EGU-18 / EGU-20 / EGU-20S / EGU-H

Electric Pallet Truck

Workshop Manual

Valid from Series No.:	**71 0117 0 00020**
	71 0119 0 00028
	71 0125 0 00048
4498854 - 01.2000	**71 0201 0 00010**

STILL SAXBY

Chassis

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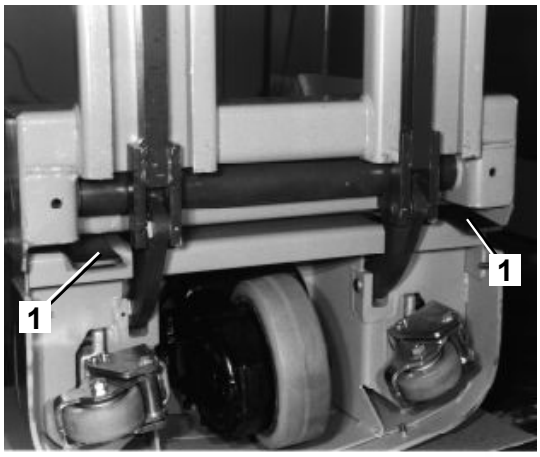
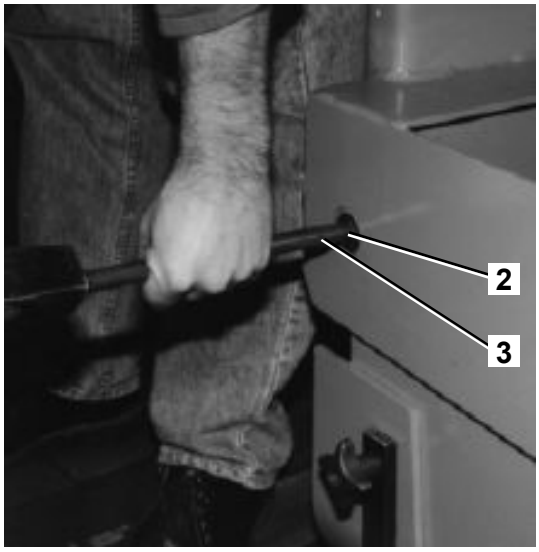
Running axle

- Remove the pressure rods (see group 02, pages 2 to 5).

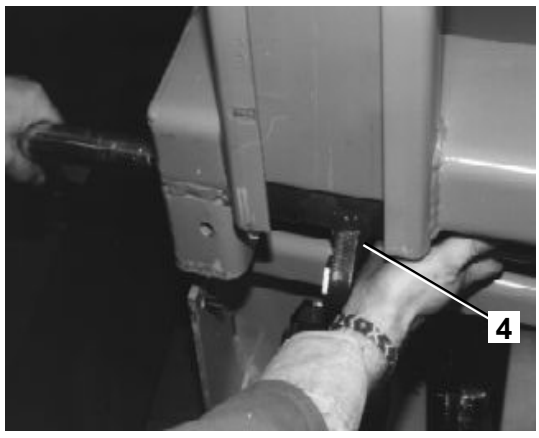
- Using wooden wedges or similar objects (1) (7 mm), fasten the fork carriage frame and the drive section.



- Drive out the pin (2) with a bronze / aluminium drift punch (3).



- Pull out the pin and hold the articulated lever in the top position (4).



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Wheels and tyres

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Driving controls

Safety microswitch

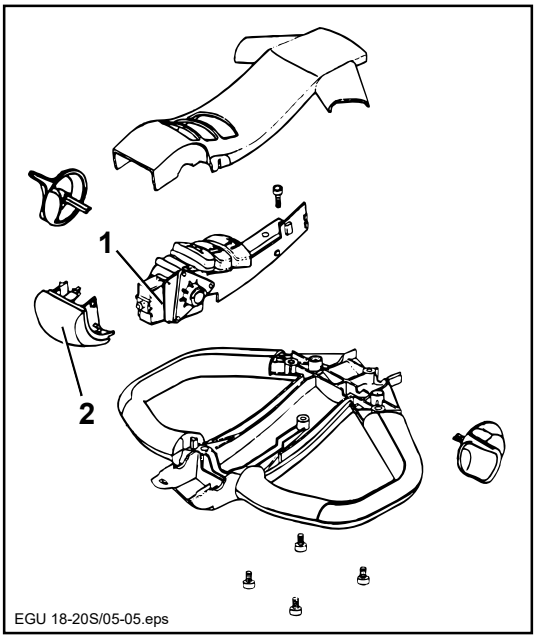
The tiller safety microswitch (1) activated by the housing (2) is a safety device that must operate in accordance with accident prevention regulations.
This is why you must always check that it works correctly during each maintenance operation.

After the safety microswitch is actuated, the direction of travel changes automatically to reverse. As soon as the microswitch is released, the machine remains at a standstill.

To restart the machine, there are only two possible solutions:

- Turn the key switch to stop and then back to start.

- Return the tiller to the braking position.



Travel direction

Forward

Reverse

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Adjusting the electromagnetic brake locking levers

- Remove the tiller.
- Put the traction wheel to the straight ahead position.
- Tighten the two levers (1 and 4) clockwise.
- This simulates the locking of the electro-magnetic brake, allowing the truck to be moved in the powerless state.
- Mark the position (A, B, C, ...) of the left and right levers as illustrated.
- Select the appropriate shim from the table below.
- Remove the left lever (1) and install the selected shim (6) between the lever and brake (2).

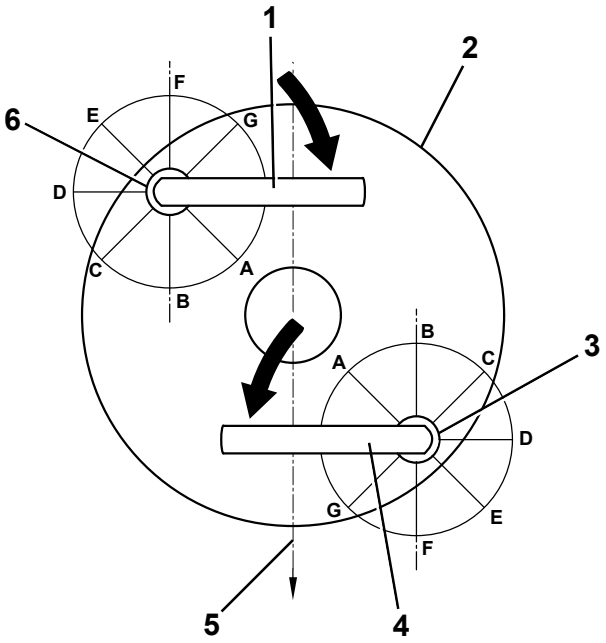
Lever Position	Shim Thickness
A	0.2
B	0.4
C	0.6
D	0.8
E	1.0
F	1.2
G	1.4

Table of shim dimensions

- Remove the right lever (4) and install the selected shim (3) between the lever and the brake (2).
- Tighten the levers. They should now be in the position indicated in the illustration.

Functional check of the levers

- Put the two levers in the position shown in the illustration.
- It should be possible to move the pallet truck when the electromagnetic brake is released.
- Turn the two levers 3/4 of a turn anti-clock-wise.
- The brake should now be applied and the powerless pallet truck no longer be able to move. The round cover can only be removed in this position.



1 Left lever (in specified position)

2 Brake

3 Shim

4 Right lever (in specified position)

5 Position of traction wheel

6 Shim

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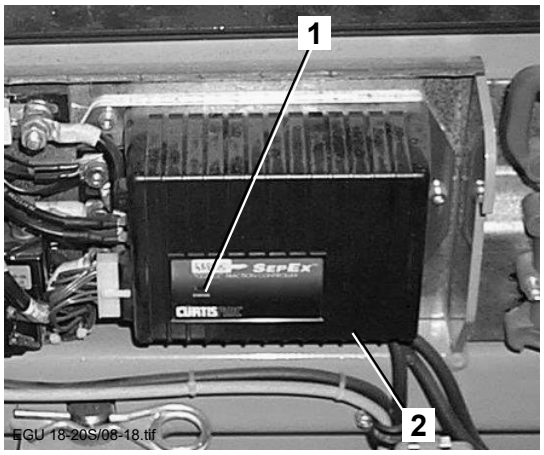
Fault display

If a fault is detected, a LED STATUS (1) indicates the fault type by means of a flashing code. The LED is on the front panel of the controller (2).

The code flashes until the controller is reinitialised (turn off / on – the braking switch is sometimes sufficient), provided that the fault has been cleared.

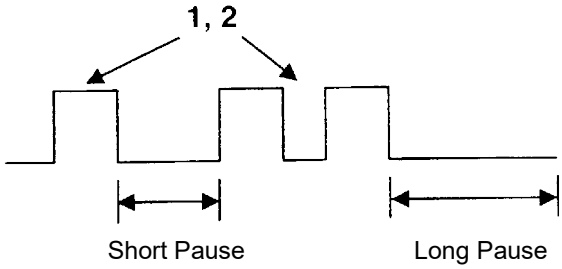


Flashing fault code

The following troubleshooting information is generated by the command. The troubleshooting LED, in the control unit section, flashes to indicate the diagnostic code.

The illustration shows an example:
One flash - short pause - two flashes - long pause, etc.
The code of this example is: 1,2

The following table gives an interpretation of the flashing codes.



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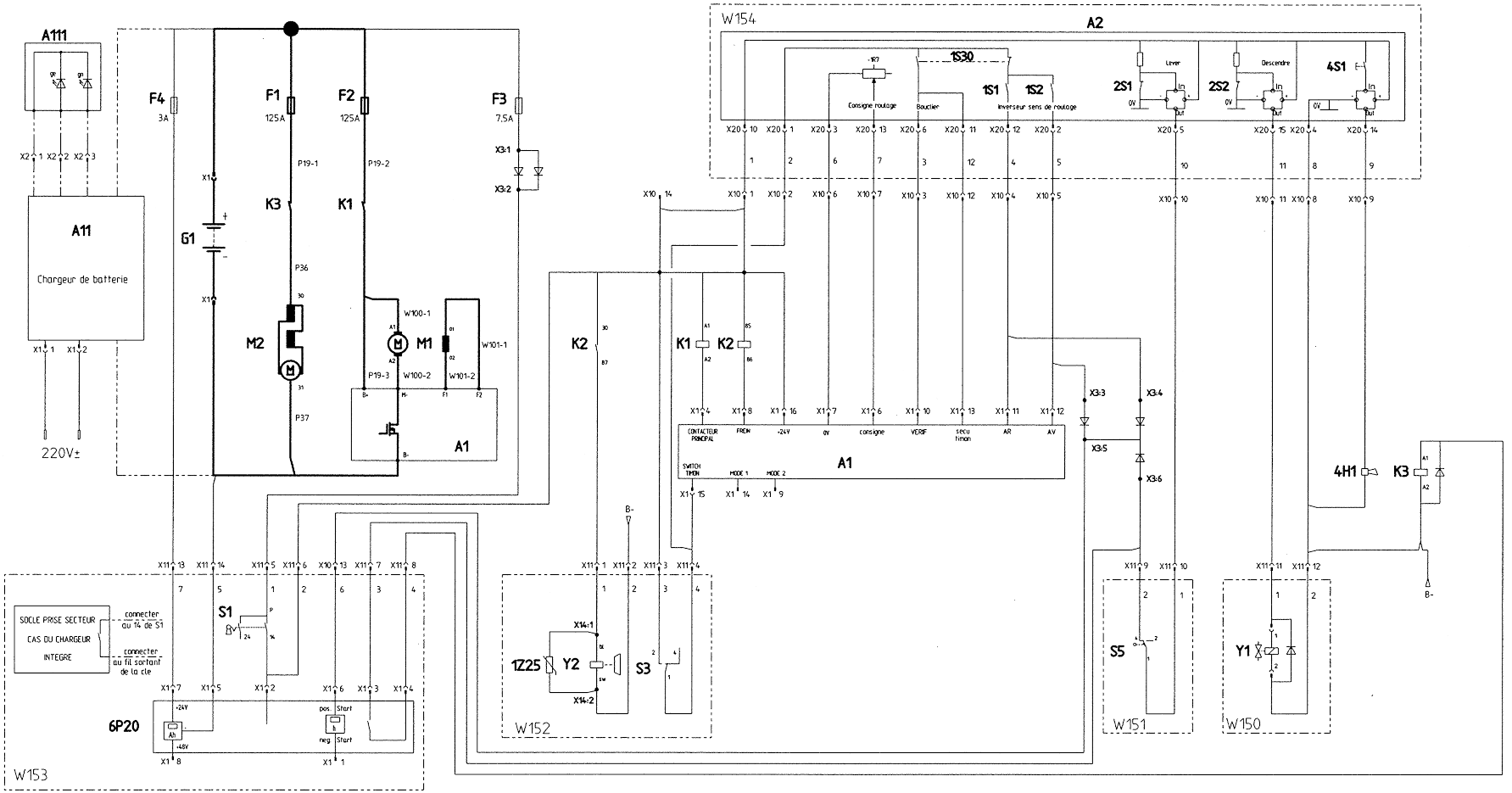

Wiring diagram
No. 467757 / 11.06.1999

Battery

PzS battery (standard lead battery)

Handling and maintenance

- Preferable operating temperature is between 25°C and 40°C. To avoid permanent damage to the battery, the maximum permissible electrolyte temperature of 55°C should never be exceeded.
- For heavy duty and when used at winter temperatures, the battery should be charged daily; even if less than 80% of the standard capacity has been used.
- Always remove or open the tray lid or battery cover before charging and for intermediate charging.
- When charging the battery, a temperature increase of 10° – 12° may be expected. With heavily used batterys, the electrolyte temperature may increase to over 55°C. If this occurs, leave the battery to cool and interrupt the charging process.
- The cell plugs may remain in place during charging.
- Do not close the tray lid or battery cover until ½ hour after charging is completed.
- Always connect the charger correctly poled, otherwise the battery and charger may be irreparably damaged (+ to +).
- Only charge with direct current.
- To avoid creep currents, always keep batterys dry and clean (Neutralospray).
- Poles and connectors should always be sprayed with pole spray in order to avoid oxidisation and sulphate formation.
- Unsuitable lifting gear may damage the battery (twisting of tray and damage to insulation).
- Protect the battery from contamination, e.g. metal dust, ammonia vapours.
- If in doubt, call the battery supplier's aftersales service.

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Lighting equipment and instruments

Pin assignment (Fig. 1)

Service voltages
Pin 7 = B+ (24 V)
Pin 5 = B-

Stop Function
Pin 3/4: stops when end of discharge voltage is reached, at 20% of the residual capacity of the battery.

NOTE:
Stopping is effected by a thyristor. This is why polarities must be observed on connection (logic positive/negative, (Fig. 3)). Incorrect polarity may cause irreparable damage to the controller or the switching contact.

Key switch
Pin 2: Powering the LED display

Service Time Counter (Fig. 2)
Starting by application

Pin 6: from B+ on (6) or
Pin 1: from B- on (1)

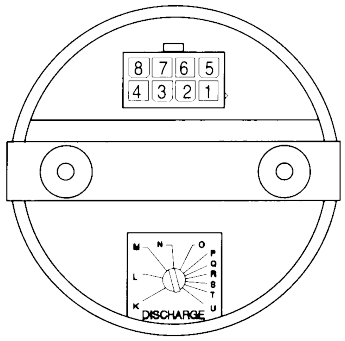

Fig. 1

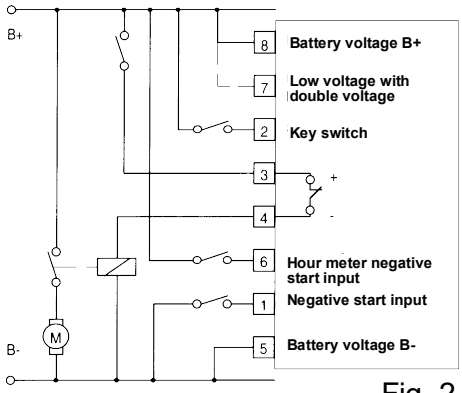

Fig. 2

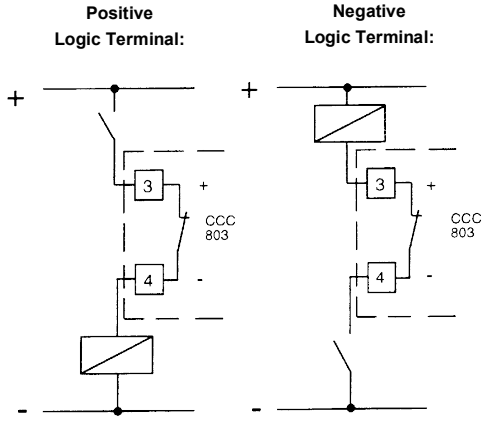

Fig. 3

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- If the main lowering button is pressed, the solenoid valves (6 and 10) are activated at the same time.
  The oil passes through the slow-lowering valve (11).
  The slow-lowering valve is controlled by loss of pressure at point A during the activation of the solenoid valves (6 or 10), which allows the oil to flow back to the tank.

- If the initial lowering button is depresses, the solenoid valves (7 and 10) are both activated at the same time, allowing oil to return directly to the tank.

NOTE :
In order that the load does not descend too fast, the check valve (12) regulates the oil flow at a given rate, which ensures a controlled lowering speed.

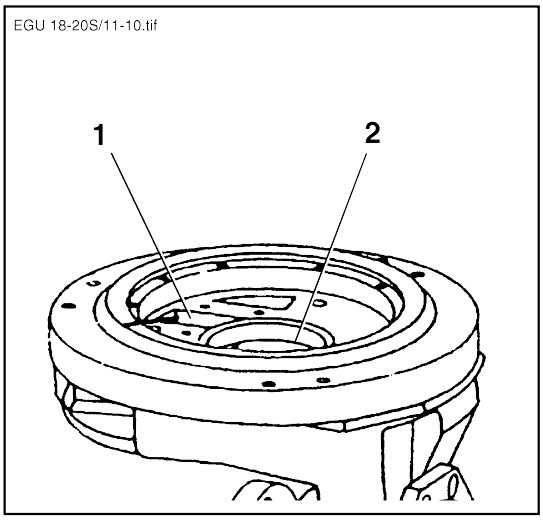
Issue: 12.2000
(Replaces issue: 01.2000)

Installation

Travel motor intallation is as per removal, but in reverse order of operations.

The following conditions must, however, be fulfilled before installation.

- Clean the gearbox orifice (2) and the ventilation - slots (1).
- Bring the drive wheel to a straight position.
- Install the travel motor in the gearbox, in the right position.



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Disassembly of the lift cylinder

- Draw out the piston rod (3) until the circlip (5) is on a level with the hydraulic connection (7).

- Lever the circlip into the groove (4) through the hydraulic connection.

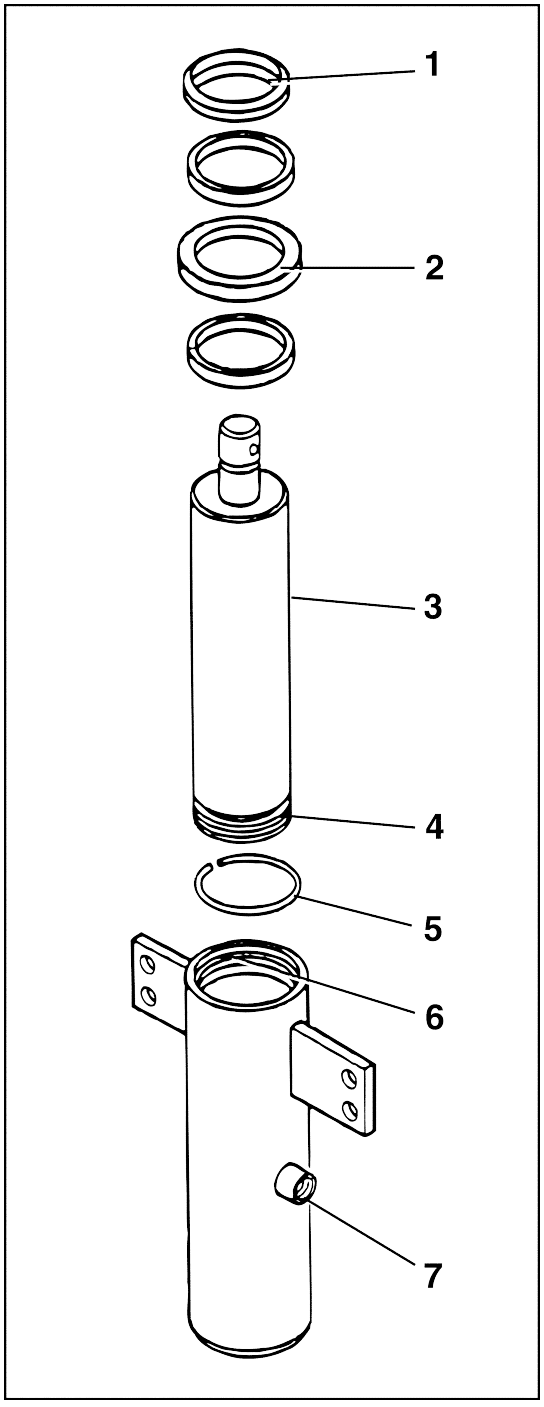
- Pull out the piston rod.

Assembly

NOTE:
When assembling, the circlip must always be seated tightly in the groove (4).

If this is not the case, the circlip (5) will snap into the groove (6) of the sealing ring (2) so that the piston rod can neither be installed nor removed.

For this reason, bend the circlip, if necessary, in such a way that it has a snug fit.



1 Wiper

2 Sealing ring

3 Piston rod

4 Groove

5 Retaining ring

6 Groove

7 Fitting

Issue: 01.2000
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Built-in charger

Technical data

General
These specifications characterise a charger developed by IES.

The charging curve, entirely controlled by a micro-controller, adapts automatically to batteries of 160 to 300 Ah capacity, even those subjected to heavy-duty use.

The charging time depends on the capacity of the battery being charged:

15 hours for 330 Ah capacity batteries
12 hours for 240 Ah capacity batteries
8 hours for 180 Ah capacity batteries
9 hours for 195 Ah capacity batteries

Energy conversion uses a cycle operating at 80 kHz.

Mechanical characteristics
Air input via ventilator with protective grid on top of charger.

Air output at rear.

Unit is fastened to baseplate by means of three 6 mm studs.

2.5 m mains lead on front panel.

Issue: 12.2001
(Replaces issue: 01.2000)

General conditions of utilisation
The on-board charger is continuously connected to the battery.

Storage temperature	-10 to +50°C
Operating temperature	0 to +40°C
Relative humidity	90%
Weight	2.2 kg
Volume	1.6 litres

Electrical characteristics

Input characteristics	
Rated input voltage	Mains 230 V +10/-15%
Mains frequency	50 Hz +/-1%
Feeder current (connection to mains)	limited by CNT
Output characteristics	
Max. output power	720 W +/-3%
Max. output current	30 A +/-2%
Rated battery voltage	24 V
U-range voltage tolerance	1%

Diagnostics

The Program Menu is presented at the end of this section.

NOTE:
Some items may not be available on all 1243 models.

In the test mode, accessed by pressing the **TEST** key, real-time information is displayed about the status of the inputs, outputs, and controller temperature.


TEST

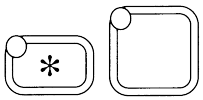
For example, when the status of the forward switch is displayed, it should read "On/Off/On/ Off/On/Off" as the switch is repeatedly turned on and off. In the Test mode, the item of interest does not need to be the top item on the list; it only needs to be among the four items visible in the window. The Test mode is useful for checking out the operation of the controller during initial installation, and also for troubleshooting should problems occur.
The **MORE INFO** key, when used in the Test mode, causes additional information to be displayed about the selected item (top line in the window).
The Test Menu is presented at the end of this section.

NOTE:
Some items may not be available on all 1243 models.

In the Diagnostics mode, accessed by pressing the **DIAGNOSTICS** key, currently active faults detected by the controller are displayed.
The **MORE INFO** key, when used in the Diagnostics mode, causes additional information to be displayed about the selected item.
A list of the abbreviations used in the Diagnostics display is included at the end of this section.


DIAGNOSTICS

The Special Program mode allows you to perform a variety of tasks, most of which are self-explanatory. Through the Special Program Menu, you can revert to earlier settings, save controller settings into the programmer memory, load the controller settings from the programmer into a controller, clear the controller's diagnostic history, adjust the contrast of the programmer's LCD display, select the language to be displayed by the programmer, and display basic information (model number, etc.) about the controller and the programmer.
To access the Special Program mode, first press the **MORE INFO** key. Then, while continuing to hold the **MORE INFO** key, press the **PROGRAM** key. The LED on the **PROGRAM** key will light, just as when the programmer is in Program mode. To distinguish between the Program and Special Program modes, look at the menu items in the display.


MORE INFO PROGRAM

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