine as a whole, together with any accessories applied;
- ◆ experience of the applicable safety regulations.

- Operator's behaviour

The operator must not:

- ◆ engage in any other activity which may distract him while operating the crane;
- ◆ operate the machine in a state of drunkenness or when under the influence of drugs which may reduce either physical or mental abilities;
- ◆ leave the crane unattended with the load hanging;
- ◆ use the machine in the event of malfunctions.

4 Handling, lifting and fitting

4.1 - Handling and lifting



WARNING !

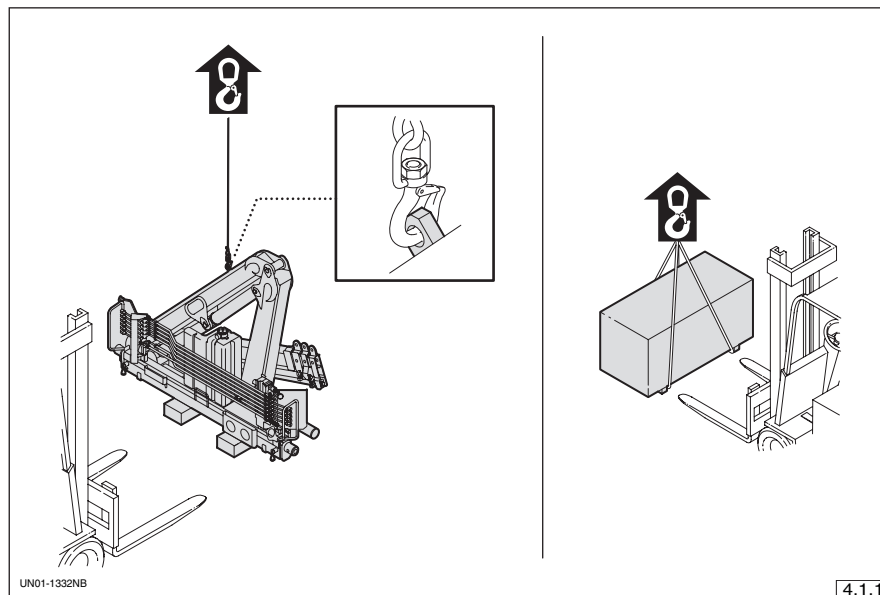
Always use lifting means which are suitable for the load to be lifted and handled.

When lifting from above be careful as, since the lifting point is never perfectly baricentric, the crane may swing.

They type of packing must be chosen according to the means of transport and the destination of the goods.

The crane is normally dispatched placed on two wooden beams with the stabilisers facing upwards or disassembled and placed in a box with the equipment used to fit the crane on the base truck.

For packaging which differs from that shown in the manual, follow the instructions and the symbols applied to the



packing itself.

Before lifting the packed unit, check the weight of the crane in the “Enclosures” section.

4.2 - Storage

Normally, the crane accessories and other equipment supplied are dispatched wrapped in a protective sheet which must be removed before they are fitted.

However, in the event of long periods during which the unit will be not be used, provide a suitable cover and store it indoors to protect it from the weather. The storage area must not be excessively damp or dusty. The room temperature must be between -20 °C (-4 °F) and +70 °C (+158 °F) with a maximum humidity level of 90%, with no condensation.

4.3 - Fitting

The installation of the crane on the vehicle and the inspections following installation required by the local regulations in force in each country must be carried out carefully following the information contained in the "Instruction and warnings manual for the installation of the crane on a truck" written by the company PM Group S.p.A.

All necessary information, including the "Instruction and warnings manual for the installation of the crane on a truck" is supplied to the crane owner only upon request sent by email to:

info@pm-group.eu

The fitting and any alterations to the vehicle required must comply with the regulations issued by the vehicle's manufacturer.

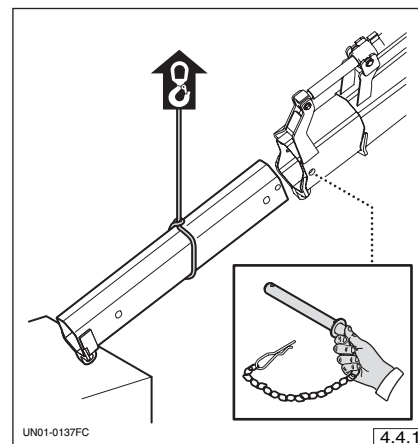
4.4 - Fitting the manual extension



WARNING !

The manual extensions must be fitted and removed one at a time in a sequential order.

After fitting, ensure the safety devices prevent the extension sliding out uncontrolled.



- 1 - Harness a lifting means to the extension the said means must be suitable in relation to the extension's weight. Rest the extension on a steady surface.

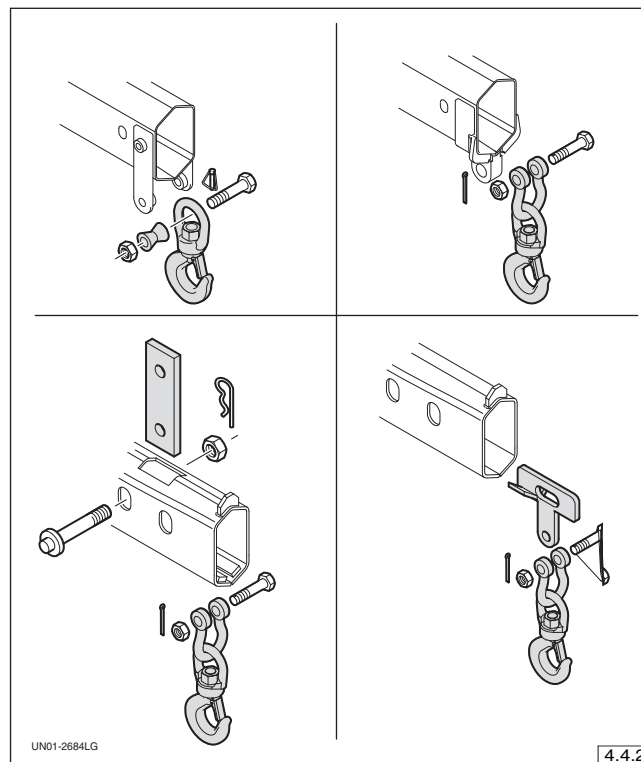
- 2 - Slide out the arms and insert the extension and so the pin holes are aligned.
- 3 - Lock the extension in position (either open or closed) with the relative safety pin.

To disassemble the extension, proceed as described for the assembly but in the reverse order.

Whenever possible, keep the arm pack angled towards the ground.

4.4.1 - Fitting the hook

Assembly type



WARNING !

The hook can only be fitted on the last extension extended.

5 Information about adjustments

All adjustments must be performed by an authorised workshop.

6 Usage instructions

6.1 - Controls

6.1.1 - Symbols

Crane stabilisers		Stabiliser activation
		Crane activation
Stabilisers		Stabiliser jack extension
		Stabiliser jack retraction
Column		Clockwise rotation
		Anti-clockwise rotation

Main arm		Lowering
		Lifting
Secondary arm		Lowering
		Lifting
Arms		Extension
		Retraction

Jib		Lowering
		Lifting
		Extension
		Retraction
Rotator		Clockwise rotation
		Anti-clockwise rotation
Grab		Grab opening
		Grab closing
Jib arms/winch (with multiple activate device)		- Jib lifting - Winch lowering
		- Jib lowering - Winch lifting

6.2 - Radio control

The radio control is composed of a portable transmitter unit for the operator and a receiver unit installed on-board the machine.

- Safety precautions

Do not operate the radio control if it is damaged or malfunctioning. Before using the radio control, check that the batteries are charged.

Do not position the load manually.

Do not leave the remote control unattended; otherwise the crane may be used by unauthorised persons.

Keep under constant control:

- work area;
- load trajectory;
- indicator light on-board the machine which show the lifting of 90% or 100% of the load.

Do not clean the remote control with a pressurised water jet or immerse it in water or any other type of liquid.

6.2.1 - "SCANRECO Handy" radiocontrol

- Technical data

- Batteries:
 - Rechargeable type A-A Ni-MH 1,2 V
- Protection grade: IP65.

Batteries

The effective duration of a battery is approx. 20 hours.

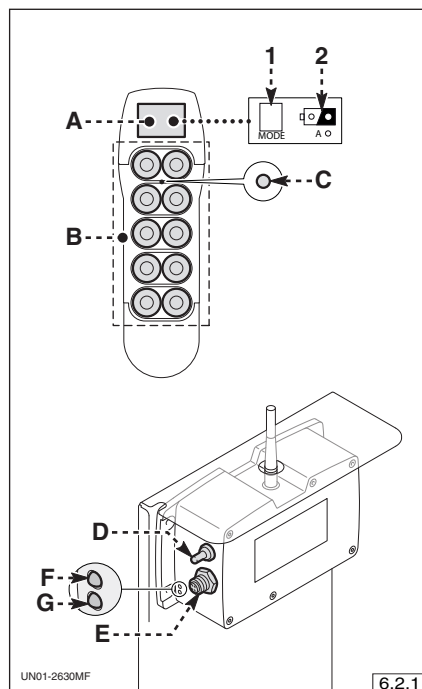
The charge level is shown on the display of the transmitter unit (see "Wireless control description").

The charging time required to charge the batteries when completely flat is about 2 hours.

Battery charger

Voltage of the battery charger supplied: 12 V / 24 V.

- Description of controls and signal lights on the wireless control



A - Display

This displays the operating mode “1” and the battery charge status “2”.

B - Buttons (see “Button description”).

C - Signal light (green light)

This signals that the transmitter unit is on.

D - Three stable position switch

This switches on and off the receiver unit.

- REMOTE position: the receiver unit is on.

- OFF position: the receiver unit is off.

- MANUAL position: the receiver unit is on and the transmitter unit is by-passed.

E - Socket

To connect the configuration unit of the receiver unit (only to be used by specialised personnel).

F - “DV” Signal light

This indicates the state of operation of the wireless control.

G - “Status” Signal light

This indicates the state of operation of the wireless control.

- Signal light signals

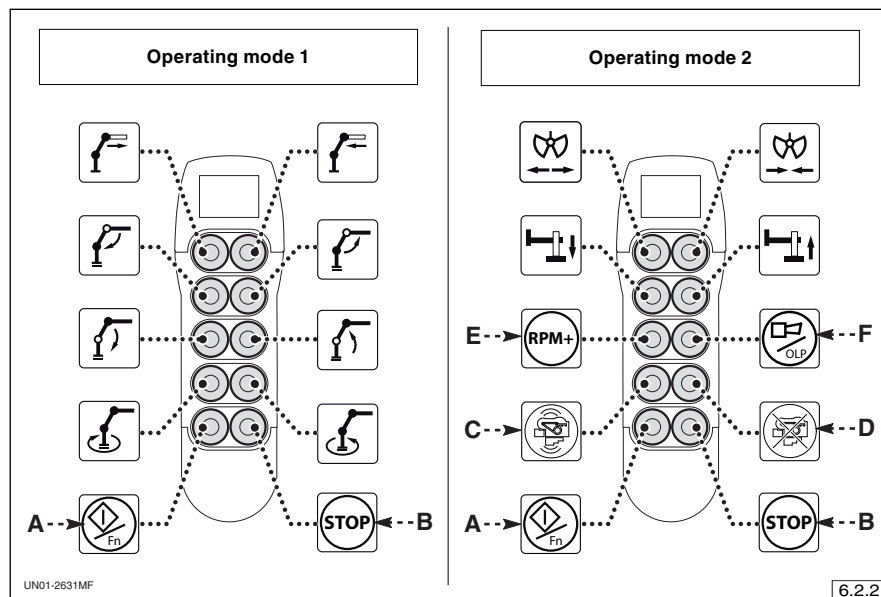
System on and transmitter unit off

Position selector “D”	Signal lights on
REMOTE	“Status” (red light)
MANUAL	“DV” (red light)

System on and transmitter unit on

Position selector “D”	Signal lights on
REMOTE (no button is pressed on transmitter unit)	“Status” (green light)
REMOTE (a button is pressed on transmitter unit)	“Status” (green light) “DV” (red light)

- Use of transmitter unit



i Information

Switch the transmitter unit on in the required operating mode with the transmitter unit switched off.

The transmitter unit can be switched on in the following modes:

- 1 - "Operating 1" mode
- 2 - "Operating 2" mode
- 3 - "Test" mode (*)
- 4 - "Assignment" mode (*)
- 5 - "Calibration" mode (*)

(*) = for use by specialised personnel only.

- Description of buttons in 1 - 2 "operative mode"

A - Button

to change the use of the transmitter unit.

B - Button

to switch off the transmitter unit.

C - Button

to start the vehicle engine.

D - Button

to stop the vehicle engine.

E - Button

to increase the engine's rpm.

F - Button

to activate the vehicle's horn and reset the "PLUS" (**) device.

(**) The "PLUS" (supplied only on cranes of the 5 P series) device automatically reduces the work speed and boosts hoisting capacity when the effect of the load on the outreach causes the pressure level to reach the device's trigger level.

- Switching on and off the transmitter unit (fig. 6.2.2)

To switch on the transmitter unit proceed as outlined below.

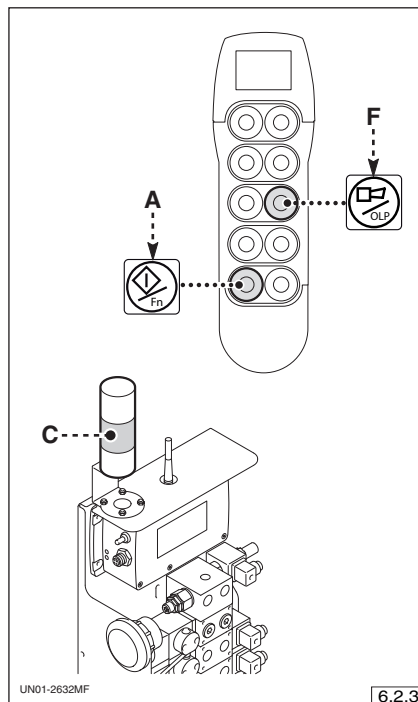
- 1) Press button "B" and keep it pressed.
- 2) Press and release button "A".
- 3) Release button "B". The transmitter unit will switch on in "Operating 1" mode.
- 4) Press button "A" and keep it pressed to activate "Operating 2" mode.
- 5) Release button "A" to return to "Operating 1" mode.

Every time button "A" is pressed, the activated operating mode will be displayed for 8 seconds.

To switch off the transmitter unit proceed as outlined below.

- 1) Press button "B".
- The transmitter unit will switch off.

- Use of the "PLUS" device



The "PLUS" device is automatically activated when 90% of the load that can be lifted is reached.

Signal light "C" (orange light) comes on.

To disable the "PLUS" device proceed as outlined below.

- 1) Move the load closer to the column so that the signal light "C" switches off.
- 2) Press button "A" and button "F" at the same time.

6.2.2 - Radiocontrol "SCANRECO"

- Technical data

- Power voltage: 7,2 Volts
- Battery:
 - Rechargeable Scanreco.
- Working range including obstacles: 100 m (ft 328).
- Protection grade: IP65.

Battery

The effective duration of a battery is approx. 8 hours.

The intermittent switching on three times of a buzzer and the intermittent switching on of the indicator light "M", indicate that the battery is nearly flat.



Information

Only replace the battery when the flashing "M" indicator light switches off.

Battery charger

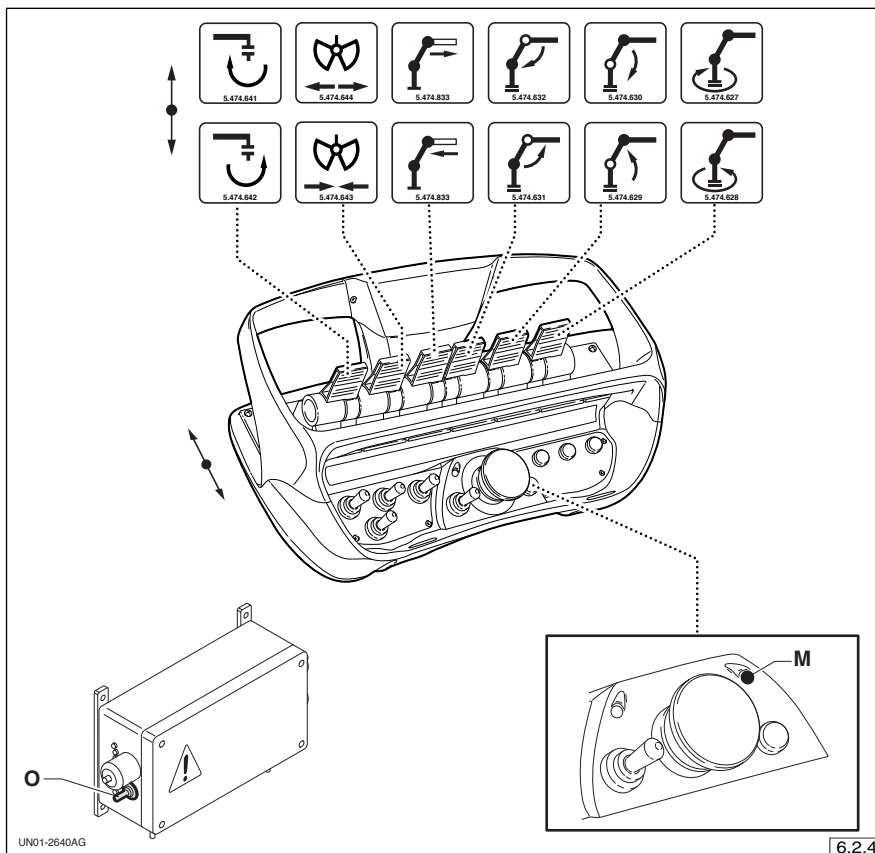
Charge voltage of the battery charger supplied: 11 Vcc - 30 Vcc.

The recharging time of a completely flat battery varies from 12 to 14 hours.

Battery charger indicator lights

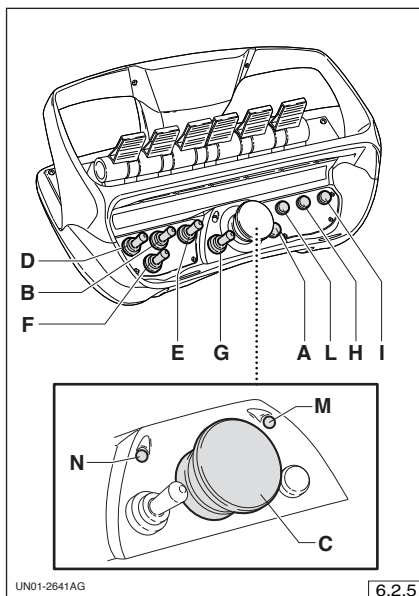
- The red indicator light signals the presence of electricity supply to the charger.
- When the green indicator light is on, the battery is being recharged.

- Controls



UN01-2640AG

6.2.4



A - Switching on the transmitter unit

The button has two functions:

- I) radio control ON;
- II) buzzer.

B - Start-up/stop

Click the switch to start up or stop the vehicle engine.

C - Emergency stop button

Rotate the button to activate the crane.

D - "RPM" activation

Click the switch to place the engine rpm in automatic or manual mode.

E - Accelerator

Click the switch to vary the engine rpm of the vehicle. It only works with switch "D" in manual.

F - Switch

Not active.

G - Speed switch

The switch activates and deactivates the functioning speed of the crane.

Press repeatedly.

Each time it is pressed corresponds to a different crane speed.

Up to five different speeds are possible.

The speed chosen is indicated by the number of flashes of the indicator light "N".

Click the switch once only (in the off direction) to reset the normal functioning speed.

H - Button

Not active.

I - "Plus" reset button

L - Function button (F1)

Not active.

M - Indicator light

Red.

When on, it indicates that the transmitter unit is switched on.

N - Indicator light

Green.

When on, it indicates the different functioning speeds of the crane (see speed switch).

O - Three-setting switch (fig. 6.2.4)

Remote: the ECU is activated.

Off: the ECU is switched off.

Manual: the ECU is activated, the receiving unit is switched off.

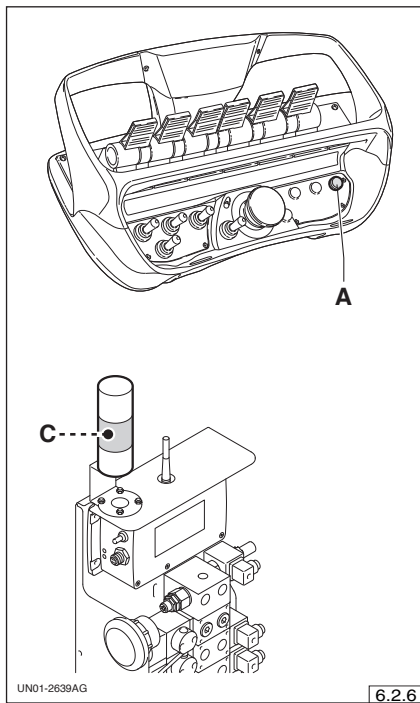
- Switching on the radio control

- Release the emergency button "C".
- Press button "A" fig. 6.2.5.

- Switching off the radio control

- Press the emergency button "C".

- Use of the “PLUS” device



The “PLUS” device is automatically activated when 90% of the load that can be lifted is reached.

Signal light “C” (orange light) comes on.

To disable the “PLUS” device proceed as outlined below.

- 1) Move the load closer to the column so that the signal light “C” switches off.
- 2) Press button “A” and button “F” at the same time.

6.2.3 - "HETRONIC" radio control

- Technical data

- Power voltage: 3 Volts
- Batteries:
 - Rechargeable with Ni-Mh or Ni-Cd accumulators, 3,9 Volts;
 - Stylus/miniature type alkaline 2x1,5 Volts or 3x1,5 Volts.
- Working range including obstacles: 100 m (ft 328).
- Protection grade: IP65.

The radio control is equipped with two safety devices which are automatically triggered in the following cases:

- a) if the work area is disturbed by a signal which effects the radio control's frequency range;
- b) the radio control is out of the transmitting unit's range.
In this case, the radio control switches to emergency mode and stops the crane operating.

Battery



Information

Use alkaline batteries only.

The power supplied by zinc-carbon batteries is insufficient.

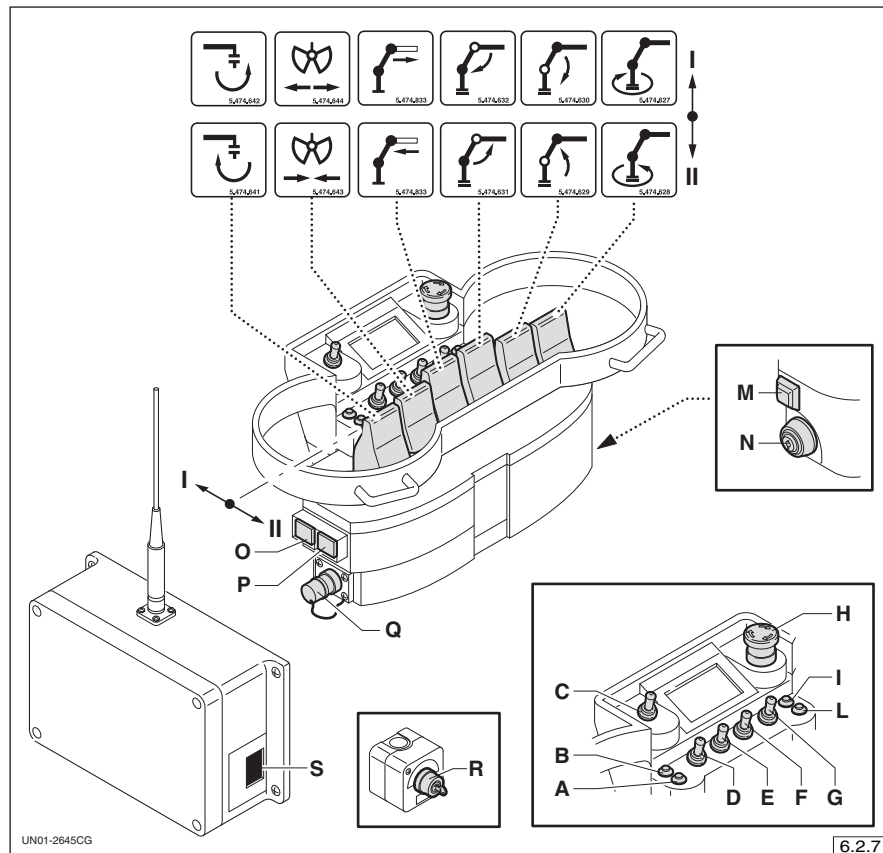
Battery charger

Charge voltage of the battery charger supplied: 12 V / 24 V.

Battery charger indicator light

- When the signal light is switched on, this means the battery charger is live.
- When charging, the signal light should always remain on.
- As soon as the battery charging is complete, the signal light will flash.

- Controls



Information

The fig. 6.2.7 symbology illustrated controls order can be on request inverted.

A - Signal light (fitting only)

Not active.

B - Signal light (fitting only)

Not active.

C - Control commutation switch

Not active.

D - Switch ("RPM + / RPM -")

Flick the switch to vary the engine rpm of the vehicle.

E - Speed/F3 function key switch

Activate to enable or disable the crane operating speed or the optional F3 function key.

F - Start/stop switch

Flick the switch to start up or stop the vehicle engine.

G - F1 and F2 functions switch

Activate to enable or disable the optional F1 or F2 functions.

H - Emergency stop button

See "Safety devices".

I - Indicator light

Not active.

L - Indicator light

When on:

- with a green light, this shows the radio-control is operating normally;
- with a red light, this shows the transmitter unit batteries are flat.

M - Remote control enable

The button has two functions:

- 1) enables the radio control operation;
- 2) sounds to alert the operator that the radio control is switched on.

N - On switch

O = Transmitter unit is switched off

I = Transmitter unit is live

P = Programming accessible by specialised technical staff only

O - Button

Not active.

P - "Reset" button

The button, used in combination with each single load lowering control command, moves the crane from a blocked situation in which all the controls are inhibited (see function reset with "3-30").

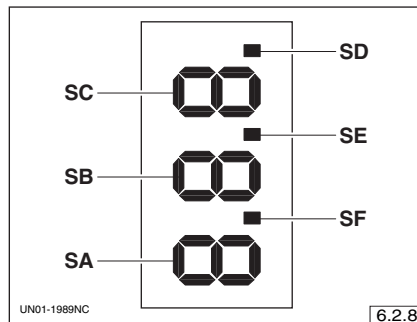
Q - Cable connector

Connection for use of the transmitter as a cable control.

R - Receiver unit ON switch

Hand/Manual position = manual control function activated;

Radio position = radio-control function activated.

S - Display

The display shows all the radio-control operation information.

- Alphanumeric fields

SA: shows which lever on the transmitter unit has been operated;

SB: only active during system programming carried out by specialised personnel;

SC: displays the radio-control operating status (see chart below).

- Key

Pos.	Code	Description
SA	E	Transmitter unit lever operating error. Switch the transmitter unit off then on again; if the code is still displayed, operation is inhibited
	1	Joystick 1 operation
	2	Joystick 2 operation
	3	Joystick 3 operation
	4	Joystick 4 operation
	5	Joystick 5 operation
	6	Joystick 6 operation
	7	Joystick 7 operation
	8	Joystick 8 operation
SB		System codes: these are only displayed during system programming. For use by specialised personnel only
SC	0	Radio-control activated: all manoeuvres are enabled.
	1	Receiver unit powered correctly. Radio signal present but radio-control not yet active.
	2	Emergency stop button pressed on transmitter unit.
	3	Warning message: insufficient radio signal reception.
	4	Receiver unit powered correctly but no radio signal: - transmitter unit switched off; - programming error (wrong radio channel or serial number).

- Points:

SD - flashing: correct radio signal reception.

SE - not active.

SF - flashing in conjunction with SD: during programming stage only.

6.12

- Switching on the radio control

- Turn the key on the receiver unit ON switch “R” (fig. 6.2.7) to the “RADIO” position.
- Turn the key on the transmitter unit ON switch “N” (fig. 6.2.7) to the “I” position.
- Press button “B” to activate the transmitter/receiver unit functions.

- Switching off the radio control

- Turn the key on the ON switch “N” on the transmitting unit (fig. 6.2.7) to position “0”.
- Turn the key on the receiver unit switch “R” to the “HAND / MANUAL” position.

6.2.4 - Radio control operation check

Before starting to work:

- check the batteries are charged;
- check the radio control is in good condition;
- check the rubber guards around the levers are in good condition;
- check the receiving unit connections are in good condition;
- check the connection pins on the receiving unit are tightened properly.
- Checking emergency stop device operation.

Press the emergency stop button, move the radio control levers in both directions and make sure that the crane movement is disabled.

Rotate the button to restore normal crane operation.

6.2.5 - Radio control stop due to power failure

In the event that the crane locks due to a flat battery, proceed as follows:

- I) switch off the transmitting unit
- II) replace the battery
- III) carry out the receiving unit start-up procedure.

6.2.6 - Radio control maintenance

For radio control maintenance, please refer to the instructions contained in the instruction manual provided by the radio control's manufacturer.

6.3 - Crane stabilisation

6.3.1 - Warnings

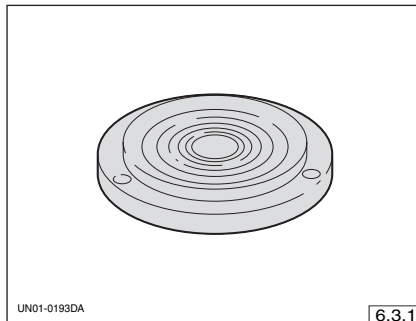


HAZARD !

The operator must know the maximum load that the stabiliser will apply to the ground (see "Enclosures") and must ensure that the ground consistency can guarantee the stability of the vehicle.

On ground that is not very solid, place the raised support plates or a hard wooden board of a suitable size between the stabiliser and the ground. Stabilise the machine by unloading the weight of the vehicle from the suspension without lifting the wheels off the ground, as this would cancel out the elastic effect of the suspension, causing it to tip over.

Check the correct levelling using the spirit level, which must be flat (0°) with a maximum tolerance of $\pm 1^\circ$.



6.3.1



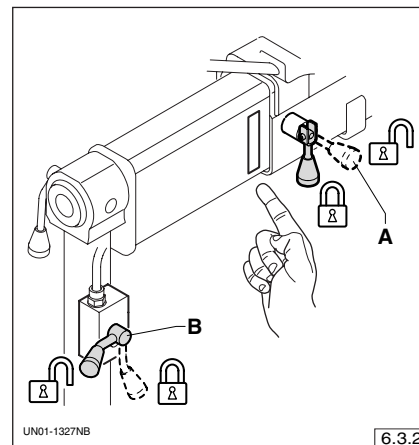
CAUTION !

Before using the controls for the stabilisation, deactivate all the locking devices.

- 1 - Block the vehicle with the parking brake and place the chocks behind the wheels.
- 2 - Start the motor at minimum rpm and engage the power takeoff.
- 3 - Release stabiliser arms (lever "A").
- 4 - Extend the stabiliser arms to the maximum open position signalled by the yellow indicator light and lock them again.
- 5 - Open the cock "B".
- 6 - Use the distributor lever or the

buttons on the transmitter unit (see "Transmitter unit controls") to rest the outrigger on the ground.

- 7 - Close the cock "B".
- 8 - Repeat the operations for each stabiliser.



6.3.2



Information

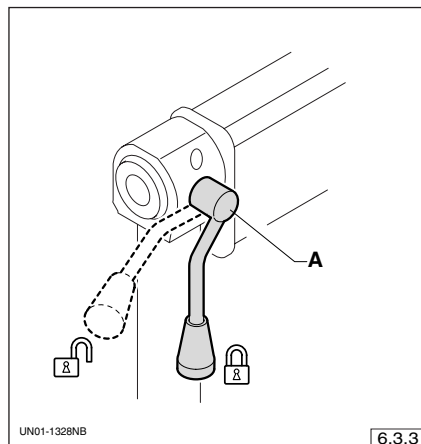
In cold climates, allow the pump to run for a few minutes before manoeuvring the crane to ensure the hydraulic oil reaches the operating temperature.

6.3.2 - Adjustable stabiliser



WARNING !

Before removing the lock pin, support the stabiliser jack (with the force required) and accompany it through the rotation movement until it reaches the upright position (work position).



- 1 - Rotate and remove the lock pin "A".
- 2 - Rotate the jack into the upright position and relock it.

Carry out the same operations but proceeding in reverse order to return the jack to the resting position. Lock it in position with pin "A".

6.4 -Working position of the crane

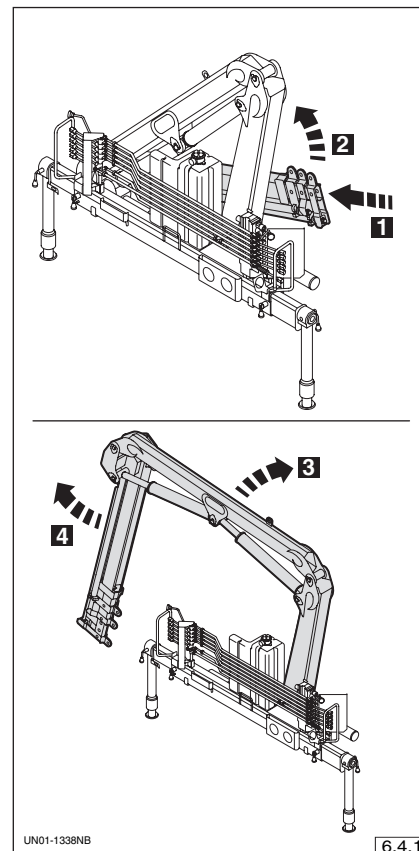
Before moving the crane, carefully read chapter "Safety" and the stabilisation instructions.

Check that the battery is charged and the radio control functions properly (5 P series).

To place the crane into the working position, carry out the following manoeuvres:

- 1 - close the arms extension jacks to the end stroke;
- 2 - close the secondary jack to the end stroke;
- 3 - open the main jack;
- 4 - open the secondary jack.

The main and secondary jacks must be open enough to allow the free rotation of the crane.



6.5 - Safety device efficiency check



WARNING !

Before starting to work, the operator must check that all the safety devices are fitted and in good working order. If any are missing or in poor condition, do not use the machine and contact an authorised PM workshop.

6.5.1 - Checking the emergency stop device



WARNING !

Check all the emergency stop devices individually.

With the crane open and without a load:

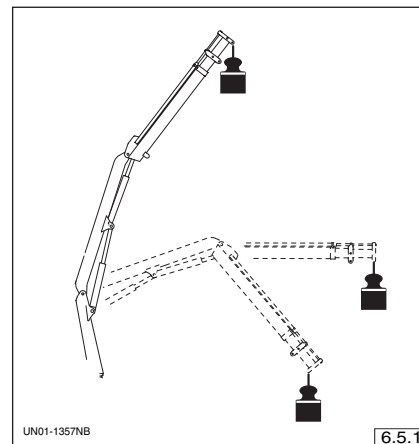
- 1 - move the safety lever (or press the button, if fitted);
- 2 - move the control levers in both directions and check that it is not possible to move the crane.
- 3 - Reposition the lever (or switch on the transmitter unit) to restore crane operation.

6.5.2 - Load limiting device check

Apply a load that exceeds the rated maximum by 15% (see load-bearing capacity diagrams in the “Enclosures” section).

It should be impossible to lift the load. If this is not the case, use of the crane is prohibited.

6.5.3 - Checking the load maintenance valves

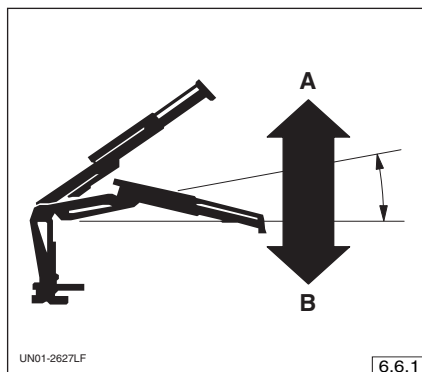


Carry out the check with a medium load.

- 1 - Position the crane as shown in fig. 6.5.1;
- 2 - deactivate the power takeoff;
- 3 - remove the pressure from the system by moving the distributor lever a few times;
- 4 - wait for a short time to check that the load does not lower.

6.6 - Lifting and moving the load

- Lifting the load



To lift large loads that require the full power of the crane, work as follows.

Zone "A":

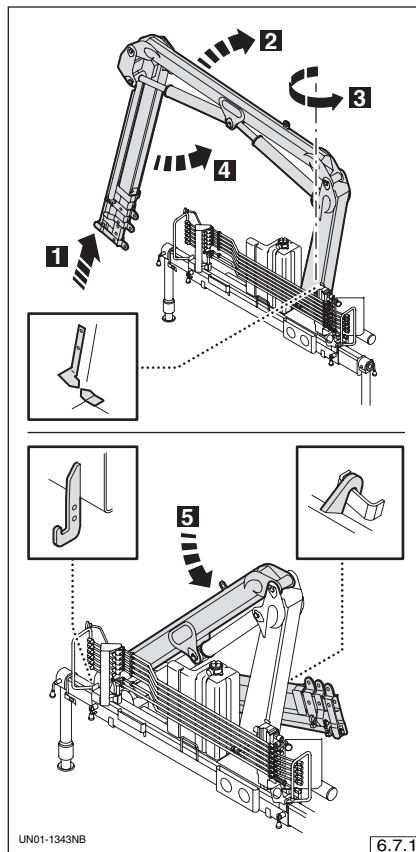
- move mainly the main jack.

Zone "B":

- use mainly the secondary jack and the arm extension jacks.

To speed up the loading/unloading operations, it is preferable to use the main and secondary jacks, rather than the arms extension jacks.

6.7 - Crane resting position



HAZARD !

To avoid the risk of accidents, manoeuvre the crane from the opposite side to the main arm closing.

To place the crane in the resting position, carry out the following manoeuvres.

- 1 - Retract the crane arms;
- 2 - open the main jack;
- 3 - turn the crane until it fits the reference points located on the column and base;
- 4 - close the secondary jack;
- 5 - close the main jack making sure that the main arm of the crane fits into the special anti-rotation supports.

6.8 - Crane destabilisation and circulation on the roads

- Crane destabilisation

Close up the machine into the resting position.

- 1 - Retract all the stabiliser jacks completely;
- 2 - retract all the stabiliser arms completely;
- 3 - check that the safety devices for road travel are activated;
- 4 - deactivate the power takeoff;
- 5 - check that the crane is within the maximum outreach limits foreseen by the Highway Code.

- Circulation on the roads



WARNING !

Before setting off, make sure the power takeoff is switched off to prevent serious damage to the vehicle.

Driving the vehicle and crane outfitting requires particular skill and training, in addition to a extreme awareness of the responsibility it entails, which is why only suitably trained and authorised persons may drive the machine.

Circulation on the road network is only permitted to approved machines and drivers meeting the requirements of the current highway code.

In any case, before setting off, ensure:

- the safety pins for circulation on the roads are fitted properly;
- any mobile parts which could move suddenly and unexpectedly are locked securely;
- all protruding parts are clearly marked with the relative warning plates.

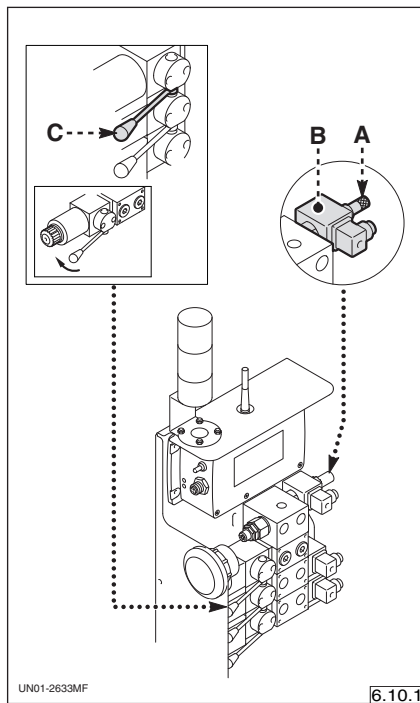
6.9 - Lock situations

6.9.1 - Crane lock due to activation of the load limiting device (optional)

Load limiter activation causes a crane block.

Manoeuvre the load to bring it closer to the column and in doing so unlock the machine.

6.10 - Electrohydraulic failure



In case of electric and/or hydraulic failure proceed as outlined below.

- 1) Remove seals from pawl "A" on the solenoid valve "B".
- 2) Press and turn the pawl "A" to enable the manual control of the distributor.
- 3) Use the control levers to select the required manoeuvre.
- 4) Use the lever "C" (red) to activate the control.

6.11 - Use of the load limiter for manual extensions



WARNING !

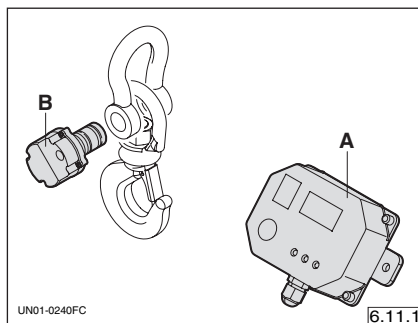
Before moving the load with the extensions, check that the transmitter pin is working and that it is mounted onto the extension that you wish to use.

Always select the number relating to the extension in use.

During movement of the load, do not for any reason change the number of the extension in use. It is prohibited to lift loads larger than those indicated on the capacity diagrams (whatever the geometric configuration of the crane is).

In any case, never exceed the load value indicated on the plate attached to the extension.

The limiter informs the operator of the weight lifted by the extension in use. On reaching the preset value (depending on the extension in use), all the load lifting manoeuvres stop immediately and so the overloading of the extension is avoided.



- Main parts

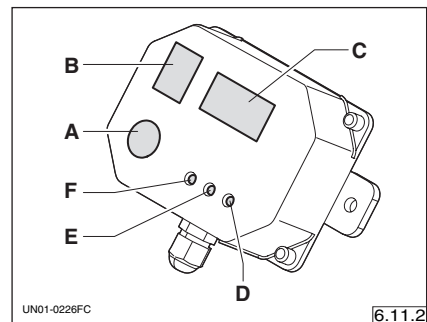
A - Receiver unit

B - Transmitter pin

- Technical data

Power voltage	from 12 to 24 V dc
Absorption	100 mA max.
Protection	IP 67
Emission frequency	FM 868,3 Mhz (CEPT SRD 1FI)
Battery	Ni-Mh 3,6V
Indicative battery duration	30 hours

- Controls and indicators



A - selection key for the extension in use;

B - display for the extension selected;

- C - display for the weight in kg lifted by the extension in use;
- D - indicator light:
 - when on, it indicates that
 - the preset weight for the extension in use has been exceeded;
 - there is no transmitter unit radio signal (in this case the message "ERR" appears on the display "C").
- E - Indicator light.
 - When on, it indicates that the limiter is switched on.
- F - Indicator light.
 - When on it indicates that the transmitter unit battery is nearly flat.
 - When the battery is totally flat, the "ERR" message appears on the display "C".

- Functioning

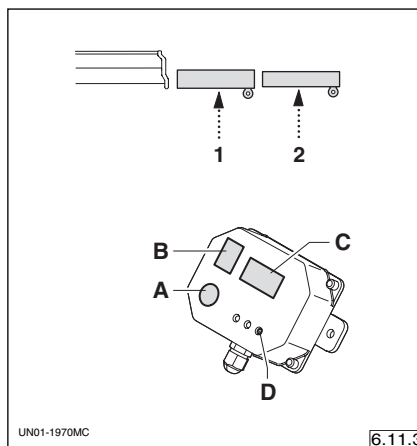
- 1 - Using button "A", select the manual extension that you wish to use, in accordance with the diagram in fig. 6.11.3 (max. 2 extensions). The number of the extension appears on the display "B".
- 2 - Install the hook/transmitter onto the selected extension.

3 - Lift the load.

On reaching the maximum load that can be lifted by the extension in use, the crane buzzer is activated, the indicator light "D" switches on. The corresponding icon appears on the remote control and the control unit displays.

All the lifting manoeuvres by the crane are blocked and only lowering movements to place the load on the ground are permitted.

With the load on the ground, the alarm stops and it is possible to start work again.



WARNING !

If all the controls are inhibited, press the button "A" until a flashing cursor that indicates the deactivation of the load limiter appears on the display "B". The operator has to manoeuvre with maximum care and place the load on the ground in order to avoid any accidents.

- Displaying the maximum preset values (fig. 6.11.3)

- 1 - Using button "A", select the number of the extension for which you wish to know the maximum preset load; the number of the extension appears on the display "B";
- 2 - keep button "A" pressed for at least 5 seconds; the load value flashes on the display "C";
- 3 - release the button to return to normal functioning.



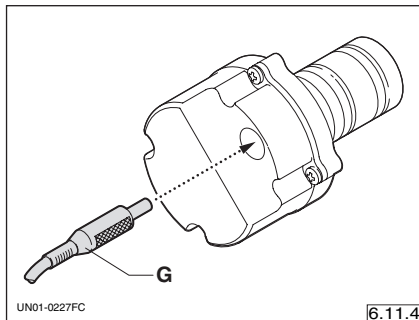
WARNING !

The values for the maximum loads of the manual extensions were originally preset by PM Autogru or at an authorised service centre. Any recalibrations may only be carried out at an authorised service centre.

The maximum preset values are slightly higher than those indicated in the load diagrams, due to the tolerance of the device.

- Charging the battery

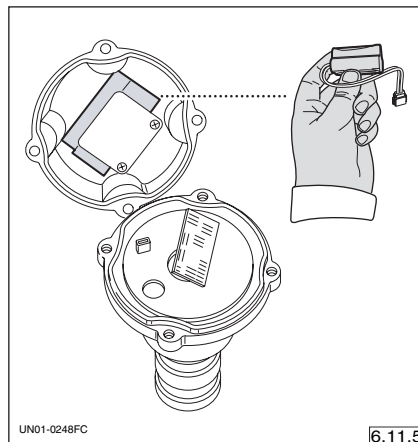
Connect the cable “G” of the battery charger to the transmitter unit and the 12 - 24 V dc vehicle socket.



6.22

- Replacing the battery

- 1 - Unscrew the four screws and open the case;
- 2 - tip the case up and unscrew the two battery fixing screws;
- 3 - extend the connector to the card and replace the batteries.



Information

Do not use lithium batteries, as they are not suitable.

Only use batteries of the type indicated by the manufacturer.

7 Maintenance

7.1 - Regular checks

All the maintenance operations that are not provided for in this chapter must be carried out at an authorised PM service centre.



CAUTION !

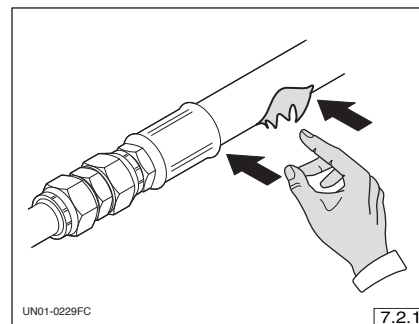
Before carrying out any maintenance operation check that the oil has completely cooled down.

Regular checks						
Checks to be carried out by the operator						
Component	Operation	Every 10 hours	Every 100 hours	Every 500 hours	Every 1000 hours	Manual reference number - para -
Pipes and hoses	Check	•				7.2
Hosing guard	Check integrity	•				7.3
Connections	Check for leaks	•				7.4
Plates	Check integrity	•				2.4
Hook	Check	•				3.1
Hydraulic oil	Check	•				7.5
Safety devices	Check	•				2.3
Structure	Inspection	•				7.6
Pin lock	Check		•			7.7
Crane stay rod	Check		•			7.8
Crane	Cleaning		•			7.10
Pins	Lubrication		•			7.15
Arms	Lubrication		•			7.11
Sliding blocks	Lubrication		•			7.15
Rotation block	Lubrication		•			7.15
Control levers	Lubrication		•			7.15
Jack sliding blocks	Check		•			7.9
Filters	Check	•				7.12
	Replacement			•		9.2

Regular checks						
Checks that must be carried out at an authorised service centre						
Component	Operation	Every 200 hours	Every 500 hours	Every 1000 hours	Every 2000 hours	Every 4000 hours
Hydraulic oil	Check, replacement			•		
	Check contamination		•			
Safety devices	Check			•		
Structure	Inspection		•			
Sliding blocks	Replacement					•
Valves	Calibration		•			
Hydraulic system	Washing					•

7.2 - Checking the condition of the hoses

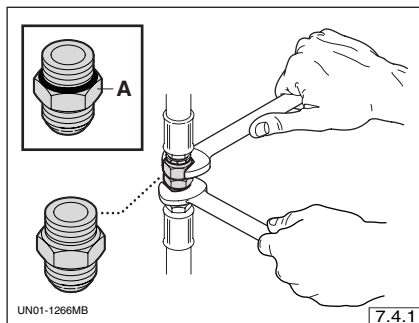
Check the fastening of the pipe connection and the condition of the hose. If the pipe shows any signs of ageing, breakage, bulging, abrasion, etc., it must be replaced.



7.3 - Checking the hosing guards

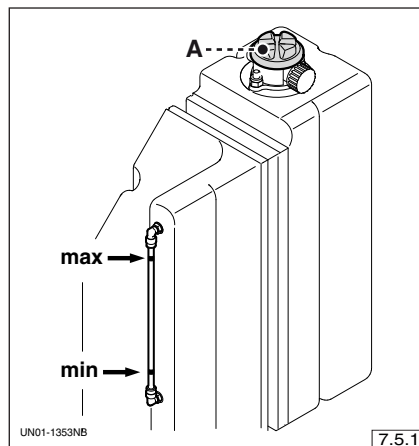
These guards protect the operator from oil spurts in the event of a breakage in the hosing. If they are worn or broken, they must be replaced.

7.4 - Checking for oil leaks from the hydraulic system



Oil leaks from the connections can normally be eliminated by tightening the connections correctly. Oil leaks from connection "A", which is supplied with an airtight washer, can only be eliminated by replacing the connection.

7.5 - Checking the hydraulic oil level



Check the oil level daily, which must be between the minimum and maximum marks.

If necessary, top up through stopper "A".

For the oil characteristics see "Oils and lubricants".

i Information

Carry out the check with the crane in the resting position, with all the jacks retracted and the vehicle on a flat surface.

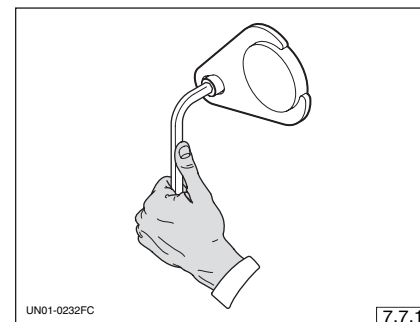
7.6 - Structure inspection

Wash the crane carefully before carrying out the checks.

Visually inspect the integrity of the structure in general and in particular the welding.

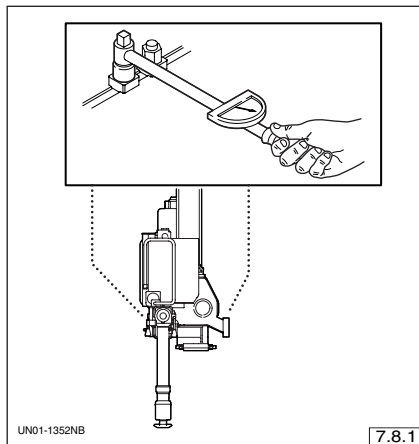
If any weakening or small cracks are noticed, immediately contact an authorised PM service centre.

7.7 - Checking the pin locks



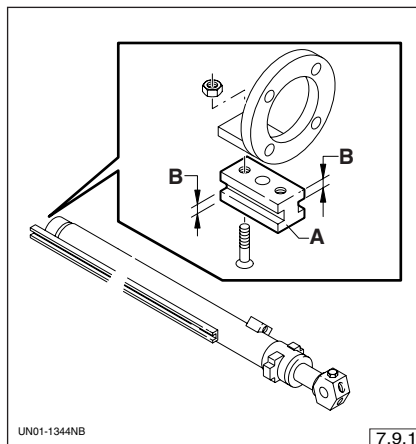
Check the fixing screws of the pin locks. If they have loosened, tighten the screws to the tightening torque of 8 daNm (59 lbs - ft).

7.8 - Checking the anchorage stay rods



Check that the anchorage stay rods are tightened; if not, tighten the nuts to the tightening torque of 16 daNm (118 lbs - ft).

7.9 - Checking the jack sliding blocks



Check the wear of sliding blocks "A". At an authorised service centre, have the sliding blocks replaced when the wings "B" are less than 4 mm (0.157").

7.10 - Cleaning the machine

Clean the jack shafts to avoid dirt building up.

Clean the machine with a jet of pressurised water, using detergents that are authorised by the standards in force.

Do not orient a jet of pressurised water to electrical equipment (if fitted) to avoid damaging it.

7.11 - Lubrication of the crane arms and stabilisers

After having carried out the lubrication, carry out some arm extension manoeuvres without a load, in order to distribute the lubricant.

For the lubricant characteristics see "Oils and lubricants".

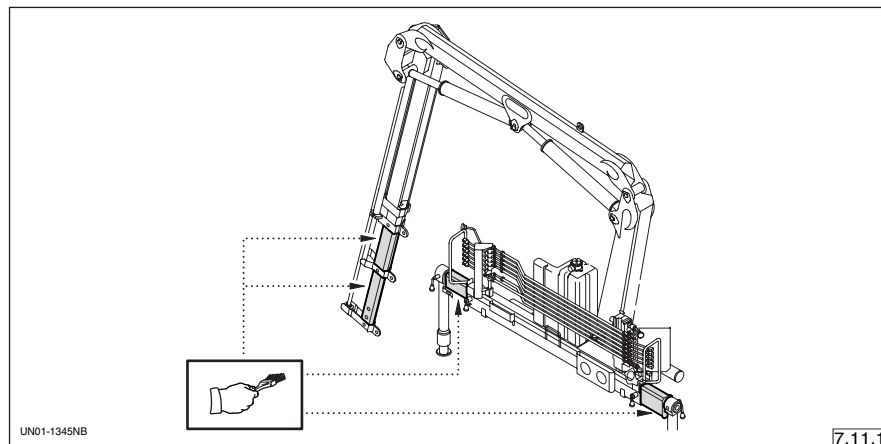
- Crane arms

Extend the arms completely and grease the upper and lower surfaces.

Grease the sides of the arms when the lateral sliding blocks are assembled.

- Stabiliser arms

Extend the arms completely and grease the lateral surfaces.



7.12 - Filter



Information

After the first 20 hours of work and in general after every maintenance operation on the hydraulic system, replace the filter cartridge to ensure the efficiency of the filtering system (see "Filter replacement").

If there are any solid deposits inside the filtering unit, contact an authorised service centre.

7.13 - Long periods of machine inactivity

If the crane has to remain inactive for a long period of time, it is necessary to:

- 1) wash it and fold it back into the resting position with all the jacks closed. If this is not possible, clean and lubricate the part of the jackshafts that remains exposed to the atmospheric agents.
- 2) Park the machine in a sheltered area, which can only be accessed by authorised personnel;
- 3) check and replace the damaged and worn components;
- 4) check and remove any fluid leaks;
- 5) check and top up all the fluid levels if necessary.

7.14 - Starting the machine up again

Before starting the machine up again after a long period of inactivity, carry out the following checks and operations:

- 1) wash the machine completely;
- 2) grease all the components that are subject to lubrication;
- 3) check and top up all the fluid levels if necessary;
- 4) check and remove any fluid leaks;
- 5) check the integrity of the pipes and hoses;
- 6) check and replace any damaged components;
- 7) check the correct functioning of the controls and visual indicators;
- 8) check the correct functioning of all the safety devices;
- 9) carry out the maintenance operations in accordance with the planned maintenance schedule (see “Regular checks”).

7.15 - Scrapping

The scrapping of the machine must be entrusted to personnel that are specialised in such work and have the necessary hydraulic and mechanical skills. The components must be separated, depending on the nature of the material they are composed of, and sent to authorised collection centres.

7.16- Oils and lubricants

Never mix oils of different types together, in order to avoid machine malfunctions.

For top ups, only use preventively filtered oils (maximum filtration grade, class 9, in accordance with Nas 1638-18/14 ISO 4406).



Information

Do not dispose of the oil in the environment, as it causes pollution.

Environmental temperature -30 ÷ +140 °C

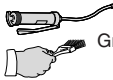
Lubricant	AGIP ⁽¹⁾	MOBIL	SHELL	TOTAL	ESSO
Hydraulic oil	OSO 32	DTE OIL 24	TELLUS OIL 32	AZOLLA ZS 32	NUTO H 32
Grease	GREASE PV 2	-	RETINAX HD 2	-	-
Crane base oil	ROTRA MP 80W/90	-	-	-	-

(1) Lubricant used by the manufacturer the first time the system is filled.

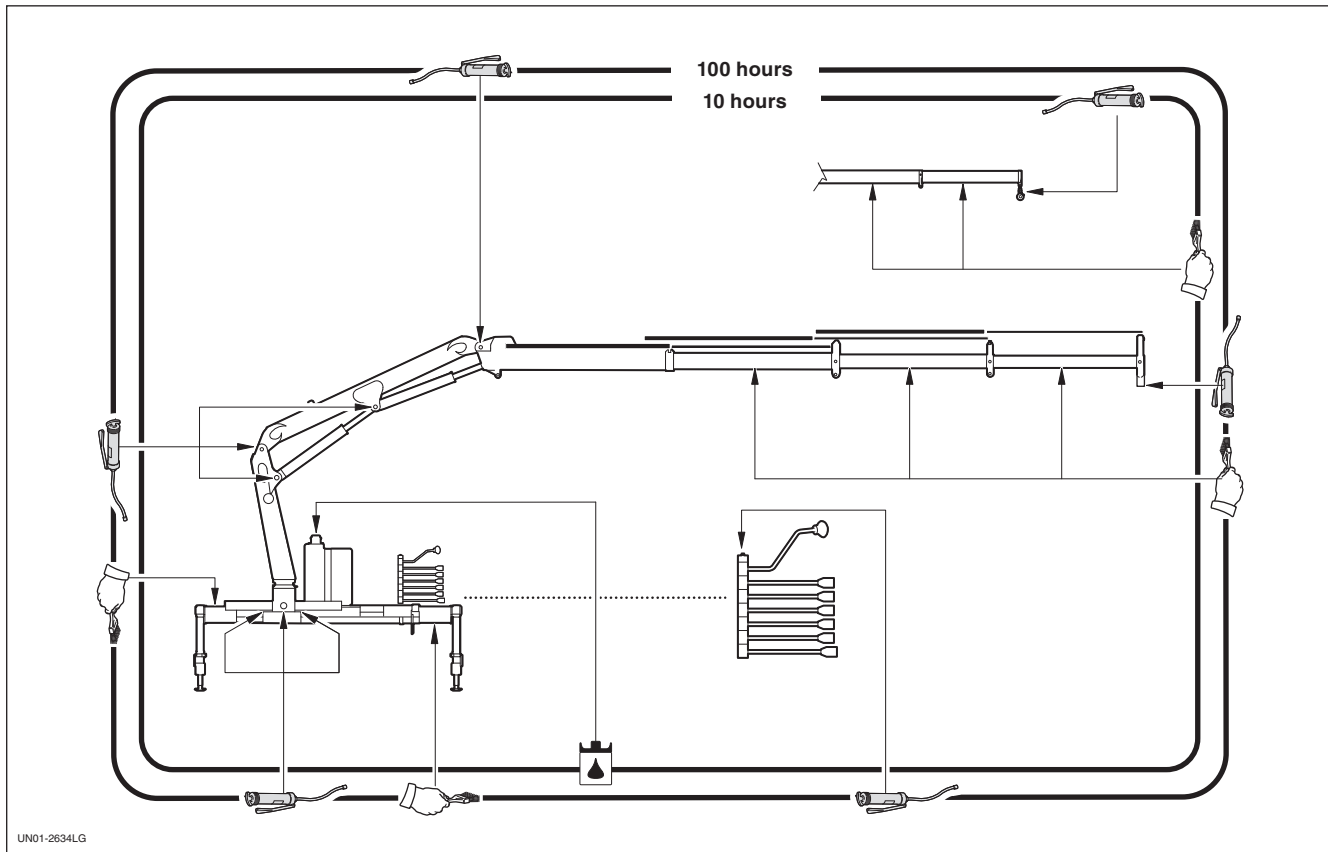
Intensive use (saline environment) temperatures -30 ÷ +140 °C

Lubricant	AGIP	MOBIL	SHELL	TOTAL	ESSO
Hydraulic oil	OSO 32	DTE OIL 22	TELLUS OIL 22	AZOLLA ZS 22	NUTO H 22
Grease	RACOL SHAPPIRE AQUA2	-	-	-	-

7.16.1- Lubricant comparison table

Lubricant		Environmental conditions		
		-30 ÷ +140 °C		
Hydraulic oil	ISO 3348	ISO VG 32	ISO VG 46	ISO VG 22
 Grease	NLGI 2 calcium/lithium			

7.17 - Greasing and lubrication diagram



Symbols =



Hydraulic oil



Grease



Grease

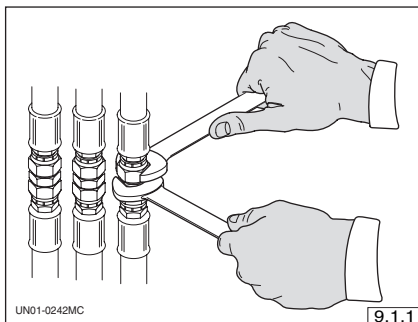
Fault	Cause possible	Remedy
La gru rimane completamente bloccata	Emergency buttons pressed	See "Emergency stop device"
	The load limiting device has come into operation	See "Block situation and manoeuvres allowed"
	The P.T.O is not engaged correctly	Engage the P.T.O.
	P.T.O. engagement malfunctioning	Repair the P.T.O. engagement
	Low temperature of hydraulic oil	Let the oil flow through the system until the working temperature is reached
	There may be a lever switch for a dump body located on the latter	Position the switch on crane
	Electrical system malfunctioning	Check the signal light on the receiver unit
	Radio control malfunctioning	Check radio control devices

Fault	Cause possible	Remedy
The crane boom cannot hold the load and keep down considerably	The pilot operated check valve fitted on the lift cylinder in question leaks	Have the valve checked and/or replaced by an authorized repair workshop
	Oil leakage inside the cylinder concerned	Have the seals inside the cylinder replaced by an authorised repair work-shop
Permanent vibrations while operating on all the movements	Insufficient hydraulic oil	Add hydraulic oil to the tank (see “Checking the hydraulic oil level”)
	Clogging of hydraulic oil filter	Replace the filter cartridge (see “Filter replacement”)
	Suction hose obstructed	Locate the cause of the obstruction and remove it
	Inefficient pump	Check the pump flow; if it is not regular replace the pump
Considerable reduction in the speed of the movements	Low speed of the engine	Check the exact speed of the vehicle's engine on the basis of the hydraulic boom extension time
	Inefficient pump	Check the pump flow; if it has decreased, replace the pump

Fault	Cause possible	Remedy
It is hard to engage the P.T.O.	If pneumatic: the air into the appropriate vehicle system is insufficient If mechanical: the control cable is obstructed	Check the pressure of the air in the vehicle's pneumatic system; stop any leaks Free the control cable
Vibrations in the arm unit during load translation	Sliding pads insufficiently lubricated Sliding pads too worn Insufficient hydraulic oil	Lubricate the sliding pads according to the relative instructions Consult an authorised workshop Check the level of the hydraulic oil
Lack of tension on the whole crane	Interrupted fuses P.T.O. relay malfunctioning	Replace the fuses Replace the relay
The wireless control does not work	Battery flat Selector on receiver unit in "Manual" of "OFF" position Radio control failure	Replace or charge batteries Position selector on "Remote" Contact an authorised service centre

9 Spare part replacement

9.1 - Hose replacement



HAZARD !

The hosing must be replaced with the hydraulic system depressurised and when the oil has completely cooled down.

To depressurise the system, disconnect the power take off, stop the truck engine and move the control levers back and forwards. Unscrew the joints and collect oil into a suitable tank. Replace the hose and tighten the joints.

9.2 - Filter replacement



CAUTION !

The filter must be replaced when the oil has completely cooled down.

Replace the filtering cartridge, as it is made of non-washable material.

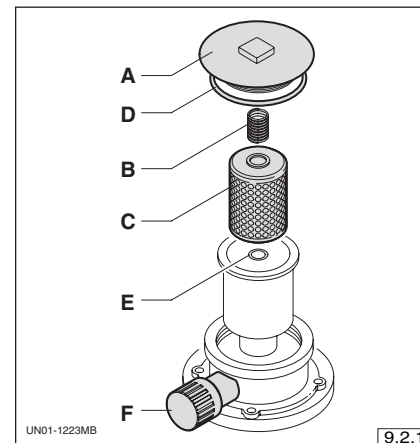


Information

When the filter cartridge is replaced, the air filter "F", must also be replaced.

- 1 - Carefully clean the external surfaces of the filter;
- 2 - unscrew the cap "A";
- 3 - remove the spring "B" and the filtering cartridge "C";
- 4 - check the condition of the washers "D" and "E"; if they are damaged replace them.

To reassemble the filter, carry out the disassembly operations in reverse.



ENCLOSURES

PM-Ingombo-189415

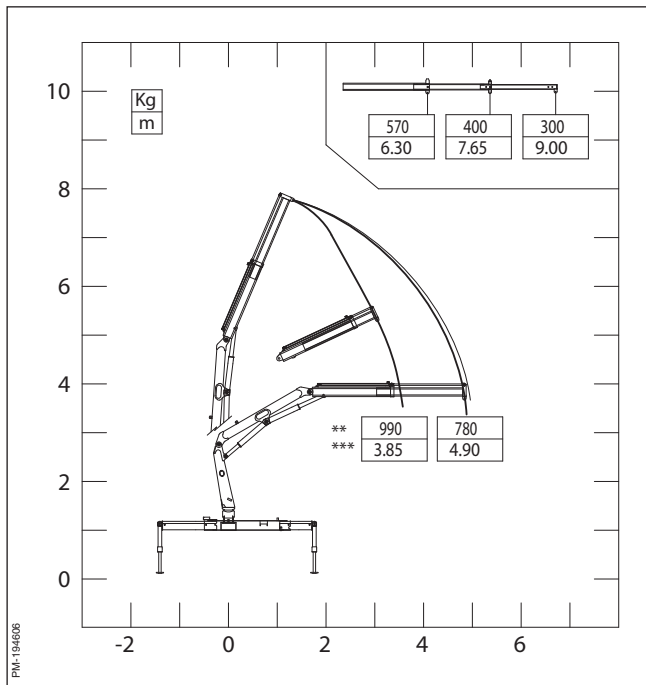
- Specifications and performances

PM 4021

Max. lifting momentum	kNm	38.....	ft lbs	27850
	tm	3,9.....	/	/
Hydraulic outreach:				
Horizontal	m	5,00.....	ft	16'5"
Vertical	m	7,80.....	ft	25'7"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	24,5.....	psi	3550
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle.....	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	530.....	lbs	1170
Maximum power absorbed by the hydraulic pump	kW	4,5.....	HP	6
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	10.....	sec.	10
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

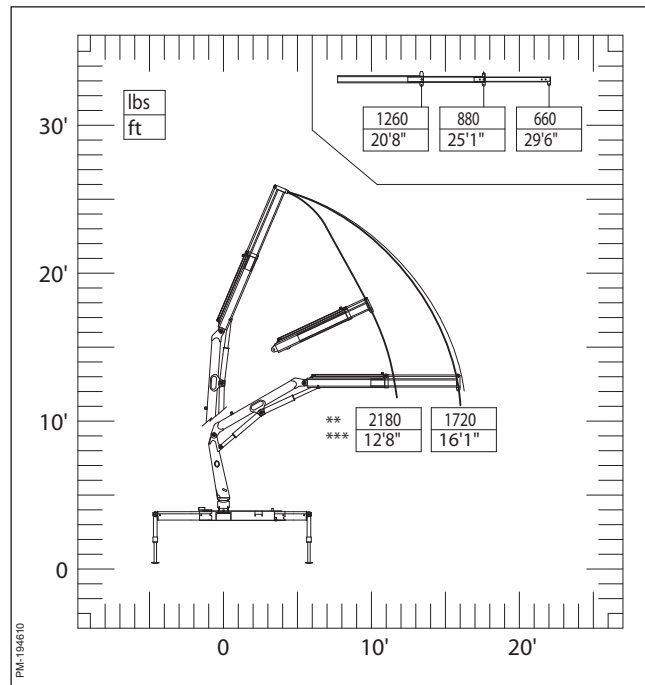
PM 4021



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

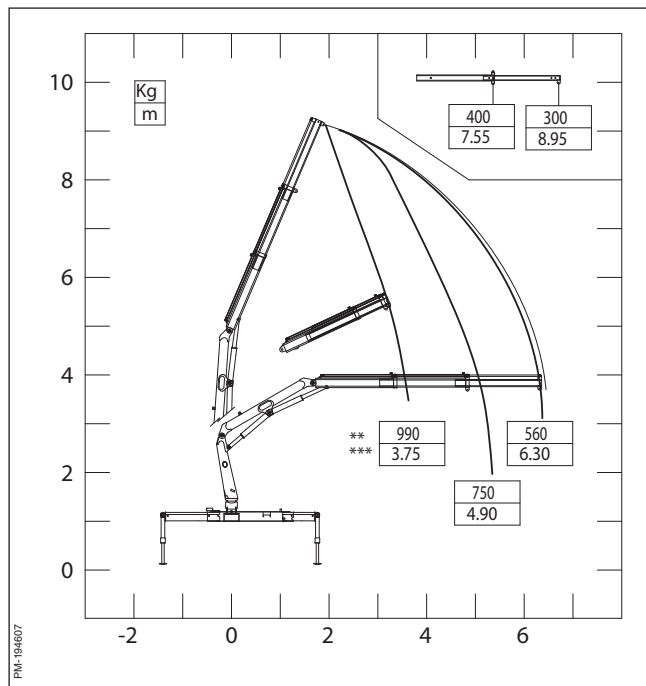
- Specifications and performances

PM 4022

Max. lifting momentum	kNm	37.....	ft lbs	27120
	tm	3,8.....	/	/
Hydraulic outreach:				
Horizontal	m	6,40.....	ft	20'12"
Vertical	m	9,15.....	ft	30'0"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	24,5.....	psi	3550
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle.....	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	570.....	lbs	1260
Maximum power absorbed by the hydraulic pump	kW	4,5.....	HP	6
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	20.....	sec.	20
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

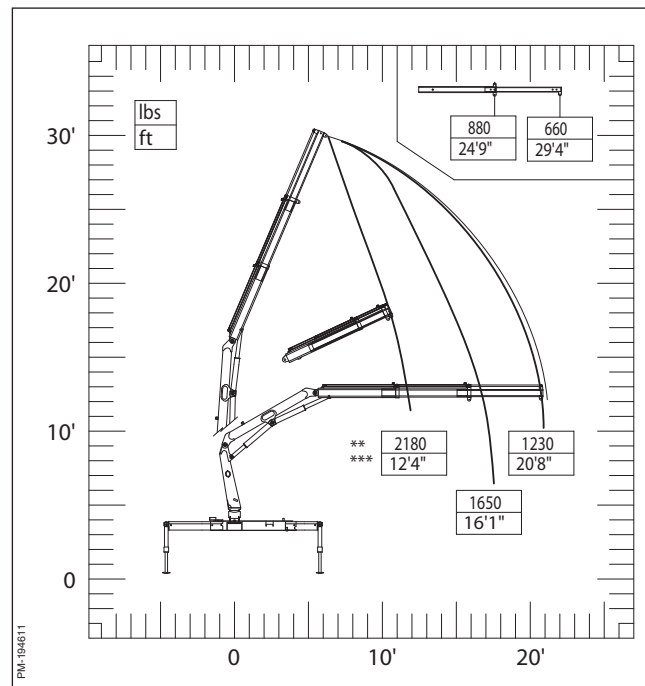
PM 4022



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

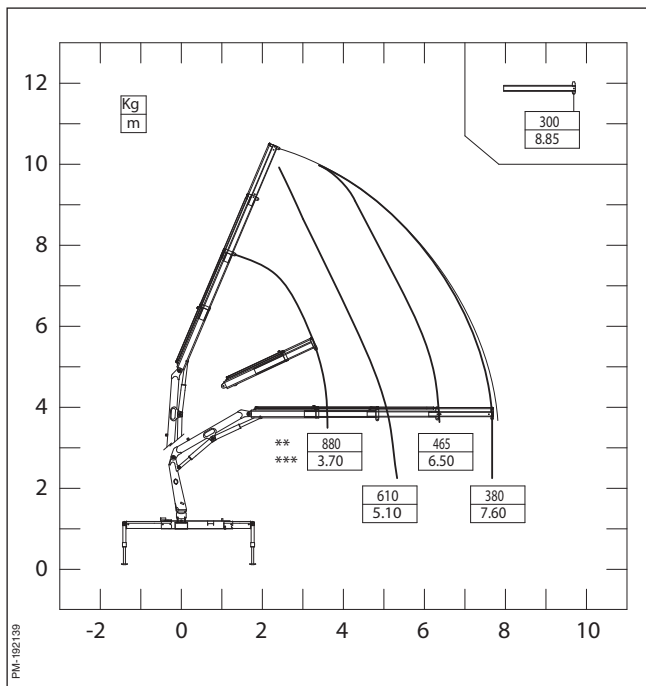
- Specifications and performances

PM 4023

Max. lifting momentum	kNm	32.....	ft lbs	23510
	tm	3,3.....	/	/
Hydraulic outreach:				
Horizontal	m	7,60.....	ft	24'11"
Vertical	m	10,40.....	ft	34'1"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	24,5.....	psi	3550
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle.....	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	600.....	lbs	1320
Maximum power absorbed by the hydraulic pump	kW	4,5.....	HP	6
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each				
stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	30.....	sec.	30
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

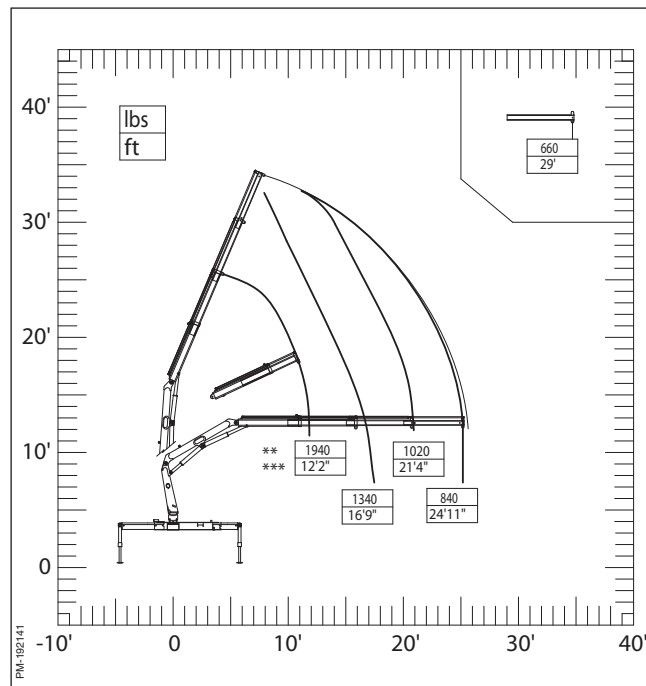
PM 4023



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

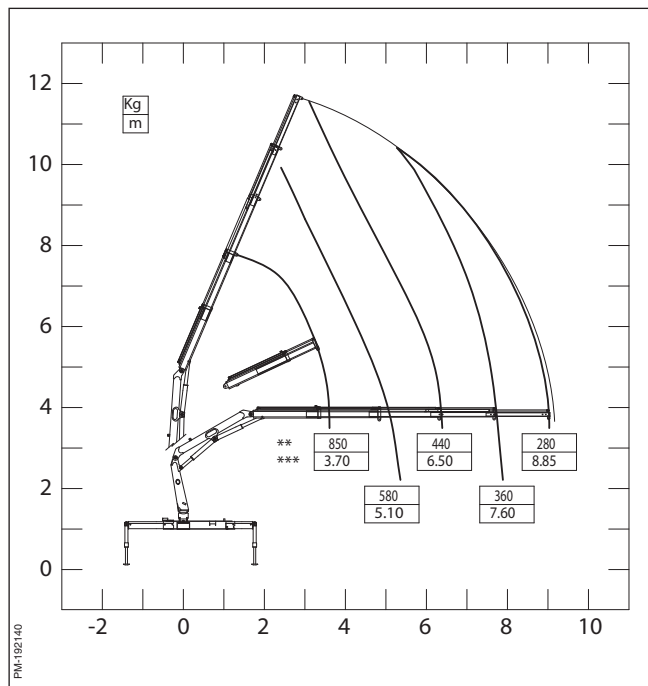
- Specifications and performances

PM 4024

Max. lifting momentum	kNm	31.....	ft lbs	22780
	tm	3,2.....	/	/
Hydraulic outreach:				
Horizontal	m	8,85.....	ft	29'0"
Vertical	m	11,65.....	ft	38'3"
Outreach with manual extensions:				
Horizontal	m	/.....	ft	/
Vertical	m	/.....	ft	/
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	24,5.....	psi	3550
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	620.....	lbs	1370
Maximum power absorbed by the hydraulic pump	kW	4,5.....	HP	6
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	40.....	sec.	40
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

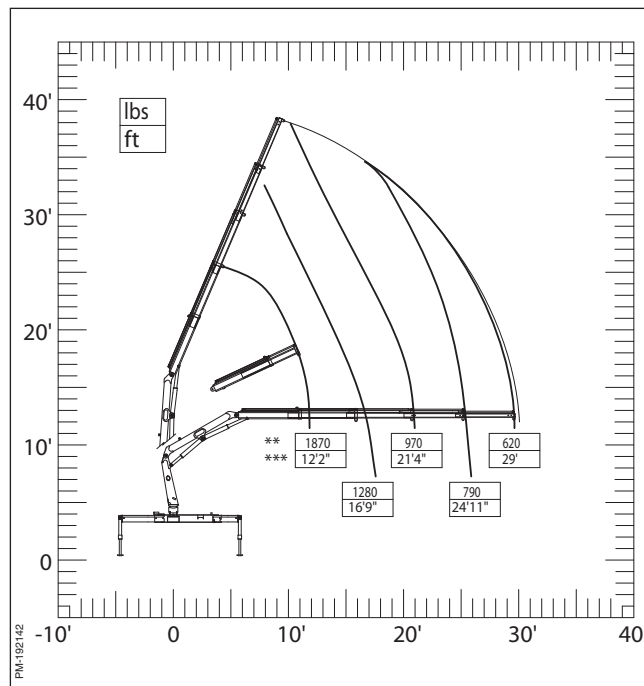
PM 4024



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



** Nominal capacity with mobile hook

*** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

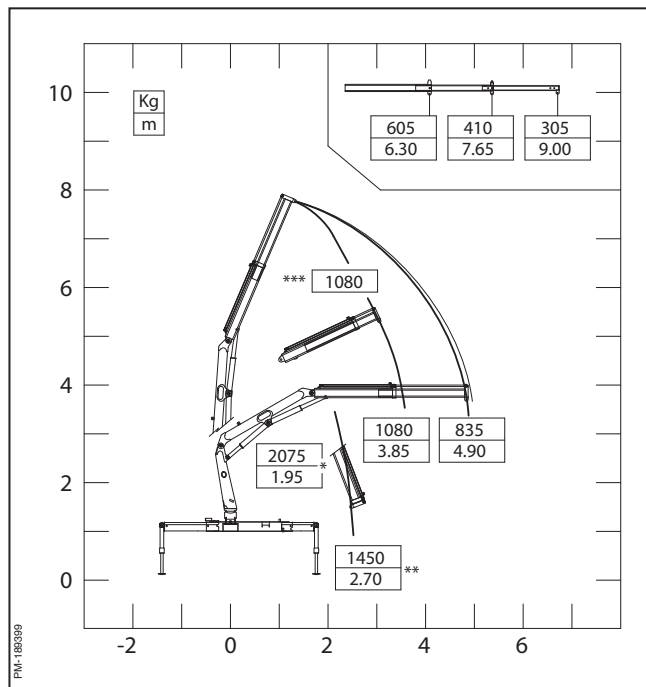
- Specifications and performances

PM 4521

Max. lifting momentum	kNm	41.....	ft lbs	30240
	tm	4,2.....	/	/
Hydraulic outreach:				
Horizontal	m	5,00.....	ft	16'5"
Vertical	m	7,80.....	ft	25'7"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	25,5.....	psi	3700
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	530.....	lbs	1170
Maximum power absorbed by the hydraulic pump	kW	4,7.....	HP	6,3
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8892
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	10.....	sec.	10
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

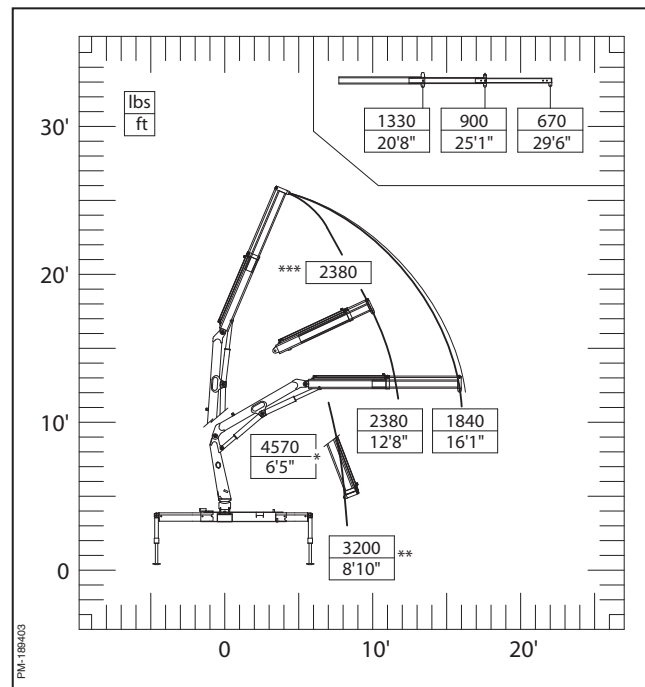
- Capacities diagram

PM 4521



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook
- *** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook
- *** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

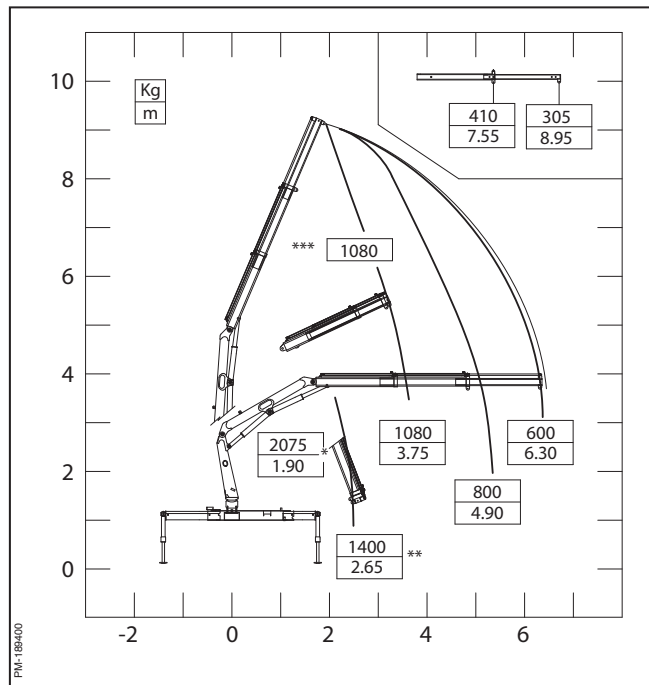
- Specifications and performances

PM 4522

Max. lifting momentum	kNm	40.....	ft lbs	29500
	tm	4,1.....	/	/
Hydraulic outreach:				
Horizontal	m	6,40.....	ft	20'12"
Vertical	m	9,15.....	ft	30'0"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	25,5.....	psi	3700
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	570.....	lbs	1260
Maximum power absorbed by the hydraulic pump	kW	4,7.....	HP	6
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	20.....	sec.	20
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

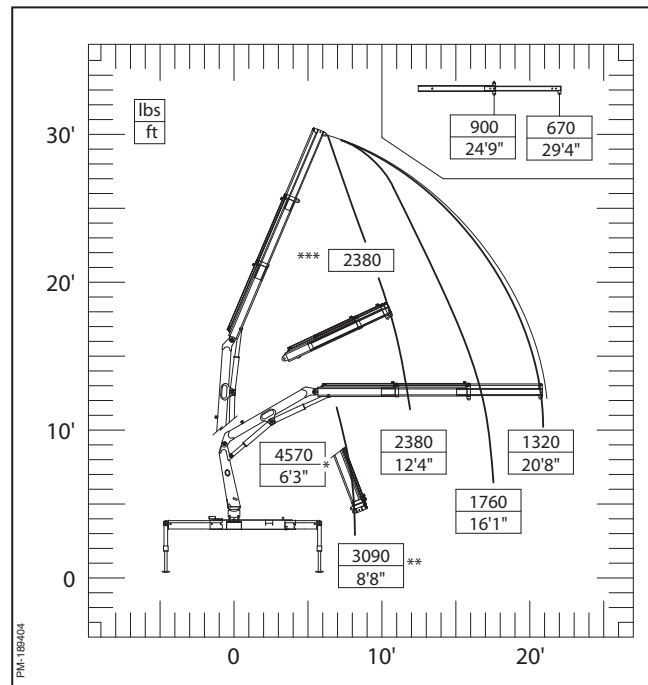
- Capacities diagram

PM 4522



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook
- *** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook
- *** Maximum capacity from horizontal to vertical

Note: the performances stated are obtained with the main arm inclined to 30°

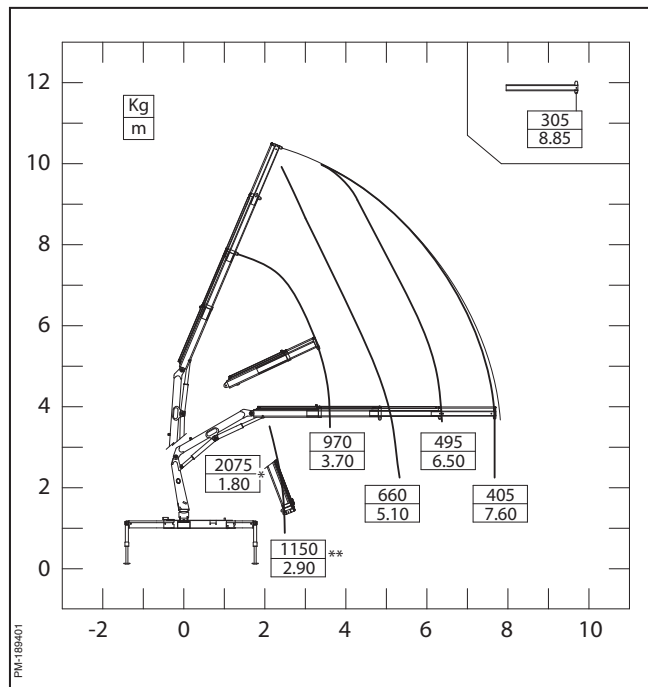
- Specifications and performances

PM 4523

Max. lifting momentum	kNm	37.....	ft lbs	27290
	tm	3,7.....	/	/
Hydraulic outreach:				
Horizontal	m	7,60.....	ft	24'11"
Vertical	m	10,40.....	ft	34'1"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	25,5.....	psi	3700
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	600.....	lbs	1320
Maximum power absorbed by the hydraulic pump	kW	4,7.....	HP	6,3
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	30.....	sec.	30
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

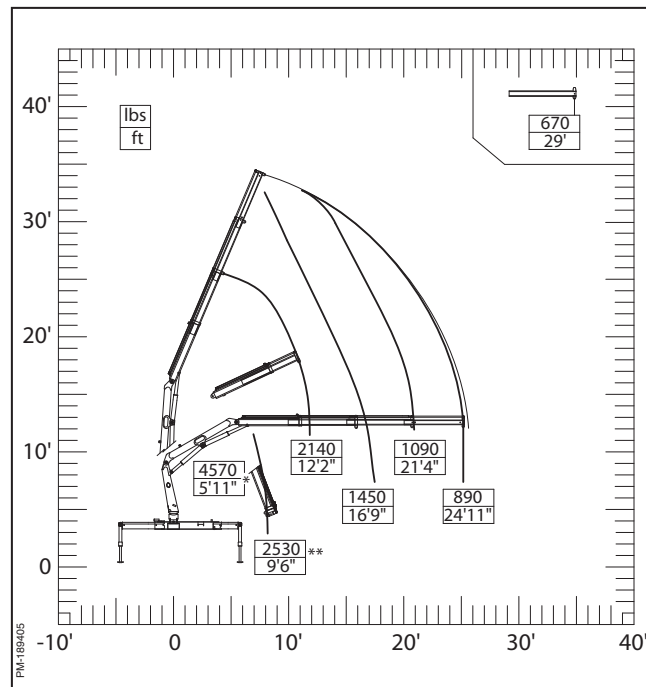
PM 4523



* Nominal capacity with fixed hook

** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°



* Nominal capacity with fixed hook

** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°

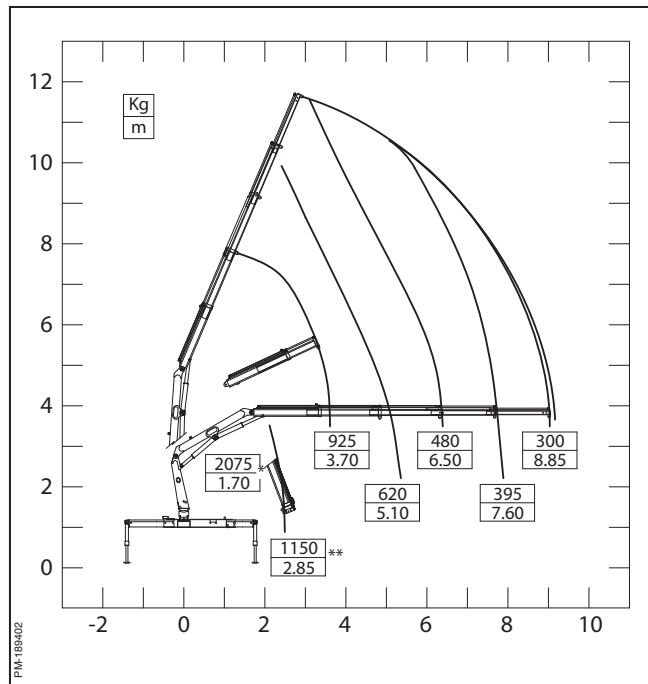
- Specifications and performances

PM 4524

Max. lifting momentum	kNm	35.....	ft lbs	25810
	tm	3,5.....	/	/
Hydraulic outreach:				
Horizontal	m	8,85.....	ft	29'0"
Vertical	m	11,65.....	ft	38'3"
Outreach with manual extensions:				
Horizontal	m	/.....	ft	/
Vertical	m	/.....	ft	/
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	25,5.....	psi	3700
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	620.....	lbs	1370
Maximum power absorbed by the hydraulic pump	kW	4,7.....	HP	6,3
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	40.....	sec.	40
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

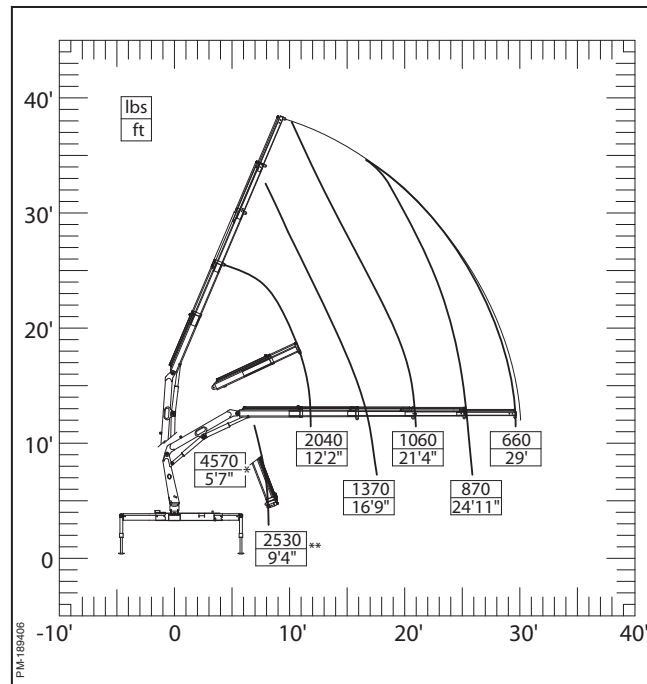
- Capacities diagram

PM 4524



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°

- Specifications and performances

PM 5021 P

Max. lifting momentum	kNm	46.....	ft lbs	33930
	tm	4,7.....	/	/
Hydraulic outreach:				
Horizontal	m	5,00.....	ft	16'5"
Vertical	m	7,80.....	ft	25'7"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	26.....	psi	3770
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	530.....	lbs	1170
Maximum power absorbed by the hydraulic pump	kW	4,8.....	HP	6,3
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	10.....	sec.	10
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

PM 5021 P



Note: the performances stated are obtained with the main arm inclined to 30°



Note: the performances stated are obtained with the main arm inclined to 30°

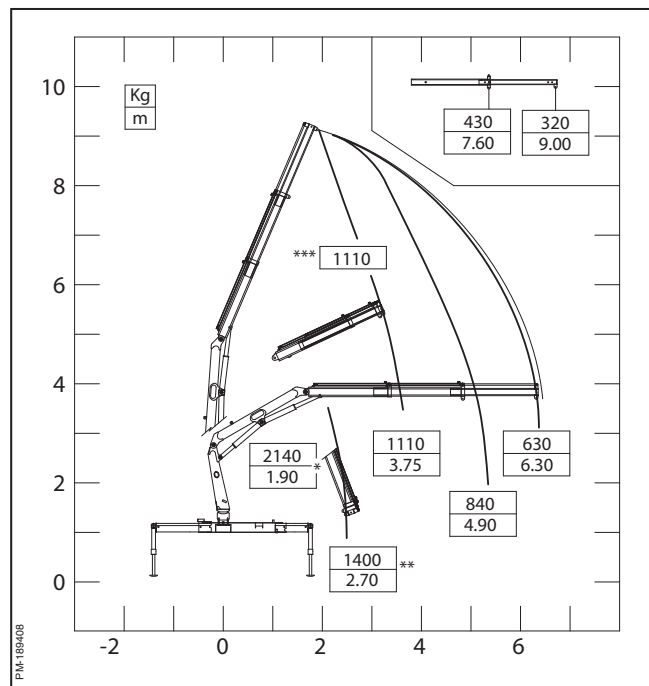
- Specifications and performances

PM 5022 P

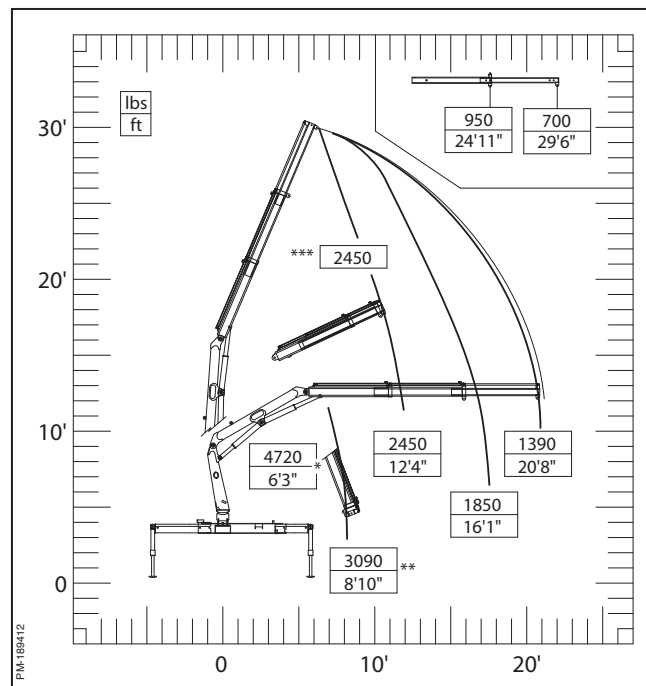
Max. lifting momentum	kNm	41.....	ft lbs	30240
	tm	4,2.....	/	/
Hydraulic outreach:				
Horizontal	m	6,40.....	ft	20'12"
Vertical	m	9,15.....	ft	30'0"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	26.....	psi	3770
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	570.....	lbs	1260
Maximum power absorbed by the hydraulic pump	kW	4,8.....	HP	6,5
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	20.....	sec.	20
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

PM 5022 P



- * Nominal capacity with fixed hook
 - ** Nominal capacity with mobile hook
 - *** Maximum capacity from horizontal to vertical
- Note: the performances stated are obtained with the main arm inclined to 30°



- * Nominal capacity with fixed hook
 - ** Nominal capacity with mobile hook
 - *** Maximum capacity from horizontal to vertical
- Note: the performances stated are obtained with the main arm inclined to 30°

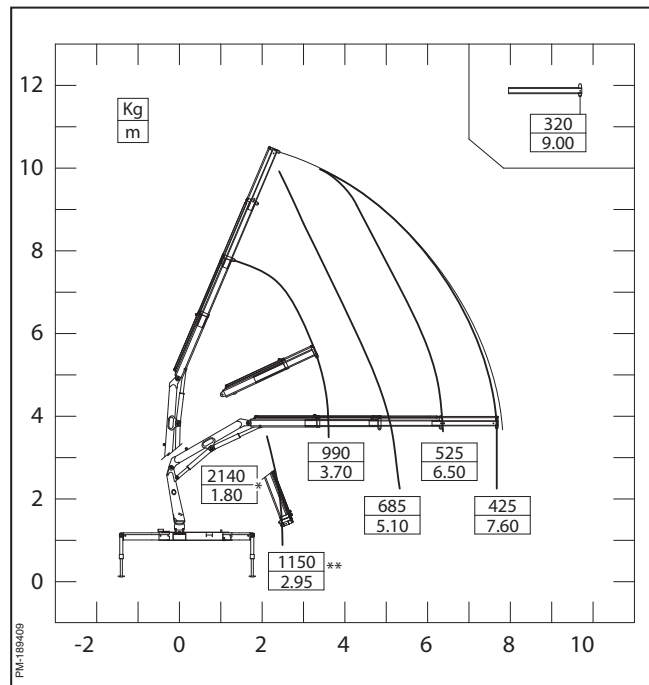
- Specifications and performances

PM 5023 P

Max. lifting momentum	kNm	38.....	ft lbs	28030
	tm	3,9.....	/	/
Hydraulic outreach:				
Horizontal	m	7,60.....	ft	24'11"
Vertical	m	10,40.....	ft	34'1"
Outreach with manual extensions:				
Horizontal	m	9,10.....	ft	29'10"
Vertical	m	11,70.....	ft	38'5"
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	26.....	psi	3770
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	600.....	lbs	1320
Maximum power absorbed by the hydraulic pump	kW	4,8.....	HP	6,5
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	30.....	sec.	30
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

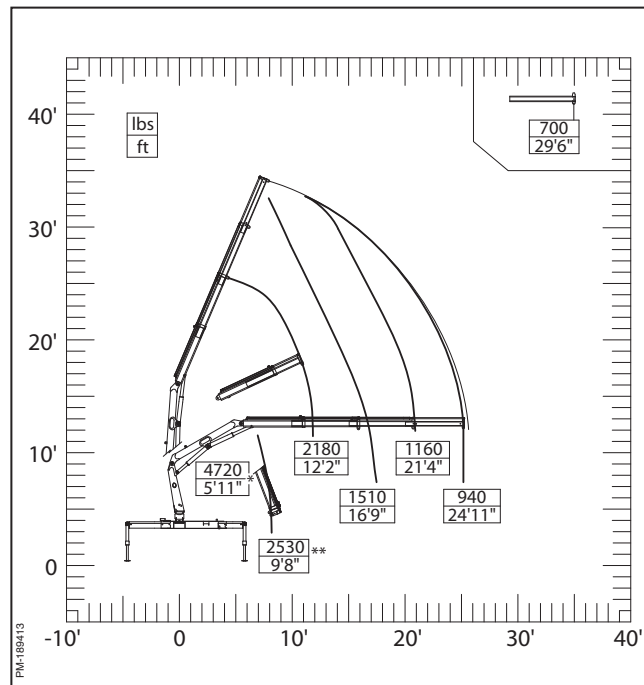
- Capacities diagram

PM 5023 P



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°



- * Nominal capacity with fixed hook
- ** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°

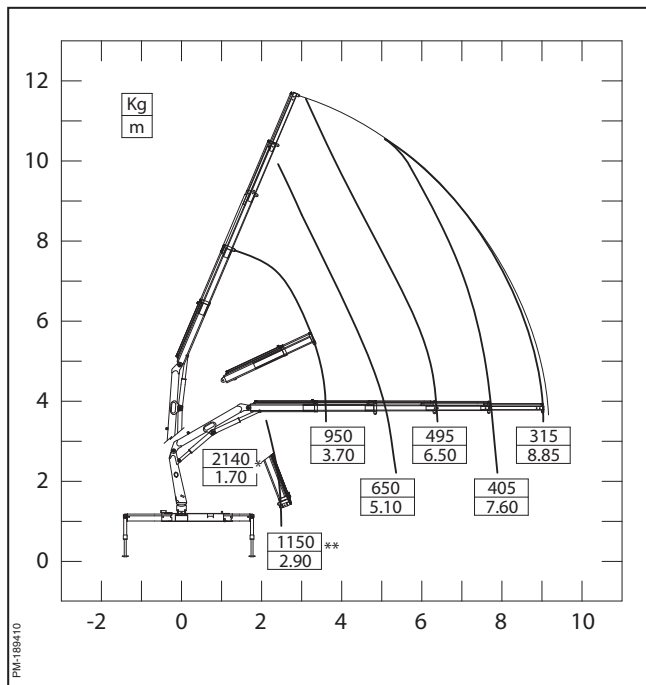
- Specifications and performances

PM 5024 P

Max. lifting momentum	kNm	36.....	ft lbs	26550
	tm	3,6.....	/	/
Hydraulic outreach:				
Horizontal	m	8,85.....	ft	29'0"
Vertical	m	11,65.....	ft	38'3"
Outreach with manual extensions:				
Horizontal	m	/.....	ft	/
Vertical	m	/.....	ft	/
Hydraulic system:				
Recommended capacity.....	l/min	10.....	gals/min	3
Maximum pressure.....	Mpa	26.....	psi	3770
Oil tank capacity.....	l	38.....	gals	10
Rotation unit:				
Rotation angle	°	360.....	°	360
Rotation torque.....	kNm	4,5.....	ft lbs	3320
Weight of standard crane with tank empty.....	kg	620.....	lbs	1320
Maximum power absorbed by the hydraulic pump	kW	4,8.....	HP	6,5
Maximum force exerted on ground by stabilisers	kN	40.....	lbs	8992
Specific operating pressure of each stabiliser with Ø 140 mm (6") disk	Mpa	2,6.....	psi	377
Arm pack extension time for standard unit	sec.	40.....	sec.	40
"Fixed" hook - Capacity.....	kg	3200.....	lbs	7055
"Mobile" hook - Capacity.....	kg	2000.....	lbs	4410

- Capacities diagram

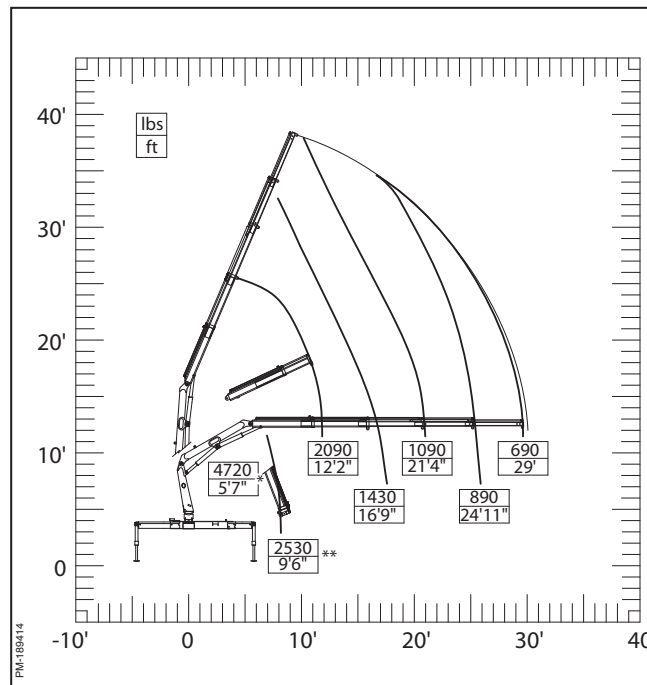
PM 5024 P



* Nominal capacity with fixed hook

** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°



* Nominal capacity with fixed hook

** Nominal capacity with mobile hook

Note: the performances stated are obtained with the main arm inclined to 30°

- “CE” declaration of conformity of the machine

The figure shows a copy of the “CE” declaration of conformity; the original is issued by the manufacturer together with this manual.

- a) Crane model
- b) Serial number
- c) Date of declaration
- d) Signature of the person authorised to write the declaration

If the machine is equipped with accessories.

- e) Accessory name
- f) Accessory model
- g) Accessory serial number



CE declaration of conformity

PM Group S.p.A.
Via Verdi 22
41018 San Cesario sul Panaro MO Italia

Declares that the loader crane

a

Equipped with the following accessories

Name	Model	Serial No.
e	f	g

b

f

**Complies in all its parts with directive 2006/42/EC
and directive 2004/108/EC.**

The technical dossier can be requested by writing to the manufacturer
PM Group S.p.A.Via Verdi 22 41018 San Cesario sul Panaro MO Italia info@pm-group.eu

c

San Cesario s.p.à " / / "

d

The legal representative
" " "

UN01-2642AG

- Record of the periodical technical inspections of the safety devices

Crane model

Year of manufacture

Serial number

Year of installation

Safety device inspected	Kind of inspection performed	Inspection result	Date	Date of next inspection	Name, businnes name and signature of the person responsible for inspection

Safety device inspected	Kind of inspection performed	Inspection result	Date	Date of next inspection	Name, business name and signature of the person responsible for inspection

Safety device inspected	Kind of inspection performed	Inspection result	Date	Date of next inspection	Name, businnes name and signature of the person responsible for inspection

Safety device inspected	Kind of inspection performed	Inspection result	Date	Date of next inspection	Name, business name and signature of the person responsible for inspection

Safety device inspected	Kind of inspection performed	Inspection result	Date	Date of next inspection	Name, businnes name and signature of the person responsible for inspection

NOTES

- Maintenance intervention confirmation

The service interventions must be carried out in series respecting the schedule.

Interventions must be marked with a cross.

At 500 hours

. Hydraulic oil pollution check

☐

. Structural inspection

☐

. Valves calibration

☐

. Manual extension adjustments

☐

.....

stamp

.....

signature

At 1500 hours

. Hydraulic oil pollution check

☐

. Structural inspection

☐

. Valves calibration

☐

. Manual extension adjustments

☐

.....

stamp

.....

signature

At 1000 hours

. Hydraulic oil replacement

☐

. Structural inspection

☐

. Valves calibration

☐

. Manual extension adjustments

☐

. Reduction gears oil replacement

☐

. Safety devices check

☐

.....

stamp

.....

signature

At 2000 hours

. Hydraulic oil replacement

☐

. Structural inspection

☐

. Valves calibration

☐

. Manual extension adjustments

☐

. Reduction gears oil replacement

☐

. Safety devices check

☐

.....

stamp

.....

signature

At 2500 hours

- . Hydraulic oil pollution check ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐

.....
stamp

.....
signature

At 3500 hours

- . Hydraulic oil pollution check ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐

.....
stamp

.....
signature

At 3000 hours

- . Hydraulic oil replacement ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐
- . Reduction gears oil replacement ☐
- . Safety devices check ☐

.....
stamp

.....
signature

At 4000 hours

- . Hydraulic oil replacement ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐
- . Reduction gears oil replacement ☐
- . Safety devices check ☐
- . Runner replacement ☐
- . Hydraulic system washing ☐

.....
stamp

.....
signature

At 4500 hours

- . Hydraulic oil pollution check ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐

.....
stamp

.....
signature

At 6500 hours

- . Hydraulic oil pollution check ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐

.....
stamp

.....
signature

At 6000 hours

- . Hydraulic oil replacement ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐
- . Reduction gears oil replacement ☐
- . Safety devices check ☐

.....
stamp

.....
signature

At 7000 hours

- . Hydraulic oil replacement ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐
- . Reduction gears oil replacement ☐
- . Safety devices check ☐

.....
stamp

.....
signature

At 7500 hours

- . Hydraulic oil pollution check ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustment ☐

.....
stamp

.....
signature

At hours

.....
.....
.....
.....
.....
.....
.....

.....
stamp

.....
signature

At 8000 hours

- . Hydraulic oil replacement ☐
- . Structural inspection ☐
- . Valves calibration ☐
- . Manual extension adjustments ☐
- . Reduction gears oil replacement ☐
- . Safety devices check ☐
- . Runner replacement ☐
- . Hydraulic system washing ☐

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