C 300 H
C 300 H x4
C 350 H
C 350 H x4

OPERATOR'S MANUAL

ENGLISH

C 300 H
C 300 H 4x4
C 350 H
C 350 H 4x4

Foreword

■ Thank you for choosing this model of AUSA forklift truck (hereinafter forklift) which will provide you with the best available value, safety and comfort at work.
The preservation of these qualities over a long period of time lies in your hands. The correct use of your forklift will allow you to make the most of the resultant benefits.
We recommend you read and study the Operator Handbook before using the forklift; the purpose of the handbook is to instruct all the people who come into contact with the forklift, but especially the operator. The contents of the Handbook will help you to get to know your AUSA forklift, including: everything concerning start-up, driving method, maintenance, preservation, the uses for which it is designed and the safety instructions that should be borne in mind.
Any damage resulting from the incorrect use of the forklift shall not be considered to be the responsibility of AUSA.
In the event of query, complaint or to place an order for spares, please contact your Official AUSA Agent - Distributor.
For further information, please contact:

AUSA Center, S.L.U.
Apartado P.O.B. 194
08243 MANRESA (Barcelona) SPAIN
Tel. 34 - 93 874 75 52 / 93 874 73 11
Fax 34 - 93 873 61 39 / 93 874 12 11 / 93 874 12 55
E-mail: ausa@ausa.com
Web: www.ausa.com

AUSA is continually improving its products and reserves the right to make the necessary modifications, without being obliged to incorporate these modifications into previously sold products. As such, we will not accept claims that are based on the data, illustrations or descriptions included in these instructions.
Only original AUSA spare parts should be used. This is the only way to guarantee that AUSA machinery has the same operational level as at the time of delivery.
No alterations should be made to the vehicle without the prior authorization of the manufacturer.
This manual should be kept in the place provided on the support of the hydraulic control valve. To access this space, tilt the mast forwards and tip the cabin **(fig. 1)**.

(fig. 1)

Contents

Introduction

■ **Uses for which the forklift is designed**

Forklifts C 300/350 H and C 300/350 H x4 have been designed and manufactured for lifting, handling and transporting loads on rough ground. The safety of individuals and of the loads carried must be ensured through the use of forks or other accessories and equipment.

Any use other than that described above shall be considered inappropriate and therefore improper.

Strict adherence to the operating, maintenance and repair conditions specified by the manufacturer are essential in order to maintain the forklift in good working order.

Driving, maintenance and repair of the forklift should only be carried out by suitably qualified personnel, with the necessary tools and knowledge of the control and safety procedures relative to the forklift.

When handling loads or carrying out maintenance and/or repair work, the occupational health and safety regulations, together with those relative to accident prevention, should be observed.

When driving with the forklift on public highways, special care should be taken to ensure compliance with the current legislation for this type of vehicle (Highway Code).

AUSA does not assume responsibility for any damage resulting from modifications made to the forklift without express authorization.

❀ **The texts following this symbol provide information on recycling and protecting the environment.**

■ **Improper use**

Improper use is understood to mean the use of the forklift in a manner not in keeping with the criteria and instructions given in this handbook and in a way which might cause damage to persons or objects.

Some of the more common and dangerous examples of improper use are given below:

- Carrying persons other than the operator on the forklift.
- Not strictly observing the instructions for use and maintenance given in this handbook.
- Exceeding the limits for load and centre of gravity given in the relevant load tables.
- Working on unstable, unshored grounds or at the edges of trenches and ditches.
- Working on excessively steep slopes.
- The use of accessories or equipment for purposes other than those for which they have been designed.
- The use of accessories or equipment not manufactured or authorized by AUSA.

Identification of the forklift truck

Important! When contacting either AUSA or their dealers on matters regarding the forklift, the following information should be given: Model, date of purchase, chassis number and engine number. This data is given on the identification plate.
For ease of access, write this information in the spaces given below:

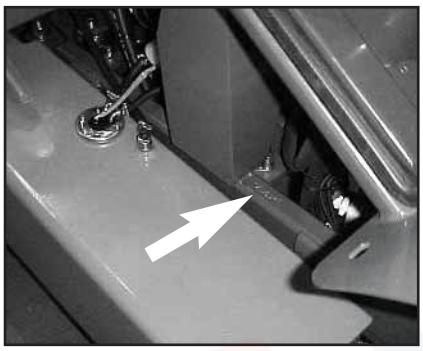
Forklift model: .....

Date of purchase: .....

Chassis serial number: .....

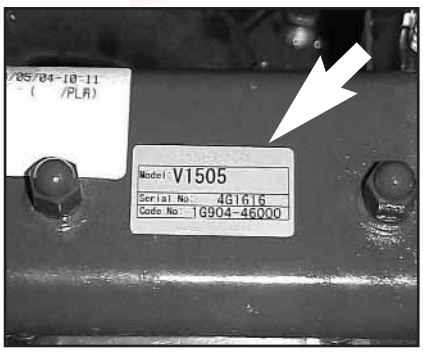
Engine serial number: .....

(fig. 1)



(fig. 2)

(fig. 3)



(fig. 4)

■ **Machine identification plate: (fig. 1)** This is located on the left-hand side of the driver's seat. It includes the CE mark.

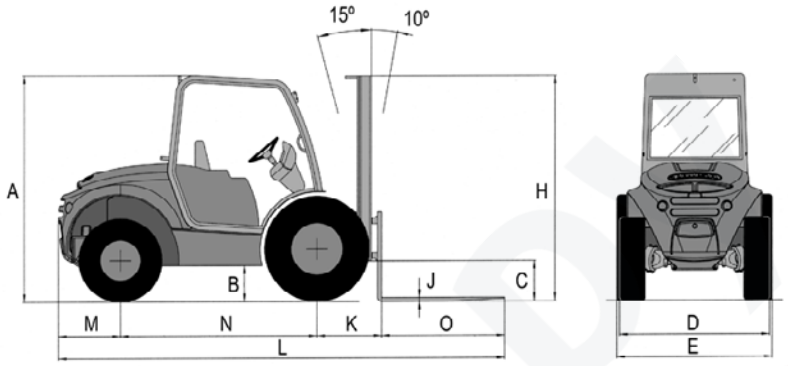
■ **Chassis serial number: (fig. 2)** This is engraved on the right-hand strut of the chassis.

■ **Engine serial number: (figs. 3, 4)** This is engraved on the right-hand side of the engine, below the exhaust manifold and is also given on a label on the rocker arm cover.

■ **Identification plates of the principal components:** The identification plates corresponding to all those components not directly constructed by AUSA (for example: engines, pumps, etc.) are located on the components themselves, in the positions in which the respective manufacturers originally placed them. For further information see the section **Identification plates and labels**.

Technical specifications

Measurements chart



DIMENSIONS (mm)	C 300 H	C 300 H x4	C 350 H	C 350 Hx4
A	2200	2200	2240	2240
B	250	220	250	220
C	325	325	380	380
D	1460	1460	1460	1460
E (narrow axle)	1510	1510	1690	1690
E (wide axle)	1870	1870	1950	1950
F	3500	4700	3500	4700
G	2850	3005	2850	3005
I	120	120	120	120
J	50	50	50	50
K	750	750	750	750
L	4500	4500	4500	4500
M	600	600	600	600
N	1950	1950	1950	1950
O	1200	1200	1200	1200
P	5600	6805	5600	6805

Technical specifications

■ Diesel engine

C 300 H	Kubota V2003T	57.88 HP/ 42.6 kW (According to DIN 6270B) 62.9 HP/ 46.3 kW (According to DIN 70020) at 2700 rpm
C 350 H C 350 H x4	Kubota V3300E2B	61,6 HP/ 45,2 kW (According to DIN 6270B) 64,5 HP/ 48,1 kW (According to DIN 70020) at 2400 rpm

Four cylinder, four stroke, water cooled. Mixed water / oil radiator. Electrical starter.

■ Transmission

Hydrostatic system, with variable flow pump and inching function.
Hydrostatic engine with variable flow.
Maximum operating pressure: 420 bar.

■ Directional control

The selection of movement mode (forwards/ backwards) is made using a switch on the lower part of the joystick. A warning lamp in the form of an arrow lights up on the switch when a movement mode is selected.

■ Steering

Hydraulic powered. Drive is in the rear shaft, through a double acting hydraulic cylinder.
Operating pressure: 140 +7 bar (all models).

■ Exterior turning circle

C 300H: 3,487 mm
C 300H x4: 4,700 mm
C 350H: 3,487 mm
C 350H x4: 4,700 mm

■ Brakes

Multi-disc sealed brakes oil immersed on the front axle.

Service brakes: hydraulic actuated
Parking brakes: negative brake system, spring applied, hydraulically released.

Technical specifications

■ Wheels

Dimensions

	Front wheels	Rear wheels
C 300 H	12.5 - 18 / 80 (16 PR)	27 x 10 - 12 (14 PR)
C 300 H x4	12.5 - 18 / 80 (16 PR)	10.0 / 75 - 15.3 (14 PR)
C 350 H	16 / 70 - 20 (14 PR)	27 x 10 - 12 (14 PR)
C 350 H X4	16 / 70 - 20 (14 PR)	10.0 / 75 - 15,3 (14 PR)

Pressures

	Front wheels	Rear wheels
C 300 H	5 ± 0,5 bar	6,5 bar
C 300 H x4	5 ± 0,5 bar	5 bar
C 350 H	3,5 ± 0,5 bar	6,5 bar
C 350 H X4	3,5 ± 0,5 ba	5 bar

■ Operating temperature

From -15 ^{o}C to 40 ^{o}C

■ Vibration and noise levels

In the surrounding area:
V3300E2B Engine: Lwa = 103 dB (A); Lpa = 82 dB (A)
V2003T Engine: Lwa = 102 dB (A); Lpa = 82 dB (A)

■ Hydraulic circuit

Activated by double gear pump; one gear for the drive circuit and one for the hydraulic steering, connected to the hydrostatic pump of the transmission.

GEAR PUMP FLOWS	
C 300 H	36 / 12 l/min at 1500 rpm
C 300 H x4	45 / 12 l/min at 1500 rpm
C 350 H	
C 350 H X4	

Two spools monoblock control valve and selector solenoid for side shift.

Technical specifications

■ **Operating pressure:**
C 300 H x 2: 170 + 9 bar
C 300 H x 4: 170 + 9 bar
C 350 H x 2: 190 + 10 bar
C 350 H x 4: 190 + 10 bar

Braking valve for controlling lowering speed of mast when loaded.
Hydraulic oil tank capacity: 66 litres

■ **Electrical equipment**
Pre-heating plugs, 1.4 kW starter motor (V2003T engine) and 2.5 kW starter motor (V3300E2B engine).

12V/480W (V2003T engine) and 12V/540W (V3300E2B engine) alternator and regulator.

Battery:
V3300E2B Engine: 12 V / 110 Ah
V2003T Engine: 12 V / 70 Ah

Rotating beacon. Horn. Audible reverse warning. Audible warning for low: engine oil pressure, hydraulic oil level and battery charge.

■ **Weights (with full tanks)**
Unladen weight:
C 300 H x 2: 5,700 Kg
C 300 H x 4: 5,700 Kg
C 350 H x 2: 6,000 Kg
C 350 H x 4: 6,000 Kg

Fully laden weight:
C 300 H x 2: 8,700 Kg
C 300 H x 4: 8,700 Kg
C 350 H x 2: 9,500 Kg
C 350 H x 4: 9,500 Kg

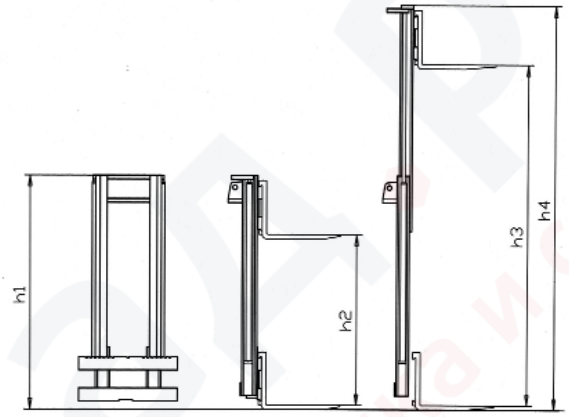
Technical specifications

■ Load capacity

C 300 H: 3.000 Kg
C 350 H: 3.500 Kg
With load centre of gravity at 500 mm (see load chart)

■ Standard mast

Side-shift.
Lifting height: 3.36 m
Length of forks: 1.200 mm



C 300 H					
Mast	Lift height (mm)	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)
DUPLEX	3300	2480	≥ 120	3250	≥ 4500
	4000	2830	≥ 120	3950	≥ 5200
TRIPLEX	3700	2130	≥ 1200	3650	≥ 4900
	5400	2698	≥ 1680	5350	≥ 6600

C 350 H					
Mast	Lift height (mm)	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)
DUPLEX	3300	2480	≥ 120	3250	≥ 4500
	4000	2830	≥ 120	3950	≥ 5200
TRIPLEX	3700	2130	≥ 1200	3650	≥ 4900
	5400	2698	≥ 1680	5350	≥ 6600
	6850	3180	2200	6800	7780

■ Carriage way and forks

FEM III class.

Technical specifications

■ **Lifting speed**

C 300 H	Unladen: 25.2 m/min. Laden: 24 m/min
C 300 H x4	Unladen: 28.8 m/min. Laden: 28.8 m/min
C 350 H	
C 350 H X4	

■ **Lowering speed**

C 300 H	Unladen: 25.2 m/min. Laden: 24 m/min
C 300 H x4	Unladen: 21.6 m/min. Laden: 34.8 m/min
C 350 H	
C 350 H X4	

■ **Control panel and controls**

The controls, switches and warning lights are incorporated into the steering column.

■ **Lighting (✱)**

Operating lights, park lights, indicators and hazard warning light equipment.

■ **Overhead guard**

Constructed in accordance with ISO 6055 standards.

WARNING

The operator is protected by an overhead guard which complies with the ISO 6055 and ASME B56.6 standards. It provides protection against falling objects and together with the mast, provides protection should the forklift overturn. The seat belt is an important part of the safety system and should always be fastened before starting to operate the forklift. In the event of the forklift overturning, if the seat belt is not fastened the operator may suffer serious injury or even loss of life as a result of crushing from the forklift or even the overhead guard itself.

Technical specifications

■ Optional equipment

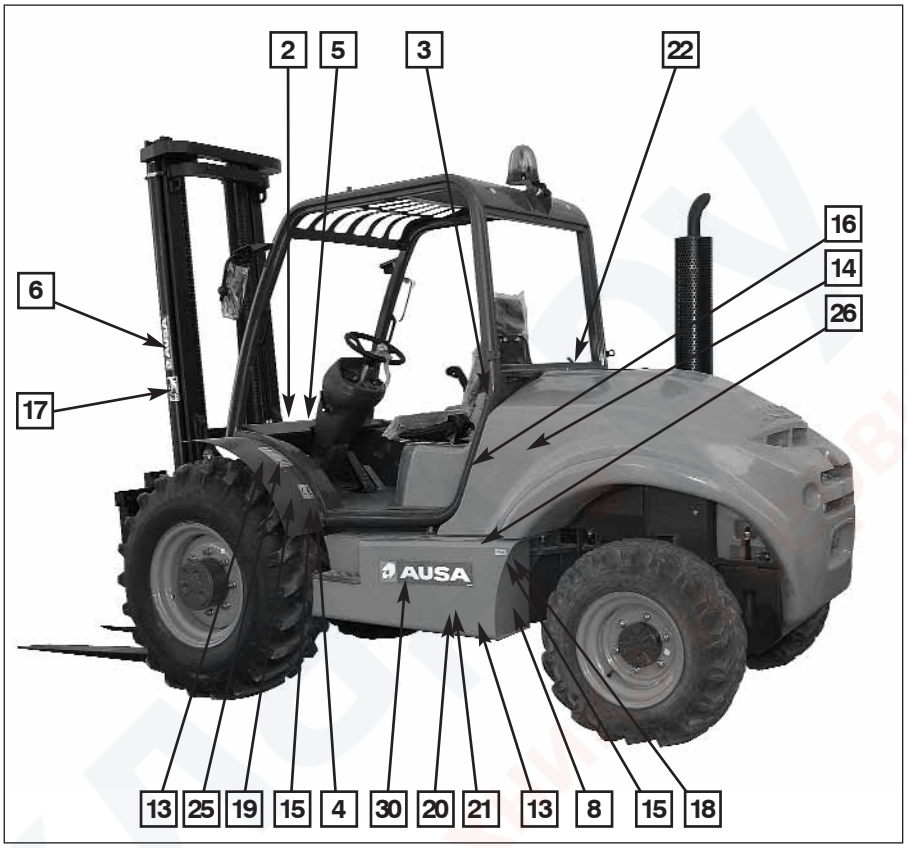
Optional equipment is marked with an asterisk (✱). Optional equipment is only supplied at the express wish of the customer, for certain versions of forklift or even only in certain countries.

- Simplex masts: 4 m.
- Triplex masts: 3.7 m, 5.4 m and 6.85 m free lift.
- Load backrest.
- Wheels: superelastic, solid and floating.
- Catalytic converter.
- Exhaust spark arrestor.
- Semi-closed or full heated cabin.
- 600, 800 and 1000 l hydraulic shovels.
- Additional hydraulic functions for atachments.
- Lighting system (front and rear).
- Laminated windscreen with wipers.
- Rear window wiper.
- Wide front axle.
- Fuel filter with water separator.

Where the forklift comes equipped with accessories mounted at factory, please read the relevant Instruction Manual for each accessory carefully before use. Each accessory has its own Instruction Manual issued by the manufacturer, and this is provided with the forklift Operator Handbook.

Where accessories and equipment are fitted to the basic chassis or forkholder plate at a later date by companies other than the manufacturer, the specifications and limitations of the forklift with respect to weight and dimensions, the adjustment and effectiveness of the lighting system, the protective system requirements, or any additional systems required to guarantee vehicle safety should be taken into consideration.

Decals / labels / identification plates



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		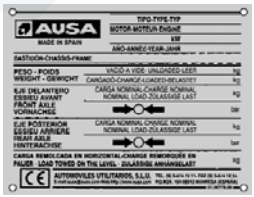		
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			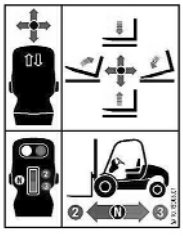	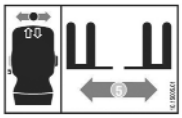
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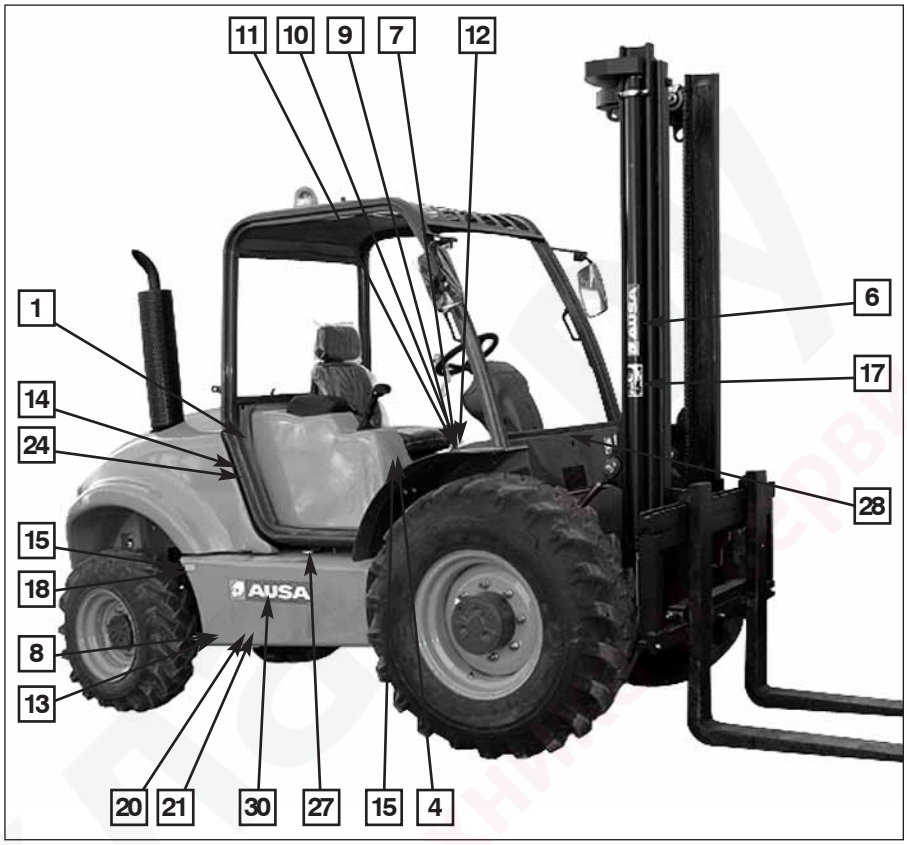
Decals / labels / identification plates



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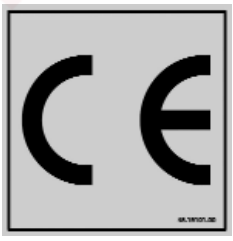
				
(21) 57.12002.00	(22) 57.12010.00	(23) 58.01353.01	(24) 43.01170.02	(25) 43.01350.28
				
(26) 43.01352.20	(27) 43.01356.00	(28) 43.01356.00	(29) 46.08099.00	(30) 13.12136.00
				

Special Safety Messages

■ General comments

Operator responsibilities

AUSA manufactures its forklift trucks (hereinafter forklifts) in accordance with the intrinsic protection requirements, as established by current legislation in the countries of the European Economic Community, in the face of dangers of any nature which may put health or life at risk, whenever the machinery is in use and maintained in accordance with these guidelines. Any danger resulting from improper use, not complying with these provisions or others which are specifically provided with the machinery, shall be the responsibility of the user and not of AUSA.
This section provides instructions on the use of the forklift, in accordance with that established by the Directive for Safety of Machinery 98/37/CEE.
Before using the forklift which is initially unfamiliar, you should read the Handbook closely and resolve any doubts with a supervisor **(fig. 1)**.
The forklift must only be used by authorized and correctly trained personnel.

Operator clothing

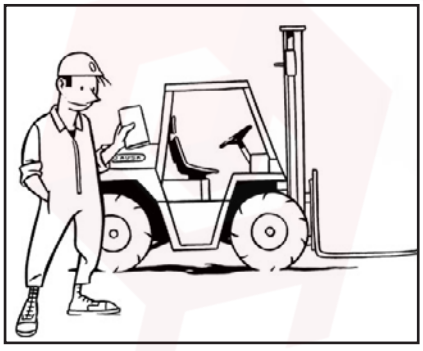
Request the personal protective equipment required to carry out the work in safety, for example: helmet, protective earmuffs, protective clothing, reflective gear, safety glasses, etc. **(fig. 2)**.
The wearing of bracelets, chains, loose ropes, long hair which is not tied up, etc., is not recommended due to the risk of catching these in controls, rotating components, edges, etc.

Description of a forklift truck

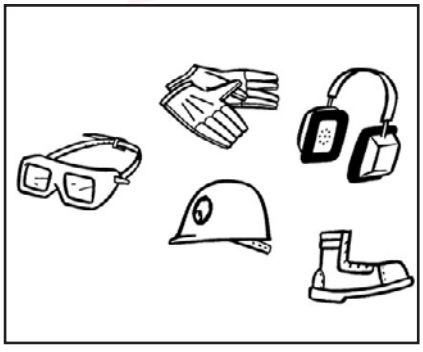
A forklift truck is a powered vehicle used for transporting or handling loads with the aid of tools specific to the task in hand. The forklift is able to lift loads. It consists of a resistant chassis resting upon two axles. The front axle is the drive axle and the rear axle the steering axle, although versions exist in which both axles are drive axles.
At the front of the forklift is a mast, along which the fork carrier plate moves. The unit formed by both is designed to lift and tilt the load forwards and backwards, making handling easier .

Rudiments of static equilibrium

In order that the forklift is able to handle loads in a stable and safe manner, certain equilibrium conditions must exist and be maintained between the load and the machinery. Therefore, the forklift is fitted with counterweights at the rear. These are designed to compensate for the weight of the load being carried, as long as the centre of gravity of the load and the forklift are within certain established limits. In order to calculate the values of the transportable weight and the position of the centre of gravity permitted for the forklift see the **Load chart** in the section **Procedures for the Use of the Forklift** in this Handbook.



(fig. 1)



(fig. 2)

Special Safety Messages

Rudiments of dynamic equilibrium

While the forklift is moving, and as it gains speed, the equilibrium conditions of the load-forklift unit are modified as the centre of gravity shifts. This is accentuated on lifting loads, turning, braking, etc. In these conditions it is necessary to take the utmost care to ensure that the centre of gravity of the load is maintained within the specifications given on the load chart label.

Static equilibrium of a conventional forklift

The forklift counterweight produces a situation of imbalance when the forklift is unloaded. The centre of gravity is maintained low and close to the rear of the forklift. When the load is collected, the imbalance is corrected and the centre of gravity shifts forward. If the load is within the margins given on the load table, equilibrium is maintained. As the load is lifted, the centre of gravity also rises, shifting upwards. At the moment that the centre of gravity shifts beyond the forklift, the equilibrium is lost and the forklift becomes unstable. Therefore, the forklift should not move while the load is raised.

Stability

Do not carry unstable or loose loads, or loads which are oversized with respect to the forklift. If very large or wide loads must be carried, every precaution must be taken to prevent bumps or other possible accidents.

When carrying out lifting manoeuvres, particularly at height, ensure that the forklift is on stable ground as level as possible.

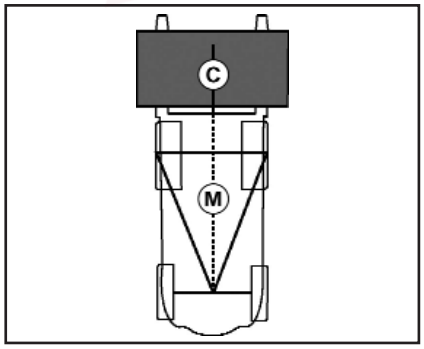
Do not drive over objects which may endanger the stability of the machine.

The triangle of horizontal stability

To prevent the loads which are being transported from falling, it is necessary to consider the triangle of horizontal stability **(fig. 1)**. This is an imaginary inverted triangle, with the lower end located on the centre of the rear axle and the two upper vertices on each of the front wheels. Stability is guaranteed when the centre of gravity of load **(C)** and the machine **(M)** always remain within an imaginary line, starting from the lower vertex of the triangle to the centre of the base of the same, located between the front wheels.

Longitudinal stabilization

The risk of longitudinal overturning increases if the forklift is driven while the load is raised. Sharp braking and accelerating or rapid tilting movements decrease stability.



(fig. 1)

Special Safety Messages

Transversal stability

The risk of overturning sideways increases on turning at incorrect speeds, while the forklift is unloaded or when the load is raised. Rough ground, sharp braking or accelerating or shifts in the load make these conditions worse **(fig. 1)**.

Centre of gravity and the capacity of the forklift truck

Do not overload the forklift or handle loads which shift the centre of gravity beyond that for which it is designed. Manoeuvre slowly, especially when changing direction on slippery ground **(fig. 2)**.

The load and counterweight

The load should be lifted and lowered with the mast in vertical position or slightly tilted backwards. The raised load should only be tilted forwards when it is about to be unloaded.

Tilting the load forwards or backwards (swinging) is very useful for collecting or positioning the load, but affects the longitudinal and lateral stability. Therefore, when handling raised loads, do not swing the mast more than is absolutely essential.

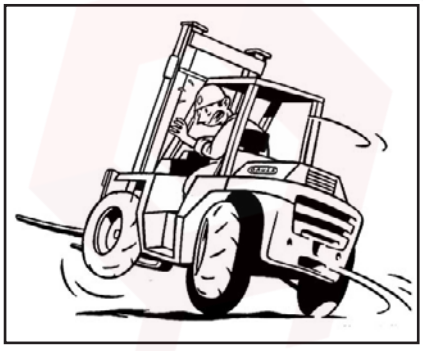
The forklift may tip forwards when carrying a raised load with the mast tilted forwards, or in the event of sudden braking or accelerating while the load is raised.

If using an accessory attachment or tool, first check the permitted load. The combination of the weight of the forklift plus the weight of the accessory or attachment reduces the nominal load.

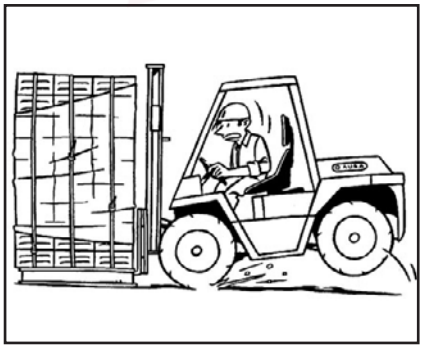
Critical speed

The speed at which the forklift moves affects its stability. When turning, braking, or accelerating, the centre of gravity shifts within the triangle of stability. Sharp turns, sudden braking or accelerating cause the centre of gravity to shift sharply and it may fall outside the triangle. This is the moment when the stability of the forklift and the load are not guaranteed and there is a risk of accident.

When manoeuvring reduce the speed of the forklift and avoid turning the steering wheel sharply.



(fig. 1)



(fig. 2)

Special Safety Messages

The surrounding area

Pedestrians in the surrounding area

It is forbidden to carry persons on the forklift **(fig. 1)**.

No-one is permitted to remain or cross below the forks when these are raised, whether they are laden or unladen.

Give way to the right to pedestrians found in your path.

Accesses and doors

Make sure that the passages and doors along the route are sufficiently high to allow all the forklift to pass.

When carrying out lifting manoeuvers, pay special attention to the height of the roof, lighting and other overhead installations.

Ground surface

Check that the ground is strong enough to bear the forklift when loaded, especially when approaching bridges, the edges of embankments, concrete flooring, elevators, etc. **(fig. 2)**.

Lighting

The forklift working area should be adequately lit to prevent the risk of accidently running over persons or colliding with obstacles. As soon as the daylight fades, the forklift lighting system should be switched on. If the forklift is not equipped with lighting, make sure that the working area is adequately lit. If this is not possible, do not continue working with the forklift, this may result in an accident.

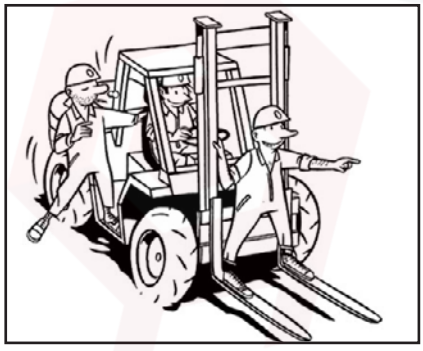
Loading bay. Communication. Shelving and installations. The load

The loading bay or area where the loads are handled should be correctly equipped and signposted. The operating area of the forklift should be free of obstacles and pedestrians, however if their presence is necessary, the pedestrians should move in areas which have been duly marked as such and they should be easily distinguished, for example, by wearing reflective jackets.

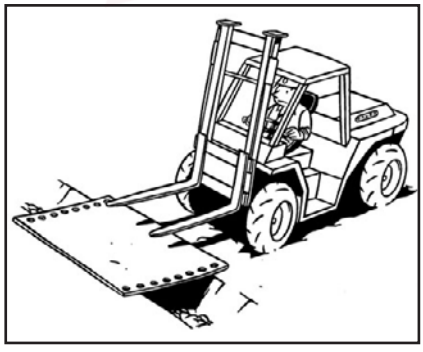
If the area is closed it should be well-ventilated and the forklift must be equipped with lighting and exhaust gas purifier systems.

The forklift operator should be able to communicate normally with pedestrians. If the surrounding area is excessively noisy, pedestrians should refrain from walking in the immediate vicinity. If this is unavoidable, the utmost care should be taken. Radio communication equipment should not be handled while driving the forklift. If it is necessary to use the radio, pull over to one side and signal the position of the forklift, using the lights or hazard warning lights.

Shelving for the loads have a series of marked passageways. The width of these should be at least the width of the forklift plus 1 m. If the passageway is two-way, the width must be sufficient to allow two forklifts to pass plus an additional 1.40 m.



(fig. 1)



(fig. 2)

Special Safety Messages

Before using the forklift to handle loads check the load and ensure that the weight does not exceed the forklift capacity. At the same time, check that the load is stabilized and correctly secured, to ensure that no part of the load falls off during transportation.

Order and cleanliness

Carrying out a series of checks before starting the forklift and keeping the operator cab clean help to make the work safer.

To do so, follow the maintenance table given in this handbook strictly, and keep the operator cab clean and free of earth, gravel, mud, oil or other objects which may cause falls.

Do not carry objects in the operator cab. These may injure the operator or accidently activate the forklift controls.

■ General points about driving a forklift truck

Basic information for starting up a forklift truck

Fill up the tank with fuel while the engine is switched off and do not smoke while doing so. Follow the instructions given in the section Fuel.

Do not start the forklift, or activate the controls if you are not seated in the operator cab. Adjust the seat to your build.

Keep the driver's cab free of objects and tools. These may move around, block a control or a pedal, and prevent a manoeuver or stop the forklift.

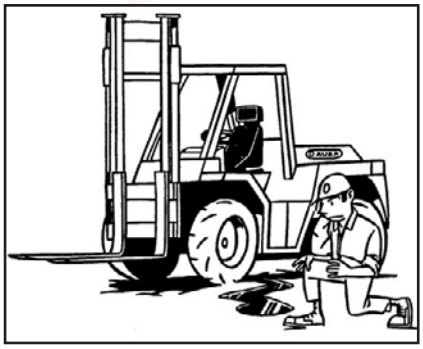
Before starting to work with the forklift, clean any oil or fuel spills, clean and remove grease from hands and the soles of shoes (fig. 1). Do not forget to carry out the operations and daily checks listed in the General maintenance table.

Check the correct position and fastening of all the guards, caps and safety stops.

Check that all the controls are operating correctly.

Check that informative and safety plates on the forklift are clean and in good condition. If they are not in good condition, replace the plates.

Check that lighting and signaling components are clean and work correctly. If they do not work check the corresponding fuses and bulbs as shown in the section Maintenance Operations.



(fig. 1)

Special Safety Messages

Work circuit

The movement of loads within an installation or enclosure must be carried out following certain instructions concerning the circulation of forklifts and pedestrians. If you are not aware of these regulations, please check with your supervisor. Study the movements of the forklift to avoid making manoeuvers which are unnecessary, or involve risk to the surrounding areas. Find out which paths are suited to the type of vehicle you are driving and the load carried. If it is necessary to drive along public highways, first check that the forklift complies with current regulations of the country.

Work cycle

If it is necessary to move loads continuously and repeatedly, try to do so with the minimum number of movements necessary, where possible. Reducing the number of movements saves fuel and reduces the emission of exhaust gases.

If the work is very intense, remember to check the instrument panel from time to time, especially in extreme climates, as the engine will be working in particularly hard conditions.

Forklift truck circulation

When approaching a junction with poor visibility, reduce speed, emit acoustic warnings and proceed slowly according to the available visibility.

The speed of the forklift should at all times be adapted to the working conditions and the surrounding area. Systematically driving at the maximum speed permitted by the machine may put the operator and the surrounding area at risk.

Driving in reverse

Ensure good visibility of the path to be taken. If the load being carried obstructs visibility, reverse with the utmost of caution.

Before reversing, the operator should ensure that this does not involve risks for the forklift, persons or objects in the surrounding area (fig. 1).

Driving on gradients

Special care should be taken when driving on gradients: move slowly, avoid placing the machine across the gradient and do not work on gradients steeper than those recommended.

The maximum permitted gradient does not imply that it is possible to manoeuver here in absolute safety under all load, ground and operating conditions.

Gradients should be descended in reverse, with the load facing the direction of greatest stability **(fig. 1)**.

(fig. 1)

Special Safety Messages

Parking the forklift truck

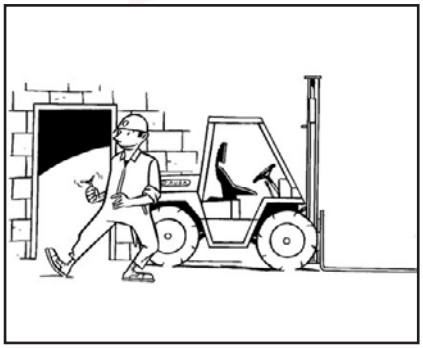
A poorly parked forklift truck is a risk.

Park the forklift in the areas provided for this purpose, without obstructing the passage of others, exits or entrances to stairs and emergency equipment.

Park on level ground. If it is necessary to park the forklift on a gradient, in addition to using the parking brake, place blocks against the wheels.

On leaving the forklift **(fig. 1)**:

- Place the forks or tool at ground level.
- Put the parking brake on.
- Stop the engine and remove the key from the ignition.
- Set all switches to position “0” (neutral).
- Block all the mechanisms for preventing the use of the machine by unauthorized persons; particularly the ignition circuit, by removing the key.



(fig. 1)

Controls / Instruments / Equipments

Vehicle

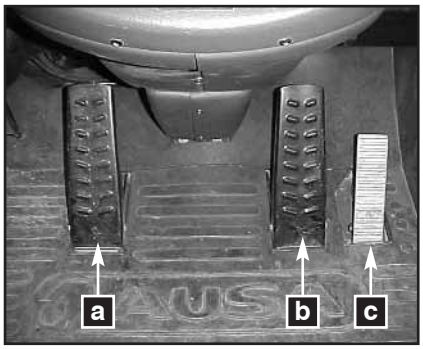
Forklift truck: general points

The terms right, left, forwards and backwards used in this Handbook are defined viewed from the driver's seat, facing forwards.

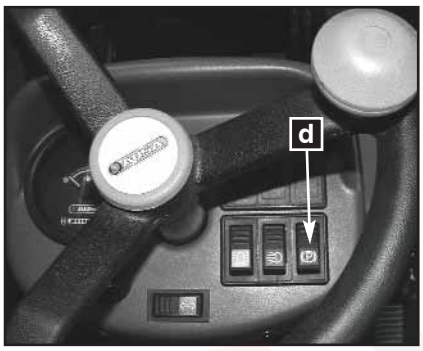
Description of parts

1- Lifting mast
2- Lighting equipment (✱)
3- Joystick
4- Operator overhead guard
5- Rotating beacon
6- Diesel tank (placed symmetrically to the hydraulic oil tank)
7- Hydraulic oil tank
8- Operator's seat with seatbelt
9- Mast forks

Controls / Instruments / Equipments



(fig. 1)



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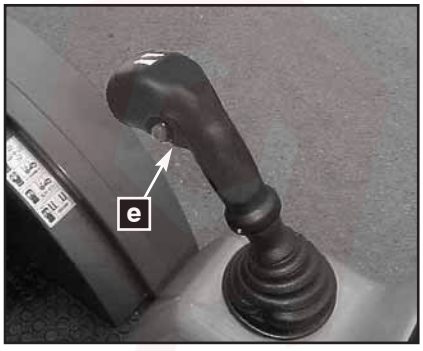
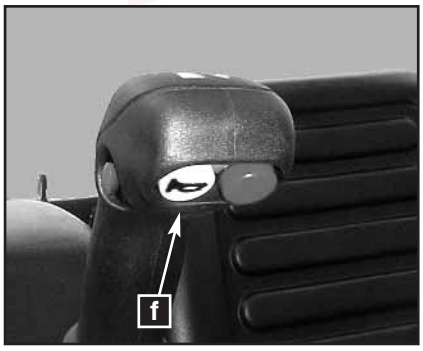


(fig. 3)



(fig. 4)

■ **Pedals (fig. 1)**

a- Inching.
When the pedal is depressed the machine stops, allowing the engine to accelerate for faster operation of the mast. When the pedal is slowly released the machine will start to move again.

WARNING

The inching pedal also acts on the parking brake when it is kept fully depressed.

b- Service brake pedal.
Acts on a pump located below the pedal.

c- Accelerator pedal.
Acts on the engine through a cable.

■ **Emergency brake**
In the event of emergency use the inching pedal.

■ **Parking brake (fig. 2)**
The parking brake is operated electronically using the switch **(d)**. It is also operated electronically when the inching pedal is kept fully depressed.

■ **Joystick (fig. 3)**
Forward and backward directional travel control.
The direction of travel is changed using the electric switch **(e)** located on the lower part of the joystick. In each case the corresponding arrow showing the direction of travel lights up.
When the direction arrows are not lit, the direction of travel control is at the stop position (neutral). By pressing the front of the switch the machine travels forwards and by pressing the rear of the switch the machine travels backwards.

Safety: When the parking brake is not on and/or the operator is not sitting in the driver's seat, the direction arrows are also switched off and the direction of travel control is disconnected.

■ **Back-up alarm**
This is emitted when reverse is selected.

WARNING

If the forklift is equipped with lighting, the back-up alarm is disconnected when the lights are switched on. However, the rear white reversing lights continue to work.

■ **Horn (fig. 4)**
The horn is operated using the button **(f)** located on the right of the joystick.

Controls / Instruments / Equipments

■ **Load handling controls (fig. 1)**

The mast and the load are moved by using the joystick.

Raising and lowering the forks.

If the joystick is pulled backwards the mast and forks lift and if pushed forwards the mast and forks lower.

Tilting the forks.

If the joystick is pulled to the left, the mast forks tilt backwards (forks lift) and if pushed to the right, they tilt forward (forks lower).

Side-shift.

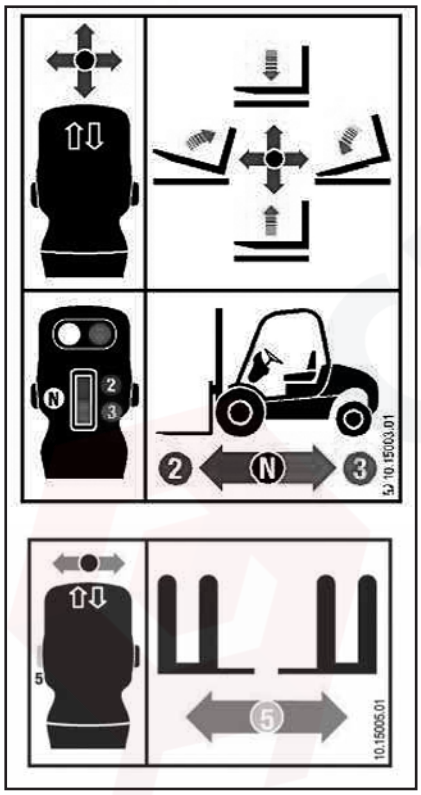
By holding down button **(5)** on the joystick and pulling the joystick to the left, the forks move to the left.

By holding down button **(5)** and pushing the joystick to the right the forks move to the right.

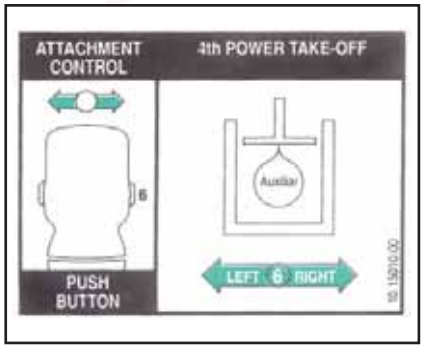
Always centre the carriage when in transit or when transporting a load.

Additional hydraulic control for attachments (✱) (fig. 2).

By holding down button **(6)** of the joystick and pulling it to the left (towards the operator), or pushing it to the right, pressure is supplied to the hydraulic quick couplings located on the left-hand side of the mast.



(fig. 1)

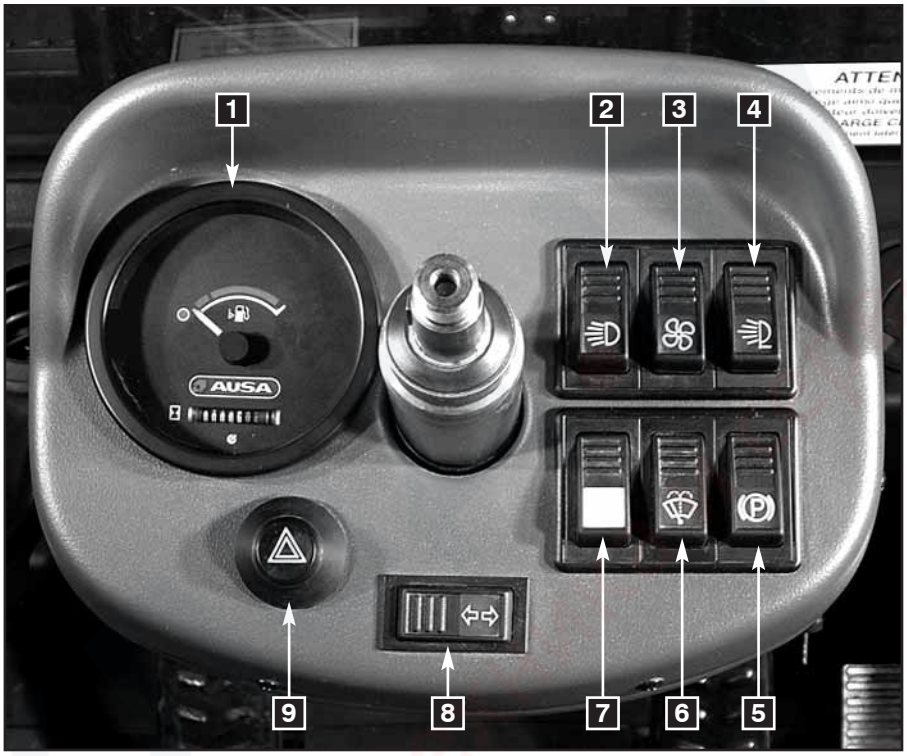


(fig. 2)

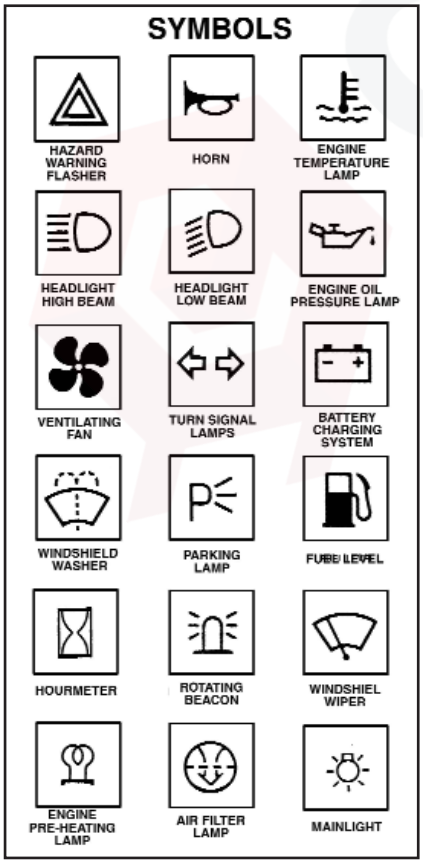
Controls / Instruments / Equipments

■ Instrument panel: Components

Note: For ease of understanding, the diagram is given with the steering wheel removed.



1- Multi-function instrument
2- Lights switch
3- Heating switch (✱)
4- Working light switch (✱)
5- Parking brake
6- Windscreen wiper switch (✱)
7- Rotating beacon switch
8- Indicators switch (✱)
9- Hazard light switch (✱)



Controls / Instruments / Equipments

■ Starter switch (fig. 1)

To start the engine see the section **Starter**.

A- In this position the ignition and the engine are disconnected.

B- Ignition on. The engine pre-heating system and the lamp on the control panel are activated for a few seconds.

C-Starter. Turning the key to position **(c)** starts the engine.

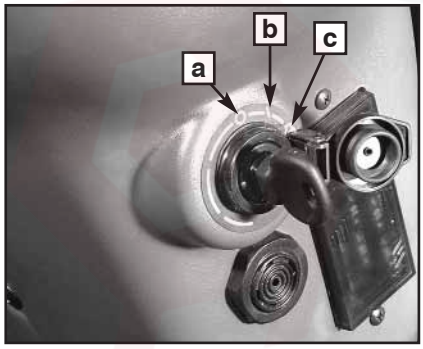
Before re-starting the engine, the key should first be switched to position **(a)**.

■ Fuse box (fig. 2)

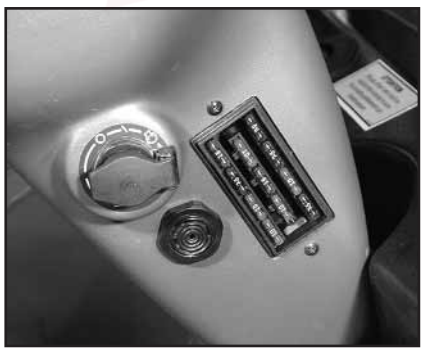
This is located at the right of the steering column, next to the starter switch.
See the section **Electrical circuit diagram** in this Handbook to identify the number and function of each fuse.

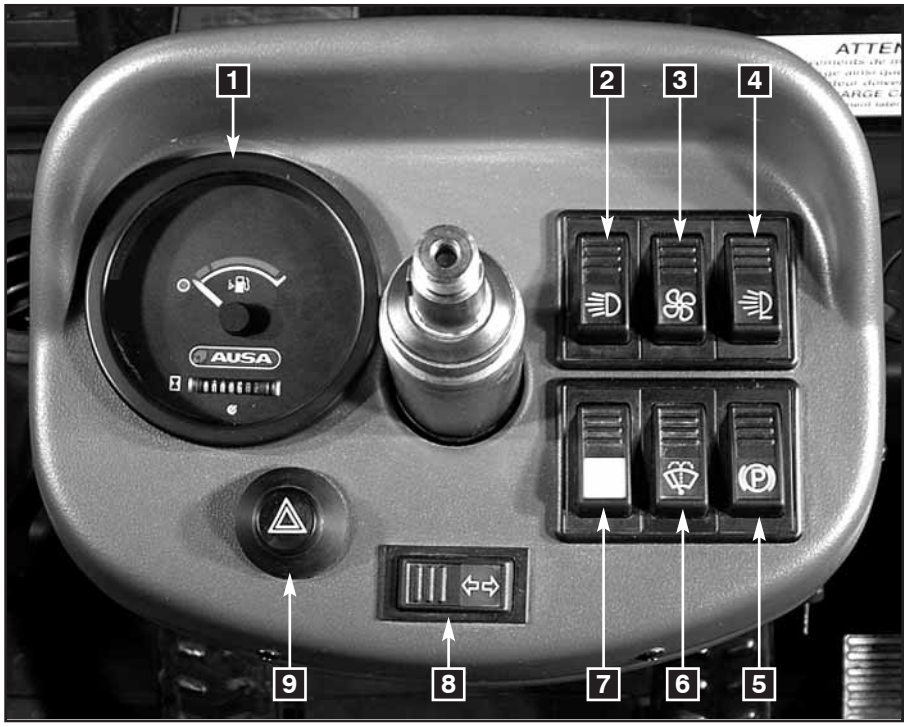
■ Instrument panel: Operation (fig. 3)

1- Multi-function instrument. See the section **Multi-function instrument**
2- Light switch. This switch has two positions, the first switches on the side lights and the second switches on the low beam.
3- Heating switch (✱). This has two positions to give two fan speeds.
4- Working light switch (✱). To connect the front working lights turn on the switch.
5- Parking brake. To activate the forklift parking brake, press the switch.
6- Windscreen wiper switch (✱). To switch on the windscreen wiper, press the switch to the right. To activate the windscreen wiper washer pump, press the same switch to the right again.
7- Rotating beacon switch. To switch on, press the button and it will light up. To switch off, press the button again.
8- Indicators switch (✱). The turning indicators are switched on by pressing the switch to the left or to the right.
9- Hazard lights switch (✱). To switch on, press the button and it will blink. To switch off, press the button again.



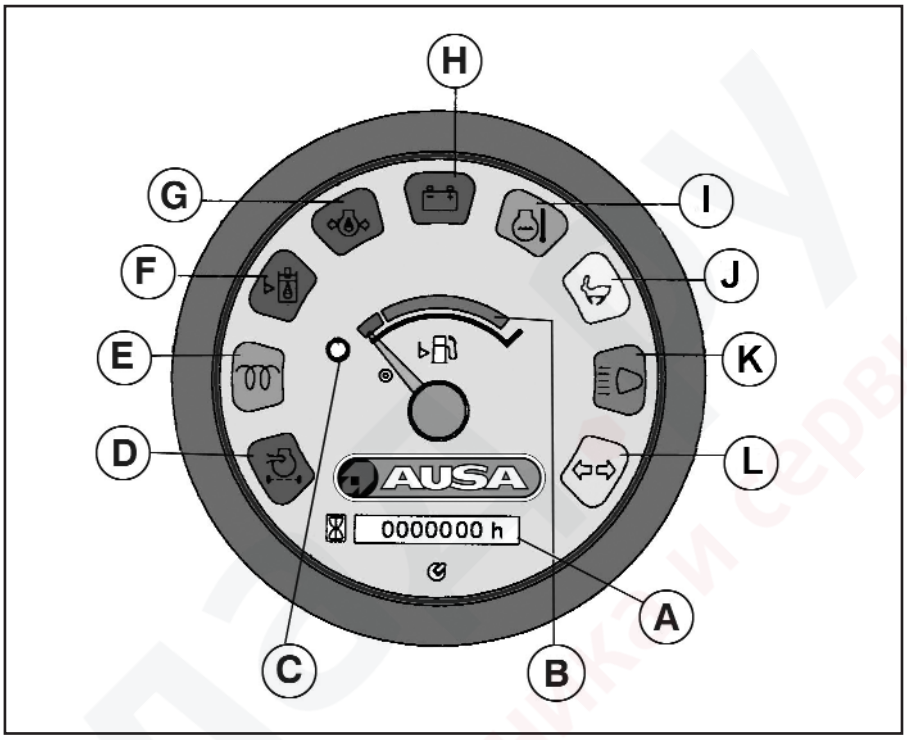
(fig. 1)


(fig. 2)



Controls / Instruments / Equipments

■ **Multi-function instrument (fig. 1)**



A- Hourmeter. Meters the total operating time of the machine's engine and enables the control of regular services. (See the section **Maintenance chart**).

B- Fuel gauge. Displays the level of diesel in the tank.

C- Fuel reserve warning light. This lights up when the level of diesel in the tank falls into reserve.

D- Air filter warning light. This lights up when the air filter is dirty or clogged. The filter element should be cleaned or replaced immediately.

E- Preheating warning light. This lights up when the preheating resistances are working and heating the combustion chamber to the temperature required in order to start the engine.

F- Hydraulic oil level warning light. This lights up and emits an audible warning when the hydraulic oil level is at the minimum level. Oil should be added to top up the level to the correct level.

G- Engine oil pressure warning light. When the ignition is on this lights up and switches off when the engine is working. If this light comes on and a warning signal is emitted while the engine is running, the engine must be switched off immediately to prevent damage. Check the level and add oil where necessary.

Controls / Instruments / Equipments

H- Battery charge warning light. When the ignition is on this lights up when the alternator does not charge the battery and switches off when the engine speed exceeds the idle speed. It it stays on and an acoustic signal is emitted, switch off the engine and check.

I- Engine temperature warning light. If this lights up, this implies that the engine temperature is too high. Stop immediately to investigate the problem. It may due to a low level of coolant, dirt in the radiator, that the thermostat does not work correctly or there is a break in the alternator belt.

J- Not applicable to this model.

K- High beam. (Only applicable to forklifts with lights). This lights up when this type of lighting is selected (✸)

L- Indicator light. (Only applicable to forklifts with lights). This warning light flashes while the indicators are switched on (✸)

■ Fuel

Handling

- Only use the fuel type authorized by AUSA. Do not use fuel mixed with oil, other fuels or unsuitable additives.

- The correct fuel for the forklift is diesel. For further details regarding fuel type and required specifications see the section **Fluids and lubricants**.

- Do not allow the fuel to come into contact with the skin and avoid inhaling the fumes, which are toxic. High concentrations of fuel vapour may cause sickness, loss of consciousness or even loss of life in the event of prolonged exposure. If you experience symptoms such as sickness or loss of consciousness seek medical advice immediately.

- Do not store fuel in closed places. The fuel vapours will alter the atmosphere of the enclosure and may cause a fire or explosion.

- Use suitable impermeable clothing, safety glasses and gloves when handling fuel.

When refuelling from a tank, bucket or barrel using a siphon, the following precautions should be taken:

- If refuelling is by gravity, from a raised tank, open the fuel output valve of the tank slowly.

- If the tank or barrel does not have an output valve use a suitable vacuum pump.

Controls / Instruments / Equipments

WARNING

Never suck the fuel into the pipe by mouth to start the siphoning. The fuel and its vapours are highly toxic.

- In the event of fuel spillage, please inform the supervisor, mark the area suitably and cover the spillage with absorbent material.

- Take suitable measures to avoid risk until the remains of the fuel have been completely removed.

■ **Refuelling**

WARNING

Smoking, naked flames or sparks are not permitted in the refuelling area. Fuel vapours can be explosive.

- Refuel in a well-ventilated area.

- Position the forklift as close as possible to the fuel pump so that the filler hose reaches the opening of the tank comfortably.

- Apply the parking brake, switch off the engine and lights, including the rotating beacon.

Note: If the fuel pump is equipped with a vehicle earth connection, connect this to an uninsulated metal component of the forklift.

- Clean the fuel cap and surrounding area with a cloth if they have been dirtied. Do not allow dust, water, or any other substance to enter the tank.

- Open the fuel cap using the key and turning to the left.

- Fill the tank without exceeding the volume specified for the forklift (80 Litres). Take care not to spill fuel outside the tank. If you do, clean immediately and dry the surface well.

- Close the tank using the key and remove it from the cap. Check that the cap is correctly closed.

Operating the forklift

■ **Entering and leaving the operator cabin (fig. 1)**

Do not hold or pull the steering wheel to enter the driver cabin, use the handles provided on the front structure of the overhead guard. Always place one foot on the tread of the sill to prevent slipping when climbing in or out.

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

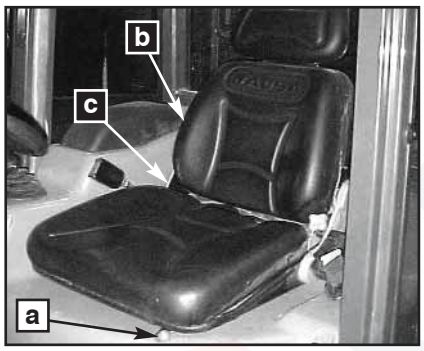
Before using the forklift, adjust the seat and steering wheel to a comfortable driving position.

Turning the lever **(a)** unlock the seat and move forwards or backwards to the desired position. The suspension of the seat can be adjusted between 60 and 120 Kg according to the weight of the operator, by turning the lever 24 times **(b)**. Normally the seats are adjusted to a weight of 90 Kg.

Using the wheel **(c)** it is possible to adjust the seat backrest angle. The seat backrest tilts backwards when the wheel is turned to the right and forwards when turned to the left.

The position of the steering wheel is adjusted by inclining the steering column. The lever **(d)** unblocks the steering column and can be adjusted to the correct position. To block again bolt the lever.


(fig. 1)



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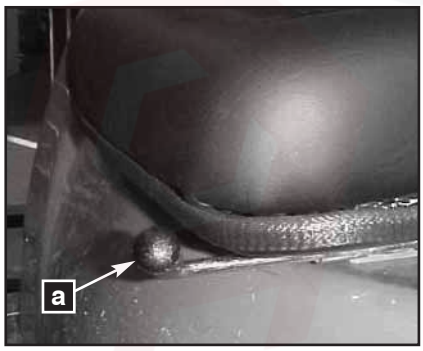
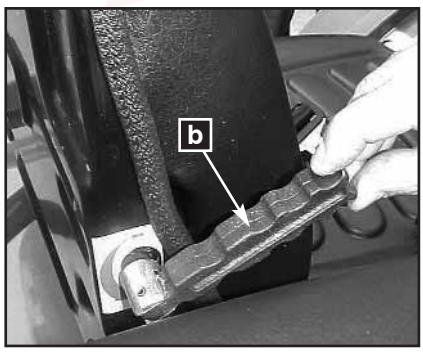


(fig. 3)



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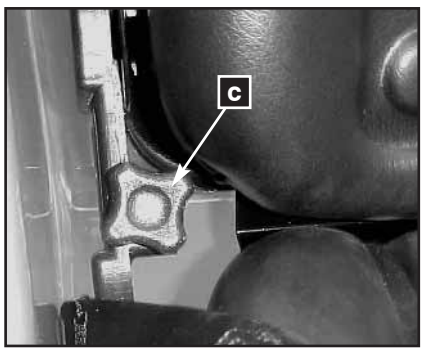
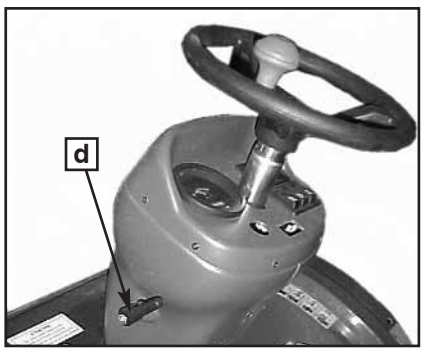


(fig. 5)



(fig. 6)

Operating the forklift

■ Starter

WARNING

For reasons of safety, the operator should be seated, the seatbelt fastened, and the parking brake applied.

Starting engine when the operator is seated:
The direction of travel control switch should be in neutral.

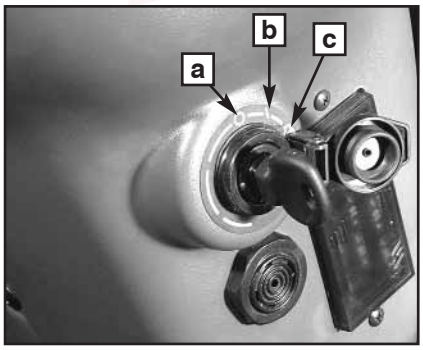
Starting engine when the operator is not seated:
The direction of travel control switch can be in any position.

- Place the key in the ignition switch and turn to position **(b)** ignition. Wait a few moments until the engine preheating light goes out.
- Press the accelerator pedal 1/4 of the way and turn the key to position **(c)** to start the engine. Do not hold the key in this position for more than 15 seconds.
- If the engine does not start, repeat the above steps and wait 30 seconds between each attempt. Before re-starting the engine, the key should first be switched to position **(a)**.

■ Checks

With the engine running and the forklift at a standstill, carry out the following checks and tests.

- Check the instrument panel controls.
- Check the steering by turning it gently to the left and right.
- Lift the forks off the ground 150 mm.
- Check the parking brake.
- Check that the brake pedal action is firm.



(fig. 1)

Operating the forklift

■ Parking the forklift and stopping the engine

Note: Always park the forklift, whether at the end of the day or for maintenance purposes, on level ground.

- Lower the forks to the ground, put on the parking brake and place the direction of travel control switch and the joystick in neutral.
- If the forklift has been operating to the full keep the engine running at idle for 1 minute.
- To turn off the engine turn the key in the ignition switch anticlockwise to position **(a)** (fig. 1 previous page).
- Remove the key from the ignition switch and take with you. Never leave the key in the parked forklift.

■ Forklift nominal load

The nominal load is the load which can be safely carried by the forklift. It is determined by the height of elevation and the weight of the load. The ground conditions and the shape of the load may also reduce the weight which can be safely lifted. Excess loads may cause instability, make driving difficult and risk the forklift overturning.
Check that the load to be lifted is within the limits given in the Load Table located on the left-hand side of the overhead guard. The models C300H and C300H 4x4 have a load capacity of 3000 kg. and de models C350H and C350H 4x4 have a load capacity of 3500 kg. with a centre of gravity at 500 mm from the vertical face of the forks.
The use of tools other than the standard forks provided with the forklift may reduce the lifting and load capacity.

■ Load centre

Forklift manufacturers have standardized forklifts to a certain load weight and size. The forklift capacity is based on a cube measuring 1 m on all three sides. The centre of gravity is in the centre of the cube, therefore the centre of the load will be at 500 mm from the vertical and horizontal face of the forks. It is important to remember that an increase in the distance from the load centre will reduce the capacity of the forklift.

Operating the forklift

■ Alteration to the forklift/load relation

The forklift/load relation is modified by changes in:

- Attachable tools (see the corresponding Load Tables).
- Lifting height.
- Changes in the ground surface over which the forklift moves.
- Compaction and/or stability of the ground.

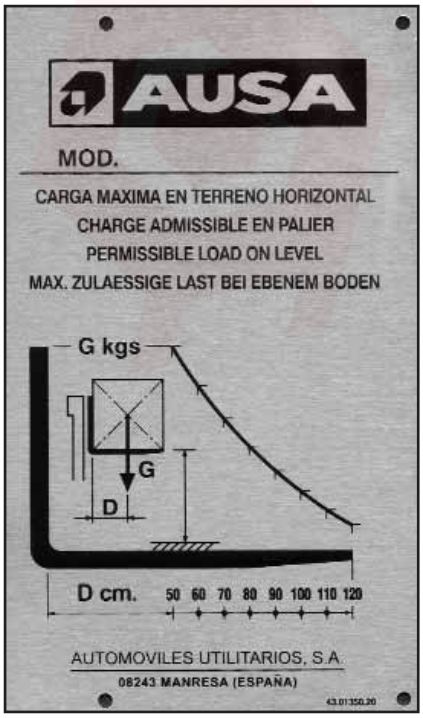
Forklift stability must be maintained while these these factors are constantly changing. This requires careful judgement by the operator.

■ Lifting capacity

The stability of the machine is only maintained when the forklift is handling loads that are within its load capacity and the operator has previously identified the factors determining the forklift/load relation. The lifting capacity of the forklift is determined by the safe height and weight limit of the load. Excess loads may cause instability, make driving difficult and risk the forklift overturning.

■ Load charts (fig. 1)

The load limitations can be read in the Load charts. These give the loads that the forklift is able to lift with a 100 mm displacement of the load centre from the nominal 500 mm. It can be sen that these displacements reduce the load capacity to be lifted.
The Load Table is located on the left-hand side of the overhead guard so that it can easily be viewed by the operator from the operator seat while using the forklift.
The table gives the loads which can be lifted on a level ground, with the load correctly positioned on the forks (for example, a square box with the weight centred), and a lifting height of 2.66 m.
At the foot of the table (horizontal axis X) the distance “D” is given in 10 centimeter intervals. These distances show how the load centre can be shifted along the horizontal surface of the forks. The load capacity in Kg. is given along the curve of the graph, as the centre of gravity of the load shifts towards the ends of the forks.



(fig. 1)

Special procedures

■ **Engine overheating**

If the engine overheats and the engine temperature warning light on the control panel lights up, try the following:

- Check and clean the radiator coolant blades. See the section **Regular maintenance procedures** in this manual.
- Reduce speed but keep the forklift moving in order to allow air to circulate around the radiator.
- If the engine is still overheating after approximately one minute, stop the forklift, set the direction of travel control switch to neutral, apply the parking brake and switch off the engine.

WARNING

The radiator may be extremely hot. Use gloves before touching the radiator.

- Allow the engine to cool. Check the level of coolant and top up if necessary.
- If the engine continues to overheat, refer the problem to an authorized AUSA dealer as soon as possible.

■ **After-use care**

When the forklift is used in salt water areas (beach areas, etc.), rinse the machine with fresh water to protect the forklift and its components from rust.
We recommend lubricating the metal components. This should be carried out at the end of every day after using the forklift.
When the forklift has been working in muddy areas, it should be washed with fresh water to protect the forklift and keep the lights clean.

Note: Never use high-pressure water to clean the forklift. **ONLY USE LOW-PRESSURE WATER**. High-pressure water may cause electrical and mechanical damage.

■ **Overturning**

In the event of the forklift overturning, the driver must avoid being trapped between the machine and the ground. Therefore, we recommend:

- Try to remain inside the operator cabin.
- Hold onto the steering wheel tightly.
- Lean feet firmly onto the floor of the overhead guard.
- Try to keep as far away as possible from the point of impact.

Special procedures

When the forklift overturns or is knocked onto one side, restore it to normal operating position (on all four wheels).

WARNING

DO NOT TRY TO START THE FORKLIFT without first checking with an authorized AUSA dealer.

- Remove the 4 glow plugs.
- Turn the key in the ignition to position (C). Hold the key in position until the oil has come out of the combustion chamber.

WARNING

The oil will come out of the combustion chambers at high pressure and may cause injury.

- Re-assemble the four glow plugs.
- Check the engine oil level and top up if necessary.
- If the engine oil pressure gauge remains lit after starting the engine, stop immediately to prevent internal damage and refer the problem to an authorized Ausa dealer.

■ **Immersion of the forklift**

If the forklift becomes submerged under water, it will be necessary to take it to an authorized AUSA dealer as soon as possible.

WARNING

DO NOT START THE ENGINE. Immersion of the forklift may cause serious damage to the engine if the start-up procedures are not followed correctly.

- Arrange for an authorized AUSA dealer to carefully inspect the supply system as shown in the **Maintenance chart**.

■ **Storage and pre-parking preparation**

When the forklift is not to be used for more than a month it should be stored correctly. When the forklift is brought out for use again after a period of storage, special preparation is required. Ask an authorized AUSA dealer about the appropriate procedures.

Recommended fluids and lubricants

■ Lubricant and fluid products

This section specifies the recommended fluids and lubricants. See the section regular maintenance procedure in this Handbook for procedures to check fluid levels and changes.

Table of fluids and lubricants (references and capacities)

FLUID OR LUBRICANT	SPECIFICATION	REMARKS	AUSA P/N	CAPACITY (Litres)
FUEL	Use clean auto diesel (class A), preferably in accordance with Directive 98/70/EEC modified by directive 2003/17 or Standard EN 590 equivalent to the same. In Spain this corresponds to RD 1728/1999. For the USA market, it should conform to Grades 1D and 2 and for supplies not conforming to these requirements, in no event should the sulphur content exceed 0.5% by mass. Initially, the use of REM type biodiesel or similar is not recommended. In the event that it is used, it should not be used in proportions higher than 5 % of the fuel mixture.			80
ENGINE OIL	Engine oil in accordance with MIL-2104C / API CD or higher	See section "ENGINE OIL" in this section	461.00017.00	7,9 (*) 13,2(**)
ENGINE COOLANT FLUID	Ethylene glycol antifreeze with corrosion inhibitors for aluminum engines with internal combustion	See section "COOLANT" in this section	45.00075.01	10 (*) 13(**)

(*) V2003T Engine
(**) V3300E2B Engine

FLUID OR LUBRICANT	SPECIFICATION	REMARKS	AUSA P/N	CAPACITY (Litres)
HYDRAULIC CIRCUIT	Hydraulic oil ISO Grade VG-46 in accordance with ISO 6743/4 HM DIN 51524 Part 2 - class HLP		461.00008.00	66
FRONT AXLE OIL C 300 H	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105D with additive, "LIMITED SLIP"	See section "REDUCER BOX OIL x4 (COMPEN) AND FRONT AXLE" in this section	461.00016.00	4
FRONT AXLE WHEEL REDUCTION OIL C 300 H	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105D with additive, "LIMITED SLIP"	See section "REDUCER BOX OIL x4 (COMPEN) AND FRONT BRIDGE" in this section	461.00016.00	0.4
DIFFERENTIAL FRONT AXLE OIL C 350 H	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105D with additive, "LIMITED SLIP"	See section "REDUCER BOX OIL x4 (COMPEN) AND FRONT BRIDGE" in this section	461.00004.01	6
FRONT AXLE WHEEL REDUCTION OIL C 350 H	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105D with additive, "LIMITED SLIP"	See section "REDUCER BOX OIL x4 (COMPEN) AND FRONT BRIDGE" in this section	461.00004.01	0.7
REAR AXLE DIFFERENTIAL OIL x4	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105B		461.00004.01	3.3
REAR AXLE WHEEL REDUCTION OIL x4	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105B		461.00004.01	0.3
TRANSFER BOX OIL x2	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105B		461.00004.01	3.25
TRANSFER BOX OIL x4 (COMPEN)	Transmission oil SAE 90 in accordance with API GL5 / MIL-L-2105D with additive, "LIMITED SLIP"	See section "REDUCER BOX OIL x4 (COMPEN) AND FRONT BRIDGE" in this section	461.00016.00	2.75
INCHING AND BRAKE FLUID	Hydraulic OIL SAE 10W or ATF fluid in accordance with CAT TO-4 / TO-2 or ALLISON C-4 / C-3	See section "BRAKE FLUID AND INCHING" in this section	461.00015.00	1
WINDSCREEN WIPER-WASHER		Freezing point temperature: -20ºC	465.00016.00	1.5
BATTERY ELECTROLYTE	Distilled water	See section "BATTERY ELECTROLYTE" in this section		
LUBRICATION POINTS	Calcic grease NLGI-3 consistency	See section "LUBRICATION POINTS" in this handbook		

Maintenance Chart

■ General maintenance table

Maintenance operations and intervals are defined according to the engine type fitted in the forklift (Kubota V2003T or V3300E2B).

INITIAL INSPECTION (50 HOURS)			
		Tasks	To be made by
ENGINE	Oil (1)	Change	CUSTOMER
	Oil filter (1)	Change	CUSTOMER
	Alternator belt (1)	Inspect	DEALER
SUPPLY CIRCUIT	Fuel prefilter (1)	Change	CUSTOMER
ELECTRICAL SYSTEM	Battery electrolyte	Inspect	CUSTOMER
HYDRAULIC CIRCUIT	Oil and intake filter	Change	CUSTOMER
	Hydraulic cartridge	Change	CUSTOMER
REDUCER BOX	Oil (1)	Inspect	CUSTOMER
AXLES (FRONT AND REAR)	Oil (1)	Inspect	CUSTOMER
BRAKES	Free play of service brake pedal	Inspect	CUSTOMER

EVERY 100 HOURS			
		Tasks	To be made by
ENGINE	Alternator belt (1)	Inspect	DEALER
SUPPLY CIRCUIT	Air filter element (4)	Clean	CUSTOMER
ELECTRICAL SYSTEM	Battery electrolyte	Inspect	CUSTOMER

EVERY 150 HOURS (V2003T)			
		Tasks	To be made by
ENGINE	Oil (1)	Change	CUSTOMER
	Oil filter (1)	Change	CUSTOMER
SUPPLY CIRCUIT	Air intake hose	Inspect	CUSTOMER
HYDRAULIC CIRCUIT	Damage to lines and hydraulic connections	Inspect	CUSTOMER

EVERY 250 HOURS (V3300E2B)			
		Tasks	To be made by
ENGINE	Oil (1)	Change	CUSTOMER
	Oil filter (1)	Change	CUSTOMER
SUPPLY CIRCUIT	Air intake hose	Inspect	CUSTOMER
	Fuel prefilter (1)	Change	CUSTOMER
COOLANT CIRCUIT	Radiator hose and clamps	Inspect	CUSTOMER
HYDRAULIC CIRCUIT	Damage to lines and hydraulic connections	Inspect	CUSTOMER

EVERY 300 HOURS (V2003T)			
		Tasks	To be made by
SUPPLY CIRCUIT	Fuel prefilter (1)	Change	CUSTOMER
COOLANT CIRCUIT	Radiator hose and clamps	Inspect	CUSTOMER

Maintenance Chart

EVERY 400 HOURS (V3300E2B)			
		Tasks	To be made by
SUPPLY CIRCUIT	Fuel filter cartridge	Change	CUSTOMER

EVERY 500 HOURS (V3300E2B)			
		Tasks	To be made by
ENGINE	Oil filter (1)	Change	CUSTOMER
	Alternator belt (1)	Change	DEALER
SUPPLY CIRCUIT	Oil filter element	Replace (5)	CUSTOMER
	Fuel tank	Clean	CUSTOMER
COOLANT CIRCUIT	Radiator (interior)	Clean	DEALER
REDUCER BOX	Oil (1)	Change	CUSTOMER
AXLES (FRONT AND REAR)	Oil (1)	Change	CUSTOMER

EVERY 600 HOURS (V2003T)			
		Tasks	To be made by
ENGINE	Alternator belt (1)	Change	DEALER
SUPPLY CIRCUIT	Air filter element (4)	Change	CUSTOMER
	Fuel filter cartridge	Change	CUSTOMER
	Fuel tank	Clean	CUSTOMER
COOLANT CIRCUIT	Radiator (interior)	Clean	DEALER
REDUCER BOX	Oil (1)	Change	CUSTOMER
AXLES (FRONT AND REAR)	Oil (1)	Change	CUSTOMER

EVERY 750 HOURS (V2003T)			
		Tasks	To be made by
ENGINE	Valve set	Inspect	DEALER

EVERY 900 HOURS (V2003T)			
		Tasks	To be made by
HYDRAULIC CIRCUIT	Oil and intake filter (3)	Change	CUSTOMER
	Hydraulic cartridge	Change	CUSTOMER
AXLES (FRONT AND REAR)	Tightening of bolts fastening to chassis	Inspect	DEALER
BRAKES	Brake fluid (3)	Change	CUSTOMER

EVERY 1000 HOURS (V3300E2B)			
		Tasks	To be made by
ENGINE	Valve set	Inspect	DEALER
HYDRAULIC CIRCUIT	Oil and intake filter (3)	Change	CUSTOMER
	Hydraulic cartridge	Change	CUSTOMER
AXLES (FRONT AND REAR)	Tightening of bolts fastening to chassis	Inspect	DEALER
BRAKES	Brake fluid (3)	Change	CUSTOMER

Maintenance Chart

EVERY 1500 HOURS			
		Tasks	To be made by
SUPPLY CIRCUIT	Fuel injection nozzle injection pressure (2)	Inspect	DEALER

EVERY 3000 HOURS			
		Tasks	To be made by
SUPPLY CIRCUIT	Injection pump (timing) (2)	Inspect	DEALER
	Fuel injection timer (2)	Inspect	DEALER
	Turbocharger (2)	Inspect	DEALER

EVERY WEEK			
		Tasks	To be made by
SUPPLY CIRCUIT	Fuel pipes and clamps	Inspect	CUSTOMER
COOLANT CIRCUIT	Coolant	Inspect	CUSTOMER
ELECTRICAL SYSTEM	Battery connections	Inspect	CUSTOMER
	Panel warning light (3)	Inspect	CUSTOMER
HYDRAULIC CIRCUIT	Oil and intake filter (3)	Inspect	CUSTOMER
	Movement of mast (3)	Inspect	CUSTOMER
	Movement of steering (3)	Inspect	CUSTOMER
LUBRICATION POINTS	Mast guides	Lubricate	CUSTOMER
	Lubricators (see lubrication points)	Lubricate	CUSTOMER
	Articulation of controls (accelerator, tilting cylinders...)	Lubricate	CUSTOMER
REDUCER BOX	Oil (1)	Inspect	CUSTOMER
	Loss of oil	Inspect	CUSTOMER
	Tighten all bolts and nuts	Inspect	CUSTOMER
AXLES (FRONT AND REAR)	Oil (1)	Inspect	CUSTOMER
	Loss of oil	Inspect	CUSTOMER
	Tighten wheel nuts	Inspect	CUSTOMER
	Condition of tyres and tyre pressures	Inspect	CUSTOMER
BRAKES	Brake fluid (3)	Inspect	CUSTOMER
	Free play of service brake pedal (3)	Inspect	CUSTOMER
CHASSIS BODYWORK	Overhead guard	Inspect	CUSTOMER
	Seatbelts (3)	Inspect	CUSTOMER
	Cabin floor, access step and handles (3)	Inspect/ Clean	CUSTOMER
	Guards (3)	Inspect	CUSTOMER
	Identification plates and labels (3)	Inspect/ Clean	CUSTOMER
	Safety systems / safe fastening of raised cabin	Inspect	CUSTOMER
	Cabin closure	Inspect	CUSTOMER

EVERY MONTH			
		Tasks	To be made by
ELECTRICAL SYSTEM	Battery	Inspect	CUSTOMER
AXLES (FRONT AND REAR)	Tighten nuts securing cardan gasket	Inspect	DEALER
	Tighten nuts securing coupling	Inspect	DEALER

Maintenance Chart

EVERY YEAR			
		Tasks	To be made by
ENGINE	Oil (1)	Change	CUSTOMER
	Oil filter (1) (V2003T)	Change	CUSTOMER
SUPPLY CIRCUIT	Air filter element (4)	Change	CUSTOMER
ELECTRICAL SYSTEM	Damage to electric wiring and loose connections	Inspect	CUSTOMER
REDUCER BOX	Oil (1)	Change	CUSTOMER
AXLES (FRONT AND REAR)	Oil (1)	Change	CUSTOMER

EVERY 2 YEARS			
		Tasks	To be made by
ENGINE	Alternator belt (1)	Change	DEALER
SUPPLY CIRCUIT	Air intake hose	Change	CUSTOMER
	Fuel pipes and clamps	Replace (2)	CUSTOMER
COOLANT CIRCUIT	Radiator hose and clamps	Change	CUSTOMER
	Coolant	Change	CUSTOMER
ELECTRICAL SYSTEM	Battery	Change	CUSTOMER
BRAKES	Brake fluid (3)	Change	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) More often under severe use such dusty areas, sand, snow, wet or muddy conditions.
(5) Replace after 6 clean.

Periodic Maintenance Operations

■ General comments

Only original AUSA spare parts should be used during maintenance operations. This is the only way to guarantee that the AUSA machinery will have the same operational level that it had upon delivery.

This forklift, as with any machine, contains parts and systems which are subject to wear or require re-adjusting, and which may affect the reliability of the machine and the safety of the operator, the environment and the surrounding area, such as for example, exhaust gas emissions. The necessary maintenance should be carried out regularly in order to ensure similar conditions to those existing on leaving the factory.

In accordance with Work Equipment Directives, these systems should be inspected regularly and the results recorded on the forms provided by the Labour Authorities of each country. (89/655/EEC or RD 1215/97).

All repair and maintenance operations should be made while the forklift is unloaded, the parking brake applied and the wheels blocked in order to keep the forklift stationary.

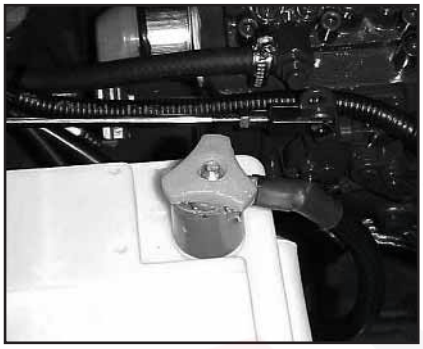
Disconnect the battery **(fig. 1)** before carrying out any work on the electrical system.

Never use a flame to check fluid levels.

❀ Respect the environment

When changing oil or other fluids use a suitable container to collect the old fluid. Take care not to cause damage to the environment and take all the replaced materials (batteries, coolant, etc) to the appropriate recycling centres.

In the event of leaks of substances which may be harmful to persons or to the environment, immediately take the necessary measures to reduce their impact, for example in the case of oil leaks, plug the leak, use a recipient to collect the oil, sprinkle absorbent material or collect up and remove the contaminated soil if necessary.



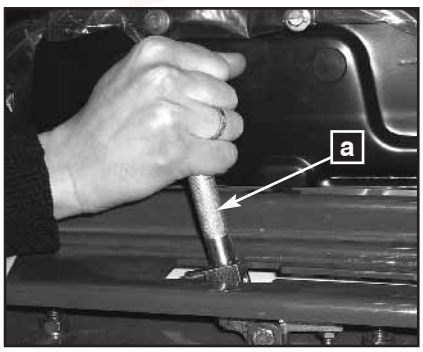
(fig. 1)

■ Access for maintenance

The engine, transmission and filters are located below the operator cabin **(fig. 2)**. To access these, lift up as follows:

(fig. 2)

- Start the forklift and tilt the mast forwards (the operator remains seated in the driver's cabin).
- Move the joystick to the right until reaching the maximum forward tilt.
- Stop the engine and remove the key from the ignition.
- Get down from the driver's cabin.



(fig. 3)

- Pull lever **(a)** located at the rear of the cabin, behind the seat **(fig. 3)** to disengage the cabin catch, the cabin will tip up, allowing access in order to carry out the maintenance operations.

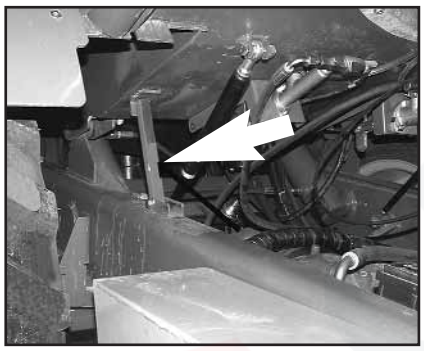
Periodic Maintenance Operations

- After lifting up the cabin, it should be secured using the safety lock
- **(fig. 1, 2)**. This will prevent it from lowering and causing accident.

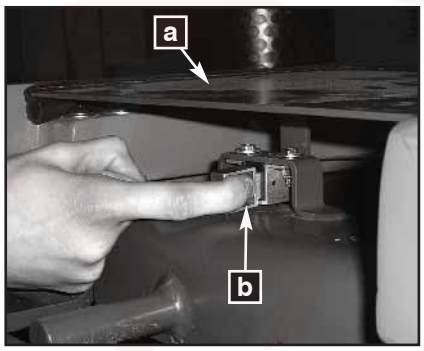
WARNING

Whenever the cabin is raised, the safety lock must be on. This prevents the cabin from causing an accident on descending.

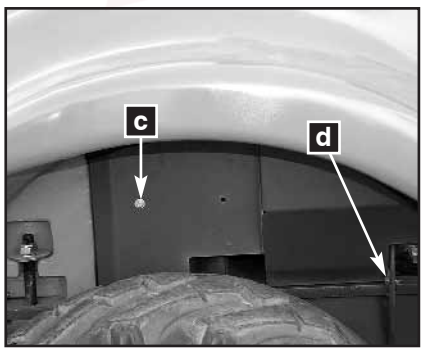
(fig. 1)



(fig. 2)



(fig. 3)



(fig. 4)

To access the upper part of the engine, after raising and securing the operator cabin, lift the inspection cover **(a)** by pulling on the lock **(b)**.

To access the sides of the engine, undo the bolt **(c)** and nut **(d)** and remove the rear wheel cover. There is a wheel cover on each side of the machine.

■ Daily checks

- Before starting to work with the forklift, clean any oil or fuel spills, clean and remove grease from hands and the soles of shoes and do not forget to make the following checks:
- Condition of the lifting chains
- Tyre pressure and condition of the tread.
- Brakes.
- Leaks in the hydraulic, coolant, fuel circuits, etc.
- Check the correct position and fastening of all the guards, caps and safety stops.
- Absence of cracks or other structural defects visible at first glance.
- Check that all the controls are operating correctly.

Periodic Maintenance Operations

- Check fluid levels:
  - fuel.
  - brake fluid.
  - hydraulic circuit fluid.
  - coolant circuit fluid.

- Check that alarm and signaling devices are operating correctly (for example: acoustic warning, air intake filter blocked warning, etc.)

- Check that informative and safety plates on the forklift are clean and in good condition.

- Clean and check lighting and signaling system are operating correctly.

- Check electrical battery connections and level of electrolyte.

- Adjust the seat to your build.

- Carefully inspect the condition of the seatbelt, paying special attention to:
  - Cuts or fraying on the belt.
  - Wear or damage to the fastenings including the anchorage points.
  - Poor functioning of the buckle or automatic reel device.
  - Loose stitching.

Correct any problems before using the forklift.
Where necessary, refer the problem to an authorized AUSA dealer.

Periodic Maintenance Operations

■ **Engine**

For operating instructions, list of spare parts and general maintenance, see the engine handbooks or the **Maintenance chart**.

■ **Alternator belt**

Check the tension of the alternator belt regularly. Also check for cracks or other damage. Refer to an authorized AUSA dealer for the replacement of the alternator belt.

■ **Engine oil**

Oil level: Checking

With the forklift on a level surface, while the engine is cold and switched off, check the oil level as follows:

- Pull out the dipstick and clean on a clean cloth.
- Replace the dipstick in its casing.
- Remove again and check the oil level. This should be at the upper level. (fig. 1).

a- Full
b- Add oil
c- Operating range

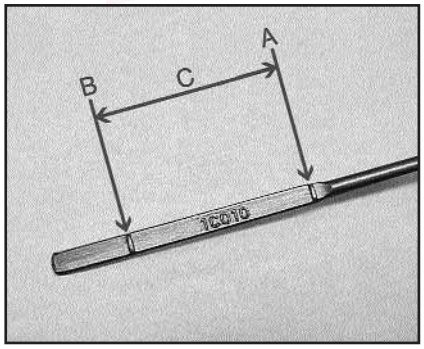
- Add oil until the level reaches the upper level.

Oil level: Correct

- Remove the dipstick and place a funnel in the opening of the oil filler neck located above the rocker arm cover.
- Top up with oil gradually until the level is correct.

CAUTION

Do not exceed the maximum level mark. Starting the engine with incorrect oil levels may cause serious damage. Clean up any spillage. Check the oil level often and top up where necessary.



(fig. 1)

Periodic Maintenance Operations

Engine oil: Draining

The oil change should be made when the oil is warm.

WARNING

The engine oil may be very hot. To avoid the risk of burns, do not remove the drain plug or unscrew the filter if the engine is hot. Wait until the engine oil is cooler.

- Make sure the forklift is on level ground.
- Remove the dipstick.
- Clean the area around the oil drain plug.
- Place a container below the oil drain plug.
- Unscrew the oil drain plug **(fig.1)**.
- Allow all the oil to drain from the engine.
- Clean the oil sump drain plug and replace the plug with a new plug.
- Screw on the plug by hand and tighten to **35 Nm**.

Oil filter cartridge: Replacing

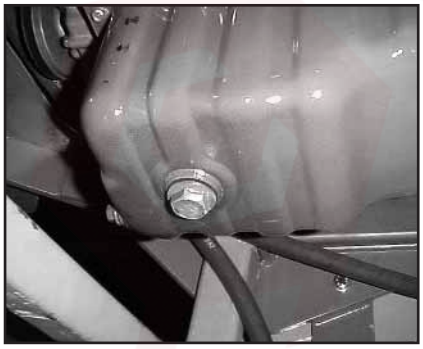
The oil filter cartridge **(a)** is located on the left-hand side of the engine.

- Unscrew the oil filter cartridge by turning to the left.
- Clean the base of the filter and oil the seal of the new filter element.
- Screw on the new filter element and tighten by hand, without using mechanical means.

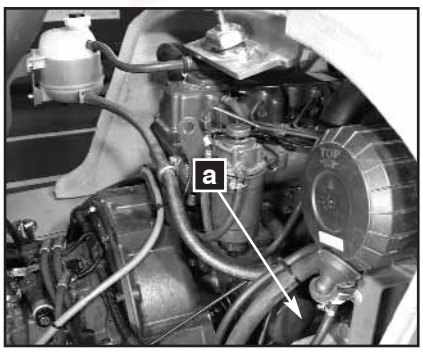
❀ Dispose of the used oil filter cartridge in an authorized centre for this purpose.

Engine oil: Filling up

- Remove the dipstick and place a funnel in the opening of the oil filler neck located above the rocker arm cover.
- Fill the engine to the recommended oil level. See the **Table of fluids and lubricants** (references and capacities) in this Operator's manual for oil type and capacity.
- Start the engine and leave idling for a few minutes. Check the areas around the oil filter and oil drain plug for leaks.
- Switch off the engine.



(fig. 1)



(fig. 2)

Periodic Maintenance Operations

- Wait a few seconds to allow the oil to flow towards the engine oil pan and then check the level.

- Top up if necessary.

CAUTION

Do not exceed the maximum level mark. Starting the engine with incorrect oil levels may cause serious damage. Clean up any spillage. Check the oil level often and top up where necessary.

❀ Dispose of used oil in authorized centres.

■ **Coolant system**

Level of coolant: Checking

WARNING

Never remove the coolant reservoir cap while the engine is hot. Wait until the engine has cooled down.

The level of coolant should be between the “MIN” and “MAX” marks on the coolant reservoir **(fig. 1)**.

If the coolant level is below the “MIN” mark, top up the coolant reservoir with coolant. Check the engine, hoses and radiator for possible coolant leaks.

Coolant circuit: Draining

The coolant should be changed according to **Table of fluids and lubricants** (references and capacities), or when the circuit is drained for repair purposes. To do so, proceed as follows:

- Place a container below the radiator.

- Disconnect the lower radiator hose in order to drain the radiator here.

Coolant circuit: Filling and bleeding

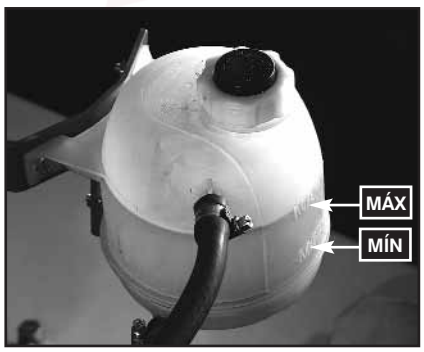
- Before filling the circuit, re-connect the lower radiator hose.

- The circuit is filled through the coolant reservoir.

Proportions of coolant and distilled water:

Temperatures from -17 ºC to 127 ºC: 40 % glycol and 60 % distilled water.
Temperatures from -35 ºC to 145 ºC: 50 % glycol and 50 % distilled water.

- Start the engine until the thermostat opens.



(fig. 1)

Periodic Maintenance Operations

- Then, when the engine is cold, check the level of coolant in the coolant reservoir.
- If necessary, bleed the coolant air circuit using the bleeder located on the radiator hose **(fig. 1)**.

❀ Dispose of used coolant in authorized centres.

■ **Air filter**

Replacing

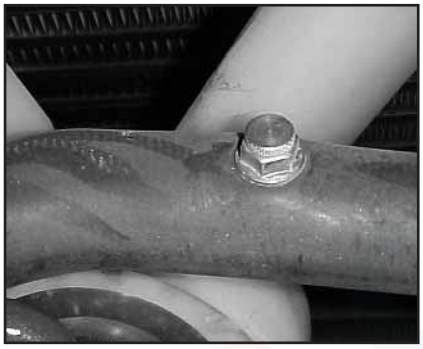
The air intake in the engine is through a dry filter -Figs. 2 and 3- with double element. The life of the engine and its performance largely depend on the correct maintenance of this filter.
The filters should be changed and cleaned as shown in the **Maintenance chart**.
If the forklift is working in a dusty atmosphere the filter element should be replaced more often than that specified.

Note: The intake filter includes a filter clogged indicator. If the control warning light on the control panel lights up, the filter element should be cleaned or replaced as soon as possible.

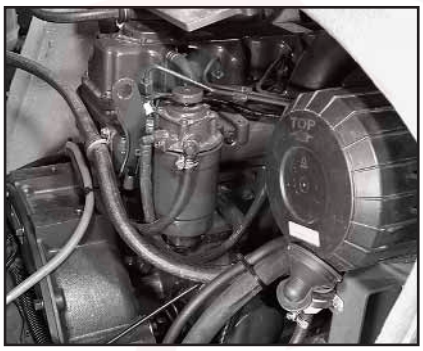
- Undo the left and right-hand staples of the filter cover and remove the cover.

CAUTION

Do not start the engine when there is water inside the air filter casing. When there are fluids or dirt inside the casing, the filter cartridges should be inspected, drained or replaced.


(fig. 1)

- To clean the filter element, blow high-pressure air (maximum 5 bar) through the element from the inside to the outside while turning.
- Also clean the interior of the filter casing.



(fig. 2)

Air filter blocked warning light. check the working.

- Disconnect the wiring from the air filter clogged indicator.
- Make a bridge between the connector contacts using, for example, a small diameter piece of electrical cable.
- The air filter blocked warning light on the multi-function instrument should light up.
- If the warning light does not light up, contact a AUSA dealer.


(fig. 3)

Periodic Maintenance Operations

■ **Fuel pre-filter**

Replacing

The fuel pre-filter is located next to the fuel tank, on the inside of the chassis.

WARNING

Always replace this component. Never try to clean it.

a- Brackets
b- Fuel pre-filter

- Remove the fastening brackets and the filter.
- Make sure that the new filter is fitted in the correct direction as shown by the arrow on the body of the filter.

❀ Dispose of remains of fuel in authorized centres.

■ **Fuel filter**

Replacing (V3300E2B Engine) (fig. 2)

- Unscrew, by turning to the left, the cartridge **(c)** of the fuel filter located on the left-hand side of the engine and remove it from the support.
- Clean the base and oil the seal of the new filter.
- Screw on the new filter element and tighten by hand, without using mechanical means.

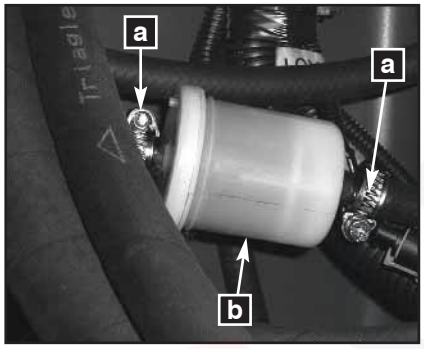
Replacing (V2003T Engine) (fig. 3)

- Unscrew, by turning to the left, the cartridge **(d)** of the fuel filter located next to the joystick support.
- Clean the base and oil the seal of the new filter.
- Screw on the new filter element and tighten by hand, without using mechanical means.

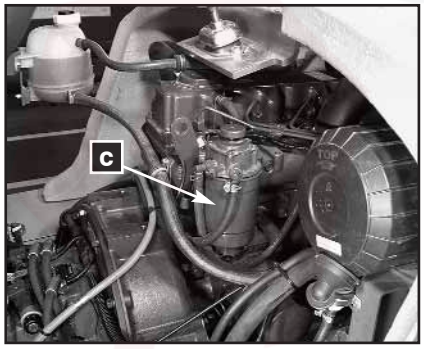
WARNING

Take care to correctly tighten the filter element otherwise the circuit may suction air from the outside, causing faults in the supply to the engine.

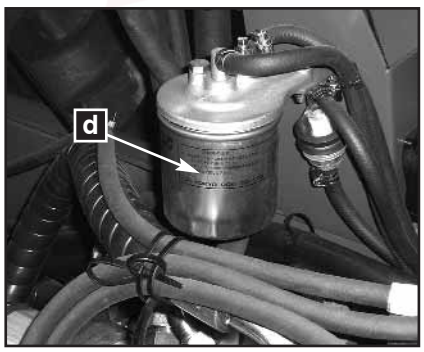
❀ Dispose of remains of fuel in authorized centres.



(fig. 1)



(fig. 2)



(fig. 3)

Periodic Maintenance Operations

Drain the water from the fuel filter

The fuel used may contain water which is deposited on the lower part of the filter element. To protect the fuel injection system it is essential to drain the water from the filter element regularly as shown in the **Maintenance chart**.

V3300E2B Engine (fig. 1)

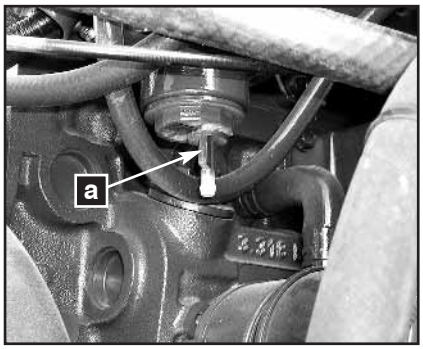
- Unscrew the drainage cap **(a)** located on the lower part of the filter element.

V2003T Engine (fig. 2)

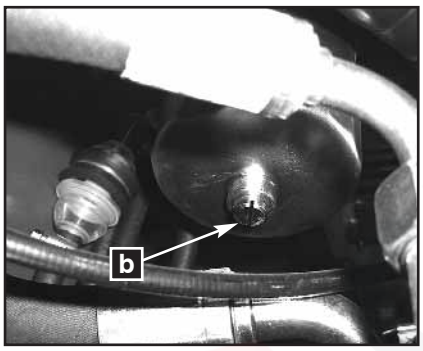
- Unscrew the drainage cap **(b)** located on the lower part of the filter element.

Continue as follows for both engines:

- Wait until all the water in the filter has drained off.
- Tighten the drainage cap **(b)**.



(fig. 1)



(fig. 1)

WARNING

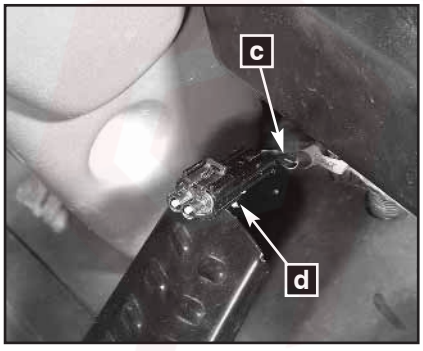
Take care to correctly tighten the drainage cap. If it is loose, unwanted air may enter the injection system and cause the engine to operate incorrectly.

❀ Dispose of remains of fuel in authorized centres.

■ **Tilting the mast while the engine is stopped (emergency movement)**

It is possible to tilt the mast of the forklift (emergency movement) forwards with the ignition off. To do so, proceed as follows:

- Locate the emergency movement connector under the dash panel, next to the steering column **(fig. 3)**.

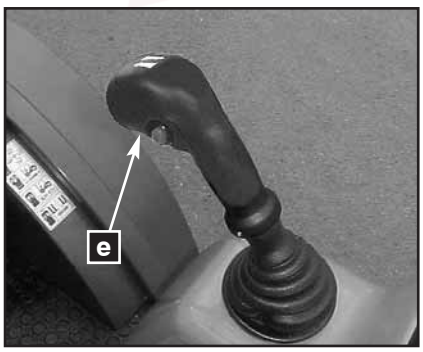


(fig. 3)

- Remove the protective cover from the connector by lifting the locking tab and moving it forwards.

- With the help of an external battery supply the connector with + 12V DC and earth (-) as follows:
  Orange wire, contact **(c)**: + 12V DC
  Black wire, contact **(d)**: earth (-)

- Push the joystick **(e)(fig. 4)** to the right in order to tilt the mast.



(fig. 4)

Note: To help this movement, we recommend applying a small load on the end of the forks.

Periodic Maintenance Operations

■ **Parking brake**

Oil: Replacing
If the brake pedal lowers excessively, refer to the authorized AUSA dealer for adjusting, bleeding or replacement of the inner discs.

Releasing parking brake while the engine is stopped:

- This operation should be carried out following the instructions given in Towing the forklift in this handbook.

■ **Service brake**

Adjusting (fig. 1)

If the pedal has excessive free play, this can be corrected using the push rod **(a)** of the pedal which operates the brake pump. This has a system of nut and locknut. Allow the push rod to have a free play of between 1 and 1.5 mm, making sure that the pump is free of internal pressure.
If, on applying the service brake, the pedal lowers too much it should be adjusted. To do so, contact an AUSA authorized dealer.

To replace the brake discs contact an authorized AUSA dealer.

Brake and inching fluid: Checking the level

With the forklift parked on a level surface, the level of the brake fluid in the tank should lie between the marks MIN. and MAX. **(fig. 2)**.

If necessary, top up the brake fluid in the tank:

- Unscrew the filler cap and use a funnel to prevent spillage.
- Top up with fluid until the level reaches the MAX. mark.
- Close the filler cap by screwing it on again.

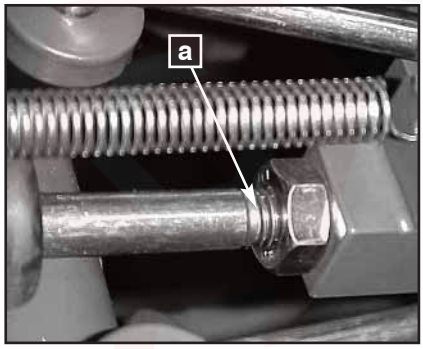
Note: While topping up, do not exceed the MAX. mark.

WARNING

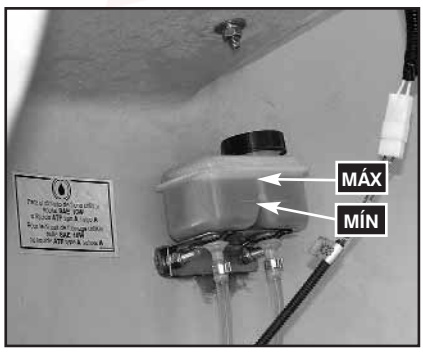
If it becomes necessary to top up the brake fluid frequently, it is possible that the brake system has a leak. Park the forklift correctly (See the section Parking the forklift truck) and consult an authorized AUSA dealer.

Brake and inching fluid: Replacing

The replacement of brake fluid or any repair to the brake system should be carried out by an authorized AUSA dealer.



(fig. 1)



(fig. 2)

Periodic Maintenance Operations

■ **Transfer box oil level (fig. 1)**

Checking

- To check the oil level unscrew the cap **(b)**.

Draining

- To drain the oil, unscrew the plug located on the lower part.

Topping up

- Top up with the specified oil through the filler cap **(a)** bleeder located on the upper part. See the **Fluids and lubricants chart** (references and capacities) in this Handbook for oil specs and capacity.

❀ Dispose of used oil in authorized centres.

■ **Oil level in the rear axles differential (4x4 models) (fig. 2)**

Checking

- To check the oil level unscrew the cap **(b)**. The oil should be at the level of the casing.

Draining

- To drain the oil, unscrew the plug **(c)** located on the lower part.

Topping up

- To fill or top up the rear axle with oil use opening **(b)** of the level.

- Fill with the specified oil through the opening of the plug **(b)**. See the **Fluids and lubricants chart** (references and capacities) in this Operator's manual for oil specs and capacity.

❀ Dispose of used oil in authorized centres.

■ **Oil level on front axle (fig. 3)**

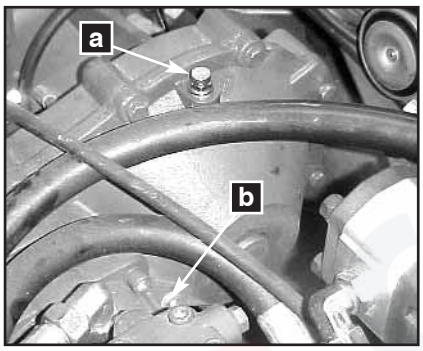
This should be checked while the forklift is on flat ground. The oil of the differentials and the reducers is connected internally.

Differential: Checking the level

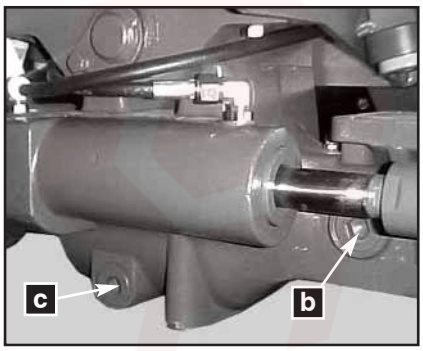
- To check the oil level in the differentials use the cap **(b)**.

Differential: Draining

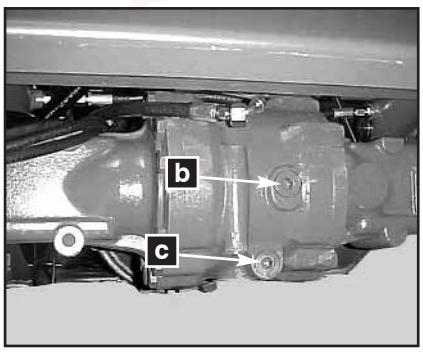
- To drain the oil, unscrew the plug **(c)** located on the lower part.



(fig. 1)



(fig. 2)



(fig. 3)

Periodic Maintenance Operations

❀ Dispose of used oil in authorized centres.

Differential: Topping up

- Fill with the specified oil through the opening of the plug **(a)**. See the **Fluids and lubricants chart** (references and capacities) in this Operator's manual for oil specs and capacity.

■ **Oil level in final drives on front axle and wheel hub on rear.**

WARNING

Never remove the drain plug of the final reductions when the oil is hot. The gases formed in the interior may cause injury.

Final drives: Checking the level (fig. 1)

- Turn the wheel until the mark "Oil Stand Level" on the reducer is horizontal.
- To check the oil level in the final reductions use the cap **(a)**.

Final reductions: Draining

- Remove the wheel.

WARNING

If is necessary to remove the drain plug while the oil is still hot, place it on the upper part of the wheel hub, and remove the plug carefully covering it with a cloth or similar.

- To drain the oil, turn the wheel hub until plug **(a)(fig. 2)** is located on the lower part of the wheel hub.

❀ Dispose of used oil in authorized centres.

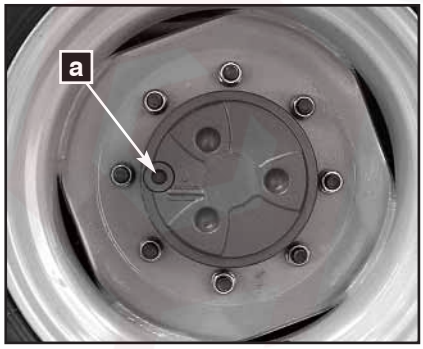
Wheel hubs: Topping up (fig. 2)

- Turn the wheel until the mark "Oil Stand Level" on the reducer is horizontal.
- Fill with the specified oil through the opening of the plug **(a)**. See the **Fluids and lubricants chart** (references and capacities) in this Operator's manual for oil specs and capacity.

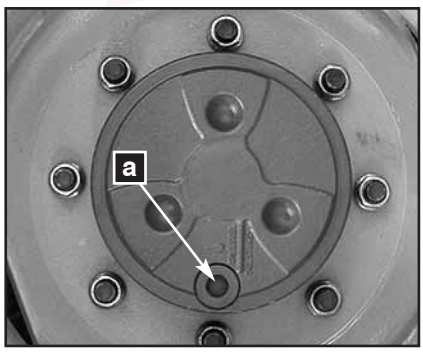
■ **Hydraulic oil**

Level: checking

This should be checked while the forklift is on flat ground, the forks are lowered to rest position and the engine is switched off.



(fig. 1)

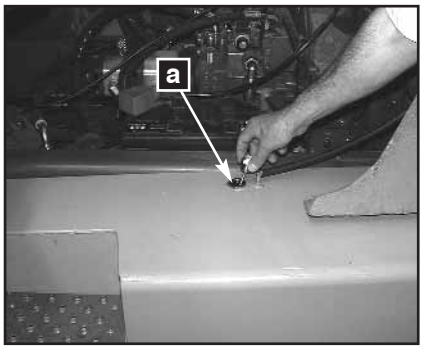


(fig. 2)

Periodic Maintenance Operations

Note: The oil tank is equipped with an oil level low warning light. When this level is reached, the light on the multi-function instrument lights up and an acoustic warning is emitted. Add oil immediately to prevent damage to the hydraulic pumps.

- Loosen the dipstick **(fig. 1)(a)**.
- Check whether the oil level reaches the upper mark.
- If necessary, top up with oil through the dipstick hole.

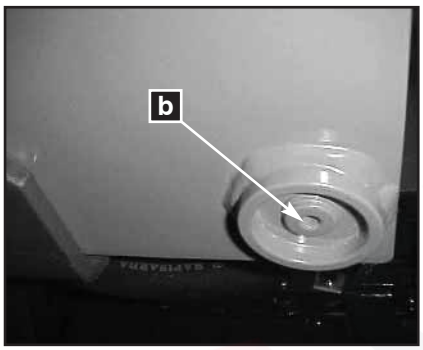


(fig. 1)

Draining

- The tank is drained through plug **(fig. 2)(b)** on the lower part of the tank.

❀ Dispose of used oil in authorized centres.



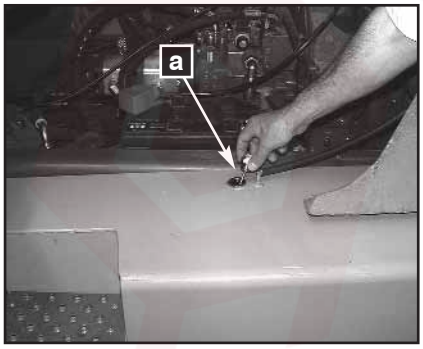
(fig. 2)

Topping up

- Fill with the specified oil through the opening of the plug **(fig. 3)(a)**. See the **Fluids and lubricants chart** (references and capacities) in this Operator's manual for oil specs and capacity.

Hydraulic circuit oil. Types and operating temperatures

VG 46: for atmospheric temperatures usually below 10 ºC.
VG 68: for atmospheric temperatures between 10 and 40 ºC.
VG 100: for atmospheric temperatures usually above 40 ºC.

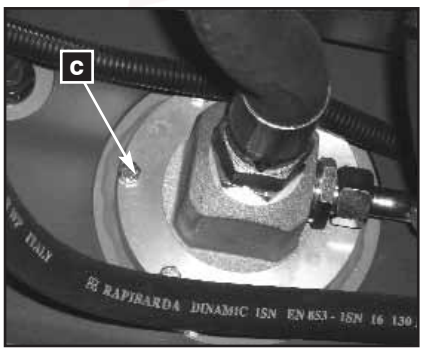


(fig. 3)

Clean the hydraulic oil strainer

There is an oil strainer located on the interior of the tank in the hydraulic circuit. This is a metal strainer which should be cleaned every time the hydraulic oil is drained.

- To do so, remove the 6 screws **(c)** from the flat **(fig. 4)**.
- Before assembling, check the condition of the seal and replace if necessary.



(fig. 4)

■ Hydraulic hoses

All the hydraulic hoses should be replaced at least every 6 years.

Periodic Maintenance Operations

■ **Hydraulic system safety valves: trimming**

There are two safety valves for preventing overpressure: one on the steering circuit and one on the mast operating circuit. The first is located on the hydraulic steering **(fig. 1)** and the second on the control valve **(fig. 2)**. These valves are set to the correct pressure in the factory, but their trim should be checked regularly and adjusted accordingly.

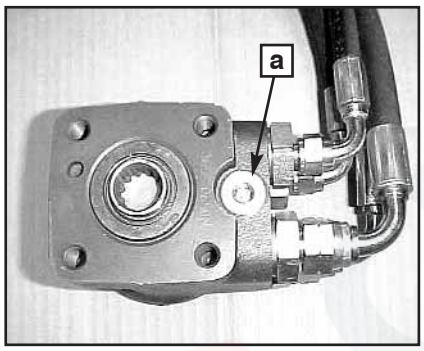
The trimming should be carried out by personnel with a good knowledge of hydraulics and suitable tools. The pressures should never exceed those given in the section **Technical specifications** in this Handbook.

Hydraulic steering valve

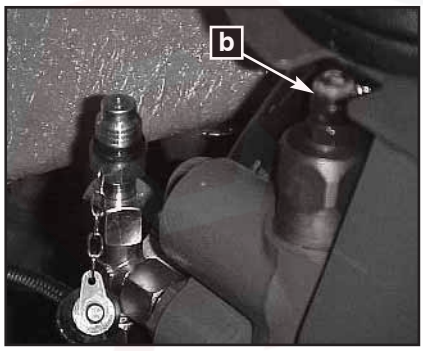
- Remove the plug **(a)**.
- To increase the hydraulic pressure turn the interior screw clockwise using a screwdriver. To reduce the pressure, turn the interior screw in the opposite direction.

Control valve

- Remove the seal.
- Remove the plastic cover.
- Unscrew the metal cap **(b)** and loosen the locknut.
- To increase the hydraulic pressure turn the screw clockwise using an allen key. To reduce the pressure, turn the interior screw in the opposite direction.



(fig. 1)



(fig. 2)

(fig. 3)

■ **Hydrostatic transmission filter: Replacing**

The hydrostatic circuit has a cartridge filter **(fig. 3)** which should be replaced regularly (See the section **Maintenance chart**).

- Undo the cartridge filter by turning it to the left.
- Clean the base of the filter and oil the seal of the new filter element.
- Screw on the new filter element and tighten by hand, without using mechanical means.

Check whether the filter needs replacing (vacuometer)

The filter support has a filter clogged indicator. When the engine is running the needle should lie in the green zone, or at a maximum, in the yellow zone. If the needle approaches or lies in the red zone, replace the cartridge filter as soon as possible.

WARNING

Take care to correctly tighten the filter element otherwise the circuit may suction air from the outside, causing faults in the transmission.

Periodic Maintenance Operations

■ **Wheels**

WARNING

Unless it is imperative for the work to be carried out, given that the machine does not have suspension, the use of solid tyres is not recommended, as this increases the effect of impacts on the transmission and the operator.

Tyre pressure: Checking

If possible, the tyres should be inflated by specialised personnel.
The following operations are recommended, in particular for the front wheels:

Checking and inflating tyres: Safety measures

WARNING

The tyre pressures of the forklift are very high. Inflating the wheels could be dangerous if not performed with care.

- Inflate the forklift tyres when cold to the pressure given by AUSA before starting the day's work (See the section **Technical Specifications** in this Operator's manual).

- Checking tyre pressures and inflation should be carried out with a manometer in good condition fitted with a nozzle with safety clip. The safety clip is essential for preventing the manometer nozzle from coming off the tyre valve during inflation, which could cause serious injury to the operator.

- Use gloves to protect hands.

Wheel mounted on the machine

This should be checked while the forklift is on flat ground, the forks are lowered to rest position and the engine is switched off.

Wheel dismounted

- Place the tyre in a cage or other device suitable for inflating tyres of this nature.

Wheel nuts: Tightening torque

The tightening torque of the wheel nuts should be checked every week. The exact values of the wheel nut torques are given in the attached table.

- Use a torque wrench in good condition to check the tightening torque of the wheel nuts.

Periodic Maintenance Operations

- If pneumatic wrenches have been used, the torques should still be checked using a torque wrench.

- Do not force the torque wrench by using extensions (pipes or similar).

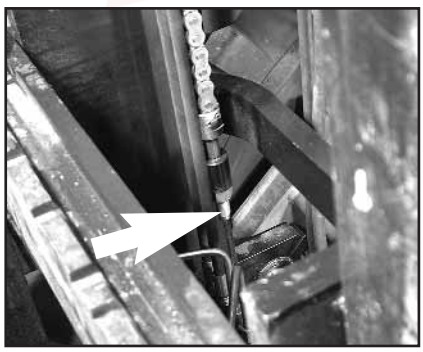
Tightening torque		
	Front wheels	**Rear wheels**
C 300 H	350 ± 50 Nm / 35.7 ± 5 Kgm	250 ± 30 Nm / 25,5 ± 5 Kgm
C 300 H x4	350 ± 50 Nm / 35.7 ± 5 Kgm	350 ± 50 Nm / 35,7 ± 5 Kgm
C 350 H	460 ± 50 Nm / 47 ± 5 Kgm	250 ± 30 Nm / 25,5 ± 5 Kgm
C 350 H x4	460 ± 50 Nm / 47 ± 5 Kgm	350 ± 50 Nm / 35,7 ± 5 Kgm

■ **Mast: tension and length of mast chains**

The tension and length of the mast chains should be checked regularly. They stretch gradually due to the strain applied to them.

The mast chains should be replaced when their nominal length has increased by 3%. Length can be checked by counting the links in one meter of 5/8" chain. Nominally there should be 63 links. The change should be made when there are 62.5 links, or a maximum of 61.

The chain is tensioned by turning the stop nut **(fig. 1)** of the tensioning rods.



(fig. 1)

Periodic Maintenance Operations

■ Lubrication

Rear axle

C 300 H / C 350 H

1 nipple on the central articulation of the axle **(fig. 1)**.
2 nipples, one on each wheel pivot **(fig. 2)**.

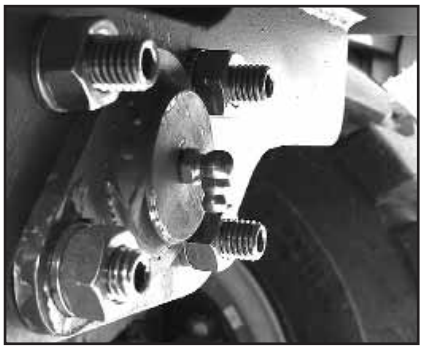
C 300 H x4 / C 350 H x4

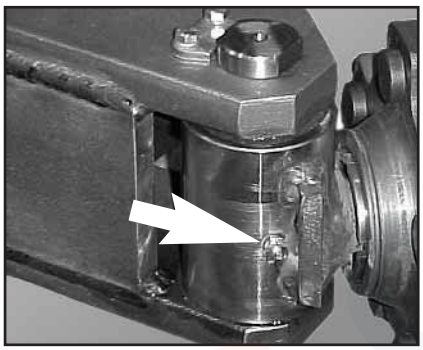
4 nipples, two on each wheel reduction joint **(fig. 3, 4)**.
2 nipples on the wheel hub of the axle.

Cardan joints

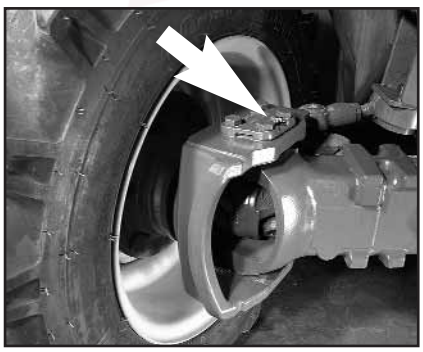
C 300 H x4 / C 350 H x4

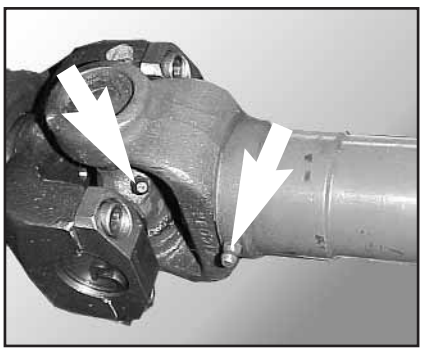
2 nipples, one on each diagonal of the seal **(fig. 5, 6)**.
2 nipples on the grooving **(fig. 5)**.

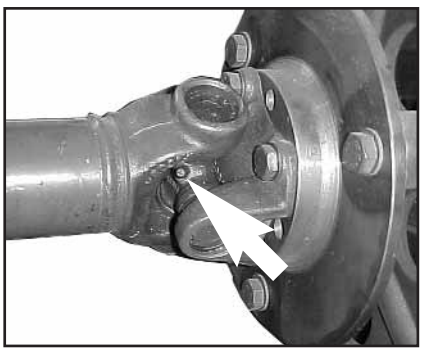

(fig. 1)


(fig. 2)


(fig. 3)

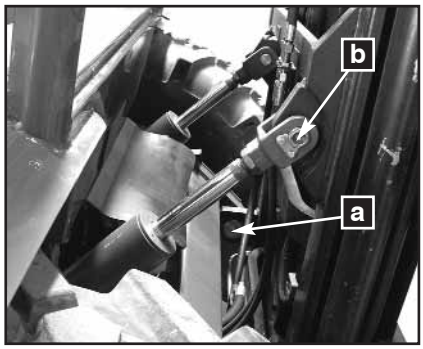

(fig. 4)


(fig. 5)

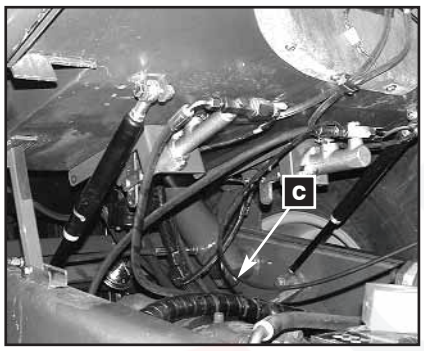

(fig. 6)

Periodic Maintenance Operations

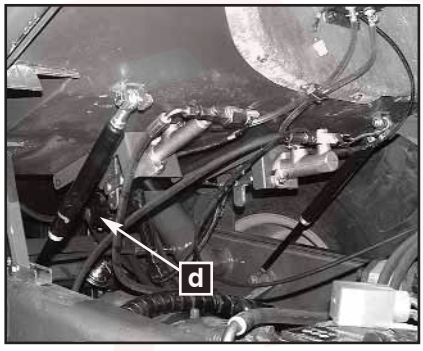
- **Mast articulation supports (fig. 1)**
  2 nipples, one on each pin of the mast articulation **(a)**.
- **Mast articulation with the tilting cylinder (fig. 1)**
  2 nipples, one on each support of the articulation **(b)**.
- **Tilting cylinder articulation with the chassis (fig. 2)**
  2 nipples, one on each support **(c)**.
- **Articulations of the controls (fig. 3)**
  Inching pedal **(d)**.
- **Brake pedal (fig. 4)(e)**



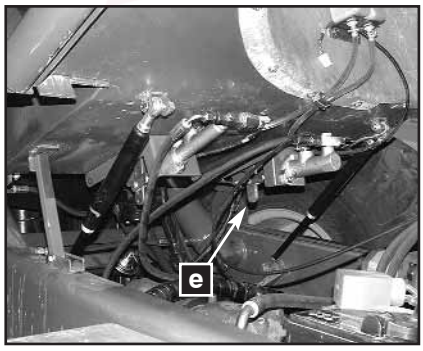
(fig. 1)



(fig. 2)



(fig. 3)



(fig. 4)

Periodic Maintenance Operations

■ **Lighting and signaling system (✱)**

Indicator, parking, reverse, left and right side light bulbs: replacing (fig. 1).

- Undo bolts **(a)** and remove the lens.
- Remove the bulb by pressing it gently inwards and turning it to the left at the same time in order to release it from the lamp holder.
- Replace the bulb with a new bulb of the same type and power.

Operating beacon bulbs: replacing (fig. 2).

- Undo bolts **(b)** and remove the rear housing of the operating beacon.

Operating beacon bulb:

- Remove the connector from the bulb.
- Undo the clip fastening the bulb by pressing it inwards and to the right at the same time.
- Replace the bulb with a new bulb of the same type and power.

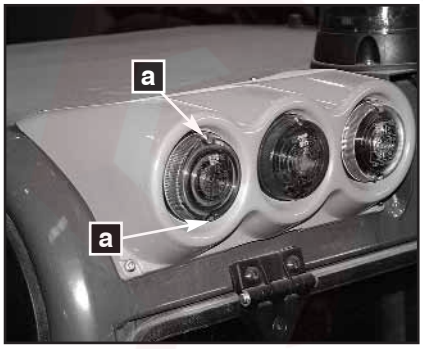
CAUTION

Do not touch the surface of the glass of the bulb. If it is dirty wipe gently using a clean dry cloth.

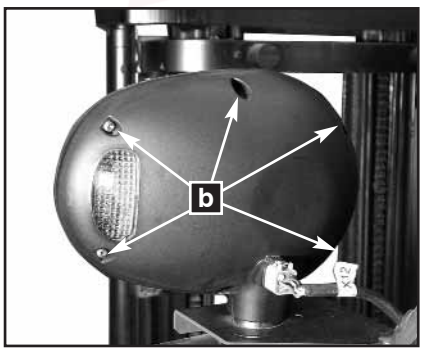
- Secure the clip again by pressing it inwards and to the left at the same time.

Indicator bulb:

- Remove the connector from the bulb.
- Remove the bulb by pressing it gently inwards and turning it to the left at the same time in order to release it from the lamp holder.
- Replace the bulb with a new bulb of the same type and power.

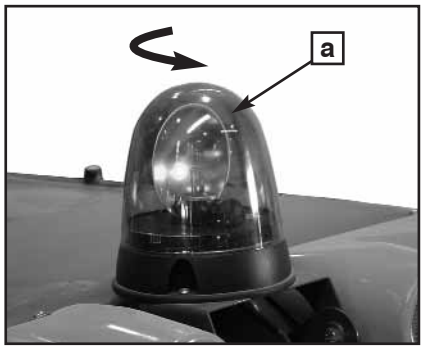


(fig. 1)

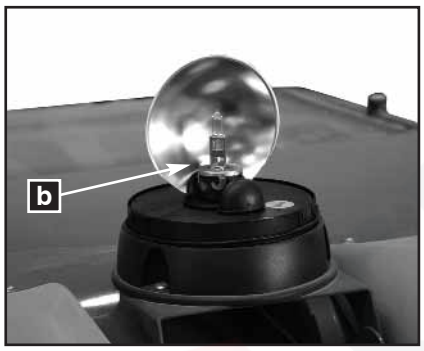


(fig. 2)

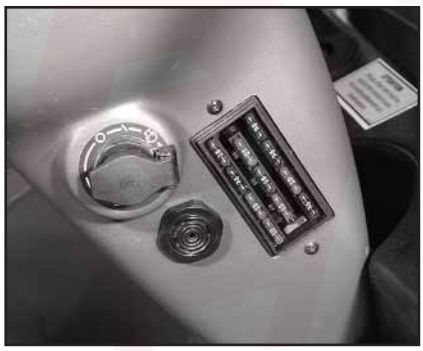
Periodic Maintenance Operations

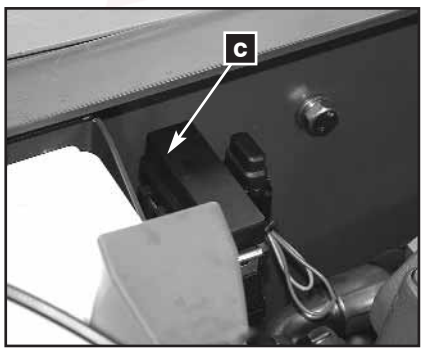


(fig. 1)



(fig. 2)


(fig. 3)



(fig. 4)

Rotating beacon bulb: replacing (fig. 1, 2)

- Turn the amber cover **(a)** of the rotating beacon to the left and remove.
- Unhook the plate **(b)** holding the bulb by pressing it inwards and to the left at the same time.
- Replace the bulb with a new bulb of the same type and power.

CAUTION

Do not touch the surface of the glass of the bulb. If it is dirty wipe gently using a clean dry cloth.

- Fasten the plate holding the bulb by pressing it inwards and to the right at the same time.

■ Electrical system

Fuses: checking (fig. 3)

- Switch off the ignition.
- Remove the protective cover from the fuses by pulling it outwards.
- The burnt fuse can be recognised as the metal strip which is visible in the centre of each fuse will have melted (viewing window).
- Remove the burnt fuse and replace with a new fuse of the same type.

CAUTION

Do not use fuses of a higher value, this could cause major damage.

Battery fuses: checking (fig. 4)

- Switch off the ignition.
- Remove the protective cover from the fuses **(c)**.
- The burnt fuse can be recognised as the metal strip which is visible in the centre of each fuse will have melted (viewing window).
- Remove the burnt fuse and replace with a new fuse of the same type.

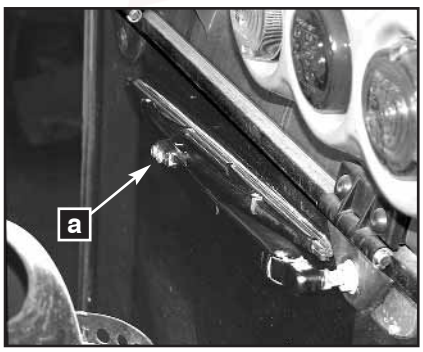
CAUTION

Do not use fuses of a higher value, this could cause major damage.

Periodic Maintenance Operations

■ **Windscreen wiper blade (✱): replacing (fig. 1)**

- Loosen screws **(a)** to remove the blade from the windscreen wiper arm.
- Replace blade.
- Check that the screws **(a)** hold the blade tightly to the wiper arm.



(fig. 1)

Transporting the forklift

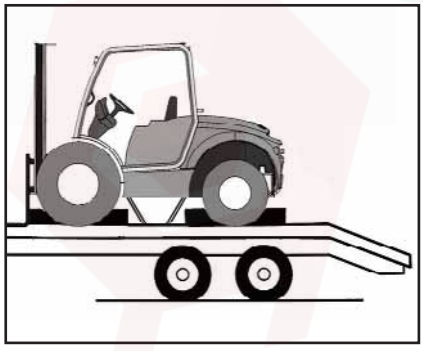
■ **Safety measures for loading the forklift onto a lorry or trailer using ramps**

WARNING

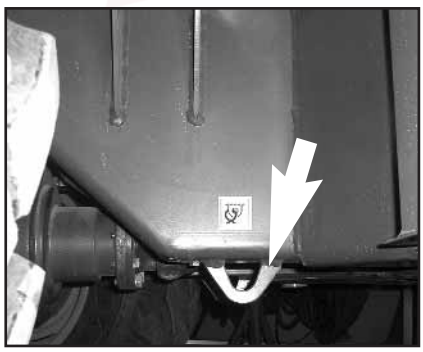
Before loading the forklift onto a lorry or trailer make sure that ramp is strong enough to bear the weight of the forklift. The lorry platform should be clean, and never greasy or frozen.
Do not transport the forklift with a full tank of fuel.

■ **Loading the forklift onto a lorry or trailer using ramps**

- Fasten the seatbelt.
- Drive the forklift up or down the ramps slowly and carefully.
- Set the forward-reverse directional travel control switch to neutral.
- Apply the parking brake.
- Lower the forks as far as possible.
- Place a bulk under the ends of each fork and tilt the mast slightly forwards.
- Stop the engine and remove the key from the ignition switch.
- Once the machine has been loaded onto the lorry / trailer, place chocs behind each of the four wheels.
- Tie the forklift tightly to the platform using suitable securing systems (chains, belts or slings) making sure that these are sufficiently strong and suited to this purpose **(fig. 1)**.
  Use the four eyes welded onto the chassis of the forklift for this purpose **(fig. 2**).



(fig. 1)



(fig. 2)

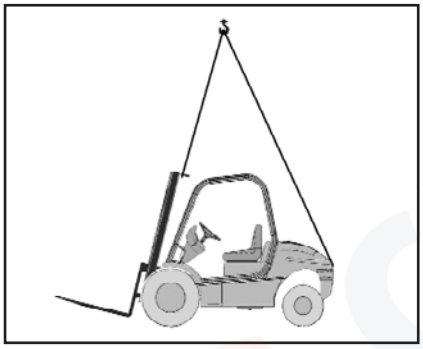
Transporting the forklift

■ **Safety measures for loading the forklift onto a lorry or trailer using a crane**

WARNING

The lorry or trailer platform should be clean, and never greasy or frozen.
Do not transport the forklift with a full tank of fuel.

- When loading a forklift onto a lorry using a crane and cable or sling, hook the cable or sling as shown in the figure **(fig. 1)**.
- The slings used at the front should be at least 2.5 m in length.
- Before lifting the forklift, make sure that the cable or sling is securely attached.
- While lifting the forklift, no-one is permitted inside the cabin or within a 5 m radius.
- Make sure that the angle of the front sling is approximately the same as that of the mast.

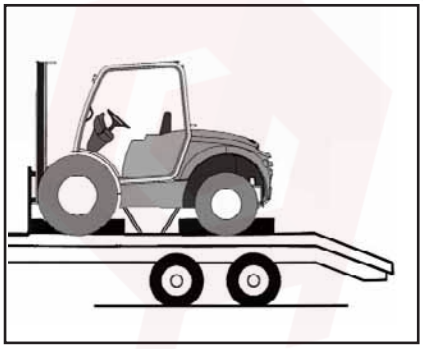


(fig. 1)

■ **Loading the forklift onto a lorry or trailer using a crane**

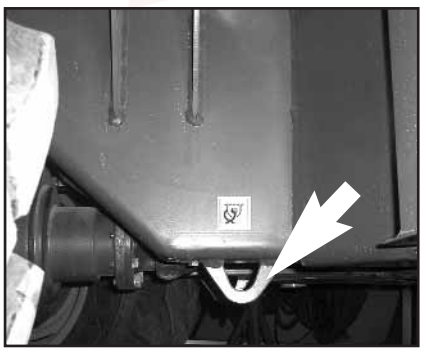
Observe the following:

- The slings used at the front should be at least 2.5 m in length.
- Make sure that the angle of the front sling is approximately the same as that of the mast.
- Once the machine has been loaded onto the lorry / trailer, place blocks behind each of the four wheels.
- Tie the forklift tightly to the platform using suitable securing systems (chains, belts or slings) making sure that these are sufficiently strong and suited to this purpose **(fig. 2)**.



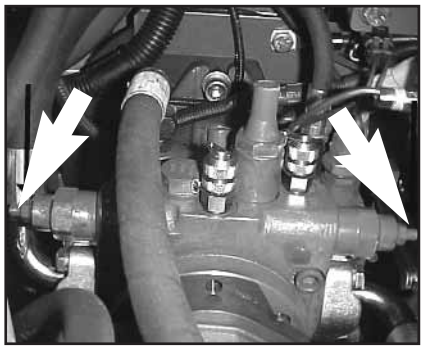
(fig. 2)

Use the four eyes welded onto the chassis of the forklift for this purpose **(fig. 3)**.

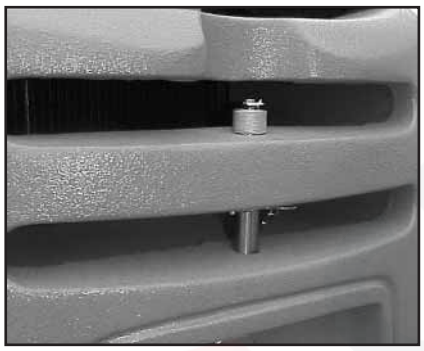


(fig. 3)

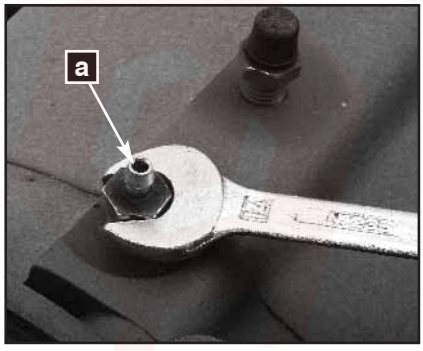
Transporting the forklift



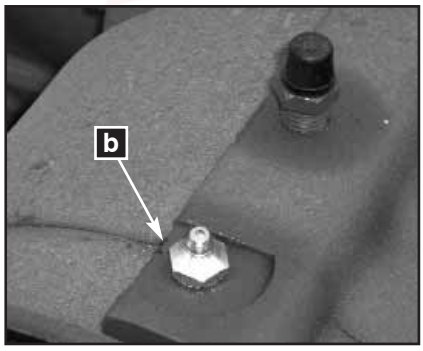
(fig. 1)



(fig. 2)



(fig. 3)



(fig. 4)

■ Towing the forklift

Conditions for towing the forklift

The forklift should only be towed in the event of breakdown when there is no other alternative, as this could seriously damage the hydrostatic transmission. Wherever possible, the repair should be carried out at the point of breakdown. In the event that this is not possible, the forklift should be towed over short distances and at low speeds.

- Before towing the forklift, tighten (but not over-tighten) the central bolts of the maximum pressure valves of the hydrostatic pump, to do so loosen the counter nuts **(fig. 1)**.

- After repairing the machine, loosen the central bolts of the maximum pressure valve of the hydrostatic pump and re-tighten the counter nuts.

- The forklift should be towed using a solid towing bar to prevent any lateral oscillation. The bar should be fixed to the rear bolt of the counterweight **(fig. 2)**.

■ Release the parking brake (fig. 3, 4, 5)

In the event that the parking brake is blocked, due, for example, to a loss of brake fluid, or because the engine does not start, proceed as follows to release it.

- Remove the bleeder **(a)** from the brake.

- Screw on the nipple **(b)** supplied in the forklift tool box.

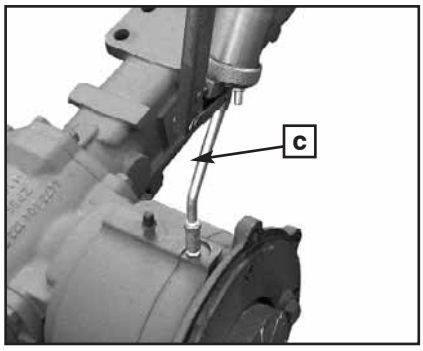
- Using a hand pump lubricatior **(c)** insert grease until the internal pressure of the lubricant manages to release the parking brake.

- To finally release the parking brake, unscrew the nipple **(b)**. The lubricant will come out of the brake thanks to the operation of the internal springs.

- Re-assemble the bleeder **(a)**.

WARNING

Any repair to the brake system should be carried out by an authorized AUSA dealer.



(fig. 5)

Electrical circuit diagram

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

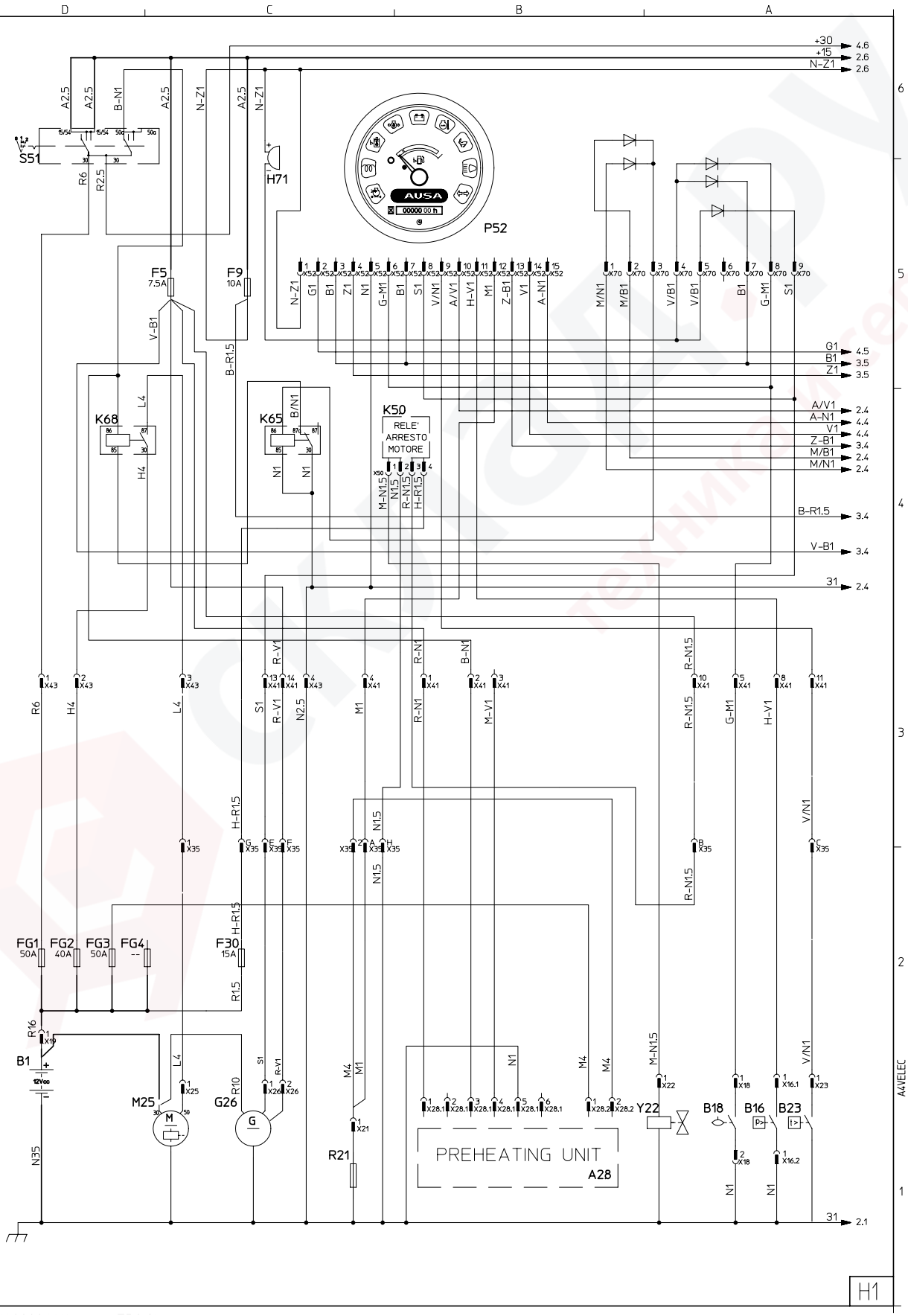
Cables: identification of colours

In the case of two-colour cables, the first letter of the code indicates the dominant colour. The arrangement of the figures, using the letters given on the colour chart, is as follows:

G/V -Yellow / Green. Horizontal stripes.
G-V -Yellow / Green. Vertical stripes.

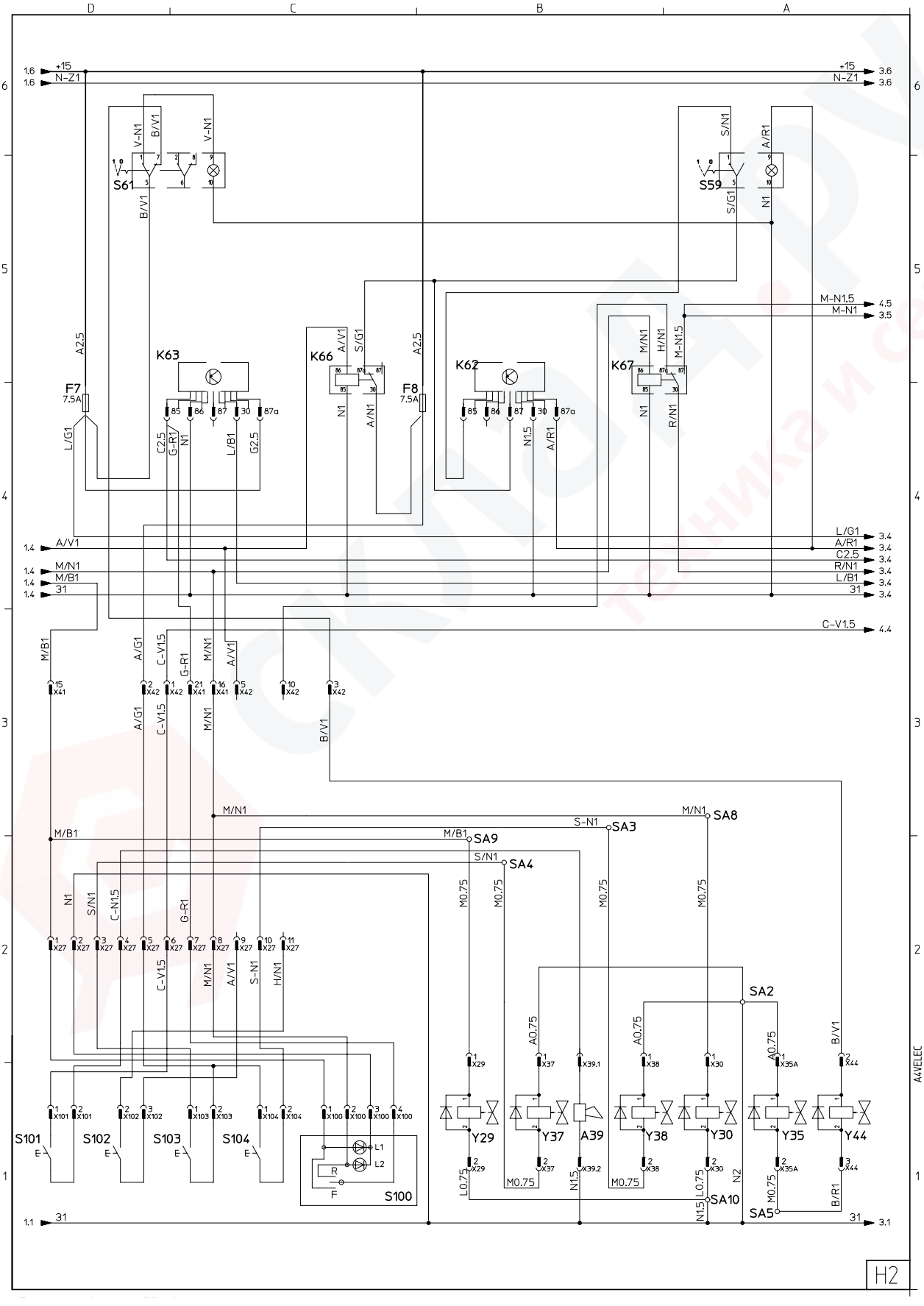
Electrical circuit diagram C 300 H

Below chassis number 50365



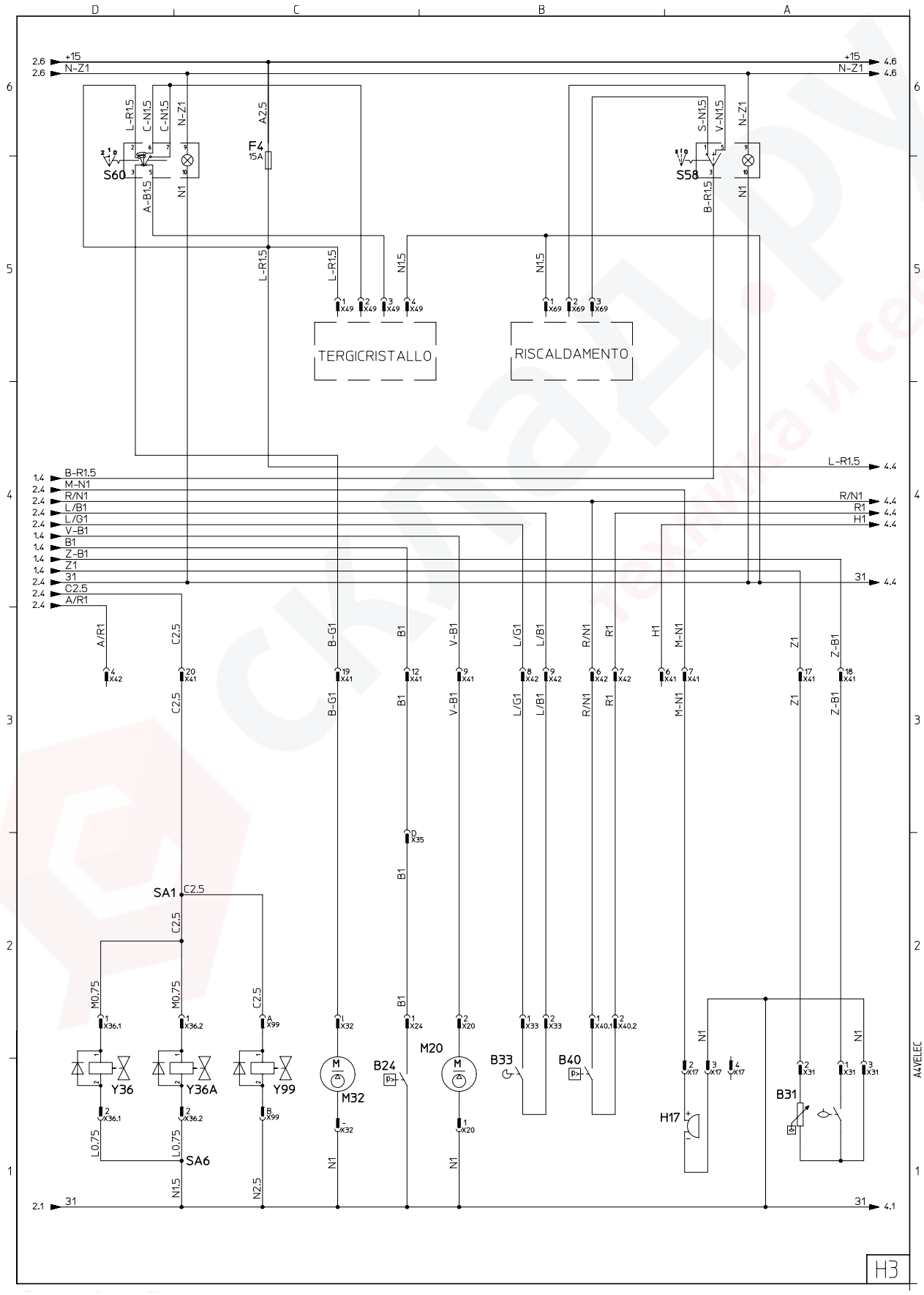
Electrical circuit diagram C 300 H

Below chassis number 50365



Electrical circuit diagram C 300 H

Below chassis number 50365



Electrical circuit diagram C 300 H

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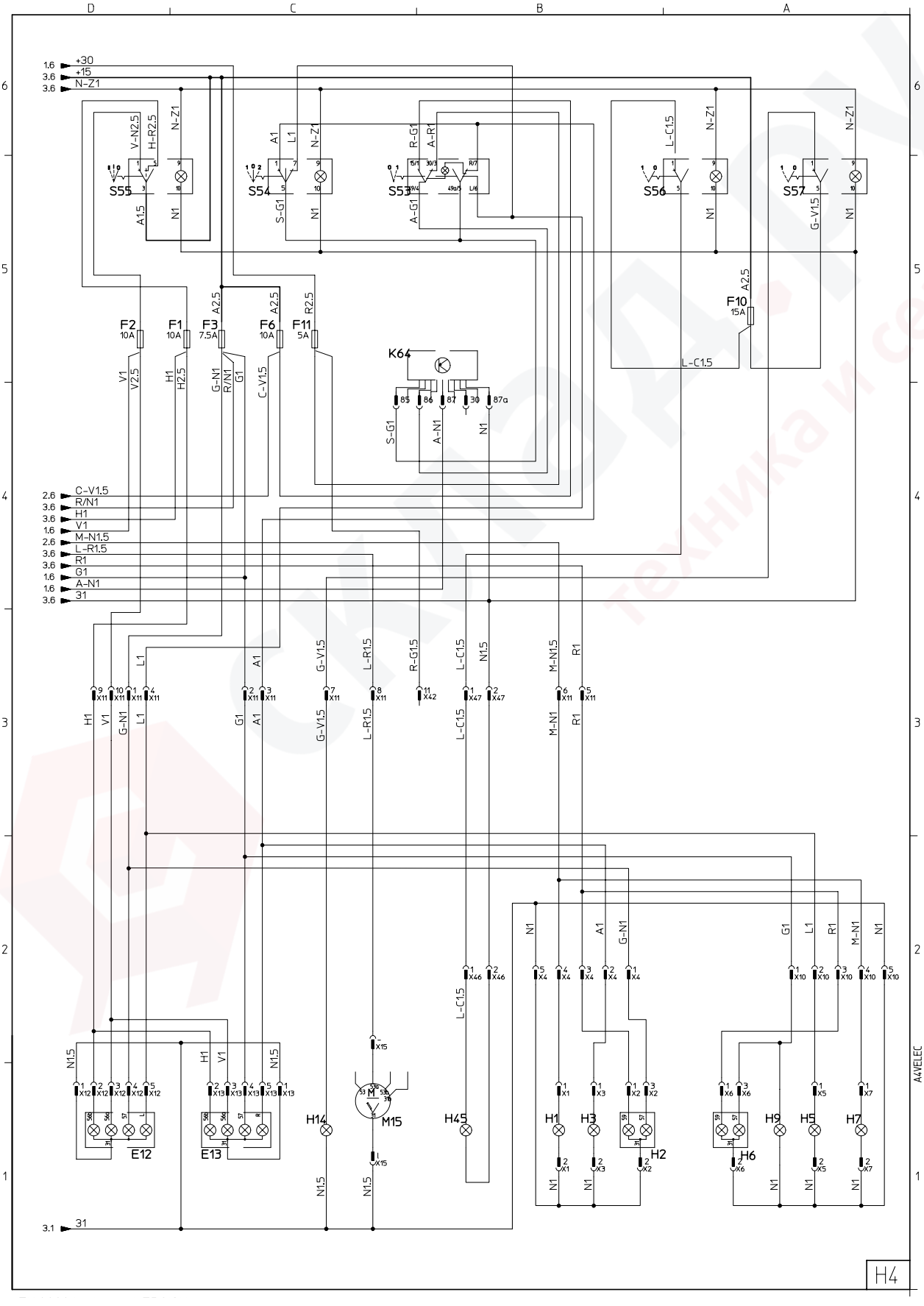


Electrical circuit diagram C 300 H

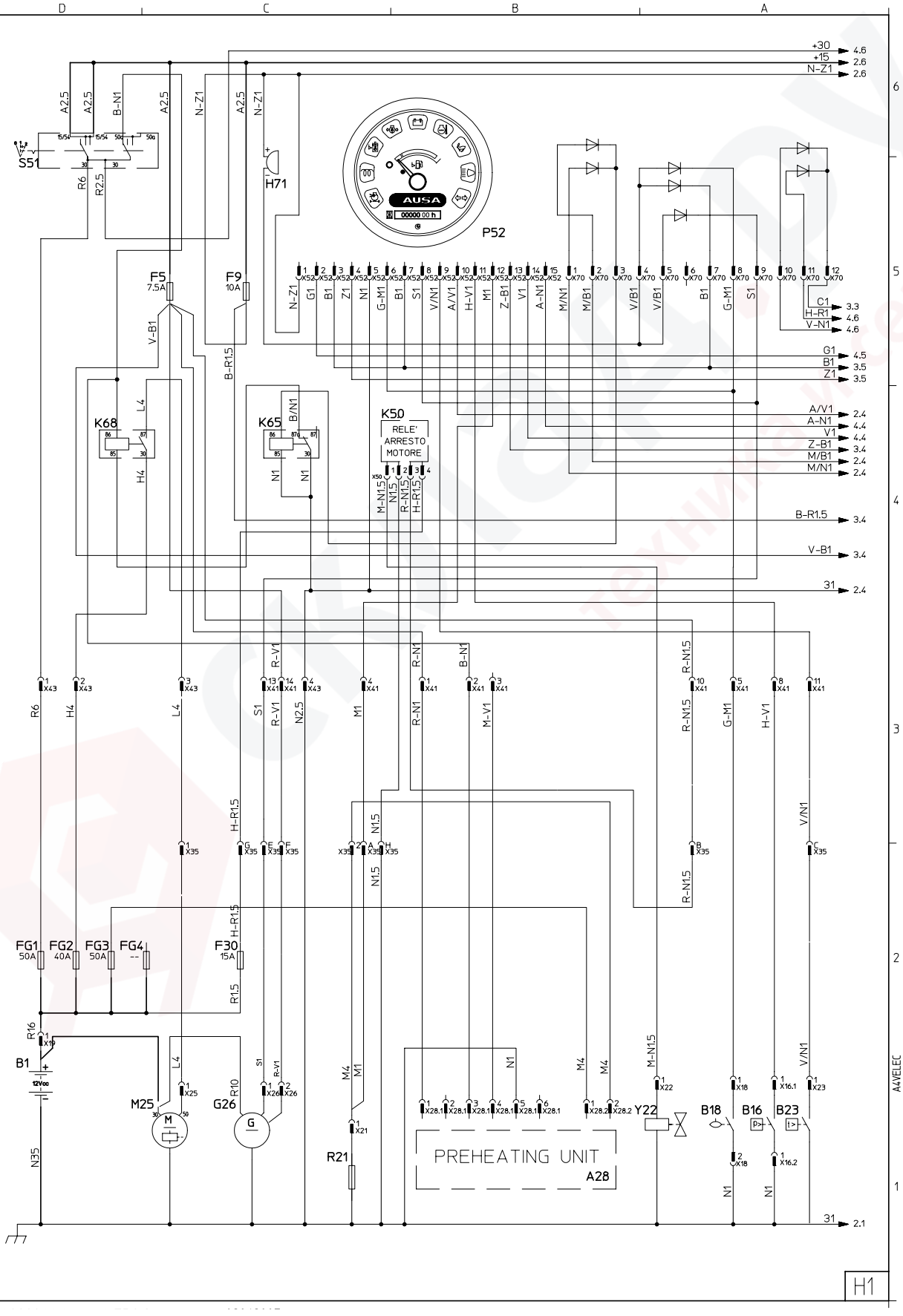
Below chassis number 50365

Item	Description	Sh.
A28	Pre-heat relay	1
A39	Horn	2
B1	Battery	1
B16	Air filter blockage indicator	1
B18	Hydraulic oil level sensor	1
B23	Coolant temperature warning switch	1
B24	Engine oil pressure switch	3
B31	Fuel tank gauge	3
B33	Seat switch	3
B40	Brake lights switch	3
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 / handbrake switch / timer relay fuse (7'5A)	2
F8	4x4 (not used) / 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
F30	Starter motor solenoid fuse	1
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
G1	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.
M1	Starter motor	1
M15	Rear wiper motor	4
M20	Electric fuel pump	3
M32	Windscreen washer motor	3
P52	Instrument panel	1
R21	Pre-heater plugs	1
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	3
S59	4x4 switch (not used)	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) (not used)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y35	2 Speed solenoid	2
Y36	Joystick spool valve lock unit (1)	3
Y36A	Joystick spool valve lock unit (2)	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2
Y44	Handbrake solenoid	2
Y99	Joystick spool valve lock solenoid	3
X10	5 pin connector (MARK type)	4
X11	12 pin connector (DEUTSCH type)	4
X27	11 pin connector (MARK type)	2
X35	15 pin connector (ITT type)	1
X4	5 pin connector (MARK type)	4
X41	21 pin connector (MARK type)	1
X42	15 pin connector (MATE'N'LOCK type)	2
X43	4 pin large connector	1
X46	2 pin connector	4
X47	2 pin connector	4
X49	4 pin connector	3
X69	3 pin connector	3
X70	9 pin connector (MARK type)	1
X99	2 pin connector	3

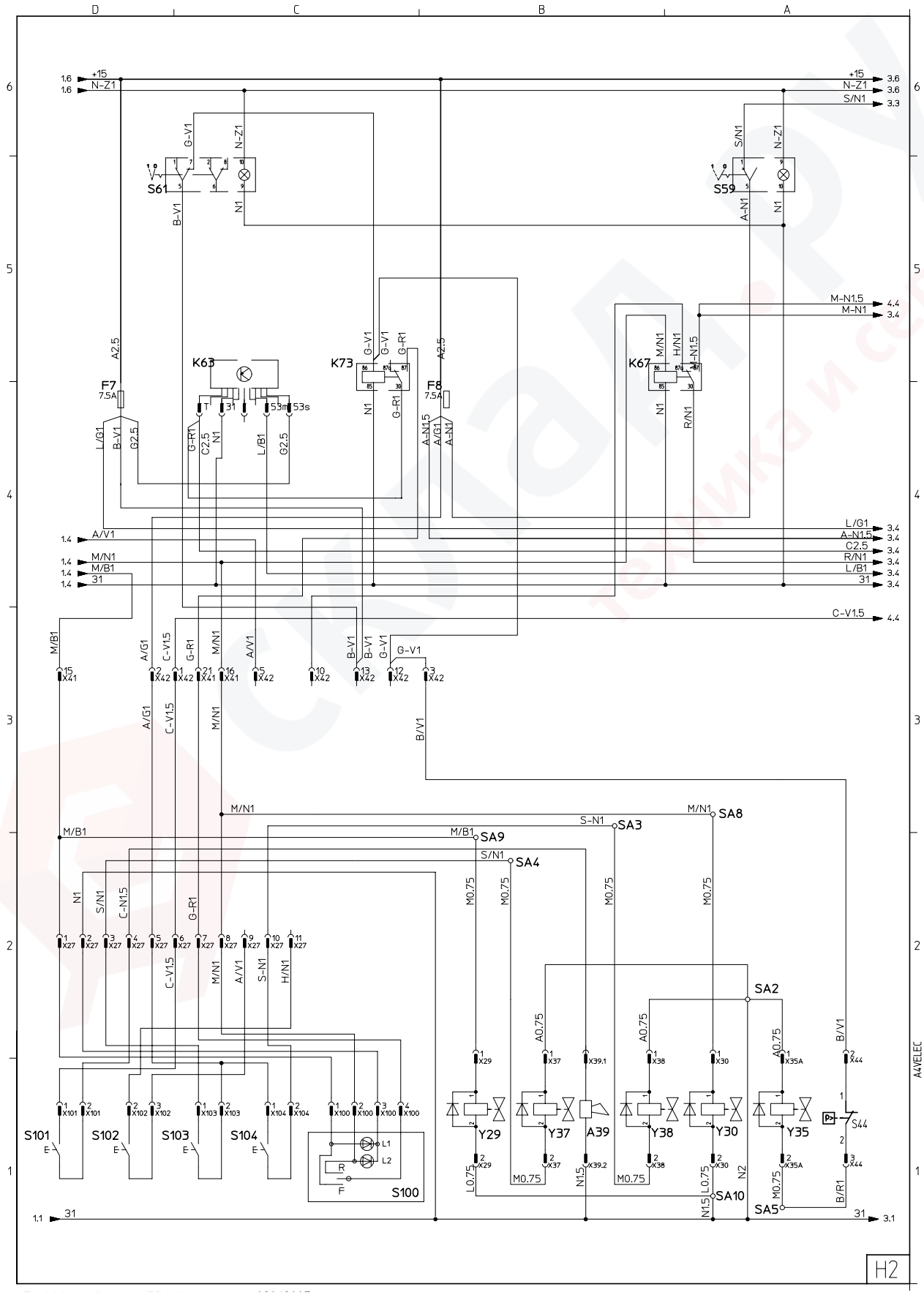
Electrical circuit diagram C 300 H

Above chassis number 50365



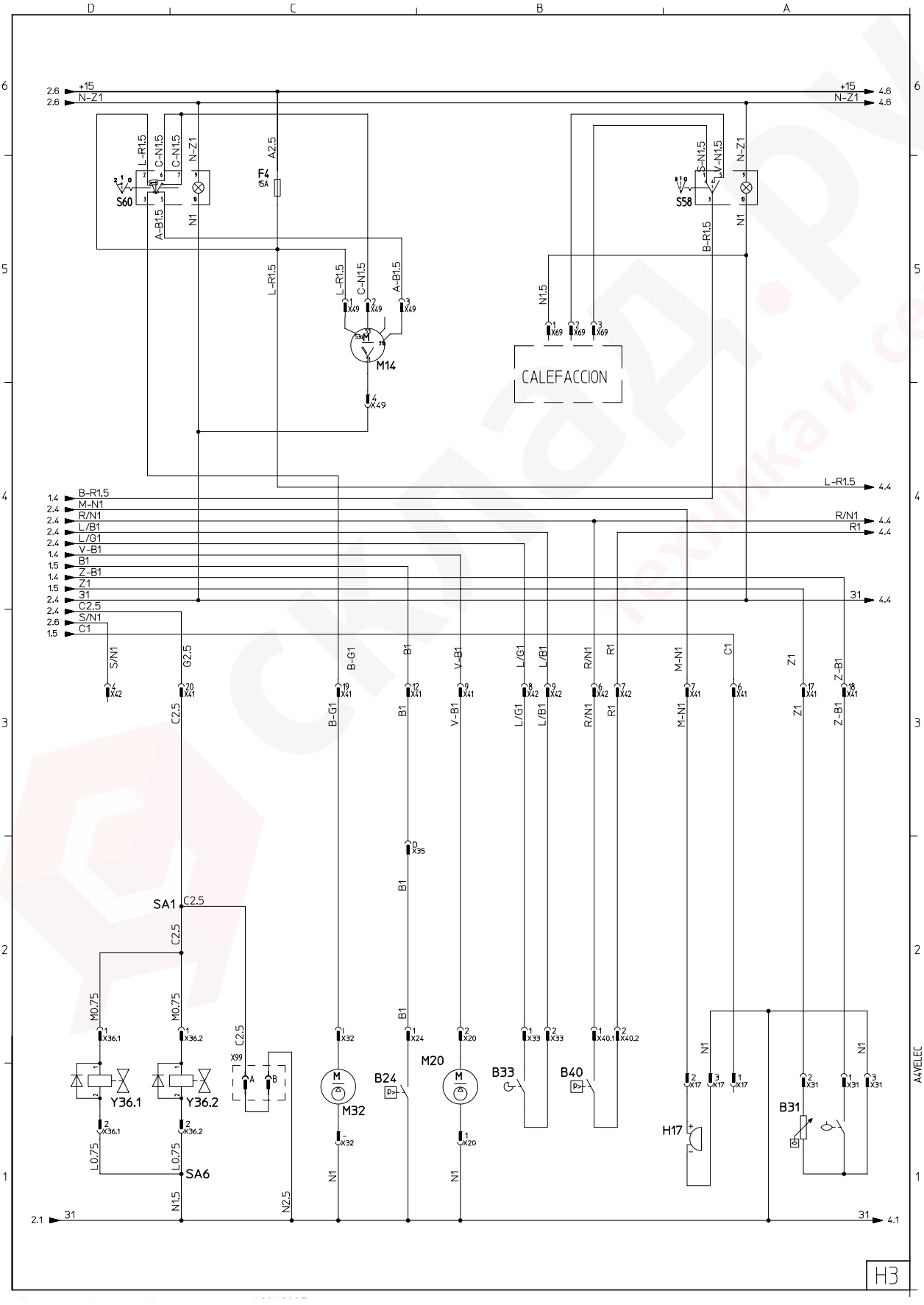
Electrical circuit diagram C 300 H

Above chassis number 50365



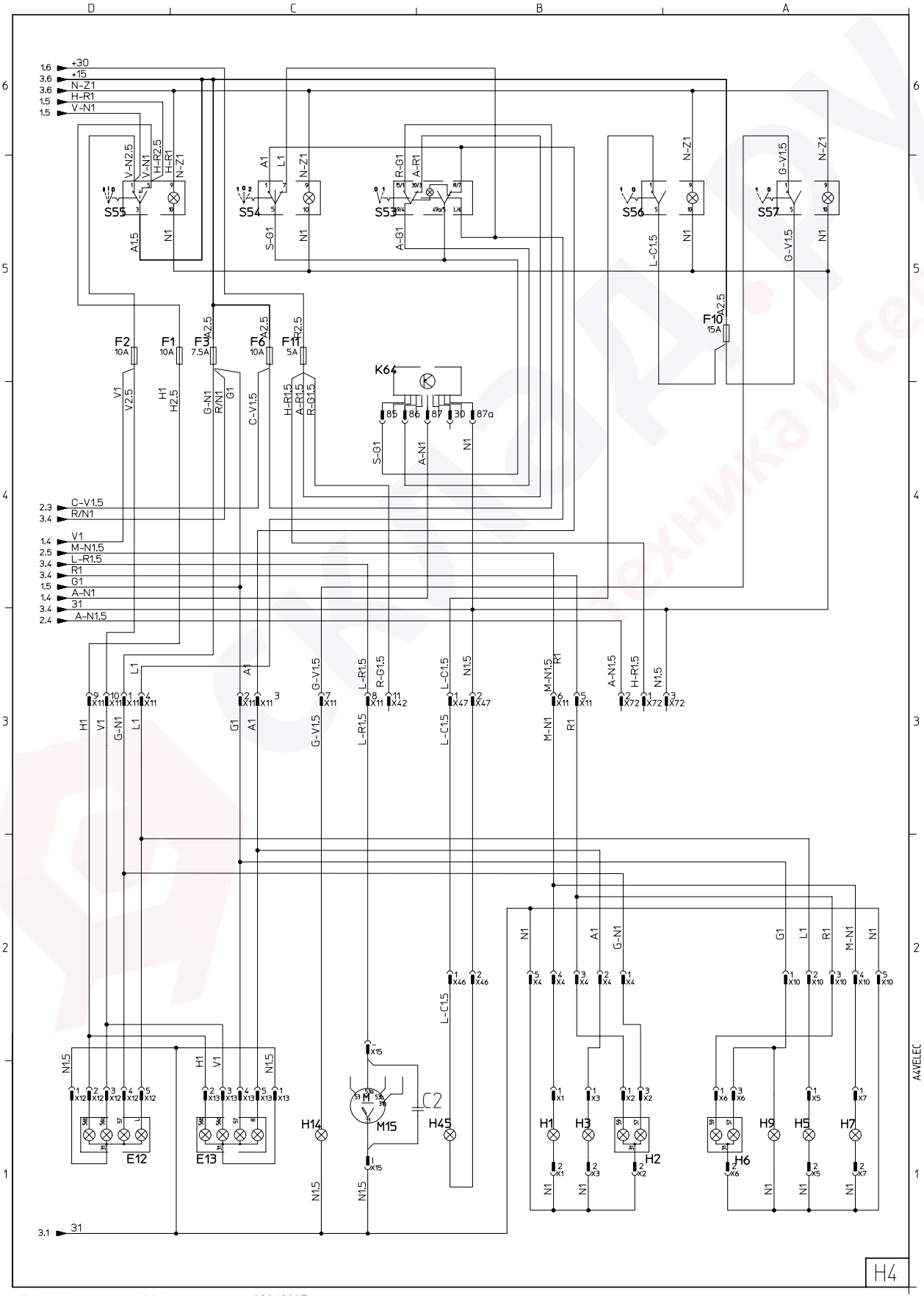
Electrical circuit diagram C 300 H

Above chassis number 50365



Electrical circuit diagram C 300 H

Above chassis number 50365



Electrical circuit diagram C 300 H

Above chassis number 50365

Item	Description	Sh.
A28	Pre-heat relay	1
A39	Horn	2
B1	Battery	1
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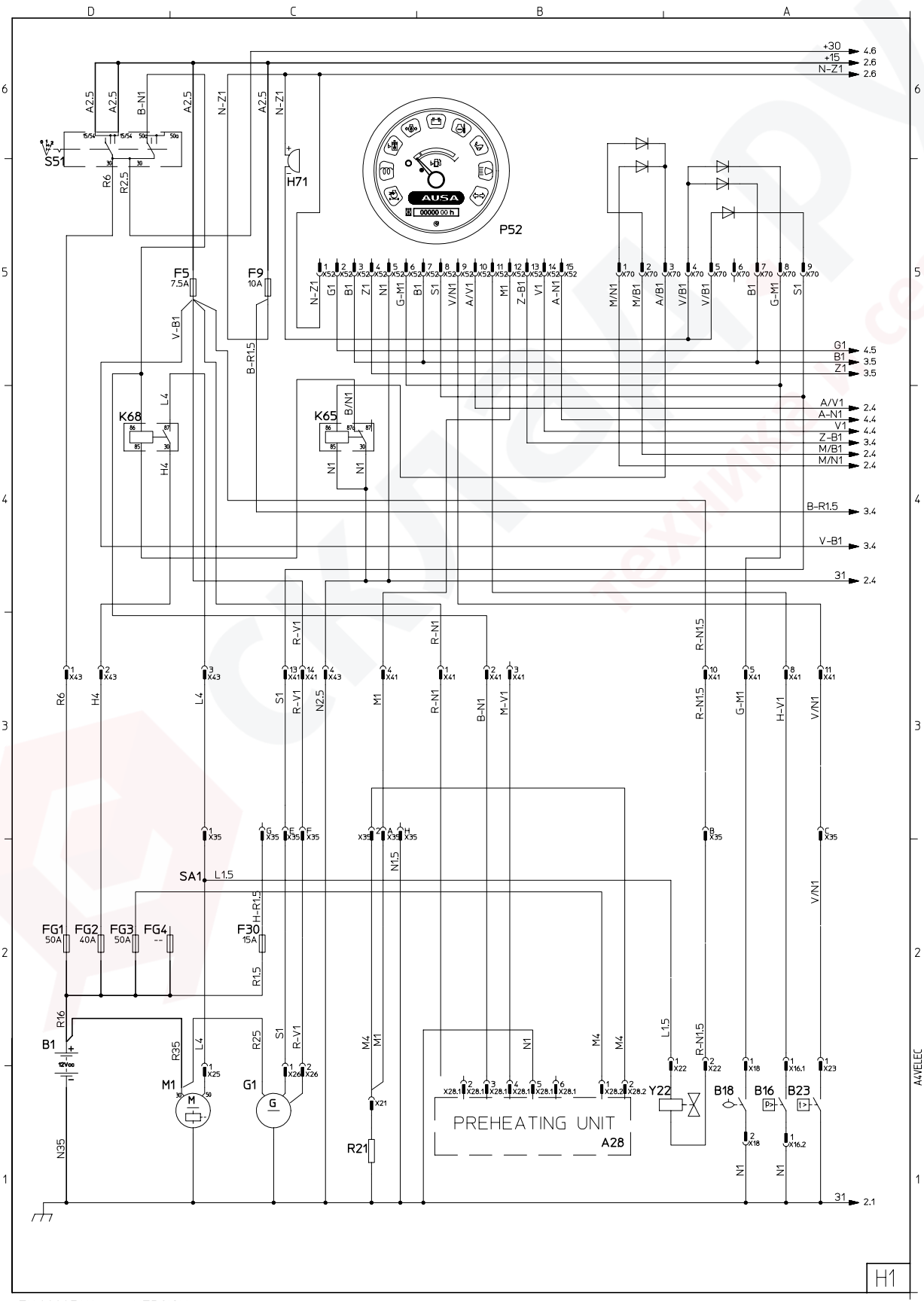
B18	Hydraulic oil level sensor	1
B23	Coolant temperature warning switch	1
B24	Engine oil pressure switch	3
B31	Fuel tank gauge	3
B33	Seat switch	3
B40	Brake lights switch	3
C2	Condensator	4
E12	Left hand headlight	4
E13	Right hand headlight	4
F1	Low beam fuse (10A)	4
F2	High Beam fuse (10A)	4
F3	Side 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 / handbrake switch / timer relay fuse (7'5A)	2
F8	4x4 (not used) / 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
F30	Starter motor solenoid fuse	1
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
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

Item	Description	Sh.
H71	Dash panel buzzer (warning lights)	1
K50	Stop solenoid timer relay	1
K63	Seat switch timer relay	2
K64	Flasher relay	4
K65	Neutral start relay	1
K67	Reverse lights and alarm relay	2
K68	Starter motor relay	1
K73	FNR switch disconnection relay (handbrake on)	2
M14	Front wiper motor	3
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
S44	Inching pedal switch	2
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	3
S59	4x4 switch (not used)	2
S60	Front windscreen wiper switch	3
S61	Handbrake switch	2
S100	Forward and Reverse switch (joystick)	2
S101	Horn switch (joystick)	2
S102	2 Speed selector switch (joystick) (not used)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y35	Handbrake solenoid	2
Y36.1	Joystick spool valve lock unit (1)	3
Y36.2	Joystick spool valve lock unit (2)	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2
X99	Joystick spool valve lock connector	3

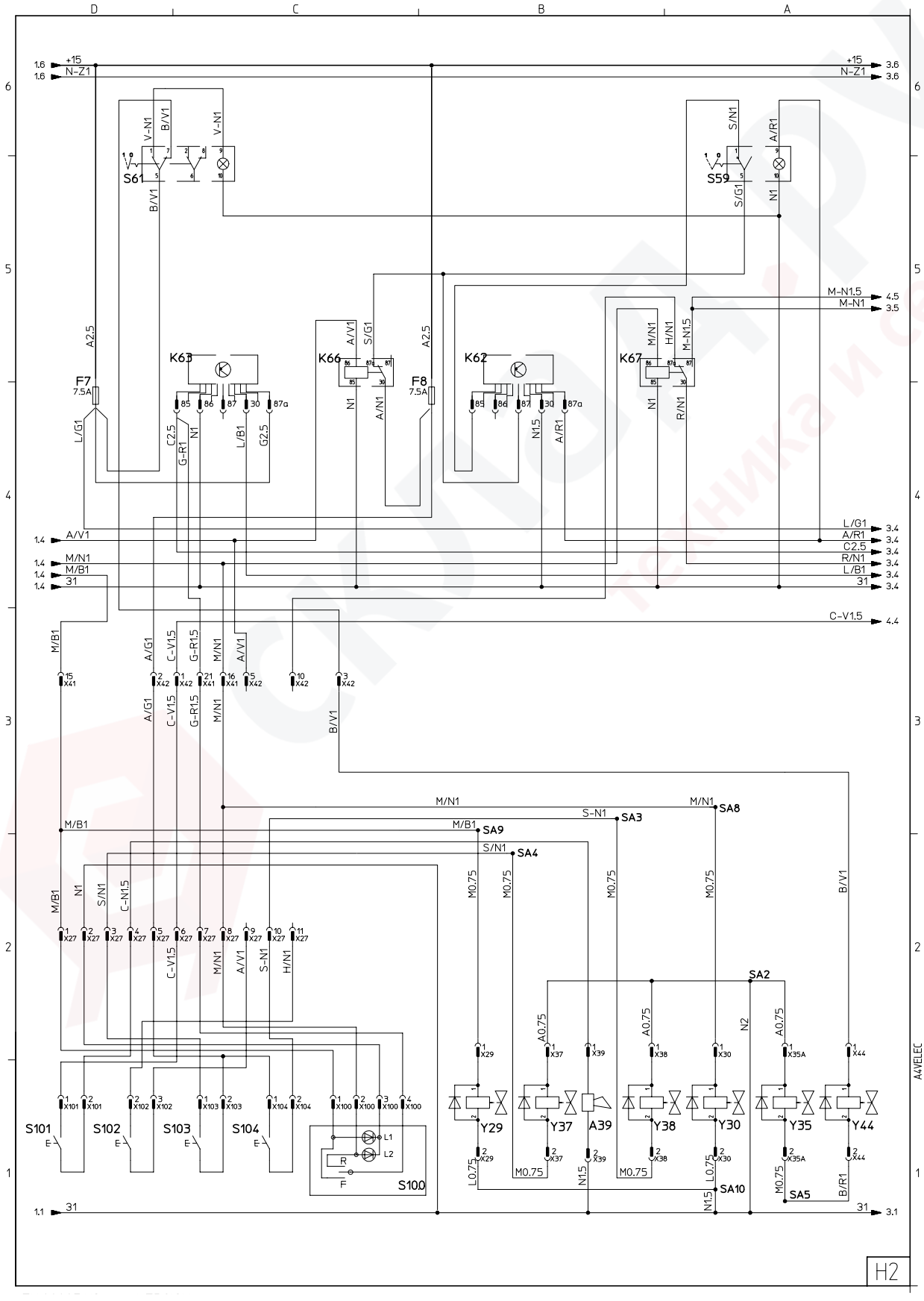
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Below chassis number 50365



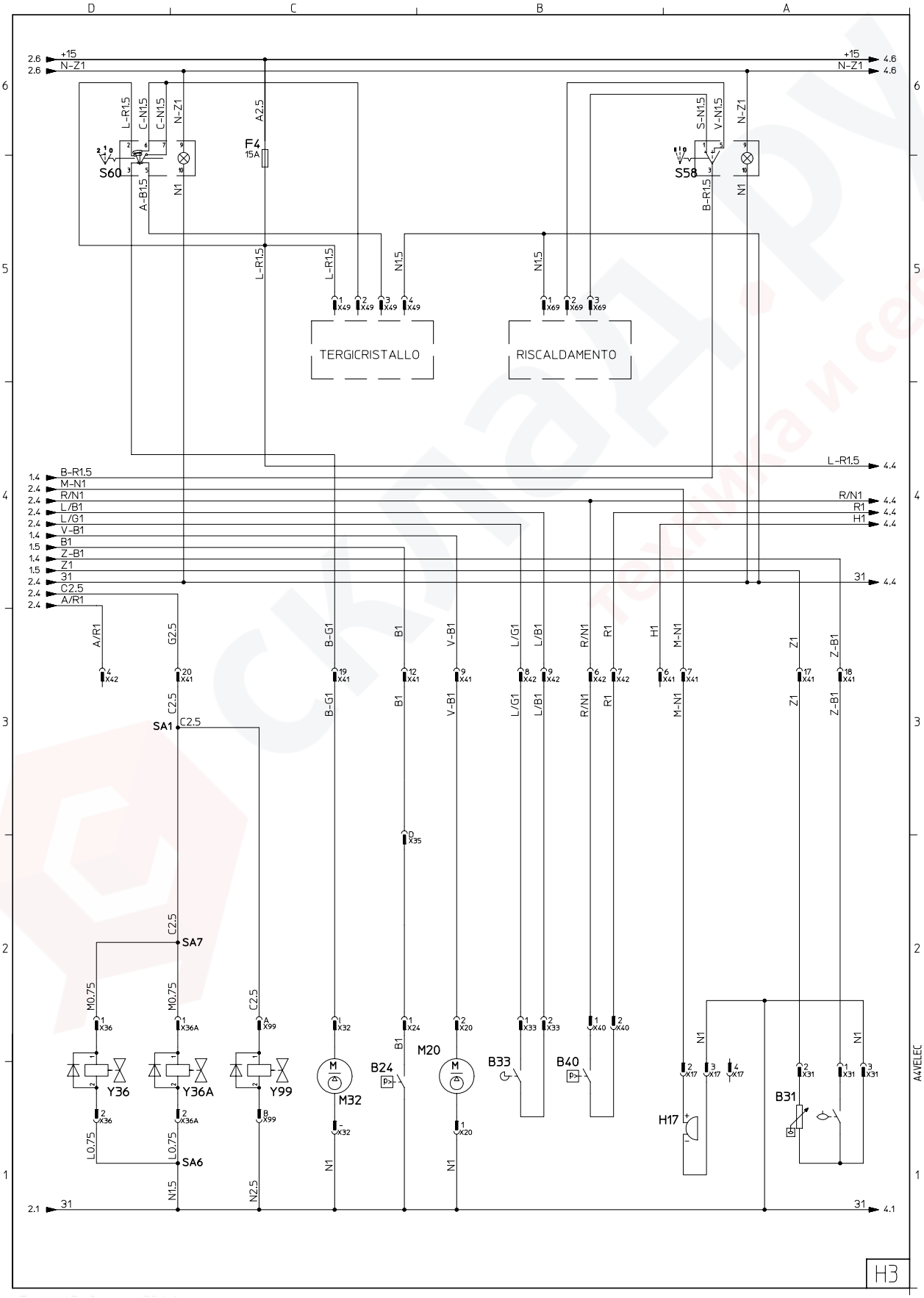
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Below chassis number 50365



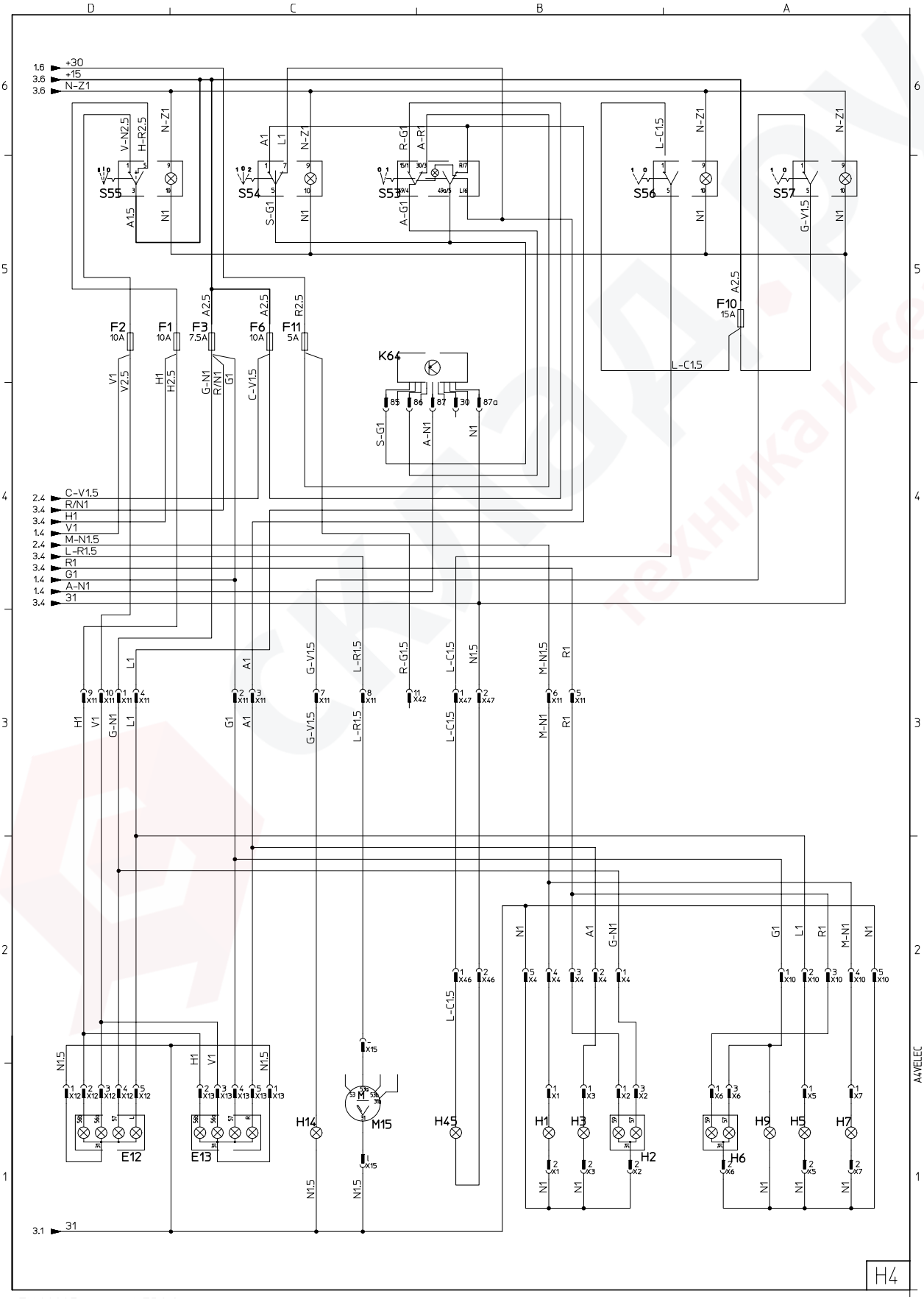
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Below chassis number 50365



Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Below chassis number 50365



Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

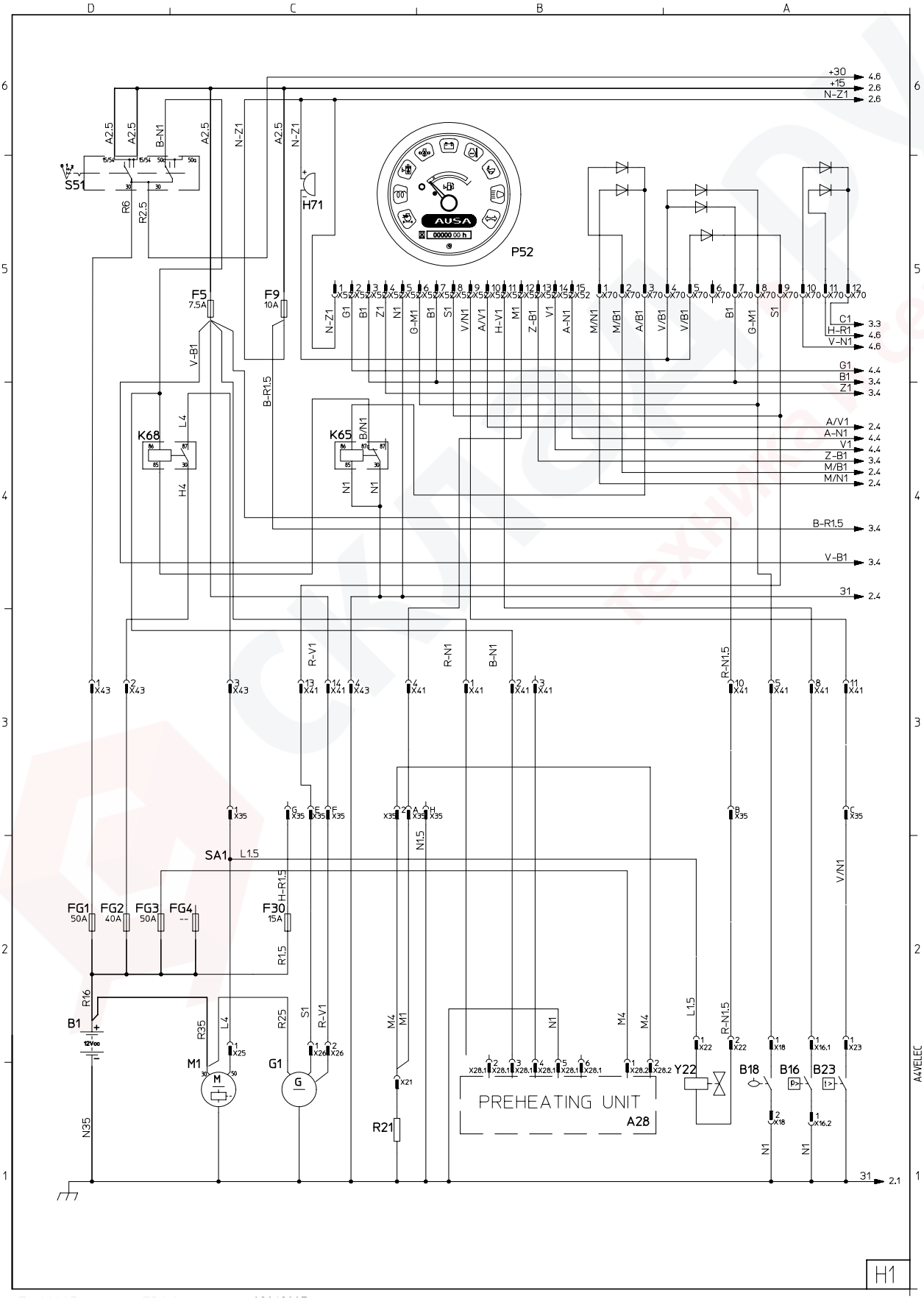
Below chassis number 50365

Item	Description	Sh.
A28	Pre-heat relay	1
A39	Horn	2
B1	Battery	1
B16	Air filter blockage indicator	1
B18	Hydraulic oil level sensor	1
B23	Coolant temperature warning switch	1
B24	Engine oil pressure switch	3
B31	Fuel tank gauge	3
B33	Seat switch	3
B40	Brake lights switch	3
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 / handbrake switch / timer relay fuse (7'5A)	2
F8	4x4 (not used) / 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
F30	Starter motor solenoid fuse	1
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
G1	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.
M1	Starter motor	1
M15	Rear wiper motor	4
M20	Electric fuel pump	3
M32	Windscreen washer motor	3
P52	Instrument panel	1
R21	Pre-heater plugs	1
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	3
S59	4x4 switch (not used)	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) (not used)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y35	2 Speed solenoid	2
Y36	Joystick spool valve lock unit (1)	3
Y36A	Joystick spool valve lock unit (2)	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2
Y44	Handbrake solenoid	2
Y99	Joystick spool valve lock solenoid	3
X10	5 pin connector (MARK type)	4
X11	12 pin connector (DEUTSCH type)	4
X27	11 pin connector (MARK type)	2
X35	15 pin connector (ITT type)	1
X4	5 pin connector (MARK type)	4
X41	21 pin connector (MARK type)	1
X42	15 pin connector (MATE'N'LOCK type)	2
X43	4 pin large connector	1
X46	2 pin connector	4
X47	2 pin connector	4
X49	4 pin connector	3
X69	3 pin connector	3
X70	9 pin connector (MARK type)	1
X99	2 pin connector	3

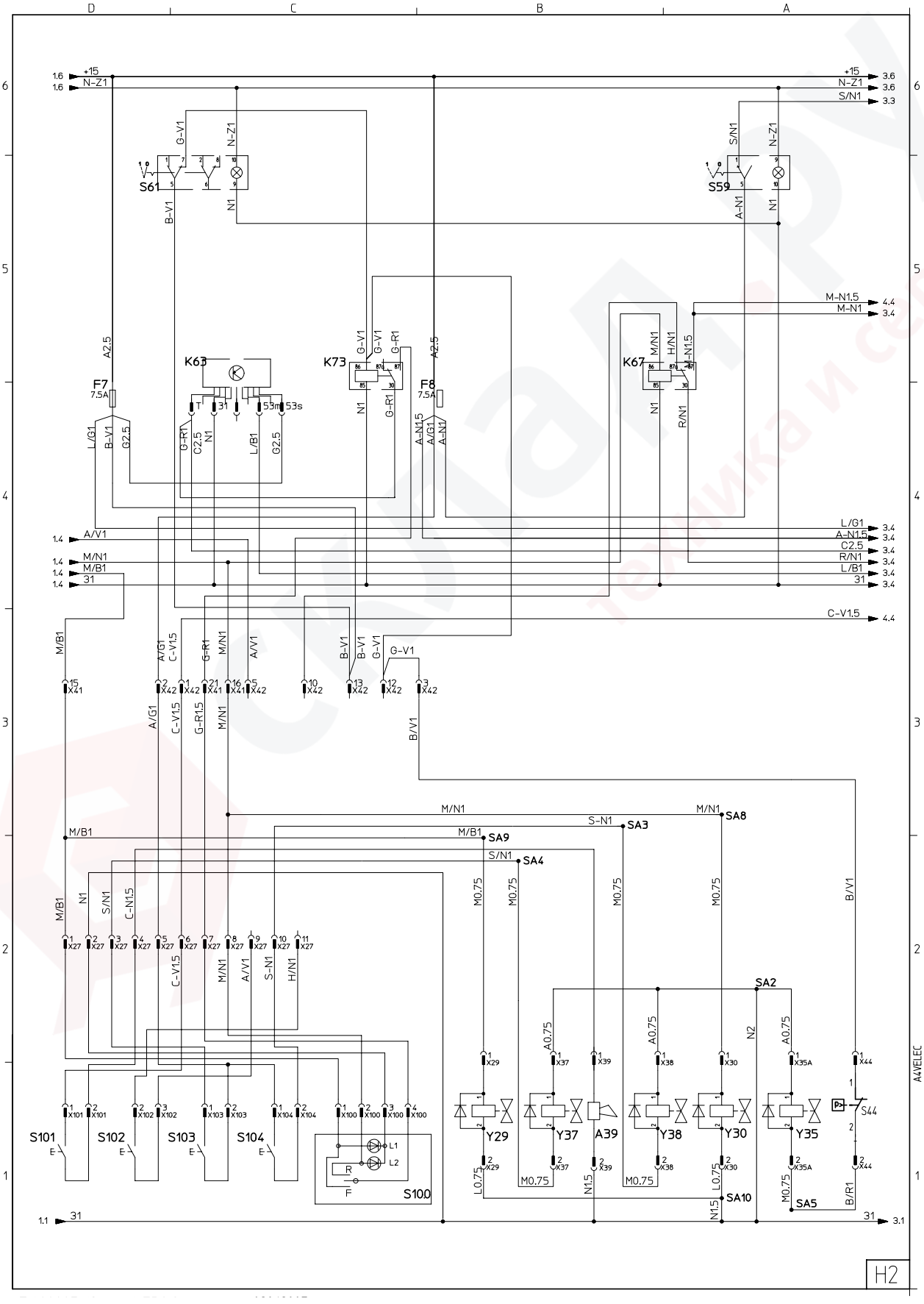
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Above chassis number 50365



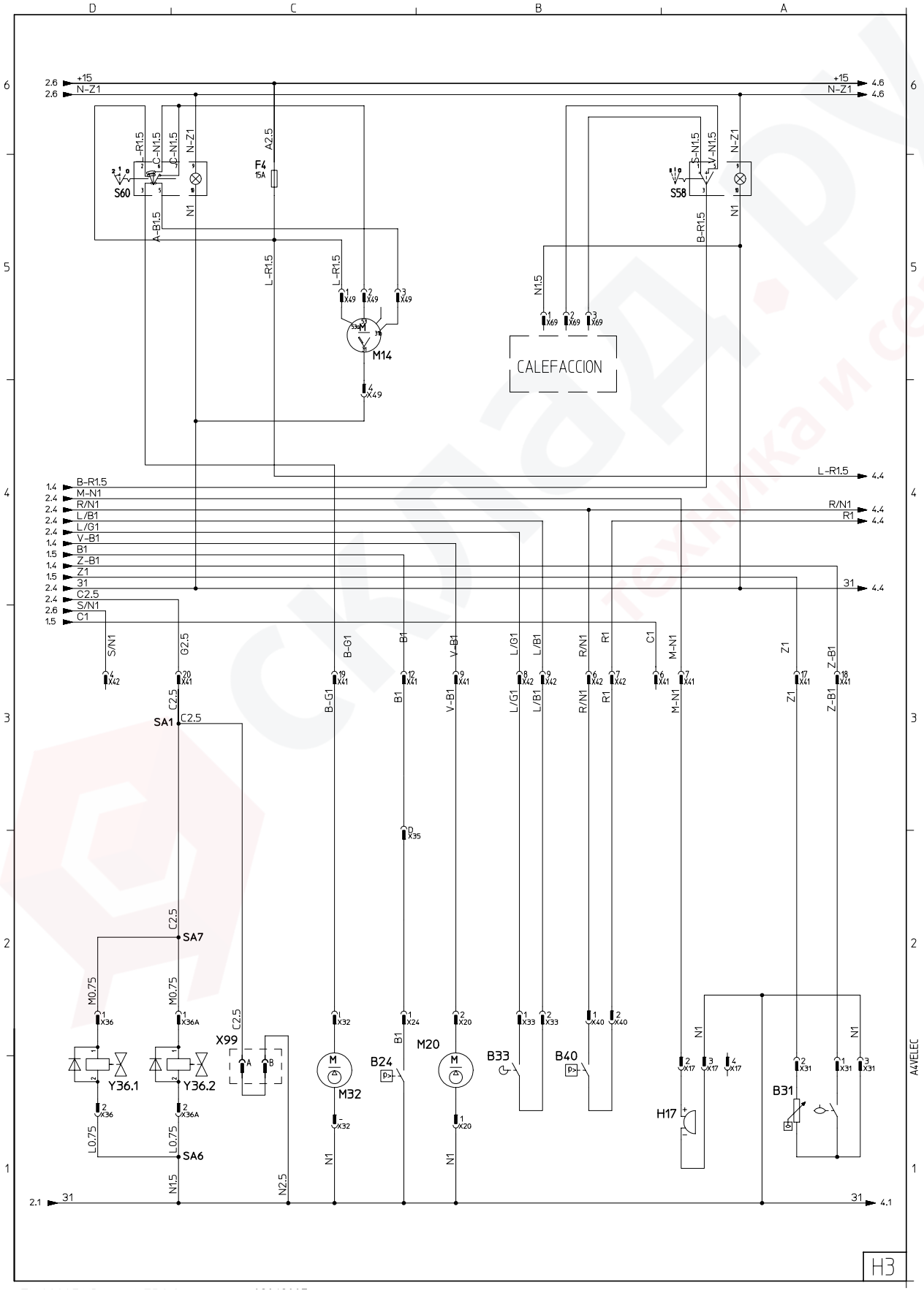
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Above chassis number 50365



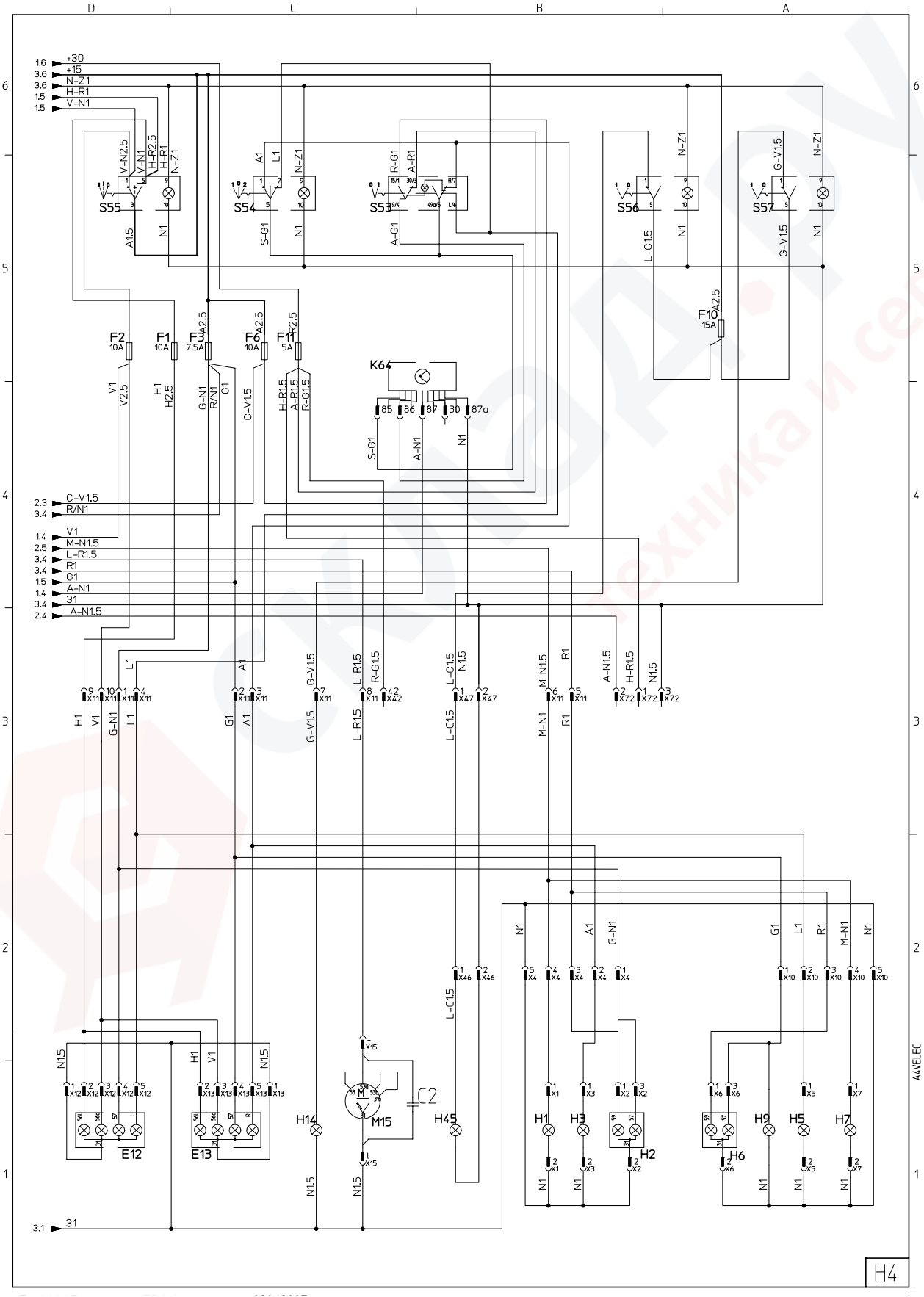
Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Above chassis number 50365



Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

Above chassis number 50365



Electrical circuit diagram C 300 H x4 / C 350 H / C 350 H x4

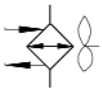
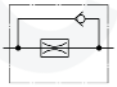
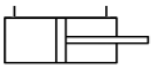
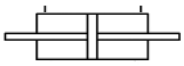
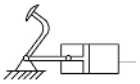
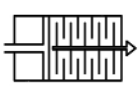
Above chassis number 50365

Item	Description	Sh.
A28	Pre-heat relay	1
A39	Horn	2
B1	Battery	1
B16	Air filter blockage indicator	1
B18	Hydraulic oil level sensor	1
B23	Coolant temperature warning switch	1
B24	Engine oil pressure switch	3
B31	Fuel tank gauge	3
B33	Seat switch	3
B40	Brake lights switch	3
C2	Condensator	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 / handbrake switch / timer relay fuse (7'5A)	2
F8	4x4 (not used) / 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
F30	Starter motor solenoid fuse	1
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
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

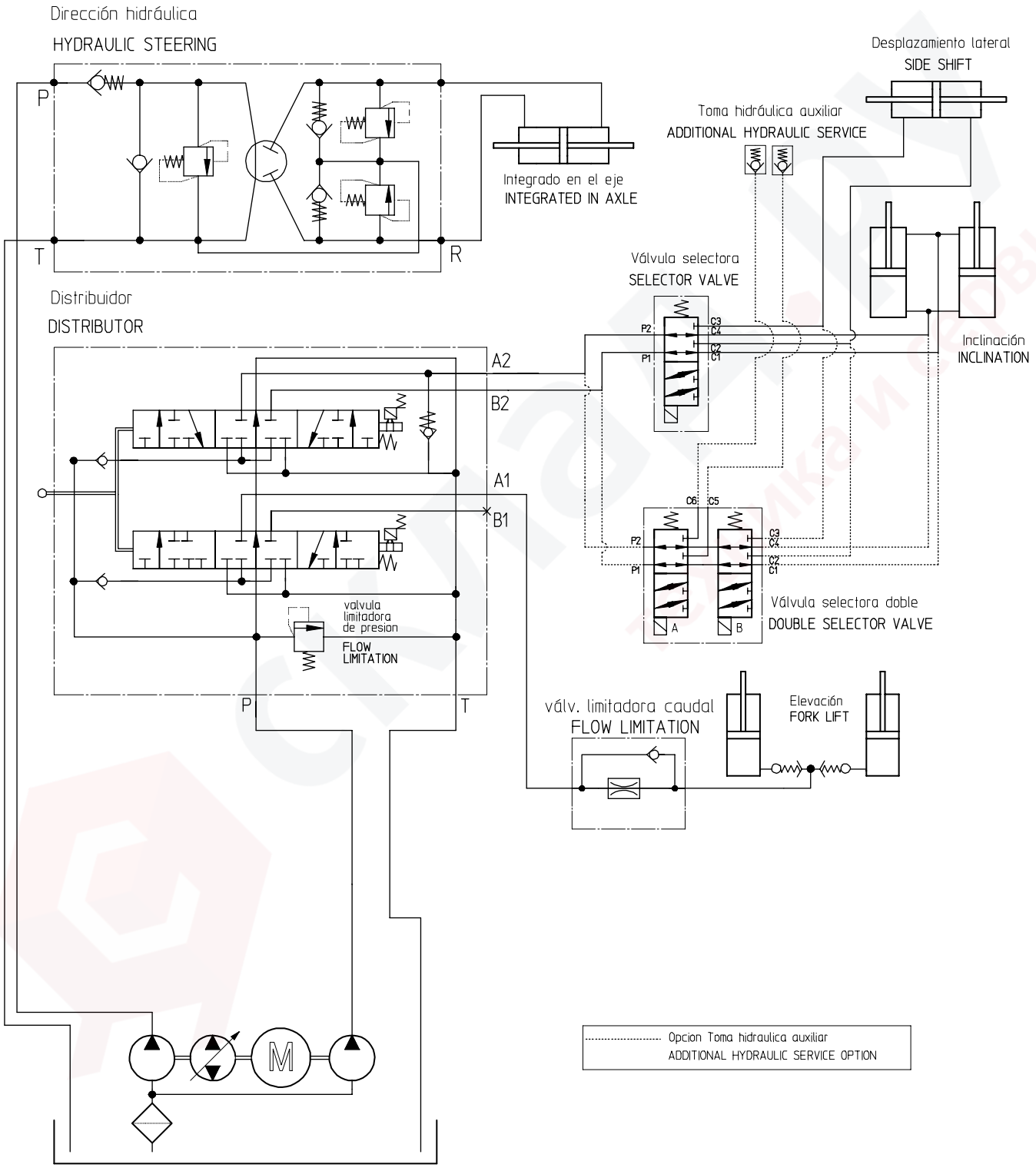
Item	Description	Sh.
H71	Dash panel buzzer (warning lights)	1
K63	Seat switch timer relay	2
K64	Flasher relay	4
K65	Neutral start relay	1
K67	Reverse lights and alarm relay	2
K68	Starter motor relay	1
K73	FNR switch disconnection relay (handbrake on)	2
M14	Front wiper motor	3
M15	Rear wiper motor	4
M20	Electric fuel pump	3
M25	Starter motor	1
M32	Windscreen washer motor	3
P52	Instrument panel	1
R21	Pre-heater plugs	1
S44	Inching pedal switch	2
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	3
S59	4x4 switch (not used)	2
S60	Front windscreen wiper switch	3
S61	Handbrake switch	2
S100	Forward and Reverse switch (joystick)	2
S101	Horn switch (joystick)	2
S102	2 Speed selector switch (joystick) (not used)	2
S103	3rd. service switch (side shift) (joystick)	2
S104	4rd. service switch (attachments) (joystick)	2
Y22	Engine stop solenoid	1
Y29	Forward solenoid	2
Y30	Reverse solenoid	2
Y35	Handbrake solenoid	2
Y36	Joystick spool valve lock unit (1)	3
Y36A	Joystick spool valve lock unit (2)	3
Y37	3rd. service solenoid (side shift)	2
Y38	4rd. service solenoid (attachments)	2
X99	Joystick spool valve lock connector	3

Hydraulic circuit diagram

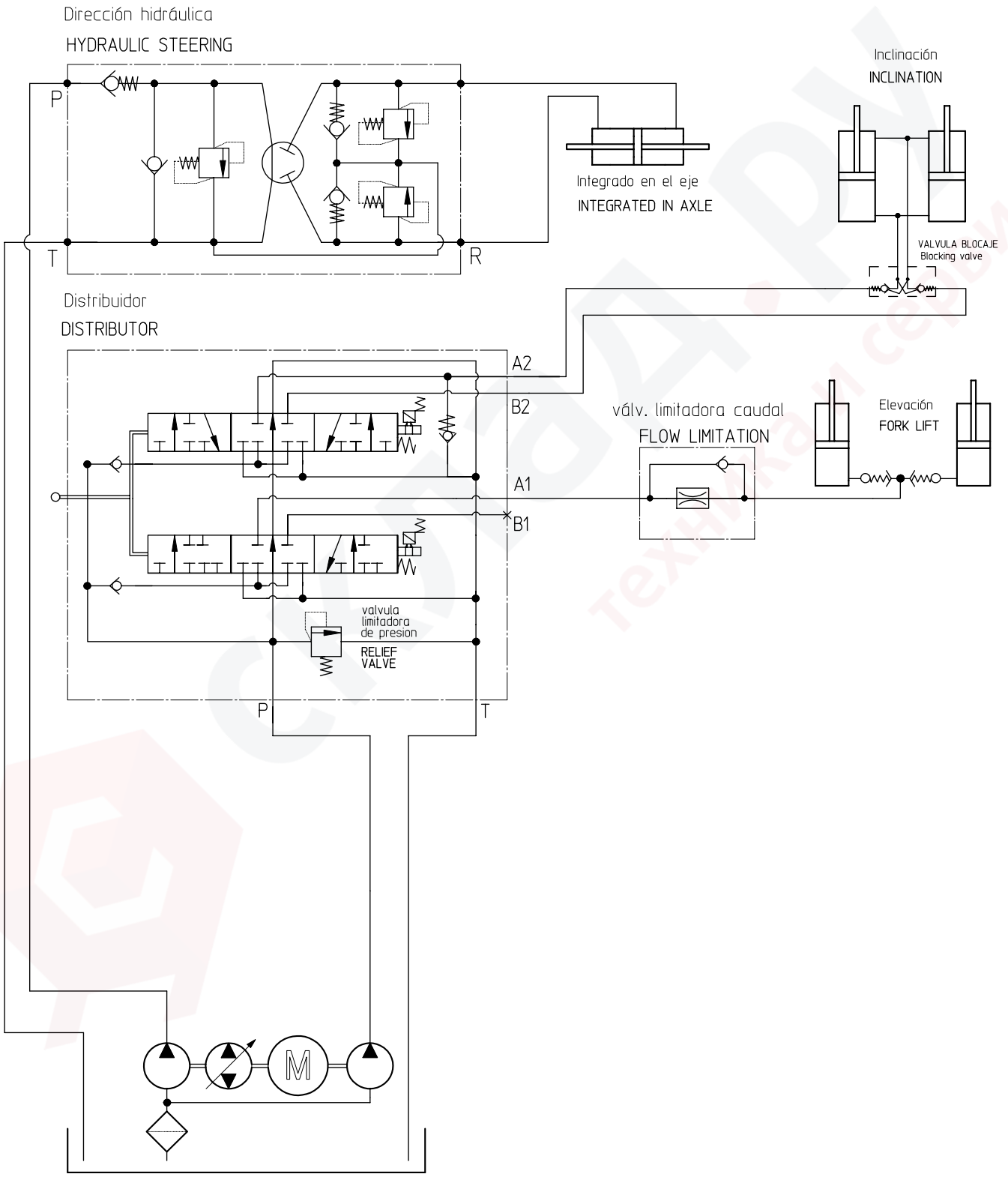
Hydraulic symbols

	Tank
	Variable flow pump
	Motor activation
	Filter
	Radiator
	Pressure limiting valve
	Directional valve
	Directional valve with spring
	Auxiliary connection valve
	Flow limiting valve
	Distributor valve
	Selector valve
	Hydraulic steering
	Actuator cylinder
	Bidirectional actuator cylinder
	Brake pump
	Service brake (negative brake)

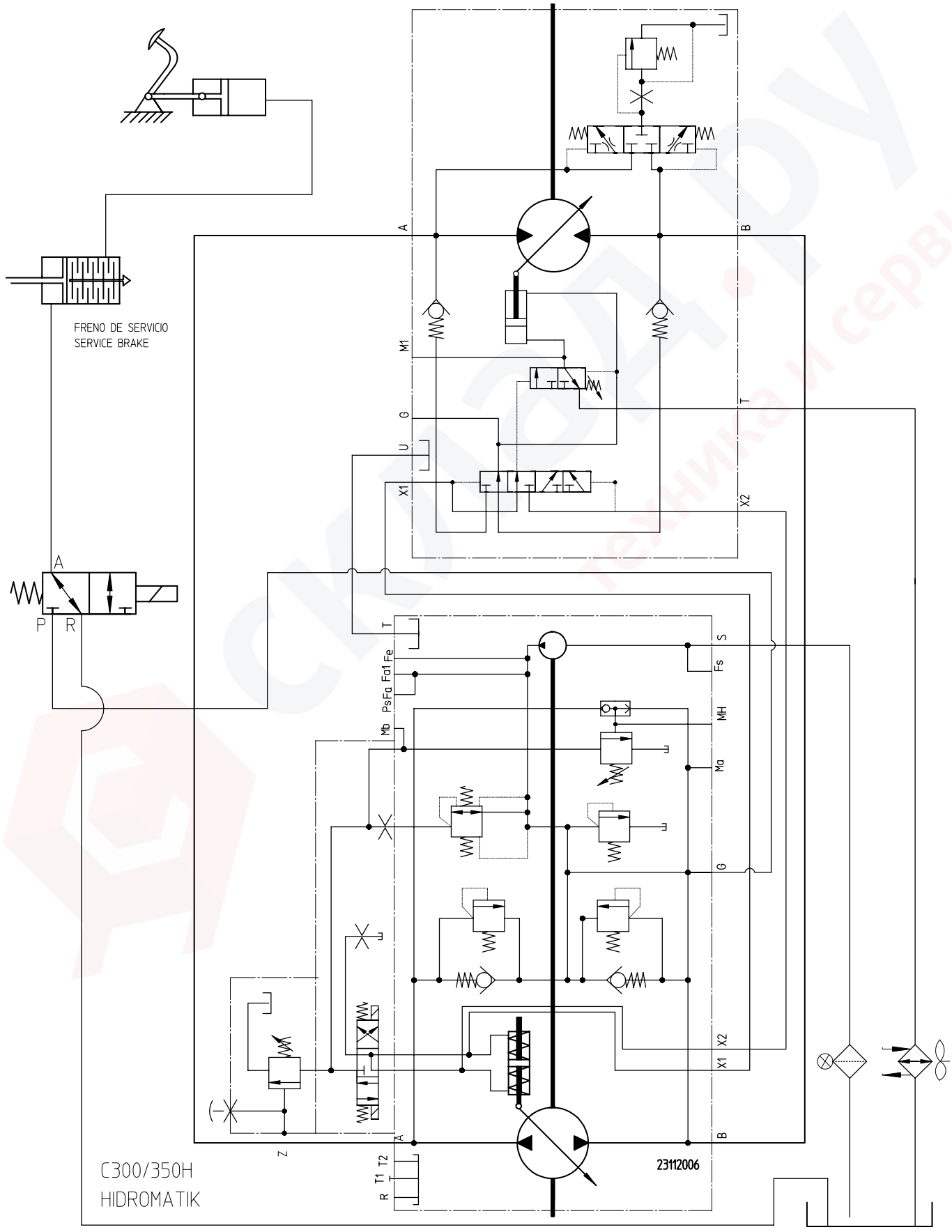
Hydraulic circuit diagram (Hydraulic Appliances)



Hydraulic circuit diagram (Hydraulic appliances) mast 6'85m



Hydraulic circuit diagram (transmission)



Fault chart

AUSA	INSTRUCTIONS FOR THE IDENTIFICATION OF FAILURES IN HYDROSTATIC TRANSMISSIONS		
FAILURE	**POSSIBLE CAUSE**	**CHECK**	**LOCATION**
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
	Faulty coupling	Load pressure	Motor or pump coupling
	Pre-load pump turns counterwise to engine		Pressure intake with a gauge on pump's port M3 (SAUER GROUP) or S (BOSCH-REXROTH GROUP)
	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
	Inching is seized, disconnected or badly connected (SAUER)	Potentiometer, linkage and connections	Pedal and electric connections

AUSA	INSTRUCTIONS FOR THE IDENTIFICATION OF FAILURES IN HYDROSTATIC TRANSMISSIONS		
FAILURE	**POSSIBLE CAUSE**	**CHECK**	**LOCATION**
Engine is overloaded	Low engine power or faulty engine	Engine does not accelerate at max. Load	Engine
	High pressure-limit is set too low	Working pressure	Working pressure ports in pump
	Inching is seized (SAUER)	Potentiometer / linkage	Pedal
Low traction power	Engine does not work at nominal level or it's overload	Haul of accelerator lever	Engine
	Low load pressure	Load pressure	Pressure intake with a gauge on pump's port M3 (SAUER GROUP) or S (BOSCH-REXROTH GROUP)
	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
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
	Radiator is clogged	Dirt in radiator	

AUSA	INSTRUCTIONS FOR THE IDENTIFICATION OF FAILURES IN HYDROSTATIC TRANSMISSIONS		
FAILURE	**POSSIBLE CAUSE**	**CHECK**	**LOCATION**
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