



***MOBILE ELEVATOR WORKING PLATFORM (MEWP)
ECOLINE RS200***

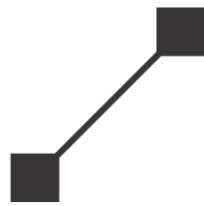
**USE AND MAINTENANCE MANUAL
CONTROL REGISTER**



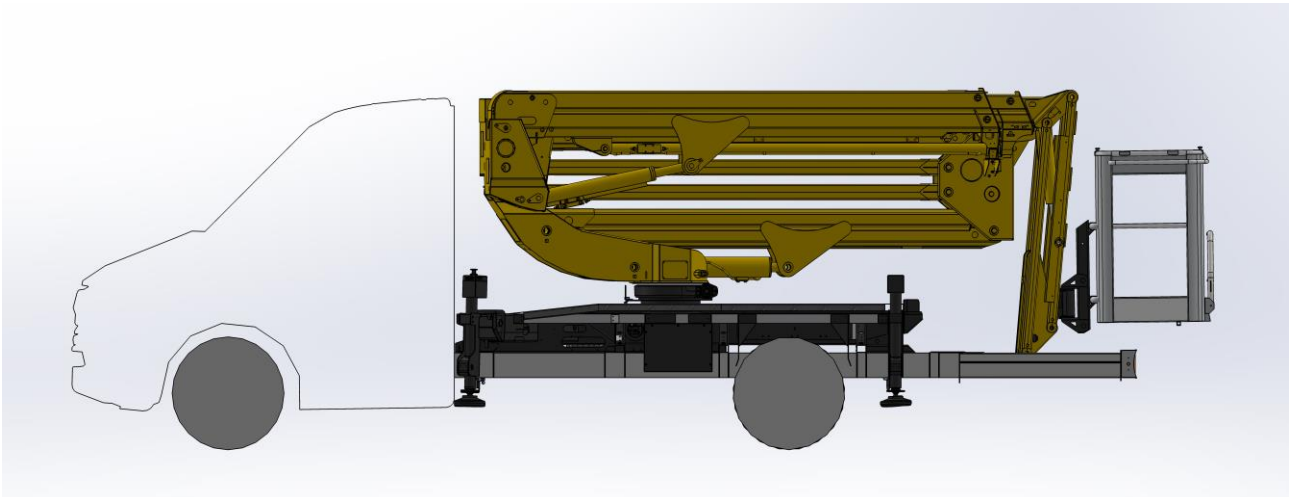
WARNING

An improper use of the machine can cause serious injuries or death. The operators and maintenance staff must read this manual before using the machine and before making any maintenance operation.

Keep this manual near the machine so that it can be consulted at any time or periodically by people who need to be familiar with it.



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professionals at work



Model of Aerial Platform :	ECOLINE RS200
Serial number:	R0211209
Manufacture Year:	2021
Vehicle (Brand, Model):	MERCEDES SPRINTER 314 CDI
Frame number:	W1V9071331N144029
Standard Equipment:	<ul style="list-style-type: none"> • Basket rotation • Basket in aluminium • EASY - stabilizing system • Go Home (optional)
Annex:	<ul style="list-style-type: none"> • EC Conformity declaration

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TERMS AND CONDITIONS OF GUARANTEE

We guarantee the regular operation and the quality of our machine parts for the period indicated in the EEC certificate of guarantee and conformity.

If the machine is used for more than 48 hours of work a week, we reserve the right to a proportional reduction of the guarantee period.

The guarantee is limited to manufacturing defects and is not applicable to normal wear and tear.

Evidently faulty parts must be returned to our premises at your expense, and these will be repaired, replaced and sent back within a reasonable time frame.

All shipment and transport costs will be for your account.

Any damages, defects and incorrect operation due to the following will not be covered by guarantee, and will therefore no longer fall under our responsibility:

- *incorrect positioning and tampering with the machine*
- *inexperience, incorrect use, overloading.*
- *Lack of or inadequate maintenance.*
- *Belated reporting of identified defects*
- *Uses other than the machine's intended use*
- *Modifications of any nature carried out on the machine and any other supplied parts without authorisation.*
- *Use of spare parts that are not original and non-compliance with the instructions covered in this manual.*

If any work carried out during the guarantee period is subsequently found not to be of our responsibility and, therefore, not subject to guarantee, all expenses incurred, parts replaced, and work carried out by our personnel will be for your account. Any work and repair on the MEWP will be carried out at our premises.

In the event of downtime due to repair, even if under guarantee, we reserve the right to a reasonable time (motivated) to carry out the repairs and eliminate the problem. No damages may be claimed, and no extension of guarantee will be granted for the downtime. No extension of payment terms will be granted, and all obligations must still be fulfilled.

RUTHMANN ITALIA Srl thanks you for having chosen and purchased a product from its range and invites you to read this manual with care. This manual contains all necessary information regarding safety before and during aerial operation, as well as regarding the correct use of the purchased machine. It is therefore recommended that you read the manual thoroughly and read the instructions carefully. This manual should be kept in a suitable place where it cannot be damaged and where it can be easily accessed during operation.

The content of this manual may be modified without prior notice, and without any additional obligations on our part, to include changes and improvements to units that have already been delivered. No reproduction or translation of any part of this manual may be carried out without the written permission of RUTHMANN ITALIA S.r.l.

COPY TO BE MAILED

MANUAL RECEIPT ADVICE AND DECLARATION

This instruction manual, drawn up in compliance with the new Machinery Directive 2006/42/CE, is intended to assist the users of the machine to use it correctly to avoid damages to persons or things. Compliance with the instructions contained herein are necessary to work responsibly and in safety. For all elements and components that are not manufactured by us, the user will have to consult the specific annexes.

Since it is not possible to provide instructions for all the situations that may arise during operation, the User assumes full responsibility, which is essential for compliance with the "Safety and Health" objective in accordance with the EEC Directive and current legislation.

This form has the purpose of proving that an Instruction Manual was supplied with the machine by the manufacturer and that the operator assumes the responsibility of studying it and applying it thoroughly.

No part of this document may reproduce or translated without the manufacturer's consent.

Please complete and return to:

RUTHMANN ITALIA S.r.l.
Via Santa Maria del Piano di Sotto, 91/B
47854 Montescudo – Monte Colombo (RN) – ITALIA

This is to certify that I have received the Instruction Manual for:

MEWP..... serial number.....

Date..... Company stamp.....

Manager's signature.....

Department.....

**THANK YOU FOR CHOOSING A RUTHMANN ECOLINE WORK PLATFORM
THIS QUALITY PRODUCT HAS BEEN ENGINEERED AND DEVELOPED
BY RUTHMANN ITALIA S.r.l.**

1. INTRODUCTION

In European Union member countries, the machine is delivered with the following:

- Use and Maintenance manual in your language
- Manufacturer's data plate with EC mark on the machine
- EC conformity declaration.

1.1. PURPOSE AND LIMITS OF THE INSTRUCTION MANUAL

This instruction manual is intended for the owners of the MOBILE ELEVATING WORK PLATFORM in particular (henceforth MEWP), as well as to all those that take part in the road transport, use, supervision, maintenance and final decommissioning of the machine.

The instruction manual has the following purposes:

- to describe the use of the MEWP in accordance with project requirements;
- to illustrate the main technical features of the machine;
- to provide the characteristic data required by the regulatory body to fill in the "CONTROL BOOKLET";
- to provide instructions on the use and positioning of the MEWP;
- to describe the safety devices;
- to provide instructions for ordinary repair and maintenance;
- to provide support for personnel training;
- to provide instructions for completing the control register.

However, this manual is no substitute for adequate experience which was acquired previously by operators on similar machines, or which they can acquire on this very machine under the guidance of personnel that has already been trained in accordance with the instructions contained in chapter 5.

In addition to having to comply with all the rules contained in this instruction manual, the use of the MEWP is subject to all safety standards forming part of specific legislation in force in the Country in which the machine is used.

1.2 WHERE AND HOW TO STORE THE INSTRUCTION MANUAL

The operating instructions are to be considered part of the unit and must therefore always be kept for reference on board the MEWP, in the vehicle's cabin, or in a safe, dry place protected from sunlight.

If the instruction manual is accidentally damaged, ask RUTHMANN ITALIA S.r.l. to provide you with another copy.

1.3 MODIFICATIONS AND ADDITIONS TO THE INSTRUCTION MANUAL

The manual reflects current technical knowledge at the time of sale of the MEWP, and it cannot therefore be considered inadequate due to the fact that subsequent modifications or additions have been made in accordance with new laws, updates of harmonised standards and/or acquisition of new knowledge.

RUTHMANN ITALIA S.r.l. reserves the right to update its products and relative instruction manuals following technical developments, the acquisition of new knowledge and/or the variation of laws, without being obliged to modify previously-sold machines and relative manuals.

Nevertheless, **RUTHMANN ITALIA S.r.l.** will have the right to modify or make additions to the use and maintenance instruction manual of previously-sold products when it deems it necessary to do so.

In this case, the original owners of the machines will receive the update or modification forms. These must be considered as an integral part of the instruction manual and should be carefully stored, together with the present manual, and passed on to the new owners when the MEWP is sold.

1.4 EXCLUSION OF LIABILITY

As the manufacturer, RUTHMANN ITALIA S.r.l., will not be held liable for any problems caused by:

- improper use of the MEWP
- use by untrained personnel or personnel that is not in the correct physical conditions to operate the machine
- use that does not comply with the safety standards of specific community and/or national laws in force
- unsuitable ground characteristics
- partial or total non-observance of the precautions mentioned in this manual
- non-observance of the instructions of the maintenance mentioned in this manual
- modifications or repairs that have not been authorised by the manufacturer
- use of non-original spare parts that are different from the ones indicated in the "SPARE PARTS MANUAL" catalogue
- exceptional events

1.5 COLLABORATION BETWEEN MANUFACTURER AND USER

RUTHMANN ITALIA S.r.l. will do everything it can to provide additional or more-detailed information to users who need it and request it.

In addition, RUTHMANN ITALIA S.r.l. will examine any suggestions for improvement put forward by users for the development of this manual.

If the machine is sold, the user is requested to inform RUTHMANN ITALIA S.r.l. of the name of the new owner so that the MEWP can be tracked easily should the manufacturer need to communicate anything or make upgrades.

1.6 CHARACTERISTIC DATA REQUIRED BY THE REGULATORY BODY TO FILL IN THE "CONTROL BOOKLET"

Below are characteristic data required to fill in the "control booklet":

AERIAL WORKING PLATFORM ECOLINE R200

Model	: ECOLINE RS200
Max Basket Capacity	: 250 kg
Max development from ground	: 18 m (from the bottom of cage)
Max lateral outreach	: 10,5 m (120 kg) - 8,90 m (200 kg) – 8,10 m (250 kg)
Basket dimensions	: 1300 x 700 x 1100 mm
Basket material	: aluminium
Basket enter	: through a frontal gate which can be opened lifting a specific bar with an automatic closing. The basket has a stair way for making easier the access.
Basket Rotation	: $\pm 80^\circ$
Turret Rotation	: 360° (opt. $220^\circ+220^\circ$)
Platform mass	: 1569 kg
Max manual strength	: 400 N (strength that can be done by the operators in basket)
Max wind speed	: 45 km/h (6° Beaufort scale)
Electric system tension	: 12 V
Oil tank capacity	: 40 l
Max flatcar gradient	: 1° (as to the horizontal surface)
Max hydraulic system pressure	: 210 bar
Pump delivery	: 15.73 l/min (rest engine) – 21.45 l/min (throttle engine)
Revolution per minute – RPM	: 1100 rpm (rest engine) – 1500 rpm (throttle engine)

ORIGINALE

Vehicle model	:	MERCEDES SPRINTER 314 CDI
GVW	:	3,5 t
Wheelbase	:	3665 mm
Stabilizer axle base	:	3155 mm
Stabilizer gage	:	Front 2980 mm - Rear 1950 mm
Max reaction at ground	:	Front 2275 kg - Rear 1752 kg

BRIEF DESCRIPTION OF THE MEWP

This aerial platform has been designed to be mounted on a road motor vehicle. It is made up of:

- **a structure (platform)** made up of a rotating turret; its rotation is possible by means of a ball bearing fifth wheel. On the turret peak, an articulated boom is hinged, which is connected to a telescope boom (with a 3 extensible elements), jib boom and basket support. On this latest element, the basket is hinged.
- **a base support structure (basic-counterframe)** made up of longitudinal frame members and cross members on which the fifth wheel of the turret is fixed; also 4 stabilizers and the oil tank are part of the basic counterframe.
- **a hydraulic equipment** which controls the movement of the machine.
- **an electric equipment** which feeds the electric system of the vehicle.

All the machine's movements are hydraulic and there is always a corresponding safety valve.

The platform has an emergency manual lowering system which must only be used in the event of a breakdown and/or if there is a fault in the main power supply circuit.

1.7 LEGAL ASPECTS

The legal obligations of the owner of the machine vary according to the country of commissioning. It is therefore recommended to inquiry about the procedures in force in your country from the boards responsible for industrial safety. This manual contains a final section called "Control Register" for better filing of documents and recording of any modifications.

In ITALY, the owner of the Aerial Platform must notify the use of the unit to the local competent INAIL.

INAIL issues a "Control booklet" indicating only the detectable data of the machine already in use or inferable from the relative User Manual. Afterwards INAIL sends a copy of the same booklet to the territorial inspection boards (ASL/USL or ARPA) which carry out the periodical mandatory checks (every year).

The annual checks are compulsory and must be carried out also when the "Control booklet" is not available. In Italy the owner of the Aerial Platform must apply for a periodical check by sending a registered letter to the local competent inspection board (ASL/USL or ARPA) at least twenty days before the expiry of the year from the purchase date or the last periodical check.

In case of transfer of ownership (in Italy) the new owner of the Aerial Platform must notify the ownership of the unit to the local competent inspection board (ASL/USL or ARPA) by enclosing a copy of:

- Conformity declaration issued by the manufacturer;
- Declaration of commissioning carried out by the first owner.

2. GENERAL INSTRUCTIONS AND OPERATIONAL PRECAUTIONS

The machine described in this use and maintenance manual is an aerial platform intended for lifting persons and materials (equipment and building materials) in order to carry out maintenance, installation, cleaning, painting, removing paint, sandblasting, welding operations, etc.

Do not use the machine for different operations from those for which it has been designed.

At least 2 operators are necessary to use the MEWP:

- **an operator at ground**, who checks the work and can intervene in case of emergency,
- **an operator in basket** to manoeuvre the platform.

In case 2 operators are in basket, only one of them must do the manoeuvres.

One of the operators must have a driving licence to drive the vehicle on which the MEWP is mounted.

The max. capacity allowed (differs in accordance with models), is as follows:

- 80 Kg for each person on board
- 40 Kg for equipment;
- the remaining load is represented by the material being used.
- it is not permitted to transport animals.

In any event, **NEVER** exceed the capacity indicated in the manual and found on the Manufacturer's data plate, as well as on the labels on the machine (always replace unreadable labels with new original ones).

All loads must be positioned inside the basket. Do not lift loads (even if complying with the maximum capacity allowed) hanging from the platform or lifting structure.

Do not carry large-sized panels since they increase the resistance to wind force thus causing the machine to overturn.

On this model, there is a Moment limiting device that inhibits the movement of lifting of main boom, telescopic boom, and jib in order to the weight in basket. It is made up of an electronic system, which automatically senses the load in basket (max 250kg) and keeps the horizontal outreach within the permitted measures, as to the angle of the main boom. Once reached the max permitted measure, both the main boom lowering, the extraction of the extractable elements and the jib boom lifting are stopped. To reset operations, you have to retract the extractable elements and/or lift the main boom.

The unit cannot be used in areas where road vehicles operate. Always surround the working area by means of suitable signs when the unit is used in public areas.

Do not use the machine to tow trucks or other vehicles



WARNING

2.1 GENERAL USE AND SAFETY INSTRUCTIONS

- **Avoid dangerous situations**
- **Failure to observe and understand the safety rules and instructions contained in this manual could cause death or serious injury**
- The use of the platform is only for suitably-trained personnel in good physical/mental health conditions, who have the ability to concentrate.
- The aerial working platform is suitable for overhead works by operating from inside the basket. The platform should be used only by skilled staff who knows the location and the function of all the controls, the instruments, the indicators, the warning lights, and the plates. The operator should understand the procedures for platform operation before putting it into service. The correct use of the platform includes the presence of a skilful operator on the ground, beside the operator (or operators) in the basket, for machine check. He should be ready to avoid dangerous situations and carry out emergency manoeuvres if required.
- **The overhead working platform can be installed on a lorry homologated for road circulation. Before going on the road, make sure the vehicle is consistent with the laws in force.**

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- For use and maintenance operations on the base machine, refer to the lorry use and maintenance manual.
- **Placed a first aid box and a fire extinguisher on the lorry. Use them according to the rules in force.**
- Before operating the machine, ensure that the ground can withstand the weight of the platform itself, the people and the equipment.
- Do not exceed the maximum load permitted which is indicated on the plates found on the machine.
- Do not tamper with the safety valves and the pressure release valves.
- Do not tamper with sensor and safety electronic devices (The system is equipped with a digital register for the tampering that automatically detects it. This event affects the warranty and any liability of Manufacturer).
- Do not tamper with or modify any part of the equipment.
- Do not tamper with the safety devices or calibrations.
- Check the hydraulic oil level inside the tank on a weekly basis.
- Before operating the platform, always check that there are no outsiders and/or animals in the working area.
- Carry out the prescribed periodical maintenance work.
- **In case of remarkable changes in the machine safety or its operation, stop the machine immediately and refer the failure to the responsible person. Find the remedy to the safety damage or failure found.**
- When nearing the point at which the work needs to be carried out, proceed slowly; in particular, be very careful when dealing with slopes and ensure that the machine is always in line with the direction of the slope and not perpendicular to it.
- Avoid sudden changes of direction in order not to cause the platform and structure to backlash.
- Stop the vehicle so that the platform is as near as possible to the point at which the work needs to be carried out and check that there are no dangerous obstacles in the working area before carrying out any movements.
- Always operate calmly and cautiously; rushed movements can cause accidents
- Be aware of the danger of being crushed when gripping the platform rail.
- During platform operation, always look in the direction in which the platform is moving.
- During operation, an authorized and trained operator must be present to operate the emergency controls located at the foot of the machine
- The emergency control compartment must be closed at all times and it should only be opened in case of emergency.
- **Personal protective gear such as headgear and safety belts must be used at all times.**
- Lower the central crossbar that gives access to the platform or close the access gate before using
- Do not get on or off the machine while it is moving
- The instructions for use must be followed rigorously and in chronological order.

2.2 OPERATIONAL PRECAUTIONS (RESIDUAL RISKS)

ELECTRICAL LINES



**This machine is not electrically insulated and does not offer any protection against contact with live electrical lines or when in the proximity of such lines.
It is extremely dangerous to work near electrical lines.**

Electrical discharges occur even if the two bodies are not in contact: it is sufficient to get closer than the minimum safety distance, which is 5 (five) metres for up to 50,000 volts and 10 metres over 50,000 volts. These values are absolute minimums: no part of the machine and no work phase must exceed these limits. Certain countries may have laws with different restrictions, with which the operator should always comply. Together with the observance of the minimum distance prescribed by law, we recommend that a series of precautions be adopted to reduce the risk of accidents:

1. Ask the electricity supply company to interrupt the electricity supply and to “earth” the line;

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2. when it is not possible to interrupt the electricity supply, maintain all parts of the machine at a distance that is far greater than the obligatory one, considering that the electrical lines could oscillate due to wind;
3. unnecessary persons must keep as far away as possible from the work area;
4. always operate with caution and prudence;
5. when possible, adopt safety devices such as: line proximity indicator or transversal and height limits. Bear in mind that devices such as machine earthing or protections on the work surface or extendable structure, offer little or no protection against electrical discharges.

When working near radio, television or radar stations, the machine may receive a high induced voltage which could cause painful shocks and burns due to the overheating of the platform's metallic structures. Take suitable precautions before operation, consulting the technicians of the concerned station.

What to do in the event of an accidental contact of any part of the machine with live electrical lines:

1. Do not act impulsively or panic; if you are not in direct contact you are reasonably insulated. Do not jump off the platform: in addition to injuries from the fall, the risk of being electrocuted remains because the ground around the machine is also electrified to some extent.
2. if the height permits it, jump as far as possible and move away jumping with both feet together.
3. any rescuers will only be able to get close once a dry wooden walkway has been set up.
4. get all people away from the area surrounding the machine immediately.
5. if the machine is functioning, try get away from the contact by moving in the opposite direction to the movement that caused the contact.
6. If you cannot detach yourself from the line, remain in your place until the electrical line has been disabled.
7. once you have returned to a safe zone, stop the machine and check it for damage.



IT IS FORBIDDEN TO USE THE MACHINE AS WELDING MATERIAL

EFFECTS OF WIND

It is possible to operate the machine with winds up to 12.5 m/s or 45 km/h

Take into account that there may be strong gusts of wind when working between buildings that are close to each other due to the "wind tunnel" effect.

Always pay attention when working near buildings, sudden gusts may rock the machine and crush the operator's limbs between the edge of the cage rail and the obstacle.

We recommend that a reasonable distance be maintained between any obstacles and the cage during all operations. Avoid lifting panels with solid sides which create a "sail" effect that is dangerous for the stability of the platform.

It is forbidden to lift the platform when there are strong gusts of wind

BEAUFORT SCALE				
WIND FORCE		WIND SPEED		EFFECTS ON GROUND
DEGREES	BEAUFORT SCALE	m/sec	Km/h	
0	Calm	0 - 0,2	1	Calm, smoke rises vertically
1	Light air	0,3 – 1,5	1 – 5	The wind direction is given by the smoke but not by the windsock
2	Light breeze	1,6 – 3,3	6 – 11	Rustling of leaves, windsock moves
3	Gentle breeze	3,4 – 5,5	12 – 19	Leaves and twigs move, flags move
4	Moderate breeze	5,5 – 7,9	20 – 28	Dust and pieces of paper are lifted, twigs and small branches move

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5	Fresh breeze	8 – 10,7	29 – 38	Small trees sway, small crests form on the water
6	Strong breeze	10,8 – 13,8	39 – 49	Large branches shake, it is difficult to use umbrellas
7	Near gale	13,9 – 17,1	50 – 61	Trees shake, difficult to walk into the wind
8	Gale	17,2 – 20,2	62 – 74	Branches break, it is difficult to move
9	Strong gale	20,3 – 24,4	75 – 88	Small damage to buildings, tiles removed
10	Storm	24,5 – 28,4	89 – 102	Trees uprooted, serious damage to buildings

SMALL BURNS, EXPLOSION AND FIRE RISKS

Do not touch hot surfaces or high temperature oil; in case of oil leaks or sprays stop the machine



The batteries contain acid.

It is obligatory to wear clothes, gloves and eyewear when working on the batteries. In the event of accidental contact with the acid, immediately neutralize the area and rinse thoroughly with water.



Do not start the engine if you smell or if you detect liquefied petroleum gases (LPG), petrol, diesel or other explosive substances.

Do not refuel the machine while the engine is running.

Only refuel and replace the battery in an open and well-ventilated area, far away from sparks, flames and lit cigarettes.

Start the lorry engine only on a well-ventilated area and avoid any closed or underground areas. Before operating the platform, check that nobody is in the range of action.

DANGER OF OVERTURNING

Check the ground consistency before laying the stabilizers. The platform must be placed on a surface that is flat, solid, compact and firm to guarantee stability.

Should you operate on ground that is not very firm, it is necessary to place suitable hard wooden planks or steel plates of appropriate thickness under the stabilizer plates to increase the surface area and, therefore, obtain a significant reduction of the specific pressure on the ground.



Check that there are no manholes, hollows or underground piping on the stabilizer laying surface. They could make the ground sinking. The stabilizer distance from slopes or ditches should be at least twice their depth.



Do not place the machine on slippery surfaces (ex. wet marble floors or ice...)

In the most difficult operating conditions for the platform, the max pressure exerted by a single stabilizer plate is 2275 kg for the front stabilizers and 1752 kg for the rear stabilizers.

To prevent one or all the stabilizers from sinking, it is necessary to know the carrying capacity of the ground.

The size of the support plate or of the special support bases is calculated with the following formula:

$$\text{TOTAL PRESSURE} / \text{GROUND CARRYING CAPACITY} = \text{SUPPORT SURFACE AREA IN cm}^2$$

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E.g. a pressure of 800 Kg on ground with a carrying capacity of 4 Kg/cm²
The minimum size of the support plate will be $800/4 = 200 \text{ cm}^2$

GROUND CARRYING CAPACITY TABLE:	
GROUND TYPE	CARRYING CAPACITY IN Kg/cm ²
Ground not compact	0 – 1
Mud, peat, etc.	0
Sand	1,5
Gravel	2
Loose ground	0
Soft ground	0,4
Firm ground	1
Semisolid ground	2
Solid ground	4
Rock	15 - 30

NOTE: These values are indicative, therefore, if there is doubt, the carrying capacity must be established by means of suitable tests. For cement floors, bridges, etc. it must be requested from the manufacturer.

The frame of the platform must be in a perfectly horizontal position, checking the level using an optical level. (Max slope permitted 1° indicated by the black outer circle on the level)

The electronic safety system does not allow any movement of the boom when the inclination of the frame is over 1.5 °.



It is forbidden to use the platform on a mobile surface or to rest it on other structures, even if they are fixed



It is forbidden to exceed the max capacity of the MEWP, which is 250 Kg (two people, materials and work equipment). It is also forbidden for more than two people to get into the cage.



The machine is designed to lift loads vertically and it is therefore forbidden to use it to push or pull horizontally.



It is forbidden to attach weights to the edges of the cage or to other parts of the lifting system

DANGER OF FALLING



When you get on the basket, you have to hook immediately the safety belts to the eyebolts, before making any manoeuvre.

In all phases of operation, it is forbidden to sit or get onto the cage rail or to take any other measures to reach further heights (e.g. rest ladders on the cage, create platforms on the rail, etc.)

Do not push or pull yourself on any object other than the platform.

Always maintain a correct position with your feet firmly on the cage floor.

Before lifting yourself, ensure that the cage gravity access door is in the correct position.



It is forbidden to jump from the cage when it is lifted or to descend from the lifting boom. In the event of a fault or lack of power, call ground personnel and carry out an emergency manual lowering manoeuvre.

The cage floor must be kept clean, it must not be greasy and there must be no objects in it.

Do not lift the platform if it is secured to fix points! (Cables, ropes, etc.)

DANGER OF COLLISION

It is necessary to check that there are no people, animals or obstacles inside the area before carrying out the emergency manual lowering manoeuvre.

It is forbidden to throw objects and equipment from bottom to top and vice versa.

Do not operate the machine if there are cables, flexible wires, cables etc. dangling from the cage.

Before using the platform, check that the area in which the cage will operate does not contain pipes, electrical conduits, lamps and any other obstacles that could cause dangerous situations.

Also check for possible interferences with the movement of mobile machinery such as jib cranes, bridge cranes etc.



If the platform works on public roads, signal it by blinking lights and special signs to the ground.



Do not work under poor visibility and lighting conditions, neither within magnetic fields.



It is forbidden to move the vehicle when the aerial platform is not at its rest position

FAULTY MACHINE DANGER

It is forbidden to operate the machine before having carried out a **complete inspection** on it and having checked that all the controls as well as all the safety devices are working properly.

It is forbidden to use a faulty or damaged machine.

Machine maintenance must be carried out within the timeframe and according to the instructions in the user manual.

Ensure that all the plates and labels are clear and visible. Users or owners must replace plates and labels that are unreadable, requesting them from RUTHMANN ITALIA S.r.l.

Make sure that the user manual is available and stored in a suitable manner.

COLD CLIMATES

Before operating the machine in freezing conditions, make sure that all the controls are not blocked by ice or snow.

In very cold conditions, before operating the machine, check the state of the fuel; before actually beginning to work, carry out some partial manoeuvres to warm up the hydraulic oil.

Precautions need to be taken to prevent the hydraulic oil from being contaminated by water. The emulsified water on the surface of the oil could freeze and form crystals that block the water itself, causing damage to the hydraulic pump.

In cold or harsh climatic-environmental conditions, wait a few minutes before operating the machine, so that both the engine and hydraulic oil warm up. The oil has to reach a minimum temperature of 10° - 20°.

On climatic-environmental conditions, do not undervalue the risk of exposure at elevated working height.



By low temperature (- 5°) operate the hydraulic pump for several minutes to let oil flow, so that it reaches a temperature of at least 5°C, before operating the platform.

2.3 SECURITY RULES DURING OPERATIONS

BEFORE USE

- If you have not fully understood all the operating and emergency procedures, the safety conditions necessary to start operation are not in place and operation must therefore be interrupted.
- It is necessary to carry out a visual control of the parts and a test of the safety devices and controls before using the machine.
- Ensure that the plates and labels are readable and clean.
- Ensure that the user manual provided with the machine is available.
- Check the hydraulic components and the hydraulic oil level.
- Check the fuel level, the condition of the battery and all electrical components (connections, electrical cables, etc.).
- Check the gravity access door of the platform.
- Visually inspect the welds and integrity of the structure.
- Clean all the rails and platforms and rid them of any soil, snow or ice.
- It is forbidden to abandon objects or tools on the machine.
- If, during the checks, you notice incorrect operation of controls, indicator lights, etc., these must be repaired or replaced before operation begins. The operator must notify any problem encountered on the machine to the person responsible for control and maintenance. Any faults that are detected must be fixed before beginning to work to avoid injuries or accidents. If it is not possible to carry out repairs immediately, the faulty or damaged machine must be taken out of service
- Place the platform in the ideal position to reach the desired point.
- Ensure that the ground on which the stabilizers will have to rest can support the weight of the machine and that there are no holes or manholes. Place suitable support plates under the stabilizer plates.
- Check that there are no aerial obstacles that could interfere with the upward movement of the work platform.
- Do not use cages other than the one provided.
- Use the machine in well-lit areas.
- During the maintenance phases, do not dispose of any waste materials in the environment and comply with current laws.
- Do not use the vehicle's engine indoors or in areas that are not sufficiently ventilated.
- Do not approach the hydraulic system components with sources of heat or flames.
- The platform is intended to carry people; therefore, it is necessary to comply with the current local regulations relevant to this class of machines.
- Do not increase the max. permitted height by means of scaffolds, ladders or other.
- Do not use the machine as a crane.
- Do not use the machine as a hoist and/or lift.
- Protect the machine (in particular the control panel inside the cage) and the operator when working in adverse environmental conditions (painting, removing paint, sandblasting, washing, etc.).
- It is forbidden to use the machine in adverse weather conditions (storms with winds exceeding the limits indicated on the manual and the plates).
- In the event of rain or in parking mode, protect the on-platform control panel using the cap provided.
- Do not use the machine in areas where risks of fire or explosion exist.
- Do not use pressurized water jets (high-pressure cleaners) to wash the machine.
- Movements on sloping ground are to be carried out with the utmost caution.

DURING USE

- In addition to the cage operator, when the platform is in use there must be a person on the ground who is capable of operating the machine and who knows the emergency procedures.
- The machine may only be used by specialized personnel who must have read and understood the manual that comes with the machine.

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- Personnel with long hair, loose clothing or jewellery such as bracelets, necklaces, rings etc. may not access the machine. These could cause injuries and accidents as they could get caught up or ripped off.
- **It is compulsory to use personal safety gear: protective headgear and safety harness secured to the cage.**

CHECKING CORRECT OPERATION

1. Choose an area that is free of all obstacles.
2. Check that there is enough fuel in the tank provided and the battery is connected.
3. Lower the stabilizers until the chassis is raised completely off the ground and levelled (check using optical level)

There are three phases to stabilizing the machine correctly:

- a) lower the four stabilizers towards the ground**
- b) simultaneously lift the two stabilizers that are on the downhill side**
- c) simultaneously lift the two stabilizers on the opposite side until the machine is level.**

4. Use the joystick following the below sequence:
 - act on the lower boom joystick for lifting the lower boom
 - act on the upper boom joystick for lifting the upper boom
 - act on the telescopic boom joystick for extending the upper boom
 - act on the turret rotation joystick for turning the turret in a clockwise or anticlockwise direction.
5. Repeat the above mentioned operations inverting the sequence to bring the platform back to transport mode, paying particular attention to the closure of the stabilizers, which must occur by lifting them a few centimetres at a time, preferably two at a time – front and back – or all four simultaneously.

2.4 SECURITY RULES DURING MAINTENANCE

- When the platform is being checked, put a notice “Check” on the cabin door. Before checking the platform or before any operation with telescopic boom raised, always apply blocks or safety supports.
- It is forbidden to do any maintenance operation while the boom is working: the boom must be at rest position.
- It is extremely dangerous to commit mistakes. Before greasing or repairing, read this Use and Maintenance Manual carefully.
- When working on the electrical system, always wear protection glasses and take off rings, wrist watches and any other metal jewel.
- As general rule, not use petrol for clearing the components.
- Heavy parts should be lifted by means of a hoist.
- During assembly and disassembly or when using the hammer to hit parts, be careful with Flying metal particles. Always wear protection glasses.
- A fluid that draws under pressure can have the force to penetrate your skin. Always release the pressure before disconnecting the hydraulic pipes and tighten all unions before putting on the pressure. Keep your hands and body away from holes and nozzles from which high-pressure liquid comes out. Use a piece of cardboard or paper to search for leaks.
- It is forbidden to make changes to the machine that can modify components or parameters established by the manufacturer.
- Check at least once a day or a shift the vehicle, in order to see if there are external damages (corrosion, welding, integrity of structural parts). In case you find changes (in the working too) you have to inform the person in charge immediately. Stop the vehicle immediately.
- The interventions on the electric system must always be made by a specialized staff that is able to act according to what is established by the rules in force, or by our Service Department.
- Do not scatter lubricants into the environment, but collect and dispose of those products, respecting the rules in force in every country.
- The hydraulic circuit alteration can be a serious danger for platform use.

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- Hydraulic piping should be laid and fitted properly.
- Always disconnect the battery before making any operation on the electric system.
- Handle every particular with great care. Keep your hands and fingers far from gaps, gearings and similar. Always use the approved protection devices like safety glasses, gloves, and safety shoes.
- Handle parts with extreme care. Do not put your hands or fingers between one part and another.
- Always wear homologated accident prevention cloche like glasses, gloves, and safety shoes



3. MEWP MARKINGS

3.1 STAMPS

The MEWP serial number is stamped on the turret, on the base frame and on the cage.

3.2 IDENTIFICATION PLATE

The MEWP identification plate is fixed to the turret's left shoulder.

			
<small>RUTHMANN ITALIA Srl - Via Santa Maria del Piano di sotto,91/B 47854 Montescudo - Monte Colombo (RN) ITALY Tel. 0541.756872 - Fax 0541.729800</small>			
Piattaforma Modello	A		
N° Costruzione	B	Anno Costruz.	C
Veicolo (marca, mod.)	D		
N° Telaio	E		
Portata Max navicella kg.	F	F ₁	
Sbraccio laterale Max. m.	G	G ₁	
Compreso persone n°	H	H ₁	
Altezza Max. piano calpestio m.	I		
Forza del vento Max. ammessa	° Beaufort	Km/h	
	L	M	
Peso piattaforma (Braccio/torretta/ralla) kg	N		
Spinta Manuale Massima N	O		
Inclinazione Max pianale °	P		
Pompa idraulica principale	Portata (l/min.)	Pressione Max. (bar)	
	Q	R	

PIATTAFORMA AEREA DI LAVORO

- A Model
- B Serial Number
- C Manufacturer year
- D Vehicle
- E Frame number
- F Max basket capacity kg (1 person + tools)
- F₁ Max basket capacity kg (2 person + tools)
- G Max lateral outreach with 120 kg m
- G₁ Max lateral outreach with 200 kg m
- H Number of operators
- H₁ Number of operators
- I Max development from ground at the cage bottom m
- L Max wind speed (Beaufort scale) °
- M Max wind speed Km/h
- N Platform Mass kg
- O Max manual strength N
- P Max flatcar gradient °
- Q Max hydraulic system pressure bar
- R Pump delivery l/min

4. FEATURES OF THE MEWP

4.1 DESCRIPTION OF MEWP

DESCRIPTION:

This aerial platform has been designed to be mounted on a road motor vehicle. It is made up of:

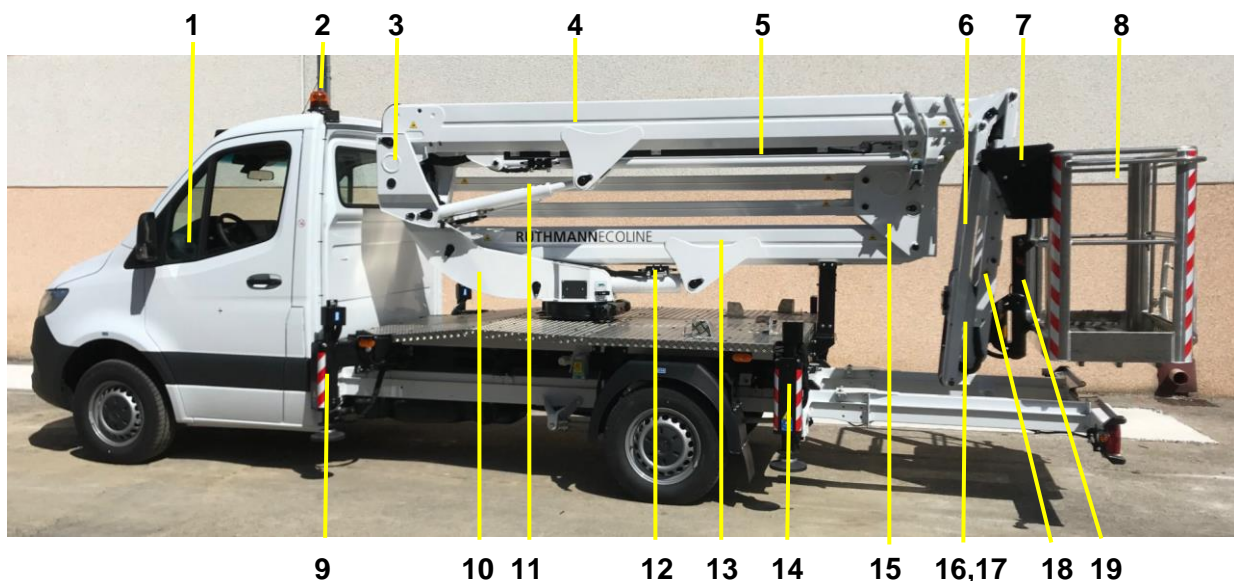
- **a structure (platform)** made up of a rotating turret; its rotation is possible by means of a ball bearing fifth wheel. On the turret peak, an articulated boom is hinged, which is connected to a telescope boom (with a 3 extensible elements), jib boom and basket support. On this latest element, the basket is hinged.
- **a base support structure (basic-counterframe)** made up of longitudinal frame members and cross members on which the fifth wheel of the turret is fixed; also 4 stabilizers and the oil tank are part of the basic counterframe.
- **a hydraulic equipment** which controls the movement of the machine.
- **an electric equipment** which feeds the electric system of the vehicle.

All the machine's movements are hydraulic and there is always a corresponding safety valve.

The platform has an emergency manual lowering system which must only be used in the event of a breakdown and/or if there is a fault in the main power supply circuit.

If the machine is not stabilized properly or loses stability, the buzzer will sound with the corresponding signal indicating that a stabilizer is not in contact with the ground. The machine allows for retraction operations at a reduced speed.

The cage is made of electrically welded aluminium tubes and the basket support is fitted with attachments for the safety belts. The entry is in the front lifting the bar with automatic closing and it is accessed directly from the ground by a small ladder.



- | | | |
|----------------------------------|---|---|
| 1. Controls in vehicle cab | : | used to activate the hydraulic system |
| 2. Rotating beacon over the cab | : | signalling device. It is activated from the controls in vehicle cab. |
| 3. Articulation for main boom | : | it is made up of a fixed fulcrum element fixed at section of lower boom and at main boom. |
| 4. Main boom | : | it is made up of a fixed fulcrum element (fixed at its articulation) and by extractable elements which are activated by a hydraulic cylinder. |
| 5. Cylinder for telescoping boom | : | activates the extraction of the telescoping elements of the main boom. |
| 6. Jib | : | it is made up of 2 elements. |
| 7. Basket controls | : | they are used by the operator in the basket to do all manoeuvres. |
| 8. Basket | : | it is the structure where 1 or 2 operators stay. It can also contain some tools (if allowed). A hydraulic device guarantees the basket verticality at each working angle of the boom. It can be made of |

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- 9. Front stabilizer. : aluminium.
: it is a hydraulic jack which is fixed onto the cross-members of the basic-counterframe; it is provided with an articulated plate. It is activated by the stabilizer controls and it is extensible 400 mm from the outside.
- 10. Turret : it is the fulcrum element fixed at the lower boom. Its rotation is activated by a hydraulic motor.
- 11. Main boom cylinder : it activates the movement of the upper boom.
- 12. Lower boom cylinder : it activates the movement of the lower boom.
- 13. Lower boom : it is made up of 4 elements fixed on the articulation of the lower boom.
- 14. Rear stabilizer : it is a hydraulic jack which is fixed onto the cross-members of the basic-counterframe; it is provided with an articulated plate. It is activated by the stabilizer controls.
- 15. Articulation of lower boom : it is an element on which are connected the 4 lower booms.
- 16. Articulation of Jib : connection elements of the jib boom.
- 17. Basket leveling cylinder : it activates the leveling of the basket.
- 18. Jib cylinder : it activates the movement of the jib.
- 19. Basket support : it is the support structure necessary to fix the basket. It is fitted with a basket rotator motor.



20 21 22 23 24 25

- 20. Entrance ladder to the basket : to simplify the access to the basket.
- 21. Boom support at rest position : it supports the main boom at rest and transport position.
- 22. Oil tank : it is included in the structure of the basic-counterframe and contains the oil which feeds the hydraulic system.
- 23. Basic-counterframe with flatcar : it is the support structure necessary to fix the aerial platform to the vehicle.
- 24. Emergency controls : they are necessary to take basket back to ground in case of engine failure. They can be activated by the operator at ground.
- 25. Ratiomotors in turret : they activate the turret movement by means of the transmission between pinion and fifth wheel.

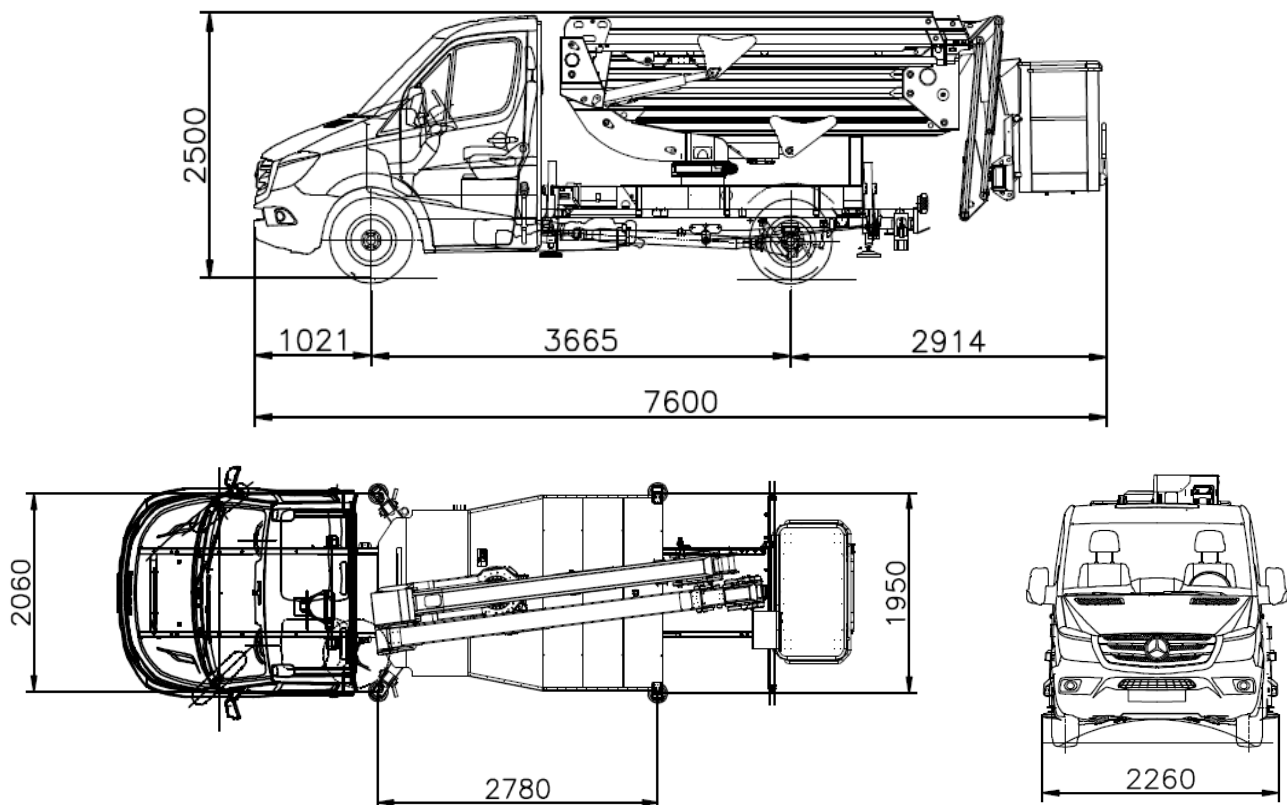
4.2 TECHNICAL DATA

- Model : ECOLINE RS200
- Max Basket Capacity : 250 kg

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Max development from ground	:	18 m (from the bottom of cage)
Max lateral outreach	:	10,5 m (120 kg) - 8,90 m (200 kg) – 8,10 m (250 kg)
Basket dimensions	:	1300 x 700 x 1100 mm
Basket material	:	aluminium
Basket enter	:	through a frontal gate which can be opened lifting a specific bar with an automatic closing. The basket has a stair way for making easier the access.
Basket Rotation	:	± 80°
Turret Rotation	:	360° (opt. 220°+220°)
Platform mass	:	1569 kg
Max manual strength	:	400 N (strength that can be done by the operators in basket)
Max wind speed	:	45 km/h (6° Beaufort scale)
Electric system tension	:	12 V
Oil tank capacity	:	40 l
Max flatcar gradient	:	1° (as to the horizontal surface)
Max hydraulic system pressure	:	210 bar
Pump delivery	:	15.73 l/min (rest engine) – 21.45 l/min (throttle engine)
Revolution per minute – RPM	:	1100 rpm (rest engine) – 1500 rpm (throttle engine)
Vehicle model	:	MERCEDES SPRINTER 314 CDI
GVW	:	3,5 t
Wheelbase	:	3665 mm
Stabilizer axle base	:	3155 mm
Stabilizer gage	:	Front 2980 mm - Rear 1950 mm
Max reaction at ground	:	Front 2275 kg - Rear 1752 kg

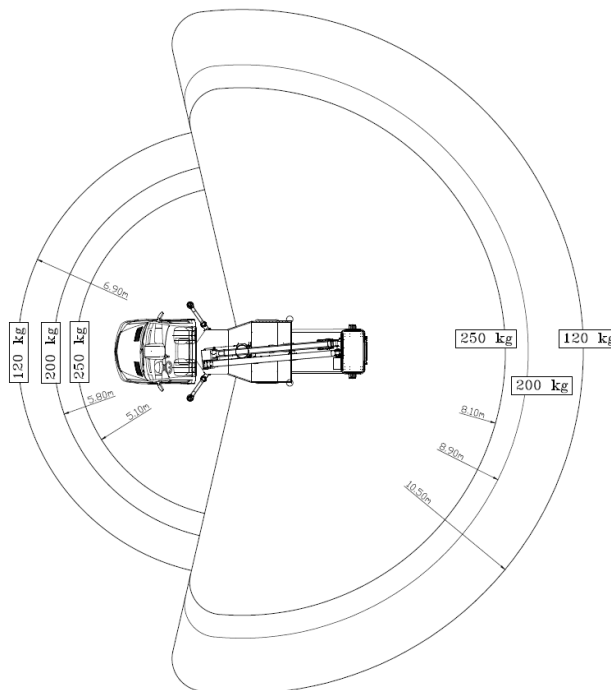
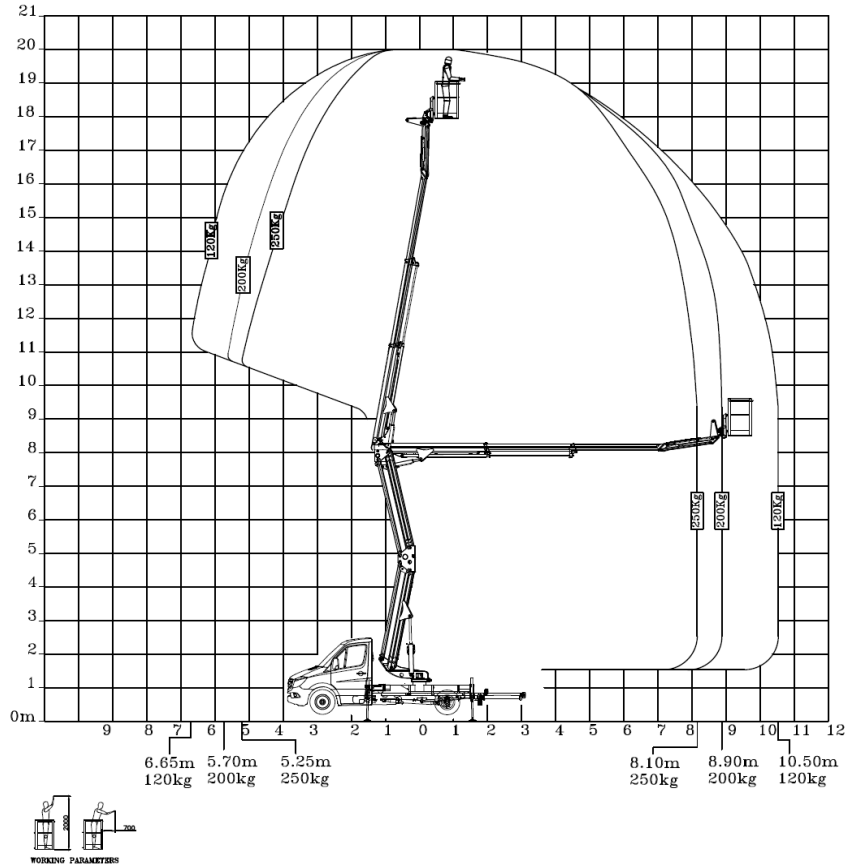
4.3 CONFIGURATION FOR ROAD CIRCULATION



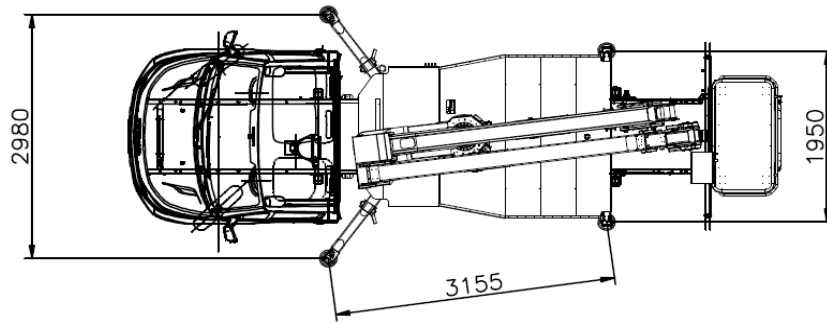
4.4 WORKING DIAGRAMS

The max basket capacity is 250 kg. The max lateral outreach is:

MAX STABILITY AREA	
Payload:	Outreach:
120 kg	10,5 m
200 kg	8,90 m
250 kg	8,10 m

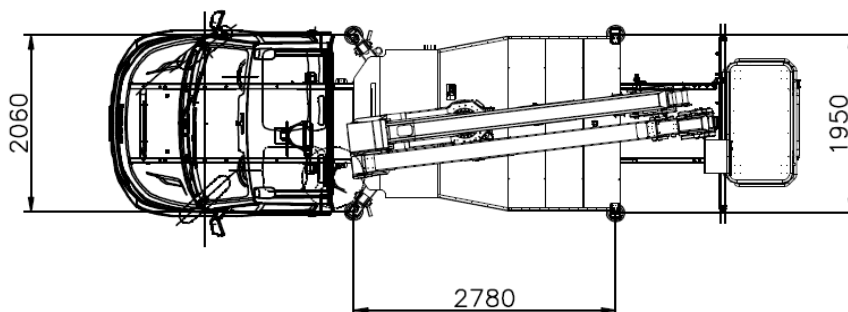
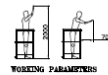
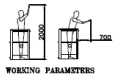
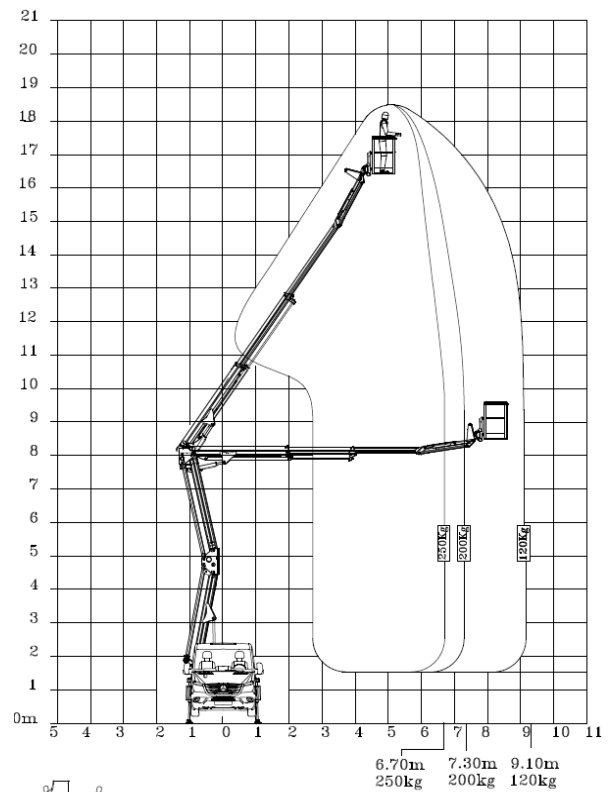
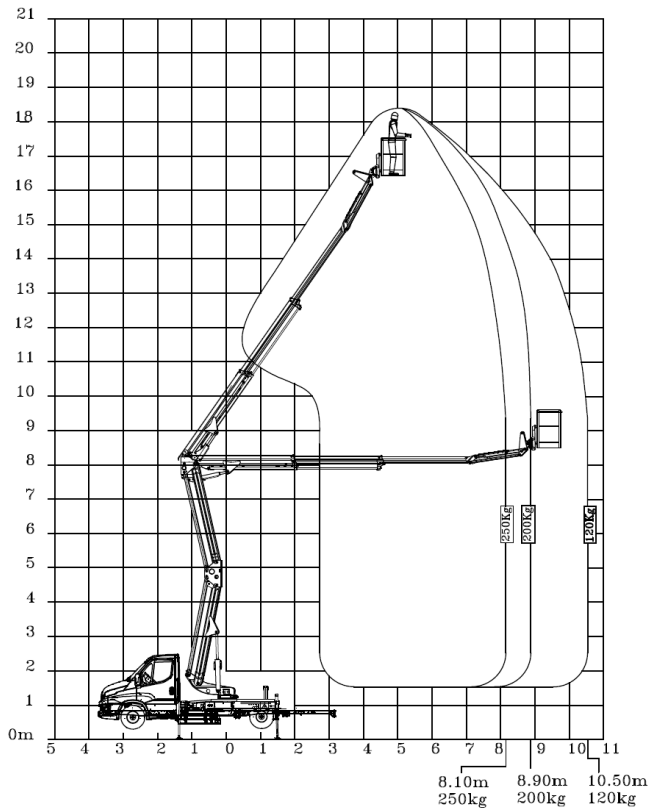


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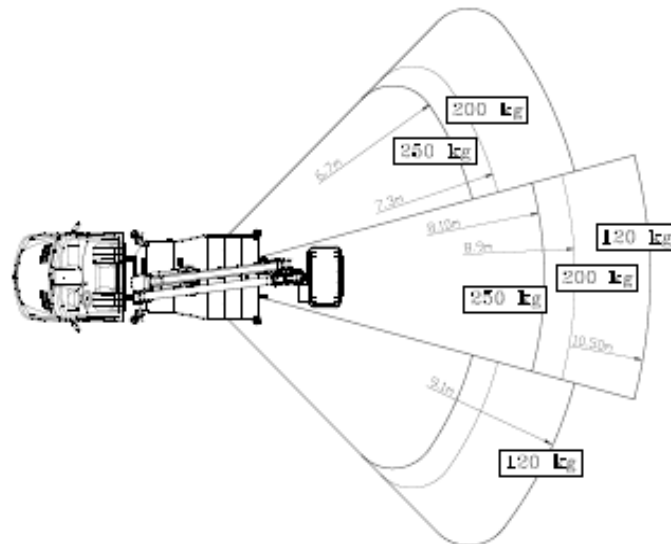


As Option, it is possible to have a working diagram also with front outrigger in shape of vehicle:

OUTRIGGER IN SHAPE OF VEHICLE	
Payload:	Outreach:
120 kg	9,10 m
200 kg	7,30 m
250 kg	6,70 m



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4.5 SAFETY AND EMERGENCY DEVICES

These devices are an integral part of the platform and act in terms of security depending on the configuration of the platform.

A) Moment limiting device

It is made up of an electronic system, which senses automatically the load in basket (max 250kg) and keeps the horizontal outreach within the permitted measures, as to the angle of the main boom. Once reached the max permitted measure, both the main boom lowering, the extraction of the extractable elements and the jib boom lifting are stopped. To reset operations you have to retract the extractable elements and/or lift the main boom.



IMPORTANT: This device is extremely important as to safety, since it avoids the rollover of the machine and the structural overload.

B) Basket balancing device

It is a hydraulic device integrated in the main circuit by means of 2 oil-pressure cylinders which keep the basket balanced automatically in every working position of the boom. In case the basket is not balanced perfectly, it is possible to act by hand, following the procedure described below.



ATTENTION: CARRY OUT THE CORRECTION OF THE BASKET LEVELLING WITH CARE AND WITHOUT MATERIAL IN THE BASKET. THE PLATFORM HAS TO BE IN REST POSITION

Procedure:

1. stabilize the platform
2. lift the main boom for having approximately an angle of 2° (no more)
3. Depress the bottom "Basket Levelling" and simultaneously depress the function key "Cage rotation right" (the working cage moves upwards - cage up) or "Cage rotation left" (the working cage moves downwards - cage down) until you have corrected the level of the basket

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!!! DURING THIS PROCEDURE THE MOVEMENT IS VERY SLOW!!!



ATTENTION: CARRY OUT THE CORRECTION OF THE BASKET LEVELLING WITH CARE AND WITHOUT MATERIAL IN THE BASKET.



ATTENTION: IT IS OBLIGATORY TO LEVEL THE BASKET BEFORE TO USE THE PLATFORM.



ATTENTION: NOT MOVE ANY BOOMS IF THE BASKET IS NOT WELL LEVELLED; THIS COULD CAUSE DAMEGES ON LEVELLING CYLINDERS.

C) Lock valve

A lock valve is installed on each hydraulic actuator. It enables only the movements done by the operator and stops any spontaneous movements caused by a failure of the oil-pressure system.

D) Max pressure valve

The max pressure valve is integral part of the main hydraulic block placed on the base-frame. It operates when the max operating pressure is reached.

E) Boom/Stabilizer Interlock device

This is a micro switch which senses the position of the main boom on “boom support at rest position” and makes it possible to manoeuvre the stabilizers only when the boom is at rest position. When the boom is lifted, this device prevents the stabilizer manoeuvres.

F) Hand pump

It is placed closed to the main hydraulic block.

In case of failure of the thermic motor or of PTO, it enables you to take back the platform to its rest position.

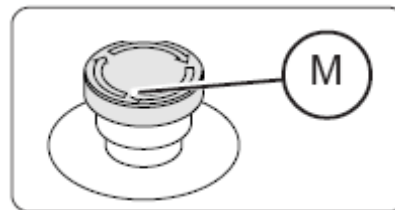
Before operating the manual pump it is necessary to fit the handle supplied to its seat on the pump. Pump with energy from top to bottom.



G) Emergency stop push button

You have to push this button in case of imminent risk. All movements of the platform and the engine of the vehicle stop immediately. After having normalized the situation, you have to release the switch M in order to reset all functions.

An emergency button is placed on chassis control box, on basket control box and on remote control



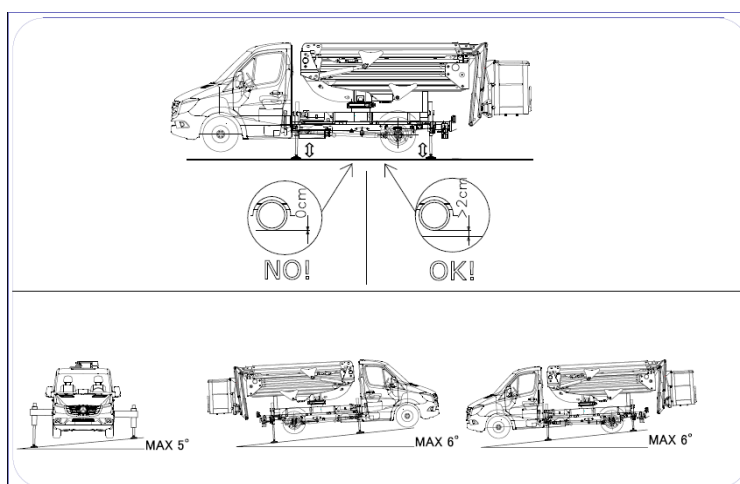
4.6 ALLOWABLE GRADIENTS

The truck mount ECOLINE MEWP can compensate a maximum subframe inclination of 4° on both axes by stabilizers.

The maximum allowable ECOLINE MEWP subframe inclinations are listed hereafter:

- Towards front axle = 2,0 °
- Towards rear axle = 5,0 °
- Lateral = 2,0 °

Additionally, the following pictogram shows the maximum slope of the terrain, in which the ECOLINE MEWP can operate safely.



DANGER! Do not use the platform on grounds that have higher gradients than those shown in picture and controllable by means of the optic bubble installed on the chassis.

When using the platform under these permissible maximum slope conditions, and especially in case of smooth and slippery surfaces, there is a risk of slipping of the vehicle. The ECOLINE platform must be secured in such a way that there is no possibility of slipping. Secure the ECOLINE against slipping in an appropriate manner and measures (ex. by chains or ropes appropriate to the pull force and anchoring on points that can support the mass of the vehicle).



WARNING! Always check the inclination of the platform with the optical bubble. The maximum permissible inclination cannot be exceeded.

4.7 LIMITS FOR THE ENVIRONMENTAL WORKING

The aerial working platform usually works by the following environmental conditions:

- minimum temperature: - 15°

- max temperature: + 40°
- speed wind lower than 45km/h, equal to 6° of the Beaufort scale.

4.8 ACOUSTIC EMISSIONS

- **Exposition of working operator**

The sound power value of the machine at the operator's ear has been determined on the basis of the two working positions in which the operator is more exposed:

Measurement of the maximum sound pressure level at the operator's ear in the basket:

$L_{PA} =$	67,3	dB(A)
------------	------	-------

Measurement of the maximum sound pressure level at the operator's ear on the ground position:

$L_{PA} =$	79,6	dB(A)
------------	------	-------

It is therefore apparent that the maximum sound pressure level at the detected ear is 80 dB (A)

- **Environmental Acoustic Emission**

The weighted sound power level emitted by the machine, detected in accordance with:

- Annex IIIA point 2.2 - Acoustic Emission Directive 2000/14 / EC
- Annex IIIB point 1 - Acoustic Emissions Directive 2000/14 / EC

is equal to:

Sound Power Level Lwa(dB)	
Measured	Guaranteed
93	96



4.9 FURTHER INFORMATION

Sound emissions: the emissions - produced by the MEWP during its working – are not very loud in comparison with the thermic engine of the vehicle, which is the primary source of energy.

Vibration emissions: the emissions - produced by the MEWP during its working – are not very loud in comparison with those of the thermic engine of the vehicle, which is the primary source of energy

5. MOVEMENT

5.1 ROAD CIRCULATION

Road circulation is allowed to all homologated machines driven by a person that has all the requirements requested by the rules in force of the country where the MEWP will be used.

Anyway, before transport lock all parts that might cause sudden and unexpected shifts and check the profile, in order to be sure that it does not exceed the allowable overall dimensions and, if necessary, put the suitable signalling.

5.2 VEHICLE PARKING

Park the vehicle in a suitable parking area, avoiding to cause obstacle and danger to circulation. Adopt all necessary precautions as to safety and prevent the access to non-authorized people.

5.3 ASSEMBLY/DISASSEMBLY OF THE PLATFORM

To assemble or disassemble the aerial platform (boom, turret, fifth wheel) from the vehicle, it is necessary to use proper and certified bands.

6. MEWP USE AND OPERATION

6.1 CONDITIONS AND LIMITS OF USE

The MEWP must be used on flat, solid and level ground.

Do not use the MEWP if the various operation and emergency procedures have not been fully understood. The employer must verify that the operators who have to use the MEWP must always be trained, in order to be able to make all manoeuvres properly (both from basket and from turret controls).

By means of a careful reading of this manual, they must learn:

- the proper use of the MEWP and its limits
- the safety devices (and their strict and constant respect)
- the daily maintenance operations, which permit to check the working of the MEWP and of its safety devices
- the proper controls

By means of a training done by a skilful staff, they will have to learn to:

- use the basket controls and turret controls properly
- use the emergency controls properly (in order to be able to take back to ground the basket and the operators (in case of engine failure or sudden illness of the operators)

The operators must follow our instructions strictly. The employer must verify that the operators have learned to control the MEWP properly, before letting them use it.



IMPORTANT

The employer is bound to inform and train the operators of the platform according to the rules in force.



WARNING

Every control device is associated with a pictogram which indicates the movements of its actuator. The pictograms are in such a way that they are consistent with the action of the actuator.

6.1.1 RESPONSIBILITY OF THE USER

- a. The installation and positioning instructions on the workplace must be followed thoroughly and chronologically, taking care not to exceed the capacities indicated on the plates located on the foothold at the entrance of the platform.
- b. The machine must rest on ground that is able to withstand the forces exerted by the stabilizer plates. Should you operate on ground that is not very firm, it is necessary to place suitable hard wooden planks under the stabilizer plates to increase the surface area and, therefore, obtain a significant reduction of the specific pressure on the ground.
- c. The MEWP is not insulated; therefore, when working near low-voltage electrical lines that are not insulated, where accidental contact between the metallic parts of the platform and the same electrical lines may occur, it is necessary to operate with special care and prudence and to ensure that a minimum safety distance of 5 meters is maintained between the platform and the live parts.
- d. All the movements required to reach the point where the work is to be carried out must be controlled by the person on the platform. Operation from the ground is permitted only in case of emergency.
- e. Should the platform be used in roads that are open to traffic, it is necessary to indicate its presence using appropriate signs.
- f. During work or during operation to reach the place where the work is to be carried out, it is forbidden to climb onto the platform's rails or to use other means (ladders, stools etc...) to reach further heights.
- g. The platform is designed to lift loads vertically and it is therefore forbidden to use it for lateral or horizontal pushing or pulling movements. The platform must not be loaded when it is in the lifted position. It must be loaded when it is on the ground, ensuring that the recommended capacities are not exceeded.

ORIGINALE

- h. It is forbidden to throw equipment from bottom to top and vice versa.
- i. It is strictly forbidden to remove or tamper with the installed safety devices. In particular, it is forbidden to tamper with the locking valves and the pressure relief valves.

6.1.2 USE OF PERSONAL PROTECTIVE GEAR

While on the platform, the operator must make use of the protective helmet and the safety belt, which must be fastened to the special hook located inside the cage.

6.1.3 SAFETY RULES – OBLIGATIONS AND PROHIBITIONS**OBLIGATIONS**

- The MEWP is designed to operate at a maximum wind speed of 45 km/h.
- If the wind speed is greater than the above-mentioned value it is forbidden to use the MEWP, and it should immediately be returned to transport mode.
- It is obligatory to always use the safety belts and helmet.
- After having positioned the machine and before beginning to work, the user must check that the machine is on solid, compact and flat ground.
- It is necessary to check for oil leaks on a daily basis.
- Materials may only be loaded onto the platform when it is completely lowered.
- The cage may only be accessed via the accesses provided.
- Check carefully the perfect operation of safety devices and outreach limiting device each time you use the machine

PROHIBITIONS

- It is forbidden to place the machine at a distance of less than 5 m from electrical lines.
- It is forbidden to operate the machine on loose ground, manholes and slippery surfaces that slope slightly even.
- It is forbidden to tamper with the safety micro switches.
- It is forbidden to operate the MEWP using the ground controls.
- It is forbidden to modify the hydraulic operating pressure.
- It is forbidden for unauthorized personnel to use the machines.
- It is forbidden to overload the machines.
- It is forbidden to carry out repairs or replace structural components without the approval of the manufacturer.
- It is forbidden to operate the machine at wind speeds that exceed 45 Km/h.
- It is forbidden to operate if the machine is not on a flat surface.
- It is forbidden to use the machine as a tool to lift materials.
- It is forbidden to lock the cage closing bar in the open position.
- It is forbidden to load the machine while it is raised.

6.2 INSTALLATION AND POSITIONING ON THE WORKPLACE

To use the MEWP correctly, the instructions below must be followed in chronological order every time the machine is used.

- A. Check the oil level
- B. Check the fuel and engine oil level
- C. Position the machine so that the platform can reach the desired point
- D. Check that there are no obstacles that may hinder the lifting of the platform
- E. Check that the ground on which you need to operate can support the weight of the machine and that there are no holes, manholes etc.
- F. At this point, the machine is ready to be lifted for work.

6.3 DESCRIPTION OF THE CAB CONTROLS



1. **PTO Red pilot light:** if it is lit, it indicates that the PTO is connected.

2. **STABILIZERS Red pilot light:** if it is lit, it indicates that the stabilizers are extended.

3. Push for stop the sound alarm

4. **OK Green pilot light:** if it is lit, it indicates that stabilizers are retracted and PTO disconnected. The operator can drive the platform.

5. **Switch to connect PTO;** it is necessary to activate the hydraulic pump by means of the clutch pedal. The red pilot light 1 switches on.

6.4 DESCRIPTION OF CONTROLS ON BASE-FRAME



1. **Hydraulic control of outriggers**

2. **Push button, red "Emergency Cut-Off":** push this button in case of imminent risk. All movements of the platform and the engine of the vehicle stop immediately.



ATTENTION












Please refer to chapter 8 for a full description of the functionality of each button.

The operators and maintenance staff must read this manual before using the machine and before making any maintenance operation.


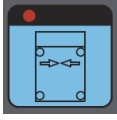


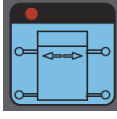
ORIGINALE



Coordination of function keys from left to right and from top to bottom:

	Function key	Description
1.	 Push button "ESC"	⇒ Return to previous page of diagnostic menu (showed on display in basket)
2.	 Push button "Display up"	⇒ scrolling of plain text indication, the next "display page" will be shown (display in basket)
3.	 Push button "Display down"	⇒ scrolling of plain text indication, the previous "display page" will be shown (display in basket)
4.	 Push button "ENTER"	⇒ Enter in the menu mode/Confirm the function
5.	 Push button "Motor start/stop"	⇒ - starts the vehicle engine (only possible with switched-on ignition) - stops the vehicle engine
6.	 Free	⇒ without function
7.	 Function keys enabled	⇒ When the function key is pressed, the jib control is enabled
8.	 Luminous push button "Go Home"	⇒ Push function (for 3 sec), move ECOLINE into the basic position automatically. Permanent light: boom in basic position.
9.	 Free	⇒ without function
10.	 Push button "Cage rotation left"	⇒ without function Blinking light: the cage rotation is not allowed.
11.	 Push button "Cage rotation right"	⇒ without function Blinking light: the cage rotation is not allowed

ORIGINALE

- | | | | |
|----|---|-------------------------------|---|
| 12 |  | Free | ⇒ - without function |
| 13 |  | Push button "Minimum jacking" | ⇒ - Jacking variant with stabilizing jacks within the vehicle profile on both sides.
- Activates push button for re-entering the extendible front outriggers. |
| 14 |  | Push button "Jack activation" | ⇒ press for activating the controls of extendible front stabilizers and outriggers cylinders
Permanent light: outriggers' control is enabled |
| 15 |  | Free | ⇒ without function |
| 16 |  | Push button "Full jacking" | ⇒ - Jacking variant with front stabilizing jacks extended horizontally on the left and right.
- Activates push button for extending the extendible front outriggers. |

**ATTENTION**

Please refer to chapter 8 for a full description of the functionality of each button.

The operators and maintenance staff must read this manual before using the machine and before making any maintenance operation.



The **WHITE LED is ON** when the control of upper part of platform is activated and there are the following conditions for lifting the booms:

- platform is stabilized and chassis is levelled,
- the lifting functions are active,
- there is not any malfunctioning of platform that could block all boom functions (... as breakdown of a safety sensor). In case of a malfunctioning, the led is off and an alarm message appears on the display of remote control. If the malfunctioning causes the block of only a part of lifting movements, the white led continues to be on. If led is off and there isn't any alarm message on display, the operator has to check the previous conditions and if the emergency compartment located on the right side of platform is open.



The **ORANGE LED is ON** when the control of lower part of platform is activated and there are the following conditions for controlling the outriggers:

- boom in rest position,
- the outriggers functions are active,
- there is not any malfunctioning of platform that could block all outrigger functions (...as breakdown of a microswitch on stabilizer). In case of a malfunctioning, the led is off and an alarm message appears on the display. If led is off and there isn't any alarm message on display, the operator has to check the previous conditions.





6.5 DESCRIPTION OF BASKET CONTROLS




- 3. Control panel at working cage
- 4. Display
- 5. 230V plug in basket
- 6. Push button, red "Emergency Cut-Off": push this button in case of imminent risk. All movements of the platform and the engine of the vehicle stop immediately.






LEFT-HAND JOYSTICK

Function key	Description
 Raise boom	↑ - Lifts up the boom.
 Lower boom	↓ - Lowers the boom.
 Swivel boom left	← - Swivels the boom (tower) to the left.
 Swivel boom right	→ - Swivels the boom (tower) to the right side.












RIGHT-HAND JOYSTICK

Function key	Description
 Raise pantograph boom	↑ - Lifts up the boom.


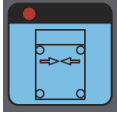


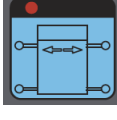
ORIGINALE

	Lower pantograph boom	↓ - Lowers the boom.
	Telescope in / Lower jib boom	← - Moves the telescope in. - JIB boom down in combination with "Function key" pressed
	Telescope out / Raise jib boom	→ - Moves the telescope out. - JIB boom up in combination with "Function key" pressed

Coordination of function keys from left to right and from top to bottom:

	Function key	Description
1.	 Push button "ESC"	⇒ Return to previous page of diagnostic menu (showed on display in basket)
2.	 Push button "Display up"	⇒ scrolling of plain text indication, the next "display page" will be shown (display in basket)
3.	 Push button "Display down"	⇒ scrolling of plain text indication, the previous "display page" will be shown (display in basket)
4.	 Push button "ENTER"	⇒ Enter in the menu mode/Confirm the function
5.	 Push button "Motor start/stop"	⇒ - starts the vehicle engine (only possible with switched-on ignition) - stops the vehicle engine
6.	 Free	⇒ without function
7.	 Function keys enabled	⇒ When the function key is pressed, the jib control is enabled
8.	 Luminous push button "Go Home"	⇒ Push function (for 3 sec), move ECOLINE into the basic position automatically. Permanent light: boom in basic position.
9.	 Free	⇒ without function
10.	 Push button "Cage rotation left"	⇒ Rotate working cage to the left Blinking light: the cage rotation is not allowed.
11.	 Push button "Cage rotation right"	⇒ Rotate working cage to the right Blinking light: the cage rotation is not allowed.

ORIGINALE

- 12  Free ⇒ - without function
- 13  Push button "Minimum jacking" ⇒ - Jacking variant with stabilizing jacks within the vehicle profile on both sides.
- Activates push button for re-entering the extendible front outriggers.
- 14  Push button "Jack activation" ⇒ press for activating the controls of extendible front stabilizers and outriggers cylinders
Permanent light: outriggers' control is enabled
- 15  Free ⇒ without function
- 16  Push button "Full jacking" ⇒ - Jacking variant with front stabilizing jacks extended horizontally on the left and right.
- Activates push button for extending the extendible front outriggers.



ATTENTION

Please refer to chapter 8 for a full description of the functionality of each button. The operators and maintenance staff must read this manual before using the machine and before making any maintenance operation.

DISPLAY

When is visible the below screen, the available functions are:

- lifting of booms,
- start/stop combustion engine.

Center position of turret for place the booms in rest position



This message indicates that boom functions are activated

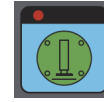
During the use of platform on first line of screen could appears a "Warning Message" following a not correct use or a "Alarm Message" on malfunctioning of platform devices:



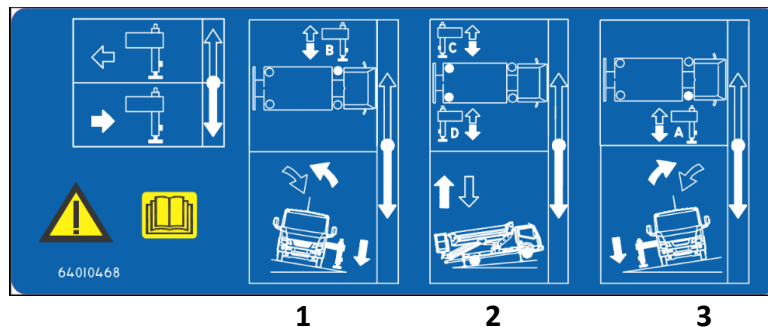
ATTENTION

For a detailed description, see "Description of the ALARMS and WARNINGS messages" in appendix to this manual.

6.6 DESCRIPTION OF HYDRAULIC CONTROLS OF STABILIZERS (EMERGENCY PROCEDURE)



In normal operating condition, press the Push button “Jack activation” (1) and simultaneously operate on outriggers’ levers (1,2,3) for stabilizing the platform.



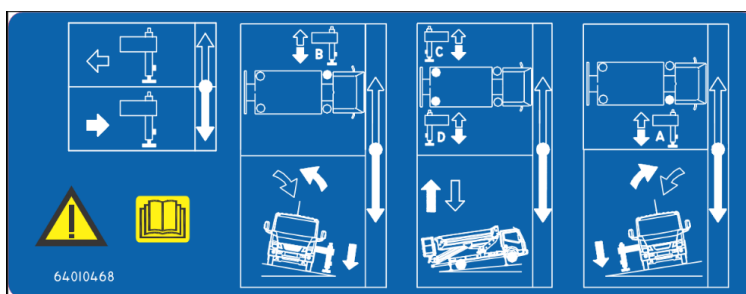
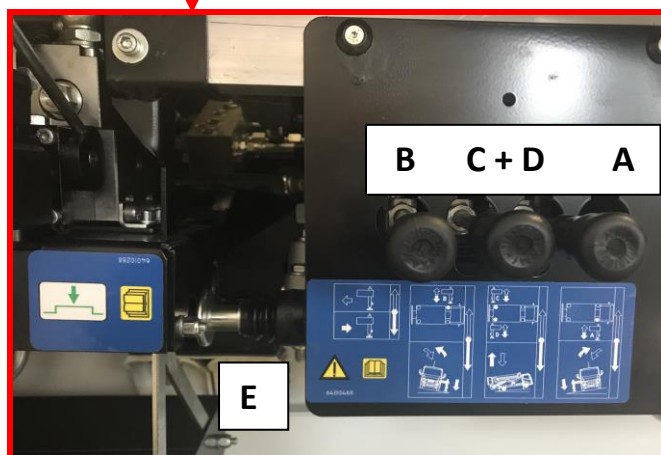
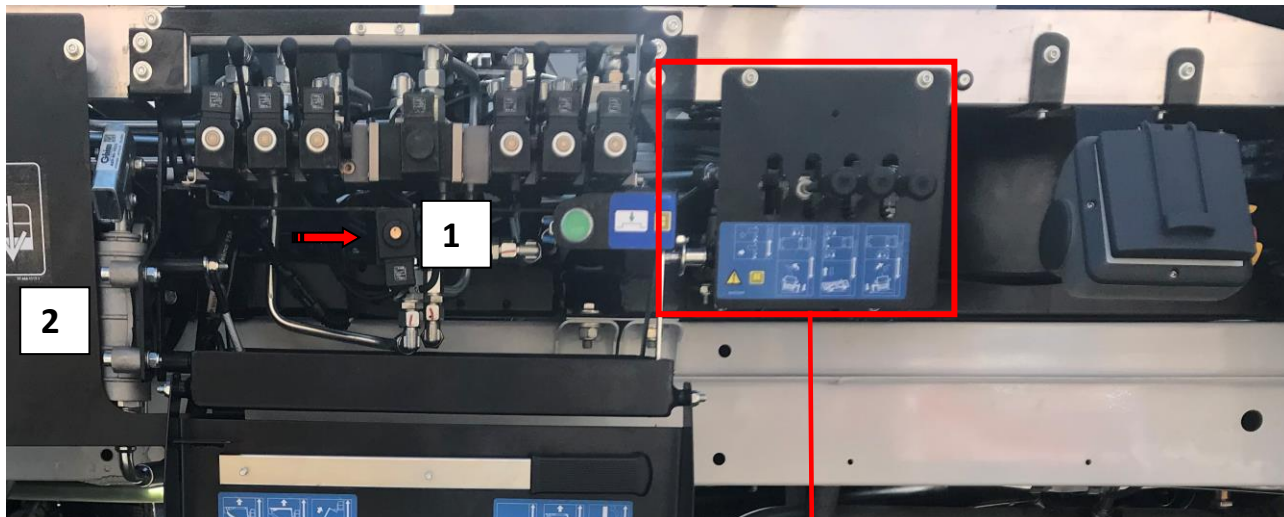
- 1. Lever to control the stabilizer B: front left
- 2. Lever to control the stabilizers C+D: rear left and right
- 3. Lever to control the stabilizer A: front right

In case of an emergency, open the emergency compartment located on the right side of platform:



In case of failure of the combustion engine, operate the manual pump and follow this procedure:

- Press the cursor (1) of the solenoid valve with a screwdriver or any other object
- simultaneously operate the manual pump (2) and outrigger functions' levers (A, B, C+D) until the outrigger are completely closed. Close the cross-members of the front stabilizers, activating the specific lever (E). Pull the lever out and move forward or backward to retract or extract the cross members of front stabilizers. Before operating the manual pump it is necessary to fit the handle supplied to its seat on the pump. Pump with power.



6.7 DESCRIPTION OF HYDRAULIC CONTROLS OF BOOMS (EMERGENCY PROCEDURE)

All machines are fitted with an emergency lowering system. The person who has the job of being the operator at ground must be a trained person, particularly as to the emergency and rescue works (to help the operators in basket). It is necessary for him to know the location and function of the controls and to avoid acting instinctively not to cause other damages. He will have to carefully consider the situation to take the basket back to ground.

ORIGINALE

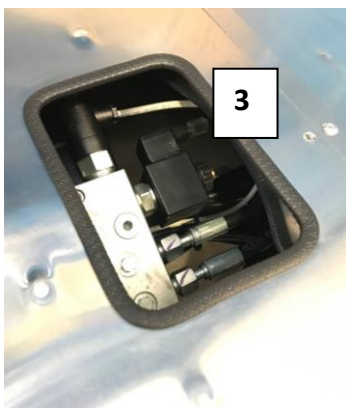


Window to access the emergency valve (3)

Emergency compartment

Should it become necessary to carry out such procedure, open the emergency compartment located on the right side of platform, and if vehicle's engine runs, push the green dead-man button (1) and simultaneously operate boom functions' levers (A, B, C, D, E, F) until the machine is completely lowered.

In case of failure of the vehicle's engine, operate the manual pump (2) and simultaneously boom functions' levers (A, B, C, D, E, F) until the machine is completely lowered. Before operating the manual pump, it is necessary to fit the handle supplied to its seat on the pump. Pump with power. For lowering the main boom remove the seal cup and push on the below emergency valve (3) and simultaneously act on lever B.



- 1. Dead man button (green button)
- 2. Hand pump
- 3. Emergency valve

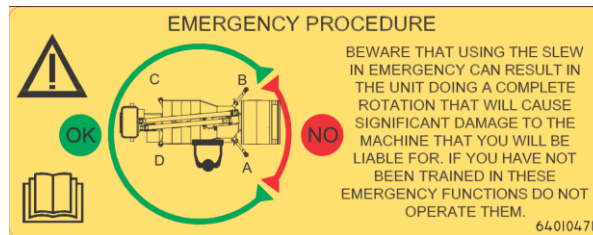
- A. Lever to control the lower boom: if it is activated onward, the boom lifts; if it is activated backward, the boom lowers
- B. Lever to control the main boom: if it is activated onward, the boom lifts; if it is activated backward, the boom lowers
- C. Lever to control the telescopic boom: if it is activated onward, the boom extracts; if it is activated backward, the boom retract
- D. Lever to control the basket rotation: if it is activated onward, basket rotates clockwise; if it is activated backward, basket rotates anticlockwise
- E. Lever to control the Jib: if it is activated onward, the boom lifts; if it is activated backward, the boom lowers
- F. Lever to control the turret rotation: if it is activated onward, turret rotates clockwise; if it is activated backward, turret rotates anticlockwise

**ATTENTION**

BEFORE USING THE PLATFORM ENSURE THAT THE SEALS ARE PRESENT ON EMERGENCY VALVES. IN ABSENCE OF SEALS IS FORBIDDEN TO USE THE PLATFORM. CONTACT IMMEDIATELY AN AUTHORIZED SERVICE CENTER

**ATTENTION**

Beware that using the slew in emergency can result in the unit doing a complete rotation that will cause significant damage to the machine that you will be liable for. If you have not been trained in these emergency functions, do not operate them.



ATTENTION: Make these retraction manoeuvres carefully, for not to cause the basket overturning.



ATTENTION: At the end of these emergency works and after having taken the operators back to ground, contact the Service Department immediately.



ATTENTION: At this point, the aerial platform must not be used till all safety and working conditions are rested; the controls must be taken back to their starting conditions, the box door must be locked and its key must be at disposal of the service staff.

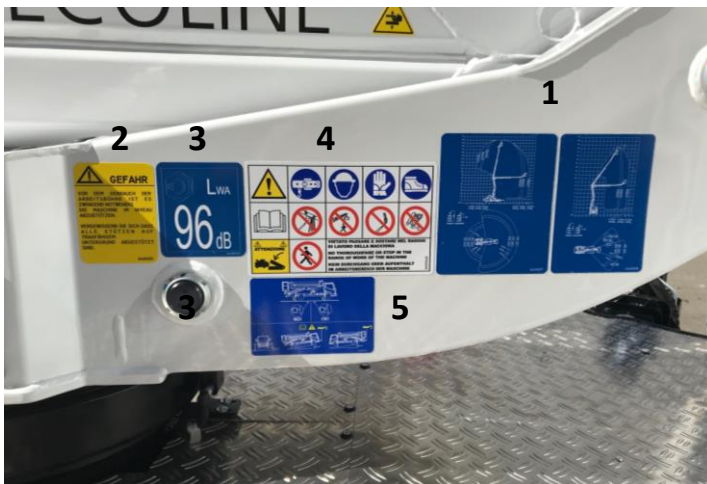
7. INSTRUCTION PLATES FOR OPERATION AND USE OF THE MEWP

There are basically two types of plates found on the machine:

- the ones with a YELLOW background indicate DANGER, WARNING
- the ones with a BLUE BACKGROUND indicate OBLIGATIONS, RULES, PROHIBITIONS, INFORMATION

7.1 INSTALLATION AND POSITIONING OF PLATES ON CHASSIS AND TURRET

A-Turret/Booms



1. Working diagrams
2. Warning decals on stabilization procedure
3. Label "Sound Emission"
4. General Warnings (Obligations and Prohibitions)
5. Attention: stabilize correctly the platform before use



6. Emergency controls
7. Emergency lowering procedure
8. Main operating instruction



WARNING SYMBOL: DANGER OF HANDS BEING CRUSHED



WHEN IN A RAISED STATE, THE DRIVER'S CABIN MUST BE EMPTY AND REMAIN FREE OF LOADS. THUS, WHEN THE FRONT AXLE IS RAISED, IT IS PROHIBITED TO REMAIN IN THE DRIVER'S CABIN! ADDITIONAL LOAD IN THE DRIVER'S CABIN OR ADDITIONAL LOADS OR ATTACHMENTS ON THE DRIVER'S CABIN ARE ALSO PROHIBITED! THE FRONT STEPS MUST NOT BE USED!



ACCESSING THE SURFACE IS PROHIBITED!
NOT ALLOWED WALKING ON ALUMINUM DECK



USE OF HIGH-PRESSURE CLEANER, WATER OR STEAM JET, ETC. IS PROHIBITED!

B- Outrigger



- A. Letter identifying each outrigger
- B. Warning symbol – danger of feet being crushed under stabilizers
- C. Symbol indicating pressure exerted by stabilizer on ground

C- Basket



1. Max load capacity in basket



- 2. General Warnings (Obligations And Prohibitions)
- 3. Working Diagram
- 4. Main Operating Instructions

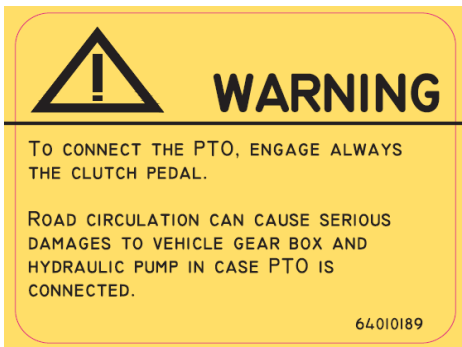


5. Attention “Falling down”

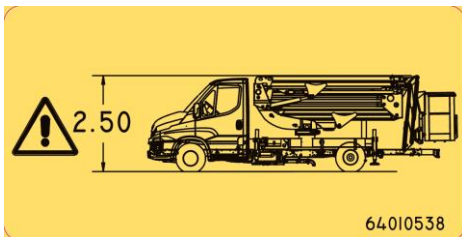
D- Cabin



Control Panel in vehicle cab



WARNING – Connect the PTO



WARNING – MAX HEIGHT of PLATFORM while driving

8. MAIN PHASES FOR USE

The main phases for the use of the aerial platform are the following ones:

- 8.1. Setting to action
 - 8.2. Stabilization
 - 8.3. Access to the basket and use of the controls
 - 8.4. Platform re-entering
 - 8.5. Stabilizer retraction and stop of the machine
- Below the description of each phase.

8.1. SETTING TO ACTION

Put the vehicle in order to be able to reach the working place and check the firmness of the ground where you have to stabilize the machine, paying great attention to be well levelled and to avoid any hole and manhole.

From the vehicle cabin do as follows:

1. Start the engine of the vehicle and apply the hand brake,
2. Press the clutch pedal,
3. Turn on the engagement/disengagement button and keep it pressed until the clutch pedal can be completely released (1-2 seconds).
The correct engagement/disengagement must be confirmed by the turning on or off of the **red lamp « PTO »**.
4. Active the rotation beacon on the cab by means of the selector on the controls in vehicle cab. Its symbol is:



ATTENTION

The correct engagement of PTO and activation of Platform must be confirmed by the turning on of the orange lamp on front outriggers. If the orange led is not active, check the hand brake and pull it fully. Repeat the procedure.



DANGER

Keep RPM within the values indicated, not to cause defects or dangerous damages to the working.



WARNING

If PTO is inserted and you release the hand brake, the vehicle switches off.

Once done this, you can do stabilization

8.2. STABILIZATION



DANGER

Before stabilization, check the firmness of the ground. In case of soft or slippery ground, adopt all necessary devices to make it firm and safe.

Before extending the jacks of the Ruthmann-ECOLINE the working range and the correspondingly necessary supporting basis must be fixed. The following jack base positions are e.g. possible:

- a) **full extension of stabilizing jacks:** all jack arms are completely extended horizontally.
- b) **extension of jacks on both sides within vehicle profile (OPTIONAL):** the jack arms remain completely retracted on both sides in horizontal position.

The jack arm must either completely be extended horizontally or completely be retracted horizontally. Intermediate positions for the horizontal extension are forbidden. The computer control recognizes, in relation to the degree of extension of the jack arms and the interrogation of the ground-contact of the jack-cylinders, the working range permissible for that jacking situation.



IMPORTANT

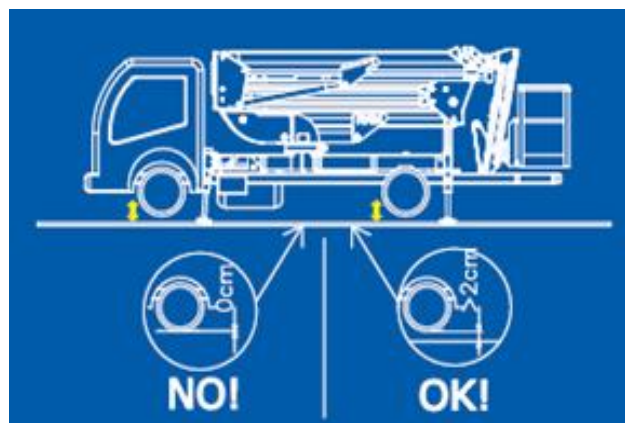
- The jack plates must have horizontal contact with the ground and must not jam. They must be freely moveable during positioning procedure.
- The ECOLINE must not be able to slip.
- In case of insufficient jack stroke the jack plates must be supported accordingly.
- The jacks have to be extended at least until the boom movement is released by the main control. All jacks must have ground contact.
- The inclination of positioning of the ECOLINE must be controlled by means of the levelling indicator. The permissible inclination of positioning must not be exceeded.



IMPORTANT

For the working ranges with “full jacking”, or “jacking within the vehicle profile on both sides” the wheels of the vehicle must be discharged and free of load, that means: the wheels must have left the ground (ground clearance).

The vehicle is well set when the 4 wheels are lifted from ground. For a correct stabilization, you should always lift the wheels from the ground even if for few centimetres. When the platform is stabilized, the contact of the wheels with the ground results in a reduction of the stability of the platform.



The **orange led** is on when the control of lower part of platform is activated and there are the following conditions for controlling the outriggers:

- boom in rest position,
- the outriggers functions are active,
- there is not any malfunctioning of platform that could block all outrigger functions (... as breakdown of a micro switch on stabilizer). In case of a malfunctioning, the led is off and an alarm message appears on the display. If led is off and there is not any alarm message on display, the operator has to check the previous conditions.



For a correct stabilization, do as follow:

A) FULL JACKING

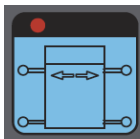
By means of the push-button “Jack activation”, the controls of extendible front stabilizers and outriggers cylinders are activated



Actuate push button “Jack activation” (keep depressed, a sound alarm starts after a few seconds).

Permanent light: outriggers’ control is enabled

By means of the push-button “Full jacking” all front stabilizing-jack-arms are extended together horizontally.

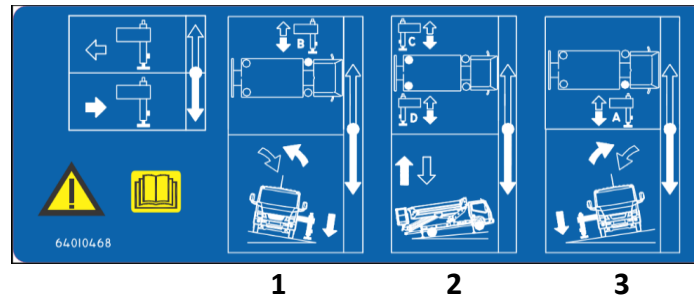


Actuate push button “Full jacking” (keep depressed, the movement starts after a few seconds).

As soon as full horizontal extension is completed, act on the levers of outriggers for correctly leveling the platform.



ORIGINALE



1. Lever to control the stabilizer B: front left
2. Lever to control the stabilizers C+D: rear left and right
3. Lever to control the stabilizer A: front right

Action:

- Operate levers 1 and 3 at the same time to extend the front outriggers and lift the front part of the vehicle off the ground
- Actuate lever 2 to simultaneously set the rear outriggers until the platform is leveled
- Press lever 1 or 3 to correct the side axle of the vehicle, if necessary

Push again the button "Jack activation"; the controls of extendible front stabilizers and outriggers cylinders are deactivated

**ATTENTION**

There are three phases to stabilize the machine correctly:

1. Lower the four stabilizers towards the ground
2. Simultaneously lift the two stabilizers that are on the downhill side
3. Simultaneously lift the two stabilizers on the opposite side until the machine is level

**IMPORTANT**

The inclination of the ECOLINE must at all events be controlled by means of the levelling indicator! The permissible inclination of positioning must not be exceeded.

B) JACKING ON BOTH SIDES WITHIN VEHICLE PROFILE

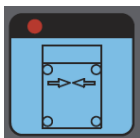
By means of the push-button "Jack activation", the controls of extendible front stabilizers and outriggers cylinders are activated



Actuate push button "Jack activation" (keep depressed, a sound alarm starts after a few seconds).

Permanent light: outriggers' control is enabled

By means of the push-button "Minimum jacking" all front stabilizing-jack-arms drive in horizontally.



Actuate push button "Minimum jacking" (keep depressed, the movement starts after a few seconds) for re-entering the extendible front outriggers or to ensure that all stabilisers are fully retracted

Act on the levers of outriggers for correctly leveling the platform following the instructions written in the previous paragraph.

Push again the button "Jack activation"; the controls of extendible front stabilizers and outriggers cylinders are deactivated

**IMPORTANT**

The inclination of the ECOLINE must at all events be controlled by means of the levelling indicator! The permissible inclination of positioning must not be exceeded.

8.3. ACCESS TO THE BASKET AND USE OF THE CONTROLS



ATTENTION

The operators must stay by their control's stations: one or two in basket to act the platform, one at ground next to emergency controls.



DANGER

During the use of the platform, it is not allowed to place weights or the person in the cabin.

For access to the basket and use of the controls, act as follows:

1. Load the necessary tools and pay attention not to exceed the weight indicated on the plate and technical data.
2. Put on the individual safety devices (safety belts, helmet, etc...).
3. Access to the basket control panel.
4. Close the door and hook the safety belt to its attachment.
IMPORTANT: the safety belts must be "harness belts" (belts provided with harness and thigh-guard) and certified.
5. Check that the operator at ground is at the emergency control panel.
6. Lift the main boom from its rest position.



DANGER Make this manoeuvre as first. Not make any other manoeuvres for avoiding damages.

7. Act the controls to reach the position you need to work:
 - move joystick into the direction of the inscription of the desired movement;
 - the speed of the movements is controlled over the angle of deflection;
 - For stopping the movement put back the joystick in the neutral position



Control lever for ECOLINE-movements:

LEFT-HAND JOYSTICK



Function key
RAISE BOOM

Description
↑ - Lifts up the boom.



LOWER BOOM

↓ - Lowers the boom.



SWIVEL BOOM LEFT

← - Swivels the boom (tower) to the left.

ORIGINALE



SWIVEL BOOM RIGHT

→ - Swivels the boom (tower) to the right side.

RIGHT-HAND JOYSTICK

Function key

Description



RAISE PANTOGRAPH BOOM

↑ - Lifts up the boom.



LOWER PANTOGRAPH BOOM

↓ - Lowers the boom.



TELESCOPE IN

← - Moves the telescope in.



TELESCOPE OUT

→ - Moves the telescope out.



RAISE JIB BOOM

→ - Press first the "function key" for enabling the JIB function



- deflect the joystick to the right for moving the jib boom upwards.



LOWER JIB BOOM

← - Press first the "function key" for enabling the JIB function



- deflect the joystick to the left for moving the jib boom downwards.



Push button "**Cage rotation left**"

⇒ Rotate working cage to the left
Blinking light: the cage rotation is not allowed.



Push button "**Cage rotation right**"

⇒ Rotate working cage to the right
Blinking light: the cage rotation is not allowed.



DANGER

Make the manoeuvres slowly and carefully, especially when you work next to obstacles.

8. The **white led** is on when the control of upper part of platform is activated and there are the following conditions for lifting the booms:
- platform is stabilized and chassis is leveled,
 - the lifting functions are active,

- there is not any malfunctioning of platform that could block all boom functions (... as breakdown of a safety sensor). In case of a malfunctioning, the led is off and an alarm message appears on the display of remote control. If the malfunctioning causes the block of only a part of lifting movements, the white led continues to be on. If led is off and there is not any alarm message on display, the operator has to check the previous conditions and if the emergency compartment located on the right side of platform is open.



GO HOME (OPTION)



Depress push button **“Basic position”** and deflect the left-hand joystick to the rear for moving the ECOLINE into the rest position automatically. The basic position is moved into automatically as long as the above-mentioned joystick is deflected.

AUTOMATIC CENTER POSITION OF TURRET

The automated positioning aid makes it possible to bring the boom easily into its centre position in order to facilitate lowering of the boom into its boom rest.

Before closing the machine for the transport, it is necessary to put the turret in the center position. When operator turns the turret and it arrives closed to the center position, the software automatically stops the rotation for few second, giving the signal that it is possible to lower booms for rest. Otherwise, if you want to continue the rotation, move the joystick rightward or leftward.

When the tower is in the central position, the following pictogram is displayed:



ATTENTION

When the boom is in rest position, but the turret is not in center position, the white led is on and the orange led flashes.

AUTOMATIC START & STOP of engine



On RUTHMANN ECOLINE, it is possible to active the **Automatic Function of “Start & Stop” of the petrol engine** for optimizing the consumption of the petrol and the pollution.

During your working, if you do not make any movement after 30-40 sec. the system switch off the engine automatically; but it is enough to move again a joystick on the basket control box for starting again the engine.

If you switch off the engine by the ON/OFF switch placed on the remote control, you deactivate this function.

When this function is active, on the display there is the message **“S & S”**:



The procedure for activating/deactivating this function is:



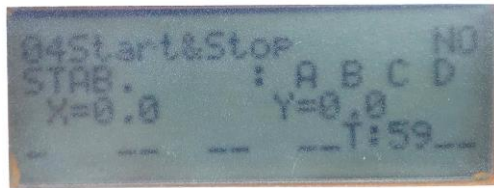
1- Depress both push button "Display up" and "Display down" for 3 sec for going in "MENU MODE":



2- Depress push button "ENTER" for entering in the menu;

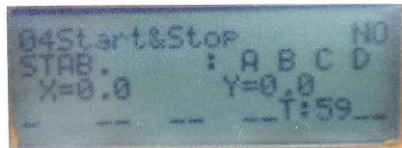


3- Depress one push one of the buttons "Display up" or "Display down" until you see the page **START&STOP**

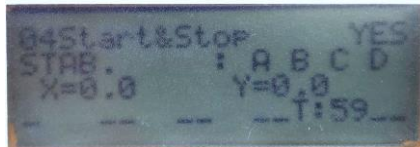


4- Depress push button "ENTER" for activating or deactivating the Automatic START&STOP:

a) **Start & Stop NO**



b) **Start & Stop YES**



5- Depress both push button "Display up" and "Display down" for 3 sec for returning on the standard visual display

8.4. PLATFORM REENTERING AND DESCENT FROM THE BASKET

For this operation do as follows:

1. Retract the extractable elements of the main boom
2. Rotate the platform till to line it up against the axle of the vehicle.
The ECOLINE platform has **the automatic center position**: When you turn the turret and you arrive closed to the centre position, the software automatically stops the rotation for few second.
3. Lower the JIB-boom, the main boom, the pantograph boom and rest it on its support.
4. Get off the basket and make sure no objects are within it.
5. Reenter the stabilizers (see next paragraph) or stop the engine for a temporary stop. In this case disconnect PTO, remove the key from the dashboard and close the vehicle cab in order to avoid the access to non-authorized people.

8.5. STABILIZER RETRACTION AND STOP OF THE MACHINE

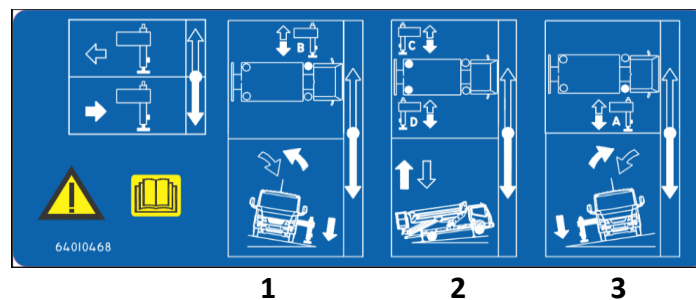
By means of the push-button “Jack activation”, the controls of extendible front stabilizers and outriggers cylinders are activated



Actuate push button “Jack activation” (keep depressed, a sound alarm starts after a few seconds).

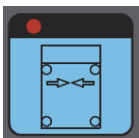
Permanent light: outriggers’ control is enabled

Act on the levers of outriggers (A, B, C+D) for destabilizing correctly the platform



1. Lever to control the stabilizer B: front left
2. Lever to control the stabilizers C+D: rear left and right
3. Lever to control the stabilizer A: front right

By means of the push-button “Minimum jacking” all front stabilizing-jack-arms drive in horizontally.



Actuate push button “minimum jacking” (keep depressed, the movement starts after a few seconds) for re-entering the extendible front outriggers.

Push again the button “Jack activation”; the controls of extendible front stabilizers and outriggers cylinders are deactivated

From the cab control panel:

1. Switch off the Rotating beacon over the cab.

2. Disconnect PTO and check if the signalling pilot light is switched off.

**WARNING**

Road circulation can cause serious damages to the vehicle in case PTO is connected. The manufacturer declines all responsibility deriving from the non-observance of this instruction

8.6. EMERGENCY OPERATIONS

The person who has the job of being the operator at ground must be a trained person, particularly as to the emergency and rescue works (to help the operators in basket).

It is necessary for him to know the location and function of the controls and to avoid acting instinctively not to cause other damages. He will have to carefully consider the situation to take the basket back to ground.

If the failure is related to a temporary trouble, which can be solved through a normal use, the operator can bring back to order the working of the MEWP; otherwise he must not use the platform and must contact the Service Department immediately.

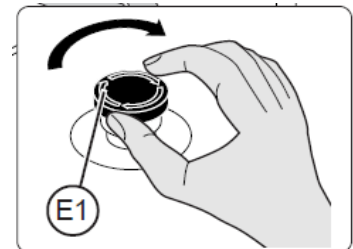
A. Intervention of emergency switch or failure of the electric system

Keeping pressed the emergency switch, the thermic engine stops; therefore, both the hydraulic power and the electric power stop.

After having reset working conditions, do as follows:

- rotate the head E1 clockwise to release the push button,
- start again the engine.

Hydraulic and electric power are active and it is possible to make all manoeuvres.

**IMPORTANT**

The MEWP cannot be used neither from basket nor from turret controls till this switch is released

In case it is not possible to release the push button (i.e.: sudden indisposition of the operator in basket), or in case you find a failure in the electric installation, the operator at ground must do the following operations:

1. Lower the lever of the electromagnetic switch, in order to disconnect the electric system of the MEWP.

**IMPORTANT**

When you disconnect the electric system of the MEWP, it is possible to start the vehicle engine

2. Start the engine of the vehicle by means of the key commutator.
3. Do the reenter manoeuvres from the distributor to take the basket back to its rest position.

Make these manoeuvres as follows (see paragraph 6.7.):

- a. Retract the extractable elements of the main boom,
- b. Rotate the platform till to line it up against the axle of the vehicle,
- c. Lower jib boom
- d. Lower main boom
- e. Lower the lower boom and rest it on its support.

**DANGER**

Make these retraction manoeuvres carefully, since all safety devices are deactivated not to cause the basket overturning

4. After having taken the platform back to its rest position, retract the stabilizer feet as indicated in paragraph 6.6.

**DANGER**

At the end of these emergency works and after having taken the operators back to ground, the aerial platform must not be used till all safety and working conditions are restored; the controls must be taken back to their starting conditions, the box door must be locked and its key must be at disposal of the service staff.

B. Failure of the thermic vehicle engine or other causes

In case there is a lack of motive power (failure of the electric or hydraulic supply), you can use the emergency hand pump to take the basket to ground.

The operator at ground must insert the lever on the hand pump then he must pump energetically top-down and makes the reenter emergency manoeuvres as described in the paragraph 6.7.

In case you should have to face a failure both hydraulic system and electric system, the operator at ground must do the manoeuvres described in the previous paragraph "Intervention of emergency switch or failure of the electric system" and use the hand pump.

**DANGER**

At the end of the emergency operations and after having taken the operator to ground, contact the Service Department immediately.

8.7. PROLONGED INACTIVITY OF THE MACHINE

In case the machine should be inactive for a long time, take the following measures:

1. do a general cleaning
2. check all machine members and – if necessary – replace them
3. lubricate all machine members provided with lubricator
4. disconnect the battery
5. park the vehicle in a well-sheltered place
6. make an antirust treatment on the non-painted parts
7. protect the cylinder chromed parts by means of a proper grease

8.8. CORRECTION OF THE BASKET LEVELING**DANGER**

Do the basket levelling with boom in rest position and without materials in the basket.

Procedure:

1. stabilize the platform
2. lift the main boom for having approximately an angle of 2° (no more)
3. Depress the bottom "Basket Levelling" and simultaneously depress the function key "Cage rotation right" (the working cage moves upwards - cage up) or "Cage rotation left" (the working cage moves downwards - cage down) until you have corrected the level of the basket



!!! DURING THIS PROCEDURE THE MOVEMENT IS VERY SLOW!!!



ATTENTION: CARRY OUT THE CORRECTION OF THE BASKET LEVELLING WITH CARE AND WITHOUT MATERIAL IN THE BASKET.



ATTENTION: IT IS OBLIGATORY TO LEVEL THE BASKET BEFORE TO USE THE PLATFORM.



ATTENTION: NOT MOVE ANY BOOMS IF THE BASKET IS NOT WELL LEVELLED; THIS COULD CAUSE DAMEGES ON LEVELLING CYLINDERS.

8.9. RESTART THE MACHINE

Before starting the machine after a long inactive period, it is necessary to do a careful check of the main machine members and of all safety devices to make sure they all are working perfectly.

1. check the battery
2. check all levels (oil, water, fuel)
3. check the tightening of the fastening screws of the main members
4. check if there are some liquid leaks
5. check and replace damaged or worn parts
6. lubricate all greasing parts
7. check the hydraulic tube conditions
8. check the efficiency of all safety devices
9. check the working of all controls and pilot lights
10. do the necessary maintenance operation
11. do a general clearing of platform

8.10. CRITICAL ENVIRONMENTAL CONDITIONS

Cold climate (temperature lower than 5°C)

- use hydraulic oil and lubricants (they must be suited to temperature)
- make sure of the battery state
- before use, move the platform for some minutes (about 15) from the emergency control panel (nobody must be within the basket), in order to heat the oil.

Hot climate (temperature higher than 35°C)

- use hydraulic oil and lubricants (they must be suited to temperature)
- make sure of the battery state

Dusty environments

- keep clean the rods of the cylinders and the extractable parts of the telescopic boom
- lubricate frequently the lubricators on the articulated joints
- check frequently the filters of the hydraulic system

8.11 OTHER FUNCTION FROM REMOTE CONTROL

SELECTION OF LANGUAGES: it is possible to choose the language of messages that should appear on display. The possible languages are English (EN), Italian (IT), German (DE), French (FR) and Spanish (ES). For selecting the languages follow this procedure:



1- Depress both push button "Display up" and "Display down" for 3 sec for going in "MENU MODE":

ORIGINALE



2- Depress push button "ENTER" for entering in the menu;



3- Depress one push one of the button "Display up" or "Display down" until you see the page **LANGUAGE**:



4- Depress push button "ENTER" for selecting one of the 5 Language (EN, IT, DE, FR, ES)



5- Depress both push button "Display up" and "Display down" for 3 sec for returning on the standard visual display

9. MAINTENANCE

9.1. GENERAL ADVICE

INTRODUCTION

- By periodical maintenance we mean the work that needs to be carried out regularly during the machine's entire life.
- We are certain that accurate maintenance and control will allow the machine to operate with continuity and maximum efficiency – we will summarise a series of operations, bearing in mind that rapid intervention on any worn part will prevent greater damage and reduce the MEWP's downtime.
- Other work that is not dealt with in this section is to be regarded as special maintenance work and, therefore, does not form part of the tasks assigned to the operators of the MEWP; this type of maintenance work must be carried out in a specialised workshop.
- All maintenance work must be carried out when the machine is not in operation, i.e. with the engine off, the power off and the machine in resting mode.
- Used liquids and lubricants must be disposed of according to current laws as they are harmful to the environment.
- A few pages have been added to this manual for the maintenance operator to write down the work that has been carried out and the machine's working hours – these can be calculated using the hour-meter on the ground control panel.

SAFETY DURING MAINTENANCE

- Before any maintenance operation, activate all safety devices and inform the staff. Signal the surrounding area properly and prevent the access to non-authorized people.
- Use equipment or tools that are suitable for the type of work to be carried out
- Only personnel that is qualified and authorised to carry out maintenance work should be present in the maintenance areas/rooms.
- Replace worn parts by means of genuine spare parts. To have a good working and safety, use the oils and greases suggested by the manufacturer.
- It is forbidden to carry out modifications or replacements with unsuitable components and without RUTHMANN ITALIA Srl's approval.
- When the machine is washed, take care to protect the electrical control panels and the combustion engine's starter battery with suitable covers to prevent water from getting inside.



WARNING

Do not disperse pollutant liquids, used parts and maintenance remnants. Dispose of them respecting the rules in force.

9.2. TABLE SHOWING THE MAINTENANCE INTERVALS



IMPORTANT





Keeping the machine in perfect condition by means of the periodic maintenances suggested by the manufacturer, enables you to obtain good performances, a long life and a good working of the safety devices.

Frequency	Component	Type of work	Action	Paragraph
Every day (every 10 hours)	Structures and main groups	Check integrity		
	Hydraulic unions	Check oil leaking	Tighten the unions	
	Fixing elements	Check tightening	Tighten the elements	9.9
	Flexible pipes	Check oil leaking	Replace	
	Pilot lights	Check working		
	Start-Stop engine device	Check working	Rotate selector	

ORIGINALE

	Emergency stop switch	Check working	Press switch	
	Stabilizer movement device	Check working		
	Operating pressure	Check pressure	Check pressure gauge	
	Oil tank	Check level	Add if necessary	9.7
	Fuel tank	Check level	Add if necessary	
Every week (every 50 hours)	Flexible pipes and cable carrier chain	Check wear	Check leaking and damages	
	Safety and information and signals	Check integrity and legibility	Clean or replace	
	Screws and bolts	Check tightening	Tighten the screws	
	Battery	Check liquid	Add some liquid or replace battery	
Every 3 months (every 300 hours)	Fuses	Check working	Replace	
	Machine greasing points	Lubrication		9.5
	Extractable elements	Lubrication		9.4
	Max valve	Check working	Contact an authorized workshop	
	Lock valves on cylinders and hydraulic actuators	Check working	Contact an authorized workshop	
	Rotating system	Check working	Contact an authorized workshop	
	Cartridge oil filter	Check obstruction	Replaced if obstructed	9.12
	Optical level	Check working	Contact an authorized workshop	
Every 6 months (every 600 hours)	Electrical elements	Check working	Replace if necessary	
	Micro switch and safety sensors	Check working	Contact an authorized workshop	
	Reduction gear	Check oil level	Add if necessary	
	Controls	Check working	Contact an authorized workshop	
	Boom regulation	Check slack	Regulate	9.7
	Sliding blocks	Check wear	Replace if necessary	9.8
	Rubber-metal-plastic components	Check working	Replace if necessary	
Every 12 months (every 1200 hours)	PTO and hydraulic pump	Check fixing and working	Contact an authorized workshop	
	Moment limiting device	Check working	Contact an authorized workshop	
	Hydraulic cylinders	Check rods	Contact an authorized workshop	
	Structure and main groups	Check integrity and safety	Contact an authorized workshop	
	Retraction chains	- Check the pre-tension of the retraction chains - Check the chains for surface corrosion and joint corrosion	Contact an authorized workshop	
	Reduction gear	Replace oil	Contact an authorized workshop	
Every 24 months (every 2400 hours)	Hydraulic oil tank	Replace oil	Contact an authorized workshop	

9.3. LUBRICANT AND HYDRAULIC OIL TABLE

Group	Lubricant/Hydraulic oil	Symbol
Joints	MOBILBREASE MP	
Extractable elements	ESSO BEACON EP2	
Oil tank	ESSO INVAROL EP68 oppure AGIP ATF D	
Reduction gear	ESSO GLYCOLUBE	

9.4. LUBRICATION OF THE ETRACTABLE ELEMENTS

- **To lubricate the extractable parts of the boom**, you have to extend the boom to its max extension and grease all sides by means of a brush; besides it is necessary to grease the traction chain too.
- **To lubricate the extractable parts of the stabilizers**, you have to extend the cross-member of front stabilizers to their max extension and grease all sides by means of a brush.
- **To lubricate the fifth wheel**, grease by means of a grease pump.



DANGER

Lubricate only when the engine is off, to avoid any squashing of your limbs.



WARNING

Use oils and greases indicated in the table.

9.5. LUBRICATION PLAN

After having done a general cleaning of the machine, it is necessary to grease in the junction points where there is lubricator with red cup by means of a grease pump every 300 hours.



DANGER

Lubricate only when the engine is off, to avoid any squashing of your limbs.



WARNING

Use oils and greases indicated in the table.

9.6. MACHINE CLEANING

Before any lubrications and greasing, it is necessary to do a general cleaning of the machine. The operators must wear their protective garments.



DANGER

Do not clean the machine when it is connected to the supply mains (220 volt)



WARNING

Do not turn the jet of water towards the controls and the electrical components, in order to avoid any damages.

WARNING

Use only authorized - inflammable – no-toxic solvents.

9.7. CHECK OIL LEVEL

Check oil level keeping the machine at its transport position and on a level ground. Check oil level on the level indicator (oil tap bar). If necessary, fill up with indicated oil.



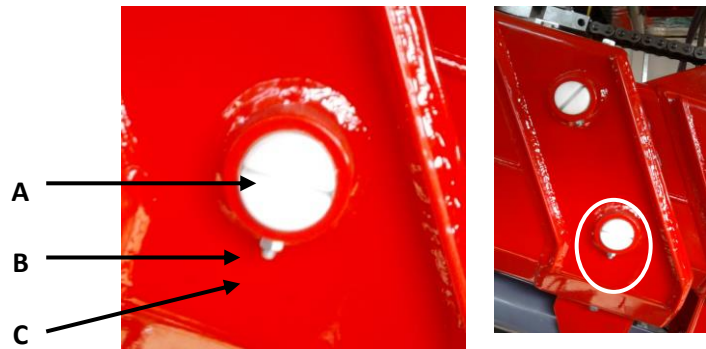
WARNING
Do not disperse pollutant liquids.

9.8. REGULATION OF THE ADJUSTABLE PLUGS

There are some adjustable plugs on the heads of the extractable parts, where some ertalon sliding blocks are located (they keep the extractable parts during extraction).

To adjust, do as follows:

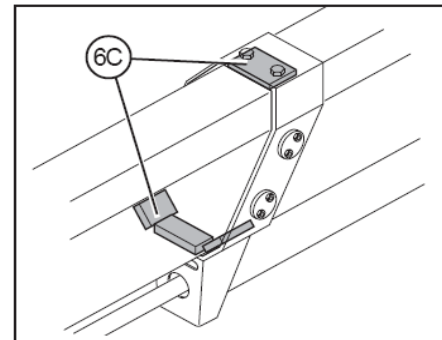
1. unscrew nuts B and unloose dowels C.
2. rotate plugs A to adjust.
3. screw dowels C and nuts B.



9.9. WORN OF THE SLIDING BLOCKS

Sliding blocks 6C are fixed to the extractable parts by means of proper screws.

Replace these screws when they touch the extractable parts because of wear of sliding blocks.



9.10. CHECK SCREW TIGHTENING

Check all fixing elements of machine members by means of a dynamometric key and respect the tightening couples indicated in the following chart.

SCREW DIMENSIONS	TIGHTENING MOMENTS (Nm) - Fiction coefficient 0,14		
	Class 8.8	Class 10.9	Class 12.9
M12x1,25	90,6	127	153
M12x1,75	84,8	119	143
M14x1,5	143	202	242
M14x2	135	190	228
M16x1,5	214	302	362
M16x2	205	288	246
M18x1,5	308	434	520
M18x2,5	283	398	478
M20x1,5	431	607	728
M20x2,5	400	562	674

9.11. MICROSWITCHES AND SAFETY SENSORS

Check the following parts:

- Check integrity
- Make sure nor water neither humidity is within contacts
- Check the fixing
- Check the working

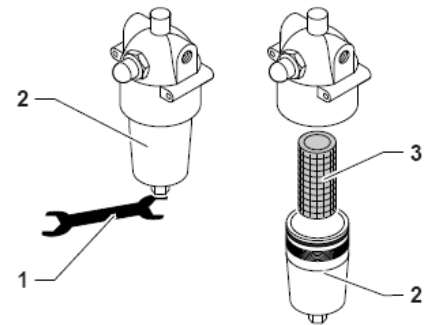


DANGER
In case of failure, repair or replace.

9.12. REPLACEMENT OF THE FILTER CARTRIDGE

Replace the cartridge as follow:

- a. Check key **1** and unscrew filter wrap **2**.
- b. Extract cartridge **3**.
- c. Wash the filter wrap by means of solvent liquid.
- d. Insert a new cartridge.
- e. Screw filter wrap **2**.



WARNING
Do not disperse pollutant liquids, used parts and maintenance remnants. Dispose of them respecting the rules in force.

9.13. MEWP DEMOLITION

The MEWP demolition must be done by an authorized staff, who can disassemble and separate the components according to their nature. The materials must be delivered to recyclable-waste collection centres, in order to enable the separation and treatment of the polluting substances, according to the rules in force in your country.

10. ELECTRIC DIAGRAM

11. HYDRAULIC DIAGRAM

12. WARNINGS

- repairs and maintenance operations are to be carried out by trained personnel only.
- make sure that the machine is completely blocked before carrying out any maintenance work.
- Before starting maintenance work on the hydraulic system with the booms raised, make sure that they are immobilized to prevent them from lowering accidentally.
- If you have any doubts or you do not understand parts of the manual, please contact our technicians at our offices.
- All the information and illustrations in this manual must NOT be distributed or used for competition.
- All rights pertaining to the royalty's law are expressly reserved.
- **WARNING:** It is strictly forbidden to modify or tamper with machine components which affect safety and which violate the safety rules issued by competent authorities.

**Any type of work that is not described in this manual must be carried out or approved and authorised by RUTHMANN ITALIA S.r.l.
Non-compliance with the above will exempt RUTHMANN ITALIA S.r.l. from any liability whatsoever concerning the MOBILE ELEVATING WORK PLATFORM.**

13. CONTROLLO REGISTER

13.1 REFERENCE TO THE NORM

This control register is issued by RUTHMANN ITALIA S.r.l. to the user of the platform, in accordance with annex I of the amended version of directive 89/392/EEC.

13.2 STORAGE INSTRUCTIONS

This control register is to be considered an integral part of the MEWP and must accompany the machine for its entire life until its final disposal.

13.3 INSTRUCTIONS FOR FILLING IN REGISTER

These instructions are supplied according to the standards in force when the platform was first marketed. New standards may come into being which may modify the user's obligations.

The register is provided to record, according to the proposed format, the following events that regard the life of the machine:

- transfers of ownership
- replacement of motors, devices, structural elements, electrical components, hydraulic components, safety devices and related components;
- serious breakdowns and relative repairs;
- periodical checks;

N.B. if there are not enough pages in this register, add the required sheets, drawn up in accordance with the format indicated below. On the additional pages, the user must indicate the type of platform, the factory serial numbers and the year of manufacture. The additional sheets will form an integral part of this register.

13.4 REGISTER FORMS

13.4.1 MOBILE ELEVATING WORK PLATFORM PROPERTIES

DELIVERY OF THE PLATFORM TO THE FIRST OWNER

The MOBILE ELEVATING WORK PLATFORM, TYPE

○ ECOLINE RS200

serial number R0211209, manufacturer year 2021 indicated in this control register was delivered by RUTHMANN ITALIA S.r.l. on 10/06/2021 to RUTHMANN HOLDING GmbH, mit Sitz in Ruthmann Str. 4, 48712 Gescher - Hochmoor (GERMANY) in accordance with the agreed-upon contractual conditions, with the technical, dimensional, and functional features specified in the instruction manual as well as in the outline of this register.

RUTHMANN ITALIA S.r.l.

SUBSEQUENT TRANSFERS OF OWNERSHIP

On _____ ownership of the MOBILE ELEVATING WORK PLATFORM forming the object of this manual is transferred to _____

_____ We affirm that, as of the above-mentioned date, the technical, dimensional and functional characteristics of this MEWP were in conformance with what was originally required and that any changes have been recorded in this register.

THE SELLER

THE BUYER

SUBSEQUENT TRANSFERS OF OWNERSHIP

On _____ ownership of the MOBILE ELEVATING WORK PLATFORM forming the object of this manual is transferred to _____

_____ We affirm that, as of the above-mentioned date, the technical, dimensional and functional characteristics of this MEWP were in conformance with what was originally required and that any changes have been recorded in this register.

THE SELLER

THE BUYER

SUBSEQUENT TRANSFERS OF OWNERSHIP

On _____ ownership of the MOBILE ELEVATING WORK PLATFORM forming the object of this manual is transferred to _____

_____ We affirm that, as of the above-mentioned date, the technical, dimensional and functional characteristics of this MEWP were in conformance with what was originally required and that any changes have been recorded in this register.

THE SELLER

THE BUYER

13.4.2 REPLACING MEWP PARTS (pumps; structural, hydraulic, electrical and safety elements)

REPLACEMENT MEWP PARTS	OF	DATE	SERIAL NUMBER	CARRIED OUT BY

13.4.3 SERIOUS BREAKDOWNS

DATE	DESCRIPTION	TYPE OF WORK	MANAGER'S SIGNATURE

13.4.4 PERIODICAL CHECKS

DATE	MACHINE HOURS	TYPE OF CHECK	COMMENTS

ORIGINALE

DATE	MACHINE HOURS	TYPE OF CHECK	COMMENTS

ORIGINALE

DATE	MACHINE HOURS	TYPE OF CHECK	COMMENTS

ORIGINALE

DATE	MACHINE HOURS	TYPE OF CHECK	COMMENTS

