

**PEGASUS**  
MAINTENANCE MANUAL

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Each vehicle is equipped with:

- A copy of this manual
- A copy of the use and maintenance manual of the engine drafted by the manufacturer
- A copy of the use and maintenance manual for every device or equipment that this vehicle should be supplied with.

These manuals are drafted by the respective suppliers, i.e. reproduced accurately and in full by **DIECI S.R.L.** Upon their specific authorisation: they can be enhanced with further specifications drafted by **DIECI S.R.L.**



**- WARNING**

All documentation provided constitutes an integral and important part of the product and must always be available to users; users must carefully read the aforementioned documentation before using the vehicle.



**- FORBIDDEN**

Improper, incorrect, or irrational use of the vehicle or the accessories with which it is equipped as well as modification to its physical structure or functioning is prohibited.



**- FORBIDDEN**

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**- ATTENTION**

A copy of this manual must always be kept on board the vehicle for the operator's reference

# **DIECI**

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**USE AND MAINTENANCE MANUAL**

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Dear customer,

congratulations and thank you for choosing a **DIECI**.

This Use and Maintenance Manual has been written to help you fully appreciate your vehicle.

We strongly recommend that you read this manual in its entirety before using the vehicle.

It contains information, advice and important warnings that will help you to fully take advantage of the technical capabilities of the **DIECI**.

You will learn about its features and special practical information in addition to information about its maintenance, driver and operation safety to help maintain your vehicle over time **DIECI**.

We are confident that you will be happy with your new vehicle and we remain at your disposal should you have any further queries.

Sincerely,

**Sales Management**



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# 1 INTRODUCTION

## 1.1 Manual structure

This manual is an integral part of the official documentation of the vehicle and of the equipment. It must be carefully stored and be available to the managers, the users and personnel in charge of maintenance.

## 1.2 Purpose and content

This manual is an integral part of the official documentation and is aimed at supplying the Operator with all the information required concerning technical aspects, operation and safety during the entire lifespan of the vehicle or equipment.



### - ATTENTION

This manual must be read carefully before using or performing maintenance on the vehicle.



### - NOTE

If in doubt on the correct understanding of the instructions, contact the Manufacturer for clarifications.

## 1.3 Preservation

The instruction manual must be kept near the equipment available to the Users (in the cab or on the equipment where set up) inside a relative envelope, protected from liquids and anything that might make it illegible.

If the manual becomes creased and/or be, even partially, damaged or illegible or in case of loss of the manual, it must be replaced immediately by contacting the **DIECI TECHNICAL ASSISTANCE SERVICE**, giving the details of the manual found on the first page.

## 1.4 Addressees

This manual is addressed to the following persons:

- **Operator:** instructed person, trained with specific theoretical-practical course concerning use of the vehicle or equipment
- **Generic maintenance technician:** trained and educated person to perform routine maintenance interventions with basic mechanical, electrical and hydraulic knowledge
- **Specialised maintenance technician:** trained and educated person to perform routine and extraordinary maintenance interventions with in-depth and specific mechanical, electrical and hydraulic knowledge, normally sent or authorised by **DIECI S.R.L.** or the dealer.



### - ATTENTION

The users must not carry out operations reserved for maintenance technicians or qualified technicians. The Manufacturer is not liable for damage deriving from the non-compliance with this prohibition.



### 1.4.1 Training

This manual gives the users all technical data on the vehicle or on the equipment, the presence and type of control and safety devices and the presence and meaning of the safety stickers and plates.

All vehicle or equipment users must have all necessary information, training and education in relation to the correct use conditions of the means and foreseeable anomalous risks.

The information, training and educating must be implemented upon introduction of new work equipment and for each work equipment available to users.



#### - NOTE

**Ensure to respect the current laws and Standards in the selling country of the machine with regard to information, training and educating of personnel to use the vehicle and its equipment.**

The employer must inform personnel on the following subjects on safe use:

- Risk of accident
- Individual safety devices and those of the machine, set up for operator safety
- General accident-prevention rules and/or foreseen by international directives
- Accident-prevention rules of Legislation of the Country where the vehicle is intended for use

Before starting to work the operator must know the vehicle features and must have fully read this Use and Maintenance Manual.

### 1.4.2 Training



#### - ATTENTION

**The operator in charge of using the vehicle or equipment must have attended a suitable theoretical-practical course lasting as long as indicated by legal prescriptions in the Country where the vehicle or equipment is used.**

Training must at least include the following subjects:

- Use and limits of the functioning and emergency controls of the equipment and of the vehicle on which the equipment is mounted.
- Knowledge and awareness of the Use and Maintenance Manual and of the control marks, of the instructions and of the warnings applied on the vehicle.
- Knowledge and understanding of the Standard on this equipment, including the educating aimed at recognising and avoiding potential dangers at work.
- Knowledge of the mechanical functioning of the vehicle sufficient for recognising a real or potential failure.
- Hints on constructive particulars of the vehicles and on static and dynamic stability concepts.
- Correct use of the vehicle procedures in safe conditions with regard to the work place and the load to be handled/lifted, capacity and guide notions.
- Knowledge and use of the PPE to be worn during use of the vehicle and of the equipment.
- Knowledge and execution of the routine maintenance to be carried out.

Training must be carried out under the supervision of a qualified person in an open area and free from obstacles. At the end of this practice, the trainee must be able to safely use the equipment, and the vehicle on which it is installed.

The operator must also be trained on the responsibility and authority of not using the vehicle in case of failure or presence of unsafe conditions, and request further information from the Manufacturer or authorised dealer.

### 1.4.3 *Qualification*

The vehicle and equipment are intended for professional use; their use must therefore be entrusted to qualified figures, in particular:

- Being of adult age
- Be physically and psychically suitable to carry out particularly difficult technical work
- Have been adequately trained on the use and maintenance of the vehicle and equipment
- Have been judged suitable by the employer to carry out the work entrusted to them
- Are able to understand and interpret the manual and the safety requirements
- Know the emergency procedures and their activation
- Have the ability of activating the specific type of vehicle or equipment
- Are familiar with the specific standards of the case
- Have understood the operational procedures defined by the Manufacturer of the vehicle or equipment



## 1.5 Terms, units of measurement and abbreviations used

	DECIMAL METRIC SYSTEM (SI)		ENGLISH IMPERIAL SYSTEM (IMP)	
	NAME	SYMBOL	NAME	SYMBOL
<b>SURFACE</b>				
	square meter	m <sup>2</sup>	square foot	ft <sup>2</sup>
<b>ELECTRICITY</b>				
	Ampere	A		
	Volt	V		
<b>FORCE</b>				
	kiloNewton	kN		
	Newton	N		
<b>LENGTH FORCE</b>				
	Newton/metres	N/m	pound/inch	lb/in
<b>SURFACE FORCE - PRESSURE</b>				
	kilopascal	kPa	Square pound/inch	psi
<b>ROTATION FREQUENCY</b>				
	Revolutions per minute	rpm		
<b>LENGTH</b>				
	kilometre	km	mile	mi
	metre	m	foot	ft
	centimetre	cm	inch	in
	millimetre	mm	inch	in
<b>MASS</b>				
	kilogram	kg	pound	lb
	ton	t	pound	lb
<b>POWER</b>				
	kilowatt	kW	horse power	HP
	Watt	W		
<b>TEMPERATURE</b>				
	Celsius degrees	°C	Fahrenheit degrees	°F
<b>TORQUE</b>				
	Newton metres	N m	pound feet	lb ft
			pound inch	lb in
<b>SPEED</b>				
	kilometres per hour	km/h	miles per hour	mph
	metres/second	m/s	feet/second	ft/s
<b>VOLUME</b>				
	cubic meter	m <sup>3</sup>	cubic yard	yd <sup>3</sup>
			cubic inch	in <sup>3</sup>
	litre	l	UK gallon	UK gal



	DECIMAL METRIC SYSTEM (SI)		ENGLISH IMPERIAL SYSTEM (IMP)	
	NAME	SYMBOL	NAME	SYMBOL
<b>TIME</b>				
	hour	h	hour	h
	minute	min	minute	min
	second	s	second	s
<b>VOLUME PER TIME</b>				
	cubic metre per minute	m <sup>3</sup> /min	cubic foot per minute	ft <sup>3</sup> /min
	litre per minute	l/min	UK gallon per minute	UK gal <sup>3</sup> /min
<b>SOUND POWER AND ACOUSTIC PRESSURE</b>				
	decibel	dB		

## 1.6 Used symbols









### 1.6.1 Symbols key in manual

Carefully read the safety regulations given and follow all recommended precautions in order to avoid potential risks and safeguard your health and safety.

The symbols listed below are inserted to highlight situations which **DIECI S.R.L.** considers particularly important.

However, this manual must be read completely and understood and must be kept inside the vehicle, covered and protected, available to all vehicle users.

If in doubt, contact the nearest agent or dealer.

SYMBOL	MEANING	COMMENT
	<b>DANGER</b>	Indicates an important safety message. When you see this symbol, carefully read the information that follows and inform other operators in order to prevent risks and hazards.
	<b>SPECIFIC DANGER</b>	Indicates a specific danger with risk, even serious, for the user. (Electrical danger provided as example)
	<b>ATTENTION</b>	Indicates a warning addressed to avoid a potentially dangerous situation
	<b>NOTE</b>	Indicates a WARNING or a note on key functions or on useful information.
	<b>PROHIBITION</b>	Indicates strictly prohibited actions or things that are dangerous to personnel.
	<b>CONSULTATION</b>	Indicates reference to other paragraphs or manuals.
	<b>MAINTENANCE</b>	Indicates a maintenance operation that must be carried out by a General or specialised maintenance technician.
	<b>OPTIONAL</b>	Indicates possible installation or presence of an optional available at <b>DIECI S.R.L.</b> distributors.

## 2 GUARANTEE

The guarantee is applied to all manufacturing and material defects, duly certified, and is exclusively limited to the repair or replacement of parts that, at the discretion of the Company, are acknowledged as faulty, as well as the labour necessary for such repairs or replacements, on the basis of guarantee times established by the Company.

All interventions carried out during the guarantee period must be carried out by personnel authorised by the Company (otherwise, the right to guarantee cover is declined).

### 2.1 Exclusions from the guarantee

Damage to the vehicle caused by the following is not included in the Guarantee:

- Operator errors
- Failure to perform the maintenance stipulated in this Manual
- Faults and/or breaks not attributable to its malfunction
- Tampering with equipment
- Normal operating wear
- Deterioration of the parts that have a purely aesthetic function
- Repairs by unauthorised centres or persons
- Product use with methods that do not comply with the warnings provided in this Use and Maintenance Manual.
- Damage caused by the unsuitability of the environment in which the equipment works and phenomena that are not caused by its normal operation
- Consumable components subject to wear: clutch, belts, brake pads, slide blocks, rollers, oil and liquids, filters, etc.
- The electrical components and systems.
- Damage caused by: climatic agents, natural disasters, vandalism, etc.
- Any other malfunction not due to a certified defect resulting from an original fault or that does not fall under the responsibility of **DIECI S.R.L.**

The following parts are also excluded from this guarantee but are covered by the guarantee of the relevant Manufacturers:

- Diesel engine
- Axles and reduction gears
- Hydraulic pumps and engines
- Tyres

**DIECI S.R.L.** shall handle the application of the aforementioned guarantees.

### 2.2 Guarantee: duration

**DIECI S.R.L.** guarantees its products for 12 months from the date of delivery to the Customer or Dealer/Distributor.

If the vehicle is stored for long periods by the Dealer/Distributor at the time of sale to the customer, the Service Centre will reserve the right to verify guarantee activation.

### 2.3 Guarantee: validity

The guarantee is valid from the date the vehicle is shipped from the factory (sales to Distributors or Dealers). When delivery is handled by the Distributor or Dealer, **DIECI** reserves the right to verify that the guarantee start date corresponds to the shipping or delivery date on the transport document of the product being guaranteed, and/or to the invoice date, and can request original copies of these documents.



## 2.4 Guarantee: activation

The guarantee is automatically valid from the date the vehicle leaves the factory (sale to Distributors or Dealers).

## 2.5 Guarantee: validity

### 2.5.1 *Guarantee in countries with assistance centres*

The guarantee covers the replacement or repair of faulty parts proven defective as a result of the material used, its manufacturing or assembly.

**DIECI** reserves the sole right to authorise the repair or replacement of faulty parts.

**DIECI** shall resolve the anomaly through the means and methods it deems most appropriate

**DIECI** is responsible for:

- The materials used
- Labour
- Travel expenses

The Customer is responsible for:

- Packing and shipping costs for replacement parts
- All other expenses not listed under those for which **DIECI S.R.L.** is liable

### 2.5.2 *Guarantee in countries with NO assistance centres*

Refers exclusively to the free supply, ex works by **DIECI**, of parts no longer usable due to faulty original material, manufacturing and/or assembly.

### 2.5.3 *Examining replaced faulty parts*

Before honouring the guarantee, **DIECI** may ask for the faulty parts replaced during the repairs to be returned at **DIECI**'s expense.

### 2.5.4 *Additional guarantee for repairs and replacement parts*

Repairs made under guarantee or not, and parts replaced during repair work, are guaranteed for 3 months from the date of repair or installation, even if the original guarantee has expired.

### 2.5.5 *Intervention campaigns for faulty products*

The replacement procedures of parts acknowledged to be faulty will be agreed upon by **DIECI S.R.L.** and its distributors/dealers/ authorised workshops.

These intervention campaigns can be followed directly by **DIECI S.R.L.** suppliers, who are responsible for supplying the components to be replaced (interventions authorised by **DIECI S.R.L.**).

The above interventions will be preceded by written communication from **DIECI S.R.L.** to its purchasers.

Only **DIECI S.R.L.** can decide the intervention method (repair, replacement or modification).

## 2.6 Guarantee: intervention request

### 2.6.1 *Guarantee: claim*

The claim of the faulty part must be made by the Customer, Dealer, Distributor or Authorised workshop and must be sent directly to **DIECI S.R.L.** Customer Service within 8 days from when it is noted.

The claim must include a clear description of the defect and precise references to the vehicle (type, model, and serial number). This information can be found on the vehicle in the places indicated in the USE AND MAINTENANCE MANUAL.

### 2.6.2 *Obligation of vehicle downtime*

If there is a risk that the defect may jeopardise safety and accident prevention or may cause further damage, the vehicle must not be used until it has been repaired and tested.

**Every modification made to the vehicle requires a new verification of conformity with the 2006/42/EC Machinery Directive. This procedure is also valid in the case of repairs with non-original spare parts.**

**In the event of any dispute, exclusive jurisdiction will be held by the Court of Reggio Emilia - ITALY.**

## 2.7 Non-activation, failure to honour, termination

### 2.7.1 *non-acknowledgement*

The guarantee is not honoured:

- If the defect is not reported as described and within the established time limit.
- If the customer does not comply with **DIECI S.R.L.'S** request to return the faulty parts replaced during the repairs.
- If the customer has not complied with the obligation to stop using the vehicle after making a claim, limited to damages caused by noncompliance.

### 2.7.2 *Guarantee: termination*

The guarantee is terminated:

- If the buyer does not fulfil contractual payment obligations.
- If damage has been caused by carelessness, negligence, or by use of the vehicle for purposes not in compliance with specifications provided in the use and maintenance manual (incorrect manoeuvres, overloading, use of incorrect fuel, poor maintenance, disregard for warning indicator instruments etc.)
- If the defect is a result of applications, equipment, modifications or repairs not authorised by **DIECI S.R.L.** or carried out using poor quality parts. (For this reason, we recommend always using original spare parts).



Refer to the "MAINTENANCE" paragraph for information regarding recommended routine maintenance.



## 2.8 Final terms

In none of the cases regarding non-activation of the guarantee, it not being honoured or being terminated, the buyer cannot demand cancellation of the contract, or compensation, or an extension of the guarantee.

Any guarantee conditions other than those listed above must be agreed upon in writing and signed by both parties.

Unless agreed upon in writing by both parties; **DIECI S.R.L.** does not pay compensation for any type of claim caused by vehicle downtime, such as:

- Replaced or rented vehicles
- Labour
- Loss of profit

## 3 SAFETY REGULATIONS

### 3.1 General warnings

The instructions for use, maintenance and repair described in this handbook must be followed if the vehicle is to be considered as being operated in accordance with the manufacturer's intended uses.



**- FORBIDDEN**

**THE MACHINERY AND EQUIPMENT CANNOT BE MODIFIED WITHOUT THE MANUFACTURER'S AUTHORISATION.**

To guarantee your safety and that of others, do not modify the structure or adjust the various accessory components of the vehicle or equipment. The same holds true for the deactivation or modification of safety devices present.



**- ATTENTION**

**Any modification made to the vehicle or accessories will absolve DIECI S.R.L. from all liability for damage or injury resulting from such modification.**



**- ATTENTION**

**Every vehicle or accessory must be used, assisted or repaired only by persons that have received training in advance on the vehicle and on its safety regulations, in addition to being authorised to use the vehicle or accessory itself.**



**- ATTENTION**

**The user must always observe the general safety regulations as well as those for accident prevention, such as traffic rules if the vehicle is used on public roads (according to the regulations in force in the country of use).**



**- FORBIDDEN**

**USE OF THE VEHICLE OR OF THE ACCESSORIES DIFFERENT TO THAT DESCRIBED IN THIS MANUAL IS PROHIBITED.**



**- FORBIDDEN**

**THE VEHICLES OR ACCESSORIES IN QUESTION ARE NOT SET-UP FOR USE IN ENVIRONMENTS OR SITES EXPOSED TO THE PRESENCE OF EXPLOSIVE GASES, THUS PROHIBITING USE IN THESE PLACES.**

To operate in closed spaces, the Manufacturer must be contacted so that the necessary modifications can be made to the vehicle.



**- FORBIDDEN**

**All functions and procedures concerning the operation and mounting of the vehicle or its equipment that are not described in this manual are strictly FORBIDDEN.**



**- DANGER**

**DO NOT USE THE VEHICLE OR THE ACCESSORIES IF YOU ARE UNDER THE EFFECT OF ALCOHOL, DRUGS OR IF YOU HAVE TAKEN MEDICINES THAT MAY MAKE YOU DROWSY OR MAY ALTER YOUR REFLEX AND REACTION TIME.**



**- ATTENTION**

**Read all of the safety stickers on the vehicle and observe all regulations printed on these stickers before starting up, running or refuelling the vehicle or before carrying out maintenance work. Immediately replace damaged, lost or illegible decals. Clean the stickers if they are covered by dirt, cement or other deposits.**



**- NOTE**

**DIECI S.R.L. is not liable for damage caused by negligent use of this vehicle or the accessory even if said damage is not a result of intentional improper use. Everything possible has been done during the design and construction phases of vehicles and accessories to make your job as safe as possible. Due caution, however, is indispensable and there is no better rule to prevent accidents.**

## 3.2 Safety indications



### - ATTENTION

Carefully observe and follow all safety signals on the vehicle and on the accessories and read all safety messages in this manual.

- The safety signals must be installed, maintained and replaced when necessary.
- If a safety signal or this manual is damaged or missing, order a replacement from the **DIECIS.R.L.** dealer in the same manner as spare parts (make sure you provide the model and serial number of the vehicle or accessory when placing the order).
- Learn how to correctly and safely operate the vehicle and the accessories and their relative controls.
- Allow only trained, qualified and authorised personnel to operate the machine and installed accessories.
- Keep the vehicle and accessories in appropriate working conditions.
- Unauthorised modifications to the vehicle or accessories can jeopardise the functioning and/or safety and influence their life-span.
- The safety messages in this SAFETY REGULATIONS chapter illustrate the basic safety procedures of the vehicles.
- In case of doubt, contact the manager before proceeding to operate or carry out maintenance work on the vehicle or on the accessories.



## 3.3 Personal protective devices

### 3.3.1 Protective clothing

In some cases, when working in particularly uncomfortable environments, adequate clothing or equipment must be worn.

It is necessary to have:

- Protective helmet
- Accident-prevention shoes
- Protective goggles or protective face mask
- Protective gloves
- Protective headwear against noise
- Reflective clothing
- Waterproof clothing
- Breathing apparatus or filtering mask

Before operating the vehicle, it is the personnel's responsibility, to ask the safety manager about the possible risks of the work and the accident prevention clothing that must be worn.



#### - ATTENTION

The Personal Protective Equipment used by the operators can have different characteristics, depending on the type of construction site and risks present in the work place.

Always use PPE that is appropriate for the type of work to be performed.



#### - ATTENTION

Pay attention to moving parts to avoid danger of crushing or dragging of the lower and upper limbs. Avoid wearing jewellery or pendants that might be trapped in moving parts. Long hair must be tied back to avoid it being caught in moving parts.



#### - FORBIDDEN

Do not wear loose clothing, chains, belts or other accessories that may be caught in the control levers or in other parts of the vehicle.



#### - FORBIDDEN

Headphones for listening to the radio or music should not be worn while using the vehicle.



**- ATTENTION**

Accident prevention equipment must always be whole and in good condition. Damaged clothing cannot ensure adequate protection. Do not wear damaged clothing; always replace damaged or torn clothing before operating the vehicle.

**3.3.2**     *Protect yourself against noise*

Prolonged exposure to loud noise can damage your hearing or may cause hearing loss.



**- ATTENTION**

Always wear anti-noise earmuffs or earplugs to protect yourself from excessive and irritating noises.

**3.3.3**     *Protections against the falling of objects from a height*

The vehicle is equipped with a protective cab against falling objecting (FOPS).



**- ATTENTION**

Use of a safety helmet is required if there is a risk of falling objects.

**3.3.4**     *Protect yourself from flying fragments*



**- ATTENTION**

During operation in certain conditions, particles of material may be ejected. In such conditions, it is a good idea to wear protective goggles and clear the area of those people not in possession of such goggles.

### **3.4 Preparing for accidents**

- Always be prepared in the event of a fire or an accident.
- Keep a fire extinguisher and first aid kit at hand. (Not supplied by the manufacturer, "optional accessories").
- Carry out periodic inspections to ensure that the first aid kit contains all necessary items; replenish content if necessary.
- To properly use the extinguisher, carefully read the instructions located on the extinguisher.
- Carry out periodic inspections and maintenance (six monthly) to ensure that the extinguisher is ready for use at any given moment.
- Create priority procedures to deal with fires or accidents.
- Keep emergency telephone numbers (doctors, ambulance, hospital and fire brigade) clearly visible and near the telephone.
- Adequately trained and educated personnel must be present for managing emergencies with adequate theoretical-practical course carried out on site.

Below are some First Aid procedures that can be activated in case of accident following use of the vehicle or equipment object of this use and maintenance manual.

These procedures may be useful in an emergency for the users or other operators present near-by, during use and various life-phases of the vehicle or of the equipment (transport, installation, use, maintenance, adjustment, etc.).

#### **3.4.1 First Aider Tasks**

1. Activate first aid (emergency call).
2. Evaluate the victim and, if necessary, support vital functions.
3. Stop an external haemorrhage.
4. Protect wounds and burns.
5. Protect the victim against further damages.
6. Do not perform unnecessary or damaging actions, which give beverages, move the victim, reduce dislocations and/or fractures, etc.

#### **3.4.2 Emergency call**

Good first aid intervention also depends on the timely arrival of rescuers (Italian emergency medical support) to the place of the emergency.

This is why the first aider in charge of calling the emergency must precisely indicate:

- Address of where the accident or illness took place.
- Number of injured or ill parties.
- The possible cause of the event.
- The state of the vital functions of the injured party, specifying whether the same is conscious or not and breathes normally or not.

At the end of the call it is recommended to:

- Give own details, indicating a telephone number where to be contacted.
- Wait for the rescuers outside the company (for example, near the reception).



### 3.4.3 Traumas

#### **Distortions, dislocations and fractures:**

Immobilise the joints in the position after the trauma, using bandages or storage, supporting the analgesic position of the injured party without attempting dangerous manoeuvres. Apply the cold (with bag of ice or other systems). In case of exposed fracture, cover the wound using a sterile gauze pad, after having pressed at a distance on the specific points the relative haemorrhage.

#### **Contusions, crushing:**

In case of contusions and/or crushing of ends of the upper and lower limbs (fingers, hand, feet, etc.) it is advised to immediately place the limb underneath running water (cold) and apply ice. Also check for wounds and/or cuts in the hit area and, if necessary, disinfect with the due precautions.

### 3.4.4 Haemorrhages

It is necessary to press the fingers on the haemorrhage point with sterile gauze pad, lifting the limb and eventually compress upstream of the haemorrhage with tourniquet.

#### **Treating superficial wounds:**

Carefully expose and clean the wound, disinfect it with physiological solution, medicate it covering it with sterile gauze pads. Bandage avoiding excessive tightening to allow good circulation.

#### **Treating deep wounds:**

It is a priority to protect yourself against the risk of infection using gloves and splash shield; pad the haemorrhage by direct pressure or using other pressure points until it stops or the arrival of the ambulance. Call the medical emergency number, informing them that you are padding an arterial haemorrhage.

Treat the wound only after the haemorrhage is under control.



#### **- NOTE**

**Do not use cotton wool, methylated spirit, antibiotic powder to disinfect the wound.**

## 3.5 Preventing fires and accidents

### 3.5.1 Risks of fires



#### - FORBIDDEN ACTION

It is forbidden to smoke or use naked flames during use of the vehicle or any maintenance operation.



#### - DANGER

Do not operate the vehicle without the following safety conditions:



#### - DANGER

**1 - Fuel, oil and lubricant leaks can trigger fires and cause serious injuries.**

- Ensure that there are no flammable liquids leaking.
- To avoid oil or diesel leaks, make sure that there are no loose or missing clamps, no twisted tubes and no tubes that rub up against each other.
- Do not bend any tubes/pipes under pressure.
- Never install damaged tubes.
- Do not weld tubes or pipes containing inflammable liquids.
- Do not use a torch head to cut tubes or pipes containing inflammable liquids.



#### - DANGER

**2- Short circuits may cause fires.**

- Ensure that there are no short circuits.
- Clean and interrupt all electrical connections.
- Before every work shift, make sure that there are no loose, twisted, hardened or damaged electric cables.



#### - DANGER

**3 - Fuel, oil, grease, waste, deposits or accumulated dust or other components can cause a fire.**

- Remove inflammable materials.
- Prevent fires by inspecting and cleaning the vehicle at every shift, by immediately removing inflammable components.
- Check the ignition switch: in the event of fire, failure to switch off the engine will obstruct the work of the Fire Brigade.
- Do not use mazut, petrol or inflammable liquids to clean parts of the vehicle. Only use non-flammable detergents.



**- DANGER**

**4 - Safely handle dangerous liquids.**

- Handle fuel with care, it is easily inflammable. If fuel is ignited, there may be an explosion and/or a fire.
- Do not refuel the vehicle while smoking and in presence of naked flames or sparks.
- Always stop the engine before refuelling the vehicle.
- Fill up the tank outside.
- All fuels, most lubricants and some anti-freezes are inflammable.
- Preserve the flammable fluids away from fire hazards.
- Do not burn or drill pressurised containers.
- Do not keep cloths soaked with lubricant; they may cause fires and spontaneous combustions.

**3.5.2 Risks of inhaling gas**



**- DANGER**

**Exhaust engine gases are toxic and can cause damages to your health.**

- If necessary to work in closed ambients, ensure it is sufficiently ventilated and equip the vehicle with special purifiers.

**3.5.3 Risks of batteries exploding**



**- DANGER**

**The gas of the batteries may explode.**

- Keep any sparks, open flames or lit cigarettes away from the upper part of the battery.
- Never place a metal object between the terminals to check the battery charge. Use a voltmeter or a densimeter.
- Do not create sparks in the battery connection during recharging phases or starting the engine with auxiliary battery.
- Do not charge the batteries if they are extremely cold, extremely hot or damages as they might explode.
- Heat the batteries up to 16°C.
- The electrolyte in the batteries is an extremely corrosive acid.
- Should the battery explode, the electrolyte may be sprayed in the eyes with the possibility of causing blindness.
- Ensure to be wearing protective goggles when carrying out maintenance on the batteries.
- Do not overturn or tilt the battery as acid could come out.

### 3.5.4 Residue risks



#### - KEEP AWAY FROM MOVING PARTS

Damage may be caused by entanglement in moving parts.



#### - AVOID BURNS

- Jets of hot fluids:

After operation, the engine cooling liquid is hot and under pressure. Contact with hot water or steam may cause serious burns.

Avoid possible injury caused by hot water jets. Do not remove the radiator cap until the engine has cooled down. To open it, unscrew the cap as far as possible. Before removing the cap, release all of the pressure.

- Hot surfaces and fluids:

The engine, reduction gears and hydraulic system oil heat up during vehicle use. The engine, rigid and flexible piping and other components heat up.

Wait until all parts cool down before beginning maintenance or repair work.



#### - CAUTION WITH PRESSURISED FLUIDS

Fluids such as fuel or hydraulic oil under pressure can penetrate the skin and eyes causing serious injuries.

Avoid these dangers while repairing or carrying out maintenance on the vehicle, discharging the pressures (using the hydraulic levers of the distributors) before disconnecting or repairing pipes and hydraulic parts.

Before restarting the engine, ensure that all connections have been correctly tightened.

Use a piece of cardboard to check for any leaks; make sure your hands and body are adequately protected against pressurised fluids. Wear a face mask or accident-prevention goggles to protect your eyes.

Should there be an accident, seek medical attention immediately. Any fluids that penetrate the skin must be removed surgically within a few hours to avoid infections.



#### - ELECTROCUTION

All maintenance and/or adjustment interventions on powered parts must be carried out only and exclusively by qualified and adequately trained personnel.



#### - RISK OF SLIPPING

During on-site operations, the areas around the equipment may have debris and liquid (oil, water, etc.) that might make the floor slippery. Pay the utmost attention.



#### - RISK OF FALLING, TRIPPING

Pay the utmost attention when climbing in and out from the vehicle.



#### - CRUSHING OF HANDS AND FEET

The presence of moving parts during functioning can cause risks for the ground operators. During vehicle manoeuvres, carefully check no unauthorised person is within the required moving area.



### 3.5.5 *Contact with dangerous substances*

- Wear the necessary protective clothing.
- Refer to the safety data sheet of the product used and take appropriate precautionary measures when using the product.
- Avoid contact with skin and eyes.
  - In case of contact with eyes: rinse them thoroughly with plenty of water for a few minutes keeping the eyelids open and consult a doctor.
  - Should any fluid come into contact with skin, wash the area carefully, remove contaminated clothing, and when skin is dry, apply moisturising cream. Consult a doctor if necessary.
  - In the event of inhalation, move away from the contaminated area and go to a well-ventilated location. Consult a doctor in the event of respiratory problems.
  - If swallowed: immediately contact a doctor, showing the label or container. Do not induce vomiting to avoid the risk of inhalation via respiratory passageways.



### 3.6 Storing dangerous liquids



**- NOTE**

Handle fuel with care, it is easily inflammable. If fuel is ignited, there may be an explosion and/or a fire.



**- DANGER FLAMMABLE MATERIAL**

All fuels, most lubricants and some anti-freezes are inflammable.



**- DANGER**

All fluids must be kept out of the reach of children and incompetent persons.



**- IT IS FORBIDDEN TO SMOKE AND HAVE OPEN FLAMES**

It is forbidden to smoke or to use naked flames near fuels.



**- FORBIDDEN**

Different types of substances must not be stored or mixed together.



**- ATTENTION**

All chemical products are generally very noxious to our health, avoid contact with the skin and eyes by wearing suitable protective clothing. Do not ingest.



**- ATTENTION**

Comply with the following precautions to store dangerous liquids:

- All inflammable fluids must be stored in special containers, and the content of the containers must be clearly indicated. Containers must be tightly sealed.
- Store inflammable fluids in well-ventilated locations, far away from heat sources, sparks and open flames.
- Keep containers closed and covered. Other substances (e.g. foodstuffs) must not be present in this location.
- Always fill up the tank outside.
- Be careful of fumes and steam which may be formed by chemical products. Avoid inhalation.
- Do not breathe in fuel fumes.
- Ensure that these chemical products do not spill or flow into the ground, sewers or puddles. If necessary, inform the competent local authorities.
- In the event of a fire, use carbon dioxide, dry chemical powder, foam, nebulised water, sand, earth. Use jets of water to cool down surfaces exposed to the fire.
- Verify that there are no leaks of inflammable liquid (fuel, oil, grease, general lubrication leaks) in the storage containers.



Refer to the safety data sheet of the product for additional precautions and warnings that are to be adopted.

## 3.7 Warnings for safe working

### 3.7.1 Ensuring the vehicle is clean

- Clean the windows, lights and rear-view mirrors.
- Clean dirt and waste away from the engine, joints and radiator
- Make sure the cab steps and the handle are clean and dry.
- Clean all safety stickers and manoeuvring instructions. Replace any stickers that are illegible or missing.



For the cleaning procedures, refer to the "CLEANING" chapter.



**- FORBIDDEN**

If the vehicle or equipment is not in perfect working order its operation is strictly prohibited.

### 3.7.2 Checking for damage

- Make sure there are no damaged or missing parts
- Make sure all articulated pins are properly fastened.
- Make sure there are no signs of possible cracks or flaws or other damage to the windows.
- Make sure there are no oil, fuel or cooling liquid leaks underneath the vehicle.
- Make sure the wheel bolts are properly tightened.



**- FORBIDDEN**

If the vehicle or equipment is not in perfect working order its operation is strictly prohibited.

### 3.7.3 Start working with the vehicle

Regardless of their level of driving experience, operators must familiarise themselves with the position and function of all controls and instruments before operating the machine.

- Before using the vehicle, check location of personnel.
- While the vehicle is running, always keep light signals on. These serves to warn people that the vehicle is about to move.
- When working in a congested area, have another person present for signalling.
- When manoeuvring the vehicle, pay attention to bulky vehicle parts. There are parts that jut out from the cab.
- Never use controls for purposes different than those for which they were created for; e.g. to climb on or off from the vehicle or hang clothing, etc...
- Only use the vehicle from the driver's position.
- The vehicle may move suddenly if started up without following the correct procedure, thus, creating the risk of personal injury.
- Start up the engine from the driver's seat only.
- Never start the engine by causing a short circuit between the terminals on the starter.
- Before starting the engine, make sure all control levers are in a neutral position.

### 3.7.4 *Passengers transportation*

Only the operator must be on board the vehicle, passengers are not admitted.

Passengers may obstruct the operator's view, causing an unsafe operation of the vehicle.



**- FORBIDDEN**

Carrying people on or lifting people up with the vehicle is strictly prohibited unless the vehicle is equipped with an elevation work platform and has a special certificate of conformity regarding the transport of people.



**- FORBIDDEN**

It is strictly forbidden to transport persons inside the basket while the vehicle is moving even in the presence of elevation work platform and certificate of conformity. It is compulsory to use the basket only with the parking brake engaged and the outriggers lowered (if present).



### 3.7.5 Electrical system protection



#### - ATTENTION

**A burnt fuse must be replaced with another fuse of the same type, amperage and class.  
Other types of interventions are not allowed, even if temporary.**

Do not connect or remove terminals, fuses, or connectors when the vehicle is switched on or electrically powered.



#### - ATTENTION

**Any intervention on the electric plant must take place with the vehicle not powered electrically. Restore the power supply only after the intervention has been concluded. Remount the lids and protections.**

- Use the battery isolator to cut off power to the vehicle.
- Cut off power by means of the battery cut-off even before replacing the vehicle battery.
- In the event that a connector is damaged or is no longer inserted in its housing, replace it immediately in order to avoid short circuits or sparks.



#### - ATTENTION

**Damaged, pinched or burnt cables must be replaced immediately even if damage is only to the sheathing or outer insulation.**

- Never carry out or interrupt any connection on the load circuit, including connections on the battery, with the engine running.
- Never ground (earth) short circuit any charging component.
- Do not use an auxiliary battery with nominal voltage exceeding 12 volt.
- Make sure the polarity is correct when putting in the battery or when using an auxiliary battery when starting the vehicle with cables. Follow the use and maintenance instructions of the manual when starting up the vehicle with cables.
- Always disconnect the negative cable from the battery before performing arc welding on the vehicle or on any connected attachment.
- Position the welding machine's ground terminal as close as possible to the area to be welded.



#### - ATTENTION

**If welding is to be carried out near an electrical module, this module must be removed from the vehicle.  
Only qualified and authorised personnel should carry out this operation.**

- Do not allow welding machine cables go above, near or cross over any electrical cable or electronic component while welding is in progress.

### 3.7.6 Signals to multiple vehicles







When working requiring more vehicles, give signals normally known to all employed personnel. Designate one person to signal and coordinate the work zone.



#### - ATTENTION

Before operating make sure that:

- The user and signaller are aware of the hand signals to be able to interact between them
- That everyone follows the directions given by the person in charge of signalling.
- The signaller must be easily identified by the user of the vehicle.
- The signaller must wear or hold one or more adequate recognition elements, like: jacket, helmet, sleeves, bracelets, signal paddles.
- The recognition elements must be bright coloured, preferably one, and reserved exclusively for the signaller.

Movement	Meaning	Description
	Start - Attention - Control socket	The two arms are open horizontally, the palm of the hands forward
	Stop - Interruption - End of motion	The right arm is stretched upwards, with palm of right hand forward
	Danger - Stop - Emergency stop	Both arms stretched upwards
	End of operations	The two hands are joint at height of chest
	Lift	The right arm, stretched upwards, with palm of right hand forward, makes a circle
	Lower	The right arm, stretched downwards, with palm of the hand towards the body, makes a circle

Movement	Meaning	Description
	Vertical distance	The hands, one on top of the other, indicate the distance
	Horizontal distance	The hands, one next to the other, indicate the distance
	Forward	Both arms are folded, the palms of the hands backwards and the forearms make slow movements towards the body
	Move back	Both arms are folded, the palms of the hands forward and the forearms make slow movements away from the body
	To the right compared to operator	The right arm, stretched horizontally, with palm of right hand downwards, slowly makes small movements towards
	To the left compared to operator	The left arm, stretched horizontally, with palm of left hand downwards, slowly makes small movements towards
	Quick motion	The conventional signals used to indicate movements are quickly made
	Slow motion	The conventional signals used to indicate movements are made very slowly

### 3.7.7 Working with the danger of masses and objects falling



#### - OBJECTS FALLING

When working in areas where there is a risk of falling, bouncing or interference from objects capable of hitting the operator or entering the cab:

- Mount suitable safety panels to protect the operator.
- Always close windows.
- Always ensure that other operators near-by are at a safe distance and cannot be hit by bouncing or falling objects.
- Pay careful attention to crumbling walls, landslides, falling material or objects from the installed equipment, that may hit the cab, the protective structure or windows, causing damages to the vehicle and to the operator.
- Never carry out work operations under an overhang; this could give way and fall onto the vehicle.
- Do not excessively weigh down or fill the installed equipment or transport loads that may come out or fall on the ground.



#### - ATTENTION

Use of a safety helmet is required if there is a risk of falling objects.

### 3.7.8 Work near electrical lines



#### - HIGH VOLTAGE

Before working near overhead electrical lines, check that the safety distance is sufficient, in compliance with the current Standard in the country of use. In any case, never work near electrical lines at distances shorter than those in the table below or at the minimum distances indicated by the Standards in force in the country of use of the vehicle.

Damp ground may increase the risk of electrocution.

Operating or parking the vehicle too close to electrical cables leads to increased risk of being struck by lightning or being seriously injured.

Designate someone on the ground to signal when too close to power lines.

Do not allow anyone near the vehicle when working in the vicinity of power lines. To prepare for any possible emergency situation, wear rubber shoes and gloves, cover the seat with a rubber piece of fabric and take care not to touch the chassis with any unprotected body parts.



#### - DANGER

Should the vehicle collide with an electrical cable, the user, to avoid electrocution, must remain inside the driver's cab until certain that the electrical power supply has been properly disconnected.



#### - DANGER

If operating close to overhead electrical lines, check the safety distance in the table below, reported in Legislative Decree 81/08 Enclosure IX. The table is valid if the vehicle is used on Italian territory. However, refer to the Standards in force in the country of use of the vehicle.

At (kV)	Distance
$\leq 1$	3 m (9.84 ft)
$1 < U_n \leq 30$	3.5 m (11.48 ft)
$30 < U_n \leq 132$	5 m (16.40 ft)
$> 132$	7 m (22.96 ft)

### 3.7.9 Working under the snow



#### - SNOW OR ICE

Snow can hide obstacles and objects, and cover holes, dug-out areas and ditches, therefore, proceed with caution.



#### - FORBIDDEN

**Operation of the vehicle if the quantity of snow does not allow for clear distinction of obstacles and possible dangers along the path is strictly prohibited.**

- Take care when clearing snow and do not venture off the main road; that which is hidden at the sides of the road may cause vehicle overturning or damage to various components.
- Surfaces covered by snow or ice are extremely dangerous. Operate with caution, reducing vehicle speed as much as possible and engaging levers slowly.
- Operate with caution. If the vehicle should sink into the snow, it may overturn or remain buried. Do not venture from the road and avoid remaining entrapped or buried under heaps of snow.
- Extra care should be taken, when working on icy terrain. Should the temperature rise, the ice could melt and the ground could become slippery.
- Use caution in the presence of electrical cables, ditches, or freshly excavated or worked ground.
- Make sure not to cause risk to others in the area when backing up the vehicle.
- Always check the space around the vehicle before carrying out any manoeuvres.



#### - NOTE

**If working the vehicle at low temperatures (-10°C), empty and refill the tank using lubricants, fuel or cooling liquids suitable for such temperatures.**



**There are accessories that can be used to facilitate working with ice or snow, contact your dealer or agent.**

### 3.7.10 Working with scarce lighting



#### - ATTENTION

**The standard illumination of the vehicle is not suitable in working conditions with poor visibility or for use at night. The vehicle can only be used with sufficient lighting in the work some**



**There are several ways to improve visibility in conditions of poor lighting. Contact your local DIECI S.R.L. dealer.**



### 3.7.11 Working in closed areas or dangerous atmospheres



#### - FORBIDDEN

It is FORBIDDEN to use the machine in:

- Suitably ventilated closed spaces, that are nevertheless not compatible for the use of equipment with running endothermic motors.
- Spaces with dangerous or explosive atmospheres.
- Protected environments such as refineries.



#### - ATTENTION

The vehicle can only be used in a tunnel if it has been declared suitable for these environments. The vehicle must be appropriately modified and certified to work in environments with an explosive atmosphere.



### 3.7.12 Working in windy conditions

Wind speed variation can cause a number of problems including the loss of vehicle stability, load oscillation, and a decrease in visibility due to dust, leaves, etc.

Adverse factors to vehicle use are:

- Location of the work site, the aerodynamic effect of buildings, trees and other structures influence wind speed.
- The height of the extended boom: the higher the boom is raised vertically, the higher wind speed becomes.
- Load bulk area: the more space the load occupies, the more the wind force is felt.



#### - STRONG WIND

**DIECI** telescopic lifts can be used up to a wind speed of 45 Km/h, equal to 12.5 m/s (No.6 on the Beaufort scale) measured on the ground.

At 10°C temperature, wind with a speed of 32 Km/h it seems that exposed parts of the body have a temperature of 0°C. The higher you climb the faster the wind speed and the more the sensation of pressure drop increases.



#### - DANGER

**In the presence of strong winds (no.5 Beaufort scale) never lift loads with surfaces exceeding 1 m<sup>2</sup>.**

Below you can find the graph of the Beaufort scale for an indication of the wind speed with which you are working and when to suspend operations, if wind speed should exceed determined values.

Beaufort Wind Scale			
Num	Definition	Speed	Speed (m/s)
0	Calm	Smoke rises vertically	0 - 0.2
1	Light air	Smoke drift wind direction	0.3 - 1.5
2	Light breeze	Wind felt on exposed skin. Leaves rustle; vanes begin to move.	1.6 - 3
3	Gentle breeze	Leaves and small twigs constantly moving; light flags extended.	3 - 5
4	Moderate breeze	Dust and loose paper raised. Small branches begin to move.	5 - 8
5	Fresh breeze	Small trees in leaf begin to sway; glassy water, small waves form.	8 - 11
6	Strong breeze	Large branches in motion. Whistling heard in electrical wires. Umbrella use becomes difficult.	11 - 14
7	Strong wind	Whole trees in motion. Effort needed to walk against the wind.	14 - 17
8	Fresh gale	Some twigs broken from trees. Cars veer on road.	17 - 21
9	Strong gale	Poorly attached asphalt shingles and shingles in poor condition peel off roofs.	21 - 24



### 3.7.13 Evaluating the soil consistency

The ground on which the vehicle can be positioned must be able to support the vehicle and its maximum carrying capacity.



**- DANGER**

The caving-in of the bottom of the vehicle may cause it to overturn.



**- ATTENTION**

Refer to a specialised technician to evaluate the consistency of the ground according to regulations in force in the country where the vehicle is used.



**- NOTE**

In any case, request a specialised technician to verify whether there are hidden cavities (conductors, wells, old cisterns, basements, manure heaps, etc.).



Refer to the "*Technical data*" chapter in the vehicle manual to learn the maximum load on the ground that each wheel or outrigger foot (if present) exerts while the vehicle is used.



## 4 GENERAL INFORMATION

### 4.1 General information

The purpose of this manual is to provide the Operator with efficient and safe instructions on the use and maintenance of the:

**Pegasus 40.25**

**Pegasus 50.19**

**Pegasus 50.21**

This vehicle has been designed and constructed for use as a self-propelled vehicle, including an operator's driving seat, with tyres, intended for use on asphalt or natural surfaces and on rough ground.

The vehicle consists of a main support structure aimed at supporting the extendible arm.

The boom head can mount forks or other equipment, only if approved by **DIECI S.R.L.** or if they are accompanied by a declaration of compliance issued by the manufacturer for use with the type of vehicle.

In used normally, the vehicle lifts and places down loads through the extension/withdrawal and raising/lowering of the boom.



#### - ATTENTION

Any use other than that intended by **DIECI S.R.L.** is considered misuse and DIECI cannot be held liable for damage to property or the vehicle itself or for injury to persons in the case of such misuse.

**For other controls or claims to recognised bodies, refer to local legislation in force in the country where the vehicle is used.**

## 4.2 Vehicle identification

Vehicle model

(Fig. 1-D0000)

Year

Chassis serial number

(Fig. 2-D0000)

Engine serial number

(Fig. 3-D0000)

Cab serial number

(Fig. 4-D0000)

Gear box serial number

(Fig. 5-D0000)

Owner/ Operator

Address of Dealer or agent

Delivery date

Guarantee expiry date

Equipment  
code

Serial No

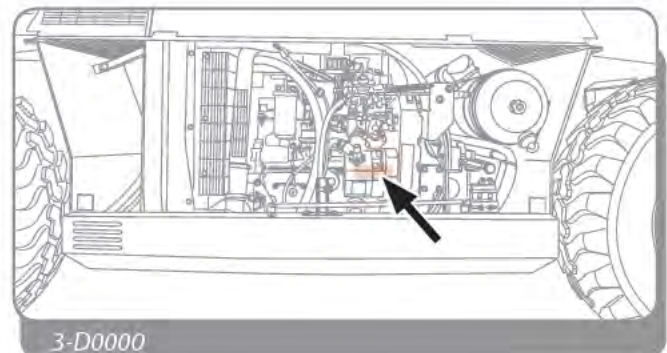
Year



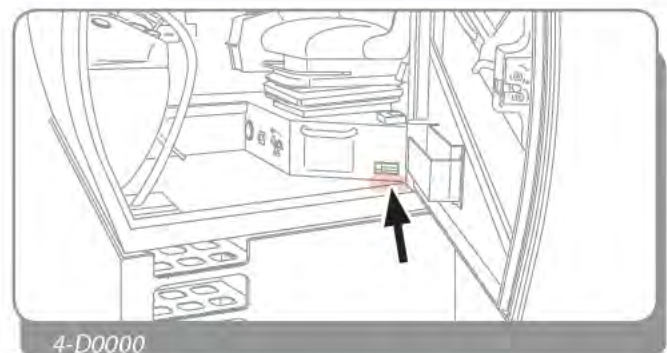
1-D0000



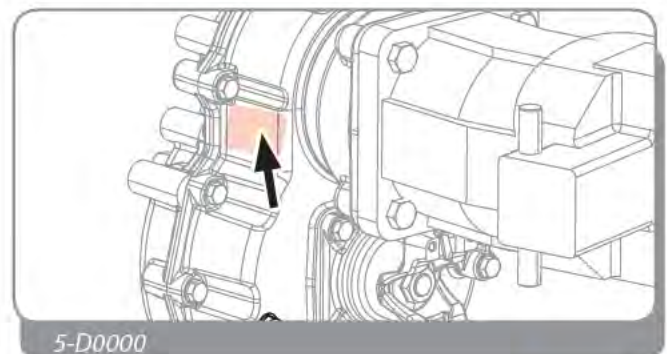
2-D0000



3-D0000



4-D0000



5-D0000

Equipment code	Serial No	Year
.....	.....	.....
.....	.....	.....
.....	.....	.....



### 4.3 Intended Use

The vehicle referred to in this document must solely be used for the purposes stipulated in this User and Maintenance Manual.

Observance of and compliance with the conditions of use, repair and maintenance, as specified by the Manufacturer, constitute essential elements falling within the intended use.



#### - ATTENTION

**The vehicle must ONLY be used by trained and qualified personnel who must be aware of the information in this Manual.**

### 4.4 Contraindications of Use

The vehicle must NOT be used:

- For recipients other than those indicated in the "Recipients" chapter
- For uses other than those indicated in this manual
- In different environmental conditions to those indicated in the "Environmental conditions" chapter
- The vehicle must only be used on the road if the driver has a valid driver's licence in accordance with the regulations in force in the country of use.
- Do not use the mobile hydraulic parts of the vehicle to lift persons.



#### - NOTE

**For every other use of the vehicle other than the above, the Manufacturer reserves the right to review the warranty conditions.**

### 4.5 Declaration of first commissioning

#### **Manufacturer declaration of first commissioning**

*DIECI S.R.L.* declares that every vehicle and equipment produced in its factories is subjected to static and dynamic tests before being placed on the market in order to verify proper operation and compliance with all the relative European directives.

Once the tests are performed, the tested vehicle is provided with the CE certificate.

Every CE marked *DIECI S.R.L.* product is supplied with its relative certificate, which must be kept by the vehicle's legitimate owner in accordance with the law.

### 4.6 Liability

- The vehicles and the equipment are manufactured in compliance with EC Directives in force at the time of marketing;
- Failure to observe the user and safety regulations or use of the vehicle in less than perfect working condition may cause accidents that are punishable by law;
- The Manufacturer is not liable for damage to people, objects or animals caused by improper use of the vehicle or by unauthorised alterations to the structure, applications and transformation;
- The Manufacturer reserves the right to make possible modifications to the vehicle for any technical or commercial reason without prior notice.



## **4.7 Manufacturer**

### ***DIECI S.R.L.***

Via E. Majorana, 2/4

42027 Montecchio Emilia (RE) ITALY

Tax Number 01283560686 VAT N. 01682740350

Tel. +39 0522 869611 - Fax +39 0522 869744

email: info@dieci.com

## **4.8 After-sales Centres**

In case of need for use or maintenance, the User must contact the Manufacturer directly specifying the equipment identification data reported on the vehicle itself.

## **4.9 CE marking and certification**

The vehicle and relative equipment are built in compliance with the relevant and applicable EU Directives at the time of its introduction on the market.

All essential health and safety requirements were analysed during the design and manufacture phases so as to verify their applicability and subsequent compliance. If the analysis resulted in an initial lack of compliance, appropriate solutions were implemented so as to fully meet these requirements.

An example of the certification attached to the vehicle is shown at the side (Fig. 1-D0100).

DICHIARAZIONE DI CONFORMITA'



(Direttiva macchine 2006/42/CE, allegato II, parte A)

**Fabbricante** : DIECI SRL  
**Indirizzo** : Via E. Majorana, 2-4- 42027 Montecchio Emilia (RE), Italia

**Nome e indirizzo della persona autorizzata a costituire il fascicolo tecnico:** SIG. ENNIO MANGHI presso DIECI SRL- Via E. Majorana, 2-4 - 42027 Montecchio Emilia (RE), Italia

**Dichiara che :**

Il carrello elevatore telescopico Tipo \*\*\*\*\* (\*\*\*\*\* \*\* \*\*) Matricola \*\*\*\*\*

è conforme a tutte le disposizioni pertinenti delle seguenti Direttive Europee:

- Direttiva Macchine - 2006/42/CE
- Direttiva Compatibilità elettromagnetica - 2004/108/CE
- Direttiva sull'emissione acustica ambientale delle macchine - 2000/14/CE allegato VI procedura I<sup>a</sup>

Organismo notificato: Reggio Emilia Innovazione S.c.a r.l - via Sicilia 31 - 42122 Reggio Emilia - Italia con N. 1232

Potenza netta installata : \*\*\* kW  
Livello di potenza sonora misurata:  $L_{WA_{m}}$  = \*\*\* dB<sub>(A)</sub>  
Livello di potenza sonora garantita:  $L_{WA}$  = \*\*\* dB<sub>(A)</sub>.

La macchina è equipaggiata con la coppia forche flottanti \*\*\*x\*\* L=\*\*\*\* portata \*,\* t codice BUD\*\*\*\*\*

Targa riportante marcatura CE è applicata sulla macchina.

Montecchio Emilia, \*\*/\*\*/xxxx

**DIECI SRL**  
Via E. Majorana, 2-4  
Montecchio Emilia (RE)  
L' Amministratore  
Ennio Manghi



## 4.10 General warnings



### - FORBIDDEN

**THE MACHINERY AND EQUIPMENT CANNOT BE MODIFIED WITHOUT THE MANUFACTURER'S AUTHORISATION.**

To guarantee your safety and that of others, do not modify the structure or adjust the various accessory components of the vehicle or equipment. The same holds true for the deactivation or modification of safety devices present.



### - ATTENTION

**Any modification made to the vehicle or accessories will absolve *DIECI S.R.L.* from all liability for damage or injury resulting from such modification.**

**Every machine or equipment comes with a copy of its own manual.**



### - FORBIDDEN

**The total or partial reproduction of this manual or any multi-media enclosures is prohibited.**

***DIECI S.R.L.* will protect the ownership rights of these materials.**

A copy of the use and maintenance manual relative to machine parts or equipment of the respective suppliers can be supplied. These manuals are written by the respective product suppliers and reproduced accurately and in full by *DIECI S.R.L.* with their specific authorisation: they can be enhanced with further specifications drawn up by *DIECI S.R.L.*

This Use and Maintenance manual is also provided by the Dealer upon delivery of the vehicle, in order to make sure that these instructions are read and correctly understood.

Should you have trouble understanding any part of this manual, do not hesitate to contact your nearest Dealer for clarification.

All documentation provided constitutes an integral and important part of the product and must always be available to users.

The instructions for use, maintenance and repair described in this handbook must be followed if the vehicle is to be considered as being operated in accordance with the manufacturer's intended uses.

This manual assumes that the health and safety Standards in force are complied with in the place of use of the vehicle and of the equipment.



### - ATTENTION

**It is compulsory to read and understand this manual before using the machine or various equipment and to carefully follow the indications therein.**



### - ATTENTION

**It is mandatory to have read and learned the machine manual before reading the manuals of the various equipment.**



### - NOTE

**This Use and Maintenance Manual in the user's language, must be carefully stored aboard the vehicle at all times in an accessible and well known place to all users.**

**If the manual becomes creased and/or be, even partially, damaged or illegible or in case of loss of the manual, it must be replaced immediately by contacting the Dieci Technical Assistance Service, giving the details of the manual found in the "Introduction" chapter.**

Local Dealers can supply original spare parts as well as advice and instructions for their installation and use.



### - ATTENTION

**Use only original spare parts when they are required.**

**The use of non-original spare parts may cause damage to other parts of the vehicle. Customers are advised to purchase all original spare parts required only from an authorised Agent or Dealer.**

***DIECI S.R.L.* does not consider itself liable for damage deriving from the use of non-original spare parts.**

**- ATTENTION**

Should the vehicle or the equipment be intended for use in particularly severe conditions (for example: in dusty environments or worksites, on argillaceous or muddy terrain), it is mandatory to consult your nearest dealer for specific instructions. Failure to observe these instructions may result in the vehicle's guarantee being voided.

**- ATTENTION**

Improper, incorrect, or irrational use of the vehicle or the accessories with which it is equipped as well as modification to its physical structure or functioning is prohibited. A different use is strictly prohibited and relieves *DIECI S.R.L.* from responsibility for damage caused to persons, things or animals.

**- NOTE**

*DIECI S.R.L.* is not liable for damage caused by negligent use of this vehicle or the accessory even if said damage is not a result of intentional improper use. Everything possible has been done during the design and construction phases of vehicles and accessories to make your job as safe as possible. Due caution, however, is indispensable and there is no better rule to prevent accidents.

**- ATTENTION**

*DIECI S.R.L.* is not liable for damage resulting from operations performed instinctively, as a reflex, while in a state of panic, or in the event of malfunctioning, accidents or anomaly, during use of the vehicle.

The instructions for use, maintenance and repair described in this handbook must be followed if the vehicle is to be considered as being operated in accordance with the manufacturer's intended uses.

**- ATTENTION**

*DIECI S.R.L.* reserves the right to carry out possible modifications to the vehicle or accessories for technical or commercial reasons without prior notice.

**- ATTENTION**

To correctly use the components and machine controls recalled in the following pages, refer to the specific use and maintenance manual of the machine.

**- ATTENTION**

Do not modify the structure or adjust the safety devices of the various machine or tool components.

**- ATTENTION**

Only CE equipment certified by the relative manufacturer and approved can be used on *DIECI* machines or that falling within the technical limits set out by *DIECI S.R.L.*.

The interchangeable equipment manufacturer must guarantee that the combination of such equipment and the basic machine on which the equipment is intended for, meets all the basic health and safety requirements, providing an adequate evaluation procedure of compliance.

*DIECI S.R.L.* liability shall not be involved if equipment use or modifications do not comply with the above mentioned requirements.

**- ATTENTION**

Before commissioning each accessory, ensure compatibility with the vehicle and calibration of the safety system relating to the used accessory.

**- ATTENTION**

Routine maintenance should be carried out regularly, keeping a record of the vehicle's working hours.

**- ATTENTION**

The right and left positions indicated in this manual refer to the view of the operator sitting in the driver's seat (looking forwards).



## 5 VEHICLE DESCRIPTION

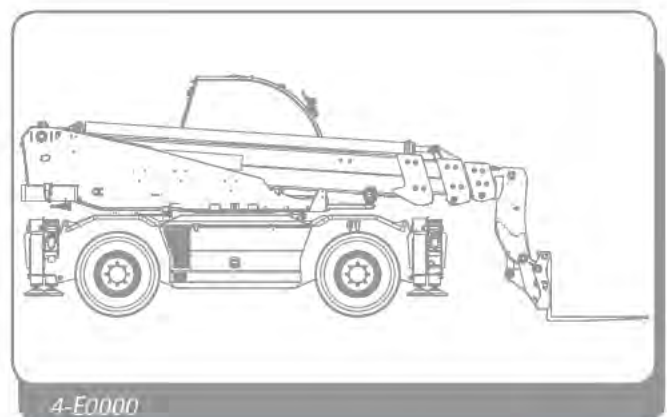
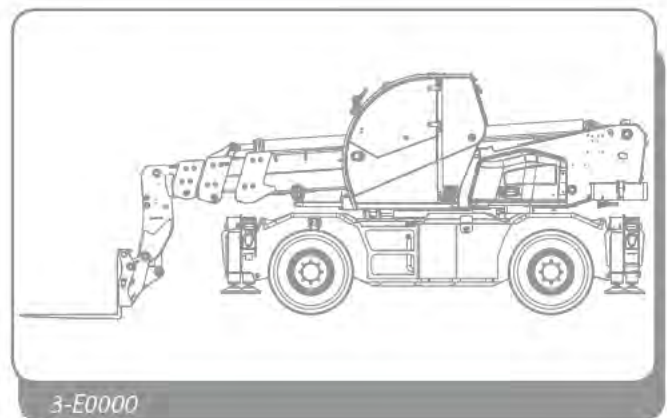
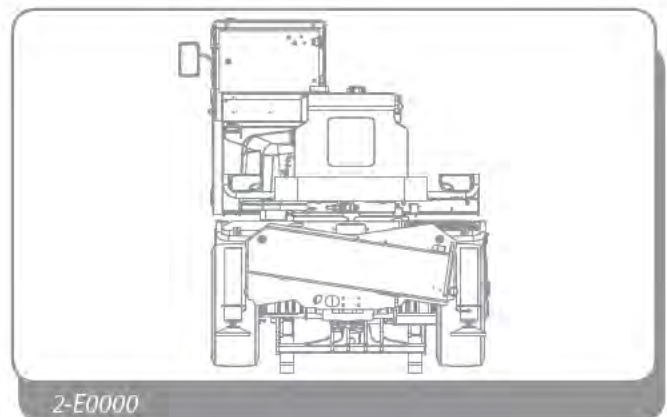
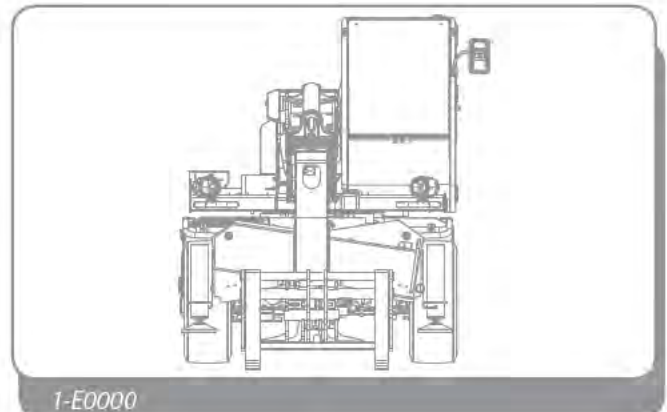


### - WARNING

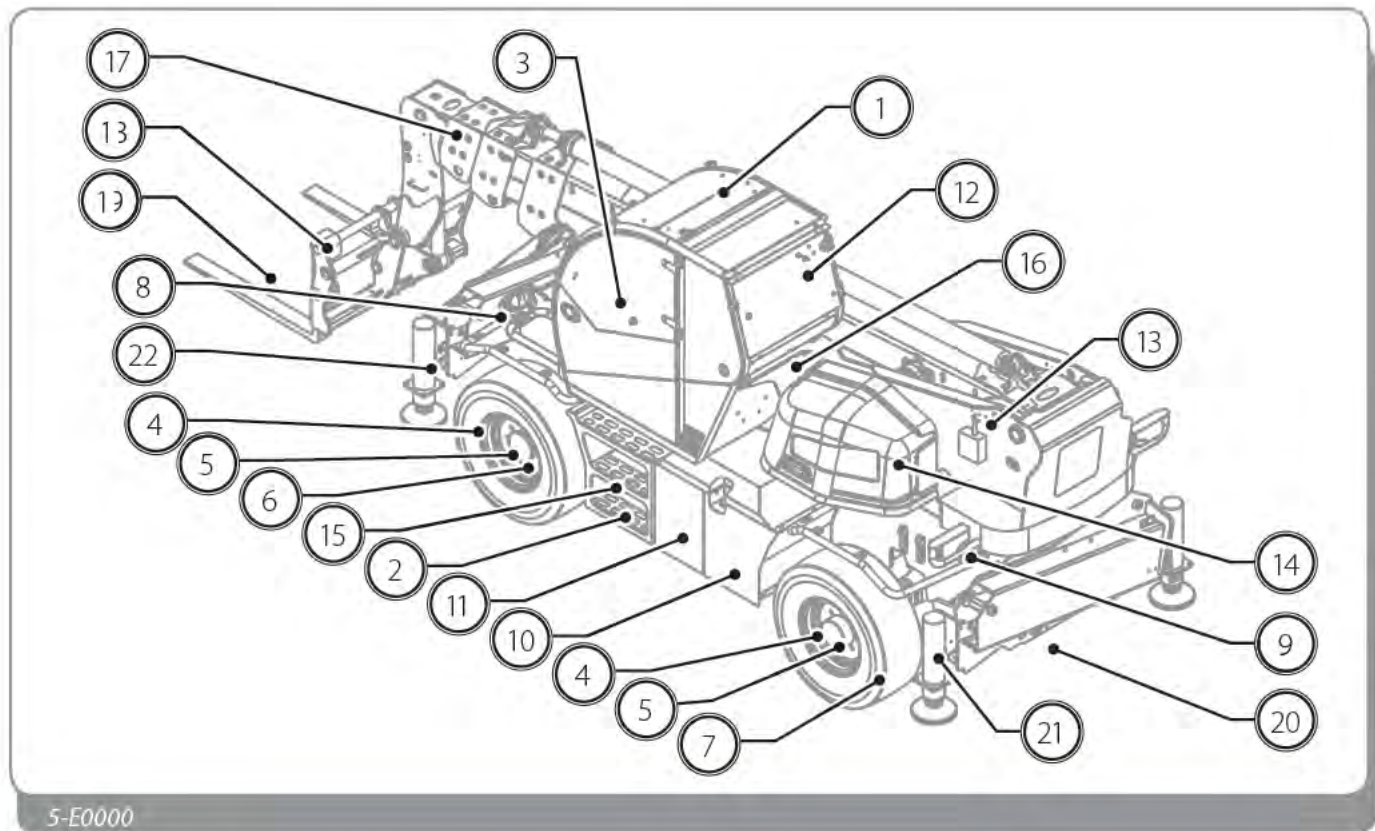
The images used to describe the components and controls refer to a vehicle complete with all the accessories; these may vary according to the set-up and selected configuration.

Positions and references used in the manual refer to the vehicle facing the normal drive direction.

- Front view (Fig. 1-E0000)
- Rear view (Fig. 2-E0000)
- Left side view (Fig. 3-E0000)
- Right side view (Fig. 4-E0000)



## 5.1 Position of the main components



5-E0000

### 5.1.1 Left side

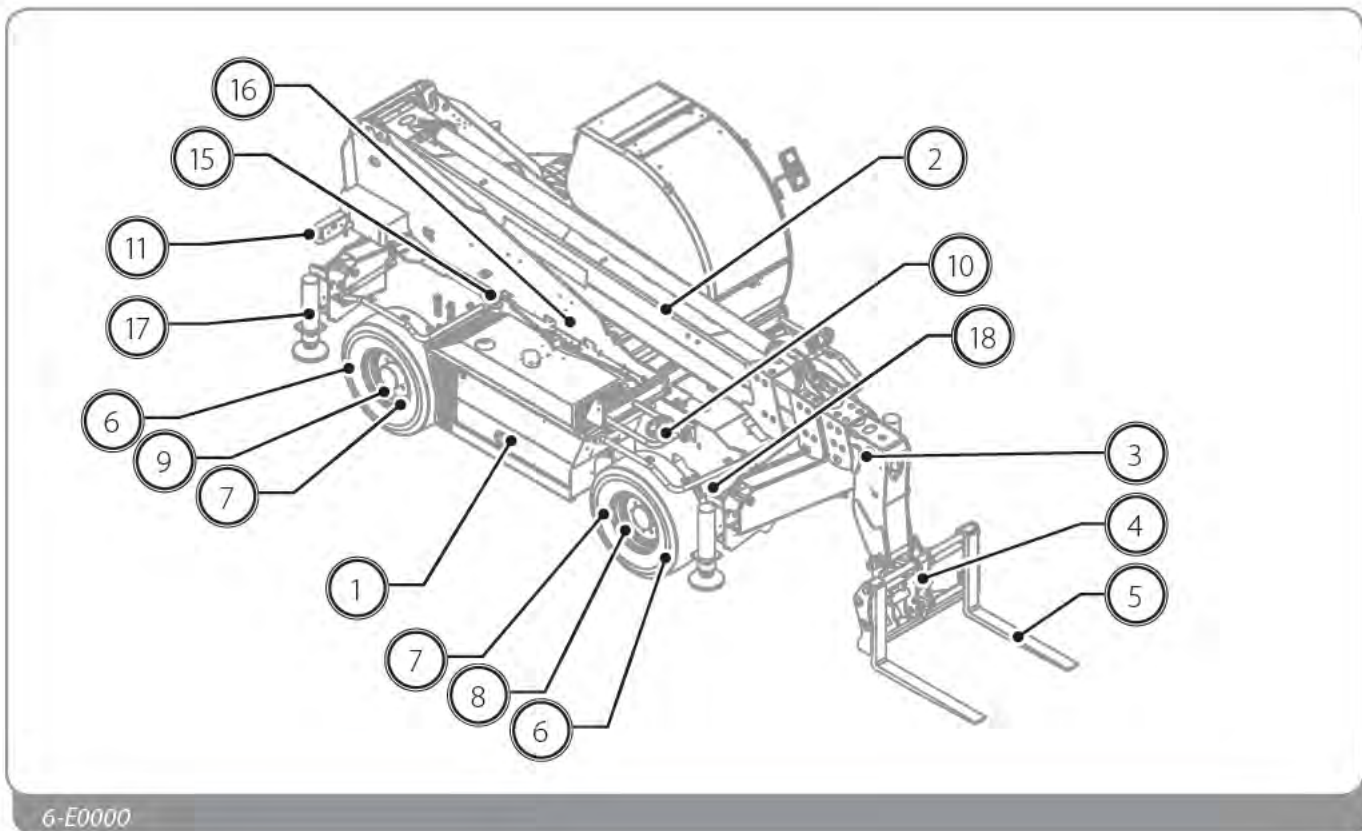
The following can be seen on the left side (Fig. 5-E0000):

1	Cab	12	Rear emergency exit	
2	Steps to climb up	13	Radio control receiver	* Optional
3	Door	14	Distributor bonnet	
4	Wheel	15	Battery compartment	
5	Epicycloidal reduction gear	16	Air conditioning	* Optional
6	Front axle	17	Telescopic boom	
7	Rear axle	18	Fork holder plate	
8	Front left light	19	Forks	
9	Rear left light	20	Converter	
10	Fuel tank	21	Rear left stabilising foot	
11	Fuel tank	22	Front left stabilising foot	



\* Optional accessories or components.





6-E0000

### 5.1.2 Right side

The following can be seen on the right side (Fig. 6-E0000):

- |                               |                                 |
|-------------------------------|---------------------------------|
| 1 Engine bonnet               | 9 Rear axle                     |
| 2 Telescopic boom             | 10 Front right light            |
| 3 Boom head                   | 11 Rear right light             |
| 4 Accessory holding plate     | 15 Fifth wheel rotation block   |
| 5 Forks                       | 16 Fifth wheel                  |
| 6 Wheel                       | 17 Rear right stabilising foot  |
| 7 Epicycloidal reduction gear | 18 Front right stabilising foot |
| 8 Front axle                  |                                 |

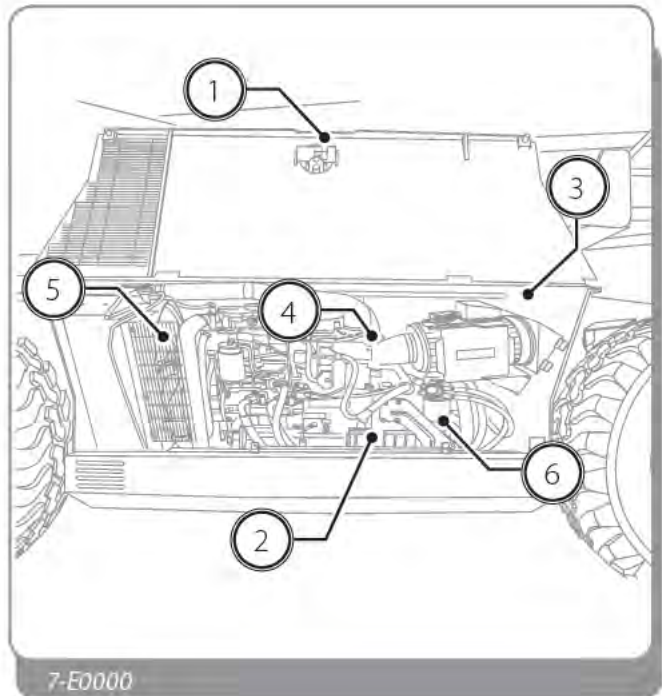


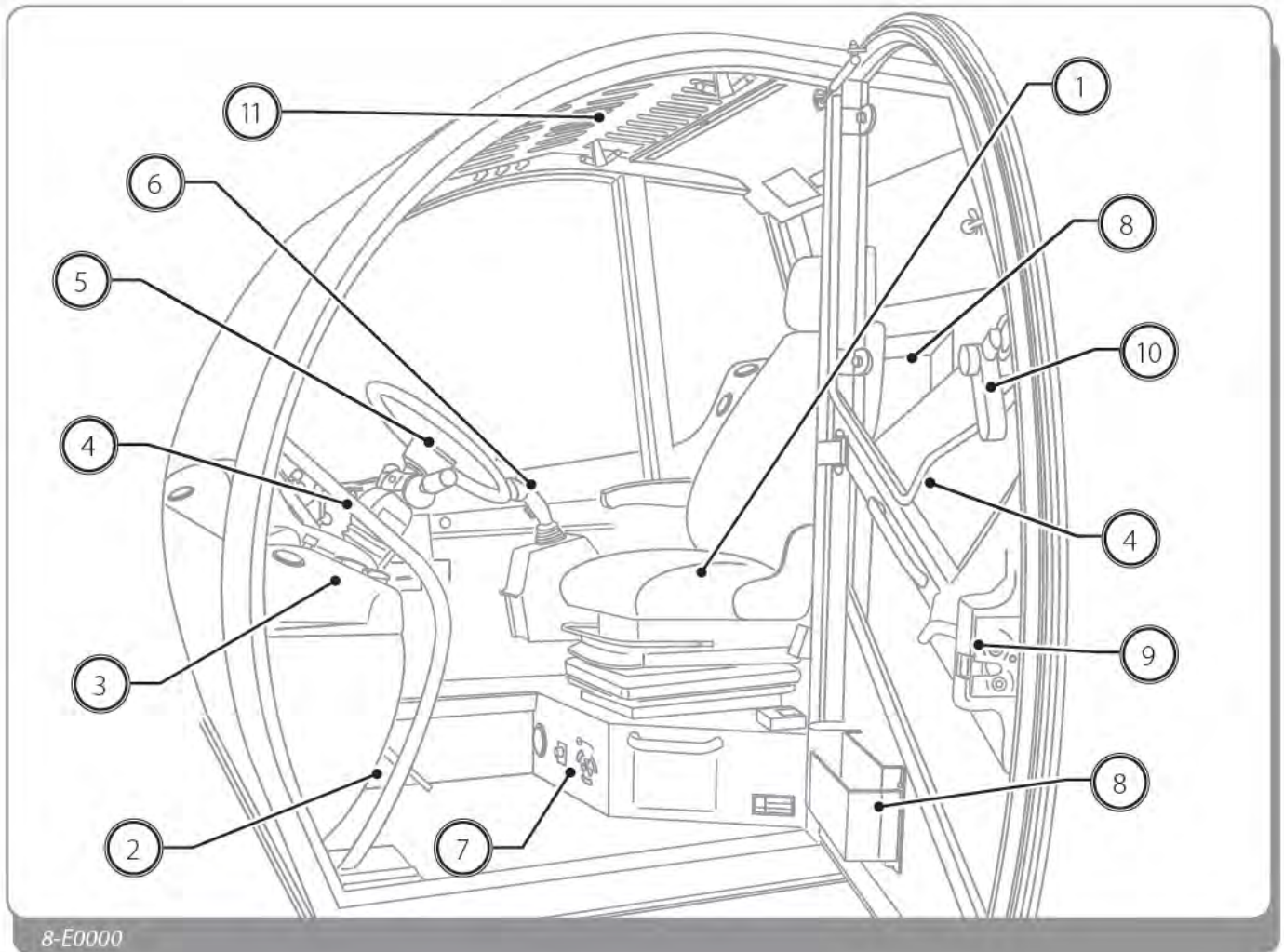
\* Optional accessories or components.

### 5.1.3 Engine bonnet

The following can be seen under the engine hood (Fig. 7-E0000):

- 1 Engine bonnet
- 2 Safety rod
- 3 Air filter
- 4 Engine
- 5 Radiator
- 6 Engine control unit





8-E0000

### 5.1.4 Cab

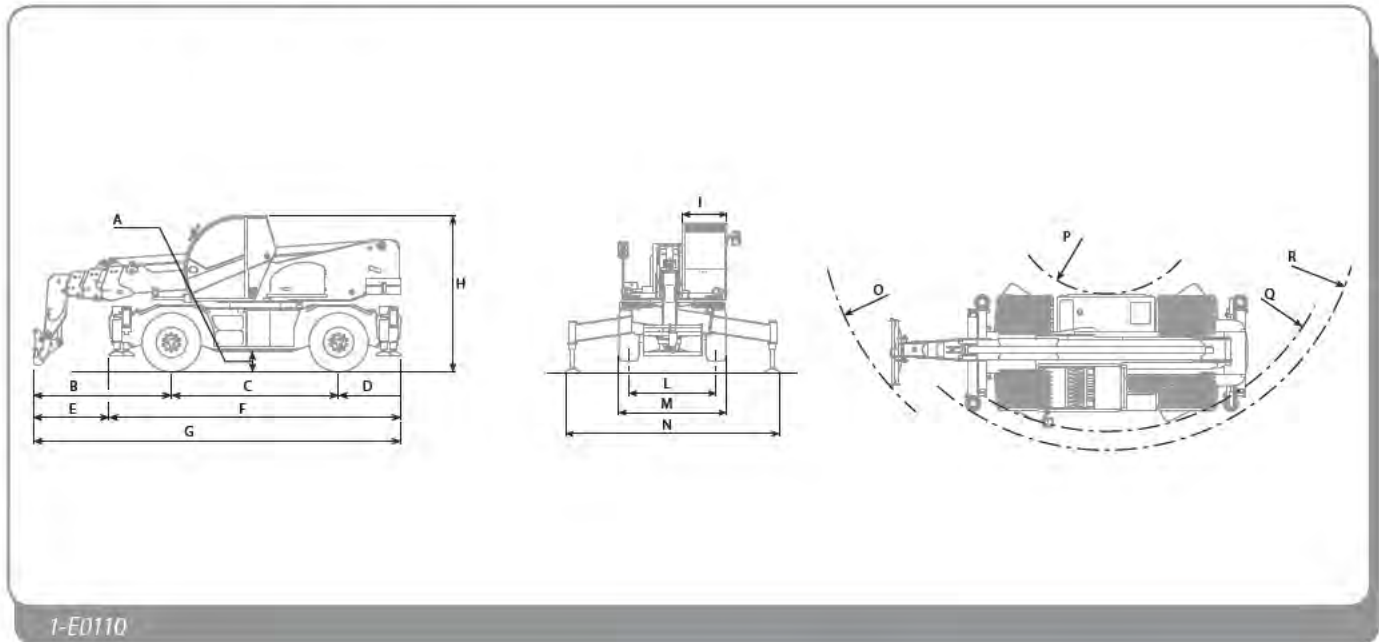
The following can be seen in the cab (Fig. 8-E0000):

- |   |                 |    |                              |
|---|-----------------|----|------------------------------|
| 1 | Seat            | 7  | Cab heating controls         |
| 2 | Pedals          | 8  | Compartment                  |
| 3 | Dashboard       | 9  | Door opening internal handle |
| 4 | Resting handles | 10 | Window opening handle        |
| 5 | Steering wheel  | 11 | Upper roof                   |
| 6 | Joystick        |    |                              |



\* Optional accessories or components.

## 5.2 Technical data



1-ED110

	Pegasus 40,25	Pegasus 50,19	Pegasus 50.21
Technical type			
Option			

DIMENSIONS			
A	360 mm (14.17 in)	360 mm (14.17 in)	360 mm (14.17 in)
B	3365 mm (132.48 in)	2660 mm (104.72 in)	2835 mm (111.61 in)
C	2950 mm (116.14 in)	2950 mm (116.14 in)	2950 mm (116.14 in)
D	1685 mm (66.33 in)	1150 mm (45.27 in)	1365 mm (53.74 in)
E	2195 mm (86.41 in)	1510 mm (59.44 in)	1665 mm (65.55 in)
F	5805 mm (228.54 in)	5250 mm (206.69 in)	5485 mm (215.94 in)
G	8000 mm (314.96 in)	6760 mm (266.14 in)	7150 mm (281.49 in)
H	3025 mm (119.09 in)	3025 mm (119.09 in)	3025 mm (119.09 in)
I	980 mm (38.58 in)	980 mm (38.58 in)	980 mm (38.58 in)
L	1920 mm (75.59 in)	1920 mm (75.59 in)	1620 mm (63.77 in)
M	2380 mm (93.7 in)	2380 mm (93.7 in)	2380 mm (93.7 in)
N	5070 mm (199.6 in)	5070 mm (199.6 in)	5070 mm (199.6 in)
O	6175 mm (243.1 in)	5450 mm (214.56 in)	5585 mm (219.88 in)
P	1700 mm (66.92 in)	1700 mm (66.92 in)	1700 mm (66.92 in)
Q	4430 mm (174.4 in)	4430 mm (174.4 in)	4430 mm (174.4 in)
R	4790 mm (188.58 in)	4790 mm (188.58 in)	4790 mm (188.58 in)



### - NOTE

The measurements refer to the vehicle with standard tyres.

	Pegasus 40.25	Pegasus 50.19	Pegasus 50.21
Technical type			
Option			

PERFORMANCE			
Maximum capacity	4000 kg (8810 lb)	5000 kg (11020 lb)	5000 kg (11020 lb)
Capacity at maximum height on stabilising feet	2000 kg (4400 lb)	3000 kg (6610 lb)	2500 kg (5510 lb)
Capacity at maximum height on tyres	2000 kg (4400 lb)	1500 kg (3300 lb)	2000 kg (4400 lb)
Capacity at maximum outreach on stabilising feet	200 kg (440 lb)	700 kg (1540 lb)	600 kg (1320 lb)
Capacity at maximum outreach on tyres	200 kg (440 lb)	200 kg (440 lb)	200 kg (440 lb)
Maximum lifting height on stabilising feet	24.5 m (80.36 ft)	18.7 m (61.33 ft)	20.5 m (67.24 ft)
Maximum lifting height on tyres	21.1 m (69.2 ft)	18.4 m (60.35 ft)	20.3 m (66.58 ft)
Maximum horizontal outreach	18.41 m (60.38 ft)	16.4 m (53.79 ft)	18.1 m (59.36 ft)
Outreach at maximum height	6.23 m (20.43 ft)	4.8 m (15.74 ft)	5.5 m (18.04 ft)
Fork oscillation angle	120°	134°	134°
Maximum climb angle	40%	40%	40%
ENGINE			
Model	Perkins	Perkins	Perkins
Maximum power	106 kW (142 Hp)	106 kW (142 Hp)	106 kW (142 Hp)
Revolutions per minute	2200 rpm	2200 rpm	2200 rpm
Operation	4-stroke diesel	4-stroke diesel	4-stroke diesel
Injection	Common-rail	Common-rail	Common-rail
Number of cylinders and layout	4, vertical in line	4, vertical in line	4, vertical in line
Engine size	4399 cm <sup>3</sup> (5762 yd <sup>3</sup> )	4399 cm <sup>3</sup> (5762 yd <sup>3</sup> )	4399 cm <sup>3</sup> (5762 yd <sup>3</sup> )
Fuel	Diesel	Diesel	Diesel
Specific consumption at maximum power	230 g/kWh (378.35 lb/Hp)	230 g/kWh (378.35 lb/Hp)	230 g/kWh (378.35 lb/Hp)
Engine	Aftercooler turbo-compressor	Aftercooler turbo-compressor	Aftercooler turbo-compressor
Cooling	Liquid system	Liquid system	Liquid system
Fuel tank capacity	180 l (39.58 IMP gal)	180 l (39.58 IMP gal)	180 l (39.58 IMP gal)



	Pegasus 40.25	Pegasus 50.19	Pegasus 50.21
Technical type			
Option			
<b>TRANSMISSION</b>			
Hydrostatics	Hydrostatic with variable displacement pump.	Hydrostatic with variable displacement pump.	Hydrostatic with variable displacement pump.
Hydraulic engine	Automatic variation	Automatic variation	Automatic variation
Inversion	Electro-hydraulic	Electro-hydraulic	Electro-hydraulic
Gearbox	2-speed, servo-controlled	2-speed, servo-controlled	2-speed, servo-controlled
Inching	Hydraulic	Hydraulic	Hydraulic
<b>FEATURES</b>			
Axles:			
- Drive	Front and rear	Front and rear	Front and rear
- Service brake	In oil bath with servo brake on front and rear axle	In oil bath with servo brake on front and rear axle	In oil bath with servo brake on front and rear axle
- Parking brake	Negative action	Negative action	Negative action
- Oscillating	Rear	Rear	Rear
- Levelling	Front	Front	Front
- Steering	Front and rear	Front and rear	Front and rear
Steering types	- 2 wheels - 4 wheels - Transversal	- 2 wheels - 4 wheels - Transversal	- 2 wheels - 4 wheels - Transversal
<b>MASS IN RUNNING ORDER</b>			
- Empty	17500 kg (38580 lb)	16500 kg (36370 lb)	17200 kg (37910 lb)
- Maximum	kg (0 lb)	kg (0 lb)	kg (0 lb)
- Maximum for front axle	kg (0 lb)	kg (0 lb)	kg (0 lb)
- Maximum for rear axle	kg (0 lb)	kg (0 lb)	kg (0 lb)
<b>HYDRAULIC SYSTEM</b>			
Hydraulic oil tank capacity	270 l (59.37 IMP gal)	270 l (59.37 IMP gal)	270 l (59.37 IMP gal)
Dual hydraulic gear pump with "Energy Saving" system:			
- Maximum capacity	135 l/min (29.68 IMP gal/min)	135 l/min (29.68 IMP gal/min)	135 l/min (29.68 IMP gal/min)
- Maximum pressure	23 MPa (3335 psi)	25 MPa (3625 psi)	25 MPa (3625 psi)
Distributor control	Joystick 5in1	Joystick 5in1	Joystick 5in1

	Pegasus 40.25	Pegasus 50.19	Pegasus 50.21
Technical type			
Option			
<b>ACOUSTIC PRESSURE</b>			
Comply with directive 2009/63/EC			
- With vehicle stopped	dB (A) ± dB (A)	dB (A) ± dB (A)	dB (A) ± dB (A)
- With vehicle in motion	dB (A) ± dB (A)	dB (A) ± dB (A)	dB (A) ± dB (A)
Comply with directive 2009/76/EC			
- Perceived by the operator	dB (A) ± dB (A)	dB (A) ± dB (A)	dB (A) ± dB (A)
<b>ACOUSTIC POWER</b>			
Compliant with directive 2000/14/EC			
- Value measured	103 dB (A)	103 dB (A)	103 dB (A)
- Value guaranteed	104 dB (A)	104 dB (A)	104 dB (A)
<b>VIBRATIONS</b>			
Vibration emission value declared compliant with EN 12096 Values determined in conformity with EN 1032. Compliant with directive 78/764/EC			
- Seat vibrations	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )
- Steering wheel vibrations	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )	m/s <sup>2</sup> ± m/s <sup>2</sup> (ft/s <sup>2</sup> ± ft/s <sup>2</sup> )
<b>LOAD EXERTED ON THE GROUND</b>			
Maximum load for a wheel	11500 daN (25870 lbf)	11500 daN (25870 lbf)	12000 daN (27000 lbf)
Maximum load for an outrigger foot	11500 daN (25870 lbf)	11500 daN (25870 lbf)	12000 daN (27000 lbf)



	Pegasus 40.25	Pegasus 50.19	Pegasus 50.21	TYPE
Engine oil	9.00 l (1.97 IMP gal)	9.00 l (1.97 IMP gal)	9.00 l (1.97 IMP gal)	- 15W-40 ACEA E7 / API CI-4 - 10W-30 ACEA E7 / API CI-4 - 10W-40 ACEA E9 / API CJ-4
Front axle oil	7.50 l (1.64 IMP gal)	7.50 l (1.64 IMP gal)	7.50 l (1.64 IMP gal)	
Front wheels reducer oil	1.25 l (0.27 IMP gal)	1.25 l (0.27 IMP gal)	1.25 l (0.27 IMP gal)	- SAE 85W90 - API GL4 - MIL L-2105
Rear axle oil	7.75 l (1.7 IMP gal)	7.75 l (1.7 IMP gal)	7.75 l (1.7 IMP gal)	
Rear wheels reducer oil	1.25 l (0.27 IMP gal)	1.25 l (0.27 IMP gal)	1.25 l (0.27 IMP gal)	
Gearbox oil	1.50 l (0.32 IMP gal)	1.50 l (0.32 IMP gal)	1.50 l (0.32 IMP gal)	- SAE 85W90 - API GL3
Braking circuit oil	3.00 l (0.65 IMP gal)	3.00 l (0.65 IMP gal)	3.00 l (0.65 IMP gal)	DEXRON II
Fifth wheel reduction gear oil	3.50 l (0.76 IMP gal)	3.50 l (0.76 IMP gal)	3.50 l (0.76 IMP gal)	EP ISO VG150
Coolant	14.00 l (3.07 IMP gal)	14.00 l (3.07 IMP gal)	14.00 l (3.07 IMP gal)	- ASTM D 3306 - ASTM D 4985 - ASTM D 1384 - CUNA NC 956-16 - B.S. 6580.92 - BS 6580 (GB) - FK Heft R 443 (D) - Afnor R 15/601 (F) - ASTM D 3306 and 4985 - SAE J 1034 - JIS K 2234 (J) - KSM 2142 (K) - NATO S 759 - CUNA NC 956/16(I) - UNE 26361-88(E) - EMPA - E/L 1415c (MIL Italy)
Grease	4.00 kg (8.81 lb)	4.00 kg (8.81 lb)	4.00 kg (8.81 lb)	NLGI - 1
Hydraulic system oil	170 l (37.38 IMP gal)	170 l (37.38 IMP gal)	170 l (37.38 IMP gal)	DIECI Hydro Telehandler Fluid ISO46
Air conditioning	1.1 kg (2.42 lb)	1.1 kg (2.42 lb)	1.1 kg (2.42 lb)	- R134A





**- ATTENTION**

Unless indicated otherwise or the customer requests particular set-ups, the hydraulic system of the vehicle is supplied with the following oil:

**DIECI Hydro Telehandler Fluid ISO46**

Specification:

ISO 6743-4 HV, Afnor NFE 48-602, ISO 11158, DIN 51524 Part 3 HVLP, Afnor NFE 48-603 HV, ASTM D6158, Denison HF-0 / HF-1 / HF-2, Eaton Vickers I-286-S / M-2950-S, Cincinnati Machine P-68 / P-69 / P-70, Afnor NFE 48-690(dry), Afnor NFE 48-691(wet), U.S. Steel 126 / 127 / 136, JCMAS HK, Bosch variable vane pumps, Rexroth RE 90220, Sauer Danfoss 520L0463, General Motors (LS-2) LH-03-1 / LH-04-1 / LH-06-1, SEB 181222.

Classification:

ASTM D 6080: ISO VG 46 / L32 - 42 (140)

Properties	Method of analysis	Unit of measure	ISO 46 value
Density at 15°C	ASTM D1298	kg/l	0.88
Kinematic viscosity at 40°C	ASTM D445	cSt	46.6
Kinematic viscosity at 100°C	ASTM D445	cSt	8.6
Viscosity Index	ASTM D2270	-	165
Kinematic viscosity at 40°C after Sonic Shear	ASTM D445	cSt	41.6
Viscosity Index after Sonic Shear	ASTM D2270	-	144
FZG Failure Load Stage	ASTM D5182	Stage	12
Flash point (COC)	ASTM D92	°C	210
Sliding point	ASTM D97	°C	-35
750cP Brookfield viscosity temperature	ASTM D2983	°C	-9



### 5.2.1 *Reduce the vibrations*

Take into consideration the following precautions to reduce the operator's exposure to vibrations:

- Always use equipment that is appropriate for the type of work being performed.
- The driver's seat must be properly adjusted. Inspect and, if necessary, repair seat suspensions and adjustment mechanisms.
- Make sure that the vehicle is kept in good condition, follow vehicle maintenance schedule as described in this manual.
- Steer, accelerate, brake, change gears and move the accessory slowly.
- While driving, adjust vehicle speed to minimise the vibration level. Reduce speed to prevent risk of jolting. Transport the vehicle if the distance between work sites is significant.
- Keep the work site in good condition, remove rocks and obstacles, fill-in depressions or holes, etc.
- To avoid back problems, use the vehicle only if in good health conditions.
- The operator should take periodic breaks to reduce the amount of time spent seated in the same position.
- Never jump down from the cab or the vehicle.
- Avoid repeatedly handling and lifting loads.

### 5.2.2 Environmental conditions

Although the vehicle can be used in the most diverse situations, the minimum operational Standards described below must be complied with for precautionary purposes:

*T3-E0100 - Table of environmental conditions*

Parameter	Values allowed
Working temperature	from -20°C to +40 °C (from -4 °F to 104 °F)
Average daily temperature	< +40 °C (< 104 °F)
Storage temperature	from -25 °C to +50 °C (from -13 °F to 122 °F)
Humidity	from 20% to 95%
Altitude	< 2500 m (< 8200 ft)

### 5.2.3 Electromagnetic interference

If supplementary equipment is installed by the customer, the user must verify whether the installation causes any type of interference with the vehicle's instruments. If so, the user must eliminate the interference.

It is important to pay careful attention to mobile equipment such as radio communication (telephones), which must be installed by qualified technicians and used with externally mounted antennas.

In general, any additional electrical equipment installed must comply with EMC Directive 2004/108/EC and must bear the CE marking.

### 5.2.4 Radiation

When the vehicle is used in normal conditions of use, it does not generate any type of radiation, ionising and non, which could cause problems for the operator.

## 6 SAFETY DEVICES

### 6.1 Safety stickers

Safety stickers have been applied on the vehicle in the positions indicated below. Their purpose is to provide a guide for your safety and that of others. Before starting to operate the vehicle, verify the content and position of the safety stickers by walking around the vehicle with this manual in hand. Re-examine the stickers with all the operators who will use the vehicle.



#### - ATTENTION

Make sure you have fully understood their position and content.

To ensure correct interpretation, verify that they are located in the correct position and that they are always kept clean.



#### - DANGER

Clean the stickers if they are covered by dirt, cement or other deposits.



#### - FORBIDDEN

Do not remove the safety stickers for any reason whatsoever.



#### - FORBIDDEN

Cleaning the stickers on the vehicle with solvents or petrol is strictly forbidden as the stickers may fade. Additional warning and safety stickers must always be treated in the same way.



Refer to the overview table in the "Maintenance" chapter for the maintenance and inspection schedule of the safety stickers.







Replace the safety stickers if they are worn, damaged or lost, as they must always be read and interpreted correctly.





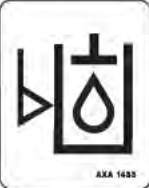






#### - WARNING













The stickers are ordered just like spare parts (make sure you provide the model and serial number of the vehicle when placing the order).

## 6.1.1 Meaning of the safety stickers

SIGN	CODE	DESCRIPTION
	AXA1163	Warning, keep the boom completely retracted when digging with buckets.
	AXA1425	Danger: keep a safe distance when using the loading shovel
	AXA1425	Crushing hazard; use the safety locks when performing maintenance.
	AXA1425	Danger: keep a safe distance from the vehicle
	AXA1425	Danger: moving mechanical components.
	AXA1425	Danger: stop the engine before performing any maintenance.
	AXA1425	Danger: switch the engine off and remove the ignition key during maintenance.
	AXA1425	Danger: maintain the safe distance from the power lines

SIGN	CODE	DESCRIPTION
	AXA1427	Indicates where to refuel from
	AXA1428	Indicates the tire pressure.
	AXA1431	Indicates the lifting points.
	AXA1432	Indicates the points where the vehicle is to be anchored from to be transported or towed.
	AXA1433	Indicates where to check the hydraulic oil level.
	AXA1434	Indicates where to top up the hydraulic oil from.
	AXA1435	Danger: moving mechanical parts; do not remove the safety guards and wait for the parts to stop before performing any maintenance.
	AXA1436	Indicates the position of the safety rod for the lifting cylinders
	AXA1438	Indicates parts of the vehicle that cannot be walked on.

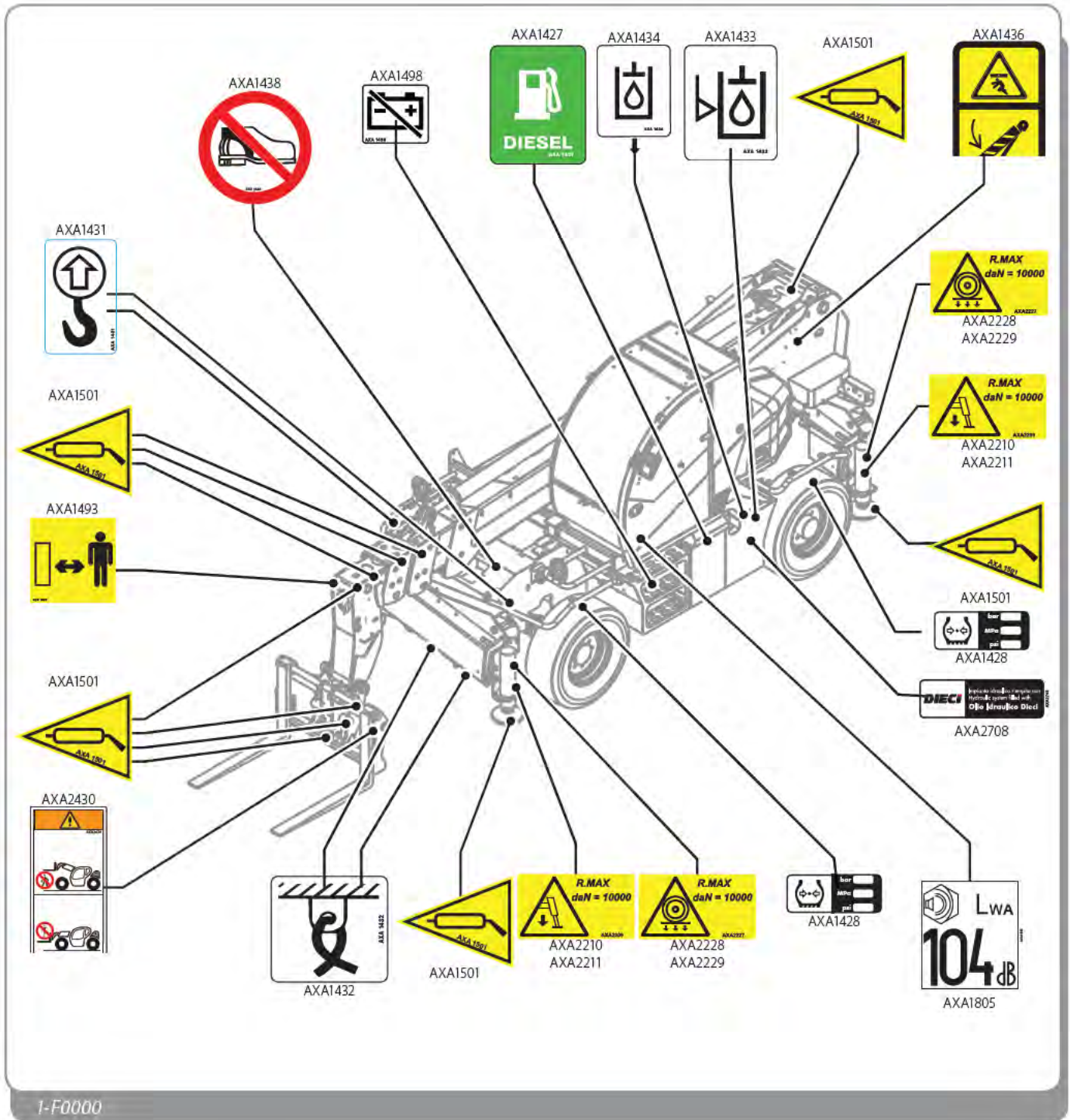
SIGN	CODE	DESCRIPTION
	AXA1439	Danger: moving mechanical parts.
	AXA1440	Danger: leaking hot and pressurised steam.
	AXA1441	Danger: hot surfaces.
	AXA1493	Warning: maintain the safe distance.
	AXA1498	Indicates the position and the user instructions of the battery isolator switch.
	AXA1499	Danger: maintain the safe distance from the power lines
	AXA1500	Indicates the position of the windscreen wiper
	AXA1501	Indicates the greasing points.
	AXA1506	Mandatory use of the seatbelts
	AXA1514	Emergency exit

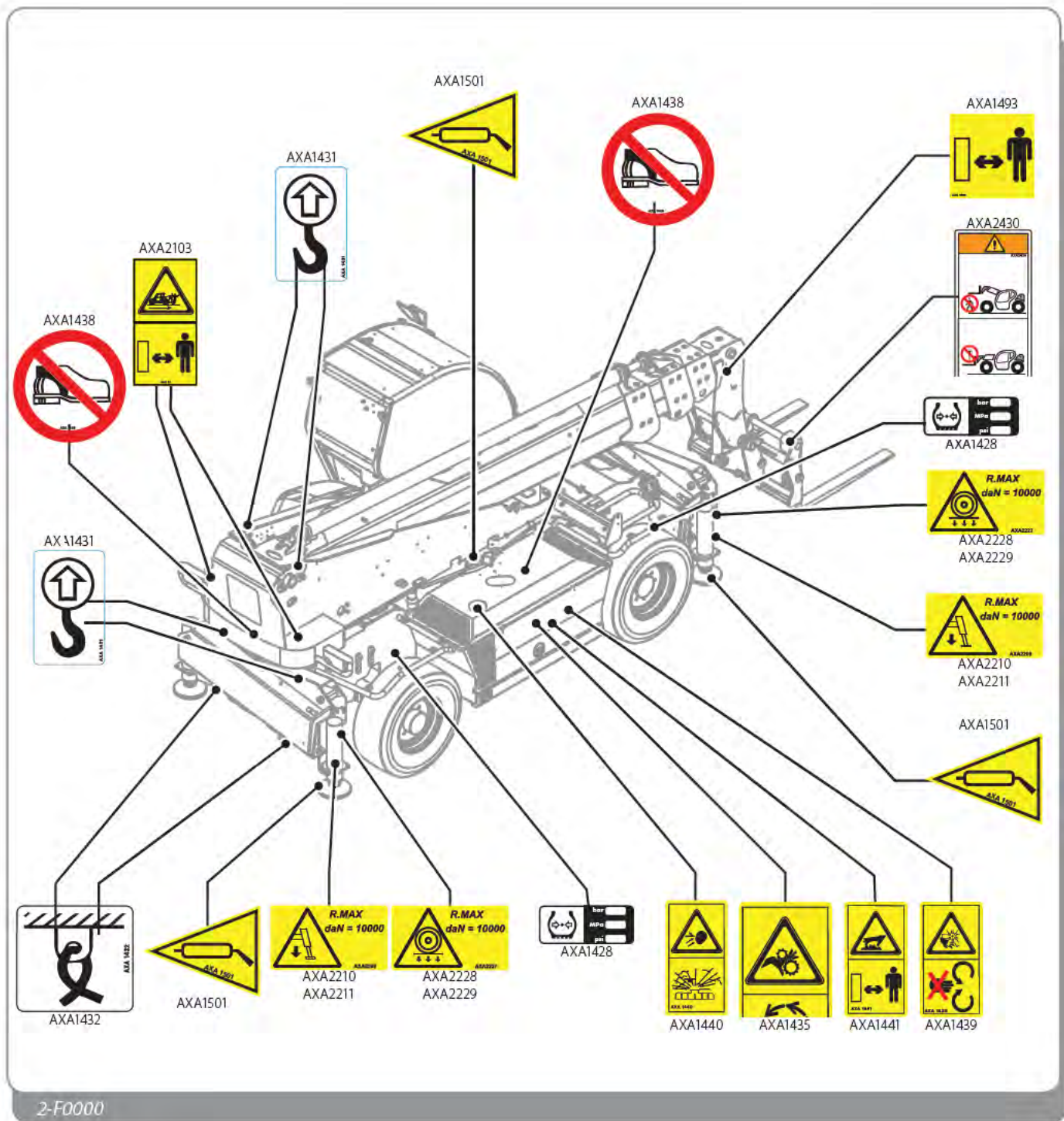
SIGN	CODE	DESCRIPTION
	AXA1515	Remove the cotter pin
	AXA1572	Describes the operations to secure and release the glass of the door
	AXA1773	Danger, do not reach high speeds or over-rev the engine downhill
	AXA2611	Instructions for using the 5in1 Joystick
	AXA1805	Indicates the maximum acoustic power guaranteed
	AXA2103	Warning: maintain the safe distance.
	AXA2210	Maximum load of stabilising feet on the ground (R.max daN=) 11500 (Only Pegasus 45.19 - Pegasus 45.21 - Pegasus 40.25 - Pegasus 60.16)
	AXA2228	Maximum load of stabilising feet on the ground (R.max daN=) 11500 (Only Pegasus 45.19 - Pegasus 45.21 - Pegasus 40.25 - Pegasus 60.16)
	AXA2211	Maximum load of stabilising feet on the ground (R.max daN=) 12000 (Only Pegasus 50.21)
	AXA2229	Maximum load of the tyres on the ground (R.max daN=) 12000 (Only Pegasus 50.21)
	AXA2708	Type of oil used in the hydraulic system.
	AXA2430	Do not stop under the forks and do not transport people with the forks



## 6.1.2 Position of decals on the vehicle with two-movement feet

The positions of the safety stickers on the vehicle are indicated in the figures Fig. 1-F0000 and Fig. 2-F0000.

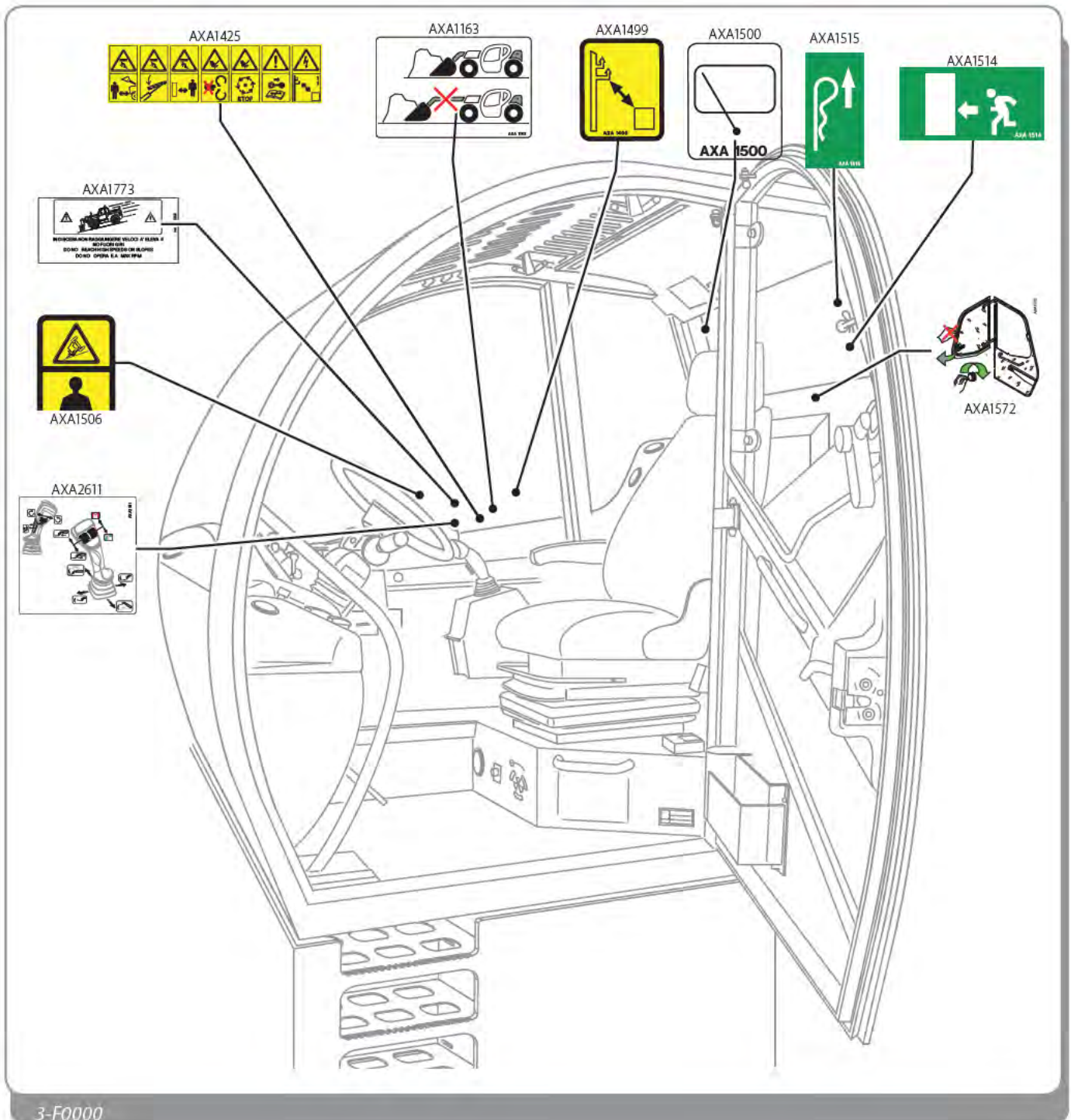




2-F0000

## 6.1.3 Position of the safety stickers in the cab

The positions of the safety stickers in the cab are (Fig. 3-F0000):



## 6.2 Safety rod

The safety rod (Fig. 1-F0101) must be used as a safety measure during maintenance to keep the boom from descending or falling in case of failures.

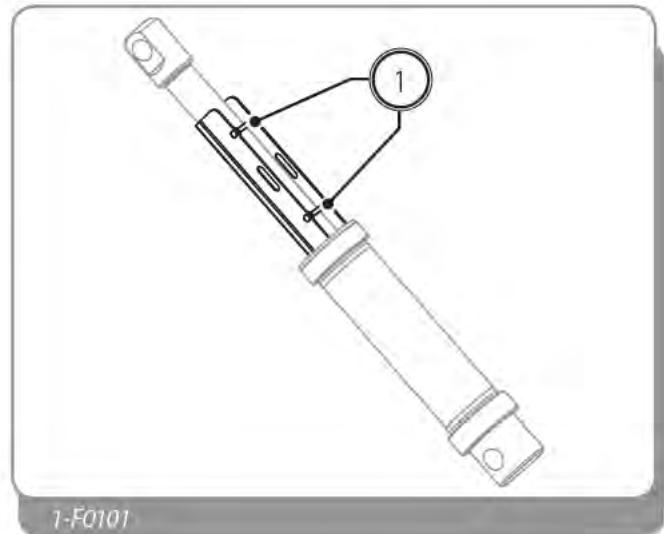


### - ATTENTION

When carrying out maintenance work on the boom raising cylinder or on the related block valve, the boom must be supported by a suitable raising mechanism with a minimum capacity of 3 tons (6610 lb).

Do as follows to insert the safety rod:

- Completely close the boom extensions
- Raise the boom the minimum height necessary to apply the safety rod;
- Block the safety rod by means of the specific hooks **1**



## 6.3 Wedge for wheels

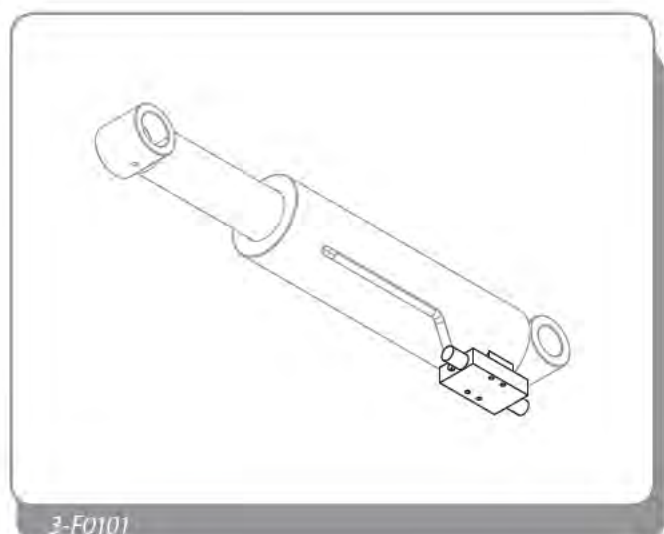
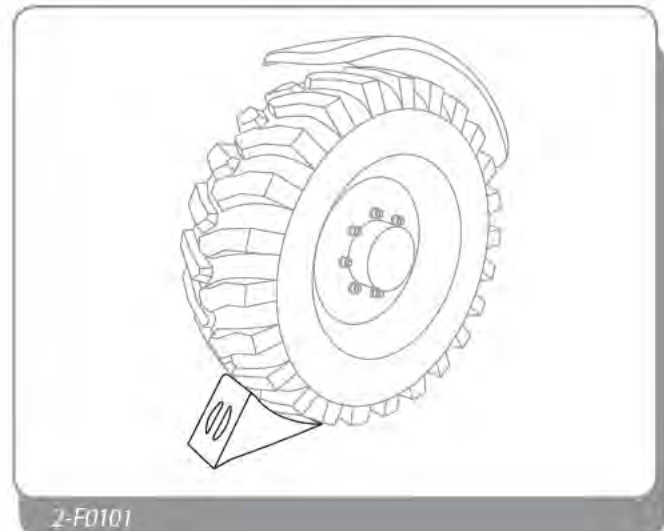
The Wedge for wheels must be used as a safety measure to impede accidental or unintentional movements of the vehicle.

Its use is recommended while parking the vehicle, during long stops on slopes or during maintenance.

## 6.4 Lock valves

Cylinder block valves hinder uncontrolled movement of the cylinder pistons in case of lacking hydraulic or bursting pressure of a flexible pipe.

The valves are mounted directly on all cylinders.



## 6.5 ROPS - FOPS Cab

The vehicle is equipped with an approved cab:

- **ROPS** (Roll Over Protection Structure)
- **FOPS** (Falling Objects Protective Structure)

The operator is therefore protected should the vehicle roll over or objects fall, as prescribed for earth movement vehicles.



### - ATTENTION

The cab is a safety component and therefore must always be kept in proper conditions of use.



### - FORBIDDEN

If the cab is tampered with, the manufacturer is relieved of civil liability in case of an accident. Therefore it is strictly prohibited to:

- Alter, pierce or modify the cab structure in any way.
- Weld or mechanically connect parts to the chassis of the cab.
- Use parts of the different class of resistance if you need to replace fastening bolts.
- Connect chains or ropes to the cab for towing purposes.



### - DANGER

Should the vehicle roll over, the best protection is achieved by remaining inside the cab with the seat belts fastened.



If the cab shows visual damage, it must be replaced; contact an authorised service centre or authorised workshop of Dieci.



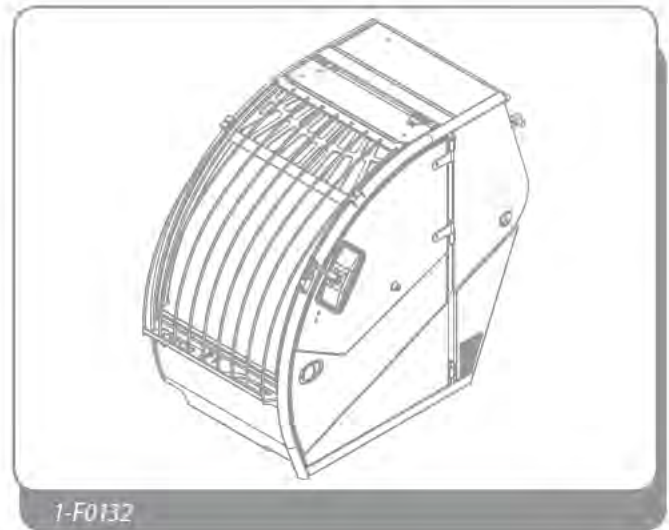
### - ATTENTION

The cab is classified in:  
**CATEGORY "1"**

The cab approved as category "1" does not provide full protection against entrance of dust, aerosol and vapours. Consult and comply with the instructions provided by the manufacturer of the chemical substances used (such as pesticides, fungicides, herbicides, etc.) and those provided by the manufacturer of the spraying machine. Use the specific personal protective equipment (PPE) when indicated in these instructions, even when inside the cab.



See the box of the product used to adopt the appropriate protective devices.



### - DANGER

Risk of inhalation for operators and nearby persons. For protection against harmful powders, aerosol and vapours, see the instructions provided by the manufacturer of the chemical agents, the manufacturer of the spraying machine and the basic rules provided in this manual.

## 6.6 Emergency stop

In emergency conditions, the vehicle can be stopped by a pressing the emergency stop button located in the cab (Fig. 2-F0132); the stop is immediate.



### - WARNING

The use of the Emergency stop button is recommended only in case of an immediate danger for the operator, the load and/or for the integrity of the vehicle itself.

Pressing the Emergency stop button cuts-off the electric power supply and consequently switches off the vehicle and any connected equipment.



### - DANGER

Return to normal working conditions after a stop with the Emergency stop button is only possible after:

- The removal of the cause that determined the stop
- Release of the emergency stop button

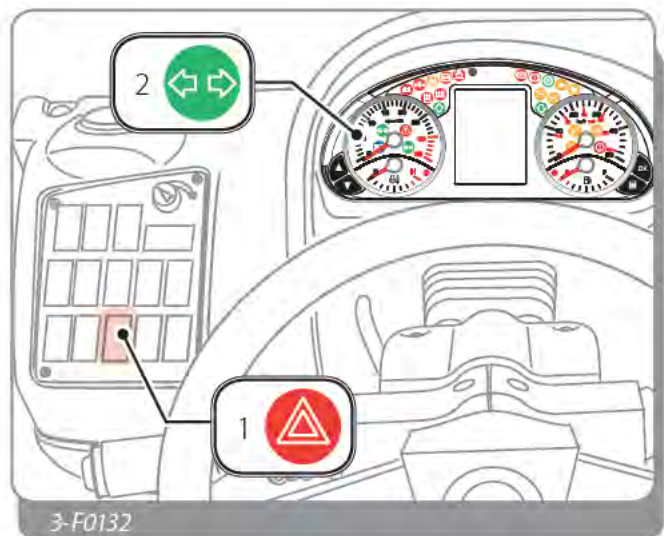
To release the emergency stop button, turn it in the direction indicated by the arrow stamp thereon.



## 6.7 Emergency lights.

Press the emergency light switch "1" (Fig. 3-F0132) to turn on all four direction indicators.

Switching on of sidelights is indicated by flashing of the switch itself and by the indicator light "2" on the dashboard.



## 6.8 Parking brake

Press the "1" switch to engage the parking brake (Fig. 4-F0132).

Engagement of the parking brake is indicated by the switch and by the indicator light "2" on the dashboard lighting up.

When the parking brake is engaged, the vehicle cannot move; the hydrostatic drive is disengaged and the wheels are braked.



### - WARNING

The parking brake must be engaged:

- Whenever the vehicle is left alone, even temporarily
- Whenever the vehicle operates at a standstill with the outrigger feet lowered (if present)

The brake is automatically engaged when the engine is switched off.



Contact an authorised *DIECI* workshop to check the efficiency of the parking brake.



### - DANGER

Do not use the vehicle if the parking brake is faulty.



### - DANGER

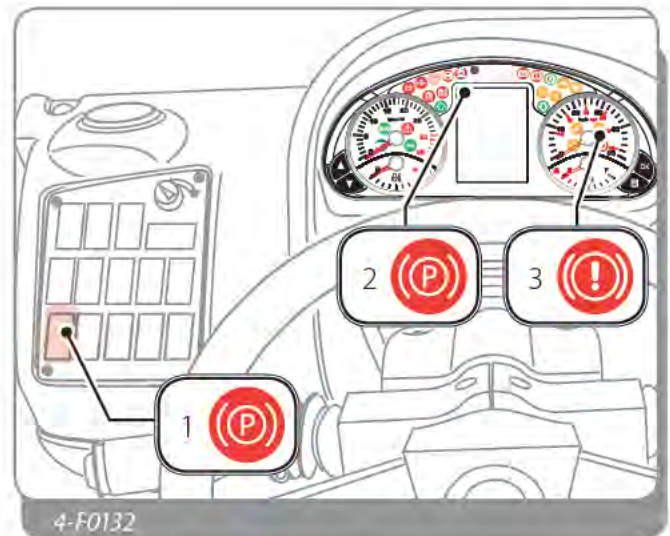
Unauthorised alterations of the axle ratios, the vehicle weight, or wheel and tyre dimensions may compromise the efficiency of the parking brake.



### - DANGER

If the indicator light "3" switches on, the parking brake is blocked or faulty.

Do not use the vehicle until the problem is resolved. Contact a *DIECI* after-sales centre.



## 6.9 Spirit level

The spirit level (Fig. 5-F0132) is situated in the centre of the dashboard. It is used to check the correct transversal levelling of the vehicle.

For safe operation, the air bubble must be in the centre; with maximum approximation margin of  $2^\circ$  to the right or left.

The slope exceeds  $2^\circ$  when the air bubble is completely out of the  $2^\circ$  delimitation mark.



### - FORBIDDEN

It is prohibited to operate with transversal inclination exceeding  $2^\circ$ .



## 6.10 Dead man joystick function

The dead man function on the joystick (Fig. 6-F0132) prevents any accidental movements of the boom.

The function must be kept activated during movement of the joystick, otherwise all joystick controls will be disabled.



There are various joysticks with different dead man functions available. Refer to the chapters on the use of the Joystick for more information.



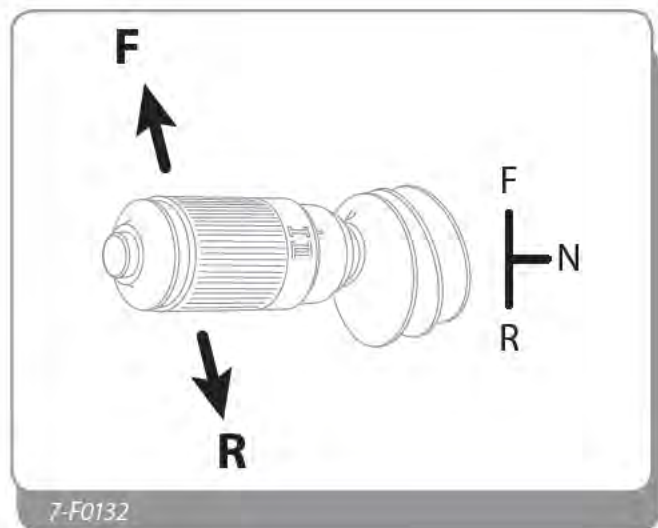
## 6.11 Gear selection lever

When the lever (Fig. 7-F0132) is kept in the intermediate position ("N") the drive is in neutral and the vehicle is partially braked.

The engine does not start up with the forward/reverse gear selection lever in any position other than "N".



For further information, see the chapter "Vehicle description".





## 6.12 Diagram notebook

The diagram notebook summarises the main information for safe use of the vehicle for rapid consultation by the operator during the various work phases.

## 6.13 Emergency exit: Rear window

The rear cab window (Fig. 9-F0132) can be used as an emergency exit should the doors of the vehicle be blocked.

To fully open the window, remove the stop "1" and push the window outwards.

The pin must be kept in position as shown during normal working operations.



### - FORBIDDEN

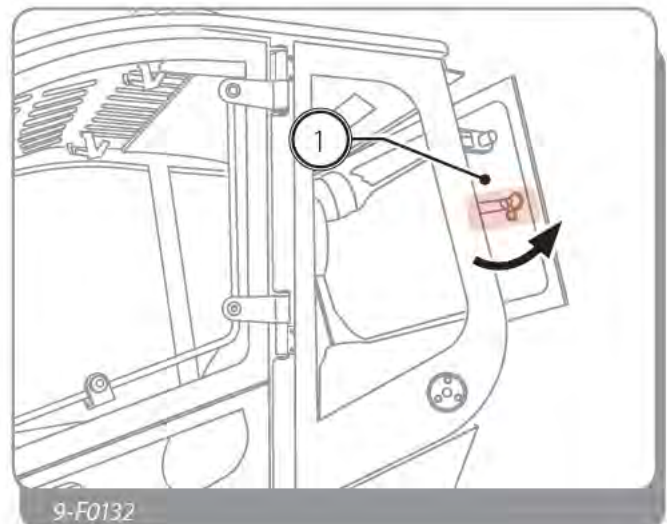
Opening the window completely during use of the vehicle is strictly prohibited, due to possible shearing hazards between the boom and chassis.

The rear window is found near the telescopic boom.



### - ATTENTION

Pay attention when opening and/or removing windows as they may chip or shatter, creating risk of injury to the operator in the cab and to those in the surrounding area.



## 6.14 Cab front window protection



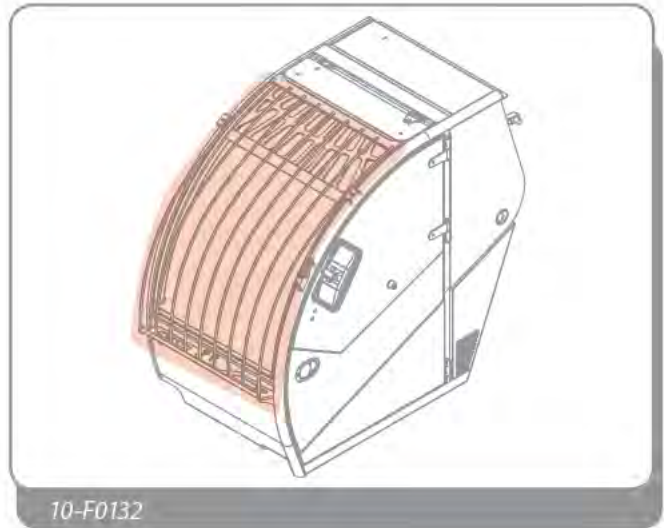
The cab front window protection is an optional accessory.

The front cab window protection (Fig. 10-F0132) offers greater protection against any loads or large or heavy objects, which could fall on the cab.



### - ATTENTION

If the vehicle is set up with the front glass protection, circulation on public roads is not allowed unless in the case of exceptions provided for by the standards in force in the country of use.



## 6.15 Seat

The seat of the vehicle is equipped with special seatbelts that protect the operator when moving or performing manoeuvres.



### - ATTENTION

Always fasten the seatbelts when using the vehicle.



Refer to the "Component description and use" chapter for additional information.

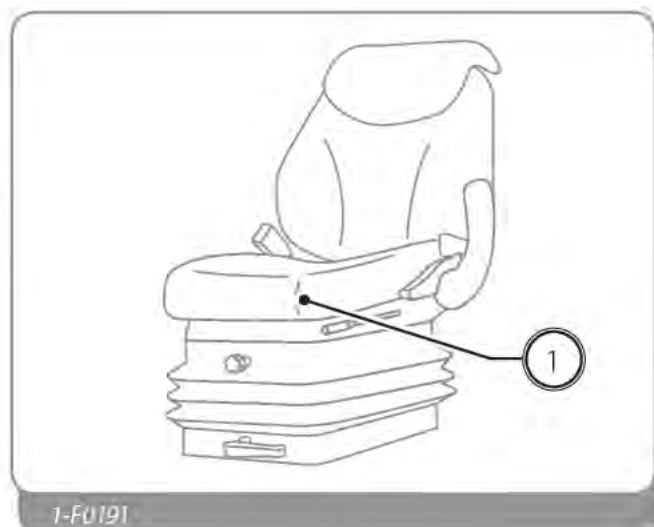
### 6.15.1 Dead man seat sensor

The vehicle is equipped with a safety system called "dead man", which consists of an electrical microswitch inside the seat cushion "1" (Fig. 1-F0191).



### - ATTENTION

The engine can only be started if the operator is seated properly in the driver's seat and the gear lever is in the neutral "N" position.



## 6.15.2 Seat belts

The vehicle is equipped with a cab that is able to support the weight of the vehicle itself should it tip over (ROPS). It is therefore, essential that the driver remains firmly fastened in the seat thanks to the seatbelt to prevent him/her from falling out and possibly getting crushed.

Before starting up the vehicle, carefully check the belts, the buckle and the fasteners of the structure. If any part is damaged or worn, replace the seat belt or the relative part before starting up the vehicle.

Remain seated with the seat belts fastened correctly for the entire time the vehicle is used in order to reduce the risk of injury in case of an accident.

Following a significant accident replace the seat belts even if there is no apparent damage.

### Proceed as follows to fasten the seat belts:

1. Insert latch "1" into buckle "2" (Fig. 2-F0191).
2. Make sure it has clicked properly, then fit the belt around your body (Fig. 3-F0191).



#### - ATTENTION

The seat belt is fastened properly when it fits snugly around the body.

### To unfasten the seat belt (Fig. 4-F0191):

1. Press the red button "1" on the buckle "2".
2. Then slide the latch "3" out.



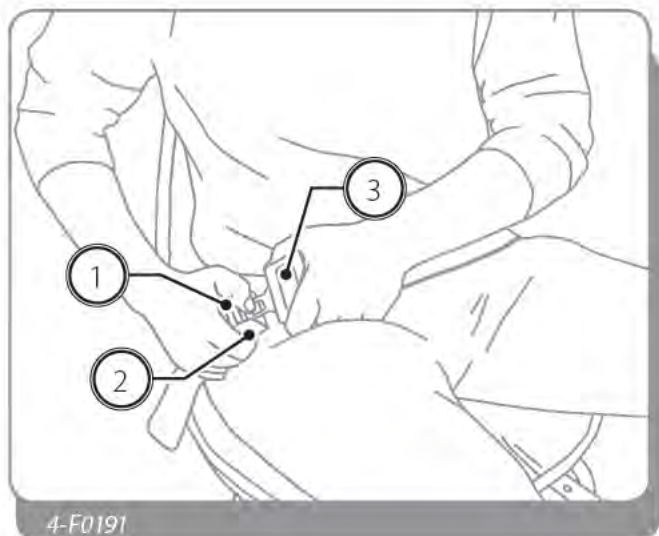
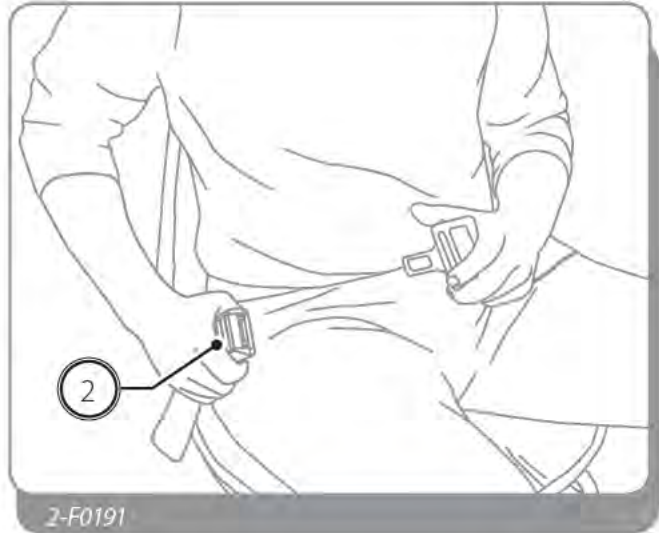
#### - ATTENTION

Drive the vehicle only with the seat belt properly fastened and adjusted. Driving with the seat belt unfastened increases the risk of accidents.



#### - FORBIDDEN

Do not use damaged or worn seat belts. Worn, damaged or weak seat belts may break or give in during a collision, causing serious injury to the operator.



## 6.15.3 Seat adjustment



### - ATTENTION

The seat has been correctly positioned when the operator is able to push the brake pedal completely down with his/her back firmly against the backrest.

The seat can be adjusted to different positions:

#### Backrest inclination

To adjust the inclination of the backrest, lift the lever on the left side (Fig. 5-F0191) and let the backrest adapt to the required position. Release the lever to block the backrest.

#### Back cushion

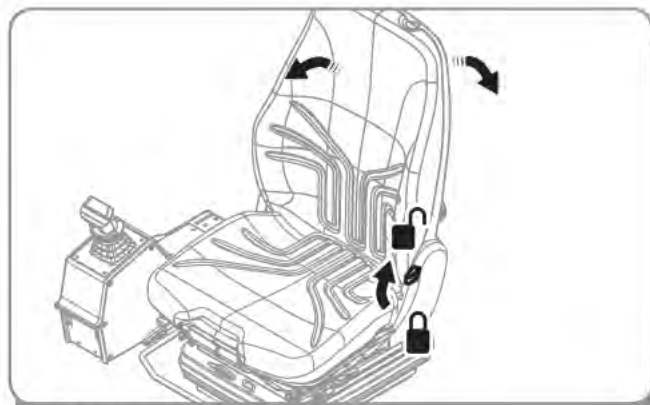
Adjust the back cushion (Fig. 6-F0191) by turning the knob behind the backrest.

#### Horizontal position of the seat unit

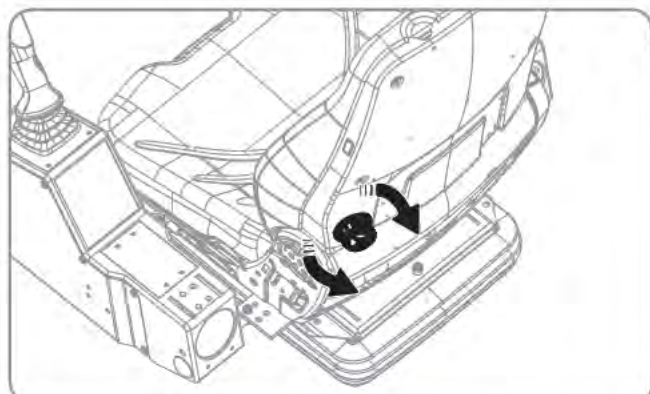
Adjust the entire seat unit longitudinally by moving the lever (Fig. 7-F0191) upwards and slide the seat unit on the guides. Release the lever when the desired position is reached. Perform small movements to make sure that the seat is fastened properly.

#### Horizontal seat position

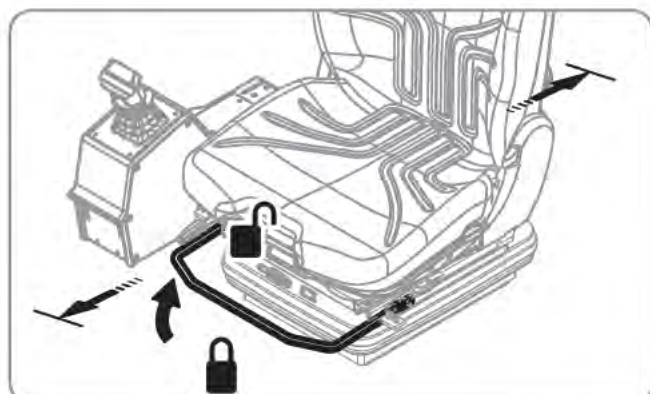
To adjust the seat longitudinally, move the lever (Fig. 8-F0191) upwards and slide the seat along the guides. Release the lever when the desired position is reached. Perform small movements to make sure that the seat is fastened properly.



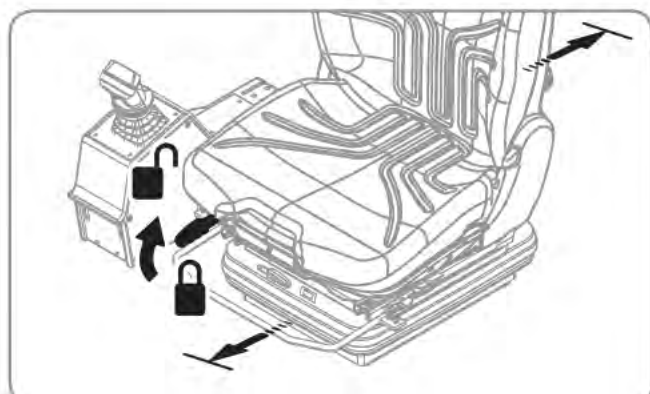
5-F0191



6-F0191



7-F0191



8-F0191



### Horizontal seat position

To adjust the seat longitudinally, press the right handle (Fig. 9-F0191) and slide the seat along the guides. Release the handle when the desired position is reached. Perform small movements to make sure that the seat is secured properly.

### Seat inclination

To adjust the seat inclination, press the left handle (Fig. 10-F0191) and adjust the seat to the desired position. Release the handle when the desired position is reached. Perform small movements to make sure that the seat is secured properly.

### Mechanical suspension degree

To adjust the degree of suspension, turn the knob (Fig. 11-F0191) towards "+" to soften the suspension. Turn the knob towards the "-" to hardened suspension.

Optimal adjustment is achieved when the weight indicated at the side of the lever corresponds to the weight of the operator.

### Pneumatic suspension degree \*



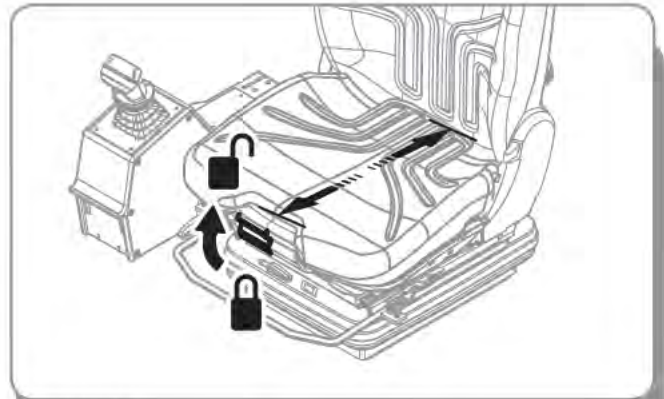
\* The pneumatic suspension of the seat is an optional accessory.

To adjust the pneumatic spring rate, pull knob (Fig. 12-F0191) to let out pressure and soften suspension. Push the knob to add pressure and harden suspension.

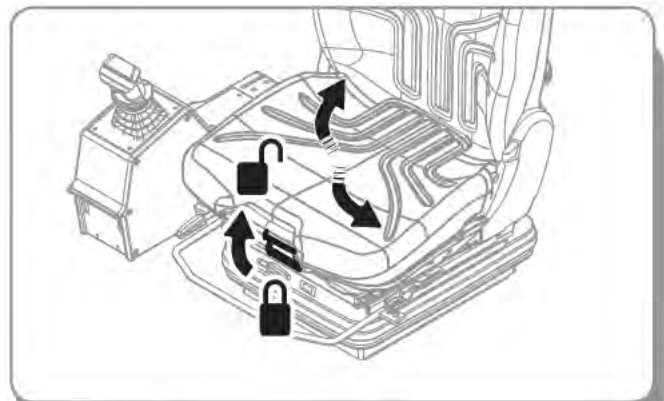


### - WARNING

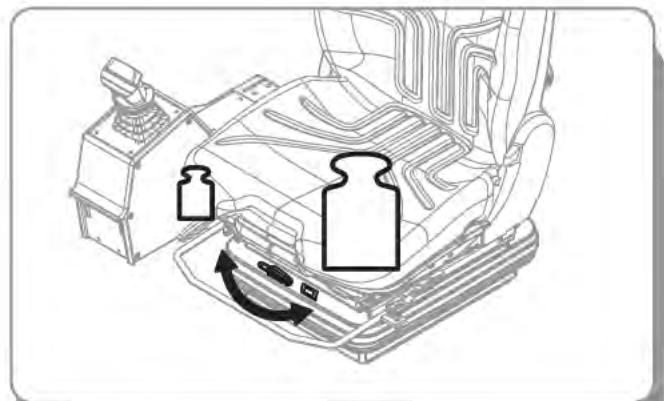
Pneumatic adjustment can only be performed with the engine running.



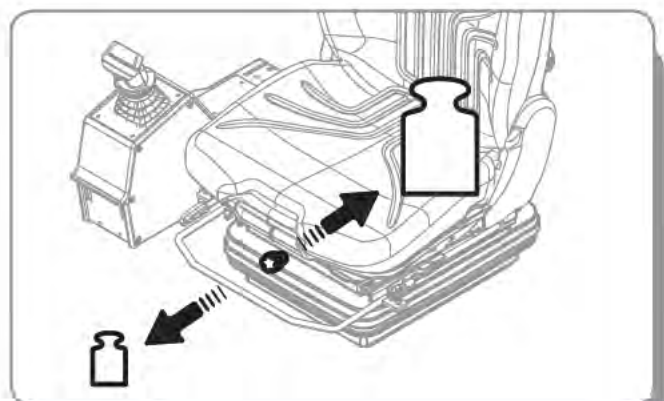
9-F0191



10-F0191



11-F0191

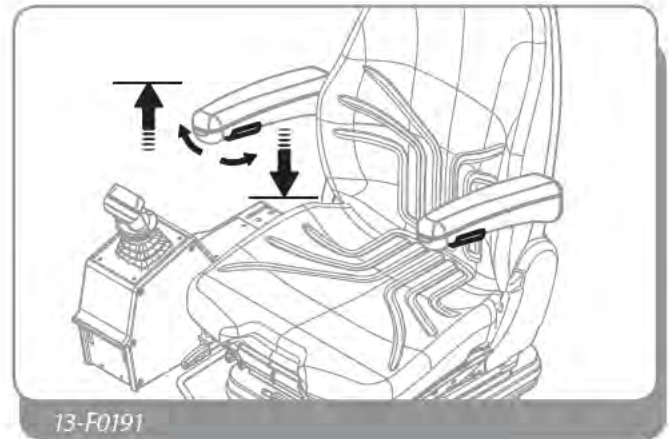


12-F0191

**Adjusting the arm rest**

You can lift or lower the arm rest by hand (Fig. 13-F0191).

To adjust the height of the arm rest when it is down, turn the knob located under it to the right to raise it, or to the left to lower the arm rest.



## 6.16 Anti-tipping device

### 6.16.1 Anti-tipping device: General information

The vehicle is equipped with an electronic anti-tipping device that helps the operator use the vehicle safely by providing various visual and acoustic signals depending on the hazard posed by the means tipping over.

The anti-tipping device is always active.



#### - WARNING

This device cannot replace the experience matured by the operator in using the vehicle safely. The responsibility of operating the vehicle safely is borne by the operator together with compliance with all prescribed safety standards.



#### - ATTENTION

The operator must be able to determine whether the data provided by the instrument are correct and actual, using the vehicle to be used safely. When checking the loaded weight, make sure that this is off the ground. The device will launch a self-diagnostics program to verify that the device itself and the transducers work properly. In the event of a fault, the device is set to a safe state and blocks the manoeuvres.

Before the operator starts to work, he must still make sure that the instrument works correctly:

- Checking the correct settings.
- Check the parameters on the display.
- Check for messages or alarms on the panel.
- Check for correct device operation.



In case of any abnormality noted, the operator must immediately contact an authorised workshop or the DIECI service centre.



#### - ATTENTION

The operator is responsible for selecting the correct settings according to the equipment installed on the vehicle. The last configuration used automatically remains selected on the next start-up until it is changed.



#### - DANGER

An incorrectly set accessory may cause the device to malfunction and therefore generate a dangerous operating situation.



#### - FORBIDDEN

You cannot use the vehicle with equipment other than that set on the device.



## 6.16.2 Description of the anti-tipping device

The device consists of (Fig. 1-F0220, Fig. 2-F0220 and Fig. 3-F0220):

- 1 Longitudinal moment indicator
- 2 Bypass Key
- 3 Equipment selection key

### The device is always operating.

The device does not warn of the overturning hazard in case of:

- Transversal tipping
- A sudden overload,
- Transporting/moving a load in an elevated position,
- Movements on rough grounds, with obstacles or potholes;
- Transporting/moving on or near a slope;
- High speed on a straight road or a curve.



### - ATTENTION

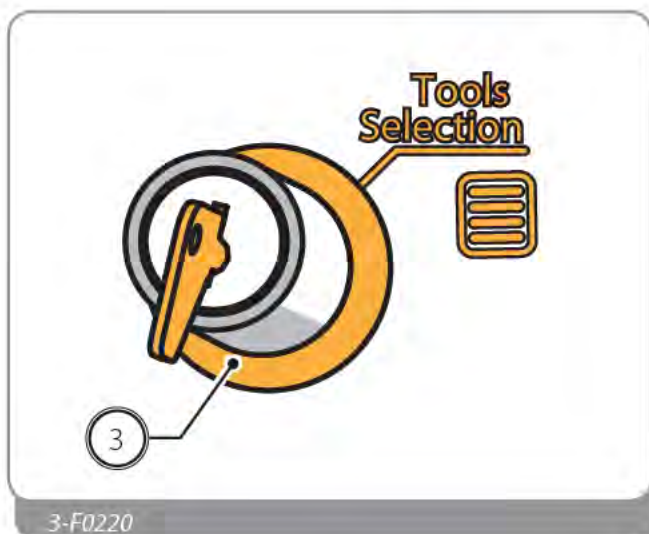
When the limit load is reached, the device automatically blocks all movements which endanger the stability of the vehicle. Only movements which move the vehicle back to safe conditions will remain active.



1-F0220



2-F0220



3-F0220

### 6.16.3 Longitudinal moment indicator

The anti-tipping LED is displayed by a bar "1" (Fig. 4-F0220) that indicates the risk of the vehicle tipping over.

The "2" indicator light has several icons and statuses according to the work conditions of the vehicle.



T1-F0221 - Table of the anti-tipping status

Icon	State bar	Condition	Acoustic signal
 (On fixed)	Green zone	Normal work	None
 (Flashing)	Yellow zone	Prealarm	Intermittent
 (On fixed)	Red zone	Alarm	On fixed

## 6.16.4 Bypass Key

If the anti-tipping device does not allow the normal safety conditions to be restored using the joystick, you can exclude the anti-tipping device with the Bypass key (Fig. 5-F0220).



### - DANGER

The anti-tipping systems are deactivated while the bypass key is used.

It is mandatory to consult the capacity diagram of the vehicle and of the installed equipment before performing any manoeuvre.

Use the data displayed on the dashboard and the letters on the boom to know the exact position of the load.

In these conditions, do not perform movements that may aggravate the stability of the vehicle, such as descent or extending the boom, as its stability may be compromised, causing it to overturn.



### - DANGER

The Bypass Key must only be used if all the following conditions occur simultaneously:

- If the maximum tipping limit is reached and the vehicle is in danger of tipping.
- To return to safe conditions
- By qualified and correctly trained personnel
- For short periods
- After attempting to restore the safety conditions through the vehicle movements that have remained active.
- If it is not possible to restore safe conditions by means of the vehicle movements that are still active.
- You are not using equipment with a lifting hook (Fork holder plate hook, winch, etc.)



### - NOTE

The bypass function is carried out by a key so that the safety manager can extract and keep the key and prevent from activating the anti-tipping device during normal working conditions.

Keep the ByPass key turned and simultaneously use the joystick to bring the vehicle in a safe condition.

While using the Bypass Key, the relative icon "3" (Fig. 6-F0220) will appear on the display together with the intermittent acoustic signal.

The Bypass Key function deactivates automatically after 30 seconds even if the key is still turned.



### - ATTENTION

Dieci disclaims any liability in the event that the operator misuses the Bypass key to bypass the safety devices.



### - FORBIDDEN

It is forbidden to use the Bypass key to operate with loads that exceed the flow rates indicated by the manufacturer.

### 6.16.5 Equipment selection key

The vehicle can be used with different types of equipment and the correct equipment currently used must be set.



#### - WARNING

The equipment is selected by means of a key so that the safety manager can remove and keep it to prevent a working mode different from that necessary for the equipment from being used.

To select the correct equipment use the equipment selection key (Fig. 7-F0220); the equipment selection screen (Fig. 8-F0220) will appear on the dashboard when the key is turned.



#### - NOTE

The equipment available refers to the *DIECI* price list.

Use the **UP** and **DOWN** keys to scroll the menu items and press the **OK** key for 3 s to confirm the selection.

The equipment available on the menu may be:

- With a Yellow background: equipment currently selected
- With a White background: equipment enabled
- With a Grey background: equipment not enabled



Contact the Dieci Technical Assistance Service to enable or disable the equipment on the menu.

Refer to the (T2-F0221 - Table of equipment icons) table for the full list of available equipment.



#### - ATTENTION

Using the vehicle with equipment other than that selected using the "Operational mode selector" is prohibited.



7-F0220



8-F0220

T2-F0221 - Table of equipment icons

Icon	Description
	Forks
	Buckets
	Hooks
	Winch - 2.5 t
	Winch - 3.8 t
	Winch - 4.0 t
	Winch - 5.0 t
	Customised winch
	Jib - 1.0 m long
	Jib - 1.3 m long
	Jib - 2.5 m long
	Jib - 4.5 m long
	Customised jib
	Basket - 2 people - 200 kg
	Basket - 2 people - 200 kg
	Basket - 2 people - 200 kg
	Basket - 2 people - 200 kg
	Basket - 2 people - 200 kg

T2-F0221 - Table of equipment icons

Icon	Description
	Basket - 2 people - 200 kg
	Basket - 2 people - 200 kg
	Customised basket
	Basket for tunnel - 300 kg
	Basket for tunnel - 400 kg
	Basket for tunnel - 800 kg
	Orange-peel grab
	Centring handler
	Positive/negative jib
	Winch with basket
	Centring handler with basket

### 6.16.6 Check functioning of the anti-tipping device with the load



#### - ATTENTION

Before every work shift it is mandatory to verify proper operation of the anti-tipping device.

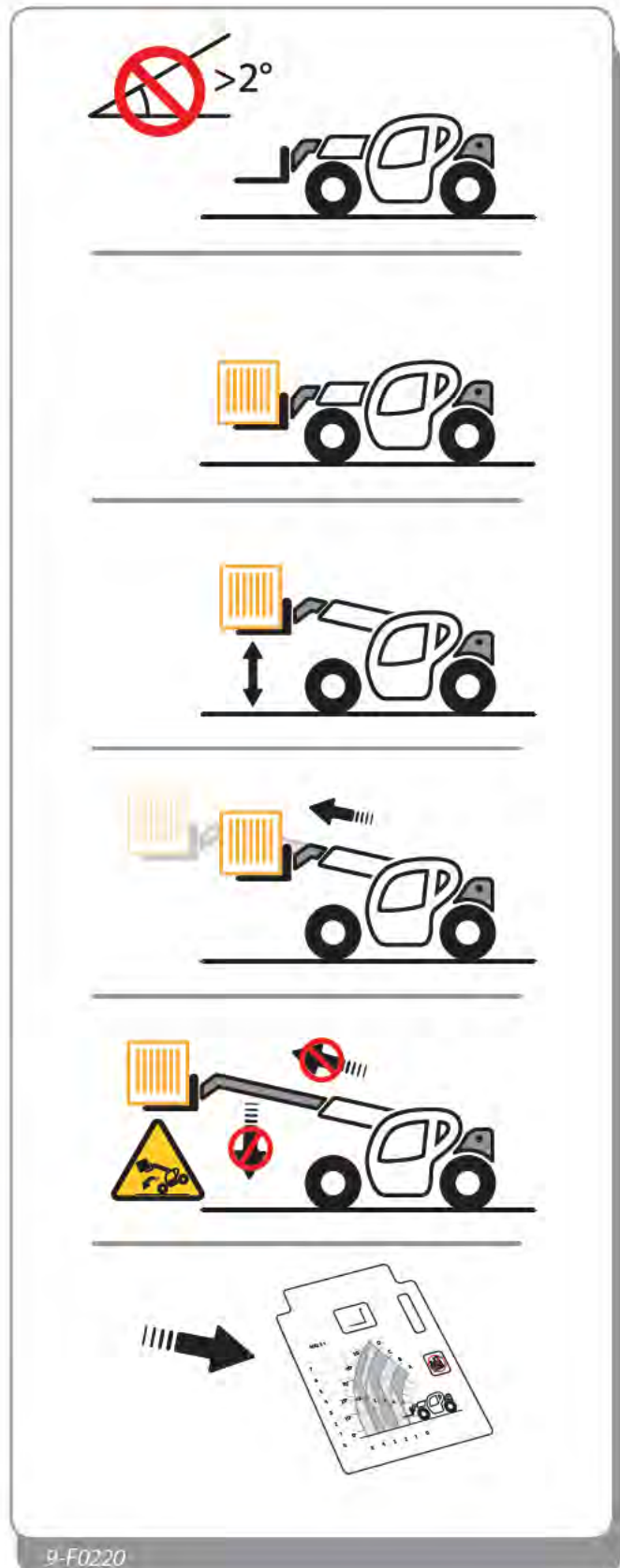
For correct verification of the device following the operations below:

- Place the vehicle on horizontal and stable surface and activate the parking brake.
- Ensure the equipment is correctly assembled on the vehicle and is adequate for the capacity of the same.
- Verify the anti-tipping device display is set for the assembled equipment.
- Bring the diesel engine and hydraulic oil to the operating temperature.
- Refer to the capacity diagram of the assembled equipment and with the boom closed take a significant load for the capacity of the equipment (equal to about 50% of the maximum capacity).
- Lift the load at about 50 cm from the ground.
- Extend the boom slowly with the engine at minimum speed. Check the anti-tipping device display during this manoeuvre. Once the red zone is reached, the continuous acoustic signal must switch-on and the extension movement will be simultaneously blocked.
- Now check the hazardous movements envisioned for the assembled equipment are not allowed.
- Check block happens in the point indicated in the capacity diagram present in the note pad inside the cab.
- Should everything work correctly, start work.



#### - DANGER

In the event of safety device anomalies, interrupt all operations until the problem is fixed. Contact the DIECI after-sales service.



9-F0220

## 6.17 Capacity diagrams

The Safe Working Load (SWL) of these vehicles depends on the extension and angle of the boom.

The capacity diagrams indicate the maximum height and extension admitted with given equipment and loads to be able to work in safe conditions, without risk of the vehicle overturning during work operations.

This vehicle is equipped with an anti-tipping device that controls the state of the load and the risk of the vehicle overturning, in real time (see "Anti-tipping device" chapter). However, it is necessary to use and respect the capacity diagrams in relation to the load and type of used accessory.



### - ATTENTION

It is compulsory to have the capacity diagram of the equipment and the vehicle being used, inside the cab. Consult the correct capacity diagram before moving a load.



### - FORBIDDEN

Do not lift or extend the boom when the vehicle is in motion. Lower and completely retract the boom before moving a load.



### - ATTENTION

The load diagram refers to the vehicle being still and levelled.



### - NOTE

Consult the "Safe work procedure" chapter before moving a load.



### - ATTENTION

It is compulsory to know the weight of the load to be moved.



### - ATTENTION

Locate the centre of gravity of the load to be moved. The centre of gravity may not be in the centre of the load.

### 6.17.1 Read the capacity diagrams

- **Name and model of the vehicle** (Fig. 1-F0300, pos. 1)

- **Equipment model** (Fig. 1-F0300, pos. 2)

Equipment model with load centre indications.

For additional information, consult the "Capacity diagrams key" chapter.

- **Code of the Capacity diagram** (Fig. 1-F0300, pos. 3)

- **Maximum capacity of the equipment** (Fig. 1-F0300, pos. 4)

The maximum capacity of the equipment is also marked by the relative sticker on the equipment itself.

- **Boom angle** (Fig. 1-F0300, pos. 5)

The boom angle is provided by the inclinometer located on the left side, on the end of the boom (if installed), or on the screen of the anti-tipping device (if installed).

- **Boom extension** (Fig. 1-F0300, pos. 6)

The boom extension is marked with the alphabet letters ("A", "B", "C", "D", etc.). The same letters are reported on stickers on the boom extension so that the user in the cab knows the boom extension by reading the letters on it.

- **Vehicle operating mode** (Fig. 1-F0300, pos. 7)

For additional information, consult the "Capacity diagrams key" chapter.

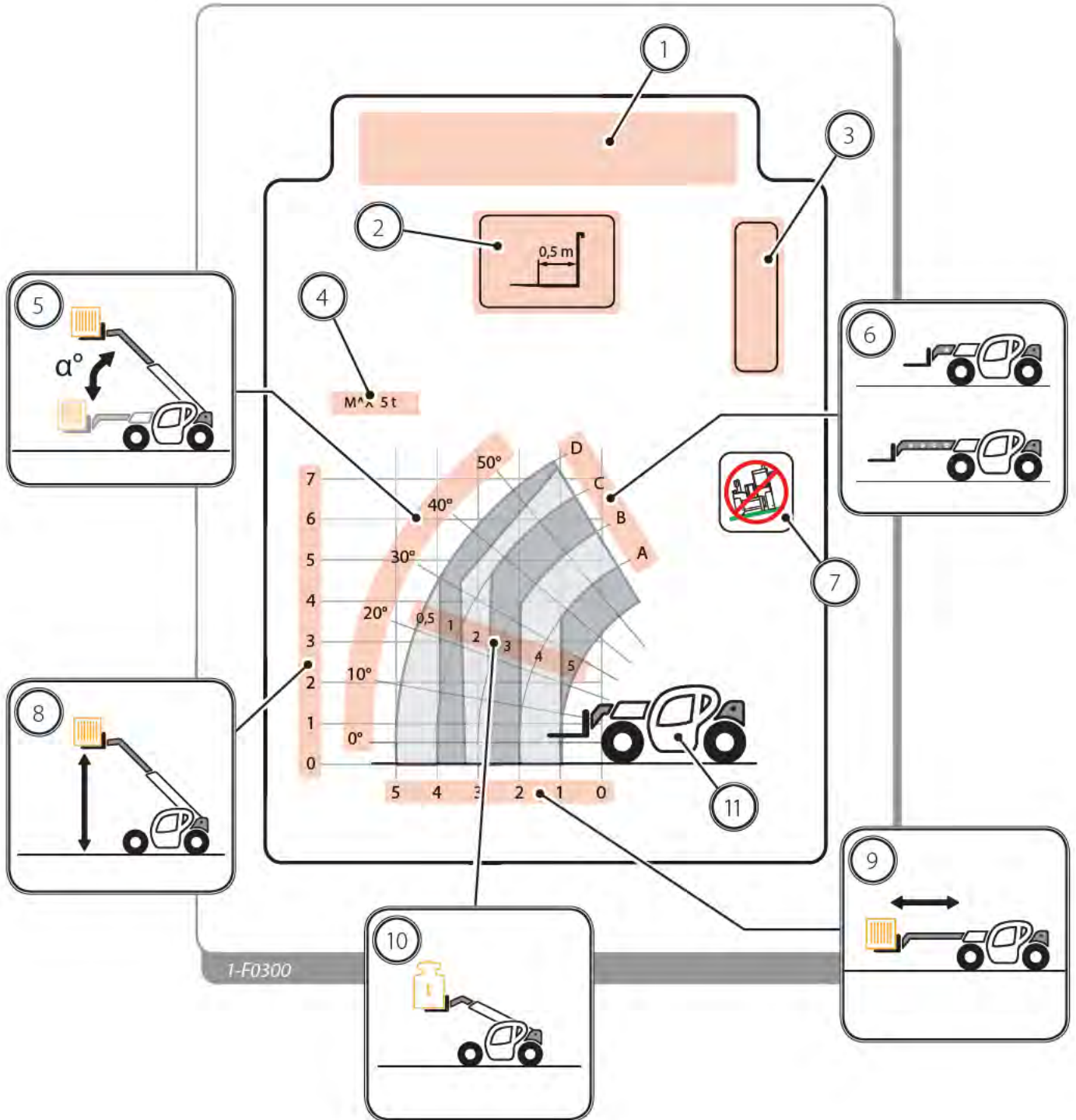
- **Load height from the ground** (Fig. 1-F0300, pos. 8)

- **Horizontal distance of the load from the vehicle** (Fig. 1-F0300, pos. 9)

- **Load weight** (Fig. 1-F0300, pos. 10)

- **Position of the machine** (Fig. 1-F0300, pos. 11)





## 6.17.2 Using the capacity diagrams

The Capacity diagrams indicate the areas in which it is possible to work with the vehicle and load in safe conditions.



### - DANGER

To operate the vehicle without respecting the Capacity diagrams of the equipment installed can lead to dangerous situations, to overturning limit and to the operating of the anti-tipping device.

The entire work area of the boom is split into the following areas (Fig. 2-F0300, pos. 1). A maximum capacity corresponds to each area. The area closest to the vehicle will have the same capacity as the vehicle's maximum load capacity; the area's maximum capacity decreases the further away one moves from the vehicle.

Before operating make sure to know:

- Weight of the load
- Height from ground at which to move the load
- Distance from vehicle at which to move the load

Identify the capacity diagram area showing a value just above that of the weight of the load to be moved; e.g. if the load weighs 1.5 t, the area of reference will be that having maximum capacity of 2 t (Fig. 2-F0300, pos. 1).

By knowing the area we will know:

- the vertical and horizontal distance at which to move the load
- the boom extension values and angle at which it is possible to operate.

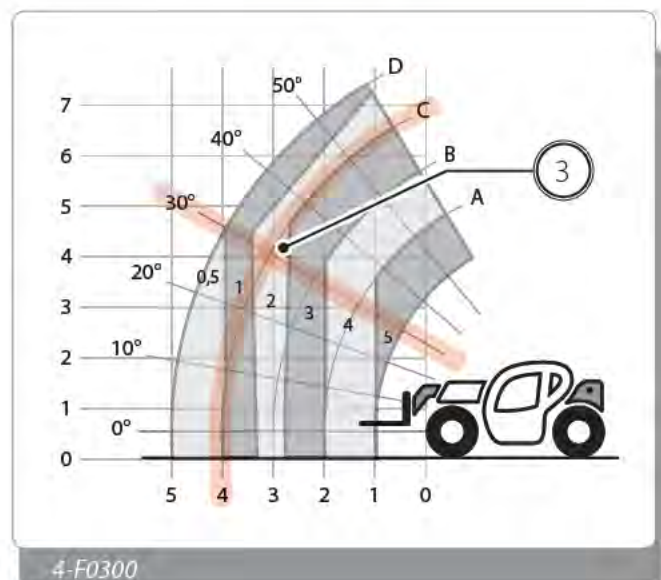
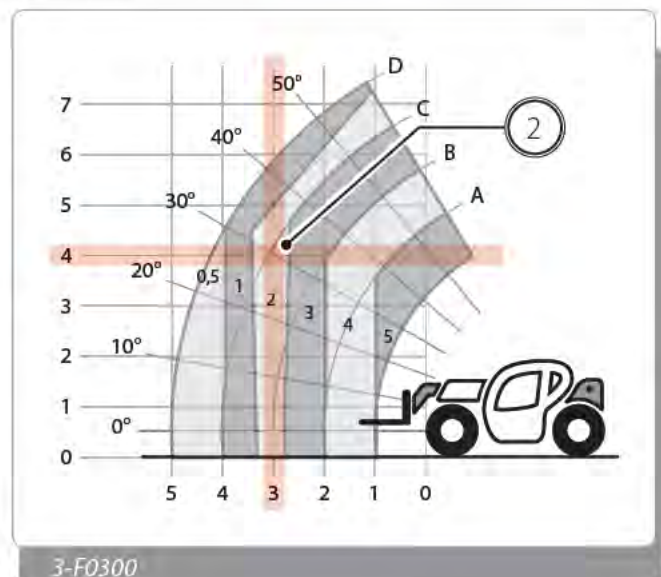
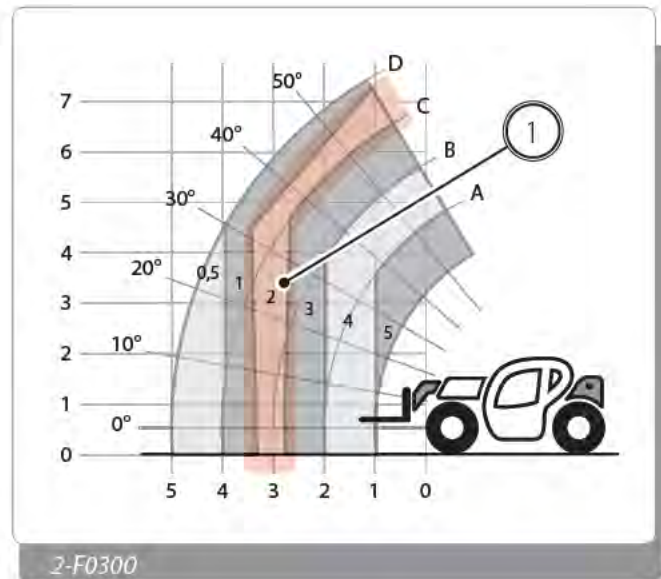
To know the vertical and horizontal distance we can move the load at, use the horizontal and vertical lines crossing the area of reference; e.g. we can bring the load at a distance of 3 m from the vehicle and at 4 m high, while remaining in safe conditions (Fig. 3-F0300, pos. 2).

To avoid operating in danger of overturning conditions, use the boom extension and angle indications. For example, we could operate with the boom extended to letter C at an angle of 30° (Fig. 4-F0300, pos. 3).



### - ATTENTION

By bringing the load over the admitted area, we would enter danger of overturning conditions and the anti-tipping device will start operating, blocking all movements considered harmful for the stability of the mean and of the load.



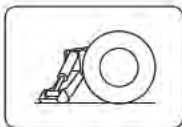


**- ATTENTION**

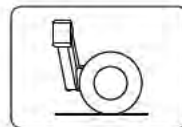
Use the capacity diagrams every time the load is moved to determine the safe work area.  
It is possible to start operating only in safe conditions and if within the pre-determined safe work area.

6.17.3 Capacity diagrams key

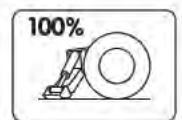
**Vehicle operating mode**



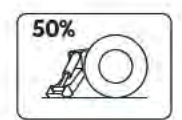
Outriggers lowered



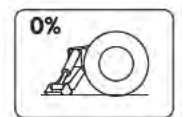
Outriggers lifted



Outriggers lowered, 100% extended



Outriggers lowered, 50% extended



Outriggers lowered, 10% extended



Forbidden to work on tyres



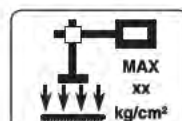
In continuous rotation



In non-continuous rotation



Front position

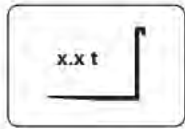


Maximum pressure exerted on ground

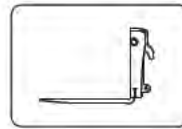


Forbidden to manoeuvre with vehicle not level

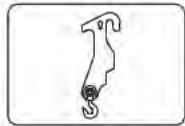
**Attrezzature installate Installed equipment/Установленное навесное оборудование**



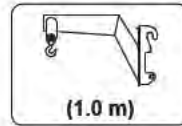
Pair of forks (capacity)



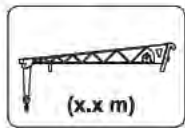
Forks extender/shifter



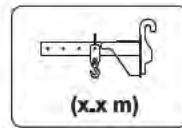
Fork support plate hook



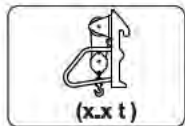
Swan neck jib (measurements)



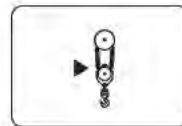
Winch jib crane extension (measurements)



Jib with hook (measurements)



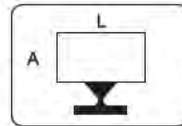
Winch (Capacity)



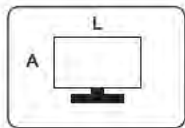
How to use Winch: Double Pull



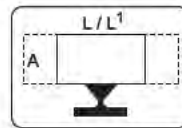
How to use Winch: Single Pull



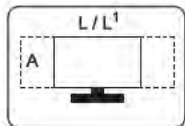
Fixed three-sided basket



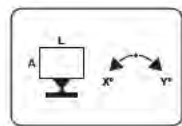
Fixed front basket



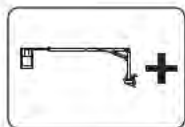
Extendable three-sided basket



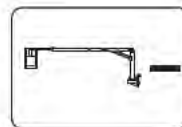
Extendable front basket



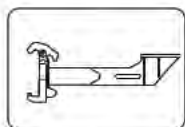
Three-sided basket (X° = RH rotation - Y° = LH rotation)



Positive jib



Negative jib



Centring handler



Orange-peel gripper with 5 teeth

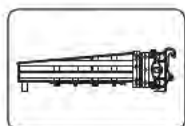
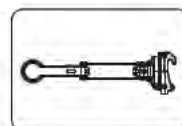


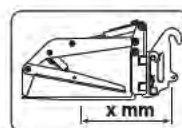
Plate gripper



Wheel handler gripper



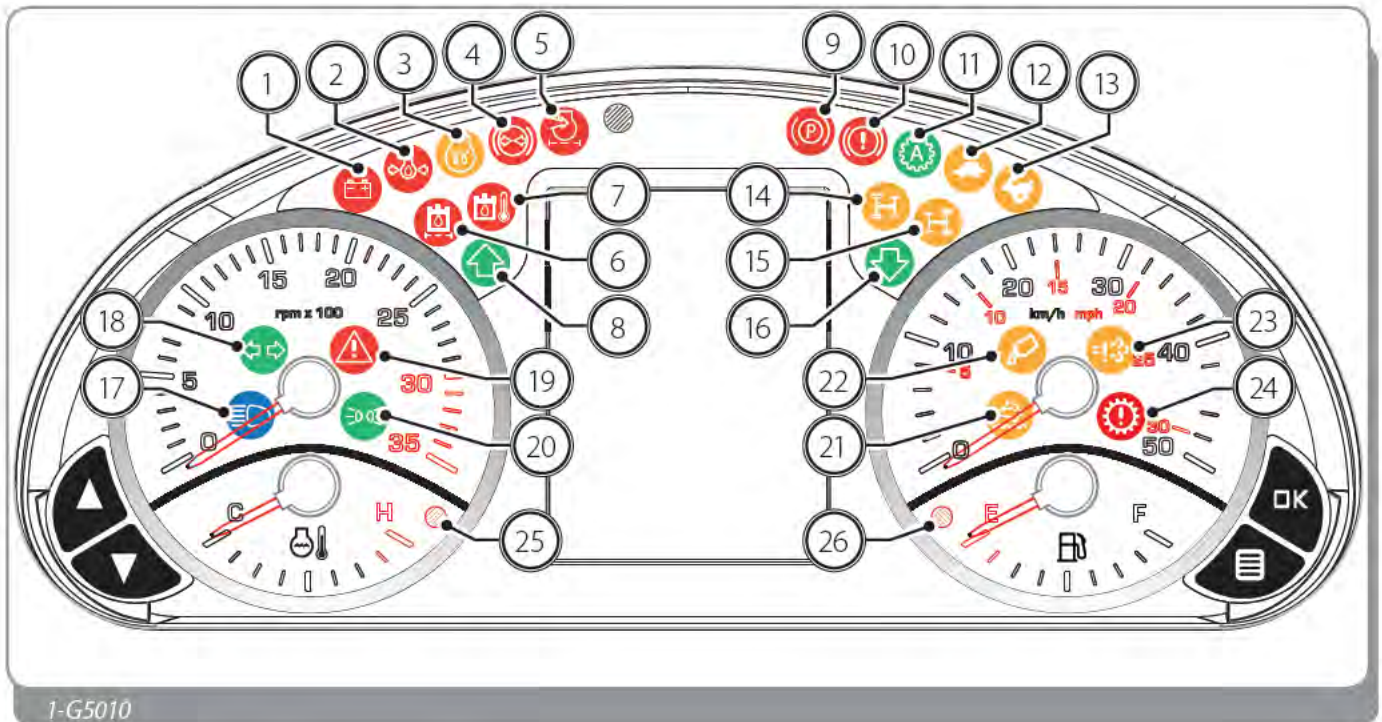
Cylinder handler gripper



Pipe gripper with pipe block

## 6.18 TFT central dashboard

### 6.18.1 Central dashboard: Indicator lights.



T1-G5010 - Table of TFT dashboard LEDs

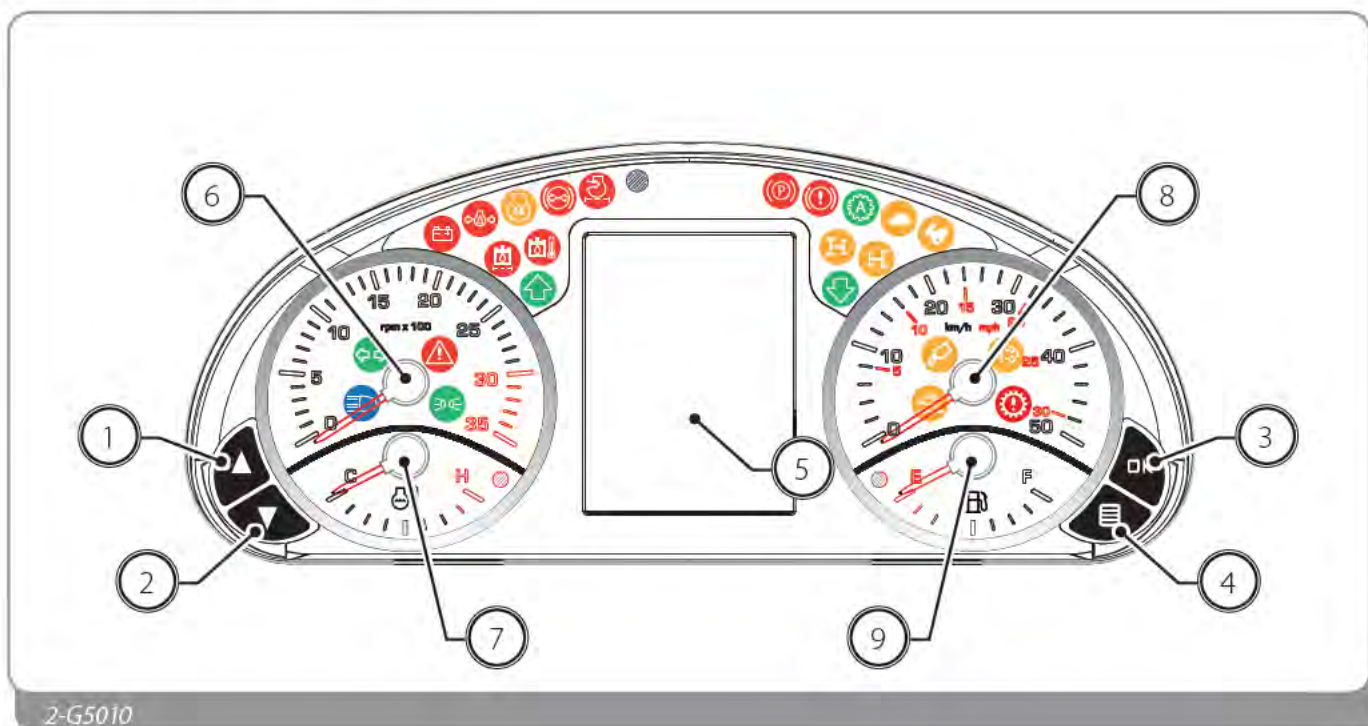
Position	LED	Colour	Start-up	Description
1		Red	Fixed	Faulty generator, battery
2		Red	Fixed	Low engine oil pressure
3		Yellow	Fixed	Ignition plugs
4		Red	Fixed	Insufficient parking brake pressure
5		Red	Fixed	Engine air filter clogging
6		Red	Fixed	Clogged hydrostatic oil filter
7		Red	Fixed	Hot hydraulic oil
8		Green	Fixed	Forward movement engaged

T1-G5010 - Table of TFT dashboard LEDs

Position	LED	Colour	Start-up	Description
9		Red	Fixed	Engaged parking brake
10		Red	Flashing	Low brake oil level
			Fixed	Brake system fault
11		Green	Fixed	Mechanical gear engaged
12		Yellow	Fixed	Slow gear engaged
13		Yellow	Fixed	Fast gear engaged
14		Yellow	Fixed	Front axle wheels alignment *
15		Yellow	Fixed	Rear axle wheel alignment *
16		Green	Fixed	Reverse movement engaged
17		Blue	Fixed	High beams
18		Green	Fixed	Direction indicators
19		Red	Fixed	General alarm
20		Green	Fixed	Side lights
21		Yellow	-	Not used
22		Yellow	-	Not used
23		Yellow	-	Not used
24		Red	-	Not used
25	-	Red	Flashing	Hot engine water
26	-	Yellow	Fixed	Low fuel level

\* Indicator lights used by optional accessories.

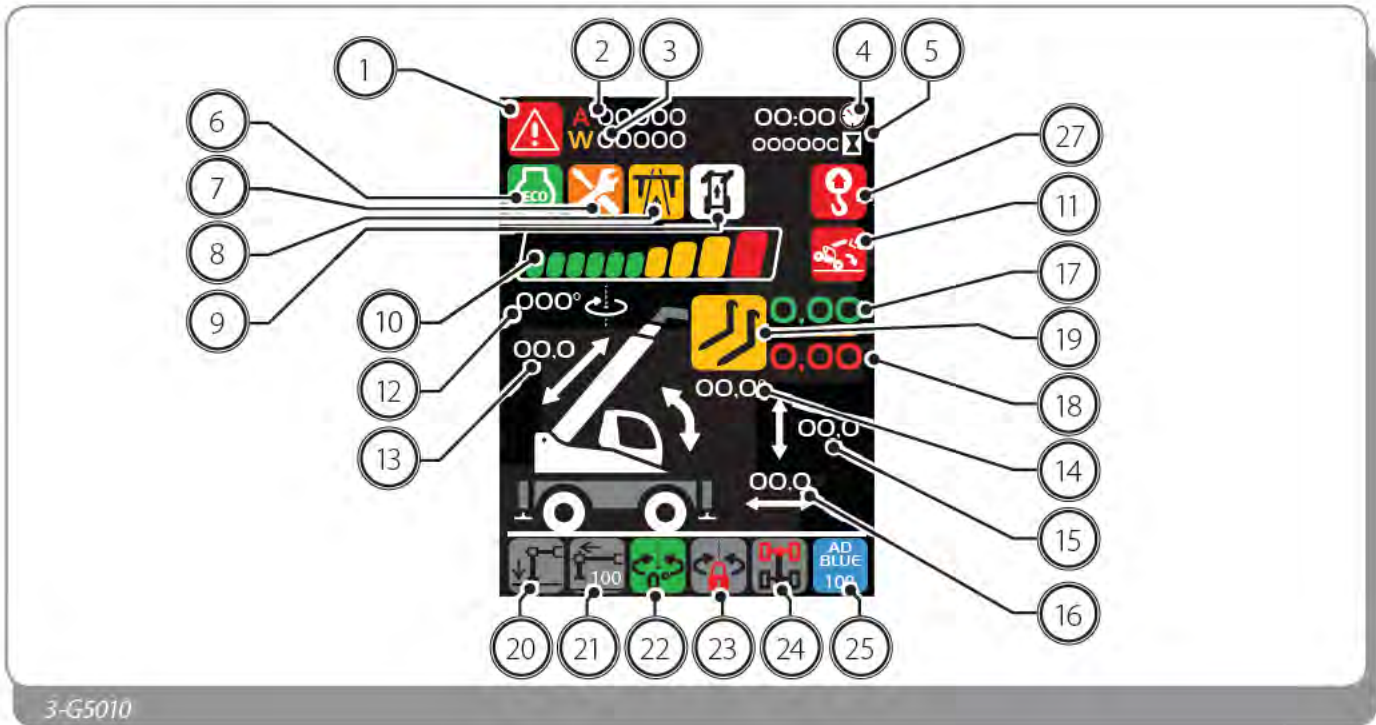
## 6.18.2 Central dashboard: Components



T2-G5010 - Table of TFT dashboard components

Position	Description
1	UP key
2	DOWN key
3	OK key
4	MENU key
5	Display
6	Rev gauge
7	Engine water temperature indicator
8	Speed gauge
9	Fuel level indicator

### 6.18.3 Central dashboard: Home



The Home screen (Fig. 3-G5010) is the standard display and contains the information required by the operator to use the vehicle.

T2-G5010 - Table of TFT dashboard components

Position	LED	Description
1		General Alarm indicator
2	A	Indicates the active alarm code.
3	W	Indicates the active warning code.
4		Clock
5		Hour meter
6		Eco LED Not used.
7		Service LED This lights up every 250 hours to indicate the vehicle maintenance schedule.



T2-G5010 - Table of TFT dashboard components

Position	LED	Description
8		Road circulation LED: Not allowed The stabilising feet are lowered on the ground or the turret is rotated
		Road circulation LED: Off-road The stabilising feet are not in the transport position and the turret is in the front position or it is rotated by 180°.
		Road circulation LED: Allowed The stabilising feet are in the transport position and the turret is in the front position.
9		Steering mode: Front wheels
		Steering mode: Concentric
		Steering mode: Crab
10	-	Anti-tipping bar
11	-	Anti-tipping alarm LED The LED flashes when the vehicle reaches the anti-tipping limit.
12		Turret rotation degrees compared to the carriage.
13	-	Extension length
14	-	Boom inclination degrees compared to the turret.
15	-	Height of the load from the ground
16	-	Distance of the load from the centre of the vehicle
17	-	Current transported weight
18	-	Maximum weight that can be transported according to the equipment installed and to the position of the vehicle
19		Installed equipment
20		Operating mode indicator light: Stabilising feet Indicates that the vehicle is in the operating mode on stabilising feet.
		Operating mode indicator light: Wheels Indicates that the vehicle is in the operating mode on wheels.
21		Stabilising feet extension indicator light Indicates the extension of the stabilising feet in percentage.

T2-G5010 - Table of TFT dashboard components

Position	LED	Description
22		Turret Frontal indicator light Indicates that the turret is perfectly aligned in the front position compared to the carriage (0°).
		Turret Frontal indicator light Indicates that the turret is in the front position compared to the carriage (+/-5°).
23		Turret blocked indicator light Indicates that the turret is blocked and that rotation is inhibited
		Axle oscillation Block indicator light: Front Indicates that the oscillation of the front differential axle is blocked
24		Axle oscillation Block indicator light: Rear Indicates that the oscillation of the rear differential axle is blocked
		Axle oscillation Block indicator light: Front Indicates that the oscillation of the front and rear differential axles is blocked
		Not active
26		ByPass indicator light Indicates the use of the ByPass key

## 6.18.4 Central dashboard: Initial check

The system runs a check on all LEDs and indicators when the panel is switched on. A loading bar "1" (Fig. 4-G5010) and the software version "2" appear on the display during the check.

Once the initial check is completed, the display switches to the display of the main Home screen.

## 6.18.5 Central dashboard: Menu

From the Home Page, you can access the menu by pressing **MENU**.

Use the **UP** and **DOWN** keys to scroll the menu items and press the **OK** key for 3 s to make the selection and go to be relative page.

The menu items are:



Equipment menu



Active errors



Clock settings



Service



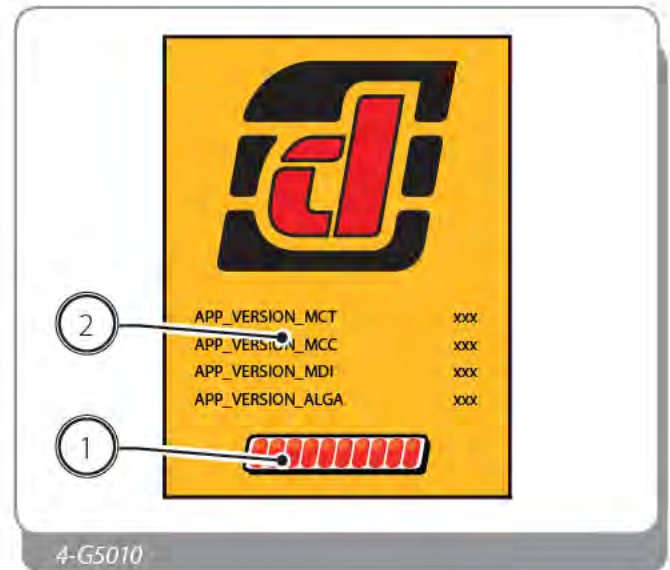
Anti-tipping calibration  
(Reserved for expert personnel)



Diagnostics



Settings  
(Reserved for expert personnel)



### 6.18.6 Central dashboard: Anti-tipping

The anti-tipping LED is displayed by a bar "1" (Fig. 6-G5010) that indicates the risk of the vehicle tipping over.

When the vehicle is about to reach the anti-tipping limit, the Tipping Hazard LED "2" starts to flash. It will stop flashing when the vehicle returns within the safety parameters.

The vehicle stability degree is indicated by (Fig. 6-G5010):

- Anti-tipping state bar "1"
- Indicator LEDs "2"
- Acoustic signal

The signals increase proportionally as the vehicle tipping risk increases during the load handling operations, as described in the table below.

When the limit load is reached the device blocks the vehicle movements considered to be compromising and the alarm is reset when the safe conditions are restored.



*T2-G5010 - Table of Anti-tipping components*

Load	Condition	LED	State bar	Acoustic signal
Load less than 90% of the maximum load allowed	Safe work conditions	Off	Within the green area	None
Load over 90% of the maximum load allowed	Pre-alarm condition	Intermittent	Beginning of the yellow zone	Intermittent
100% of the maximum load allowed	Vehicle at anti-tipping limit	Intermittent	Beginning of the red zone	Continues
Load over 100% of the maximum load allowed	Compromising movement block	Intermittent	End of red zone	Continues

## 6.18.7 Central dashboard: Service LED

The Service LED "3" (Fig. 8-G5010) indicates the intervals at which vehicle maintenance must be performed.

At 20 hours before the deadline the LED remains on for 3 s after the dashboard is switched on.

The Service LED remains on if no maintenance is performed by expert personnel when the deadline elapses.

Access the Service page to know how many hours are left for the subsequent maintenance to be performed (Fig. 7-G5010):

- Press the **MENU** key,
- Select the Service icon,
- Press the **OK** key.

Return to the home screen by simply pressing the **MENU** key or selecting the **BACK** icon "1" and pressing the **OK** key.



**Contact the Dieci technical support service for maintenance to be performed and restore the Service hour meter.**

## 6.18.8 Central dashboard: Clock

The Home screen contains the hour meter indication next to the relative icon "1" (Fig. 8-G5010).

Adjust the time as follows (Fig. 9-G5010):

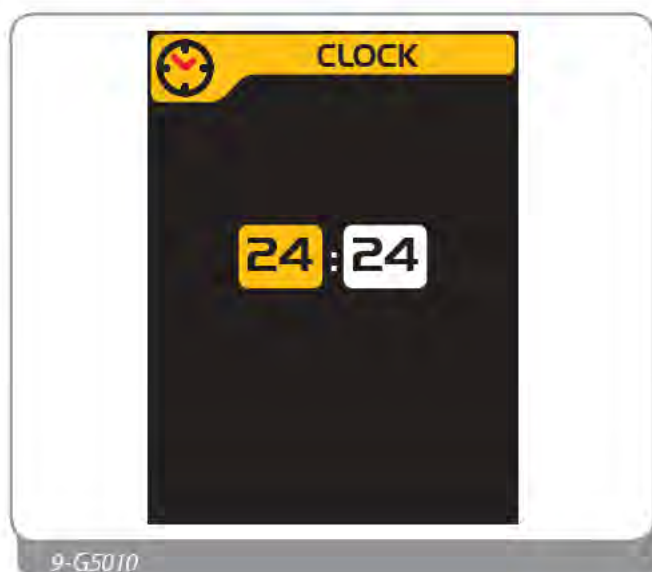
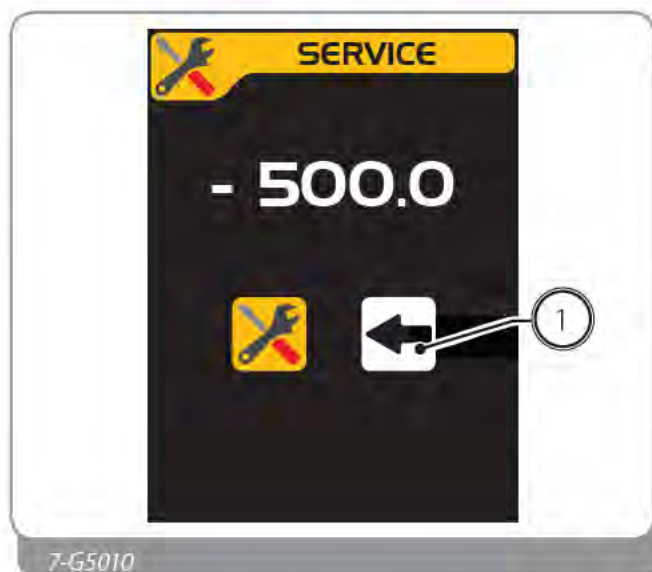
- Press the **MENU** key,
- Select the clock settings icon,
- Press the **OK** key,
- Use the **UP** and **DOWN** keys to set the hour digits,
- Press the **OK** key,
- Use the **UP** and **DOWN** keys to set the minute digits,
- Press the **OK** key to set the new time.

Press the **MENU** key at any time to cancel the process and return to the Home screen.

## 6.18.9 Central dashboard: Hour meter

The Home screen contains the hour meter indication next to the relative icon "2" (Fig. 8-G5010).

The decimal separation point flashes when the hour meter is active.



## 7 CONTROLS USE AND DESCRIPTION

### 7.1 Opening door

#### 7.1.1 External door handle

The cab door is equipped with an external locking handle (Fig. 1-G5000).

To open the door from outside:

1. Insert the key in the lock and turn clockwise/anticlockwise to engage/disengage the lock.
2. Pull the handle towards you to release the door with the lock disengaged.



#### - NOTE

The door will not open if the door handle is pushed when the lock is engaged.



#### - FORBIDDEN

Operating the vehicle with the cab door open is strictly prohibited.



#### 7.1.2 Internal door handle

To open the door from the inside:

1. Move the handle upwards to release the door (Fig. 2-G5000).
2. Push the door outwards to complete opening.
3. Accompany the door with a hand when opening.



#### - ATTENTION

Before pushing the door outward, make sure that the surrounding area is free of obstacles.



## 7.2 Ascent/descent



### - ATTENTION

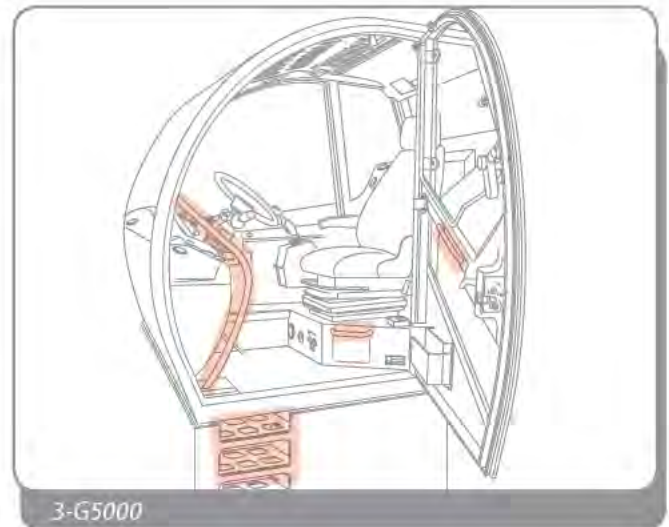
Before entering the cab, make sure that your hands and shoes are clean and dry to prevent slipping and falling.

Only use the specific handles and steps (Fig. 3-G5000) to get into the cab, do not use the controls and steering wheel inside as grips. Always face the cab when getting in or out of the vehicle.



### - ATTENTION

Only get in and out of the cab when the vehicle is stopped and the parking brake is engaged. Do not carry out maintenance on a moving vehicle.



## 7.3 Steering wheel adjustment

To adjust the inclination of the steering wheel (Fig. 4-G5000):

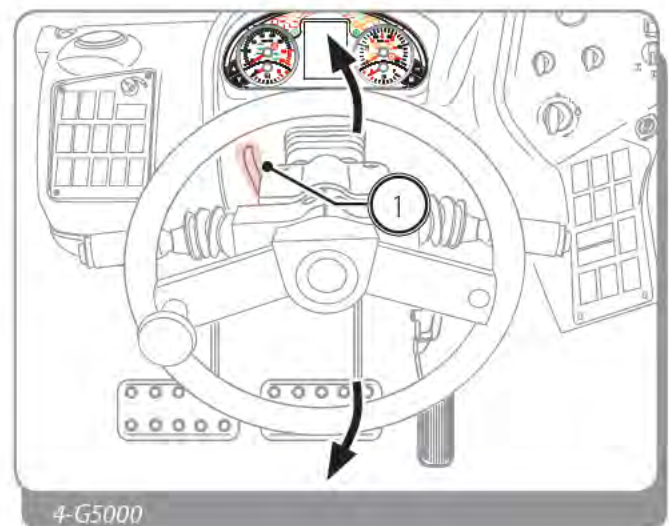
1. Turn the steering wheel adjustment lever "1" downwards to release the movements.
2. Push the steering wheel forward or pull it back in order to reach the desired position.
3. Turn the steering wheel adjustment lever upwards to lock it in its current position. Screw in with force to lock completely.

In the event the steering wheel adjustment lever is in the operator's way, pull the lever to the left and turn it until it is in the right position; then release the lever.



### - WARNING

The steering wheel is correctly adjusted when the operator, with his/her back resting against the back of the seat, is able to take hold of the furthest part of the steering wheel with his/her elbows slightly bent.



## 7.4 Door window

To open the door window (Fig. 5-G5000 and Fig. 6-G5000):

- Lower the handpiece "1" by turning it counter clockwise, and push the window outwards.
- To block the window in the permanent open position, push the window pin "2" inside the pin lock "3" using slight pressure.

To close the door window:

- Press the button inside the pin "3" to unlock the window and then close it.
- To close the window, pull it toward you, returning it to its original position.
- Turn the hand grip "1" clockwise to lock the window in the closed position.



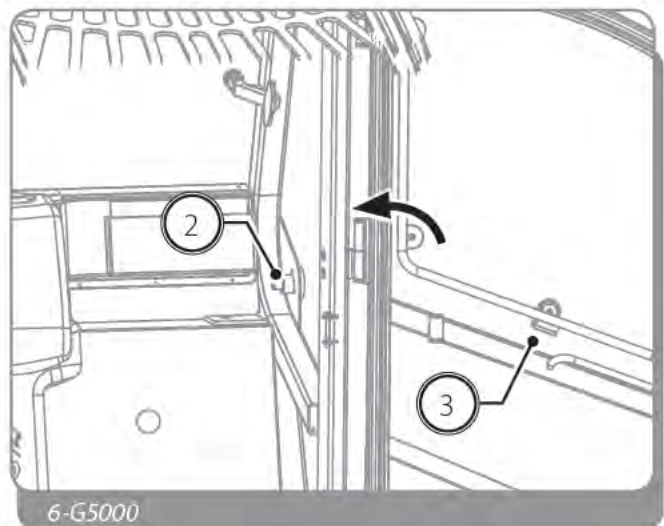
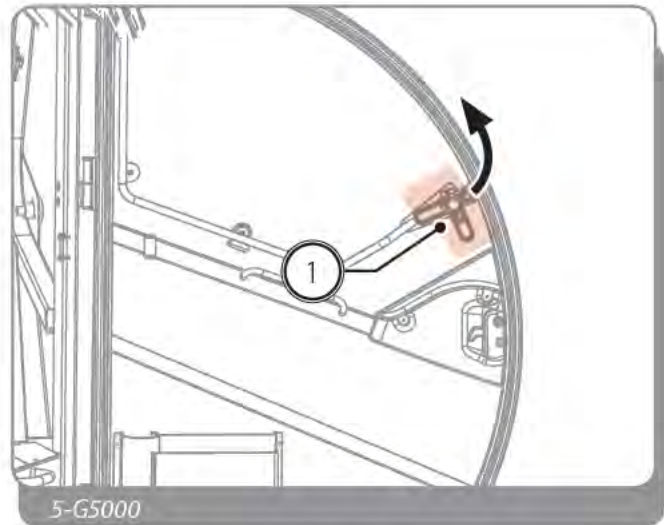
### - ATTENTION

Before opening or closing the window, verify that the surrounding area is free of any obstacle.



### - ATTENTION

Before operating, make sure that the door window is locked, regardless of it being in the open or closed position.



## 7.5 Rear window

To open the rear window, lift the handle (Fig. 7-G5000) and push the window outwards.

The window will remain in the open position by the handle itself.

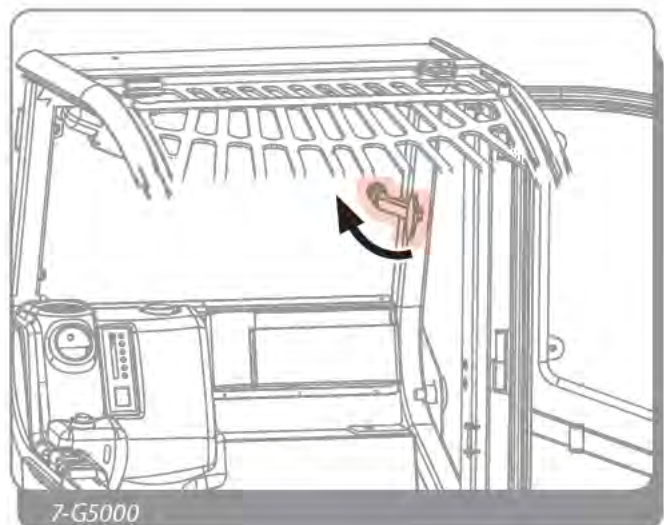
To close the rear window, pull the handle back into the cab and lower until it locks.



In the event the handle no longer blocks the window in the open position, replace it as soon as possible; risk of crushing.



The rear window also acts as an emergency exit; consult the chapter "Safety devices" for further information.





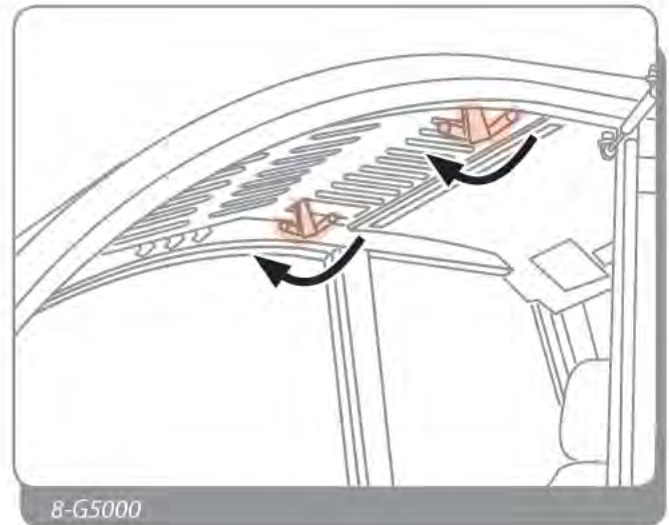
## 7.6 Roof

To open the roof, grab the handles (Fig. 8-G5000) and push upwards with a rotating movement. The rotated handles will hold the window open.

Operate inversely to close it until the handles lock.



**In the event the handles should not hold the window open, replace them as soon as possible; risk of crushing.**



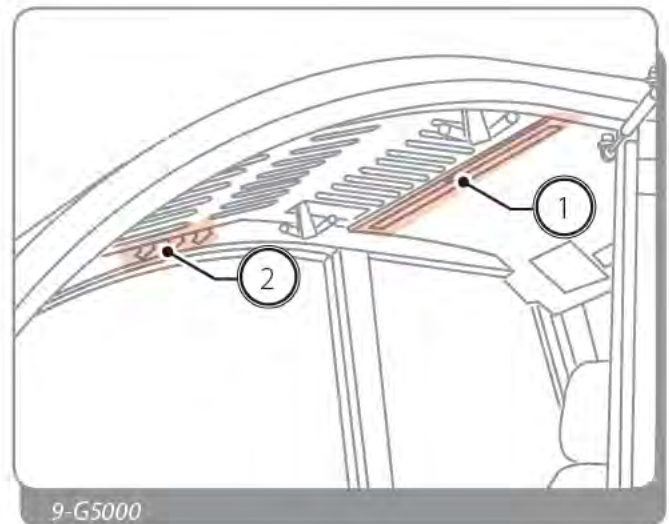
8-G5000

## 7.7 Sun shade

The sun shade is in the upper part of the cab (Fig. 9-G5000).

Lower the sun shade by grabbing the handle at the centre "1" and lowering it until it is fastened in the relative hooks "2".

Close the sun shade by lowering the handle "1" until the sun shade is released from the hooks "2" and hold on to the sun shade as it closes.

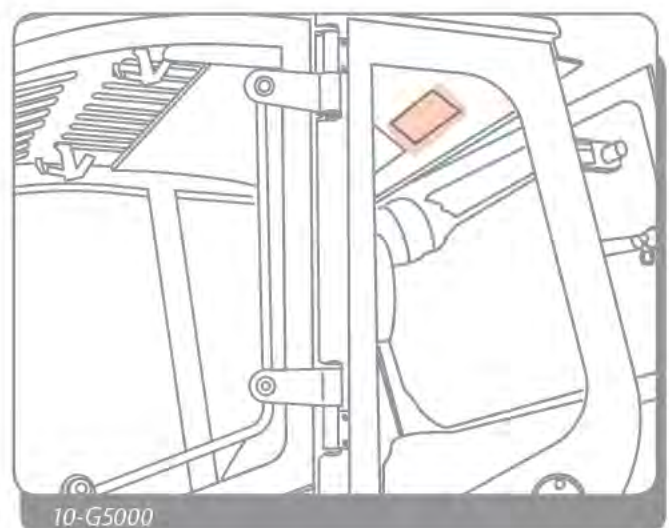


9-G5000

## 7.8 Cab lighting

To switch the light on inside the cab, act on the ceiling light, pressing one of the ends (Fig. 10-G5000).

In the central position the lighting is off.



10-G5000

## 7.9 12V socket

The 12V -180W socket (Fig. 11-G5000) connects utilities to direct current (battery charger, mobile phones, etc.)



### - ATTENTION

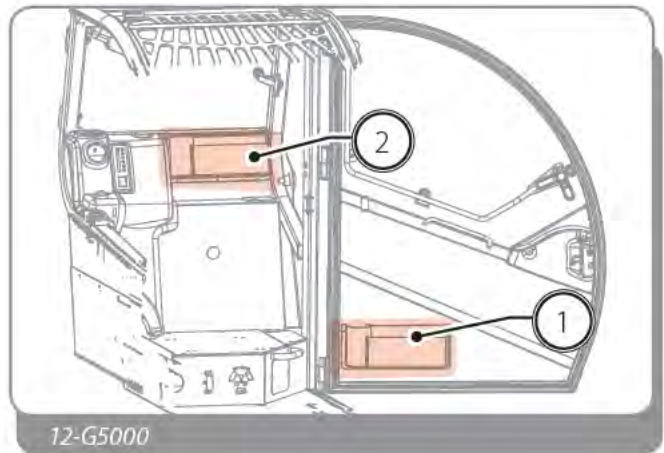
Do not connect users with nominal voltage exceeding 12 volts and power consumption exceeding 180W. Danger of damage to the electrical system.



## 7.10 Courtesy compartment

The vehicle has several courtesy compartments (Fig. 12-G5000):

- On the door "1"
- Behind the seat "2"



## 7.11 Cab ventilation

### 7.11.1 Ventilation adjustment

To adjust ventilation, turn the knob "1" (Fig. 13-G5000).

The positions indicate, respectively:

0	Off
1	First speed
2	Second speed
3	Third speed

### 7.11.2 Air temperature adjustment

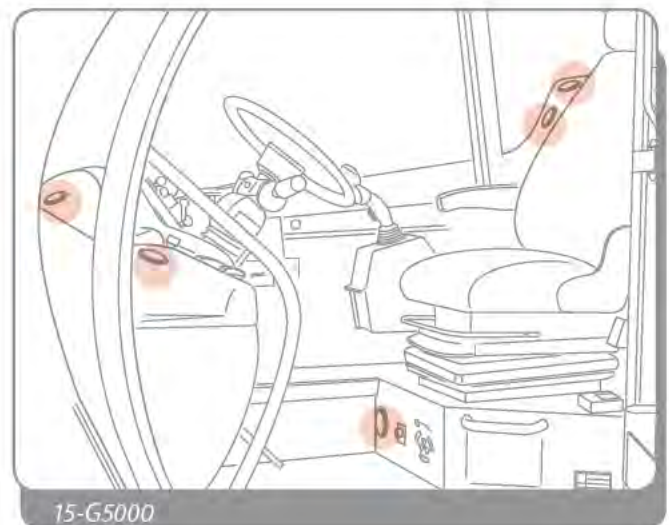
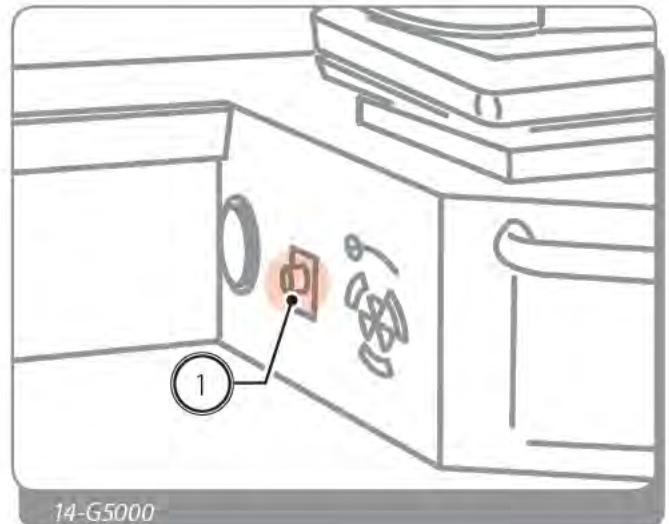
To adjust the temperature of the air coming from the vents, turn the knob "1" (Fig. 14-G5000):

- Turning the knob clockwise (in the red part of the scale) the temperature increases.
- Turning the knob anti-clockwise (in the blue part of the scale) the temperature decreases until it is near the external temperature.

### 7.11.3 Air vents

To open the air vents (Fig. 15-G5000), press down on one side of the vent and adjust the air flow direction with the tabs or turning the vent itself.

To close the vents, push the tabs until they are in a horizontal closed position.



#### 7.11.4 Air recirculation inside the cab

To enable or disable air circulation in the cab, use the lever (Fig. 16-G5000):

- In position "A" to enable air circulation inside the cab.
- In position "B" to disable air recirculation inside the cab and allow the ventilation system to take in air from the outside.



#### - NOTE

The lever acts on the "suction" of air by the ventilation system. The flow of the air and the temperature must always be controlled by the ventilation system inside the cab.



## 7.12 Air conditioning \*



Air conditioning is an optional accessory.

To correctly use air conditioning, do as follows (Fig. 17-G5000):

1. Check that all doors and windows are closed.
2. Ensure that the heater is switched off, turning the lever towards the "blue" part of the scale.
3. Switch the ventilation on by turning the knob "1" to 1, 2 or 3, depending on the desired intensity.
4. While the engine is running, press switch "2" to switch the air conditioning on.
5. Open and adjust the vents to obtain ideal cooling with regard to cab temperature.
6. Turn the temperature knob to obtain the desired temperature.



### - NOTE

Switch on the air conditioning every 15 days, even in the colder months, with the engine running at minimum (without accelerating). In this way, the moveable parts like the compressor and the general system can be lubricated.



Keep the condenser clean to keep the air conditioning system working efficiently (Fig. 18-G5000).



### - DANGER

Do not loosen any of air conditioning system's tubes in order to reach the condenser, because skin contact with coolant can cause freezing.

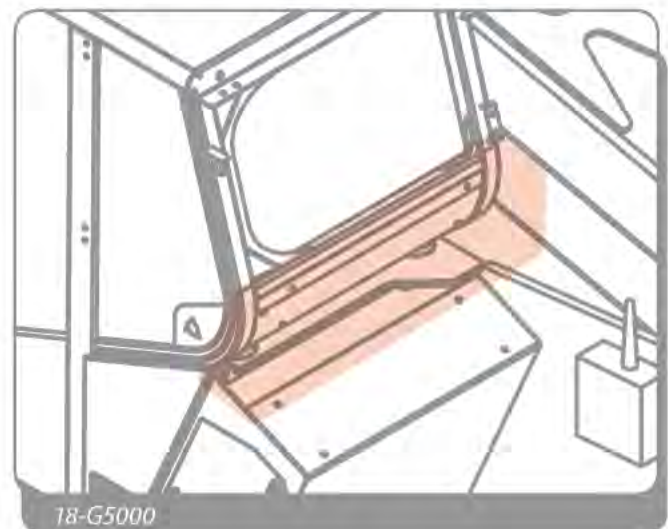
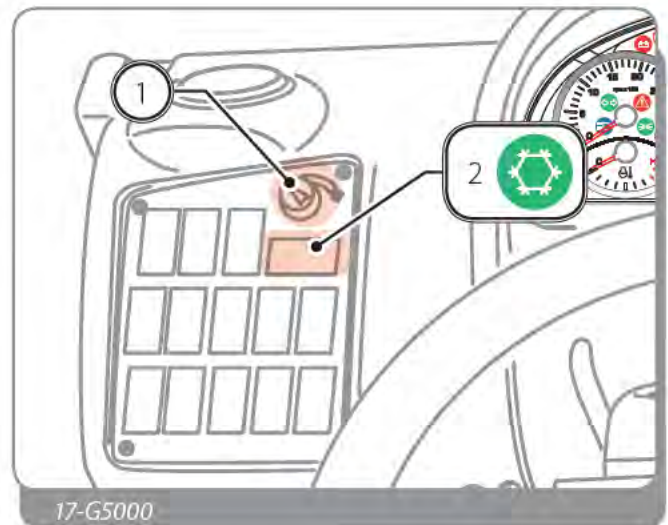


For maintenance operation and relative deadlines, see the chapter "Maintenance".



### - NOTE

During the summer, in the event the vehicle is parked in the sun for a long time, the temperature inside the cab could reach values higher than the outside temperature; to improve the efficiency of the air conditioning, you may want to switch the air conditioning on and keep the windows open for the first few minutes, until the internal temperature of the cab is the same as the outside temperature, then close the windows.



## 7.13 Multi-function lever

The multi-function lever (Fig. 1-G5103) has several functions: direction indicators, horn, switching on dipped beams, windscreen wipers and washers.

### 7.13.1 Direction indicators

- Pull the lever towards you to signal a curve to the right (R).
- Push the lever forward to indicate a curve to the left (L).

The indicators only function if the start-up switch is in the instruments-on position.

An indicator light on the central dashboard signals the activation of the direction indicators.

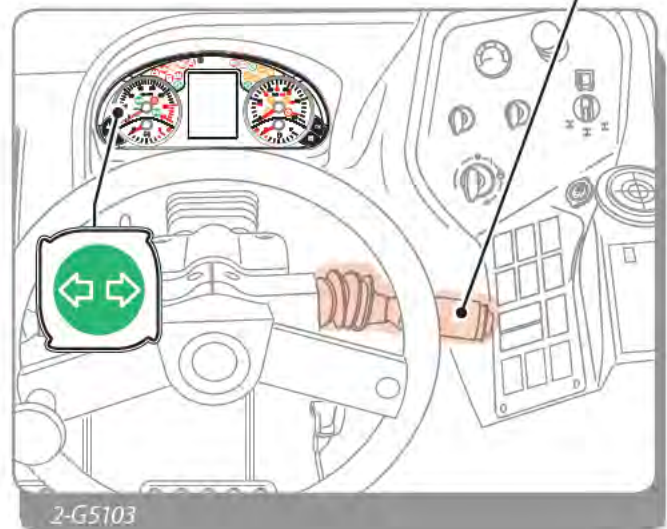
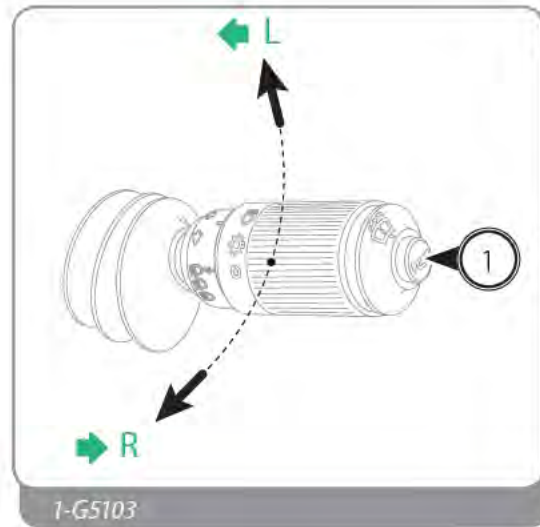


#### - ATTENTION

Bring the multi-function lever to the idle position after having performed the turn as it does not return to the neutral position automatically.

### 7.13.2 Horn

Press the button at the end of the lever "1" (Fig. 1-G5103), to sound the horn.



### 7.13.3 Windscreen washer

Press the intermediate button on the lever "1" (Fig. 3-G5103) to activate the front windscreen washer.

### 7.13.4 Front windscreen wipers

Press switch "1" (Fig. 4-G5103) to turn on the front windscreen wiper.

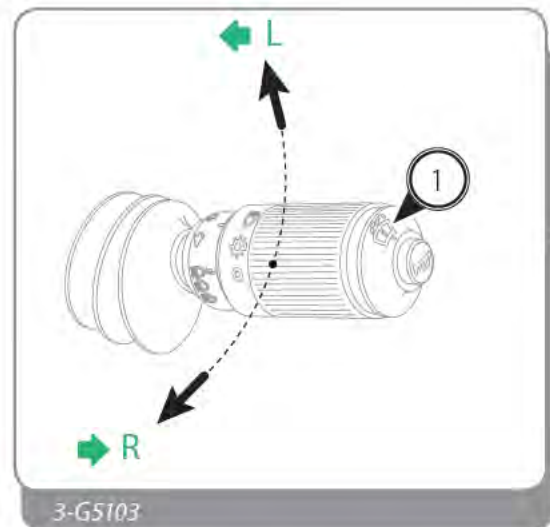
The switch has 3 stable positions:

- 0 Off
- I Slow
- II Fast



**- WARNING**

Worn blades may obstruct vision and scratch the glass.



3-G5103

### 7.13.5 Rear window washer

Press switch "2" (Fig. 4-G5103) to activate the rear windscreen washer.

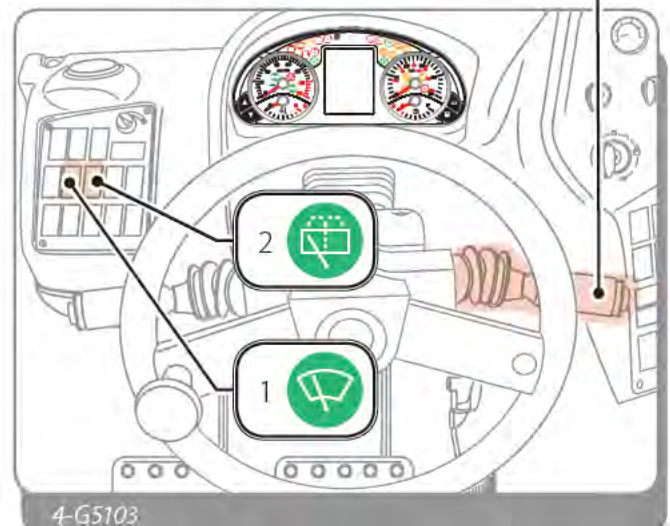
The switch features 2 stable positions and one unstable position;

- |    |                     |          |
|----|---------------------|----------|
| 0  | Off                 | Stable   |
| I  | Windscreen wiper on | Stable   |
| II | Windscreen washer   | Unstable |



**- WARNING**

Worn blades may obstruct vision and scratch the glass.



4-G5103

### 7.13.6 Windscreen washer liquid tank

The windscreen washer liquid tank is positioned in the cab, on the right side of the seat (Fig. 5-G5103).

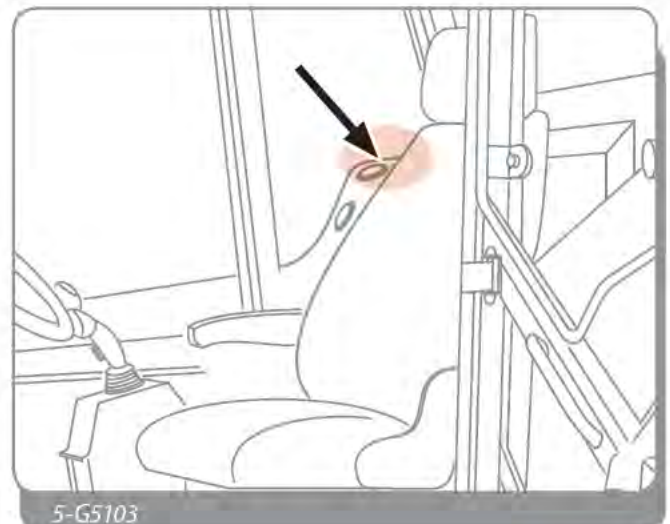
To add liquid to the tank:

1. Remove the top-up cap.
2. Add the washing liquid until the reservoir is full.
3. Refit the cap.



**- WARNING**

Add liquid anti-freeze to the water during winter.



5-G5103

## 7.14 Switching on lights

### 7.14.1 Side lights and dipped beams

To turn the front and rear position lights of the vehicle on, you must turn the multi-function lever (Fig. 6-G5103).

The lever has 3 stable positions:

1		Lights off
2		Side lights on
3		Dipped beams on

When the side lights switch on, the vehicle's dashboard is illuminated.



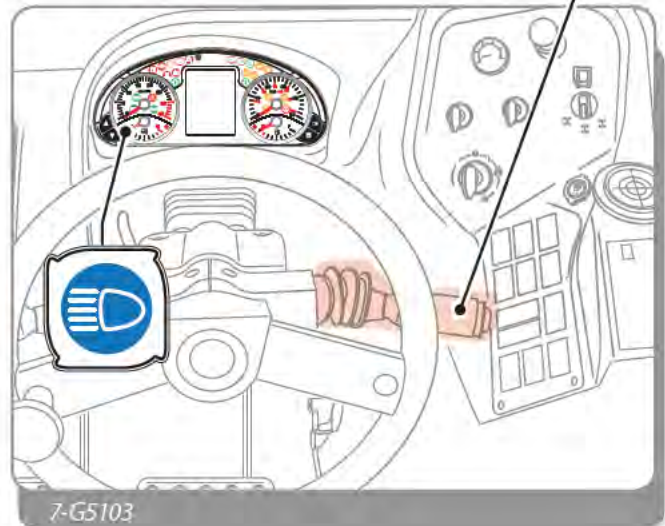
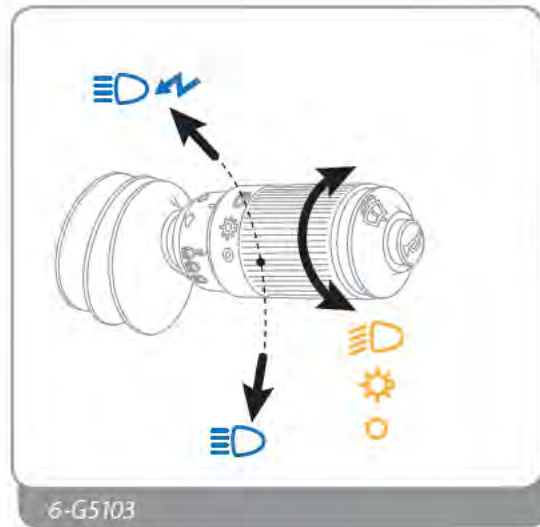
#### - WARNING

The sidelights can be switched on with the ignition key at "0", whereas it must be at "I" the switch on the dipped lights.

### 7.14.2 Full beam headlights

To switch on the high beam headlights, you must move the multi-function lever (Fig. 6-G5103).

- To perform individual flashes with the high beams, pull the multi-function lever towards the steering wheel. This function can also be used with the headlights off and in the ignition key at "0".
- To turn the high beams on, lower the multi-function lever until it clicks. It is only possible to turn the high beams on when the low beams are on. The indicator light "1" on the dashboard signals that the high beam headlights are on (Fig. 7-G5103).





### 7.14.3 Front cab light \*



\* The front cab light is an optional accessory.

Press switch "1" (Fig. 8-G5103) to turn on the front work light.  
When the indicator light on the switch turns on it means that the light is on.



**- WARNING**

This switch the light on, move the ignition key to "I".



### 7.14.4 Rear cab light \*



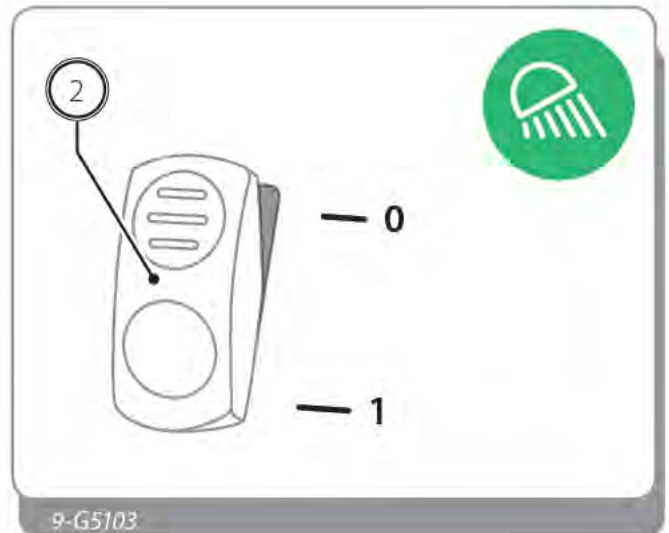
\* The rear cab light is an optional accessory.

Press switch "2" (Fig. 8-G5103) to turn on the rear work light.  
When the indicator light on the switch turns on it means that the light is on.



**- WARNING**

This switch the light on, move the ignition key to "I".



### 7.14.5 Boom head working light \*



\* The boom head working light is an optional accessory.

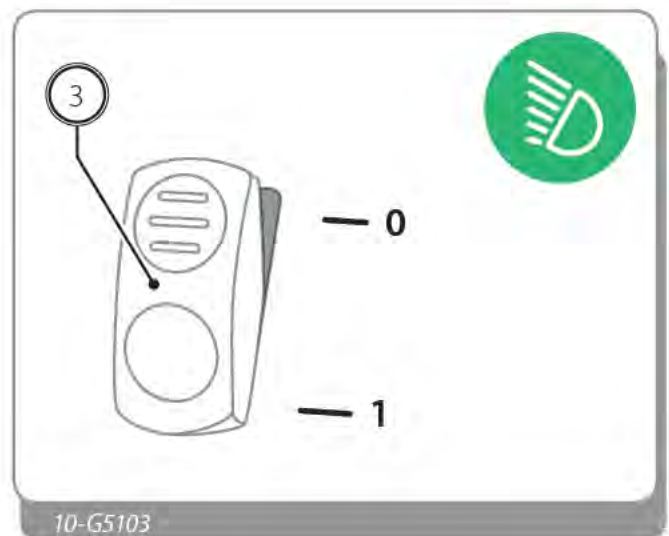
Press switch "3" (Fig. 10-G5103) to turn on the work light on the boom head.

When the indicator light on the switch turns on it means that the light is on.



**- WARNING**

This switch the light on, move the ignition key to "I".



### 7.14.6 Revolving light

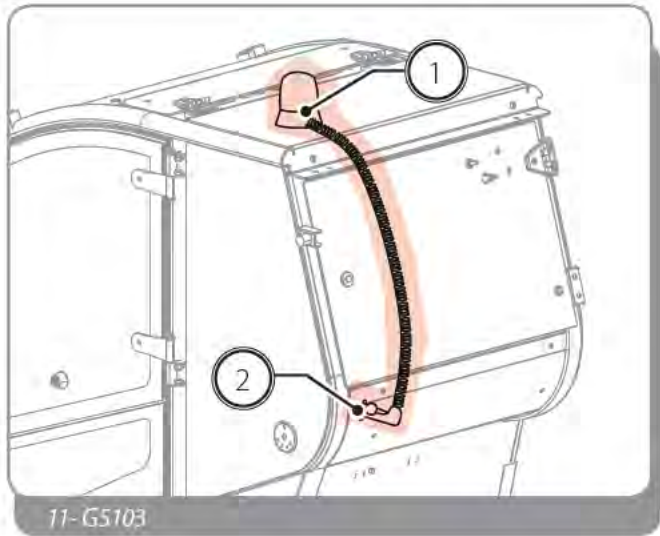
The rotating light "1" (Fig. 11- G5103) must always be positioned above the driver's cab and must always be in operation both at the work site and when driving on roads.

Do as follows to position and activate the revolving light:

1. Clean and dry the top of the driver's cab.
2. Position the revolving light on the driver's cab.
3. Put the revolving light plug in the socket on the left rear side of the cab underneath the rear window.
4. Switch the revolving light on using the switch on the upper dashboard.

The indicator light on the switch shows whether the revolving light is on.

The revolving light can be switched on even with the ignition key at "0".



#### - ATTENTION

Do not connect users with nominal voltage exceeding 12 volts and power consumption exceeding 180W. Danger of damage to the electrical system.



## 7.15 Movement selection lever

The movement selection Lever, to the left of the steering wheel (Fig. 1-G5112), allows you to set the direction the vehicle will drive in.



### - ATTENTION

The movement selection lever must be shifted towards the steering wheel to select a movement direction. This movement protects the lever from accidental manoeuvres.

- Pull the lever towards the steering wheel and push it forwards ("F direction") to move forwards.
- Pull the lever towards the steering wheel and pull it back ("R" direction) to go in reverse. An intermittent acoustic alarm is activated when going in reverse.

Having selected the direction of movement, the corresponding indicator lights on the dashboard switch on (Fig. 2-G5112):

- "F" forward movement
- "R" reverse movement

When the lever is kept in the intermediate position ("N"), the gear is in neutral and both indicator lights are off.



### - NOTE

Lever movements are not active when:

- The hand brake is engaged.
- The operator is not seated correctly in the driver's seat.
- The Rear axle oscillation block is active.
- The stabilising feet are lowered.
- The Manual electronic accelerator is active.
- The vehicle turret is rotated by over +/- 10°



### - ATTENTION

The gear will disengage automatically if the operator is not seated correctly in the driver's seat. To resume moving the vehicle, the operator must sit down in the driver's seat and move the movement selection lever back to "N".



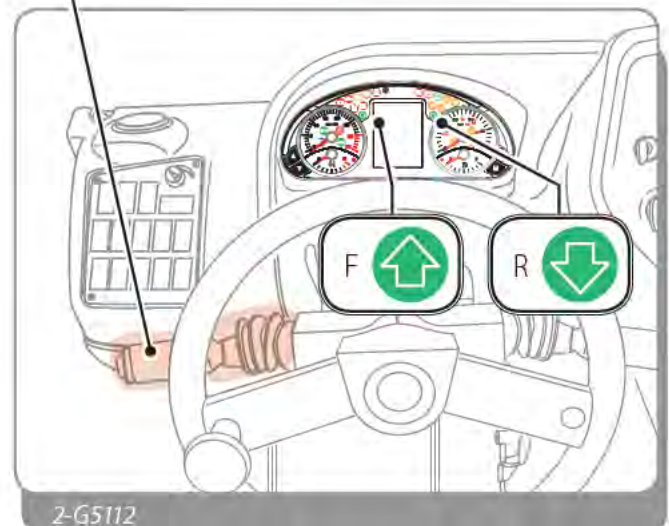
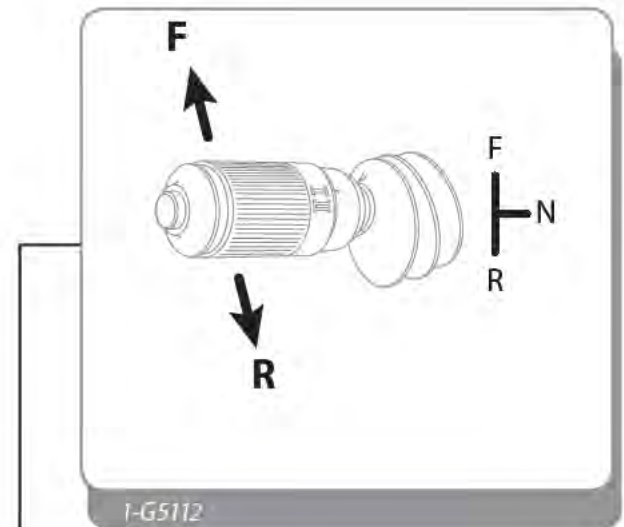
### - DANGER

When the direction of movement has been selected, the vehicle starts to move in the direction selected. Before selecting the direction of movement, verify that no one is nearby.



### - ATTENTION

The vehicle's engine cannot be switched on if the movement selection lever is in any position other than "N".





**- ATTENTION**

Reduce the engine speed to a minimum and select the new direction before inverting the drive direction.



**- DANGER**

It is dangerous to operate the movement selection lever while the engine is running at high rpm or at a speed higher than 2 km/h (1.2 mph). Danger of overturning the vehicle or serious breakage of mechanical parts.

**7.15.1 Operation with turret rotated by 180°\***



Operation with turret rotated by 180° is an optional set-up.

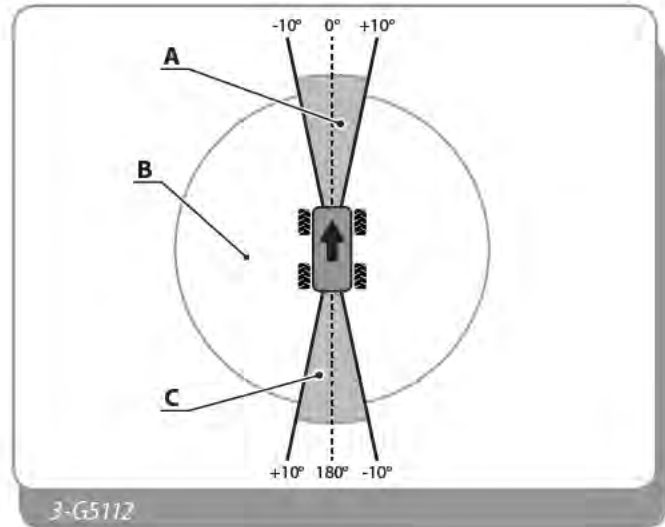
Operation with turret rotated by 180° allows you to move the vehicle when the turret is rotated by 180°, +/- 10° (area "C" - Fig. 3-G5112).

With the turret rotated by 180°, the function of the Movement selection lever remains consistent with the operating direction of the operator.



**- ATTENTION**

When the vehicle is moving with the turret rotated by 180°, only use the 4 concentric wheel steering mode or crab steering.

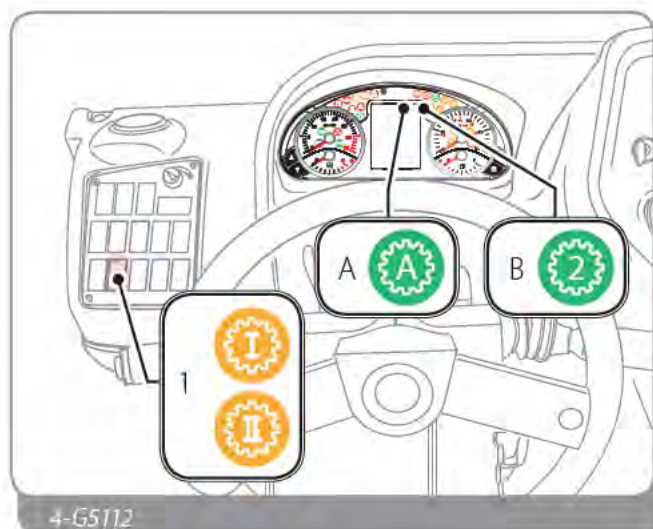


## 7.16 Mechanical gear selection

The "1" (Fig. 4-G5112) button allows you to change the mechanical gear.

### To change the mechanical gear:

1. Bring the vehicle to a complete stop.
2. Press the Inching and brake pedals.
3. Press and hold the pedals and press the button "1" for a few seconds:
  - Downwards to select the **Fast** speed, the indicator light "B" on the dashboard stays off.
  - Upwards to engage **Slow** gear; the indicator light "B" on the dashboard indicates the selection.
4. Wait for the indicator light "B" to switch on or off.
5. Release the Inching pedal.
6. Move forward slowly and gradually to allow the gear to be engaged correctly. The indicator light "A" means that the gear is engaged properly.



### - ATTENTION

Engage the **Slow** gear to work in the construction site.

Engage the **Fast** speed for long transfers without a load, in unobstructed places, with good visibility, with flat land without people transiting.



### - FORBIDDEN

Do not change gears when the vehicle is in motion.

## 7.17 Accelerator pedal

Press the accelerator pedal "1" (Fig. 1-G0504) to increase engine revs. When you release the pedal, engine revs decrease.



### - DANGER

If the vehicle exceeds the maximum allowed speed while running, the electronic transmission control "Overspeed protection" will be activated.

The general alarm LED switches on and an intermittent buzzer goes off when the "Overspeed protection" function is triggered.

Should the function trigger, the operator must lift his foot from the accelerator pedal and reduce vehicle speed. Otherwise there is the risk of overrevving the transmission and Diesel engine, damaging both.

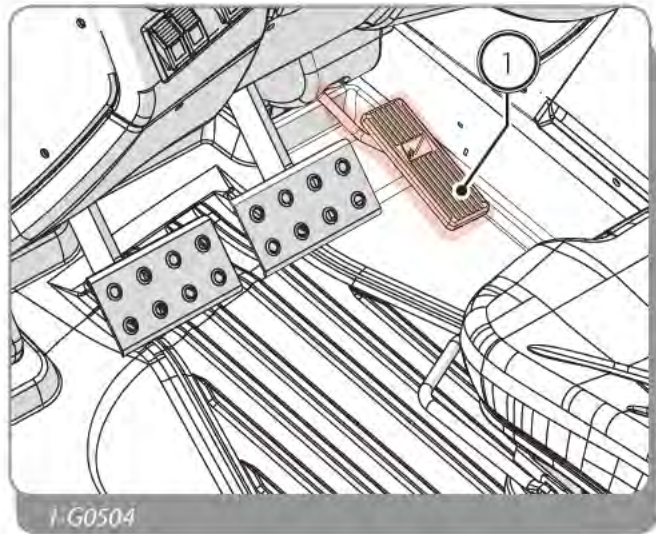


See the chapter "Technical data" to know the values at which Overspeed protection is triggered.



### - NOTE

The maximum speed of the vehicle varies on inflation pressure variation, the measurement and wear of the tyres.



## 7.18 Service brake pedal

Press the service pedal "1" (Fig. 2-G0504) to slow down or stop the vehicle.

The pedal operates directly on the service brakes inside the differential axles.

When the brake pedal is pushed, the rear stop lights switch on. The lights remain switched on until the pedal is released.



Periodically check that both lights are working.



### - ATTENTION

In the event of limited use of the pedal, periodically check that it is working properly. Contact a *DIECI* after-sales centre in the event of a problem.

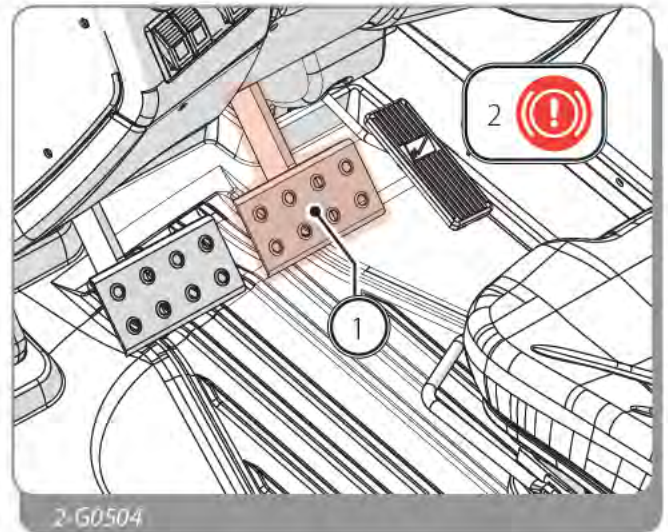


### - DANGER

If the indicator light "2" flashes, it indicates a low brake fluid level.

If the indicator light "2" switches on, the parking brake is blocked or faulty.

Do not use the vehicle until the problem is resolved. Contact a *DIECI* after-sales centre.



## 7.19 Inching pedal

The Inching pedal "1" (Fig. 1-G3310) acts directly on the hydrostatic transmission, slowing down the vehicle.

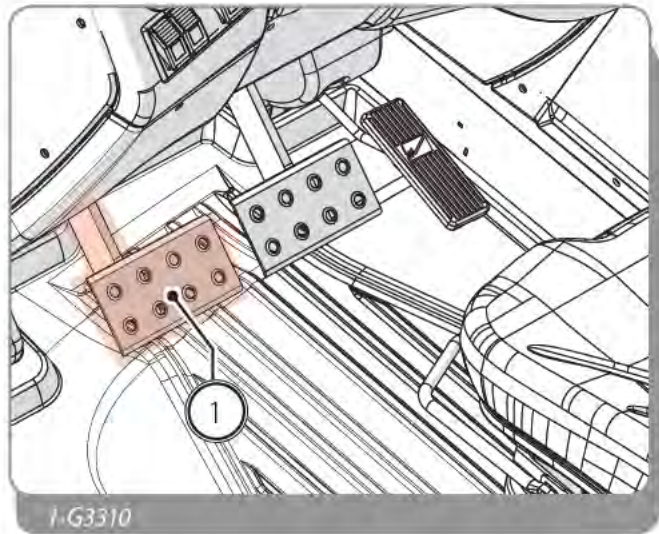
The pedal allows for slow, precise movements forward even when the thermal engine is running at a high RPM.

The vehicle stops, when the pedal is fully pressed down.



### - DANGER

Do not press the inching pedal at high speeds, the vehicle will brake sharply and the diesel could escape.





## 7.20 Electric steering selector

The steering mode selector (Fig. 1-G5400) allows the wheel steering mode to be changed:

To select the steering mode, turn the knob "1" indicating the corresponding symbol (Fig. 2-G5400):

### A - Front-wheel steering

This type of steering allows only the 2 front wheels to be used to steer.

### B - Four-wheel steering

This type of steering allows all four wheels to be used to steer so as to have the least possible steering radius.

### C - Transversal

This type of steering allows for crab or transversal steering so as to move the vehicle sideways.



#### - DANGER

Only select the steering mode with the vehicle stopped.



#### - ATTENTION

It is mandatory to select the four-wheel steering mode when driving on the road and the selector to be blocked with the relative retainer "2".



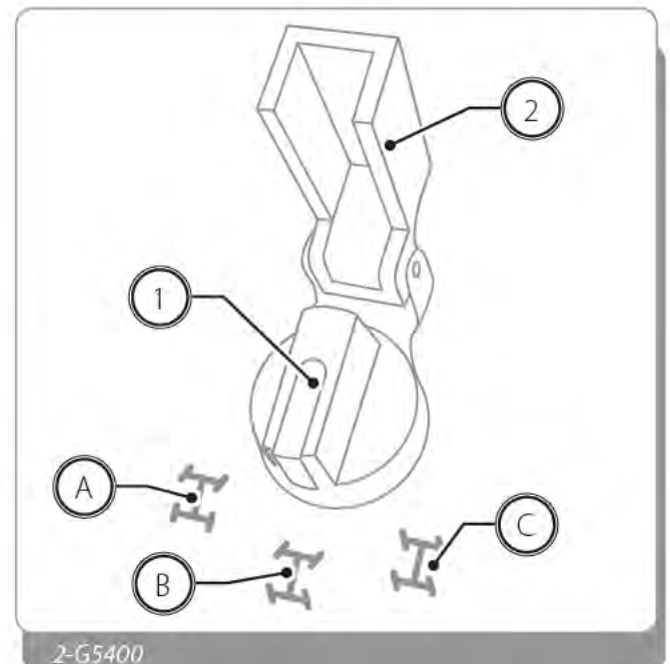
#### - WARNING

Align the wheels with the vehicle stopped before selecting a new steering type.



#### - DANGER

Always proceed at low speed when transversal steering is selected.



### 7.20.1 Manual wheel alignment

Changing the steering mode often during normal use of the vehicle could lead to the wheels not remaining perfectly aligned.



#### - WARNING

Align the wheels periodically (every 8-10 hours), depending on the ongoing use of the vehicle.

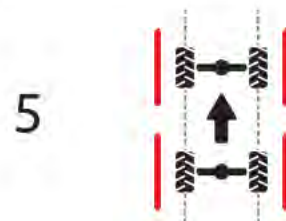
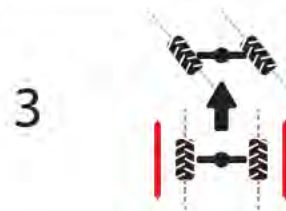
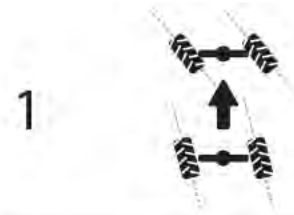
Proceed with the following operations to align the wheels correctly:

1. Stop the vehicle on level ground.
2. Select steering mode **B** or **C**
3. Turn the steering wheel until the rear wheels are aligned with the vehicle.
4. Select steering mode **A**
5. Turn the steering wheel until the front wheels are aligned with the vehicle.
6. Try to drive forward slowly for a few metres to verify that the vehicle moves in a straight line.



#### - ATTENTION

If the vehicle continues not to move in a straight line once the alignment is complete, repeat the wheel alignment procedure.



## 7.21 Automatic wheel alignment \*



Automatic wheel alignment is an optional accessory.

Changing the steering mode often during normal use of the vehicle could lead to the wheels not remaining perfectly aligned.

Automatic wheel alignment allows you to align the wheels quickly and more precisely.



### - NOTE

Align the wheels periodically (every 8-10 hours), depending on the ongoing use of the vehicle.

The following is required to align the wheels with the automatic wheel alignment (Fig. 1-G3431):

1. Stop the vehicle on level ground.
2. Select the 4 wheel or transversal steering mode.
3. Press the button. Once the button is pressed the LEDs "A" and "B" will start to flash.
4. Turn the steering wheel to align the rear wheels with the vehicle until LED "A" stops flashing.
5. The steering mode is automatically changed to "steering front wheels".
6. Turn the steering wheel to align the front wheels with the vehicle until LED "B" stops flashing.
7. Wheel alignment is now complete and the steering of the wheels will return to that selected originally.



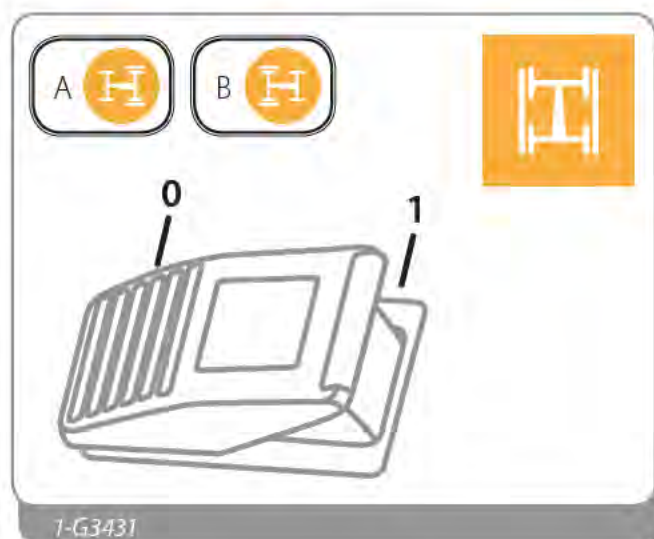
### - ATTENTION

Do not use the vehicle before the alignment procedure is completed.



### - NOTE

Press the button "1" for over 3s to activate the display mode. In display mode, LEDs "A" and "B" switch on only if the wheels are aligned to the frame.



## 7.22 Standard joystick

The Joystick (Fig. 1-H0006) allows you to drive all movements of the telescopic boom.

It is composed of:

- 1 Grip
- 2 Capacitive sensor
- 3 Man present button
- 4 Extension/retraction roller
- 5 Service roller
- 6 Turret rotation roller



### - ATTENTION

Before using the boom make sure that the area surrounding the vehicle is free. Make sure that the loads to be raised correspond with the capacity diagrams of the vehicle.



### - NOTE

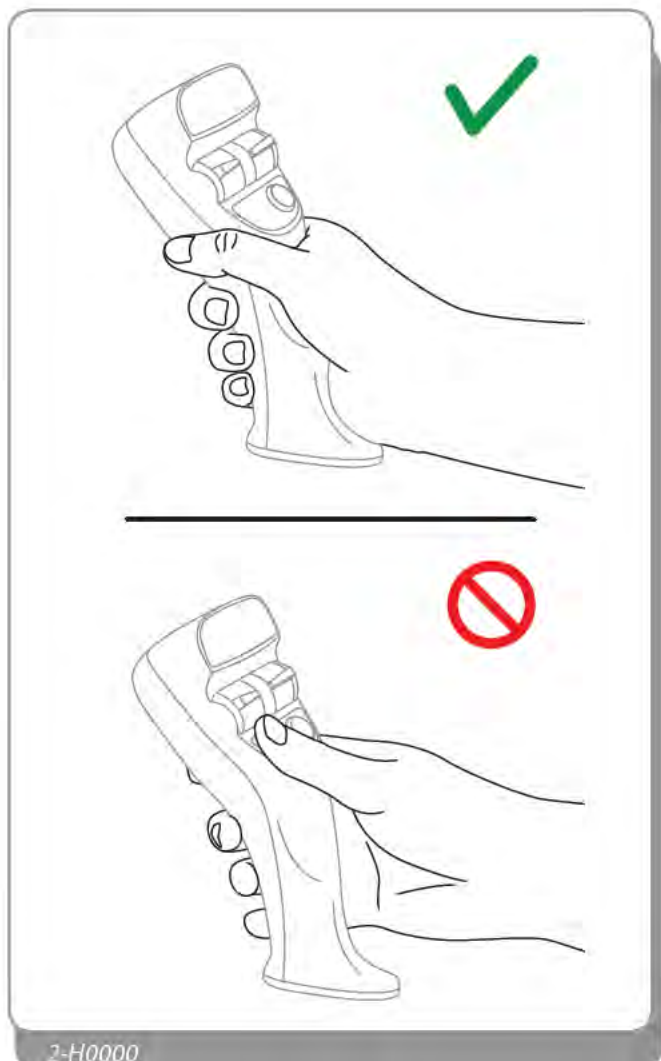
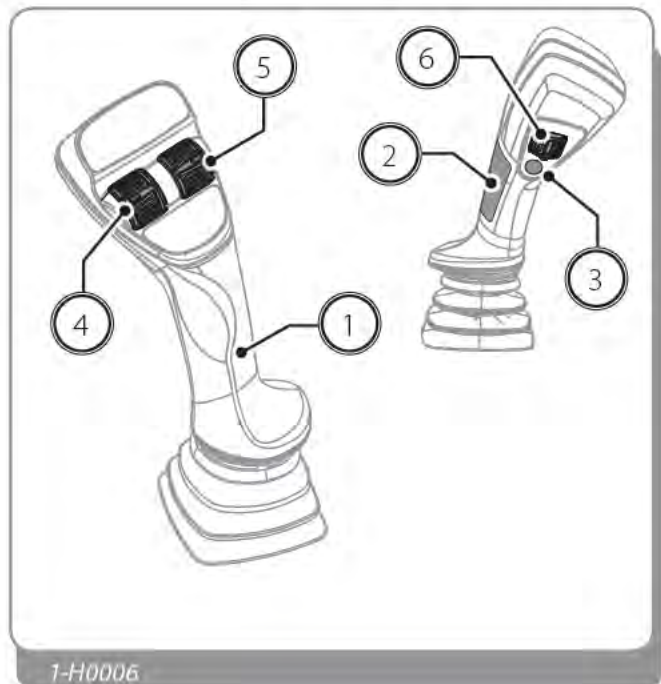
The Joystick has a capacitive "dead man" sensor: enable its function by positioning your hand correctly on handle "1" so as to activate the capacitive sensor "2".

If your hand is not rested on the capacitive sensor "2" the movements of the boom are prohibited.

Adjust the seat so as to grasp the joystick correctly (Fig. 2-H0000).

The dead man button "3" can be used if sensor "2" malfunctions.

All joystick functions are prohibited if the joystick is not grasped correctly or if the dead man button is not pressed.



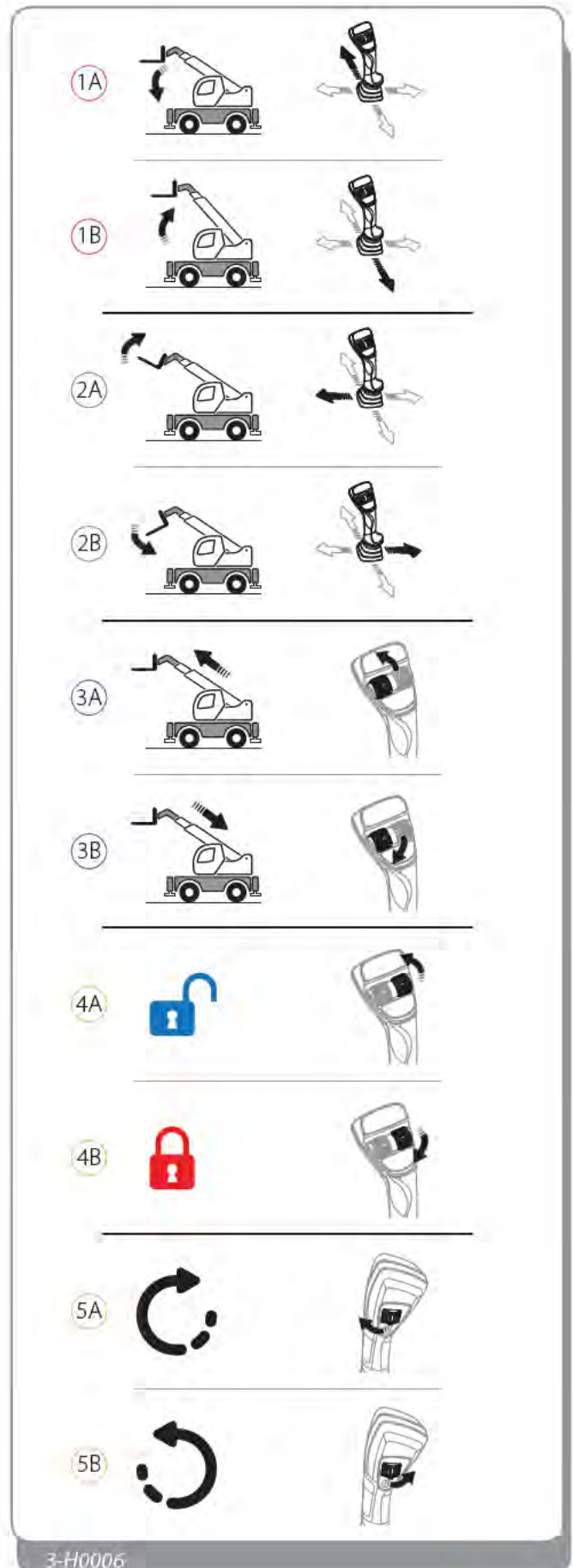
Movements that the joystick can perform are (Fig. 3-H0006):

	CONTROL	MOVEMENT
1A	Grip forward	Boom descent
1B	Grip backward	Boom ascent
2A	Grip to the left	Swivelling upwards
2B	Grip to the right	Swivelling downwards
3A	Extension/retraction roller backward	Boom extension
3B	Backward extension/retraction roller	Boom retraction
4A	Service roller forward	Oil towards the selected hydraulic socket
4B	Service roller backward	Oil towards the selected hydraulic socket
5A	Roller for rotating turret to the right	Turret rotation to the right
5B	Roller for rotating turret to the left	Turret rotation to the left



**- NOTE**

Joystick commands correspond to proportional vehicle movements.



3-H0006

## 7.23 Double Joystick \*

**\* The Double Joystick is an optional accessory.**

The Double Joystick (right: Fig. 4-H0006 and left: Fig. 5-H0006) allow you to move the telescopic boom and turret.

They consist of:

- 1 Grip
- 2 Capacitive sensor
- 3 Man present button
- 5 Service roller



### - ATTENTION

Before using the boom make sure that the area surrounding the vehicle is free. Make sure that the loads to be raised correspond with the capacity diagrams of the vehicle.



### - NOTE

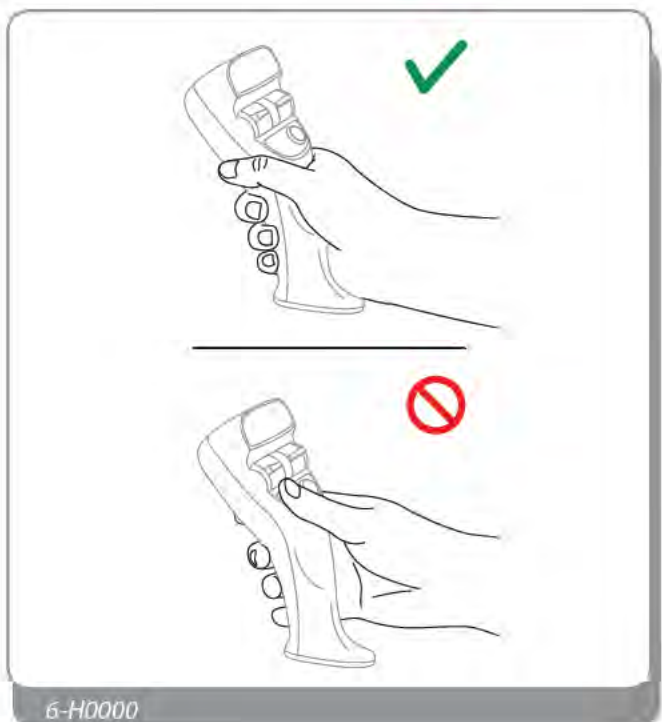
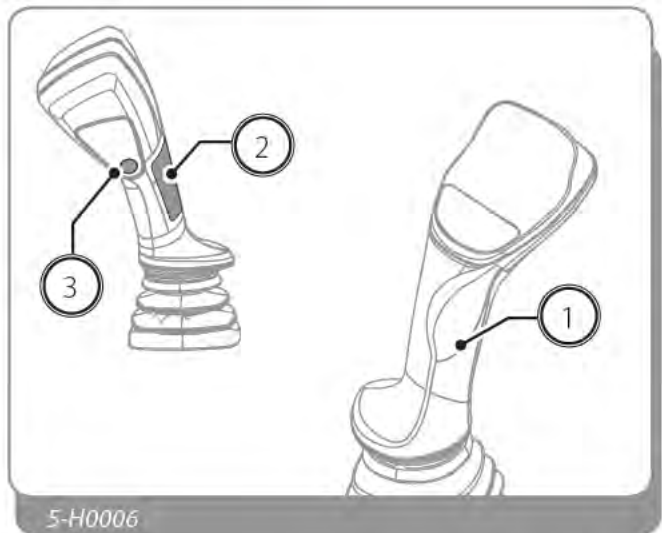
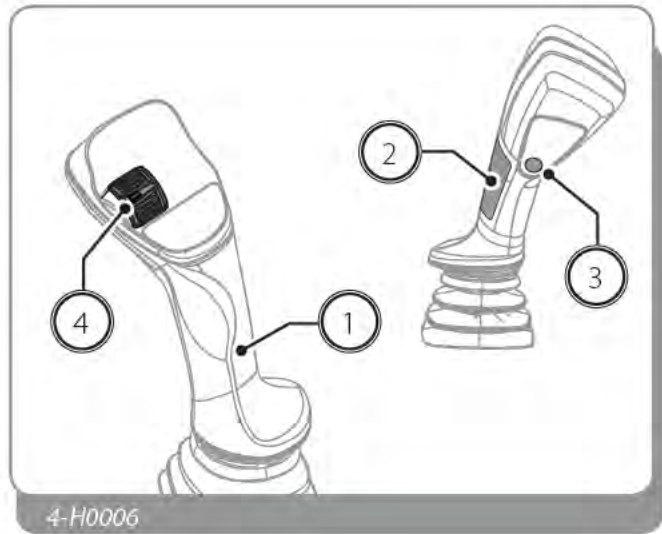
The Joystick has a capacitive "dead man" sensor: enable its function by positioning your hand correctly on handle "1" so as to activate the capacitive sensor "2".

If your hand is not rested on the capacitive sensor "2" the movements of the boom are prohibited.

Adjust the seat so as to grasp the joystick correctly (Fig. 6-H0000).

The dead man button "3" can be used if sensor "2" malfunctions.

All joystick functions are prohibited if the joystick is not grasped correctly or if the dead man button is not pressed.



## 7.23.1 Right hand Joystick controls

The right hand joystick can perform the following movements (Fig. 7-H0006):

	CONTROL	MOVEMENT
1A	Grip forward	Boom descent
1B	Grip backward	Boom ascent
2A	Grip to the left	Swivelling upwards
2B	Grip to the right	Swivelling downwards
3A	Service roller forward	Oil towards the selected hydraulic socket
3B	Service roller backward	Oil towards the selected hydraulic socket

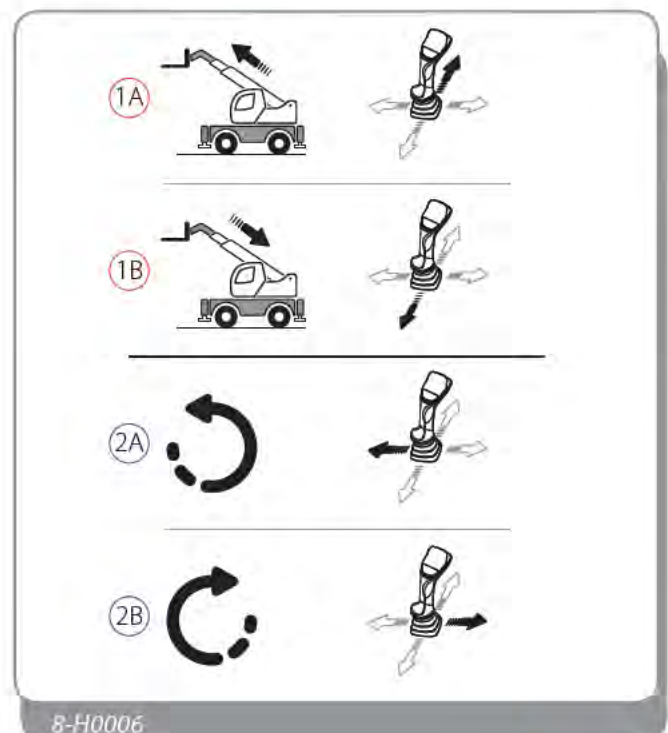
## 7.23.2 Left hand Joystick controls

The right hand joystick can perform the following movements (Fig. 8-H0006):

	CONTROL	MOVEMENT
1A	Grip forward	Boom extension
1B	Grip backward	Boom retraction
2A	Grip to the left	Turret rotation to the left
2B	Grip to the right	Turret rotation to the right



7-H0006



8-H0006

## 7.24 Turret rotation speed controller

The Turret rotation speed controller allows you to set the maximum rotation speed of the machine turret. It is located on the right hand arm rest of the seat.

To enable the Turret rotation speed controller, press switch "1" (Fig. 1-H0006). While you are pressing and holding the switch, control the speed using knob "2". Turn off switch "1" to restore maximum speed.

Turn the knob:

- Clockwise to increase the maximum rotation speed.
- Anticlockwise to decrease the maximum rotation speed.

Use the controls on the joystick to rotate the turret at the selected speed.



### - ATTENTION

Be particularly careful during the turret rotation operations.

Move slowly and gradually, especially with the boom raised or extended.

Pay particular attention to the dimensions of the vehicle during the turret rotation operations.



### - ATTENTION

Adjust the rotation speed without any load on the equipment. Carry out some test movements in an area without obstacles and personnel to check the maximum set speed.



### - WARNING

If the Turret rotation speed controller knob is set at minimum, even if the joystick is operated, rotation will not take place.



## 7.25 Hydraulic sockets in electric contact on boom head \*



\* The installation and number of hydraulic sockets and electric contacts on the telescopic boom head varies depending on the optional set-ups.

The socket switch on the boom head (Fig. 1-G1105) has different functions and positions, depending on the optional set-ups mounted on the vehicle.

Once the hydraulic socket has been selected, use the service lever on the joystick to activate the desired movement.



### - FORBIDDEN

Do not activate hydraulic sockets with the joystick while selecting the hydraulic socket. Select the hydraulic sockets and use the joystick to command the selected hydraulic socket only at a later stage. Risk of the incorrect hydraulic socket moving.

Refer to the following table depending on the accessories installed on the vehicle.



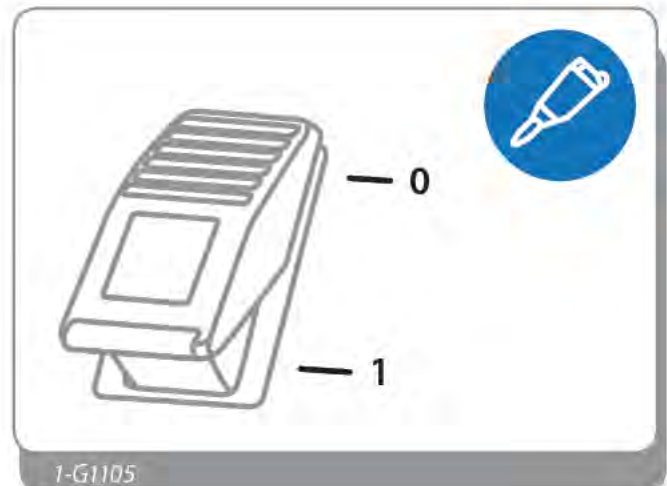
### - ATTENTION

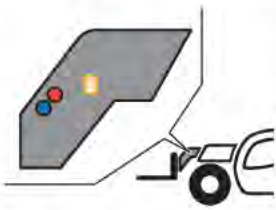
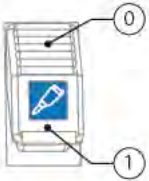
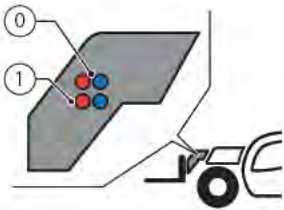

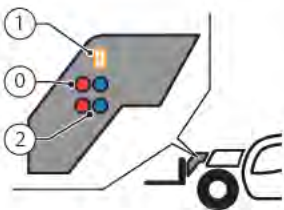
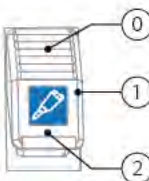
After having connected the equipment to the hydraulic sockets and before starting work, go to a safe place and check that all the controls work properly. During the test, be careful not to create dangers or cause damage to persons, animals or objects.



### - ATTENTION

Pay attention that the couplings correspond to the hydraulic sockets: moving the service lever on the joystick forward, oil will be sent to the sockets marked in blue.



Set up	Diagram	Switch description
<p>Standard hydraulic socket + Electrical contact</p>		 <p>0 - Electrical contact off 1 - Electrical contact on</p>
<p>Standard hydraulic socket + Supplementary hydraulic socket</p>		 <p>0 - Standard hydraulic socket 1 - Supplementary hydraulic socket</p>
<p>Standard hydraulic socket + Supplementary hydraulic socket + Electrical contact</p>		 <p>0 - Standard hydraulic socket 1 - Electrical contact on 2 - Supplementary hydraulic socket</p>

## 7.26 Electric contact on boom head

\*



\* The electric Contact on the boom head is an optional accessory.

The following can be connected to the electric Contact socket on the telescopic boom head (Fig. 2-G1105):

- The plug of the solenoid valve of the second supplementary hydraulic socket
- The plug of the equipment installed on the accessory holder plate.

To activate the electric contact, place the socket on boom head switch at "1" -C table in previous paragraph.



For information concerning how to perform connections to the electric socket, see the chapter "Electric connections".



### - FORBIDDEN

Do not connect users with nominal voltage exceeding 12 volts and amperage over 3 A.  
Danger of damage to the electrical system.



## 7.27 Quick fitting \*



\* The quick fitting is an optional accessory.



Refer to the "Equipment installation procedure with plate with quick fitting" chapter .

There are different models of quick equipment coupling; they can be with a single blocking cylinder (Fig. 2-G1106) or double blocking cylinder (Fig. 3-G1106), however, the procedure of use is the same for both.



### - NOTE

The equipment blocking and unblocking operations can only be performed with the boom at a maximum angle of 10°.



### - DANGER

Do not operate without having properly fastened the equipment to the plate; risk of load and equipment falling.

### Equipment release

To open the quick coupling and release the equipment you must:

- Press the button "1" (Fig. 1-G1106). If the light on the switch turns on, it means that the quick coupling is being used.
- Move the services roller on the joystick forwards to open the accessory holder plate fixing pins.

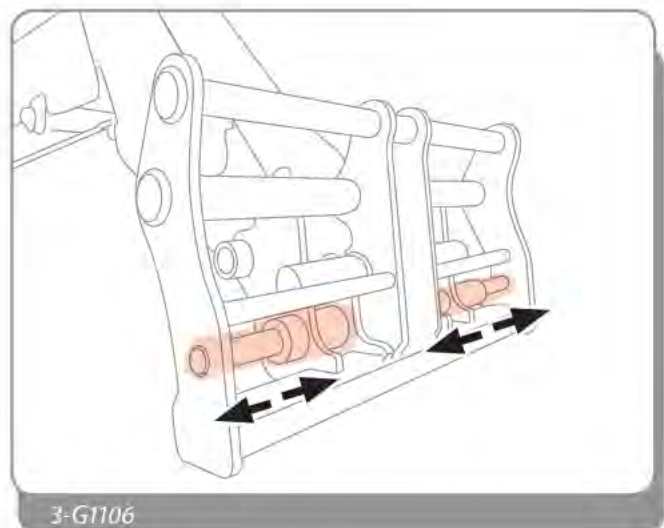
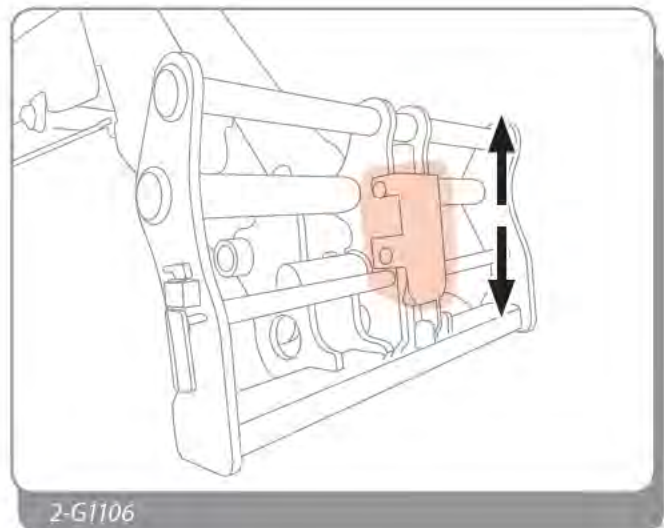
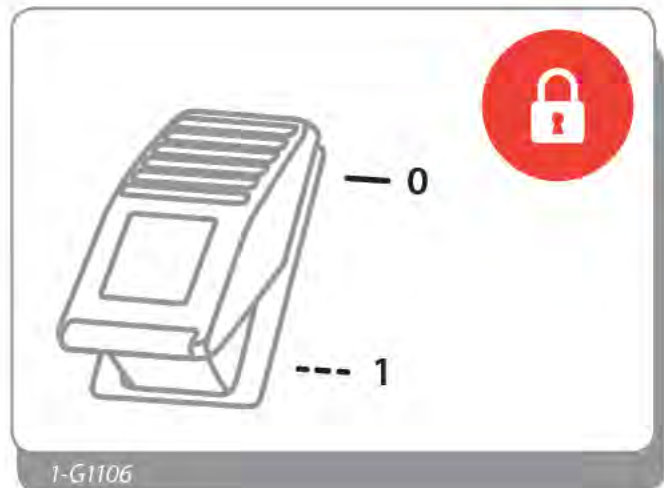
The equipment is completely released from the accessory holder plate when its fixing pins are completely retracted.

### Equipment block

To open the quick coupling and release the equipment you must:

- Press the button "1" (Fig. 1-G1106). If the light on the switch turns on, it means that the quick coupling is being used.
- Move the services roller on the joystick backwards to close the accessory holder plate fixing pins.

The equipment is completely blocked when the accessory holder plate fixing pins are completely retracted.



## 7.28 Transversal levelling \*



Transversal levelling is an optional accessory.

Transversal levelling adapts the vehicle to the transversal inclination of the ground.

To level the vehicle you must:

- Place the load on the ground.
- Lower and completely retract the telescopic boom.
- Press the transversal levelling button (Fig. 1-G1801):
  - From the left side "1" to incline the vehicle to the left.
  - From the right side "2" to incline the vehicle to the right,

It is possible to use transversal levelling only:

- When the vehicle is within  $\pm 10^\circ$  rotation compared to the front position (area "A" or "C").
- When the boom is at an angle below  $15^\circ$ .

If the vehicle does not meet these two conditions, levelling is disabled.



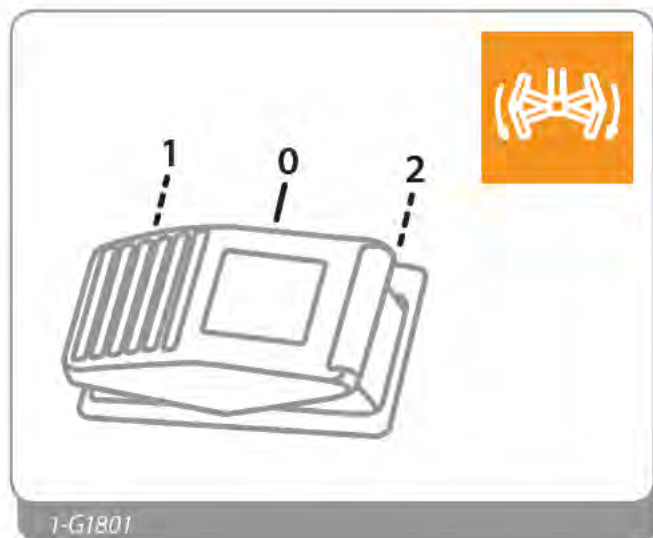
### - DANGER

Operation is only allowed with transversal inclinations less than  $2^\circ$ . Transversal tipping hazard.

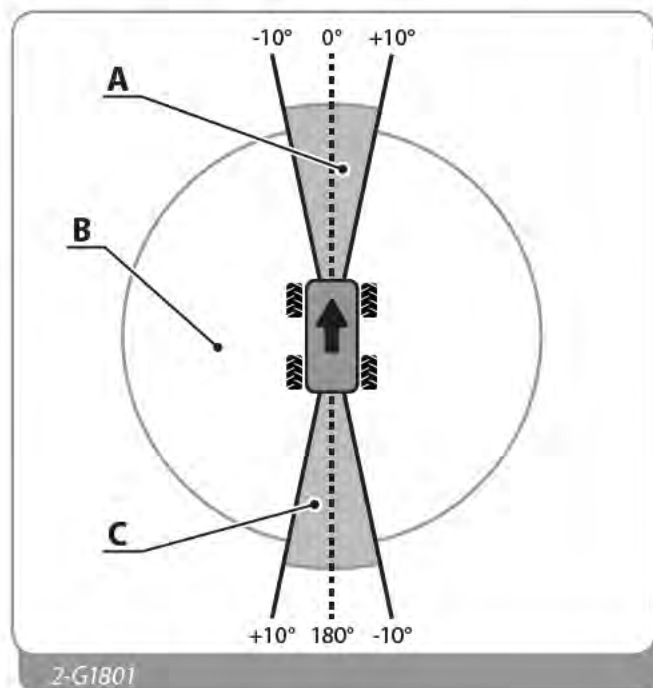


### - NOTE

Use the spirit level in the cab to check vehicle inclination.



1-G1801



2-G1801

## 7.29 Manual accelerator



The button for the manual accelerator is an optional accessory.

The Manual accelerator button (Fig. 1-G2002) keeps the engine revolutions at a constant speed, without pressing the accelerator pedal.

Press the Manual accelerator button on the top to increase the number of engine revolutions.

Press the Manual accelerator button on the top to decrease the number of engine revolutions.

The engine revolutions vary in this order:

- rpm at minimum
- 1400 rpm
- 1800 rpm
- 2200 rpm



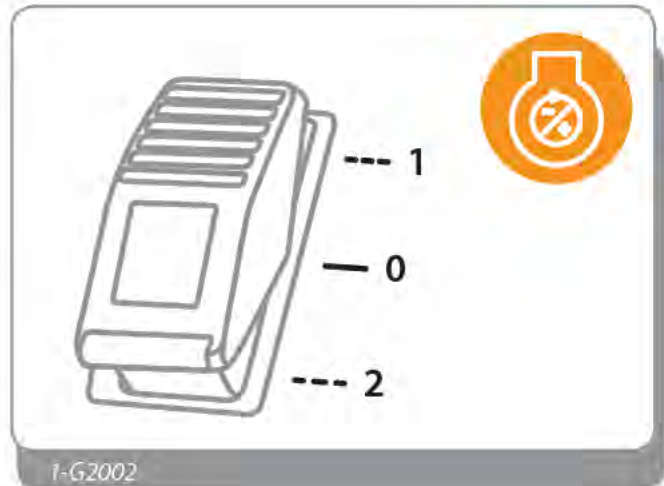
### - WARNING

The vehicle's drive is disabled when the manual Accelerator is activated.



### - ATTENTION

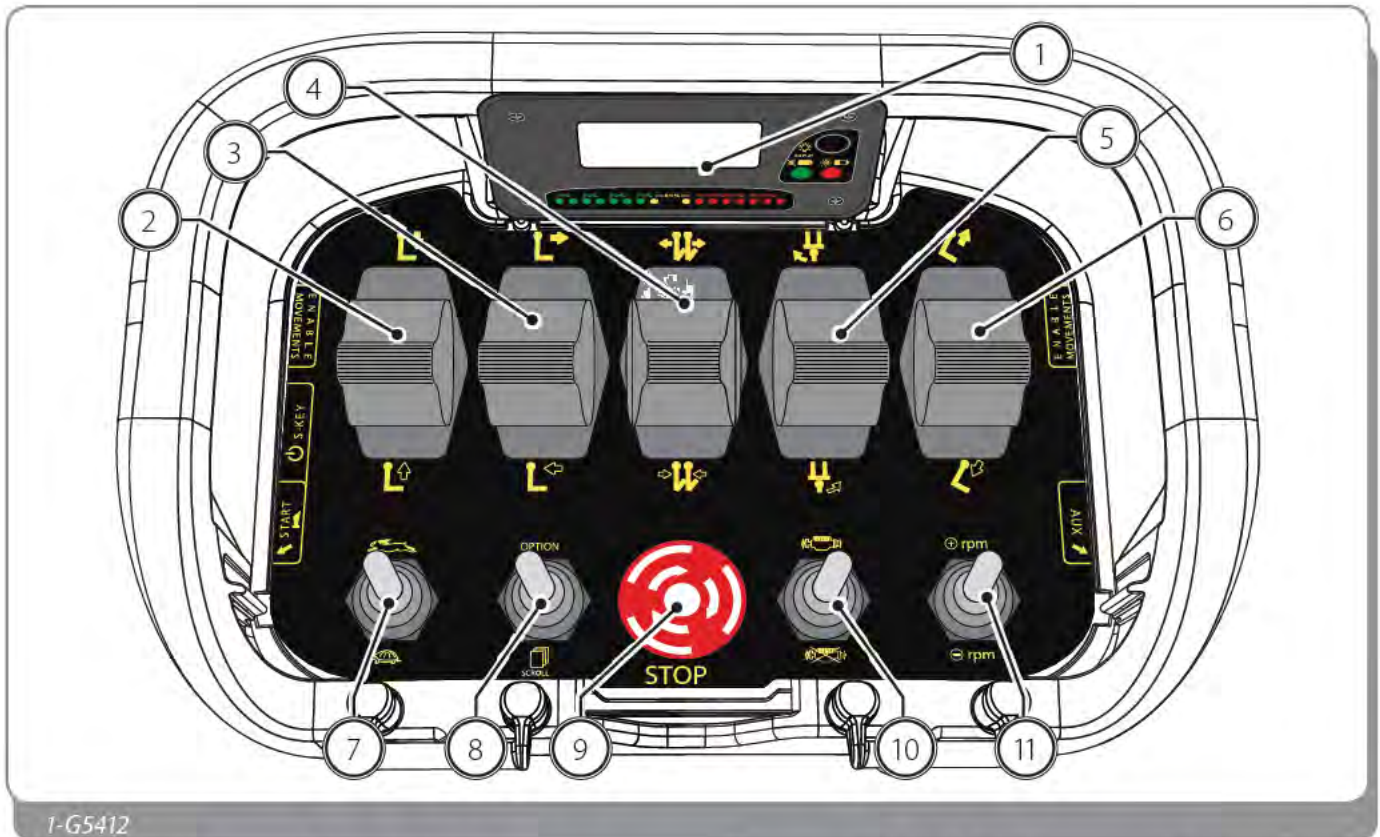
Do not use the manual accelerator in the cab while operating the basket and/or radio control.



## 7.30 Radio control \*



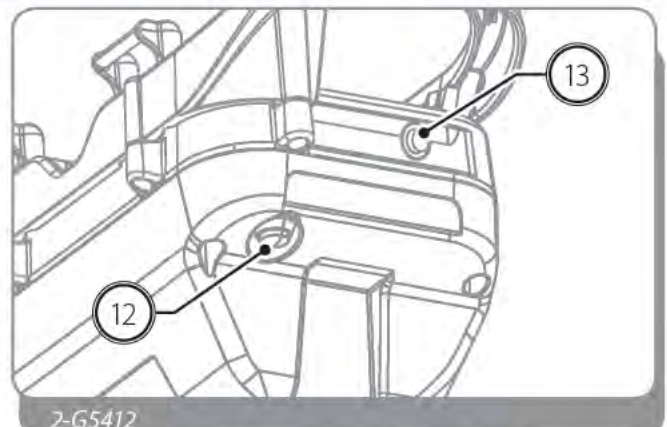
\* The radio control is an optional accessory.



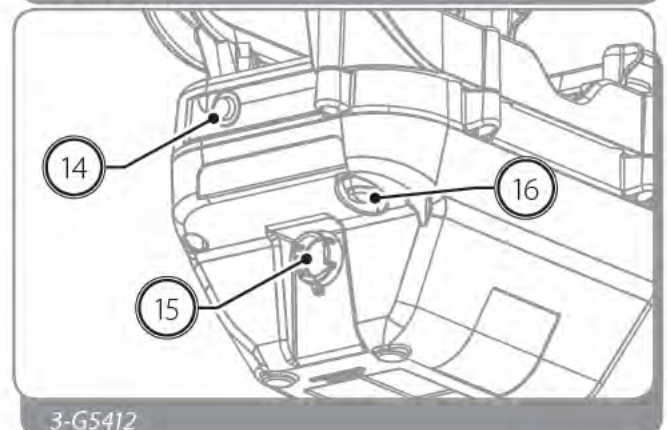
1-G5412

### 7.30.1 Radio control: Description

- 1 LCD
- 2 Boom descent / ascent lever
- 3 Boom extension/retraction lever
- 4 Services lever
- 5 Turret rotation lever
- 6 Up/down oscillation lever
- 7 Slow/fast motion speed lever
- 8 Not used
- 9 Emergency stop button
- 10 Vehicle start-up lever
- 11 Accelerator lever
- 12 Not used
- 13 Man present button
- 14 Man present button
- 15 Enabling key
- 16 Radio control start-up button



2-G5412



3-G5412



## 7.30.2 Radio control: Controls

### Emergency stop button

The emergency stop button "1" (Fig. 4-G5412) allows you to stop all vehicle and equipment movements by stopping the engine.

### Movement speed lever

The movement speed lever "2" (Fig. 4-G5412) allows you to set the speed of the movements of the vehicle. Move the lever to the left to set the slow movements (snail symbol) or to the right to set the fast movements (hare symbol).



#### - NOTE

Varying the speed of the movements will be applied to all the other functions that alter the speed of the movements on the vehicle.

### Vehicle start-up lever

The vehicle start-up lever "3" (Fig. 4-G5412) allows you to switch the vehicle engine on.

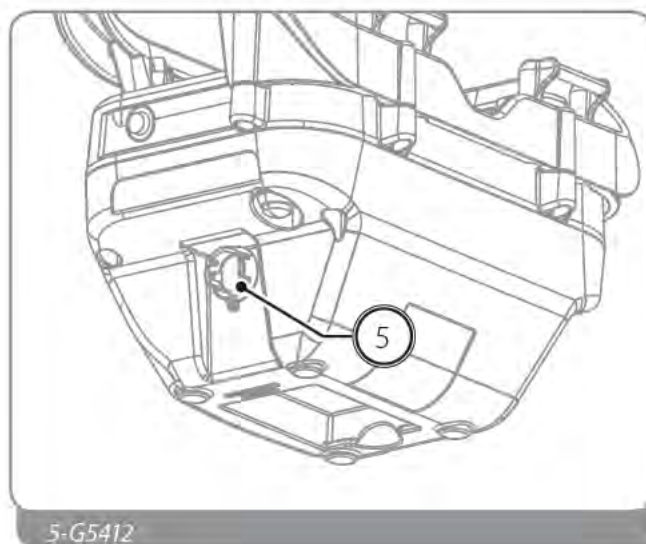
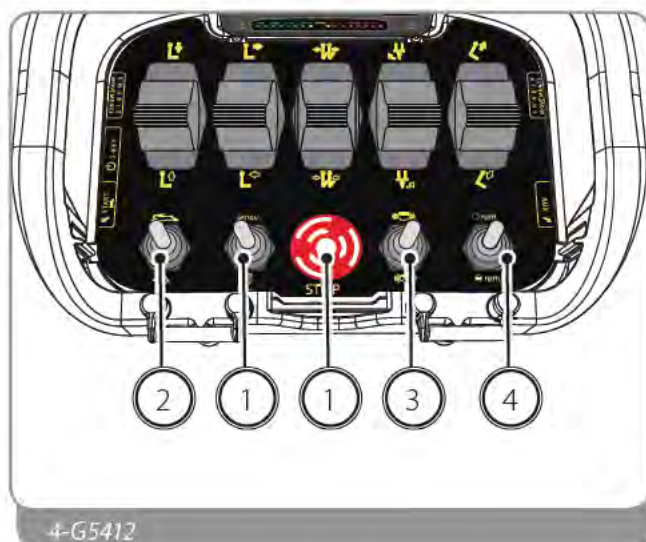
### Horn button and increase/decrease engine rpm

The green button "4" (Fig. 4-G5412) is used to sound the horn of the vehicle and to change the number of revs of the engine.

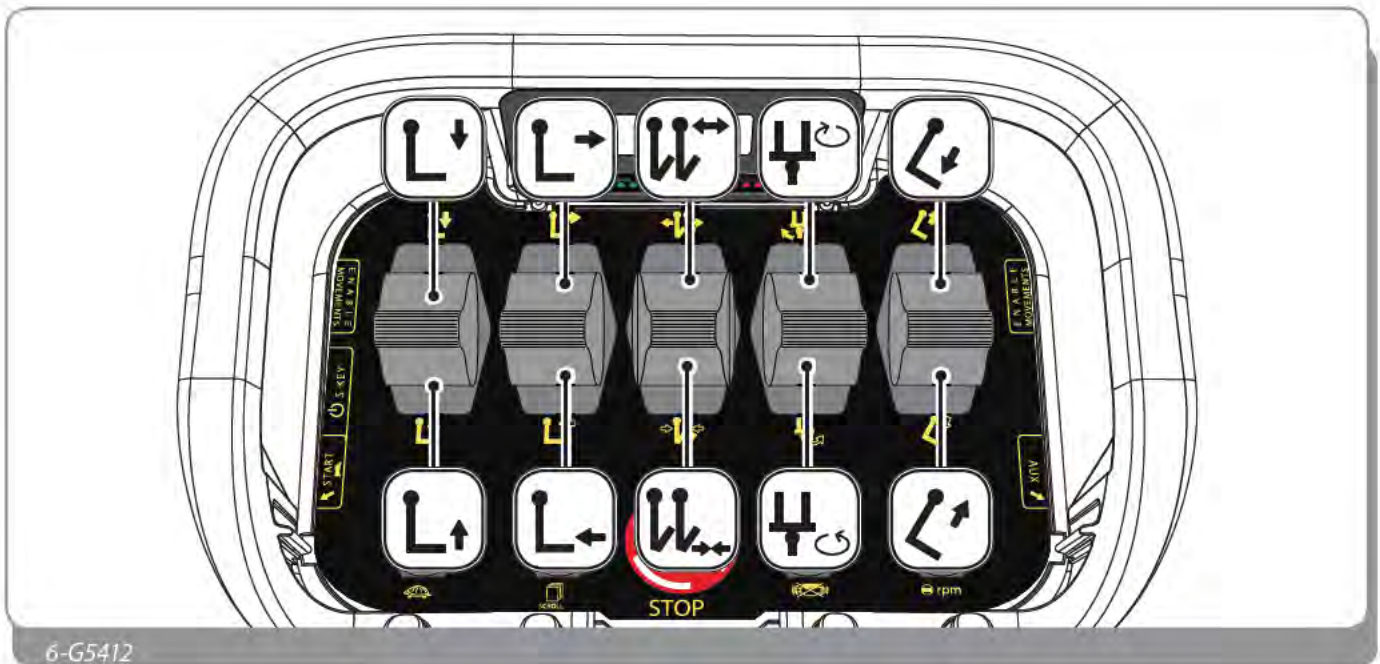
Press the button to sound the horn of the vehicle and to change the engine revs: if the revs are low, the engine will be set to high rpm or vice versa (from 900 rpm to 1400 rpm).

### Radio control start-up button

The on/off knob "5" (Fig. 5-G5412) allows you to switch the radio control on and off. Switch the radio control on by turning the knob from O to I.







### Vehicle movement levers



Boom descent



Boom ascent



Boom extension



Boom retraction



Services



Services



Rotating the turret clockwise



Rotating the turret anti-clockwise



Oscillation downwards



Oscillation upwards



### - ATTENTION

Implement the movements by keeping the dead man button pressed and then moving the lever in the direction of the desired movement.

### 7.30.3 Radio control: Use

If the vehicle is set-up accordingly, it enables use via radio control.

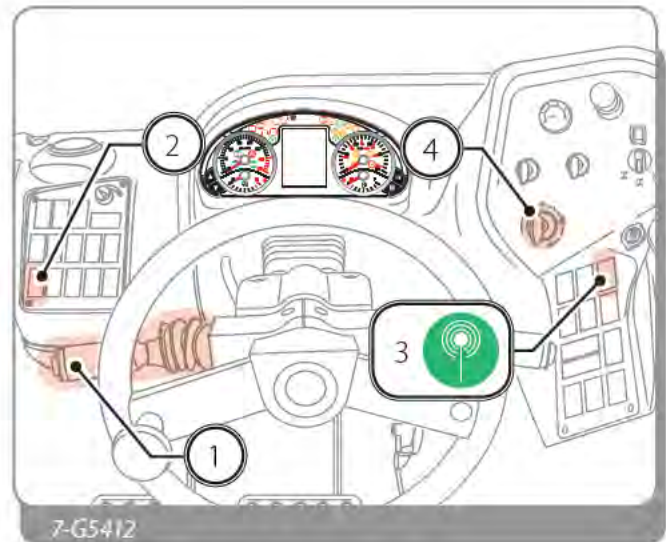
The following movements can be implemented via radio control:

- Telescopic boom extension/retraction
- Telescopic boom ascent/descent
- Oscillation.
- Turret rotation
- Services.

Implement the operations below to use the vehicle via radio control:

#### Operations on the vehicle (Fig. 7-G5412)

1. Fit the equipment on the vehicle unless already mounted. (Refer to the "*Equipment installation*" chapter and set the correct correct use mode of the vehicle)
2. Place the load on the ground.
3. Level the vehicle (if available).
4. Position the vehicle on outrigger feet.
5. Set the gear lever "1" to the neutral position "N".
6. Engage the parking brake "2".
7. Press the switch "3" to enable the radio control commands. Press the switch to automatically switch off the engine of the vehicle.
8. Turn the ignition key of the vehicle "4" to the "I" position without starting the engine.



#### - ATTENTION

If the vehicle is set up for the positive/negative jib, connecting any passenger basket to the vehicle will automatically disable the radio control. Therefore, only passenger baskets with a control panel can be used.

## Operations on the radio control (Fig. 8-G5412)

9. Turn the radio control start-up knob "1" to the "I" position.
10. Press the radio control start-up button "2" to enable the radio control.
11. Move the vehicle start-up lever "3" upwards and keep it there for 2 seconds.

The **ON** radio control LED will flash green for as long as the radio control will remain on.

When the radio control is switched on, it will emit an acoustic signal.

If the vehicle gear lever is not in the "N" position, the vehicle will not start.



### - ATTENTION

Always maintain a safe distance from the vehicle and the load, beyond the area that could be taken up if the vehicle were to tilt over or if the load were to fall.



### - NOTE

While using the vehicle with radio control:

- The emergency button in the cab is always active.
- The vehicle gear is inhibited.

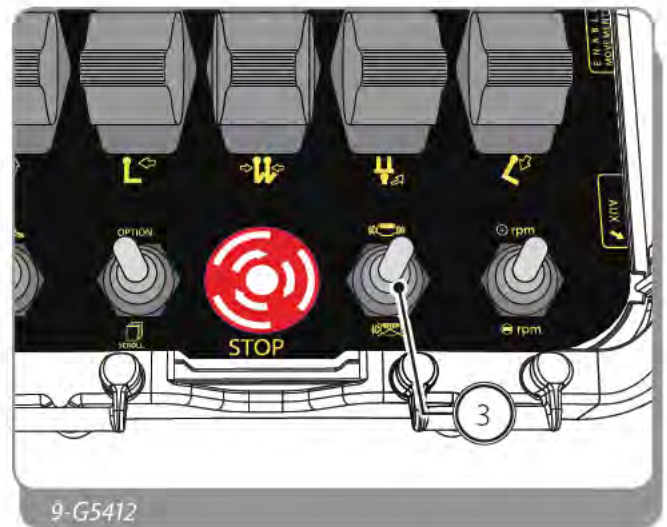
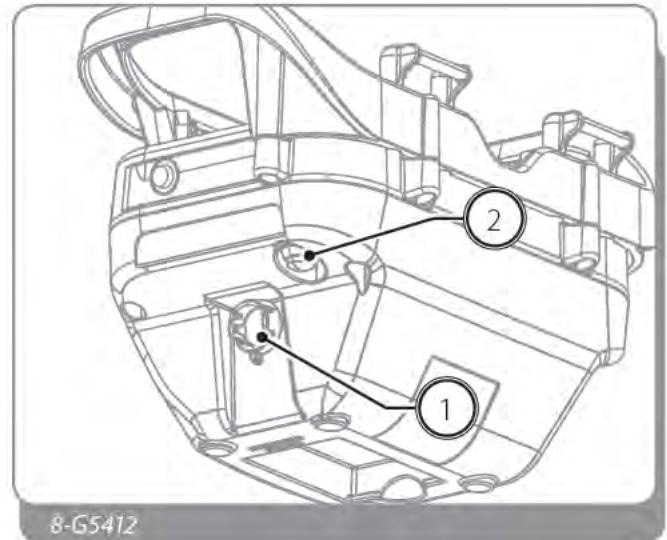


### - NOTE

After 4 min of the radio control not being used, this and the vehicle are switched off.

### 7.30.4 Radio control: Switching the vehicle and the radio control off

Switch the engine of the vehicle and the radio control off by setting the start-up knob "1" (Fig. 8-G5412) to "O".



### 7.30.5 *Radio control: Receiver*

The receiver of the radio control (Fig. 10-G5412) is installed in the rear part of the vehicle. The receiver is activated when the radio control is selected in the cab. Carefully read and learn the use and maintenance instructions of the radio control manufacturer to learn the operating specifications.

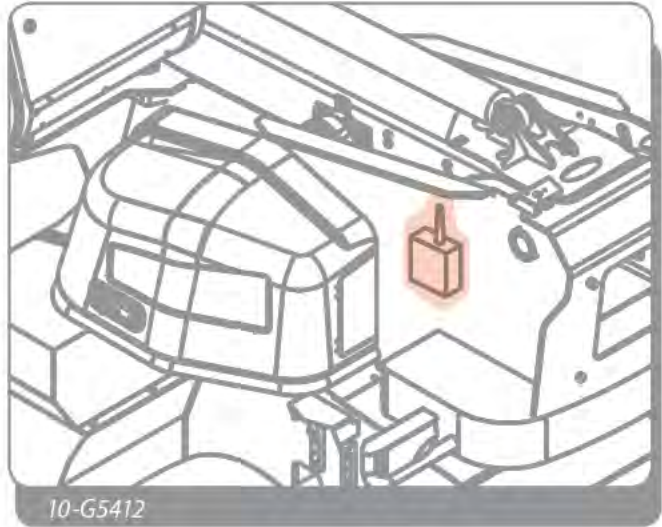
### 7.30.6 *Radio control: recharge*

The recharge base for the radio control battery is found at the side of the seat (Fig. 11-G5412).

### 7.30.7 *Radio control: Additional information*



For additional information concerning the use and maintenance of the radio control, refer to the specific manual of the radio control.



## 7.31 Automatic axle oscillation block

Blocking the oscillation of the automatic axle prevents possible oscillations of the vehicle during work and while the vehicle is being used on wheels.

Lights 1, 2 and 3 (Fig. 1-G2901) indicate which axles are blocked at that time.

The Axle oscillation block is automatically activated according to the position of the turret.

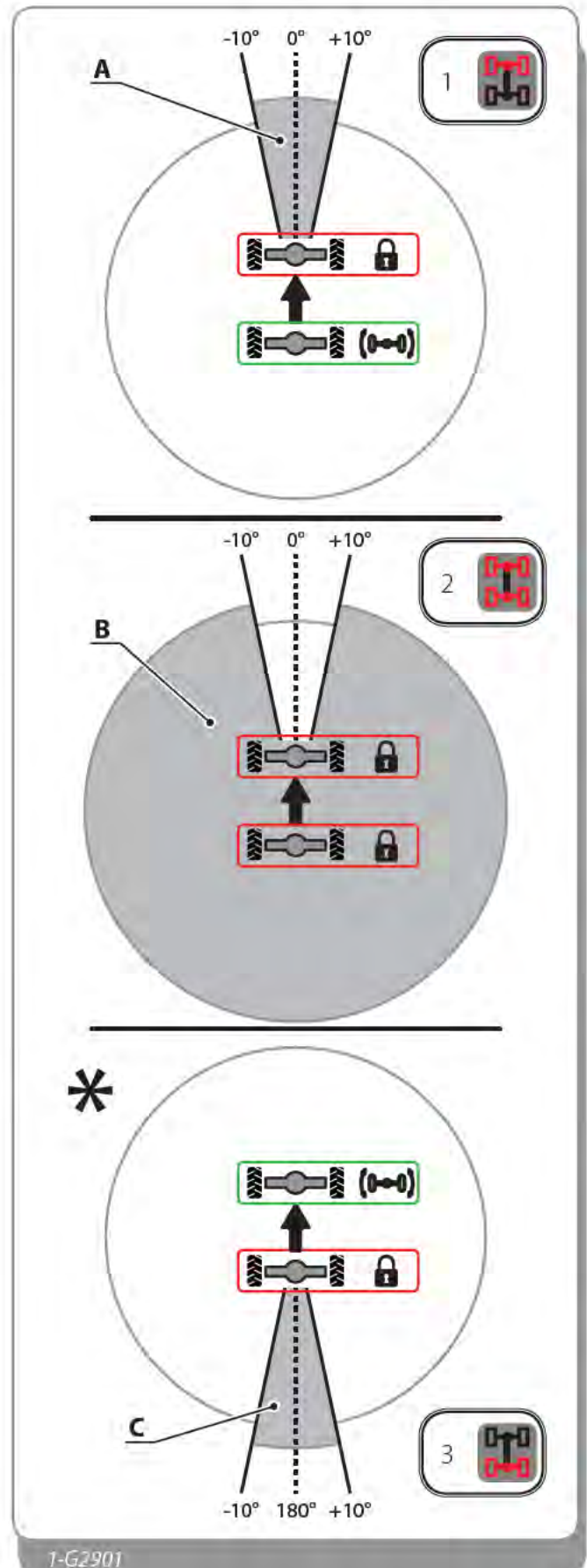
- When the turret is within  $\pm 10^\circ$  of rotation compared to the front position (area "A") only the front axle is blocked.
- when the turret is over  $\pm 10^\circ$  rotation compared to the front position (area "B") both axles, front and rear, are blocked.
- If the vehicle is equipped with the optional "inverted gear", when the tower is within  $\pm 10^\circ$  of rotation compared to the rotated position of  $180^\circ$  (area "C"), only the rear axles is blocked.



### - NOTE

If the automatic axle oscillation block blocks both axles of the vehicle, the gear of the vehicle is inhibited.

In order to move you must bring the turret in line with the vehicle.



1-G2901

## 7.32 Turret rotation block

The Turret rotation block is a safety pin, used to block the turret movements in the lower frame alignment position.

The pin is located on the right side of the vehicle turret (Fig. 1-G5801).



### - ATTENTION

**It is mandatory to block the movements of the turret while:**

- Travelling by road.
- Lifting the vehicle.
- Transporting the vehicle.

To insert the rotation block properly you must:

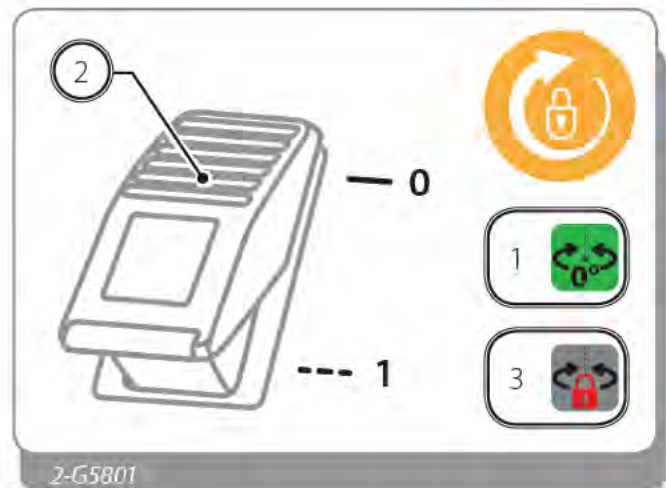
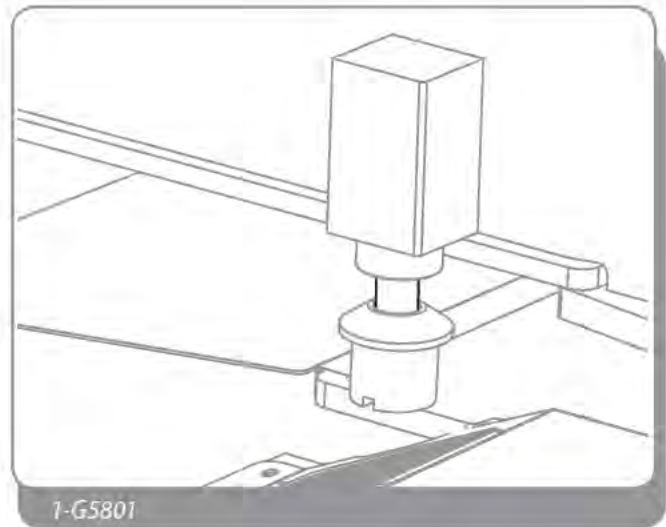
1. Place the load on the ground.
2. Lower and completely retract the telescopic boom.
3. Align the turret to the lower frame. When the indicator light on the central dashboard "1" (Fig. 2-G5801) switches on it means that the turret is perfectly aligned to the frame.
4. Press the Turret rotation block switch "2".
5. Operate the parking brake and get out of the vehicle to check that the pin is inserted properly in its seat on the carriage.
6. If the pin does not fit in its seat properly, press the key "2" and rotate the turret with a che il perno non si inserisce correttamente nella propria sede sul carro della macchina.

The Turret rotation block is indicated by the light "3" on the central dashboard.



### - NOTE

**With the rotation block inserted, turret rotation is inhibited.**



## 7.33 Continuous oil function \*



The continuous oil function is an optional accessory.

The continuous oil function allows to maintain the volume of oil transiting in the hydraulic sockets constant, without acting constantly on the Joystick selector.

### To enable the continuous oil function, you must:

- Using the hydraulic socket selector and socket switch on the boom head (if present), select the desired hydraulic socket upon which to activate the function.
- Use the services roller on the joystick to set the desired oil flow.
- Maintain the oil flow via the services roller and simultaneously press the button "1" (Fig. 1-G3100) to activate the continuous oil function.

The flashing red LED on the joystick indicates that the continuous oil function is active.

The Continuous oil function can only be activated with the vehicle in fork mode.



### - FORBIDDEN

With the continuous oil function enabled, do not move away from the driver's cab.



### - DANGER

Do not change the selection of the hydraulic sockets while using the continuous oil function; the hydraulic socket would start to work directly according to the flow set by the function. Risk of damage to objects, persons and mechanical damage to vehicle or equipment.



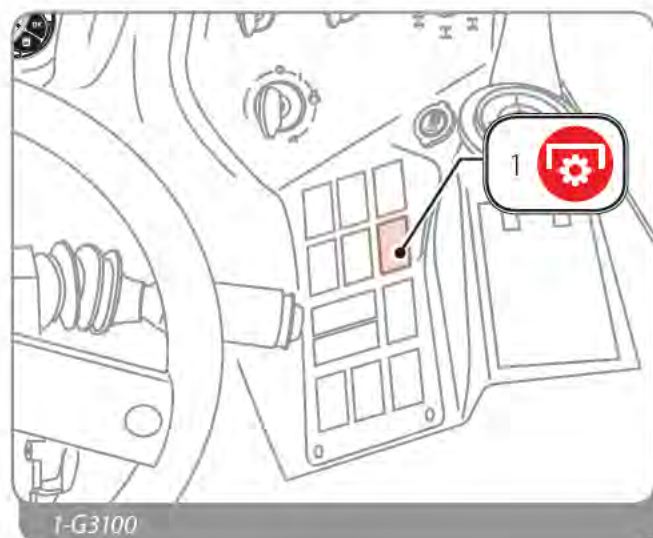
### - NOTE

When the Continuous oil function is active, the joystick can still be used to move the boom and the turret, however, the service roller and the quick coupling (if present) are deactivated.

### To deactivate the continuous oil function, you must:

- Press the button "1" (Fig. 1-G3100).

When the red LED on the joystick stops flashing it means that the continuous oil function is deactivated.



## 7.34 Outriggers

Using the stabilising feet increases vehicle stability during lifting operations.

While using the vehicle with the stabilising feet lowered properly, refer to the relative capacity diagrams.

The vehicle anti-tipping device is able to automatically understand if you are working on tyres or stabilising feet.



### - NOTE

The vehicle is set-up to work on tyres or on all 4 stabilising feet lowered on the ground.



### - DANGER

The vehicle is stabilised properly when all 4 tyres are lifted off the ground.

It is possible to work with just 1, 2 or 3 stabilising feet lowered, but the vehicle capacity will be as if it is on tyres.



### - FORBIDDEN

It is prohibited to operate with a vehicle inclination exceeding 2°.



### - DANGER

It is mandatory to lower or lift the outrigger feet, only with boom completely retracted and completely lowered. Tipping hazard.

Before lowering on the outrigger feet, position the vehicle and the work position, check that the ground is compact and can support the weight of the vehicle without the outrigger feet sinking into the same.



### - DANGER

Sinking of the feet leads to the vehicle and load becoming unstable with consequent overtipping risk of the vehicle or falling load.



See the chapter "Evaluating the working ground consistency"



### - NOTE

A safety device prevents the operation of the stabilising feet with the boom at an angle greater than 15° or with the boom extended by over 50cm.



### - ATTENTION

Before travelling on-road, lift and fully retract all the stabilising feet.



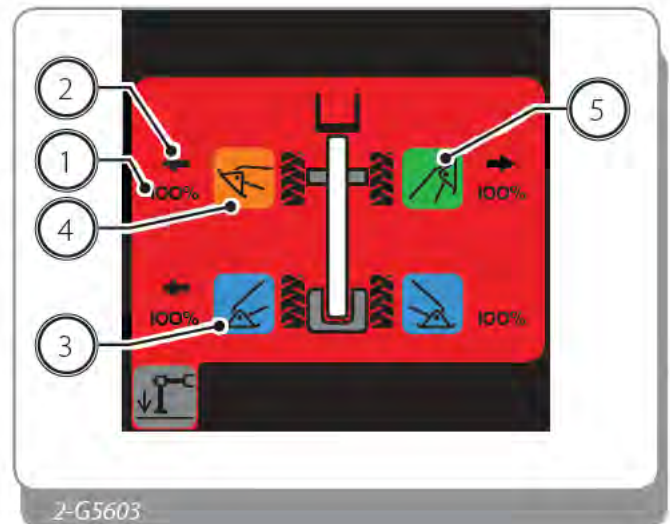
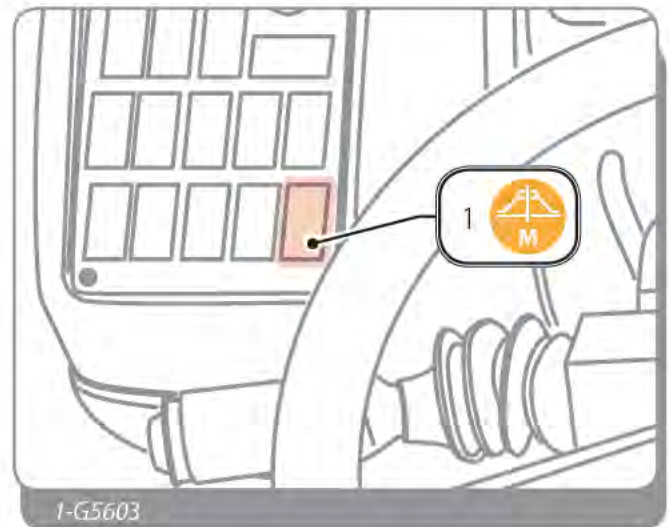
The correct sequence for positioning the vehicle on stabilising feet is the following:

1. Place the load on the ground.
2. Lower and completely retract the telescopic boom.
3. Align the turret to the lower frame.
4. Level the vehicle.
5. Block the oscillation of the rear axle.
6. Lower the front feet.
7. Lower the rear feet.
8. Level the vehicle, as required, using the stabilising feet.

Proceed in the reverse order to retract the stabilising feet.

By pressing the key for moving the stabilising feet "1" (Fig. 1-G5601) the display features a pop-up relating to the vehicle stability (Fig. 2-G3101):

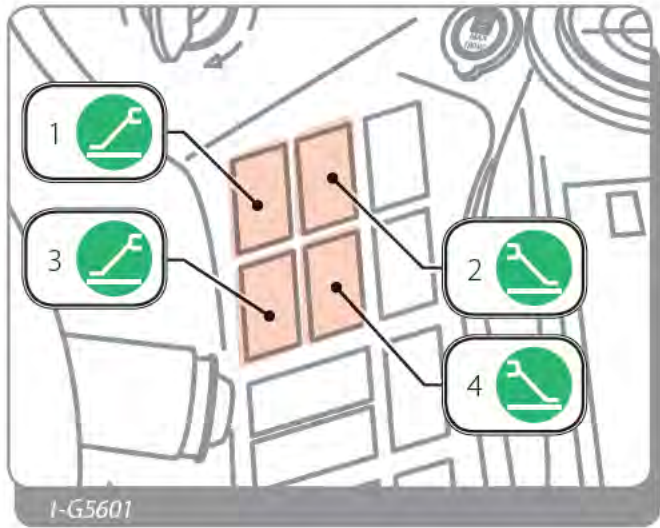
- 1 - The percentage of feet beam extension (if applicable).
- 2 - The movement being performed by the beams (if applicable).
- 3 - The foot lowered on the ground.
- 4 - The foot not yet lowered on the ground.
- 5 - The completely lifted foot.



### 7.34.1 2-movement outriggers

In order to move the stabilising feet, you must:

- Select the stabilising feet to be moved using the switches "1", "2", "3" and "4" (Fig. 1-G5601).
  - Switch 1: Front left foot and beam
  - Switch 2: Front right foot and beam
  - Switch 3: Rear left foot and beam
  - Switch 4: Rear right foot and beam
- Release the joystick.
- Press button "A" (Fig. 2-G3101) to enable the movement of the stabilising feet. Press and hold the button until the stabilising feet have been moved. When you press key "B":
  - the LEDs of the rollers on the joystick will turn red.
  - The display will feature a pop-up relating to the vehicle stability.
- use the joystick to handle the feet and beams
- Release the button "A".
- Release the joystick.



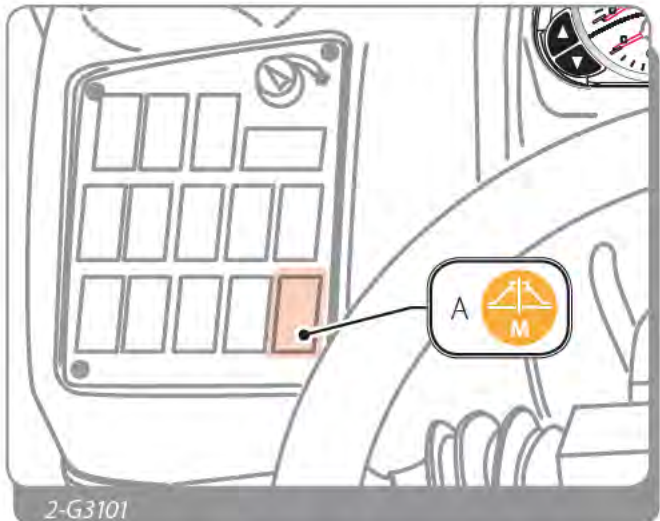
#### - DANGER

Only extend and retract the cross beams if the stabilising feet are fully raised. Risk of damaging mechanical parts.



#### - NOTE

To continue operating the vehicle, release the pressed button and the hand on the joystick and grip the joystick again.



**With the vehicle fitted with the 5in1 joystick (Fig. 3-G5601):**

- Grip the joystick and use the rollers to move the feet and beams:
  - Move the left hand roller forwards to extend the beams of the stabilising feet.
  - Move the left hand roller backwards to retract the beams of the stabilising feet.
  - Move the right hand roller forwards to lower the beams of the stabilising feet.
  - Move the right hand roller backwards to raise the beams of the stabilising feet.

**With the vehicle fitted with the 5in2 joystick (Fig. 4-G3101):**

- Grip the right joystick and use the rollers to move the feet and beams:
  - Move the left hand roller forwards to extend the beams of the stabilising feet.
  - Move the left hand roller backwards to retract the beams of the stabilising feet.
  - Move the right hand roller forwards to lower the beams of the stabilising feet.
  - Move the right hand roller backwards to raise the beams of the stabilising feet.



### 7.34.2 Automatic levelling of the vehicle on stabilising feet

Automatic levelling allows you to level the vehicle on uneven ground when it is the stabilising feet.

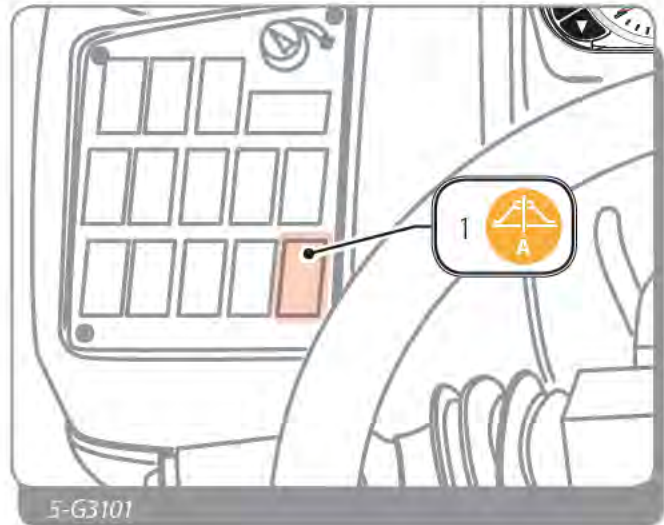
To activate Automatic levelling you must:

- Extend the feet beams as much as possible.
- Press button "1" and grip the joystick.

In this condition the LEDs of the rollers on the joystick will start flashing red.

Press and hold the button "1" and grip the joystick until the vehicle is fully level.

Release the button or the joystick to stop the levelling procedure.



## 8 DESCRIPTION OF COMPONENTS

### 8.1 Tyres



#### ATTENTION

Upon receiving the vehicle, check the air pressure of the tyres.

- Periodically check the air pressure of the tyres. The pressure should be checked when the tyres are cold.
- Tyre pressure must always be kept at the required levels.
- Check the size of the installed tyres and the serial number to ensure they are inflated to the correct pressure.



#### DANGER

Tyres that are torn or are excessively worn should be replaced immediately.

- Before each use, make sure that the sides of the tyres are not damaged.
- Keep all oils, grease and corrosive liquids away from the tyres to prevent any damage to the rubber.
- To ensure maximum efficiency do not use tyres with more than 80% tread wear.



#### ATTENTION

Inflating or working on tyres can be dangerous.

- See specialised personnel for intervening on or installing tyres.
- In any case, to prevent serious or mortal injury, follow the safety precautions described below.
  - The vehicle tyres are very heavy. Handle with care and ensure that, once stored, they cannot fall and injure anyone.
  - Never attempt to repair a tyre on a public road or motorway.
  - Make sure that the car jack is positioned on a solid, flat surface.
  - Make sure that the jack is suitable to support the weight of the vehicle.
  - Use jack tripods or other locking devices suitable for supporting the vehicle while repairing tyres.
  - Never place any part of your body under the vehicle.
  - Never start up the vehicle while it is on the jack.
  - Never hit a tyre or rim with a hammer.
  - Make sure that the rim is clean, and that there is no rust or damage. Do not weld, braze, repair or use a damaged rim in any way.
  - Do not re-inflate a tyre that has travelled partially or very deflated until it has been properly inspected by a qualified technician.
  - Do not inflate a tyre unless the rim is mounted on the vehicle or secured so that it will not move in the event that the tyre or rim should suddenly rupture.
  - Never inflate tyres in excess of the pressure indicated by **DIECI**. If the heel does not settle on the rim when this pressure level is reached, deflate the tyre and lubricate with a soapy water solution, then inflate again. Do not use oil or grease. Inflation exceeding the permitted level on unsettled heels can cause heel or rim breakage with an explosive force that can cause serious injury.
  - After having remounted the wheel, tighten the nuts between the wheel and axles. Check the torque of the nuts every day until it has stabilised.

**ATTENTION**

When mounting a new or repaired tyre, use an adapter for the spring valve with a distance manometer which allows the operator to keep away from the tyre during inflation. Use a safety fence system.

**- FORBIDDEN**

Do not mount inflated tyres with polyurethane foam unless authorised by the manufacturer.

### 8.1.1 *Tightening the wheel nuts*



Tighten the nuts in accordance with the schedule provided in the maintenance table

Refer to the relative table for the correct torque

Always tighten the nuts positioned opposite each other, not consecutively.

After having remounted the wheel, tighten the nuts between the wheel and axles. Check the torque of the nuts every day until it has stabilised.

**ATTENTION**

The number of axle studs must correspond to the number of tightened nuts. Therefore all nuts must be mounted on each tyre; otherwise the vehicle will not operate.

If a tyre is replaced, the vehicle or the lifted side can be set back on the ground only with tyres mounted and properly tightened.

**ATTENTION**

The nuts must first be tightened with the vehicle, or parts of it, lifted from the ground, and then with the vehicle on the ground.

Only use original **DIECI** nuts to tighten the wheels. Should even just a single nut be lost, contact the **DIECI** service centre.

### 8.1.2 *Urethane foam filled tyres*



Urethane foam filled tyres is an optional feature.

**ATTENTION**

The maximum allowed speed with the tyres filled with urethane foam is 20 km/h (12.4 mph).

**- FORBIDDEN**

It is forbidden to circulate on public roads when the tyres are filled with urethane foam.

### 8.1.3 Table of measurements: rims, tyres and inflation pressure

	Tyre size	Features	Brand	Inflation pressure			Rim size	Drawing
				bar	MPa	psi		
Type HVL153								
Standard	18-19.5	16PR TL 160B	BKT	5,00	0.50	72	14.00x19.5	MP567
Alternative	18-19.5	16PR 160A8	MITAS	4.50	0.45	65	14.00x19.5	MPT-06
Type HVM153								
Standard	18-19.5	16PR TL 160B	BKT	5,00	0.50	72	14.00x19.5	MP567
Alternative	18-19.5	16PR 160A8	MITAS	4.50	0.45	65	14.00x19.5	MPT-06
Type HVL154								
Standard	18 R22.5 (445/65 R22.5)	169F	MITAS	8.00	0.80	116	14.00x22.5	AR-01
Alternative	18-22.5 (445/65-22.5)	16PR	MITAS	5.10	0.51	73	14.00x22.5	MPT-06 TL
Alternative	18-22.5 (445/65-22.5)	16PR	BKT	5,00	0.50	72	14.00x22.5	MP590 TL
Type HVL155								
Standard	18 R22.5 (445/65 R22.5)	169F	MITAS	8.00	0.80	116	14.00x22.5	AR-01
Alternative	18-22.5 (445/65-22.5)	16PR	MITAS	5.10	0.51	73	14.00x22.5	MPT-06 TL
Alternative	18-22.5 (445/65-22.5)	16PR	BKT	5,00	0.50	72	14.00x22.5	MP590 TL
Type HVL156								
Standard	18 R22.5 (445/65 R22.5)	169F	MITAS	8.00	0.80	116	14.00x22.5	AR-01
Alternative	18-22.5 (445/65-22.5)	16PR	MITAS	5.10	0.51	73	14.00x22.5	MPT-06 TL
Alternative	18-22.5 (445/65-22.5)	16PR	BKT	5,00	0.50	72	14.00x22.5	MP590 TL
Type HVC158								
Standard	18 R22.5 (445/65 R22.5)	169F	MITAS	8.00	0.80	116	14.00x22.5	AR-01
Alternative	18-22.5 (445/65-22.5)	16PR	MITAS	5.10	0.51	73	14.00x22.5	MPT-06 TL
Alternative	18-22.5 (445/65-22.5)	16PR	BKT	5,00	0.50	72	14.00x22.5	MP590 TL
Type HVM158								
Standard	18 R22.5 (445/65 R22.5)	169F	MITAS	8.00	0.80	116	14.00x22.5	AR-01
Alternative	18-22.5 (445/65-22.5)	16PR	MITAS	5.10	0.51	73	14.00x22.5	MPT-06 TL
Alternative	18-22.5 (445/65-22.5)	16PR	BKT	5,00	0.50	72	14.00x22.5	MP590 TL
Tipo LLM159								
Standard	405/40-20 (16/70-20)	14PR	MITAS	4.20	0.42	60	13.00x20	MPT-04 TL
Alternative	405/40-20 (16/70-20)	14PR	MITAS	4.20	0.42	60	13.00x20	MPT-01 TL
Alternative	405/40-20 (16/70-20)	14PR	BKT	4.50	0.45	65	13.00x20	MP567 TL



	Tyre size	Features	Brand	Inflation pressure			Rim size	Drawing
				bar	MPa	psi		
Alternative	405/70 R20 (16/70 R20)	152J	MITAS	6.00	0.60	87	13.00x20	MPT21
Type LLL159								
Standard	405/40-20 (16/70-20)	14PR	MITAS	4.20	0.42	60	13.00x20	MPT-04 TL
Alternative	405/40-20 (16/70-20)	14PR	MITAS	4.20	0.42	60	13.00x20	MPT-01 TL
Alternative	405/40-20 (16/70-20)	14PR	BKT	4.50	0.45	65	13.00x20	MP567 TL
Alternative	405/70 R20 (16/70 R20)	152J	MITAS	6.00	0.60	87	13.00x20	MPT21



## 8.1.4 Changing a wheel

Do as follows to change a wheel:

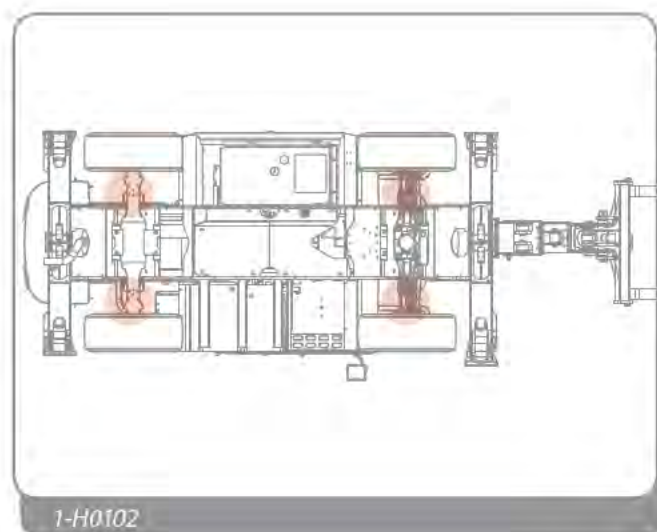
- If possible, park the vehicle on flat, even ground.
- Engage the parking brake.
- Lower all 4 stabilising feet to lift the vehicle until the wheels are off the ground.
- Switch off the engine.
- Engage emergency lights.
- Loosen the bolts of the tyre to be replaced.
- Completely unscrew the bolts from the tyre and remove them.
- Remove the wheel with rotary "push and pull" movements.
- Insert the new tyre on the hub.
- Manually screw in bolts. Lubricate them with grease if necessary. Tighten bolts securely with a torque wrench.
- Switch on the vehicle and lift the stabilising feet.
- Re-tighten bolts to the tyre securely with a torque wrench.



### - NOTE

**In the event it is not possible to use the stabilising feet while the tyre is being replaced, perform these steps to lift the vehicle from the ground:**

- Put wedges under tyres opposite from the tyre to be replaced in order to block the vehicle from moving in both directions.
- Put the jack (Fig. 1-H0102) in the end part of the axle of the relevant wheel:
- Lift the wheel until it lifts off the ground and place the safety support underneath the axle.





## 8.2 Fuel

Before handling fuel and filling the tank, comply with the following regulations:



### - FORBIDDEN

Never add different types of fuel such as petrol or alcohol to diesel.



### - FORBIDDEN

It is forbidden to refuel while the engine is running

- Clean the area around the fuel cap. Refill the fuel tank at the end of every day to reduce condensation when the vehicle is at rest.
- Water and sediments must be removed before they reach the engine.
- Do not use antifreeze to remove water from diesel fuel.
- Do not rely on a filter to remove water from diesel fuel.
- Never leave the tank without a cap and always lock it. Should you lose the original cap, replace it with an original spare. Not just any cap is suitable.
- Keep the fuel pump gun under control while filling the tank.



### - IT IS FORBIDDEN TO SMOKE AND HAVE OPEN FLAMES

It is forbidden to smoke when refuelling

- Do not inspect the tank with a flame.
- Do not fill up the tank completely. Leave room for expansion and immediately clean any spillage.
- In the event of fuel leaks due to breakage, stop the leak as quickly as possible, do not use the vehicle and contact DIECI customer service.



### - DANGER HARMFUL VAPOURS

Inhale diesel fumes for the least time possible as they are dangerous carcinogens for your health

### 8.2.1 Specifications for recommended fuel



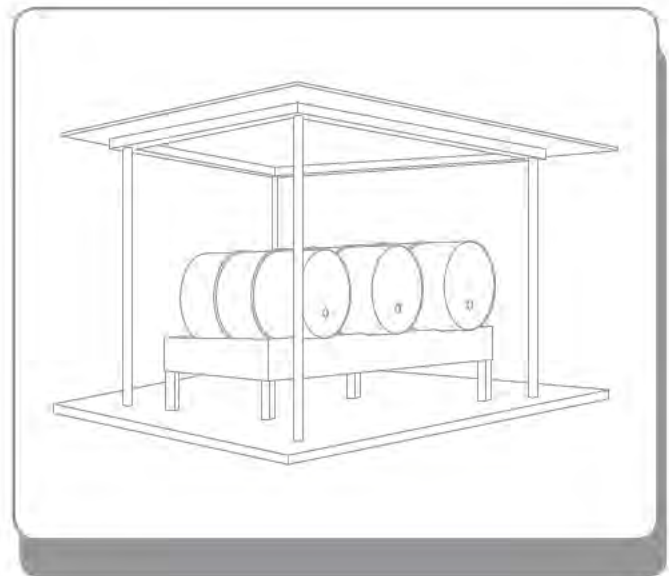
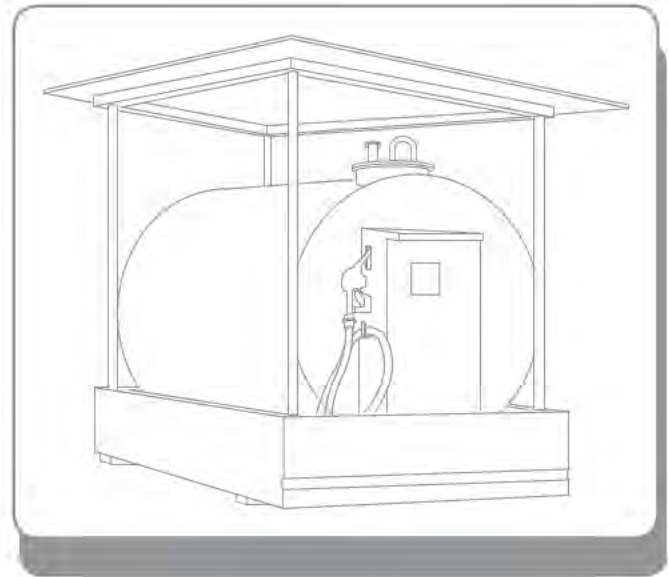
To achieve good performance, see the engine manual of the vehicle to know the best features.

### 8.2.2 *Cleaning and storing fuel*

It is important for the fuel to be kept clean.

The advice provided below will help maintain fuel quality.

- Never use zinc-coated containers.
- Never clean the inside of containers or power supply system components with cloths that may leave deposits.
- The cistern capacity (figure at the side) must allow intervals between refuelling not to be too long. A capacity of 3,000 litres is sufficient for an average sized company.
- The storage cistern must be covered and placed on a support that is high enough to allow refuelling by means of gravity. A large basin must be placed under the cistern in case of fuel leakage. The cistern must have an opening large enough to allow someone to access it for cleaning purposes.
- The delivery tap must be larger at the bottom in order to trap any deposits; it must also be equipped with a removable filter. The cistern should be tilted 40 mm per metre towards the sedimentation drain plug.
- The fuel barrels (figure at the side) must be covered when stored to prevent water infiltration. The barrels should be slightly tilted slightly, so that any water will run to the upper rim. The fuel barrels should not be stored for too long before being used.
- If the barrels are kept outside, their caps must be tightly closed to prevent water from seeping in.
- After refuelling the storage cisterns or barrels, it is recommended to allow the fuel to set for at least two hours, thereby allowing any sediment of water and impurities to be deposited before the fuel is used.



### 8.2.3 Refuelling

Proceed as follows to refuel (Fig. 1-H0202):

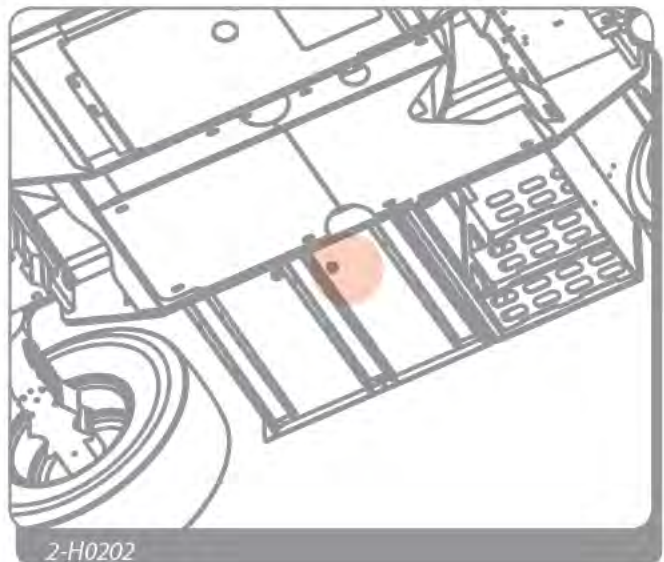
- Park the vehicle and switch the engine off
- Open the fuel cap
- Refuel
- Close the fuel cap



### 8.2.4 Fuel tank: Cleaning

With the vehicle in the maintenance position:

- Place a suitable container under the tank.
- Remove the plug underneath the tank (Fig. 2-H0202) and drain fuel from the tank to eliminate all impurities.
- Refit the plug and fill with clean fuel.



### 8.3 Engine



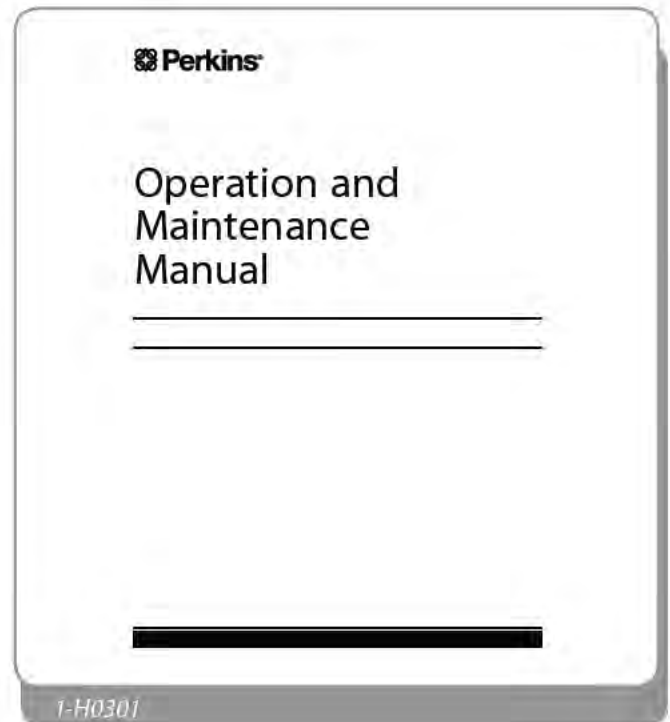
#### ATTENTION

The use and maintenance manual of the PERKINS engine is an integral part of the documentation supplied with the vehicle.



Refer to the engine manual or contact an authorised workshop for maintenance operations.

It is recommended to read the information in the instruction manual carefully and comply with them: thereby preventing accidents, benefitting from the manufacturer's warranty and always having an efficient engine that is ready to be used.





### 8.3.1 List of engine error codes

Display CODE	Type	Component	Description
001	Diagnostic	Throttle Position Sensor	Data erratic intermittent or incorrect
002	Diagnostic	Throttle Position Sensor	Voltage above normal or shorted high
	Diagnostic	Secondary throttle position sensor	Voltage above normal or shorted high
004	Diagnostic	Throttle Position Sensor	Voltage below normal or shorted low
	Diagnostic	Secondary throttle position sensor	Voltage below normal or shorted low
006	Diagnostic	Throttle Position Sensor	abnormal frequency, pulse width, or period
	Diagnostic	Secondary throttle position sensor	abnormal frequency, pulse width, or period
008	Diagnostic	Throttle Position Sensor	Bad Device or component
	Diagnostic	Secondary throttle position sensor	Bad Device or component
010	Diagnostic	Engine Oil pressure Sensor	voltage above normal or shorted high
011	Diagnostic	Engine Oil pressure Sensor	voltage below normal or shorted low
012	Diagnostic	Engine Oil pressure sensor	Engine oil pressure sensor 5V supply connection open circuit
013	Event	Engine Oil pressure sensor	low oil pressure -WARNING
014	Event	Engine Oil pressure sensor	Low oil Pressure -DERATE
015	Event	Engine Oil pressure sensor	ow Oil Pressure -SHUTDOWN
016	Event	Inlet Manifold Air Temp Sensor	High Intake manifold temperature -WARNING
017	Event	Inlet Manifold Air Temp Sensor	High Intake manifold temperature -DERATE
018	Diagnostic	Inlet Manifold Air Temp Sensor	voltage above normal or shorted high
019	Diagnostic	Inlet Manifold Air Temp Sensor	voltage below normal or shorted low
020	Diagnostic	Inlet Manifold Pressure Sensor	voltage above normal or shorted high
021	Diagnostic	Inlet Manifold Pressure Sensor	voltage below normal or shorted low
022	Diagnostic	Inlet Manifold Pressure Sensor	Inlet Manifold Pressure Sensor 5V supply connection open circuit
023	Event	Engine Coolant Temp Sensor	High coolant temp -WARNING
024	Event	Engine Coolant Temp Sensor	High coolant temp -DERATE
025	Diagnostic	Engine Coolant Temp Sensor	voltage above normal or shorted high
026	Event	Engine Coolant Temp Sensor	High coolant temp -SHUTDOWN
027	Diagnostic	Engine Coolant Temp Sensor	voltage below normal or shorted low
028	Diagnostic	Fuel Rail pressure sensor	Voltage above normal or shorted high
029	Diagnostic	Fuel Rail pressure sensor	Voltage below normal or shorted low
030	Diagnostic	Keyswitch	data erratic, intermittent, or incorrect
031	Diagnostic	ECM battery power	Excessive battery power
032	Diagnostic	ECM battery power	Low battery power
033	Diagnostic	ECM battery power	intermittent
034	Diagnostic	Speed/Timing sensor	abnormal signal frequency
035	Event	Engine Speed	Engine Overspeed -WARNING
036	Diagnostic	Throttle Position Sensor	Idle validation switch
	Diagnostic	Secondary throttle position sensor	data erratic, intermittent, or incorrect

Display CODE	Type	Component	Description
038	Diagnostic	Customer or system parameters	data incorrect
039	Diagnostic	Engine software	data incorrect
040	Diagnostic	SAE J1939 data link	Abnormal update
041	Diagnostic	Turbo Wastegate	Solenoid Current Low
042	Diagnostic	Turbo Wastegate	Solenoid Current High
043	Diagnostic	Turbo Wastegate	Turbo Wastegate not responding
044	Diagnostic	Cylinder #1 Injector	Injector Data Incorrect
045	Diagnostic	Cylinder #1 Injector	Injector Current Low
046	Diagnostic	Cylinder #1 Injector	Injector Current High
047	Diagnostic	Cylinder #1 Injector	Injector not reponding
048	Diagnostic	Cylinder #2 Injector	Injector Data Incorrect
049	Diagnostic	Cylinder #2 Injector	Injector Current Low
050	Diagnostic	Cylinder #2 Injector	Injector Current High
051	Diagnostic	Cylinder #2 Injector	Injector not reponding
052	Diagnostic	Cylinder #3 Injector	Injector Data Incorrect
053	Diagnostic	Cylinder #3 Injector	Injector Current Low
054	Diagnostic	Cylinder #3 Injector	Injector Current High
055	Diagnostic	Cylinder #3 Injector	Injector not reponding
056	Diagnostic	Cylinder #4 Injector	Injector Data Incorrect
057	Diagnostic	Cylinder #4 Injector	Injector Current Low
058	Diagnostic	Cylinder #4 Injector	Injector Current High
059	Diagnostic	Cylinder #4 Injector	Injector not reponding
060	Diagnostic	Cylinder #5 Injector	Injector Data Incorrect
061	Diagnostic	Cylinder #5 Injector	Injector Current Low
062	Diagnostic	Cylinder #5 Injector	Injector Current High
063	Diagnostic	Cylinder #5 Injector	Injector not reponding
064	Diagnostic	Cylinder #6 Injector	Injector Data Incorrect
065	Diagnostic	Cylinder #6 Injector	Injector Current Low
066	Diagnostic	Cylinder #6 Injector	Injector Current High
067	Diagnostic	Cylinder #6 Injector	Injector not reponding
068	Diagnostic	8V DC supply	ECM 8V DC supply – voltage above normal or shorted high
069	Diagnostic	8V DC supply	ECM 8V DC supply – voltage below normal or shorted low
070	Diagnostic	Primary Engine Speed Sensor	abnormal signal frequency
071	Diagnostic	Secondary Engine Speed Sensor	abnormal signal frequency
072	Diagnostic	5V sensor DC supply	voltage above normal or shorted high
073	Diagnostic	5V sensor DC supply	voltage below normal or shorted low
074	Diagnostic	Primary to secondary speed sig	calibration fault
075	Diagnostic	Primary to secondary speed sig	Calibration required
076	Diagnostic	Fuel Rail Pump	Output current low
077	Diagnostic	Fuel Rail Pump	Output current high
078	Diagnostic	Fuel Rail Pump	Not responding
079	Diagnostic	Glow Plug Start Aid relay	Current Low
080	Diagnostic	Glow Plug Start Aid relay	Current High



Display CODE	Type	Component	Description
081	Event	Exhaust	High Temperature
082	Event	Fuel Rail pressure sensor	Low Fuel Rail Pressure
083	Event	Fuel Rail pressure sensor	High Fuel Rail Pressure
084	Event	Intake Manifold pressure sensor	Low Intake Manifold Pressure
085	Event	Intake Manifold pressure sensor	High Intake Manifold Pressure
086	Diagnostic	Intake Manifold pressure sensor	Pressure Abnormal Rate of Change
087	Diagnostic	Key Switch	Erratic



## 8.4 Catalytic purifier \*



\*The catalytic purifier is an optional accessory.

As the catalyst is not actively involved in the chemical reaction it provokes, its life is theoretically unlimited. However, for particular conditions such as: engines that are not perfectly tuned, vehicle vibrations and the abrasive effect that the gas exerts on the support limit the life of the catalyst. In reality, the life of the catalytic reactor is about 10,000 working hours.

The catalyst is activated by the high temperature of the fumes which also prevents any particles from depositing on the honeycomb; less maintenance is consequently needed.



**It is advisable to clean the silencer every 500 working hours. Remove the silencer and place it in a container with hot soapy water, making sure it is completely emerged. Leave it to soak for 5 hours, then wait for it dry completely (a gentle jet of compressed air could possibly be used) and remount.**



## 8.5 Water driven purifier



\* The water-powered purifier is an optional accessory.

The water-powered purifier (Fig. 2-H5000) is manufactured entirely in stainless steel with titanium and is resistant to high temperatures and to corrosive sulphurous compounds which are present in the exhaust fumes.

It consists of a horizontal cylindrical body (sized according to engine power) which makes up the water tank, two mounting brackets and a cylindrical tower located in the upper part of the water tank that contains the separator.

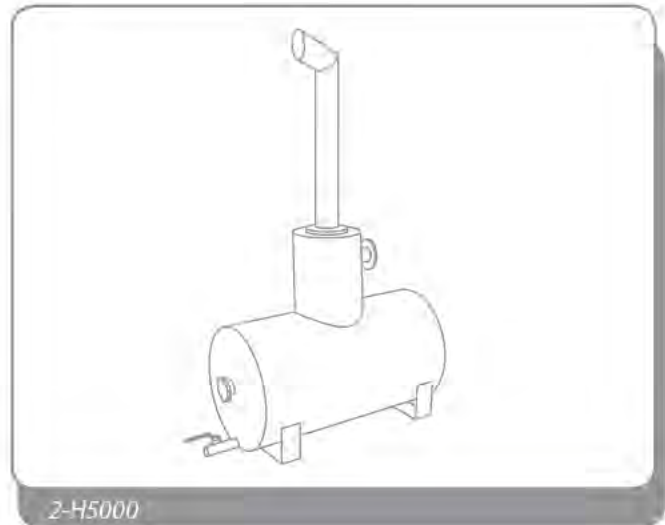
The gases are directed through an entry tube to the internal part of the purifier and then passed to the water. The carbonaceous particles become heavier upon contact with the water and drop to the bottom of the water tank.

The gases are then directed towards the separator which recovers the carbonaceous particles that have not fused with the water. The white smoke emitted from the exhaust is simply water vapour.



**Maintenance of the water-powered purifier is extremely important and consists of changing the water every 8 working hours by emptying the tank using the drain ball valve and pouring clean water through the filler and level cap.**

The black sludge which comes out when changing the water is proof of the purifier's effectiveness. The purifier must be cleaned about every 300 working hours circa: drain the water and clean inside with a pressurised jet for about a minute. DIECI also provides the additive TAM which, if added to the water at every change, helps to keep the purifier clean. The additive TAM is also used to improve purification: it neutralises the sulphuric acid and sulphurous acid.



2-H5000

## 8.6 Water heater \*



\* The water heater is an optional accessory.

The water heater is connected to its own control unit and is used to facilitate starting up the engine during winter or in cold climates.

The water heater is located at the rear of the bonnet.

To use the water heater, you must:

1. Make sure that the vehicle is off.
2. Insert the extension cord in the socket at the rear of the bonnet.
3. Insert the extension cord in the **220 V** power socket.
4. Wait for the water to be sufficiently heated.
5. Remove the heater extension cord from the power socket and from the socket on the bonnet.



**Make sure the power supply cable is in good conditions before starting up the device.**



### - DANGER

Do not use the water heater with the engine running or while the vehicle is moving.

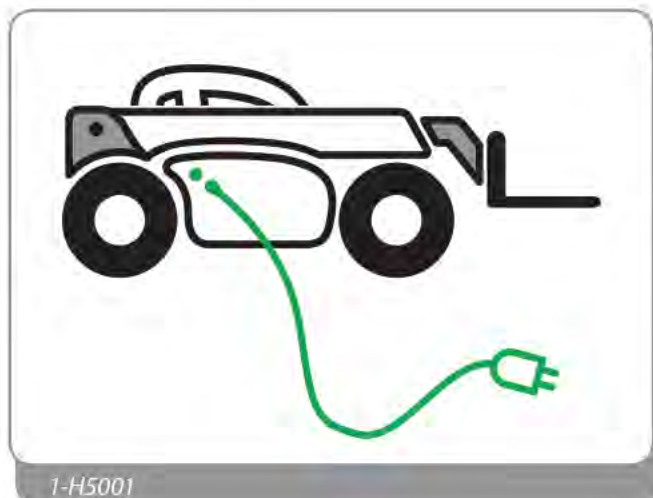


### - ATTENTION

Remove water heater power connections before switching on and/or moving the vehicle.



In the event of a malfunction, contact the **DIECI** service centre.



## 8.7 Battery



### - DANGER: BATTERY EXPLOSION

To prevent the batteries from exploding:

- Keep sparks, open flames and cigarettes away from the upper part of the batteries as the gas produced by the latter is highly flammable.
- Do not recharge damaged batteries.
- Do not charge a hot battery.



### - DANGER: HARMFUL SUBSTANCES

Batteries contain highly polluting substances that must not be released into the environment.

Batteries that are dead, old, damaged, etc. must be disposed of properly.



### - DANGER: CORROSIVE SUBSTANCES

The battery contains sulphuric acid electrolyte, which is a corrosive substance which must be handled with caution as it can cause poisoning and serious burns.

Keep out of the reach of children.

Avoid contact with skin and eyes.



### - ATTENTION

Wear protective clothing, gloves and goggles. Should contact be made with the eyes and skin, rinse immediately with plenty of water and consult a doctor. If swallowed, immediately contact a doctor.

- Do not overturn or tilt the battery as acid could come out.
- Recharge the battery in a well-ventilated place and always disconnect the power supply before disconnecting the terminals.
- Always use a voltmeter or a densimeter to check the battery charge. Should you need to check the electrolyte level, use a torch and never an open flame.
- Never place a metal object between the terminals to check the battery charge.
- DO NOT create sparks with the wire clamps while recharging the battery or while starting the vehicle engine with an auxiliary battery.
- Make sure the caps and vent covers are fitted correctly and tightened securely.
- Clean the upper part of the battery, make sure the terminals are tightened securely and cover them with a thin layer of Vaseline.
- Should the battery freeze, place it in a warm place and allow it to thaw. Do not use or recharge it; danger of explosion.
- In normal conditions, the battery is kept charged by the vehicle alternator. Should the battery run out completely as a result of prolonged inactivity or because it is at the end of its life, the alternator can no longer "regenerate" it. The battery must be replaced and recharged by means of a special battery charging instrument.



### - ATTENTION

Before performing any maintenance on the vehicle, disconnect power from the electric circuits by pressing the battery isolator switch

### **8.7.1**      *Low maintenance batteries*

Low maintenance batteries have been designed to avoid frequent routine maintenance interventions. Check the level of electrolyte if discharged. Contact the supplier or the manufacturer for the technical specifications.

### **8.7.2**      *"Zero maintenance" batteries*

These are batteries that do require maintenance.

The battery must be replaced once it is completely discharged. Contact the supplier or the manufacturer for the technical specifications.



**- FORBIDDEN**

**Do not perform maintenance or recovery operations on "zero maintenance" batteries.**



### 8.7.3 *Battery: Recharging the battery*

- A battery is fully charged if, at a constant temperature, the electrolyte density and the tension measured at the poles does not increase within 2 hours.
- The efficiency of each recharge depends on the general conditions of the battery itself. An old battery will not be able to obtain the same life and efficiency as a new battery after recharging.
- The simplest recharging method is to charge at constant power.
- Once charging is complete, the battery charger voltage increases and creates gasification. We recommend using simple battery chargers with minimum current control and a switch-off timer.
- If the battery has a low level of electrolyte, top-up to the minimum level (just above the plate limit) and then charge. Fill up to the maximum level once charging is complete (to prevent spills).
- Overcharging must be avoided because:
  - It is a loss of energy that causes water dissociation.
  - It produces a loss of active mass due to electrode deterioration.
  - It generates the risk of explosion.
- If sulphuric batteries are recharged with no voltage limit, they will boil and heat, thereby generating the risk of explosion.
- Old batteries (sulphuric in most cases) must be charged with caution. An increase in temperature is possible even with 13.8 Volts.

#### **Follow the instructions below to charge the battery:**

1. Disconnect the wires of the vehicle from the battery to protect its electrical system.
2. Place the battery at a safe distance from the vehicle.
3. Remove the caps, if possible.
4. When possible, check the electrolyte level.
5. Clean the poles.
6. Make sure the area is sufficiently ventilated.
7. Limit the charging current to a maximum of 1/10 of the battery capacity (Ah).
8. Connect the battery to the battery charger.
9. Connect the battery charger to the mains.
10. Switch the battery charger on.
11. Battery temperature must not exceed 55°C.
12. Switch the battery charger off when finished.
13. Disconnect the battery charger from the mains.
14. Disconnect the battery from the battery charger.
15. When possible, check the electrolyte level.
16. Refit the caps.

## 8.7.4 Battery isolator switch



### - ATTENTION

This switch must only be used when the engine is stopped.

The Battery switch "1" (Fig. 1-H5102) is under the driver's cab and allows the operator to isolate the battery from the wiring circuit in an emergency or during maintenance.

Proceed as follows to isolate the battery:

1. Switch the engine off.
2. Bring the ignition key to the "0" position.
3. Turn the battery isolator switch counter clockwise to the off position.

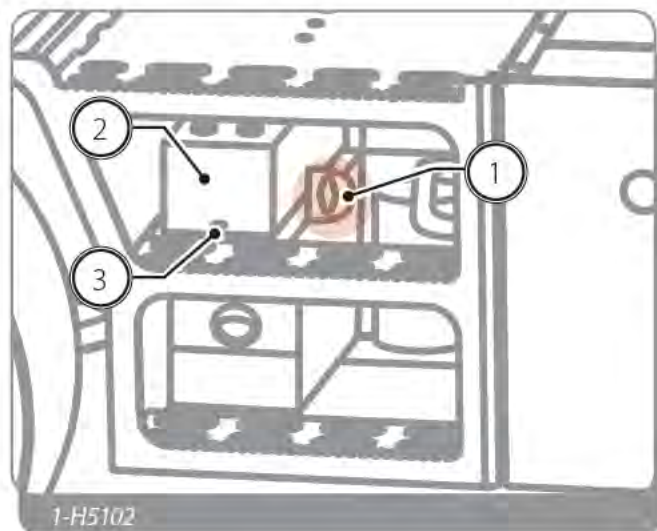
## 8.7.5 Battery: replacement

The machine is fitted with a battery "2" (Fig. 1-H5102) under the driver's cab.

Follow the instructions in the relative chapter to disconnect the battery from the electrical circuit, via the battery isolator switch, before removing it.

Proceed as follows to remove the battery:

1. Set the vehicle in the maintenance position as described in the "Vehicle set-up for maintenance" chapter.
2. Remove the pin "3".
3. Remove the battery by pulling the slide.
4. Disconnect the NEGATIVE (black) wire from the battery.
5. Disconnect the POSITIVE (red) wire from the battery.
6. Remove the battery from the vehicle.
7. Place the new battery.
8. Connect the POSITIVE (red) wire to the battery.
9. Connect the NEGATIVE (black) wire to the battery.
10. Bring the slide back to the initial position and fasten it with the pin "3".
11. Re-activate the battery isolator switch.
12. Close the engine bonnet.



## 8.8 Lighting

Vehicle lighting must always be efficient and functioning properly. Its functionality must be checked daily. Replace any damaged part of the lighting body immediately. Replace a burnt light bulb immediately.



Refer to the "Maintenance" chapter before performing any maintenance or adjustments.



### - NOTE

The bulbs are very fragile. Handle them with care.

The dipped beam bulbs must not be handled with bare hands.

### 8.8.1 Front light

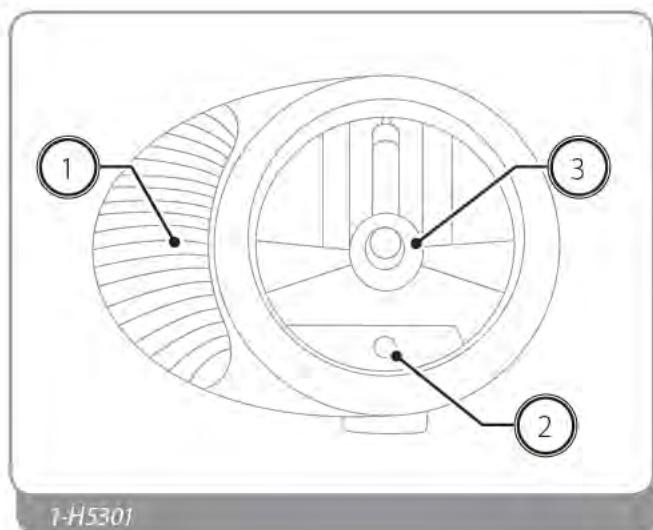
In the front headlight (Fig. 1-H5301) it is composed of:

	Description	Type
1	Direction indicator	21 W
2	Front side light	4 W
3	Dipped lights/high beams	60/55 W H4

To access the bulbs:

1. Set the vehicle in the maintenance position.
2. Act on the battery isolator switch to disconnect the supply to the electrical system.
3. Remove the power connector of the rear light.
4. Remove the front part of the light by loosening its screws located in the rear cap.

Close the light by carrying out these steps in inverse order, being careful to position the sealing gasket correctly.





## Replacing a direction indicator bulb

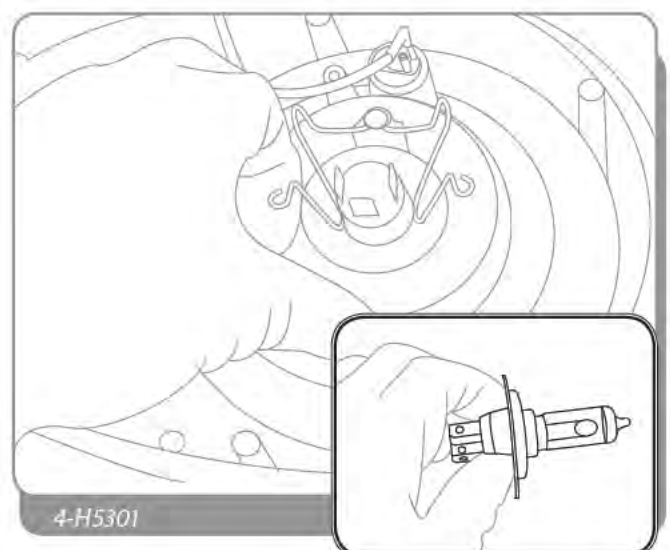
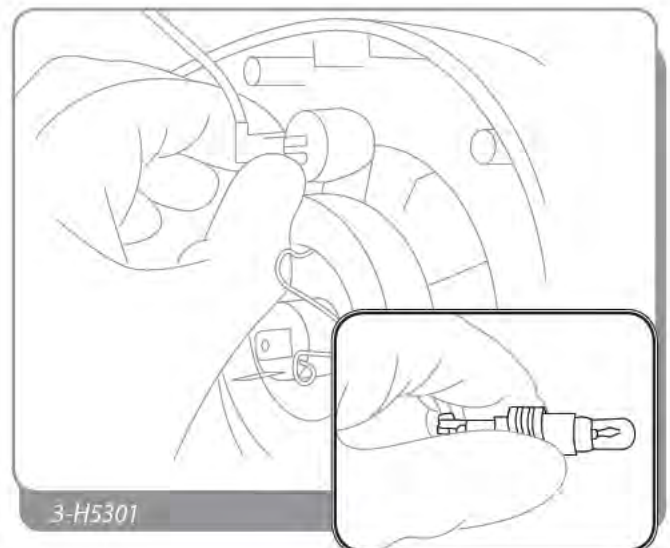
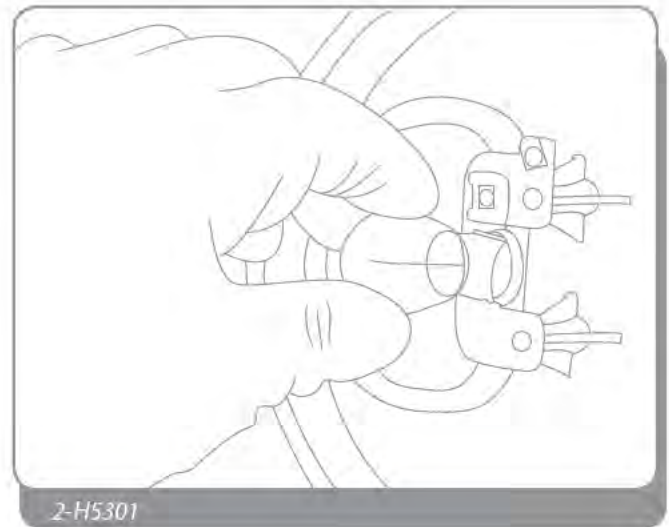
- Press the upper part of the bulb (Fig. 2-H5301).
- Turn the bulb while pressing it down to release it from the lock.
- Carry out the same steps to insert the new bulb.

## Replacing a side light bulb

- Grasp the rear part where the electrical connections are located (Fig. 3-H5301).
- Turn and pull the rear part towards you.
- Remove the support and press the upper part of the bulb.
- Turn the bulb while pressing it down to release it from the lock.
- Carry out the same steps to insert the new bulb. Reinsert the support inside its housing.

## Replacing a dipped light/high beam bulb

- Remove the electrical connector by pulling it towards you.
- Raise the locking tabs (Fig. 4-H5301) and move them sideways to release the bulb.
- Replace the bulb and proceed in inverse order to block and reconnect it. Observe the bulb closing mechanisms for proper insertion.



### 8.8.2 Rear light

In the front headlight (Fig. 5-H5301) it is composed of:

	Description	Type
1	Reverse light	21 W
2	Rear side light	5 W
3	Stop light	21 W
4	Direction indicator	21 W
5	Rear fog lamp	21 W

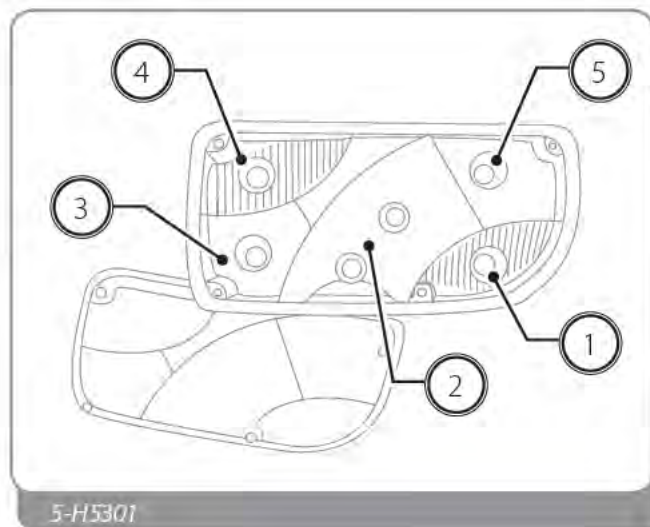
To access the bulbs:

1. Set the vehicle in the maintenance position.
2. Act on the battery isolator switch to disconnect the supply to the electrical system.
3. Remove the power connector of the rear light.
4. Remove the front part of the light by loosening its screws located on the cap.

Close the light by carrying out these steps in inverse order, being careful to position the sealing gasket correctly.

#### Replacing the rear light bulb.

- Press the upper part of the bulb.
- Turn the bulb while pressing it down to release it from the lock.
- Carry out the same steps in inverse order to insert the new bulb.



## 8.8.3 Working light \*

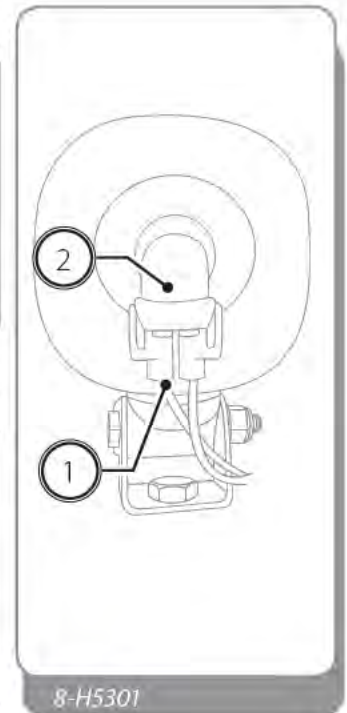


\* The work light is an optional accessory.

### Replacing the working light bulbs

To access the bulbs:

1. Set the vehicle in the maintenance position.
2. Act on the battery isolator switch to disconnect the supply to the electrical system.
3. Remove the power connector of the rear light (Fig. 8-H5301, pos.1).
4. Press the connector socket on the light (Fig. 8-H5301, pos.2).
5. Turn the socket while pressing it down to release it from the lock.
6. Carry out the same steps in inverse order to insert the new bulb.



## 8.8.4 Dual reflector working light \*

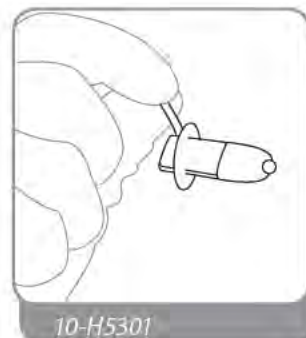
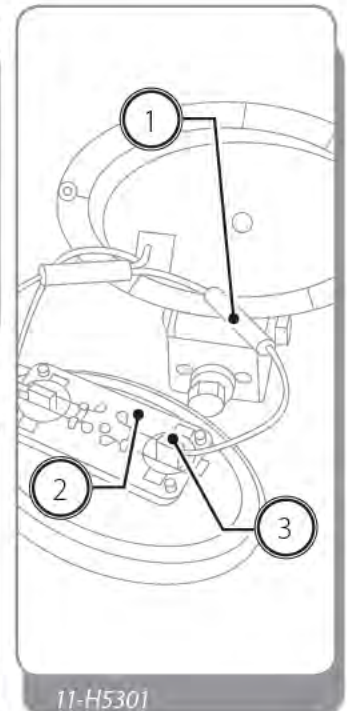


\* The work light is an optional accessory.

### Replacing bulbs

To access the bulbs:

1. Set the vehicle in the maintenance position.
2. Act on the battery isolator switch to disconnect the supply to the electrical system.
3. Remove the screws on the front part of the light.
4. Remove the power supply connectors from the bulbs (Fig. 11-H5301, pos.1).
5. Move the locking tabs, bringing them towards the inside to release them (Fig. 11-H5301, pos.2).
6. Carry out the same steps in inverse order to insert the new bulb. Observe the bulb closing mechanisms (Fig. 11-H5301, pos.3) for proper insertion.



## 9 EQUIPMENT INSTALLATION

### 9.1 General warnings on equipment use



#### - FORBIDDEN

It is strictly forbidden to modify the structure of the equipment or adjust the safety devices of the various tool components.



#### - ATTENTION

Only CE equipment certified by the relative manufacturer and approved can be used on *DIECI* machines or that falling within the technical limits set out by *DIECI S.R.L.*.

The interchangeable equipment manufacturer must guarantee that the combination of such equipment and the basic machine on which the equipment is intended for, meets all the basic health and safety requirements, providing an adequate evaluation procedure of compliance.

*DIECI S.R.L.* liability shall not be involved if equipment use or modifications do not comply with the above mentioned requirements.



#### - ATTENTION

The accessory mounted on the vehicle can only be used on solid ground and with vehicle levelled with maximum admitted slope of 2°.



#### - ATTENTION

The accessory is installed on the vehicle and is used exclusively by competent and authorised personnel who have thoroughly read this manual. If the vehicle is to be used on roads, refer to the Use and Maintenance Manual of the vehicle ensuring the operator has a valid, category B driver's license, or higher in accordance with Italian law, and that both the boom is in fully retracted position.



#### - NOTE

Before operating the vehicle and relative accessory, or before carrying out complicated or dangerous manoeuvres, it is essential that you practice in an empty, unobstructed part of the site.



#### - ATTENTION

The vehicle on which the accessory is installed and mounted must be braked and stabilised only on solid ground.



#### - ATTENTION

In case of poor visibility of the zone, have another person on the ground to coordinate the movements and manoeuvres to be carried out, and supervises the zone keeping any other persons away. The person on the ground must always keep at a safe distance from the moving vehicle and warn any personnel around before each manoeuvre.



#### - NOTE

To prevent damaging hydraulic connections when changing an attachment, stop the engine and wait a minute to remove pressure from the circuit. Always clean connectors before their reinsertion.



#### - NOTE

Check the cleanliness, protection and the conditions of rapid detachment connections in attachment circuits and on the boom head daily.



#### - DANGER

Never bring equipment near open flames.

**- ATTENTION**

When using this vehicle, carefully follow the respective Capacity diagrams.

**- FORBIDDEN**

It is strictly prohibited to work without the respective capacity diagrams for the type of vehicle and installed equipment.

**- NOTE**

Instructions supplied by the vehicle anti-tipping system must be considered valid for standard working conditions, on flat, even ground and with properly functioning and correctly calibrated instruments. However, the values displayed on the capacity diagrams must be respected and never be exceeded.

**- ATTENTION**

Each time the accessories are used, it is compulsory to insert the safety pins to fasten the accessories to the tool carriage plate.

**- ATTENTION**

If a tool carriage plate different than the original Dieci tool carriage plate is installed on the vehicle, a residual load will remain on the anti-tipping device as a safety coefficient.

Refer to the manual of the manufacturer of the tool carriage plate stalled if different than the original Dieci tool carriage plate.

### 9.1.1 *Equipment pre-use checks*



**Refer to the pre-use safety procedures of the vehicle on which the accessory is mounted.**

Before every use and every time new equipment is installed on the machine:

- Check that the equipment is correctly hooked to all pins and the hooks are inserted in the correct position.
- There are no damages, deterioration, deformation of the blocking components of the equipment.
- Check that the equipment and components are intact, perfectly functioning and not damaged.
- Verify that the equipment capacity is more than the weight of the load to be moved.
- Verify the correct functioning of the equipment and of the controls present in the vehicle's cab on which the equipment is installed in the work zone free from personnel and obstacles.
- Verify the functioning of all indicators and lights present inside the vehicle on which the accessory has been mounted.
- Check the arching when empty.
- Check the level of the hydraulic circuit oil by lifting the equipment to maximum height and extension admitted by the vehicle's boom.
- Check that the safety symbols and decals are clearly legible.
- Check the efficiency and functioning of the safety devices.
- Visually check the state of welding, inspect the vehicle and check for cavities, cracks of the welding or base metal or other inconveniences.
- Check for any deformations and/or modifications of the material due to sudden temperature changes or damage from impacts.
- Check the accessory for wear.
- Verify the use mode relating to the installed equipment has been set on the vehicle.
- Verify the Capacity diagrams relating to the vehicle and installed equipment are present on the vehicle.

#### **In case of equipment with hydraulic connections:**

- Check the tubes are in good conditions and do not obstruct the movements of the boom or of the equipment.
- Verify the correct connection of the hydraulic tubes (if present) ensuring the equipment functions are not inverted.

#### **In case of equipment with electrical connections:**

- Check that the tubes are in good conditions and do not obstruct the movements of the boom or of the equipment.
- Clean and fasten all electrical connections (if present). Before every work shift, make sure that there are no loose, twisted, hardened or damaged electric cables. Do not run the vehicle if there are loose, twisted, hardened or damaged electric cables.

#### **In the event of control pre-arrangement from radiocontrol:**

- Verify the correct functioning of the radiocontrol/push button control panel and the charge state of the batteries.

#### **In case of using lifting equipment:**

- Verify the integrity of the lifting hook, including relative catch, and of the hook bolt to the rope.

### In case of using winches:

- Check that the cable is not damaged, cut, torn, frayed. On the contrary, do not use the accessory and see to its replacement. (This check can be carried out by fully extending the lift boom and unrolling the winch cord). Functioning of the end run can also be checked during this operation, which must block the cord as described in the specific paragraph.
- Verify the functioning of the extensometric transducer of the mounted attachment (if present); to do this, attempt lifting a load slightly heavier than the nominal maximum capacity of the equipment. In case the equipment is unable to lift the load, the transducer functions correctly, otherwise immediately interrupt the operation bringing the load to the ground and repair the equipment.

### In case of using elevation work platforms:

- Verify functioning of the emergency button of the load limiting device and of the area limiting device at the beginning of each work cycle.
- Before using the platform ensure it is not wet, dirty with grease, oil, has icy surfaces or covered with other substances that can make the surface slippery. On the contrary, accurately clean the platform surfaces. Danger of slipping and falling.
- The vehicle on which the accessory is mounted must be braked and stabilised on solid ground. If outriggers (optional) are present, position them correctly on the ground before starting to operate.
- Before operating, ensure the platform closing bar is lowered and free from obstacles; always check correct fastening of the safety belts (PPE III cat.).



#### - ATTENTION

All checks must be carried out by adequately trained personnel and registered on the service register.

If damage or malfunctioning is detected, comply with the instructions contained in this manual or in the manual of the equipment or basket or contact the DIECI Assistance Centre to agree the actions to be taken.

Should routine or extraordinary maintenance or technical adjustment of the accessory be required, contact exclusively personnel authorised by the DIECI Assistance Centre and make note of the intervention on the service register.

If the accessory is tampered with the guarantee is voided and the Manufacturer is relieved of all liability.



#### - DANGER

Operators who note anomalies on the equipment or on the vehicle on which it is installed, and does not conform to safety regulations must suspend use and immediately inform the construction site manager.



For road circulation, refer to the Use and Maintenance Manual of the vehicle that the accessory is mounted on.

## 9.2 Equipment installation procedure

Carry out the following operations to correctly install the equipment:

1. Remove the safety pins (Fig. 2-I0101, pos.3) (if mounted) by taking off the safety pins (Fig. 2-I0101, pos.2) and raising the block pin (Fig. 2-I0101, pos. 1).
2. Rest the equipment on to a flat surface, not subsiding for easy hooking with the tool carriage plate of the vehicle.
3. Position the vehicle with the boom lowered parallel to the attachment. Approach the tool carriage plate to the accessory by extending the telescopic boom.



### - WARNING

The vehicle cannot extend the boom if this is completely lowered. Slightly lift the boom to extend it.

4. Turn the tool carriage plate downwards using the swivel movement. Bring the upper part of the plate underneath the attachment blocking hooks.
5. Slightly lift the boom and turn the tool carriage plate upwards, for the equipment to adhere to the tool carriage plate of the vehicle.



### - DANGER

During this operation ensure no one is near the equipment or the vehicle's boom.

6. Turn off the engine and climb out of the vehicle.
7. Raise the block pin (Fig. 2-I0101, pos.1) and insert the safety pins (Fig. 2-I0101, pos.3) in their place on the carriage plate, passing through the corresponding equipment slots.



### - WARNING

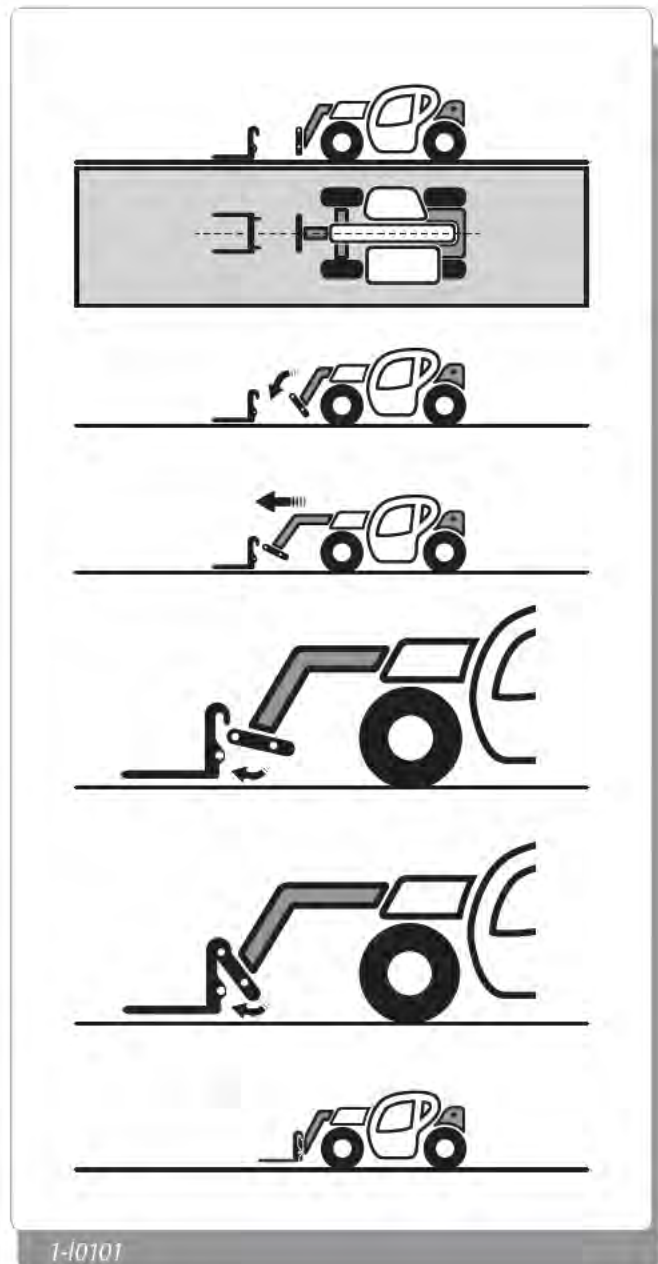
In the event the two holes do not match, carry out the operations described in the "Shear pin profile" chapter.

8. Insert the safety pins (Fig. 2-I0101, pos.2) on the pins you have just inserted.

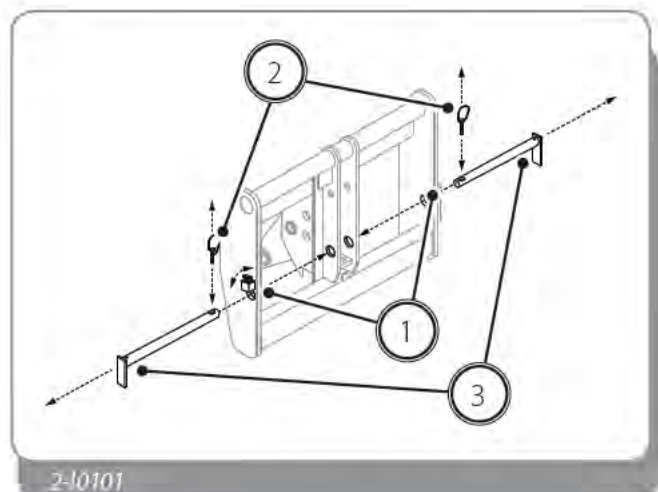


### - ATTENTION

If, due to deformations, the pins and relative shear pins do not reach the due position, it is strictly forbidden to use the accessory as it may dangerously detach and fall on the ground.



1-I0101



2-I0101





**- FORBIDDEN**

It is forbidden to work without the shear pin installed on the tool carriage plate.

- Should the equipment require electric or hydraulic connections, consult the "Hydraulic tubes connection" and "Electrical cables connection" chapters.



**- ATTENTION**

When using equipment having electric or hydraulic connections, they must always be correctly connected to the vehicle. The missing connection does not allow regular functioning of the safety devices, with risk of damaging things and persons and danger of the vehicle overturning.

- Once the equipment is correctly fixed, switch-on the vehicle and set its correct use mode relating to the just installed equipment:



See the vehicle's use and maintenance manual to set the correct operating mode.



**- FORBIDDEN**

It is forbidden to work with a vehicle's use mode different to the type of equipment installed. The electro-hydraulic equipment will not correctly work and the safety devices will not be on, creating a risk of damages to things and persons and the overturning of the vehicle.

- Verify the Capacity diagrams relating to the vehicle and the just installed equipment is present in the cab.



**- FORBIDDEN**

It is forbidden to work without the correct Capacity diagrams relating to the vehicle and the installed equipment.



For further details on any procedures of installation of the accessory or warnings, consult the use and maintenance manual of the accessory.



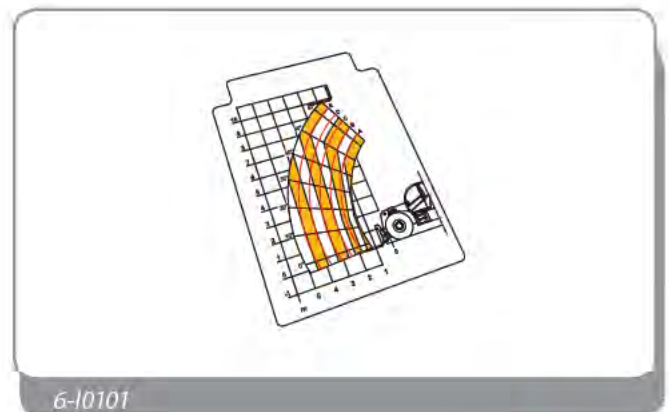
3-I0101



4-I0101



5-I0101



6-I0101



**- DANGER**

**Before use check that:**

- The equipment is correctly hooked to all pins and the hooks are inserted in the correct position.
- There are no damages, deterioration, deformation of the blocking components of the equipment.
- The electric cables or hydraulic tubes (if present) are in good condition and are not an obstruction during use of the equipment.
- The use mode of the vehicle is consistent with the type of installed equipment.
- The Capacity diagrams relating to the vehicle and installed equipment are present in the cab.

## 9.2.1 Shear pin profiles

Some equipment is provided with two profiles with two positions to give the possibility of using it on several vehicle models, (Fig. 7-I0101).

The profiles are on both sides of the hooks to the vehicle's tool carriage plate.

To change their position, loosen the bolts using relative wrenches (Fig. 8-I0101), turn the profiles and mount again tightening the bolts with an appropriate fastening torque (see vehicle use and maintenance).



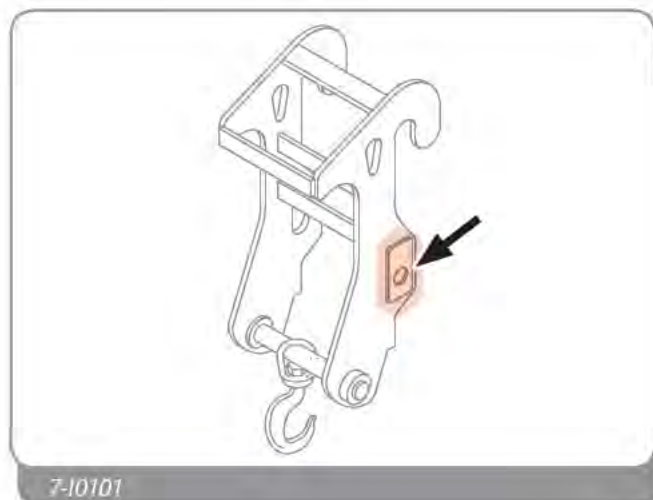
### - DANGER

If the profiles are not present on the accessory, the tool carriage plate pins do not have hooking point therefore, the attachment may lift and fall at any moment, with the danger of the load falling, risk of damaging things and persons, danger of the vehicle overturning or suddenly losing stability.



### - ATTENTION

It is compulsory to always work with the profiles in the correct position and fastened with correct fastening torque.



## 9.3 Hydraulic connections

### 9.3.1 Warnings



#### - ATTENTION

Before making the hydraulic connections, perform the "Equipment installation procedure" and check the equipment is correctly fixed to the vehicle.



#### - NOTE

Always accurately clean the hydraulic connections before each coupling. If not used, both the hydraulic connections must be protected with adequate plastic caps.



#### - DANGER

Do not use the vehicle or the equipment if the hydraulic cables are worn or damaged, but repair or replace them.



#### - ATTENTION

Check the hydraulic tubes do not obstruct the movements of the vehicle or of the equipment as it may be damaged.



Consult the equipment manual to verify correct operation.



#### - DANGER

Once the hydraulic connections have been made, it is compulsory to verify the controls are consistent with the operations carried out on the vehicle.

By inverting the connections, the accessory functions may be inverted compared to normal use, therefore, after having completed the equipment installation procedure, test the various functions in a free zone.



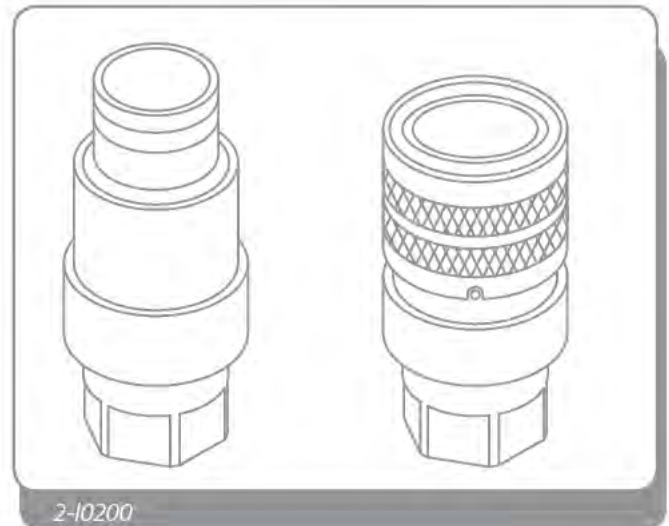
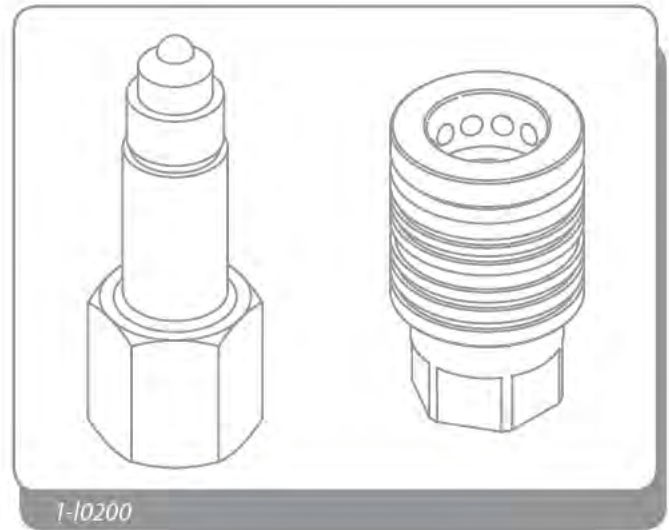
#### - ATTENTION

When using equipment having electric or hydraulic connections, they must always be correctly connected to the vehicle. The missing connection does not allow regular functioning of the safety devices, with risk of damaging things and persons and danger of the vehicle overturning.

### 9.3.2 Type of hydraulic quick couplings

The hydraulic quick couplings at boom head can be of two types:

- Push-Pull (Fig. 1-I0200)
- Flat-Face (Fig. 2-I0200)



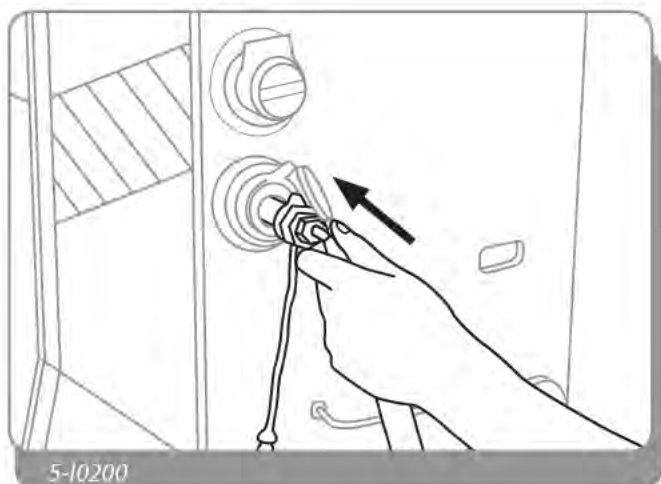
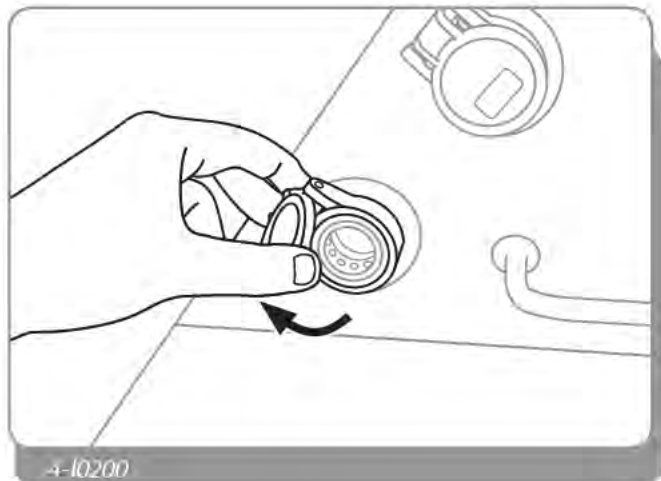
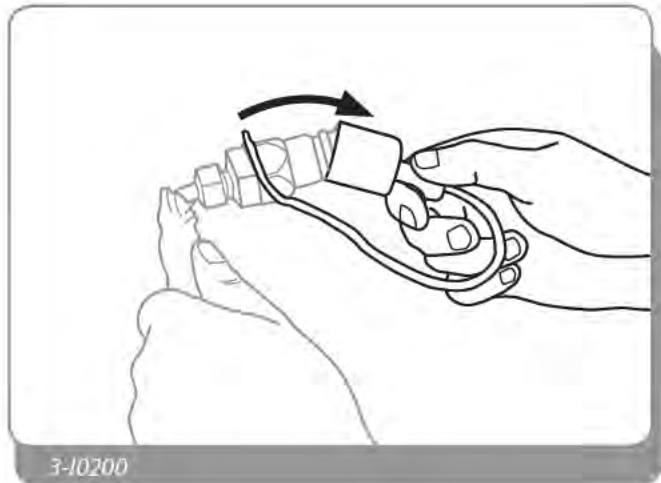
### 9.3.3 Push-Pull couplings connection

To connect the Push-Pull quick couplings to the sockets on the boom head:

1. Perform the equipment installation procedures described in the chapter: "Equipment installation procedure"
2. Switch the vehicle off
3. In case of closed centre distributor, discharge the system's residue pressure (see the relative chapter).
4. Remove the protective cap from the equipment's hydraulic plugs (Fig. 3-10200)
5. Lift the protective cover for the hydraulic socket present on the boom head (Fig. 4-10200)
6. Clean plug and socket from any dirt
7. Place the plug inside the socket and press until the tube is blocked (Fig. 5-10200)
8. Check the hydraulic tube is correctly fixed.
9. Carry out the same operation for both tubes



**Consult the equipment manual to verify correct operation.**



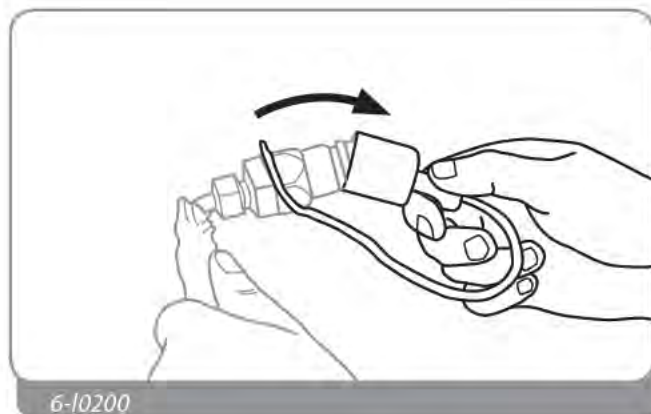
## 9.3.4 Push-Pull couplings connection when connected to a valve

To connect the Push-Pull quick couplings to the valve on the boom head:

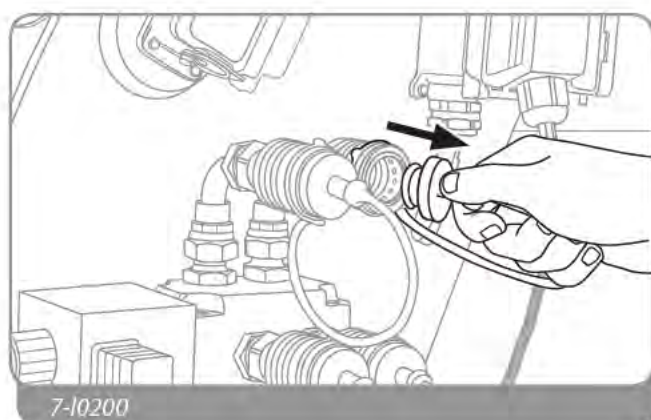
1. Perform the equipment installation procedures described in the chapter: "Equipment installation procedure".
2. Turn off the vehicle.
3. In case of closed centre distributor, discharge the system's residue pressure (see the relative chapter).
4. Remove the protective cap from the equipment's hydraulic plugs (Fig. 6-10200).
5. Remove the protective cover from the hydraulic sockets installed in the valve on the boom head (Fig. 7-10200).
6. Clean plug and socket from any dirt
7. Push the ring on the valve socket towards the boom (Fig. 8-10200).
8. Place the plug fully inside the socket and release the ring of the valve (Fig. 9-10200).
9. Check the hydraulic tube is correctly fixed.
10. Carry out the same operation for both tubes



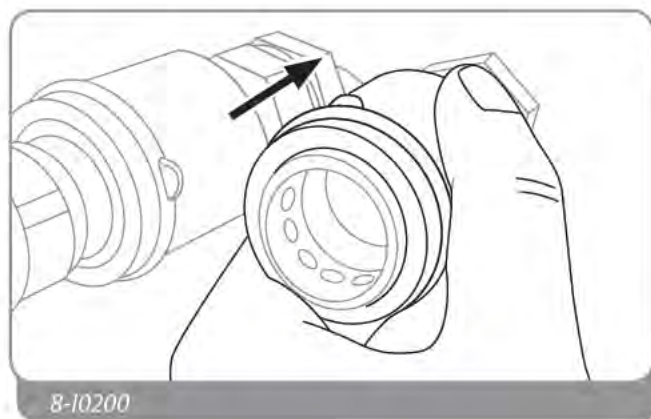
**Consult the equipment manual to verify correct operation.**



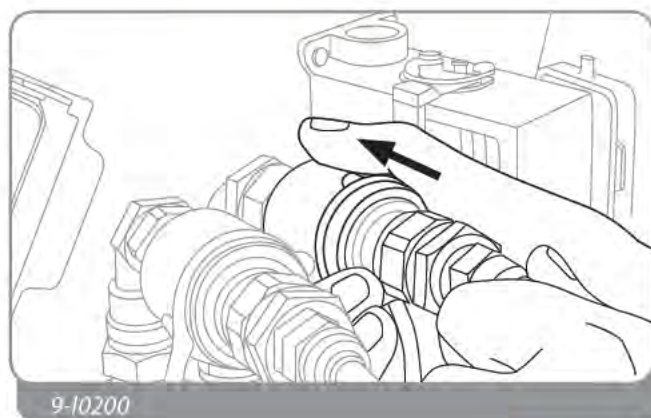
6-10200



7-10200



8-10200



9-10200

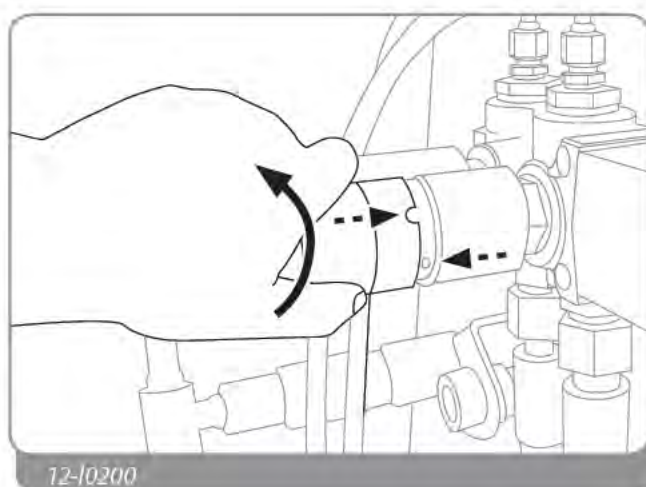
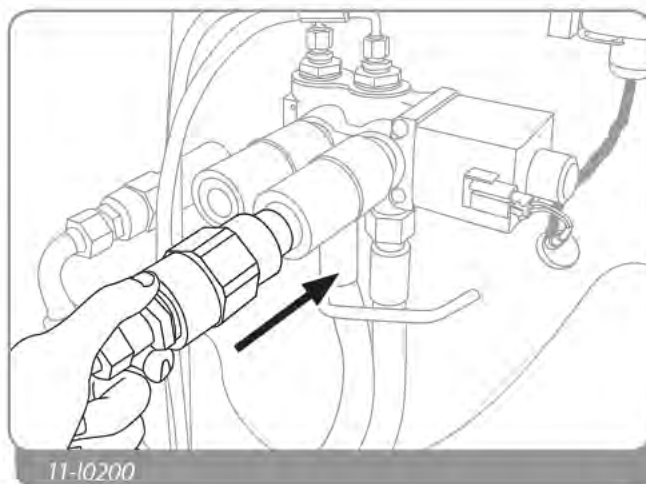
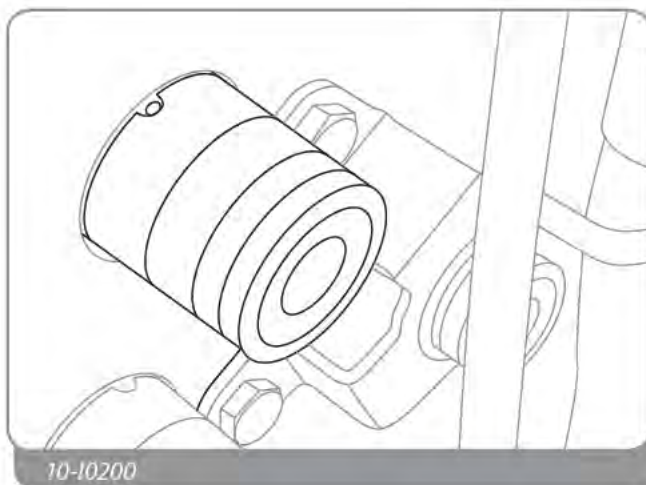
### 9.3.5 Flat-Face couplings connection

To connect the Flat-Face quick couplings:

1. Perform the equipment installation procedures described in the chapter: "Equipment installation procedure".
2. Turn off the vehicle.
3. In case of closed centre distributor, discharge the system's residue pressure (see the relative chapter).
4. Clean plug and socket from any dirt
5. Rest the plug at centre of the socket and push the fully plug (Fig. 11-10200), until the socket ring is lifted
6. Turn the ring to block the plug inside the socket (Fig. 12-10200).
7. Check the hydraulic tube is correctly fixed.
8. Carry out the same operation for both tubes



**Consult the equipment manual to verify correct operation.**





## 9.4 Electrical connections

### 9.4.1 Warnings



**- ATTENTION**

Before making the electric connection, perform the "Equipment installation procedure" and check the equipment is correctly fixed to the vehicle.



**- DANGER**

Turn-off the vehicle before making the electric connection.



**- DANGER**

Do not use the vehicle or the equipment if the electric cables are worn or damaged, but repair or replace them.



**- FORBIDDEN**

Do not leave the boom plug hanging on the chain during the work operations, as this may be damaged, jeopardising vehicle start-up during use without equipment.



**- ATTENTION**

Check the electric cable does not obstruct the movements of the vehicle or of the equipment as it may be damaged.



**- ATTENTION**

When using equipment having electric or hydraulic connections, they must always be correctly connected to the vehicle. The missing connection does not allow regular functioning of the safety devices, with risk of damaging things and persons and danger of the vehicle overturning.



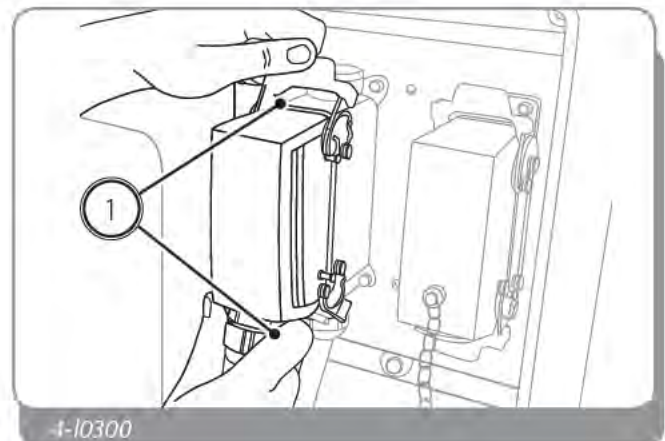
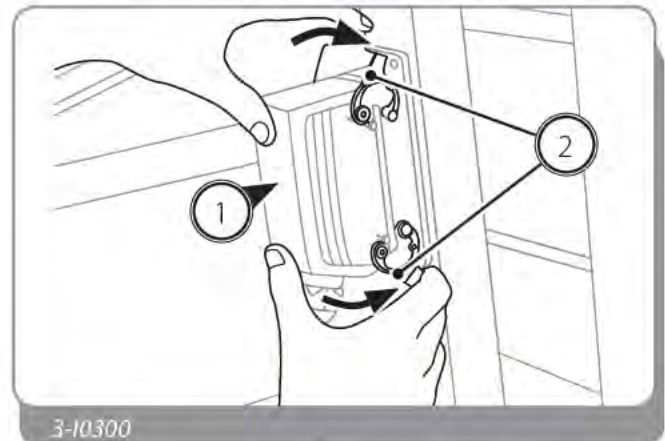
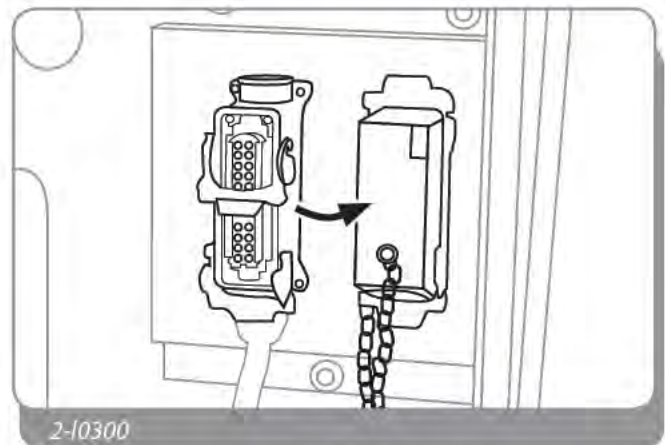
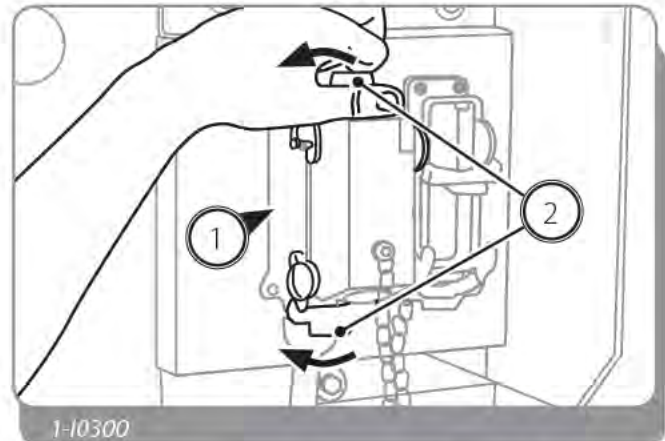
Consult the equipment manual to verify correct operation.

### 9.4.2 Procedure for performing electrical connections

The electric connections at boom head can be 6 or 24 poles, but the connection procedure remains the same for both.

For equipment provided with electric system carry out the following operations:

- Perform the equipment installation procedures described previously.
- Turn off the vehicle.
- Pull out the plug from the boom socket (Fig. 1-I0300, pos. 1) lowering the 2 safety levers (Fig. 1-I0300, pos. 2).
- Move the plug from the boom socket into the false socket on the side (Fig. 2-I0300) and fix it with appropriate levers.
- Pull the plug from the false socket of the equipment (Fig. 3-I0300, pos. 1) lowering the 2 safety levers (Fig. 3-I0300, pos. 2).
- Connect the equipment plug on the electric boom socket fixing it by lifting the 2 safety levers (Fig. 4-I0300, pos. 1).
- Once the equipment is correctly fixed, switch-on the vehicle and set its correct use mode relating to the equipment just installed: Consult the "Equipment and operational mode selection" chapter in the use and maintenance manual of the vehicle.
- Verify the Capacity diagrams relating to the vehicle and the just installed equipment is present in the cab.



## 9.5 Equipment removal

To place the accessory back once finished using it, carry out the following operations:

1. Position the vehicle on solid and level ground.
2. Place the equipment on to a support platform to facilitate movement and transport of the individual equipment.
3. Lower and remove the vehicle boom by about one metre.
4. Switch the engine off.
5. Remove any electric connections (consult successive chapter)
6. Remove any hydraulic connections (consult the successive chapter)
7. Remove the safety pins from the pins fixing the equipment to the boom plate.
8. Remove the pins from the tool carriage plate.
9. Turn on the vehicle and swivel downwards to release the tool carriage plate from the equipment.
10. Once the tool carriage plate is freed, retract the boom from the vehicle.



### - NOTE

The accessory placed on the ground must always be adequately signalled and barriers and spacers must be placed on all sides of the area it may occupy falling.



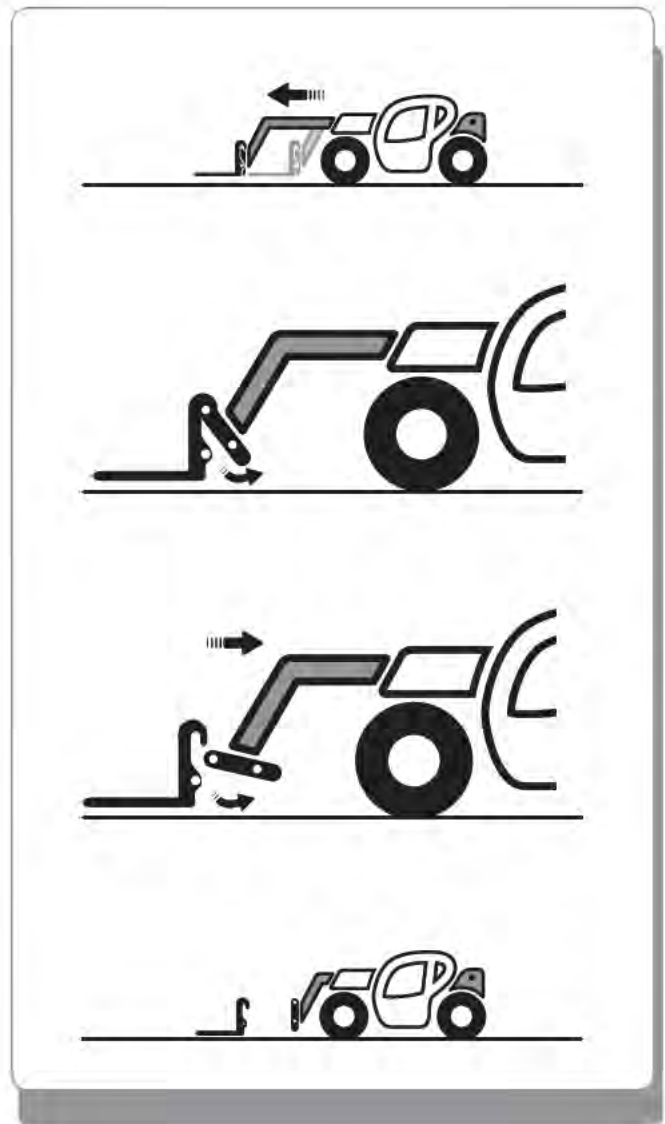
### - DANGER

After having discharged the pressure from the system, always wait one minute before disconnecting the joints.



### - DANGER

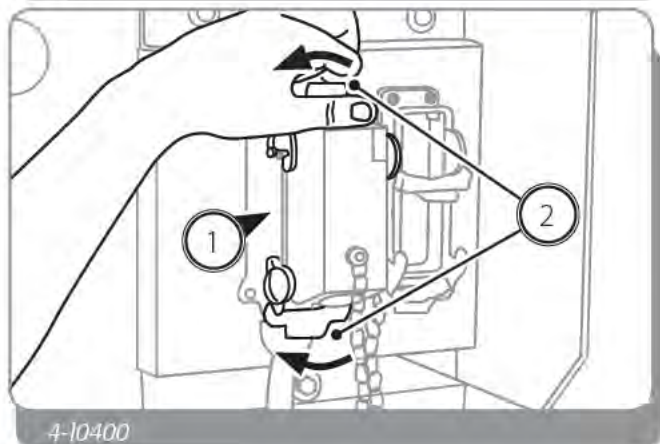
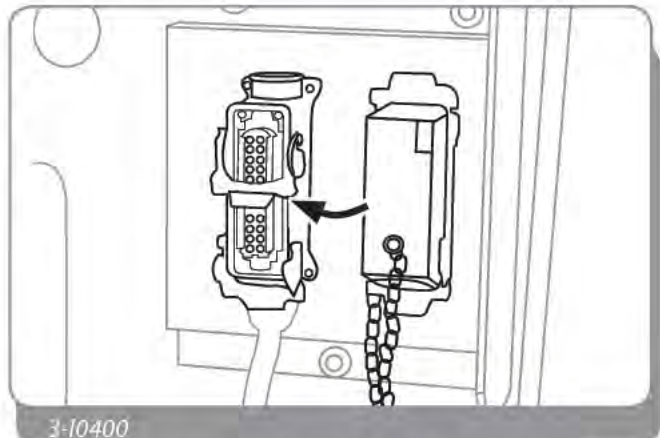
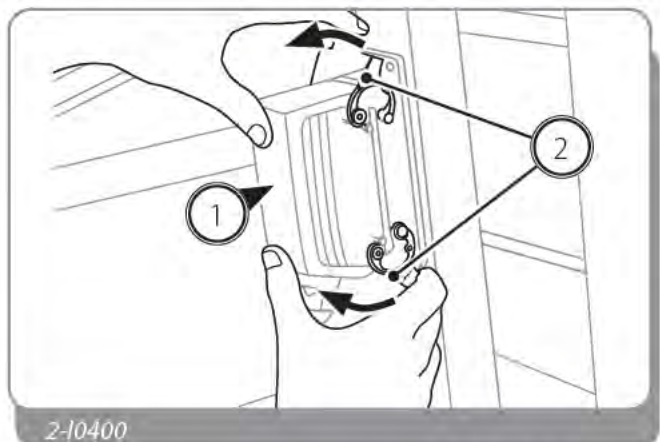
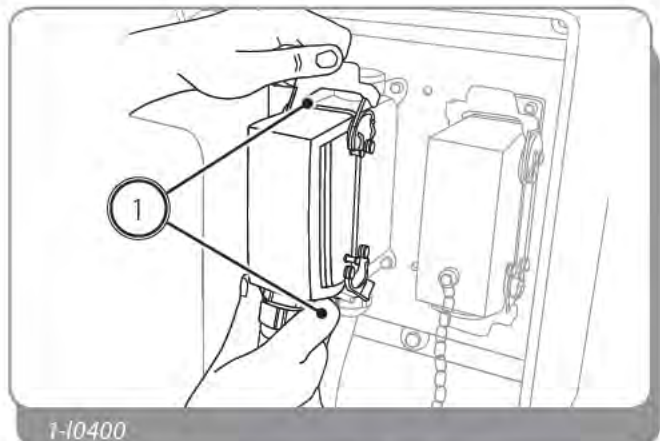
Always disconnect the hydraulic tubes and electric cables from the attachment before removing it from the vehicle. On the contrary, the tubes or cables may be damaged and the attachment may fall and be dragged.



### 9.5.1 Electric connections removal

To remove any electric connections from the equipment:

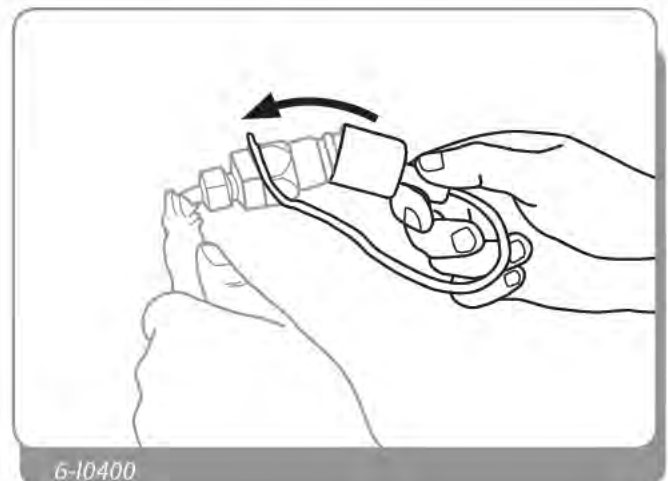
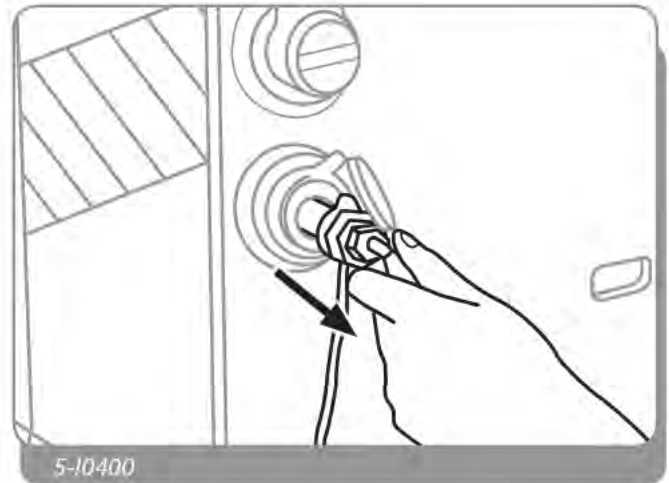
1. Execute points 1, 2, 3 and 4 of the procedure to remove the equipment from the vehicle described in previous chapter.
2. Disconnect the equipment plug from the boom by lowering the two safety levers (Fig. 1-I0400, pos.1)
3. Position the equipment plug on its false socket (Fig. 2-I0400, pos.1), using the safety levers to secure it in place (Fig. 2-I0400, pos.2)
4. Move the plug from the false socket for the boom to the electric socket (Fig. 3-I0400, pos.1)
5. Secure the plug to the boom socket (Fig. 4-I0400, pos.1) using the safety levers (Fig. 4-I0400, pos.2)
6. Check the electric cable is not caught in the tool carriage plate or crushed by the equipment when rested on to the ground.
7. Proceed with successive operations to remove the vehicle's equipment.



### 9.5.2 Push-Pull couplings removal

To disconnect the Push-Pull quick couplings from the socket on the boom head:

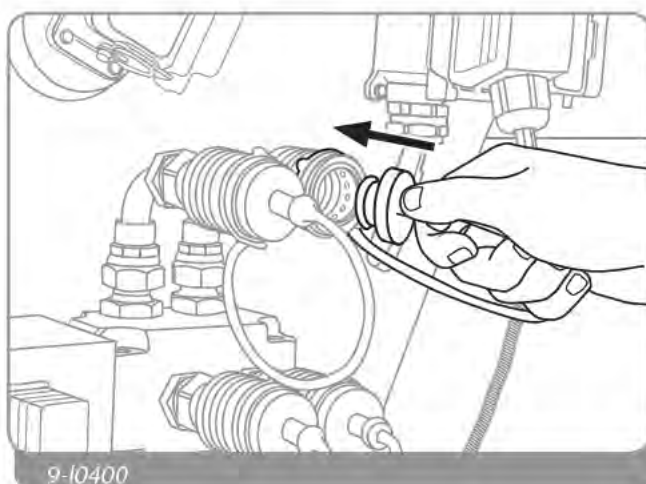
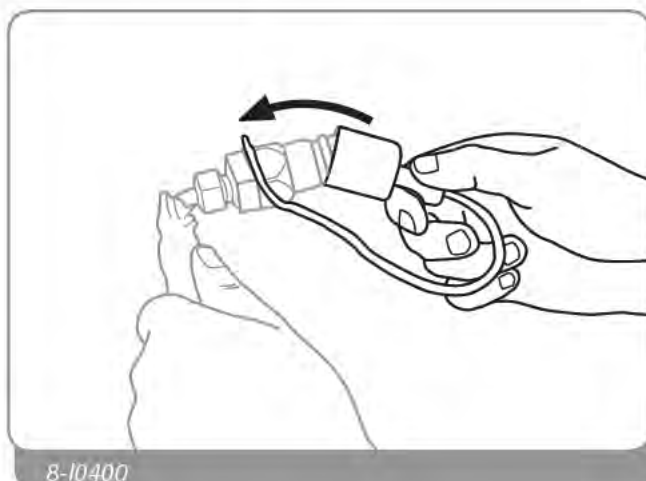
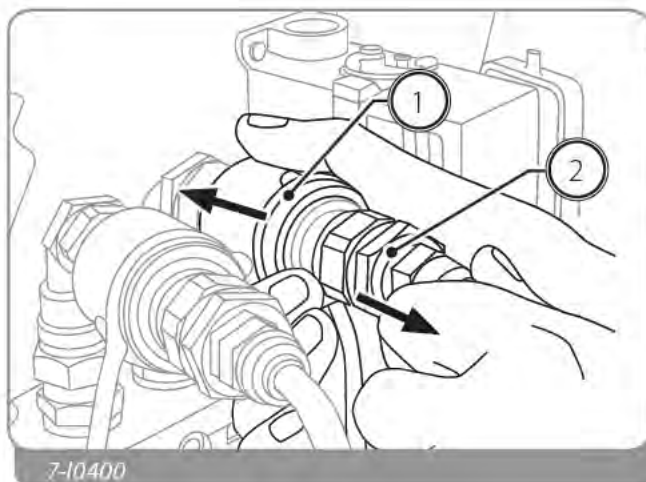
1. Execute points 1, 2, 3 and 4 of the procedure to remove the equipment from the vehicle described in previous chapter
2. In case a closed centre distributor is installed on the vehicle, execute the procedures described in the "Hydraulic tubes connections" chapter to discharge the pressure from inside the hydraulic circuit
3. Switch the vehicle off
4. Pull the plug towards you to remove it from the socket (Fig. 5-10400)
5. Clean plug and socket from any dirt
6. Place the protective cap on the equipment's hydraulic sockets (Fig. 6-10400)
7. Carry out the same operation for both tubes
8. Check the hydraulic tubes are not caught in the tool carriage plate or crushed by the equipment when rested on to the ground
9. Proceed with successive operations to remove the vehicle's equipment



### 9.5.3 Push-Pull couplings removal when connected to a valve

To disconnect the Push-Pull quick couplings from the valve on the boom head:

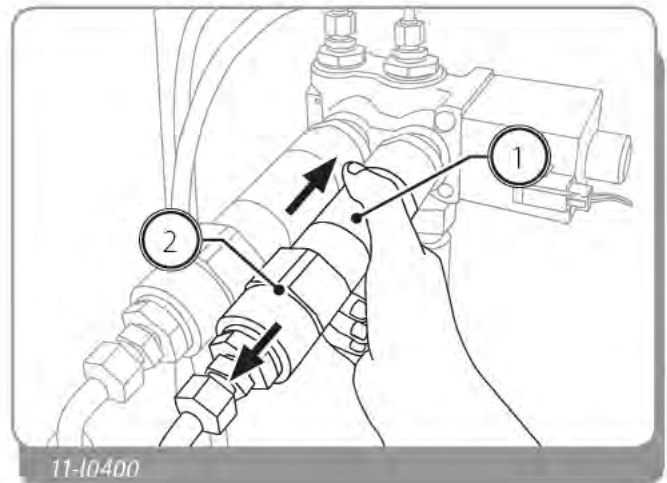
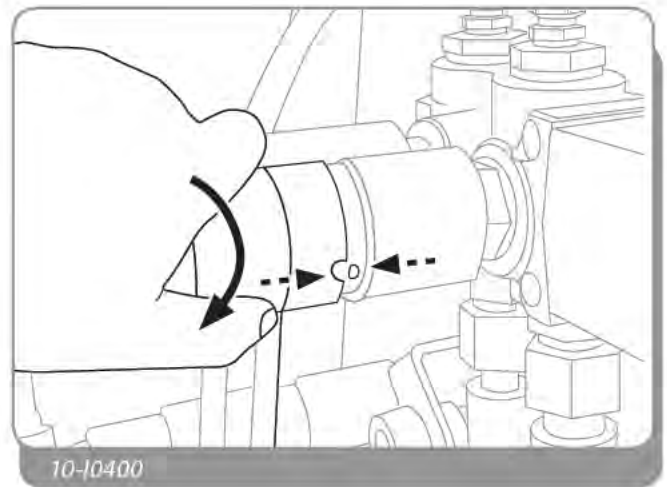
1. Execute points 1, 2, 3 and 4 of the procedure to remove the equipment from the vehicle described in previous chapter
2. In case a closed centre distributor is installed on the vehicle, execute the procedures described in the "Hydraulic tubes connections" chapter to discharge the pressure from inside the hydraulic circuit
3. Switch the vehicle off
4. Push the socket ring towards the vehicle's boom (Fig. 7-10400, pos.1)
5. Pull the plug towards you to remove it from the socket (Fig. 7-10400, pos.2)
6. Clean plug and socket from any dirt
7. Place the protective cap on the equipment's hydraulic sockets (Fig. 8-10400)
8. Place the protective cap on the valve's hydraulic sockets (Fig. 9-10400)
9. Carry out the same operation for both tubes
10. Check the hydraulic tubes are not caught in the tool carriage plate or crushed by the equipment when rested on to the ground
11. Proceed with successive operations to remove the vehicle's equipment



### 9.5.4 Flat-Face couplings removal

To disconnect the Flat-Face quick couplings:

1. Execute points 1, 2, 3 and 4 of the procedure to remove the equipment from the vehicle described in previous chapter
2. In case a closed centre distributor is installed on the vehicle, execute the procedures described in the "Hydraulic tubes connections" chapter to discharge the pressure from inside the hydraulic circuit
3. Switch the vehicle off
4. Turn the socket ring so the slot matches the position of the ball assembled on the socket (Fig. 10-I0400)
5. Push the socket ring (Fig. 11-I0400, pos.1)
6. Pull out the plug (Fig. 11-I0400, pos.1)
7. Clean plug and socket from any dirt
8. Carry out the same operation for both tubes
9. Check the hydraulic tubes are not caught in the tool carriage plate or crushed by the equipment when rested on to the ground
10. Proceed with successive operations to remove the vehicle's equipment



## 9.6 Forks

### 9.6.1 Identification

"Forks" means the pair of forks to be installed on the vehicle.  
The purpose of this equipment is to lift and handle a load from the ground upwards and vice versa.



**The forks can be provided with an extender/shifter, thereby allowing the distance between the forks to be set quickly and safely.**

The data required for identification purposes are found on the right side of the forks at the top (Fig. 1-I0501 pos. "A").

Hereunder are the identification data (the order of which could differ from that on the forks)

DIECI fork code

.....

Manufacturer Logo/Code

.....

Construction Date/Lot

.....

Maximum capacity (Kg)

.....

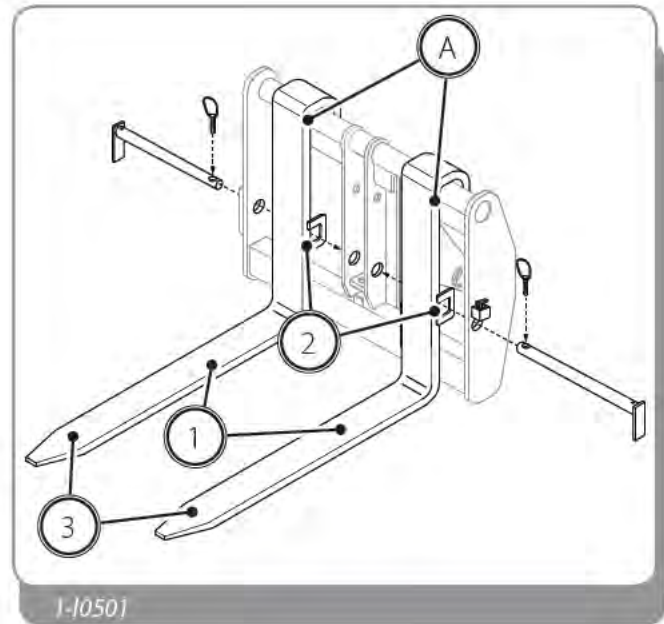
Load application centre of gravity (mm)\*

.....

\* More than 1 value may be present, depending on the load.

To ensure prompt and efficient service when ordering spare parts or when requesting information or technical explanations, always provide the identification data.

We recommend taking note of the data of your accessory for safe and quick identification in the future.



### 9.6.2 Description

The forks (Fig. 1-I0501) are made of the following main components:

Position	Description
1	Forks
2	Eyelet
3	Equipment fastening hole



#### - WARNING

The hole to fasten the equipment found at the end of the forks can only be used to fasten certain equipment to the forks. Refer to the manual of the equipment for the fastening operations.



## 9.6.3 Verification of the forks



Refer to the "Control log" for the frequency of the fork verifications.



### - ATTENTION

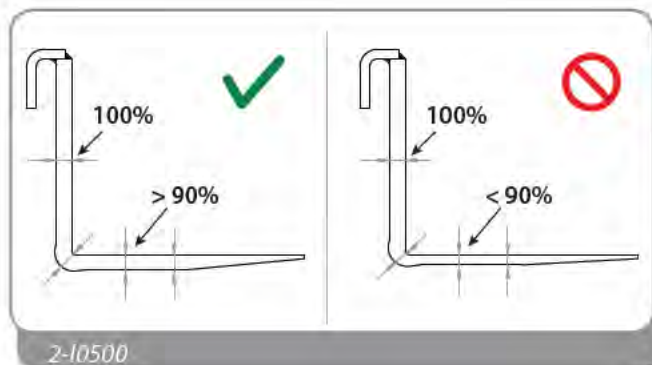
It is mandatory to use the appropriate personal protective equipment during maintenance and control.



### - FORBIDDEN

It is strictly prohibited to perform any maintenance on the forks (e.g. welding, drilling, incisions, etc.).

If the forks are damaged or deformed, replace them immediately.



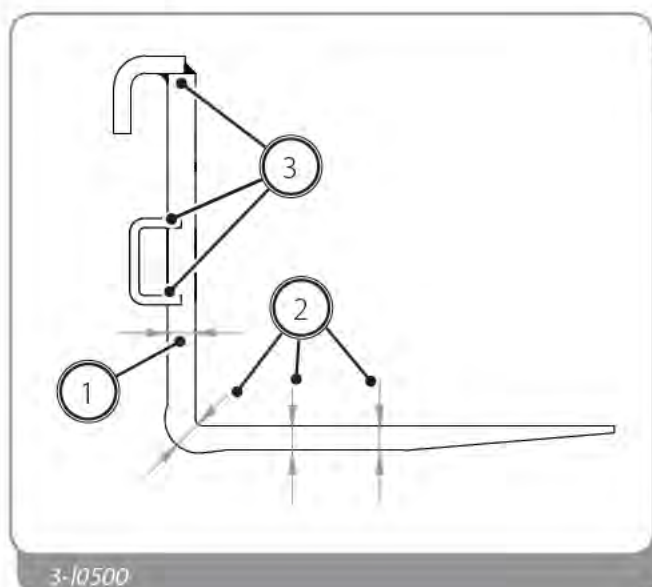
2-I0500

### Check the thickness of the forks.

The maximum admitted wear amounts to **10%** (Fig. 2-I0500).

For example, for a 70 mm-thick fork, the thickness must be no less than 63 mm. ( $70 - 10\% = 63$ )

To check the fork thickness quickly, it is necessary to measure the thickness on the vertical part of the fork (Fig. 3-I0500, pos.1); this will be the measurement that we will have to refer to in order to measure fork thickness (Fig. 3-I0500, pos.2). Take at least three measurements in different points.



3-I0500

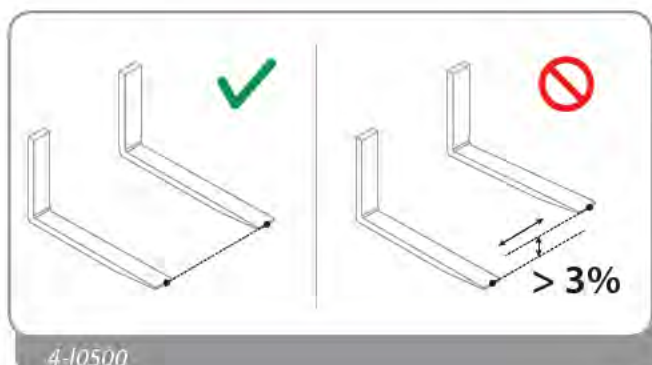
### Check for deformation of the forks

Make sure the two forks are parallel to each other and the distance from the ground is the same for both or with a difference that is less than **3%** of the length of the fork (Fig. 4-I0500).

For example, for a 1800 mm long fork, the maximum deformation waste allowed between the ends of the forks is 54 mm ( $1800 \times 3 / 100 = 54$ )

### Verifying the integrity of the welds

Make sure that all of the welded points on the forks (Fig. 3-I0500, pos.3) are in good conditions, without any cracks or irregularities.



4-I0500

#### 9.6.4 Using the forks



##### - ATTENTION

Before starting to use the equipment, inspect and check it as described in the "Equipment pre-use checks" paragraph.



##### - FORBIDDEN

It is strictly prohibited to use the forks or any type of equipment without having fastened the tool box plate with the relative safety pins.



##### - DANGER

Check the wear condition of the forks before every use as they could be worn and not able to support the load that is to be handled, thereby posing a hazard.

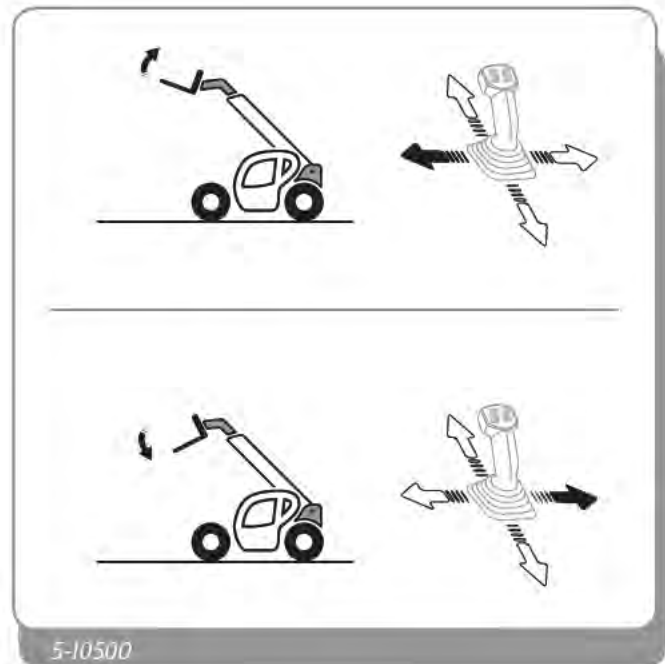


Before starting to use the equipment, refer to the chapters:

- Safety regulations
- Safe work procedures
- Verification of the forks

To use the forks, simply move the swivelling controls of the plate.

The ends of the forks are lifted by moving the joystick to the left and they are lowered by moving the joystick to the right.



## 9.6.5 Lifting the forks



### - ATTENTION

Make sure that the raising mechanism has a capacity that is appropriate for the weight of the forks to be lifted.



### - WARNING

It is recommended to use a support platform to handle and transport the equipment.



### - ATTENTION

Make sure that the support platform is in good condition and has adequate capacities for the weight of the equipment to be lifted.



### - FORBIDDEN

It is strictly forbidden to lift the vehicle with the accessory still installed on it.

## 9.6.6 Transporting the forks



### - ATTENTION

Make sure that the transport vehicle has adequate capacity for the weight of the winch to be transported.



### - WARNING

It is recommended to use a support platform to handle and transport the equipment.

When loading or unloading a vehicle and its relative accessories from a transport vehicle, there always lies the hazard of the vehicle overturning.

Use an appropriate truck or trailer for transporting the vehicle and its relative accessories.

Fix the forks with appropriate slinging systems, make sure they are in good conditions and are adequate for the weight and dimensions of the forks.

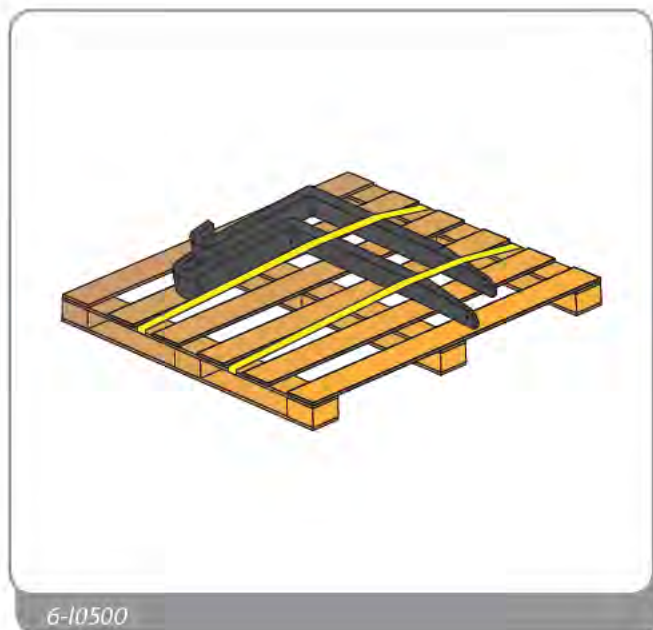


### - FORBIDDEN

It is strictly forbidden to transport the vehicle with the accessory still installed on it.

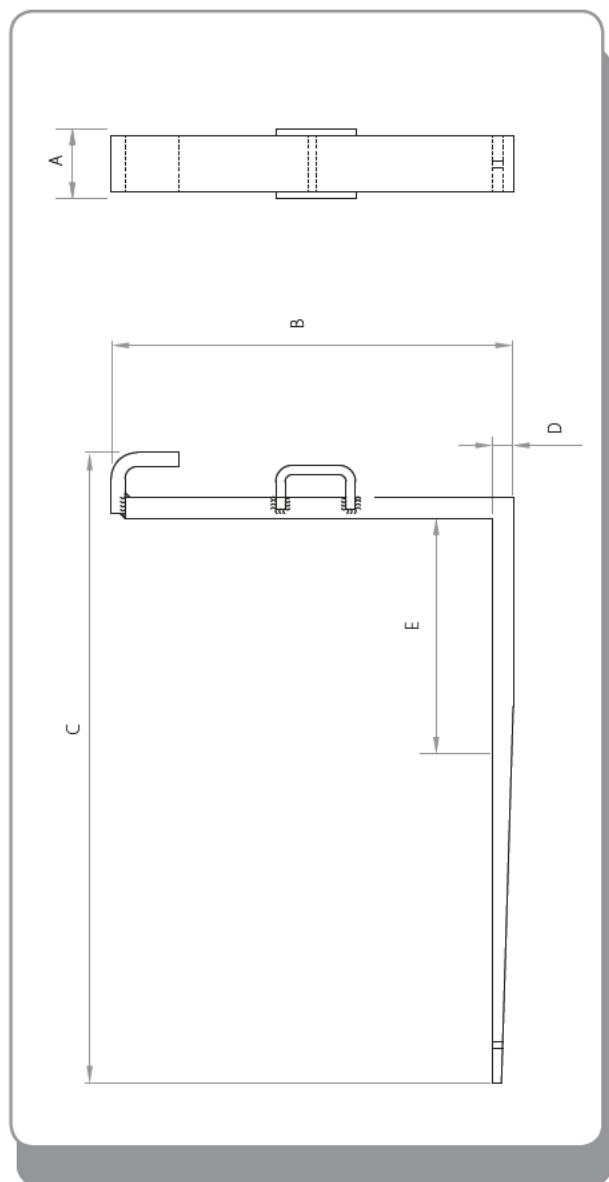


For details on the procedures to be followed when transporting the vehicle, refer to the Use and Maintenance Manual of the vehicle on which the accessory will be installed.



6-10500

### 9.6.7 Forks technical data



Equipment model	Machine model	Capacity	A	B	C	D	E	Weight	Diagram on wheels	Diagram on wheels - front	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BUD1077	Pegasus 40.25	4500 kg (9920 lb)	150 mm (5.9 in)	865 mm (34.05 in)	1345 mm (52.95 in)	120x50 mm (4.72x1.96 in)	500 mm (19.68 in)	97 kg (213 lb)	AXB1541	AXB1541-12	AXB1541-1	AXB1541-127	AXB1541-128
BUD1077	Pegasus 50.19	4500 kg (9920 lb)	150 mm (5.9 in)	865 mm (34.05 in)	1345 mm (52.95 in)	120x50 mm (4.72x1.96 in)	500 mm (19.68 in)	97 kg (213 lb)	AXB1539	AXB1539-12	AXB1539-1	AXB1539-127	AXB1539-128
BUD1077	Pegasus 50.21	4500 kg (9920 lb)	150 mm (5.9 in)	865 mm (34.05 in)	1345 mm (52.95 in)	120x50 mm (4.72x1.96 in)	500 mm (19.68 in)	97 kg (213 lb)	AXB1540	AXB1540-12	AXB1540-1	AXB1540-127	AXB1540-128

**- NOTE**



Dimensions and weights refer to a single fork.

## 9.7 Forks extender



The fork extender is optional equipment.

### 9.7.1 Identification of the fork extender

The relative equipment allows the distance between the forks installed on it to be varied.

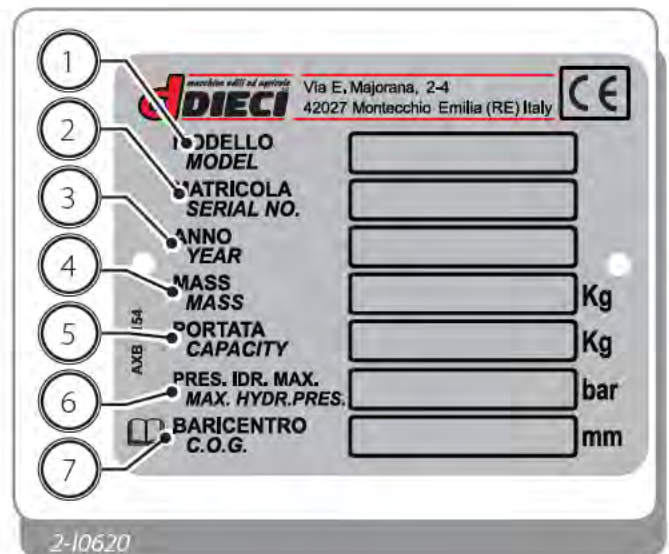
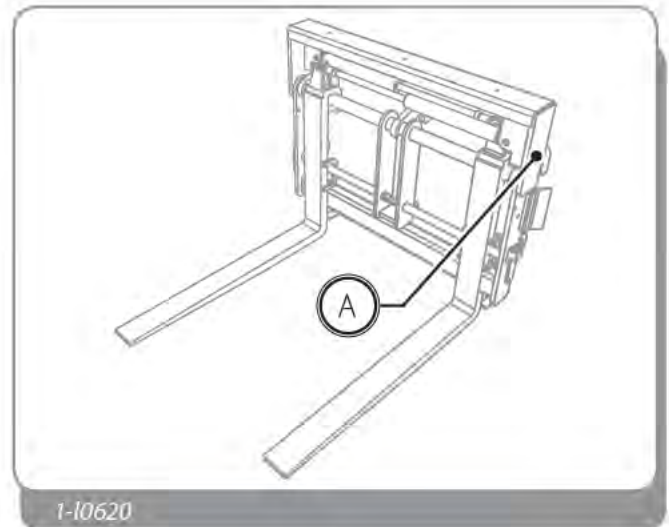
The data required for identification purposes is found on the right side of the equipment at the top (Fig. 1-I0620 pos. "A").

Hereunder are the identification data (the order of which could differ from that on the forks)

1. Model .....
2. Serial No .....
3. Year of production .....
4. Mass (Kg) .....
5. Capacity (Kg) .....
6. Maximum hydraulic pressure (bar) .....
7. Centre of gravity (mm) .....

To ensure prompt and efficient service when ordering spare parts or when requesting information or technical explanations, always provide the identification data.

We recommend taking note of the data of your accessory for safe and quick identification in the future.



### 9.7.2 Description of fork extender

The fork extender (Fig. 3-10620) consists of the following main components:

Position	Description
1	Fixed base
2	Forks
3	Equipment fastening hole



#### - WARNING

The hole to fasten the equipment found at the end of the forks can only be used to fasten certain equipment to the forks. Refer to the manual of the equipment for the fastening operations.

### 9.7.3 Installing the fork extender



Refer to the "Equipment installation" chapter for the installation operations of the fork extender.

### 9.7.4 Servicing the fork extender



For maintenance operations of the fork extender, refer to the "Fork verification" chapter.

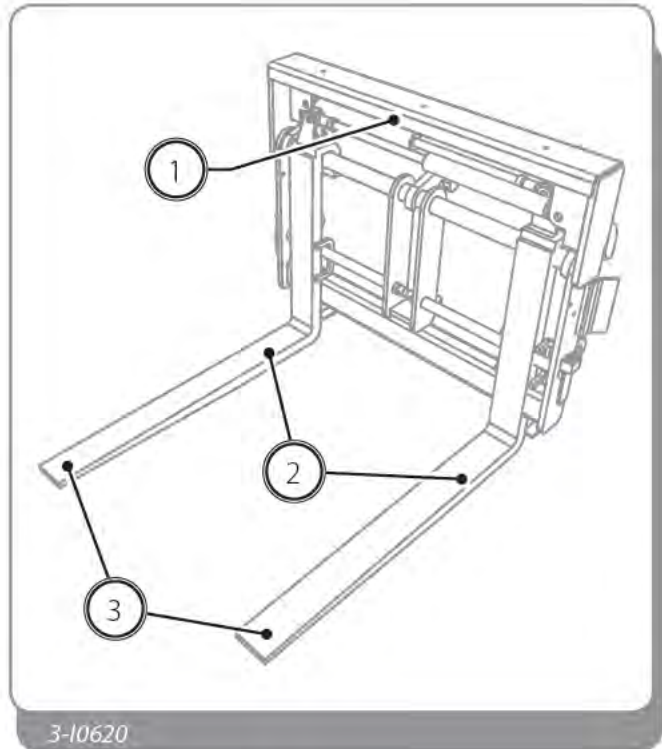
The fork extender requires maintenance (Fig. 4-0510).

- Only use silicone oil to lubricate the chrome cylinders "1".
- Use grease to lubricate the tracks for the sliding motion between the fixed base and the translating support "2".

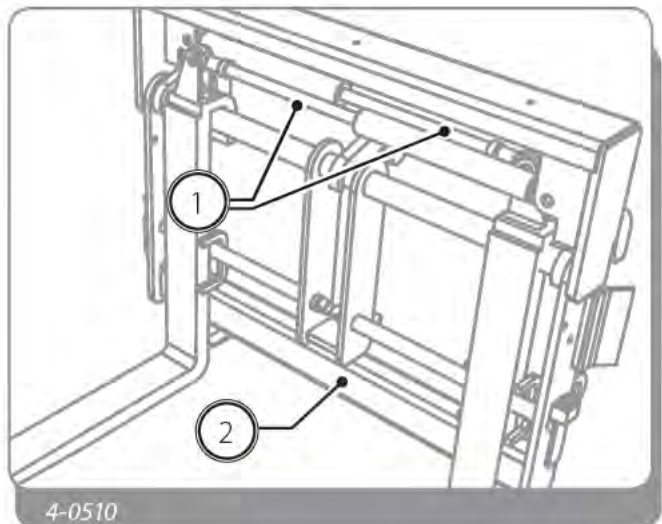


#### - FORBIDDEN

Do not use grease to lubricate the mobile hydraulic parts or the chrome cylinders. Use only silicone oil and clean often.



3-10620



4-0510

## 9.7.5 Using the fork extender



### - ATTENTION

Before starting to use the equipment, inspect and check it as described in the "Equipment pre-use checks" paragraph.



### - DANGER

Check the wear condition of the forks before every use as they could be worn and not able to support the load that is to be handled, thereby posing a hazard.



Before starting to use the equipment, refer to the chapters:

- Safety regulations
- Safe work procedures
- Verification of the forks



### - ATTENTION

Before using the fork extender, verify that its movements are correct.



### - DANGER

Should the joystick controls not correspond to the correct movements of the forks, exchange the position of the two hydraulic tubes on the quick sockets at the top of the boom.

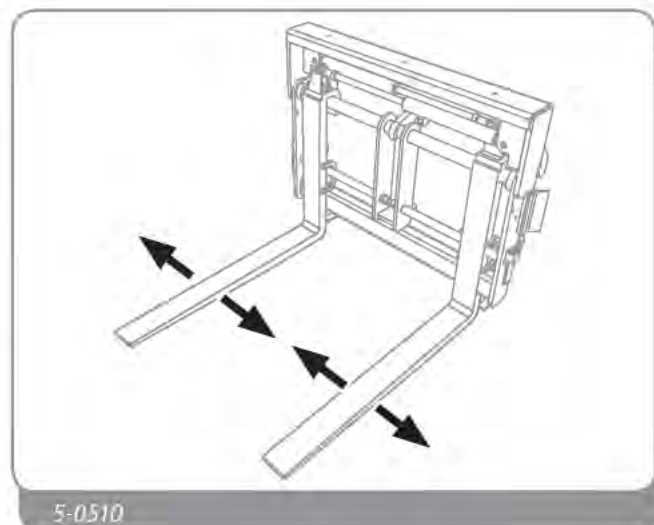
Select the hydraulic socket at the top of the relative boom and move the command intended for services in order to use the fork extender.

#### Joystick 3in1:

- Move the services lever to the right to move the counterplate to the right.
- Move the services lever to the left to move the counterplate to the left.

#### Joystick 4in1:

- Move the services roller forwards to move the counterplate to the right.
- Move the services roller backwards to move the counterplate to the left.



### 9.7.6 *Raising the fork extender*



**- ATTENTION**

Make sure that the raising mechanism has a capacity that is appropriate for the weight of the equipment to be lifted.



**- WARNING**

It is recommended to use a support platform to handle and transport the equipment.



**- ATTENTION**

Make sure that the support platform is in good condition and has adequate capacities for the weight of the equipment to be lifted.



**- FORBIDDEN**

It is strictly forbidden to lift the vehicle with the accessory still installed on it.

### 9.7.7 *Transporting the fork extender*



**- ATTENTION**

Make sure that the transport vehicle has adequate capacity for the weight of the equipment to be transported.



**- WARNING**

It is recommended to use a support platform to handle and transport the equipment.

When loading or unloading a vehicle and its relative accessories from a transport vehicle, there always lies the hazard of the vehicle overturning.

Use an appropriate truck or trailer for transporting the vehicle and its relative accessories.

Fix the forks with appropriate slinging systems, make sure they are in good conditions and are adequate for the weight and dimensions of the forks.



**- FORBIDDEN**

It is strictly forbidden to transport the vehicle with the accessory still installed on it.



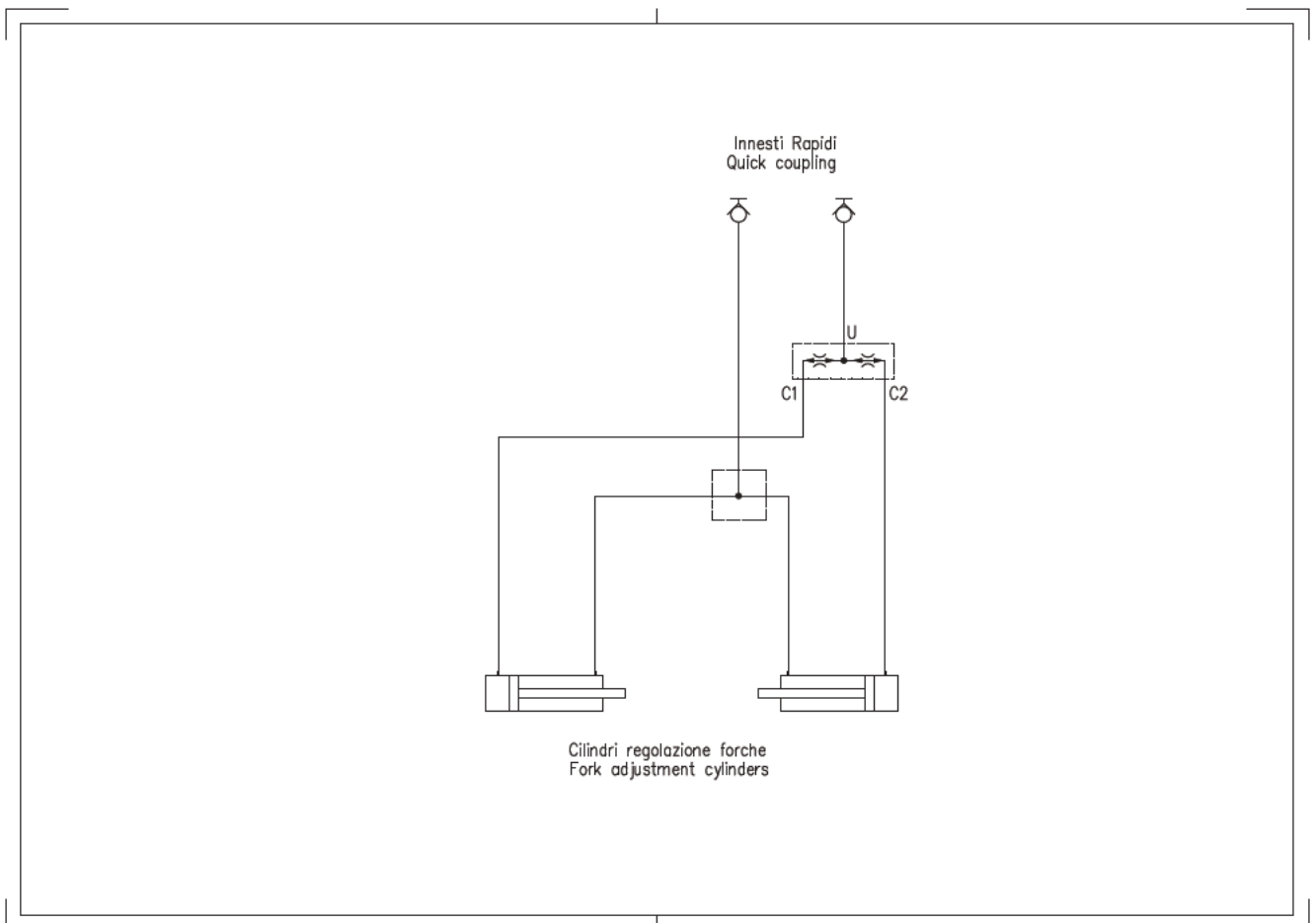
For details on the procedures to be followed when transporting the vehicle, refer to the Use and Maintenance Manual of the vehicle on which the accessory will be installed.



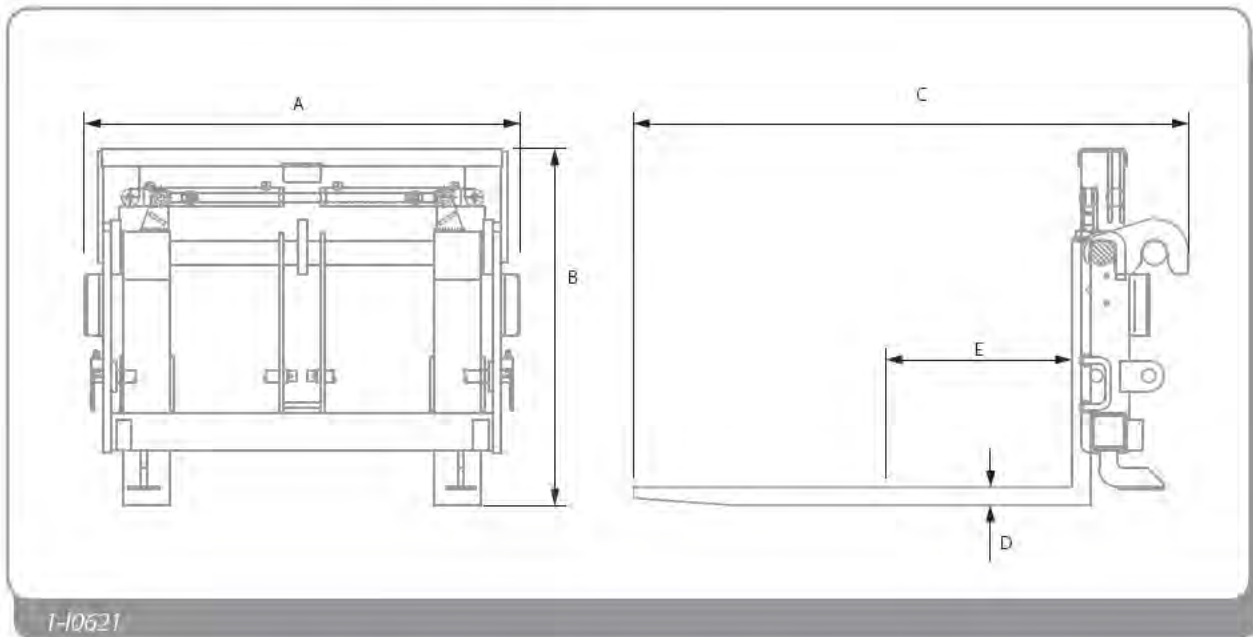
9.7.8 Hydraulic diagram of the fork extender

Hydraulic diagram key:

1	Quick couplings
2	Cylinder



9.7.9 Forks extending/shifting: Technical data



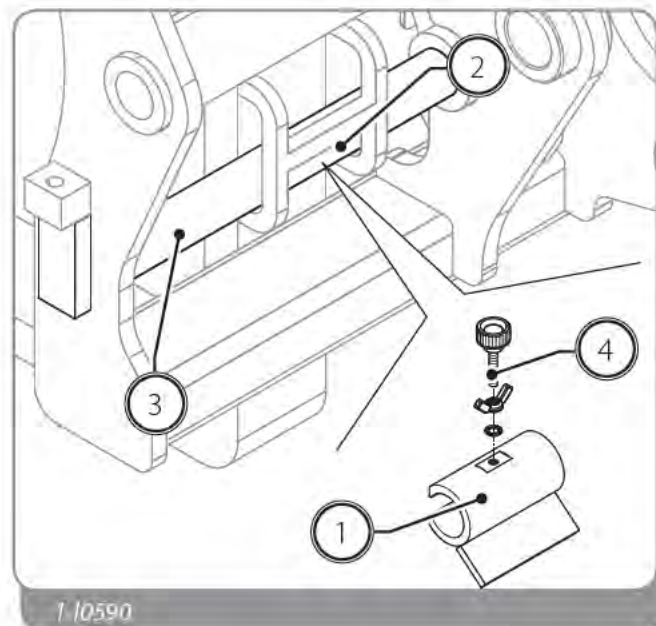
Equipment model	Vehicle	Capacity	A	B	C	D	E	Weight	Diagram on wheels	Diagram on outriggers
BCV8092	Pegasus 38.16 - 400°	3800 kg (8370 lb)	1405 mm (55.31 in)	1086 mm (42.75 in)	1400 mm (55.11 in)	120x45 mm (4.72x1.77 in)	500 mm (19.68 in)	425 kg (936 lb)	AXB1487/106A	AXB1487/106B
BCV8069	Pegasus 40.18 - 400°	5000 kg (11020 lb)	1410 mm (55.51 in)	1128 mm (44.4 in)	1500 mm (59.05 in)	120x50 mm (4.72x1.96 in)	500 mm (19.68 in)	545 kg (1201 lb)	AXB1508/106A	AXB1508/106B

### 9.7.10 Fork block

The fork block hinders the lateral movement of the forks once the desired setting is selected.

Proceed as follows to engage the fork block (Fig. 1-10590):

- Install the forks on the fork holder plate.
- Rest the fork block "1" in the eyelet of the forks "2".
- Insert the pin "3" completely in order to insert the eyelet "2" and the fork block "1".
- Fasten the pin with the relative safety locks.
- After having moved the fork sideways to the desired position, fasten the position by tightening the screw "4".



## 10 SAFE WORK PROCEDURES

### 10.1 General warnings



For safe working procedures in the various working conditions refer to the "Safety regulations" chapter.



**- ATTENTION**

Do not use the vehicle without having first read and understood all parts of this manual, and without having attended an adequate training course.



**- FORBIDDEN**

Do not use the machine if you are under the effect of alcohol, drugs or if you have taken medication that may make you drowsy or alter your reflexes.



**- DANGER**

Do not use the vehicle when hands or shoes are wet or dirty with grease or greasy substances.



**- ATTENTION**

Verify that all safety devices function before using the vehicle. The operator must always maintain control of the vehicle state and operation.

Use the acoustic warning device or other signals to alert people in the area before starting up the vehicle.

Inspect control instruments immediately after start up, while the engine is hot and at regular intervals during use, in order to promptly recognise and resolve any malfunctions.



**- FORBIDDEN**

Do not start the engine or touch the levers of the vehicle if there is a danger sticker stuck inside the cab or maintenance in progress.



**- FORBIDDEN**

Do not carry passengers on the vehicle or in the driver's cab or on any other part of the vehicle (including passenger conveying basket).



**- FORBIDDEN**

It is prohibited to use the mobile hydraulic parts of the vehicle the lift people except when using the passenger baskets with relative personal protective equipment for the operator inside.



**- NOTE**

Regardless of the user's experience, become familiar with the position and function of all controls and instruments in a work area free from obstacles and persons, before operating the vehicle.



**- ATTENTION**

Carry out all the described safety checks before resuming operations.



**- NOTE**

While the vehicle is running, always keep light signals on. These serve to warn people that the vehicle is about to move.



**- ATTENTION**

Always keep the safety distance adequate for the type of work and persons or objects in the work area. Always look in the forward direction and maintain good road visibility.



**- DANGER**

Adjust movement speed based on the load carried and the type of ground; remain at low speeds to reduce the risk of the vehicle tipping over or losing the load.

Do not drive with the brake pedal pressed.



**- DANGER**

Do not use the vehicle's force of impact to carry out tasks. These vehicles are not designed for said use; therefore, such use may cause vehicle overturning, damage, the breakage of components and attachments, or serious personal injury for the user.



**- DANGER**

Always operate with the engine bonnet closed.

Do not operate with removed vehicle protective parts.



**- ATTENTION**

When working in a congested area, designate one person to signal and coordinate the work zone.

Make sure that everyone follows the directions given by the person in charge of signalling.

Ensure to use signals conform with the dispositions in force in the country of use of the vehicle.



For additional information with regard to the presence of a person in charge of signalling, consult the "Signals to more vehicles" chapter.



**- DANGER**

When working alongside excavations or on the edge of the road or soft ground, keep at a safe distance as the vehicle may overturn. Designate a person on the ground to be in charge of signalling.

have another person present on the ground.

Remember that after strong rains, the use of explosives or an earthquake, the ground is more fragile.



**- DANGER**

When working on the upper part or inside buildings or other structures, verify their capacity and stability before starting operations. The risk of collapse exists and can cause serious injuries or damage.



**- DANGER**

Working on a slope may be dangerous. The conditions of the terrain may vary according to climatic conditions (e.g. rain, snow, ice). Therefore, pay careful attention to the conditions of the terrain on which the vehicle is being used; the use of low speeds is recommended.



**- ATTENTION**

Drive slowly on grass, leaves or wet steel slabs. Even when operating on slight slopes the vehicle may slip, lose balance or overturn.



**- ATTENTION**

Tipping conditions of the vehicle can vary depending on the features of the ground, environmental conditions and the type of work.

Complying with all the safety instructions contained in this manual reduces risks for the vehicle and the operator in most operating conditions provided herein.

It is forbidden to use the tractor if there is any risk of tipping that is not covered herein, as this manual contains an incomplete list.



## 10.2 Inspections prior to starting-up

### 10.2.1 Inspecting the vehicle

Carefully inspect your vehicle every day or before every shift.

Carry out the following inspections and operating checks:

- Parking brake efficiency
- Intact condition of the tyres
- Type of tyre suitable for the type terrain
- Engine oil level (check and top-up, if necessary).
- Hydraulic oil level (check and top-up, if necessary).
- Air filter clogging indicator (check and clean, if necessary).
- Tyre inflation and pressure (check).
- Fuel level (check).
- Signalling and warning devices (check).
- Steering efficiency.
- Service brake efficiency.
- Tightness of all nuts and bolts.
- Lighting
- Direction indicators
- Emergency lights.
- Switches.
- Indicator lights.
- Windscreen wipers.
- Reverse movement alarm.
- Position and condition of rear view mirrors



#### - DANGER

Immediately stop using the vehicle if it malfunctions or it does not comply with safety standards.



Contact an authorised *DIECI S.R.L.* workshop if the vehicle malfunctions. Refer to the "Maintenance" chapter for information regarding routine maintenance.



A thorough inspection is required if the vehicle is not used for a prolonged period of time. A detailed description of the operations is provided in the "Vehicle storage" chapter.



### 10.2.2 *Inspecting the work area*

- Examine the work area when working at the edge of an excavation or on soft ground as the vehicle could overturn.
- Examine the conformation and condition of the terrain of the work area before beginning to operate.
- Keep the vehicle well away from the edge of the excavation and the side of the road.
- When working on a slope or near the roadside, have another person present for signalling.
- Pay utmost attention when working on icy ground. The ice will melt as the temperature rises and the ground becomes slippery.
- Check for any overhead power lines or underground piping.
- Do not work in places at risk of landslides or falling rocks.
- Take due precautions to prevent that any unauthorised persons from entering the working area.
- When moving through or operating in shallow water or soft ground, verify the shape and the conditions of the land, the depth and speed of water flow before beginning operation.



## 10.3 Starting and stopping the vehicle

### 10.3.1 General warnings regarding starting up the vehicle



**- ATTENTION**

Do not use the vehicle without having first read and understood all parts of this manual, and without having attended an adequate training course.



**- DANGER**

Before starting the engine, make sure all control levers are in a neutral position, the parking brake is engaged, the engine bonnet is closed and that there is nobody in the area surrounding the vehicle.



**- DANGER**

The vehicle can only be started up or manoeuvred when the operator is seated in the driver's seat, with the seat belt fastened and adjusted.



**- DANGER**

The vehicle may move suddenly if started up without following the correct procedure, thus, creating the risk of damage.



**- FORBIDDEN**

Never start the engine by causing a short circuit between the terminals on the starter.



**- FORBIDDEN**

Never start-up the engine by pushing or pulling the vehicle. This could seriously harm people or cause serious damage to the vehicle.



**- DANGER**

Be careful when using auxiliary batteries as the gas contained in these may explode, causing serious damage.



Follow the instructions provided in the "Emergency procedures" chapter, "Start-up using auxiliary batteries" paragraph to start the engine using auxiliary batteries. An incorrect procedure can cause serious damage to the electrical/electronic system, the vehicle to move suddenly, the battery to explode and damage to objects and/or people.



**- FORBIDDEN**

Do not start the engine or touch the levers of the vehicle if there is a danger sticker stuck inside the cab or maintenance in progress.

### 10.3.2 Starting-up the engine

#### Proceed as follows to start-up the engine of the vehicle:

1. Press the parking brake switch.
2. Bring the movement selection lever to neutral.
3. Remain seated in the driver's seat.
4. Turn the ignition key (Fig. 1-J0100) clockwise to "1".

With the key in this position:

- The control panel and dashboard will be powered
- A buzzer will sound, indicating the key has been inserted. This buzzer also serves to warn any persons in the surrounding area that the vehicle has been started up.
- A check-up of the instrumentation will be performed with all the indicators lighting up for about 5 seconds. Only the following must remain switched on at the end of the check-up:
  - Engine oil pressure indicator
  - Battery charge indicator
  - General alarm indicator
  - Intermittent buzzer
  - Other indicators of activated functions (e.g. Parking brake, gears engaged, etc.)



#### - FORBIDDEN

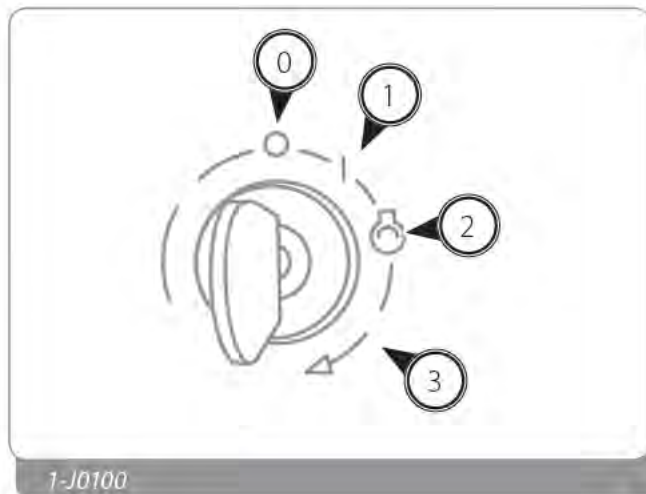
**Should other indicators remain on signalling malfunctions or if one of the previous conditions does not occur, do NOT start-up the engine and refer to the "Maintenance" chapter or contact the Dieci after-sales centre.**

5. Turn the ignition key (Fig. 1-J0100) to "3" to start-up the engine. Release the starter within 5 seconds.
6. Release the key once the engine has started. The indicators related to the engine oil pressure and battery charge must go off once the engine is started up.

If the engine does not start within 5 seconds, try again at regular 15 second intervals to prevent overloading the starter.



**If the engine does not start at all, refer to the "Maintenance" chapter of this manual or contact the DIECI after-sales centre.**





**- NOTE**

With the motor started, the automatic parking brake disengages. Always verify that the parking brake has been engaged through the button before starting up.

### 10.3.3 Warm-up after starting-up

During the first few minutes of use, keep the speed slow in order to warm up the engine and hydraulic oil.



**- DANGER**

Serious damage can be caused to the engine and the hydraulic system if the engine reaches high rpm before the operating oil temperature and pressure levels are reached.



**- NOTE**

Let the engine run at 1100 - 1300 rpm for about 5 minutes so as to bring the engine oil to the operating temperature, particularly, with outdoor temperatures below 0°C.

### 10.3.4 Start-up at low environmental temperatures

Consider the following warnings before starting-up at low environmental temperatures and with a cold engine:

- In order to prevent draining the battery, do not prolong each attempt to start-up by more than 15 seconds; however, if the engine does not seem to be starting-up, extend the time to a maximum of 30 seconds.
- Wait at least one minute before trying to start-up again.
- It is recommended to not exceed the six start-up attempts so as not to drain the battery excessively.



**- NOTE**

It is recommended to use anti-freeze diesel at environmental temperatures lower than 0°C, so as to make sure the engine is optimally supplied, without reducing performance.

### 10.3.5 Causes of failed start-ups

Check the following if the engine does not start-up:

- The parking brake switch is pressed.
- The gear selection lever is in the neutral position.
- No emergency buttons are pressed

Once all the above-mentioned conditions are verified, eliminate the cause of the failed start-up and try to start-up once again.



**If the problem persists, contact a DIECI after-sales centre**

### 10.3.6 Switch the vehicle off

It is recommended to perform the following before switching the engine off:

1. Bring all the control levers to the idle position.
2. Bring the engine to low speed for a few minutes.
3. Bring the key to the "0" position.

## 10.4 General operating warnings for rotary vehicles with 2-movement feet

### 10.4.1 Operating positions of rotary vehicles with 2-movement feet

Rotary vehicles changes its behaviour according to the position of the turret compared to the carriage (T1-J0111 - Operating positions table).

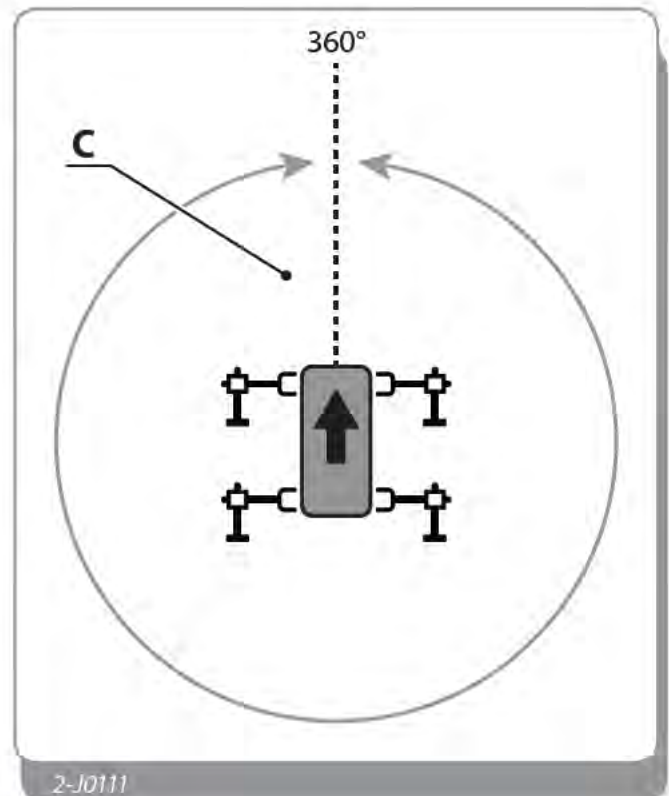
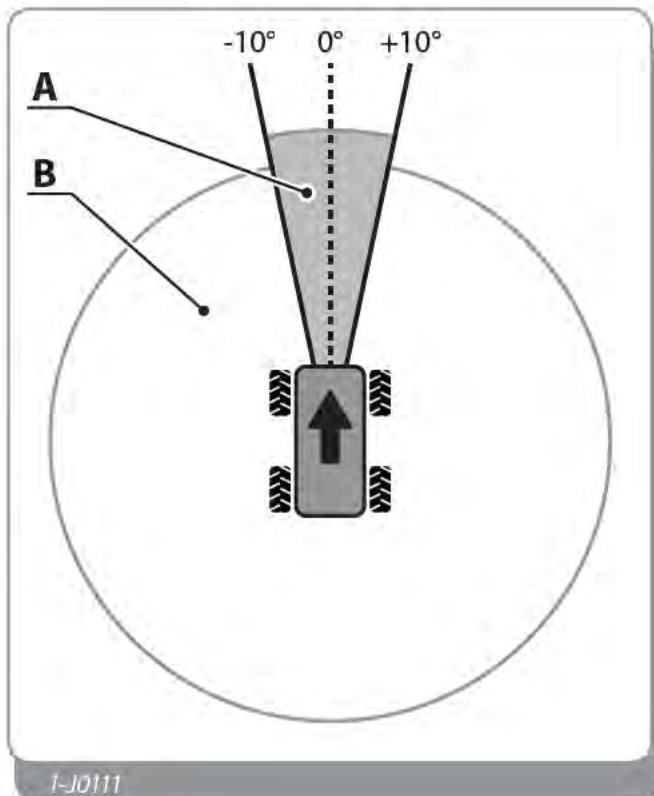
T1-J0111 - Operating positions table

Position	Front on tyres	Rotation on tyres	Rotation on stabilising feet
Area	A (Fig. 1-J0111)	B (Fig. 1-J0111)	C (Fig. 2-J0111)
Drive	Enabled	Disabled	Disabled
Axle oscillation	Enabled	Disabled	Ineffective
Levelling	Enabled	Disabled	Ineffective
Stabilising feet	Raised	Raised	Lowered



#### - NOTE

The vehicle is considered on stabilising feet when it is levelled properly and all 4 stabilising feet are lowered on the ground, fully raising the the tyres from the ground.



#### 10.4.2 Load handling and turret rotation with 2-movement feet

The same operations for lifting a load with the vehicle aligned must also be performed with the vehicle rotated.

Before operating with the vehicle, make sure that there are no obstacles in the operating range of the vehicle while the turret is rotating.



**- ATTENTION**

Before operating with the vehicle, make sure that the turret rotation blockage pin is not inserted



**- DANGER**

While the turret is rotating with a load, the boom must always be retracted and lowered as much as possible. Risk of oscillations, losing the load and side tipping.

Rotate the turret carefully and at the lowest possible speed.



**- DANGER**

Pick-up and move loads by rotating the turret only after having levelled the vehicle and inserted the axle oscillation block (if applicable). Side tipping hazard.



**- DANGER**

Handle loads only after having lifted them off the ground. Dragging or pushing a load on the ground by rotating the turret or the extension or retraction of the boom may cause damage to the vehicle.

## 10.5 Driving on the road

### 10.5.1 Warnings regarding driving on the road



#### - ATTENTION

Before driving the vehicle on the road, make sure the law and standards of the relative country are complied with.

The requirements for road travel are provided on the vehicle registration certificate.

Dimmed headlights should be used during day hours and on roads where use of visual signals and lighting devices is not mandatory.

Ensure correct operation and cleaning of headlights, directional lights and windscreen wipers.



#### - ATTENTION

Verify that the rear view mirrors are positioned correctly.

The objects seen through the rear view mirror are closer than they appear.

When driving on the road and/or on a slope pay utmost attention to the engine rpm. A high rpm could lead to mechanical damage. Always monitor the rpm and engine speed.

Pay particular attention to loading docks, trenches, scaffolding and recently excavated or filled land.

### 10.5.2 Instructions regarding driving on the road

- Level the vehicle so that the wheel axles are aligned with the chassis (if present).
- Ensure that all outriggers have been perfectly retracted and raised (if present).
- Close the telescopic arm (boom) completely.
- Lower the telescopic boom completely and then raise it slightly to about 20-30 cm from the ground.
- Make sure the lights work properly before driving on the road. Check that the slow vehicle revolving indicator light is installed and functional. Keep it activated during both day and night use.
- Align the wheels for them to be perfectly aligned to the chassis of the vehicle.
- **It is mandatory** to set the steering as indicated on the vehicle registration certificate and to block the selection lever with the relative device.
- Make sure that the amount of fuel is sufficient.
- Fit all the accessories required to drive on the road according to the relative country.
- Install an overhanging load signal panel on the boom head before the entering onto the road.
- Always assess the route to be covered, taking into consideration overhead structures (e.g. bridges, underpasses, etc.) that could be damaged by the vehicle.
- In some countries it is mandatory to place wedges under the tyres when the vehicle is stopped.
- Make sure the vehicle complies with local regulations regarding number plates when driving on the road during the day and night.



#### - ATTENTION

Road transfer with equipment assembled to the fork holding plate is not allowed except those accepted by the legal authority of the country where the vehicle operates.



#### - FORBIDDEN

Operating the vehicle on the road when it is carrying a load is prohibited.

Comply with the allowable mass limits written in the vehicle's registration.

## 10.6 Temporary stop

- Gradually release the accelerator pedal.
- Bring the vehicle to a halt on flat ground.
- Engage the parking brake
- Bring the movement selection lever to "N".
- During the running-in of the vehicle (50 h), do not keep the diesel engine at minimum revs for too long.



### - ATTENTION

If the operator must abandon the driver's seat, he/she should follow the instructions provided in the paragraph "Parking the vehicle".



### - FORBIDDEN

Never move away from the vehicle, leaving the engine running or the ignition key in the vehicle.



### - FORBIDDEN

Do not stop and leave the vehicle parked on a slope exceeding 15%, even with the parking brake engaged.

## 10.7 Parking the vehicle



### - FORBIDDEN

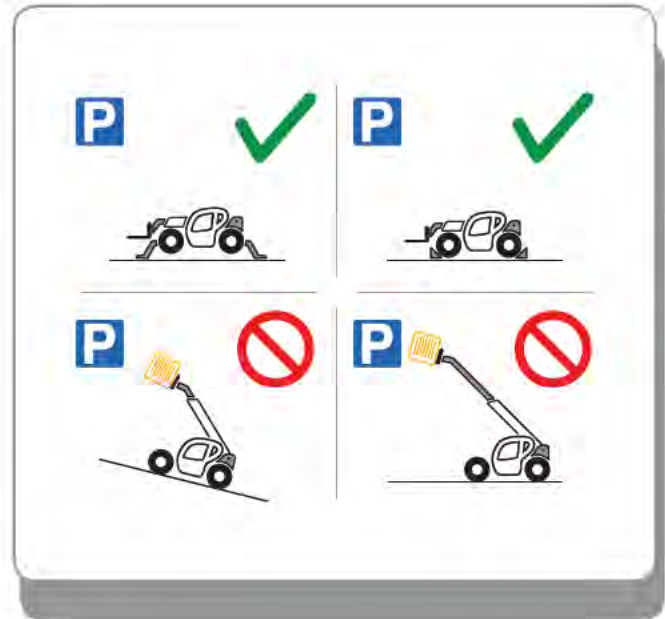
Under no circumstances is the vehicle to be parked with a raised load.

- Always park on flat, even and level ground where there is no risk of falling masses, landslides or flooding.
- Lower outriggers to the ground (if present)
- Retract the boom completely and lower it to the ground.
- Engage the parking brake
- Bring the movement selection lever to "N".
- Run the engine at minimum for a few seconds before switching off in order to let it cool.
- Turn the ignition key to the engine halt position.
- Remove the key from the ignition
- Block the hydraulic controls using the relative devices (where present)
- Close and lock windows using the specially provided handles.
- Close and lock the cab door.
- Place wedges under the wheels.
- Make sure the vehicle is parked in a way that it does not block traffic and at least 5 metres away from railway tracks.



### - FORBIDDEN

Do not stop and leave the vehicle parked on a slope exceeding 15%, even with the parking brake engaged.





## 10.8 General warnings for moving the load



For safe working procedures in the various working conditions refer to the "Safety standards" chapter.

Always adhere to safety regulations; always transport balanced, properly arranged load to prevent overturning.



**- ATTENTION**

When using this vehicle, carefully follow diagrams of the vehicle with the equipment mounted at that moment.



**- FORBIDDEN**

It is strictly prohibited to work without the respective capacity diagrams for the equipment and the vehicle.



**- FORBIDDEN**

Do not attempt to carry out operations which exceed the capacity of the assembled equipment or of the vehicle.



**- FORBIDDEN**

Do not modify the structure and vehicle stability in any way by trying to add counterweights, whichever artifice is used.



**- ATTENTION**

Always ensure the pallet, the boxes and other supports for the load are in good conditions and adequate to the load to be lifted; the sudden collapse of a rack of material is often caused by a faulty pallet.



**- FORBIDDEN**

Do not move the load with boom lifted or extended.

- Manoeuvre the vehicle with the boom raised only in exceptional circumstances. In these circumstances, operate with due prudence, reduce speed as much as possible and brake delicately. Make sure that visibility is always sufficient. If necessary, ask an operator on the ground to guide operations.

- Reduce the speed as much as possible and brake gently during handling operations.



**- FORBIDDEN**

Do not manoeuvre loads while the vehicle is moving.



**- NOTE**

Avoid passing over unstable objects. Remove dangerous, unstable objects instead of passing over or around them. Also avoid holes and ditches that might make the load jolt. Before turning, slow down as much as possible, and monitor the load.

- Do not change direction abruptly or at high speed.

- Remember that hydraulic steering is very sensitive to steering wheel movements; steer gradually and avoid sudden movements.

- Slow down before turning.

- Pay attention to the side space, in particular if transporting wide loads. If possible, keep to the centre of the passage to avoid equipment or personnel from obstructing your path.



### - ATTENTION

Handle loads with care, at low speed and without sudden or jolting movements, above all if carrying at great heights.

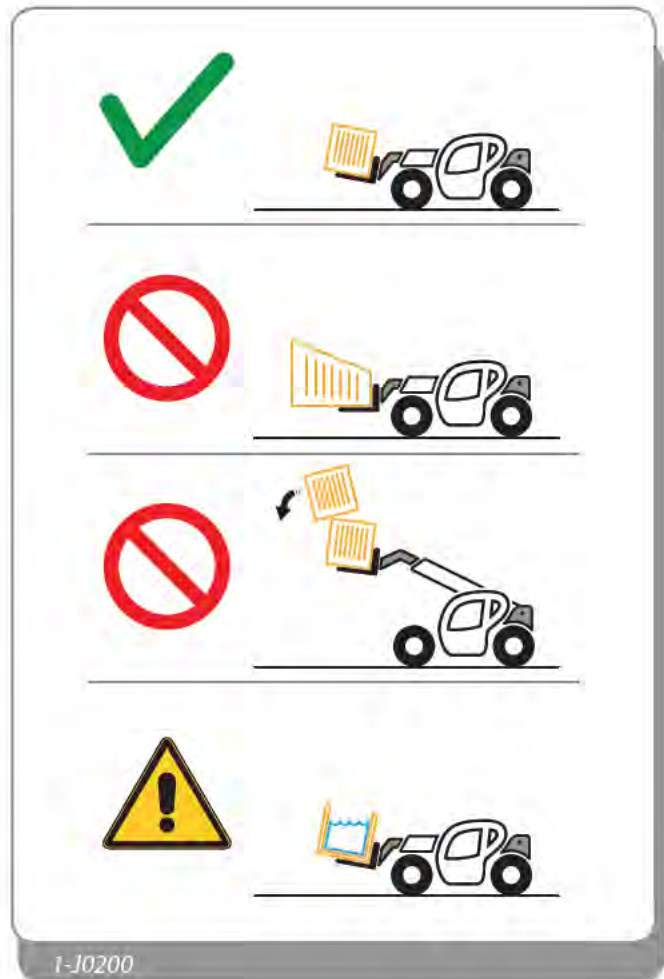
- Always ensure good visibility in the work area, including direct vision and visibility using rear view mirrors in order to check for the presence of people, animals, obstacles, holes and changes in slope etc.
- Decrease the working speed of the vehicle in case of rain, fog, snow or in any case where visibility is reduced.
- If visibility on the right side is limited during boom operation, before lifting the load, ensure that the work area is clear and make note of the position of any possible obstacles and irregularities in the terrain.
- Always make sure there is good visibility (clean windows, clean mirrors, clean lights that work properly, etc.)
- Maintain control of the vehicle and its speed in all circumstances. The speed of the loaded vehicle must never exceed 10 Km/h. If the load exceeds the maximum allowed load by 50%, vehicle speed must be reduced to 5 Km/h.
- Do not drive in reverse for long distances.
- Brake gradually; avoid braking abruptly.
- Always maintain the safe distance from other vehicles in order to have sufficient space to brake in every condition.



### - ATTENTION

Before lifting loads, operators must be familiar with the weight of the load and its centre of gravity.

- Transport the load as close as possible to the ground. Keep the load low, at a height from the ground of 300 mm. Never move with the load lifted more than necessary.
- The load diagrams are valid for centres of gravity of standard loads. For particular loads, contact your dealer.
- Pay the utmost attention during transporting of loads with variable centre of gravity (e.g. Liquids). Operate with caution in order to limit such variations and to prevent the risk of vehicle overturning.
- Always ensure the moved load is correctly balanced and cannot fall on the ground. The loss of the load or part of it can entail a danger of damage to things and persons.
- Pay the utmost attention to objects that may fall. Ensure there are no unstable objects on the upper part of the load.



**- FORBIDDEN**

Never lift a load when the vehicle is on a sloped surface. When on a sloped surface, pay attention to the conditions of the ground. When working with the vehicle on a sloped surface with the load high, a jolt or a hole is sufficient to make the vehicle overturn.

**- FORBIDDEN**

Do not lift or lower the loads when the vehicle is in motion.

## 10.9 Moving safely



### - ATTENTION

The following operations are standard for any type of installed equipment; however, refer to any warnings present in the equipment manual.



### - ATTENTION

In the event of scarce visibility, have a person operate on the ground for signalling.

### 10.9.1 Moving on sloped ground

Operating on sloped terrain can cause overturning or sliding. Advance and brake gradually and take all necessary cautions.

Always move in a straight line to go up or down a slope. Moving transversally or along the slope is extremely dangerous (Fig. 2-J0200).

Always use the parking brake when setting down or lifting a load on a slope.



### - ATTENTION

Check the vehicle is levelled before using the boom on sloped ground.



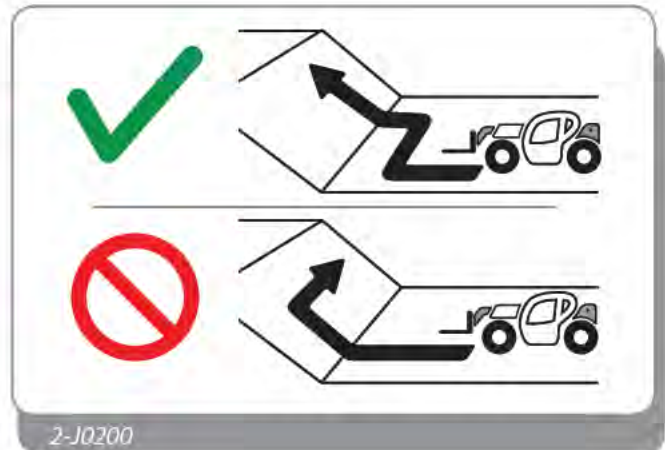
### - DANGER

Do not use the boom if the vehicle has a slope greater than 2°.



### - FORBIDDEN

Do not stop and leave the vehicle parked on a slope exceeding 15%, even with the parking brake engaged.



### 10.9.2 *Driving uphill with a full load*

In the event of having to travel uphill while transporting a load, operate always maintaining the load towards the top of the uphill (Fig. 3-J0200).

### 10.9.3 *Driving uphill without a load*

When having to drive uphill without a load, operate with the vehicle facing downhill (Fig. 4-J0200).

### 10.9.4 *Driving downhill with a full load*

When having to drive downhill while transporting a load, operate with the load facing uphill (Fig. 5-J0200).

### 10.9.5 *Driving downhill without a load*

When having to drive downhill without a load, operate with the vehicle facing downhill (Fig. 6-J0200).



## 10.10 Use of cables, ropes and slings



### - FORBIDDEN

It is strictly forbidden to lift or move load fastening ropes or chains only to the vehicle's accessory holder plate, to forks or to any other equipment not designed for this purpose.

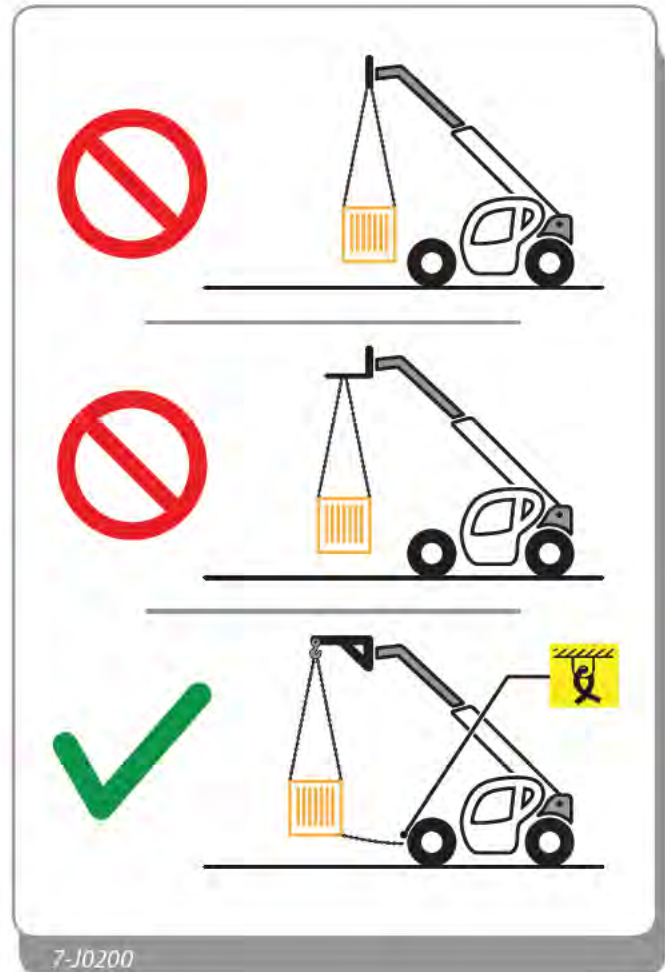


Various equipment set-up for lifting, provided with suitable hooks for the use of cables, chains and straps are available. For further information contact your *DIECI* dealer.



### - NOTE

To keep the suspended load from swaying while being handled, the load can be fixed to the anchoring eyebolts of the vehicle while being transported.



## 10.11 Safe working procedures for forks

### 10.11.1 General warnings on using forks

- Always fully insert forks under loads and bring them to the transport position (forks at 300 mm from the ground and slanted backwards, boom completely retracted).



**- FORBIDDEN**

**Never lift a load harnessed with a single fork or table.**



**- FORBIDDEN**

**It is strictly forbidden to use the forks with hooks, straps or other material for moving suspended loads. Use adequate accessories (hook, winch, jibs).**

- The load diagrams are valid for centres of gravity indicated in the diagram. Contact your dealer for information regarding centres of gravity at greater distances.
- Take caution against the risk of limbs being crushed during manual fork adjustment operations.
- It is strictly forbidden to increase the length or width of the forks using extensions not directly provided by the Manufacturer. In this case, DIECI is absolved from any liability with regard to their use.
- Overloading and transversal stresses of the forks are strictly forbidden.
- Extend the forks to their maximum possible width. Before lifting a load ensure the width of the forks corresponds to that of the pallet or that they can support the weight of the load on the pallet. Correctly spaced forks maintain a load stable.
- For a stable balance, evenly place the loads on the forks. When having to lift wide loads or not centred and it is not possible to centre them, cautiously operate the vehicle to avoid it overturning. Cautiously lift considerably long bars.
- Do not lift the load with the tip of the forks facing downwards. The points of the forks must always face upwards; in this way the load can rest on to the forks plate. A lifted load can be tilted forward only if it has to be placed on a pile or directly on to an unloading surface.
- Do not use the vehicle with forks for transporting or moving persons. Use adequate accessories.

### 10.11.2 Transport position of the load with forks

To correctly transport a load with forks:

- Fully retract the boom
- Completely lower the boom until the forks are at about 300 mm from the ground
- Tilt the tip of the forks upwards

### 10.11.3 Picking a load up from the ground

1. Slowly approach the vehicle to the load to be lifted with the boom completely retracted and the forks horizontally positioned at the height of the lifting position. Keep forks raised just enough to avoid contact with the ground.
2. Bring forks under load to be lifted until contact is made with the accessory holding plate.
3. Step on the brake pedal and move the gear selector to neutral.
4. Slightly lift up the load and tilt the accessory holding plate backwards, bringing it to the transport position.



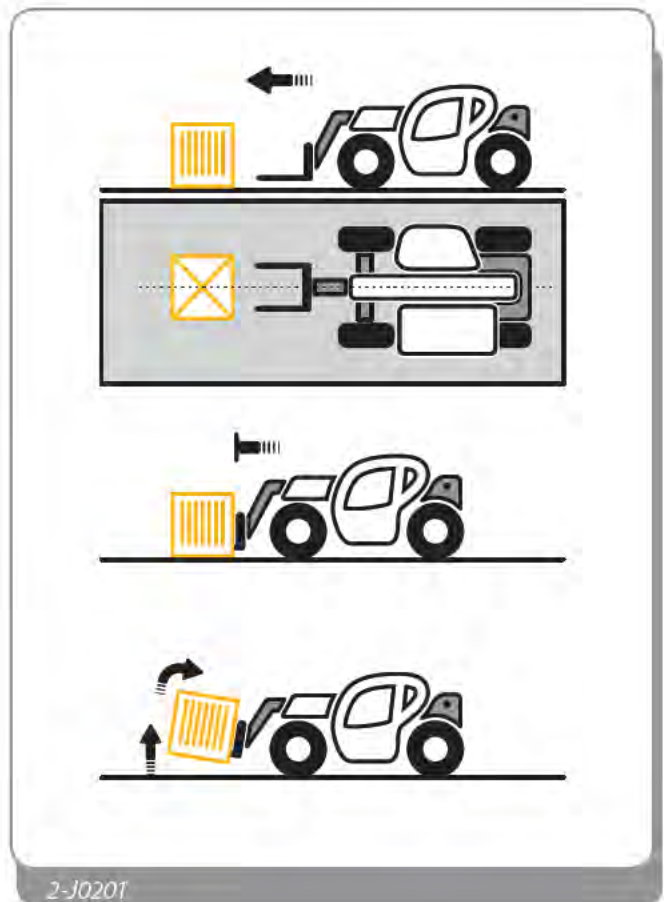
#### - ATTENTION

Always respect the load's centre of gravity, slant the forks just enough to ensure stability and prevent load loss during braking.



#### - DANGER

Never transport a load with the boom lifted and/or extended.





## 10.11.4 Picking up a load that is high up

1. Make sure that forks pass easily under the load.
2. Drive the vehicle slowly and with caution, approach the load perpendicularly with the forks horizontal. If needed, use the Inching pedal to approach slowly.
3. Remember to maintain the distance necessary to place forks under the load, between the pile and the vehicle.
4. Extend the boom the least length possible.
5. After having positioned the forks under the load to be lifted, until contact is made with the fork holding plate, press the brake pedal and move the gear selector to neutral.
6. Slightly lift up the load and tilt the fork holding plate backwards, bringing it to the transport position.
7. If possible, lower the load without moving the vehicle.
8. Raise the boom to move the load away, then retract the extensions and lower the boom to bring the load to the transport position.
9. In this is not possible, withdraw the vehicle slowly and pay careful attention, after having sufficiently moved away the load, retract the extensions and lower the boom to bring the load to the transport position.



### - ATTENTION

Always respect the load's centre of gravity, slant the forks just enough to ensure stability and prevent load loss during braking.



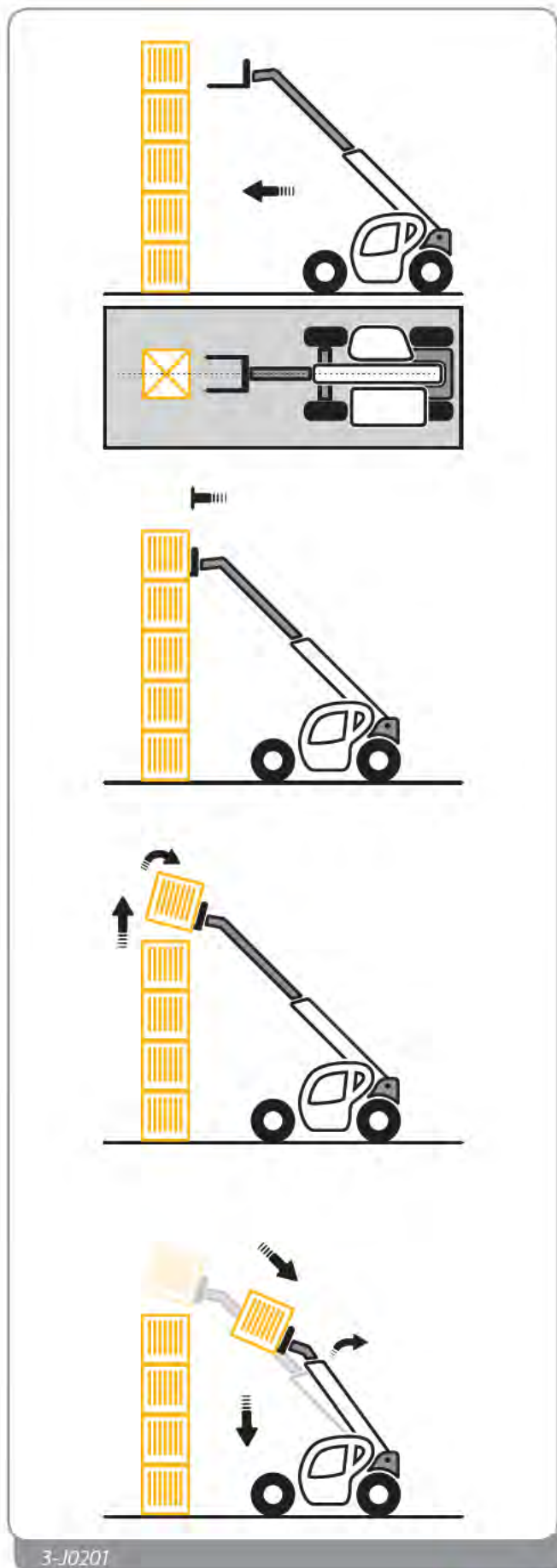
### - FORBIDDEN

It is strictly forbidden to pick up a load if the vehicle is not level.



### - DANGER

Never transport a load with the boom lifted and/or extended



3-J0201

### 10.11.5 Positioning a load high up

1. Move the load to the transport position in front of the pile.
2. Raise and extend the boom until the load is over the pile. If necessary, move the vehicle towards the pile very slowly and carefully. If needed, use the Inching pedal to approach slowly.
3. Step on the brake pedal and move the gear selector to neutral.
4. Position the load horizontally and place it on top of the pile. Lower the extensions and have them retract to properly position the load.
5. Free the forks having the extensions retract and lifting the boom alternatively. If possible, reverse the vehicle very slowly and very carefully.



#### - ATTENTION

Always respect the load's centre of gravity, slant the forks just enough to ensure stability and prevent load loss during braking.



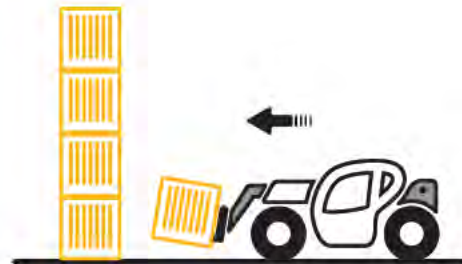
#### - FORBIDDEN

It is strictly forbidden to pick up a load if the vehicle is not level.



#### - DANGER

Never transport a load with the boom lifted and/or extended



## 10.11.6 Picking up round-shaped loads

1. Tilt the forks forward and remove the telescopic boom at the same time as inserting the forks underneath the load.
2. turn the fork holding plate backward to make the load slide. If necessary, secure the load with wedges.



### - ATTENTION

Always respect the load's centre of gravity, slant the forks just enough to ensure stability and prevent load loss during braking.

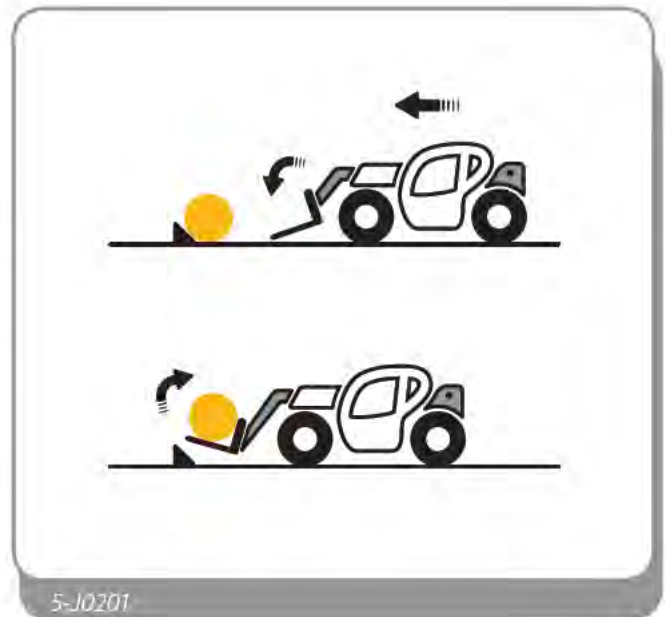


### - DANGER

Never transport a load with the boom lifted and/or extended



There are various accessories, such as pliers, to facilitate work with round shaped objects; contact your Dieci dealer.



5-J0201



## 11 EMERGENCY PROCEDURES

### 11.1 Warnings if the vehicle should overturn

- The safety belt is the best protection if the vehicle should overturn to its front or side;
- Keep calm: remain on board and do not try to jump out of the driver's seat;
- Hold the steering wheel with both hands;
- Press your feet against the floor, keeping them inside the driver's seat;
- Tilt your body in the opposite direction to that of the fall;
- To avoid banging your head, near your head as much as possible to the steering wheel.

## 11.2 Start-up using auxiliary batteries



### - ATTENTION

Starting up the engine with auxiliary batteries requires two adequately trained and qualified persons.

Failure to follow correct procedure can cause serious damage to the vehicle, things or people.

- When starting the engine using another vehicle, connect up the accumulators in parallel. When connecting the cables, avoid contact between the positive cable (+) and negative cable ("").
- Wear adequate personal protective equipment before carrying out any operation.
- Take care to avoid contact between the vehicle to be started up and the vehicle that must supply the power, in order to avoid sparks and consequently explosions caused by the hydrogen produced by the accumulators. Explosion of the accumulator may cause serious damage and injury.
- Make sure not to mix up the start-up cables; connect the ground cable first (-) and the positive cable last (+).
- Use extreme care when removing the starting cables; make sure that when the cables are disconnected from the accumulator, they do not touch other parts of the vehicle in order to avoid hydrogen explosions.



### - ATTENTION

The cables and clamps must be proportional with the current load to be transferred. The accumulator used for start-up must have a greater or at least equal capacity to that of the standard accumulator.



### - ATTENTION

Check that the cables and clamps are not corroded or damaged. Make sure the clamps firmly grip the terminals.



### - ATTENTION

Pay great attention during the various operations. Direct or indirect contact with live parts can cause injuries and in some cases even death.



### - ATTENTION

When the engine is being started up, the operator must be seated in the driver's seat in order to monitor the vehicle.



### - NOTE

These operations must be carried out by competent, trained personnel.

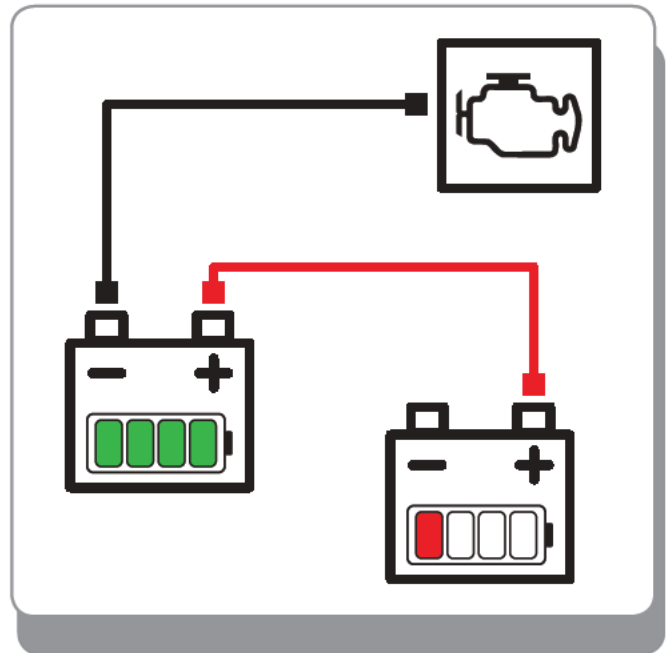
### 11.2.1 *Connecting the cables and starting the engine*

1. Make sure that the ignition key is at position "O".
2. Connect the positive poles "+" of the two batteries.
3. Connect the negative terminal cable "-" of the charged battery to the block of mass of the vehicle that is to be started up.
4. If a charged battery already installed on a vehicle that operates correctly is used, start-up the engine of the latter and bring the engine to a high rpm.
5. Start up the engine of the faulty vehicle.

### 11.2.2 *Removing the cables*

With the engine running, remove the cables in the opposite order in which they were connected.

1. Disconnect the negative cable "-" from the block of mass of the started engine and then from the charged battery.
2. First disconnect the positive cable "+" from the battery used for start-up and then from the flat battery.



### 11.3 Towing the vehicle



**- ATTENTION**

Towing the vehicle is a delicate manoeuvre and the operator runs high risks. The manufacturer's warranty does not apply if problems or accidents arise while towing. Perform repairs on site, if possible.



**- WARNING**

It is recommended that the towing operations are carried out by expert personnel.



**- FORBIDDEN**

It is strictly prohibited:

- To try to start-up the vehicle by towing or pushing.
- To tow the vehicle on public roads and for long distances. If possible, keep the yellow flashing light and emergency lights on.
- To tow the vehicle on a slope.
- To stand between the towing vehicle and the towed vehicle.



**- ATTENTION**

When the engine is switched off, the steering wheel and brake servo controls do not work. If the engine cannot be kept running, when towing the vehicle keep in mind that it will be much more difficult to operate the steering wheel.



**- ATTENTION**

The vehicle can only be towed in an emergency and at a maximum speed of 4 km/hour (2.5 mph) and for short distances, a maximum of 500 m (1640 ft).

Contact the *DIECI* service centre regarding towing the vehicle for long distances.



**- ATTENTION**

It is mandatory to tow the vehicle with the rigid towing bracket. The towing bracket must be able to support a towing weight of 15 t (33060 lb). Connect the towing bracket between the towing vehicle and the faulty vehicle, at the preset towing points.

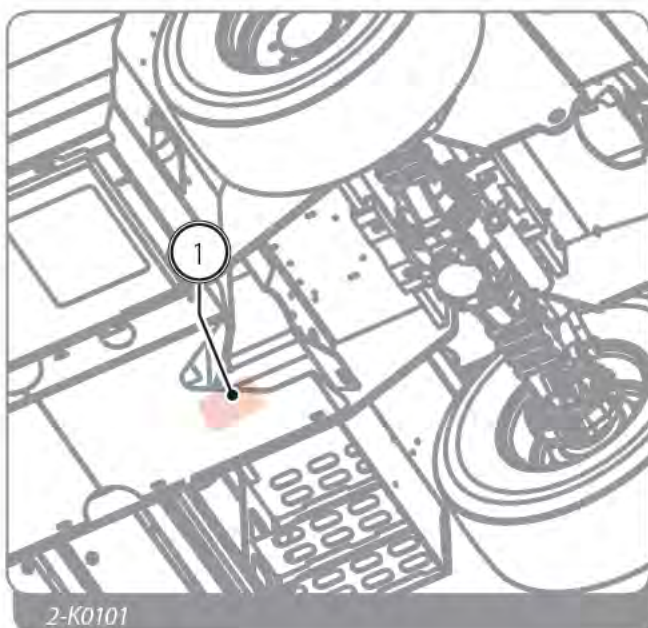
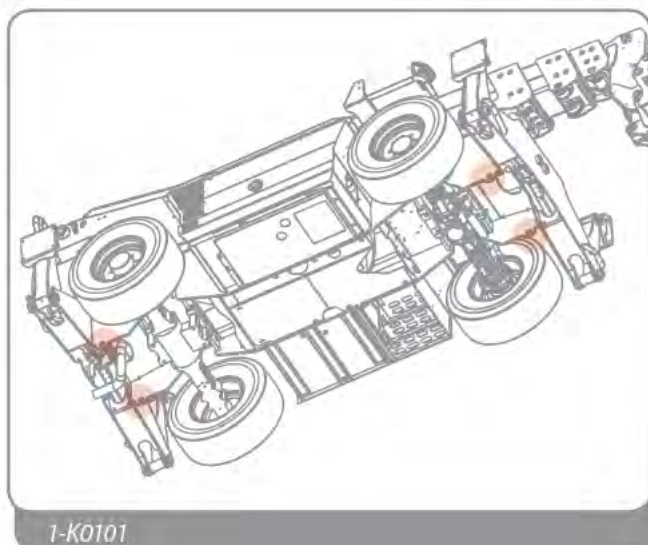
### 11.3.1 Towing the vehicle with the engine running

Follow the steps below if the vehicle must be towed with the engine running (e.g. transmission fault):

- Connect the towing bracket between the towing vehicle and the faulty vehicle, at the preset towing points (Fig. 1-K0101).
- Move the gear selection lever to position "N".
- Position wedges under the wheels.
- Remove the underside protection (if present).
- Deactivate the drive directly from the gearbox and the bypass valve found inside the front part of the chassis "1" (Fig. 2-K0101).
- Disengage the parking brake switch.
- Remove the wedges from the wheels.
- During towing, remain seated in the driver's seat to prevent the parking brake from engaging automatically.



Follow the instructions described in the "Deactivating the drive manually" chapter.





### 11.3.2 Towing the vehicle with a faulty engine

Follow the steps below if the vehicle must be towed with a faulty engine:

- Connect the towing bracket between the towing vehicle and the faulty vehicle, at the preset towing points (Fig. 1-K0101).
- Manually deactivate the parking brake on the front axle of the vehicle "1" (Fig. 2-K0101).
- Deactivate the drive directly from the gearbox and the bypass valve found inside the front part of the chassis "2" (Fig. 2-K0101).

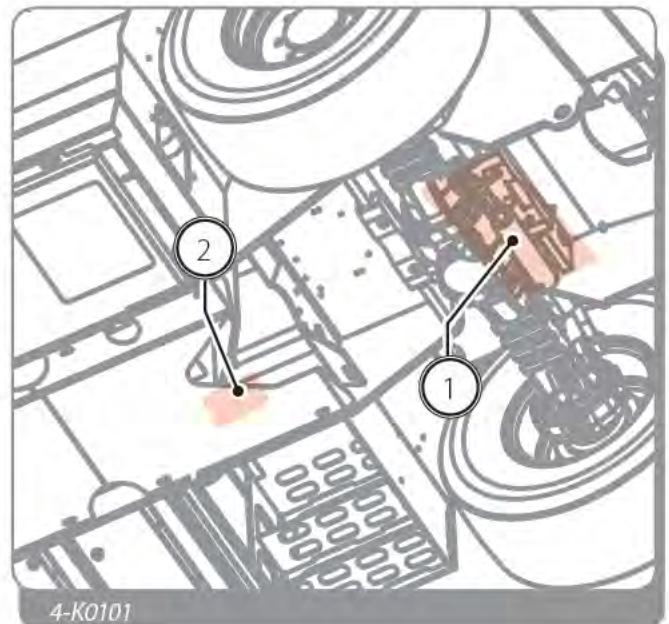
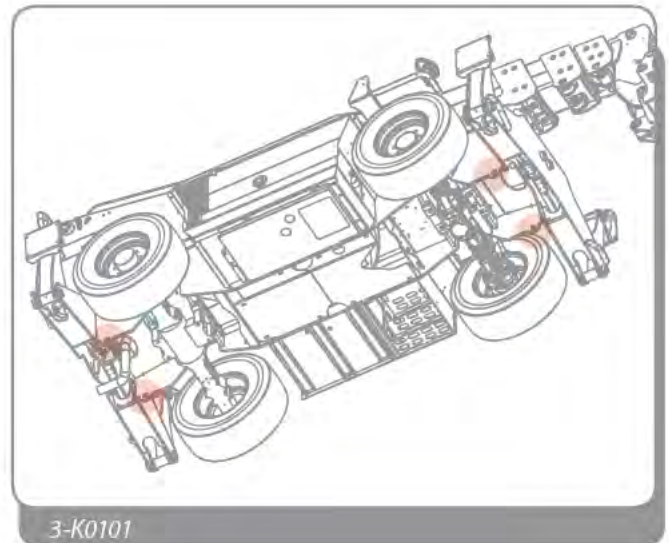


**- DANGER**

The parking brake and drive are still active even with the engine switched off. Serious damage can be caused to the vehicle and hazardous situations may be generated if the vehicle is towed with the drive and parking brake active.



Follow the instructions in the chapter "Deactivating the transmission manually" and "Deactivating the external parking brake manually"



## 11.4 Disengage the internal parking brake

The parking brake must be disconnected directly on the axle for the vehicle to be trained.

1. Place safety wedges under the wheels to prevent the vehicle from moving suddenly
2. Loosen the lock nuts located on both sides of the central body axle.
3. Tighten the screws until resistance is encountered; note the number of turns made in order to bring the screws back to their original position once towing operations have been completed.
4. Tighten the screws another 1.5 turns.
5. This way, the brake will be unlocked. Once towing operations are complete, bring everything back to its original position.



### - FORBIDDEN

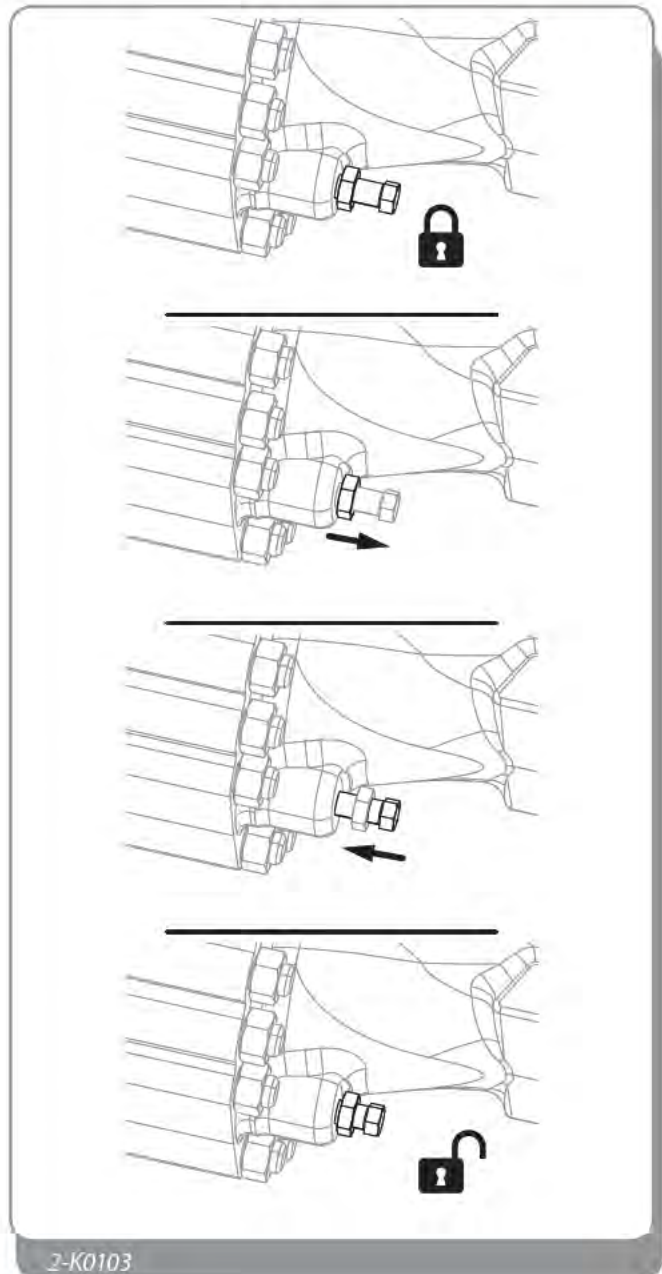
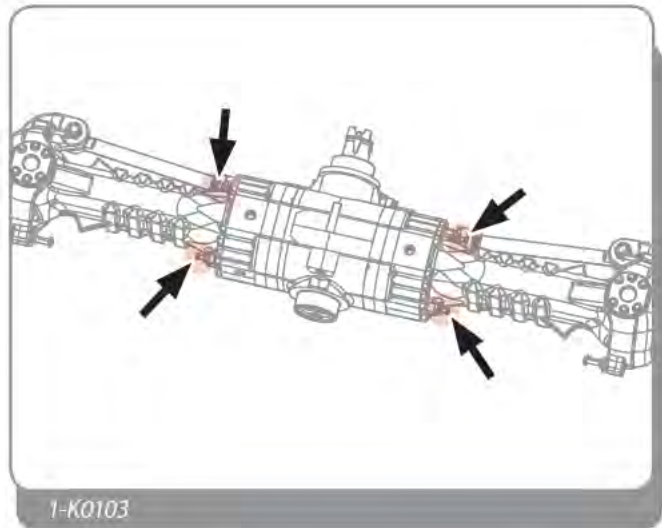
Never use the vehicle with the negative parking brake disengaged/disconnected.



### - ATTENTION

Once towing operations are complete bring everything back to its original position.

It is very important to re-tightened the screws using the same number of turns used to loosen them.



## 11.5 Deactivate transmission manually



### - DANGER

Only deactivate the drive if the vehicle must be towed with a faulty engine and/or transmission.

Transmission can be deactivated manually if the vehicle must be towed with a faulty engine and/or transmission.

Perform the following operations:

- Make sure the engine of the vehicle is off
- Place wedges under the wheels to prevent the vehicle from moving suddenly
- Turn the hydraulic tap lever (Fig. 1-K0111), to close the hydraulic supply to the reduction gear (the tap is under the vehicle, next to the reduction gear).



### - DANGER

A jet of pressurised oil can leak from the tap when the handle is turned. Use adequate safety devices to protect the eyes and skin from hot pressurised oil.

- Use a screwdriver to move the gear selection pin to the neutral position, up to half the end run (Fig. 2-K0111, pos. 2)
- Before towing the vehicle, switch the dashboard on and if possible, make sure the forward and reverse gear indicators are off.

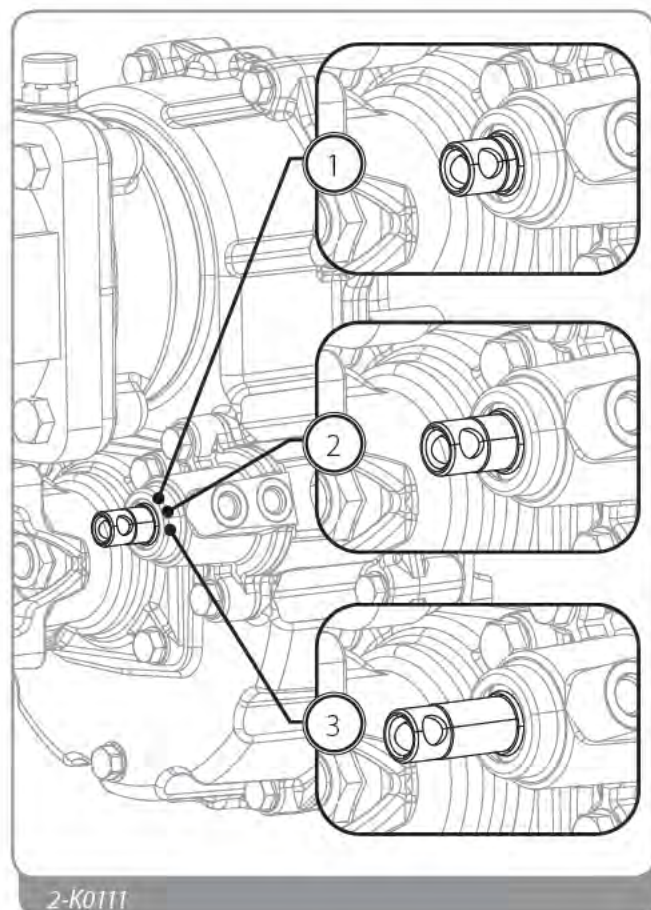


### - ATTENTION

Once the towing operations are complete, reopen the tap, bringing the lever back (Fig. 1-K0111) to its original position.



1-K0111

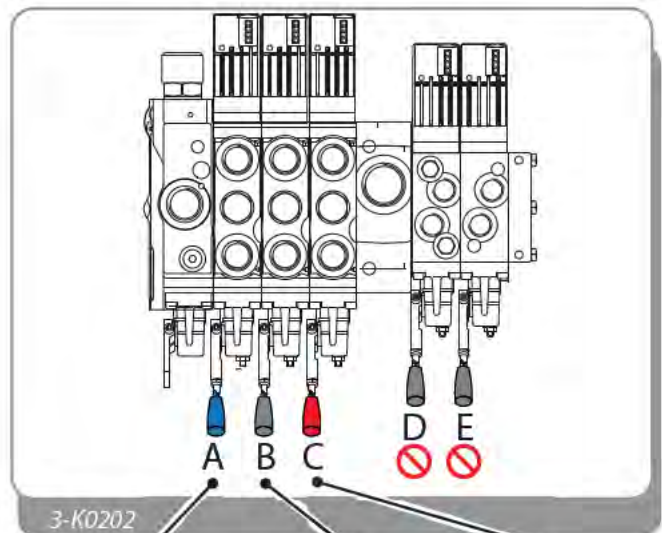
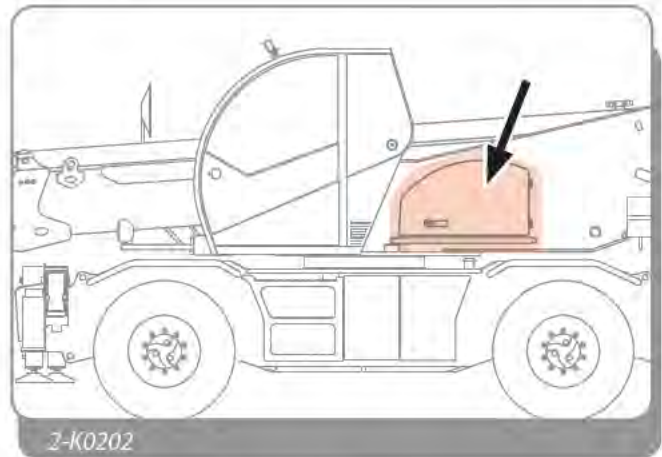
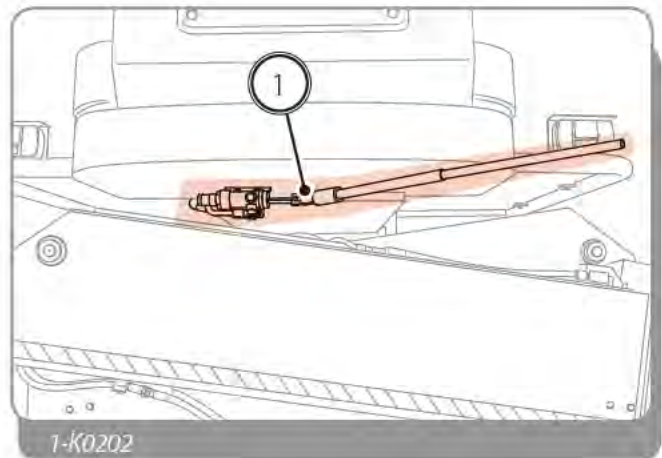


2-K0111

## 11.6 Man basket recovery in case of a fault

Proceed as described below to retract the boom manually.

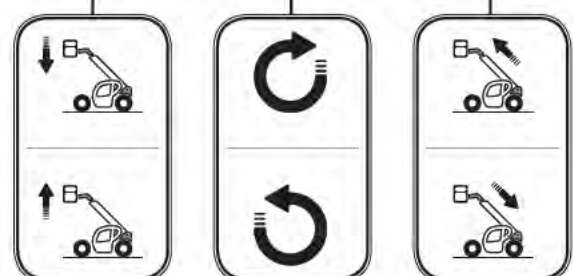
1. Switch the vehicle's engine off
2. The first operator must remove the rod from the tool box and install it on the emergency pump (Fig. 1-K0202, pos. 1)
3. The second operator must act on the levers of the distributor, which is on the left side of the vehicle (Fig. 2-K0202), according to the desired movement
4. Activate the emergency pump to implement the movements. The first operator must push the rod up to end run, first from one side and then the other to supply pressure to the system. The operation must be performed until the operation is completed.
5. While using the emergency pump, the second operator will use the lever on the distributor as follows:
  - Blue lever "A"
    - Upwards: boom descends.
    - Downwards: boom rises.
  - Black lever "B"
    - Upwards: turret rotates to the right.
    - Downwards: turret rotates to the left.
  - Red lever "C"
    - Upwards: boom extends.
    - Downwards: boom retracts.



**- FORBIDDEN**  
It is strictly prohibited to position and move the lever in positions "D" and "E" of the distributor, which are intended for swivelling and services. Danger of overturning the basket.

6. Once recovery is completed, everything must be reset to the start-up conditions; close the door of the distributor system and set the rod in the tool box.

**- WARNING**  
Act on the lever of the distributor before pumping in order to perform the desired manoeuvre. Pumping without moving the lever shall drain the oil of the distributor, which leads to a greater effort being required to perform the manoeuvres.





## 12 MAINTENANCE AND CONTROL LOGS

The Maintenance Log and Control Log are to be considered integral parts of the machine and equipment

These logs must therefore accompany the machine and equipment throughout their service life up to the final disposal.

### 12.1 Types of logs

#### 12.1.1 Control Log

The Control Log contains the scheduled main inspections **on the safety devices** of the equipment, recommended by **DIECI S.R.L.**

These inspections guarantee that the safety devices work properly.



#### - ATTENTION

**The inspections contained in the Control Log form part of the routine maintenance operations contained in the Equipment Maintenance Log.**

#### 12.1.2 Maintenance Log

The Maintenance Log contains all the scheduled maintenance interventions with reference to normal and not adverse conditions of use.

The intended maintenance must be performed more regularly, even daily, if required, in particularly adverse conditions of use (humidity, mud, sand, very dusty, etc.).



**Consult the DIECI assistance centre to establish the adequate schedules when operating in particularly adverse environments.**

Such maintenance allows the machine or equipment to be serviced in optimal efficiency conditions.

## 12.2 Instructions to complete the logs

### 12.2.1 Warnings on service register

- The register must be completed in compliance with requirements set out in the Essential Safety Requirement 4.4.2.b of Annex I of Machinery Directive 2006/42/EC, in order to prove that all maintenance and control operations regarding machine safety have been carried out correctly.
- Besides the activities regarding the service life and maintenance and use of the safety systems of the vehicle (replacing parts, servicing, faults, etc.), the register must also include all the inspections stipulated by the regulations in force in the country where the vehicle is used.
- The name of the technician and the service date must also be indicated clearly.
- It is recommended to complete, update and store this control log with care for the duration of the service life of the machine.



#### **- NOTE**

**A few pages are found at the end of the manual for these logs to be completed.**

### 12.2.2 Warnings on maintenance register

- The maintenance register is valid for warranty requests. All the activities regarding the service life, use and maintenance of the vehicle must be written in the register.

### 12.2.3 Completing the logs

Different parts of each log (Fig. 1-L0000) are completed:

1. Log data
2. Operations to be implemented
3. Device or component to which the operation refers to
4. Space that indicates the mandatory operation marked with an "o" and the possibility of taking note of special maintenance, which is not included in the log.

### 12.2.4 Key of the logs

Symbol	Operation
	Control - Inspection
	Refuel
	Adjustment
	Cleaning
	Replacement
	Lubrication
	Intervention at an authorised service centre

The screenshot shows the DIECI maintenance log form. It is divided into several sections:

- Section 1 (Maintenance Log Header):** Contains fields for 'Maintenance Data Sheet no.', 'Maintenance date', 'Vehicle serial No.', 'Vehicle hours', 'Name of the maintenance technician', and 'Name of the maintenance company'.
- Section 2 (Key):** A legend on the right side of the form listing operations with corresponding symbols: Control - Inspection, Refuel, Adjustment, Cleaning, Replacement, Lubrication, and Maintenance service.
- Section 3 (Maintenance Checklist):** A list of items to be checked, each with a checkbox. Items include: Window wiper, Air conditioner, Brake, Parking brake, Electrolyte level and battery charge, Lights, Hydraulic oil level, Alternator belts \ services, Engine oil level, Radiator, Radiator expansion tank, Tyre pressure, Filters (air, engine oil, hydraulic oil, fuel, air conditioner and cab), Anti-tipping device load verification, and Verification of wear (on the vehicle as well as on the equipment, if present). Below this is a section for 'After the first 50 hours' with items like Differential oil, Epicyclic gearbox oil, Cab filter, Hydraulic oil filter/s, Lock valves, Alternator belts \ services, Air filter, Fuel filter, Engine oil filter, Engine valve clearance, Engine oil, and Transmission oil.
- Section 4 (Footer):** Shows '1/4' and 'CONTINUES ->'.

Numbered callouts in the image point to: 1. The header section; 2. The Key legend; 3. A specific item in the checklist; 4. The checkbox area of the checklist.



### 12.3 Control log: inspections and deadlines



**- NOTE**

A few pages are found at the end of the manual for these logs to be completed.

Inspections	Notes						
<b>Mandatory inspections to be performed every 250 hours or every two months</b>							
Check the longitudinal load moment indicator		o					
Anti-tipping system acoustic alarm		o					
Anti-tipping system visual alarm		o					
Locking of the anti-tipping system movements		o					
Seat belts		o					
Inspecting the presence and condition of the safety stickers on the vehicle / equipment		o					
Inspecting the presence and condition of the capacity diagrams on the vehicle / equipment		o					
Inspecting the presence and condition of the use and maintenance manual on the vehicle / equipment		o					
Inspecting the presence and condition of the identification plates on the vehicle / equipment		o					
Parking brake		o					
Dead man seat micro switch		o					
Emergency recovery pump (if included)		o					
Emergency recovery button on the joystick		o					
Dead man button on the joystick		o					
Reverse drive engaged buzzer		o					
3-mode steering		o					
Spirit level calibration		o					
Inspecting the correct operation of the work modes for the installed equipment		o					
Making sure the emergency stop button is working		o					
Emergency push-button operation check		o					
<b>Mandatory inspections to be performed every 400 hours or every 3 months</b>							
Connection points, chain wear and setting (if present)		o		o			o
Forks (if included)		o					
<b>Mandatory inspections to be performed every 500 hours or every 6 months</b>							
Maximum hydraulic system pressure		o					
Calibrated power steering pressure		o					
Jack check valves		o					








## 12.4 Maintenance Log: actions and deadlines










### - NOTE

A few pages are found at the end of the manual for these logs to be completed.

Maintenance							
<b>_As required - Section to be filled-in if the inspections carried out are not related to fixed schedules but are due to heavy duty vehicle operation</b>							
Alternator belts \ services	<input type="checkbox"/>						
Air conditioner	<input type="checkbox"/>			<input type="checkbox"/>			
Filters (air, engine oil, hydraulic oil, fuel, air conditioner and cab)	<input type="checkbox"/>						
Brake			<input type="checkbox"/>				
Parking brake	<input type="checkbox"/>						
Electrolyte level and battery charge	<input type="checkbox"/>						
Hydraulic oil level	<input type="checkbox"/>						
Engine oil level	<input type="checkbox"/>						
Lights	<input type="checkbox"/>						
Tyre pressure	<input type="checkbox"/>						
Radiators	<input type="checkbox"/>			<input type="checkbox"/>			
Radiator expansion tank	<input type="checkbox"/>	<input type="checkbox"/>					
Window washer tank	<input type="checkbox"/>	<input type="checkbox"/>					
Anti-tipping device load verification	<input type="checkbox"/>						
Verification of wear (on the vehicle as well as on the equipment, if present)	<input type="checkbox"/>						
<b>_After the first 50 hours</b>							
Cab filter				<input type="checkbox"/>			
Air filter				<input type="checkbox"/>			
Fuel filter					<input type="checkbox"/>		
Engine oil filter					<input type="checkbox"/>		
Hydraulic oil filter/s					<input type="checkbox"/>		
Engine valve clearance	<input type="checkbox"/>						
Differential oil					<input type="checkbox"/>		
Engine oil					<input type="checkbox"/>		
Epicycloidal gearbox oil					<input type="checkbox"/>		
Transmission oil					<input type="checkbox"/>		
Lock valves	<input type="checkbox"/>						
<b>_Every 10 hours or every month</b>							
Metal structural frame, no cracks	<input type="checkbox"/>						
Boom chains (if present)	<input type="checkbox"/>						
Stickers	<input type="checkbox"/>						
Safety devices	<input type="checkbox"/>						
Coolant	<input type="checkbox"/>						
Engine oil level	<input type="checkbox"/>						

Maintenance							
<b>_Every 50 hours or every month</b>							
Transmission shafts							o
Mechanical joints							o
Parking brake mechanical joints on the axle							o
Cab filter					o		
Air filter					o		
Fuel filter					o		
Ropes and chains (if present)							o
Hydraulic oil level	o						
Boom pads	o						o
Hydraulic system leaks	o						
Tyre pressure	o						
Radiators					o		
Coolant	o						
Brake oil level	o						
Hydraulic oil level	o						
Engine oil level	o						
Tightness of the wheel nuts	o						
<b>_Every 250 hours or every 2 months</b>							
Threaded fasteners torque							o
Tightness of hydraulic fittings							o
Boom chains (if present)							o
Alternator belts \ services	o					o	
Seat belts	o						
Turret rotation fifth wheel teeth							o
Anti-tipping device	o						
Fuel filter						o	
Engine oil filter						o	
Electrolyte level and battery charge	o						
Engine oil							o
Rotating joint manifold moisture-proof bag						o	
Rear view mirrors	o						
Connection points, chain and rope wear and setting (if present)	o						o

Maintenance							
<b>_Every 500 hours or every 6 months</b>							
KUBOTA engine oil					o		
KUBOTA fuel filter					o		
KUBOTA engine oil filter					o		
Forks: wear	o						
Cab filter					o		
Air filter					o		
Hydraulic oil filter/s					o		
Electric system	o						
Differential oil	o						
Brake oil					o		
Turret rotation gearmotor oil	o						
Epicycloidal gearbox oil	o						
Transmission oil	o						
Lock valves	o						
<b>_Every 1000 hours or every year</b>							
Telescopic boom: conditions	o						**
Telescopic boom: bearing and bushing joints	o						**
Brake oil circuit				o			**
Brake oil circuit: Pressure	o						**
Condition of the equipment	o						**
Brake			o				**
Engine valve clearance	o						**
Electric system: condition of the cables	o						**
Electric system: Lighting and signals	o						**
Electric system: Acoustic signals	o						**
Hydraulic circuit: Jacks	o						**
Hydraulic circuit: Tubes and pipes	o						**
Hydraulic circuit: Movement speed	o						**
Coolant					o		
Differential oil					o		
Hydraulic oil					o		
Turret rotation gearmotor oil					o		
Epicycloidal gearbox oil					o		
Transmission oil					o		
Boom pads: wear	o						**
Fork holder plate: wear	o						**
Engine speeds	o						**
Fuel tank					o		
Cab structure	o						**
Chassis: bearing and bushing joints	o						**
Chassis: structure	o						**

Maintenance							
<b>_Every 2000 hours</b>							
Alternator and starter motor	o						**
Ropes and chains (if present)					o		**
Hydraulic circuit: Capacity	o						**
Hydraulic circuit: Pressures	o						**
Axle oscillation	o					o	**
Radiators	o			o			**
Hydraulic oil tank				o			**
<b>_Every 4000 hours</b>							
Transmission shafts	o					o	**
Gearbox Cardan shaft	o						**
Gear clearance on the wheels	o						**
Direction ball joints	o						**
Pins of the wheel gears	o					o	**
Brake discs wear	o						**
<b>_Every 2 years</b>							
Air conditioning (if present): Heat sink filter					o		**
Air conditioning (if present): Coolant	o						**
Air conditioning (if present): Pressure switches	o		o				**
Air conditioning (if present): Coil condenser and evaporator				o			**
Air conditioning (if present): Condensate and drain valve tray					o		**

## 12.5 Periodic inspections and recording methods (only Italy)

- The employer/user of the vehicle is obliged to have the vehicle inspected periodically in compliance with law (MD 12/9/59 and Legislative Decree 81/08).
- The employer/user is also obliged to adhere to the maintenance and inspection schedule described in this User and Maintenance manual.
- Inspections and periodic checks, together with maintenance work must be carried out by qualified personnel or by a workshop authorised by the manufacturer DIECI S.r.l.
- The employer/user of the vehicle must register all inspection results in the Service Register or have qualified personnel register the results.
- Periodic inspections that must be logged in the "Service Register" are:
  - Quarterly inspections that involve the operation and/or efficiency of ropes/chains in accordance with annex VI point 3.1.2 Legislative Decree 81/08;
  - Yearly inspections that involve the operation and the preservation of the vehicle to ensure its safe functioning (annual tests, corrosion tests, calibration checks, etc.) in accordance with annex VII Legislative Decree 81/08;
- Law foresees administrative fines to the charge of those who fail to carry out these quarterly and yearly inspections.
- The Service Register, in which the inspections are to be written, must be shown on request to the inspectors in charge of ensuring that the current laws are observed.
- After the yearly inspection has been carried out, the ASL inspector (Dip.SSIA) or the privately selected Qualified Entity will issue an acceptance report or will prescribe any necessary obligations that must be fulfilled. The user is obliged to keep the inspection report together with the Service Register.
- Inspection results must be recorded in the reserved pages that follow, and must indicate the results of the inspection, the date, signature, and any comments made by the inspector.
- If the pages reserved within this manual are not sufficient to hold all the notes made during the life of the vehicle, use additional sheets of paper, remembering to write them out in the same manner.

## **12.6 Requirement and instructions on how to send in I.N.A.I.L. reports (only in Italy)**

- The Ministerial Decree dated 12/09/1959, under Title II – Article 7, states that the employer and users of engine-driven lifting equipment having engine capacities greater than 200 kg and people carrying platforms, are obliged to inform the competent authority of the territory (currently the I.S.P.E.S.L. in Italy), when the vehicle is put to work, specifying the place of installation of the vehicle so that this authority may make an initial inspection.
- The declaration to I.S.P.E.S.L. must be made by enclosing a copy of the CE Declaration of conformity of the vehicle, with reference to Annex IIA of Legislative Decree 17/2010 – Machinery Directive 2006/42/EC.
- The original statements (EC Declaration of Conformity - Annex IIA) must be retained by the customer.
- The declaration shall be forwarded to I.S.P.E.S.L. by Registered mail with return receipt.

## 13 MAINTENANCE

### 13.1 Maintenance warnings

This vehicle has been designed and built to provide maximum performance, savings and facilitate its operation in various working conditions. Before delivery, the vehicle was tested both by the Manufacturer and by the Dealer to ensure its maximum condition. To preserve these conditions and guarantee problem-free operation, it is important to carry out the routine maintenance operations described in this manual at an authorised **DIECI** dealer in accordance with the maintenance schedule provided.

This section of the Manual provides all the maintenance prescriptions necessary for maintaining the **DIECI** vehicle in perfect working condition.

The vehicle must receive regular routine maintenance in order to give the best results. It is recommended that all services be carried out as prescribed in the service schedule suggested by **DIECI**. Remember that it is the owner's and/or users responsibility to keep the vehicle in safe working condition and suitable to be driven on public and private roads.

Proper vehicle maintenance not only improves the vehicle reliability but it also preserves vehicle value over time.



#### - ATTENTION

Maintenance or adjustment operations not described in this chapter or in the rest of the manual must be carried out by qualified personnel respecting the conditions of safety in order to guarantee their safety and the safety of others. Only **DIECI** Dealer maintenance staff have been trained to carry out said interventions and only they have the special equipment and tools necessary to guarantee maximum safety, precision and efficiency.



It is mandatory to have read and learned the "Safety Standards" chapters before reading the "Maintenance".



#### - FORBIDDEN

It is prohibited to service the vehicle if this manual has not been read and this chapter learned.



To know the maintenance operations and timetables, see the Maintenance Register.



#### - ATTENTION

All maintenance operations must be recorded in the specific Maintenance Register.



#### - ATTENTION

In case of operating in corrosive environments, intervene with adequate modes and times of maintenance to avoid excessive wear of the equipment.



#### - ATTENTION

Use adequate personal protective equipment during the various inspection and maintenance operations.



#### - FORBIDDEN ACTION

In the event of malfunction, do not use the vehicle until it has been repaired.



#### - ATTENTION

Any modification made to the vehicle entails a new conformity check. This procedure is also valid in the case of repairs with non-original spare parts.



Only the following checks can be carried out by the operator: liquids level, air filter cleaning, tyre pressure. These operations must be performed in compliance with safety standards as described in this manual.



### 13.1.1 Avoid accidents during maintenance

- Always keep the work site clean and organised in order to guarantee safe operation of the vehicle. .
- Do not leave tools or other instruments laying around in a disorderly fashion at the work site.
- Clean traces of grease, oil and other substances that could cause slipping.
- Always deposit cloths soaked with grease and/or inflammable materials in a safe container to ensure safety at the work site.
- Only use attachments that are appropriate for the job and ensure their proper use. The use of damaged, defective, makeshift, unsuitable and poor quality equipment may cause serious injuries.
- Do not hit the vehicle or its parts with a hammer or any other instrument, as projected fragments could cause injury.
- If inspection or maintenance is carried out on vehicles which are still covered with mud, oil, etc., operators risk sliding or falling and the visual analysis of components is made more difficult. Carefully clean the vehicle before repair or maintenance work is carried out.
- Ensure you are familiar with maintenance procedures before starting work.
- Keep the work zone clean and dry.
- Do not lubricate parts or carry out maintenance work with the engine running.
- Replace any worn or broken parts.
- Eliminate any grease and oil deposits.
- The knurled plates (bulb plates) and the cab floor are the only parts of the vehicle that can be stepped on. Use a ladder (suitable for the intended purpose) for maintenance of parts that cannot be reached from the ground.



#### - DANGER

**Do not carry out maintenance on a moving vehicle. Should maintenance need to be performed with the engine running, ask at least two workers for help and observe the following instructions:**

- One worker must always be seated in the driver's seat, ready to switch off the engine at any time.
- All workers must remain in contact with one another.
- Take care not to remain entrapped in components during the execution of operations performed on the fan, fan belt or other rotating parts.
- Do not touch levers or control pedals. Should a lever or pedal need to be moved, always warn operators first so they can move out of harm's way.
- Do allow instruments or other objects to fall into the vehicle's rotating parts, as these parts may break and be projected out.
- The vehicle must be outdoors when the engine is running. The vehicle can be kept in a closed area only if it is properly ventilated and the vehicle is equipped with specific purifiers.



#### - ATTENTION

**If you need to work under raised mobile parts (booms, shovels, etc.) block them using spacers placed on cylinder rods or lean them up against appropriately sized supports.**

**If you need to perform repair or maintenance work under the vehicle, firmly support the equipment being used and the vehicle with blocks that are solid enough to support the weight.**

- Store attachments removed from the vehicle in a safe place where they do not risk falling. Take precautions to prevent unauthorized persons from approaching the storage area.



### - ELECTRICAL SYSTEM DANGER

**Do not rest metal parts on the battery.**

- Welding operations must always be carried out by qualified welders and in areas equipped with suitable equipment. There is danger of gas leaks, fire or electrocution during welding operations; Do not allow unqualified personnel to carry out such operations.
- Disconnect the battery wires before working on the electrical system or before carrying out arc welding on the vehicle.
- When carrying out electric welding, connect the earth of the welding machine as close as possible to the area to be welded, and prevent the electric current from passing through ball bearings, articulated joints, hydraulic cylinders or sliding parts. If welding must be done in proximity to the oil or fuel tank, empty the tanks before welding.



### - ENTANGLEMENT DANGER

**Damage may be caused by entanglement in moving parts. Prevent accidents while you are working by ensuring that hands, feet, clothing, jewellery and hair cannot get caught in moving parts.**



### - EXHAUST GAS DANGER

**Exhaust gases are toxic and can damage your health.**



### - DANGER

**The vehicle must be outdoors when the engine is running.**

**The vehicle can be kept in a closed area only if it is properly ventilated and the vehicle is equipped with specific purifiers.**



### - PRESSURISED LIQUIDS DANGER

**After operation, the engine cooling liquid is hot and under pressure. Contact with hot water or steam may cause serious burns.**

- Do not attempt to loosen connections, tubes or hydraulic components when circuits are under pressure.
- Avoid possible injury caused by hot water jets.
- Do not remove the radiator cap until the engine has cooled down.
- Before removing the cap, release all of the pressure.
- Prevent burns caused by oil or other hot parts during inspection or discharge by allowing the oil and cap to cool down before beginning operation.
- Even after the oil has cooled down, slightly loosen the cover or cap before removing it to mitigate pressure inside.



### - BURNS DANGER

**Attention to burns. Engine reduction gear oil and the hydraulic system, pipes, engine and other components heat up when the vehicle is used. Wait until all parts cool down before beginning maintenance or repair work.**

- Fluids such as fuel or hydraulic oil under pressure can penetrate the skin and eyes causing serious injuries. Take care to avoid these risks when repairing or doing maintenance work on the vehicle.
- Discharge the pressure (using the hydraulic levers of the distributors) before disconnecting or repairing pipes and hydraulic parts.



### - DANGER

**When a hydraulic pipe needs to be disconnected, slowly loosen the fittings to discharge residual pressure.**

**- PRESSURISED LIQUIDS DANGER**

Hydraulic energy accumulators are mounted on the vehicle. Before intervening on them, make sure to discharge any internal pressure. Danger of high pressure oil squirts.

- Before restarting the engine, ensure that all connections have been properly tightened.
- Use a piece of cardboard to check for any leaks; make sure your hands and body are adequately protected against pressurised fluids.
- Any fluids that penetrate the skin must be removed surgically. Should there be an accident, seek medical attention immediately.

**- FORBIDDEN**

**Never touch air conditioning coolant.**

- If it comes into contact with eyes, air conditioning coolant may cause blindness; it may cause freezing if it comes into contact with skin.
- When cleaning with compressed air, serious injury may be caused by flying particles.
- Always wear protective goggles, a dust mask, gloves and other protective equipment.

**- ATTENTION**

**adjusting and/or dismantling balancing and safety valves can be dangerous.**

**One of the above-mentioned valves may be removed only when the concerned jack is at rest and the hydraulic circuit is not under pressure.**

**All other operations must be carried out by qualified, authorised personnel only.**

**- NOTE**

**Only use lubricants suggested by DIECI never utilise used lubricants.**



## 13.2 Preliminary maintenance operations

### 13.2.1 *Prepare the vehicle for maintenance*



#### **- ATTENTION**

**Before performing maintenance work on your vehicle, do the following:**

- Park the vehicle on flat, even ground.
- Engage the parking brake.
- Lower and fully retract all mobile parts (booms, shovels, etc.).
- If the maintenance operation requires the mobile parts to remain up, apply the safety run.
- Run the engine at a minimum for 60 seconds to cool it down.
- Discharge residual pressure from the hydraulic circuit.
- Switch off the key in the ignition switch.
- Remove the ignition key.
- Hang up a sign that indicates maintenance work is underway. This sign can be hung on the cab door and inside the controls.
- Set up barriers and spacers to prevent unauthorised personnel from approaching the vehicle.
- Disconnect the battery isolator switch.
- Allow the engine to cool down.



**- ATTENTION**

Set the vehicle in the maintenance position before performing any maintenance.



**- ATTENTION**

Use adequate personal protective equipment during the various inspection and maintenance operations.

### 13.2.2 Opening-closing the engine bonnet



**- FORBIDDEN**

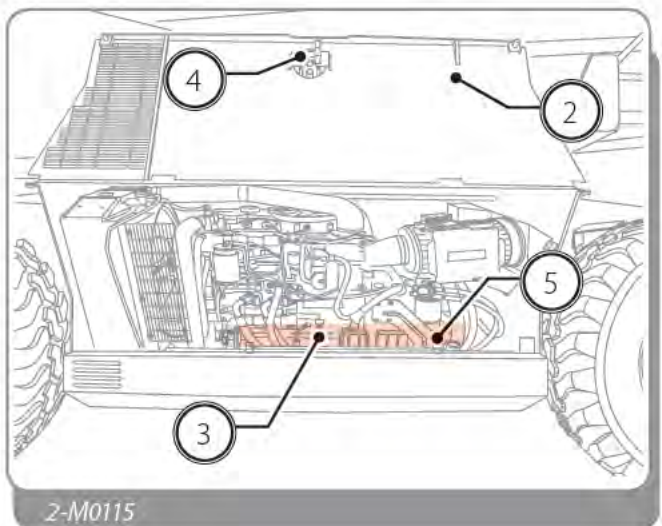
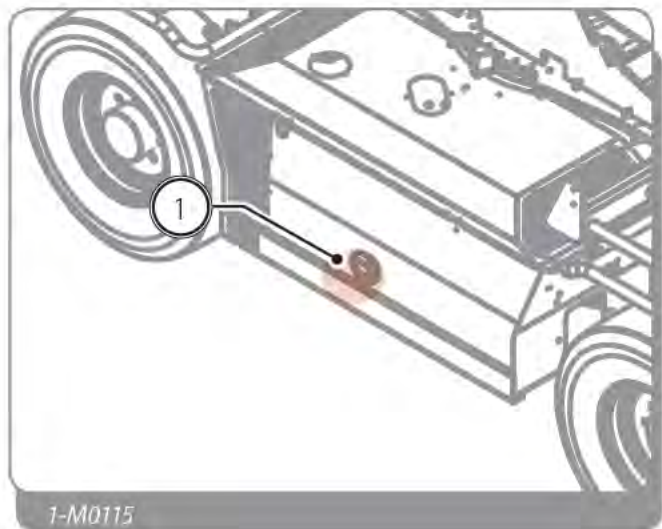
It is prohibited to open the engine bonnet with the diesel engine running. At the end of the maintenance operations, the bonnet must always be closed and locked.

**To open the upper engine bonnet you need (Fig. 1-M0115 and Fig. 2-M0115):**

1. Switch off the Diesel engine.
2. Remove the ignition key.
3. Position a plate in the cab indicating "Maintenance in progress".
4. Disconnect the battery by acting on the battery isolator switch.
5. Pull the lever "1".
6. Lift the bonnet "2".
7. Fit the support rod "3" in the relevant housing on the bonnet "4".
8. Leave the bonnet gradually to make sure that the support rod has been inserted properly.

**To close the engine bonnet, you must (Fig. 2-M0115):**

1. Support the engine bonnet "2".
2. Remove the support rod "3" from its housing "4".
3. Put the support rod "3" back in the rest position "5".
4. Slowly lower the bonnet "2".
5. Close the engine bonnet pushing it lightly. Always check that it is closed correctly before starting to operate or before moving away from the vehicle.
6. Re-activate the battery isolator switch.



### 13.2.3 Opening-closing the turret bonnet



#### - FORBIDDEN

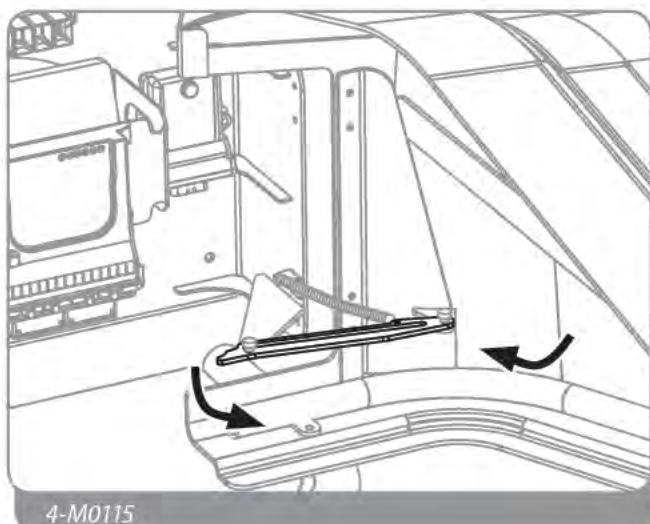
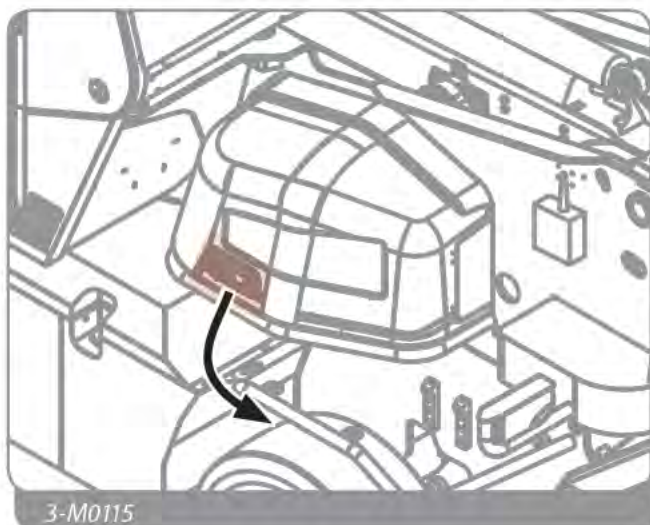
It is forbidden to open the turret bonnet while the vehicle is being used. At the end of the maintenance operations, the bonnet must always be closed and locked.

#### To open the turret bonnet, you must (Fig. 3-M0115):

1. Open the lock using the key.
2. Press the button on the handle and pull outwards.
3. Open the turret bonnet until the safety pin is engaged.

#### To close the engine bonnet, you must (Fig. 4-M0115):

1. Pull the safety pin outwards "1".
2. Keep the safety pin outwards and lower the bonnet.
3. Close the engine bonnet pushing it lightly. Always check that it is closed correctly before starting to operate or before moving away from the vehicle.



### 13.2.4 Underside protection removal

To perform certain maintenance, the engine underside protection must be temporarily removed from the vehicle. The underside protection protects the bottom of the engine from any blows, collisions and dirt.

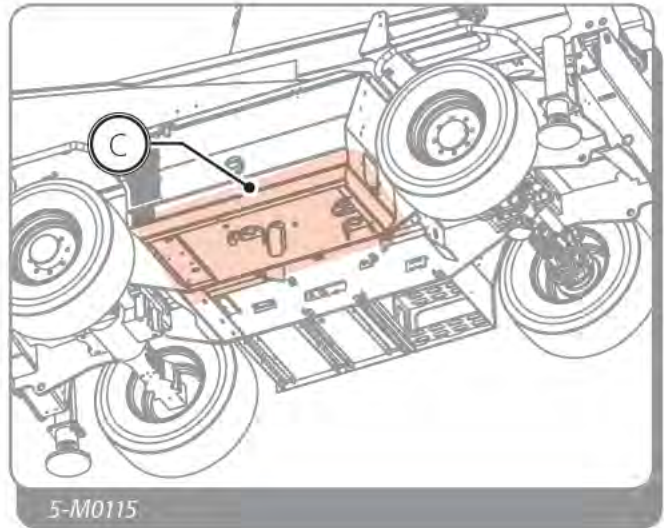
#### To remove the underside protections:

1. Set the vehicle in the maintenance position.
2. Block the wheels with wedges to keep the vehicle from moving accidentally.
3. Unscrew the bolts and remove the underside protection.



#### - ATTENTION

Once maintenance operations have been completed, remount the underside protection.





## 13.3 General maintenance of the vehicle

### 13.3.1 Threaded fasteners torque: Adjustment



Refer to the "Threaded fasteners torque" chapter to learn the coupling torques of the nuts and bolts of the vehicle.

### 13.3.2 Tightness of hydraulic fittings: Adjustment



Refer to the "Tightening torque of hydraulic fittings" chapter to learn the coupling torques of the hydraulic nuts and bolts of the vehicle.

### 13.3.3 Stickers: Inspection

Check that all the safety stickers are intact and in good condition.



Refer to the "Cleaning the safety stickers" chapter to learn how to clean the stickers.

### 13.3.4 Lights: Inspection

Make sure the light beam emitted from the various headlamps is directed and set correctly so as to prevent dazzling the drivers driving in the opposite direction.



Refer to the "Lights" chapter to learn how to replace and adjust the bulbs.

## 13.4 Lubrication

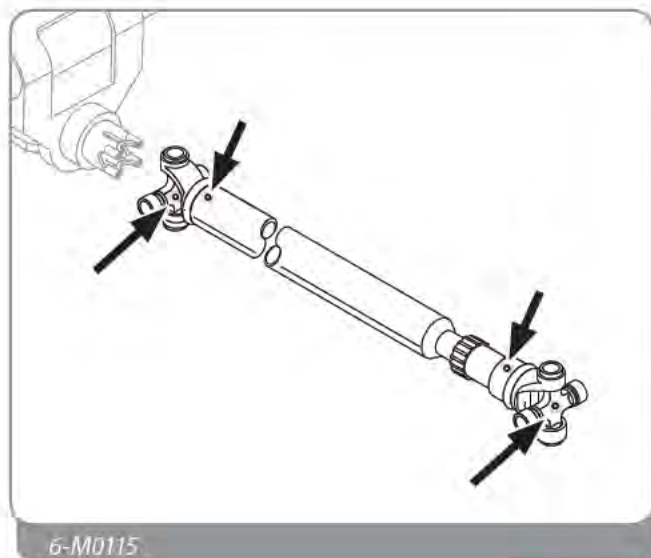
### 13.4.1 Transmission shafts: Lubrication

Lubricate the points marked in the figure (Fig. 6-M0115) until grease leaks out.



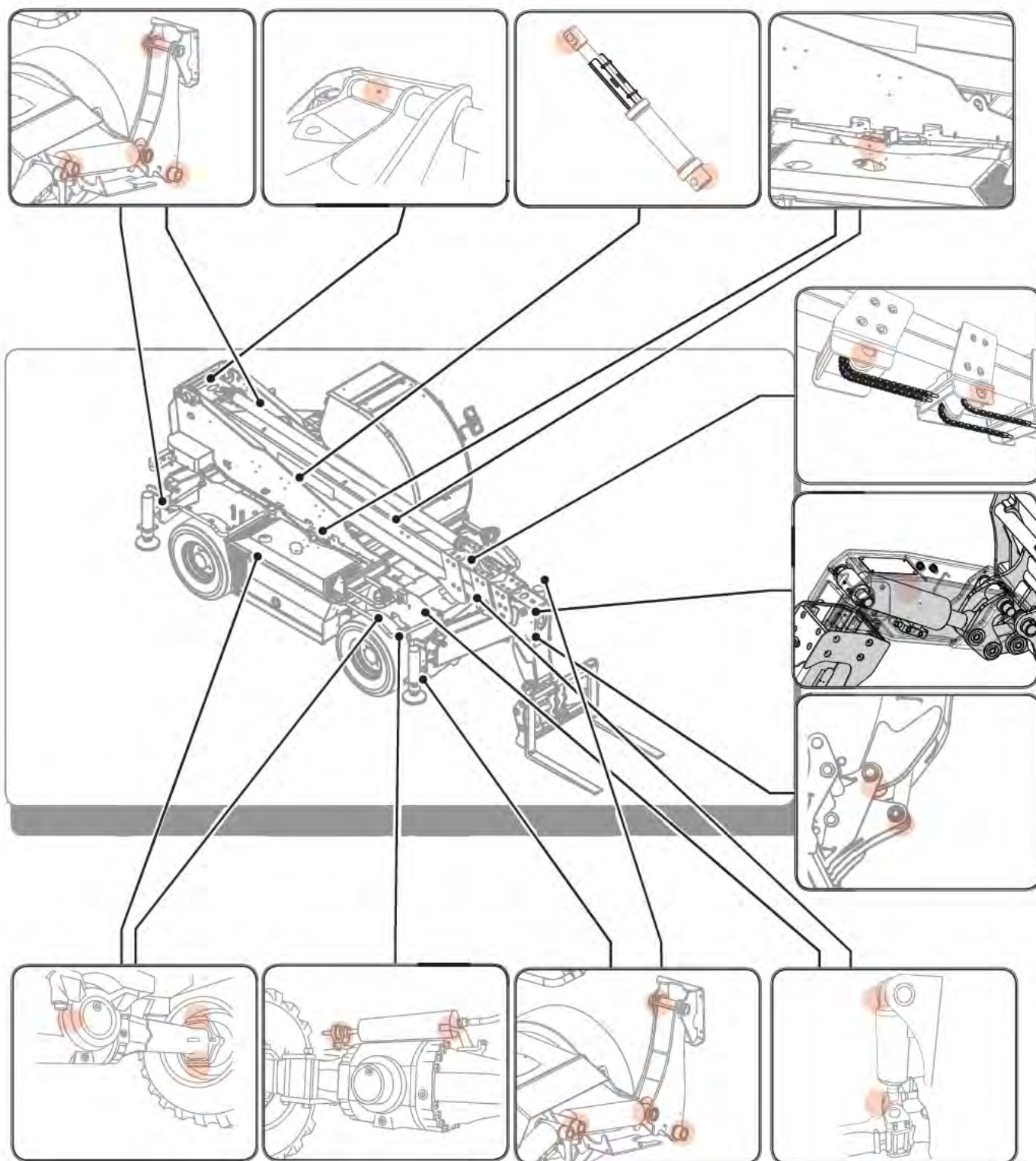
#### - WARNING

Check the tightness of the nuts and bolts on the coupling flanges of the shafts.



### 13.4.2 Mechanical joints: Lubrication

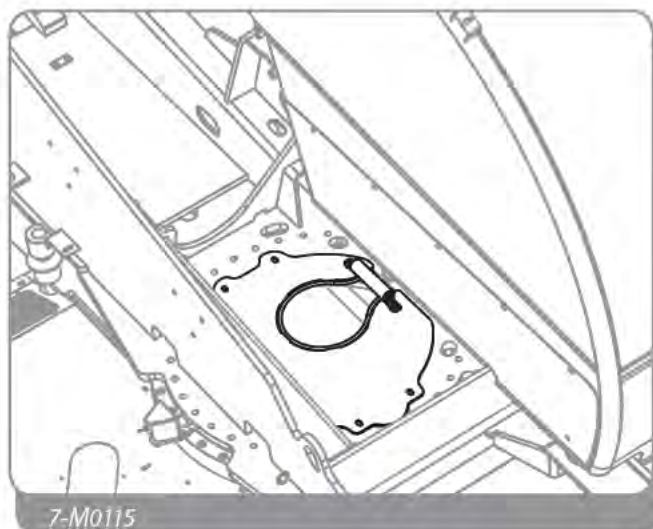
Lubricate the points indicated in the figure until the grease leaks and clean the greasing nipples from any dirt or deposits.



### 13.4.3 Fifth wheel: greasing

To grease the teeth of the rotation fifth wheel you must:

1. Set the vehicle in the maintenance position.
2. Turn on the vehicle.
3. Start the vehicle and raise the boom just enough to insert the safety rod on the raising cylinder blocking rod.
4. Switch off the engine and remove the ignition key, position a plate in the cab indicating "Maintenance in progress".
5. Insert the "boom support" safety rod on the raising cylinder blocking rod; set suitable safety supports on the telescopic boom.
6. Remove the protective casing above the fifth wheel, next to the cab.
7. Clean the cogs of the fifth wheel and of the rotation reducer, removing any dirt or old grease.
8. Using a brush, grease the teeth of the fifth wheel.
9. Remove the protective casing.
10. Remove the "boom support" safety rod.



## 13.5 Engine maintenance



### - ATTENTION

See the engine manual to perform maintenance on it.

### 13.5.1 Belts: Inspection and adjustment

Check that the belt (Fig. 8-M0115) has no tears, cracks or signs of rubbing; if in doubt, install a new belt.

Make sure the belt fits properly on the pulleys and the tensioner works correctly.



### - WARNING

If the belt does not seem to be in good conditions, replace it with a new one

### 13.5.2 Fuel filter: Replacement

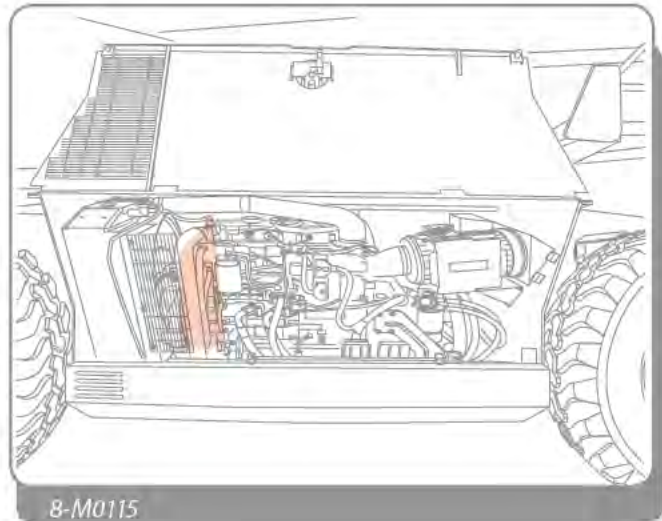


Refer to the engine manual to learn how to replace the fuel filter.

### 13.5.3 Engine oil filter: Replacement



Refer to the engine manual to learn how to replace the engine oil filter.



## 13.5.4 Engine oil: Inspection and top-up

1. Check the level while the vehicle is level and the engine is off. Wait at least 5 minutes to allow the oil to settle in the sump.
2. Take out the level rod "1" (Fig. 9-M0115), clean it and put it all the way back in.
3. Remove it again "1" and check that the oil level is between the "MIN" e "MAX" notches.
4. Insert the dipstick once again completely.
5. If necessary, add oil via the cap on the engine by removing the outside casing on the engine bonnet "2" (Fig. 10-M0115).



Refer to the engine manual to learn the quantities and type of oil.



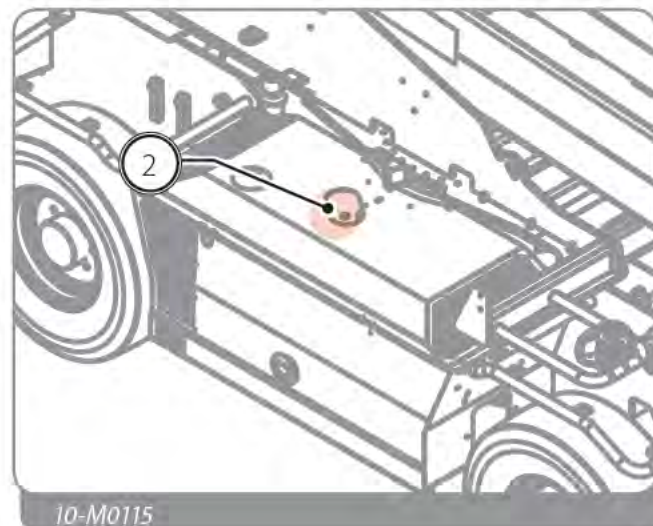
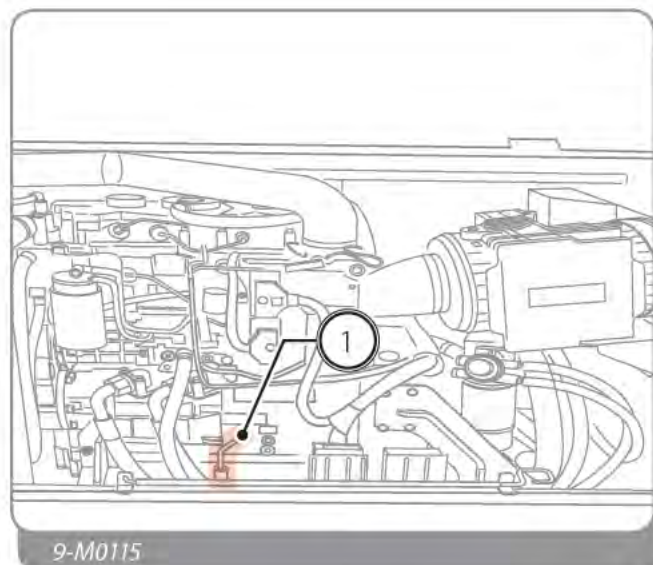
### - WARNING

Do not top-up above the "MAX" notch; if topped up excessively, the oil is burnt and smoke is produced, giving the false impression that the oil is being consumed.



### - ATTENTION

Never use the engine if the oil level is below the "MIN" notch.



## 13.6 Radiator maintenance

### 13.6.1 Air circulation grills and meshes

Check that the air circulation grills and meshes are clean and free from dirt (Fig. 11-M0115):

Use a low pressure air jet to clean them, directing it from the inside towards the outside of the vehicle.

### 13.6.2 Radiator: Inspection and cleaning

The oil and water radiator requires the following operations (Fig. 12-M0115):

#### Radiator check

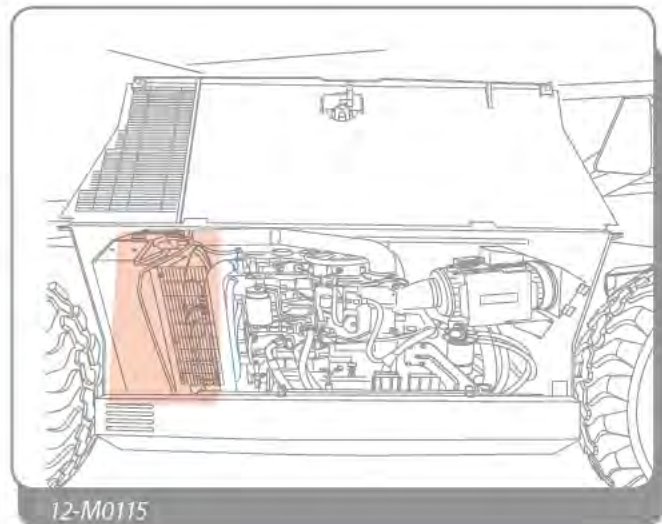
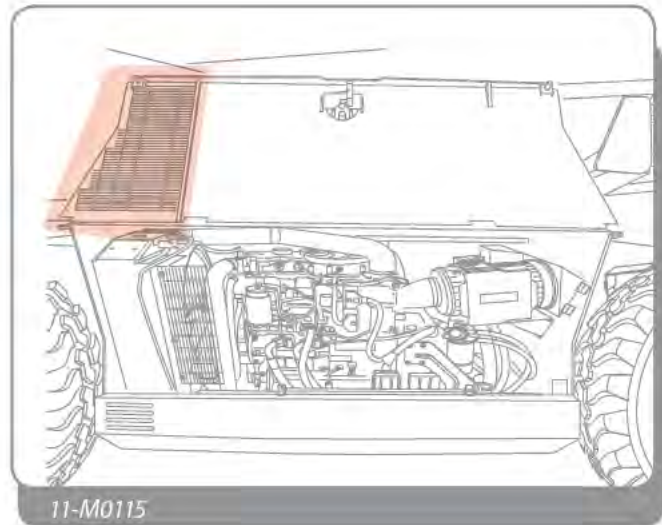
Check that the fins are not deformed; in this case, straighten them with caution.

Check that there is no accumulated dirt on the fins and that they are not blocked.

#### Cleaning radiators

Clean the radiator from any dirt and impurities accumulated between the cooling fins. For cleaning, use compressed air with pressure not beyond 7 bar from the inside towards the outside.

If necessary, use a detergent and then remove it with the pressure washer.



## 13.6.3 Radiator: Filling and replacing liquid



### - RISK OF BURNS

Do not remove the radiator top-up cap when the system is hot, otherwise, boiling coolant could leak. Once the system has cooled, turn the top-up cap to the first notch and wait until the pressure is discharged completely before proceeding. Risk of burns and injury.



### - DANGER: HARMFUL SUBSTANCES

The coolant can be toxic. Avoid contact with skin, eyes and clothing. If contact is made with skin or eyes, rinse with plenty of water. Consult a doctor immediately. If not used once again, dispose of according to the local environmental regulations.

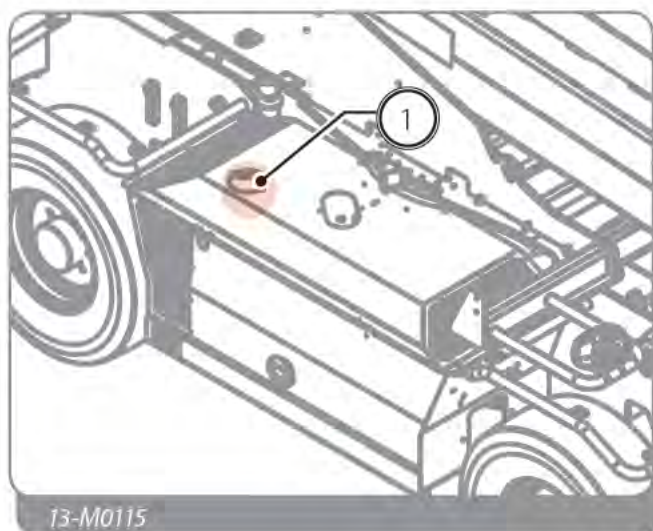


### - ATTENTION

The radiator must always be filled with a solution of distilled water and anti-freeze in order to prevent corrosion and the system water from freezing.

The mixture percentages can be found on the anti-freeze packages.

Use demineralised water to fill the cooling system. Hard water can cause incrustation and premature system ageing.

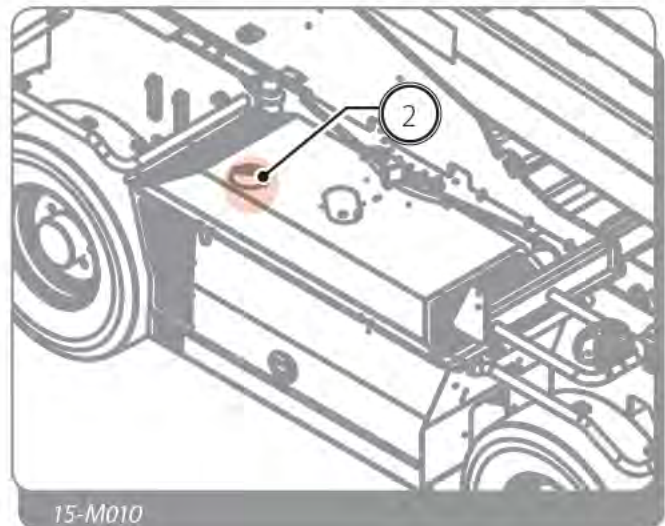
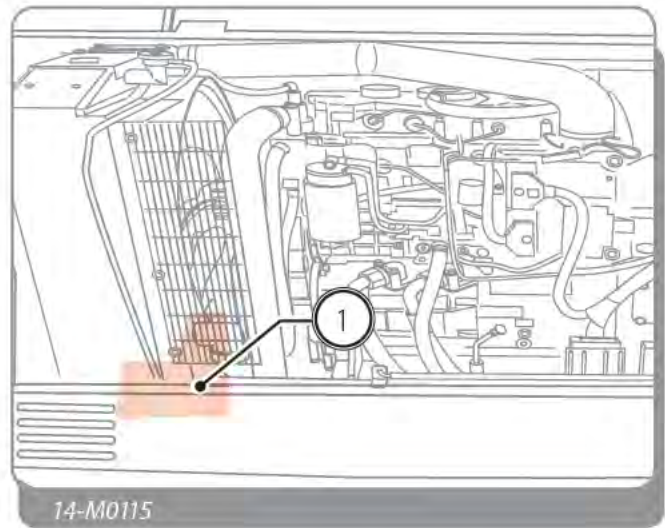


### Top-up

1. Set the vehicle in the maintenance position.
2. Remove the protective casing on the engine bonnet "1" (Fig. 13-M0115).
3. Slowly unscrew the filler cap anticlockwise until reaching the safety pin.
4. Discharge residual pressure and steam.
5. Add coolant until the level reaches **30 mm (1.2 in)** under the cap.
6. Refit the cap.
7. Close the protective casing on the engine bonnet "1".

## Changing liquid

1. Set the vehicle in the maintenance position.
2. Open the engine bonnet.
3. Remove the engine underside protection.
4. Set up an adequately sized container under the drain pipe "1" (Fig. 14-M0115) to collect the drained coolant.
5. Remove the sleeve "1" to drain the coolant from the radiator.
6. Remove the protective casing on the engine bonnet "2" (Fig. 15-M010).
7. Remove the filler cap to empty it quicker.
8. Allow the cooling circuit to drain completely.
9. Rinse the radiator with clean demineralised water, through the filler cap "2" and draining it from the orifice of the sleeve "1". Add detergent if necessary.
10. Check the conditions of the sleeves and their fastenings. Replace them if necessary.
11. When cleaning is finished, put the drain sleeve "1" and relative underside protection back in place.
12. Fill the cooling system with coolant previously prepared through the filler cap "2" until the level is **30 mm (1.2 in)** below the cap.
13. Close the filler cap.
14. Close the protective casing on the engine bonnet.
15. Turn the engine on allowing it to run at minimum for a few minutes.
16. Make sure that there are no leaks, check the level and, if necessary, add more liquid.





## 13.7 Hydraulic system maintenance

### 13.7.1 Hydraulic oil: Inspection and change

The hydraulic oil tank is found on the left side of the vehicle, under the cab "1" (Fig. 16-M0115).

The level can be checked through the transparent cap on the left side of the vehicle "2".

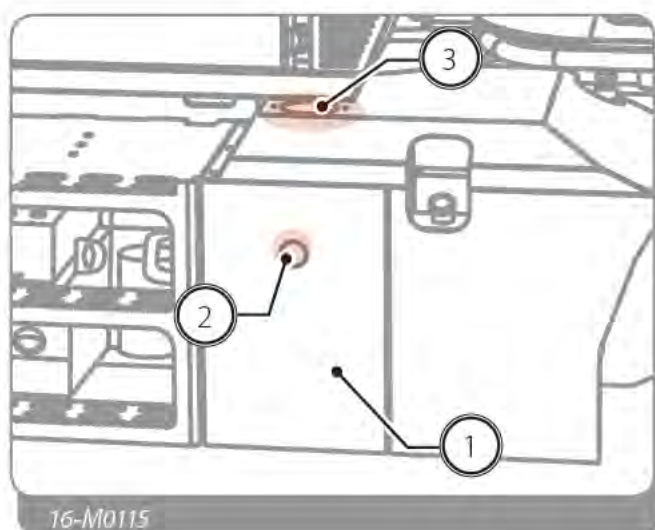
The level is correct when the oil can be seen through the transparent cap "2" with all vehicle cylinders in transport position.

#### Inspecting the oil

The oil level must be kept in optimal condition so as to maintain the vehicle in normal conditions of use.

Proceed as follows to check the oil level in the tank correctly:

1. Set the vehicle in the maintenance position.
2. Make sure that all cylinders and jacks of the vehicle are retracted (for example: telescopic boom completely lowered and retracted, accessory holder plate inclined downwards as far as possible to avoid contact with the chassis or tyres). This will send all the oil in the hydraulic circuit to the tank.
3. Check the oil level through the transparent cap "2". In optimal conditions, the oil level reaches halfway up the transparent indicator.
4. If necessary, remove the cap from the tank "3" and top up the oil until the correct level is reached.
5. Remount the tank cap "3".



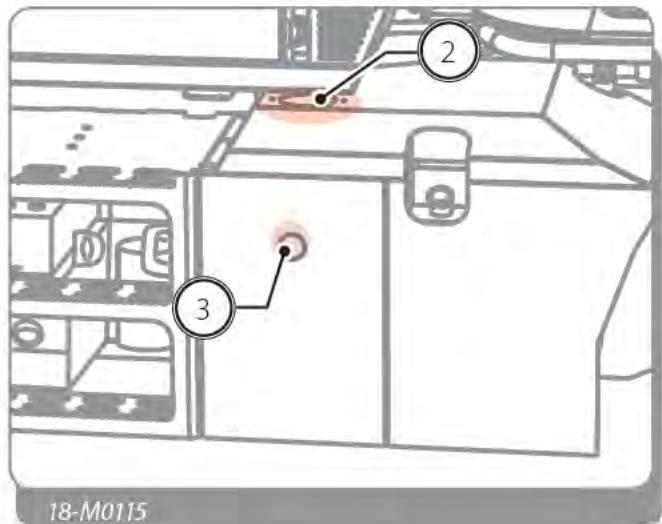
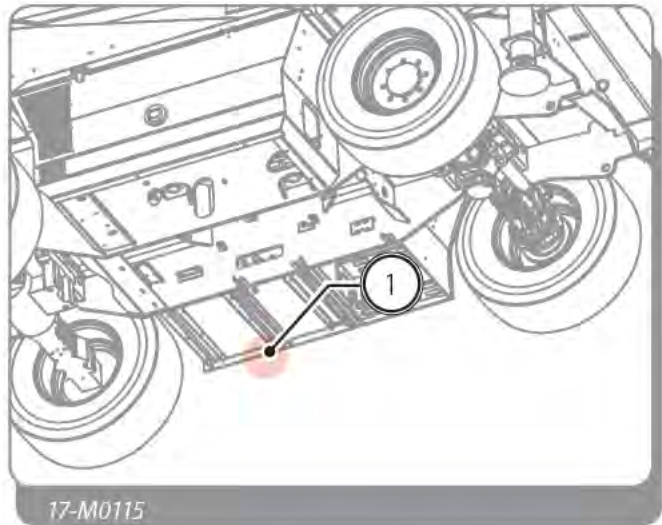
## Changing oil

To change the oil in tank (Fig. 17-M0115, and Fig. 18-M0115) you need to:

1. Set the vehicle in the maintenance position.
2. Make sure that all cylinders and jacks of the vehicle are retracted (for example: telescopic boom completely lowered and retracted, accessory holder plate inclined downwards as far as possible to avoid contact with the chassis or tyres). This will send all the oil in the hydraulic circuit to the tank.
3. Place a container under the drain cap (under the tank) "1".
4. Remove the filler cap "2"
5. Remove the drain plug to allow the oil to drain "1".
6. After draining the oil, remount the drain plug "1".
7. Fill the tank with indicated oil
8. Check the level through indicator "3" after having started the engine and operated all the hydraulic controls to let out any air bubbles.
9. Close the filler cap "2".
10. If necessary, top-up the level.



Refer to the "Technical Data" chapter to know the amount of oil required and to the "Oil comparison table" to be familiar with the type of recommended oil.

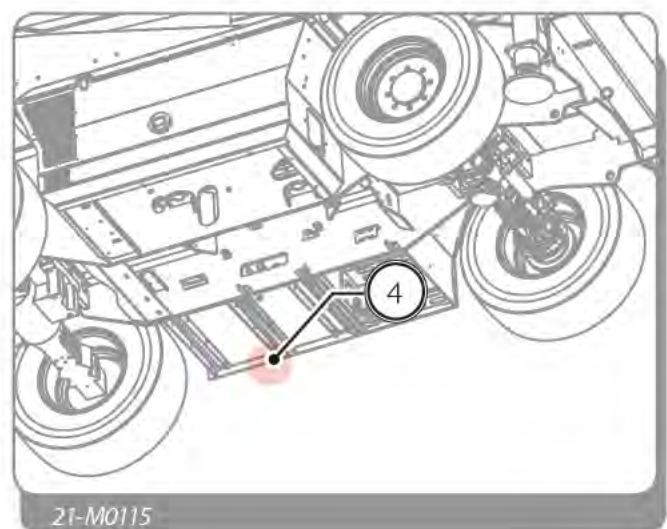
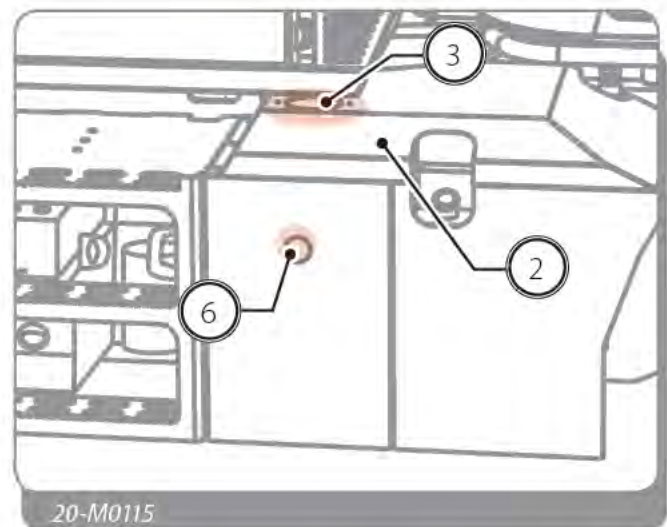
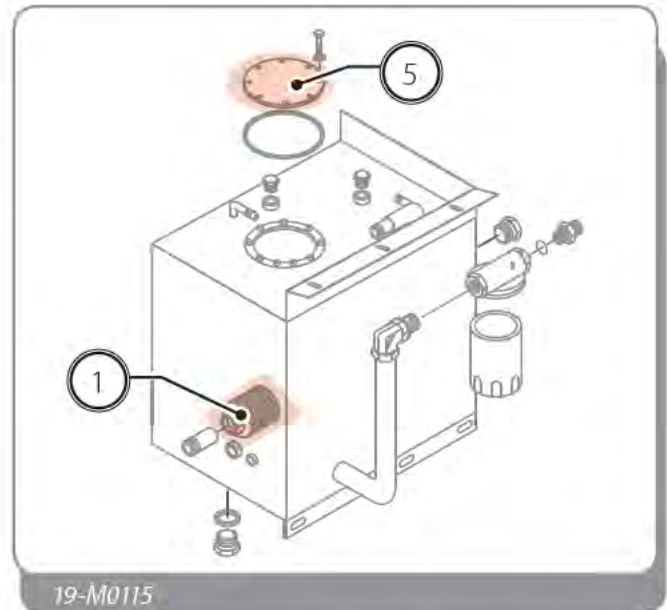


## 13.7.2 Internal hydraulic oil intake filter: Replacement

The internal hydraulic oil intake filters "1" (Fig. 19-M0115) are inside the hydraulic oil tank; the tank must be emptied completely in order to replace them. It is therefore recommended to replace the intake filters when changing the oil.

Follow the instructions below to replace the intake filter (Fig. 19-M0115, Fig. 20-M0115 and Fig. 21-M0115):

1. Set the vehicle in the maintenance position.
2. If possible, switch on the vehicle and turn the turret clockwise by approximately 90-100 degrees, in order to free the area above the tank to facilitate the replacement.
3. Turn off the vehicle.
4. Make sure that all cylinders and jacks of the vehicle are retracted (for example: telescopic boom completely lowered and retracted, accessory holder plate inclined downwards as far as possible to avoid contact with the chassis or tyres). This will send all the oil in the hydraulic circuit to the tank.
5. Place a container under the drain cap (under the tank).
6. Remove the protective casing "2".
7. Remove the filler cap "3"
8. Remove the drain plug to allow the oil to drain "4".
9. When the oil is completely emptied, remove the flange "5" in order to access the intake filters.
10. Unscrew the intake filter "1" inside the tank with an adjustable fork spanner.
11. Fit new filters and tighten them with the fork spanner.
12. Refit the drain plug "4".
13. Fill the tank with indicated oil.
14. Remove the filler cap "3" and the protective casing "2".
15. Check the level through indicator "6" after having started the engine and operated all the hydraulic controls to let out any air bubbles.
16. If necessary, top-up the level.

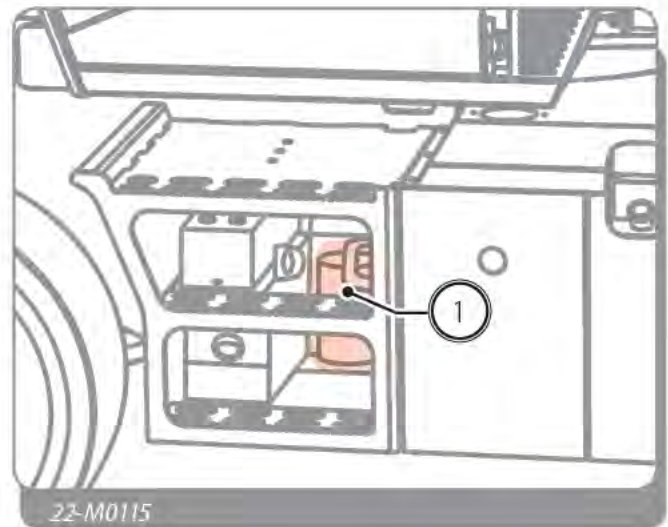


### 13.7.3 External hydraulic oil intake filter: Replacement

The external hydraulic oil intake filter "1" (Fig. 22-M0115) is next to the tank, behind the access steps.

Follow the instructions below to replace the external hydraulic oil intake filter:

1. Set the vehicle in the maintenance position.
2. Start the vehicle and raise the boom just enough to insert the safety rod on the raising cylinder blocking rod.
3. Switch off the engine and remove the ignition key, position a plate in the cab indicating "Maintenance in progress".
4. Let the engine and hydraulic oil cool off.
5. Insert the "boom support" safety rod on the raising cylinder blocking rod; set suitable safety supports on the telescopic boom.
6. Place a container under the oil filter "1" to collect the oil that could leak when replacing it.
7. Replace the filter "1", lightly oil the gasket and manually tighten 3/4 of a turn.



## 13.8 Brake maintenance

### 13.8.1 Brake: Inspection

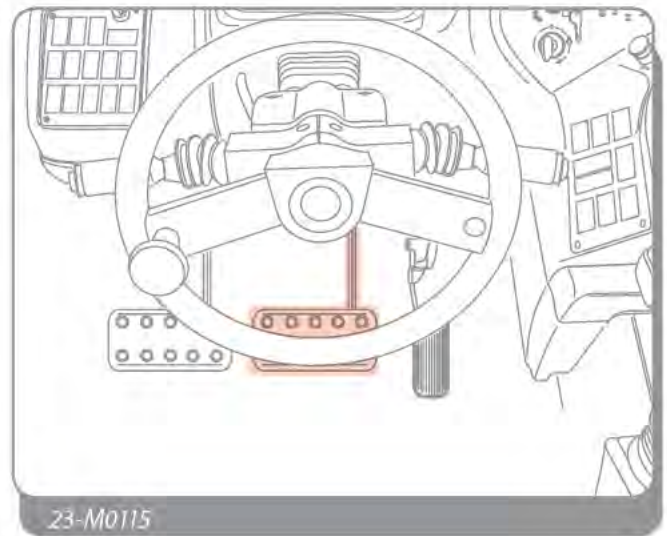
Visually make sure that the joints of the pedals (Fig. 23-M0115) are not damaged and that the stroke of the pedal is not too extended or too elastic.



#### - ATTENTION

If irregularities occur while braking, contact qualified personnel to verify the cause of the problem.

The braking components also safeguard your safety. It is recommended to not intervene personally on the hydraulic system so as to try to eliminate any faults



### 13.8.2 Brake: Checking the liquid level

Check the tank behind the seat via the indicator "1" (Fig. 24-M0115), the oil must not be below the lowest notch "MIN".

A slight lowering of the level is due to the normal consumption of brake pads.

#### To top up:

- Unscrew the tank cap "2" by turning it anticlockwise.
- Check that oil is level, otherwise top it up to "MAX".
- Screw on the tank cap "2" by turning it clockwise. Do not tighten it too much.
- Clean any spillage.



#### - DANGER

If the level is drastically reduced there is a system leak. Contact specialised personnel to replace all damaged, corroded or worn pipes.



#### - ATTENTION

Always use the recommended type of oil, as indicated in the "Technical specifications" chapter.

This type of oil can ruin coated surfaces and plastic dashboard parts. For the safety precautions refer to the "Safety standards" chapter.



#### - DANGER

It is strictly forbidden to work with the brake oil level below minimum "MIN". The brakes could operate irregularly with the risk of accidents.



## 13.9 Air filter maintenance

### 13.9.1 Air filter: Cartridge Cleaning / Replacement

An air filter in poor conditions can cause a reduction in power, excessive fuel consumption and shorten engine life.

Filter clogging is signalled by an indicator light found on the central dashboard; once the indicator light switches on the vehicle can be used for a maximum of 10 hours. Maintenance must however be carried out as often as described.



**- ATTENTION:**

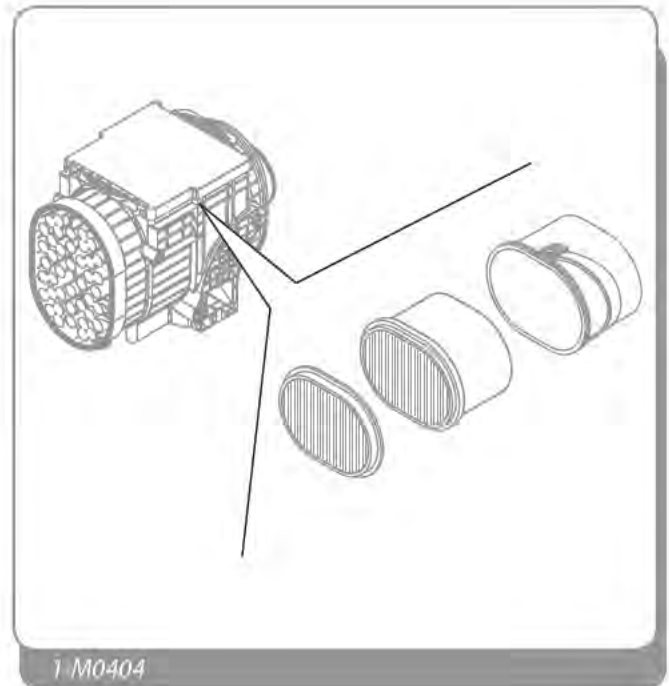
Clean filters only when the indicator light signals clogging or at scheduled maintenance intervals. Unnecessary, frequent cleaning exposes components to handling damage which can allow dust and dirt to pass into the filtering phases, causing damage to the engine.



**- ATTENTION:**

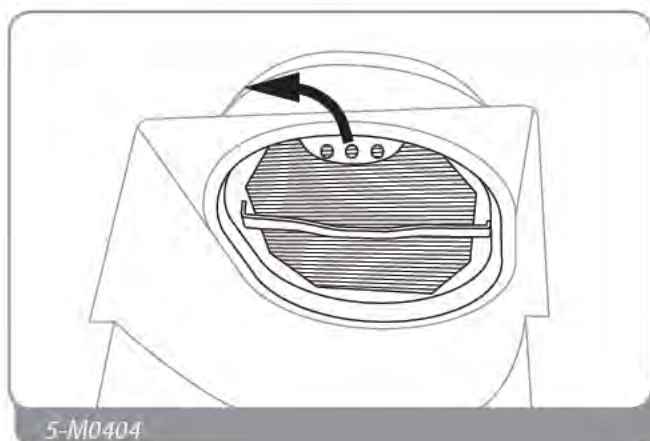
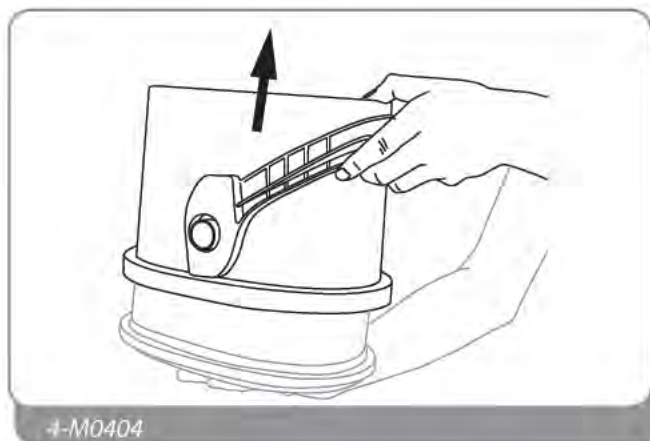
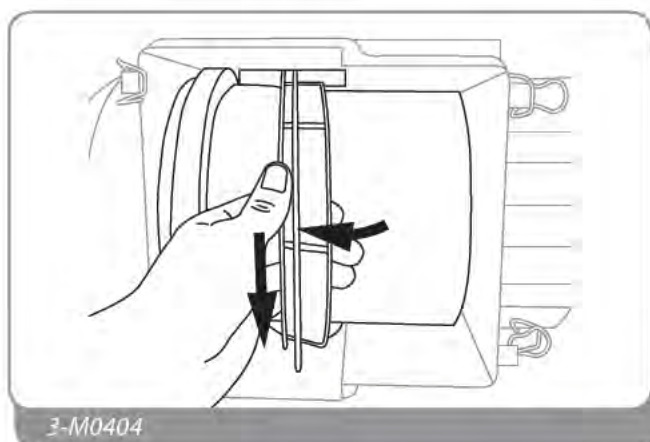
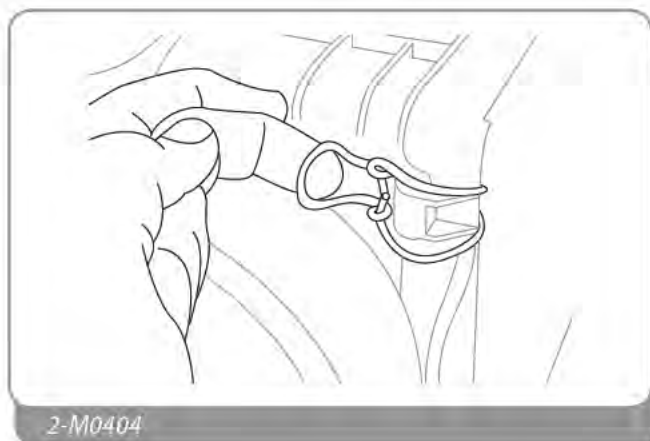
Filtering components must be replaced if they come into contact with any type of liquid.

Regularly check the suction sleeves and replace them immediately if worn or damaged. Regularly check that the bolts and clamps are tightened properly. No air should be allowed to enter the engine without having first passed through the filter.



**To correctly clean the filter, you must:**

1. Set the vehicle in the maintenance position.
2. Open and lock the bonnet.
3. Open the filter cover (Fig. 2-M0404) pulling the blocking levers on the four corners.
4. Push the handle on the filter and lift the cartridge upwards (Fig. 3-M0404).
5. Slide the secondary paper filter from the support, turning downward and over the part with a gasket. Keep one hand under it to prevent it from falling and being ruined (Fig. 4-M0404).
6. Remove the primary filter by pulling the flap on the side or the central plastic towards you (Fig. 5-M0404).
7. Use a wet cloth which will not leave residue to clean the box and cover.
8. Clean or replace the filters. Filter cleaning should be carried out with compressed air at maximum of **3 Bar** (43.5 psi), and at a distance not less than **150 mm** (5.9 in), taking due caution not to damage the filtering element.
9. Assemble all following the same operations in reverse order.





**To correctly clean the suction ducts, you must:**

1. Set the vehicle in the maintenance position.
2. Open and lock the bonnet.
3. Unscrew the screw fixing the intake filter.
4. Remove the air intake filter (Fig. 6-M0404).
5. Use a wet cloth that will not leave residue. Clean every air input inlet.
6. Put the air intake filter back in its place.

**- NOTE**

In the event that connecting gaskets between the suction duct and filter should become worn, replace them.

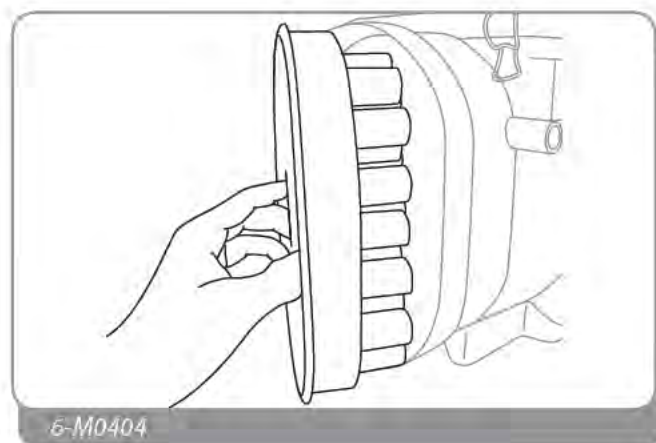
**- ATTENTION**

For the complete efficiency of the filter, it is advised to operate with the filter complete with all parts and components.

All worn parts should be replaced as quickly as possible.

Operating the vehicle without the engine air filter is strictly prohibited.

The engine suction is in air continuously during use. Dust that enters into circulation can cause serious system damage.



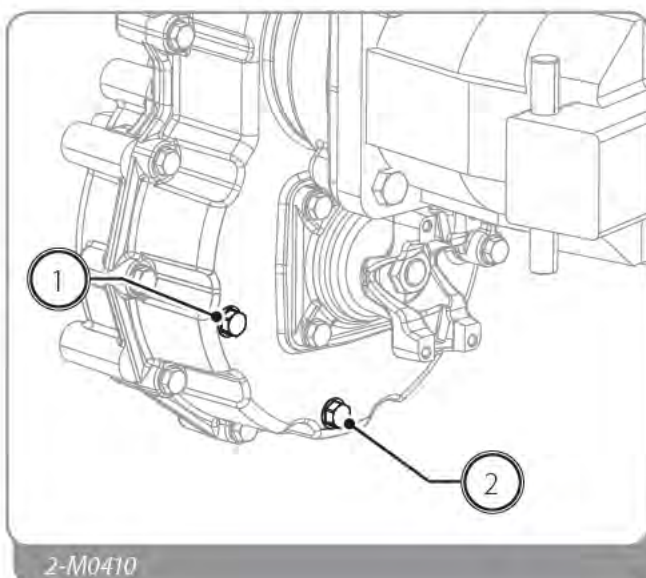
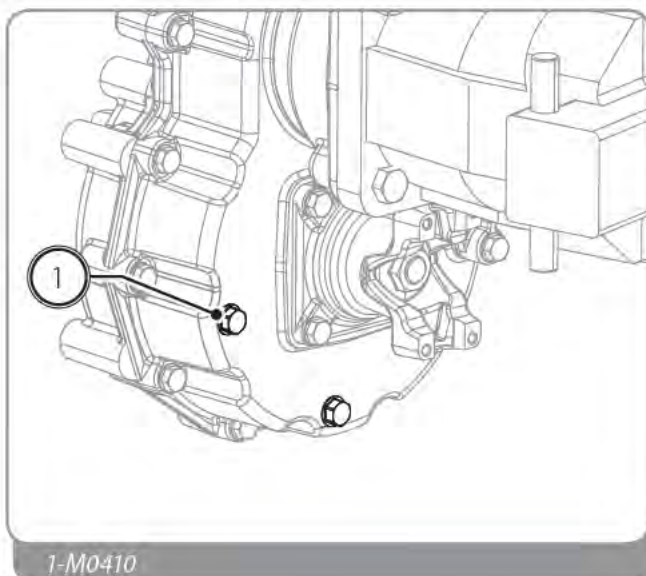
## 13.10 Transmission maintenance

### 13.10.1 Oil change: Inspection

1. Set the vehicle in the maintenance position.
2. Place a container under the gearbox.
3. Take the level cap off (Fig. 1-M0410, pos.1), oil must leak out from the hole.
4. If necessary, top-up through the hole of the cap until the oil seeps through.

### 13.10.2 Oil change: Inspection and change

1. Set the vehicle in the maintenance position.
2. Place a container under the gearbox.
3. Take the level cap (Fig. 2-M0410, pos.1) and the drain cap off (Fig. 2-M0410, pos.2).
4. Allow the oil to completely drain out.
5. Refit the drain cap and tighten it securely.
6. Top-up with approved type of oil (pos.1) until the oil seeps through.



## 13.11 Wheel maintenance

### 13.11.1 Epicycloidal reduction gear oil: Inspection and change

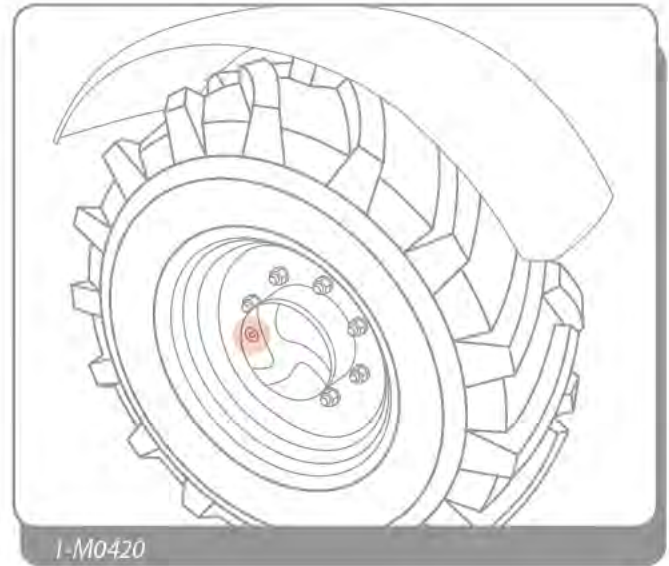
The oil cap of the epicycloidal reduction gear is located on the hub of the wheel (Fig. 1-M0420):

#### When checking the oil level:

1. Set the vehicle in the maintenance position.
2. Turn the wheel for the oil cap to be in the horizontal position (9 o'clock).
3. Place a container to collect the oil.
4. Remove the cap and verify that the oil seeps from the hole.
5. If necessary, top-up through the same hole.
6. Close the cap and tighten it securely.

#### When changing the oil:

1. Set the vehicle in the maintenance position.
2. Turn the wheel for the oil cap to be in the lowest possible position (6 o'clock).
3. Place a container to collect the oil.
4. Remove the cap and let the oil drain completely.
5. Turn the wheel and bring the cap to the horizontal position (9 o'clock).
6. Fill through the same cap with new oil until it seeps through.
7. Close the cap and tighten it securely.



### 13.11.2 Tyre pressure: Inspection

Verify and adjust the pressure of the front and rear tyres.

Check that the tread and the sides are not damaged.

Connect a manometer to the tyre valve and verify that the inflation pressure is correct.

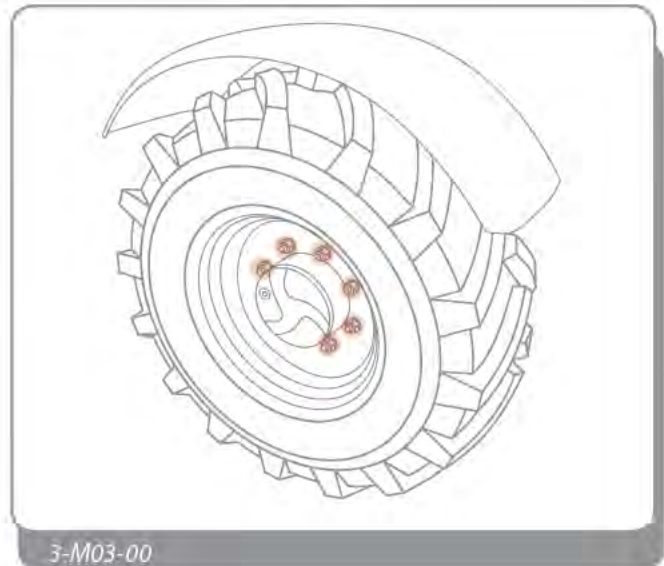
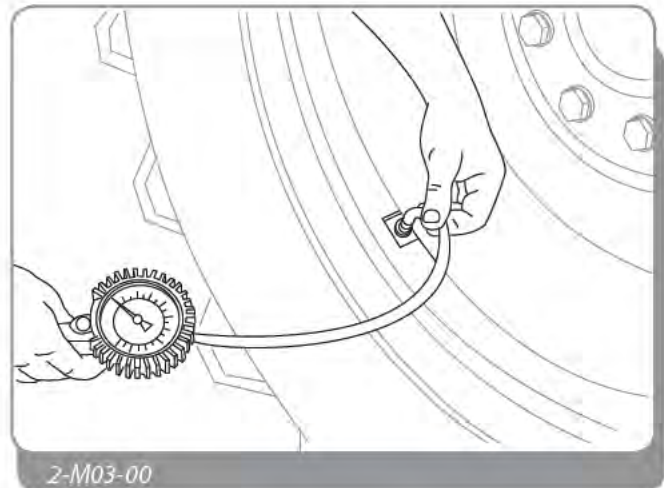


Adjust the tyre pressure according to the indications provided in the "Tyres" chapter.

### 13.11.3 Tightness of the wheel nuts: Inspection

Check that the nuts of the front and rear wheels are tightened well, using a torque wrench (with a torque multiplier, if necessary).

Tapered nut	Torque
M18x1,5	460 N/m
M22x1,5	740 N/m



## 13.12 Differential axle maintenance

### 13.12.1 Differential axle oil: Inspection and change

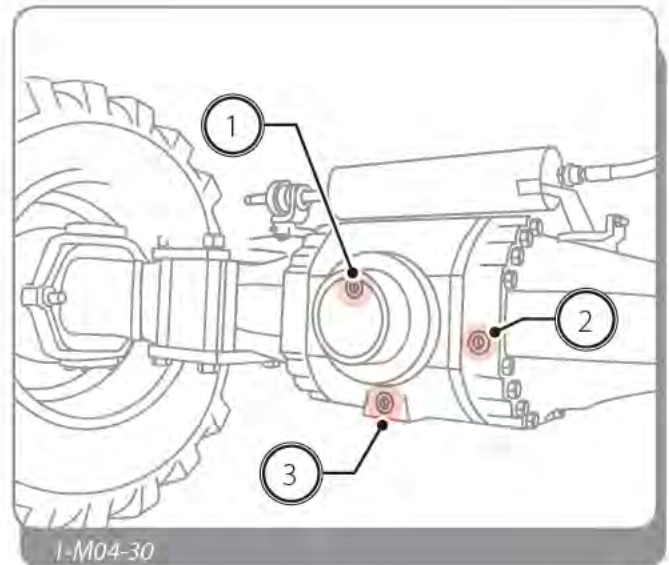
The filler, level and drain caps are in the middle part of the front and rear differential axle (Fig. 1-M04-30):

#### When checking the oil level:

1. Set the vehicle in the maintenance position.
2. Place a container under the level cap "2" to collect any oil that may leak.
3. Open the level cap "2". In optimal conditions, the oil must seep from the hole.
4. If necessary, open cap "1" and top-up until the oil seeps from level cap "2".
5. Close the caps and tighten them securely.

#### When changing the oil:

1. Set the vehicle in the maintenance position.
2. Place a container under the drain plug "3" to collect any oil that may leak.
3. Open the filler cap "1" and then drain plug "3".
4. Allow the oil to completely drain out.
5. Close the drain plug "3".
6. Fill new oil through the filler cap "1" until the oil seeps from level cap "2".
7. Close the caps and tighten them securely.



## 13.13 Ventilation system maintenance

### 13.13.1 Cab ventilation filter: Cleaning and replacing

On changing the cab ventilation filter, clean the intake pipe using a jet of air from the inside of the cab to the outside.

1. Set the vehicle in the maintenance position.
2. Remove the guard "1" (Fig. 1-M0451), located on the left part of the seat, unscrewing the fixing screw.
3. Remove the filter "2" (Fig. 2-M0451).
4. Replace or clean the filter cartridges by striking them gently on a flat surface, with the external side facing down, making sure not to damage them; or use a jet of air (less than 6.9 bar) and blow from the inner side outwards.
5. Refit the filter "2".
6. Put the casing back in place "1".
7. Restart the engine with the fan moving to verify that the operation is correct.

Clean the air intake grill (Fig. 3-M0451) at the end of every working day using a jet of air.



#### - WARNING

Do not use diesel, petrol, solvents or water to clean the cartridges as the filtering material could be damaged.



#### - WARNING

In the event of vehicle use in particularly dust rich environments (haylofts, etc.); the filter life is reduced by 100 hours.



#### - ATTENTION

If the ventilation system malfunctions, check for filter clogging.

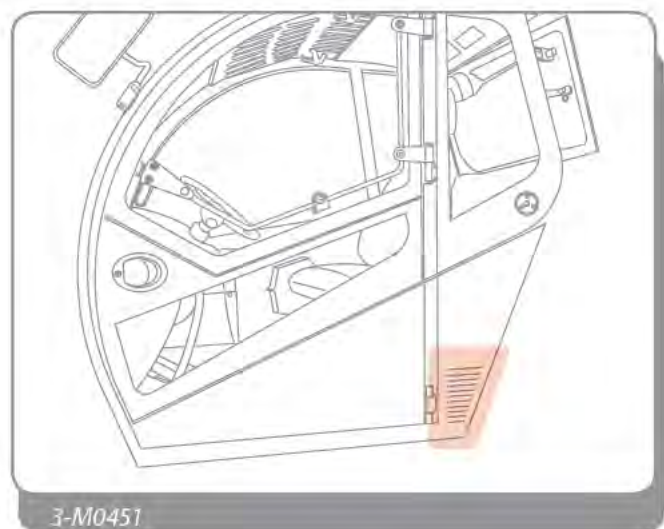
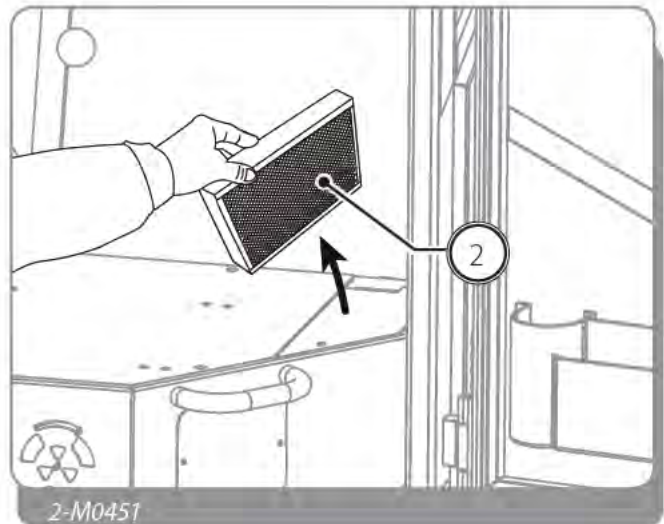
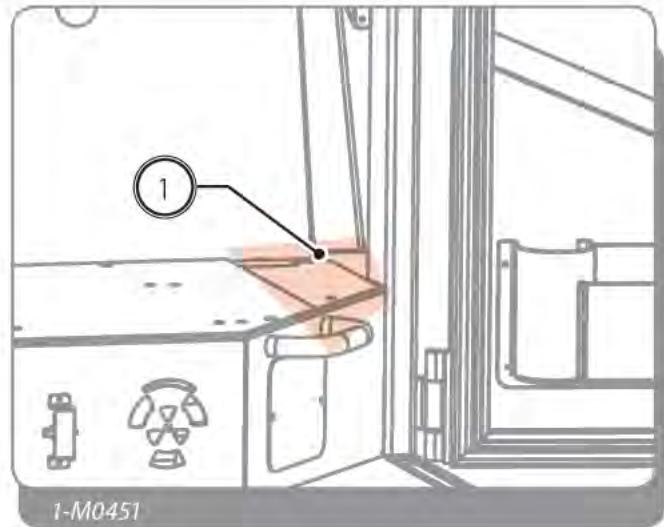
In the event that malfunctions persist even after filter replacement, contact a DIECI after-sales centre.



#### - FORBIDDEN

Do not use the vehicle without a cab filter.

Dust that enters the cab can cause health risks for the operator and ventilation system malfunction.



### 13.13.2 Air conditioning: Cleaning \*



**Air conditioning is an optional accessory.**

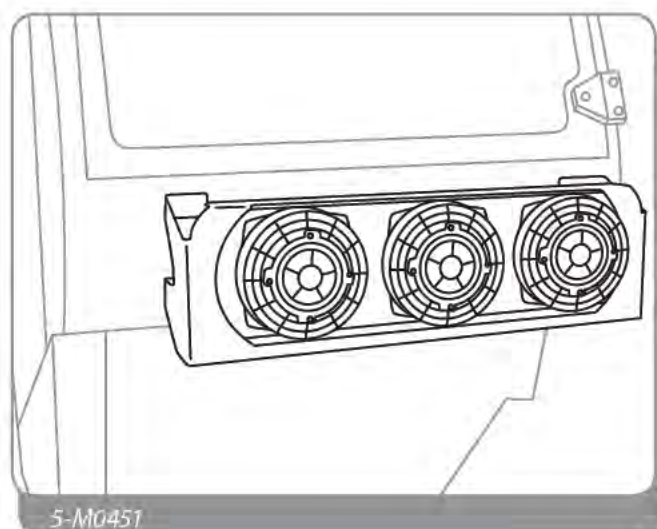
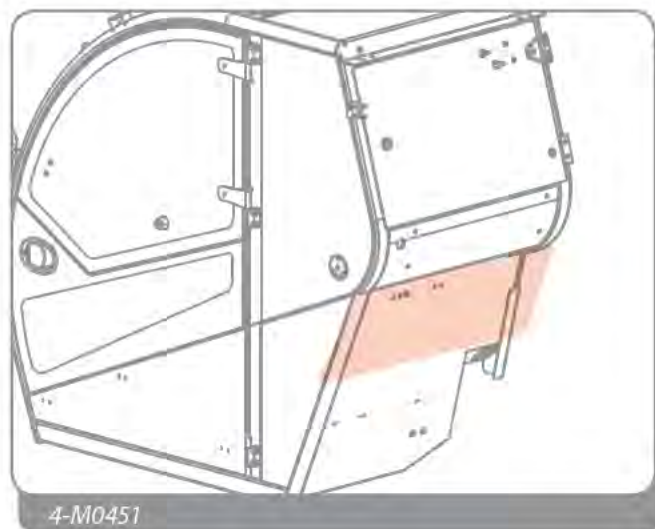
1. Set the vehicle in the maintenance position.
2. Remove the protective casing (Fig. 4-M0451).
3. Clean the air conditioning radiator (Fig. 5-M0451) by directing compressed air, at a maximum pressure of **7 bar**, from the top downwards in the opposite direction as the normal air flow. The jet of air must be perpendicular to the surface of the radiator.
4. Remove filth underneath the air conditioning radiator.
5. After cleaning, replace the condenser.



**- WARNING**

Be careful not to damage radiator fins while cleaning.

Check that the fins are not deformed; in this case, straighten them with caution.



## 13.14 Cylinder block valve maintenance

### 13.14.1 Cylinder block valve's action

Cylinder block valves hinder uncontrolled movement of the cylinder pistons in case of lacking hydraulic or bursting pressure of a flexible pipe.

The valves are directly mounted on the cylinders.



**- DANGER**

Do not allow anybody near the vehicle while these checks are being carried out.



**- ATTENTION**

Inspect only one valve at a time.



**- DANGER**

In the event of malfunction, do not use the vehicle until it has been repaired.

#### Boom raising cylinders:

- Start up the engine. Make sure that the parking brake is engaged and the transmission in neutral.
- Lift the boom to a 45° angle.
- With the engine running at 1400 RPM, lower the boom. During boom movement stop the engine.

The boom must slow down and stop as the engine slows down and stops.



**- DANGER**

If the boom continues to move even after the motor stops, the boom raising cylinders are faulty.



Repair the defect as quickly as possible, contact a *DIECI* service centre.

#### Boom extension cylinder:

- Start up the engine. Make sure that the parking brake is engaged and the transmission in neutral.
- Raised and extended the boom completely.
- With the engine running at 1400 RPM, retract the boom. During boom movement stop the engine.

The boom must slow down and stop as the engine slows down and stops.



**- DANGER**

If the boom continues to move even after the engine is switched off, the block valve is faulty.



Repair the defect as quickly as possible, contact a *DIECI* service centre.



### Fork swivel cylinder:

- Start the engine, pick up a load on the forks (e.g. a load of bricks or bales of hay).
- Incline the forks completely upwards.
- Engage the parking brake and put the transmission in neutral.
- Lift the boom off the ground just enough necessary to allow the forward inclination of the forks.
- When the engine is running at 1400 RPMs, engage the control lever to tilt the forks forward. During the fork movement stop the engine.

Movement of the swivel must slow down and then stop as the engine slows down and stops.



**- DANGER**

If the forks continue to lower or move after the engine is switched off, the block valve is faulty.



Repair the defect as quickly as possible, contact a *DIECI* service centre.

### Levelling cylinders and oscillation block (if present):

- Position the vehicle on a perfectly horizontal surface.
- Make sure that the parking brake is engaged and the transmission in neutral.
- Make sure the vehicle is in trolley mode.
- Lift the boom to about 15 cm from the ground and level the vehicle in a way that the frame is perfectly parallel to the surface (check the spirit level on the cab).
- Check that, without intervening on the levelling control, the vehicle keeps this position also after prolonged use.



**- DANGER**

In the event of offset of the levelling cylinder rod, without operator intervention, the lock valve is faulty.



Repair the defect as quickly as possible, contact a *DIECI* service centre.



**- NOTE**

Do not level the vehicle with boom lifted and extended.

### Stabiliser feet cylinders

- Start up the engine. Make sure that the parking brake is engaged and the transmission in neutral.
- Position the vehicle on outrigger feet.
- Level the vehicle with the outrigger feet.
- Extend the boom completely.
- Rotate the turret of the vehicle while the engine is running at minimum speed.



#### - DANGER

If the vehicle does not remain stable on the outrigger feet during rotation, the cylinder block valves are defective.



Repair the defect as quickly as possible, contact a *DIECI* service centre.

## 13.15 Telescopic boom maintenance

### 13.15.1 Telescopic boom sliding blocks

#### Sliding block wear

Sliding block wear can cause oscillations and slack between extensions causing a loss of accuracy in movements and the risk of load loss.



Consult the Summary Table at the start of the chapter for servicing intervals.

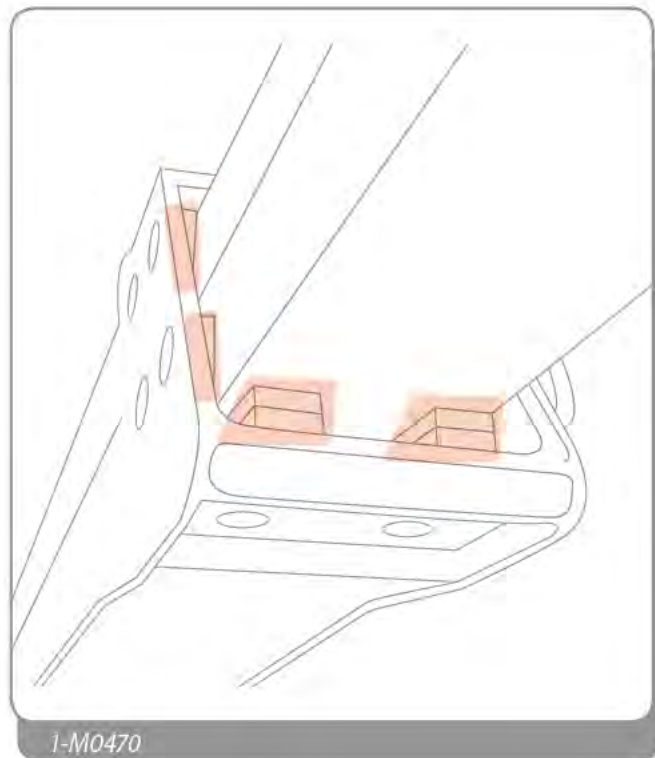


The more difficult the working conditions, the greater the wear and tear on the vehicle.



#### - ATTENTION

Boom sliding block maintenance must be carried out by an authorised *DIECI* workshop.



## Lubrication

Boom sliding blocks must be kept lubricated to prevent deterioration as much as possible and keep movements smooth.

In the event that the layer of grease is thin or presents impurities (sand, dust, shavings, etc.) proceed as follows:

1. Set the vehicle in the maintenance position.
2. Turn on the vehicle.
3. Extend the boom completely in a horizontal position.
4. Switch off the engine and remove the ignition key, hang up a sign in the cab that reads "maintenance work under way".
5. Disconnect the battery by acting on the battery isolator switch.
6. Use a cloth to remove the layer of grease and any impurities from the surface of the extensions.
7. Use a brush to spread a layer of an approved type of grease on the four sides of the extensions.
8. Turn on the vehicle.
9. Retract and extend the boom fully several times to evenly distribute the grease.
10. Turn off the vehicle.
11. Remove any excess grease.



### - ATTENTION

During the visual check phase and spreading the grease, the vehicle must be off and the key removed from the cab to prevent accidental manoeuvres.

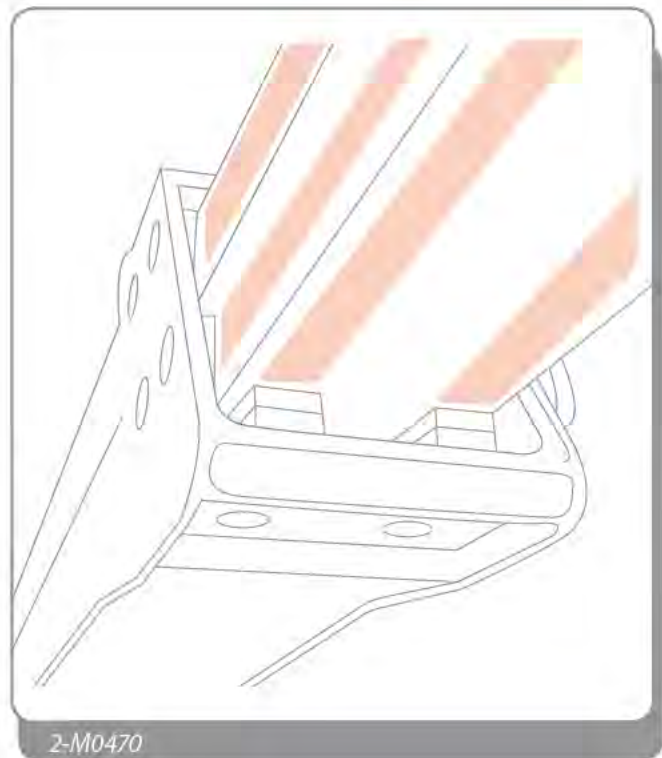


Should the vehicle be used in particularly severe conditions or very dusty environments lubricate more frequently.



### - ATTENTION

Use only the lubricants indicated on the *DIECI* tables. Different types of lubricants can cause serious damage to the sliding surfaces.

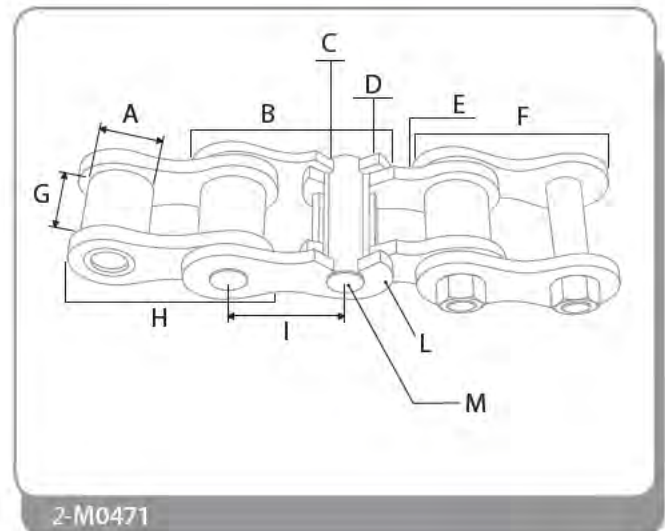
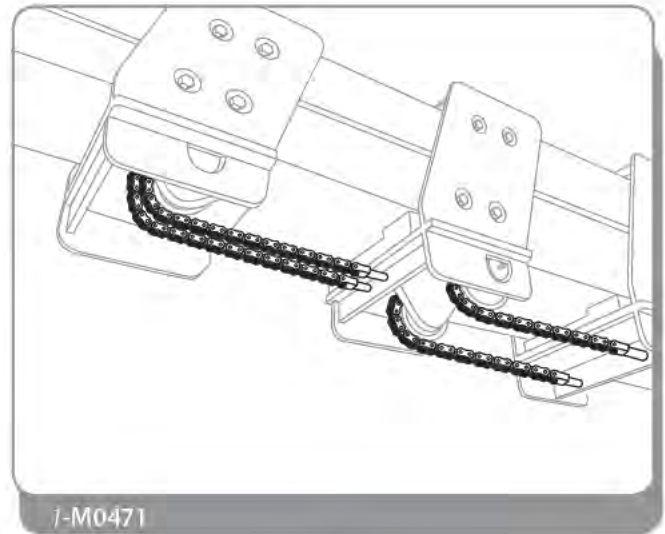


## 13.15.2 External boom chains

The external chains on the boom allow to extend and retract the boom (Fig. 1-M0471).

The chains are composed of:

- A Roller diameter
- B External mesh
- C Bush
- D Roller
- E Internal plate
- F Connecting mesh
- G Internal width
- H Internal mesh
- I Pitch
- L External plate
- M Pin



## Lubrication

Lubrication allows the operator to:

- Interpose liquid between contact surfaces to diminish wear and prevent seizure.
- Protect chains from rust.
- Reduce noise between the surfaces subject to collisions.

Lubrication must be carried out:

- Longitudinally, in an area where joints are only slightly strained to favour lubrication penetration.
- Crosswise, between the plates to facilitate oil penetration in joints.



### - ATTENTION:

In the event of special applications or use in adverse conditions, consult a DIECI after-sales centre.

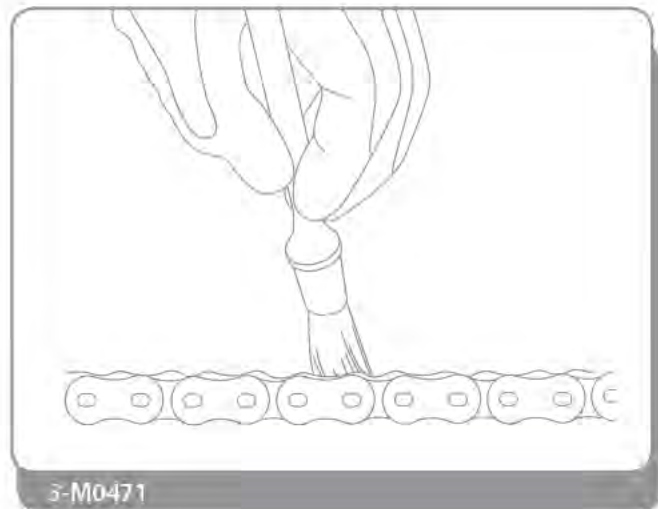


### - FORBIDDEN.

It is prohibited to lubricate the chains using grease

Oil viscosity must be suitable to the surrounding temperature. Viscosity which is too low favours lubrication withdrawal and viscosity which is too high hinders lubricants from penetrating joints. See the following table to know the correct viscosity:

Temperature	Recommended viscosity ISO VG (Cst)
-15 °C < T < 0 °C 5 °F < T < 32 °F	between <b>15</b> and <b>32</b>
0 °C < T < 50 °C 32 °F < T < 122 °F	between <b>46</b> and <b>150</b>
50 °C < T < 80 °C 122 °F < T < 176 °F	between <b>220</b> and <b>320</b>



## Checking for Wear

At prescribed intervals, verify:

- The installation of geometry.
- The condition of the chain in order to analyse traces of friction that may indicate incorrect installation geometry. Wear on the side plate profile due to contact with pulleys and guiding systems. Wear on the sides of the external plates and on the pin heads due to contact with pulley flanges or with any guiding devices.
- Wear on chain joints both due to direct measurement of its length with measurement instrument or a control scale, and visually.
- Wear of Fleyer raising chain plates.



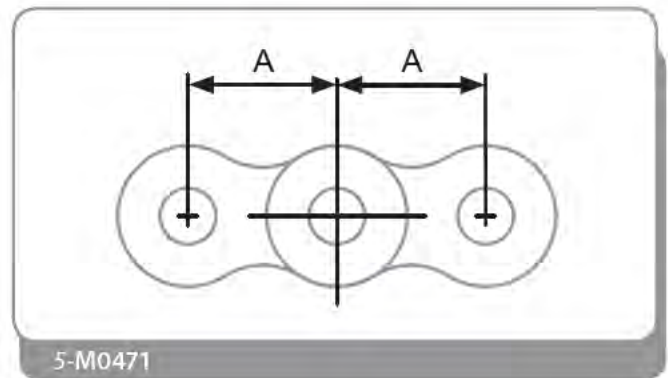
### - ATTENTION.

The chains must be replaced when wear due to lengthening exceeds 2%.

When the chain is replaced it is mandatory also to replace the respective rollers.



4-M0471



5-M0471

## Determining wear due to extension

- Verify the type of chain installed, indicated on its external plate. If it cannot be read, contact a **DIECI** after-sales centre.
- Identify the pitch of the chain on the table. (e.g. Fleyer AL8/BL8 Chain Pitch 25.40mm (1 in)) and multiply it by 10.
- Measure 10 pitches of the chain to be verified (Fig. 5-M0471).
- If the measurement exceeds 2% of the pitch indicated in the table multiplied by ten, the chain should be considered worn and must be replaced.

$$2\% \text{ of the measurement} = [\text{Measurement} : 100] \times 2$$



### - ATTENTION:

Measurements must be taken at several points as wearing may not be uniform. The chain must also be tight. Measurements can be taken with a gauge or a ruler divided into millimetres Fig. 4-M0471.

Flyer chains	AL4	AL5	AL6	AL8	AL10	AL12	AL14	AL16
Flyer chains	BL4	BL5	BL6	BL8	BL10	BL12	BL14	BL16
Inch pitch	1/2"	5/8"	3/4"	1	1 1/4"	1 1/2"	1 3/4"	2"
Pitch mm	12.70	15.87	19.05	25.40	31.75	38.10	44.45	50.80



### Check, cleaning, lubrication

- Set the vehicle in the maintenance position.
- Turn on the vehicle.
- Position the vehicle on outrigger feet (if present).
- Extend the boom completely in a horizontal position.
- Switch off the engine and remove the ignition key, hang up a sign in the cab that reads "maintenance work under way".
- Clean the chains to eliminate surface impurities with a clean cloth that will not leave residue.
- Forcefully brush chains to remove impurities, using a hard nylon brush and clean fuel. Then blow with compressed air.
- Carefully examine the chains as described in the paragraph "Checking for wear".
- Lightly lubricate the chains with a brush soaked in oil (see paragraph entitled "lubrication").
- Remove excess oil from the entire surface of the chains using a clean cloth.
- - Move the boom several times to distribute the oil evenly.



**- ATTENTION:**

**In case of chain replacement, contact a DIECI after-sales centre.**



**- ATTENTION.**

**Chains can be made fragile by hydrogen.**

**Operating in acidic environments is strictly prohibited.**

**Operate for as little time as possible when in oxidative or corrosive environments.**



## 13.16 Threaded fastening torque

### 13.16.1 Fine pitch

	Friction coefficient	4.8		5.8		6.8		8.8		10.9		12.9	
		Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)
M8	0.10	9798.1	10.87	12247.6	13.59	14697.1	16.31	19596.1	21.75	27557.1	30.58	33068.5	36.70
	0.14	9079.5	13.53	11349.4	16.91	13619.3	20.29	18159.1	27.05	25536.2	38.04	30643.4	45.65
M10	0.10	15296.9	21.13	19121.1	26.41	22945.3	31.69	30593.8	42.25	43022.5	59.42	51627.0	71.30
	0.14	14175.0	26.27	17718.8	32.84	21262.6	39.41	28350.1	52.55	39867.3	73.89	47840.8	88.67
M10	0.10	16383.6	22.12	20479.5	27.66	24575.4	33.19	32767.2	44.25	46078.8	62.23	55294.6	74.67
	0.14	15221.6	27.80	19027.0	34.75	22832.5	41.70	30443.3	55.61	42810.8	78.20	51373.0	93.84
M12	0.10	22020.7	35.83	27525.9	44.79	33031.0	53.75	44041.4	71.67	61933.2	100.78	74319.8	120.94
	0.14	20405.8	44.53	25507.2	55.66	30608.7	66.79	40811.6	89.06	57391.3	125.24	68869.5	150.29
M12	0.10	23333.7	37.26	29167.1	46.57	35000.6	55.88	46667.4	74.51	65626.1	104.78	78751.3	125.74
	0.14	21669.2	46.70	27086.5	58.38	32503.8	70.06	43338.4	93.41	60944.6	131.36	73133.5	157.63
M14	0.10	31610.0	59.04	39512.5	73.80	47415.0	88.57	63220.0	118.09	88903.1	166.06	106683.7	199.27
	0.14	29345.9	73.92	36682.4	92.40	44018.9	110.89	58691.9	147.85	82535.4	207.91	99042.5	249.49
M16	0.10	42581.3	89.78	53226.6	112.23	63871.9	134.67	85162.5	179.56	119759.8	252.51	143711.8	303.02
	0.14	39587.8	113.06	49484.7	141.32	59381.6	169.59	79175.5	226.12	111340.6	317.98	133608.7	381.57
M18	0.10	51457.2	124.03	64321.5	155.03	77185.8	186.04	102914.4	248.06	144723.3	348.83	173668.0	418.59
	0.14	47751.7	155.02	59689.6	193.78	71627.5	232.53	95503.3	310.05	134301.6	436.00	161161.9	523.20
M18	0.10	55415.1	130.17	69268.9	162.72	83122.7	195.26	110830.3	260.35	155855.1	366.12	187026.1	439.34
	0.14	51577.6	164.67	64472.0	205.84	77366.4	247.01	103155.2	329.35	145062.1	463.15	174074.5	555.77
M20	0.10	65534.1	173.72	81917.7	217.16	98301.2	260.59	131068.3	347.45	184314.8	488.60	221177.8	586.32
	0.14	60886.2	218.17	76107.8	272.71	91329.3	327.26	121772.4	436.34	171242.5	613.61	205491.0	736.33
M20	0.10	70114.7	181.58	87643.3	226.97	105172.0	272.36	140229.3	363.15	197197.5	51.68	236637.0	612.82
	0.14	65319.1	230.55	81648.8	288.19	97978.6	345.82	130638.1	461.10	183709.9	648.42	220451.9	778.10
M22	0.10	81220.8	236.88	101526.0	296.10	121831.2	355.32	162441.5	473.76	228433.4	666.23	274120.1	799.48
	0.14	75533.9	298.75	94417.4	373.43	113300.9	448.12	151067.8	597.49	212439.1	840.22	254927.0	1008.27
M22	0.10	86164.2	246.02	107705.3	307.53	129246.4	369.04	172328.5	492.05	242337.0	691.94	290804.3	830.33
	0.14	80331.8	313.41	100414.7	391.76	120497.7	470.11	160663.6	626.82	225933.2	881.46	271119.8	1057.75
M24	0.10	98515.6	308.56	123144.5	385.70	147773.4	462.84	197031.1	617.12	277075.0	867.83	332490.0	1041.40
	0.14	91693.3	390.33	114616.6	487.92	137539.9	585.50	183386.5	780.67	257887.3	1097.82	309464.8	1317.38
M22	0.10	104079.4	319.62	130099.2	399.52	156119.0	479.43	208151.7	639.23	292723.2	898.92	351267.9	1878.71
	0.14	97096.0	408.12	121370.1	510.15	145644.1	612.18	194192.1	816.24	273082.6	1147.84	327699.1	1377.41
M27	0.10	127922.3	448.43	159902.9	560.54	191883.5	627.65	255844.7	896.87	359781.6	1261.22	431737.9	1513.46
	0.14	119185.0	569.67	148981.3	712.09	178777.5	854.51	238370.1	1139.34	335207.9	1602.20	402249.5	1922.64
M30	0.10	16817.5	623.80	201021.8	779.75	241226.2	935.70	321635.0	1247.60	452299.2	1754.43	542759.0	2105.32
	0.14	149957.0	795.14	187446.3	993.93	224935.5	1192.72	299914.0	1590.29	421754.2	2236.34	506105.0	2683.61



### 13.16.2 Wide pitch

	Friction coefficient	4.8		5.8		6.8		8.8		10.9		12.9	
		Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)	Preload (N)	Fastening torque (Nm)
M3	0.10	1219.9	0.54	1524.9	0.68	1829.9	0.82	2439.9	1.09	3431.0	1.53	4117.2	1.84
	0.14	1125.9	0.60	1407.4	0.83	1688.9	1.00	2251.9	1.34	3166.7	1.88	3800.0	2.26
M3.5	0.10	1638.2	0.84	2047.8	1.05	2457.3	1.26	3276.4	1.68	4607.5	2.36	5528.9	2.84
	0.14	1511.3	1.03	1889.2	1.28	2267.0	1.54	3022.6	2.05	4250.6	2.89	5100.7	3.47
M4	0.10	2115.4	1.25	2644.3	1.56	3173.1	1.88	4230.8	2.50	5949.6	3.52	7139.5	4.22
	0.14	1950.9	1.53	2438.7	1.91	2926.4	2.29	3901.9	3.06	5487.0	4.30	6584.4	5.16
M5	0.10	3461.6	2.46	4327.0	3.08	5192.3	3.70	6923.1	4.93	9735.7	6.93	11682.8	8.32
	0.14	3196.8	3.02	3996.0	3.78	4795.2	4.53	6393.7	6.04	8991.1	8.50	10789.3	10.20
M6	0.10	4874.7	4.24	6093.4	5.30	7312.1	6.35	9749.4	8.47	13710.1	11.92	16452.2	14.30
	0.14	4499.1	5.19	5623.9	6.48	6748.6	7.78	8998.2	10.37	12653.7	14.59	15184.4	17.51
M7	0.10	7134.5	6.97	8918.2	8.71	10701.8	10.45	14269.1	13.94	20065.9	19.60	24079.1	23.52
	0.14	6599.6	8.60	8249.5	10.76	9899.4	12.90	13199.2	17.21	18561.4	24.20	22273.6	29.04
M8	0.10	8947.1	10.20	11183.9	12.75	13420.7	15.30	17894.2	20.41	25163.7	28.70	30196.5	34.44
	0.14	8265.6	12.54	10332.0	15.67	12398.4	18.80	16531.2	25.07	23247.0	35.26	27896.5	42.31
M10	0.10	14244.5	20.11	17805.6	25.14	21366.8	30.16	28489.0	40.22	40062.7	56.56	48075.3	67.87
	0.14	13167.4	24.76	16459.2	30.95	19751.1	31.14	26334.8	49.52	37033.3	69.64	44439.9	83.56
M12	0.10	20766.6	34.43	25958.3	43.03	31149.9	51.64	41533.2	68.86	58406.1	96.83	70087.3	116.20
	0.14	19204.0	42.42	24005.0	53.03	28806.0	63.63	38408.0	84.84	54011.2	119.31	64813.5	143.17
M14	0.10	28389.9	54.77	35487.4	68.46	42584.9	82.15	56779.8	109.53	79846.6	154.03	95816.0	184.84
	0.14	26261.2	67.56	32826.5	84.45	39391.8	101.34	52522.4	135.13	73859.6	190.02	88631.5	228.03
M16	0.10	39242.1	85.14	49052.7	106.43	58863.2	127.72	78484.3	170.29	110368.5	239.47	132442.2	287.36
	0.14	36364.2	105.80	45455.3	132.26	54546.3	158.71	72728.5	211.61	102274.4	297.58	122729.3	357.09
M18	0.10	47533.0	117.48	59416.3	146.85	71299.6	176.22	95066.1	234.96	133686.7	330.41	160424.1	396.49
	0.14	43986.1	145.16	54982.7	181.45	65979.2	217.74	87972.3	290.32	123711.0	402.26	148453.2	489.92
M20	0.10	61238.0	166.08	76547.5	207.61	91857.0	249.13	122476.0	332.17	172231.9	467.11	206678.2	560.54
	0.14	56747.1	206.39	70933.9	257.98	85120.6	309.58	113494.2	412.78	159601.2	580.47	191521.5	696.56
M22	0.10	76305.2	227.22	95381.5	284.02	114457.8	340.82	152610.4	454.43	214608.3	639.05	257530.0	766.85
	0.14	70791.9	283.79	88489.8	352.74	106187.8	425.69	141583.7	567.58	199102.1	798.16	238922.5	957.80
M22	0.10	88232.4	287.16	110290.5	358.94	132348.6	430.73	176464.9	574.31	248153.7	807.63	297784.4	969.15
	0.14	81761.8	356.84	102202.2	446.05	122642.7	535.26	163523.6	713.68	229955.1	1003.61	275946.1	1204.33
m27	0.10	115778.8	420.40	144723.5	525.05	173668.2	930.06	231557.6	840.08	325627.9	1181.36	390753.4	1417.63
	0.14	107441.5	525.08	134301.9	656.35	161162.2	787.62	214883.0	1050.16	302179.2	1476.79	362615.0	1772.15
M30	0.10	140999.5	572.83	176249.4	716.03	211499.3	859.24	281999.0	1145.65	396561.1	1611.08	475873.4	1933.29
	0.14	130770.6	714.49	163463.3	893.11	196155.9	1071.73	261541.2	1428.97	367792.3	2009.49	441350.8	2411.39

### 13.17 Tightening torque of hydraulic fittings

60° spinner inserts - BSP thread										
Threading	1/18.28	1/4.19	3/8-19	1/2-14	5/8-14	3/4-14	1"-11	1 1/4-11	1 1/2-11	2-11
(Nm)	12-14	14-16	25-28	45-60	55-70	90-110	120-140	170-190	200-245	

60° spinner inserts - METRIC thread										
Threading	10x1	12x1.5	14x1.5	16x1.5	18x1.5	22x1.5	26x1.5	28x1.5	30x1.5	
(Nm)	12-14	13-15	15-18	25-218	27-30	50-60	60-75	80-100	110-130	

STANDARD DIN "L" RANGE										
Threading	12x1.5	14x1.5	16x1.5	18x1.5	22x1.5	26x1.5	30.2	36x1.5	45x1.5	52x1.5
(Nm)	13-15	15-18	25-28	27-30	50-60	30-75	85-105	120-140	170-190	190-230

STANDARD DIN "L" RANGE										
Threading	14x1.5	16x1.5	18x1.5	20x1.5	22x1.5	14x1.5	30x2	36x2	42x2	52x2
(Nm)	15-18	25-28	27-30	43-54	50-62	60-75	90-110	125-145	170-190	200-245



## 14 TECHNICAL SERVICE CENTRE

### 14.1 Spare parts supply

*DIECI S.R.L.* guarantees the supply of original spare parts or alternatives for 10 years, starting from the date of the last manufactured model in the relative range.



**In addition to this use and maintenance manual, every Dieci vehicle or equipment is supplied with a spare parts catalogue so as to be able to order all the parts required for repairs.**

### 14.2 Assistance provided to the owner/ operator

Take note of this important information before contacting the service centre in order to obtain optimum service from your Dealer.

1. Specify your name, address and telephone number.
2. Quote the model and chassis serial number of the vehicle.
3. Quote the purchase date and operating hours.
4. Describe the type of fault.

Only DIECI Dealers have access to DIECI customer service resources. Moreover, Dealers can offer a variety of programmes regarding guarantee, fixed rate maintenance and safety checks, including tests.



#### **Dieci Technical Assistance Service**

Via E. Majorana, 2/4  
42027 Montecchio Emilia (RE) ITALY  
Tel. +39 0522 869611  
Fax +39 0522 869744  
[service@dieci.com](mailto:service@dieci.com)

## 14.3 Troubleshooting



Troubleshooting interventions can only be carried out by the personnel in charge.

Do not intervene on faults before having read and understood the "Safety Regulations", "Safe working procedures" and "MAINTENANCE" chapters.



This symbol means that the problem **CANNOT** be resolved without the intervention of an authorised **DIECI** Service Workshop




### 14.3.1 Engine

PROBLEM	CAUSE	SOLUTION	
The vehicle will not start	Direction lever is engaged	Set the lever in neutral	
	Operator not sitting in driver position correctly	Sit correctly in the cab	
	No fuel	Fill the tank	
	Disconnected battery isolator switch	Connect the battery isolator switch	
	Flat battery	Recharge or replace the battery	
	Burnt fuse	Replace the fuse	
	Others	Refer to the engine Use and Maintenance manual	



### 14.3.2 Drive hydraulic system

PROBLEM	CAUSE	SOLUTION	
The vehicle does not move in any direction.	Insufficient level of hydraulic oil	Check the level of hydraulic oil	
	Electronic accelerator on (if installed)	Switch the electronic accelerator off	
	The sensor in the seat does not detect the driver's presence.	Sit correctly in the driver's seat	
	The movement selection lever is not engaged	Set the lever in the desired position	
	The outrigger feet are lowered (if present)	Fully raise all outrigger feet.	
	Rear axle blocked (if present)	Release the axle.	
	Parking brake is engaged	Disengage the brake	
The vehicle loses speed	Faulty electric circuit	Repair the circuit	
	Faulty hydrostatic transmission	Repair or replace the transmission	
	The ByPass valve to tow the vehicle is closed	Open the ByPass valve	
	Clogged hydraulic oil inlet filter	Remove and replace the oil filter	
	Faulty hydrostatic transmission	Repair or replace the transmission	
	Inching pedal anomaly	Check the correct functioning of the pedal	




### 14.3.3 Brakes

PROBLEM	CAUSE	SOLUTION	
The vehicle does not brake	There is no oil in the oil – brake tank.	Top-up tank and/or bleed system	
	Fluid leaking from the circuit	Check for leaks	
	Worn brake pads	Change the brake pads	
	Brake pump damaged	Repair or replace	
	Unsuitable fluid in the circuit or in the differential sump	Check oil comparison table	



### 14.3.4 Steering wheel

PROBLEM	CAUSE	SOLUTION	
The vehicle moves diagonally/ The wheels are not aligned	The wheels are not aligned correctly	Proceed with alignment	
	Steering selection error	Reposition the lever in different steering mode	
	Control distributor failure	Repair or replace the distributor	
	The steering wheel hydraulic cylinders leak oil	Replace the seals	

### 14.3.5 Telescopic boom

PROBLEM	CAUSE	SOLUTION	
The vehicle will not lift load	The safety systems are activated	See the chapter "Anti-tipping device"	
	Electrical system failure	Check fuses and the electrical system	
	Insufficient hydraulic oil level in tank	Top-up	
	Faulty relative hydraulic pump	Repair or replace the pump	
	Low distributor calibration	Check and re-calibrate the distributor	
	Internal leakage of raising cylinders.	Replace the seals	
The boom does not extend	"The safety systems are activated (Indicator light and acoustic alarm functioning)"	See the chapter "Anti-tipping device"	
The boom cannot be lowered	"The safety systems are activated (Indicator light and acoustic alarm functioning)"	See the chapter "Anti-tipping device"	

### 14.3.6 Turret rotation

PROBLEM	CAUSE	SOLUTION	
The turret does not turn on itself	Turret rotation block pin	Remove the pin	
	The safety systems are activated (Indicator light and acoustic alarm in operation)	See the chapter "Anti-tipping device"	
	Faulty turret rotation hydraulic pump	Fit the manometer and check the pressure	
	Low working pressure	Calibrate the distributor	
	Faulty hydraulic engine	Disconnect the damaged pipe and check that the right amount of oil comes out. If necessary, replace.	
	Faulty electrical buttons	Check coil current.	
	Rotation performed against a fixed wall or by dragging a weight (Warning W1059).	Reset the rotation sensor: Unload any load, retract and lower the boom and insert the turret rotation locking pin.	



## 14.4 3B6 Errors



If the vehicle displays an error, contact a *DIECI* assistance centre to solve the problem, providing the displayed error code.



For more information about the display of errors, refer to the "Main dashboard" chapter.

Icon	Example	Description
A	000	Alarms
W	000	Warnings

### LIST OF TURRET ALARMS

Code	Description	What to do
1	Alarm E2PROM Inconsistent memory data	Switch the system off and on Contact the After-sales Technical Assistance
2	Error in verifying memory reserved for the program	Contact the After-sales Technical Assistance
10	CAN Radio 1 transmission error	Verify the wiring
11	CAN Radio 2 transmission error	Verify the wiring
19	CAN Joystic 1 transmission error	Verify the wiring
20	CAN Joystic 2 transmission error	Verify the wiring
21	CAN 1 Joystic Elobau left transmission error	Verify the wiring
22	CAN 2 Joystic Elobau left transmission error	Verify the wiring
23	CAN 1 Joystic Elobau right transmission error	Verify the wiring
24	CAN 2 Joystic Elobau right transmission error	Verify the wiring
28	CAN MC2M Carriage transmission error	Verify the wiring
37	CAN MIDAC+ (LMI_0) transmission error	Verify the wiring
38	CAN MIDAC+ (LMI_1) transmission error	Verify the wiring
39	CAN MIDAC+ (LMI_3) transmission error	Verify the wiring
40	CAN MIDAC+ (LMI_4) transmission error	Verify the wiring
41	CAN MIDAC+ (Out.) transmission error	Verify the wiring
64	Exclusion LMI input redundancy fault	Verify the wiring
66	Exclusion Car input redundancy fault	Verify the wiring
68	Emergency mushroom input fault	Verify the wiring
69	Radio Control Emergency Input Fault	Verify the wiring
89	Parking Brake Switch Malfunction	Verify the wiring
109	Cab Joystick Malfunction Boom ch. lifting A	Verify the wiring
110	Cab Joystick Malfunction Boom ch. lifting B	Verify the wiring
111	Cab Joystick Malfunction Oscillation ch. A	Verify the wiring
112	Cab Joystick Malfunction Oscillation ch. B	Verify the wiring
113	Cab Joystick Malfunction Tower ch. rotation A	Verify the wiring
114	Cab Joystick Malfunction Tower ch. rotation B	Verify the wiring
115	Cab Joystick Malfunction Boom ch. length A	Verify the wiring
116	Cab Joystick Malfunction Boom ch. length B	Verify the wiring



118	Cab Joystick Malfunction Service ch. A	Verify the wiring
119	Cab Joystick Malfunction Service ch. B	Verify the wiring
121	Difference between the two readings (A and B) of the Boom lifting cab joystick is too high	Verify the readings of the channels of the joystick
122	Difference between the two readings (A and B) of the Oscillation cab joystick is too high	Verify the readings of the channels of the joystick
123	Difference between the two readings (A and B) of the Tower rotation cab joystick is too high	Verify the readings of the channels of the joystick
124	Difference between the two readings (A and B) of the Boom length cab joystick is too high	Verify the readings of the channels of the joystick
125	Difference between the two readings (A and B) of the Service cab joystick is too high	Verify the readings of the channels of the joystick
127	Right rear axle block malfunction	Verify the wiring
128	Left rear axle block malfunction	Verify the wiring

#### LIST OF CARRIAGE ALARMS

Code	Description	What to do
201	Alarm E2PROM Inconsistent memory data	Switch the system off and on Contact the After-sales Technical Assistance
202	Error in verifying memory reserved for the program	Contact the After-sales Technical Assistance
210	Motor Start-up Fault/Malfunction	Verify the wiring
211	Crab Steering EV Fault/Malfunction	Verify the wiring Verify PIN Error
212	Concentric Steering EV Fault/Malfunction	Verify the wiring Verify PIN Error
213	Outrigger Ascent EV Fault/Malfunction	Verify the wiring Verify PIN Error
214	Right Rear Axle Block EV Fault/Malfunction	Verify the wiring Verify PIN Error
215	Left Rear Axle Block EV Fault/Malfunction	Verify the wiring Verify PIN Error
216	Auxiliary Pump Block EV Fault/Malfunction	Verify the wiring Verify PIN Error
219	Right front Crossbar EV Fault/Malfunction	Verify the wiring Verify PIN Error
220	Left front Crossbar EV Fault/Malfunction	Verify the wiring Verify PIN Error
221	Right rear Crossbar EV Fault/Malfunction	Verify the wiring Verify PIN Error
222	Left rear Crossbar EV Fault/Malfunction	Verify the wiring Verify PIN Error
223	Right front Outrigger EV Fault/Malfunction	Verify the wiring Verify PIN Error
224	Left front Outrigger EV Fault/Malfunction	Verify the wiring Verify PIN Error
225	Right rear Outrigger EV Fault/Malfunction	Verify the wiring Verify PIN Error



226	Left rear Outrigger EV Fault/Malfunction	Verify the wiring Verify PIN Error
229	Hydraulic Braking EV Fault/Malfunction	Verify the wiring Verify PIN Error
230	Parking Brake EV Fault/Malfunction	Verify the wiring Verify PIN Error
231	Slow Gear EV Fault/Malfunction	Verify the wiring Verify PIN Error
232	Fast Gear EV Fault/Malfunction	Verify the wiring Verify PIN Error
233	Right Levelling EV Fault/Malfunction	Verify the wiring Verify PIN Error
234	Left Levelling EV Fault/Malfunction	Verify the wiring Verify PIN Error

#### LIST OF LMI ALARMS

Code	Description	What to do
401	Alarm E2PROM Inconsistent memory data	Switch the system off and on Contact the After-sales Technical Assistance
402	Error in verifying memory reserved for the program	Contact the After-sales Technical Assistance
403	Error in verifying memory reserved for the tables	Contact the After-sales Technical Assistance
405	CAN MC2M Tower transmission error	Verify that the wiring is not interrupted
406	CAN MIDAC+ (Outriggers A) transmission error	Verify that the wiring is not interrupted
410	Fault E2Prom Acq1 (ch. A)	Contact the After-sales Technical Assistance
411	Accelerometer fault (X-axis) from Acq1 (ch. A)	Contact the After-sales Technical Assistance
412	Accelerometer fault (Y-axis) from Acq1 (ch. A)	Contact the After-sales Technical Assistance
413	WDO Fault from Acq1 (ch. A)	Contact the After-sales Technical Assistance
414	Transmission error CAN Acq1 (ch. A)	Contact the After-sales Technical Assistance
419	Fault E2Prom Acq1 (ch. B)	Contact the After-sales Technical Assistance
420	Accelerometer fault (X-axis) from Acq1 (ch. B)	Contact the After-sales Technical Assistance
421	Accelerometer fault (Y-axis) from Acq1 (ch. B)	Contact the After-sales Technical Assistance
422	WDO Fault from Acq1 (ch. B)	Contact the After-sales Technical Assistance
423	Transmission error CAN Acq1 (ch. B)	Contact the After-sales Technical Assistance
428	Reading (ch. A) from the lower turret rotation sensor to the lower value	Verify the sensor operation If the alarm persists, call Technical Assistance Service
429	Reading (ch. A) by the upper turret rotation sensor to the maximum value	Verify the sensor operation If the alarm persists, call Technical Assistance Service
430	Reading (ch. B) from the lower turret rotation sensor to the lower value.	Verify the sensor operation If the alarm persists, call Technical Assistance Service
431	Reading (ch. B) by the upper turret rotation sensor to the maximum value	Verify the sensor operation If the alarm persists, call Technical Assistance Service
432	Difference between the two readings (ch. A and B) of the turret rotation sensor is too high	Check the relevant extension values
437	CAN MIDAC+ (Outriggers A) transmission error	Verify that the wiring is not interrupted
438	CAN MIDAC+ (Outriggers B) transmission error	Verify that the wiring is not interrupted
439	CAN MIDAC+ (MachineCondition) transmission error	Verify that the wiring is not interrupted

440	CAN MIDAC+ (Outriggers C) transmission error	Verify that the wiring is not interrupted
441	CAN MIDAC+ (Outriggers D) transmission error	Verify that the wiring is not interrupted
442	CAN MIDAC+ (Outriggers E) transmission error	Verify that the wiring is not interrupted
446	Reading (ch. A) of the angle transducer (Acq1) less than the minimum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
447	Reading (ch. A) of the angle transducer (Acq1) more than the maximum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
448	Reading (ch. B) of the angle transducer (Acq1) less than the minimum value.	Verify the transducer operation If the alarm persists, call Technical Assistance Service
449	Reading (ch. B) of the angle transducer (Acq1) less than the minimum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
450	Difference between the two readings (ch. A and B) of the angle transducer (Acq1) is too high	Verify the transducer operation If the alarm persists, call Technical Assistance Service
455	Analogue signal (ch. A) from the extension sensor (Acq1) less than the minimum value allowed.	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
456	Analogue signal (ch. A) from the extension sensor (Acq1) more than the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
457	Reading (ch. A) of the extension sensor (Acq1) less than the minimum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
458	Reading (ch. A) of the extension sensor (Acq1) more than the maximum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
459	Analogue signal (ch. B) from the extension sensor (Acq1) less than the minimum value allowed.	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
460	Analogue signal (ch. B) from the extension sensor (Acq1) more than the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
461	Reading (ch. A) of the extension sensor (Acq1) less than the minimum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
462	Reading (ch. A) of the extension sensor (Acq1) more than the maximum value	Verify the transducer operation If the alarm persists, call Technical Assistance Service
464	Difference between the two readings (ch. A and B) of the extension sensor (Acq1) is too high	Verify the transducer operation If the alarm persists, call Technical Assistance Service
473	Signal from the pressure transducer of the main cylinder, base side (ch. A) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
474	Signal of the pressure transducer of the main cylinder, base side (ch. A) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
475	Signal of the pressure transducer of the main cylinder, base side (ch. B) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
476	Signal of the pressure transducer of the main cylinder, base side (ch. B) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
477	Inconsistency error of the readings of the pressure transmitter of the main cylinder, base side	Verify the wiring Contact the After-sales Technical Assistance



482	Signal from the pressure transducer of the main cylinder, rod side (ch. A) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
483	Signal of the pressure transducer of the main cylinder, rod side (ch. A) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
484	Signal of the pressure transducer of the main cylinder, rod side (ch. B) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
485	Signal of the pressure transducer of the main cylinder, rod side (ch. B) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
486	Inconsistency error of the readings of the pressure transmitter of the main cylinder, base side	Verify the wiring Contact the After-sales Technical Assistance
491	Signal from the pressure transducer of the add. cylinder, base side (ch. A) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
492	Signal of the pressure transducer of the add. cylinder, base side (ch. A) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
493	Signal of the pressure transducer of the add. cylinder, base side (ch. B) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
494	Signal of the pressure transducer of the add. cylinder, base side (ch. B) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
495	Inconsistency error of the readings of the pressure transmitter of the add. cylinder, base side	Verify the wiring Contact the After-sales Technical Assistance
500	Signal from the pressure transducer of the add. cylinder, rod side (ch. A) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
501	Signal of the pressure transducer of the add. cylinder, rod side (ch. A) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
502	Signal of the pressure transducer of the add. cylinder, rod side (ch. B) lower than the minimum	Verify the transducer operation Verify that the wiring is not interrupted
503	Signal of the pressure transducer of the add. cylinder, rod side (ch. B) more than the maximum	Verify the transducer operation Verify that the wiring is not short circuited
504	Inconsistency error of the readings of the pressure transmitter of the add. cylinder, rod side	Verify the wiring Contact the After-sales Technical Assistance
518	PHC fault Right front outrigger on ground	Verify the wiring
519	PHC fault Left front outrigger on ground	Verify the wiring
520	PHC fault Right rear outrigger on ground	Verify the wiring
521	PHC fault Left rear outrigger on ground	Verify the wiring
522	Faulty fully extended right front outrigger PHC	Verify the wiring
523	PHC fault Fully extended left front outrigger	Verify the wiring
524	PHC fault Fully extended right rear outrigger	Verify the wiring
525	PHC fault Fully extended left rear outrigger	Verify the wiring
527	Overload1	Release the lifted load
528	Overload1	Perform the safety operations
529	Overload1	
530	Extra Block Malfunction	Verify the block output
545	Analogue signal (ch. A) lower left front crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service

546	Analogue signal (ch. A) upper left front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
547	Reading (ch. A) from the lower left front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
548	Reading (ch. A) from the upper left front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
549	Analogue signal (ch. B) lower left front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
550	Analogue signal (ch. B) upper left front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
551	Reading (ch. B) from the lower left front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
551	Reading (ch. B) from the upper left front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
554	Analogue signal (ch. A) lower right front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
555	Analogue signal (ch. A) upper right front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
556	Reading (ch. A) from the lower right front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
557	Reading (ch. A) from the upper right front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
558	Analogue signal (ch. B) lower right front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
559	Analogue signal (ch. B) upper right front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
560	Reading (ch. B) from the lower right front crossbar at the minimum value allowed	Verify the sensor operation
		Verify that the wiring is not interrupted
		If the alarm persists, call Technical Assistance Service
561	Reading (ch. B) from the upper right front crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service



563	Analogue signal (ch. A) lower left rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
564	Analogue signal (ch. A) upper left rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
565	Reading (ch. A) from the lower left rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
566	Reading (ch. A) from the upper left rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
567	Analogue signal (ch. B) lower left rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
568	Analogue signal (ch. B) upper left rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
569	Reading (ch. B) from the lower left rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
570	Reading (ch. A) from the upper left rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
572	Analogue signal (ch. A) lower right rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
573	Analogue signal (ch. A) upper right rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
574	Reading (ch. A) from the lower right rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
575	Reading (ch. A) from the upper right rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
576	Analogue signal (ch. B) lower right rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service
577	Analogue signal (ch. B) upper right rear crossbar at the maximum value allowed	Verify the sensor operation Verify that the wiring is not short circuited. If the alarm persists, call Technical Assistance Service
578	Reading (ch. B) from the lower right rear crossbar at the minimum value allowed	Verify the sensor operation Verify that the wiring is not interrupted If the alarm persists, call Technical Assistance Service

579	Reading (ch. B) from the upper right rear crossbar at the maximum value allowed	Verify the sensor operation
		Verify that the wiring is not short circuited.
		If the alarm persists, call Technical Assistance Service
581	Difference between the two readings (ch. A and B) of the left front crossbar.	Check the relevant extension values
582	Difference between the two readings (ch. A and B) of the right front crossbar.	Check the relevant extension values
583	Difference between the two readings (ch. A and B) of the left rear crossbar.	Check the relevant extension values
584	Difference between the two readings (ch. A and B) of the right rear crossbar.	Check the relevant extension values



WARNING LIST	
Code	Description
1	The vehicle does not stop
2	Emergency button pressed
3	Device alarm
4	Dead man present
5	Lmi block
6	Car overload
7	High angle limit 55
8	Angle consistency not verified
9	Extension consistency not verified
10	Not allowed
11	Slowdown for high end run
12	Slowdown for lmi
13	Turret not blocked
14	Outrigger on ground
15	Angle not low
16	Max Ve extension
17	Min Ve extension
18	On-road
19	On car
20	Turret not released
21	Max Hr extension
22	Min Hr extension
23	Turret not frontal
24	Height 3m
25	Not on tyres
26	Max angle limit
27	Boom not closed
28	Not on frontal15
29	Blocked due to isaac intervention
30	Missing seat micro switch
31	Sudeco car not allowed
32	Car door micro switch
33	Excluded optional
34	Door open
35	Err on deco
36	Car sel
37	Intervention a2b
38	Rope overload
39	Turned rope
40	Winch not selected
41	Car jib not closed
42	Na rib back
43	Crossbars not closed

WARNING LIST	
Code	Description
44	Missing brake pedal
45	Not idle
46	Non boom low
47	Missing parking brake consent
48	Missing enabling
49	Mode not confirmed
50	Sword not inserted
51	On radio not stabilised
52	Boom not low
53	Gear not engaged
54	Blocked rear axle
55	Outrigger inconsistent consent
56	Engaged power steering
57	Activated outrig
58	Load not allowed
59	Rotation sensor error
60	Lifting danfoss internal error
61	Lifting danfoss directional error
62	Lifting danfoss tension error
63	Extension danfoss internal error
64	Extension danfoss directional error
65	Extension danfoss tension error
66	Rotation danfoss internal error
67	Rotation danfoss directional error
68	Rotation danfoss tension error
69	Auxiliary danfoss internal error
70	Auxiliary danfoss directional error
71	Auxiliary danfoss tension error
72	Oscillation danfoss internal error
73	Oscillation danfoss directional error
74	Oscillation danfoss tension error
80	Tower mc2m power supply
81	Carriage mc2m power supply
82	Cabin recovery



## 15 CLEANING

Cleaning the vehicle and all its components is fundamental for it to be kept in proper working order.

### 15.1 Cleaning the vehicle

Proceed as follows for a correct cleaning process:

- Switch the engine off, remove the ignition key and wait until the various components cool down.
- Wear the suitable protective clothing (gloves, masks, overalls, etc.).
- Do not use flammable liquids, acids or products that may chemically attack the vehicle components.
- Use water to soften dirt that sticks to the surface.
- Ask your **DIECI** dealer for touch-up paint to repair minor defects in the vehicle's bodywork.
- Check that all the safety stickers are present. Replace any that have been lost or removed for cleaning purposes.
- Use a pressure washer to clean the external part of the vehicle and the engine compartment, bearing the following in mind:
  - Make sure the top-up caps (radiator, oil tank, fuel tank, etc.) are closed well.
  - Protect the control boxes and connectors from water infiltrations.
  - Do not operate with a pressure and water temperature that exceeds 100 bar and 80°, respectively.
  - Hold the washer nozzle at a minimum distance of 40 cm from the relative surface.
  - Do not direct the jet at any single point but wash with wide strokes.
  - The inside of the vehicle is delicate and cannot be cleaned with a pressure washer.



#### - FORBIDDEN

Cleaning the stickers on the vehicle with solvents or petrol is strictly forbidden as the stickers may fade. Additional warning and safety stickers must always be treated in the same way.



#### - ELECTRICAL COMPONENTS

- If a pressurised jet is used, try not to wet the electrical components, such as the alternator and the starter motor.
- If water accidentally falls into the electrical system, it could cause the vehicle to malfunction.
- Do not use water or steam to clean the electrical system, sensors or connectors.



#### - MECHANICAL COMPONENTS

- Do not clean moving or overheated parts. Let the parts cool down as a temperature excursion may damage them.

### 15.2 Washing the windows

- The cab windows, lights and rear view mirrors must be washed often with soapy water.
- After washing has been completed, dry thoroughly; do not leave any stains or marks which may limit or obstruct the driver's visibility.

### 15.3 Cleaning the cab

- Clean soft upholstery in the cab with a cloth that has been dipped in a solution of water and detergent and then thoroughly wrung.
- The driver's seat and the floor must be cleaned with a vacuum cleaner and/or a stiff brush. If necessary, use a damp cloth to remove any stubborn stains.
- Clean the seat belt with a sponge that has been soaked in hot soapy water, and let it dry on its own.
- Fabric-covered seats must be cleaned with a stiff brush or vacuum cleaner. Plastic seats must be cleaned with a damp cloth.



#### **- ELECTRICAL COMPONENTS**

Do not use water jets inside the cab.



#### **- FORBIDDEN**

Do not use products containing alcohol to clean the interior lining of the cab.

## 15.4 Cleaning of the safety stickers



### - ATTENTION

To ensure correct interpretation, verify that they are located in the correct position and that they are always kept clean.



### - DANGER

Clean the stickers if they are covered by dirt, cement or other deposits.



### - FORBIDDEN

Cleaning the stickers on the vehicle with solvents or petrol is strictly forbidden as the stickers may fade. Additional warning and safety stickers must always be treated in the same way.

## 16 LIFTING, TRANSPORTING AND STORING

### 16.1 Lifting the vehicle



**- DANGER**

Always check the good conditions of anchorages (ropes, chains, wedges, etc.)



**- ATTENTION**

Make sure that the lifting mechanism has an adequate capacity for the weight of the vehicle.

The weight of the vehicle is indicated on the relative metal plate; check the overall dimensions for the minimum and maximum heights from the ground and the weight allowed.

The vehicle is fitted with lifting points, marked by special symbols (Fig. 1-R0002).



**- DANGER**

To lift the machine only use the anchor points on the machine carriage.

Attach the ropes at the points indicated in the figure, paying utmost attention during the lifting phases. Slowly proceed with the lifting.



**- DANGER**

Before lifting the vehicle, make sure no unauthorised personnel are in the surrounding area.



**- ATTENTION**

Lifting cables with a minimum unit capacity of 6 Tonnes are required.

Before lifting the vehicle, make sure to:

- Remove any attachments installed on the vehicle.
- Retract and lower the telescopic boom completely.
- Engage the parking brake, place and the movement selection lever at "N" and switch off the vehicle.
- Close all windows and the cab door.
- Align the turret to the carriage and insert the turret rotation blockage pin (Fig. 2-R0002).
- Check that the stabilising feet are fully lifted and retracted.



## 16.2 Transporting the vehicle

### 16.2.1 Transporting the vehicle on a trailer



**- DANGER**

Always check the good conditions of anchorages (ropes, chains, wedges, etc.)



**- ATTENTION**

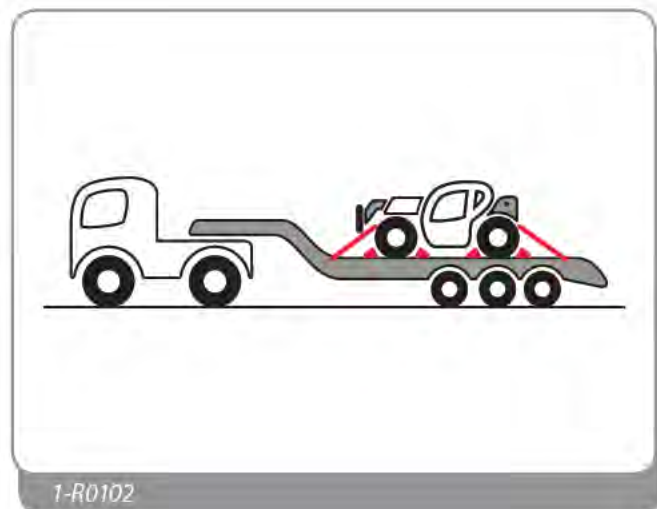
Pay attention to the following when loading the vehicle on to a trailer:

- Before using ramps or trailers to load the machine on, remove any mud, ice or oil that could cause accidents.
- Check that the axle and the transport vehicle can withstand the overall weight of the machine and any loaded equipment.
- Check the overall dimensions of the vehicle for minimum and maximum heights from the ground and the weight allowed.
- Carefully manoeuvre the machine on to the transport vehicle.
- Make sure local regulations are observed when transporting the vehicle on public roads.



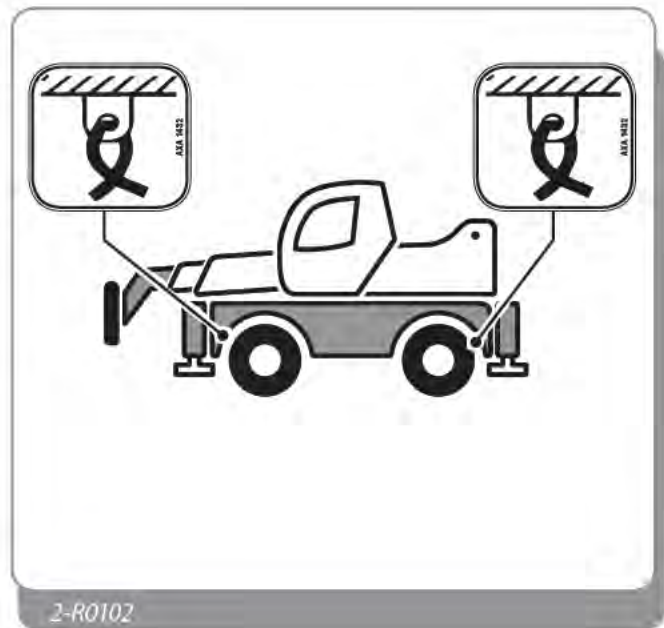
**- DANGER**

When loading or unloading a vehicle from a transport vehicle, there is always the risk of the vehicle overturning sideways; therefore, have another person on the ground to control the manoeuvres.



Take the following precautions when loading or unloading a vehicle:

1. Choose solid and level ground.
2. Remove any attachments installed on the vehicle.
3. Lower and completely retract the telescopic boom.
4. Fully retract and raise the stabilising feet
5. Align the turret to the carriage and block the turret with the retainer.
6. Use a platform or a ramp.
7. Always select the slowest speed.
8. Load the vehicle on to the transport vehicle, making sure that the ramps are positioned properly and safely.
9. Once the vehicle is in a safe position, switch the engine off and engage the parking brake.
10. Close all windows and the cab door.
11. Anchor the vehicle to the transport vehicle with chains or cables through the relative hooks (Fig. 2-R0102).
12. Apply wedges to the front and rear wheels of the transport vehicle.



## 17 STORING THE VEHICLE

### 17.1 Long period of inactivity

If the vehicle must be stored for a long period of time, certain precautions must be complied with to protect it:

- Clean the vehicle.
- Touch up the paint where necessary to prevent rust.
- Lubricate all the greasers.
- Check whether any parts are worn or damaged and replace them, if necessary.
- Check the tyres and inflate them to the recommended pressure.
- Drain the oil from the engine and replace it with new oil.
- Clean the fuel system and change the filter cartridges.
- Empty the fuel tank as usual and fill it with ten litres of special fuel for prolonged inactivity. Run the engine for ten minutes so the new solution can distribute evenly.
- Store any equipment.
- Realign and lower all the mobile parts of the vehicle completely.
- Cover the exposed rods of the hydraulic cylinders with a thin layer of grease.
- Cover the exhaust opening.
- Close and lock all the windows.
- Close and lock the door.

### 17.2 Restarting the vehicle

Preparing the vehicle after a long period of inactivity:

- Inflate the tyres to the correct pressure.
- Remove the jack stands from under the axles.
- Fill the fuel tank.
- Check the radiator coolant level.
- Check the level of the various oils.
- Fit a fully charged battery.
- Remove the cover of the exhaust pipe.
- Remove the layer of grease on the exposed cylinder rods.
- Start the engine and check that all the controls work properly.
- Let the engine run for a few minutes.
- Verify the efficiency of the brake system.

1.



## 18 WASTE DISPOSAL

- Waste material should not be dispersed in the environment but rather disposed of appropriately. Used lubricants, batteries, rags dirty with grease, brake pads etc. should be handed over to specialised companies authorised to dispose of polluting waste.
- Improper waste disposal poses a threat to the environment. The following are potentially dangerous waste: lubricants, fuel, cooling, filters and batteries.
- Do not spill or pour waste onto the ground, into the sewers or into water beds.
- Contact your local authority or collection centres for information for how to recycle or dispose of waste properly.

### 18.1 Ecological considerations

A few helpful recommendations are listed below. Learn about current legislation in force in your country.

Ask suppliers for information about lubricating oils, fuels, antifreeze products, detergents, etc., about their effects on people and on the environment as well as on information regarding the regulations to be observed when using, stocking and disposing of such products.

- Do not refill the tanks using unsuitable jerry cans or pressurised combustible fuelling systems as they may cause leaks and loss of significant amounts of liquid.
- Modern lubricating oils contain additives. Do not burn contaminated combustible oils and/or oils used in conventional heating systems.
- Take care not to spill used engine cooling fluids, engine and transmission lubricating oils, hydraulic oil, brake oil etc. while pouring or draining them. Store them safely and, when it is time, dispose of them in compliance with current legislation or with local facilities.
- Modern antifreeze liquids and their solutions, such as antifreeze and other additives should be replaced every two years. Make sure such liquids are not absorbed by the soil; they should be collected and disposed of appropriately.
- Do not intervene directly with the air conditioning systems (Optional), by opening them. These systems contain gas which must not be released into the atmosphere. Contact your dealer or an expert who has the necessary special equipment and who would, in any case, have to refill the system.
- Immediately repair any leaks or faults in the cooling or engine hydraulic systems.

### 18.2 Protect the environment

It is illegal to pollute sewers, water sources or soil. Use only authorised dumping grounds centres, including the areas designated by the local authorities or workshops equipped with the necessary tools for the disposal of used oils. If in doubt, contact your local authority for relevant instructions.



## 19 DEMOLITION

To demolish the vehicle or the equipment, dismantle all components and keep the different types of materials separate for sending to the relative collection centres.

The following types of materials may be present:

- Ferrous materials (carpentries and mechanical components)
- Plastic materials (gaskets, belts, protections)
- Electric materials (cables, windings and similar)
- Oils and lubricants (hydraulic oil, reduction gear lubricants, lubricating greases)

## 20 ELECTRIC SYSTEM

### 20.1 Electric system diagram

WIRE COLOURS	
A	Light blue
B	White
C	Orange
G	Yellow
H	Grey
L	Blue
M	Brown
N	Black
R	Red
S	Pink
V	Green
Z	Violet
/	Transversal colours
-	Longitudinal colours



#### - NOTE

The colour of the two-tone wires is indicated with composition of the above-mentioned codes, using the "/" and "-" symbols

Example:

**Y/G** = Yellow/green transversal colour

**Y-G** = Yellow-green longitudinal colour

Nome/Item	Descrizione/Description	Fg/Sh
A151	Radio	7
A650	Perkins control unit	1
A650	Perkins control unit	3
B130	Seat micro switch	2
B138	Micro inching	4
B193	Stop lights pressure switch	6
B234	Pedal brake pressure switch	4
B279	Pedal brake accumulator pressure switch	8
B502	Reverse buzzer	6
B503	Horn	6
B512	Fuel level sensor	8
B513	Clogged hydraulic oil filter pressure switch	8
B534	Gear engaged micro switch	4
B535	2nd gear pressure switch	4
B554	Parking brake fault pressure switch	4
B558	Front axle alignment prox.	8
B560	Rear axle alignment prox.	8
B572	Rear axle alignment prox.	8
B585	Rear axle alignment prox.	8
B638	Air filter pressure switch	1
B711	Boom extension/retraction directional lever	9
B713	Boom up/down directional lever	9
B715	Up/down oscillation directional lever	9
B717	Service directional lever	9
B719	Right/Left tower rotation directional lever	9
B720	Compensation base pressure transducer	8
B721	Compensation rod pressure transducer	8
B722	Lifting base pressure transducer	8
B723	Lifting rod pressure transducer	8
B726	Boom/chassis angle sensor	8
B730	Tower rotation sensor	8
B783-B	Rear left foot micro switch	12
B784-B	Rear left foot micro switch	12
B790	Left crossbar winder 1	12
B790	Left crossbar winder 1	12
B791	Left crossbar winder 2	12
B791	Left crossbar winder 2	12
B792	Right crossbar winder 1	12
B792	Right crossbar winder 1	12

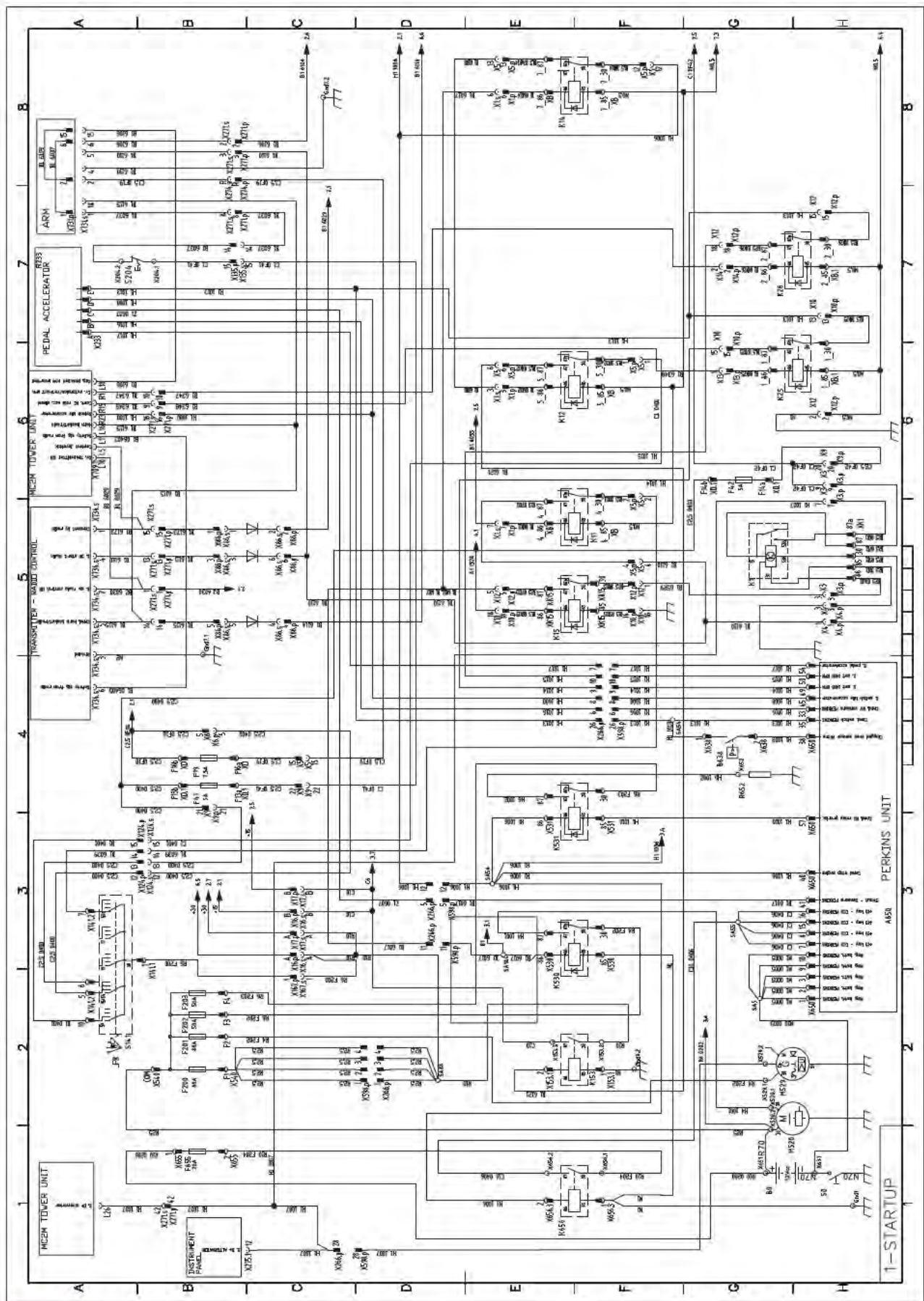
Nome/Item	Descrizione/Description	Fg/Sh
B793	Right crossbar winder 2	12
B793	Right crossbar winder 2	12
E102	Right front work light	7
E103	Right rear work light	7
E104	Left front work light	7
E118	Left rear work light	7
E127	Revolving light	7
E147	Ceiling light	7
E522	Right rear light	6
E524	Plate light	6
E526	Left front light	6
E548	Left rear light	6
E551	Right front light	6
E727	Radio control rotating light	7
F10	Warning fuse - radio	6
F11	Right rear left front lights fuse	6
F12	Left rear right front lights fuse	6
F14	Switch services fuse	11
F15	Radio control switch fuse	2
F16	Stop lights fuse	6
F17	Work light switch fuse	7
F18	Radio control switch fuse	2
F19	+15 Basket key fuse	1
F2	Warning switch fuse	6
F200	General fuse	1
F201	Fuse + battery	1
F202	Ignition relay fuse	1
F203	Ignition plug relay fuse	1
F22	Current socket fuse	7
F23	Light-switch fuse	6
F25	+15 services ve mc2m tower fuse	3
F26	Radio control battery charger fuse	2
F27	Reverse light relay fuse	6
F3	Dipped beam relay fuse	6
F31	Start consent fuse	4
F32	Sensor power supply relay fuse	9
F33	Ventilation fuse	5
F34	Pneumatic seat fuse	5
F35	Front windscreen wiper fuse	5
F36	Rear windscreen wiper fuse	5
F37	Radio control switch fuse	2
F38	Centring handler services fuse	13
F39	Lower carriage vp mc2m fuse	3
F4	Current socket fuse	7

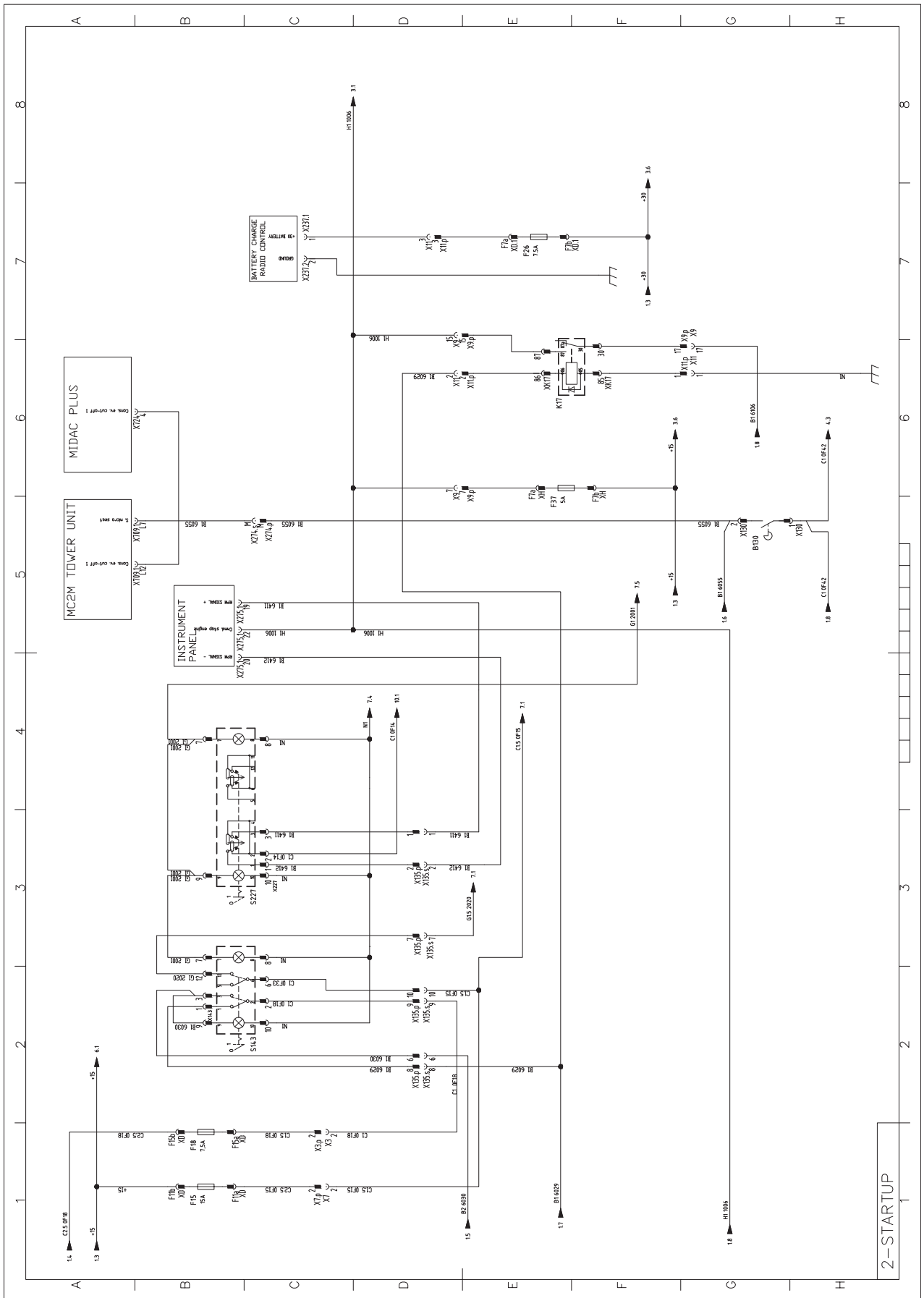


Nome/ Item	Descrizione/Description	Fg/ Sh
F40	Optional services fuse	13
F41	Emergency button fuse	1
F42	Start-up fuse	1
F5	Full beam relay fuse	6
F50	vp mc2m tower fuse	3
F51	+15 services fuse	5
F653	Lower carriage vp mc2m fuse	3
F655	Perkins motor ecu fuse	1
F7	Current socket fuse	7
F8	Horn relay fuse	6
HA4	Left speaker	7
HA5	Right speaker	7
K1	Start-up anti-rep control unit	1
K11	Seat micro switch start-up consent relay	1
K15	Neutral position start-up consent relay	1
K153	Services relay	1
K17	Cab manual acc. cutting relay	2
K19	Full beam headlights relay	7
K23	Sensor power supply relay fuse	9
K24	Gear consent relay	4
K25	Relay set 1400 rpm	1
K26	Relay set 1800 rpm	1
K27	Reverse gear relay	4
K28	Forward gear relay	4
K29	Reverse light/buzzer relay	6
K3	Ventilation relay	5
K30	Forward gear relay	4
K31	Reverse gear relay	4
K5	Horn relay	6
K530	Starting relay	1
K531	Ignition plug relay	1
K6	Full beam headlights relay	7
K654	Low. mc2m carriage power supply relay	3
K656	Emergency relay	1
K8	Full beam headlights relay	6
K9	Dipped beam headlights relay	6
M112	Front windscreen wiper motor	5
M117	Window washer pump	5
M119	Rear window washer pump	5
M122	Rear windscreen wiper motor	5
M129	Fan motor	5

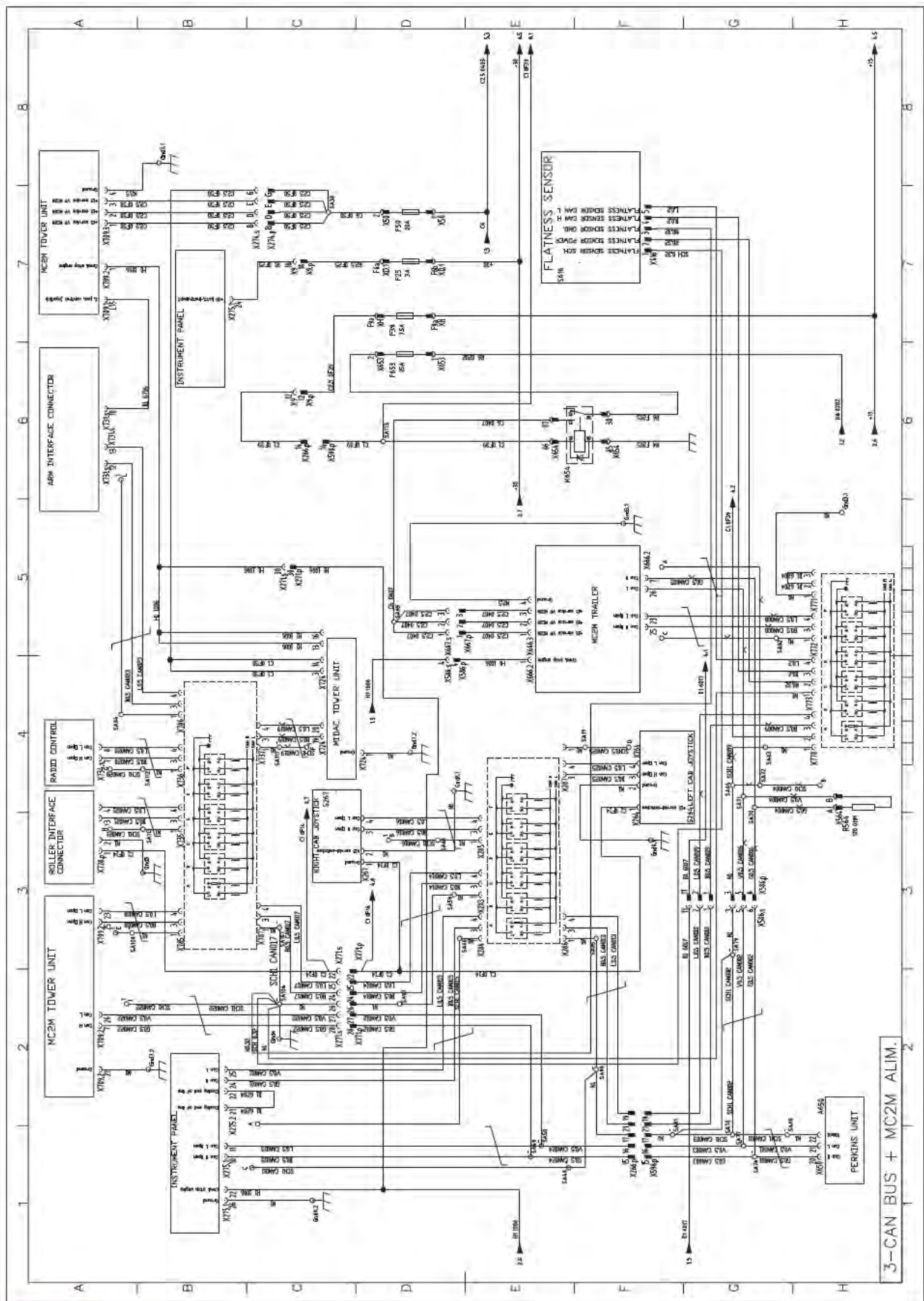
Nome/ Item	Descrizione/Description	Fg/ Sh
M152	Pneumatic seat	5
M520	Starter motor	1
M529	Alternator	1
M555	A/C motor	5
R233	Accelerator pedal	1
R652	Ignition plugs	1
S0	Battery isolator switch	1
S106	Rear work lights switch	7
S107	Manual-auto stabiliser consent button	11
S108	Warning switch	6
S109	Levelling button	10
S110	Gear change button	4
S113	Left front outrigger switch	11
S114	Right front outrigger switch	11
S115	Cobo warning switch 16.352	7
S120	Rear windscreen wiper/washer switch	5
S121	Parking brake switch	4
S137	Start gear	4
S140	Lights-indicators switch	6
S141	Starting control board	1
S148	Front work light switches	7
S197	Front windscreen wiper switch	5
S202	Steering selector switch	10
S204	Mushroom-shaped emergency button	1
S206	Boom work lights switch	7
S207	Tower rotation block button	11
S222	Left rear outrigger switch	11
S223	Right rear outrigger switch	11
S251	Equipment change consent unstable key	11
S264	Left cab joystick	3
S267	Joystick	3
S278	Potentiometer	10
S616	Joystick	3
X165	Current socket	7
Y514	Outriggers general solenoid valve	11
Y515	Tower rotation block solenoid valve	9
Y516	1st mechanical gear solenoid valve	4
Y518	Right levelling solenoid valve	10
Y519	Left levelling solenoid valve	10
Y521	2nd mechanical gear solenoid valve	4
Y523	Parking brake solenoid valve	4

Nome/ Item	Descrizione/Description	Fg/ Sh
Y527	Forward gear solenoid valve	4
Y528	Reverse gear solenoid valve	4
Y578	Left rear axle block solenoid valve	10
Y579	Right rear axle block solenoid valve	10
Y580	Crab steering solenoid valve	10
Y581	Concentric/crab steering common solenoid valve	10
Y582	Concentric steering solenoid valve	10
Y583	Front steering solenoid valve	10
Y588	Ascent selection solenoid valve	11
Y589	Descent selection solenoid valve	11
Y590	Left rear foot solenoid valve	11
Y591	Right rear foot solenoid valve	11
Y592	Left front foot solenoid valve	11
Y593	Right front foot solenoid valve	11
Y619	Front axle block solenoid valve	10
Y620	Front axle block solenoid valve 2	10
Y661	Auxiliary pump solenoid valve	11
Y662	Left rear beam solenoid valve	11
Y663	Right rear beam solenoid valve	11
Y664	Left front beam solenoid valve	11
Y665	Right front beam solenoid valve	11
Y668	Power steering inversion solenoid valve	10
Y676	Front axle block solenoid valve 3	10
Y677	Front axle block solenoid valve 4	10
Y712	Boom up/down solenoid valve	9
Y714	Up/down oscillation solenoid valve	9
Y716	Service solenoid valve	9
Y718	Right/Left tower rotation solenoid valve	9
Y725	Cut-off solenoid valve 1	9
Y789	Boom extension/retraction solenoid valve	9

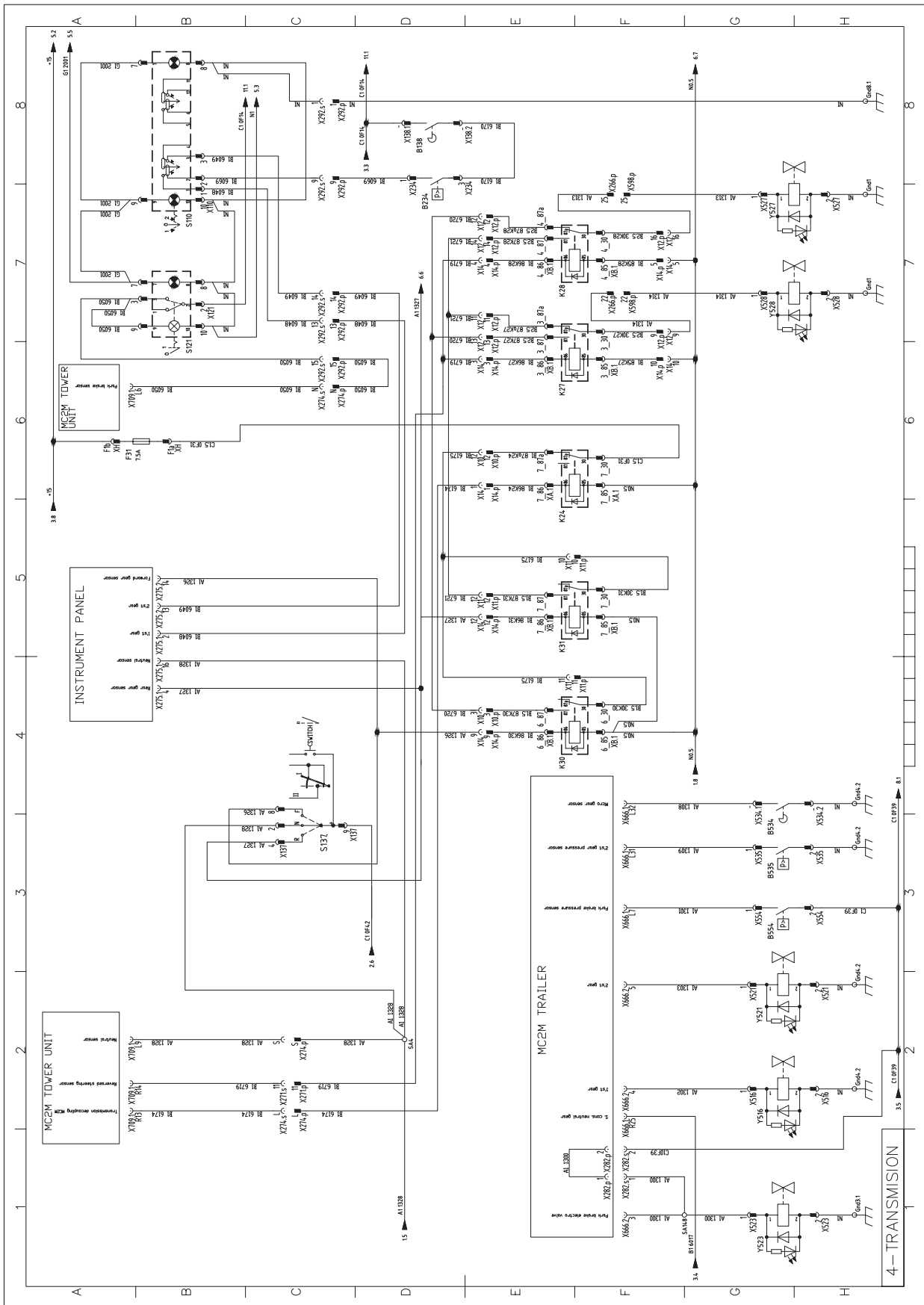


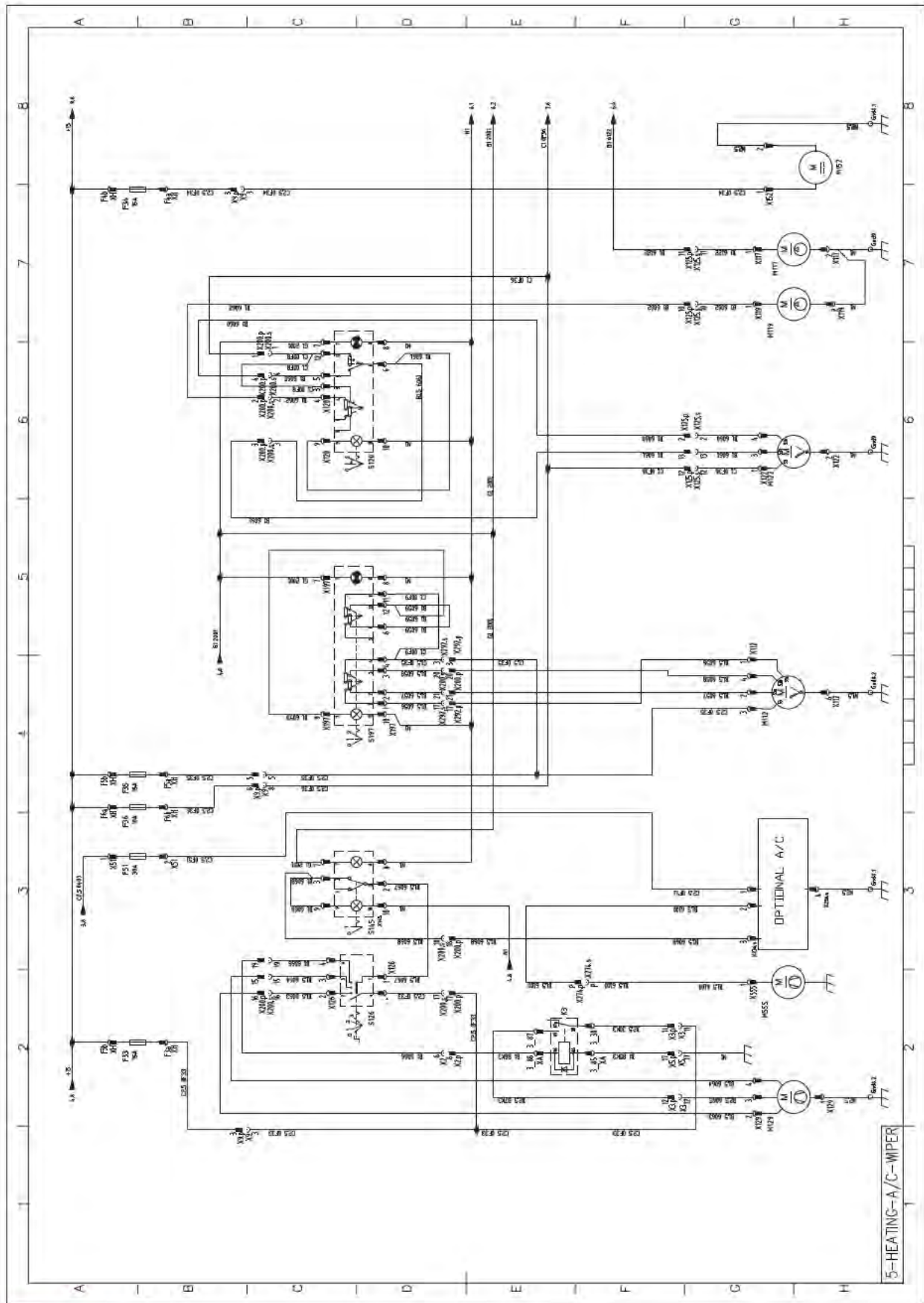


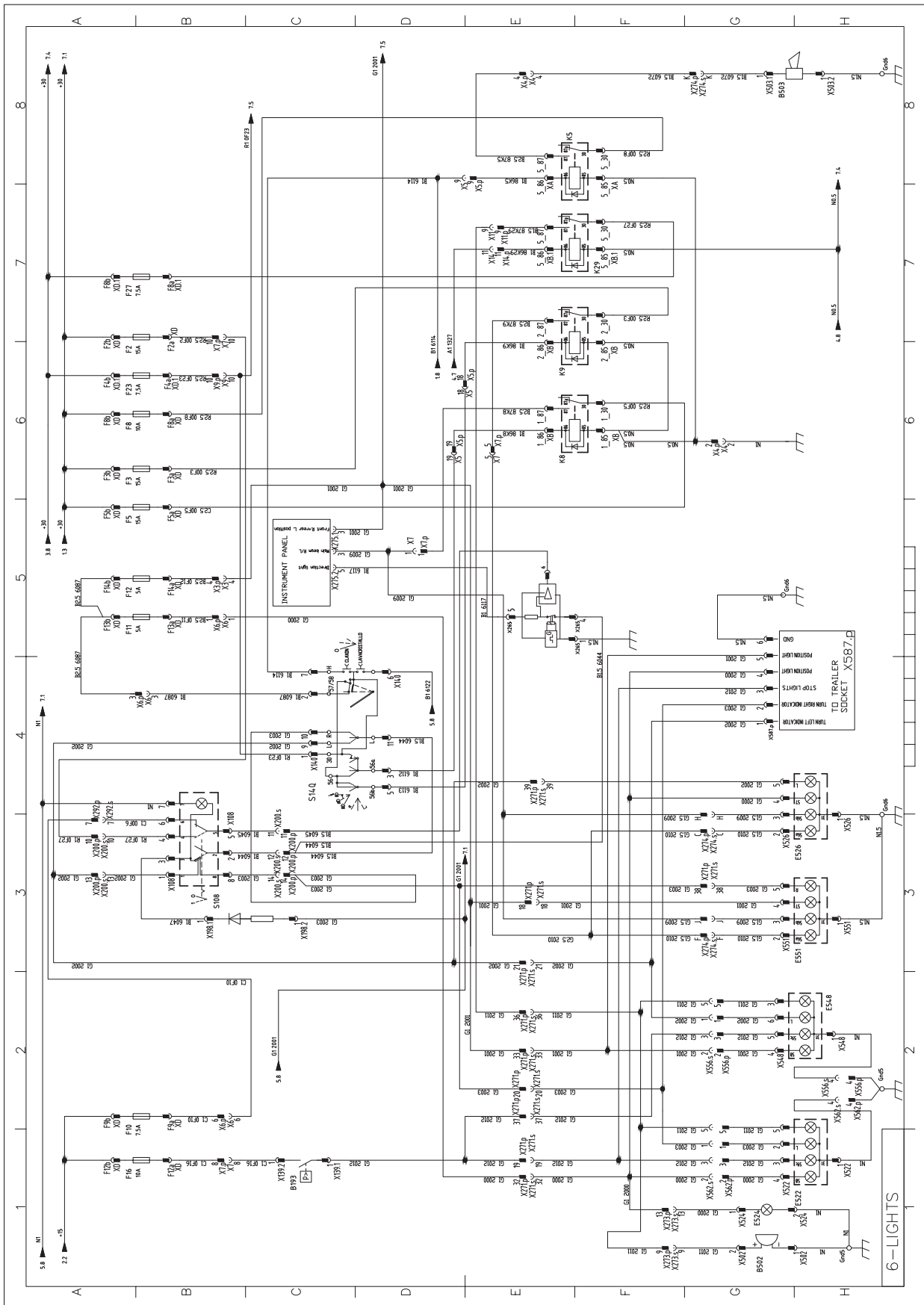
2-STARTUP

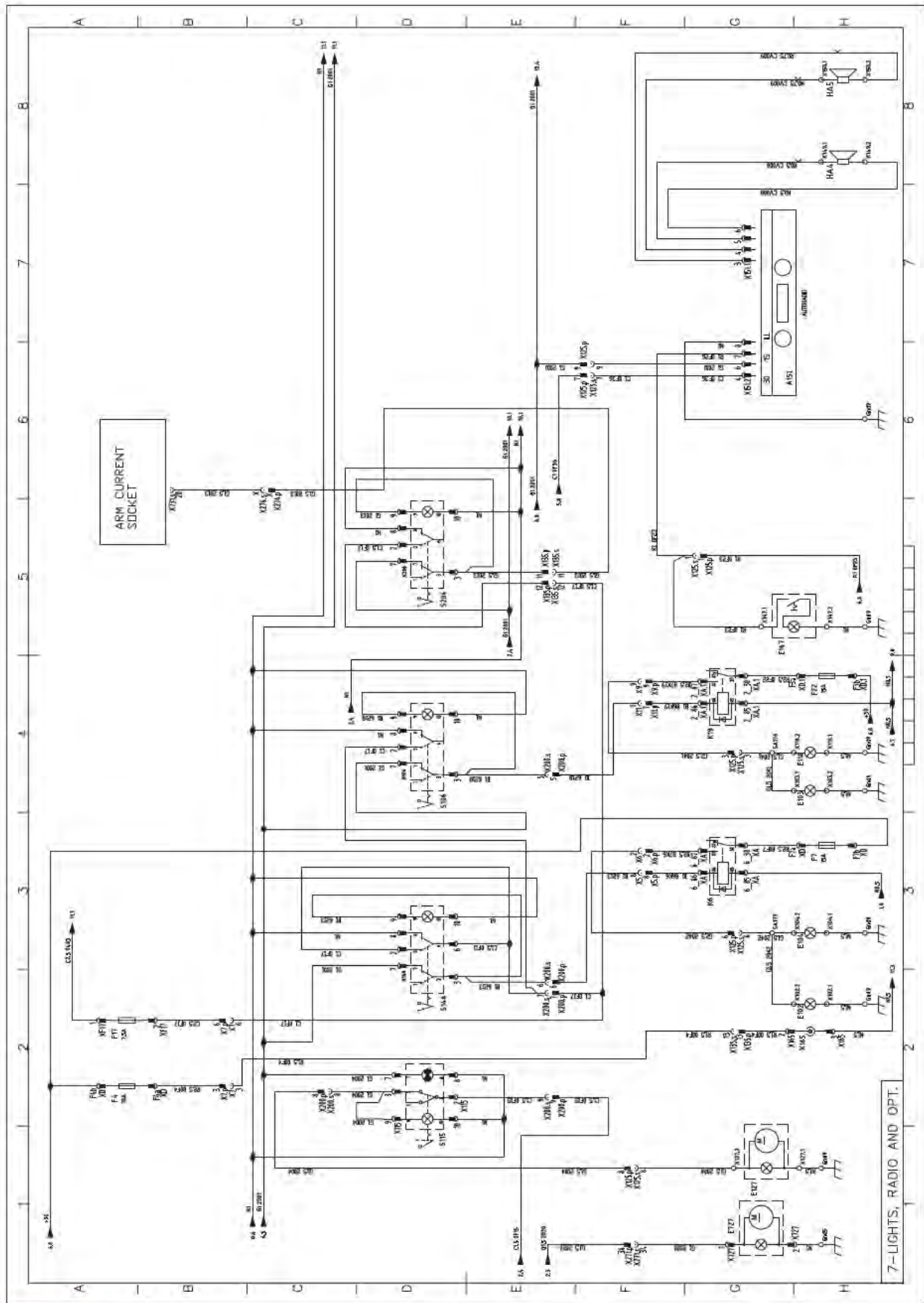


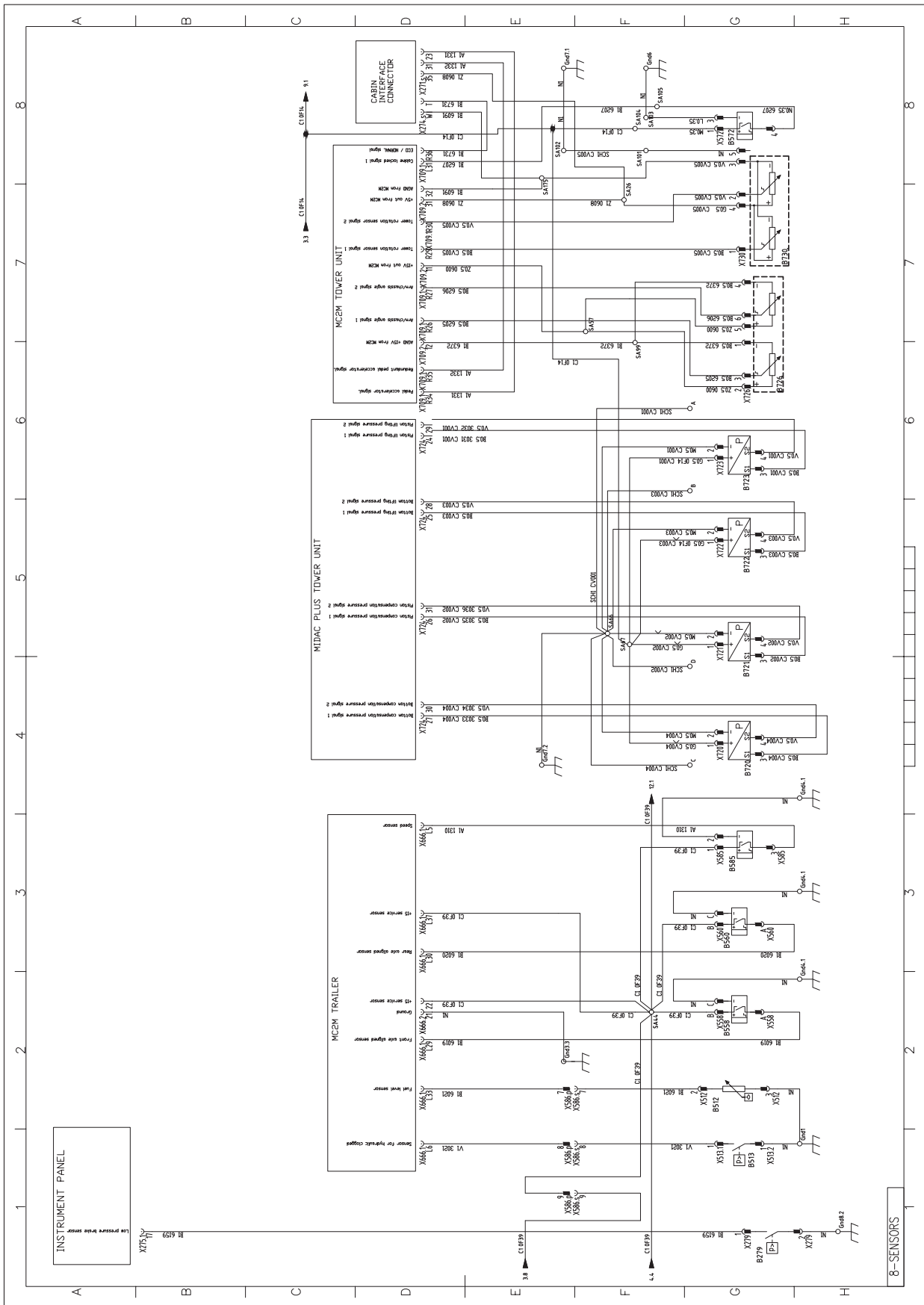


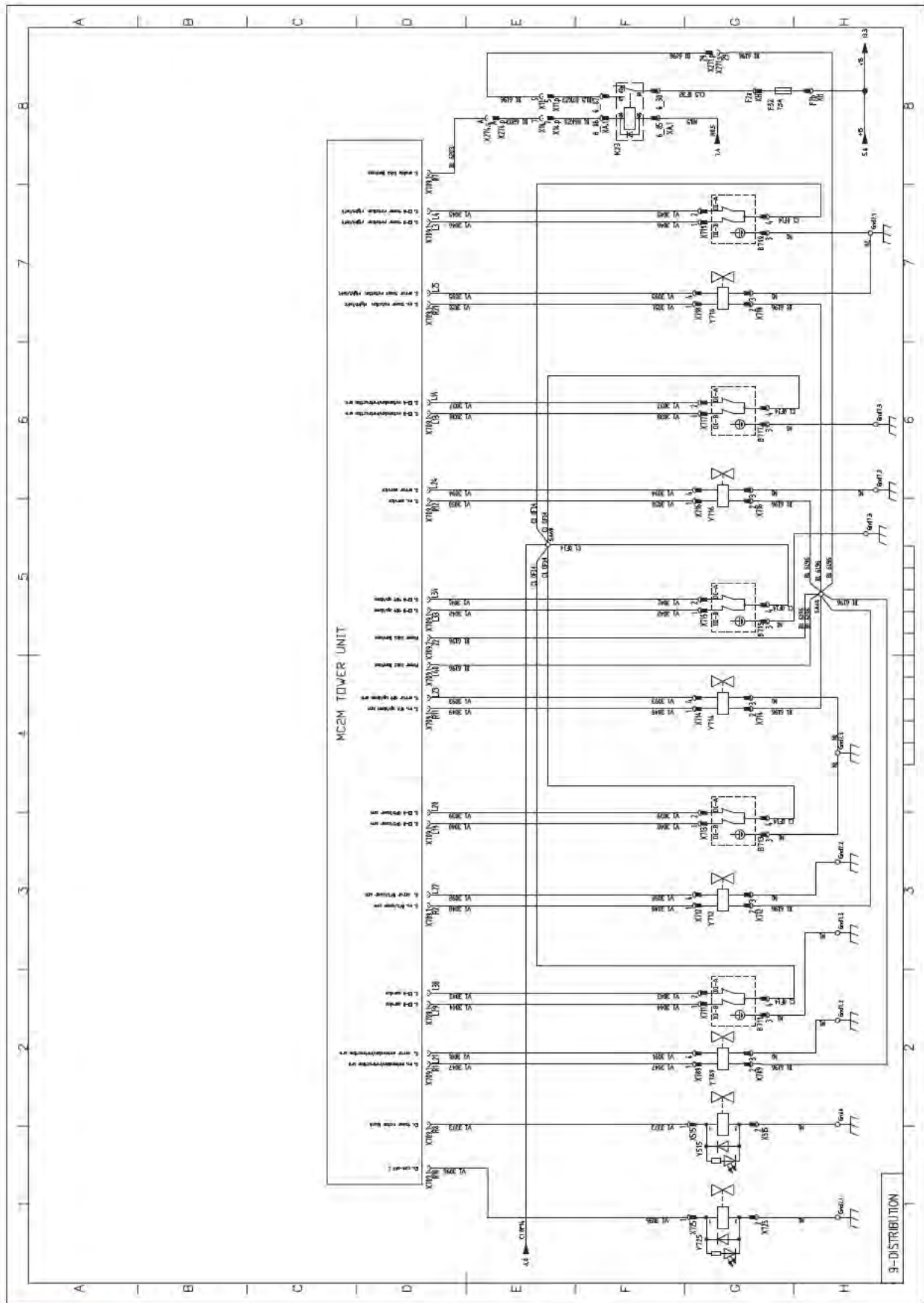


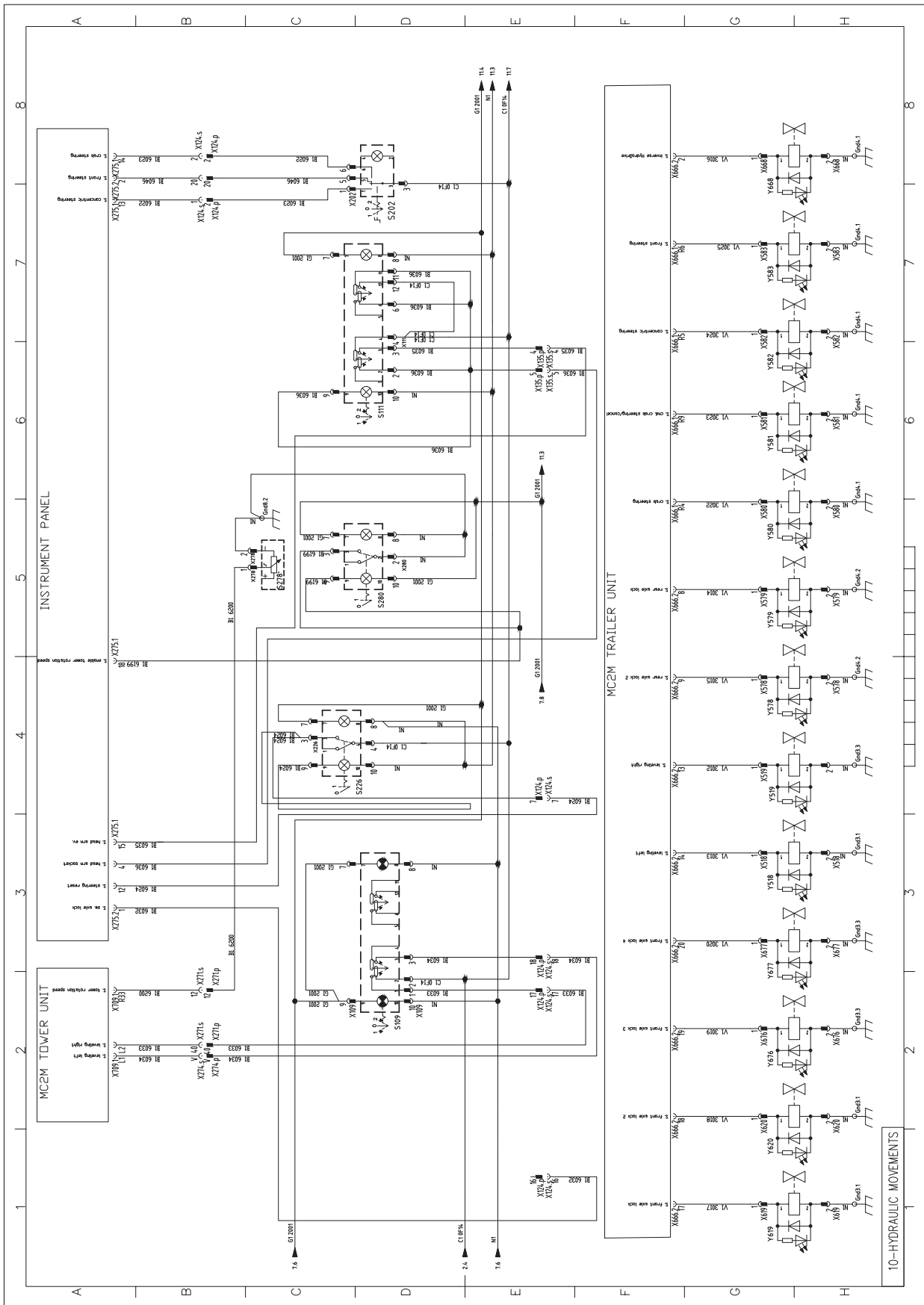


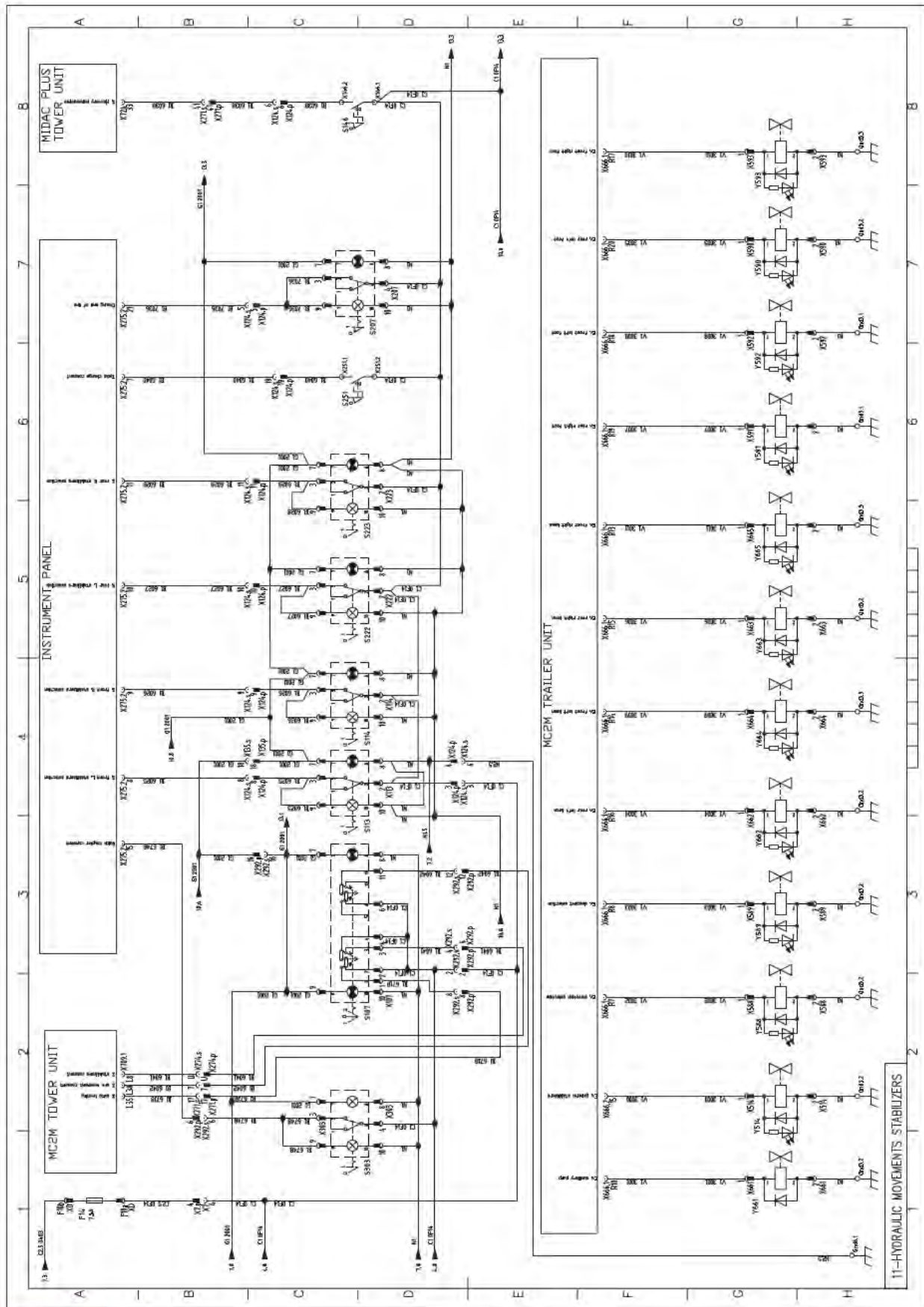




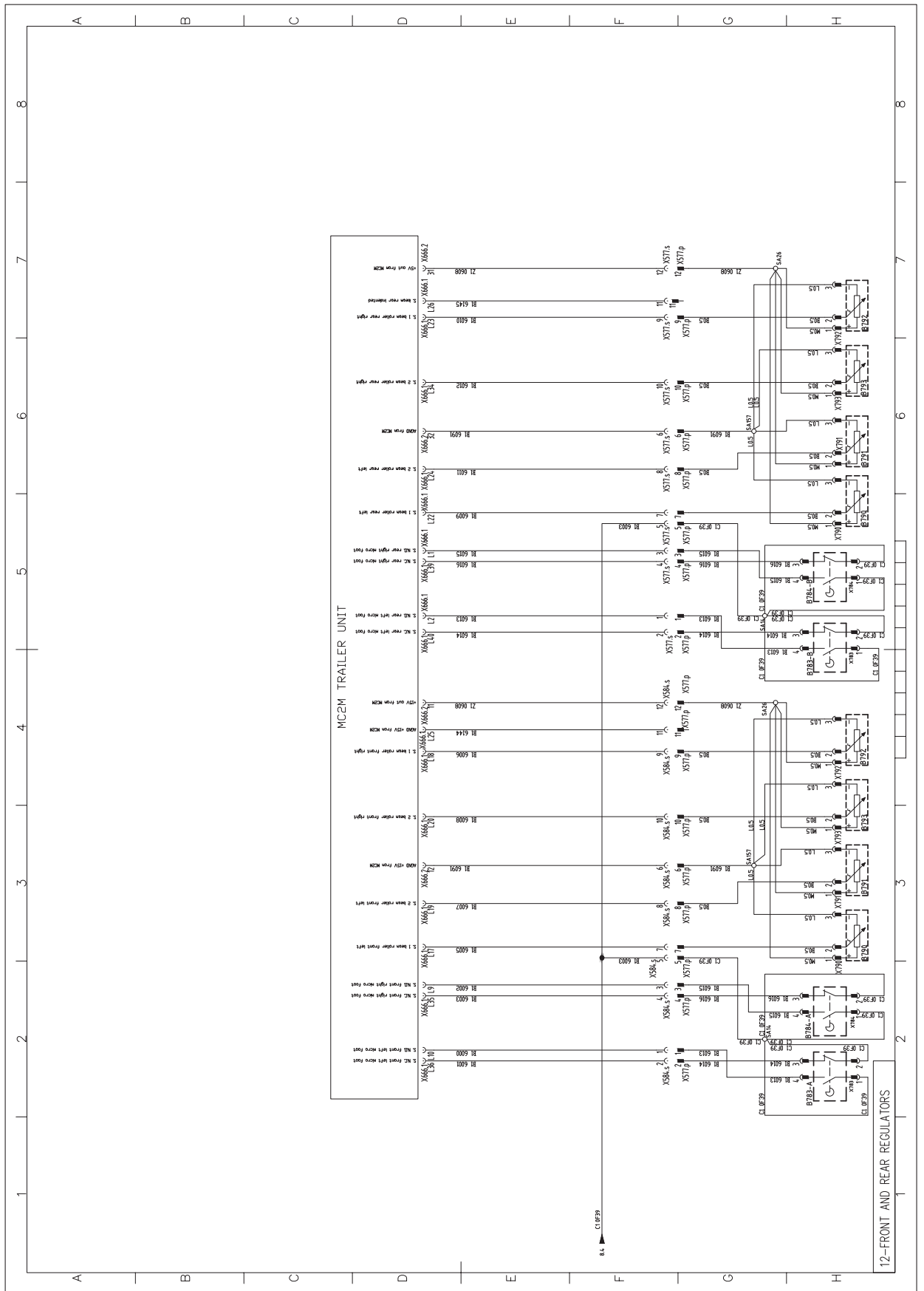


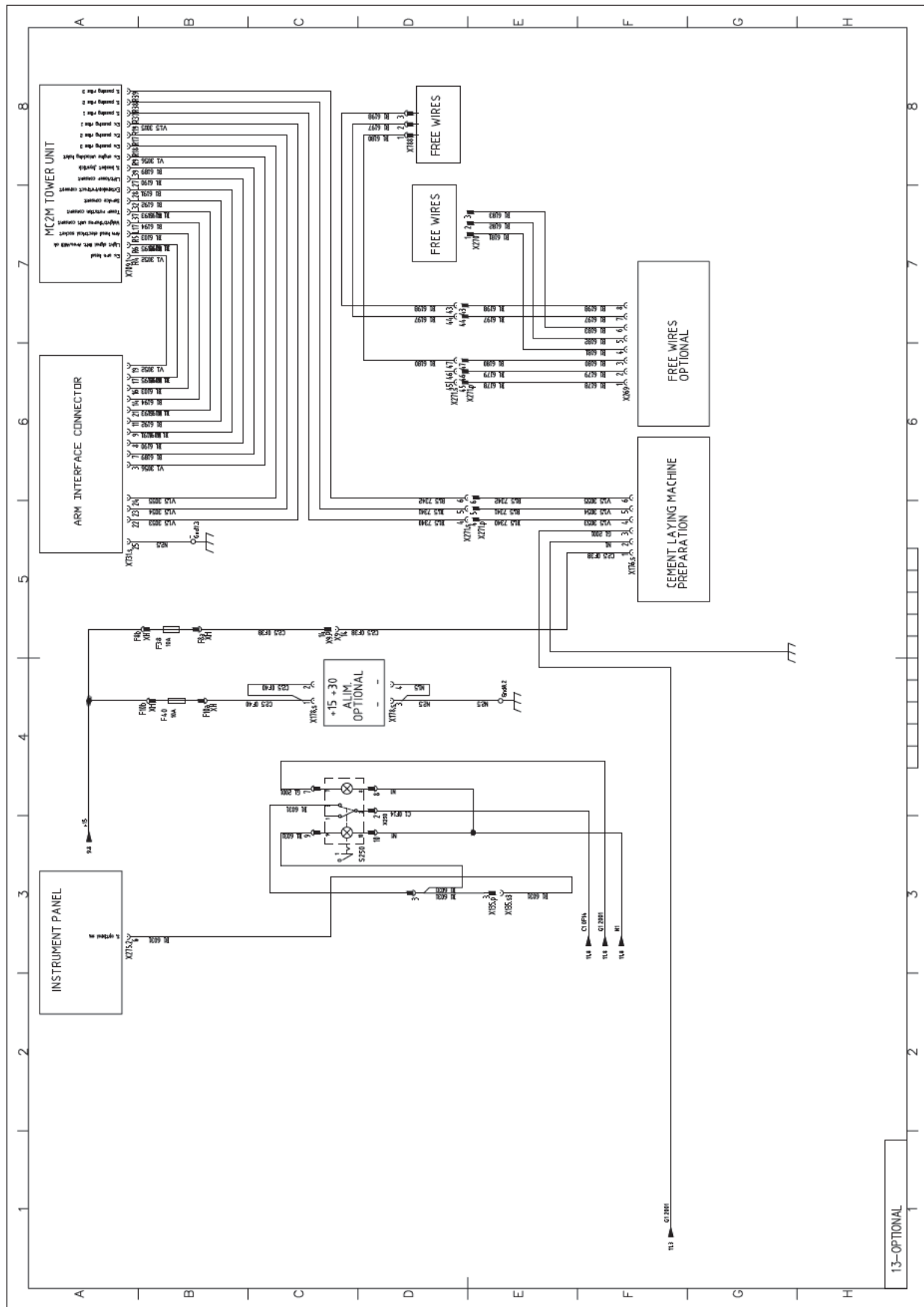












## 20.2 Fuses



### - WARNING

Fuses must be removed with special pliers.

To replace a fuse, remove it from its seat using specific pliers and replace it with another fuse of the same class, quality and amps.



### - FORBIDDEN

Do not attempt to repair fuses.

### 20.2.1 General control box

The main electric circuit is protected by fuses located in the general circuit board (Fig. 1-V0000).

Access the circuit board by removing the left plastic under the dashboard, removing its screws.

In the event of an electrical malfunction, fuse conditions must be verified as the first troubleshooting operation.



### - ATTENTION

Before accessing the fuse control unit in the cab, set the vehicle in the maintenance position.

### 20.2.2 Engine control unit

The electrical circuits in the engine and its connected components are protected by a fuse control unit set up inside the engine compartment (Fig. 2-V0000). Remove the box cover to access the fuses. In the event of an electrical malfunction, fuse conditions must be verified as the first troubleshooting operation.



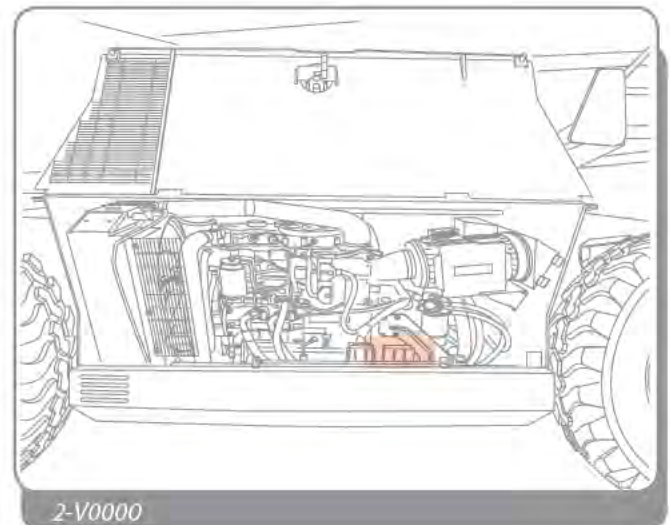
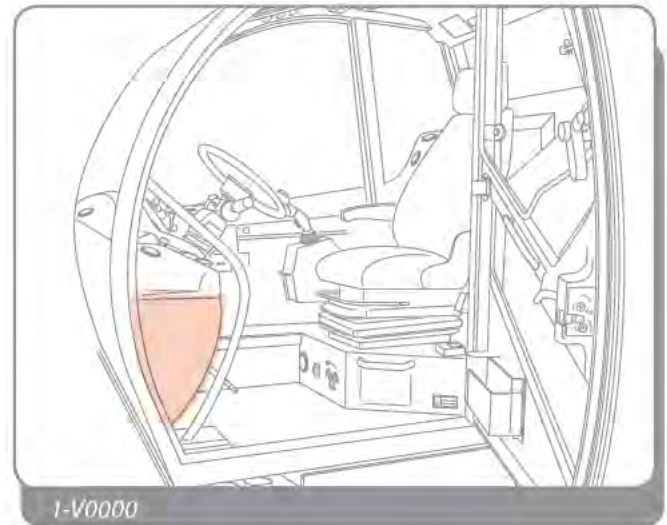
### - ATTENTION

Before accessing the engine control unit, set the vehicle in the maintenance position.



### - WARNING

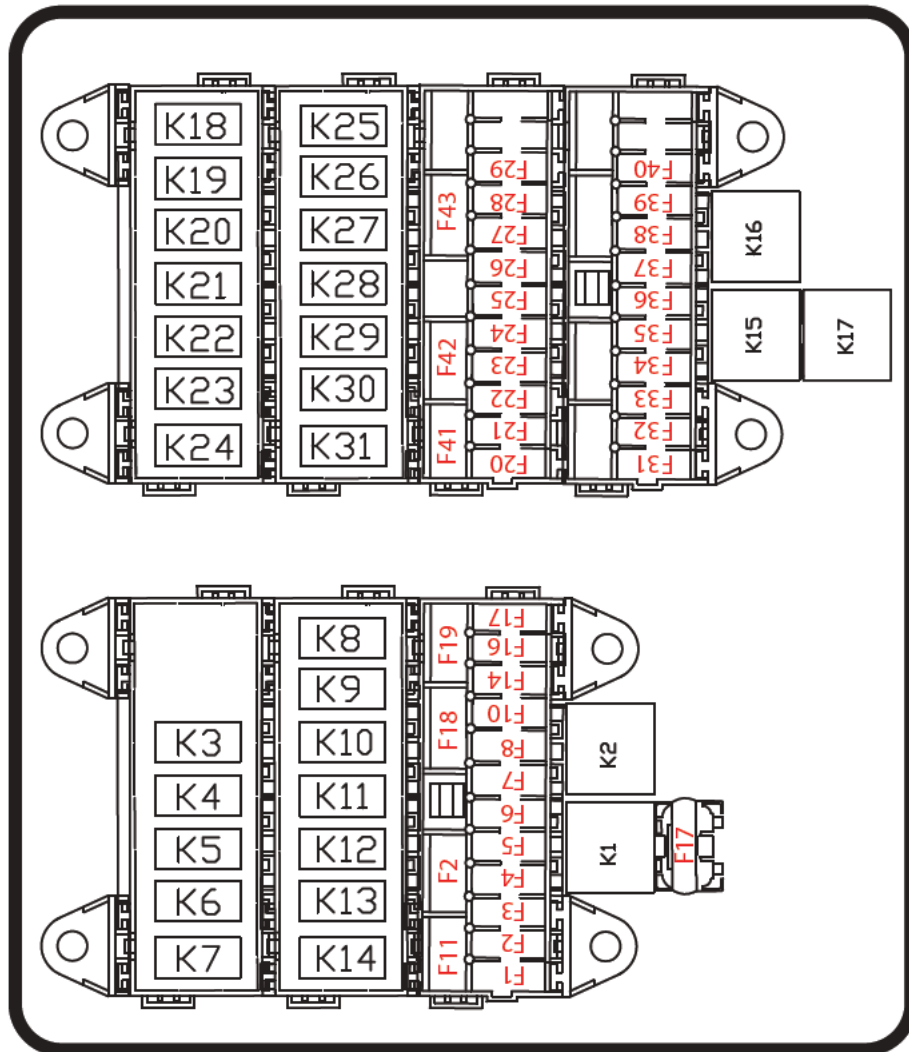
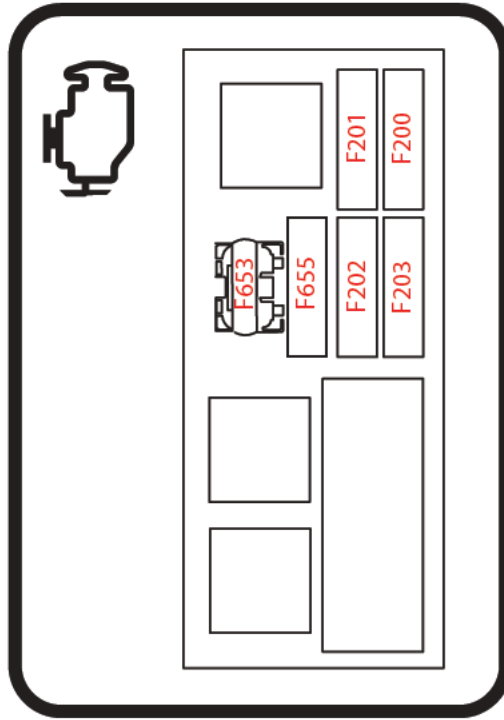
The main fuse of the vehicle is located inside the engine control unit.





Fuse	Ampere	Function Description
F1	15	
F2	15	Warning
F3	15	Dipped lights
F4	10	Current socket
F5	15	Full beam headlights
F6	15	
F7	15	Front work lights
F8	10	Horn
F9		
F10	7.5	Warning - radio
F11	5	Left rear and right front sidelights
F12	5	Right rear left front sidelights and number plate light
F13		
F14	7.5	Services switch
F15	15	Radio control and rotating light
F16	10	Stop lights
F17	7.5	Work lights
F18	7.5	Radio control switch
F19	7.5	+15 Basket key
F20	20	
F21	10	
F22	15	Rear work lights
F23	7.5	Light switch and dome lamp
F24	15	
F25	3	+30 instrument cluster
F26	15	
F27	7.5	Reverse light and rear buzzer
F28	7.5	
F29	7.5	
F30		
F31	7.5	Drive disconnection
F32	7.5	Power supply distributor modules
F33	15	Fan speed selector
F34	15	Pneumatic seat
F35	15	Front windscreen wipers
F36	10	Rear windscreen wiper and radio-antenna
F37	5	Enginge stop command
F38	10	Centring handler services
F39	7.5	Lower carriage MC2M logic power supply
F40	10	Optional power supplies
F41	5	Mushroom-shaped emergency button

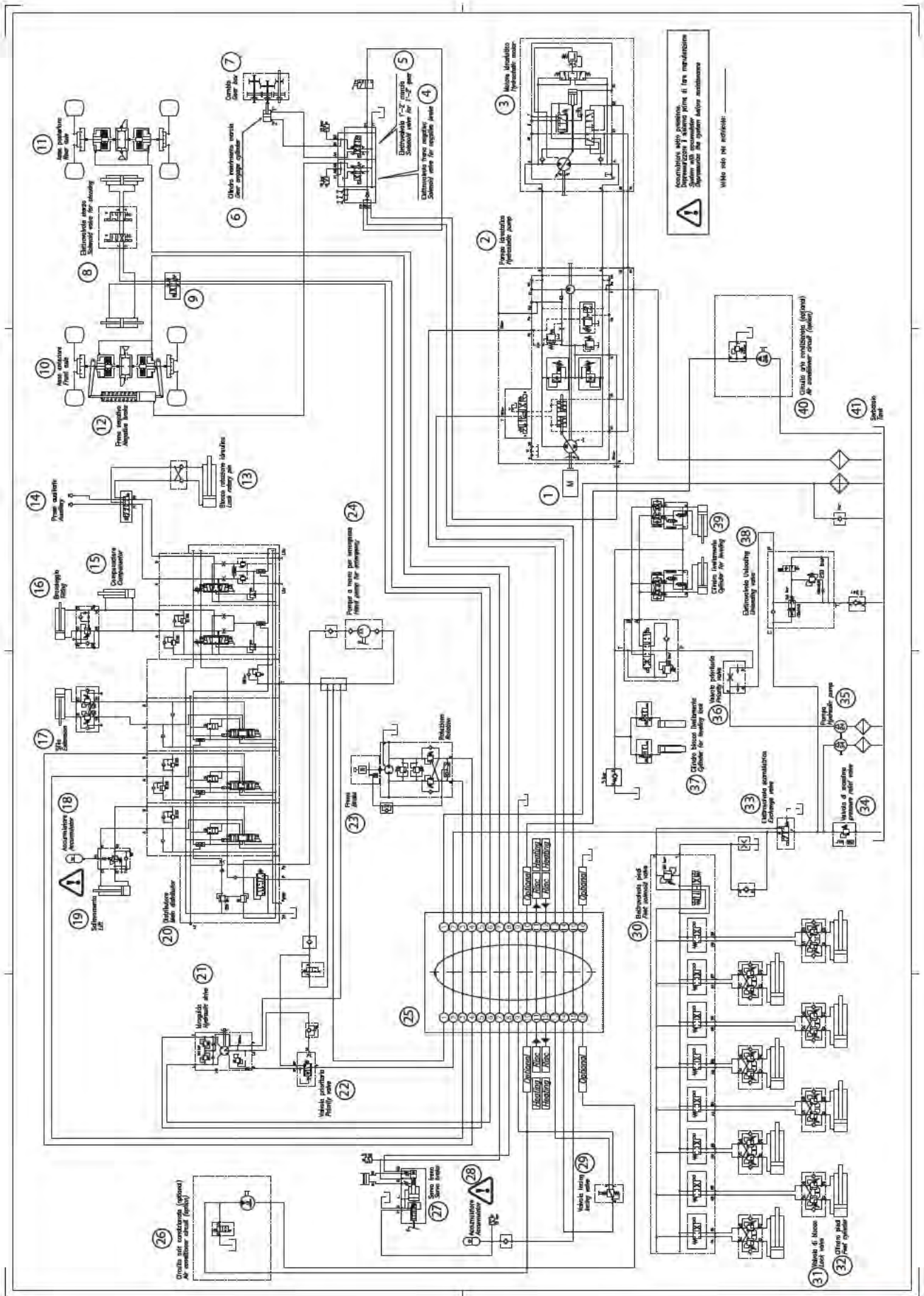
Fuse	Ampere	Function Description
F42	5	Seat microswitch and gear switch
F43	5	
F50	20	MC2M tower and midac power supply
F51	20	Evaporator electric fan
F52		
F200	80	General fuse
F201	80	Fuse + battery
F202	50	Ignition relay fuse
F203	50	Ignition plug relay fuse
F653	25	Lower carriage MC2M power supply
F655	20	ECU engine





## 21 HYDRAULIC SYSTEM DIAGRAM

Reference	Description
1	Diesel Engine
2	Hydrostatic pump
3	Hydrostatic engine
4	Negative brake solenoid valve
5	1st - 2nd gear solenoid valve
6	Gear engagement cylinder
7	Gearbox
8	Steering solenoid valve
9	Inverted drive solenoid valve
10	Front axle
11	Rear axle
12	Negative brake
13	Hydraulic rotation block
14	Auxiliary sockets
15	Compensator
16	Oscillation
17	Extension
18	Accumulator
19	Lifting
20	Distributor
21	Power steering
22	Priority valve
23	Negative brake
24	Hand pump for emergencies
25	Rotating joint
26	Air conditioning circuit (optional)
27	Servo brake
28	Accumulator
29	Inching valve
30	Feet solenoid valve
31	Lock valve
32	Feet cylinder
33	Heat exchanger solenoid valve
34	Maximum valve
35	Pump
36	Priority valve
37	Leveling block cylinder
38	Unloading Valve
39	Levelling cylinder
40	Air conditioning circuit (optional)
41	Tank





## 22 LIST OF CAPACITY DIAGRAMS

Hereunder are the various capacity diagrams with reference to the machines or equipment in this manual.

The capacity diagrams vary according to the equipment and the machine on which it is installed.



Refer to the “Capacity diagrams” Chapter for further information on how to read the data they contain.



### - ATTENTION

The diagrams of the machine and equipment being used must always be present in the Diagram notebook found in the cab, used by the operator.



Replace the capacity diagrams if they deteriorate, are damaged or lost.

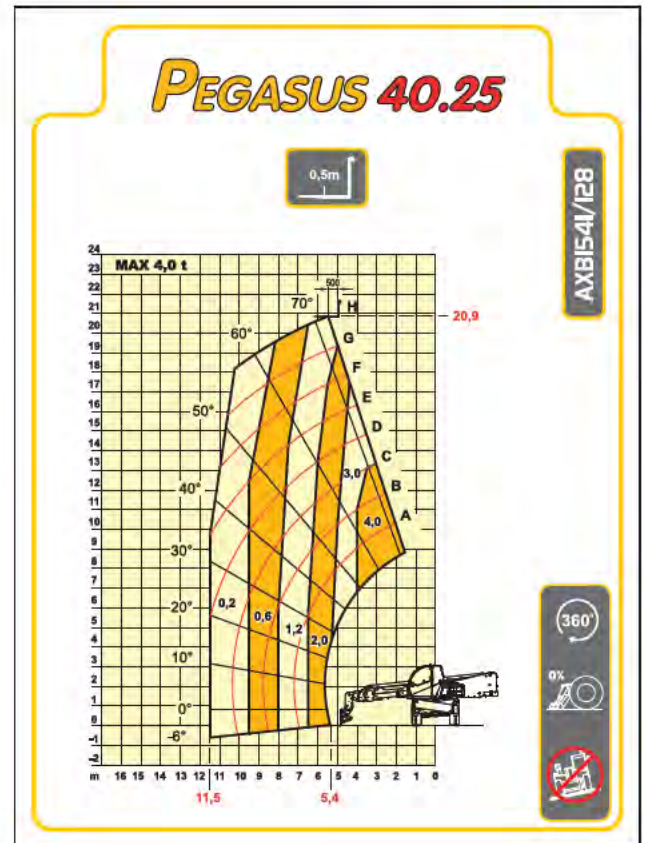
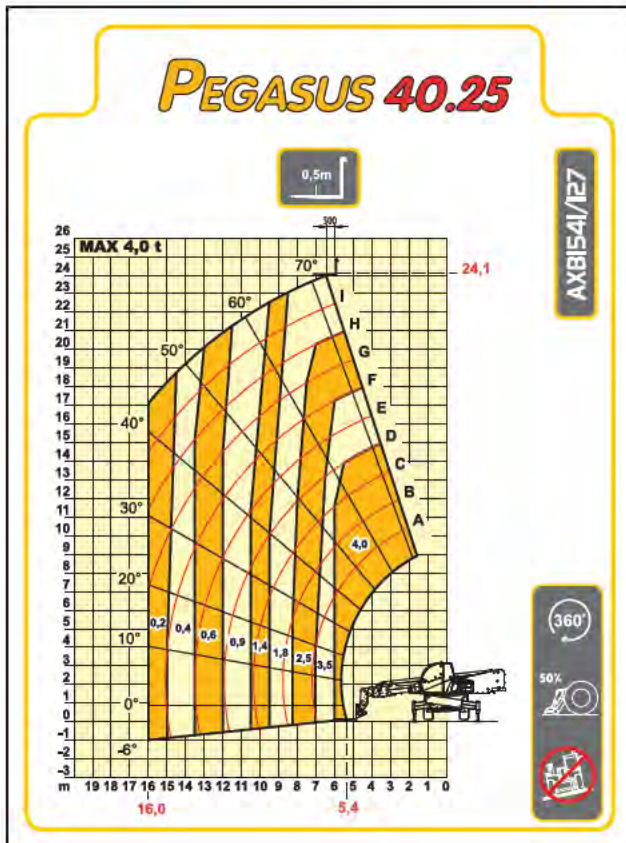
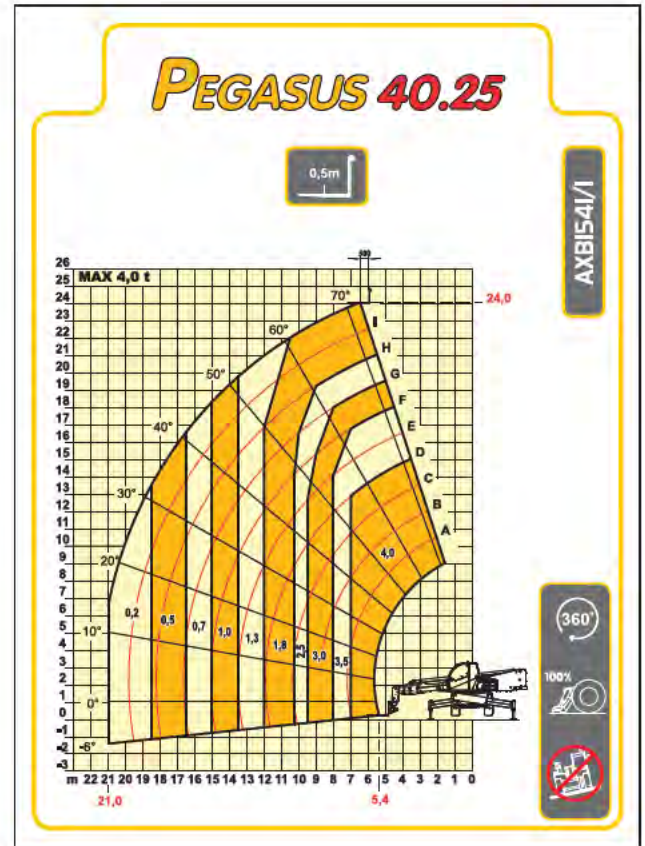
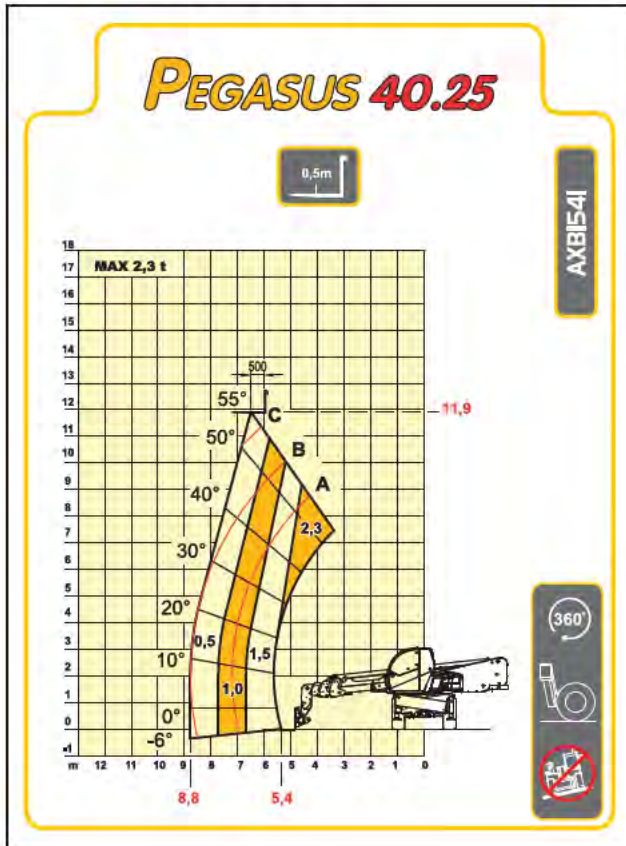


### - WARNING

The capacity diagrams are ordered just like spare parts (make sure you provide the relative identification code when placing the order).



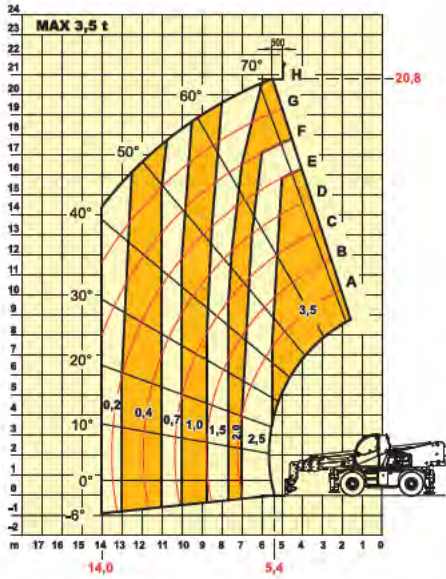
## 22.1 Pegasus 40.25



# PEGASUS 40.25

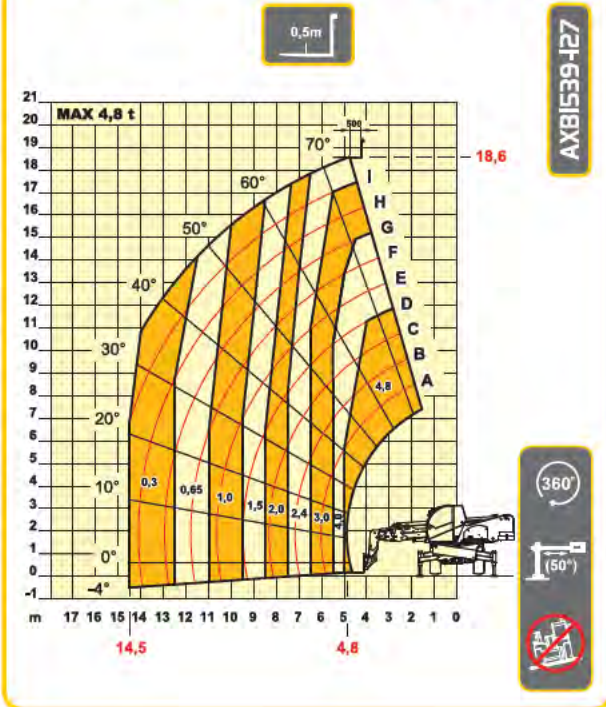
0,5m

AXB154/12

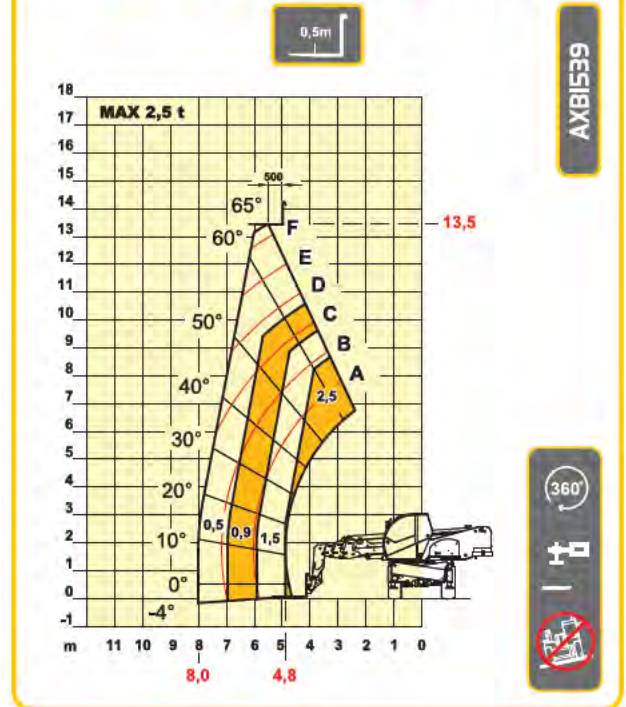


## 22.2 Pegasus 50.19

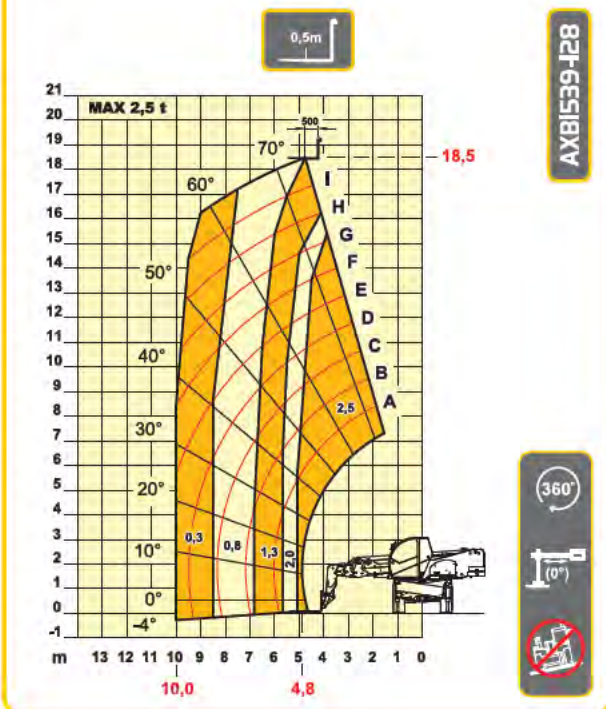
### PEGASUS 50.19



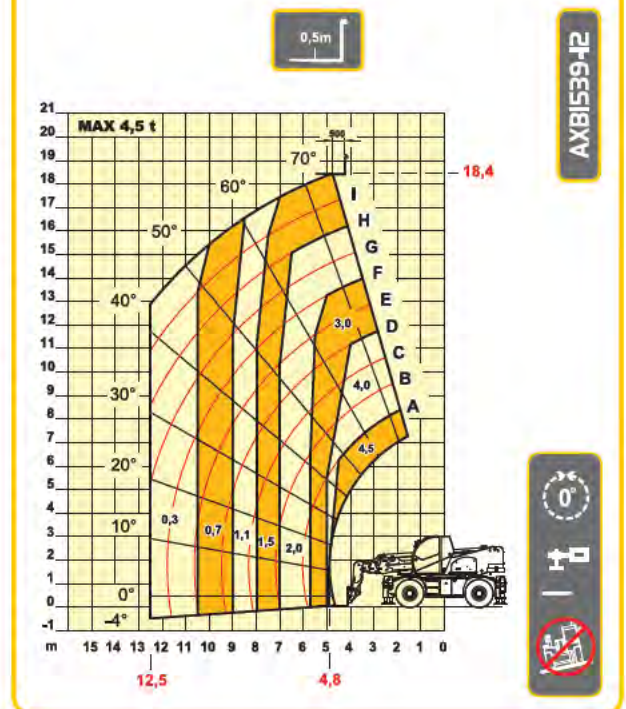
### PEGASUS 50.19



### PEGASUS 50.19



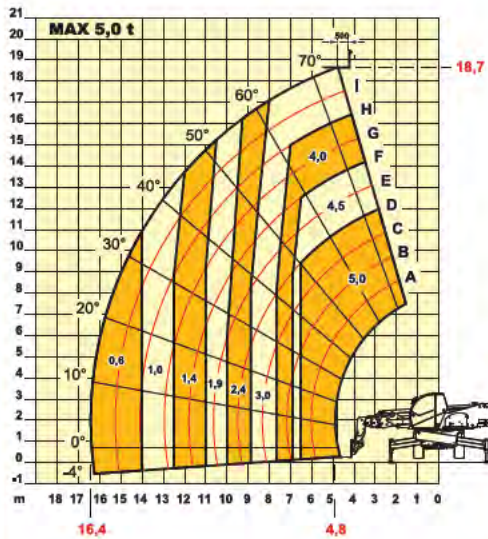
### PEGASUS 50.19



# PEGASUS 50.19



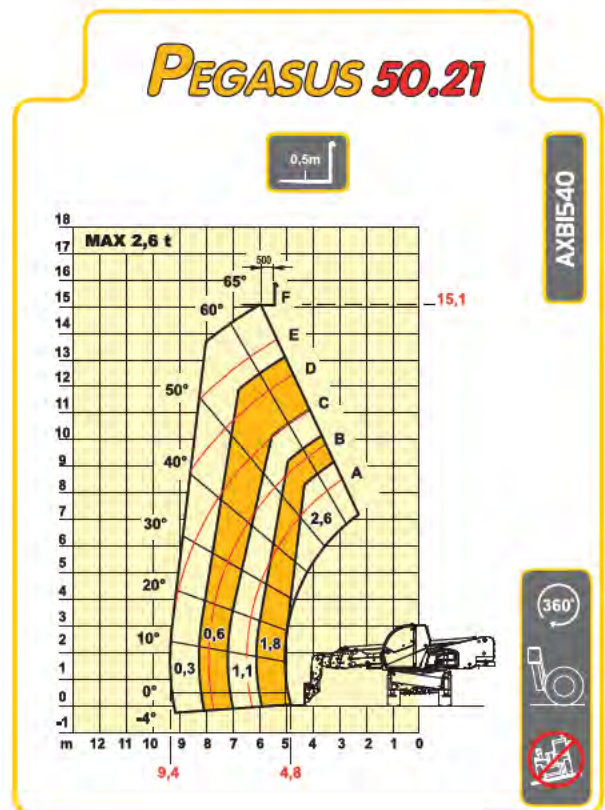
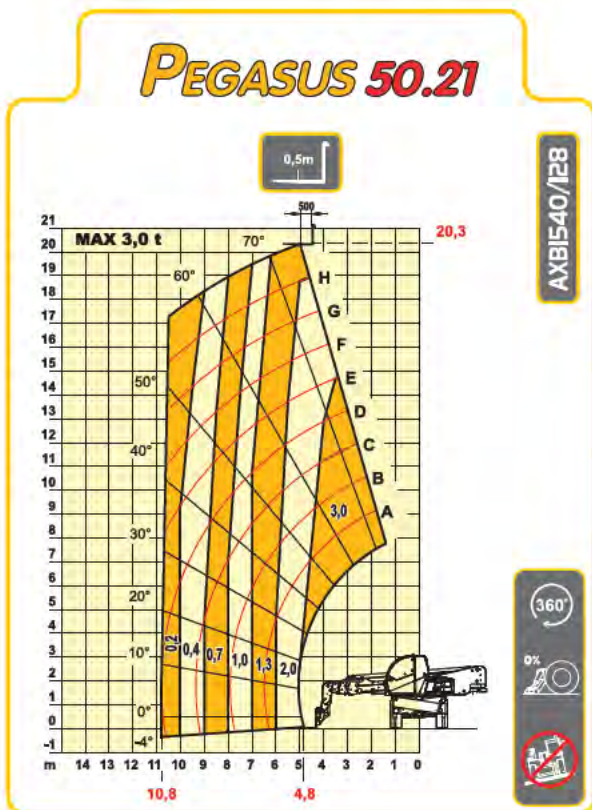
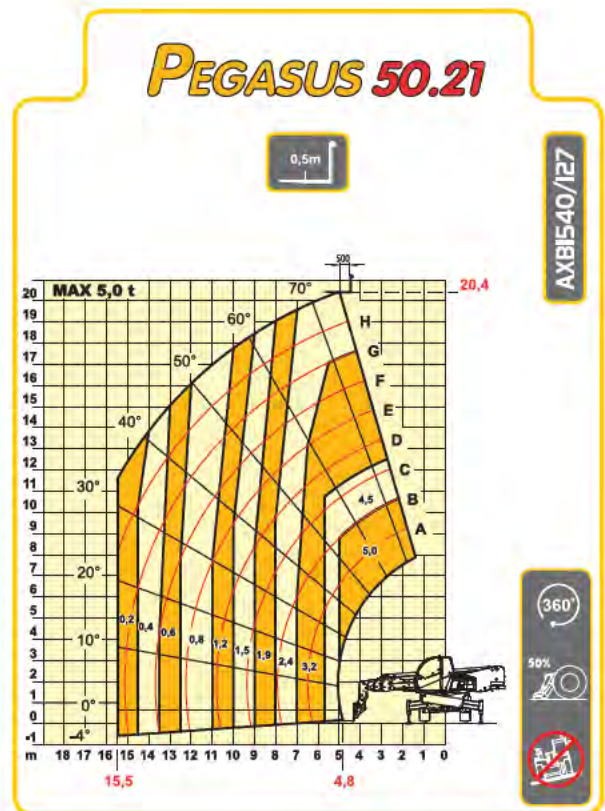
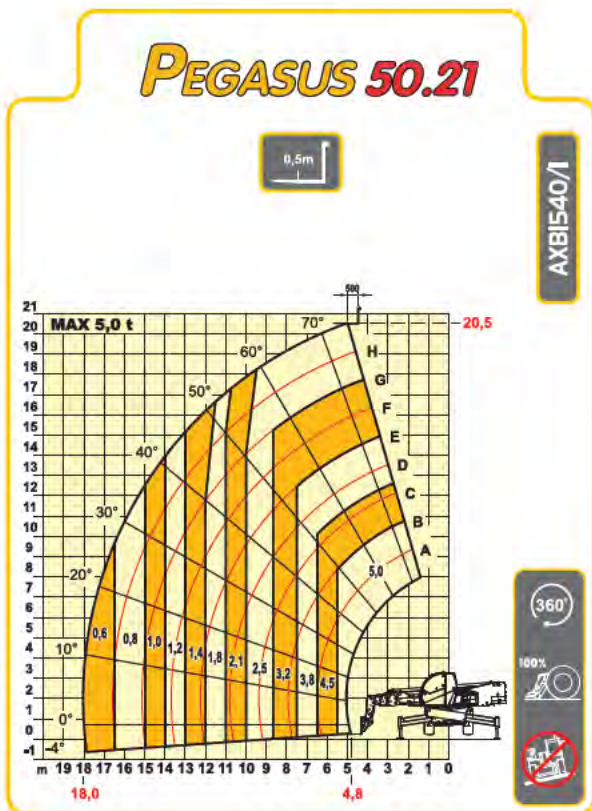
AXB1539-I



360°

(100°)

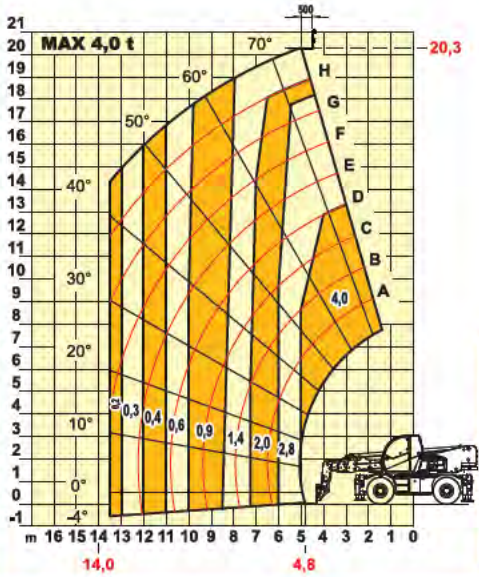
## 22.3 Pegasus 50.21



# PEGASUS 50.21

0,5m

AXB1540/12



## 23 EQUIPMENT LIST

Equipment model	Vehicle Model	Full Description	Diagram on wheels	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BCV8069	Pegasus 40.25	Fork extender complete with pair of forks 120 x 50 L = 1200 mm and 5 t capacity	AXB1541-106A	AXB1541-106B	-	-
BCV8069	Pegasus 50.19	Fork extender complete with pair of forks 120 x 50 L = 1200 mm and 5 t capacity	AXB1539-106A	AXB1539-106B	-	-
BCV8069	Pegasus 50.21	Fork extender complete with pair of forks 120 x 50 L = 1200 mm and 5 t capacity	AXB1540-106A	AXB1540-106B	-	-
BUD4349	Pegasus 40.25	Winch for fork holder plate (2.5 t capacity) double pull without rope guide	-	AXB1541-5B	AXB1541-5D	AXB1541-5C
BUD4349	Pegasus 50.19	Winch for fork holder plate (2.5 t capacity) double pull without rope guide	-	AXB1539-5B	AXB1539-5D	AXB1539-5C
BUD4349	Pegasus 50.21	Winch for fork holder plate (2.5 t capacity) double pull without rope guide	-	AXB1540-5B	AXB1540-5D	AXB1540-5C
BUD4433	Pegasus 40.25	Winch for fork holder plate (3.8 t capacity) double pull, with rope guide	-	AXB1541-6B	AXB1541-6D	AXB1541-6C
BUD4433	Pegasus 50.19	Winch for fork holder plate (3.8 t capacity) double pull, with rope guide	-	AXB1539-6B	AXB1539-6D	AXB1539-6C
BUD4433	Pegasus 50.21	Winch for fork holder plate (3.8 t capacity) double pull, with rope guide	-	AXB1540-6B	AXB1540-6D	AXB1540-6C
BUD4312	Pegasus 40.25	Mixing bucket, l 330 [Mandatory electric contact on boom head EID4908]	-	-	-	-
BUD4312	Pegasus 50.19	Mixing bucket, l 330 [Mandatory electric contact on boom head EID4908]	-	-	-	-
BUD4312	Pegasus 50.21	Mixing bucket, l 330 [Mandatory electric contact on boom head EID4908]	-	-	-	-
BUD3053	Pegasus 40.25	Mixing bucket, l 500 [Mandatory electric contact on boom head]	-	-	-	-
BUD3053	Pegasus 50.19	Mixing bucket, l 500 [Mandatory electric contact on boom head]	-	-	-	-
BUD3053	Pegasus 50.21	Mixing bucket, l 500 [Mandatory electric contact on boom head]	-	-	-	-
BUB2403	Pegasus 40.25	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 0.75 SAE heaped (width 2.35 m) [Wear-proof blade recommended]. Equipment approved for road circulation in Italy]	-	-	-	-
BUB2403	Pegasus 50.19	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 0.75 SAE heaped (width 2.35 m) [Wear-proof blade recommended]. Equipment approved for road circulation in Italy]	-	-	-	-
BUB2403	Pegasus 50.21	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 0.75 SAE heaped (width 2.35 m) [Wear-proof blade recommended]. Equipment approved for road circulation in Italy]	-	-	-	-
BUB2422	Pegasus 40.25	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.00 SAE heaped (width 2.35 m)	-	-	-	-
BUB2422	Pegasus 50.19	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.00 SAE heaped (width 2.35 m)	-	-	-	-
BUB2422	Pegasus 50.21	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.00 SAE heaped (width 2.35 m)	-	-	-	-
BUB2423	Pegasus 40.25	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.50 SAE heaped (width 2.35 m)	-	-	-	-
BUB2423	Pegasus 50.19	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.50 SAE heaped (width 2.35 m)	-	-	-	-
BUB2423	Pegasus 50.21	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 1.50 SAE heaped (width 2.35 m)	-	-	-	-
BUB2424	Pegasus 40.25	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 2.00 SAE heaped (width 2.35 m)	-	-	-	-
BUB2424	Pegasus 50.19	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 2.00 SAE heaped (width 2.35 m)	-	-	-	-
BUB2424	Pegasus 50.21	Bucket for light materials (max spec. weight 0.8 t/m <sup>3</sup> ) m <sup>3</sup> 2.00 SAE heaped (width 2.35 m)	-	-	-	-
BUD4389	Pegasus 40.25	Jib L = 1.00 m with hook (2.5 t capacity)	-	AXB1541-32B	AXB1541-32D	AXB1541-32C
BUD4389	Pegasus 50.19	Jib L = 1.00 m with hook (2.5 t capacity)	-	AXB1539-32B	AXB1539-32D	AXB1539-32C
BUD4389	Pegasus 50.21	Jib L = 1.00 m with hook (2.5 t capacity)	-	AXB1540-32B	AXB1540-32D	AXB1540-32C



Equipment model	Vehicle Model	Full Description	Diagram on wheels	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BUD7022	Pegasus 40.25	Positive/negative jib with man basket, 200 kg capacity including two people [Not applicable for Pegasus 50.19. Mandatory set-up EID5883]	-	-	-	-
BUD7022	Pegasus 50.21	Positive/negative jib with man basket, 200 kg capacity including two people [Not applicable for Pegasus 50.19. Mandatory set-up EID5883]	-	-	-	-
BUD6218	Pegasus 40.25	Material basket 200 x 120 x 130 cm with side door. Capacity 1000 kg	-	-	-	-
BUD6218	Pegasus 50.19	Material basket 200 x 120 x 130 cm with side door. Capacity 1000 kg	-	-	-	-
BUD6218	Pegasus 50.21	Material basket 200 x 120 x 130 cm with side door. Capacity 1000 kg	-	-	-	-
BUD6430	Pegasus 50.21	Three-sided man basket for tunnels, 100 x 235 cm. Capacity 300 kg including 2 people	-	AXB1540-114	-	-
BUD6431	Pegasus 50.21	Three-sided man basket for tunnels, 100 x 235 cm. Capacity 300 kg including 2 people for vehicle with radio control with proportional distributor	-	AXB1540-114	-	-
BUD6432	Pegasus 50.21	Three-sided man basket for tunnels, 100 x 235 cm. Capacity 800 kg including 2 people	-	AXB1540-115	-	-
BUD6433	Pegasus 50.21	Three-sided man basket for tunnels, 100 x 235 cm. Capacity 800 kg including 2 people for vehicle with radio control with proportional distributor	-	AXB1540-115	-	-
BUD6416	Pegasus 40.25	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1541-7	-	-
BUD6416	Pegasus 50.19	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1539-7	-	-
BUD6416	Pegasus 50.21	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1540-7	-	-
BUD6417	Pegasus 40.25	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor for vehicle with radio control	-	AXB1541-7	-	-
BUD6417	Pegasus 50.19	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor for vehicle with radio control	-	AXB1539-7	-	-
BUD6417	Pegasus 50.21	Front man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor for vehicle with radio control	-	AXB1540-7	-	-
BUD6418	Pegasus 40.25	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1541-7	-	-
BUD6418	Pegasus 50.19	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1539-7	-	-
BUD6418	Pegasus 50.21	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1540-7	-	-
BUD6419	Pegasus 40.25	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1541-7	-	-
BUD6419	Pegasus 50.19	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1539-7	-	-
BUD6419	Pegasus 50.21	Front man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1540-7	-	-
BUD6420	Pegasus 50.19	Three-sided man basket 120 x 215 cm. Capacity 1000 kg including 3 people with proportional distributor	-	AXB1539-19	-	-
BUD6420	Pegasus 50.21	Three-sided man basket 120 x 215 cm. Capacity 1000 kg including 3 people with proportional distributor	-	AXB1540-19	-	-
BUD6421	Pegasus 40.25	Three-sided man basket 120 x 215 cm. Capacity 1000 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1541-19	-	-



Equipment model	Vehicle Model	Full Description	Diagram on wheels	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BUD6421	Pegasus 50.19	Three-sided man basket 120 x 215 cm. Capacity 1000 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1539-19	-	-
BUD6421	Pegasus 50.21	Three-sided man basket 120 x 215 cm. Capacity 1000 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1540-19	-	-
BUD6422	Pegasus 40.25	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1541-8	-	-
BUD6422	Pegasus 50.19	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1539-8	-	-
BUD6422	Pegasus 50.21	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1540-8	-	-
BUD6423	Pegasus 40.25	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1541-8	-	-
BUD6423	Pegasus 50.19	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1539-8	-	-
BUD6423	Pegasus 50.21	Three-sided man basket 120 x 215 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1540-8	-	-
BUD6424	Pegasus 40.25	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1541-36	-	-
BUD6424	Pegasus 50.19	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1539-36	-	-
BUD6424	Pegasus 50.21	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1540-36	-	-
BUD6425	Pegasus 40.25	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1541-36	-	-
BUD6425	Pegasus 50.19	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1539-36	-	-
BUD6425	Pegasus 50.21	Triateral man basket 120 x 240 cm with hydraulic/manual extension up to 580 cm. Capacity 300 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1540-36	-	-
BUD6426	Pegasus 40.25	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1541-8	-	-
BUD6426	Pegasus 50.19	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1539-8	-	-
BUD6426	Pegasus 50.21	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people with proportional distributor	-	AXB1540-8	-	-
BUD6427	Pegasus 40.25	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1541-8	-	-
BUD6427	Pegasus 50.19	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1539-8	-	-
BUD6427	Pegasus 50.21	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 300 kg including 3 people for vehicle with radio control with proportional distributor	-	AXB1540-8	-	-
BUD6428	Pegasus 40.25	Triateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people with proportional distributor	-	AXB1541-14	-	-

Equipment model	Vehicle Model	Full Description	Diagram on wheels	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BUD6428	Pegasus 50.19	Trilateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people with proportional distributor	-	AXB1539-14	-	-
BUD6428	Pegasus 50.21	Trilateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people with proportional distributor	-	AXB1540-14	-	-
BUD6429	Pegasus 40.25	Trilateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1541-14	-	-
BUD6429	Pegasus 50.19	Trilateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1539-14	-	-
BUD6429	Pegasus 50.21	Trilateral man basket 120 x 240 cm with hydraulic extension up to 420 cm. Capacity 800 kg including 3 people, for vehicle with radio control and proportional distributor	-	AXB1540-14	-	-
BCV8045	Pegasus 40.25	Fork counterplate (with pins) for use with quick coupling	-	-	-	-
BCV8045	Pegasus 50.19	Fork counterplate (with pins) for use with quick coupling	-	-	-	-
BCV8045	Pegasus 50.21	Fork counterplate (with pins) for use with quick coupling	-	-	-	-
BUD1077	Pegasus 40.25	Pair of floating forks 120 x 50 L = 1200 mm. Capacity 4.5 t	AXB1541	AXB1541-1	AXB1541-127	AXB1541-128
BUD1077	Pegasus 50.19	Pair of floating forks 120 x 50 L = 1200 mm. Capacity 4.5 t	AXB1539	AXB1539-1	AXB1539-127	AXB1539-128
BUD1077	Pegasus 50.21	Pair of floating forks 120 x 50 L = 1200 mm. Capacity 4.5 t	AXB1540	AXB1540-1	AXB1540-127	AXB1540-128
BUD1051/0G	Pegasus 40.25	Pair of fork extensions L = 1900 mm for forks 120 x 45/50 mm	-	-	-	-
BUD1051/0G	Pegasus 50.19	Pair of fork extensions L = 1900 mm for forks 120 x 45/50 mm	-	-	-	-
BUD1051/0G	Pegasus 50.21	Pair of fork extensions L = 1900 mm for forks 120 x 45/50 mm	-	-	-	-
BUB2448	Pegasus 40.25	Hook for fork holder plate with the same capacity as the vehicle	AXB1541-9A	AXB1541-9B	AXB1541-9D	AXB1541-9C
BUB2448	Pegasus 50.19	Hook for fork holder plate with the same capacity as the vehicle	AXB1539-9A	AXB1539-9B	AXB1539-9D	AXB1539-9C
BUB2448	Pegasus 50.21	Hook for fork holder plate with the same capacity as the vehicle	AXB1540-9A	AXB1540-9B	AXB1540-9D	AXB1540-9C
BUB2441	Pegasus 40.25	Orange-peel grab with 5 teeth. Capacity 0.23 m <sup>3</sup>	AXB1541-40A	AXB1541-40B	-	-
BUB2441	Pegasus 50.19	Orange-peel grab with 5 teeth. Capacity 0.23 m <sup>3</sup>	AXB1539-40A	AXB1539-40B	-	-
BUB2441	Pegasus 50.21	Orange-peel grab with 5 teeth. Capacity 0.23 m <sup>3</sup>	AXB1540-40A	AXB1540-40B	-	-
BUD7001	Pegasus 40.25	Centring handler (capacity 2.5 t)	-	AXB1541-24B	-	-
BUD7001	Pegasus 50.19	Centring handler (capacity 2.5 t)	-	AXB1539-24B	-	-
BUD7001	Pegasus 50.21	Centring handler (capacity 2.5 t)	-	AXB1540-24B	-	-
BUD4363	Pegasus 40.25	Jib (crane extension) L = 1.3 m with winch (capacity 2.0 t)	-	AXB1541-25B	AXB1541-25D	AXB1541-25C
BUD4363	Pegasus 50.19	Jib (crane extension) L = 1.3 m with winch (capacity 2.0 t)	-	AXB1539-25B	AXB1539-25D	AXB1539-25C
BUD4363	Pegasus 50.21	Jib (crane extension) L = 1.3 m with winch (capacity 2.0 t)	-	AXB1540-25B	AXB1540-25D	AXB1540-25C
BUD4394	Pegasus 40.25	Jib (crane extension) L = 1.3 m with hook (capacity 2.0 t)	-	AXB1541-25B	AXB1541-25D	AXB1541-25C
BUD4394	Pegasus 50.19	Jib (crane extension) L = 1.3 m with hook (capacity 2.0 t)	-	AXB1539-25B	AXB1539-25D	AXB1539-25C
BUD4394	Pegasus 50.21	Jib (crane extension) L = 1.3 m with hook (capacity 2.0 t)	-	AXB1540-25B	AXB1540-25D	AXB1540-25C
BUD4345	Pegasus 40.25	Jib (crane extension) L = 2.5 m with winch (capacity 1.2 t)	-	AXB1541-2B	AXB1541-2D	AXB1541-2C

Equipment model	Vehicle Model	Full Description	Diagram on wheels	Diagram on outriggers 100%	Diagram on outriggers 50%	Diagram on outriggers 0%
BUD4345	Pegasus 50.19	Jib (crane extension) L = 2.5 m with winch (capacity 1.2 t)	-	AXB1539-2B	AXB1539-2D	AXB1539-2C
BUD4345	Pegasus 50.21	Jib (crane extension) L = 2.5 m with winch (capacity 1.2 t)	-	AXB1540-2B	AXB1540-2D	AXB1540-2C
BUD4344	Pegasus 40.25	Jib (crane extension) L = 2.5 m with hook (capacity 1.2 t)	-	AXB1541-2B	AXB1541-2D	AXB1541-2C
BUD4344	Pegasus 50.19	Jib (crane extension) L = 2.5 m with hook (capacity 1.2 t)	-	AXB1539-2B	AXB1539-2D	AXB1539-2C
BUD4344	Pegasus 50.21	Jib (crane extension) L = 2.5 m with hook (capacity 1.2 t)	-	AXB1540-2B	AXB1540-2D	AXB1540-2C
BUD4347	Pegasus 40.25	Jib (crane extension) L = 4.5 m with winch (capacity 0.6 t)	-	AXB1541-3B	AXB1541-2D	AXB1541-2C
BUD4347	Pegasus 50.19	Jib (crane extension) L = 4.5 m with winch (capacity 0.6 t)	-	AXB1539-3B	AXB1539-2D	AXB1539-2C
BUD4347	Pegasus 50.21	Jib (crane extension) L = 4.5 m with winch (capacity 0.6 t)	-	AXB1540-3B	AXB1540-2D	AXB1540-2C
BUD4346	Pegasus 40.25	Jib (crane extension) L = 4.5 m with hook (capacity 0.6 t)	-	AXB1541-3B	AXB1541-2D	AXB1541-2C
BUD4346	Pegasus 50.19	Jib (crane extension) L = 4.5 m with hook (capacity 0.6 t)	-	AXB1539-3B	AXB1539-2D	AXB1539-2C
BUD4346	Pegasus 50.21	Jib (crane extension) L = 4.5 m with hook (capacity 0.6 t)	-	AXB1540-3B	AXB1540-2D	AXB1540-2C
BUD1121/0G	Pegasus 40.25	Fork counterplate guard	-	-	-	-
BUD1121/0G	Pegasus 50.19	Fork counterplate guard	-	-	-	-
BUD1121/0G	Pegasus 50.21	Fork counterplate guard	-	-	-	-
BUD1128/0G	Pegasus 40.25	Fork holder plate guard [Only to be used with a pair of forks]	-	-	-	-
BUD1128/0G	Pegasus 50.19	Fork holder plate guard [Only to be used with a pair of forks]	-	-	-	-
BUD1128/0G	Pegasus 50.21	Fork holder plate guard [Only to be used with a pair of forks]	-	-	-	-
BUD3020	Pegasus 40.25	Hydraulic opening ladle I 400	-	-	-	-
BUD3020	Pegasus 50.19	Hydraulic opening ladle I 400	-	-	-	-
BUD3020	Pegasus 50.21	Hydraulic opening ladle I 400	-	-	-	-
BUD3021	Pegasus 40.25	Hydraulic opening ladle I 600	-	-	-	-
BUD3021	Pegasus 50.19	Hydraulic opening ladle I 600	-	-	-	-
BUD3021	Pegasus 50.21	Hydraulic opening ladle I 600	-	-	-	-



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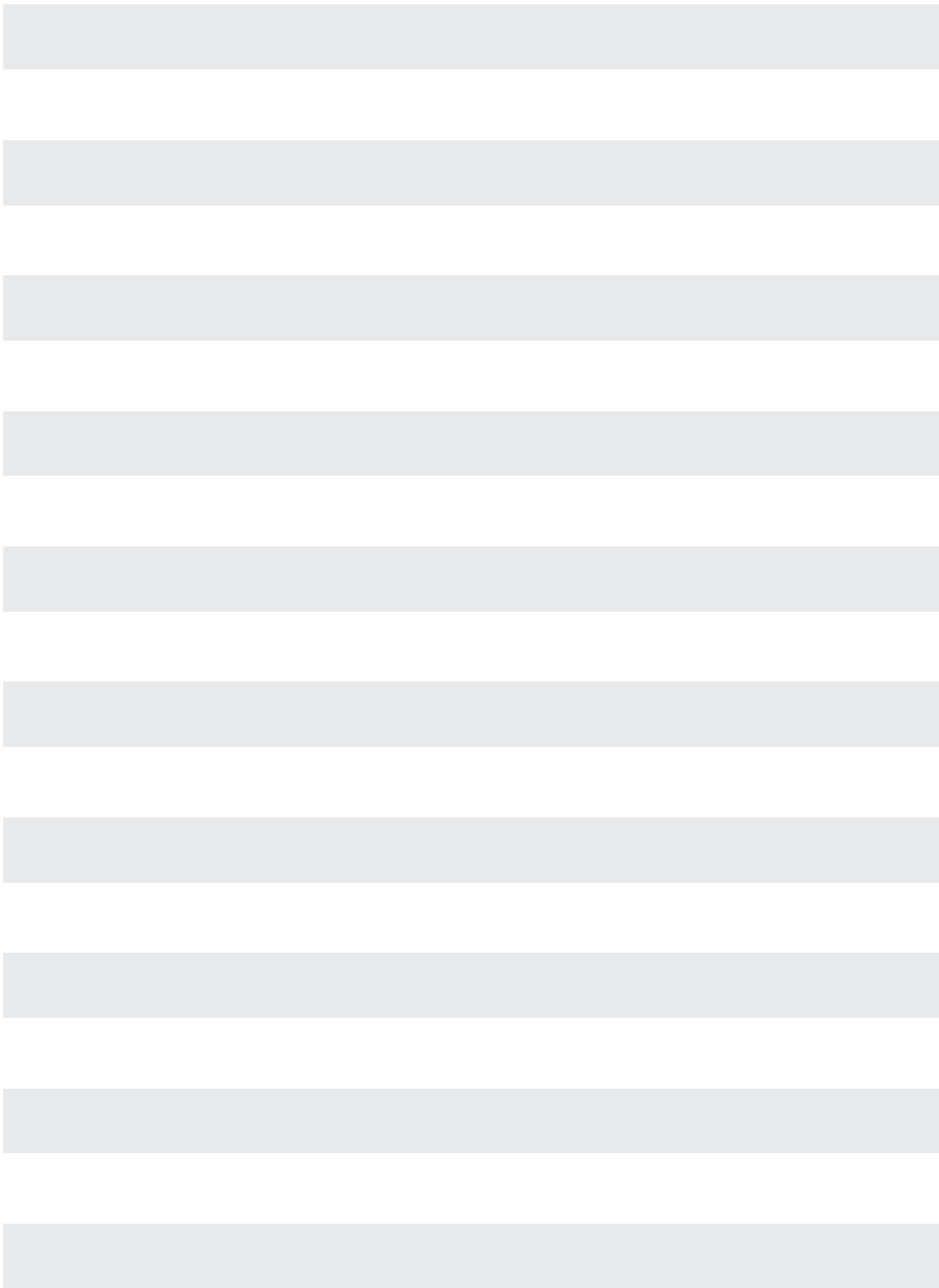
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## 24 NOTES





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