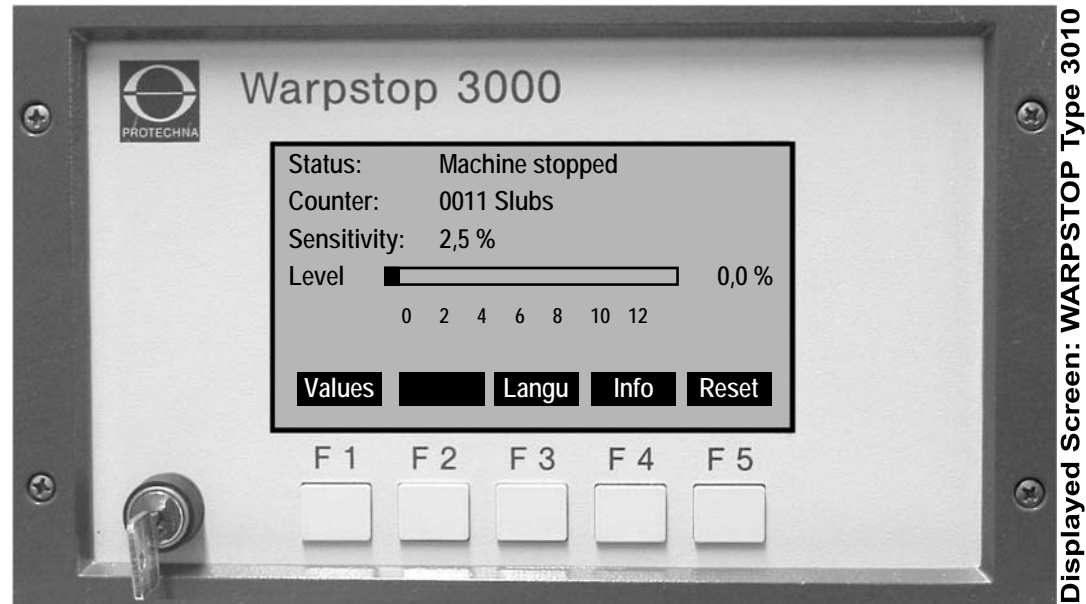


PROTECHNA

Qualitätssicherung für Textilien



Working Instructions

PROTECHNA Yarn Inspector

WARPSTOP Series 3000

Types 3010 / 3011 / 3012

B-E-0459/04.04/E



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Safety advice

Before installing the device, please carefully read the following instructions for your own personal safety as well as the operational security of the equipment.

- Always follow all warnings and instructions which are shown as direct advice or mentioned, as well as any in this instruction book.
- Before any cleaning, or to remove or replace an option, the device must always be disconnected from the power supply. For cleaning, no liquid agents or sprays are allowed, instead only a dry cloth must be used.
- Never use the equipment in areas where dangers are present, where water or other liquids could enter the device.
- The mounting position for the device must always be stable, as strong vibration could cause the unit to fall and be badly damaged.
- Always make sure that the correct voltage rating is used to match the power supply.
- Never try to push any objects through any openings in the device, as the interior voltage could cause short circuits or electrical shocks.
- With the exception of the detailed information in the instructions, you should never attempt to repair the device yourself, otherwise you could place yourself in danger from contact with high voltage parts.

- Please handle the light wave conductors with great care. For example, if they bent they could become unusable. This will result in them having to be replaced.
- When you have decided on the position of the inspection head, please do not forget, that both of the stand feet must be firmly anchored to the floor. To do this, holes must be drilled into the floor and then provided with floor plugs. Please make sure that no electric wires or other lines are underneath the stand feet.



Cleaning of the overrun profiles (ceramic surface) of the WARPSTOP series 3000 inspection head beds must be carried out only with a dry cloth. **Isopropyl alcohol exclusively** may be used at heavy soiling. Other cleaning agents must not be used. After cleaning is carried out the ceramic surface should be wiped off with **acid-free oil** (e.g. yarn oil).



The electrical connection must only be carried out by suitably qualified technical personnel. Before the electrical connection, you must make absolutely sure that there is no danger to come into contact with any parts that might carry live electricity.

Introduction

General

The PROTECHNA yarn inspectors WARPSTOP Types 3010 (Mono), 3011 (Major/Minor) and 3012 (Major/Minor/Length Selector) are precision devices for detecting selected yarn faults during the warping process. In normal use the warping machine will be stopped on detection of a yarn fault.

Type	Function	Description
3010	Mono	Instant stopping of the machine on exceeding the stop threshold level
3011	Major	Instant stopping of the machine on exceeding the Major stop threshold level
	Minor	Counts the yarn faults on exceeding the Minor threshold level
3012	Major	as Type 3011
	Minor	as Type 3011
	Length Selector	Stops the machine on exceeding the Minor threshold level and exceeding a set number of yarn faults of a pre-set length

i The control unit type 3012 offers an additional operating mode **Length Mode**. If this mode is activated, the machine is switched off **exclusively** by the Length Selector function when exceeding the switching thresholds of the Minor **and** Major Kanals. The normal function of the Major channel is deactivated by this setting.

By using light wave conductors, the system guarantees a high operating standard. Thanks to a digital sensitivity setting, with a calibration possibility in steps of 0,1%, even the smallest faults can be detected.

Typical yarn faults which can be detected are loose filaments, knots and broken capillaries. The WARPSTOP Series 3000 can detect such yarn faults in a wide range of multifilament yarns, for example, Nylon, Polyester, Acetate, Viscose, Rayon, Artificial Silk, Acrylic yarns, Tyrecord, Glass Fibre etc.

The yarn inspector comprises of a control unit WARPSTOP series 3000 with integrated operating system, an inspection head and the foot stands. With the type 3012, it is necessary also to have an impulse giver with a magnet foil attached to the over-run roller, to determine the warp length.

Introduction

Control Unit 3000 with Integrated Operator Panel

The thread signal is compared with the adjustable stop level in the control unit. The warping machine is stopped under the following prerequisites when the device is operated in **normal operation**:

Type	Description
3010	Instant, on exceeding the stop threshold level or on completion of a pre-set stop delay phase
3011	Instant, on exceeding the stop threshold level of the Major channel or on completion of a pre-set stop delay phase
3012	a) Instant, on exceeding the stop threshold level of the Major channel or on completion of a pre-set stop delay phase b) On exceeding the threshold level of the Minor channel and the number of slubs exceeds the pre-set total of a selected length

i	The control unit type 3012 offers an additional operating mode Length Mode . If this mode is activated, the machine is switched off exclusively by the Length Selector function when exceeding the switching thresholds of the Minor and Major Kanals. The normal function of the Major channel is deactivated by this setting.
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The control unit with its integrated operator panel with LCD display and keyboard can be placed in any position to suit your requirements.

Depending on the type of the unit, the following information is displayed on the LCD screen: The yarn noise level, the size of the last stop signal, the pre-set stopping as well as counting thresholds, the length information as well as the total number of faults indicated.

All operational parameters can be entered via an easy to use menu control.

Introduction

Inspection Head

The inspection head uses light wave conductors for the evaluation and the data transfer to the control unit.

The light beam for the evaluation of the yarn sheet is highly concentrated to ensure an even sensitivity over the total inspection head width. Since no electronic parts are inside the inspection head, the unit is insensitive to external electrical interference. Should it be necessary to change the transmitter or receiver electronics, no adjustment of the inspection head is required since all electronic parts are inside the control unit.

The new designed overrun profile of the inspection head ensures an improved guidance of the yarn through the light beam, as well as a reduction of soiling of the inspection head caused by slubs and yarn residue.

Impulse Giver with Magnetic Foil

With the type 3012, it is necessary also to have an impulse giver with a magnetic foil attached to the over-run roller, in order to determine the warp length.

Assembly - Service

The PROTECHNA yarn inspector WARPSTOP Series 3000 is usually despatched ready to use, so that the customer has the possibility to set the unit into operation without assistance. Should however any problem occur, one can make use of the services of the PROTECHNA assembly service. Customers overseas should in this case make contact with the respective PROTECHNA agent.

Service

Service technicians are available on special request to check and test the PROTECHNA yarn inspector WARPSTOP Series 3000. Generally, however, most small problems can be cleared up by a telephone call or by letter, without the need to require a visit by a technician.

For further information please contact:

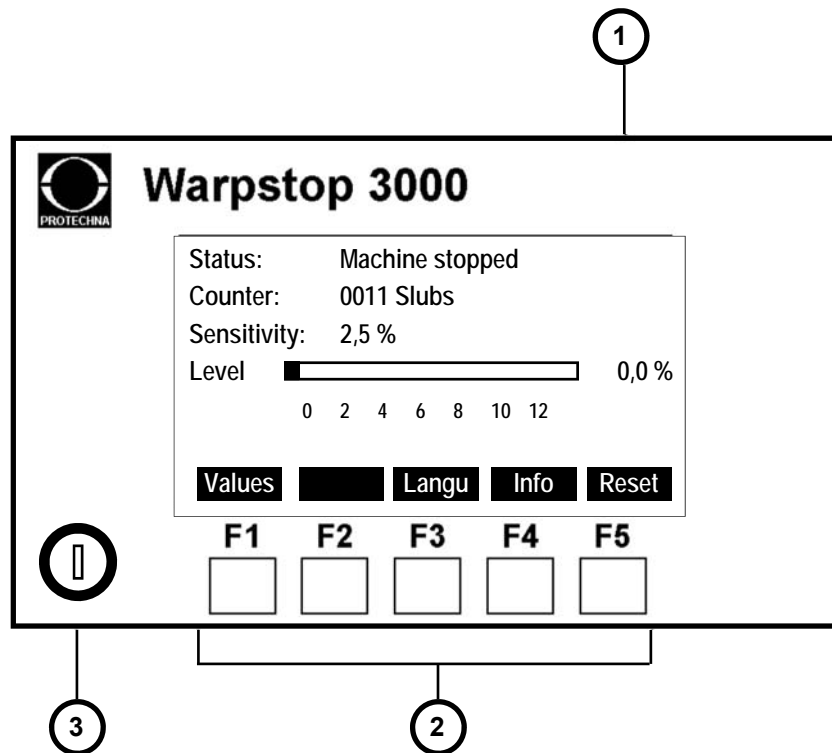
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Notes

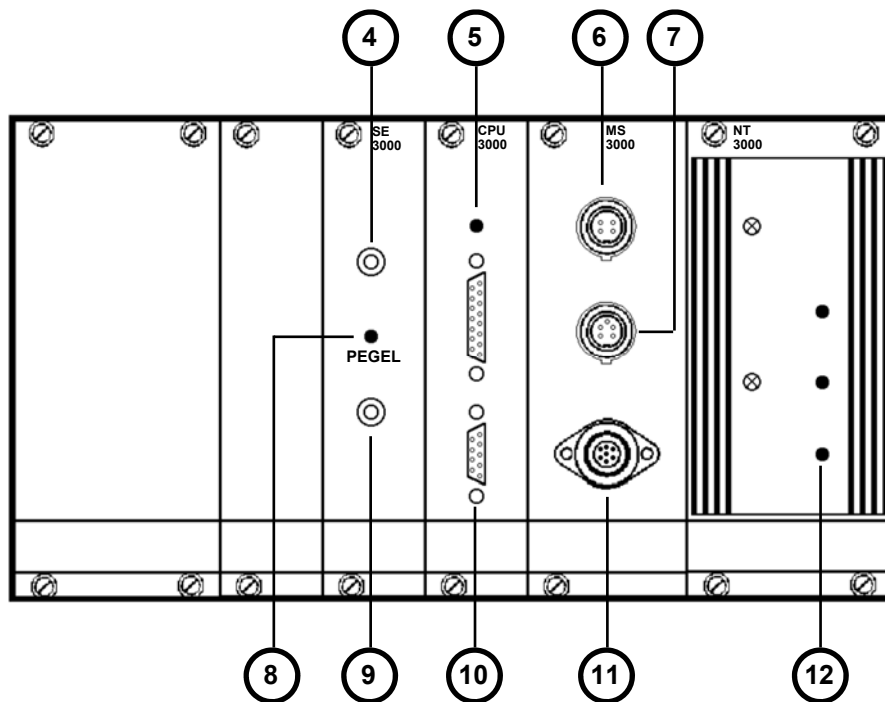
Control Unit Series 3000 - Front View *)



1. LCD screen
2. **Function keys F1 to F5:** The functions of the keys differ with the change of the screen. The individual function of each key is displayed on each screen.
3. **Power switch:** Switches the control unit on and off

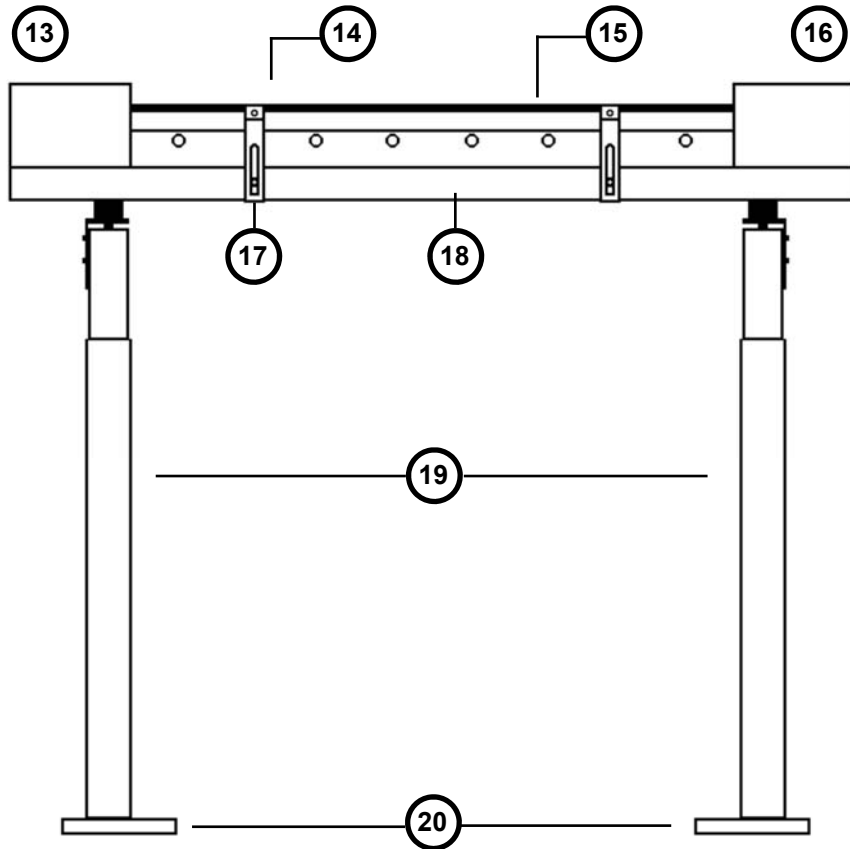
*) Displayed screen: WARPSTOP Type 3010

Control Unit Series 3000 - Rear View



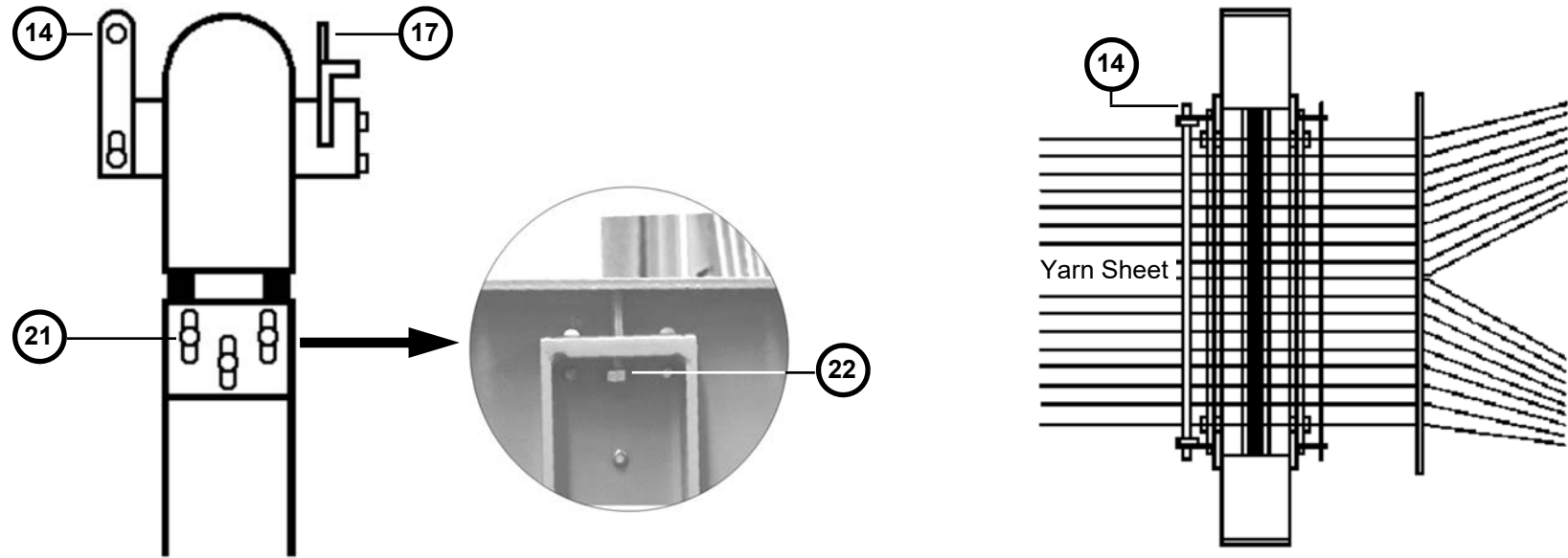
4. **Connection socket for the light wave conductor**
5. **CPU indicator:** Lights up when the computer board works correctly
6. **4-pole socket (only Type 3012):** Connection socket for the impulse sensor to monitor the yarn speed
7. **5-pole socket:** Connection socket for the low voltage reset and the semi-conductor output
8. **Level indicator:** Lights up when the inspection head works correctly
9. **Connection socket for the light wave conductor**
10. **15-pole and 9-pole sockets (optional):** Connection socket for a serial interface (9-pole). The 15-pole socket is not used.
11. **Socket POWER:** Connection socket for the 7-pole power/control cable
12. **Power supply indicators:** Light up when the power supply works correctly

Inspection Head



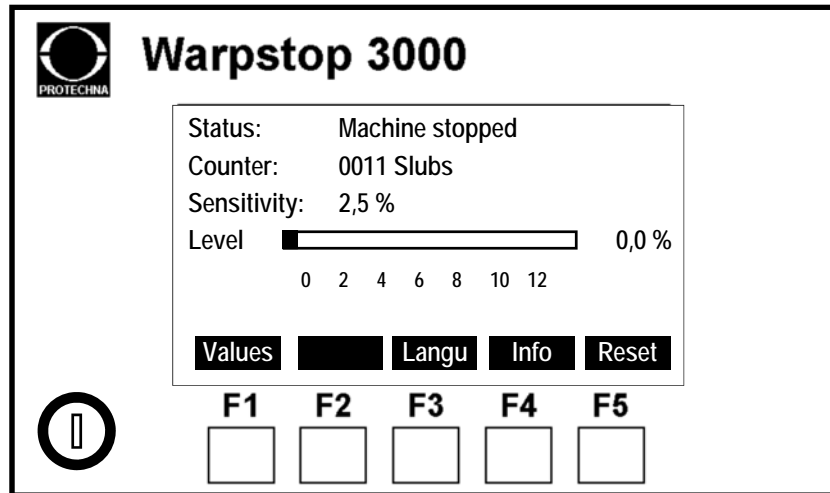
- 13. **Housing:** Contains the optical system of the inspection head
- 14. **Holder for the thread guide unit (not visible):** The thread guide unit serves to regulate the yarn sheet over the overrun profile
- 15. **Overrun profile:** Thread guide in the surveillance area with high performance ceramic covering
- 16. **Housing:** Contains the optical system of the inspection head
- 17. **Reed holder:** The reed is not part of the delivered consignment
- 18. **U-steel bed:** Supports the complete inspection head assembly
- 19. **Stands:** With height adjustment
- 20. **Floor plates:** With securing holes to fix the complete inspection head to the floor

Inspection Head



- 14. **Holder for the thread guide unit:** The thread guide unit serves to regulate the yarn sheet over the overrun profile
- 17. **Reed holder with reed:** The reed is not part of the delivered consignment
- 21. **Hight adjustment:** To adjust the hight of the inspection head bed
- 22. **Adjustment screw (M10):** To adjust the hight of the inspection head bed

Function Keys - Operational Menu *) Types 3010 / 3011



F1 - Values: By pressing this key it is possible to enter the respective setting menu

F2 Not used

F3 - Langu: By pressing this key it is possible to enter the language selection menu

F4 - Info: By pressing this key you will obtain the following information:

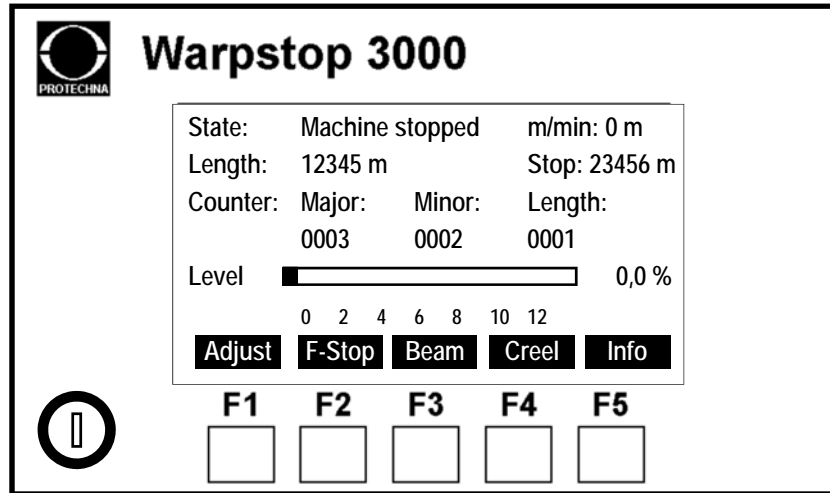
Display	Notes
Software Version	When making enquiries about the surveillance device, it might happen that you will be asked about the software programme being used.
Test Mode Operation	Change over possibilities between normal operation and test mode operation

F5 - Reset: Resetting the fault counter

When you press the key **F5**, this will reset the counter to zero. This key must be held pressed for approx. **2 seconds**.

*) Displayed screen: WARPSTOP Type 3010

Function Keys - Operational Menu Type 3012



F1 - Adjust: By pressing this key it is possible to enter the setting menu. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

F2 - F-Stop: False stop key. If you press the **F2** key after a false stop, the slub counter is reduced by one. The input must be confirmed with YES (F1).

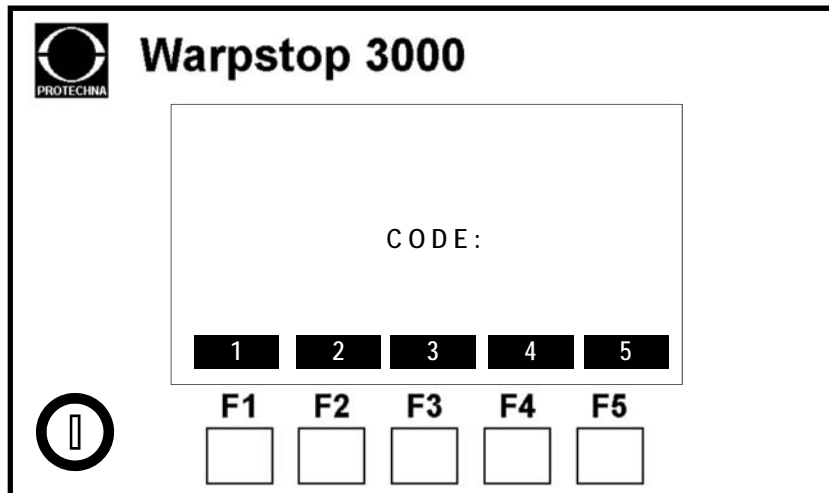
F3 - Beam: Re-setting the slub counter and metre counter for the warping length. The input must be confirmed with YES (F1).

F4 - Creel: This key only is only activated in connection with the optional available **WarpWatch** programme. The input must be confirmed with YES (F1).

F5 - Info: By pressing this key it is possible to get the following information:

Display	Information
Software version	Display of the software version of the programme being used. In the case of queries it is possible you may be asked which software you have.
System condition	System status display
Display	Display and input possibility for the length measure unit (metre or yard)
Pulser	Display and setting possibilities for the number of pulses per Metre/Yard. This setting is dependents on the type of the magnetic foil.
Operating mode	Switching possibilities between normal operation and test mode operation, as well as activating the Length Mode function.

Function Keys - Code Number Input (only Type 3012)



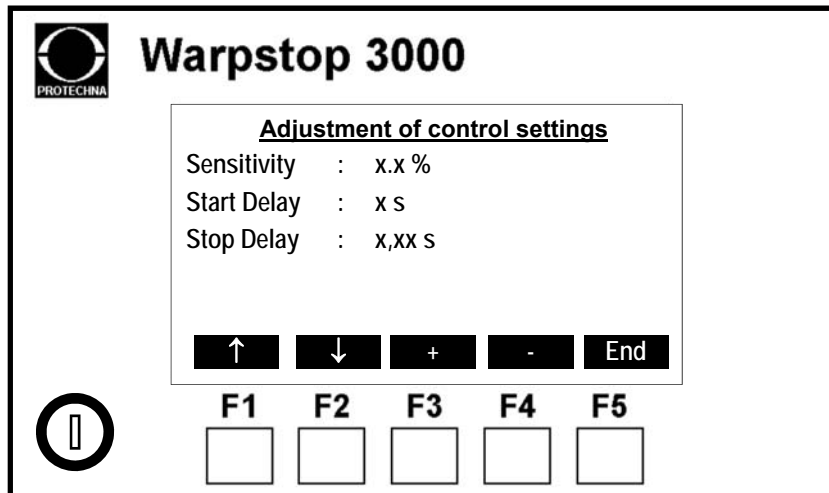
This menu opens automatically, if you want to change the settings (Adjust) in one of the menus and the code number input function is activated.

The code number is: **4 5 2 1 3**.

Please press the following keys **in sequence**:
F4 - F5 - F2 - F1 - F3

Then the corresponding input menu will open.

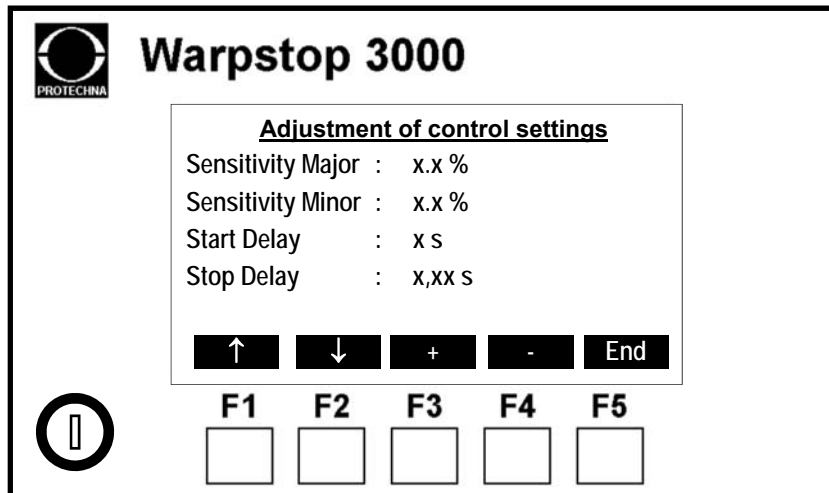
Function Keys - Setting Menu Type 3010



Allocation of the function keys in the setting menu (Values)

- F1 - Arrow up:** Setting position upwards
- F2 - Arrow down:** Setting position downwards
- F3 - (+):** To increase a value
- F4 - (-):** To decrease a value
- F5 - End:** To leave the setting menu

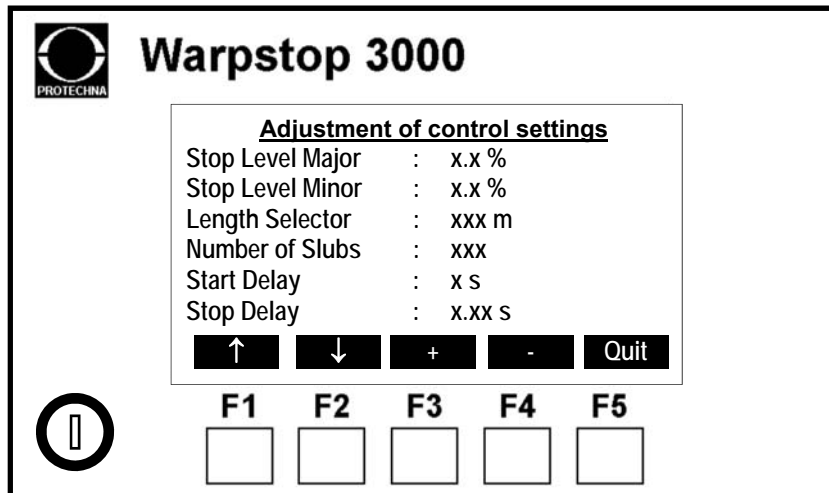
Function Keys - Setting Menu Type 3011



Allocation of the function keys in the setting menu (Values)

- F1 - Arrow up:** Setting position upwards
- F2 - Arrow down:** Setting position downwards
- F3 - (+):** To increase a value
- F4 - (-):** To decrease a value
- F5 - End:** To leave the setting menu

Function Keys - Setting Menu Type 3012

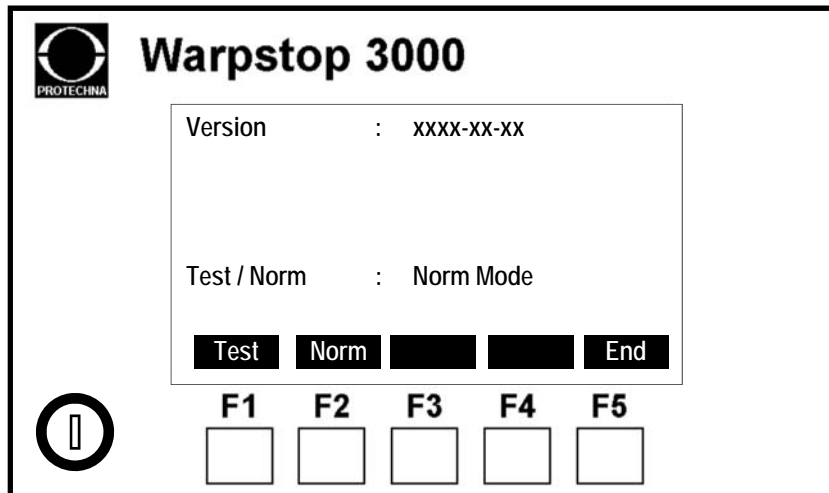


Allocation of the function keys in the setting menu (Adjust)

The setting menu may be safeguarded with a code number.
The code number is: **4 5 2 1 3**.

- F1 - Arrow up:** Setting position upwards
- F2 - Arrow down:** Setting position downwards
- F3 - (+):** To increase a value
- F4 - (-):** To decrease a value
- F5 - Quit:** To leave the setting menu

Function Keys - Info Display (Types 3010/3011)



F1 - Test: Switch over to the test operation. To change over you must hold this key pressed for approx. 5 seconds.

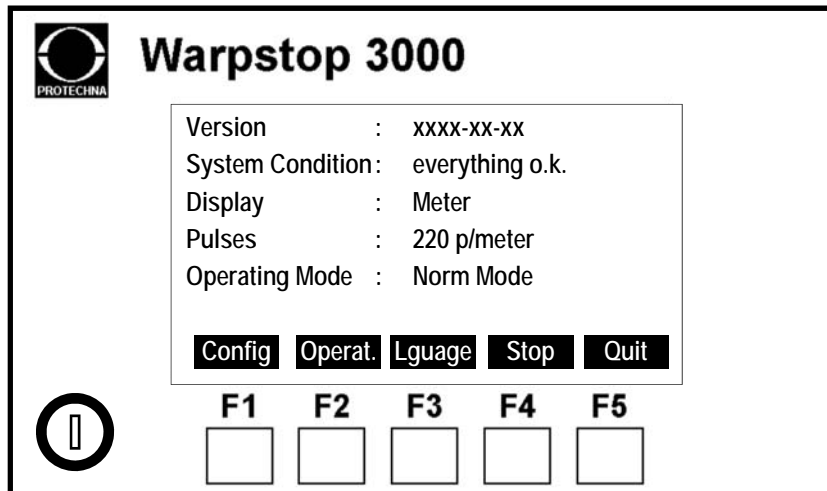
F2 - Norm: Switch over to the normal operation. To change over you must hold this key pressed for approx. 5 seconds.

F3 Not used

F4 Not used

F5 - End: To leave the Info - Display

Function Keys - Info Display (Type 3012 / only Display)



F1 - Config: By pressing this key it is possible to enter the setting menu. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

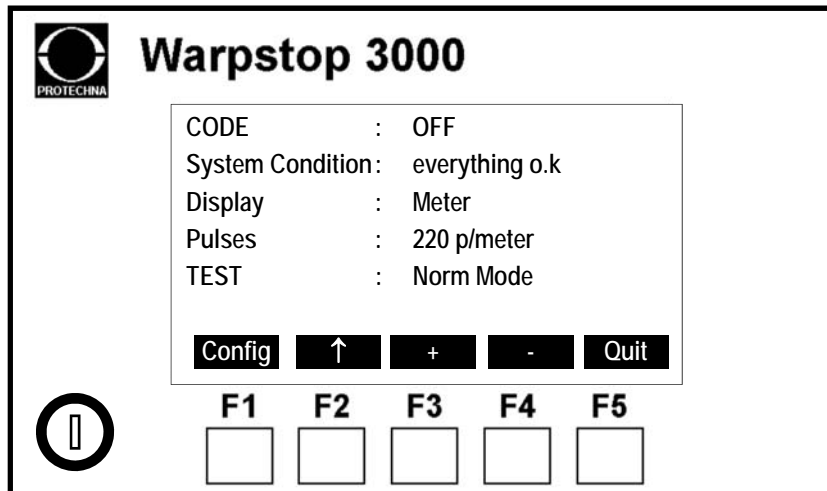
F2 - Operat.: Switching function between normal operation and test mode operation as well as switching on the Length Mode function. For changing between the different modes this key must be kept pushed down for approx. **5 seconds**.

F3 - Lguage: By pressing this key it is possible to enter the language selection menu.

F4 - Stop: By pressing this key it is possible to enter a pre-set length, at which the warping machine shall be stopped.

F5 - Quit: To leave the Info - Display

Function Keys - Info Display (Type 3012 / Input Values)



The setting menu may be safeguarded with a code number.
The code number is: **4 5 2 1 3**.

It is possible to alter the following settings in this menu:

Code: Code number input function On or Off
Display: Metre or Yard
Pulses: Setting the number of pulses per Metre/Yard. This setting is dependent on the type of the magnetic foil.

F1 - Config: Without function in this display

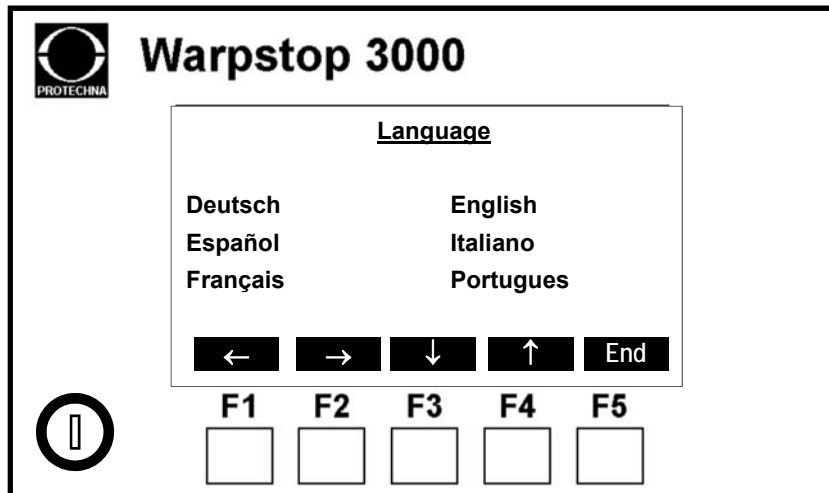
F2 -Arrow: To change the setting position

F3 - (+): To increase a value

F4 - (-): To decrease a value

F5 - Quit: To leave the info menu

Function Keys - Language Menu



Types 3010/3011: You get to this menu from the operational display
Type 3012: You get to this menu via the information display

- F1 - Arrow left:** Setting position to the left
- F2 - Arrow right:** Setting position to the right
- F3 - Arrow down:** Setting position downwards
- F4 - Arrow up:** Setting position upwards
- F5 - End or Quit:** To leave the setting menu

General User Information

- Before you first turn on the yarn inspector, make certain that the correct required voltage rating for the device matches that of the power supply.
- When you turn on the yarn inspector, the control unit will be initialised for a short moment.
- Be careful to make sure that all plugs are securely screwed in. Plugs which are not screwed in can influence the surveillance device in a negative manner.
- Please handle the light wave conductors with great care. For example, if they bent they could become unusable. This will result in them having to be replaced.
- Keep the optics of the inspection head clean. Avoid fingerprints on the optics. Clean the optics using a dry lint free cloth only.
- When you are entering information in the control unit and have not keyed a function for longer than 30 seconds, the display will revert back to the operation menu.

- The sensitivity settings of the different channels are displayed with symbols on the bar graph for the noise level as well as digital number next to the bar graph.

The different settings are displayed with the following sybols:

Type	Funktion	Darstellung
3010	Sensitivity	□
3011	Sensitivity Major	□
	Sensitivity Minor	
3012	Sensitivity Major	□
	Sensitivity Minor	

- Please make sure that the stopping threshold (all types) and the sensitivity for the Minor channel (only types 3011/3012) are set **higher** than the yarn noise level.

General User Information

- **Test Operation**

The surveillance device can also be used to only count yarn faults without causing the machine to be stopped. When you wish to use this function, please switch the device to its test operation (see setting: Test Operation / Normal Operation).

- **Reset Key (F5) (only Types 3010/3011)**

By pressing this key the fault counter will be set at Zero. This key must be pressed and held for approx. **2 seconds**.

- **Beam Key (F3) (only Type 3012)**

By pressing this key the fault counter and the metre counter for the warp length will be set at Zero. The input must be confirmed with YES (F1).

- **Creel Key (F4) (only Type 3012)**

This key only is only activated in connection with the optional available **WarpWatch** programme. The input must be confirmed with YES (F1).

- **F-Stop Key (F2) (only Type 3012)**

False stop key. If you press the **F2** key after a false stop, the respective slub counter is reduced by one. The input must be confirmed with YES (F1).

- **Info Key (F5) (only Type 3012)**

Additional information about some occurred faults in the surveillance system can be seen by pressing the key **Info** (F5) on the operational display. Should a fault be present the Info display will flash.

- **Impulse Giver (only Type 3012)**

The impulse giver should be plugged into the 4 pin socket in the **MS 3000** board on the rear of the control unit.



With machines where the material can be stretched, the impulse giver must always be mounted on a overrun roller which is positioned near to the inspection head bed.

- **Display of the Machine Speed (only Type 3012)**

The surveillance device has the facility to display the machine speed. This is displayed on the LCD screen of the control unit beneath the status display, whilst the machine is running.



With machines where the material can be stretched, the displayed machine speed can vary with that of the machine speed display.

- **Stopping the Warping Machine (only Type 3012)**

The WARPSTOP control unit can be used to stop the warping machine when reaching a pre-set warped length.



Please note, that the length displayed at the WARPSTOP control unit can differ from the actual warped length. This is dependent on the mounting position of the magnet foil.



When the pre-set length was reached and the machine was switched off, the machine remains locked until the metre counter and the slub counters are set to Zero by pressing the **Beam (F3)** key.

Setting the Stop Level (Sensitivity)

The setting of the stop level (sensitivity) for immediately switching off the machine during normal operation is carried out at the different types in the following positions:

Type	Position
3010	Sensitivity
3011	Sensitivity Major
3012	Sensitivity Major

To carry out the setting please proceed as follows:

Pos.	Description
1	Turn the control unit on. The power supply indicators must light.
2	Press the key F1 (Values) on the control unit to enter the respective setting menu. The setting menu may be safeguarded with a code number. The code number is: 4 5 2 1 3 .
3	Press the key arrow up or arrow down until the value next to the following line is flashing: Type 3010: Sensitivity Type 3011: Sensitivity Major Type 3012: Stop Level Major
4	Press the key (+) until the value is approx. 5 %.
5	Leave the setting menu by pressing the key END or QUIT .
6	Start the warping machine.

Pos.	Description
7	The bar graph display on the LCD screen will now show the basis yarn noise level of the warp sheet. The precise value of the noise level will be found next to the bar graph.
8	Please memorise or make a note of the value of the noise level. This value is decisive in determining the position of the individual sensitivity settings.
9	Press the key F1 (Values) on the control unit to enter the respective setting menu. The setting menu may be safeguarded with a code number. The code number is: 4 5 2 1 3 .
10	Press the key arrow up or arrow down until the value next to the following line is flashing: Type 3010: Sensitivity Type 3011: Sensitivity Major Type 3012: Stop Level Major
11	By pressing the keys (+) and (-) , please set the value for the sensitivity (stop level) approx. 1 % higher than the basic yarn noise level.
12	Leave the setting menu by pressing the key END or QUIT .



This setting is only a basic setting. The exact setting of the sensitivity depends first of all upon your requirements. Please note, however, that the value is always **higher** than that value which is displayed as the basic noise level.

Further Settings

Start Delay

An adjustable start delay avoids false stopping during the start up phase of the warping machine.



Please set the time for the start up delay for only as long as you need it. During the running of the delay phase, the yarn sheet will not be controlled.

The start delay allows settings in the range of 0 (switched off) to 20 seconds to be used.

If the LCD screen is still displaying the operation menu, then please switch to the setting menu by pressing the key **F1 (Values or Adjust)**. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the key **arrow up** or **arrow down** until the value next to the line **Start Delay** is flashing. Then set the required time, using the keys **(+)** or **(-)**.

If you do not wish to carry out any further settings, please press the key **End** or **Quit**. The display at the LCD screen will now change back to the operational menu.

Stop Delay

The device has the possibility of the setting of a stop delay. If you should activate the stop delay, you will add an adjustable time after a stop signal was triggered by the WARPSTOP before the warping machine is stopped.



Please activate the stop delay only when you have available a suitable braking system. If you should input too large a value for the stop delay, it could be possible for the yarn fault to finish up on the warp beam. Normally, the stop delay should be switched off.

The stop delay allows settings in the range of 0 (switched off) to 1,2 seconds to be used.

If the LCD screen is still displaying the operation menu, then please switch to the setting menu by pressing the key **F1 (Values or Adjust)**. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the key **arrow up** or **arrow down** until the value next to the line **Stop Delay** is flashing. Then set the required time resp. distance, using the keys **(+)** or **(-)**.

If you do not wish to carry out any further settings, please press the key **End** or **Quit**. The display at the LCD screen will now change back to the operational menu.

Further Settings

Switching Level (Sensitivity) for the Minor Channel (only Types 3011/3012)

These types of the surveillance device have the possibility to set a separate switching level for counting small slubs, without stopping the machine.

If the LCD screen is still displaying the operation menu, then please switch to the setting menu by pressing the key **F1 (Values or Adjust)**. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the key **arrow up** or **arrow down** until the value next to the line **Sensitivity Minor** or **Stop Level Minor** is flashing. Then set the required switching level, using the keys **(+)** or **(-)**.



Please make sure that the sensitivity value for the Minor channel is set lower than the value for the Major channel.



Please make sure that the sensitivity value for the Minor channel is set higher than that value which is displayed as the basic noise level.

If you do not wish to carry out any further settings, please press the key **End** or **Quit**. The display at the LCD screen will now change back to the operational menu.

Switching Level (Sensibility) for the Length Selector Channel (only Type 3012)

A setting of the switching level for this channel is not necessary since this switching level is usually coupled with the Minor channel. If you activate the Length Mode function, the switching level of the Major channel is also evaluated for switching off the machine (also see setting: Length Mode).

Language

The device has the capability to operate in different languages.

Types 3010 / 3011

If the LCD screen is still displaying the operation menu, then please switch to the language menu by pressing the key **F3 (Langu)**.

Type 3012

If the LCD screen is still showing the operational display, then please switch to the Info display by pressing the key **F5 (Info)**. Please switch forward into the language menu by pressing the key **F3 (Lguage)** in the info display.

Please set the required operator language, using the arrow keys. The selected language blinks on the display.

If you do not wish to carry out any further settings, please press the key **End** or **Quit**. The display at the LCD screen will now change back to the operational menu, which is already displayed in the selected language.

Further Settings

**Re-setting the Fault Counter (all Types)
and the Metre Counter (only Type 3012)**

Re-setting the fault counter and the metre counter for the warped length is carried out in the operation menu.

In the rows **Counter** the number of faults are displayed relating to which channel caused them. In the line **Length** the warped length in metre or yard is shown.

Type	Zähler	Beschreibung
3010	Counter	Stops of the machine on exceeding the stop threshold level
3011	Major	Stops of the machine on exceeding the stop threshold level of the Major channel
	Minor	Counts of yarn faults on exceeding the threshold level of the Minor channel
3012	Major	as Type 3011
	Minor	as Type 3011
	Länge	Stops of the machine on exceeding the threshold level of the Minor channel and exceeding a set number of yarn faults of a pre-set length



The control unit type 3012 offers the Length Mode function as an additional operating mode. If this mode is activated, the machine is switched off **exclusively** by the Length Selector function. This setting deactivates the function of the Major channel. Since a switching off for the machine is therefore no longer possible through the major channel, the display of Major fault counter remains on zero.

To re-set the fault counter (all types) and the metre counter (only type 3012), please proceed as follows:

Types 3010 / 3011

When you wish to set these displays back to zero, please press the key **F5 (Reset)**. This key must be pressed and held for approx. **2 seconds**.

Type 3012

When you wish to set the counters **and** the warped length back to zero, please press the key **F3 (Beam)**. The input must be confirmed with YES (F1).

Further Settings

Length Selector (only Type 3012)

This setting determines the length on which a pre-set number of slubs are detected, before the machine is stopped.

If the LCD screen is still displaying the operation menu, then please switch to the setting menu by pressing the key **F1 (Adjust)**. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the key **arrow up** or **arrow down** until the value next to the line **Length Selector** is flashing. Then set the required length, using the keys **(+)** or **(-)**. The length can be set in the range between 0 m (Length Selector function switched off) and 150 m (in 1 m steps).

If you do not wish to carry out any further settings, please press the key **Quit**. The display at the LCD screen will now change back to the operational menu.



The Length Selector function can be switched off by entering the value **0 m** for the length.

Number of Slubs (only Type 3012)

This setting determines the number (amount) of slubs which have to be detected on a pre-set length, before the machine is stopped.

If the LCD screen is still displaying the operation menu, then please switch to the setting menu by pressing the key **F1 (Adjust)**. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the key **arrow up** or **arrow down** until the value next to the line **Number of Slubs** is flashing. Then set the required amount, using the keys **(+)** or **(-)**. The number of slubs can be set in the range between 2 and 50.

If you do not wish to carry out any further settings, please press the key **Quit**. The display at the LCD screen will now change back to the operational menu.

Further Settings

Impulse (only Type 3012)

The device is normally delivered with a pulse count set to 220 impulses per metre.

When a differing pulse count is stated with the magnetic foil supplied, you must change the setting.

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**. Please switch forward into the setting menu by pressing the key **F1 (Adjust)** in the info display. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Press the **arrow** key until the value next to the line **Pulses** is flashing. Please select the required pulse count by using the keys **(+)** and **(-)**.

When you do not wish to make any further settings, please press the key **Quit**. The display on the LCD screen will now change back to the operational display.



If you should use yards as length measure unit, then the pulse count for the delivered magnet foil must be set to **201** impulses per yard.



Please make a note of the pulse count you have set. Only in this way will you have the possibility of setting the correct pulse count again if you have changed it by mistake.

Display (only Type 3012)

The display of the control unit can be switched over between **Metre** and **Yard**.



If the display is switched over to yard, the input pulses/metre is switched over to pulses/yard. Please, also correct this value.

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**. Please switch forward into the setting menu by pressing the key **F1 (Adjust)** in the info display. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Please press the **arrow key** until the value next to the line **Display** blinks. Then please set the required display using the keys **(+)** (for yard) and **(-)** (for metre).

When no further settings are required, please press the key **Quit**. The display on the LCD screen will now change back to the operational menu.

Further Settings

Test Operation / Normal Operation

The surveillance device can also be used to count yarn faults without the machine being stopped. When you wish to use this function, please switch the device into its test operation mode.



When the surveillance device is in its test operation mode, it cannot stop the machine.

Types 3010 / 3011

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F4 (Info)**.

Press the function key **F1** for approx. **5 seconds** until the display next to the line **Test/Norm** changes to **Test**.

When you do not wish to make any further setting changes, then please press the key **End**. The display on the LCD screen will then change back to the operational display.

To switch back to the normal operational mode, please carry out the procedure as just described. Please press the Function key **F2** in the Info display, until the display next to the line **Test/Norm** changes to **Norm**.

Type 3012

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**.

Keep the function key **F2 (Operat.)** pushed down for as long until the display in the line **Operating Mode** changes to **Test Mode**. The switchover of the individual displays in the line Operating Mode lasts approx. **5 seconds**.

When you do not wish to make any further setting changes, then please press the key **Quit**. The display on the LCD screen will then change back to the operational display.

For changing back into the normal operation mode, please proceed as just described. Keep the function key **F2 (Operat.)** pushed down for as long until the display in the line **Operating Mode** changes to **Norm Mode**.



The control unit type 3012 offers, besides the Test Mode (test mode operation) and the Norm Mode (normal operation), an additional operating mode Length Mode. Please make sure that you do not set the Length Mode by accident when changing between test mode and normal operation (see also setting: Length Mode).

Further Settings

Length Mode (only Type 3012)

The switching level of the Length Selector channel is usually only coupled with the switching level of the Minor channel. When activating the Length Mode function the switching level of the Major channel is also used for switching off the machine.



When activating the Length Mode function the machine is switched off **exclusively** by the Length Selector function. This setting deactivates the function of the Major channel. **Switching off the machine by the Major channel is therefore no longer possible.**

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**.

Keep the function key **F2 (Operat.)** pushed down for as long until the display in the line **Operating Mode** changes to **Length Mode**.



The switchover of the individual displays in the line Operating Mode lasts approx. **5 seconds**.

When no further settings are required, please press the key **Quit**. The display on the LCD screen will now change back to the operational menu.

For changing back into the normal operation mode, please proceed as just described. Keep the function key **F2 (Operat.)** pushed down for as long until the display in the line **Operating Mode** changes to **Norm Mode**.

Code Number Input Function (only Type 3012)

The setting menus (Adjust) can be protected by a code number against accidental alteration.



It is necessary to enter the code number every time when switching in one of the setting menus, when the code number input function is activated. The code number is: **4 5 2 1 3**. The code number cannot be altered.

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**. Please switch forward into the setting menu by pressing the key **F1 (Adjust)** in the info display. The setting menu may be safeguarded with a code number. The code number is: **4 5 2 1 3**.

Please press the **arrow key** until the text next to the line **Code** blinks. Then please set the required function using the keys **(+)** (ON) and **(-)** (OFF).

When no further settings are required, please press the key **Quit**. The display on the LCD screen will now change back to the operational menu.

Further Settings

Stopping the Warping Machine via the Warped Length (only Type 3012)

Notes

The WARPSTOP control unit can be used to stop the warping machine when reaching a pre-set warped length.



Please note, that the length displayed at the WARPSTOP control unit can differ from the actual warped length. This is dependent on the mounting position of the magnet foil.

If the operational display is still shown on the LCD screen, then please switch to the Info display by pressing the key **F5 (Info)**. Please switch forward into the stopping menu by pressing the key **F4 (Stop)** in the info display.

It is possible to set the length, at which the machine shall be stopped, in steps of 10.000 m, 1.000 m, 100 m and 10 m by using the keys **F1** to **F4**. The set value is displayed in the line **Warping Length for Stop**.



If you do not wish to stop the warping machine by the control unit, the value in the line **Warping Length for Stop** must be set to **Zero**.

When no further settings are required, please press the key **Quit**. The display on the LCD screen will now change back to the operational menu.

Notes

Operation

Operation

Turn on the control unit. All indicator diodes on the back of the control unit must light up.

Start the warping machine. The surveillance device will be in operation after the finish of the pre-set start delay phase.

When a fault occurs in the yarn sheet, the warping machine is stopped under the following prerequisites when the device is operated in **normal operation**:

Type	Description
3010	Instant, on exceeding the stop threshold level or on completion of a pre-set stop delay phase
3011	Instant, on exceeding the stop threshold level of the Major channel or on completion of a pre-set stop delay phase
3012	a) Instant, on exceeding the stop threshold level of the Major channel or on completion of a pre-set stop delay phase b) On exceeding the threshold level of the Minor channel and the number of slubs exceeds the pre-set total of a selected length



The control unit type 3012 offers the **Length Mode** function as an additional operating mode. If this mode is activated, the machine is switched off **exclusively** by the Length Selector function. **This setting deactivates the function of the Major channel.** Since a switching off for the machine is therefore no longer possible by the major channel, the display of Major fault counter remains on zero.

The respective fault counter on the LCD display screen will count one position further and will remain at this position until the machine is restarted again.

Operation

Display of the Last Stopping Signal

The surveillance device has the capability to display the size of the last stopping signal. If a fault occurs in the warp sheet exceeding the stop threshold level, the machine will be stopped.

The size of the signal is displayed on both of the bar graphs and the value of the signal is displayed next to them. This display will remain until the machine has been re-started.

Only Types 3011/3012

These types of the surveillance device have the possibility to set a separate switching level for counting small slubs, without stopping the machine.

If a fault occurs in the warp sheet and the switching level of the Minor channel is exceeded, the respective fault counter will move forward another digit, without stopping the machine.

Only Type 3012

This type of the surveillance device has the capability to display the actual speed of the warping machine. The display is located on the LCD screen below the machine status display.

False Stop Key (only Type 3012)

If you press the **F2** key after a false stop, the slub counter is reduced by one. The input must be confirmed with YES (F1).

Stopping the Warping Machine (only Type 3012)

The WARPSTOP control unit can be used to stop the warping machine when reaching a pre-set warped length.



Please note, that the length displayed at the WARPSTOP control unit can differ from the actual warped length. This is dependent on the mounting position of the magnet foil.



When the pre-set length was reached and the machine was switched off, the machine remains locked until the metre counter and the slub counters are set to Zero by pressing the **Beam (F3)** key.

Operation

Automatic Device Control

Notes

The WARPSTOP Series 3000 is fitted with an automatic level adjustment device for the transmitter. This regulator keeps the system always in its optimum working condition and compensates for slight soiling of the optical system as well as variances in the thread thickness of the material being checked.

The display for this regulation function is found at the back of the control unit. The indicator diode **PEGEL** (Level) on the board **SE 3000** must light. When the regulation cannot cope with setting the optimal level, the warping machine will be stopped automatically and the indicator diode will be extinguished.

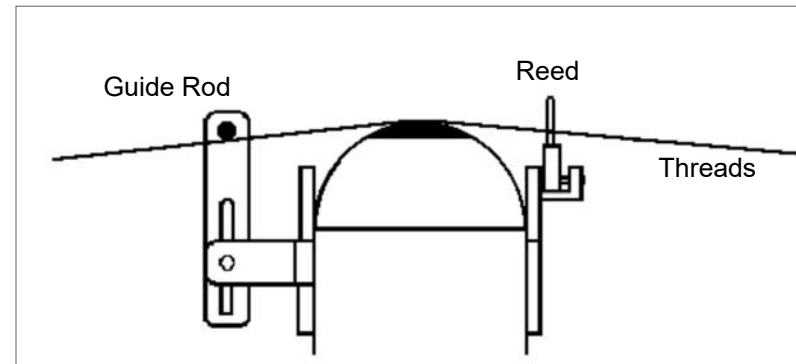
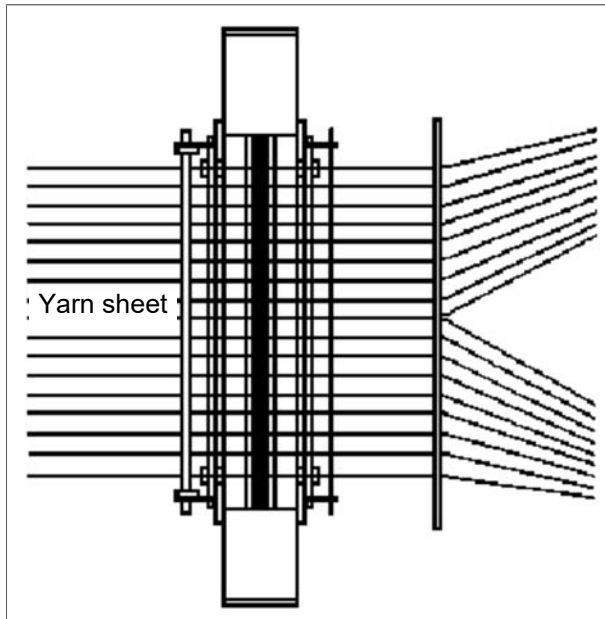
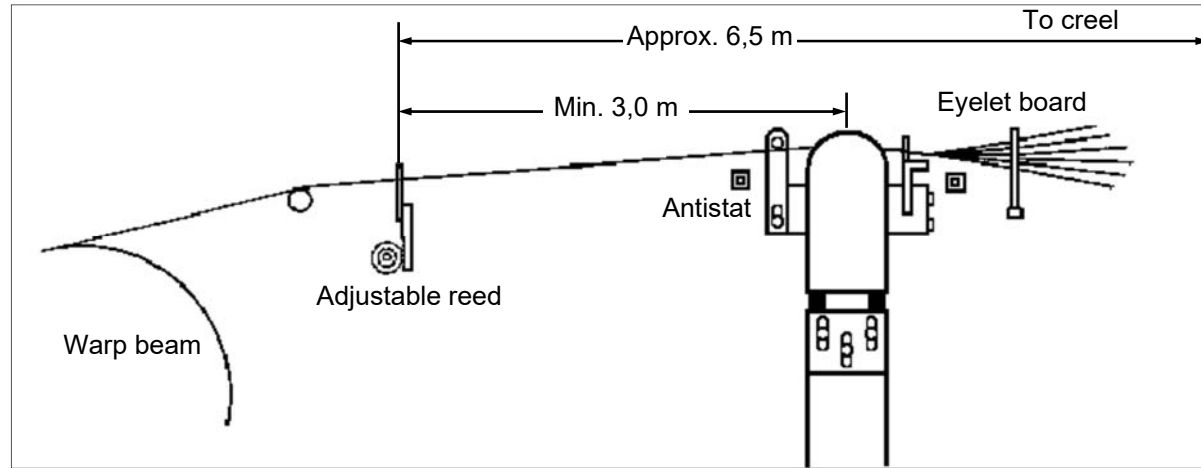
In this case, you should first of all clean the optics of the inspection head using a soft cloth.

Other causes could be:

- Defective transmitter
- Defective receiver
- Defective light wave conductor
- Defect in the electronic control for the transmitter
- Interrupted light beam

Notes

Assembly - Drawings



Assembly - General Information

As you will see from the drawing above, to obtain the best possible performance from the yarn inspector, the distance between the warping machine and the creel should be at least 6,5 meters.

The inspection head bed, should be positioned between the warping machine and creel at a point exactly on the centre line - with a minimum distance of 3,0 m from the inspection head bed to the pin reed.

The control unit should be mounted at the front, directly on the warping machine (see drawings below). In this way, the setting of the sensitivity, as well as the monitoring of the fault counter is made easy.

For the electrical connection of the unit, as well as the linking up of the components, three cables are supplied:

- One power/control cable - 7 pin
- Two light wave conductors to the inspection head bed
- One connection cable for the impulse giver - 4-pin (only type 3012)

The Customer should provide:

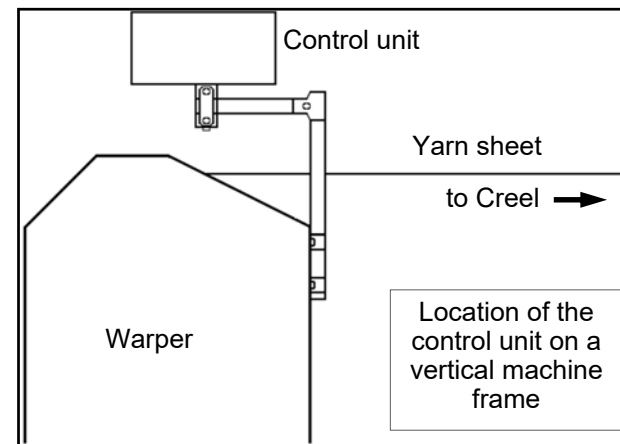
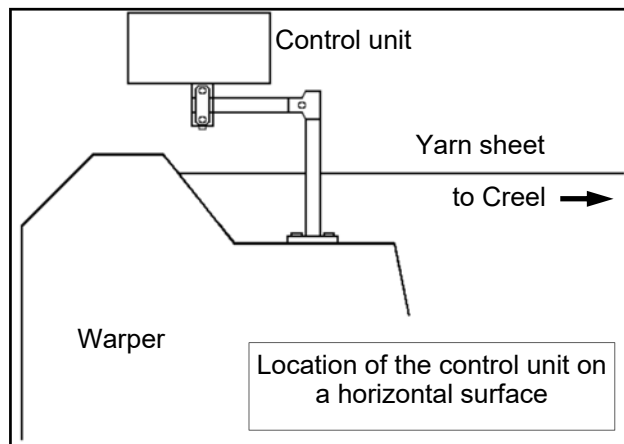
- Warping reed
- Eyelet board
- The necessary antistatic tubes

As you will see from the drawing above, the use of antistatic tubes and a comb reed are recommended. The quantity of the recommended antistatic tubes depends on the prevalent conditions (humidity, type of yarns etc.).



Regardless that the WARPSTOP is in the main insensitive to stray fields and electrical interference, one should avoid that the connections to the antistatic tubes are arranged together with the cables to the WARPSTOP unit.

The following assembly refers to the WARPSTOP Series 3000 Types 3010/3011/3012. If this system is used in conjunction with a PROTECHNA end break detector model FSG or CAMSCAN, then the respective assembly instructions for the thread break system must be followed.



Assembly

First please assemble the stands. The stands should be assembled into a position which will be approx. that of the working height of the inspection bed.

The stands should now be located at a minimum distance of 3 m away from the pin reed.

To install the inspection head bed, it is not necessary to removed the yarn sheet from the warping machine. The inspection head bed can be moved under the yarn sheet and then mounted onto the stands using the supplied shock absorber.

You will see from the drawings on pages 38, how the inspection bed is mounted onto the stands. The guiding rod should be located towards the warping machine.

Drawing on page 38: In this drawing the measurements are indicated, which must be followed in order to achieve the best possible performance from the WARPSTOP. The WARPSTOP and the creel should both be set -up according to these measurements. The minimum space was be established by trial and should also take into account the speed of the warping machine.

The installation of the reed, can be seen from looking at page 38. It should be attached to the reed holder using the two screws provided.

The height of the inspection head bed must be adjusted with the hight adjustment screw M 10 (inside the U-profile), so that when working with the largest beam diameter an approx. yarn path is achieved, as shown in the drawing on page 38.

The horizontal position of the inspection head bed must be checked and then set with the use of a spirit level. Following this, the locking nuts for the hight adjustment can be fixed in place.

The eyelet board and the guiding rod must be placed in such a position, that the threads at the guiding rod form a yarn sheet. At the same time, the guiding rod must be in such a deep position, that the threads can never be displaced away from the over-run rods (see drawing page 38).


The guiding rod must be set up parallel to the over-run rods.

Screw the foot plates firmly to the floor.



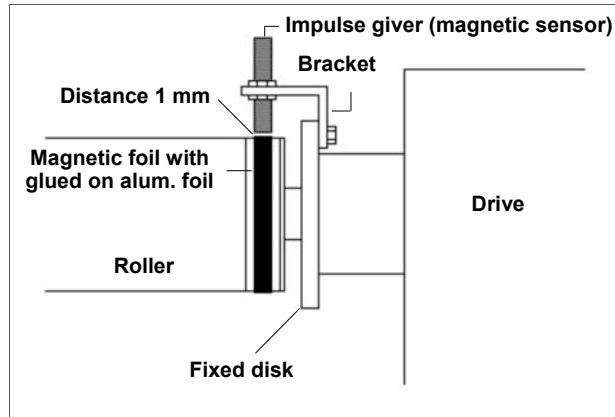
It is very important to make sure that you have a perfect earthing of both the inspection head bed and also the control unit!

Assembly of the Impulse Giver (only Type 3012)

 Please do not forget to control the correct pulse count for the foil and if necessary to re-set it.

The impulse giver is necessary to measure the actual yarn speed.

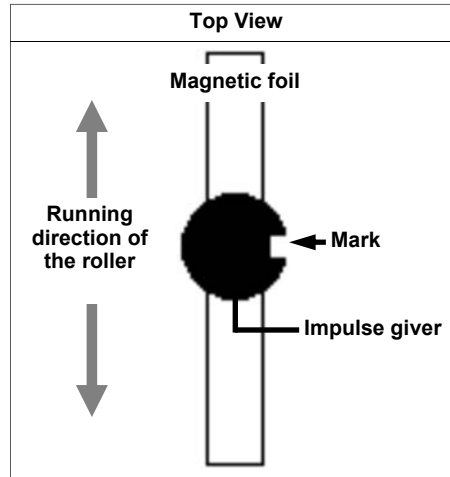
The impulse giver should be mounted on one of the rollers on the warping machine or levelling roller device i.e. which give the running speed of the yarn (see also: **General User Information**). The distance and position of the impulse giver relative to the roller, can be seen on the drawings.



With machines, in which the selected roller alters or changes, you should check to see if the stroke to the impulse giver is smaller than ± 5 mm. Otherwise one should use a different roller which meets the required specification.

Next, the magnetic foil supplied, must be attached to the levelling roller. As the foil is glued in place, please make sure that the surface to which it is to be fixed to, is absolutely free from any oil or grease.

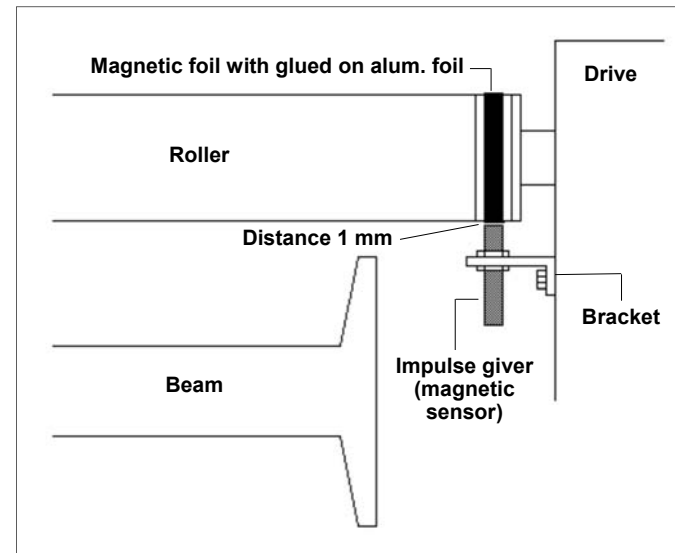
The fitting of the foil will be made easier if you first mark the position it is to be placed in, on the levelling roller.



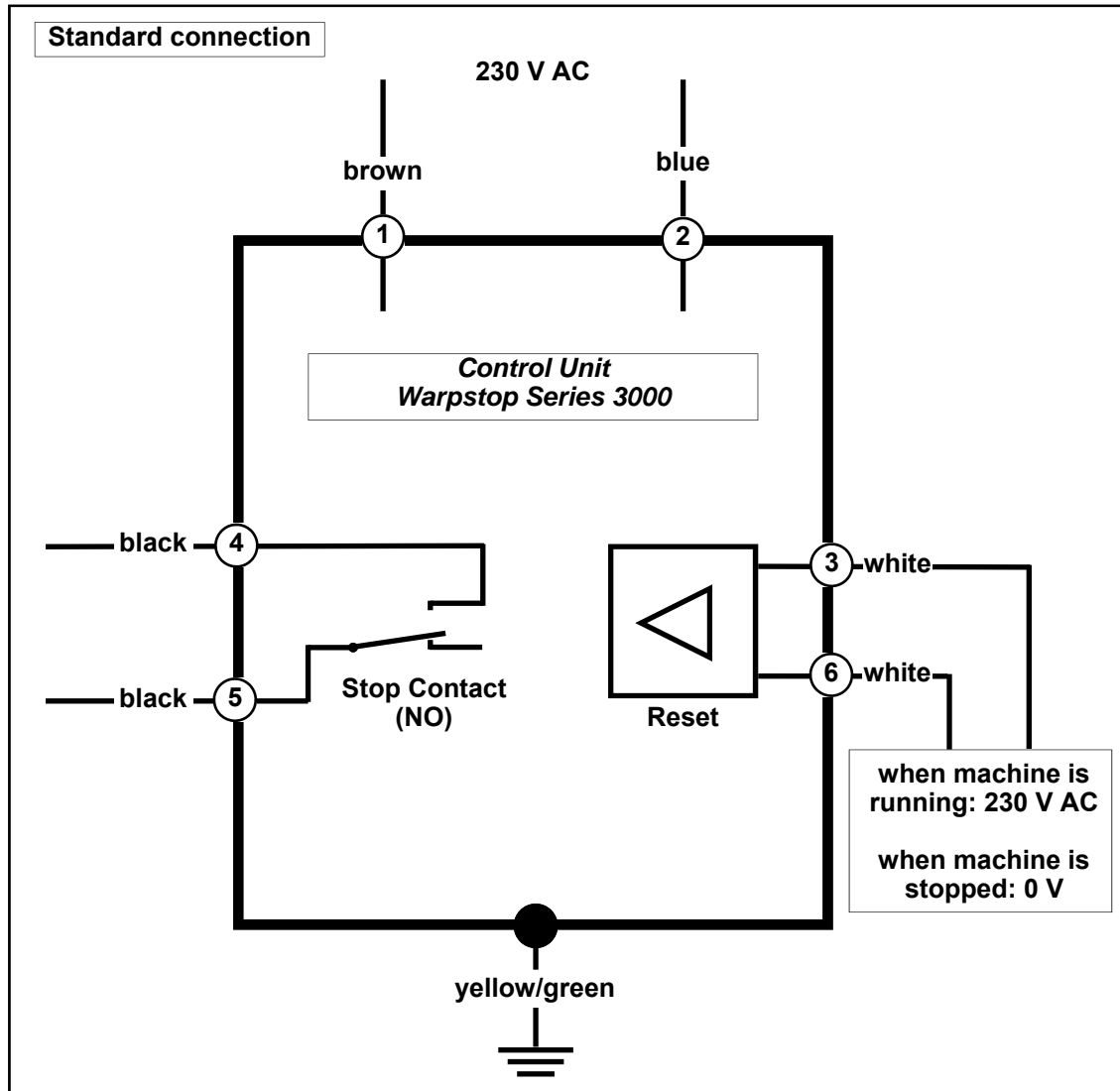
Please apply the foil to the roller using pressure, but do not stretch it.

Finally, the supplied aluminium foil has to be glued on top of the magnetic foil. The aluminium foil has to cover the magnetic foil completely.

The impulse giver cable is plugged into the 4-pin socket on the board **MS 3000** on the back of the control unit.



Electrical Connection - Control Unit WARPSTOP Series 3000



The electrical connection must only be carried out by suitably qualified technical personnel.

Before the electrical connection, you must make absolutely sure that there is no danger to come into contact with any parts that might carry live electricity.



The electrical standard connection between the control unit and the machine switch box is made via the 7 pin power/control cable. This cable should be plugged into the socket **Netz** (power) at the back of the control unit.



This information is only relevant, if you have received a surveillance device WARPSTOP Series 3000 in the USA version. This version is clearly marked with **115 V** labels, which are placed on the back of the control unit. The electrical data for the unit are as follows:

Power supply:	115 V AC
Reset voltage:	115 V AC

Electrical Connection - Control Unit WARPSTOP Series 3000



Before the electrical connection, you must make absolutely sure that there is no danger to come into contact with any parts that might carry live electricity.

Power Supply

The control unit is connected using the wires 1 (brown) and 2 (blue) to a alternating current of 230 V AC and with a frequency of 48 to 66 Hz. The yellow/green wire must be connected to the earth of the switch box.

Reset Input

During the normal operation of the machine (machine running) the wires 3 (white) and 6 (white) should have a voltage of 230V AC/DC +/- 20%. During the inching drive operation or when the machine is stopped, there must be no power present at these wires.

Stop Contact

The wires 4 (black) and 5 (black) should be connected to the stopping device of the machine. They serve to provide a potential free relay contact which will be activated during a fault. This contact is set up as a closing type (NO).



This information is only relevant, if you have received a surveillance device WARPSTOP Series 3000 in the USA version. This version is clearly marked with **115 V** labels, which are placed on the back of the control unit. The electrical data for the unit are as follows:

Power supply:	115 V AC
Reset voltage:	115 V AC



It is very important to make sure that you have a perfect earthing of both the inspection head bed and also the control unit!

Low Voltage Reset

To use the low voltage reset, an additional control cable must be plugged into the socket **RESET** at the rear of the control unit.

At the wires 1 (white) and 2 (brown) of the additional control cables during the operation of the machine (machine running) a voltage of 24 Volts AC/DC +/-20% must be present. During the inching drive operation, or when the machine is stopped, there must be no power present at these wires.

In the case of DC the polarity can be disregarded.



When using the low voltage reset, the wires 3 and 6 of the power/control cables must **not** be connected.

Semi Conductor output

To use the semi conductor output, an additional control cable must be plugged into the rear of the control unit at the socket **RESET**.

The wires 3 (green = minus) and 4 (yellow = plus) of this additional control cable should be connected with the electronic stopping equipment of the machine. They serve to provide a potential free semi conductor output with the following data: U max. = 30 V DC, I max. = 0,25 A, NO contact.




When using the semi conductor output, the wires 4 and 5 of the power/control cable must **not** be connected.

Plug Connectors - Control Unit WARPSTOP Series 3000

Connection of the Inspection Head

For the connection between the control unit and the inspection head the light wave conductors are used. The light wave conductors are plugged into the sockets on the board **SE 3000** on the back of the control unit. The sockets for the light wave conductors are equipped with safety caps which should have now been removed.

	Please handle the light wave conductors with great care. For example, if they bent they could become unusable. This will result in them having to be replaced.
	Please lead the light wave conductors from the control unit to the cable channel only in the enclosed protection tube. If the light wave conductors should be longer than needed, put the excess cable carefully in e.g. one floor stand or the cable channel, please.

- Turn the control unit on.
 - Plug one of the light wave conductors into the upper socket. The end of the light wave conductor is equipped with a safety cap which should have now been removed. *)
 - Plug the other light wave conductor into the lower socket. The end of the light wave conductor is equipped with a safety cap which should have now been removed. *)
- *) The polarity of the light wave conductors can be disregarded.
- The green indicator diode **PEGEL** (Level) must light.
 - Turn the control unit off.

Connection of the Impulse Sensor (only Type 3012)

The impulse sensor is plugged into the 4-pole socket on the board **MS 3000** on the back of the control unit.

Serial Data Interface (optional)

The control unit WARPSTOP Series 3000 has the capability to operate diverse special functions via a serial data interface. If no special functions are ordered, this interface is not available.

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Notes

Technische Daten

Control Unit Series 3000

Environmental conditions

Operation: 0° C to 50° C
 Humidity: max. 95 % RH
 Storage: -20° C to +70° C

Power Supply

Continous: 230 V AC +/-20 %, 48 Hz to 66 Hz or
 115 V AC +/-20 %, 48 Hz to 66 Hz

Fuse

230 V AC: 0,5 A
 115 V AC: 1,0 A

Performance rating

< 45 VA

Measurements

Width / Hight / Depth: 265 mm / 155 mm / 265 mm

Weight

6,8 kg

Safety classification

IP 54

Impulse Giver

Environmental conditions

Operation: 0° C to 50° C
 Humidity: max. 95 % RH
 Storage: -20° C to +70° C

Measurements

Length: 70 mm
 Ø Body: 12 mm
 Ø incl. cable radius and
 connection: 85 mm
 Normal switching distance: 2 mm

Principle of measurement

magnetic

Weight

0,15 kg

Safety classification

IP 54

EC - Conformity Declaration

We hereby declare:

**Protechna Herbst GmbH & Co KG
Lilienthalstr. 9
85579 Neubiberg
Germany**

That the product to the following description insofar as its original design and construction and also the model now despatched by us, corresponds to the relevant safety and health requirements laid down by the EC Directives.

Any alteration of the product carried out without permission nullifies this declaration.

Description of the product: **Yarn Inspector**

Type: **Warpstop**

Model - No. **Series 3000**

Relevant EC Directives:

EC - Directive relating to Electro-Magnetic Tolerance (89/336/EEC) followed by 93/31/EEC

EC - Low Voltage Directive (73/23/EEC)

Applied co-ordinating standards, in particular:

DIN EN 50 081 Part 2 Electromagnetic Tolerance (EMV)
Technical base standard interference emission

DIN EN 50 082 Part 2 Electromagnetic Tolerance (EMV)
Technical base standard interference strength

DIN EN 60 204 Electrical equipment on industrial machines

DIN EN 61 010 Safety regulations for measuring, controlling, regulating and laboratory equipment

Applied national standards and technical specifications, in particular:

DIN VDE 0100

Signature of manufacturer:



Dipl. Ing. W. Bühler

Details of signatee:

Development Manager

Date:

January 1996