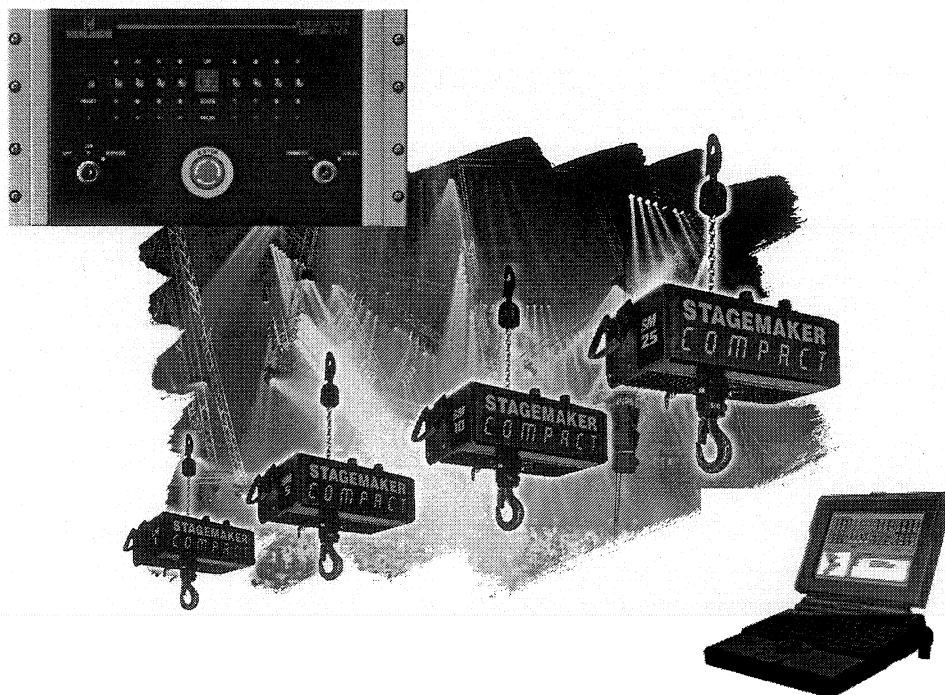


# STAGEMAKER CONTROLLERS



## OWNER'S MANUAL

**STAGEMAKER CONTROLLERS SERIES R8CPU**  
VERSION 1.11.54

 **VERLINDE**  
LIFTING EQUIPMENT

ANGLAIS



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## NOTES ON SAFETY



### General

- This device is designed for the control of professional stage equipment and is not suitable for any other purpose. It should only be used by or under the supervision of suitably qualified and trained personnel.
- Read the information in this manual carefully as it contains important information on installation, safety and operation.
- It is very important that this manual accompanies the rack if sold or passed on to others, so that the new operator can inform himself of the mode of operation of the device.
- After unpacking check that the device is intact and complete. If this should not be the case, please immediately contact our service department.
- The device must only be used by persons who are of age. Minors must be forbidden to use the device.
- Electrical work necessary for the installation of the device must be undertaken by a qualified electrician or person with the necessary specialised knowledge.
- Do not use the device in damp environments and avoid ambient temperatures above 42 °C and below 2 °C.
- Do not dismantle or modify the device in any way.
- Prevent any ingress of liquids or the insertion of metallic objects in the device.
- In case of serious malfunction, switch off the device and contact the service department or the manufacturer.
- Do not open the device. It contains only user non-repairable components.
- Never attempt to repair the device yourself.

### Hoists



As the control with connected hoists represents a system, it is essential that the connected hoist is adapted to match the controllers configuration. In case of an advanced level of security such as BGV-CI, it is essential that this level is being applied to the hoists as well and the hoists as such delivers all the required signals. If this should not be the case, the entire system and in turn also the control cannot be regarded as a system to be operated according to this standard.

It applies here that the weakest link in the "chain" determines the level of safety.

### Power supply

It must be ensured that all three phases (400 V) are present at the device and the phase sequence is a clockwise phase sequence. In the event of a fault, a red "Phase Fault" LED at the rear of the housing lights up. Operation is then NOT possible. To remedy this condition, the phases can be reversed with the phase reverser in the CEE connector. If this fails to remedy the fault, the supply cable must be checked.

In order to correctly pole two reversed phases, a mechanical phase reversal device is provided at the CEE connector. With a wide-bladed screwdriver, pressure must be exerted in the recess between two phases in order to interchange the two poles with a rotating movement. When the pressure is relieved, the two poles are clamped in place.

Reinsert the cable and if no phase is missing, the phase fault LED must be off.

### Emergency stop



The Emergency Stop button on the device front panel switches off the respective eight group completely. For linking with further control units, the devices must be connected with the two E-Stop in/out link cables. In this case, the emergency shutdown of a device affects all devices. If only one device is used, the in/out connections must be bridged with a cable. If the Emergency Stop button was actuated, the actuated Emergency Stop button must be released and the Emergency Stop subsequently acknowledged.

### Improper use



If the prescribed supply cable or link cables for the hoists supplied by the manufacturer are not used, the safety functions can be restricted.

**Operation under these conditions is forbidden! The warranty is invalidated in this case.**

## PROVISION AND USE OF PROGRAMABLE HOISTS

Recommended practice  
§§ 7 - 10 and §§ 25, 26 of UVV  
"Shows and productions for scenic presentations  
in film, television and radio"  
(old designation VBG 70 new designation BGV C1)

### Applications

Electric chainhoist are used in shows and productions for scenic presentations for the purpose of holding and moving loads (e.g. scenery, trusses, lighting, video and audio equipment) above people.

### Provision

The Contractor is required to precise the required level of security for the hoist and the hoist controls, in order to prevent confusion with the both alternatives:

- a) basic European standards, generally applicable in Europe (BGV-D8)
- b) advanced safety standards such as to DIN 56925 (BGV C1") applicable in Germany, Austria, Switzerland etc.

### Use

Depending on the type of use, and required standard, the necessary minimum requirement must be selected according to Table 1. (in particular for BGV-C1 cases)

With asynchronous group movements, a fault in group deactivation can overload the suspended scenery or individual hoists.


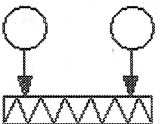
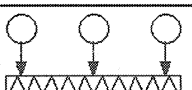
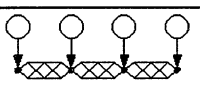
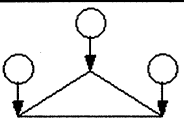
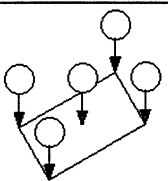
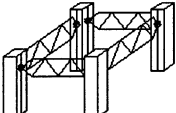
With scenic movements, where constant observation cannot be ensured, the total load should not exceed the carrying capacity of one hoist.

Lifting loads at an angle with hoists is forbidden.

For the erection and dismantling of supporting structures, available equipment with hoists according to basic standards are allowed, however no individuals should be underneath it.

If it should become necessary for persons to stand under loads, the hoists must be relieved completely or additional secured with a steel sling.

### LOAD CONFIGURATIONS

Load types		Type of use	
		Equipment for	
		Setting with visual contact	scenic movement
1. Single loads		G	G
2. Straight structures suspended from two hoists		G	G + Z 1
3. Straight structures suspended from more than two hoists		G + Z 1	G + Z 3 or G + Z 1 + Z 2 + Z 4
4. Connected structures suspended from different hoists		G + Z 1	G + Z 1 + Z 2
5. Combined structures suspended from three hoists		G + Z 1	G + Z 3 or G + Z 1 + Z 2 + Z 4
6. Combined structures suspended from more than three hoists		G + Z 3 or G + Z 1 + Z 4	G + Z 3
7. Rigidly guided structures		G + Z 1 + Z 4	G + Z 3 + Z 4
<p>G = Basic equipment  Z = Additional equipment  Z 1 = Asynchronous group movements  with group deactivation  Z 2 = Reset via synchronous point  Z 3 = Synchronous group movements (path and time synchronous)  or synchro control  Z 4 = Shutdown on overload (slack rope/slack chain safety mechanism)</p>			

## INTRODUCTION

### Fore word;

We congratulate you with the purchase of the STAGEMAKER CONTROLLER R8CPU for controlling and positioning of electric chainhoists type STAGEMAKER. It will soon become apparent that nothing could be easier and more convenient to use.

STAGEMAKER CONTROLLER R8CPU (D8 & C1) stands for:

- Easy to use hardware
- Simple installation
- Convenient graphic user interfaces in Windows™ as standard
- Maximum ergonomics in software design
- a) R8CPU-D8 standard version  
b) R8CPU-C1 advanced safety version

Please read the operating instructions thoroughly before use.  
We know that can this be tedious, but please take the time to do so.  
After all, you will be moving loads weighing tons above people below.

We wish you lots of success and many successful productions!

### Scope of supply

Supplied with each rack:

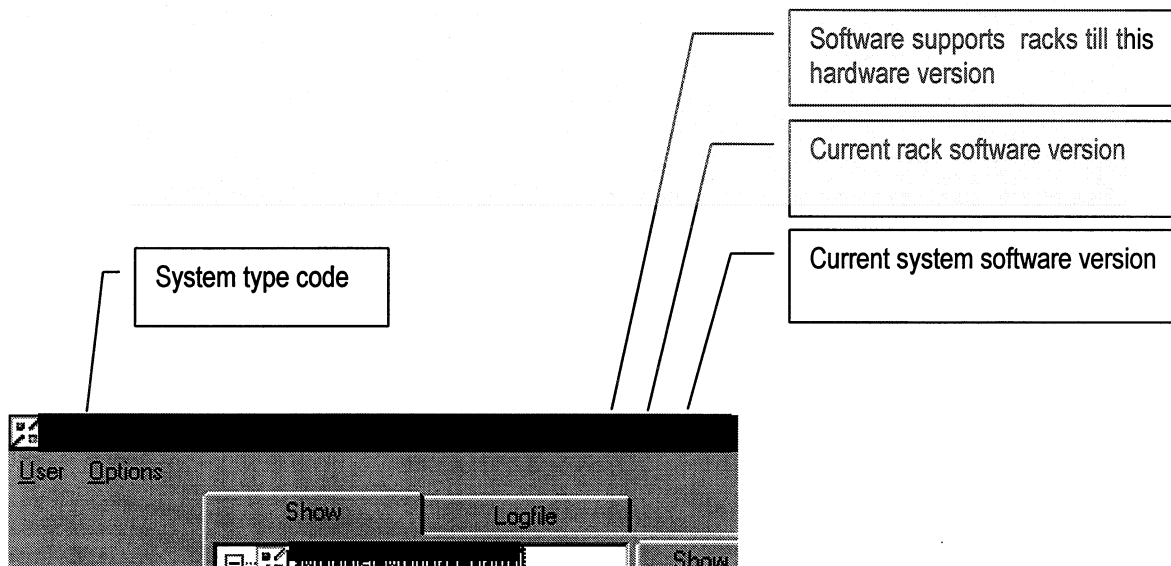
- |                                     |                    |
|-------------------------------------|--------------------|
| 1 Link cable                        |                    |
| 1 Dummy plug                        |                    |
| 1 Operating instructions            | (One for each set) |
| 3 Diskettes with operating software | (One for each set) |
| 4 Keys                              |                    |

### CONDITIONS

#### System requirements (Operating computer)

Minimum Pentium with 200 MHz  
Minimum 16 MB main memory (RAM)  
Screen resolution of minimum 800x600 at 256 colours  
Network card for 10 Mbit Ethernet / 10 Base T cabling  
Windows95  
10 MB free hard drive capacity  
Mouse / Trackpad

#### System code descriptions



A new software version, always includes the updated control software, as well as the rack software. The rack software, will be automatically updated each time when a new version of control software is installed.

During installation of the software to the rack, a message screen shows up with info " Please wait until Monica is updating" During this message period, it is not allowed to switch-off the rack or the PC. It otherwise is not guaranteed that the software transfer was completed.

#### Rack requirements

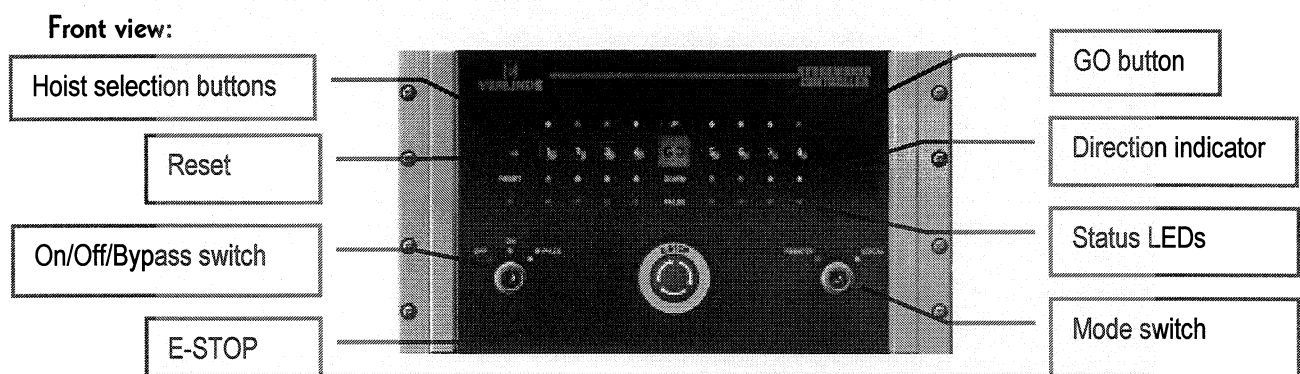
400 V / 32 A (three-phase)  
For linking: standard 10 Mbit Ethernet hub  
Ethernet cable with western connector

## RACK

The rack is the link between the STAGEMAKER CONTROLLER software the operating computer and the hoists. They can also control the hoists in backup operation direct via the buttons in the rack.

### Where can I find what? Front view of STAGEMAKER CONTROLLER R8CPU

The following drawing shows the positions of the individual control elements:



### Emergency stop

Button for emergencies. All movements are stopped when this button is pressed.

In order to cancel an Emergency Stop, the actuated Emergency Stop button must be released by turning it in the direction indicated by the direction arrows shown on the button, whereupon the button returns to its original position.

The Emergency Stop must subsequently be acknowledged. For this purpose, the left key-switch must be set to Off and then On again. Acknowledgement must take place at the rack at which the Emergency Stop button was actuated. For the hand-held Emergency Stop controllers, the Emergency Stop must be acknowledged at the rack to which the controller is connected. For this purpose, the key-switch must remain in the Off position until the LEDs have extinguished.

The hoist selection is lost when an Emergency Stop is initiated.

The hoists must subsequently be reselected.

### Hoist selection button

These buttons serve to select the individual hoists in backup operation (Key-switch must be set to Local).



The respective hoist for upward movement can be selected by pressing the button once.

Pressing the button twice selects the hoist for downward movement and can be deselected by pressing a third time.

Selection, is not possible when a hoist is in motion.

### GO button

This button can be used to initiate movements in backup operation (Key-switch set to Local).

The hoists move only as long as the button is depressed.

Only the selected hoists move in the direction indicated by the blue LED. If no LED lights for the respective hoist, the hoist is not selected and will not move. If racks are linked, the Go command takes place also for the connected racks.

### Direction indicator

These LEDs indicate the selected direction of travel or movement.

### Status LEDs

Activation of the FALSE LEDs takes place for all hoists for the states:

- Emergency limit switch approached (shows red)
- Overload (shows orange)
- Slack chain (option) (shows orange)
- Hoist connected (shows green)

In the event of a fault or as a result of a reset, the direction indicators of all hoists go out. A fault of a single hoist remains present and a hoist can only be moved downwards after reselection in the event of a "slack chain" fault (option). The fault can be cancelled by switching the respective control Off and On again (reset).

The LED below the reset button indicates a fault which originates from a different rack; with decentralised positioning of the rack, a clear overview of the entire system is provided.

### On/Off/Bypass (Key-switch)

This switch can be used to set the rack to standby and bypass slack chains during (option) upward movements. For this purpose, the switch must be kept in the respective position. An Emergency Stop can also be acknowledged by switching to "Off".

#### Note:

When switching on for the first time, the hoist fault indicator lights can light up. This is normal and is not a fault. After a delay time, needed for internal check-up, these LEDs go out.

### Reset

This button serves to reset a hoist fault (overload) or the selected hoist direction can be cancelled.

### Mode (key-switch)

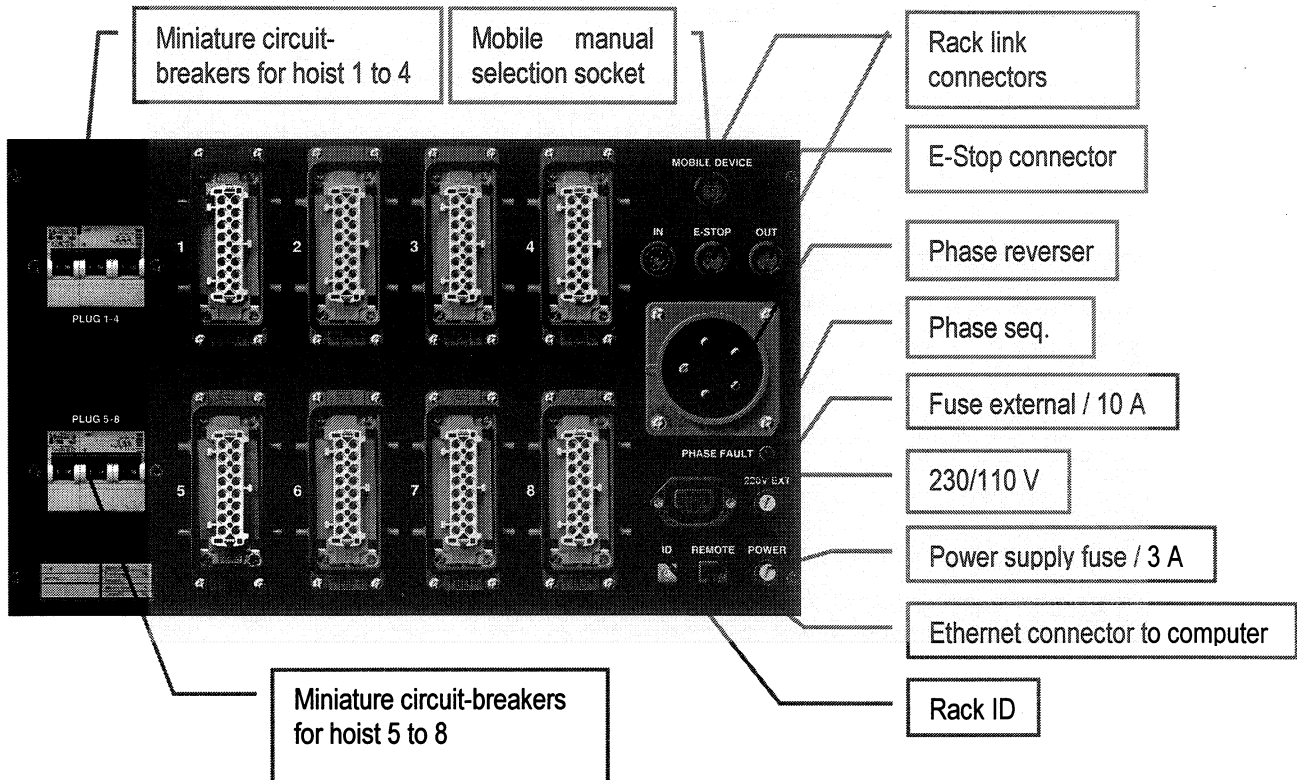
This switch can be used to select between the Local (manual) and Remote (Software) mode.

Local is the backup control mode. If Local is selected, the hoists can be selected with the buttons and moved with the GO button. The Go command also affects all other connected racks. The computer no longer has any influence on a rack set to Local, but has full access to the connected racks set to Remote.

Remote is the mode in which the computer (Laptop) controls the rack. Hoist selection at the rack is then not possible.

### Where can I find what?

Rear view



#### Link connectors:

When linking several racks, (In/1-Out/2-In/2-Out/1 etc.) these connectors can be used to link Emergency Stop connectors. If only one device is used, the two connections must be linked via a same cable.

#### E-Stop connector:

This connector can be used to connect the emergency stop controller or if no emergency stop controller is required, a dummy plug must be fitted.

#### ID selector switch:

This switch can be used to set the rack ID. This is essential for control via software (system 1; select 1 / system 2; select 2 etc.)

#### Ethernet:

This connector can be used to link the rack to the computer or network Hub.

#### Phase seq. indicator:

If the power connection is not a clockwise phase sequence, this LED shows red and starting is not possible. A clockwise phase sequence can be established by reversing two phases. With the phase reverser CEE connector used here, two poles can easily be interchanged with the aid of a screwdriver by exerting light pressure on the recess until the lock releases to enable the phases to be reversed mechanically.

### COMMISSIONING

First familiarise yourself with the position of the individual sockets at the rear of the rack. Read the Section "Where can I find what?".

**Warning:** Ensure that the rack and computer is not switched on until all cables are properly connected.

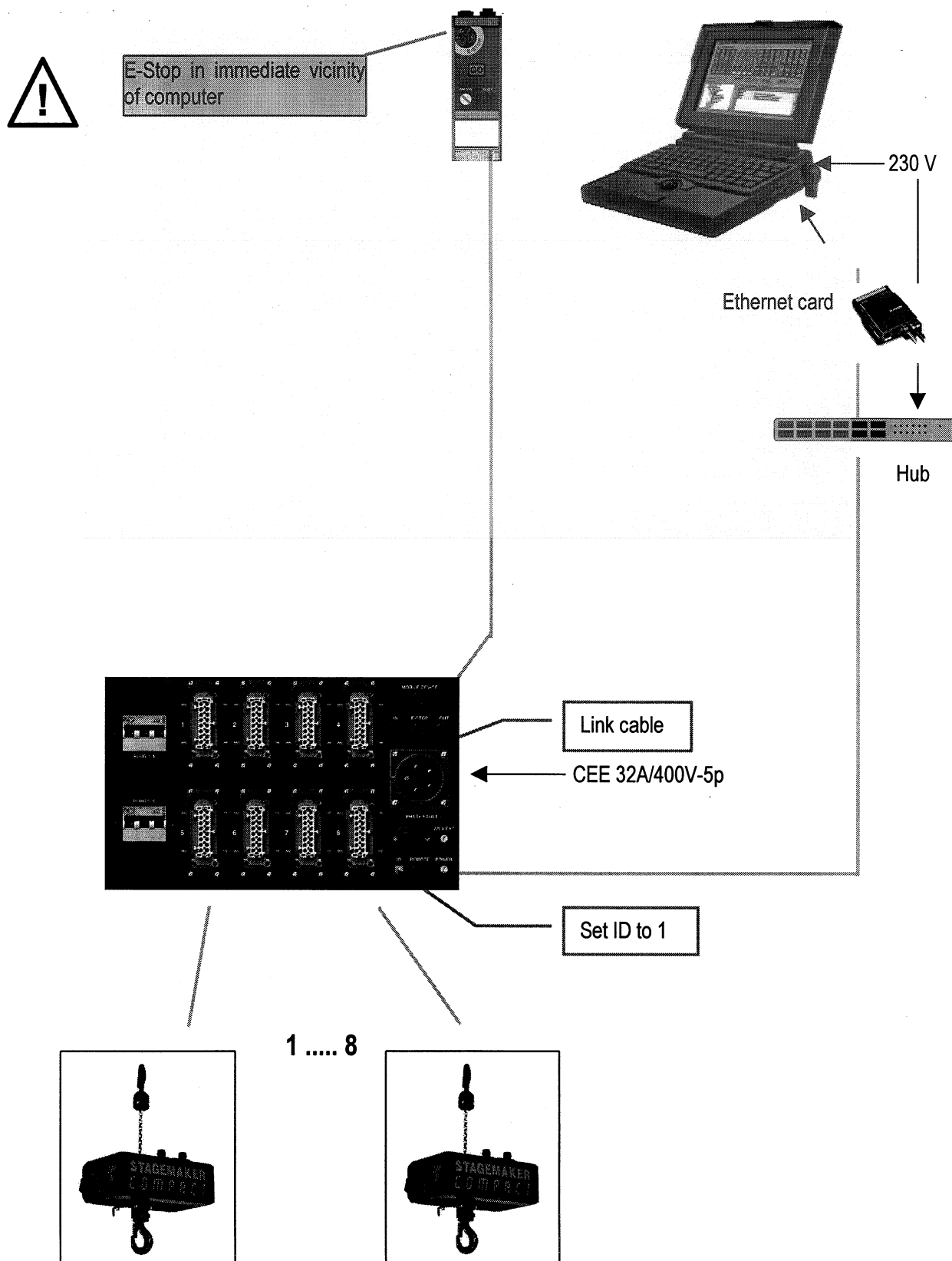
#### Configuration using a single rack



1. First connect the hoists to the rack. Check the connectors for a secure fit.
2. Connect the Ethernet interface of the switched off computer to the Ethernet interface at the rear of the rack (Remote) with twisted patch cable or use patch cable through a hub. Set the ID of the first rack to 1
3. Plug the hand-held emergency stop controller into the rack connector provided. Operation with open connector is not possible. If no hand-held emergency stop controller is connected, a dummy plug must be fitted. The hand-held emergency stop controller should be located in the immediate vicinity of the operating computer in order to stop movements within the system at any given time.
4. Connect the IN and OUT connector with a short link cable. Operation with open connector is not possible.
5. Ensure that the circuitbreakers are on.

Connect the device to the supply (CEE 400 V 3Ph), whereby the key-switch must be set to the OFF position with each new commissioning. Check the phase sequence and reverse if necessary. For this purpose, simply interchange two poles with the aid of a screwdriver by exerting light pressure on the recess until the lock releases to enable the phases to be reversed mechanically. For testing purposes, the Emergency Stop button must subsequently be actuated once and released, whereupon the key-switch can be set to ON. When switching on, it can happen that several LED fault indicators light up. This is due to the system and has effect on the function. A time delay of about 5 seconds prevents a standby mode being assumed immediately, as a short time is required until all components are powered up. Only then is the device enabled. It is now possible, with correctly connected cabling to switch the rack to standby by turning the key-switch to OFF and then ON, provided all E-Stops are released.

### SINGLE RACK CONFIGURATION



### Configuration of a link of up to 8 racks

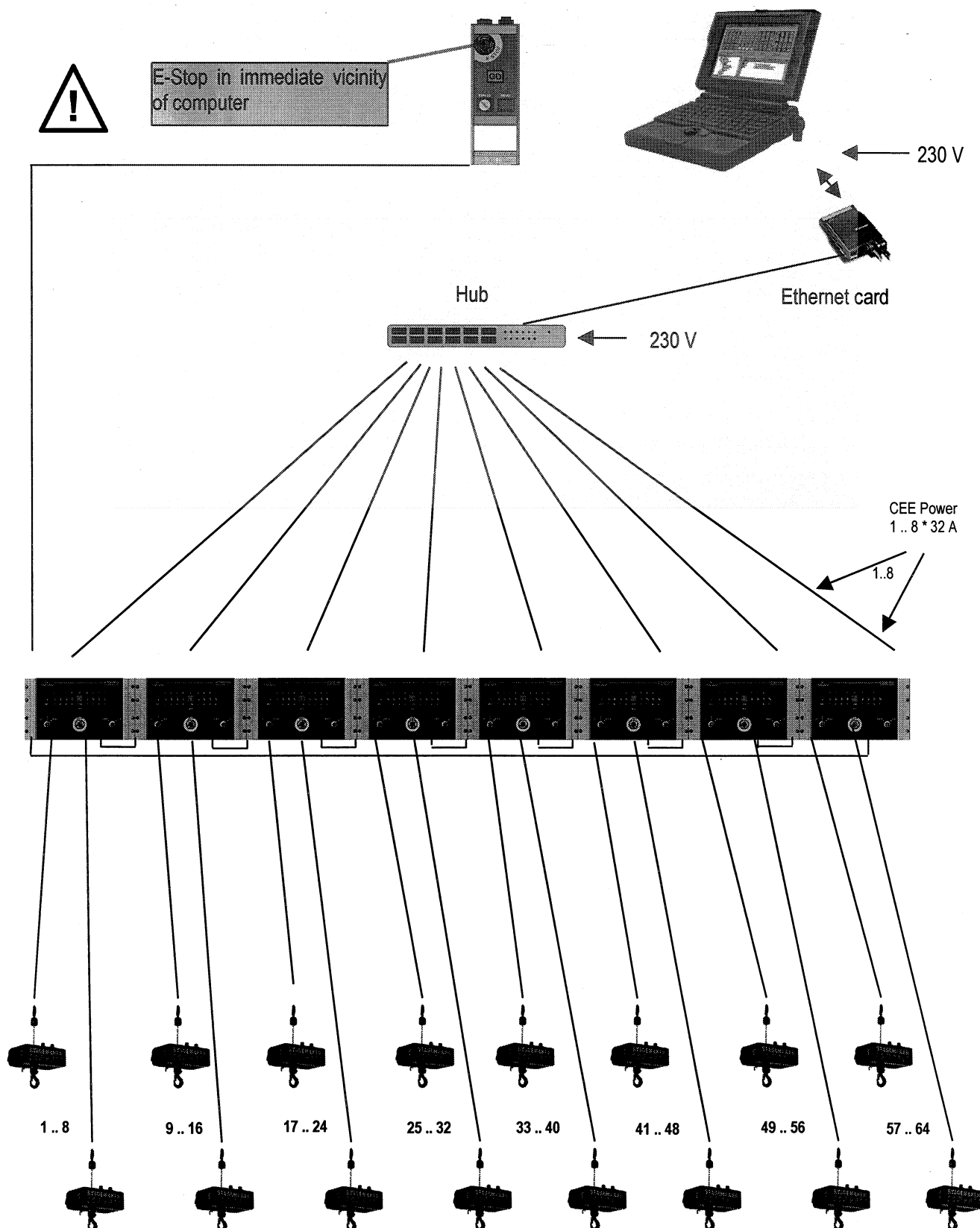
Up to 8 racks can be linked. The procedure is as follows:

**Warning:** Ensure that the rack and computer is not switched on until all cables are properly connected.

1. First set the rack IDs. Ensure that no ID is double. The first ID must be 1, all further rack IDs must be consecutively incremented by one.
2. Connect the hoists to the rack. Ensure that the connectors are tight.
3. Connect the Remote outputs of the rack to the required hub box (see conditions) and power the hub. The rack output 230 V could be used.
4. Connect the LINK inputs and outputs. IN and OUT sockets are provided at the device. Keep to the following pattern. A loop must be established. One cable respectively must be routed from one device to the next. The output of the last device must be connected to the input of the first device.
5. Connect hand-held emergency stop controllers to one or several racks. The hand-held emergency stop controller should be located in the immediate vicinity of the operating computer in order to stop movements within the system at any given time. A dummy plug must be fitted on those racks who have no hand-held emergency stop controllers connected. **Operation with open connectors is not possible.**
6. Connect the hub with the PC (Laptop) which still off power.
7. Finally establish the supply connection to the racks. Check the phase sequence and simply interchange two poles with the aid of a screwdriver by exerting light pressure on the recess until the lock releases to enable the phases to be reversed mechanically.

Switch all racks to ON. Switching on one is the same as switching on only one rack. However, for linked ranks, it suffices to switch on any rack. These switching operations are transferred to the linked racks.

### GROUP CONFIGURATION



### SYSTEM SHUTDOWN

After using the system, the STAGEMAKER CONTROLLER software must be terminated first. When doing this before disconnection of the Ethernet, the hoist positions are saved in the flash memory of the rack. These values can be transferred from the rack memory to the operating computer with the next start by pressing the REFPOS button and the previous condition is restored.

The racks can subsequently be disconnected by isolating them from the supply or switching the key-switch to Off. Dropping out of the main contactor can be heard clearly and all LEDs on the front panels are off.

### MANUAL / BACKUP CONTROL

The hoists can be controlled directly via the rack (backup mode).

The Laptop together with the link box and Ethernet cabling does not have to be installed.

Only simple motions without programmed target positions are possible.

**It is essential that moving hoists are in your field of vision at all times.**



Familiarise yourself with the position of the individual control elements. Read the Section "Where can I find what?".

In order to control the hoists from the rack, the right key-switch must be set to "Local". The other key-switch must be set to On and the ON LED (standby) must light up.

If the reset LED shows red, a fault is present. The fault can be acknowledged by briefly pressing the reset button. A status overview based on the colours is provided in the Appendix under "Status based on LEDs".

### Selection

First select the hoists to be moved as follows:

Press the buttons of the hoists to be moved. Press these

- once for upward movement
- twice for downward movement
- three times to cancel the selection.

Depending in the selection direction of movement, the direction indicating LEDs now light up at the rack.

### Go

To initiate movements, press the Go button until movement is to be ended. When the button is released, all hoists are immediately stopped. If the racks are linked, also their selected hoists effect specific movements.

### End of operation

When a hoist has reached its limit switch contact before to come to its target position, it stops, while the others continue to approach their target position.



### Fault

In the case of faults, such as load faults, slack chain (option) or emergency stop, all hoists stop.

If a fault should occur, all hoists are deselected. In order to reselect hoists, the fault must be acknowledged with a reset. Reselection is subsequently possible.

### Link

If several racks are connected via IN – OUT connector, they are linked. The mode of operation of linked racks is virtually identical with that of a single rack, however, with the following differences:

The functions are rack interlinked. If at a rack or an emergency stop controller one of the Emergency Stop, Bypass or Go buttons is pressed, this affects all linked racks. When the Go button is pressed at a rack, the selected hoists of another rack also move. Pressing the reset button by contrast will only cancel the fault at your own rack. Only the reset of a hand-held emergency stop controller affects all racks.

A fault at one rack will cause the hoists at the other racks to be deselected, i.e. if a hoist at a rack with slack rope and stops, the moving hoists at the other racks will also stop.

### Emergency Stop button



When this button is pressed, all movements are immediately stopped.

After being pressed, the Emergency Stop button remains locked. In order to release the button, it must be turned in the arrowed direction, whereupon button returns to its original position. All linked racks also assume a standby mode, whereby it is irrelevant from which rack or hand-held emergency stop controller the emergency stop was initiated.

In order to cancel an emergency stop, the actuated Emergency Stop button must be released by turning it in the direction of the arrows on the button, so that the button returns to its original position.

The emergency stop must subsequently be acknowledged by switching the left key-switch to off and then on again. Acknowledgement must take place at the rack at which the Emergency Stop button was actuated. In the case of hand-held emergency stop controllers, the emergency stop must be acknowledged from the rack to which the emergency stop controller is connected. For this purpose, the key-switch must remain in the off position until the LEDs go out.

The selected hoists are lost when an emergency stop is initiated and must subsequently be reselected.

### Bypass key-switch

If slack chain (option) occurs with a hoist, all hoists are deselected and stop. This applies similarly to all hoists of the linked racks. Under the fault signalling hoist, the orange fault LED lights up.

If this hoist has to be lowered (load already on the ground), the fault must initially be acknowledged by actuating the reset button. The downward direction of the hoists to be moved must be selected. The key-switch must be set to BYPASS while simultaneously pressing and holding the Go button. Although a fault is signalled again, the selected hoists can continue to operate, as long as the key-switch is set to BYPASS. As soon as this is released, the fault must be acknowledged from anew.

This procedure has the same effects on all linked racks.

### Reset button

If a fault is signalled by any hoist, a fault LED of the respective hoist lights up in order to indicate this fault. As long as the fault is present, a selection of hoists and movements is not possible.

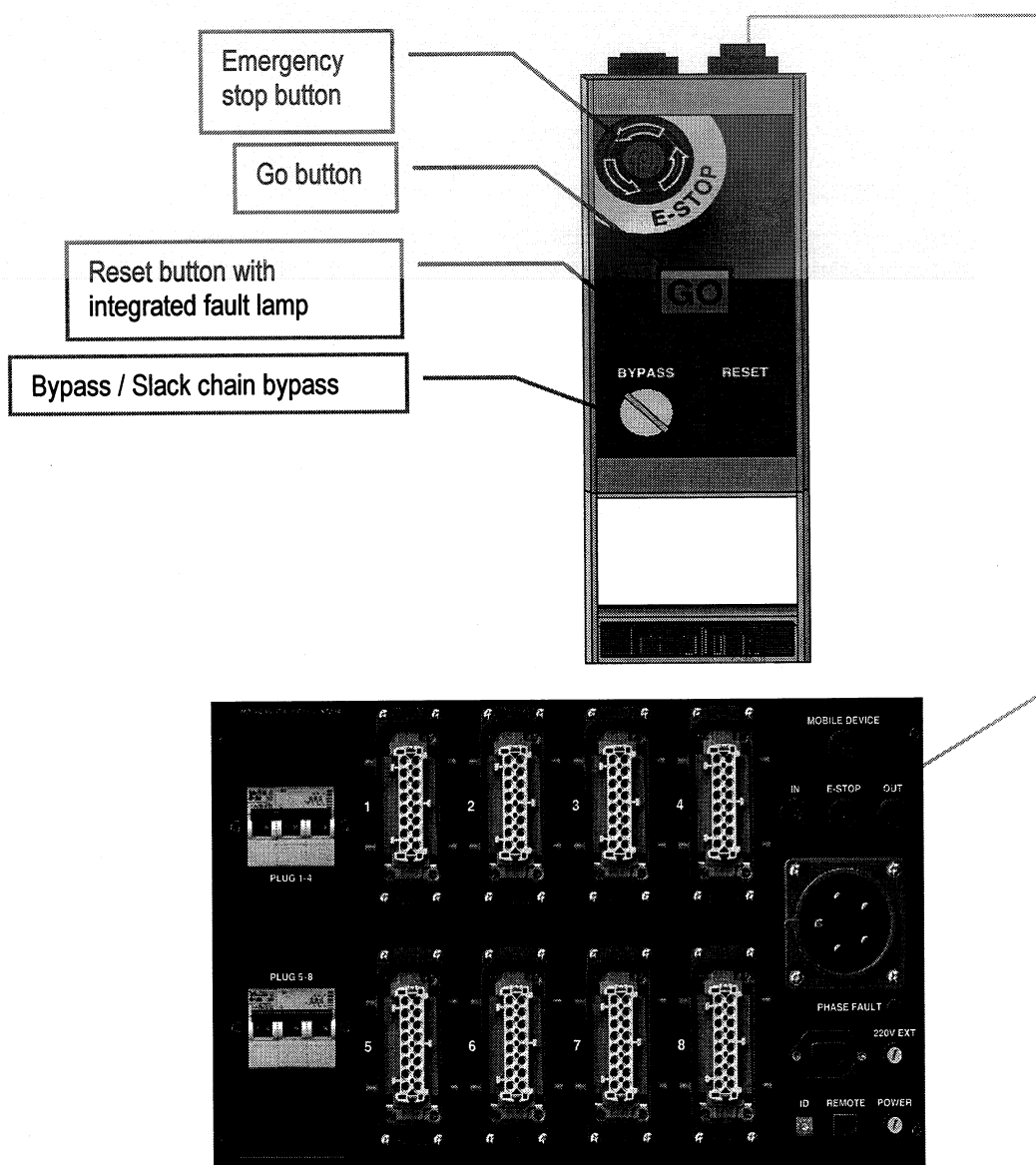
A fault can be acknowledged by pressing the reset button and the system is set to standby.

### HAND-HELD EMERGENCY STOP CONTROLLER

At least one hand-held emergency stop controller must be located in the immediate vicinity of the operating computer. It must always be possible to stop any movement via the hand-held emergency stop controller or a STAGEMAKER CONTROLLER rack.



In backup operation, the hand-held emergency stop controller offers through flexible cable routes the advantage of controlling movements from a good viewing position, to have the emergency stop button at hand in emergencies as well as to have the possibility to acknowledge faults and use the slack rope bypass.



Connection of the hand-held emergency stop controller takes place via a 12-pole emergency stop cable (optional order number: ESC-8A-20), which can easily be extended to 100 m. At the rack, the cable is connected to the E-Stop socket.

If no hand-held emergency stop controller is connected to the rack (e.g. if several racks were linked and only hand-held emergency stop controller is required), a bypass plug (dummy plug) must be fitted (optional order number: ESC-8A-0).

A link cable and dummy plug is supplied with each rack.

### Emergency stop button

When this button is pressed, all movements are immediately stopped.

After being pressed, the emergency stop button remains locked. In order to release the button, it must be turned in the arrowed direction and the knob returns to its original position.

In order to initiate an emergency stop again, the actuated emergency stop button must be released by turning it in the direction of the arrows marked on the button, whereupon the button returns to its original position. The emergency stop must subsequently be acknowledged by switching the left key-switch Off then On again. Acknowledgement must take place at the rack at which the emergency stop button was pressed. If an emergency stop is initiated from hand-held emergency stop controllers, the key-switch must be set to Off until the LEDs have extinguished. (Tip: This can be done more quickly by pressing the emergency stop button at the rack once again, releasing it and then switching it quickly Off then On). The selected hoists are lost when an emergency stop is initiated and must subsequently be reselected.



### Bypass key-switch

If slack rope occurs with a hoist, all hoists are deselected and stop. (This feature is only applicable if the hoists are provided with the optional slack chain detection) This applies similarly to all hoists of the linked racks. Under the fault signalling hoist, the red fault LED lights up.

If this hoist has to be lowered (load already on the ground), the fault must initially be acknowledged by setting the key-switch first to OFF then ON again. The downward direction of the hoists to be moved must be selected. The key-switch must be set to BYPASS while simultaneously pressing and holding the Go button. Although a fault is signalled again, the selected hoists can continue to operate, as long as the key-switch is set to BYPASS. As soon as this is released, the fault must be acknowledged again, if it is still there.

This procedure has the same effects on all linked racks.

### Reset button

If a fault (such as an overload) is signalled by any hoist, the red fault LED of the respective button lights up in order to indicate this fault.

As long as the fault is present, a selection of hoists and movements is not possible.

A fault can be acknowledged by pressing the reset button and the system is set to standby. This procedure has the same effects on all linked racks.

Exception:

If an Emergency Stop button was pressed, acknowledgement is only possible at the rack via the key-switch. This procedure has the same effects on all linked racks.

### Go button

If the rack is in Local mode (key-switch set to Local), all hoists selected for a direction move as long as the button is depressed. This also applies to linked racks. Hoist reselection is not possible while the hoists are in motion.

## **SOFTWARE**

The software enables convenient and pre-programmable operation for up to 64 hoists. Initially familiarise yourself with the software before using it to initiate movements.

### **Installation**

The installation of the software presupposes a correctly installed Microsoft Windows9x operating system.

Installation only takes five minutes.

The software is delivered on two diskettes.

For installation purposes, copy both diskettes to a directory of your choice. Unpack both diskettes by selecting them (self-unpacking .exe files). Start the "Install program from this directory and subsequently follow the installation program instructions.

### **Address for Ethernet**

The installed Ethernet card on your PC requires an address in order to address the racks.

For this purpose, select START / SETTINGS / SYSTEM CONTROL and choose NETWORK.

Under the CONFIGURATION folder, mark the TCP/IP driver -> "name of your Ethernet card" and choose PROPERTIES.

The following addresses can be defined in the IP address folder:

IP address:        192.168. 4 .100

Subnet Mask:     255.255.255. 0

Confirm the entry with OK to apply the address.

The software cannot be started without installed TCP/IP driver. Even if the software is to be used only in a simulation mode, the TCP/IP driver is obligatory.

### **Source**

Updated software can be downloaded free of charge from the Internet under [\*\*www.stagemaker.com\*\*](http://www.stagemaker.com).

This software is designed so that when connecting to the racks, the newest rack software is also installed at the same. This means that also the rack is always provided with updated software.

## **SOFTWARE OPERATION**

The software is designed for use with Windows95 98 or NT. If you have no experiencing using Windows, it is recommended to consult the corresponding manual. This subject is too extensive to deal with here.

### **Simulation**

When the Simulation check box is activated under the STAGEMAKER CONTROLLER folder, the operating computer is not linked to the racks. This means that you can program (blind) shows or familiarise yourself with the software completely dependently of the racks.

### **Menu User**

Under the User menu, new operators can be entered for the system. The entered names can then access the software with their password. The password is case sensitive, i.e. distinction is made between upper and lower case characters. A new user can be entered as a user by the supervisor. The supervisor is able to access all functions. The ordinary user cannot enter any new user and edit any parameters. The supervisor can only be entered by an authorised service engineer.

When using the system for the first time, ask your supplier for the installed user name and password or contact Verlinde. ([www.stagemaker.com](http://www.stagemaker.com))

## DEFINITIONS

When you work with this manual, you will constantly come across the following terms. It is therefore recommended that you read this section in advance in order to familiarise yourself with the basic terms.

### Show

Show is the combination of all pre-programmed sequences of motions for a show.

### Cue

A cue is a group of pre-programmed sequences of motions. Any number of details can be combined under a cue. A detail can contain a hoist or a group with a defined target position. All details are started with the cue, so that the cue represents the starting time for the various details.

### Detail

A cue detail contains a single sequence of motions within a cue. The detail is assigned the associated hoist or hoist group and pre-set positions (target position saved as a single storage Show); absolute positions can also be entered here. It is also possible to enter a delay (Delay).

With the aid of the delay, it is possible to move one and the same hoist up and down successively with only one start of a cue by entering the various details with one and the same hoist alternately a high and low position. The selected delay (Delay) should be defined large enough in the various details, so that the target positions can be approached, otherwise unforeseeable movements can occur, e.g. with two details with different positions, but the same delay, the program can only process one.

### Group

A group is the combination of several individual hoists. A group defined in this way can be treated as an individual hoist. This makes it possible to simultaneously address with only one cue detail all hoists in a group. There are three different type of groups available:

1. non conditional group
2. synchronous group
3. conditional group

A **non conditional** group is a group of hoists, used as such to simplify the programming and the operation. Instead of clicking at each individual hoist, activation of all the hoists in the group is effected by one single click. The group transfers the commands to the individual hoists.

There is no link between two individual hoists, so it remains possible to add or retract an hoist from the group at any time. Even during the run of a cue, an single hoist could be stopped while the rest in the group continues to their goal positions.

A show that is built together using just groups, meaning even single hoists are configured as groups, remains flexible in set-up and modifications. Groups could be easily modified or transferred from rack no. 1 to rack no.2 etc. This avoids a lot of changes at Cue level with all its details.

This enables the provision of a patch.

In a non conditional group the end position could be the same for all the hoists.

A **synchronous** group acts like a non conditional group but with certain restrictions. All positions of the individual group members are continuously guarded and kept within a certain margin.

The first member of the group acts as the master, all other members following as slaves.

Also during the execution of the cue, all members are kept synchronised, meaning that eventual speed differences are continuously compensated. From starting point to goal position the differences in height between the various members remains unchanged.

To synchronise a group, one should choose in the corresponding "Sync" field for "true". The synchronisation is deactivated by clicking the "false" mode.

As for the non conditional group, it remains possible to alter the group at any time.

A **conditional** group acts like a synchronous group, but now the hoists are strictly tightened to the group. It is not possible to alter a group, or to intervene at single hoist level, during the run of a cue.

With this option, a group of hoists remains dedicated to a certain truss configuration (triangle, square etc.) and mutual hoist positions never changes once it has been defined.

The displacement of all members in such group is always identical.

### **Member**

A member is basically the same as a hoist, only that this is assigned to a group, i.e. a member in the group.

### **Pre-set**

A pre-set is a pre-programmed target position. Using pre-sets in a cue instead of detail settings, does have the advantage that whenever an identical target positions in all cue's has to be changed, all hoist with the same target position are modified in one pre-set change action. This instead of modifying all the individual details at hoist level.

### **Reference positions**

The reference position of an hoist is the actual position of it. It shows the physical position of the hoist in centimetres at that very moment. In the configuration field, the end positions have been set to -300 till + 3000 centimetre. This value has to be altered case by case as it represents the travel limits of the hoist.

Example: Stage floor = 120cm and stage height is 1500cm above field level;

lower truss level is defined at 100cm and upper level at 1400 cm above stage floor.

The trusses are manually positioned just above stage floor and the reference position is set to "0". The lower level has to be set to 100 and the upper level to 1400cm. The system is now able to work between these extreme settings related to stage level. The reference position readout shows the actual position which is in this case always between 100 and 1400cm.

### Control console

The control and display field shows the following information

The screenshot shows the control console interface with the following callouts:

- User entry**: Points to the 'User' button in the top left.
- Opens Configuration window**: Points to the 'Options' button in the top left.
- The folders can be used to open the hoist pages**: Points to the 'show' tab in the top left.
- Tree structure, overview of Cues, Shows, Hoists, Pre-sets ...**: Points to the 'Logfile' tab in the top left.
- Exit program**: Points to the 'X' button in the top right.
- Version number**: Points to the 'Version' button in the top right.
- Activates selected Cue in Go-Register**: Points to the 'Cue1' button in the left sidebar.
- Calls selected Group in Group-Register**: Points to the 'Activate' button in the left sidebar.
- Shows memorised current position**: Points to the 'Group1' button in the left sidebar.
- Memorise all activated Hoists as Details in a Cue**: Points to the 'Ref. Pos.' button in the left sidebar.
- Memorise all connected Hoists as Details in a Cue**: Points to the 'Rec. All' button in the left sidebar.
- Clears all pre-selections, Hoists and Cue's**: Points to the 'Clear All' button in the left sidebar.
- These tabs can be used to open the next hoist pages**: Points to the '1st / 2nd', '3rd / 4th', '5th / 6th', and '7th / 8th' tabs at the bottom.
- Starts a Cue after left Mouse click, or spacebar together with Ctrl button. Ctrl button has to be pressed during the full Cue run. Ctrl button has security function.**: Points to the 'Start' button in the bottom left.

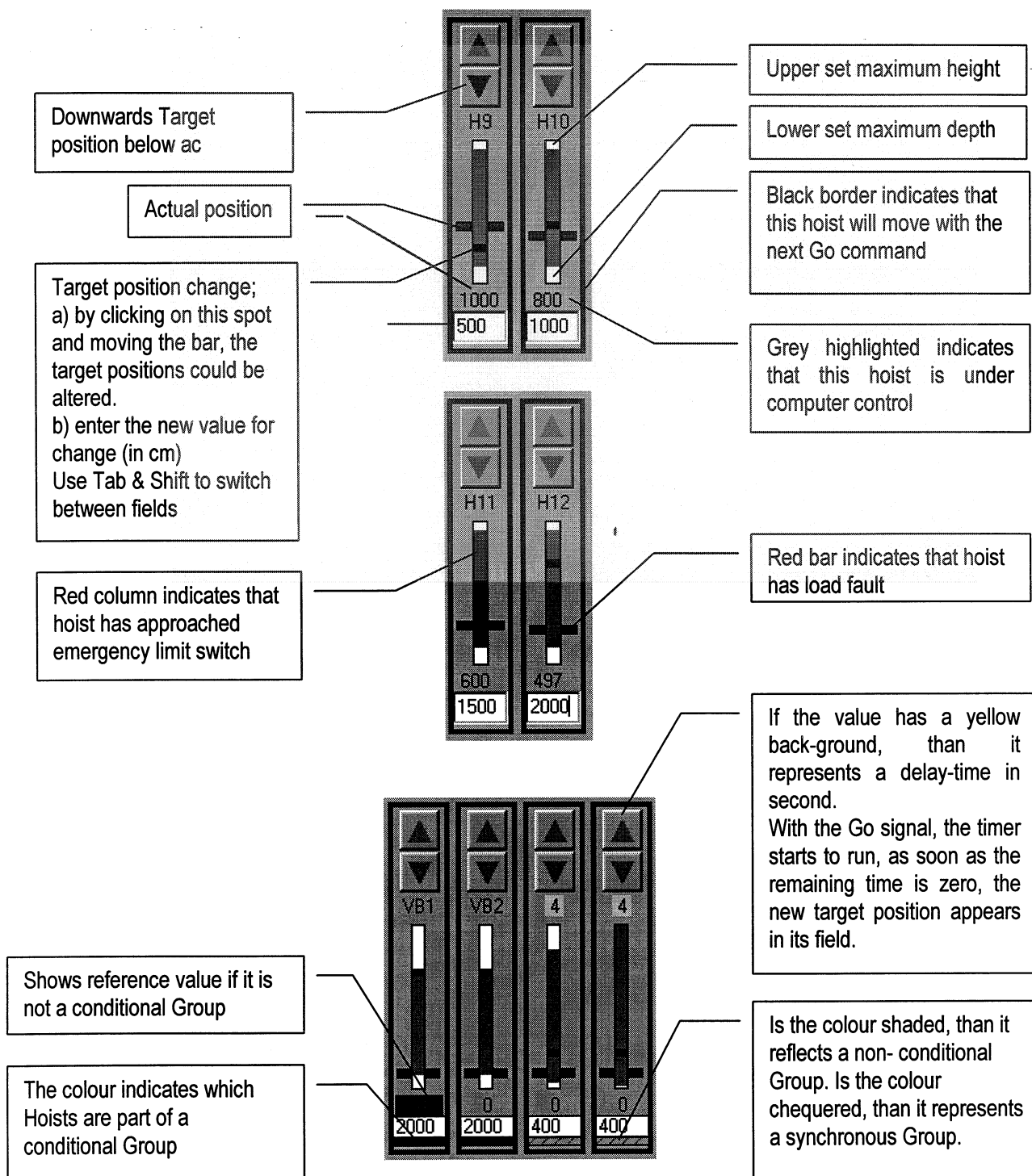
The interface also displays a tree structure on the left, a table of cues in the center, and a set of hoist controls at the bottom.

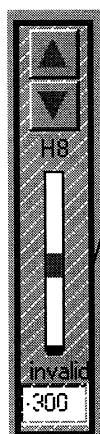
Name	Description
Cue1	Position um Material einzuhängen
Begin 1. Akt	19:45 zweites Zeichen alles in Ausgangsposition
zurück zu null	Peter ruft: "Mach das Licht aus"

The hoist controls at the bottom show 16 hoists (H1 to H16) with their current positions and limits.



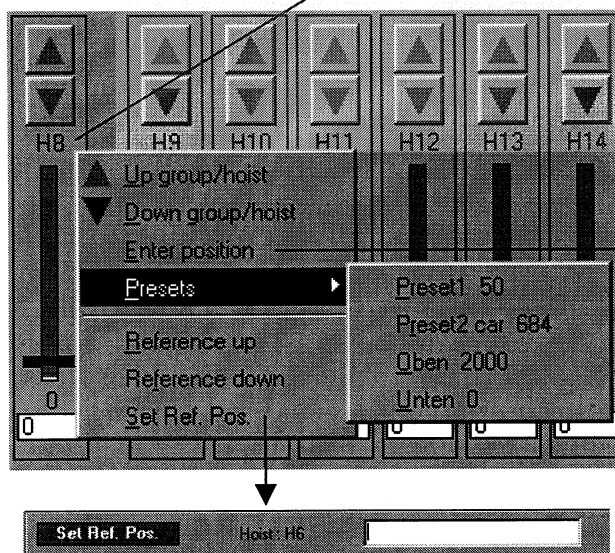
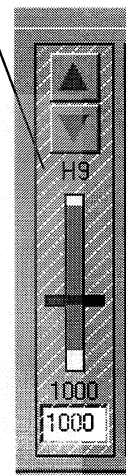
The individual elements have the following functions





Red border indicates that hoist is not plugged into rack.  
If the power supply of a rack to the hoists was disconnected or the link to a rack was interrupted, the affected hoists will also be shown with a red border.

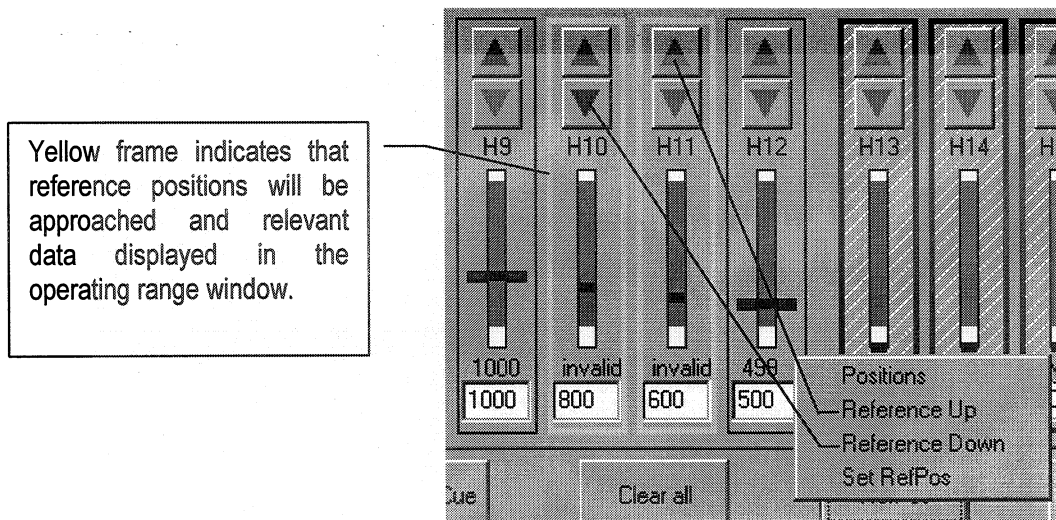
White hatching indicates that a hoist is connected, but the rack is set to backup operation (local) and so no access can take place via the operating computer



Clicking with the right Mouse button, the window of the corresponding Hoist opens and the new position could be entered, or the correct reference position filled in.



During the run of a Cue, it is possible to select Hoists or Groups likewise.



The RefPos. is the height related to a certain fixed point given to the hoist. In most cases, the stage floor level is defined as "0" metres as this reference point. From this point onwards, any position of a load (e.g. truss) suspended from the hoist can be defined and specified for the hoist as a RefPos. (reference position).

The computer now knows at which height the hoist is located and can display the same. Negative values occurred for lowering devices or fore-stages are also possible.

Clicking the Up or Down buttons, the Hoist will run in the corresponding direction till it reaches the limit switch. The pre-sets for maxim upper and lower position will appear as reference position in the corresponding field.

This functions is only applicable in case the hoist has been equipped with limit switches.

### Function buttons

With the help of function buttons, commands will be executed instantly.

#### Ref. Pos.

The actual memorised hoist positions will appear on the screen. This function is recommended after a set-up on a new Show or in case one or more Hoists shows "invalid" in stead off its current position.

#### Activate

If in the tree structure a Cue has been marked, than it will be stored in the Cue register and with the next Go command executed.

#### Go

By pushing the Ctrl button, the Go button on the screen is activated. (emergency function)

All selected Hoists will start their motion after clicking on the space-bar or the left Mouse button.

#### Clear All

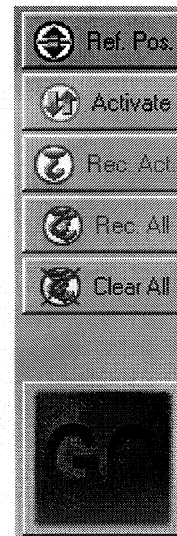
All pre-sets are cleared. With the next Go command there will be no action.

#### Rec. Act.

Current positions of all activated Hoists (black border around the field) ready to run with the next Go command, will be stored, each as a Detail in a new Cue that is pre-selected as such.

#### Rec. All

Current positions of all connected Hoists (without red border around the field), will be stored, each as a Detail in a new Cue that is pre-selected as such.

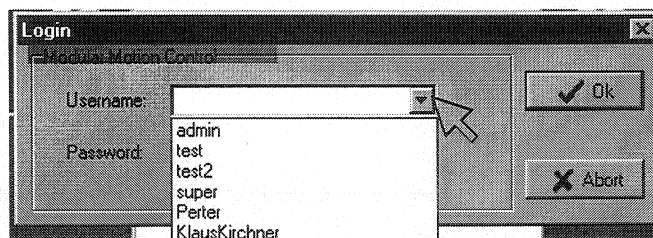


### QUICK START

Quick start introduction without Rack, in order to get familiar with the system;

#### Password

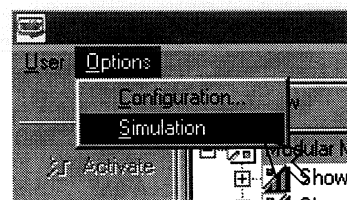
Starting the program, a Users name is requested. Click on the arrow to open Users list, select yours and fill-in the Password. If you are not on the list, ask your Supervisor. If the system is being used for the first time, the pre-installed Users name is "admin" and Password "admin" as-well.



The program opens, the data is being loaded and the system is searching for a Rack. If there is no rack connected, all Hoist are surrounded with a red banner and the background is shaded.

#### Simulation

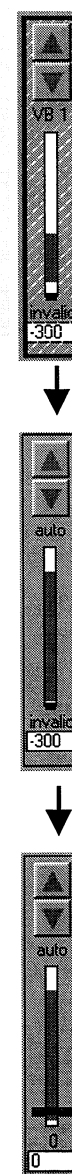
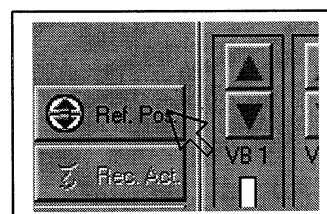
Click Option – Simulation, now you are able to work stand-alone and make yourself familiar with the system.



#### Reference position

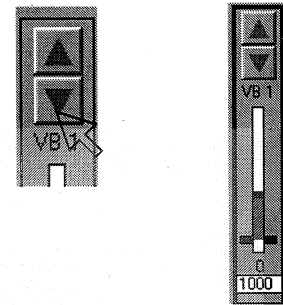
As the system in a new set-up start doesn't know where the Hoists are, the reference position button will give you the correct information. The displayed value after clicking the button, is the position stored during switch-off the previous time, provided that the Hoists have not been used without the Rack.

In case of Simulation, the reference position is set to zero.



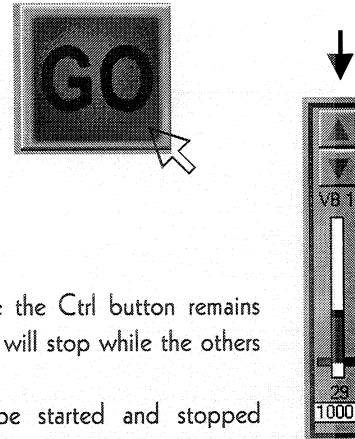
### Selection of Hoists

In order to select an Hoist to go up, just click the arrow "UP", it lights up green and the banner around that respective graphic becomes black. Clicking again means Hoist de-selected.. The first Hoist is called H1, you can change this code as you wish. In the aside given picture it is called VB1,



### Start motion

In order to command selected Hoist(s) to go up or down, press the Ctrl button of the key-board and touch the GO button or the space-bar. (the Ctrl key stands for dead-man function). In the left upper screen, a display appears showing the proceeding of the motion. The banner around the graphic becomes green.



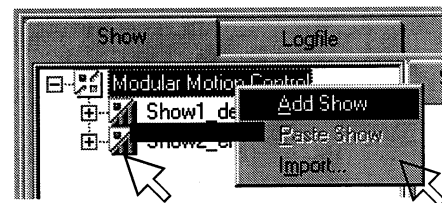
### Stop motion

All motions are stopping as soon as the Ctrl button is released. If while the Ctrl button remains pressed, a second touch of the arrow is given to a particular Hoist, this one will stop while the others continue.

As long as the Ctrl button is pressed, any activated Hoists could be started and stopped independently as often as required..

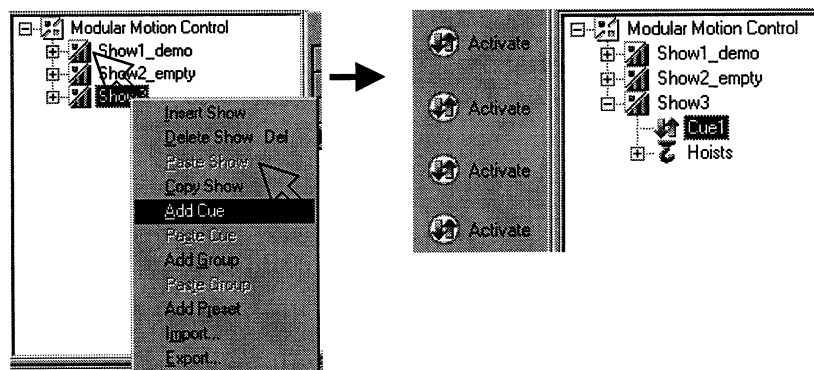
### Add New Show

To create a new Show, click in the upper field "Stagemaker controller" with the right mouse button and then click on Add Show. (On a new supplied system there is already a demo Show installed.)



### Add New Cue

A new Cue could be added to a Show by clicking with the right mouse button on the selected Show, then click on Add Cue. A Cue is composed by Details representing Hoists or a group of Hoist. In the Details you can find the information about the individual Hoists or group of Hoists, when and where they have to go to.



### Store configuration

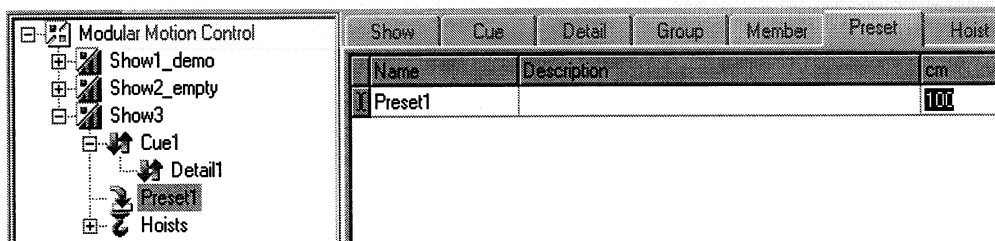
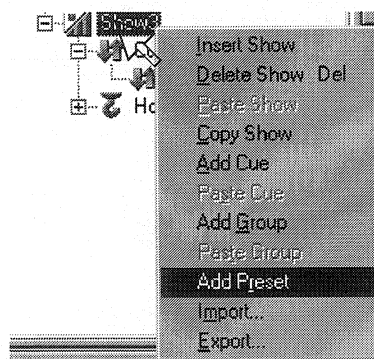
To store the selected hoists with their new target positions, press the Rec.Act. button. This configuration of new target positions is now stored in a new created Cue.



### Create Pre-set

A pre-set is a target position that is stored in a separate databank. Pre-sets are used as programming add, which makes the programming of similar target positions easier. If a particular target position has to be changed for all the hoists, one just has to change only one value and all related details are modified in one shot.

To add a pre-set, click with the right mouse button on the respective Shows and then select Add Pre-set. Enter the value in centimetres. Always close the entry with a Return.

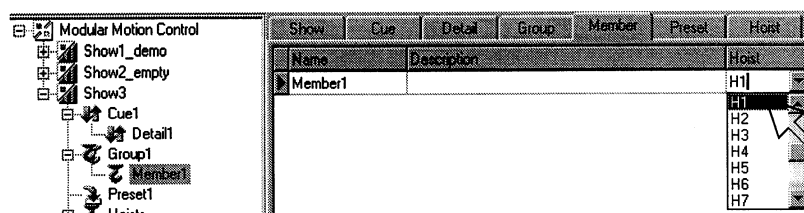
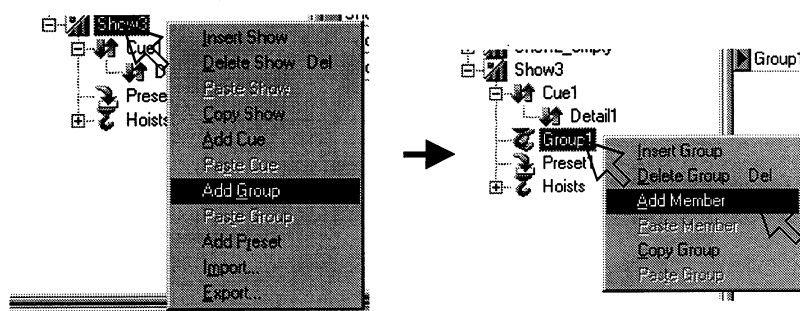


### Building a Group

Before appointing Members (Hoists) to a group, first one have to create it. Right mouse click on the respective Show and click on Add Group.

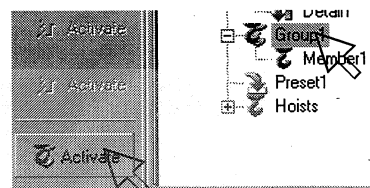
Now right mouse click on this new Group and click Add Member. Make choice from the list by clicking on Hoist. (Standard Hoist no H1 appears)

Now the Group, composed by one Member is ready.



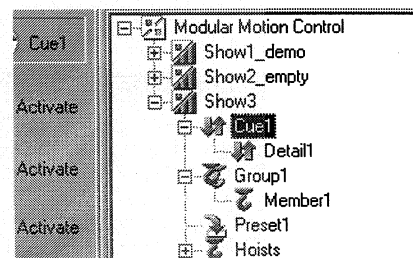
### Group appointed to Target positions

In order to activate a Group, click on the button Activate. An a table with Pre-sets appears. Make your choice and click on the selected value.  
Proceed for starting the Group as described under 5.



### Restore and execute a Cue

In this example Hoist 1 was manually brought in position, then stored as Detail 1 in Cue i. Afterwards we build a Group, again with Hoist 1 and run to a new position. To come back now to the original position, click on Cue 1, followed by a click on one of the four pre-selection buttons and continue as described under 5.



### Important !

*These are the basic skills required to work with the system. You are no able to run individual Hoists, to create Cues, Groups and to complete Details and Pre-sets. It is very important to extend your skills by practising. The incorporated demo Show will be very help full to learn and understand all the possibilities.*



### MANUAL MOVEMENT OF INDIVIDUAL HOISTS

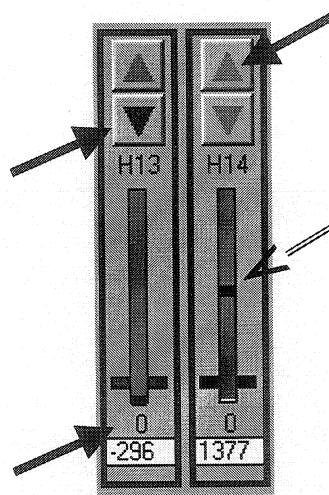
Individual hoists can also be moved outside the cue mode. The procedure for this is as follows:

#### Selection

The hoists can be moved into their lower or upper limit by clicking the required direction button with the left mouse button. The set position is applied to the respective limit.

Different hoists can also be moved to specific target positions by entering the required target position in the set values field of the respective hoist and confirming the entry by pressing the Return key. Also negative values can be entered in order to, e.g. lower the fore-stage hoist lower than stage level, which, e.g. was set at zero. The values can be from - 300 cm to 3000 cm.

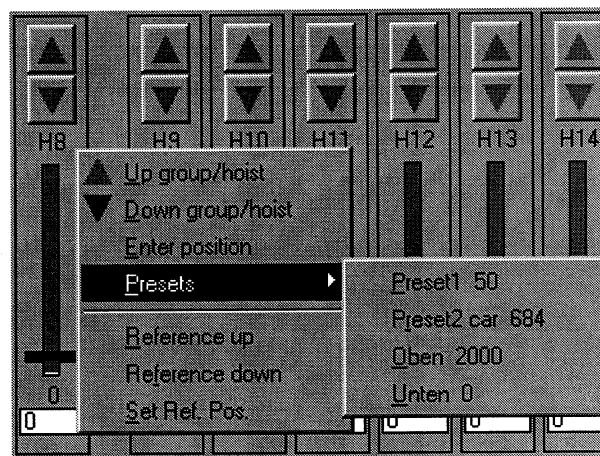
While clicking with the left Mouse button on the black marker (see white arrow) and moving it at the same time, it is possible to make fast changes. This method is relative in-accurate.



Selected hoists are displayed with a black border.

Click with the right mouse button inside the black border of the particular Hoist and a new window appears. A new position could be entered in the destination field.

Another possibility is to use pre-sets. Open the pre-set window appears, point "pre-sets." click on the required pre-set and the value will be memorised. This function is also available if during the run of a Cue a new target position is needed.



Enter new dest. Hoist : AH. 500

### To start a motion

When all values have been entered correctly, movements can be initiated by first pressing and holding the left Prepare GO-button then the CTRL key while clicking the GO button

The moving hoists are displayed with a green border and the direction indicator flashes. When a moving hoist has reached its set position, the green border disappears and the direction indicator stops flashing.



The mouse button together with the CTRL key forms the dead-man's function



### To stop a motion

Motions continue until the limit is reached or the mouse button or CTRL key is released.

Movements can be continued by proceeding the motion start procedure as described above.

### Reset selections

General de-selection takes place by clicking the left mouse button on Clear all.

Individual hoists can be de-selected by repeatedly clicking the direction arrow with the left mouse button.

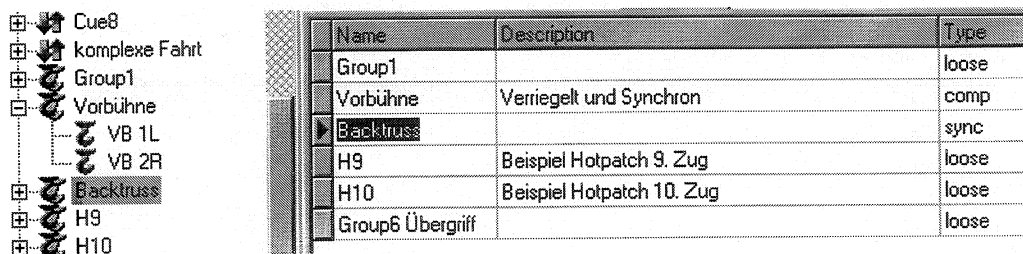


### Group travel

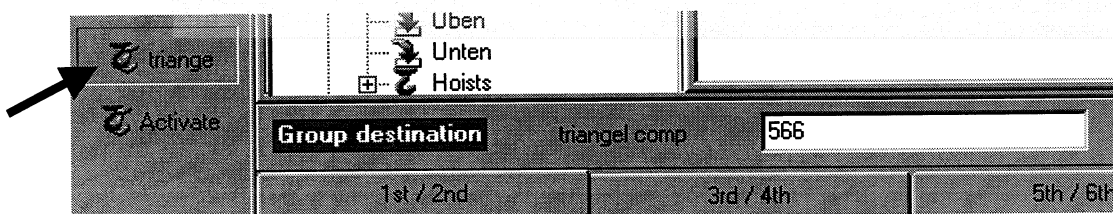
#### Group selection

It remains possible, even during the run of a Cue to move a Group.

Select from the tree or the table the required Group, and click with the left mouse button on it.



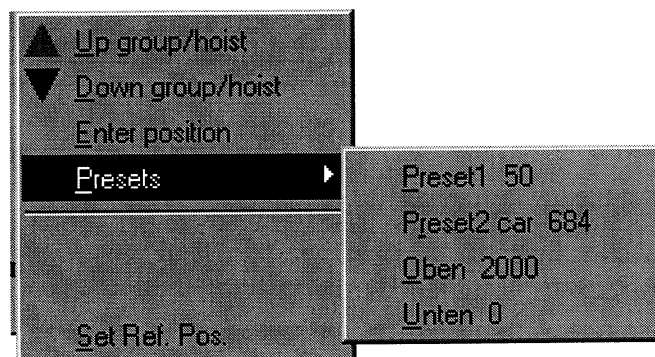
Click on the Group display register button.



A dialog window opens. If the Group has to go all the way up or down, just click at the corresponding arrow. The target position is then memorised as limit up c.q. down.

Enter a new target position in the Group destination field if the target differs from the end positions. Close the entry always with a return command.

Also negative values can be entered in order to, e.g. lower the fore-stage hoist lower than stage level, which, e.g. was set at zero. The values can be from - 300 cm to 3000 cm.



Selected hoists are displayed with a black border.

### To start a Group

When all values have been entered correctly, movements can be initiated by first pressing and holding the left Prepare GO-button then the CTRL key while clicking the GO button

The moving hoists are displayed with a green border and the direction indicator flashes. When a moving hoist has reached its set position, the green border disappears and the direction indicator stops flashing.



The mouse button together with the CTRL key forms the dead-man's function



### To stop a Group

Motions continue until the limit is reached or the mouse button or CTRL key is released.

Movements can be continued by proceeding the motion start procedure as described above.

### Group reset

General de-selection takes place by clicking the left mouse button on Clear all.

A Group can be de-selected by repeatedly clicking the Group button.

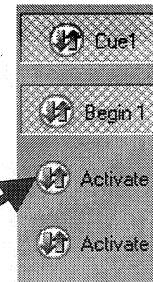


### Selection and Cue starts

The Cue system, enables the user to call on a Cue in a relaxed way, no matter if they are symple nor complex of structure. Proceed as follows.

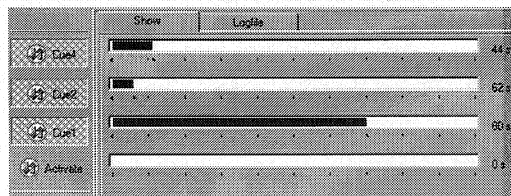
Open the tree of the required Show in a way that all Cues are displayed.

Select the Cue of your choice and click on it. On the upper left side of your screen the corresponding Cue pre-selection button lights up.



Click on the lighted „Activate Cue“ button and the details of the Cue are loaded in to the graphic display and all Hoist belonging to the Cue are activated. (black banner appears around it) .

The Cue is activated as soon as the Ctrl button is pressed and the GO button touched with a Mouse click or the space-bar once pressed.



After pressing the Ctrl button, the tree structure is replaced by a graphic display that shows the progress of the current Cue run. The Hoist belonging to this Cue are marked with a green banner for as long as they are active.

For Hoist with a start delay, the delay time is displayed on a yellow background.

As soon as the Ctrl button is released, all actions are stopping immediately. This function is to be considered as an elementary safety function (dead-man function)

In order to start the next Cue, the "Activate Cue" button must be pressed again. The automatic Cue pre-set prepares the always the next Cue in line.

Up to four Cues could be pre-selected and run at the same time. This enables you to run slow movements over a long period of time and still have the other tree Cue available to run autonomous.

#### **Note:**

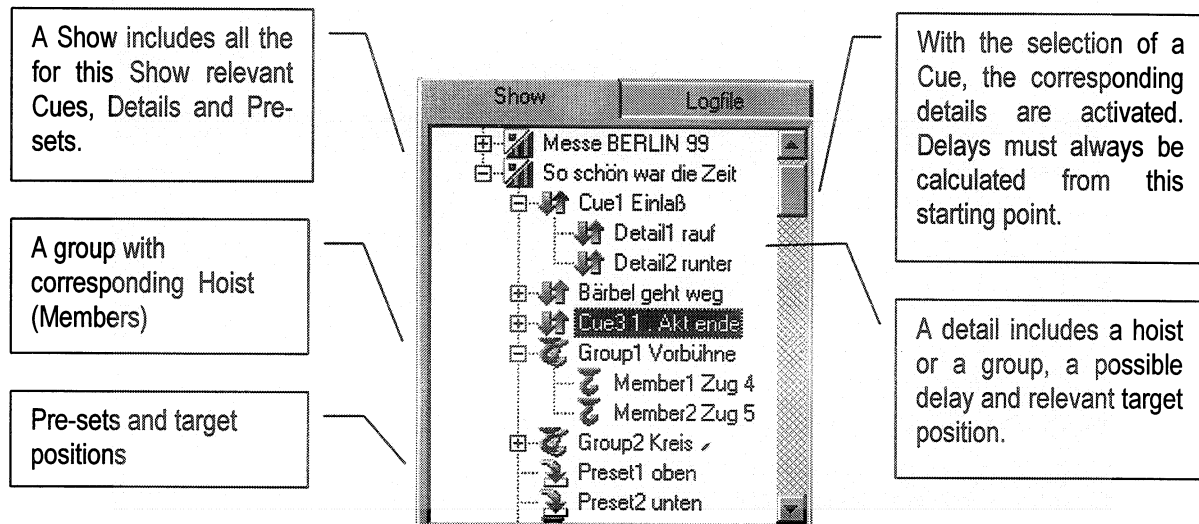
*If one hoist has different goal positions in more than one cue, the last registered cue position prevails provided that these cue's are activated at the same time.*

If a only Cue should start from a certain Detail position, than this Detail could be marked as such and than click at that vary moment on "Activate Cue". Only Details from that marker onwards will be activated, previous Details remain on hold.

## PROGRAMMING

### System tree structure

The STAGEMAKER CONTROLLER software operates according to the following hierarchical system:  
This data is managed in an overview window in a so-called tree diagram:



By clicking the + or -, the tree can be opened further or closed. The editing area automatically changes to the respective area when an item is selected by clicking.

Clicking with the right mouse button in the tree structure elements, a sub-menu appears with the functions: Copy - Past - Insert - Add and Delete.

If after a new program start no tree structure appears, or if no Hoists are shown in the tree, then the databank is empty.

Click with the right mouse button on the upper button "STAGEMAKER CONTROLL" in the tree, select Add Show and the databank is filled with 64 Hoist.

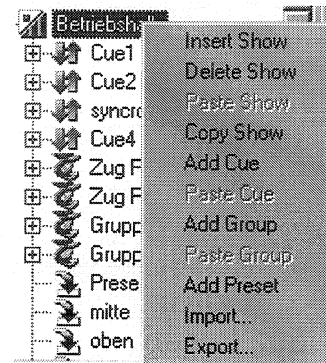
### Import / Export

An Import / Export function is integrated for archiving shows or Shows in long-term memories or for transferring them to other computers.

The selected area opens the menu bar below when the right mouse button is pressed.

After clicking on Import or Export, a standard Windows file-handling window opens.

The areas can be imported or exported according to Windows conventions.



### Copy

The copy function can be used to copy Pre-set, Groups, Details, Cues, Shows and Shows.

The selected area opens the above menu bar when the right mouse button is pressed.

After clicking Copy, a standard Windows window opens.

The areas can be copied according to Windows conventions.

### Paste

The Past function allows you to insert groups, Details, Cues and Shows. Click the right mouse button and the above mentioned sub-menu appears. By clicking the Past function, a standard sub-menu shows up.

In order to avoid double names and interchanges, it is recommended to choose new names each time.

### Insert

With the Insert function it is possible to insert a new Show, Cue, Detail etc. at that vary position.

### Add

With the Add function it is possible to Add a new Show, Cue, Detail etc. at the end of the table.

### Delete

The delete function, Deletes the marked item after confirmation. If a Cue is deleted, all the Details of that vary Cue will be deleted as well.

### Add Shows

Any number of Shows can be added and managed. The procedure is as follows:

In order to add a new show, click the right mouse button in the Context menu and subsequently on "Add Show".

Show	Cue	Detail	Group	Member	Preset	Hoist
Name/Location		Description				
Show4		Beispiel				
Betriebshalle		batalpha Test				
Spielwiese						
Show7		Er braucht kein Text eigegeben zu werden				
Show5		Der Text kann bis zu 256 Zeichen lang sein				

The software now adds a new show to the bottom of the tree with the name ShowX (x is a continuous number). The name can be changed by clicking on the same and changing it in the editing area. An additional description can also be entered in the "Description" field.

A new show can also be inserted between two existing shows. For this purpose, right click on the lower of the two shows and then select "Insert Show", otherwise proceed as above.

### Delete Shows

A show can be deleted as follows:

Right click on the show to be deleted and select in the displayed Context menu the item "Delete Show". Confirm the displayed prompt by pressing the RETURN key.

The show is **irrevocably** deleted.



### Adding Hoists to a Show

When a new Show is defined, the software automatically assigns 64 hoists to the Show. This procedure takes a short time.

The individual hoists must subsequently be configured.

Click on the name of the new hoist. In the editing area, the names of the hoist can be changed and an additional description entered in the "Description" field.

The hoist connected to the rack can be assigned as a number in the control software as follows

$$\text{Hoist-ID} = (\text{Rack ID} - 1) \times 8 + \text{slot ID}$$

Example: A hoist is plugged into slot 2 of the rack with the ID 2. The hoist ID is accordingly  $(2-1) \times 8 + 2$ , i.e. 10. In the operating computer, it is designated H10.

Enter the upper and lower software limits in the LimitLow (lower) and LimitUp (upper) fields. The used unit is centimetres.

This is now followed by entry of the ProxValue. This entry is required so that various hoists with different resolutions can cover the same distances. Select the connected hoist from the selection list.

Confirm all entries by pressing the Return key.

Show	Cue	Detail	Group	Member	Preset	Hoist
Name	Description	LimitLow	LimitUp	ProxValue		
Peter	Vorbühnen Zug 1 ca. 500kg	0	2000	SM 10		
Pan	Vorbühnen Zug 2 ca. 450Kg	0	2000	SM 10		
H3	Circel fornt	500	1500	time		
H4	Circel Left	500	1500	time		
H5	Circel right	500	1500	time		
H6		-296	2970	SM 10		
H7		-296	2970	CM VL		
H8		-296	2970	CM VLL		
H9		-296	2970	CM Prost:		
				Movecat		
				Liftcat		
				Liftcat oh		

A new hoist can be inserted between two existing hoists. For this purpose, right click on the lower of the two hoists and subsequently select "Insert Hoist", otherwise proceed as above.

## Add Pre-sets

In order to facilitate programming, fixed reference positions can be defined for each hoist (so-called pre-sets). The procedure is as follows:

In order to add a new pre-set for a hoist, right click on the respective hoist.

In the Context menu, click on "Add Pre-sets".

The software now adds to the bottom of the tree of the respective hoist a new Pre-sets with the name Pre-setX (x is a continuous number). The name can be changed by clicking on the same and changing it in the editing area. An additional description can also be entered in the "Description" field.

Show	Cue	Detail	Group	Member	Preset	Hoist
	Name	Description				cm
	Preset4 unten	in Baden Baden die Parkhöhe des Autos				160
	mitte	Leinwände auf Projektionshöhe				200
	oben	Obere Parkposition				250
	ganz oben	Unterkante Grid				300

Define the required position in the "cm" field.

Confirm all entries by pressing the Return key.

A new Pre-set can also be inserted between two existing Pre-sets. For this purpose, right click on the lower of the two Pre-sets and subsequently select "Insert Pre-set", otherwise proceed as above.

## Delete Pre-sets

In order to delete an Pre-set, the procedure is as follows:

Right click on the Pre-set to be deleted and select in the displayed Context menu the item "Delete Pre-set". Confirm the displayed prompt by pressing the RETURN key.

The Pre-set is **irrevocably** deleted.

### Add Groups

Various hoists of a Show can be combined to a group. There are three different types of groups to consider:

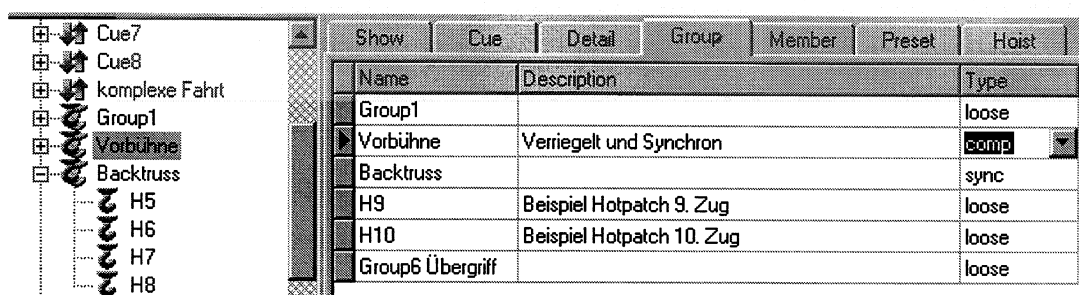
1. non conditional group      Loos
2. synchrony group              Sync
3. conditional group            Comp

The procedure is as follows:

In order to add a new group for a Show, right click on the respective Show.

In the Context menu, click on "Add Group".

The software now adds to the bottom of the tree of the respective show a new group with the name GroupX (x is a continuous number). The name can be changed by clicking on the same and changing it in the editing area. An additional description can also be entered in the "Description" field.



A new group can also be inserted between two existing groups. For this purpose, right click on the lower of the two groups and subsequently select "Insert Group", otherwise proceed as above.

If all Hoists are appointed to a mutual groups and also single Hoists are appointed to their own group, the configuration could be considered as a Patch field. If then in a Detail instead of now referring to the Hoist, the Group is selected, it is possible to change the Hoist places without consequences.

### Delete Groups

In order to delete a group, the procedure is as follows:

Click with the right mouse button on the group to be deleted and select in the displayed Context menu the item "Delete Group". Confirm the displayed prompt by pressing the RETURN key.

The group is **irrevocably** deleted.

### Add Group Members

In order to assign a hoist to a group as a member, the procedure is as follows:

Right click on the respective group.

In the Context menu, click "Add Member".

The software now adds to the bottom of the tree of the respective group a new member with the name MemberX (x is a continuous number). The names can be changed by clicking on the same and changing them in the editing area. An additional description can also be entered in the "Description" field.

A new member can also be inserted between two existing members. For this purpose, right click on the lower of the two members and subsequently select "Insert Member", otherwise proceed as above.

### Delete Members

In order to delete a member, the procedure is as follows:

Click with the right mouse button on the member to be deleted and select in the Context menu the item "Delete Member". Confirm the displayed prompt by pressing the RETURN key.

The member is **irrevocably** deleted.

### Add Cues to a Shows

Any number of cues can be added for a Show. The procedure is as follows:

Right click on the required Show of the respective show.

In the Context menu, click "Add Cue".

The software now adds to the bottom of the tree of the respective Show a new cue with the name CueX an (x is a continuous number). The name can be changed by clicking on the same and changing it in the editing area. An additional description can be entered in the "Description" field.

A new cue can also be inserted between two existing cues. For this purpose, right click on the lower of the two cues and subsequently select "Insert Cues", otherwise proceed as above.

### Delete Cues

In order to delete a cue, the procedure is as follows:

Click with the right mouse button on the cue to be deleted and select in the displayed Context menu the item "Delete Cue". Confirm the displayed prompt by pressing the RETURN key.

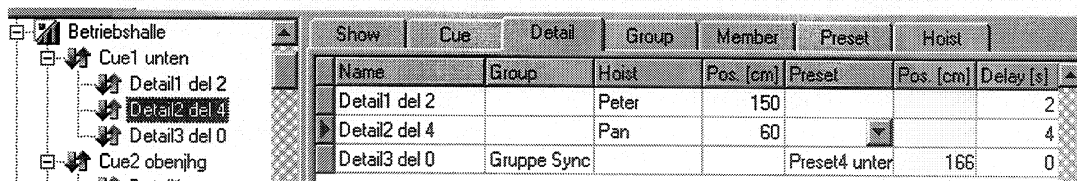
The cue is **irrevocably** deleted.

### Add Details to a Cue

Right click on the respective cue.

In the Context menu, click on "Add Detail".

The software adds to the bottom of the tree the respective cue a new detail with the name DetailX (x is a continuous number). The name can be changed by clicking on the same and changing it in the editing area. An additional description can also be entered in the "Description" field.



Name	Group	Hoist	Pos. [cm]	Preset	Pos. [cm]	Delay [s]
Detail1 del 2		Peter	150			2
Detail2 del 4		Pan	60			4
Detail3 del 0	Gruppe Sync			Preset4 unten	166	0

To be entered now is the hoist or group to be used for the detail. Enter this in the respective column of the Detail table in the editing area.

Also enter the required target position either by entering an Pre-set (Hoist or Group) or the position in cm in the respective column.

If several hoists with the same position are to be entered, these can be copied with the copy function. After entering a height and confirming the same by pressing the Enter key, press and hold the Ctrl key and press the letter C (as in Windows applications). For the next hoist, mark the field (flashing cursor suffices) and press the Ctrl and V key. The parameter is copied.

A delay can also be entered. The seconds entered under Delay cause this detail to be initiated after lapse of this delay, counting from the time when the cue was started with Go. End all entries by pressing the Return key.

A new detail can also be inserted between two existing details. For this purpose, right click on the lower of the two details and subsequently select "Insert Detail". Otherwise proceed as above.

### Delete Details

In order to delete a detail, the procedure is as follows:

Click with the right mouse button on the detail to be deleted and select in the displayed Context menu the item "Delete Detail". Confirm the displayed prompt by pressing the RETURN key.

The detail is **irrevocably** deleted.

### User Menu

In the User menu, it is possible to add a number of users. These users are to be identified by a Password.

The Password is case sensitive.

A new user has be inserted by the Supervisor, who has access to all levels of the software. User can't appoint new users nor change Parameters.

For the first time, the system is configured with the Username "admin" and Password "admin"

### Menu Options / Simulation

If in the menu field after Option – Simulation is selected, the PC is disconnected from the rack and is it possible to work with the PC fully in depended from the rack and its connected Hoists.

One is able to program complete Shows and make simulations in order to become familiar with the software. The Simulation mode could be used any time, at home in the office etc.

In the simulation mode all the Hoists are running with a speed of 1.8 m/min.

The Simulator has to be closed down before to return to the rack-mode. Click again on "Simulation".

### Menu Option / Configuration

In this Menu there are three pages,, ProxValues, ErrorDefinition and Parameters .

#### ProxValues

In this table, the specific hoist values are to be listed. For hoists with an incremental encoder, the number of pulses per meter lift should be entered in the corresponding box and in the column No Proximity the value should be then "false".

Hoists without encoder are running on time-bases, therefor it is essential to enter the full load speeds up and down. Since these differ due to gravity effects, the speed has to be accurate up to two figures behind the comma. The No Proximity value must be then set to "true".

Configuration						
ProxValues	ErrorDefinition	Parameter				
Name	Description	ProxValue l/m	No Proximity	V Up m/min	V Dn m/min	
StdProx	new hoists get this prox-value	75	false	2	2,34	
SSMDA	Verlinde Stage Maker 10	178	false	8	8	
CM TCu	CM Tomcat USA	171	false	4	4	
CM ProG	CM Prostar Germany without encoder	0	true	3,962	4	
CM ProS	CM Prostar Spain with encoder	641	false	0	0	
CM PL	CM BGV C1 Landsamtauer	136	false	0	0	
CM VLL	CM BGV C1 Schmelzauer	136	false	0	0	
Movecat	Logiklift BGV C1 Think Abele	1515	false	0	0	
Movecat	Logiklift BGV D8 Think Abele	0	true	5,986	6	
Liftcat	Logiklift BGV C1 Müller Trussing	312	false	0	0	
Liftcat	Logiklift BGV D8 Müller Trussing	0	true	5,986	6	

*Note:*  
 Until the software versions 1.1.52b, the ProxValues were calculated with a different coefficient.  
 For SM10 single fall units the value is 178. Two fall hoists (from SM10B) the value is 356.



### Parameters

Configuration	
ProValues	ErrorDefinition
Parameter	Value
MonicaVersion	106
MonicaPortBase	9800
FtpServerPort	ftp
MonicaIntervall	200
SynchronToleranz_cm	7
SynchronWeiter_cm	2
ModularVersion	49
CompileDate	15.6.1999
CompileTime	16:30
DigitalInBEUnten	2
DigitalInBEOben	8
DigitalInOverload	4
DigitalInUnderload	4
DigitalInImpuls	32
DigitalInNotend	16
MaxUp	3000
Protocol	UDP
MaxDown	-300
AppNameLong	Modular Motion Control
AppNameShort	Modular

- MonicaVersion – Rack-software version (should be the same as for the PC software)
- MonicaPortBase – Rights reserved
- FtpServerPort – Rights reserved
- Monicaintervall – Rights reserved
- SynchronToleranz\_cm – Maximum distance between synchronised Hoists before a correction is executed by the system.
- SynchronWeiter\_cm – Maximum distance from synchronised level before a stopped Hoists continues.
- ModularVersion – Rights reserved
- CompileDate – Rights reserved
- CompileTime – Rights reserved
- DigitalInBEUnten – Rights reserved
- DigitalInBEOben – Rights reserved
- DigitalInOverload – Rights reserved
- DigitalInUnderload – Rights reserved
- DigitalInImpuls – Rights reserved
- DigitalInNotend – Rights reserved
- MaxUp – Upper electric endswitch
- Protocol – Rights reserved
- MaxDown – Lower electric endswitch
- AppNameLong – Rights reserved
- AppNameShort – Rights reserved

### Error definitions

Error definitions are given to locate eventual problems. For interpretation as well as action, the rights are reserved.

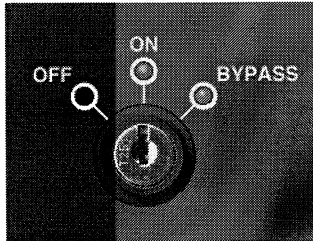
Configuration		
Prox/Values	ErrorDefinition	Parameter
Errorcode	Kind	Description
1	Info	Upper Limit reached
2	Info	Lower Limit reached
3	Warning	Emergency Limit reached
4	Error	wrong direction from proximity-switch
5	Error	proximity-switch failure
6	Error	Overload
7	Error	Underload
8	Error	Digital-In failure
9	Debug	unused
100	Debug	Sending Master-Telegram to Monica failed
101	Debug	Data-Arrival from Monica without connection
102	Debug	Object-Telegram from Monica with wrong size
103	Debug	Login-Telegram from Monica with wrong size
104	Debug	Login from Monica successfull
105	Debug	unknown Telegram from Monica
106	Debug	Connection-Request from Monica
107	Debug	TCP from Monica already used
108	Debug	Connected to Monica
109	Debug	TCP Error
110	Debug	Telegram from Monica with wrong size
111	Debug	Object-Telegram from Monica with wrong crc
112	Debug	unused
113	Debug	Version Update Monica
114	Debug	wrong Version from Monica
115	Debug	TCP timeout
116	Debug	TCP overflow
117	Debug	unused
300	Debug	destination value too large
301	Debug	destination value too small
302	Debug	unused
303	Debug	emergency limit reached
304	Debug	unused
305	Debug	proximity switch failure
306	Debug	overload
307	Debug	underload
308	Debug	unused
900	Error	group is closed for hoist
901	Error	hoist with sync, cannot overload
902	Error	other group with sync, cannot overload
903	Error	detail not found
904	Error	group not found

Please note that the software considers no load (fault 6) and overload (fault 7) as one signal. It also is possible that no load or overload are registered as fault 306 and 307. These differences have no meaning for the operator, but is just an indication for internal use. The same is applicable on error codes 3 and 303.

### APPENDIX 1

#### Service info

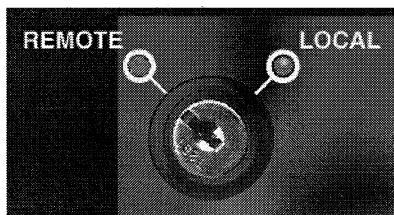
#### OFF - ON - BYPASS key-switch LED status



	LED OFF	LED ON	LED BYPASS	Status
Key-switch				
ON		Green		Standby
OFF	Red			E-Stop initiated or operating delay Rack has disconnected the power supply to the hoists. The main contactor is not activated. The operating computer cannot identify any hoist. Operating delay after about 5 seconds
OFF				Device is switched off further linked racks cannot assume standby mode as the switched off device interrupts the emergency stop chain.
BYPASS		Green	Green	Slack rope bypass If hoists have initiated a slack rope fault and this was acknowledged, further operation of the hoists is possible by reselection by holding the key-switch in the BYPASS position and simultaneously pressing the GO button. <b>ATTENTION:</b> This mode bypasses a safety device and requires special observation and takes place on the responsibility of the user!



### REMOTE - LOCAL key-switch LED status



Key-switch	Remote	Local	
Remote	Green		Hoist control takes place with the <b>operating</b> computer. No hoists can be selected at the rack.
Local		Green	The rack is in the <b>backup</b> mode. Hoist selection takes place directly at the rack. Movements are initiated by pressing and holding the rack Go button as well as by pressing and holding the Go button of another linked rack or via an associated EMERGENCY STOP controller. The hoists in the operating computer are displayed hatched.

### PHASE FAULT LED status



Phase	Status
RED	Phase sequence confused phase sequence reversible via phase reverser CEE connector at rack.

### Problem solving after installation

Problem description	Solutions
Despite switching OFF-On and waiting for lapse of delay, red OFF-LED does not go out and the rack does not function.	<p>If the rear phase LED shows red, a phase has failed or two phases are reversed.</p> <p>In order to correctly pole a reversed phase, a mechanical phase reversing device is provided at the CEE connector. With a wide-bladed screwdriver, slight pressure must be exerted on the recess between two phases in order to reverse two poles by twisting. When the pressure is released the two poles snap in place. Reconnect the cable and, if no phase is missing, the phase fault LED must be off.</p> <p>Not all link and emergency stop connectors are connected. This should be repeated and the procedure described under installation followed.</p>
No LED lights at ON/OFF/BYPASS key-switch and device cannot be activated, despite supply voltage being present.	Power supply fuse failed. Check and replace if necessary.

### Problem solving in operation

Problem description	Solutions
Following an emergency stop the red Off LED does not go out despite switching off and the rack does not function.	An Emergency Stop button was not released. All Emergency Stop buttons must be released and subsequently switched OFF again. Operation of the main contactor must be audible.

Despite choosing the hoist selection buttons, no hoists can be selected.	Key-switch is set to REMOTE. It must be set to LOCAL.
As a target position 200 was entered. The hoist only moves up to 199 or 201.	So that a hoist does not constantly move back and forth in order to reach the exact centimetre (overswing), this tolerance is necessary due to the system and is not a fault.
After using the RefPos command, values are incorrect.	As a result of a power failure of the rack, the current positions were not saved. Saving only takes place when an Ethernet connection no longer exists, e.g. ending STAGEMAKER CONTROLLER software.
Clicking on the direction arrows with a registered hoist has no effect.	<p>The hoist has no actual position. Click on RefPos and the data will be transferred from the rack to the operating computer or enter the actual position with NEW RefPos by right clicking the mouse button on the respective hoist. Clicking is subsequently possible or</p> <p>The limits are set too narrow and the actual position is within these limits. Either the actual position is within the limit, as described above, or the limits (LimitLow, LimitUp) corrected via the Hoist folder.</p>

### Fuses

- There are two three-phase 16 A miniature circuit-breakers at the rear. These are intended for protection of the hoists. The first block protects hoists 1 to 4, the second block protects hoists 5 to 8. On tripping, the cause must be remedied at the hoist or its supply cable, whereupon the miniature circuit-breaker can be switched on again.
- Provided at the rear is also a 10 A fuse holder. This is seated next to the 220 V socket-outlet for non-heating apparatus and protects the same. On tripping, the cause at the connected consumers or their supply cable must be remedied.
- Also provided at the rear is a 3 A fuse holder, which is the back-up fuse for the power supply. If this fuse should trip, the service department should be contacted if reconnection is unsuccessful.
- Inside the device are three fuses for the internal wiring to terminal strips as well as a further fuse subsequent to the power supply in the 24 V circuit. Tripping of the same is not visible externally and the service department must be contacted in any event.

## GLOSSARY

English a > z	Deutsch	Meaning
Activate	Bereitmachen	The marked cue is loaded into the replay register in order to start it as required.
Add	Addieren	Add
Pre-set	Zeiger auf einen Speicherplatz	In an Pre-set a target position is entered. If in all cue details no absolute value is entered as the target but an Pre-set, the cue details then refer to this storage Show. With a subsequent change (e.g. show in another hall with low ceiling) not all cue details have to be changed, but only the respective Pre-set.
Backdrop	hinterer Aushang	
Bug	Käfer	Program fault
Bypass	Überbrückung	This enables a hoist to be lowered, despite a slack rope protective mechanism trying to stop the hoist.
Camlock		Plug-in system for high currents
Catwalk		Small walkway on the traverse
all	Alles	
Clear	Löschen	
Cue	Verwandlung	A scene with a specific cue sequence. A cue is assigned at least one cue detail. Cue selection with the Go command is the starting point for all associated cue details.
Cue Detail	Teilbewegung eine Verwandlung	A hoist or group movement with the associated parameters is stored in a cue detail.
Dead man pedal	Totman	In remote mode the CNTL key
Delay	Verzögerungszeit	Is always calculated from the initiation of the respective cue
Delete	Löschen	
Description	Beschreibung	Comment field
Down Stage	Zur Vorbühne	Stage front side
Download	Herunterladen	Files from the internet can be copied to the hard drive.
Enter	Befehl ausführen	Keyboard: The arrow curving from the top to the left.
Error	Fehler	
E-Stop	Not-Aus	Stops all movements immediately.
Ethernet		Computer to computer transfer system
False	Fehler	
Flash memory		Memory card that replaces a hard drive and is far less sensitive to shocks.
Folder	Ordner	Means of presenting structures more clearly of for paging.
Go	Start	All movements under a cue detail are initiated.
Grid	Schnürboden	
Ground Support (Base)		Frame system on which the traverse structure stands on the floor

Group	Gruppe	Group of individual hoists
Hoist	Kettenzug	
Hub		Ethernet link box which distributes data to the computers
ID	Adresse	Enables the computer to distinguish between the various racks.
In	Eingang	
Insert	Einfügen	
Install		Installs a program on a computer hard drive and sets up the computer for operation.
Internet		Worldwide facility for data exchange
Limit	Begrenzung	
Link	Verbindung	When devices are connected to each other they re linked
Local	Vor Ort	Backup control at the rack
Show	Örtlichkeit	By changing the Show, the limits and Proxvalues of the respective Show are adapted, e.g. to the Cologne Arena
Low	Unten	
Member	Mitglied	Term for a hoist when assigned to a group
Menu	Befehlsauswahl	
Off	Aus	
On	Ein	
Optional	Zubehör	
Out	Ausgang	Exit
Password	Zugangsberechtigungs- ungswort	
Patch	Vertauschen	E.g. replacing hoists in an emergency but the control declares the new hoist under the old name
Performance	Leistungsfähigkeit	
Pers. best boy	Kabelaffe	Assistant to the electrician, pers. gaffer
Pers. gaffer	Beleuchter	Responsible for lighting and power
Pers. gofer	Sprinter, Runner	Helper with local knowledge for errands
Pers. grip		Camera track constructor
Pers. key grip		Technical support and camera assistance
Pers. rigger	Bühnenarbeiter	Rigger (constructs traverse structures)
Pers. Showcaller	Inspizient	
Pers. Stage hand	Aushilfe	Helps with assembly and dismantling
Pers. stage hand	Bühnenhelfer	
Pers. Stage Manager	Bühnenmeister	
Pipe	Rundrohr 48 mm	
Prepare	Vorbereiten	Prepare Go prepares the activation of a cue.
Preset	Voreinstellung	Target position
Proxvalue	Umrechnungswert	Number of pulses per meter lift.



Acknowledged	Bestätigt	In this program, every entry must be concluded by pressing the Enter key. Errors must be acknowledged.
Rack	19" Gehäuse	The STAGEMAKER CONTROLLER R8CPU control in 19 Inch rack 6U
Reference position	Ist Position	Current height of hoist.
Remote	Fernsteuerung	The operating computer controls the rack.
Reset	Rücksetzen	A fault can be acknowledged with a reset.
Return	Befehl ausführen	Keyboard: Key with arrow curving from the top to the left.
Safety	Sicherheitsseil	
Show	Veranstaltung	
Socapex		Connector equivalent to our Hartings, but is circular
Stage	Bühne	
Stage Left	rechte Bühnenseite	On a German stage this is stage right, since in Germany the stage hand stands on the stage and looks into the audience, whilst the English guy orientates himself from the aspect of the audience.
Stage right	linke Bühnenseite	See also Stage Left
STRG	Steuerung	Special key due to dual key assignment.
Supervisor		User who may also edit parameters
Synchronous	Aufeinander abgestimmt	Hoist groups in synchronous mode wait for the slowest hoist until it is roughly at the same height.
TCP		Ethernet protocol
Trackpad		Mouse substitute used with a Laptop
Traverse		Supporting hanging ladder construction from which spotlights and other equipment can be suspended. This construction is lifted with a hoist.
Truss	Abk. Traverse	See Traverse
Trusspin	Bolzen	Pin for truss joint
UDP		Ethernet protocol
UP	Oben, rauf	Attention: When the English and Germans carry a heavy crate and call "Up"!
Up Stage	Zur Hinterbühne	Stage backside
Update	Neue Version	Programs are updated with an update.
User	Benutzer	

### ADDITIONAL POINTS OF ATTENTION

Position as per 05-12 Vers. 1.11.54

- With a 200 MHz Pentium of average performance, STAGEMAKER CONTROLLER R8CPU does not run stable when other programs are also running. Please observe the system conditions! The consequence would be a timeout in the protocol and stopping of all movements (failsafe).
- STAGEMAKER CONTROLLER R8CPU is not compatible with Compuserve software. The consequence would be a timeout in the protocol and stopping of all movements (failsafe).
- In the event of failure of the supply voltage and simultaneous loss of the Ethernet, it can occur sporadically that the actual positions are lost. It is recommended to make a back-up when parking the hoists (non-use). Data to be copied is to be found under **C:\Programme\.....data**.
- Ending the software by leaving Windows or simply switching off the computer can damage the STAGEMAKER CONTROLLER R8CPU database. The files in the data directory form the database.

Please contact us if a systematic fault should occur in the software or hardware, so that we can improve our product and pass on your experience to other STAGEMAKER CONTROLLER R8CPU users on the Internet.

#### Service Address

VERLINDE  
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**LIST OF ACCESSORIES**

Designation	Application	Order number
E-Stop device	Hand-held emergency stop controller	ESD-8A
E-Stop cable (20 m)	For establishing a connection between the hand-held emergency controller and rack	ESC-8A-20
Dummy plug	If no hand-held emergency stop controller is connected, this connector must be fitted to ensure proper functioning.	ESC-8A-0
Link cable (0,5 m)	50 cm cable for establishing a connection to other racks or if no other racks are present, the link-out must be connected to the link-in.	LIC-8A-0,5
Link cable (20 m)	10 m cable for establishing a connection to other racks	LIC-8A-10
Link box incl. supply cable	For linking racks	HUB-10A
Patch Cable twisted (10 m)	Direct rack connection to the Laptop	PAC-8A-T
Patch Cable (3 m), yellow	Link box connection with rack or Laptop	PAC-8A-3
Patch Cable (15 m), red	Link box connection with rack or Laptop	PAC-8A-15
Ethernet card for Laptop		ETC-10A
Laptop	Incl. Ethernet card and software installation	LAP-71A
Setup Laptop	The network card is supplied by the customer	SWI-1A
Flightcase 19"		FCS-3A
Training 4 hours	Plus travelling costs and expenses	TRA-8A-4

**TECHNICAL DATA****Supply voltage:**

Supply voltage: 400 V

Frequency: 50/60 Hz

Operating current: per chainhoist: 4 A

Connection: 32 A / 3 phases CEE reversing pole socket

Weight: 16 Kg

Dimensions: 263.9 high, 482.6 wide, 473.5 depth (19"

Positioning range: from - 296 cm to 2970 cm

Ethernet protocol: 10 based TCP, UDP

Linkable up to 8 devices

Software: Controls up to 64 hoists simultaneously

**CE, BGV-C1 or BGV-D8**

## EC DECLARATION OF CONFORMITY

We, ETS VERLINDE S.A. herewith declare that the type of construction of the following designated system in the form put into circulation by us, complies with the pertinent EC Directives specified below.

This declaration becomes null and void if amended without our prior consent.

Designation: STAGEMAKER CONTROLLER for hoists, accepted  
according to BGV-D8 and BGV-C1

Type: R8CPU-D8 and C1

Order number:

Pertinent EC Directives:	73/23/EEC	(Low-voltage Directive)
	89/392/EEC	(Machine Directive)

Amended by: 91/368/EEC; 93/44/EEC, 93/68/EEC  
89/336/EEC (Electromagnetic Compatibility)

Amended by: 91/263/EEC; 92/31/EEC; 93/68/EEC

Harmonised standards referred to: EN 292-1  
EN 292-2  
EN 60204-1 (VDE 0113; VDE 0100)

European standard: DIN 56925 (BGV-C1 entertainment hoists)

Vernouillet, 20-11.2000





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