C 150 H
C 150 H x4

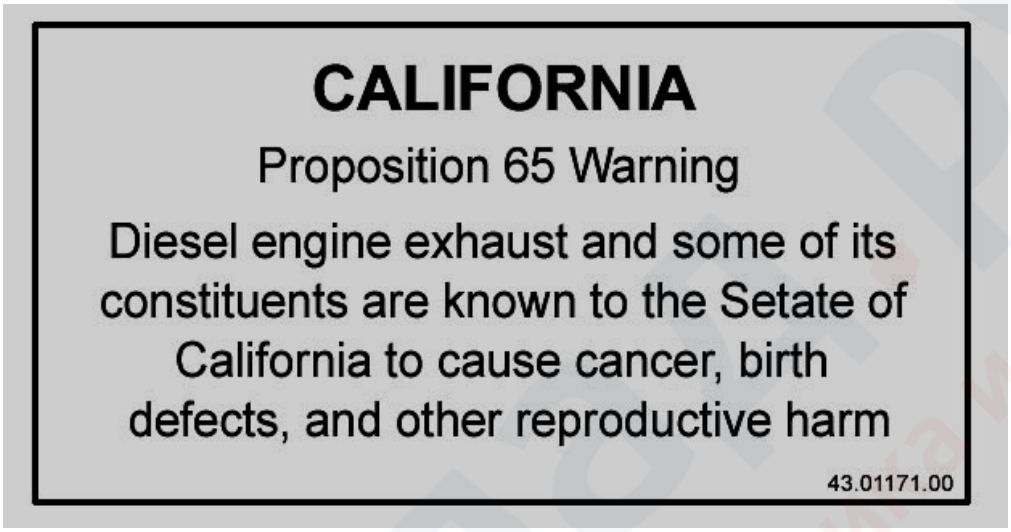
OPERATOR'S MANUAL

ENGLISH / USA

AUSA Forklift

C 150 H
C 150 H x4

USA MARKET


CALIFORNIA
Proposition 65 Warning
Diesel engine exhaust and some of its constituents are known to the Setate of California to cause cancer, birth defects, and other reproductive harm
43.01171.00


WARNING
• Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
Wash hands after handling.

Foreword

■ Thank you for choosing this AUSA Models C150H / C15H x4 Forklift. The purpose of this Operators Manual is to provide you, the user, with instructions concerning the productive, safe and efficient use of this forklift. You should read and understand this manual before operating the forklift. The Manual contains safety messages concerning the use of the forklift. Remember that "you" are the key to safety.

The Manual also contains instructions for some adjustments and for maintenance of this forklift. Follow these instructions carefully while performing routine maintenance checks and keep a record of all maintenance. As wide variations in operating conditions may be experienced, you are urged to contact your AUSA Distributor to resolve any operational or service problems.

Please have all operators of this forklift read and understand this Manual.

When not in use keep it stored on the forklift in the Manual holder box under the arm rest.

This forklift is designed and intended for off highway use. If it is temporarily operated on any public street or highway, the state and local laws governing speed, size, weight, brakes and lighting must be complied with.

For further information you may write, FAX or E-mail to:

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AUSA is continuously trying to improve the efficiency, productivity and safety of its products and reserves the right to make such improvements without incurring any obligation to make changes to forklifts previously sold.

Because of this policy of striving for constant product improvement, the specifications and operating instructions shown in this Manual may be different from prior forklift models.

Keep this manual in the hydraulic distributor hollow support. To accede to it, lean the mast forwards and turn around the cabin (fig.1)

(Fig. 1)

Table of contents

Designed uses of forklifts

■ The C150 H forklift has been designed for the lift, manipulation and transport of loads in non conditioned terrains, but in conditions guaranteeing the security of the people and the loads, using brackets or other accessories and equipment.

Any other use should be considered outside of the design use and therefore improper.

Close adherence to the operation, maintenance and repair conditions specified by the manufacturer is essential for good use of the vehicle.

Driving, maintenance and repair of the forklift should only be carried out by properly trained personnel, equipped with the necessary tools and understanding the intervention and safety procedures that apply to the forklift.

The rules of security and hygiene in the work and accident prevention must be respected for all the operations of loads manipulation, maintenance or repair. When circulating in public routes the legislation in use must be respected (Circulation Code).

AUSA will not be held responsible for any possible damages caused as a result of any modifications made to the vehicle without their express authorisation.

■ **Improper use**

Improper use is understood as the use of the forklift in a way that does not conform to the criteria and instructions of this manual and in a way that may cause harm to people or damage to property.

The following are some of the most frequent and dangerous instances of improper use:

- Transporting people on the forklift, other than the operator.
- Failing to comply scrupulously with the instructions for use and maintenance set out in this manual.
- To surpass the load limits and position of its center of gravity indicated in the corresponding loading diagrams.
- Working in unstable lands, not consolidated or in the edges of ditches and trenches.
- Working on unstable, unconsolidated ground, or on the edge of ditches and trenches.
- Using accessories and equipment for purposes other than those they are designed for.
- Using accessories and equipment other than those manufactured or authorised by AUSA.

How to identify the forklift

■ **Important!** Writes your machine Model number, date of sale, chassis and engine serial number in the spaces provided below. Give this information to your AUSA dealer when you need parts or information for your machine.

Make a record of these numbers in your files.

Model number: .....

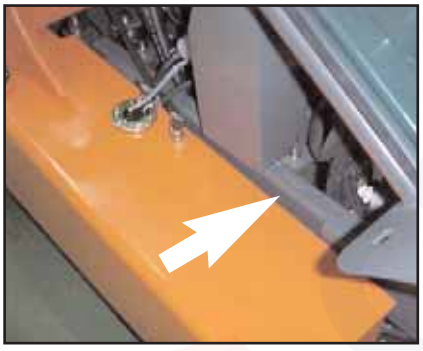
Date of sale: .....

Chassis serial number: .....

Engine serial number: .....

(fig. 1)

■ **The Vehicle Identification Plate (fig. 1)** is located at the left of the operators seat. Included the CE trademark.



(fig. 2)

■ **The Chassis Serial Number (fig. 2)** is located on the right side of the chassis.

(fig. 3)

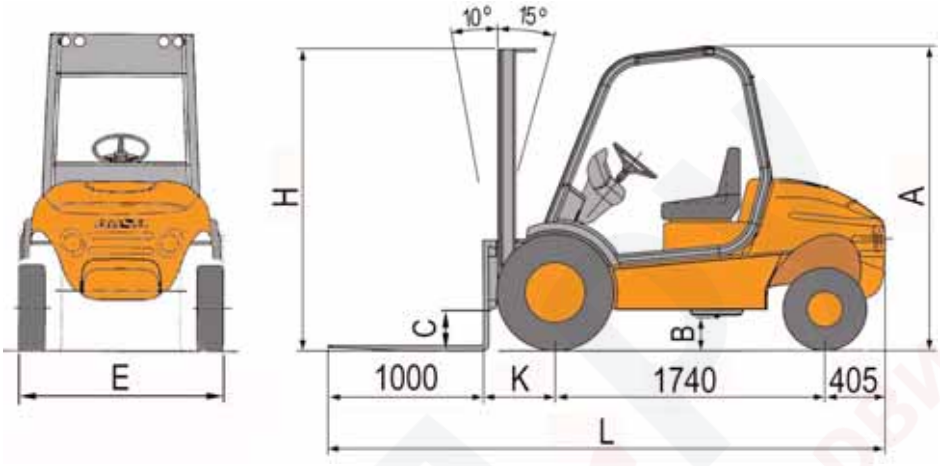
■ **The Engine Serial Number (fig. 3 and 4)** is located on the right side of the engine, underneath the exhaust manifold and also it is identified in a label on the cover of balance beams.

(fig. 4)

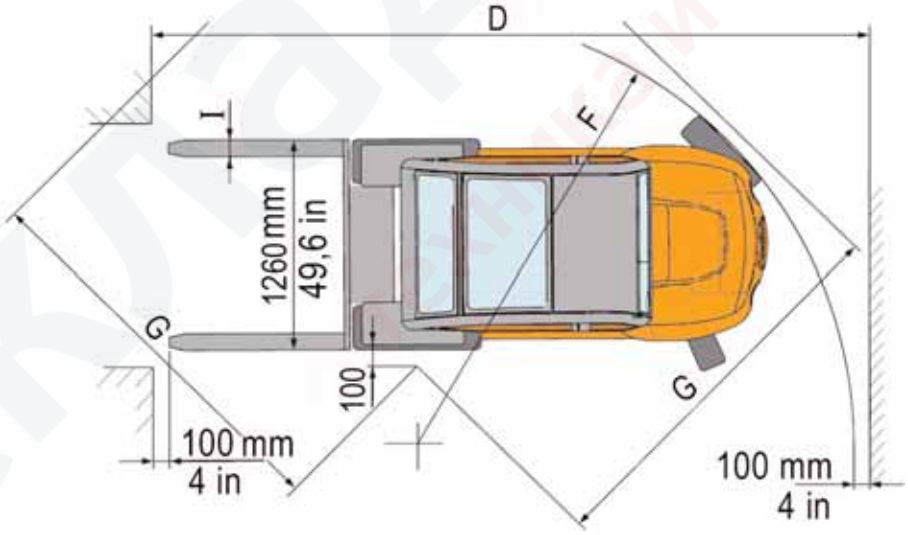
■ **Number plates of the main components.**

Number plates of all no AUSA manufactured components, (for example: engines, pumps, etc.), are located in themselves.

Specifications



■ **Aisle widths**



	MACHINE MESURES			
	C 150 H		C 150 H x 4	
	USA	UK	USA	UK
A	6,5 ft 6,4 in	1990 mm (2010 mm with lights)	6,6 ft 7,6 in	2020 mm (2040 mm with lights)
B	8,6 in	220 mm	9,84 in	250 mm
C	8,5 in	215 mm	8,5 in	215 mm
D	13,9 ftv 11 in	4250 mm	18 ft 8,4 in	5700 mm
E	4 ft 3,36 in	1305 mm	4 ft 3,36 in	1305 mm
F	8,4 ft 4 in	2550 mm	13 ft 1,4 in	4000 mm
G	7,7 ft 8,5 in	2350 mm	8,4 ft 4 in	2550 mm
I	3,94 in	100 mm	3,94 in	100 mm
J	1,38 in	35 mm	1,38 in	35 mm
K	19,7 in	500 mm	19,7 in	500 mm
L	11 ft 11,5 in	3645 mm	11 ft 11,5 in	3645 mm

Technical characteristics

■ **Diesel engine (see the engine instructions handbook)**

Kubota V1505.
31,4 CV - 30,97 HP/23.1 kW at 2600 rpm.(in accordance with DIN 6270B).
34,1 CV - 33,63 HP/25,1 Kw at 2600 rpm. (in accordance with DIN 70020).
Four cylinders, four stroke, water-cooled. Electrical starter.
Mixed radiator (water/oil)

■ **Transmission**

Hydrostatic system with variable flow pump, inching (slow approaching).
Hydrostatic motor of two speeds selected by electric switch.
Work pressure: 4641,2 PSI (320 bar)

■ **Directional control**

Forward / Backward by electric switch at the top of the joystick. When a direction is selected, the arrow lamp indicator light on.

■ **Steering**

Hydraulic powered with one double acting hydraulic cylinder on the rear axle.
Work pressures:
C 150H 2WD: 2030,5 PSI (140 bar)
C 150H 4WD: 870,2 PSI (60 bar)

■ **Exterior turning radius**

C 150H 2WD: 8 ft 6,4 in (2.600 mm)
C 150H 4WD: 13 ft 1,5 in (4.000 mm)

■ **Brakes**

Service brake. Multiple disk brakes in oil bath in the front axis of hydraulic drive.
Parking brake. Mechanical drive by cables, on the driving brake discs.

■ **Wheels**

DIMENSIONS		
	FRONT WHEELS	**REAR WHEELS**
C 150 H x2	10.0/75 - 15,3 (10PR)	6,00 - 9 (10PR)
C 150 H x4	10.0/75 - 15,3 (10PR)	23 x 8,50 - 12 (6PR)

PRESSURE		
	FRONT WHEELS	**REAR WHEELS**
C 150 H x2	74 PSI ± 7 / 5 bar ± 0,5	123 PSI ± 13 / 8,5 bar ± 0,9
C 150 H x4	72 PSI ± 7 / 5 bar ± 0,5	36 PSI / 2,5 bar

■ **Working temperature**

From 5º F to 104º F / -15ºC to 40ºC.

■ **Vibration and noise levels**

In the surroundings: Lwa= 104 dB (A); Lpa=85 dB (A)

■ **Hydraulic circuit**

A double gear pump, a body for the driving circuit and a body for the hydraulic direction connected to the transmission pump.
Two slier monoblock distributor and selective electro valve.
Work pressure: 2900 PSI (200 bar).
Maximum load lowering speed controlled by check valve.
Hydraulic tank capacity: 10,6 USGal / 8,80 UK Gal (40 liters)

Technical characteristics

■ **Electrical equipment**
Electric starter. Pre-heating spark plugs. Alternator and regulator of 20A. Battery 12 V and 70 Ah. Starter motor of 1,2 Kw. Rotating beacon. Horn.
Back-up alarm, engine oil level alarm, hydraulic oil pressure alarm, battery charge and coolant temperature alarm.

■ **Weight**
Unladen weight: 5.941,46 lb (2.695 Kg)
Maximum weight capacity: 9.248,4 lb (4.195 Kg)

■ **Standard displacer**
Bracket holder plate and brackets: Class FEM2 B.

■ **Load Capacity**
3.306,9 lb (1500 Kg) With the gravity center of the load at 19,68 in (500 mm) (consult the loads graphic).

■ **Standard mast**
Elevation: 8,7 ft (2,66 m.)
Free lift: 5,9 in (150 mm.)
Forks larger: 39 in (1.000 mm.)

■ **Hoisting speed**
With no load: 108,3 ft/min (33 m./min.) With load: 106,3 ft/min (32,4 m./min.)

■ **Lowering speed**
With no load: 59 ft/min (18 m./min.) With load: 102,3 ft/min (31,2 m./min.)

■ **Controls panel**
The controls are integrated in steering column.

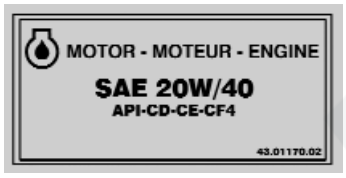
■ **Lighting (in option)**
Work lighting equipment, steering indicators, parking lights or warning.

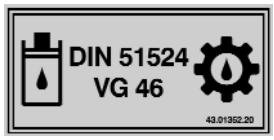
■ **Protector roof**
Built according to ISO 6055 norme.

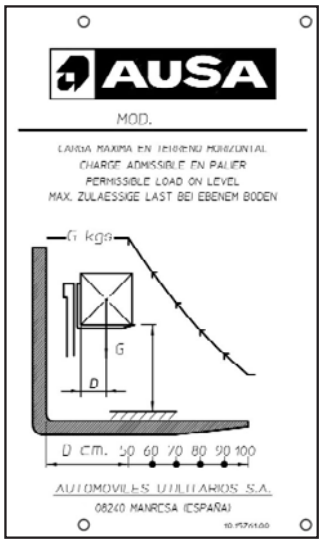
■ **Optional equipment**
Masts duplex: 10,8 ft (3,3 m), 5,9 in (150mm) of free lift and 8,5 ft (2,6 m), 3,94 ft (1,2m) of free lift.
Masts triplex: 13,12 ft (4 m) and 3,9 ft (1,2 m) of free lift.
Load protector.
Super-elastic solid whe els and flotation.
Oxi-catalytic exhaust purifier.
Metallic escape sparks quencher.
Partially closed or closed cab with heating.
Load shovels of 300 and 400 ls.
Additional hydraulic plug for implements.
Lighting system according to Spanish Highway Code.
Front laminate windshield with wiper.
Rear windshield with wiper.
4x4 Transmission.

Machine decals (UK market)

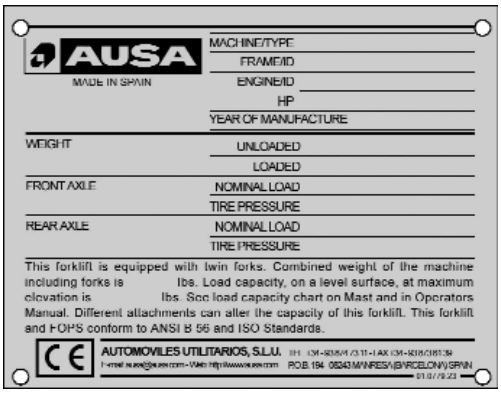
■ Information

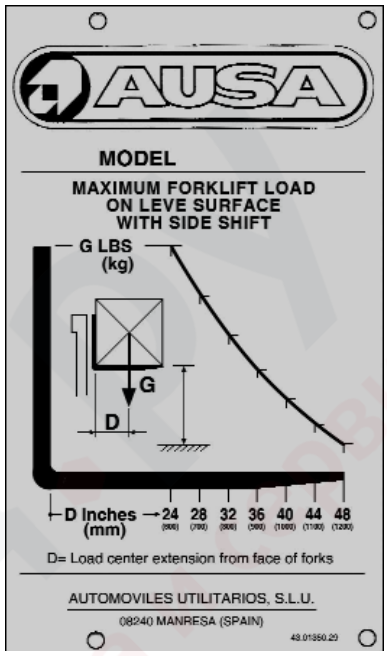


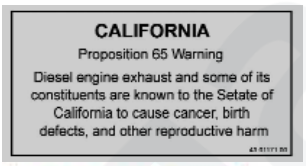


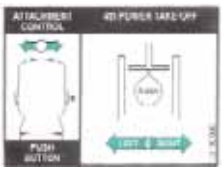


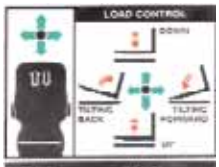
Machine decals (USA market)

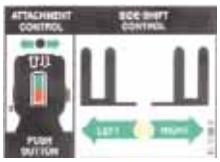


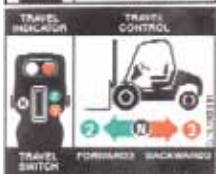




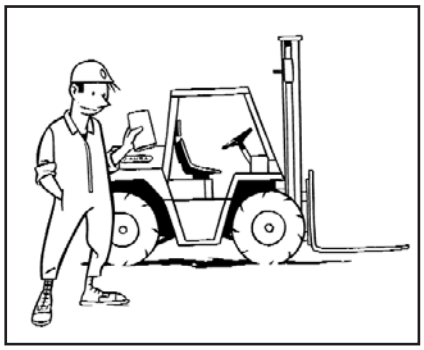




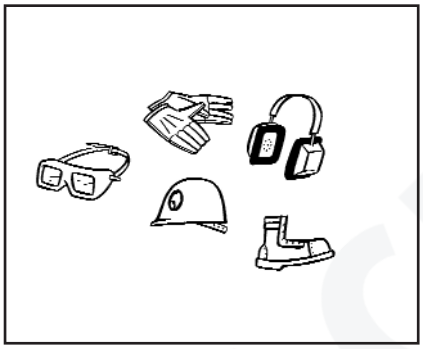




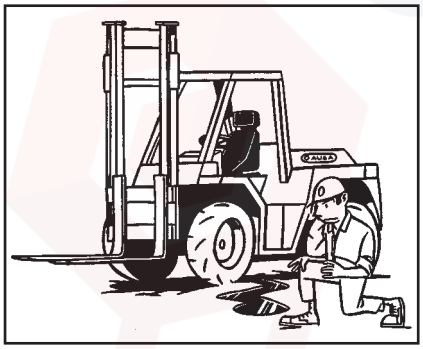
Special safety messages



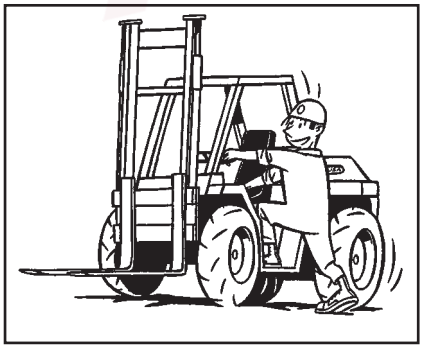
(fig. 1)



(fig. 2)



(fig. 3)



(fig. 4)

■ AUSA manufactures its forklifts in compliance with the intrinsic protection demanded by the current legislation for the member states of the European Union, against hazards of any kind which may threaten life or health, providing the machine is used and maintained in compliance with these guidelines. Any hazard caused by improper use, not in compliance with these instructions or others specifically provided with the machine, will be held to be the responsibility of the user and not AUSA.

This section provides instructions on how the forklift is to be used, in accordance with that set out in the Machine Safety Directive 98/37/CEE.

■ **As an driver, think about...**

Before you begin using a forklift that you are not yet familiar with, you should read this Operator's and Safety Manual carefully and consult your superior if you have any doubts (fig.1). The vehicle should only be used by authorised and properly trained personnel.

Make sure you are issued with all the necessary protective gear to enable you to carry out your work safely, for instance: approved helmet, ear protectors, goggles, protective clothing, reflecting equipment, etc. (fig.2).

Do not wear loose clothing or jewellry or long air as these could become entangled in the controls, in moving parts or edges of the forklift and prove dangerous.

■ **Depending on work environment...**

If in work environment exists any danger of fire or explosion, because of the goods stored or any gas or fluid potential escapes, check it the forklift flameproof protection is safe enough.

If working in an enclosed area make certain there is sufficient ventilation to prevent excessive build-up of exhaust fumes. Under these conditions always stop the engine when not in use.

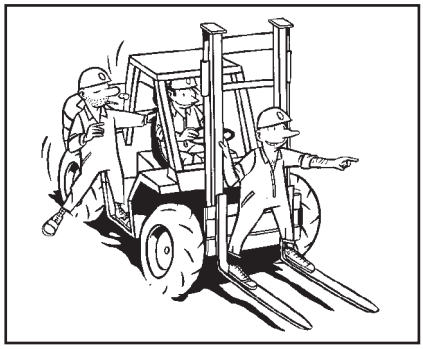
In public roads, the forklift has to be equipped with all the permit and the authorisations by the current laws. And the driving license for the user will be required. The use of the forklift without lights, is allowed just in daylights or in well illuminated environments.

■ **Before starting the forklift (fig.3-4)**

Before starting the forklift, clean any oil or fuel leaks that may exist on the forklift controls or operating area and test the following items:

- State of the lift chains.
- Check tire conditions and pressure.
- Check brake functioning.
- Check for any leaks in the fuel, hydraulic or cooling systems.
- Correct position and well fixed of any protectors, tops and security elements.
- Absence of fissures or other structural visible problems.
- Check that all controls are working correctly.
- Check the following fluid levels:
  * fuel.
  * braking fluid.
  * hydraulic fluid.
  * cooling system fluid.
- Check if the mechanism alarm and signing (for example: alarm, indicator of clogging of the filter of air admission, etc.) working properly
- Clean and check all informative and safety plates of the forklift.
- Clean and check signaling and lighting systems.

Special safety messages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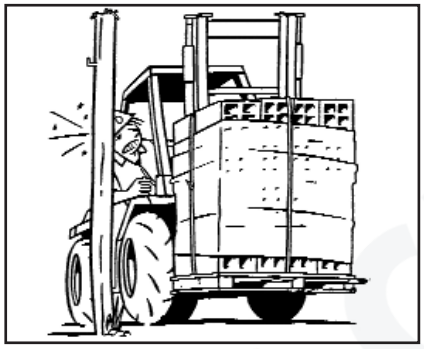
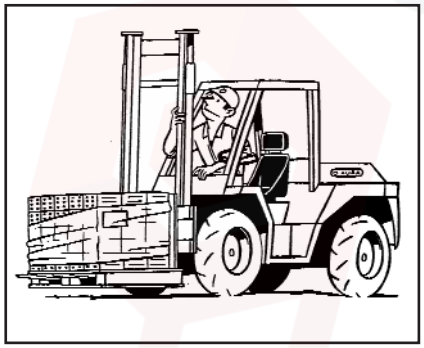

(fig. 6)


(fig. 7)


(fig. 8)

- Check battery connections and electrolyte level.
- Check seat position according users measures.
- Never start or operate any of the controls unless seated in the driver's seat.
- Keep driving room clean and free of any kind of objects to prevent obstructions with pedals or commands.
- Always stop the engine and do not smoke when carry out the fuel filling the forklift.

■ **At work with the forklift, don't forget... (fig.5-6-7-8)**

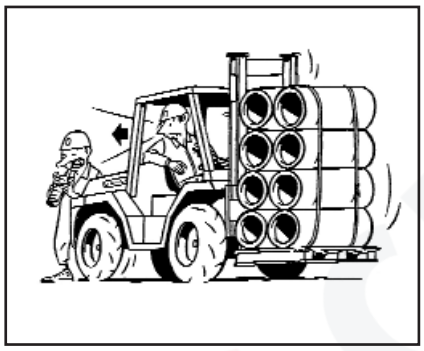
that it's forbidden:

- Overload the forklift, above its rated load.
- Drive with the cargo box tipped.
- Carry out turns at high speed.
- Rude brakings.
- Transporting people **(fig.5)**.
- If you see any malfunction or disorder when using the forklift, notice it to your superior or maintenance services.
- Stay alert. Concentrate fully on your work. Your safety and that of others depends on the care you take when operating this forklift.
- Keep your hands and feet within the area designated for the driver. **(fig.6)**.
- Never put any part of your body between the fork mast and the forklift body. Be careful around any load edges, pressure zones or revolving movements and extensions.**(fig.7)**.
- Do not let people stand or walk under raised forks, loaded or unloaded.
- When you are carrying out lift maneuvers, especially to high altitude, try to keep the forklift in stable land and balanced.
- When circulating, do not pass over objects representing a danger to the stability of the machine.
- Make certain that the ground on which you are driving will safety support the forklift and its load. Be very careful when approaching the edge of an embankment, wrought or temporary bridges on a construction site.
- Put much attention to the slope work. Move very carefully and slowly. Never position the forklift sideways on a slope and don't work on slopes higher than recommended. The surmountable slope, does not mean that in the same one it can be manoeuvred with absolute security in any condition of load, land or manoeuvre. This means reversing backwards down a slope to maintain maximum load stability. **(fig.8)**.
- Give way to the right at the pedestrians.
- Make sure itself that the steps and existing doors in the tour are sufficient for the total height of the forklift. In the maneuvers of elevation one must present special attention at a height of the roof, lights and other air installations.
- Be certain you have good visibility at all times. If the load does not allow forward vision, then drive slowly with caution in reverse.
- The lift and descent of the load must be done with the mast in vertical position or slightly inclined backwards. The inclination towards of the lifted load only must take place when reached the unloading point. The lean of the load is very useful for their collection and positioning, but affects the stability in lateral and longitudinal position, for that reason when handling a lifted load do not lean the mast more than necessary.

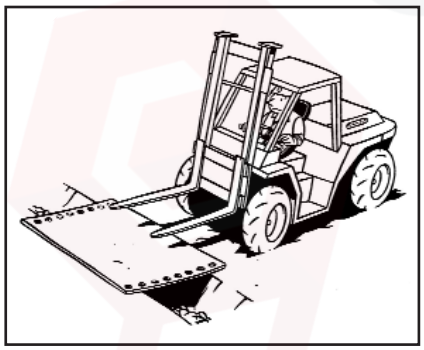
The forklift can upset forwards when carrying the lifted load with the mast inclined and also when stopping or accelerating abruptly with the lifted load.

Special safety messages

• Before shifting the directional control lever into reverse, make certain that the way is suitable for safe forklift travel and that there are no people or objects behind the forklift.(fig.10).
• When one approaches a crossing without visibility, reduces the speed, it slowly signals acoustic and advance in agreement with the visibility which it has.
• Forklift's speed must be appropriate to work conditions and environment. Going continuously at top speed can be dangerous for the user and environment.
• Make certain that the ground on which you are driving will safety support the forklift and its load. Be very careful when approaching the edge of an embankment, wrought or temporary bridges on a construction site.(fig.11).
• In overturned case, the operator must try to stay in the conduction position, not to be catched between the vehicle and the ground, for that reason it is necessary to wear the security belt correctly fit and fastened. It is also recommendable: handle with force, support firmly the feet on the ground of the cockpit and to try to stay away of the impact point.
• Forklift's speed must be appropriate to work conditions and environment. Going continuously at top speed can be dangerous for the user and environment.
• Forklift is not a designed machine to tow others vehicles. If in case of necessity, places certain load in the bin to assure the traction. Drive with safety and slow speed; and if the tow hasn't inertia brake, make sure forklift's brakes are strong enough for the two components.
• The risk of lateral overturning increases when carrying out turnings with an inadequate speed with the forklift empty or with the load lifted. The irregularities of the land, accelerations and brakings or the displacements of the load increase these risks (fig.12).
• The risk of longitudinal overturning increases if the forklift circulates with the load lifted. The brakings and abrupt accelerations and the fast movements of inclination diminish the stability.



(fig. 10)



(fig. 11)

(fig. 12)

■ **Be careful when loading and unloading the forklift ...**

• Do not overload the forklift nor manipulates loads that could move the center of gravity. Do the maneuvers slowly, specially the changes of direction in sliding land. (fig.13-pag.15).

• Do not transport unstable, loose loads or with disproportioned dimensions for the forklift. If it is inevitable to handle very long or wide loads, adopt all class of precautions to avoid hitting the surroundings and other possible accidents.

• Before loading or unloading a truck or tow, make sure that this one is correctly braked and located.

• In the case of using an accessory or implement, previously consult the permissible load for the combination of wheelbarrow plus the accessory, because it will be minor than the nominal.

• With the load lifted, lean the mast towards ahead only when depositing it on a shelve or pound. In order to retire a load from a shelve, lean the mast only the necessary to stabilize the load on the brackets. In both cases drive the inclination control with smoothness.

• Do not circulate with the load lifted; only lift the load to locate it in its unloading point. Circulate with the load in a low position, approximately to 40 cm from the ground. (fig.14-pag.15).

Special safety messages

• Leave the vehicle parked in areas set aside for this purpose, and not where it prevents people from passing or blocks exits or access to stairways or emergency equipment.

■ **A good conservation is security guarantee for that reason ...**

• The forklift can be a dangerous machine if not carrying out its correct maintenance. Only qualified mechanics with proper tools should perform maintenance operations and make any necessary repairs to the machine.

• Unless work on the engine demands that it be running, all repairs and maintenance on the machine should be done with the machine parked, engine stopped, unloaded, and wheels blocked to keep the forklift from moving during servicing.

• Take precautions to avoid spilling before disconnecting any of the fluid system circuits. Never use an open flame to check fluid leaks or levels.

• The hydraulic system should be checked periodically to avoid poor performance or accidents which might be caused by hydraulic oil leaks or by misalignment of the pressure relief valves.

• Also all the elements must be reviewed periodically whose wearing down or aging can suppose a risk, for example: hydraulic pipes, trimmings of brakes, band of tread of the tires, etc.

• Number plates, instructions and warnings on forklift must stay in perfect state of reading.

• Any modification that affects to the capacity and security of forklift must be authorized by the manufacturer or a responsible industrialist, modifying, as soon as it is necessary, the plates and books of instructions.

• AUSA does not assume any responsibility in relation to incidences or accidents derived from the use of non-original repair or spare parts conducted in factories non-authorized.

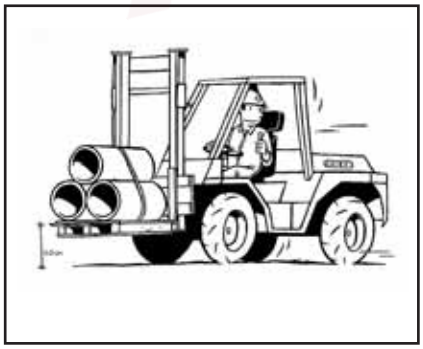
• When replacing tyres, especially in forklift with 4 driving wheels, the new ones must be as recommended in manual. For security reasons divided wheels do not have to be used (formed by two screwed rims).

• Manipulating or inspecting the forklift must be by predicted points for this machine, as appeared in this manual and with enough capacity devices.

• In case of working in mires with non waterproof brakes, these must be cleaned and dried with the necessary frequency to keep their effectiveness.

• In any intervention, make sure battery terminals are protected, so is not possible any contact between them and some tool, object, etc.

(fig. 13)



(fig. 14)

Special safety messages

• Disconnect the battery before manipulating the electrical circuit (fig.15)

• Before any resistance welding job to the forklift, disassemble every electric and electronic parts, to prevent damages.

• When replacing a tire, make sure of which it mounts with the drawing of cover in the correct sense.

• Before working on refrigerating circuit, make sure the oil temperature is cold enough to open the radiator cap without risks.

• If must tow forklift, you use a towed bar preferably, or if you haven't the same one, a cable of sufficient resistance. In each cases, lock it in the appropriate areas by AUSA, and do it at 10Km/h max. speed. If driving the towed forklift, take care at your hands position on the steering wheel, to prevent damage when turning. If the towed forklift is hydrostatic operated, first of all, follow the instructions from this manual to unplug the operation of the motive axis, to make easily the unloading prevent risks for the hydrostatic group.

• When cleaning, do not use flammable fuels or recipients that have contained them, avoid the entrance of any liquid into the electrical equipment.

• When you carry out the fuel filling and other fluids, use gloves to prevent cutaneous allergies and other dangers.

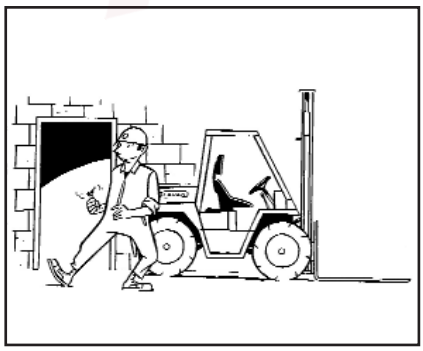
■ **When leaving the forklift ... (fig. 16)**

• Place the forks in the fully lowered position.
• Apply the parking brake.
• Stop the engine and remove the ignition key.
• Set all the controls in the neutral position.
• Lock all mechanisms to prevent any unauthorized person from using the machine. Remove the ignition key.
• Park it in a stable ground or leveled surface. If it must leave forklift in a slope, besides to drive the parking brake, immobilize the wheels with suitable wedges.

ELECTROMAGNETIC COMPATIBILITY

• Check if the machine is appropriate in the case that electromagnetic fields appear in the zone of service and if it causes interferences in electro magnetically sensitive machines.

(fig. 15)



(fig. 16)

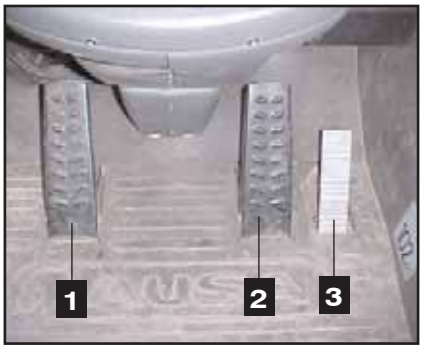
Controls/ Instruments/ Equipments

■ Term such as right, left, front and rear when used in this Operators Manual indicate the right and left sides of the machine, the front and back of the machine, as viewed from the operators seat looking forward.

■ **Identification components**

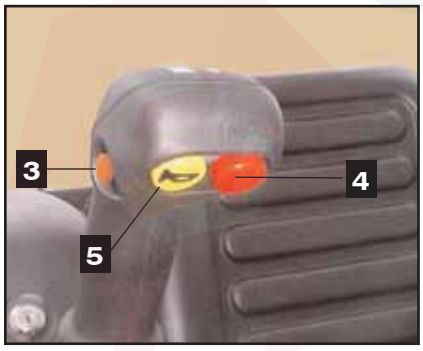
1- Overhead guard.
2- Joystick for reverse of movement direction and control of the mast.
3- Parking brake switch.
4- Driver seat.
5- Diesel tank (symmetrical to hydraulic oil position).
6- Hydraulic tank.
7- Lifting mast.
8- Forks.
9- Rotating beacon.
10- Lighting equipment (in option).

Controls/ Instruments/ Equipments



(fig. 1)

(fig. 2)



(fig. 3)


(fig. 4)

■ **Pedals (fig. 1)**

1- Inching pedal or of slow approach. With the stepped pedal, the machine stops being able to accelerate the engine for the working of the mast. Loosing it slowly the machine will begin to move.

2- Service brake pedal. Acts on a pump located underneath the pedal.

3- Accelerator pedal. Acts on the engine by means of a cable.

■ **Acoustic warning rear speed**

Its sounds when the machine goes backward.

Attention: If the forklift is equipped with lighting equipment, the acoustic warning device becomes disconnected when igniting the lights. Nevertheless, the white lights back indicating the reverse gear will continue working.

■ **Parking brake (fig.4)**

The handle of the hand brake is located left to the steering wheel. When it is operated it will be in vertical position, obtaining the blocking of the handle.

To unbrake, push the handle towards ahead until it reaches its horizontal position.

■ **Emergency brake**

In case of emergency, use inching pedal.

■ **Forward and backward direction control (fig.2)**

By means of an electrical switch (1) located on the joystick at the bottom. When the lights of the arrows are off, the control switch is in neutral. Pushing the switch on the left, the machine drives forward and pushing the switch on the right, the machine drives backwards.

In each case the corresponding arrow will be lit.

Safety: When the parking brake is engaged and the operator is not sitting on the seat the arrows light are also off and directional control is disconnected.

■ **Horn (fig.3)**

The horn is activated by means of the button located to the right of the joystick (5).

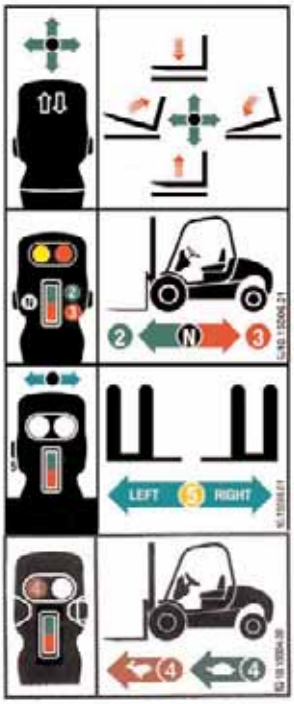
■ **Speed control (fig.3)**

Pushing the joystick switch button (4) the fast speed is connected/disconnected. When it is connected the fast speed lamp on the instrument panel is lit.

Attention: The fast speed does not work in reverse gear.

■ **Load controls (fig.2)**

The joystick to control the load movements is located at the right of the driver.



•**Up and down control.** Pulling the joystick to the left (to driver) will raise the forks upward and pushing to the right will lower the forks downward.

•**Tilt control.** Pushing the joystick to the right will tilt the mast and the front of the forks forwards. Pulling the joystick on the left to driver will tilt the mast and front of the forks backwards.

•**Side shift control.** Pushing the joystick switch button (2) (fig. 2) and pulling the joystick to the left (operator) will move the forks to the left and pushing the joystick to the right will move the forks to the right. Always center the carriage when in transit or when transporting a load.

•**4th hydraulic control for attachments (option).** Pushing the joystick (fig.3) switch button "3" and pushing the joystick to the operator or pulling it to the right, the auxiliar hydraulic circuit (4th valve) is on and hydraulic pressure is supplied to the quick hydraulic couplings located on the left side of the mast.

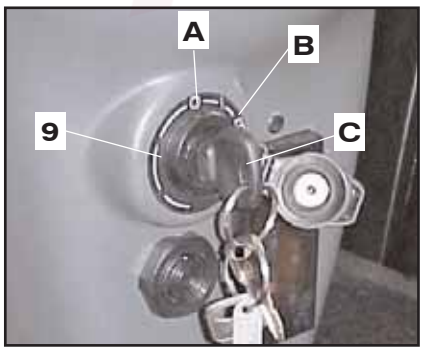
Controls/ Instruments/ Equipments

INSTRUMENT PANEL AND CONTROLS

■ Components

1 - Multifunction Instrument. See fig. 1, page 21.
2 - Heating fan switch (version with closed cabin). It has 2 speeds.
3 - Lighting switch (only in forklift with lights). This switch has two positions, the first connect the parking lights and the second connects the low beams.
4 - Warning switch (only in forklift with lights). To switch on, push the button, it will light, to switch off push the button again.
5 - Turning indicators switch (only in forklift with lights). Push the lever to the right or to the left according to the side chosen for turning.
6 - Rotating beacon switch. To switch on, push the button, it will light, to switch off push the button again.
7 - Windshield wiper switch. To connect the windshield wiper press to the right of the switch. To operate the water pump of the windshield wiper, press again to the right the same switch.
8 - Fuse box. The fuse box has places for 11 fuses. See ELECTRIC CIRCUIT at the rear of this Manual to identify the number and function of each fuse.
9 - Starter switch and pre-heating (A). Starter (B) and engine stop (A). (see fig.2).

(fig. 1)

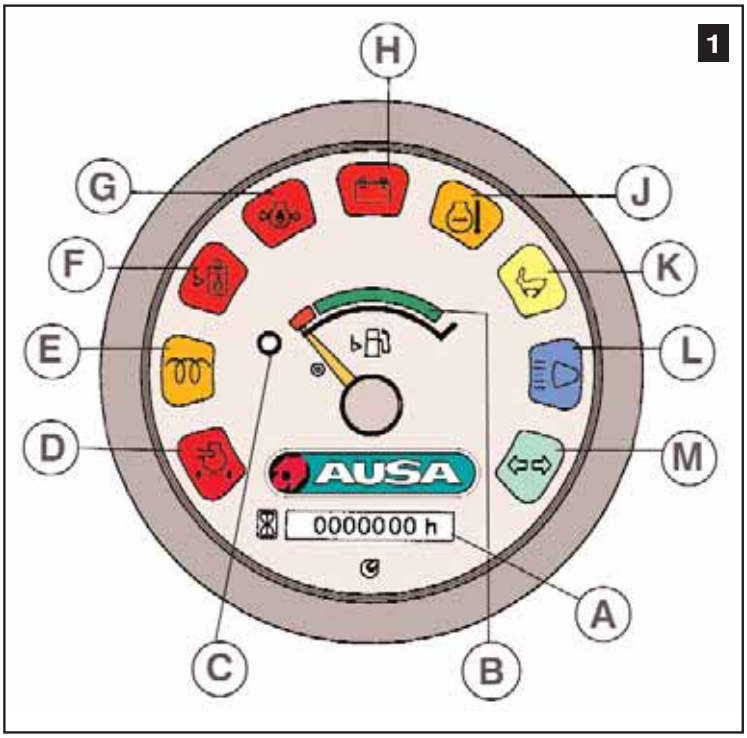


(fig. 2)

Controls/ Instruments/ Equipments

■ MULTIFUNCTION INSTRUMENT

A- Hourmeter. This gauge indicates the total running time of the forklift engine to enable servicing of the engine at proper intervals. (See MAINTENANCE CHART for servicing frequency).
B- Fuel level. This gauge indicates the diesel fuel level.
C- Fuel lamp. When the diesel fuel level is at the minimum level this alarm is lit.
D- Air filter lamp. When the air filter of the diesel engine becomes clogged with dirt, this lamp will light. The air filter should be immediately cleaned or serviced.
E- Engine pre-heat lamp. When this lamp glows it indicates that the engine pre-heat plugs are in operation and heating the combustion chamber to a temperature that will enable firing of the vaporized diesel fuel.
F- Hydraulic oil lamp. When the hydraulic oil level is at minimum level this lamp is lit.
G- Oil pressure lamp. When this lamp is lit it means that the engine oil level is low causing low oil pressure to the engine. The engine should be stopped immediately to prevent engine damage. Add oil to the engine until the proper level is reached.
H- Charge battery lamp. This gauge shows the condition of the battery and will tell you if the battery charge is too low or if the alternator is not charging properly. Once the engine starts to run, this red lamp will go out. If it remains lit, stop the engine and determine the cause.
J- Engine temperature lamp. This gauge shows the temperature of the coolant in the engine cooling system. When this lamp glows it means that the engine is operating at high temperature which could damage the engine. The engine should be stopped immediately to determine the cause of the high temperature. It could be low coolant, debris in the radiator or a thermostat, which does not operate correctly.
K- Fast speed lamp. This lamp is lit when the faster speed is selected.
L- High beam lamp (only in forklift with lights). This lamp is lit when high beams are selected.
M- Turn signal lamp (only in forklift with lights). This lamp will blink indicating turn signals are operating.



(fig. 1)

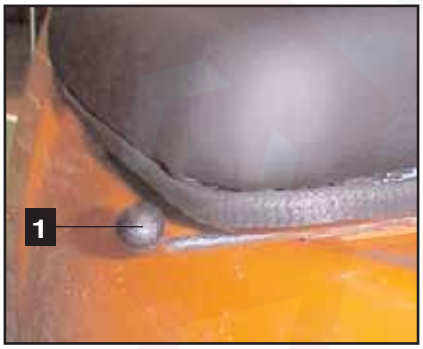
Operating the machine

ATTENTION

Before each period of operation, check the forklift for correct operation of the steering, brakes, hydraulic controls, instruments and safety equipment. Check the neutral position of directional control lever. A machine that runs correctly is more efficient and can prevent accidents.
Make all necessary adjustments or repairs before you operate the machine.

(fig. 1)

(fig. 2)



(fig. 3)

(fig. 4)

■ **Come in and come out of the forklift (fig.1)**

Don't hold and pull of the steering wheel to come in/off the forklift, use the handles located on the overhead guard and always support your foot on the rough bands of the step, to prevent any downfall when you come in or come out.

■ **Adjusting the seat and the steering wheel (figs. 2-3-4-5-6)**

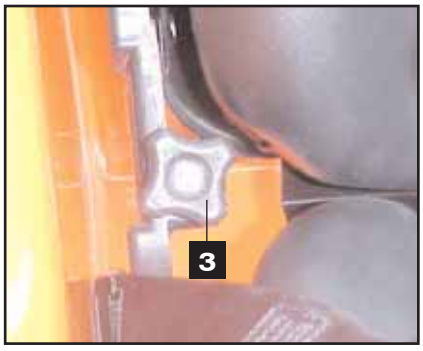
Before starting work with the forklift each day adjust the seat for the most comfortable position. To move the seat backwards and forwards reach under the right side of the seat and locate a small lever (1). Press the lever and move the seat to the desired position. According to the weight of the driver, set the seat with the lever (2). There are 24 turns of the lever from minimum driver weight of 132 lb. to maximum of 264 lb. Normally it is adjusted for a driver weighting 198 lb. To adjust the tilting backrest of the seat to your comfort turn on the knob(3). Securely fasten the seat belt.
To adjust the steering wheel in a comfortable position, loose this lever (fig. 5) move the column adequately and tight it again.

■ **Starting the engine (fig.2, pag.19)**

For safety reasons, when starting the engine the driver should be sitting on his seat, the parking brake engaged, because in opposite case the forklift doesn't start.
Insert the key in the switchboard of take-off and turn it to the position (B) of contact until the witness of warm-up goes out, press the pedal of the accelerator 1/4 of his career and turn the key to the position (C) until the engine take-off. Do not support it in this position more than 15 seconds. If the engine fails to start, repeat all above steps. Allow 30 seconds between attempts.

■ **Jump starting the machine**

Starting the machine by means of a booster battery can be done by using other 12 volt batteries which may then be connected to the starter motor. If using another machine for this purpose make certain the two machines do not touch. Two persons must be used for this operation.
1- Apply the parking brake.
2- Open the machine's cab.
3- Connect the positive (+) cable of the booster batteries to the positive (+) terminal of the forklift battery. Then have you connect the negative (-) cable of the booster batteries to a good ground connection on the frame of the forklift.
4- Start the machine engine in the normal fashion.
5- Disconnect the booster cables in the same order, first disconnect the booster cables from the positive (+) terminal of the forklift battery and then disconnect the booster cables from the negative (-) terminal of the forklift battery.



(fig. 5)


(fig. 6)

Operating the machine

■ **Checking**

With the starter engine and the stop forklift to check or test the following:

· Check all the instruments on the instruments panel.
· Test steering, both right and left, while moving slowly.
· Raise the forks about 6in (150 mm) above the ground.
· Test the parking brake.
· Test the foot brakes for correct firmness of operation.

■ **The rated capacity of the forklift**

The Rated Capacity of this forklift is the weight the machine is capable of lifting under safe operating conditions. The lifting capacity of a forklift is determined by the height and weight limits of the load. Poor ground conditions as well as shape of the load may reduce the weight that can be safely lifted. Overloading the forks can make the forklift unstable, hard to handle, and may be in danger of tipping over.

Inspect the load you intend to lift and make certain it is within the limits of the Load Capacity Chart located on the left mudguard. With load centre at 20 in or 500mm (European and ISO standards), the forklift has a rated capacity of 3.306,9 lb (1,500Kg) If the load is too heavy split it and re-stack it. Use of attachments other than the two standard pallet forks that came with this machine may reduce lifting capacity and affect other machine handling characteristics. If this forklift has a side-shift carriage, the capacity of the load is decreased. Reproduced below are copies of the Load Capacity Chart for a forklift with a side-shift carriage. Study the Load Capacity Chart for your machine carefully and make certain you understand it before lifting loads on the forks.

■ **Load Center**

To rate the lifting capacity of forklifts manufacturers have standardized on a certain size of load. The rated capacity of this forklift is based on a cube measuring 39in (1m) in accordance at European and ISO standards, or 48in in accordance with American standards, in all three dimensions with the center of gravity in the center of this cube. This is known as a 19.5 or 24in load center (with the center of gravity 19.5 or 24in from both the vertical face of the mast and from the lifting surface of the forks). It is important to keep load center in mind for as the load center increases, the lifting capacity of the forklift decreases.

■ **The relationship between the forklift and the load is altered by changes in:**

Removable attachments (see load limit charts).

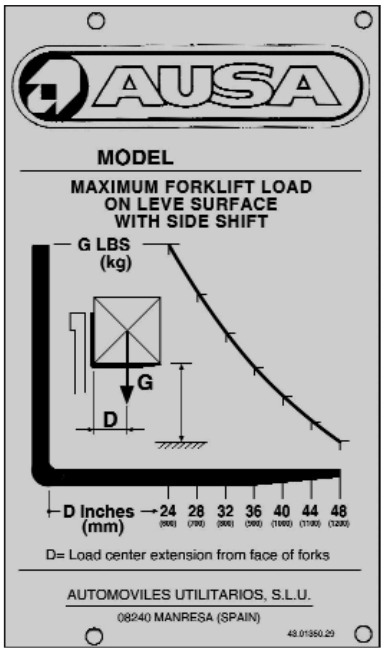
• Height of the forks.
• Changes in the motion of the machine and the grade of the ground on which it is moving.
• Smoothness and stability of the ground.
• Machine stability must be maintained while these factors change constantly during forklift operation. This requires careful judgement on the part of the operator.

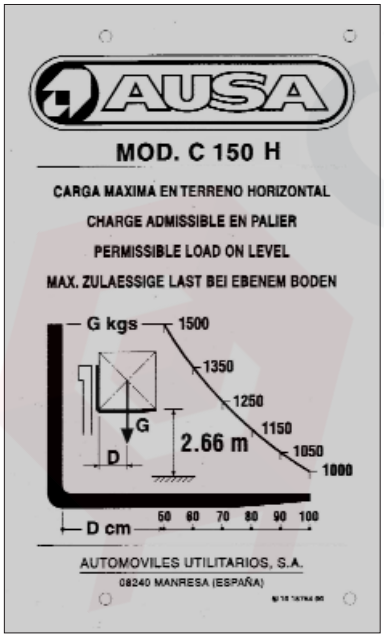
■ **Lift and descent of the load**

The lift and descent of the load must be done with the mast in vertical position or slightly inclined backwards. The inclination towards of the load lifted only must take place when reached the unloading point. The lean of the load is very useful for their collection and positioning, but affects the stability in lateral and longitudinal position, for that reason when handling a lifted load do not lean the mast more than necessary.

The forklift can upset forwards when carrying the lifted load with the mast inclined and also when stopping or accelerating abruptly with the load lifted.

Operating the machine





■ Lifting Capacity

Machine stability is maintained only when the forklift handles loads within its rated lifting capacity and the various conditions listed above. The lifting capacity of the machine is determined by the safe height and weight limits of the load. An overload on the forks makes the forklift unstable, hard to handle, and will present the danger of tipping oven.

■ Load charts

The charts you can see in (fig.1) shows how much your forklift can lift as the load centre increases out to 4 in. (100 mm). Note how the lift capacity decreases as the load centre increases. This chart is reproduced as a machine decal and is located on both the right and the left side of the mast and at the driver seat for ease of reference during machine operation. The chart represents the load that can be lifted on a level surface, with the load evenly displaced (like a square box with the weight centred), and a lift height (standard mast) of 8ft. 8.7in. (2.66 m.)

The horizontal axis T" (often referred to as the X axis), represents the distance in inches (mm) that the load centre is moved forward from the face of the forks.

The vertical axis "G" (often referred to as the Y axis), shows the load weight in pounds (kgs).

■ Parking the forklift and stopping the engine

Make certain that the forklift is parked on level ground when leaving it overnight. Also park it on level ground before any scheduled maintenance is attempted. Lower the brackets to the ground, apply the parking brake and push directional switch to neutral. Run the engine at idle for 1 minute if the forklift has been working at full load as this procedure will cool the engine components evenly. Now turn off the key switch in a counterclockwise motion, to position (A), to stop the engine. Remove the key from the ignition and take it with you. Never leave the key in a parked forklift.

■ Be environmentally friendly

What changing oil and other fluids, use an appropriate container, and don't harm the environment during the operation and take old elements (battery, coolants, etc) to recycling centres.

In case of escapes of dangerous substances for people or environment, try minimize their impact. For example, in oil escapes, block the leak, put a container to collect the fluid, spread absorbent material or pick up polluted mud if necessary.

At the end of the life of the machine give it up for its taking apart to suitable and authorized centers.

	MASTS									
	MAXIMUM ELEVATION		FREE ELEVATION		H. MAXIM HEIGHT IN BENT MAST		MAXIM HEIGHT IN SPREADED MAST		LOAD	
TYPE	UK	USA	UK	USA	UK	USA	UK	USA	UK	USA
DUPLEX (EST.)	2660 mm	8 ft 8,8 in	0	0	1975 mm	6,5 ft 5,6 in	3285 mm	10,7 ft 9,2 in	1500 kg	3307 lb
DUPLEX	3300 mm	10 ft 9,9 in	0	0	2325 mm	7,6ft 7,5 in	3925 mm	12,9 ft 10,4 in	1350 kg	2976 lb
DUPLEX ELEV. FREE	2600 mm	8,5 ft 6,4 in	1360 mm	4 ft 5,5 in	1975 mm	6,5 ft 5,6 in	3270 mm	10,7 ft 8,7 in	1500 kg	3307 lb
TRIPLEX ELEV. FREE	4000 mm	13 ft 1,4 in	1360 mm	4 ft 5,5 in	1975 mm	6,5 ft 5,6 in	4670 mm	15 ft 3,8 in	1200 kg	2645'5 lb

Before starting the machine

WARNING

These checks are very important prior to operating the forklift. Always check the proper operation of controls, safety systems nd mechanical components before starting. If not done as specified here, severe injury or death might occur.

- Check tire pressure and condition.
- Familiarize with the controls and ensure they work properly.
- Verify steering operates freely.
- Activate throttle pedal several times to ensure it operates freely. It must return to idle position when released.
- Activate the brake pedal to make sure the brakes fully apply. Pedal must fully return when released.
- Ensure that the direction control works correctly.
- Check fuel, engine oil,hydraulic oil, coolant and brake fluid.
- Check for oil leaks on the engine, hydraulic circuit and drive train components.
- Clean headlights and taillights. (if exist).
- Ensure operator's compartment is properly closed.
- Ensure seat belts are properly latched.

Before initiating the day, inspect carefully the condition of this device with special attention to:

*Cuts or gossips in the tape.
*Wear or damages in ironworks including the anchorage points.
*Badly functioning of the clasp of closing or of the winder.
*Seams or free points of sewing.

- If you transport cargo, respect load capacity. Make sure that the load is correctly distributed.
- Look and feel for engine parts while engine is off. Check fasteners.
- Check operation of starter switch, headlights, side lights, taillights indicator lights and back-up alarm (if exist).
- Start engine and drive forward slowly a few feet and apply brake pedal to test them.

Correct any problem you may have found. See an authorized AUSA dealer as necessary.

Transporting the machine

■ **Fixation / immobilization of the forklift on a platform (fig.1)**

When transporting the forklift C150 H on a trailer or truck bed, carefully follow the instructions in the Caution Decal.

Once the machine is loaded upon a truck/trailer, wedges must be placed in the front and back wheels.

Then, the forklift must be tied firmly to the platform to prevent any displacement placing the fixation systems as showed in figure 1.

FRONT AXIS: over the front wheels.

BACK AXIS: by the bolt of the counterbalance.

ADVERTENCIA

Before you put the forklift on a trailer or truck bed, make certain that the ramp is strong enough to support the load and that the parking surface is fee of debris, oil, grease or ice.

· Do not transport the forklift with a full diesel fuel tank.

· Make certain your seat belt is properly fastened.

· Move the forklift slowly and carefully up the ramp onto the trailer..

· Shift the directional control lever to neutral.

· Apply the parking brake.

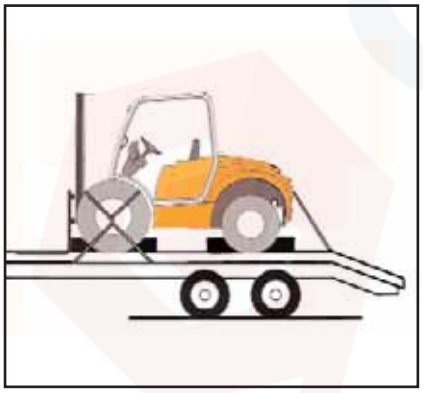
· In transit position lower the forks to their lowest level.

· Put blocks under the tips of each fork and tilt the mast slightly forward.

· Stop the engine and remove the key.

· Put blocks at the front and rear of the forklift tires.

· Tie the forklift to the platform using suitable systems of fixation (chains, strap or slings) considering that they must be sufficiently resistant and adapted for this purpose.



(fig. 1)

■ **Loading onto a trailer by crane (fig.2)**

If a sling and crane are used to load the forklift onto a trailer or truck, attach the sling as shown in the next figure.

Before lifting check that the sling cable is firmly attached. While lifting the forklift do not permit riders on the forklift or by standers within 15ft (5m).

To lift the machine with a crane, bear in mind the following advice:

- Front slings must not be shorter than 8 ft. (2,5 m.).
- Always raise the machine in a balanced position.
- Keep the angle of inclination of the front sling approximately the same as the angle of inclination of the mast tilted backwards.

(fig. 2)

Transporting the machine

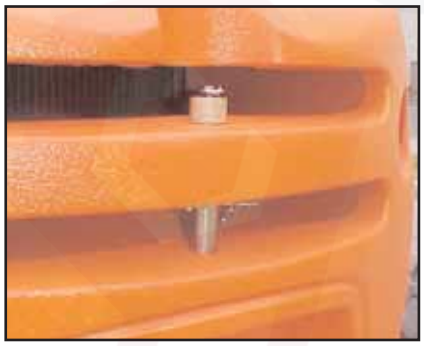
■ **Towing the forklift (fig.1, 2)**

The towing of forklift is only recommended in case of damage, when there is no other options, because can break the hydrostatic transmission. When possible, it is strongly recommended to solve the problem where the forklift id stopped. When is not possible, towing must be done at low speed and short distances.

Before towing the forklift should thoroughly crowd together the central screws of the valves of maximum pressure of the hydrostatic pump, to make it will loosen it the locknuts (fig.2).

Once the machine is repaired loose the central screws of the control valves of the hydrostatic pump and tighten again the lock nuts

The forklift must be towed with a solid tow-bar to prevent any lateral sway, attach the tow bar to the bolt at the rear of the counter weight (fig. 1).



(fig. 1)

(fig. 2)

Liquids and lubricants

(fig. 1)


(fig. 2)

(fig. 3)


(fig. 4)

This section specifies the recommended liquids and lubricants. Consult PERIODIC OPERATIONS OF MANINTENANCE in this Manual for the procedures of level checking and changes of liquids.

LIQUID or LUBRICANT	SPECIFICATION	OBSERVATION	REF. AUSA	CAPACITY		
				Liters	US Gal	UK Gal
FUEL (fig. 1)	GAS-OIL A TYPE WITH LESS THAN 0,5% IN SULPHUR, AS ESTABLISHED IN DIN 51601 and ASTM D975-77 Degree Nº1D and Z-D			40	10.57	8.8
ENGINE OIL	Oil for engines as established in MIL-L-2104C / API CD or more.	See ENGINE OIL in this section.	461.0017.00	6	1.58	1.32
ENGINE REFRIGERANT LIQUID (fig. 2)	Always use ethylene-glycol antifreeze containing corrosion inhibitors specifically for internal combustion aluminium engines. 30% glycol and 70% distilled water standard machine.	See REFRIGERATING LIQUID in this section.	45.00075.00	7	1.85	1.54
HYDRAULIC CIRCUIT (fig. 3)	Hydraulic oil ISO Degree VG-46 as established ISO 6743/4 HV DIN 51524 Part 3-classe HVLP.		461.00008.00	40	10.57	8.8
FRONT AXLE OIL	Oil for transmissions SAE 90 as established API GL5 / MIL-L-2105b		461.00004.01	3	0.79	0.66
REAR AXLE DIFFERENTIAL OIL x4				0.5	0.13	0.11
REAR AXLE TRANSFER-BOX OIL x4				0.25	0.06	0.05
TRANSFER-BOX OIL x2				1	0.26	0.22
TRANSFER-BOX OIL x4 (COMPEN)	Oil for transmissions SAE 90 as established API GL5 / MIL-L-2105D with additive LIMITED SLIP	See TRANSFER-BOX OIL x4 (COMPEN) in this section.	461.00016.01	1.6	0.42	0.35
BRAKES FLUID E INCHING (fig. 4)	Brake fluids type LHM (verde) of mineral base according to ISO VG32.	See BRAKES FLUIDS E INCHING in this section	461.00001.01	0.5	0.13	0.11
WINDSCREEN WIPER-WASHER (fig. 5)			465.00016.00	1.5	0.39	0.33
BATTERY ELECTROLYTE	Distilled water	See BATTERY ELECTROLYTE in this section.				
GREASING POINTS	Oil calcic consistency NLGI-3	See GREASING POINTS in this section	461.00009.00			


(fig. 5)

Liquids and lubricants

■ **Engine oil (fig. 1)**

Use 4-stroke engine oil that meets or exceeds the requirements for MIL-L-2104C / API CD or more.

Verify always the quality API in the attached etiquette in the container of the oil to make sure that the quality should be the needed one.

SAE 20W40 is recommended for all seasons. However, during the hottest days of the summer and bitter cold days of the winter, refer to the following chart to select the proper viscosity:

Room temperature above to 25ºC: SAE30 or SAE10W30 / 10W40.
Room temperature of 0 up to 25ºC: SAE 20 or SAE10W30 / 10W40.
Room temperature below 0ºC: SAE10W or SAE10W30 / 10W40.

If you use oils of different brands, empty completely the housing before adding the new oil.

■ **Refrigerating liquid**

Always use ethylene-glycol antifreeze containing corrosion inhibitors specifically for internal combustion aluminum engines. Cooling system must be filled with water and antifreeze solution (70% water, 30% antifreeze in standard machine for temperatures of -17 ºC up to 127 ºC)

(50% water, 50% antifreeze for temperatures of -35 ºC up to 145 ºC).

■ **Oil in the transfer-box x4 (COMPEN)**

Oil for transmissions SAE 90 according to API GL-5 / MIL-L-2105D for bridges differentials of limited sliding (limited slip) ó auto blocking bridges

AUSA recommended **TRANSELF TYPE BLS 90** characterized by:

- Additives modifiers of the coefficient friction.
- A capacity of "Extreme Pressure" and anti wear.
- Good anticorrosion characteristics.
- Excellent thermal stability.
- Avoid the vibrations and noises in differentials bridges or auto blocking.

■ **Brake fluid and Inching**

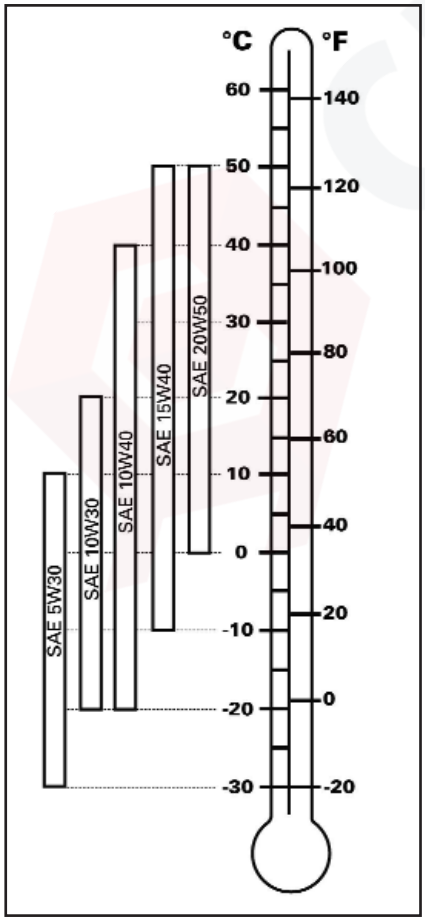
Liquid brakes type (green) LHM of mineral base according to ISO VG32.

CAUTION!

To avoid serious damage to the braking system, do not use fluids other than the recommended one, nor mix different fluids for topping up. Under no concept use liquid of brakes of vegetable base (SAE J1703).

■ **Battery electrolyte**

This vehicle is equipped with a type battery that requires maintenance. Add distilled water if necessary.

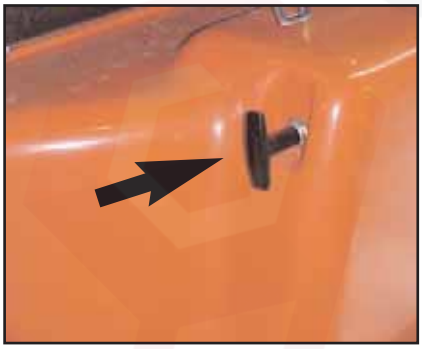


(fig. 1)

Periodic maintenance operations


(fig. 1)


(fig. 2)


(fig. 3)


(fig. 4)


(fig. 5)

■ Periodic maintenance operations

• In maintenance operations only use original AUSA spare parts. This is only way to guarantee that your machine will remain as technically efficient as when it was purchased.

Just as on any machine, this forklift has parts and systems which become worn or poorly adjusted, and this may affect their reliability and the safety of the operator, and the surrounding environment, e.g. exhaust gas emissions, etc. Necessary maintenance must be carried out periodically to ensure that the machine is kept in a condition similar to when it left the factory (97/68, etc.).

In accordance with Work Equipment Legislation, these systems must be submitted to periodic inspections, the results of which must be registered on the forms provided by each country's Employment Authorities. (89/655/CEE or RD 1215/97).

Unless work on the engine demands that it be running, all repairs and maintenance on the machine should be done with the machine parked, engine stopped, forks down and unloaded, and wheels blocked to keep the forklift from moving during servicing.

Disconnect the battery **(fig. 1)** before carrying out any maintenance or repairs to the electrical system. Never use an open flame to check fluid leaks or levels.

■ Be environmentally friendly

What changing oil and other fluids, use an appropriate container, and don't harm the environment during the operation and take old elements (battery, coolants, etc) to recycling centres.

In case of escapes of dangerous substances for people or environment, try minimize their impact. For example, in oil escapes, block the leak, put a container to collect the fluid, spread absorbent material or pick up polluted mud if necessary.

■ Access from maintenance (fig. 2, 3, 4, 5)

The engine, the transmission and filters are located under operator's compartment (fig.2), to access them, you have to tip it as follows:

• Start the machine and to incline the mast forward, (operative sat down in the machine) to push the joystick toward the right until it arrives to the position but early.

• Pull the control located at the left side next to the seat (fig.3), to unblock the latch of the cabin, then lift and tilt it forward.

• To prevent the falling down of the cabin when carry out maintenance operations, insert the proper safety pin (fig.4,5).

Periodic maintenance operations

■ **Machine cleaning**

During the clean operations, not to direct the water jet to pressure on the intake (air filter), the steering column, battery, alternator and other electric devices because can deteriorate their components.

■ **Breakdown in road**

In case of breakdown when driving on public roads, warn other users of the road with the hazard warning triangles (optional). They could be stored under the cabin; raising it.

■ **Break-in period**

A break-in period of 50 operating hours is required before running the forklift's engine at sustained full throttle.

During this period, maximum throttle should not exceed 3/4. However, brief full acceleration and speed variations contribute to a good break-in. Continued wide open throttle accelerations, prolonged cruising speeds and engine overheating are detrimental during the break-in period.

■ **50-Hour initial inspection**

As with any precision piece of mechanical equipment, we suggest that after the first 50 hours or 30 days after the purchase, whichever comes first, your vehicle be inspected by an authorized AUSA dealer. This inspection will give you the opportunity to discuss the unanswered questions you may have encountered during the first hours of operation.

WARNING:

While reading this Operator's Manual, remember that:

The following covers the maintenance items that can be performed by the customer if desired. Other items found in MAINTENANCE CHART must be performed by an authorized AUSA dealer.

NOTE: Among other things, this section gives the procedures to replace the oils and the lubricants.

Refer to LIQUIDS AND LUBRICANTS for procedures to check levels and refill.

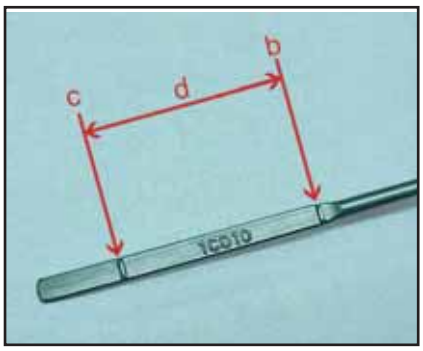
■ **Engine**

For information on correct operation, spare parts and general maintenance, see separate Engine Manual. Also review the MAINTENANCE CHART in this Operators Manual.

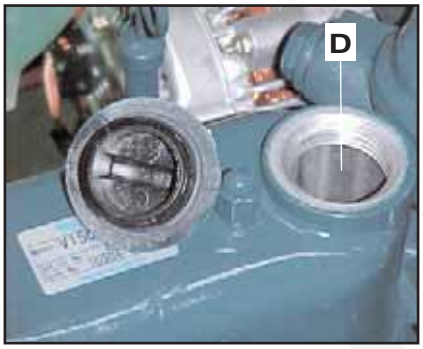
- Generator belt

Control periodically the tension of the alternator strap. Also, verify if there are cracks or other damages. See an authorized AUSA dealer to replace the generator belt.

Periodic maintenance operations

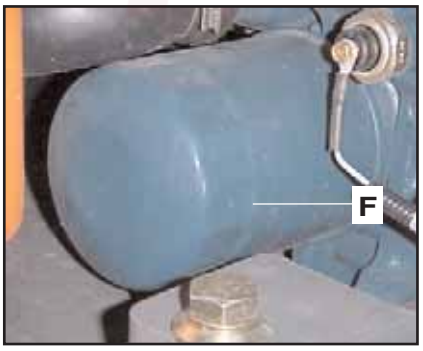


(fig. 1)



(fig. 2)

(fig. 3)



(fig. 4)

■ **Oil engine**

· **Engine oil level (fig. 1, 2, 3, 4)**

CAUTION: Check level frequently and refill if necessary. Do not exceed the maximum mark. Operating the engine with an improper level may severely damage it. Wipe off any spillage. With vehicle on a level surface and engine cold, not running, check the oil level as follows:

- Pull the level rod, remove it from its lodging and clean it with a clean cloth.
- Place the level rod in its lodging.
- Remove and check oil level. It should be near or equal to the upper mark overfill. (fig 1).

A. Full
B. Add
C. Operating range

- Add oil up to upper mark if required.
- To add oil, remove dipstick. Place a funnel in the oil filling orifice located upon the balance beams cap.

D. Filling orifice (fig.2)

Do not exceed the maximum mark.

- Tighten correctly the oil filling cap and place correctly the level rod.

• **Oil Change and Oil Filter Replacement**

ATTENTION: The first substitution of the oil of the engine must be done after the first 50 hours of service. The initial maintenance is very important and must not be neglected.

Oil change should be done with a warm oil.
Ensure vehicle is on a level surface.
Remove dipstick.
Clean the oil drain plug area.
Place a drain pan under the oil drain plug area.
Unscrew oil drain plug.

E. Oil drain plug (fig.3)

WARNING
The engine oil can be very hot. To prevent burning yourself, do not remove the engine drain plug or the filter cover if the engine is hot.
Wait until engine oil is warm.

Allow enough time for oil to flow out of oil filter.
Unscrew the oil filter cover, located on the left side and remove.

F. Oil cartridge filter (fig.4)

Clean the base and grease with clean oil the joint of the new filter element.
Screw the filter element and tighten it without using mechanical means.

Periodic maintenance operations

(fig. 1)

(fig. 2)

(fig. 3)

(fig. 4)

ATTENTION!!
Wipe out any oil spillage on engine.
Change gasket on oil drain plug (a). Clean gasket area on engine and oil drain plug then reinstall plug.
Refill engine at the proper level with the recommended oil. Refer to LIQUIDS AND LUBRICANTS in this Manual for capacity.
Start engine and let idle for a few minutes. Ensure oil filter area and oil drain plug areas are not leaking.
Stop engine.
Wait a while to allow oil to flow down to crankcase then check oil level.
Refill as necessary.
Reject the used oil in the authorized centers.

■ **Engine refrigerating circuit (fig. 1, 2)**

As coolant, antifreeze quality CC 40% is recommended.

ATTENTION!!
Never remove the cap of the coolant tank or for the radiator when the engine is hot, until the engine is cold, wait 20 minutes aprox.

- Add refrigerating liquid
This operation is done by the coolant tank.

- Refrigerating replacement
The change must be made every 2 years or when the circuit must be emptying. To make this, follow next steps:
- Quit drainage cap of cylinder block, located at the right side of the engine, for emptying.(fig.1)
- Unplug the inferior sleeve of the radiator to drain the radiator by this point.
- Before opening the circuit we must screw up the cap of the drainage engine and plug the sleeve again.
- The filling is made by the radiator with a flexible tube and a funnel, until it is absolutely filled, then caps it and fill the expansion glass.
- Start the engine until the thermostat is opened.
- Then with the cold engine, the level of the expansion vessel must be checked.
- If it is necessary to purge the circuit use the purger located in the sleeve of the radiator.(fig.2)

■ **Air filter (fig.3, 4)**

The engine uses a dry type filter.

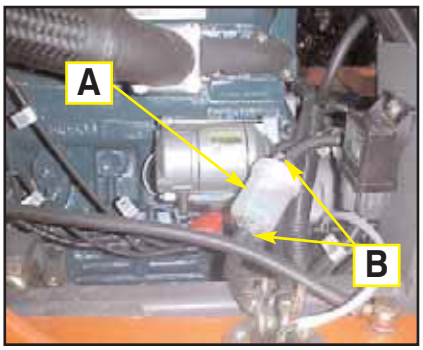
Correct maintenance of the air filter is essential for the engine performance as well as to the life of the engine. To clean the filter element of accumulated dust and dirt, remove the filter element and, from the inside, blow out the element using air line with pressure not exceeding 60 psi (5 bar), while it is turned.

Check periodicity of renovation in MAINTENANCE CHART.

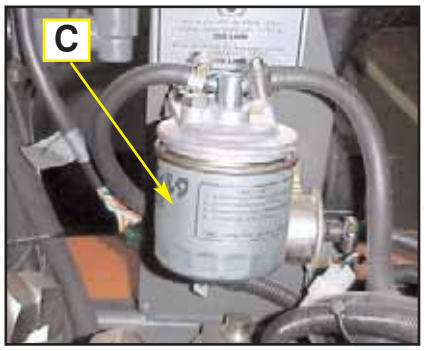
If the forklift works in dusty area, the filter element should be changed more frequently than normal specification.

NOTE: The filter has a obturation indicator (vacuummeter). If this indicator in the control panel is lit, the filter element should be serviced as soon as possible.

Periodic maintenance operations



(fig. 1)



(fig. 2)


(fig. 3)


(fig. 4)

■ **Fuel prefilter (fig.1)**

Note: Always replace this component. Never try to clean it.

A- Pre-filter
B- Flanges

Disassemble the supporting flanges and the filter. Make sure that the new filter is mounted in the correct sense as indicates the arrow marked in the body of the filter.

■ **Fuel filter (fig.2)**

Consult the periodicity of renovation, in the MAINTENANCE CHART.

- Fuel filter replacement.

Unscrew the fuel filter cartridge located in the left part of the engine and remove it of its support.

C. Fuel filter.

Clean the base and grease with clean oil the joint of the new filter element.
Screw the filter element and tighten it without using mechanical means.

To protect engine injection system, is very important to use clean gas-oil A type with less than 0,5% in sulphur, as established in DIN51601 regulations or ASTM D975-77 Degree Nº 1-D and 2-D.

■ **Lean of the mast with the stopped engine (emergency movement)(fig.3)**

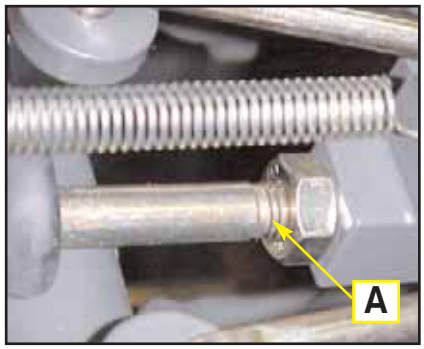
1.- Locate the connector next to the direction column.
2.- Use an external battery to feed the connector with 12Vdc. and mass (-).
3.- Pushing the handle of joystick to the right will allow us to make the movement of lean of the mast.

NOTE: in order to facilitate this movement, it is recommended to apply a small load in the end of the brackets.

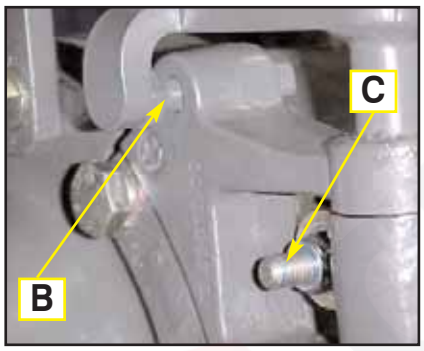
■ **Parking brake (fig. 4)**

When to apply the hand brake you do not need any strain, it means the hand brake fails to apply the brakes correctly and adjustments have to be made as follows:
- Put the gear lever in neutral and lift the front of the forklift so the front wheels are off the floor.
- Let the hand brake firmly and check if the front driving wheels are locked. If not, the linkage should be adjusted.
- Turn the grip of the end of the handle in the clock direction to tighten the cables and in the opposite direction to unthigh them.
- The linkage and cables should be kept clean.

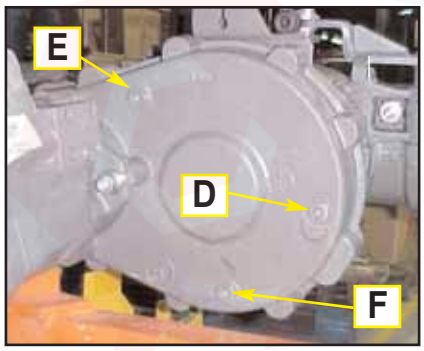
Periodic maintenance operations



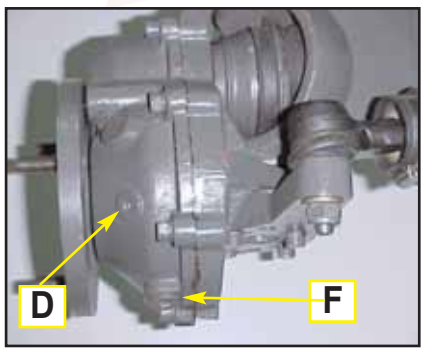
(fig. 1)



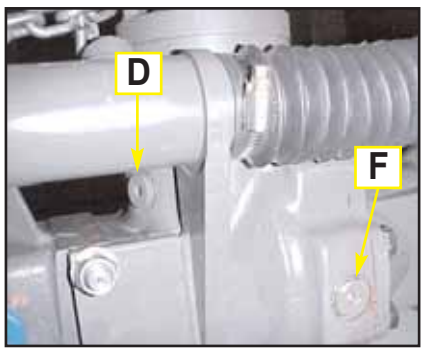
(fig. 2)



(fig.3)



(fig. 4)



(fig. 5)

■ **Service brake (fig. 1, 2)**

If the pedal has an excessive free movement, it is possible to corrected it regulating the pusher of the pedal commanding the brake pump. This one has a nut system lock. The pusher must have a free movement between 1 and 1.5 mm, making sure that the pump is free of internal pressure.

If when driving the brake the pedal low in excess, it must be tightened. To do so:

- Lift the machine so that the front wheels do not have contact with the ground.
- Tighten the nut (C) until obtaining the wished tact in the pedal.
- Graduate the end of the handle (B) and leave some free movement between the handle and the end of 1 mm.

For the substitution of the brake discs, contact with an AUSA authorized distributor.

■ **Transfer box oil level (fig.3)**

- To check the oil level in the transfer box, remove plug (D) to see if the oil is just below this hole level. Add oil if necessary trough plug (E).
- To drain the oil, unscrew plug (F) at the bottom of this box.

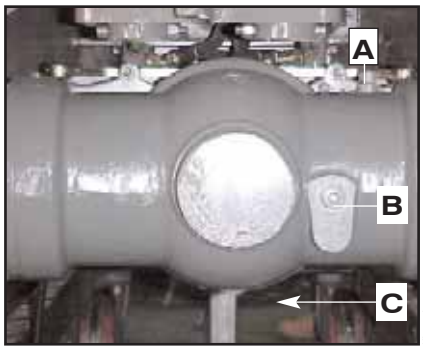
See MAINTENANCE CHART.

■ **Oil level in the engine back axis (models 4x4)(fig. 4, 5)**

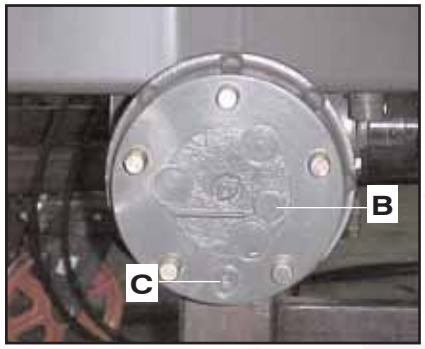
- To verify the level unscrew the cork (D). The oil must be at level of the lodging.
- To drain it, unscrew the lid (F) located in the inferior part.
- To fill or to add oil in the reduction of the wheels, use the orifice (D) of the level.
- To fill or to add oil to the differential, use the orifice of the unsteam lid.

See MAINTENANCE CHART.

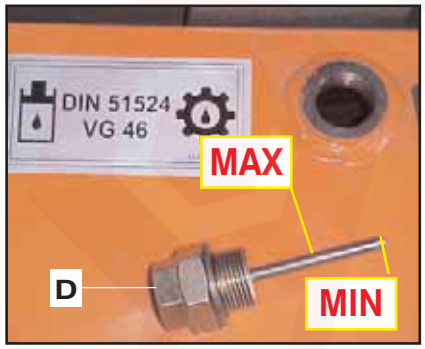
Periodic maintenance operations



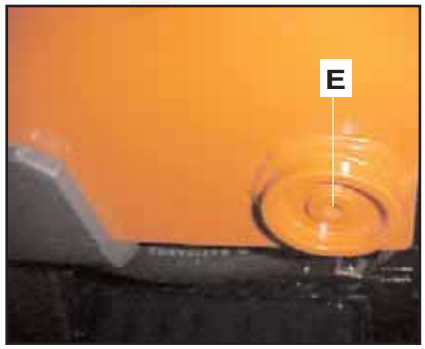
(fig.1)



(fig.2)



(fig. 3)



(fig. 4)

■ **Front axle oil level**

To check the oil level in the axle, place the machine on level ground.
The oil of the differentials and transfer box, is internally communicated.

- Differentials (fig. 1)

To check the oil level in the differentials, remove plug (B). To drain the oil, unscrew plug below differential box (C). If necessary, add oil by the steam cap (A).

- Final Reductions (fig.2)

For the filling and level control of the oil of the reducer, use the hexagonal lid (B) located in the bucket rolls. Turn it until the reducing mark is situated in the horizontal position. Open the lid and to fill until it overflows. To drain the oil:

- Remove the wheel.
- Remove the allen lid (C) and position the hole in the inferior part of the bucket roll.

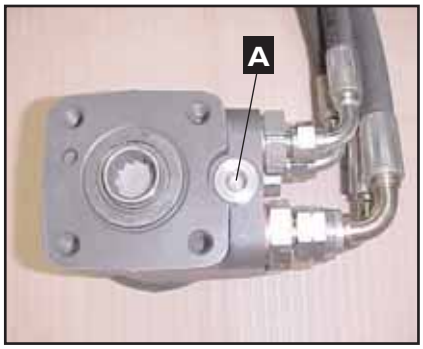
See MAINTENANCE CHART.

■ **Hydraulic oil level and filter (fig.3, 4)**

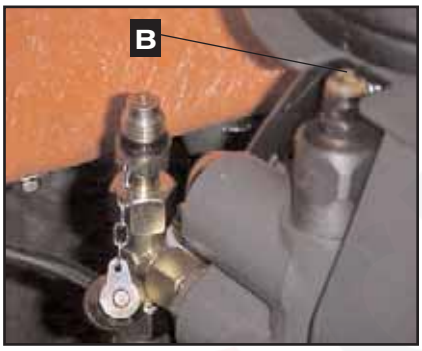
The oil level should check with the forks in low position of rest and with the engine stopped. Place the machine on level ground.To loose the bar (D) and check if the oil arrive to the superior
mark. If necessary, add oil by the hole of the oil bar.
The drain of the tank have to make by the plug (E) located in the inferior side of the tank.
In the hydraulic diagram there are an aspiration filter, located inside of the tank. It's a metallic filter that should clean periodically.

NOTE: The oil tank is equipped with an indicator of low level of oil. When this level is reached, the warning light on the dashboard will be on and an acoustic alarm will also sound. Add oil immediately to prevent any damage in the hydraulic pumps.

Periodic maintenance operations



(fig. 1)



(fig. 2)

(fig. 3)

(fig. 4)

■ **Safety valves adjustment (fig. 1, 2)**

There are safety relief valves on both the hydraulic steering block and on the load handling control valve. The lines in figure 1 and 2 show the plugs where the hydraulic steering pressure (fig.1)
and the load control hydraulic pressure (fig.2) are adjusted. Although they are set at the correct working pressure at the factory, if the hydraulic system fails these safety valves must be reset. However this work must only be done by trained mechanics with knowledge of hydraulics and correct pressure gauge tools. The pressure must not be set higher than set forth in the "SPECIFICATIONS" section of this Manual.

- Steering Block Valve: Take off the cap (A) and turn the screw underneath clockwise to increase the hydraulic pressure.

- Load Control Valve: Take out the cover nut (B) and turn the screw underneath clockwise to increase the hydraulic pressure.

■ **Filter of the hydrostatic transmission (fig. 3)**

The hydrostatic diagram is equipped with a cartridge filter that it should to be substituted periodically. To consult the MAINTENANCE CHART.
The support of the filter goes provided of an obturation indicator (vacuummeter). With the engine started, the needle has to be located in the green area or as maximum in the yellow one. If it comes closer or it locates in the red area, to replace the cartridge filter as soon as possible.

■ **Wheels**

- Tyres pressure

It is recommended that experienced tire personnel should only do tire inflation, as tire inflation can be dangerous if not done with care. The following procedure steps should be taken when inflating the tires, with special caution exercised when working on the front axle tires.
- Park the machine on level ground and turn the engine off.
- Always inflate tyres before it has been operated and the tires are still cold. Only inflate tires to the level recommended by AUSA. (See SPECIFICATIONS in this Manual).
- Check tire air pressure with a tire pressure gauge. The inflation valve must be secured with a clamp to prevent a possible whip lash if the valve is suddenly disengaged.
- Always wear goggles to prevent injury from an unforeseen air jet.
- If a tire is inflated after being removed from the machine, the tire should only be inflated after it has been placed under a protective cage.

■ **Tightening torque**

You should check weekly the torque wrench of the nuts of the wheels fixation.

Specified torque is:

Front axle: 230 lb ft ± 20 (32 mKg ± 4) (250 ± 30 Nm)
Rear axle 2WD: 230 lb ft ± 20 (32 mKg ± 4) (250 ± 30 Nm)
Rear axle 4WD: 108 lb ft ± 10 (15 mKg ± 4) (150 ± 20 Nm)

ATTENTION!!

If not essential because of the specific job to do, and because this machine hasn't suspension, solid tyres or strips are not recommended because the effect of impacts are bigger.

■ **Forklift mast chain (fig. 4)**

The length of the mast chain should be checked every 1000 hours. When the forklift is delivered to the owner, the length of the mast chain must be measured and noted in a permanent record. The chain must be replaced when their length has increased 3%. To tighten the mast chain, loose and tight the nuts arrowed.
The confirmation of the lengthening you can make counting the links that there is in a meter of chain of 5/8" in passing, nominally they should have 63 links. The change should be carried out when 62,5 links are counted, maximum 61.

Greasing points

■ Greasing points

Rear axle

2 WD models

1 nipples in axle articulation.

2 nipples, 1 on each wheel kingpin.

4 WD models

4 nipples, 2 on each articulation of the wheel reduction gears.

1 nipples in axle articulation.

Universal drive joints (4 WD models) (fig. 1 and 2)

2 nipples on each joint.

Mast support.(fig. 3)

2 nipples, 1 on each articulation mast axle.

Tilting cylinders (fig. 4)

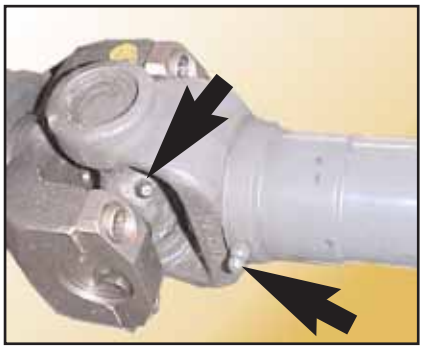
2 nipples, 1 on each articulation axle.

Chassis tilting cylinder articulation (fig. 5)

2 nipples, 1 on each support

Control valve joints (fig. 6)

3 nipples, 1 on each joint.

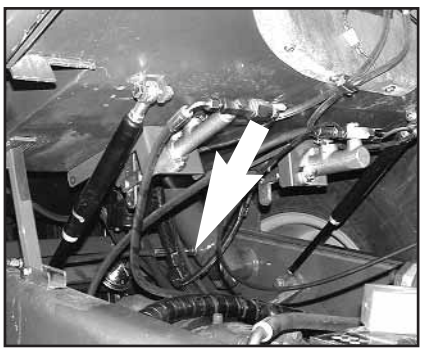


(fig. 1)

(fig. 2)

(fig. 3)

(fig. 4)



(fig. 5)

(fig. 6)

Maintenance Chart

C 150 H LUBRICATION AND MAINTENANCE CHART **I:** Inspect, verify, clean, lubricate, replace if necessary **C:** Clean **L:** Lubricate **R:** Replace	EVERY													To be performed by
	Initial inspection (50 h)	Every 100 h.	Every 200 h.	Every 400 h.	Every 600 h.	Every 800 h.	Every 1000 h.	Every 1500 h.	Every 3000 h.	Every week	Every month	Every year	Every 2 years	
ENGINE														
Oil and oil filter (1)	R		R(6)									R		CUSTOMER
Alternator belt (1)	I	I		R									R (8)	DEALER
Valve clearance						I								DEALER
CIRCUIT FEED														
Air filter element (4)		C			R(5)							R		CUSTOMER
Pipeline for air inlet			I										R (7)	CUSTOMER
Fuel pipe and clamp										I			R (2)	CUSTOMER
Fuel filter cartridge				R										CUSTOMER
Fuel prefilter (1)	R			R										CUSTOMER
Fuel tank				C										CUSTOMER
Injection pressure of the mouth piece dor fuel injection								I						DEALER
Injection pump (timing) (2)									I					DEALER
Fuel injection timer (2)									I					DEALER
REFRIGERATING CIRCUIT														
Muffs of the radiator and claspers			I										R	CUSTOMER
Radiator (internal)				C										DEALER
Refrigerating liquid										I			R	CUSTOMER
ELECTRICAL SYSTEM														
Battery electrolyte	I	I												CUSTOMER
Battery connections										I				CUSTOMER
Dashboard indicator (3)										I				CUSTOMER
Battery											I		R	CUSTOMER
Damages in the elctrical cables and in free connections												I		CUSTOMER
HYDRAULIC CIRCUIT														
Oil and suction strainer (3)	R						R			I				CUSTOMER
Hydraulic cartridge	R						R							
Movements masts (3)										I				CUSTOMER
Damages in the cliches and in hydraulic connections			I											CUSTOMER
Direction movements (3)										I				CUSTOMER
GREASING POINTS														
Masts guides										L				CUSTOMER
Nipples (see greasing points)										L				CUSTOMER
Control links (accelerator, lifting cylinders...)										L				CUSTOMER
TRANSFER-BOX														
Oil (1)	I				R(6)					I		R		CUSTOMER
Loss of oil										I				CUSTOMER
Pressing of all the screws and nuts										I				CUSTOMER
AXLES (FRONT AND REAR)														
Oil (1)	I				R(6)					I		R		CUSTOMER
Loss of oil										I				CUSTOMER
Press the wheel nuts										I				CUSTOMER
Press the fixation screws to the chassis							I							DEALER
Press the fixation nuts of the cardan joint											I			DEALER
Press the fixation nuts for coupling											I			DEALER
Condition of tires ans pressures										I				CUSTOMER
BRAKES														
Brake fluid (3)							R			I			R	CUSTOMER
Stretched of the service brake (3)	I									I				
Stretched of the parking brake (3)	I									I				CUSTOMER
BODY/FRAME														
Protector roof										I				CUSTOMER
Seat belt (3)										I				CUSTOMER
Floor plate and access steps (3)										I / C				CUSTOMER
Protectors (3)										I				CUSTOMER
Plates and adhesives (3)										I/C				CUSTOMER
Safety system / fixation cabin surely raised										I				CUSTOMER
Cabin lock										I				CUSTOMER

(1) Initial inspection. The initial maintenance is very important and must not be neglected.
(2) To be performed by an authorized AUSA dealer.
(3) Daily inspection item.
(4) The air filter must be cleaned more often in dusty conditions than in normal conditions.
(5) After cleaning 6 times.
(6) ... Or at least once a year.
(7) Substitute only in case of being necessary.
(8) ... Or every 400 hours.

Electric circuit

Below chassis number 50365

CABLES COLORS	
A	Light Blue
B	White
C	Orange
G	Yellow
H	Grey
L	Blue
M	Brown
N	Black
R	Red
S	Pink
V	Green
Z	Violet

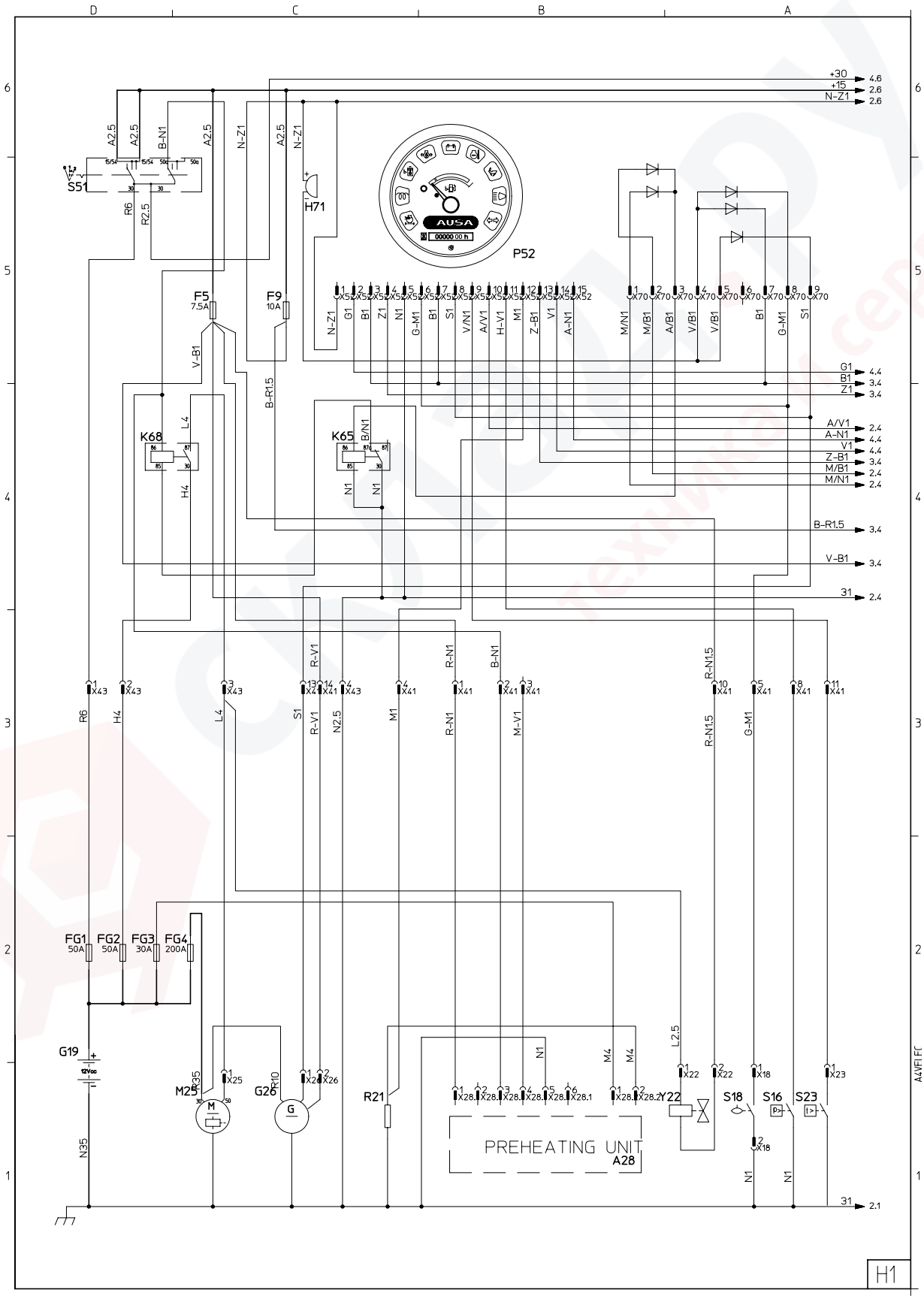
Remark: In the bicolor cables, the longitudinal or traverse shape of the marks on the protective coating are to indicate the color. For example:

G - V: Yellow / Green with traverse marks
G / V : Yellow / Green with longitudinal marks

Electric circuit

1

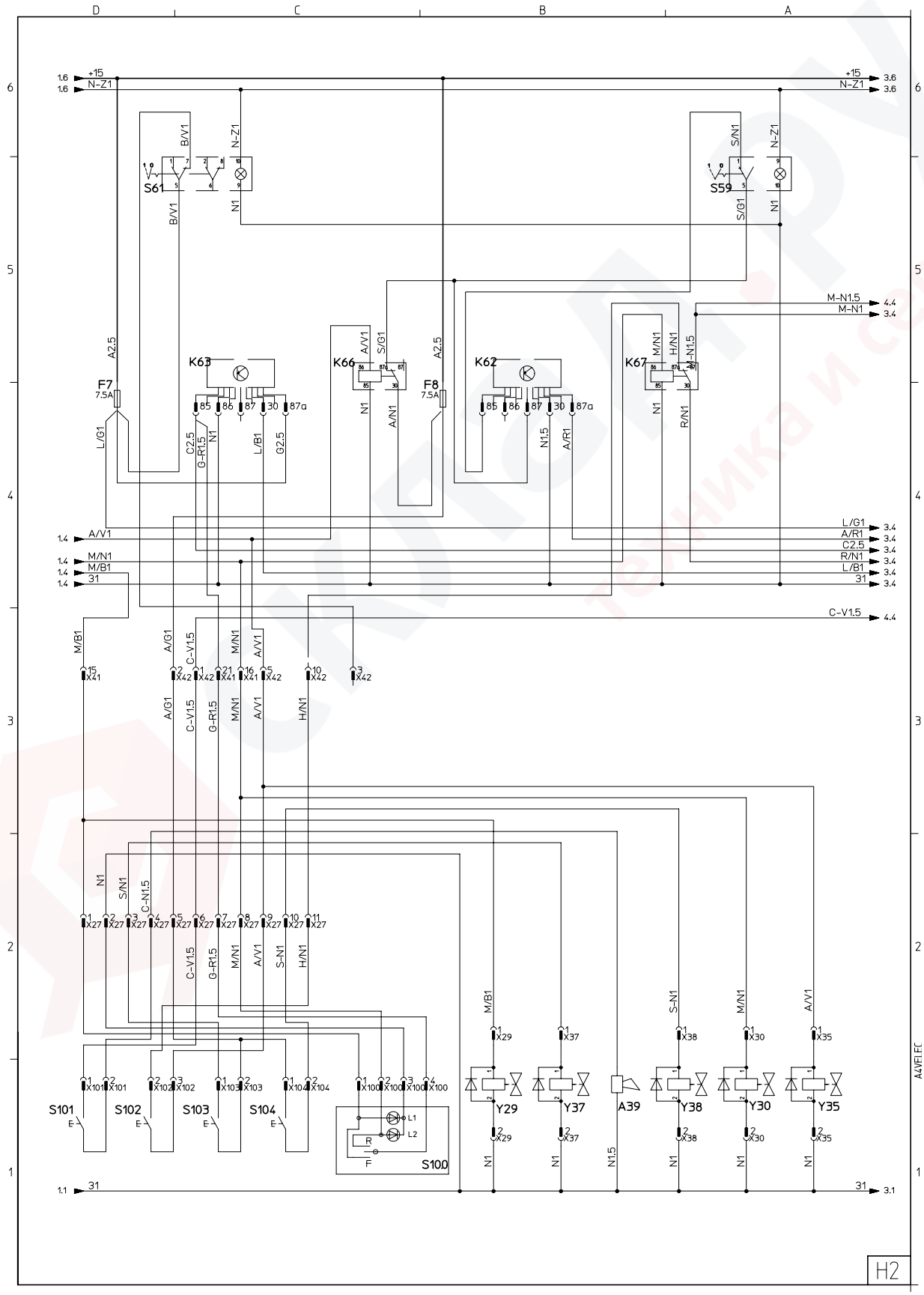
Below chassis number 50365



Electric circuit

Below chassis number 50365

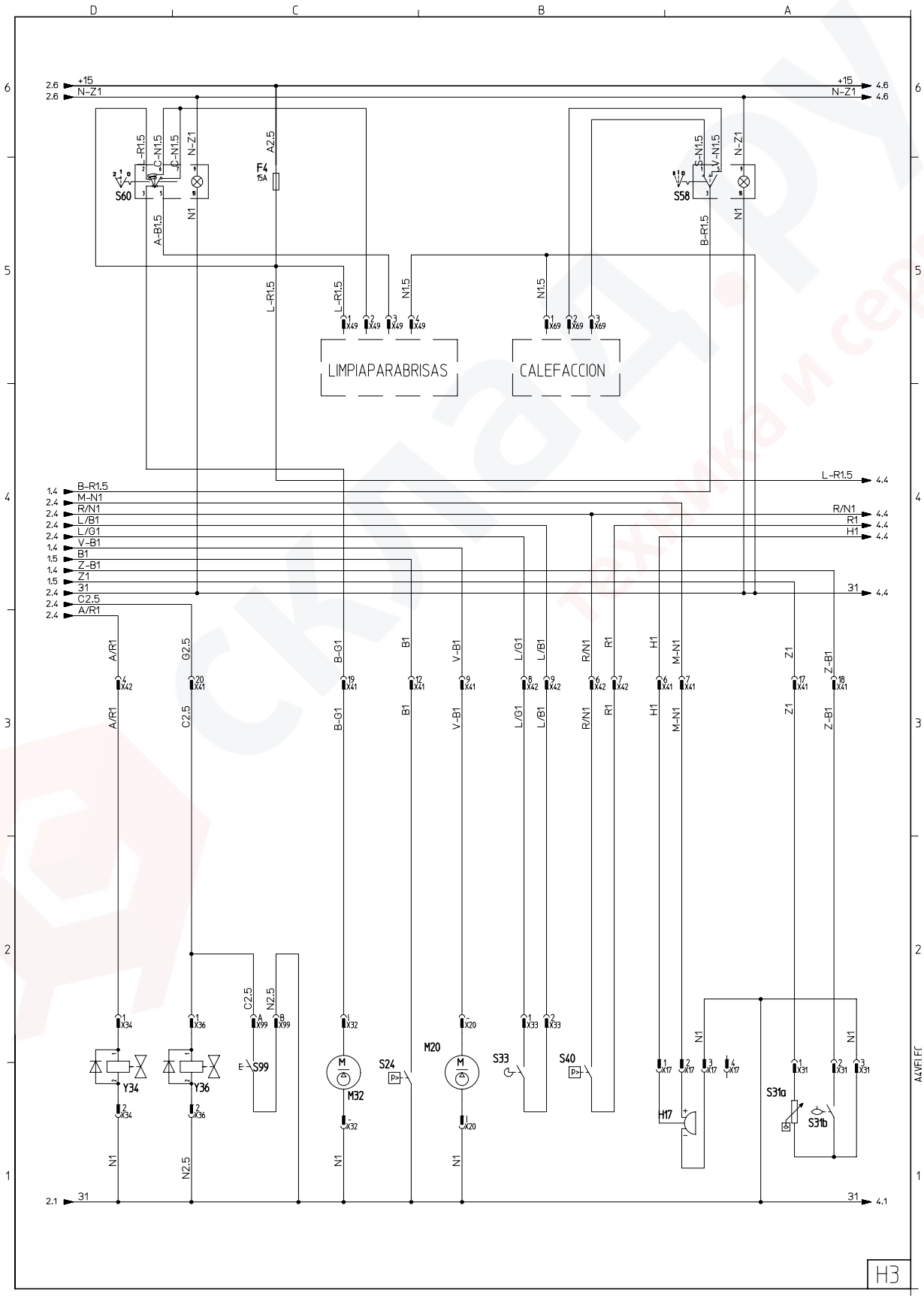
2



Electric circuit

3

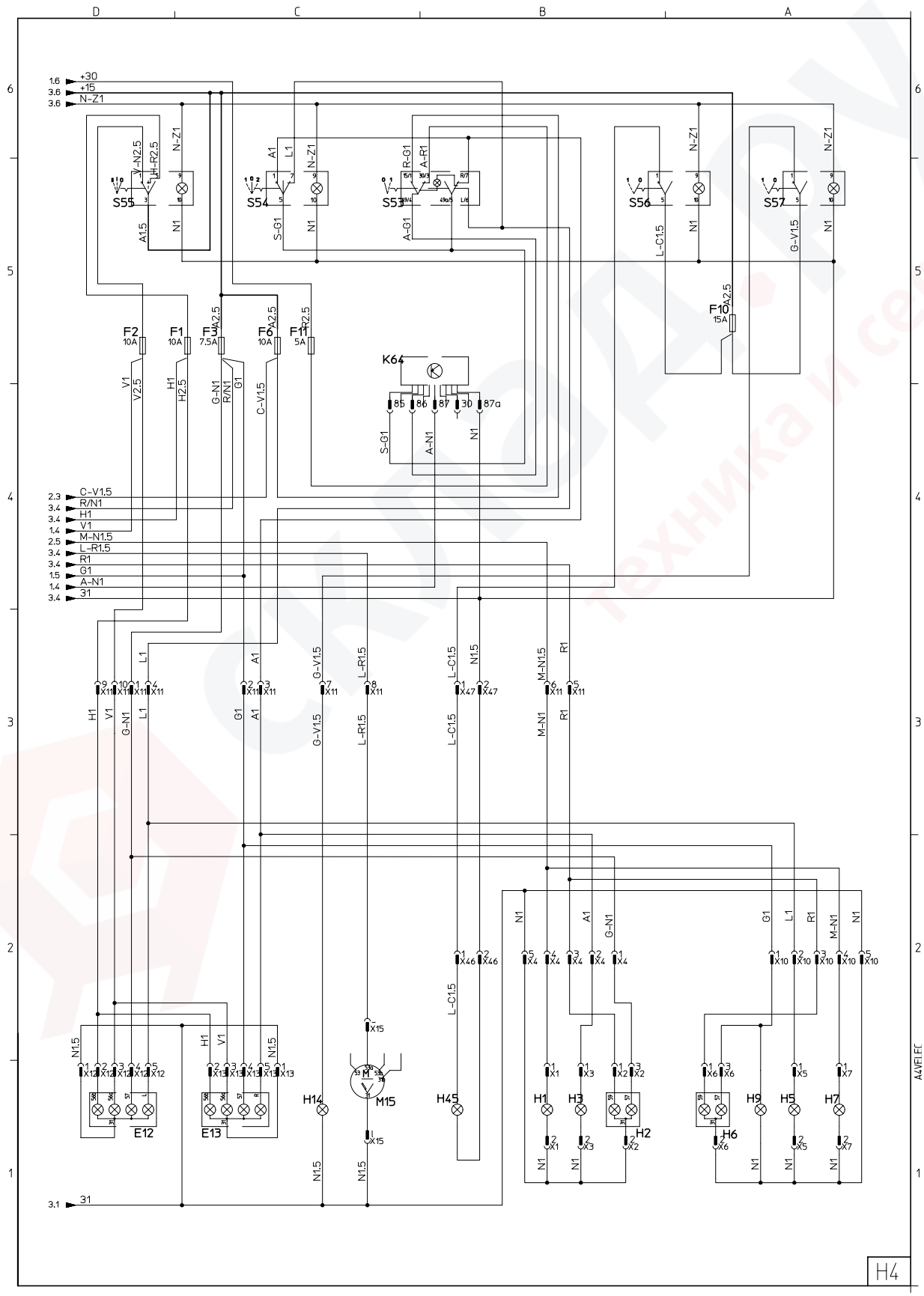
Below chassis number 50365



Electric circuit

Below chassis number 50365

4



Electric circuit

Below chassis number 50365

Item	Description	Sh
A28	Pre-heat relay	1
A39	Horn	2
E12	Left hand headlight	4
E13	Right hand headlight	4
F1	Low beam fuse (10A)	4
F2	High Beam fuse (10A)	4
F3	Side lights / brake lights / reverse relay fuse (7'5A)	4
F4	Front windscreen wiper fuse (15A)	3
F5	Ignition feed stop solenoid / fuel pump / pre-heating / alternator fuse (7'5A)	1
F6	Ignition feed warning lights / horn fuse (10A)	4
F7	Seat switch / timer relay fuse (7'5A)	2
F8	3rd.and 4rth.service solenoids (sideshift or attachments) fuse (7'5A)	2
F9	Dash panel lights / heater motor fuse (10A)	1
F10	Flashing / rotating beacon and working lights fuse (15A)	4
F11	Permanent live warning lights switch (5A)	4
FG1	Permanent live main fuse (50A)	1
FG2	Starter motor relay main fuse (50A)	1
FG3	Pre-heat relay main fuse (30A)	1
FG4	Battery main fuse (200A)	1
G19	Battery	1
G26	Alternator	1
H1	Right hand reverse light	4
H2	Brake and tail lights right hand side	4
H3	Rear right hand indicator	4
H5	Rear left hand indicator	4
H6	Brake and tail lights left hand side	4
H7	Left hand reverse light	4
H9	Number plate light	4
H14	Work lights	4
H17	Reverse alarm	3
H45	Rotating / Flashing beacon	4
H71	Dash panel buzzer (warning lights)	1
K62	4x4 timer relay (not used)	2
K63	Seat switch timer relay	2
K64	Flasher relay	4
K65	Neutral start relay	1
K66	4x4 low speed relay (not used)	2
K67	Reverse alarm relay (night silence)	2
K68	Starter motor relay	1

Item	Description	Sh
M15	Rear wiper motor	4
M20	Electric fuel pump	3
M25	Starter motor	1
M32	Windscreen washer motor	3
P52	Instrument panel	1
R21	Pre-heater plugs	1
S16	Air filter blockage indicator	1
S18	Hydraulic oil level sensor	1
S23	Coolant temperature warning switch	1
S24	Engine oil pressure switch	3
S33	Seat switch	3
S40	Brake lights switch	3
S51	Ignition barrel	1
S53	Hazard light switch	4
S54	Indicator switch	4
S55	Headlight / sidelight switch	4
S56	Rotating / Flashing beacon switch	4
S57	Worklight switch	4
S58	Heater motor switch	4
S59	4x4 switch (not used)	2
S60	Front windscreen wiper switch	3
S61	Handbrake switch (not used)	2
S99	Joystick spool valve lock link connector	3
S100	Forward and Reverse switch (joystick)	2
S101	Horn switch (joystick)	2
S102	2 Speed selector switch (joystick)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
S31a	Fuel tank gauge	3
S31b	Low level fuel warning light	3
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y34	4x4 solenoid (not used)	3
Y35	2 Speed solenoid	2
Y36	Joystick spool valve lock units	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2

Electric circuit

Above chassis number 50365

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B	White
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N	Black
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Remark: In the bicolor cables, the longitudinal or traverse shape of the marks on the protective coating are to indicate the color. For example:

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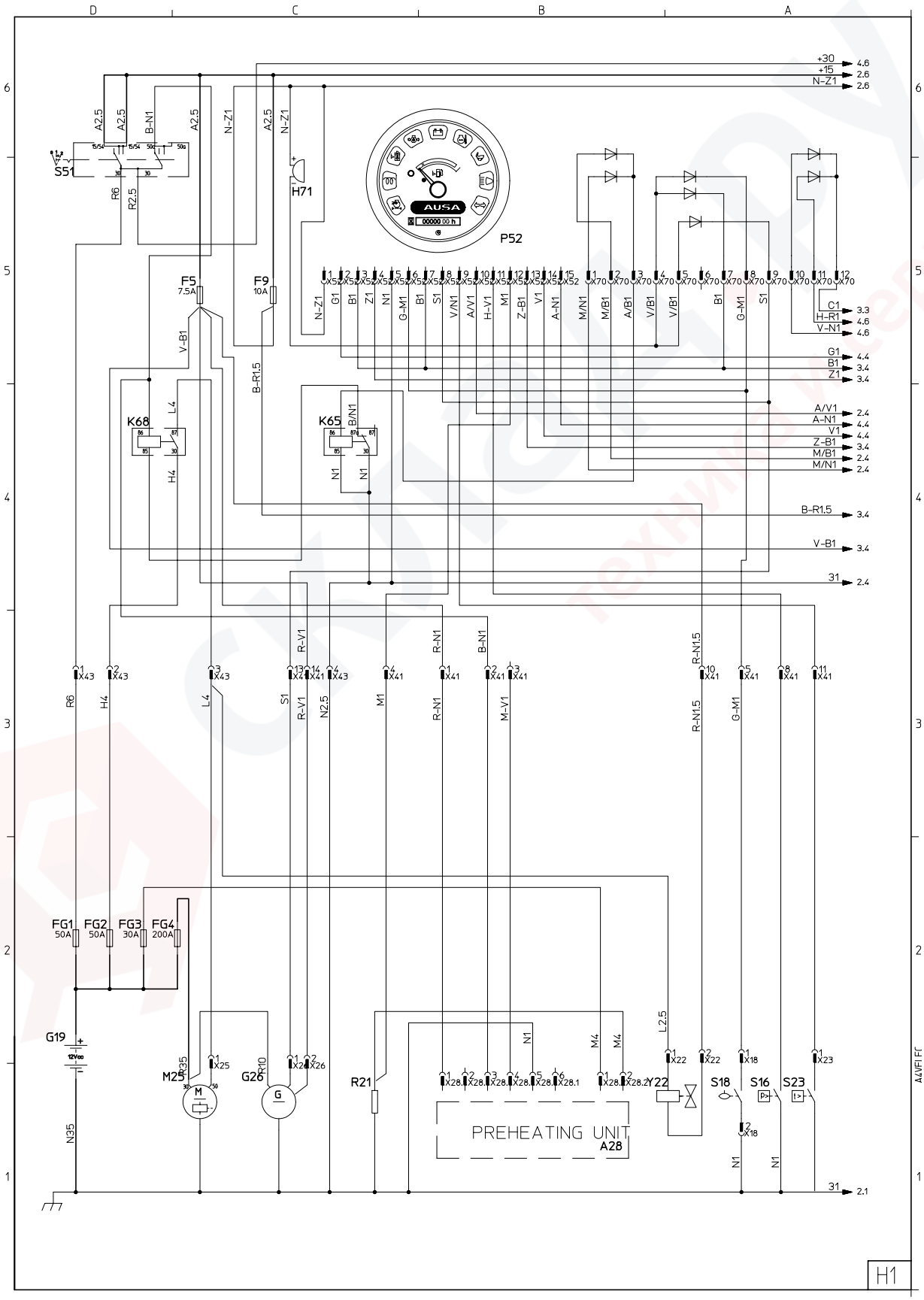
Electric circuit

1

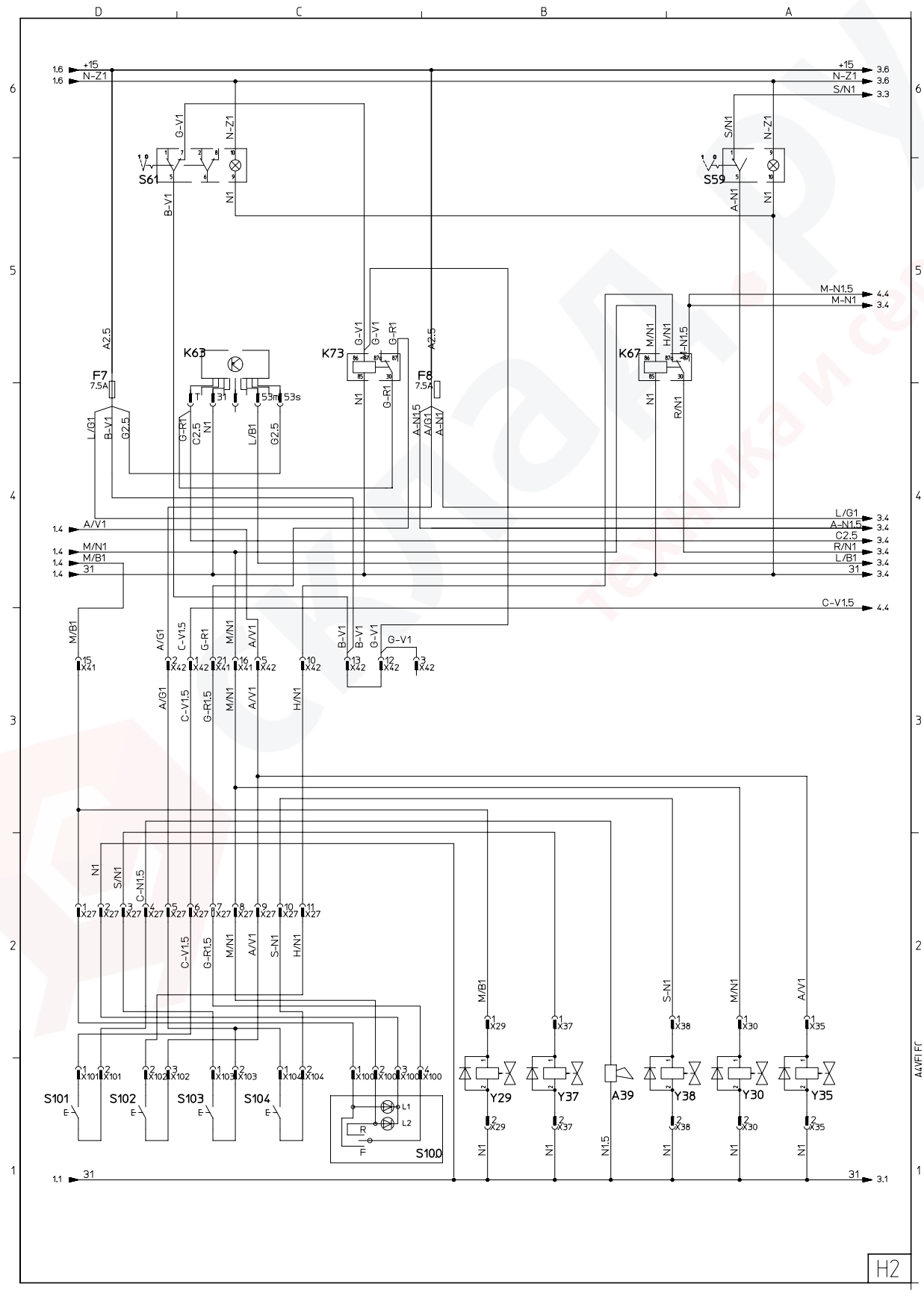
Above chassis number 50365



Electric circuit

Above chassis number 50365

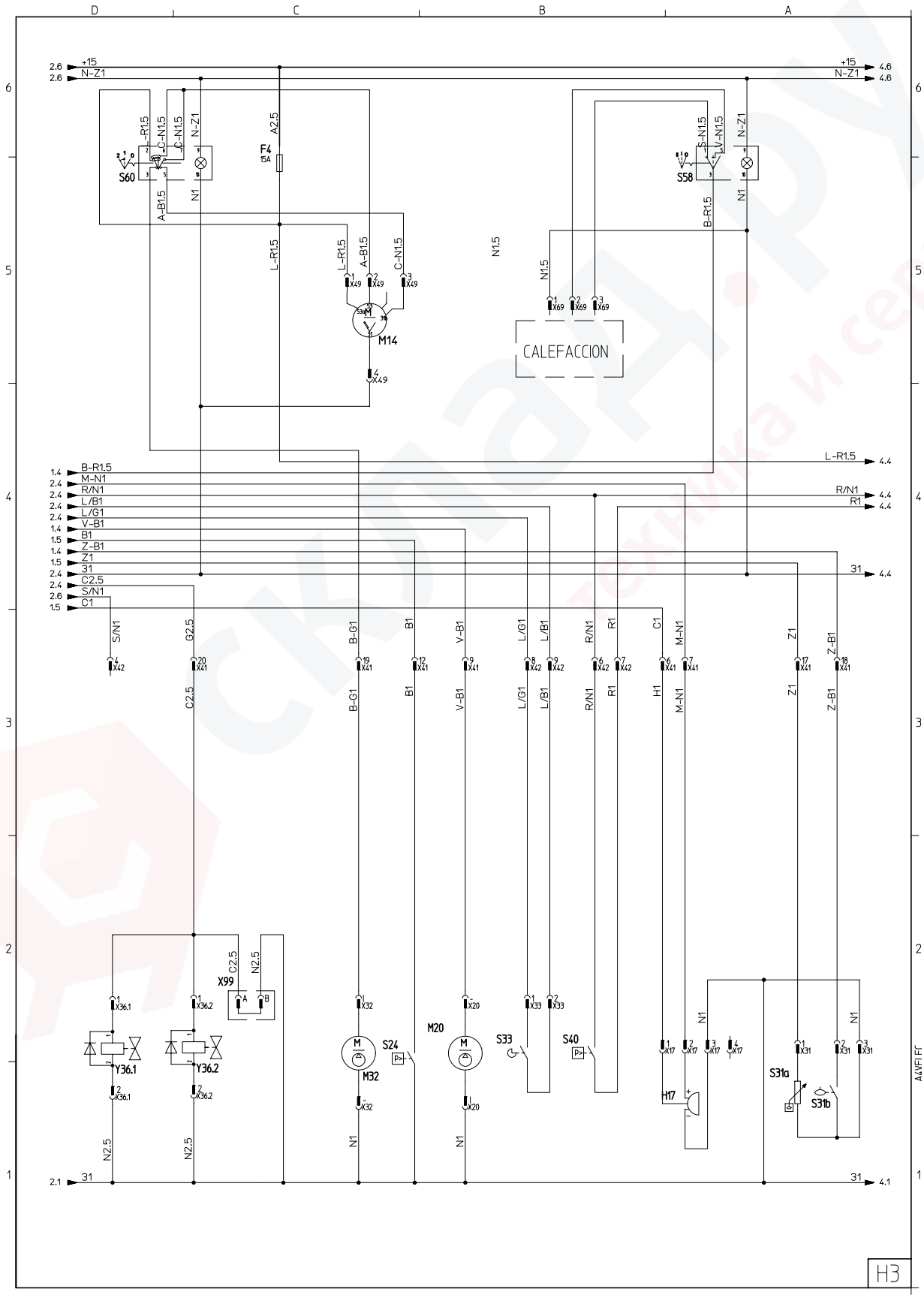
2



Electric circuit

2

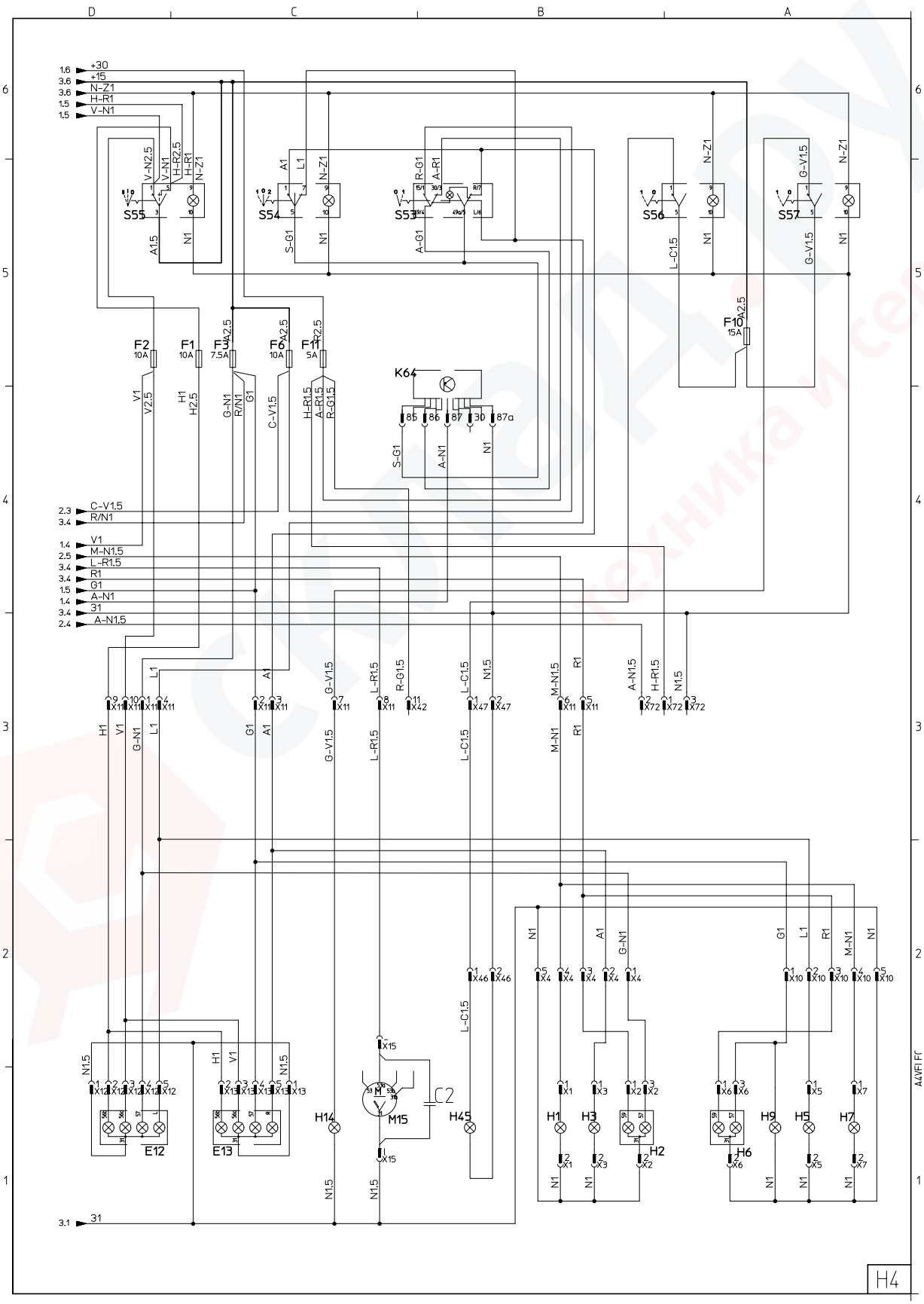
Above chassis number 50365



Electric circuit

Above chassis number 50365

2



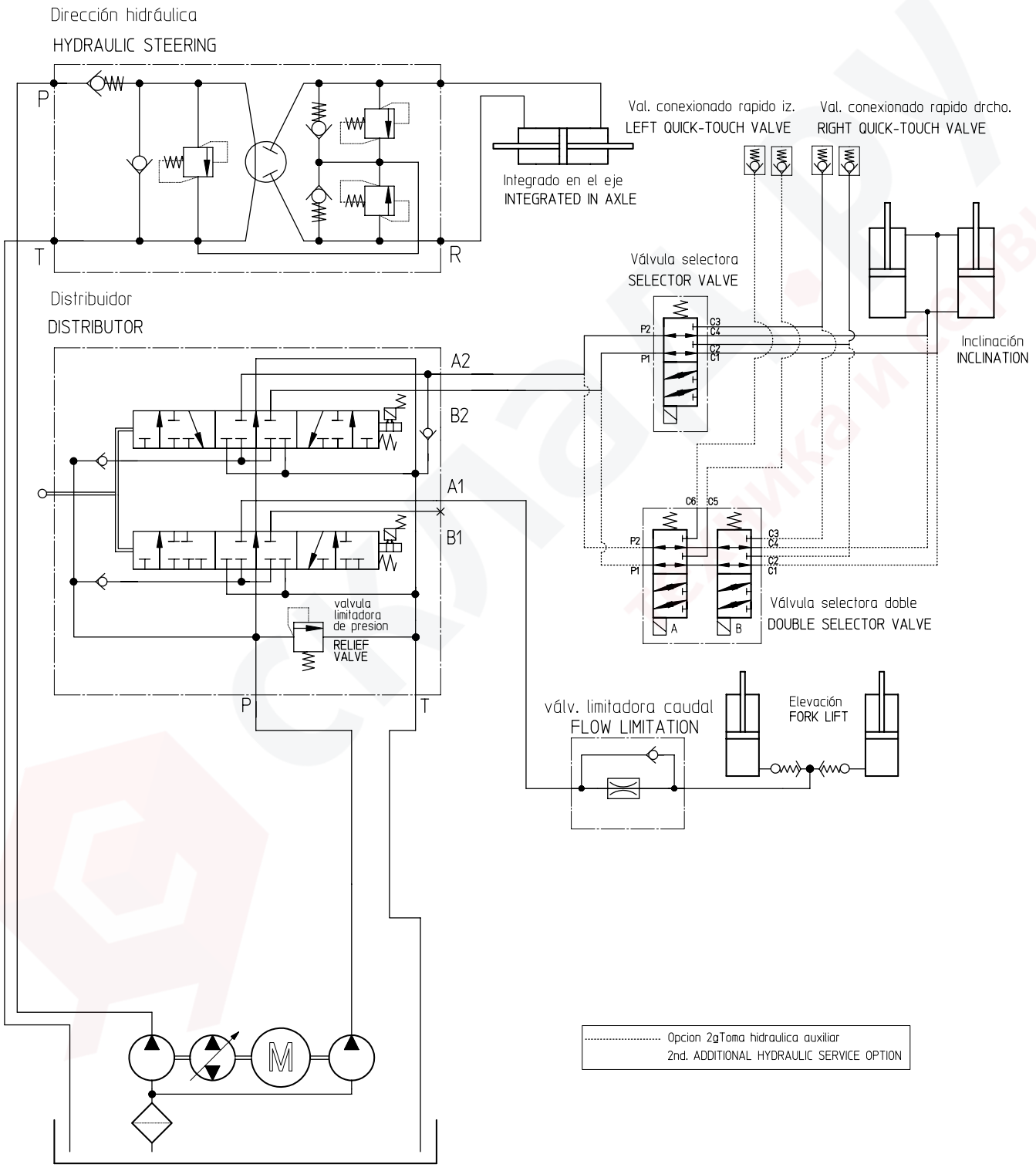
Electric circuit

Above chassis number 50365

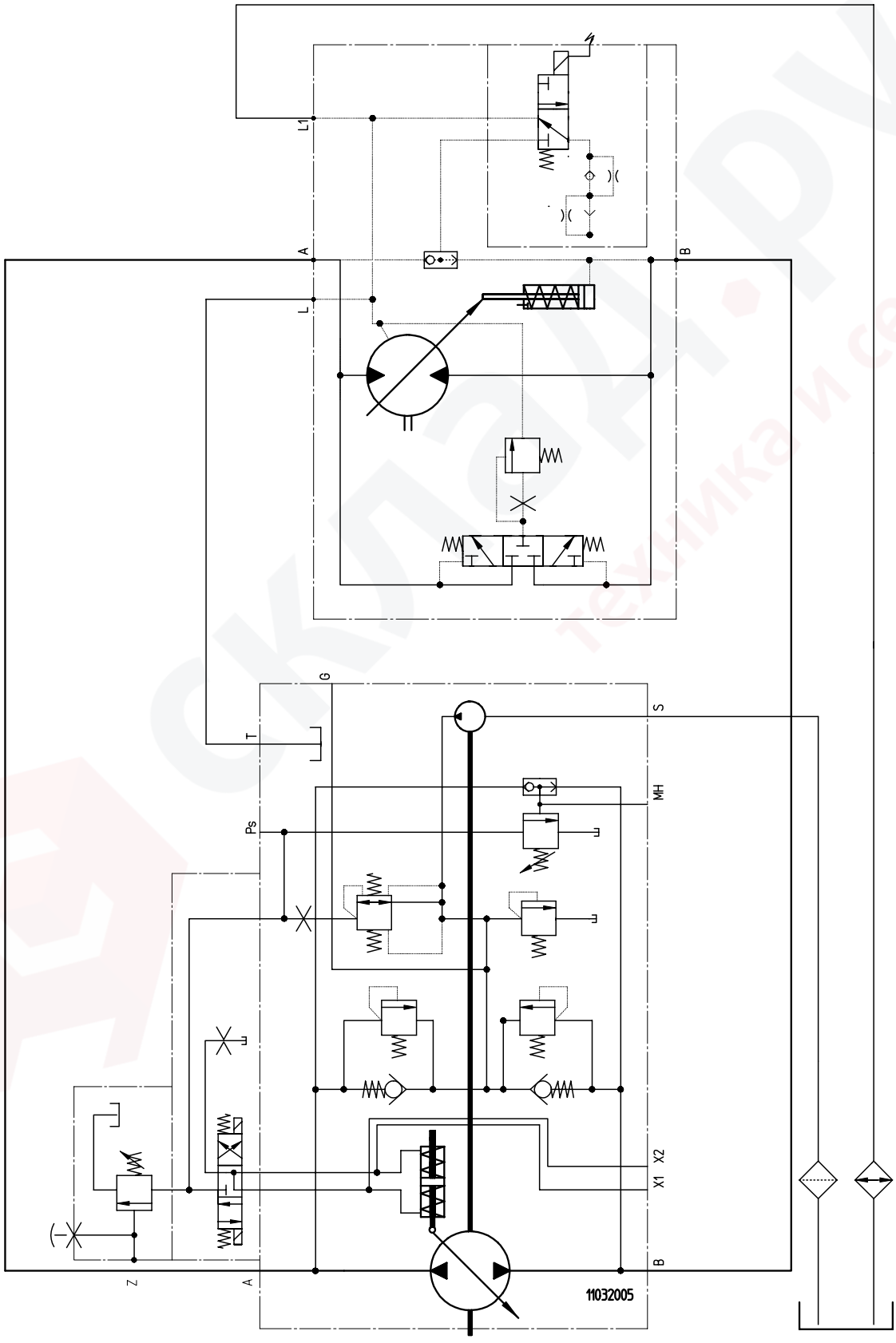
Item	Description	Sh
A28	Pre-heat relay	1
A39	Horn	2
C2	Condenser	4
E12	Left hand headlight	4
E13	Right hand headlight	4
F1	Low beam fuse (10A)	4
F2	High Beam fuse (10A)	4
F3	Side lights / brake lights / reverse relay fuse (7'5A)	4
F4	Front windscreen wiper fuse (15A)	3
F5	Ignition feed stop solenoid / fuel pump / pre-heating / alternator fuse (7'5A)	1
F6	Ignition feed warning lights / horn fuse (10A)	4
F7	Seat switch / timer relay fuse (7'5A)	2
F8	3rd.and 4rth.service solenoids (sideshift or attachments) fuse (7'5A)	2
F9	Dash panel lights / heater motor fuse (10A)	1
F10	Flashing / rotating beacon and working lights fuse (25A)	4
F11	Permanent live warning lights switch (15A)	4
FG1	Permanent live main fuse (50A)	1
FG2	Starter motor relay main fuse (50A)	1
FG3	Pre-heat relay main fuse (50A)	1
FG4	Battery main fuse (200A)	1
G19	Battery	1
G26	Alternator	1
H1	Right hand reverse light	4
H2	Brake and tail lights right hand side	4
H3	Rear right hand indicator	4
H5	Rear left hand indicator	4
H6	Brake and tail lights left hand side	4
H7	Left hand reverse light	4
H9	Number plate light	4
H14	Work lights	4
H17	Reverse alarm	3
H45	Rotating / Flashing beacon	4
H71	Dash panel buzzer (warning lights)	1
K63	Seat switch timer relay	2
K64	Flasher relay	4
K65	Neutral start relay	1
K67	Reverse alarm relay (night silence)	2
K68	Starter motor relay	1
K73	FNR switch disconnection relay (handbrake on) (not used)	2
M14	Wiper motor	3

Item	Description	Sh
M15	Rear wiper motor	4
M20	Electric fuel pump	3
M25	Starter motor	1
M32	Windscreen washer motor	3
P52	Instrument panel	1
R21	Pre-heater plugs	1
S16	Air filter blockage indicator	1
S18	Hydraulic oil level sensor	1
S23	Coolant temperature warning switch	1
S24	Engine oil pressure switch	3
S33	Seat switch	3
S40	Brake lights switch	3
S51	Ignition barrel	1
S53	Hazard light switch	4
S54	Indicator switch	4
S55	Headlight / sidelight switch	4
S56	Rotating / Flashing beacon switch	4
S57	Worklight switch	4
S58	Heater motor switch	4
S59	Optional switch	2
S60	Front windscreen wiper switch	3
S61	Handbrake switch	2
S99	Joystick spool valve lock link connector	3
S100	Forward and Reverse switch (joystick)	2
S101	Horn switch (joystick)	2
S102	2 Speed selector switch (joystick)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
S31a	Fuel tank gauge	3
S31b	Low level fuel warning light	3
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y34	Parking brake solenoid	3
Y35	2 Speed solenoid	2
Y36.1	Security solenoid	3
Y36.2	Security solenoid	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2

Hydraulic diagram (hydraulic appliances)



Hydraulic diagram (transmission)



Trouble shooting

AUSA	INSTRUCTIONS FOR THE IDENTIFICATION OF FAILURES IN HYDROSTATIC TRANSMISSIONS			
FAILURE	**POSSIBLE CAUSE**	**CHECK**	**LOCATION**	**CORRECT VALUES**
The machine does not move neither forward nor reverse	Oil Level is low	Oil level	Oil tank	
	Suction hose is bent or squashed		Suction hose	
	Hydraulic oil cartridge is clogged	Depressor marked in vacuum gauge	Suction filter	< 0,3 bar
	Faulty coupling		Motor or pump coupling	
	Pre-load pump turns counterwise to engine	Load pressure	Pressure intake with a gauge on pump's port M3 (SAUER GROUP) or S (BOSCH-REXROTH GROUP)	20÷24 bar
	Faulty pre-load pump			
	Faulty oil motor			
	Directional solenoid does not work	Resistance and voltage. Control box (SAUER)	Directional solenoids in pump	
	Inching is seized, disconnected or badly set (SAUER)	Throw and connections	Pedal and electric connections	
	Faulty oil strainer	Faulty oil suction Sealing of tubes, connectors and suction	Oil connections	
Non instant motion response, abnormal noise	Oil is air-emulsified or Oil level is low	Oil level, sealing of pipes / hoses, fittings	Oil tank, fittings	
	Vacuum filter is clogged	Depressor marked in vacuum gauge	Vacuum filter	< 0,3 bar
	Inching is seized, disconnected or badly connected (SAUER)	Potentiometer, linkage and connections	Pedal and electric connections	
Engine is overloaded	Low engine power or faulty engine	Engine does not accelerate at max. Load	Engine	85÷95 % max rpm. of engine
	High pressure-limit is set too low	Working pressure	Working pressure ports in pump	Recommended max. Pressures: 345 or 410 bar.
	Inching is seized (SAUER)	Potentiometer / linkage	Pedal	< 0,3 bar
Low traction power	Engine does not work at nominal level or it's overloaded	Haul of accelerator lever	Engine	85÷95 % max rpm. of engine
	Low load pressure	Load pressure	Pressure intake with a gauge on pump's port M3 (SAUER GROUP) or S (BOSCH-REXROTH GROUP)	20÷24 bar
	Inching is seized (SAUER)	Potentiometer / linkage	Pedal	
	M4, M5 (SAUER) or Xa, Xb (BOSCH-REXROTH) Piloting hoses of hydrostatic motor are reversed.	Hydraulic chart	Connections	
	Hydraulic Oil overheating	Dirt in radiator	Radiator oil	

Trouble shooting

AUSA	INSTRUCTIONS FOR THE IDENTIFICATION OF FAILURES IN HYDROSTATIC TRANSMISSIONS			
FAILURE	**POSSIBLE CAUSE**	**CHECK**	**LOCATION**	**CORRECT VALUES**
Hydraulic oil overheating	Low oil level	Oil level	Oil tank	
	Faulty oil	Oil degradation an pollution		
	Suction line is not sealed	Sealing for hoses, fittings and cartridge	Oil connections	
	Faulty high pressure relief-valves	Working pressure	Working pressure ports in pump	Recommended max. Pressures: 345 or 410 bar.
	Radiator is clogged	Dirt in radiator		
Transmission overspeed	Max. Engine RPM is higher than recommended	Max. RPM on the engine	Engine	
	Faulty hudrostatic motor. Does not move to max. flow.			
Irregular running	M4, M5 (SAUER) or Xa, Xb (BOSCH-REXROTH) Piloting hoses of hydrostatic motor are reversed.	Hydraulic Chart	Oil connections	
Insuficient acceleration	Low engine power	Haul of accelerator lever	Engine	
	M4, M5 (SAUER) or Xa, Xb (BOSCH-REXROTH) Piloting hoses of hydrostatic motor are reversed.	Hydraulic Chart	Oil connections	
	Faulty hudrostatic motor. Does not move to min. flow.			


AUSA