

Operating Manual

Mounting instruction

H153 V2

for the radio control system of the company



Serial number:

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(Please fill in the serial numbers here:)

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0. Extent of supply

- 1 X H153V2 with fixed Antenna

1. Safety instructions:

Even if you have worked with radio remote controls before, please read this operating manual before initial operation carefully! Only this one contains the latest information for your Hatox system and how to use it!

Please note in any case the respective working safety and protective precaution instructions! Only instructed and authorized personnel may operate the Hatox system! The safety features integrated in the Hatox system have to be checked on a regular basis.

In case of any failures the Hatox module has to be turned off at once. The modul has to be deactivated via stop button (has to be connected directly to supply) . The connecting cable has be disconnected from the stationary transceiver of the unit to be controlled.

Never operate a defective Hatox system!

Contact you distributor or Hatox directly!

Always stay in range of sight with the unit to be controlled!

Never trust the LCD display. The shown information may be wrong.

By neglecting this advice you jeopardize yourself or other persons! Hatox declines any warranty or liability in this case! The radio system is only suitable for the control of construction machinery and industrial equipment. Only there the applied safety measures (STOP, zero position) are fully effective. A different use is not allowed and absolves Hatox from any responsibility!

2. General information

The power supply of the radio control is provided in most of the case via the connecting cable.

For machines that have never been operated with a radio control before, generally a ground wire (neutral) has to be added. Otherwise the power supply to the Hatox electronics cannot be set up!

Please mind that the operating voltage of the radio systems complies with the connecting values of the unit to be controlled. The valid operating voltage is written down in the enclosure.

Never expose the Hatox components to the harsh water jet of a high pressure cleaner! The same applies for the transmitter!

The module may only be installed in an upright position to the outer wall of the switching cabinet (the antenna shall always overlap the wall). It is important that the antenna is not shielded by metal parts, neither partly nor totally.

The module shall always be installed in that manner that the antenna remains visible with every position change of the transmitter.

When operating never disconnect the antenna from the stationary transceiver. This worsens the quality of reception.

In case of service and maintenance work please disconnect the Hatox control completely from the machine (including possibly an external antenna).

3. Safety features in the Hatox system

In the portable H153V2:

stop button

In the stationary H129V2:

stop output

In order to grant a fault-free operation please adhere exactly to the following rules for operation: The machine can only be turned on (provided that the transmitter is ready for operation) if no buttons and joysticks are operated.

4. Functioning recheck:

For keeping up the operating safety a regular functioning recheck of the Hatox radio control is necessary. For daily one-shift operation we recommend this check at least once per day or after every change of shifts. The check can be done by help of the LEDs on the stationary unit/units. For that the transmitter has to be put in a ready-to-operate status.

5. OPTical check:

Before starting to operate please check if the transmitter shows any damages!

Please check if all protective devices are provided and in working order!

Never work with a unit that shows damages like that!

Have those defects fixed immediately!

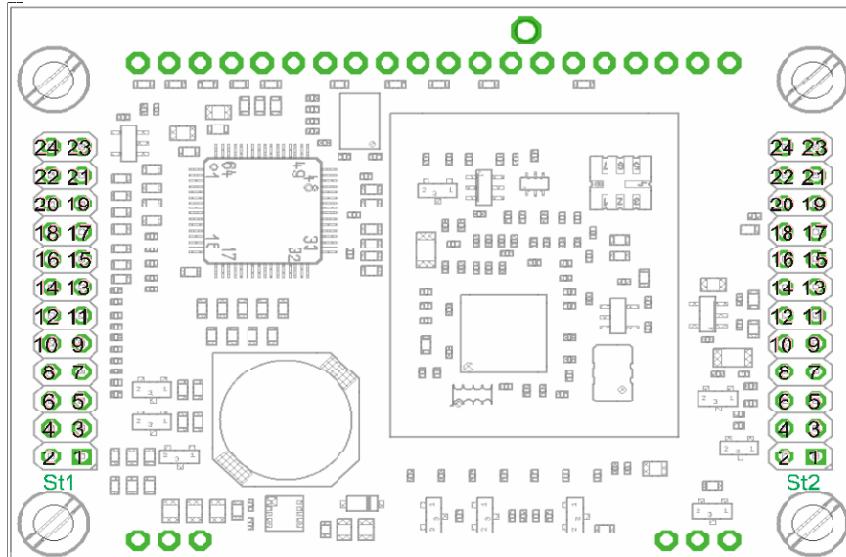
6. Initial operation:

STOP-control: Press the stop push button connected with the module. Afterwards please check if the machine is in stop status, i.e. if it is turned off. (Switch-off time depending on application. Please check the time in the operating manual of the machine).

Additionally, please effect the testing procedures which are described in the manual of the machine!

7. INTERFACING

Plug	PIN	Function Description	Plug	PIN	Function Description
ST1	1	ON/OFF-Input (3.3V)	ST2	1	Do not connect
ST1	2	ON/OFF-Input (3.3V)	ST2	2	Do not connect
ST1	3	ON/OFF-Input (3.3V)	ST2	3	Do not connect
ST1	4	ON/OFF-Input (3.3V)	ST2	4	Do not connect
ST1	5	ON/OFF-Input (3.3V)	ST2	5	RXD / optional
ST1	6	ON/OFF-Input (3.3V)	ST2	6	Do not connect
ST1	7	ON/OFF-Input (3.3V)	ST2	7	/ RESET
ST1	8	ON/OFF-Input (3.3V)	ST2	8	TXD / optional
ST1	9	ON/OFF-Input (3.3V)	ST2	9	Power supply 2 .. 6 V / DC
ST1	10	ON/OFF-Input (3.3V)	ST2	10	Do not connect
ST1	11	ON/OFF-Input (3.3V)	ST2	11	Ref. Voltage Analogue inputs 2,5 V DC
ST1	12	ON/OFF-Input (3.3V)	ST2	12	Ground
ST1	13	ON/OFF-Input (3.3V)	ST2	13	Analogue input 0..2,5V DC
ST1	14	ON/OFF-Input (3.3V)	ST2	14	Analogue input 0..2,5V DC
ST1	15	Do not connect	ST2	15	Analogue input 0..2,5V DC
ST1	16	Do not connect	ST2	16	Analogue input 0..2,5V DC
ST1	17	Do not connect	ST2	17	Analogue input 0..2,5V DC
ST1	18	Do not connect	ST2	18	Analogue input 0..2,5V DC
ST1	19	Ground	ST2	19	Analogue input 0..2,5V DC
ST1	20	Do not connect	ST2	20	Analogue input 0..2,5V DC
ST1	21	Output 3.3 V / max. 30 mA	ST2	21	Analogue input 0..2,5V DC
ST1	22	Ground	ST2	22	Analogue input 0..2,5V DC
ST1	23	Do not connect	ST2	23	Do not connect
ST1	24	Ground	ST2	24	Not connected



8. Maintenance:

- When doing electric welding at the machine to be controlled, the receiver has to be disconnected from the power supply! Otherwise the receiver electronics is endangered to be damaged!

9. Warranty:

We grant a warranty of 6 months on all Hatox radio remote controls (transmitter, receiver, battery charger) from the date of sale on. In case of despatch to the manufacturer of the machine please negotiate the warranty with the seller of the complete system. Special conditions may exist.

Labor and material expenses are included in the warranty. Freight has to be taken over by the buyer. Excluded from warranty are: Wear and tear parts, relays and batteries. The warranty of functioning is not valid by damage, accident damage, neglect, incorrect use, disobeying the operating instructions, not-adhering to the operating-, test- and service advices as well as repairs or device changes not authorized by Hatox.

Hatox is not liable for indirect damages and reserves the right to decide for repair or exchange.

10. Safety of this system:

This system is equipped with electronical safety features.

Interferences by other radio remote controls are excluded by an individual code for each system.

WE THINK OF YOUR SAFETY !

Beware of incorrect operation or abuse. This can have consequences for your life, for the machine or other material values.

The following persons may operate the Hatox control:

They have to be qualified and instructed acc. to the rules and regulations.

They have to obey this manual and also the manual of the machine to be controlled.

(SEE MANUAL OF THE MACHINE TO BE CONTROLLED)

The operator has to see to it that no unauthorized personnel gets hold of the radio control once he has put it down (for a break etc.), e.g.:

- by locking away the transmitter
- by taking out the batteries
- by taking out the stop key cap (if it exists)

The operator has to take care that

- the user of the radio control has access to the operating manual
- that the user has read and understood it

11. Source of danger

This system enables the wireless operation of machines. The transmission of control commands is effected, however also outside the range of vision and through or around obstacles.

THEREFORE YOU SHOULD:

Put the transmitter always at a safe and dry (locked) place which is not accessible to other persons.

Always turn off the transmitter when it is not in use.

Before installation, repair or maintenance power supply has to be disconnected.

When welding please be sure that both the power supply and every antenna connection (e.g. to a separate antenna) is disconnected.

12. Safety measures in working area

- Ensure a stable position
- Make sure that nobody stands in the slewing or working area during (initial) operation
- Always use the waist belt / hand strap of the transmitter as far as it is provided

13. Protective Devices

The radio control turns in idle position

- by pressing the red stop button in the control panel of the transmitter
- when leaving the range
- by an error of the transmitter or the stationary receiving or controlling unit
- by taking out the batteries
- when the capacity of the batteries is too low

These protective devices are provided for the safety of persons and material assets and must in no way be removed or bypassed !!!

Additional protective devices are depending on design.

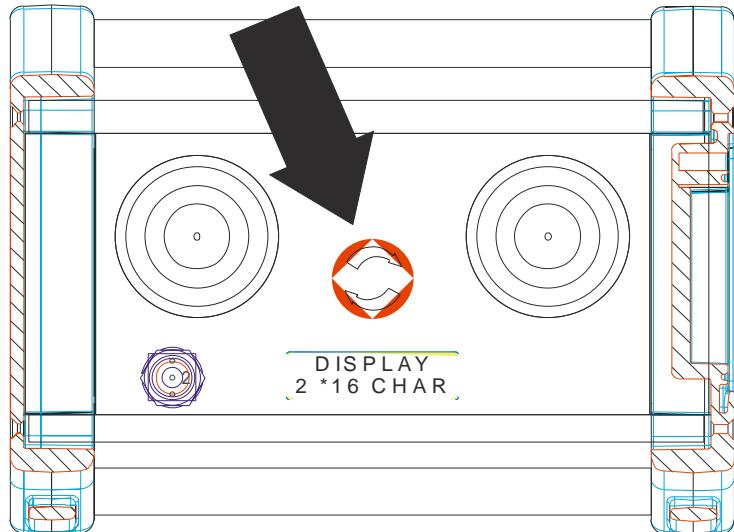
Hatox recommends:

- protective collar / safety bar
- lower positioned control elements

These devices protect the control elements from unwanted operation and therefore from unintended commands.

14. Behavior in case of danger

Hatox recommends strongly to use an e-stop-switch. In case of an emergency immediately press the red stop button in the control panel of the transmitter. For the further procedure adhere to the operating manual of the machine to be controlled.



15. Trouble shooting:

Appearing Error	Possible causes	Trouble shooting
System cannot be put into operation	System is not locked in yet (is shown by „SCAN“ on the display)	After turning on wait up to 5 sec., until „STOP“ is shown on the display. Then activate On/Horn. As soon as „RUN“ is shown in the display, the system is activated.
System cannot be put into operation, no display indication	batteries empty Battery or battery shaft is defect, e.g. <ul style="list-style-type: none">● contact corrosion● battery leaked	Insert new or recharged batteries Check if the same effect happens with a different pair of batteries. If not, dispose the batteries in a proper manner and replace them by new ones. In case that the contacts are corroded, have them cleaned by a person skilled in this.
Period of operating is too short.	Wrong or discharged batteries were inserted.	Check if the power supply of the battery charger was disconnected or if the connection was not properly made.
The transmission of control commands to the machine is disturbed.	No radio connection Check the installation of the stationary transceiver. There should be intervisibility to the antenna. Stationary transceiver resp. the antenna of the transceiver is built in a metal cabinet, a vehicle or in the machine to be controlled.	Check the function of the LEDs at the stationary transceiver (see above). Install the stationary transceiver as described above! Install the stationary transceiver as described above!
Individual functions cannot be controlled.	Interruption of the control cable resp. individual cables between the machine to be controlled and the stationary transceiver or the stationary controller.	Check the plug for tight connection, good contact etc. Check the wiring in the switch cabinet, connector, etc.

16. Mounting instruction

Connecting instructions and initial operation.

The connection to the machine may only be done by an authorized expert who is familiar with the machine!

There are following additional installation instructions:

For any work at the machine and at the Hatox system the stationary unit/s have to be switched off the power.

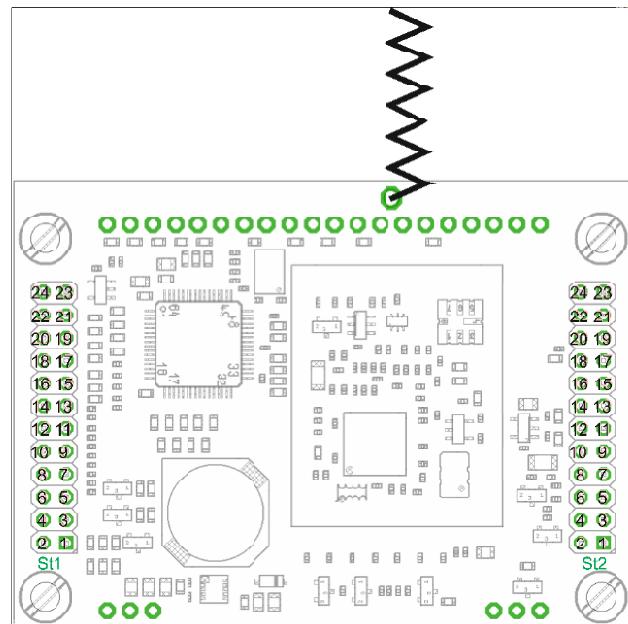
The VDE-specifications as well as the local EVU-regulations and the accident prevention guidelines (UVV) strictly have to be observed.

Hatox does not takes over any responsibility, liability and warranty for any possible personal injury, damage to property and consequential loss which result from improper or reckless use of this system or which contravene the regulations, which this operating instruction, the operating instruction and the general regulations of the machine to be controlled are base on.

It has to be seen to it that the stationary transceiver unit is installed at a well accessible position and not in the object to be controlled.

Generally switch the machine to be controlled off the power before you connect the Hatox system.

Installation of the transceiver:



Only install the stationary transceiver together with the fixed antenna. Do not unsolder the antenna from the module.

17. Maintenance:

The operator has to take care that the devices of the wireless control are checked on a regular basis – at least however once per year by an authorized person (specialist).

A specialist is a person who has sufficient knowledge in wireless controls and machine controls in general as well as in the area of the individual machine to be controlled due to his special education and experience. He has to be familiar with the relevant governmental labor protection laws, accident prevention regulations, regulations and general accepted rules of technics (such as DIN-standards, VDE-regulations, regulations of the mutual indemnity society, EU-standards, technical regulations of other member countries of the European Union or other states of the agreement of the European Economic Area).

He has to be familiar with the work-safe state of the devices for the wireless transmission of control commands.

18. Disposal

Avoid pollution.

Electronic pieces and parts of it are hazardous waste!

This applies especially for rechargeable batteries.

Instruct a specialist with the material processing and disposal.

Save the environment! Use rechargeable batteries only. Avoid the use of standard batteries (non-rechargeable) !

19. Technical data:

Storage temperature:	-40° C to + 80° C
Operating temperature:	-20° C + 70° C
Protection class (not valid for battery charger):	Depending on assembling
Frequency range	902-928 MHz
Baud rate:	4800 baud (bits per sec.)
Range:	50 up to 500 meters (depending on installation and environment)
Power supply of the portable unit:	2 * 1,2 V NiMh- battery (AA)

Information to the user

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Integration of Module

The Grantee is required to ensure equipment authorisation of the end product, which includes the module, under all operating conditions and modes.

Label

End products shall bear a permanent label on which module certification numbers is displayed. The certification number shall be preceded by the text: "Contains:", so it appears as follows:

Contains FCC ID: FCC ID of the module

or

Contains IC: IC certification number of the module

Users Manual

The users manual of the end product needs to include the following information:

Changes or modifications not expressly approved by the party responsible for

compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules and with *Industry Canada licence-exempt RSS standard(s)*. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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RF Exposure

According to the low output power of the device, the module is allowed to be used in portable application.

Approved Antennas:

Frequency	915 MHz
Typ	helical antenna
Connector	Internal antenna
Gain	0 dBi