

USER'S MANUAL

Front Half Filleting System FHF-XB Control Panel

**Document number:
90688_03_00_ENG**

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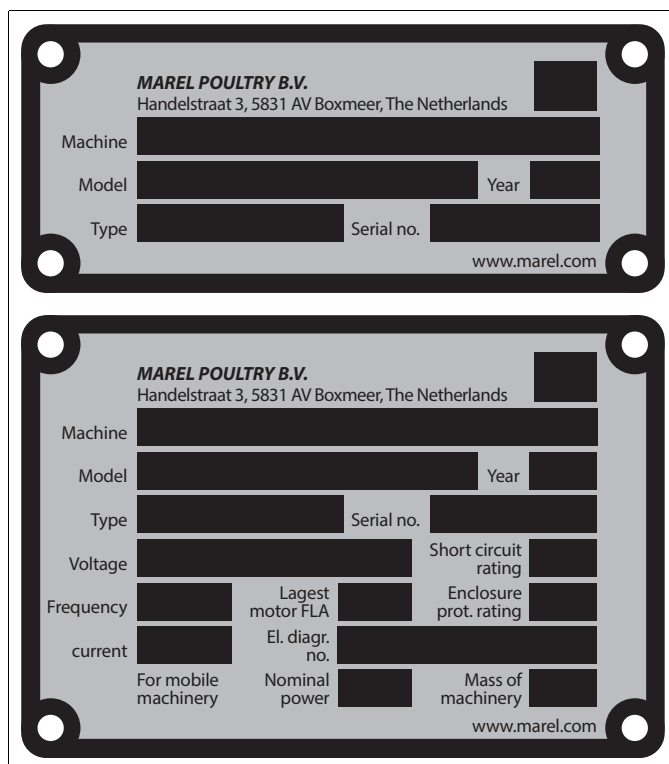


fig. 1 Example machine plate

1 PREFACE

1.1 User's Manual identification

The data on the machine plate can be found in the index of the documentation set, see fig. 1. It contains a reference to the document number of the User's Manual of the machine and the corresponding control panel. Check if the User's Manual belongs to the control panel. The index can also contain references to corresponding documentation.

1.2 General

The User's Manual provides information and instructions for proper and safe use of the control panel and applies to the life of it.

All users of the control panel must be acquainted with the presence and contents of the User's Manual, which for that reason has to be kept in an accessible place.

Carefully read through the User's Manual before starting to use the control panel. Familiarize yourself with the information and follow the instructions.

If you have questions, require explanation of subjects related to the control panel or the User's Manual, please contact Marel Poultry.

You can find the address on the front page.

Replace damaged and missing User's Manuals.

1.3 Reading indicator

This User's Manual contains several boxes. They draw your attention to dangerous situations for the user, control panel and/or product and give you tips. They have been subdivided and displayed as follows:



MORTAL DANGER

The user's life is directly threatened.



WARNING

The user can be (seriously) injured or seriously damage the control panel.

The picture in this box depends on the risk-bearing action that is discussed.



TAKE CARE

The user can damage the control panel or products when the instructions are not carried out with care.



NOTE

Observation containing additional information for the user.



TIP

Provides suggestions and advice to the user to carry out certain instructions more skilfully and easier.

Page and document numbers

Each page has a unique identification and consists of:

- The page number with the total number of pages.

Example:

4 / 24

- The document number and the date of issue.

Example:

90952_00_01_ENG / 17-08-2013

Position numbers and letters in text

Bold printed position numbers and letters in the text refer to the specific section in the figure.

Example:

Control panel **40** must be installed in a



NOTE

The pictures in this User's Manual can deviate from your control panel. Keep this in mind when reading this User's Manual and carrying out operations on the control panel.

Some components can have documentation of their own. Consult the index on this.

1.4 Keeping control panel data up to date

We advise you to keep a logbook.

You can enter data regarding production, maintenance, inspections, defects, repairs, overhauls and other operations on the control panel. See appendix: LOGBOOK.

We also advise you, if applicable, to enter the various values of the process parameters on a registration form. See appendix: PROCESS PARAMETERS.

1.5 General terms of delivery

The general terms of delivery of Marel Poultry B.V. apply to the control panel and can be found in the documentation set.

1.6 Responsibilities of the purchaser

By "purchaser" this User's Manual means every enterprise that uses the control panel, regardless of whether concerns purchase, rent, lease or another

user's right.

**MORTAL DANGER**

If the machine is not installed in accordance with our layout drawings, or if local regulations or the individual circumstances make this necessary, then additional safety measures are necessary.

The purchaser has a duty to familiarize all users with the information and instructions given in this User's Manual.

The purchaser is obliged to take care of the safety of the users and the control panel.

In particular:

- he makes sure that all required information is available to all users.
- he allocates authorities to the users per chapter of the User's Manual.
- only authorized, skilled and instructed users are allowed to carry out the instructions.
- he supervises the users to make sure they meet all regulations and instructions.
- he makes sure that the control panel is only used within the limits mentioned in the User's Manual and "Technical Data".
- he makes sure that the control panel remains in its original state.

1.7 Modifications to the control panel

The data contained in this User's Manual are based on the latest information.

Marel Poultry reserves the right to change the design and/or configuration of its control panels at any time, without any obligation on our part to change any previous supplies accordingly.

The original state of the control panel must not be changed by modifications, repairs and/or other influences by or on behalf of the purchaser or a third party.

1.8 Use of the control panel

- The control panel can only be used for industrial ends.
- The control panel can only be used within the limits mentioned in the User's Manual and "Technical Data".
- Prior written permission of Marel Poultry is required for other use.
- It is not allowed to install parts that have not been supplied, installed and/or released beforehand by Marel Poultry.

2 SAFETY

2.1 Safety at work

The manufacturer has made every possible effort to provide you with comprehensive, accurate information as regards any hazards relating to the operation of the control panel. The purchaser himself shall be responsible for the implementation and proper observance of these rules of conduct.

Observe the current state of labour, safety and environmental regulations when carrying out any operations.

**MORTAL DANGER**

Do not wear:

- loose-fitting and loose articles of clothing.
- jewellery and suchlike.

They can come into contact with moving parts.

Wear footwear that prevents slipping.



Danger of personal injury caused by electrical power.

2.2 Safety labels

The safety label on this page alerts the user to possible danger. You will find it on the control panel and in the text of this User's Manual.

2.3 Hygiene and environment

Observe the rules of hygiene and environment while working on the control panel or carrying out maintenance operations.

Recycling

Offer materials for recycling sorted as much as possible.

Chemical waste

Materials that come under the category of chemical waste should be separated when discharged.

Waste discharge

Waste should only be offered to recognized waste-disposal companies that meet local legislation, standards and regulations.

Putting control panel out of operation

If the control panel is not used for a prolonged period of time or if it is to be dismantled, the purchaser must remove all hazardous parts.

3 TRANSPORT

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

3.1 Transport and storage

- During transport of the machine/control panel follow instructions on the packing.
Consult the weight marking on the packing for transport weights.
- Check if the machines or spare parts are correct and available by means of the documents that have also been supplied.
- Check the machine for transport damage.
- In case of incorrect delivery or damage contact the manufacturer.
- Keep the machine dry, clean and safeguarded against humidity, dust and dirt.

4 MACHINE DESCRIPTION

4.1 Area of applicability

The Front Half Filleting System FHF-XB is supplied with a standard Control Panel.

With the Control Panel the overhead conveyor is started and stopped. Also the speed of the overhead conveyor and all FHF-XB modules are controlled by the Control Panel.

The Control Panel is available in three versions to support various line types of the Front Half Filleting System FHF-XB line. The difference between the Control Panels is the number of motor drives and the handling of signalling capabilities.
See the electrical drawings for details.

Options

Inside the Control Panel space is reserved for three optional frequency inverters to expand of the Front Half Filleting System FHF-XB line with:

- Fillet discharge conveyor (H3667)
- Back meat separation module (H3551)
- Fillet halving module (H3552)

Also a remote control is available to start/stop the Front Half Filleting System FHF-XB line from a place away from the Control Panel.

4.2 Control Panel component names

The Control Panel consists of the following components, see fig. 2 and tab. 1:

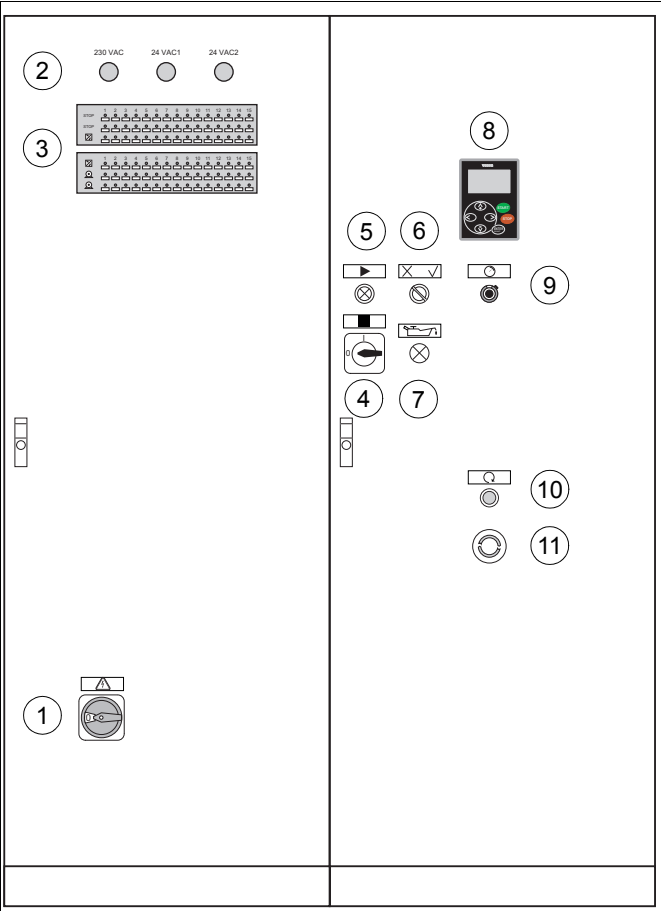


fig. 2 Control Panel components names

tab. 1 Control Panel component names

	Name	Function / remark
1.	Main power switch	Switch on/off the main power.
2.	Indication lights	To indicate the availability of 230 VAC supply- and 2x 24VAC control voltage.
3.	LED failure indication	Indication of fault events in one of the connected modules, safety device, overhead conveyor during production. Also see tab. 3.
4.	Stop switch	To prevent the Front Half Filleting System FHF-XB line from starting.
5.	Start button with indication light	To start the Front Half Filleting System FHF-XB line, the indication light goes on. (to start, first turn Stop switch 4 to "I".
6.	On/off switch chain lubricator	When switched on, the chain lubricator is active.
7.	Indication light chain lubricator	Indication light is on when the chain lubricator is switched on.
8.	Control device of the frequency inverter	This device controls the drive and speed of the overhead conveyor. See paragraph 6.1 Frequency inverter.

tab. 1 Control Panel component names

	Name	Function / remark
9.	Speed control knob	Knob to set the speed of the overhead conveyor of the Front Half Filleting System FHF-XB.
10.	Push button with indication light	When indication light is on you first must reset. See paragraph 7.2.1 Reset procedure error events. Reset is necessary after: - emergency stop - safety failure - motor failure See tab. 3.
11.	Emergency stop button	To operate the emergency stop on the Control Panel.

4.3 Operating principle

The Control Panel monitors the in- and output signals, supplies and controls the drive voltage for all motors in the modules of the Front Half Filleting System FHF-XB line. The control is based on the received signals of all the modules and safety devices in the line.

These signals consist of:

- emergency push buttons and/or pull cords
- safeguards in the line like safety fences, panels, hoods etc.
- thermal failures in the motor drive circuitry
- fuses, frequency inverters

The above mentioned failures become visible on the LED-plates on the front of the Control Panel.

When a failure occurs, the corresponding LED lights up and the FHF-XB line stops. See also tab. 3.

After the failure is solved and the reset button on the Control Panel is pressed, the FHF-XB line can start-up after an acoustic signal. See paragraph 7.3 Start and stop the Front Half Filleting System FHF-XB.

For other possible failures, you can consult the failure list in chapter 8 FAULTS.

If a breast deskinning module is part of the Front Half Filleting System FHF-XB line then a frequency inverter is fitted in the Control Panel to regulate the speed of the drive motor of the pinions.

5 INSTALLATION

The Control Panel is installed by Marel Poultry or by others commissioned by Marel Poultry.
If the purchaser carries out these activities himself then the following instructions apply.

**MORTAL DANGER**

The installation must be carried out by competent, professional and trained personnel.

5.1 Setting up the control panel

Set up the control panel according to the manufacturer's recommendations and instructions.

Note:

- local rules and regulations.
- the location of the control panel preferably in a frost-proof, dry area.
- make the distance between the control panel and the machine as short as possible.
- make sure there is good access to the control panel for servicing.
- the operator of the control panel can clearly see both the personnel and the machine at the same time.

5.2 Connections

5.2.1 Electricity connection

**MORTAL DANGER**

Do the work described in this chapter only if:

1. **the power supply to the machines and/or control panels is switched off.**
2. **all the electrical plugs of the machine have been removed from the wall sockets.**
3. **all the main switches have been fitted with a padlock.**
4. **all measures have been taken to prevent that the electricity is unintendedly switched on.**

Take care when performing the work.

Before connecting, check if the power supply and frequency match the data on the type plate of the main drive. Follow local regulations when connecting the machine.

For data about the connections, see the electric circuit diagrams supplied by the manufacturer.

For connection and consumption details consult the "Technical Data".

- Connect the Control Panel according to the electrical circuit diagrams supplied by Marel Poultry.
- Connect the drives to the Control Panel.
- Check after connection the direction of rotation of the drives.
- There are connection points and signal devices in the Control Panel supplied by Marel Poultry for connecting the emergency stop facilities.
If you wish or if local legislations requires this you can fit the emergency stop facilities in the vicinity of the Front Half Filleting System FHF-XB.



MORTAL DANGER
Check the functioning of all safety facilities prior to operating the machine.

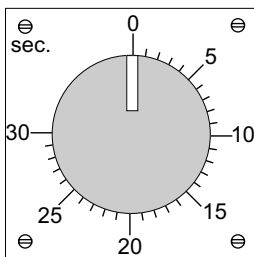


fig. 3 Timer relay warning signals

5.2.2 Connect the warning light and horn

Before you start the Front Half Filleting System FHF-XB line, you must always warn everyone in the vicinity of the line.

The Control Panel has a connection point to attach the warning lamp and horn.

For the safe functioning of the installation, you must connect the warning lamp and horn inside the Control Panel. See the electrical drawings inside the Control Panel.



NOTE

See electrical diagrams on how to connect the warning lamp and horn inside the Control Panel.

You can set the duration of the warning signal with timer relay **1** inside the Control Panel.
See fig. 3.

6 ADJUSTMENT AND SETTING UP



MORTAL DANGER

Activities described in this chapter must be carried out by competent, professional and trained personnel.



MORTAL DANGER

Make the adjustments when the control panel is open and connected. Take care when performing the work.

6.1 Frequency inverter

The User's Manual of the frequency inverter is also delivered as document. In case of differences between this User's Manual and the instruction of the frequency inverter, always follow the instructions of the frequency inverter.

You can find the process parameters for the frequency inverter in tab. 2.

6.1.1 Control Panel

The Control Panel contains keys and a display.

The keys are used for the following:

- Scrolling up or down on the display.
- Changing the parameter value.

The display is used for the following:

- Read-out the parameter value
- Read-out of error code

See fig. 4.

6.1.2 Setting the frequency inverter

You can find the settings for the overhead conveyor belt converters in tab. 2.



fig. 4 Control Panel



NOTE

The electrical diagrams with the settings for the frequency inverter are inside the Control Panel.

In the event of differences compared to the following table, the settings in the electrical diagrams in the Control Panel apply.

The following settings must be changed from the factory setting.

tab. 2 Setting the frequency inverter of the overhead conveyor

Parameter	Function	Value
P2 1.1	MIN FREQ.	20 Hz. (minimum frequency = lowest line speed)
P2 1.2	MAX. FREQ.	50 Hz. (maximum frequency = highest line speed)
P2 1.3	ACCEL. TIME	3 sec. (run-up time from 0 Hz. to the set motor frequency)
P2 1.4	DECEL. TIME	0.1 sec. (deceleration time for the set motor frequency to 0 Hz.)
P2 1.6	MOTOR VOLTAGE	400 V (or another motor voltage if the nominal motor voltage is different)
P2 1.7	MOTOR FREQ.	50 Hz. (or another frequency if the nominal motor frequency is different)
P2 1.8	MOTOR SPEED	1440 RPM (enter the nominal rpm of the motor, refer to the type plate)
P2 1.9	MOTOR CURRENT	* Amp. * Enter the total nominal current of all the connected motors, see the type plate
P2 1.10	Cos ϕ MOTOR	See the motor type plate
P2 1.12	STOP FUNCTION	1 (motor stops according to the set deceleration time)
P2 4.3	DC BRAKE	6.5 (the injected flow during the active DC brake)
P2.11.1	Prod Mul ^(a)	Enter a multiplication factor (range 1-100) to show the number of products per minute and products per hour
P2.11.2	Prod Div ^(a)	Enter a division factor (range 1-1000) to show the number of products per minute and products per hour
Parameter group "S6"		
P6.6.1	Default page	1.25.1 (for reading the line speed in products per minute) 1.25.2 (for reading the line speed in products per hour)

(a) See paragraph. 6.1.3 Prod Mul and Prod Div calculation

For the setting of the parameters, see instruction of the frequency inverter.

Process parameters P2.11.1 (Prod Mul) and P2.11.2 (Prod Div) are specific Marel Poultry settings. See paragraph 6.1.3 Prod Mul and Prod Div calculation. They are not described in the User's Manual of the frequency inverter.

Prod Mul	Number of shackles per minute	
=		
Prod Div	Nominal rpm motor(s)	

Example:

Number of shackles = 165

Nominal rpm = 1100

Prod Mul	165	15 (= Prod Mul)
=		
Prod Div	1100	100 (= Prod Div)
= 0,15 =		

Set parameter 11.1 to 15.

Set parameter 11.2 to 100.

fig. 5 Prod Mul and Prod Div determination

6.1.3 Prod Mul and Prod Div calculation

Determine the Prod Mul and Prod Div of the overhead conveyor belt according to the formula in fig. 5.

Do this as follows:

1. Count the number of shackles which pass by a fixed point in the overhead conveyor belt per minute.
2. Enter the formula:
 - the nominal RPM of the motor(s).
 - the number of shackles per minute that pass by a fixed position in the overhead conveyor.
3. Calculate the value of Prod Mul/Prod Div, see fig. 5.

When setting the Prod Mul and Prod Div, the value must meet the following requirements:

- Enter only whole numbers
- The value must lie in the range of Prod Mul and Prod Div (see parameter P2.11.1 and P2.11.2).

**NOTE**

See the electrical drawings for frequency inverter settings of the Back meat harvesting module, the lubricator and the optional frequency inverters.

7 OPERATION

The following instructions apply if the control panel is provided by the manufacturer and it is connected in accordance with the manufacturers electrical diagrams.

**MORTAL DANGER**

Activities described in this chapter must be carried out by competent, professional and trained personnel.

7.1 Emergency stop



NOTE

Only use the emergency stop in an emergency situation.

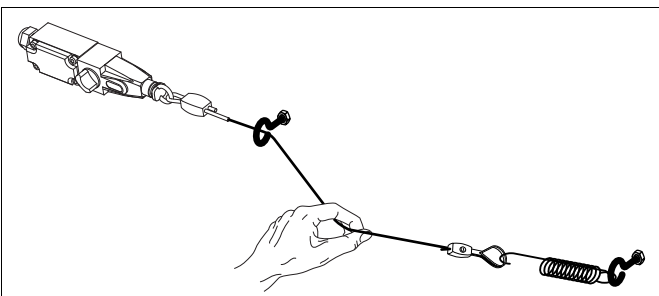


fig. 6 Emergency stop cord

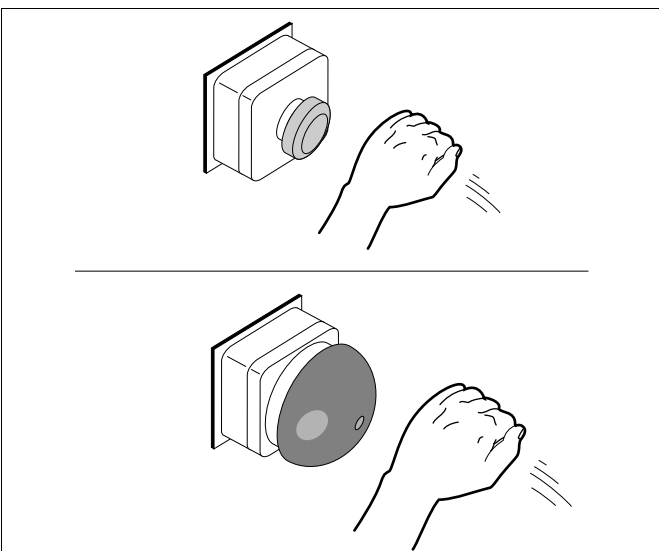


fig. 7 Emergency stop cord

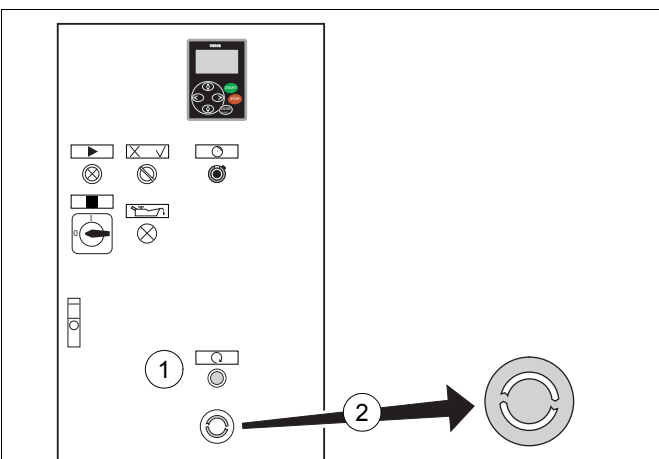


fig. 8 Emergency stop button on the Control Panel

In an emergency situation you must:

- pull the emergency stop cord.
- press the emergency stop button.

See fig. 6, fig. 7 and fig. 8.

When emergency stop 2 is operated then the Front Half Filleting System FHF-XB stops. All electrical supply to the machines are switched off immediately. An error message appears on the Control Panel.

Solve the emergency situation as follows:

1. An authorized person must solve the emergency situation.



MORTAL DANGER

Make sure that nothing is done on the machine until the emergency stop is released.

Warn everybody near the machine before you start the machine again.

2. Release the emergency stop button. See the User's Manual "Emergency stop provisions" (90839).
3. Press reset button 1 to reset the emergency stop error. See fig. 8.
4. Start the Front Half Filleting System FHF-XB. See paragraph 7.3 Start and stop the Front Half Filleting System FHF-XB.

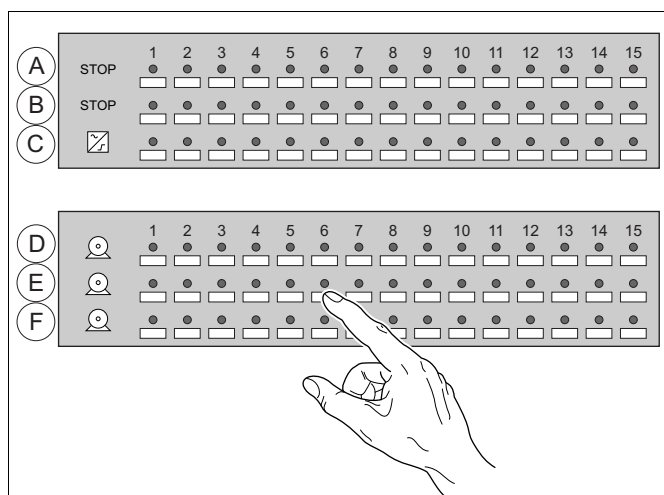


fig. 9 LED plates

7.2 LED plates

The LED lights on the Control Panel go on when faults occur anywhere in the Front Half Filleting System FHF-XB line:

- **A - B LEDs;**
When a LED burns an emergency stop button or the emergency stop cord is activated.
- **C LEDs;**
When a LED burns one of the safeguards is open.
- **D - F LEDs;**
When a LED burns a motor or frequency inverter protection is activated.

See fig. 9.



NOTE

The LED burns until the problem is solved and the reset procedure is carried out. See paragraph 7.2.1 Reset procedure error events.

tab. 3 Led plate indication lights

LED row	Function	Error relates to	Possible solution
A1-B3	Emergency stop(s)	Overhead conveyor (B0161)	Inspect the emergency stops (ES1-18).
B4		Control Panel (B0161)	Inspect the emergency stop (ES19).
B5-B8		Overhead conveyor (B0161)	Inspect the emergency stop (ES1).
B9	Emergency pull cord	Emergency pull cord on H3514	Inspect the emergency stop (ES1) on H3514.
B10	Emergency stop	Remote operator panel (H3514)	Inspect the emergency stop on remote control of H3514.
B11		Control Panel Fillet handling (H3798)	Inspect the emergency stop on Control Panel H3798 (if available).
B12		External interface	Inspect the emergency stop of external operator panel.
B13		General	Inspect if the reset relay is functioning.
B14	Alarm	Alarm general	Inspect for other motor failures.
B15	OP1 ES1	Remote operator panel (OP1)	Inspect the emergency stop (ES1) on remote operator panel.
C1	Safety switch	Tensioner bend (B0161)	Inspect the indicated safeguard (S1).
C2-C6	Spare	-	
C7	Chain lubricator	Lubricator (B0124)	Inspect the lubricator functions.
C8 / C9	Safety switch	Wishbone S1 / S2 (H3631)	Inspect safety switches S1/S2 (H3631).
C10		By-pass clutch S3 (H3612)	Inspect safety switch S3 (H3612).
C11-C13	Not used	-	

tab. 3 Led plate indication lights

LED row	Function	Error relates to	Possible solution
C14	Safety switch	Remote stop OP1 active (H3514)	Inspect safeguard (S2) on H3514).
C15		Remote stop OP1 active (B0161)	Inspect safeguard (S2) on B0161).
D1 / D2	Motor protection	Overhead conveyor motor 1 / 2 (B0161)	The clixon (FM1/FM2) has switched off motor M1 or M2.
D3	Input protection frequency inverter	Supply voltage to the frequency inverter (B0161)	Inspect fuse F1.
D4	Output protection frequency inverter	Supply voltage from the frequency inverter to drive motor (B0161)	Inspect fuse E1.
D5	Motor protection	Back meat harvesting module (H3576)	Inspect motor M1.
D6		Fillet discharge conveyor belt (H3667)	Inspect: - Fuse F1 - Frequency inverter E1 - Thermal protection FM1 (clixon)
D7		Wing tip cutting module (H3551)	
D8		Wing joint cutting module (H3552)	
D9-D15 E1-E15 F1-F8		Module motor	Inspect thermal relay QF1.
F9-F15	Not used	-	-

7.2.1 Reset procedure error events

The LED plate shows a LED lights up when:

- an emergency stop button/pull cord is pushed/pulled
- safeguards are activated (safety fence, covers, hoods etc. are open)
- an electrical motor/frequency inverter fails (fuses, thermal relays, clixons etc.).



NOTE

An overheated motor is switched off by a clixon. The line stops. When the motor temperature is within operating range the line can start after the reset procedure.

If one of the above situations is true, the Front Half Filleting System FHF-XB stops.

Do this to resolve the error event:

1. Call in the help of an authorized person to lift the error as indicated in tab. 3.
2. Press reset button 1; see fig. 10.
3. Start the line again.
See paragraph 7.3 Start and stop the Front Half Filleting System FHF-XB.

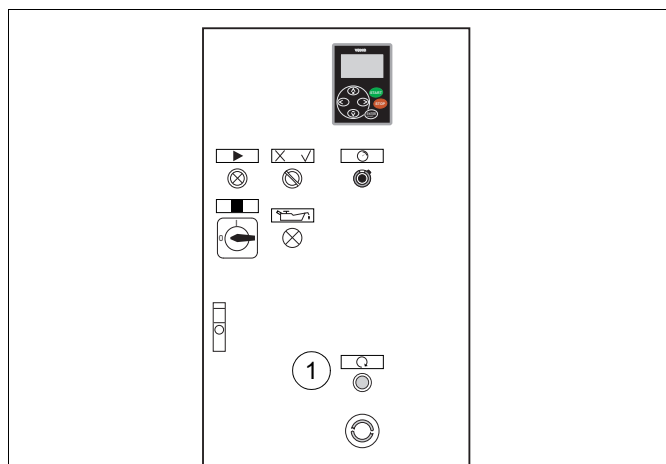


fig. 10 Reset procedure error events

7.3 Start and stop the Front Half Filleting System FHF-XB



MORTAL DANGER

Warn everyone in the vicinity before the machine is started again.

Carry out the following steps before you start the Front Half Filleting System FHF-XB:

1. Let an authorized person turn main switch **1** to position "0" and secure it with a padlock.
2. Check if the safeguards of all machines are in place and closed.
See the User's Manuals for the machines in the Front Half Filleting System FHF-XB.
3. Release the emergency stops if required. See the User's Manual "Emergency stop provisions" (90839).
4. Check if the safety fence (if present) is closed.
See the User's Manual "Safety fence" (90796).
5. Have an authorized person remove the padlock on main switch **1** and turn the main switch to ON position.
Signal lamps **2** light up to indicate that the control voltages 24 VAC and 230 VAC are present.
6. Press reset button **3** when it lights up blue.
See fig. 11.

Start the Front Half Filleting System FHF-XB as follows:

1. Press the start button **4**.
2. Adjust the speed of the overhead conveyor belt with speed control knob **5**.
Adjust the speed as follows:
 - a. Unlock the knob with the pawl.
 - b. Turn the knob clockwise to increase the speed.
Turn the knob counterclockwise to decrease the speed.
 - c. Lock the knob with the pawl.

See fig. 11.

Stop the Front Half Filleting System FHF-XB as follows:

1. Turn off stop switch **6**.
The overhead conveyor stops immediately.

See fig. 11.



WARNING

When the Front Half Filleting System FHF-XB is stopped, it takes some time for the knives to stop spinning.

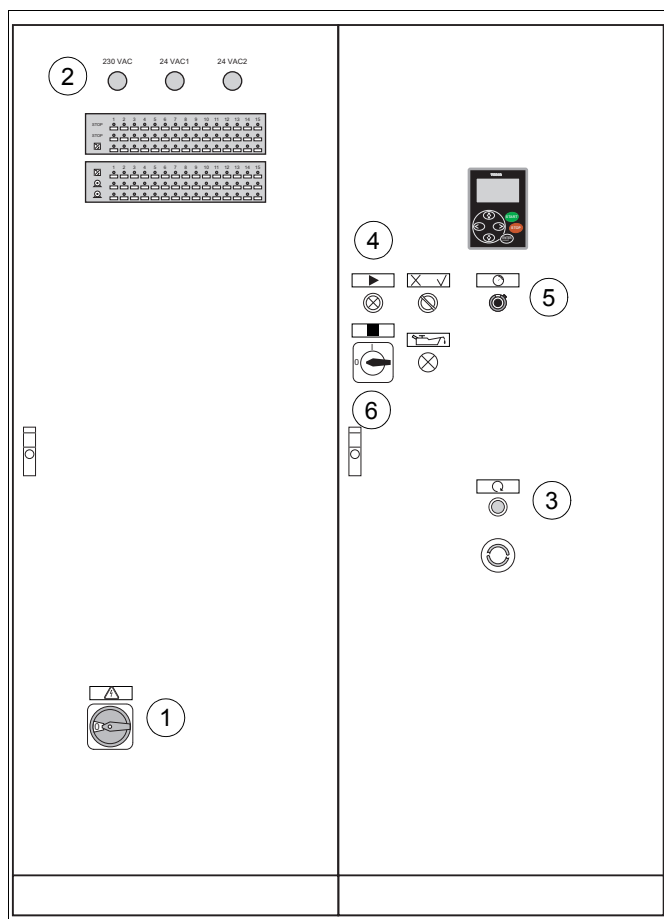


fig. 11 Switchbox

8 FAULTS



MORTAL DANGER

Fault handling must be carried out by competent, professional and trained personnel.

8.1 Failure list

The following failure list includes the most usual failures, their possible cause and solution. Always fix failures as quickly as possible.

tab. 4 Fault list

Fault	Possible cause	Possible solution	Para-graph
The speed of the overhead conveyor belt can not be changed.	The speed control knob on the Control Panel is faulty or wrongly connected.	Check the connection of the speed control knob.	-
One of the motors runs irregularly but no fault code appears on the screen.	Motor is not properly connected.	Check the motor connection.	5.2
Motors run irregularly but no fault code appears on the screen.	Incorrect setting for the frequency inverter.	Check if the frequency inverter has been set-up properly.	6.1.2
Motor does not run, screen does not work and no fault code appears.	The frequency inverter is faulty.	Replace the frequency inverter, see the User's Manual Frequency inverter.	-
	No power to the frequency inverter.	Check the supply voltage to the frequency inverter, see the User's Manual Frequency inverter.	-
Motor does not run, the message "RUN OK" appears on the screen but there is no fault code.	The speed of the speed control knob is at zero.	Check the connection of the speed control knob.	-
	Motor is not correctly connected.	Check the motor connection.	5.2
Fault code on the screen of the frequency inverter.	Miscellaneous	See the User's Manual Frequency inverter.	-
One of the LED lights A1 to B15 is on; the overhead conveyor belt stops.	One of the emergency stops was activated.	Check why the emergency stop was activated.	7.1, 7.2 and 7.3
One of the LED lights C1 to C15 is on.	One of the machine safeguards was activated.	Check why the safeguard was activated.	7.2, 7.3
One of the LED lights D1 to F15 is on.	One of the motor safety devices was activated.	Check why the safety device was activated.	7.2, 7.3