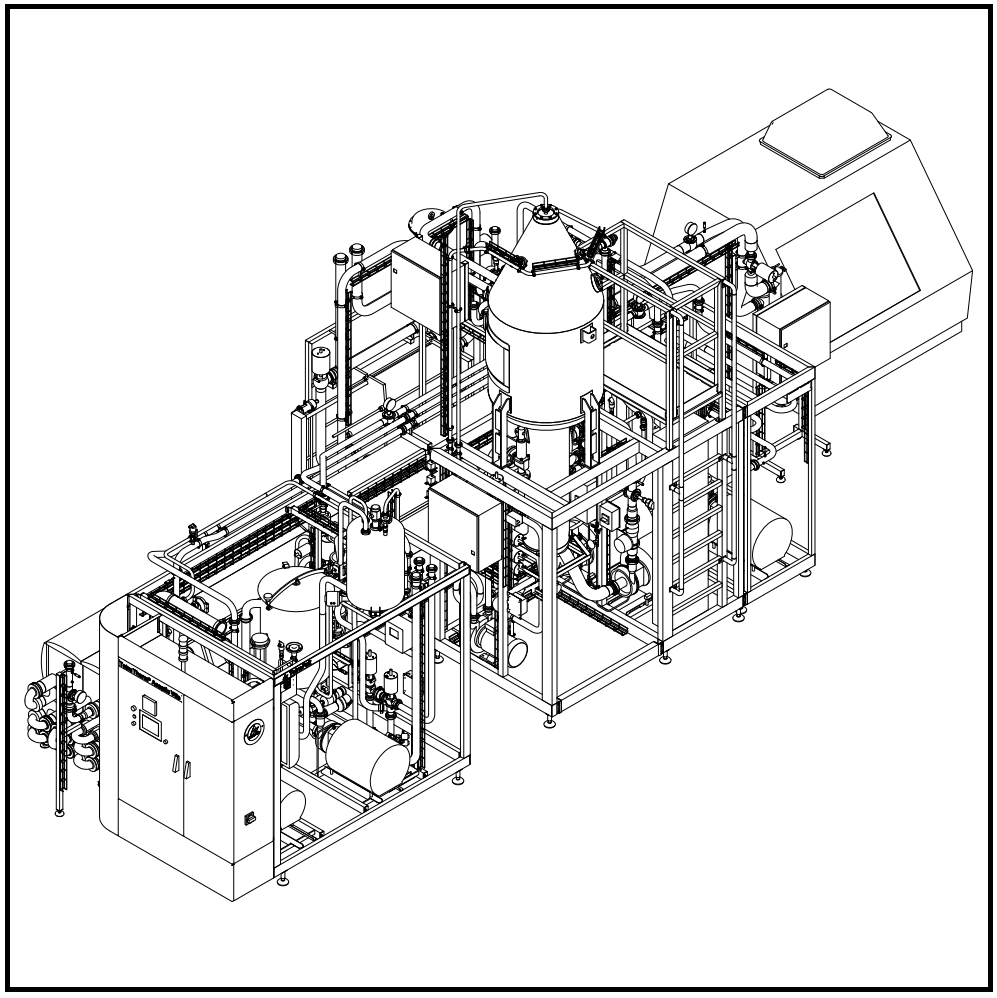
OM

Operation Manual

Tetra Therm® Aseptic VTIS



WARNING

Read and follow all safety precaution instructions throughout this document and on safety signs attached to this equipment.

Failure to follow all safety precaution instructions could result in death or serious injury.

Tetra Pak®

Doc. No. OM-3284901-0103

Copyright © 2016 Tetra Pak International S.A.

All rights reserved. No part of this document may be reproduced or copied in any form or by any means without written permission from Tetra Pak Dairy & Beverage Systems AB.

, Tetra Pak, and all other trademarks displayed in this document are the property of the Tetra Pak International SA. Tetra Pak Dairy & Beverage Systems AB together with Tetra Pak International SA form part of ‘the Tetra Pak Group’. The content of this document is in accordance with the design and construction of the machine or equipment at the time of publishing. The Tetra Pak Group reserves the right to introduce design modifications without prior notice.

The English language version of this document contains the original instructions. All other language versions are translations of the original instructions.

This document was produced and printed by:

Tetra Pak Dairy & Beverage Systems AB
Ruben Rausings gata
S-221 86 LUND
Sweden

Doc. No. OM-3284901-0103

Issue 2016-05

This document is valid for:

T5844130774

Serial No. / Machine No.
Year of Manufacture Sign.

OM
Operation Manual

i Introduction
ii Safety Precautions
1 General Description
2 Process Description
3 Control Panel
4 Alarm
5 Preparations
6 Operation
7 Care And Cleaning
8 Option Machine Edition

Tetra Therm® Aseptic VTIS

Machine or equipment configurations that this document is valid for are described on the next page.

Doc. No. OM-3284901-0103
Issue 2016-05

Tetra Pak®
Tetra Pak Dairy & Beverage Systems AB

Valid for:

Name	Drawing Specification and Development Step	Additional Information

i Introduction

About the Introduction Chapter

This chapter contains basic information about this manual and the related Tetra Pak equipment.

About the Introduction Chapter i-2

Manual Information i-5

Delivered Manuals i-5

Page Layout i-6

Page Numbering i-7

Typographical Conventions i-7

Symbols i-7

Machine Introduction i-8

Intended Use of the Equipment i-8

Manufacturer i-8

Declaration of Conformity i-8

Identification i-9

CE Compliance i-9

Machine Plate i-9

How to Use This OM i-10

Purpose of the OM i-10

Operator Workflow i-10

Assistance and Inquiries i-11

This page intentionally left blank

Manual Information

Tetra Pak recommends reading all delivered manuals carefully. Make sure that the delivered manuals are available to personnel who operate or maintain the equipment.

It is important to keep this manual for the lifetime of the equipment and to pass the manual on to any subsequent holder or user.

Tetra Pak will not be held responsible for any damage to the equipment caused by not following the instructions given in this manual.

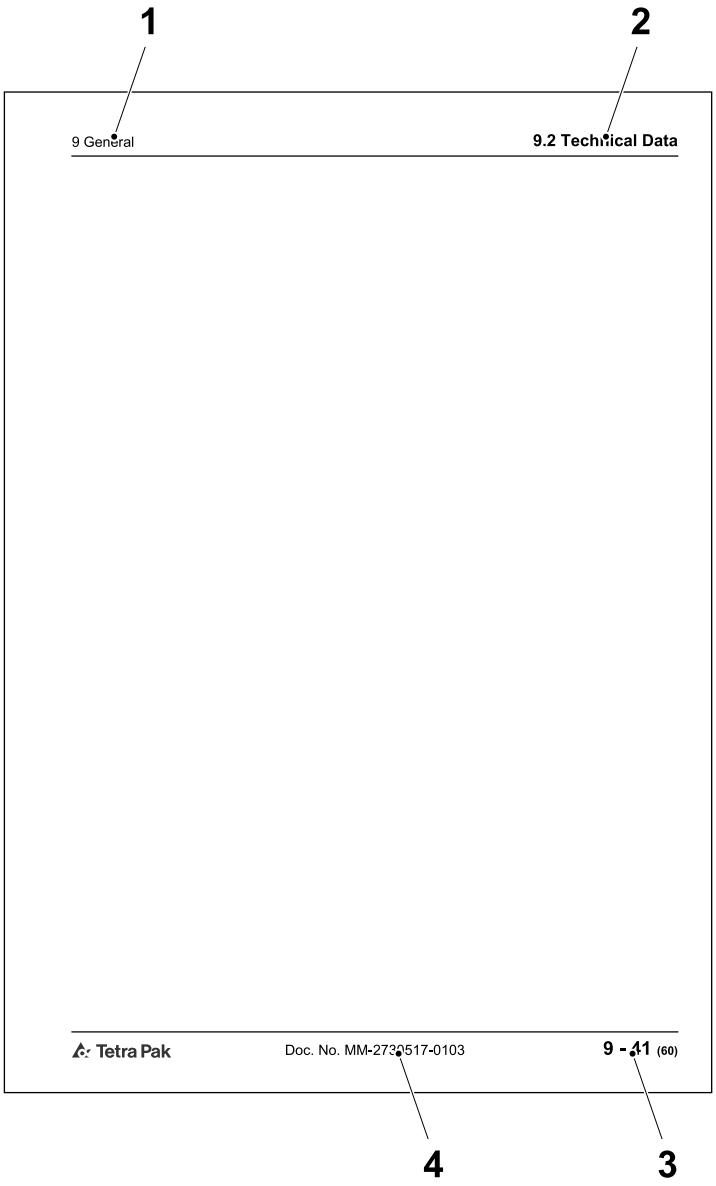
Delivered Manuals

Manuals delivered with this equipment:

- Operation Manual
- Technical Manual
- Electrical Manual (if applicable)

Page Layout

Every main page in this manual contains a header and a footer. The page header contains the chapter name (1) and the section name (2). The page footer contains the page number (3), and the document number (4). See also the page numbering section.

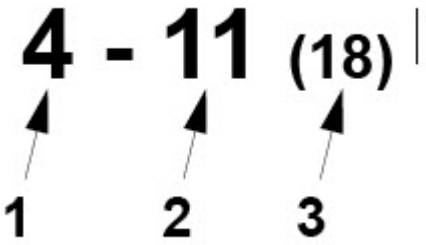


1 Chapter name
2 Section name
3 Page number
4 Document number

Page Numbering

A page number has three parts:

- chapter number (1)
- consecutive page number (2) within the chapter
- total number of pages (3) in the chapter.



1 Chapter number
2 Consecutive page number
3 Total number of pages

Typographical Conventions

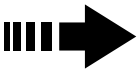
Controls on the operator panel, emergency stop devices, and program steps are printed in CAPITAL LETTERS.

Menu names, button names and other text displayed in software are printed in Courier.

Cross-references are underlined

Symbols

Symbols used in illustrations

	A pointer arrow indicates the position of an object.
	A zoom arrow indicates that an object view is enlarged. The arrow points towards the enlarged view of the object.
	A rotation movement arrow indicates rotational movement of an object. The arrow points in the direction of rotation.
	A straight movement arrow indicates movement of an object. The arrow points in the direction of movement.

Machine Introduction

Intended Use of the Equipment

This equipment is intended for use according to the specifications in Technical data (see Technical Manual) and related documents.

All other use is prohibited. Tetra Pak will not be held responsible for injury or damage if the equipment is used for any other purpose.

Manufacturer

This Tetra Pak equipment has been manufactured by

Tetra Pak Dairy & Beverage Systems AB

Ruben Rausings gata

S-221 86 LUND

Sweden

Declaration of Conformity

For deliveries within EU, or if requested, a signed Declaration of Conformity is delivered with the Technical Manual.

Identification

CE Compliance

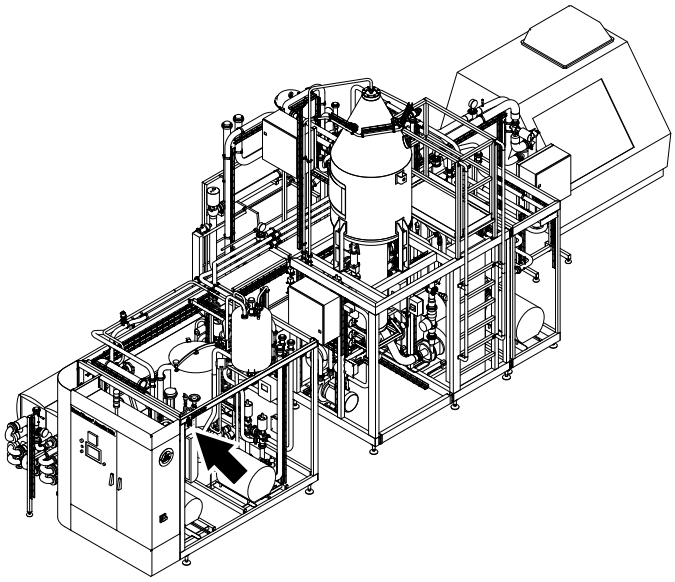
This equipment complies with the basic health and safety regulations of the EEA.

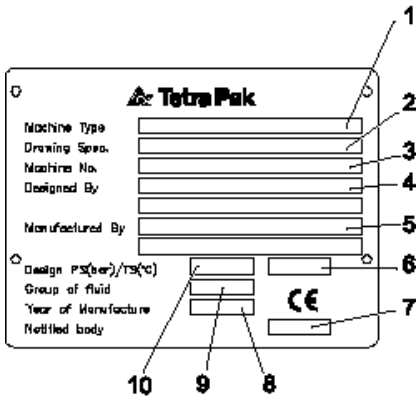
Machine Plate

The illustration below shows an example of the machine plate and its location on the equipment. The machine plate carries data needed when contacting Tetra Pak concerning this specific equipment.

Note! Design pressure PS and design temperature TS stated on the machine sign is the maximum design pressure and maximum design temperature in the assembly and is not applicable to all parts or components of the assembly. PS and TS are most often not at the same location in the assembly.

Make sure that the equipment data in the front pages of this manual corresponds to the machine plate data and the machine specification.





1 Machine type
2 Drawing specifications
3 Machine serial number
4 Designed by
5 Manufacturer
6 Design TS (°C)
7 Notified body
8 Year of manufacture
9 Group of fluid
10 Design PS (bar)

How to Use This OM

Purpose of the OM

The Operation Manual provides operators with information on handling and operating the equipment before, during, and after production.

Operator Workflow

Beginning with a PREPARATION CYCLE, the content is structured to follow the operator workflow with a PRODUCTION CYCLE and then a CARE CYCLE.

Assistance and Inquiries

For assistance when operating this equipment, or other inquiries, comments, or suggestions, submit the questions or give feedback by using the QuTI-P tool. Type QuTI-P in the address field of your browser. If access to QuTI-P is not available, request access by contacting the Global Service Desk.

If access to the Tetra Pak® intranet is not available, contact the nearest Tetra Pak representative.

This page intentionally left blank

ii Safety Precautions

Safety Precaution Instructions

WARNING

Read all safety precaution instructions throughout this manual and on safety signs attached to this equipment.
Failure to follow all safety precaution instructions could result in death or serious injury.

Note! This manual does not cover the safety precaution instructions for the homogenizer. The safety instructions regarding the homogenizer are included in the delivered homogenizer documentation.

Safety Precaution Instructions ii-2

Safety Messages Description ii-5

Personnel Requirements ii-6

Skilled Person ii-6

Instructed Person ii-6

Hygiene ii-7

Food product ii-7

Steam Barrier ii-7

Checkpoints ii-8

Safety Signs ii-9

Locations of Safety Signs ii-11

Unexpected Stop at Production ii-12

Protective Devices ii-13

Emergency Stop ii-13

Emergency Stop Push-Buttons ii-13

Self-Closing Gate ii-14

Safeguards ii-15

Indicating Tower ii-16

Safe Manual Handling ii-17

Personal Protection ii-18

Personal Protective Equipment ii-18

Noise Hazard ii-18

Entanglement Hazard ii-18

Hazardous Substances ii-19

Cleaning and Disinfection Chemicals ii-20

Emergency Procedures ii-21

Disposal of Chemical Substances.....ii-21

Supply Systems.....ii-22

Definition of Lockout Procedure.....ii-22

Elctrical Supply.....ii-22

Residual Voltage..... ii-23

Electrical Cabinet..... ii-24

Socket Outlet..... ii-25

Air Supply..... ii-25

Steam Supply..... ii-26

Water Supply..... ii-26

Safety Messages Description

A safety message is always accompanied by a safety alert symbol and a signal word. The safety alert symbol is used to alert about potential personal injury hazards. To avoid hazards, obey all safety messages that follow this symbol.

The following safety alert symbols and signal words are used in this manual to inform the user of hazards.

DANGER	Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Warning indicates a potentially hazardous situation which, if not avoided, **could** result in **death or serious injury**.
CAUTION	Caution indicates a potentially hazardous situation which, if not avoided, **may** result in **minor or moderate injury**. It may also be used to alert against unsafe practices.
CAUTION	Caution without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in **property damage**.

Personnel Requirements

Note! Personnel includes all persons working on or near this equipment.

Only skilled or instructed persons are allowed to work with this equipment.

Skilled Person

A skilled person must have relevant education and experience to enable him or her to identify hazards, analyse risks, and avoid hazards which electricity, machinery, chemicals, other energies, and supply systems on this equipment can create.

Skilled persons must meet local regulations, such as certifications and qualifications for working with these energies and systems.

Instructed Person

An instructed person must be adequately advised or supervised by a skilled person. The skilled person enables the instructed person to identify hazards, analyse risks, and avoid hazards which electricity, machinery, chemicals, other energies, and supply systems on this equipment can create

Hygiene

Food product

Avoid microbiological contamination of the food product:

- Never clean the floors or the equipment in the process room (area) when the equipment is in production.
- Compressed air used for cleaning purposes should only be used outside the process room (area).
- Disinfect your hands before touching anything that may come into contact with the product.
- Keep your hands and gloves clean.
- Always wear some type of hair protection (cap or hairnet) and clean clothes (preferably white).
- Do not wear a watch, ring, necklace, earrings, or any other exposed jewellery

Steam Barrier

Steam barriers of the product valve in filling machine or Tetra Alsafe tank employs a steam barrier to separate the product supply line from the filling machine/aseptic tank. The steam barrier allows the filling machine/aseptic tank and the product line to be independently sterilized or cleaned. Steam barriers can also be found in end valve clusters to minimize risk of contamination during filling. In applications with full flexibility between sterilizers, aseptic tanks and fillers, steam barriers are often used in mixproof valves.

Steam barriers for pump bearings, flange joints safety valves etc are common in process equipment where sterility is required.

- Never disengage the steam barrier, and never interrupt the steam supply when any of the equipment above is brought into pre-sterilizing phase or when the equipment is already in production phase or aseptic intermediate cleaning phase.
- If any maintenance activities require disengagement of the steam barrier or interruption of the steam supply to the equipment, make sure that no commercial product can be contaminated.

Checkpoints

CAUTION

Risk for unsterility and contaminated product

Risk of leakage when tightening pipe connections while the plant is pressurized. If a leakage is detected, shut down production. Check/renew leaking parts. Start up with a CIP prior to production. Processed product should be stored and carefully checked for contamination prior to distribution to market.

Continuous and systematic leakage check of the equipment must be done:

- During manual preparation.
- During the pre-sterilization phase.
- In conjunction with production start up.
- During production - once every hour.
- During AIC/CIP phase.

To ensure a safe product, it is important that the following checkpoints during the processing of the product are confirmed:

- That the selected configuration (capacity, temperature...) is valid for the food product to be processed.
- That the sterilizing of the equipment is of sufficient time and temperature.
- That no open tanks etc are exposed to foreign objects/contamination.
- That carry-over of potential allergens between products during product change and cleaning is considered. A close inspection of the equipment is of utmost importance if a possible risk occurs - refer to QA system.
- That the correct recipe is selected.
- That ingredients are of the correct type and amount according to recipes.
- That the cleaning solutions are of correct type, concentration and amount according to recipes.
- That no food residue according to defined control points remains after finalized cleaning.
- That no residue of chemicals is present after cleaning the equipment.
- That the unit is clean before start of production if it has been idle for a very long time period. Microbiological growth may occur if there is a long delay between cleaning and the next production.
- Food quality may be affected if the food is stored for excessive periods in the tank. Make sure it is of acceptable quality before resuming production in case of long interruptions in production or long waiting periods before start of production.

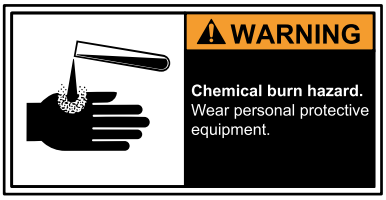
Safety Signs

WARNING

Damaged or missing safety signs increase the risk of death or serious injury.
Replace all missing or damaged safety signs immediately.

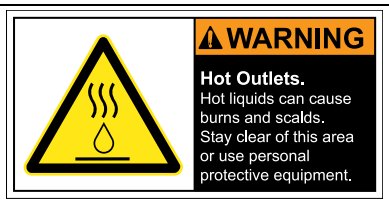
Safety signs are attached to the equipment. The table below lists all the signs that are used, and illustrations show their locations on the equipment. Each position number refers to two variants of a safety sign in the table, but only one is used on the equipment.

- Make sure that each safety sign is legible and in its correct position after installation and maintenance.
- Replace all missing or damaged safety signs immediately.

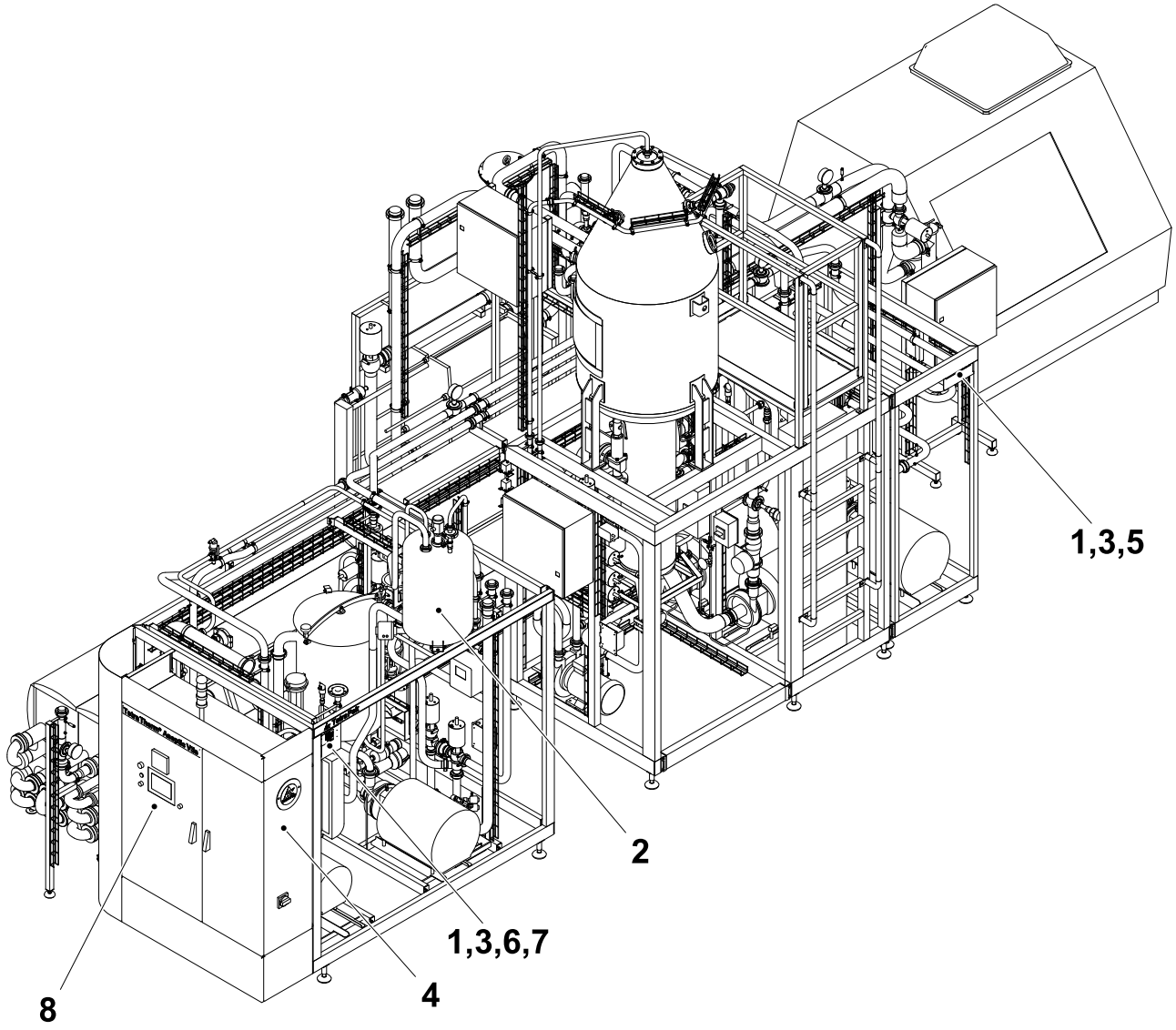
Pos.	ISO sign	ANSI sign
1	 **Hazardous noise.** Risk of impaired hearing. Wear hearing protection	
2	 **Chemical burn hazard** Do not touch Wear personal protective equipment	
3	 **Hot surface** Do not touch Follow lockout procedure before maintenance	

(Cont'd)

(Cont'd)

Pos.	ISO sign	ANSI sign
4	 **Equipment sensitive to welding** First, disconnect all power and fuses in panel. Do NOT weld on panel. Ground close to welding point.	
6	 **Pressurized device** Can cause serious injury. Follow instructions for safe work practice in place and operating. Read manual before first operating machine. If manual is missing, contact Tetra Pak.	
7	 **Hot Outlets** Hot liquid can cause burns and scalds. Stay clear of this area or use personal protective equipment.	
8	 **To prevent serious injury:** Do not operate this machine unless all doors are closed and guards are in place and operating. Read manual before first operating machine. If manual is missing, contact Tetra Pak.	

Locations of Safety Signs



The illustration shows an example of a Tetra Therm Aseptic VTIS installation.

Unexpected Stop at Production

At powers failure or any abnormal stop during production, the process equipment may contain trapped hot pressurized liquid in certain areas.

This could be caused by blockage inside the piping or equipment. In addition, a blocked faulty or missing pressure indicator makes it difficult to verify that depressurization is completed.

WARNING

Burn Hazard.

There is a risk of residual pressure in the equipment if it has not been depressurised fully.

To avoid exposure, make sure that skilled personnel is available before any remedying action.

Protective Devices

There are different kinds of protective device designed to ensure safe use of the equipment. See the sections below.

WARNING

Hazardous zones

Hazardous zones are safeguarded and provided with protective devices. Do not inch or run this equipment if any protective device is inoperative.

Change inoperative components of the safety system immediately.

WARNING

Hazardous voltage

Hazardous voltage remains on this equipment after activating an EMERGENCY STOP or an interlocking device.

Emergency Stop

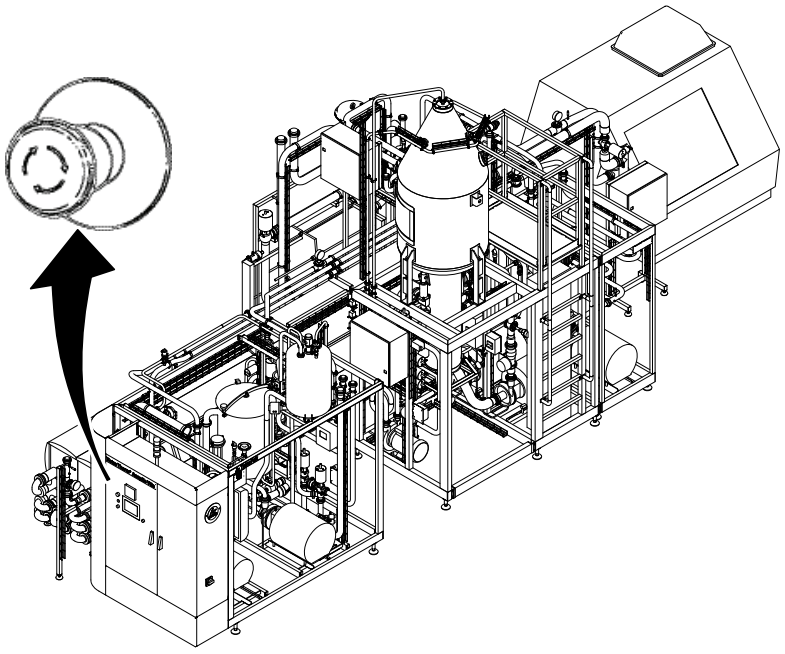
Emergency stop devices are used to stop this equipment immediately in an hazardous situation. Learn the positions of all emergency stop devices and how to use them.

Instructions for a normal production stop, see chapter Operation in Operation manual.

Emergency Stop Push-Buttons

Push one of the EMERGENCY STOP push-buttons to stop this equipment immediately.

The location of each EMERGENCY STOP push-button is shown by an arrow.



Self-Closing Gate

The platform is supplied with a self-closing gate. Make sure that gate is automatically closed after opening.

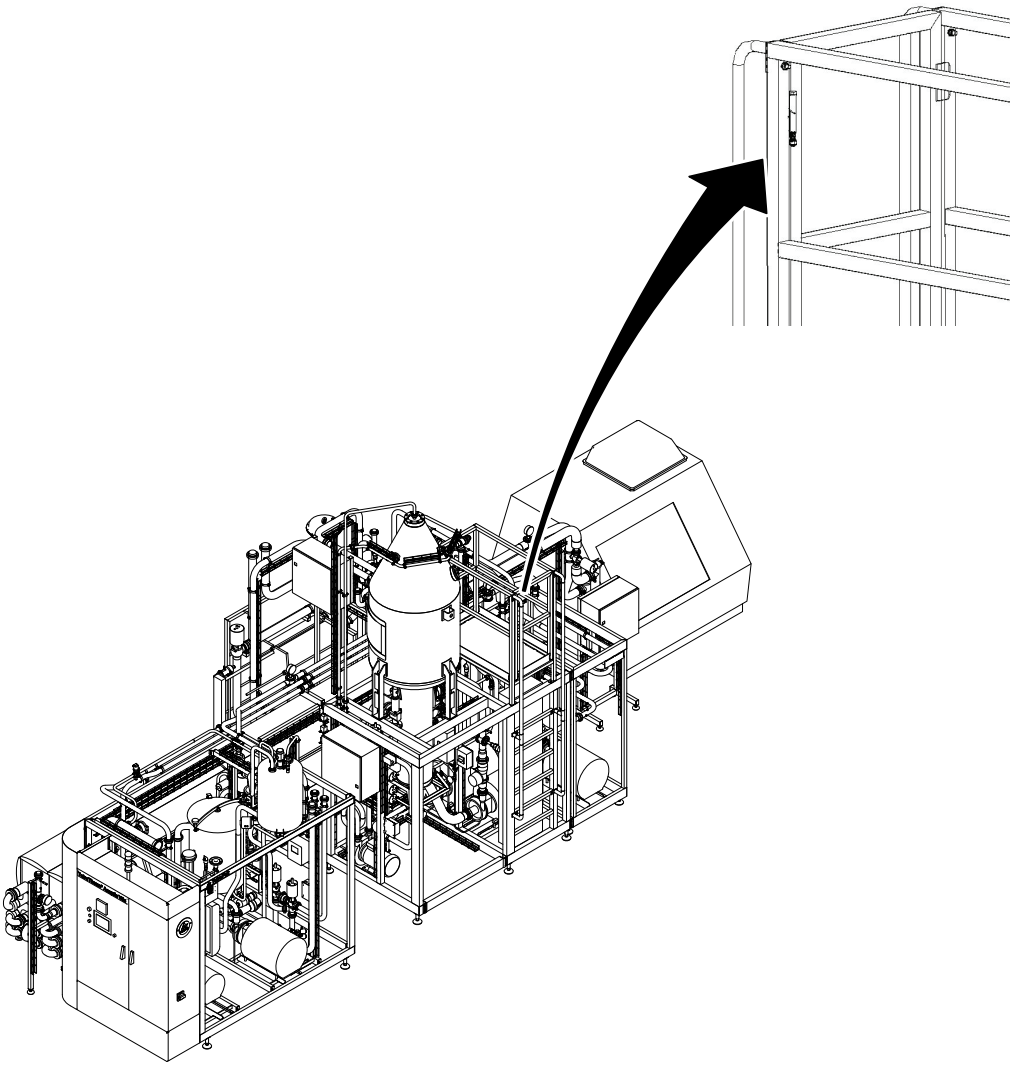
If not the hinges must be cleaned and greased or adjusted.

The location of the hinges is shown by an arrow.

WARNING

Fall hazard

Make sure that the gate is correctly closed when using the platform



Safeguards

WARNING

Moving machinery

Never defeat or bypass the interlocking devices.

Movable guards, for example, doors and covers leading to hazardous zones, are fitted with interlocking devices where required. These devices are usually electric safety switches that are parts of the safety system and must never be defeated, bypassed, or otherwise made inoperative.

WARNING

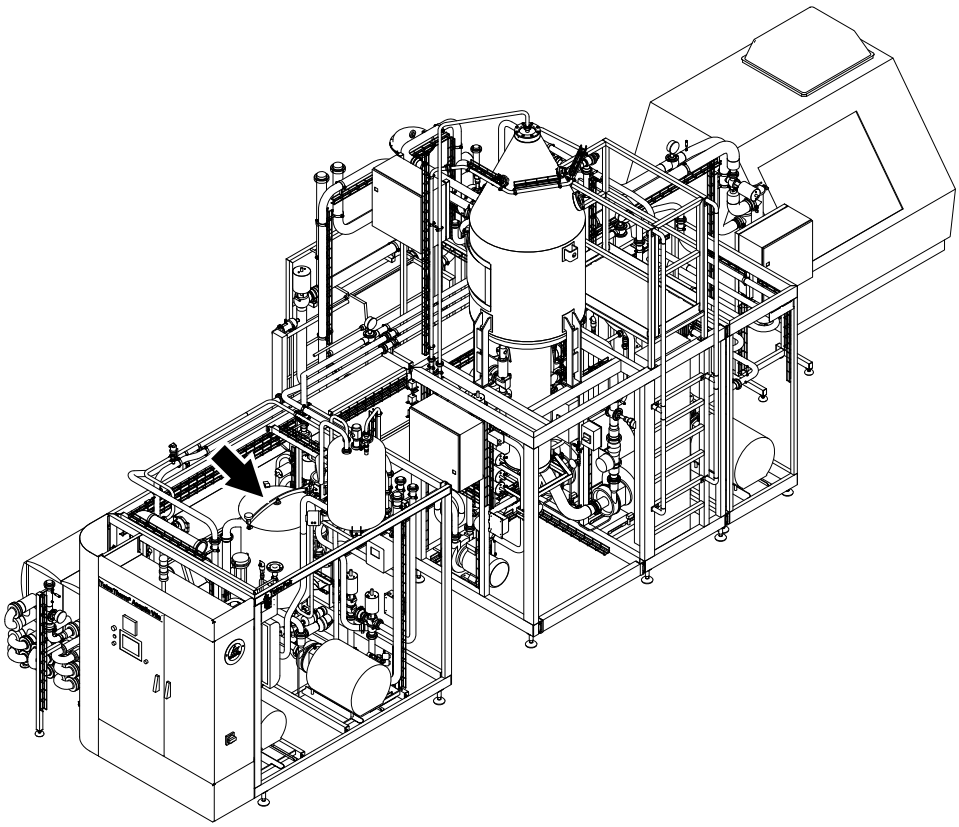
Corners and edges

To prevent injury from corners and edges of open doors and covers, close them unless they must be open during such work.
Be careful when working under an open door, cover or elsewhere below parts of the equipment with corners and edges.

CAUTION

Burn hazard

Parts of this equipment may be hot after operation.
After installation and maintenance, and before this equipment is inched or run, check that all safeguards are in place and that they operate correctly.



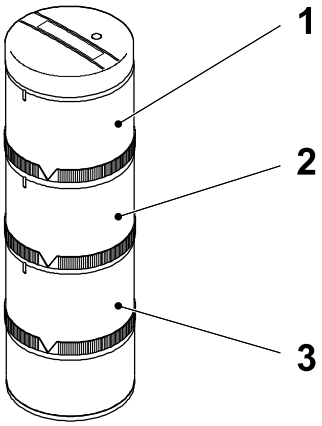
Indicating Tower

An indicating tower is a column of warning lights:

- Red light (1) indicates that the machine is emergency stopped
- Yellow light (2) flashes when an abnormal condition occurs, an impending critical condition calling for action by the operator
- Green light (3) indicates a normal condition, such as production

Note! For a complete list of alarms, see the Operation Manual.

The light stops flashing and remains lit when the alarm is acknowledged. After the fault is corrected or the operator takes the appropriate action, the warning light turns off.



1 Red light
2 Yellow light
3 Green light

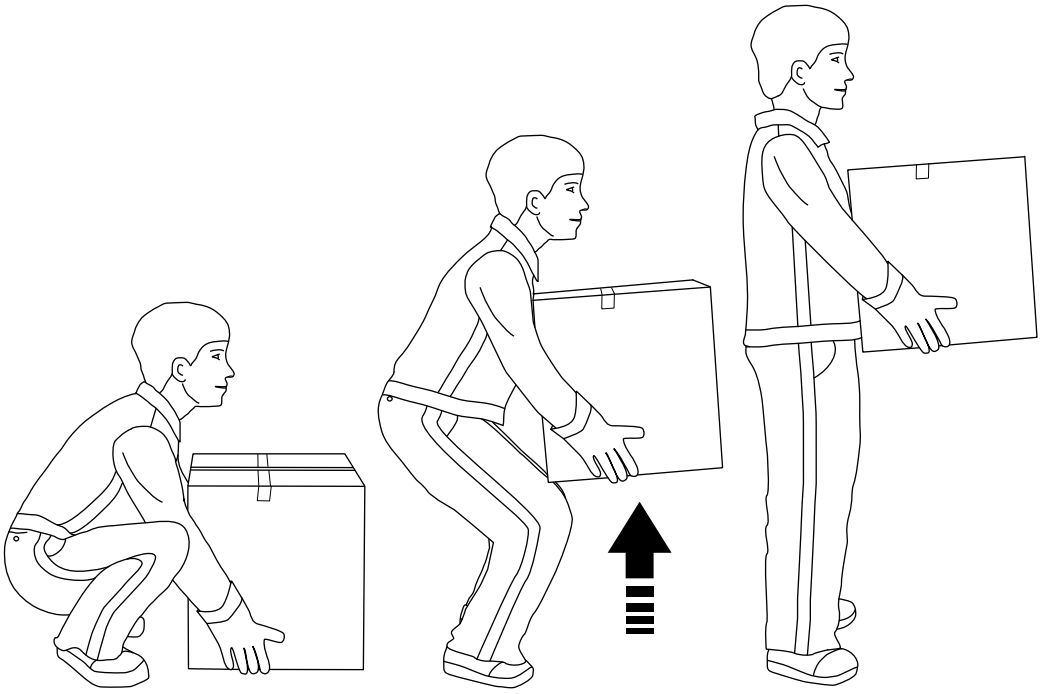
Safe Manual Handling

Use mechanical lifting aids whenever possible. If mechanical lifting aids are not available, do not attempt to lift loads over 23 kg without the assistance of a colleague. Avoid lifting below knee height and above shoulder height. If it is necessary to lift from the floor, follow the instructions below to reduce the risk of back and disc injuries.

- Use safety shoes and be sure that the surface of the floor is not slippery.
- Get close to the load.
- Take a wide stance and find the best positions for your feet.
- Bend your hips and knees, and use your leg muscles.
- Keep the load close to your body.
- Do not twist your body while moving the load.
- Take small steps when turning.

In order to reduce the risk of injury to discs and back muscles, be careful to not bend or twist your back when lifting. Keep the load close to your body to reduce the strain on your back.

To reduce the ergonomic risks to each individual operator, job rotation is recommended, so that recovery and variety are provided.



Personal Protection

This section applies to all personnel at all times when this equipment is in operation. For special personal protection required when handling hazardous substances, see the Hazardous Substances section.

Personal Protective Equipment

Following personal protective equipment is recommended to wear during normal operation and maintenance:

- hearing protection
- protective shoes or boots made of PVC or PE plastic, or rubber
- protective clothes

WARNING

Risk of falling

For safe inspection or maintenance of components that can not be reached from floor level or platform, use lifting device or shoulder harness.

WARNING

Risk of burns

Whenever there is risk of exposure to chemicals, hot water or product, wear protective clothing, face shield, gloves and shoes of PVC or PE plastic, or rubber.

Put on protective clothing, face shield, gloves and shoes before starting trouble shooting of the plant at the slightest risk of getting exposed to chemicals, hot water, or product. Pay attention at pressure less conditions to use protective equipment when it is needed to open the holding tube for service/cleaning.

Noise Hazard

WARNING

Hazardous noise

Risk of impaired hearing.
Wear hearing protection whenever this equipment is in operation.

Entanglement Hazard

WARNING

Risk of entanglement

Do not wear jewellery or loose clothing when working on or near this equipment. Long hair may not be loose.

Hazardous Substances

WARNING

Contact with chemicals can cause death, serious injury, or illness.
Always read and follow the instructions in the safety data sheet supplied by the manufacturer or local supplier, when handling chemicals.

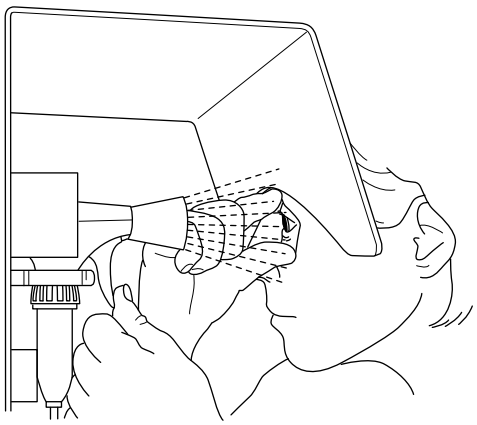
Make sure that:

- the safety data sheet is available
- the showers work
- an eyewash device, movable or wall-mounted, is available and operational
- additional washing facilities are nearby

Note! Learn the locations of washing facilities in order to act immediately in case of an accident







Cleaning and Disinfection Chemicals

DANGER

Contact with chemicals can cause death, serious injury, or illness.
Always read and follow the instructions of the safety data sheet supplied by the manufacturer or the local supplier, when handling chemicals.

Make sure that:

- the safety data sheet is available
- preparations have been done to ensure that the stated safety measures in the safety data sheet can be followed
- the locations of the first aid equipment are learned in order to act immediately in case of an accident

During handling of chemicals, manual cleaning of equipment and maintenance of machinery that have used chemicals, add following extra protection:

- protective goggles (for instance, TP No. 90303-11), tight fitting.
- if there is a risk of splashes, a visor is a suitable complement
- protective gloves made of neoprene (for instance, TP No. 90303-12), nitrile, or butyl rubber
- protective apron (for instance, TP No. 90303-13), or protective suit when handling larger amounts of chemicals
- proper respiratory equipment, if ventilation is insufficient

WARNING

Corrosive chemical.
Wear personal protective equipment.
In both liquid and gas states, these chemicals may cause irritation or damage if they come into contact with skin, mucous membranes, eyes, or clothes. Consult the instructions on the label of the tank or container. Call for medical attention immediately if there is an accident.

Emergency Procedures

If there is an accident, rinse the affected area as soon as possible with large amounts of water.

Eyes

If splashes or vapour from these chemicals come in contact with the eyes

- wash the eyes thoroughly with lukewarm water for 15 minutes (keep eyelids wide apart)
- call for medical attention immediately

Skin

If these chemicals come into contact with skin or clothes

- rinse immediately with plenty of water
- call for medical attention immediately if skin burns appear
- thoroughly wash the clothes before wearing them again

Inhalation

If irritation or pain is experienced due to having **inhaled** these chemicals vapour

- leave the affected area and get some fresh air
- call for medical attention if the symptoms get worse

Ingestion

If these chemicals are swallowed

- do not attempt to cause vomiting
- drink large amounts of lukewarm water to dilute these chemicals
- call for medical attention immediately

Disposal of Chemical Substances

Always read and follow the disposal instructions in the safety data sheet supplied by the manufacturer or local supplier.

It is strongly recommended that used chemical containers are:

- disposed of according to the instructions immediately after use
- not used as disposal containers for other chemicals in order to avoid uncontrolled chemical reactions within the container

Supply Systems

Definition of Lockout Procedure

A lockout procedure is a procedure to put each necessary energy isolating device in its safe position to prevent the energisation of the equipment, such as when a maintenance procedure should be carried out.

A lockout is the use of a device, for example, a padlock, to make sure that an energy isolating device cannot be operated.

An energy isolating device is a mechanical device that physically prevents transmission or release of energy, such as a power supply disconnector.

Elctrical Supply

WARNING

Hazardous voltage and moving machinery.
The electrical supply disconnecting device must be turned off and secured with a lock before any maintenance.

Note! The key to the lock must be removed by the technician and retained in his/her possession until all work is completed. (The lock is not a part of the delivery)

Certain maintenance procedures may require electrical supply systems to be on. These exceptions are clearly stated in the Component instructions.

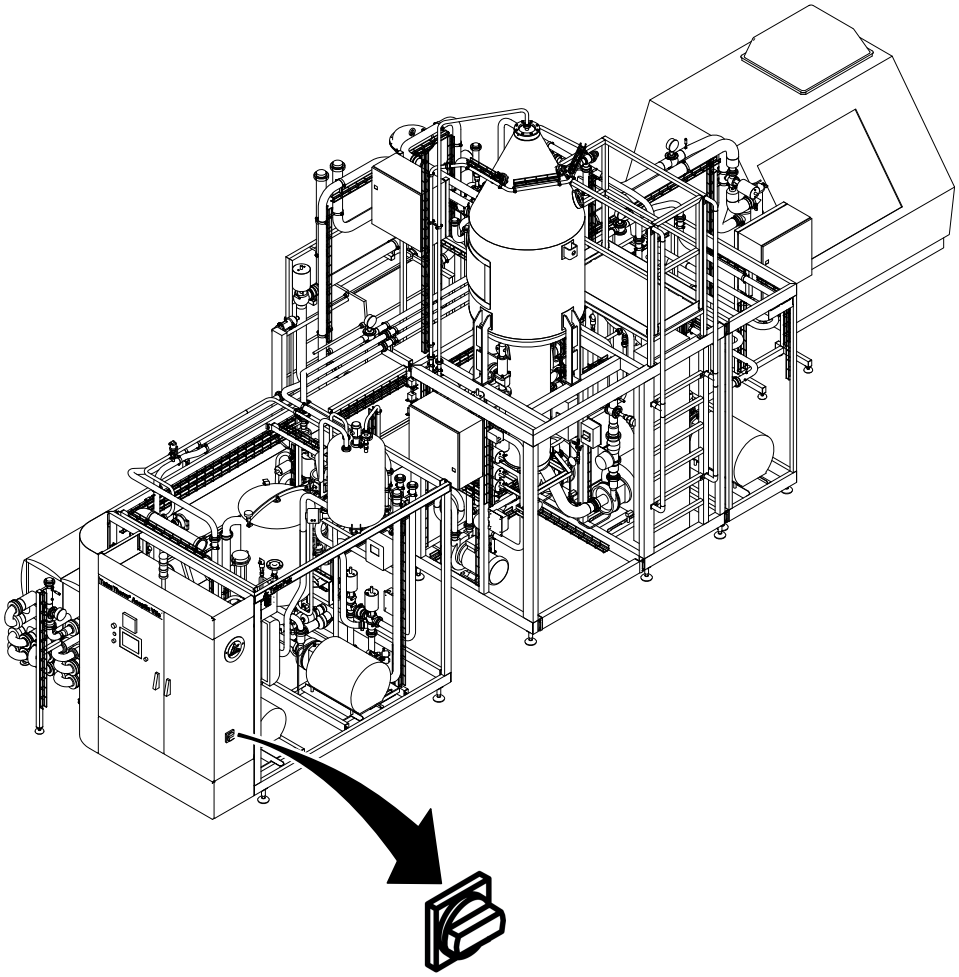
The illustrations show the electrical supply disconnecting device and its location.

WARNING

Hazardous voltage
Circuits identified by orange-coloured conductors are not disconnected by the main electrical supply disconnecting device. The location of the electrical supply disconnecting device of these circuits is described in the procedures that include work on these types of circuit.

(Cont'd)

(Cont'd)



Residual Voltage

WARNING

Hazardous voltage

Do not touch any terminals immediately after the power supply disconnector is turned off. Ensure that no residual voltage remains on the capacitors before touching. Wait five minutes. Failure to observe this information will cause death or serious injury.

After the power supply disconnector is turned off, residual voltage remains in the capacitor circuits.

Electrical Cabinet

WARNING

Hazardous voltage

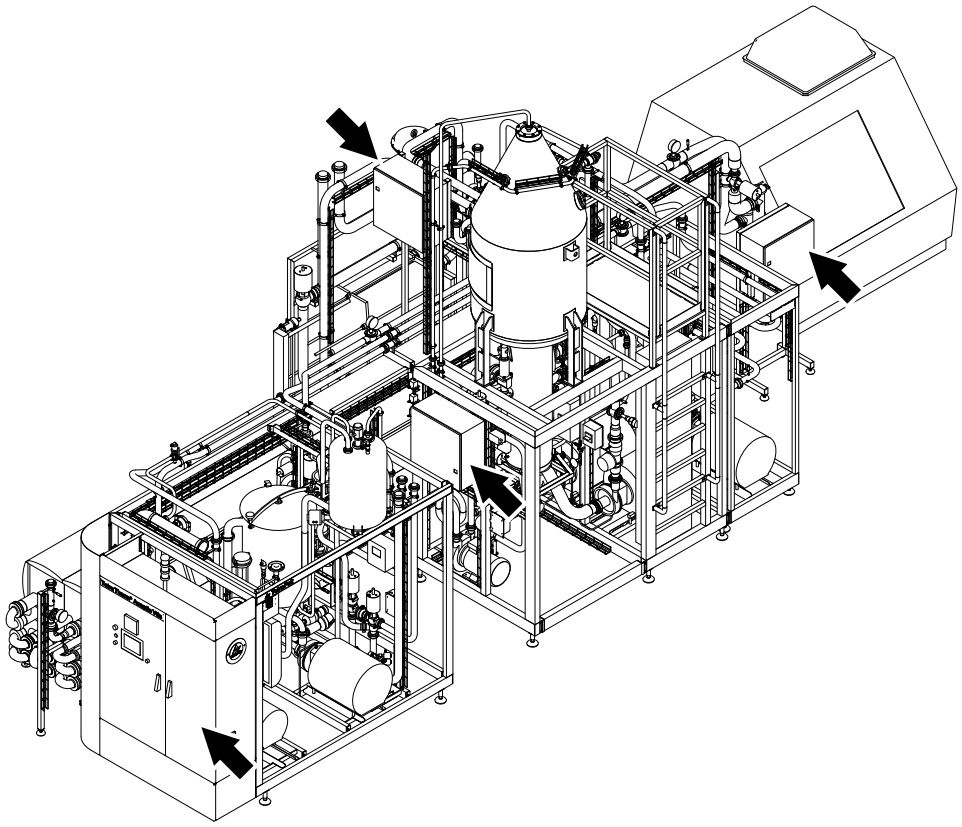
Will shock, burn, or cause death.

Parts behind doors to the electrical cabinet may be live. The electrical supply disconnecting device must be turned to position O (OFF) and secured with a lock before maintenance inside the electrical cabinet.

Note! The key to the lock must be removed by the technician and retained in his/her possession until all work is completed. (The key is not a part of the delivery).

Make sure that the electrical cabinet doors are closed after working inside the electrical cabinet. Doors with lock must be locked.

The location of each electrical cabinet is shown by an arrow.



Socket Outlet

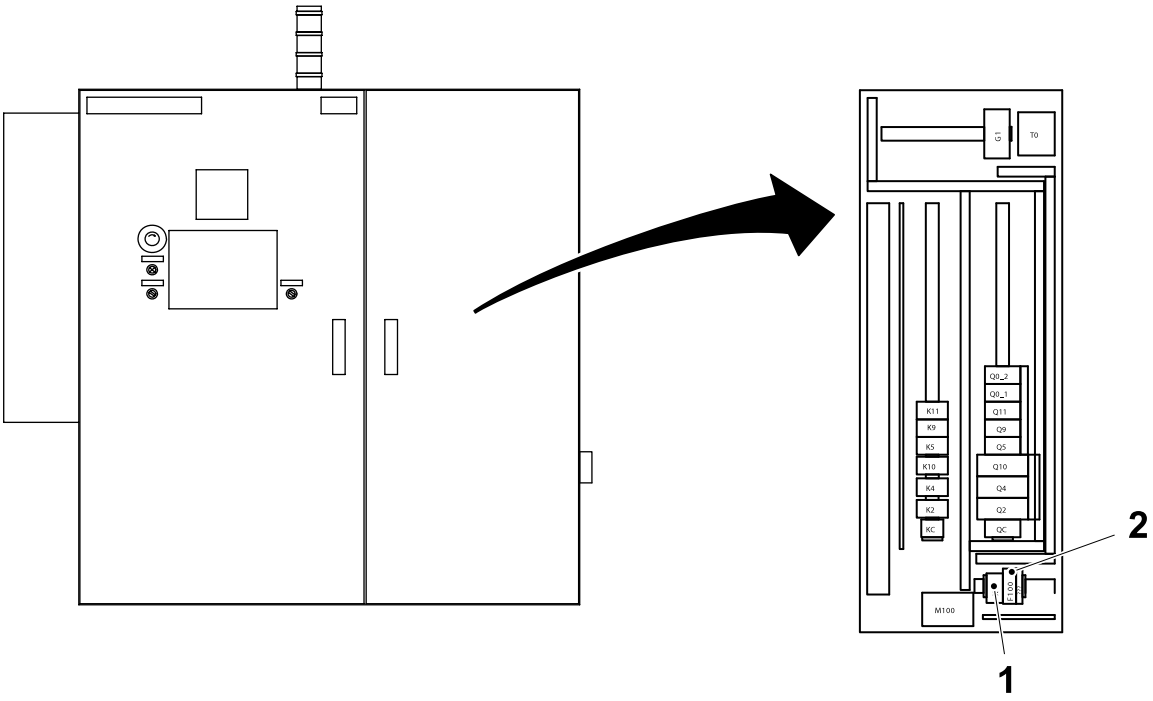
WARNING

Hazardous voltage.

Can shock, burn, or cause death. Read the Maintenance Manual before using this socket outlet.

The socket outlet (1) is connected to a residual current device (2) to protect users against electrical shock if there is an earth fault in the connected equipment. The residual current device shall be tested each time before the socket outlet is being used. See relevant MaSP for test procedure.

The illustration shows the socket outlet, the residual current device, and their location.



Air Supply

WARNING

Compressed air and moving machinery.

Close the main air valve and lock it, and safely release compressed air from the air system before any maintenance.

Note! The key to the lock must be removed by the technician and retained in his/her possession until all work is completed. The lock is not a part of the delivery.

Certain maintenance procedures may require air supply systems to be on. These exceptions are clearly stated in the Component Instructions.

Steam Supply

WARNING

Hot steam can cause scalds.
Pressurized steam can be discharged unexpectedly. Close the steam supply valve and lock it, depressurize and vent all steam safely before any maintenance on parts with steam, such as pipes and valves.

Note! The key to the lock must be removed by the technician and retained in his/her possession until all work is completed.

Certain maintenance procedures may require steam supply systems to be on. These exceptions are clearly stated in the Component Instructions.

WARNING

Hot parts can cause severe burns.
Pipes, valves, and other parts containing steam can be extremely hot. Do not touch hot parts.

Water Supply

CAUTION

Water under pressure.
Close the water supply valves before any maintenance.

Certain maintenance procedures may require water supply systems to be on. These exceptions are stated in the Component instructions.

1 General Description

Description

This chapter contains general descriptions of the machine, its functions, and its components.

Description 1-2

1.1 Applications 1-5

1.1.1 Operator´s Working Area 1-5

1.1.2 Risk Area 1-5

1.2 Main Components 1-6

1.3 Manual Valve Operation Guide 1-7

This page intentionally left blank

1.1 Applications

Aseptic processing module for continuous UHT treatment with direct steam injection. Mainly for heat sensitive low acid products such as milk, enriched milk, cream, soy milk, formulated dairy products, ice cream mix, dairy desserts as well as ESL (Extended Shelf Life) products.

1.1.1 Operator´s Working Area

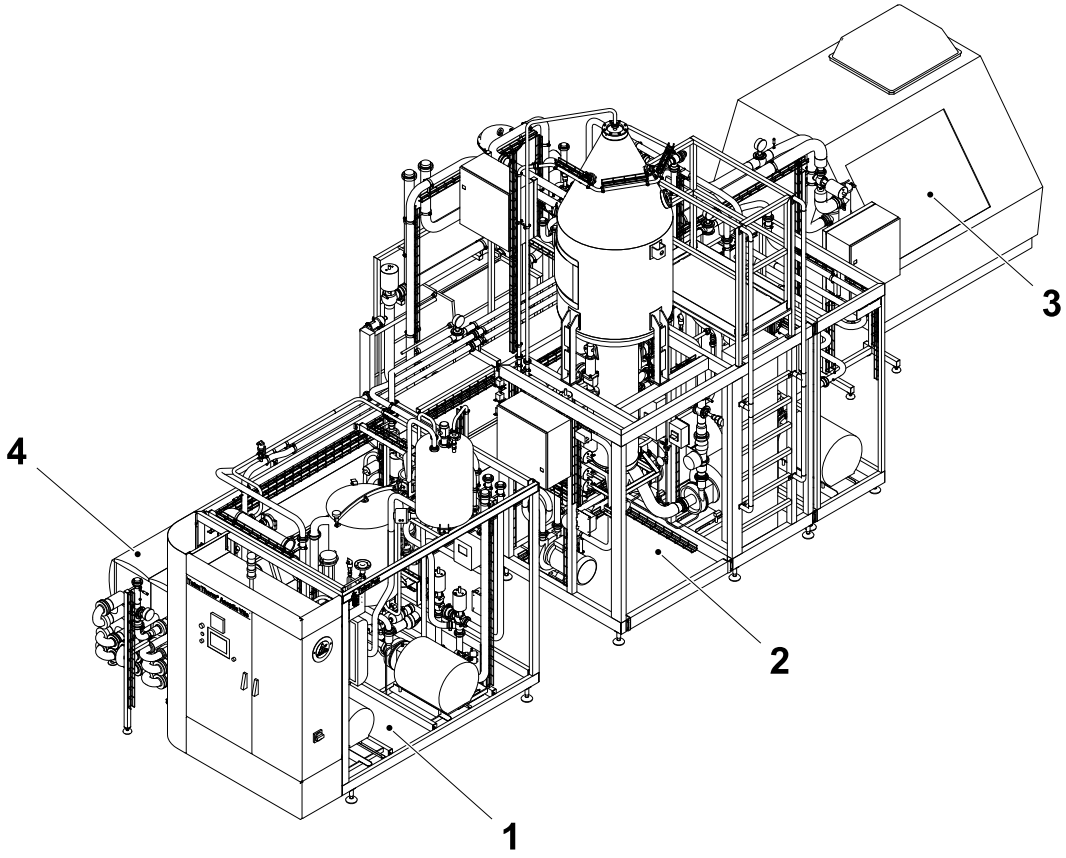
Mainly in front of the control panel

1.1.2 Risk Area

One metre around the equipment due to:

- hot pipes and equipment
- jets of hot liquid and cleaning solution

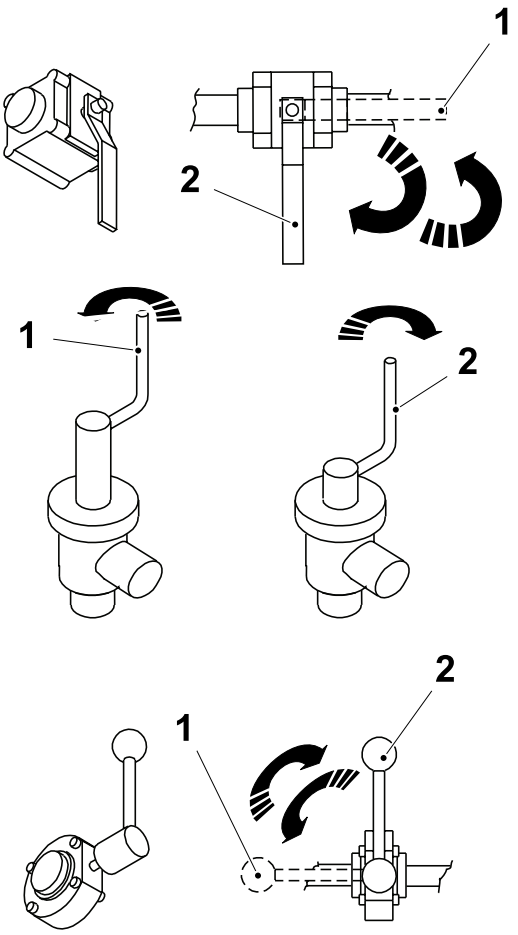
1.2 Main Components



The figure shows only one example of a Tetra Therm Aseptic VTIS installation, for correct installation drawing see the Technical Manual (TeM)

1 Base module with control panel.
2 Direct heat module.
3 Tetra Alex homogenizer, M6.
4 Tetra Spiraflo tube heat exchanger.

1.3 Manual Valve Operation Guide



1 Open
2 Closed

This page intentionally left blank

2 Process Description

Description

This section describes the process cycles and working principle etcetera.

Description 2-2

2.1 Introduction 2-5

2.1.1 Process Cycle 2-5

2.2 Working Principle 2-6

2.2.1 Sterilization 2-6

2.2.2 Production 2-7

2.2.3 Cleaning 2-7

2.2.4 Product Flow with Steam Injector/HoldingTube 2-8

2.2.5 Product Flow with Infuser 2-9

This page intentionally left blank

2.1 Introduction

This chapter gives a simple description of this process equipment.

The way of function is described with a flow chart, which is adapted to give a clear picture and do not include all details.

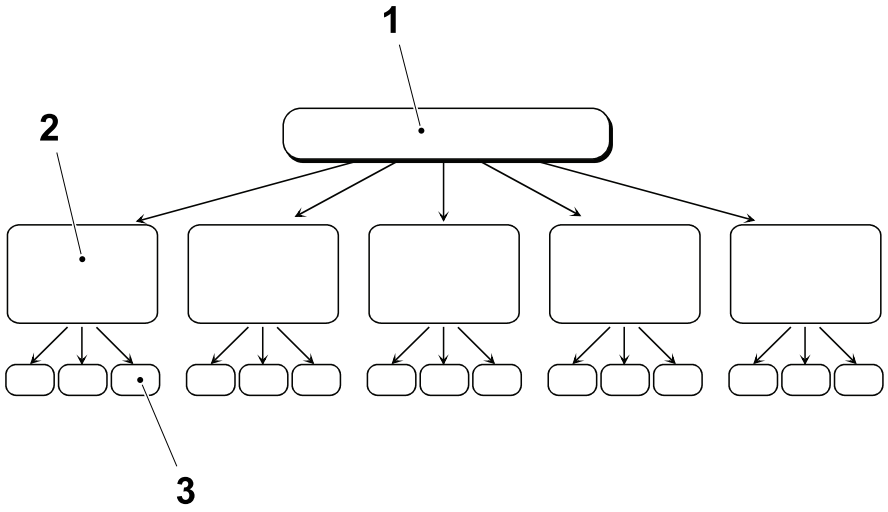
For detailed information, see customised documents in the Technical Manual (TeM) such as:

- Flow diagram.
- Technical data documents.
- Functional documents.

2.1.1 Process Cycle

The process cycle (2) is divided into the following phases:

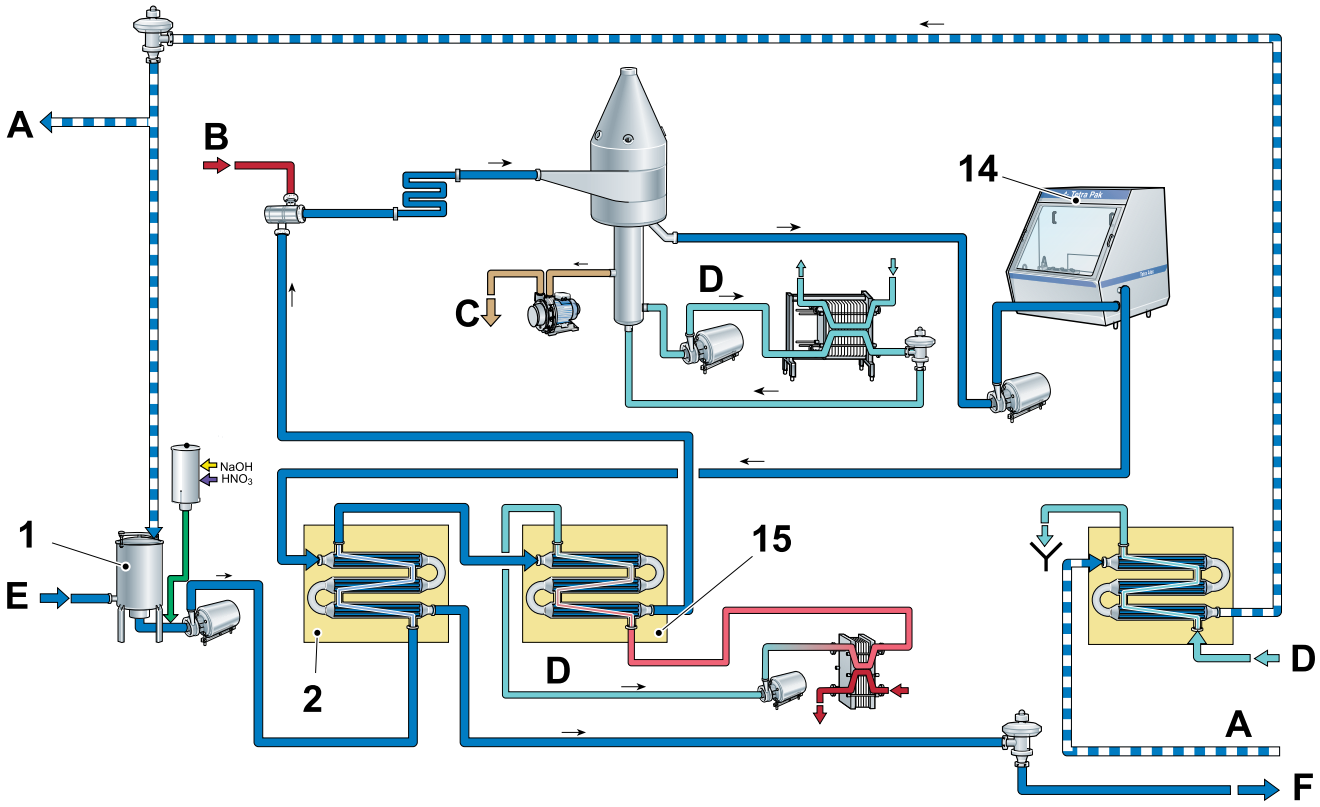
- Sterilization loop
- Production
- Aseptic intermediate cleaning
- Stop
- Cleaning



1 Process cycle
2 Phase
3 Step

2.2 Working Principle

The figure shows a flow diagram for Tetra Therm Aseptic VTIS (CMR) based on a tube heat exchanger, the principle is basically the same with a plate heat exchanger



A = To reject tank. B = Steam. C = Air and condensate. D = Cooling water. E = Product in. F = Product to filling

2.2.1 Sterilization

The Tetra Therm Aseptic VTIS is sterilized by circulating hot water under pressure for 30 minutes. After sterilization, the module is cooled down step by step to production temperatures. Finally sterile water is circulated through the product circuit.

2.2.2 Production

When a downstream tank or filling machine is ready, production can start by filling the module with product via the balance tank (1). The product displaces the water/product mix to drain or reject tank. A balance tank with product bowl minimises the mixing phases.

If product supply fails or a stop at the aseptic tank or filling machine occurs, sterile water replaces the product and the module goes into sterile water circulation.

During production, the product is preheated in a heat exchanger (2) to about 80 °C and the heat energy from the outgoing product is regeneratively recovered.

Continue with 2.2.4 Product Flow with Steam Injector/HoldingTube on page 2-8

or 2.2.5 Product Flow with Infuser on page 2-9

2.2.3 Cleaning

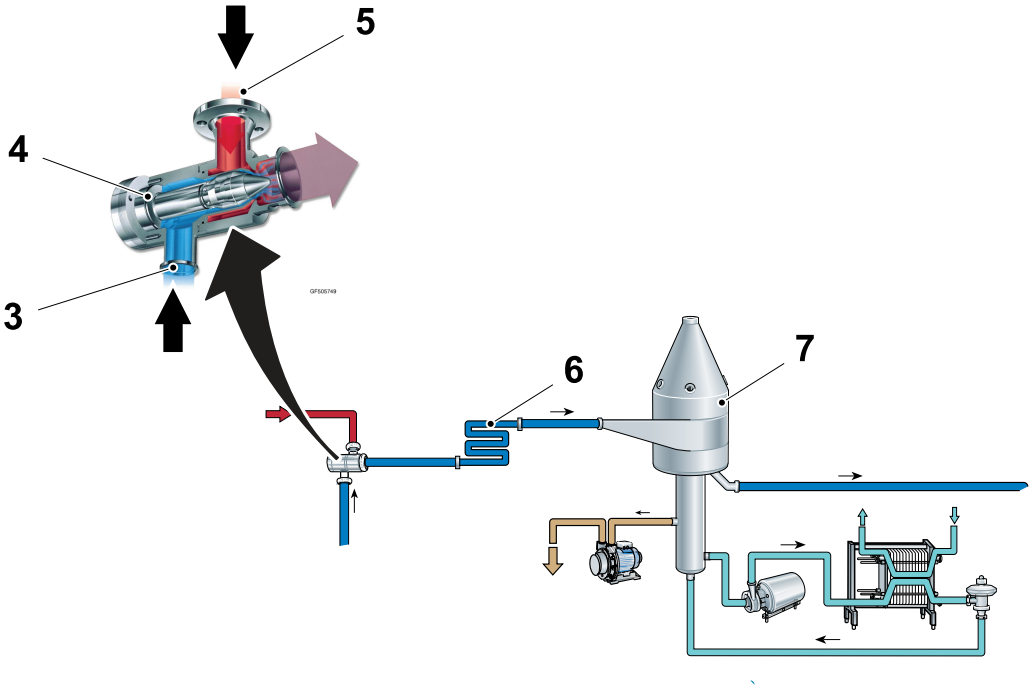
To prolong the production period between full CIP (Cleaning-in-place), an Aseptic Intermediate Cleaning (AIC) can be performed. This cleaning is done under aseptic conditions and the module remains sterile. After each production run, the module is cleaned (CIP) with both lye and acid.

2.2.4 Product Flow with Steam Injector/HoldingTube

Preheated product (3) enters the steam injector (4). Pressurised steam (5) is injected into the product that is instantly heated to the predefined temperature.

The product is kept at predefined temperature in the holding tube (6) for a predefined time. The product is then immediately cooled down to a predefined flash temperature in the flash vessel (7).

Continue according to 2.2.3 Cleaning.



2.2.5 Product Flow with Infuser

Product (8) enters through nozzles that are mounted on a perforated plate (9) in the top of the infusion unit.

Jets of the product fall down to the cone body in the bottom.

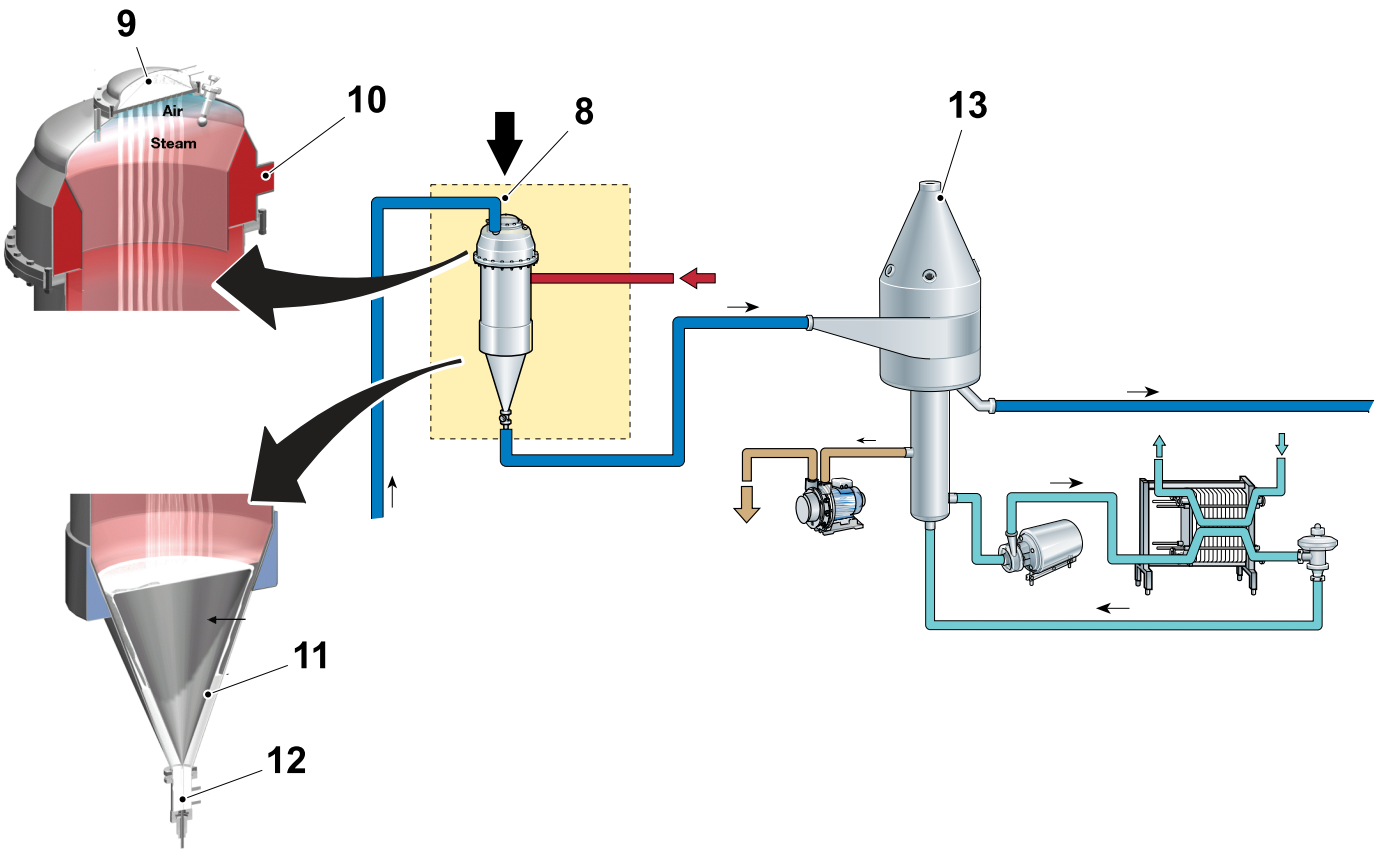
Steam enters through the steam inlet (10) and the product jets are instantly heated to the predefined temperature.

The product flows down into the space between the cone body and the wall of the chamber. The product level (11) depends on the product flow, length of the adjusting screw and the desired time delay before the product leaves through the outlet (12).

The product level corresponds to the holding tube in a VTIS-unit with steam injector and the time delay corresponds to the holding time.

The product is then immediately cooled down to the same temperature as before the steam injector by the flashing vessel (13).

Continue according to 2.2.3 Cleaning.



This page intentionally left blank

3 Control Panel

Description

This chapter describes the control panel and the operator panel with menus

Description 3-2

3.1 Denomination 3-7

3.2 Operator's Panel 3-8

3.3 Access Code Levels 3-9

3.4 TPOP Description 3-10

3.5 TPOP Description #2 3-11

3.5.1 Time/Volume, Step, and Recipe Indication 3-12

3.6 Buttons and Symbols on the Window Pictures 3-13

3.6.1 Local/Remote Control 3-14

3.6.2 Process Values Legend 3-14

3.6.3 Function Buttons 3-15

3.6.4 Step/Scroll Buttons 3-15

3.6.5 Process Value, Data Input and Indication 3-16

3.6.6 Bar Graph 3-16

3.7 TPOP Windows 3-17

3.7.1 Overview Window 3-17

3.7.2 Detailed Overview Window 3-18

3.7.3 Operating Window 3-19

3.7.3.1 Phase Mode Buttons 3-19

3.7.3.2 Control Buttons 3-20

3.7.3.3 Dialogue Buttons 3-20

3.7.3.4 Indications 3-20

3.7.3.5 One Button Action Area 3-21

3.7.4 Start Condition 3-22

3.7.5 Process Value Window 3-23

3.7.6 Alarm List 3-24

3.7.7 Trend Diagram Window 3-25

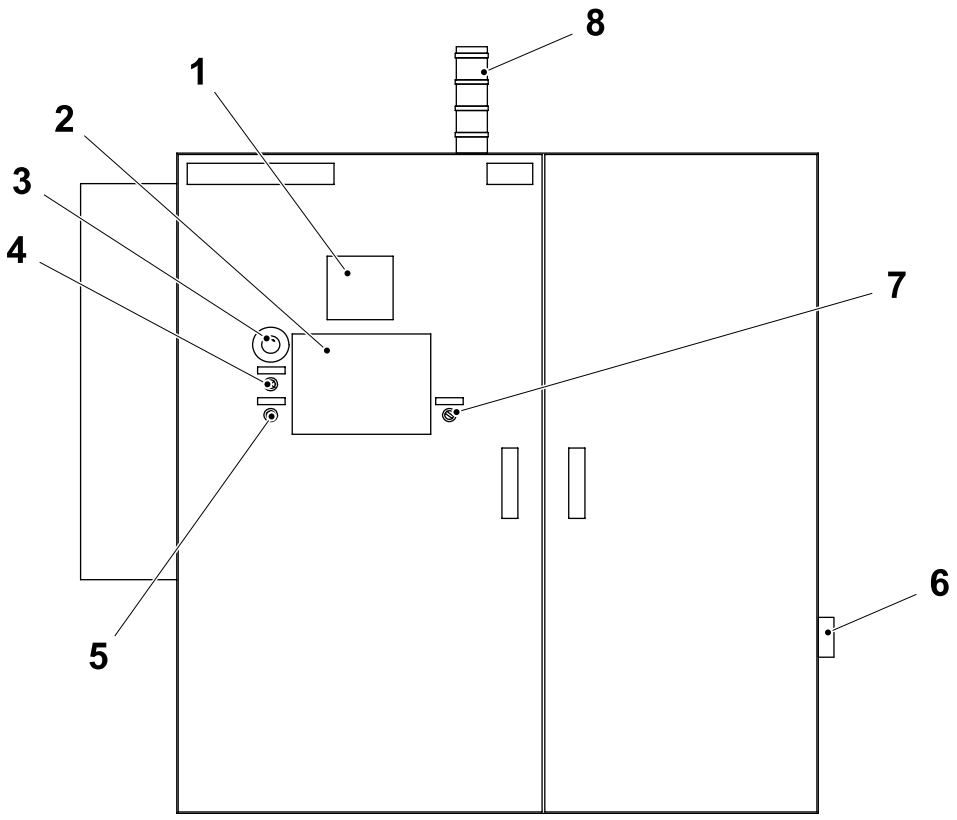
3.7.7.1 Select Pen 3-26

3.7.8 Service Window 3-27
3.7.9 Product and Capacity Window 3-28
3.7.10 PID Overview 3-30
3.7.11 Recipe Overview 3-30
3.7.12 AFM Capacity Configuration 3-31
3.7.13 Force Main Window 3-32
3.7.14 Force I/O Valves and Motors 3-33
3.7.14.1 Motor Face Plate 3-34
3.7.14.2 Valve Face Plate 3-35
3.7.14.3 Analogue Object 3-37
3.7.14.3.1 Analogue Input Face Plate 3-38
3.7.14.4 Volume Set Up 3-39
3.7.14.4.1 Bar Graph Indicator 3-40
3.7.14.5 Recipe Edit Window 3-41
3.7.14.5.1 Edit Recipe or Recipe name 3-42
3.7.14.5.2 Copy Recipe 3-43
3.7.14.6 PID Recipe Edit 3-44
3.7.14.7 PID Controller 3-45
3.7.14.8 PID Parameter 3-46
3.7.14.9 Analog Settings for Motors and Valves 3-47
3.7.14.10 Pressure Homogeniser 3-48
3.7.14.11 CIP Concentration 3-49
3.7.14.12 Temperature Guard (TSL42) 3-50
3.7.14.13 Differential Pressure Guard PSL61-64 (Option) 3-51
3.7.14.14 Pressure Guard PSL847 (Option) 3-52
3.7.14.15 Pressure Switch PS66 3-53
3.7.14.16 Flow and Holding Time Guards 3-54
3.7.14.17 Fo Calculation 3-55
3.7.14.18 Level Switch LS08 3-56
3.7.14.19 Step Forward on Temperature Settings 3-57
3.7.15 Logger Sterilization Report page 1 3-58
3.7.16 Logger Sterilization Report page 2 3-59
3.7.17 Logger Production Report page 1 3-60

3.7.18 Logger Production Report page 2 3-61
3.7.18.1 PAC and CIP Setup 3-62
3.7.19 IntelliCIP™ 2.0 3-63
3.7.19.1 Trend Indicator Status 3-65
3.7.19.2 RFL Graph 3-65
3.7.19.3 Clean Machine 3-66
3.7.19.4 Positioning of Differential Pressure Transmitters 3-67
3.7.19.5 Calibration 3-67
3.7.19.5.1 Calibration Procedure 3-68
3.7.19.5.2 Start Calibration 3-68
3.7.20 Turbidity Meter QT78 (Option) 3-70
3.7.20.1 How to use turbidity meter QT78 to fine tune volume settings 3-71
3.7.21 Keyboards 3-71
3.7.21.1 Integer Numbers 3-72
3.7.21.2 Alphanumerical Keyboard 3-73

This page intentionally left blank

3.1 Denomination



1 Temperature recorder (option).
2 Operator panel.
3 Emergency stop button.
4 Emergency reset button.
5 Local/Remote selector.
6 Electrical supply disconnecting device.
7 Steam switch On/Off.
8 Indicating tower.

3.2 Operator's Panel

This processing equipment is controlled by a Programmable Logic Controller (PLC). This PLC contains several sequences, which control the execution of the necessary programs for running production, cleaning, and so on.

The necessary number of controllers (regulators) are also integrated into the PLC to control the analogue subprocesses, such as level, pressure and/or temperature controls.

A Human Machine Interface (HMI) is used as the link between PLC, the processing equipment, and the operators. Using the HMI the operator can enter the necessary commands, enter various process and system parameters and obtain information about system status. It is possible to retrieve information about the current step of the system and which sequence is active. If abnormal condition occurs, alarms are shown on this unit.

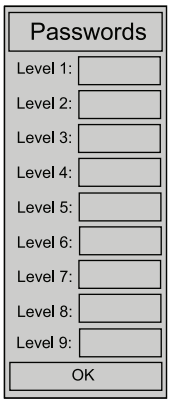
This processing equipment can also be connected to an overall control system. From there, it is possible to enter and receive more or less the same information as entered and retrieved from the HMI of the system.

3.3 Access Code Levels

Access levels to operators panel are divided into two groups:

- Operators have access to level 0 and 1, see table below
- Supervisors have access to level 0, 1 and 2, see table below

Access status	**Allows to:**
0 = No user	View and choose among all the pictures View and see all values Alarms, trends Start and stop sequences Select Product/Capacity Take away historic alarms
1 = Operator	All possibilities as for No user (0)
2 = Supervisor	All possibilities as for No user (0) and also: -Change parameters -Run controllers in manual mode -Force I/O -Change set points for PID:s and Guards -Set CIP memory

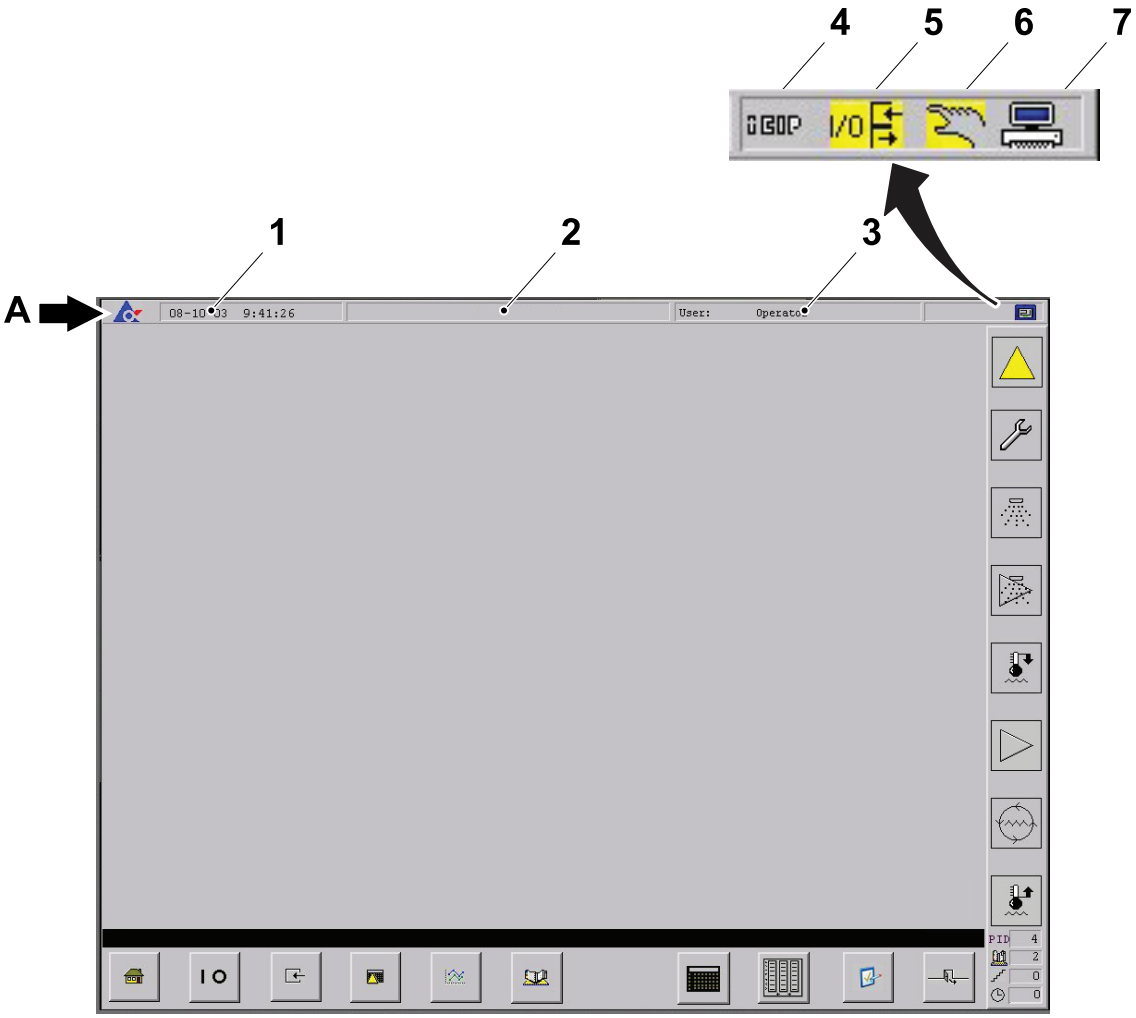


3.4 TPOP Description

The TPOP main window displays the buttons and icons used identify the status of the processing equipment and to access the different sections of the processing equipment control.

Note! If **Date and Time area** (1) are pushed the `CHANGE TIME AND DATE` menu opens. If **current user area** (3) is pushed the `LOGIN WINDOW` opens.

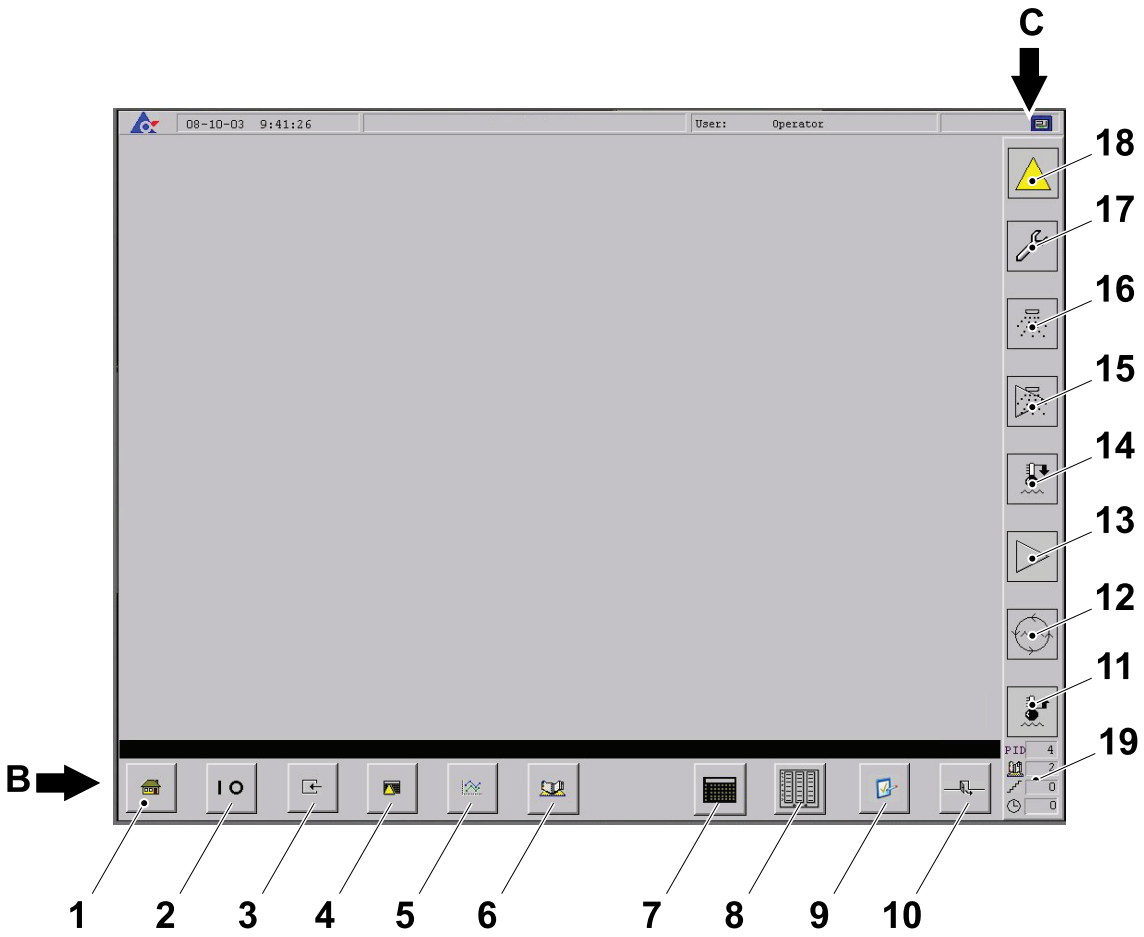
The Header bar (A) contains information as follows.



1 Date and time.
2 Current window name.
3 Current user.
4 Intelligent CIP indication.
5 Force indication.
6 PID in manual indication.
7 Local/remote indication.

3.5 TPOP Description #2

The button bar (B) and the ladder bar (C) contains functions and indications as follows.

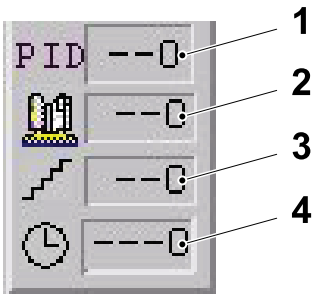


1 Go to OVERVIEW WINDOW.
2 Go to OPERATORS WINDOW.
3 Go to PROCESS VALUES WINDOW.
4 Go to ALARM WINDOW.
5 Go to TREND WINDOW.
6 Go to PRODUCT AND CAPACITY WINDOW.
7 Go to EVENT LOGGER WINDOW.
8 Go to DATA LOGGER WINDOW.
9 Go to SETTING WINDOW.
10 Go to PREVIOUS WINDOW.
11 Indication for sterilization.
12 Indication for water circulation/hibernation.
13 Indication for production.
14 Indication for shutdown/emergency empty.
15 Indication for Aseptic Intermediate Cleaning (AIC).
16 Indication for Cleaning In Place (CIP).
17 Indication for maintenance.
18 Indication for alarm. Push to jump to ALARM WINDOW.
19 Time/Volume, Step and recipe indication.

3.5.1 Time/Volume, Step, and Recipe Indication

There are three possible values for position (4):

- time or volume remaining in current step,
- time (min) accumulated in production or water circulation/hibernation,
- time (sec.) accumulated in water circulation/hibernation when waiting to enter hibernation.



1 Current PID recipe.
2 Current product recipe.
3 Current step.
4 Time or volume.

3.6 Buttons and Symbols on the Window Pictures

Note! The following pages in this section contain a selection of buttons, symbols, and window pictures that may be seen on the HMI. The various options and equipment that is supplied with each sterilizer determines what is seen on your HMI.

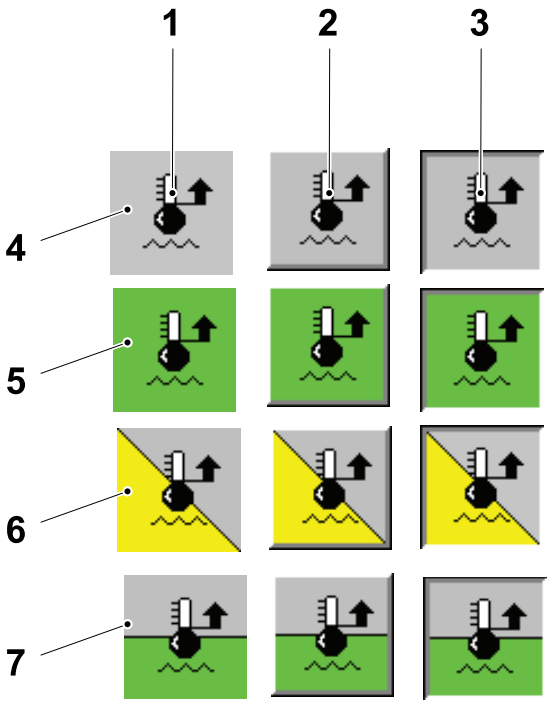
The symbols on the ladder bar tell about the operating / functioning modes of the machine at any given time.

The illustration shows the different modes for the process STERILIZATION. Different colour codes on the symbols indicate different status.

The push-button position could be flat not selectable (1), up selectable (2) or down not selectable (3).

The colour represents the process status,

- Gray-Idle (4).
- Green-Run (5).
- Gray/yellow-Held (6).
- Gray/green-Queue (7).

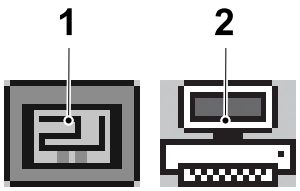


3.6.1 Local/Remote Control

Remote control is selected with a key switch on the front of the control panel, if a separate master control unit is placed in a remote control room

Local control means that the processing equipment is operated from the local panel control system.

Note! In local, control it is still possible to change pictures and view the application from the remote control unit, but it is not possible to operate the module.



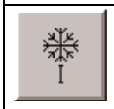
1 Local control.
2 Remote control.

3.6.2 Process Values Legend

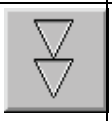
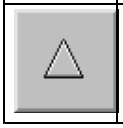
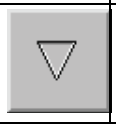
TI	Temperature Indicator (view only).
TC/TIC	Temperature Controller (associated with a PID controller).
TSL	Temperature Set point Level (associated with set point settings).
PT	Pressure Transmitter (view only).
PC/PIC	Pressure Controller (associated with a PID controller).
PSL	Pressure Set point Level (associated with set point settings).
DP	Differential Pressure.
LT	Level Transmitter (view only).
LC/LIC	Level Controller (associated with a PID controller).
LSL	Level Set point Level (associated with set point settings).
FI	Flow Transmitter (view only).
FC/FIC	Flow Controller (associated with a PID controller).
FS	Flow Switch (associated with set point settings).

3.6.3 Function Buttons

The operator can select certain machine functions by pushing one of these buttons. Different colour codes on the symbols indicate different status.

Symbol	Description	Symbol	Description
	Not selected and not selectable.		Connected, but not selected, not selectable. (Remote control).
	Not selected and selectable.		Selected, but not correctly connected, not selectable. (Remote control).
	Connected, but not selected, selectable.		Selected and correctly connected, selectable.
	Selected, but not correctly connected, selectable.		Selected and correctly connected, not selectable.

3.6.4 Step/Scroll Buttons

Symbol	Description	Symbol	Description
	Step/scroll button.		
	Go up one page in list.		Go one page down in list.
	Go up one line in list.		Go one line down in list.

3.6.5 Process Value, Data Input and Indication

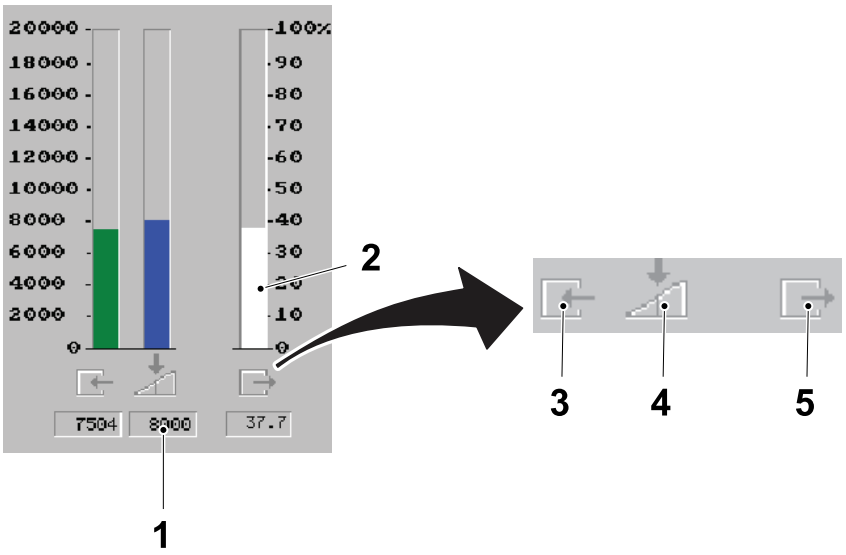
Process value (1) is identified with a code followed by a number. First letter indicates parameter or device, second letter indicates that functionality and third letter indicates extra functions for guards. Data input indicates by a push button (2) with data field showing the current value.



First letter	Second letter	Third letter
Temperature (T).	Indication (I).	High (H).
Flow (F).	Guard/switch (S).	Low (H).
Pressure (P).	Controller (C).	
Conductivity (Q).		
Valves (V).		
Motors (M).		

3.6.6 Bar Graph

The illustration shows an example of bar graph with numeric display used in various windows.



1 Numeric display.
2 Bar graph.
3 Symbol for input.
4 Symbol for set point.
5 Symbol for output.

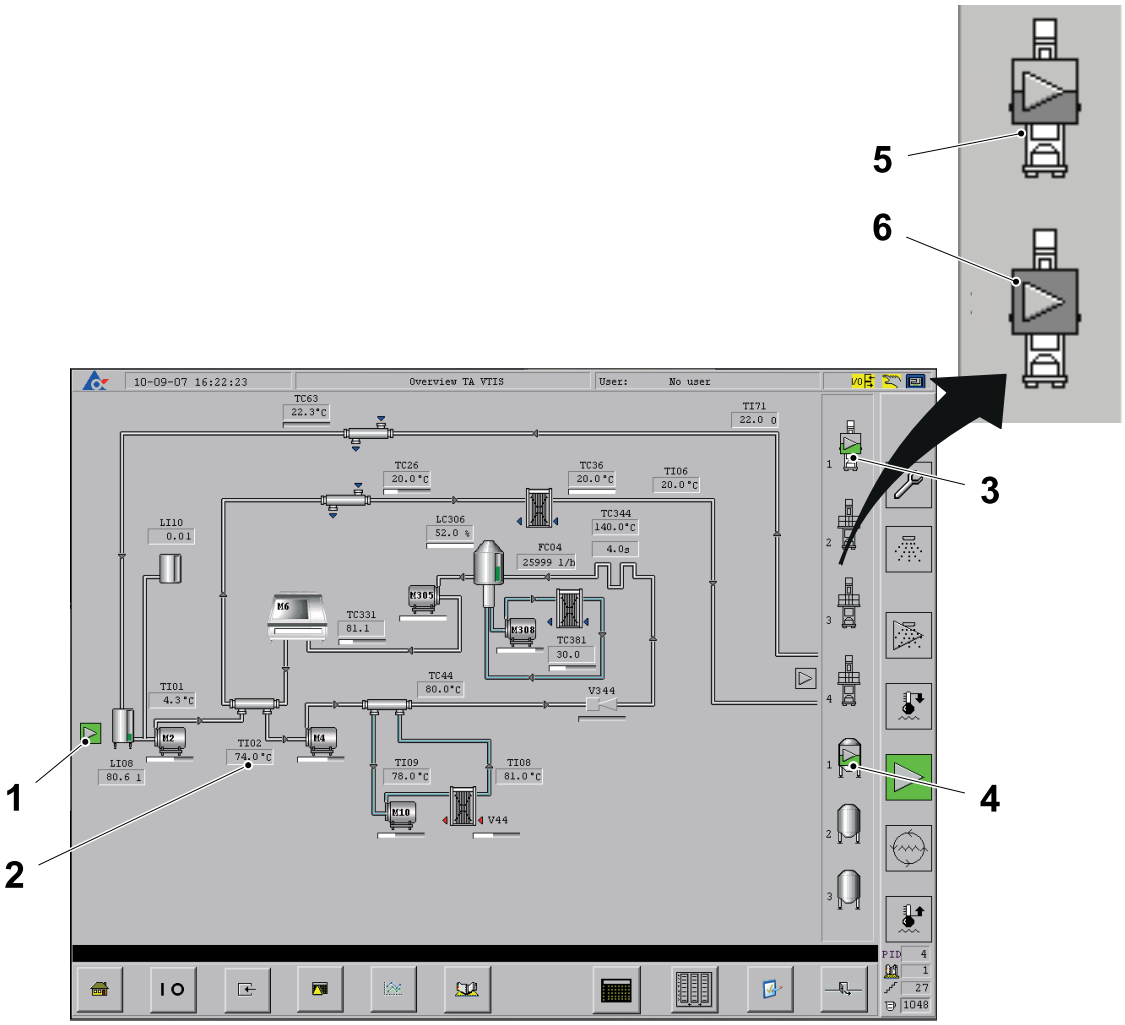
3.7 TPOP Windows

3.7.1 Overview Window

The overview window is a presented as a simplified flowchart where some process values and indications of importance are visible. such as:

- Product available at BTD (Balance Tank) (1)
- Output from controller (0-100%) (2)
- Sterilizer filled with product and signal Product available to AFM/Alsafe tank. (3)
- AFM/Alsafe tank indication Ready/Production (4)

Note! Press anywhere on the overview window to bring up a detailed flowchart.

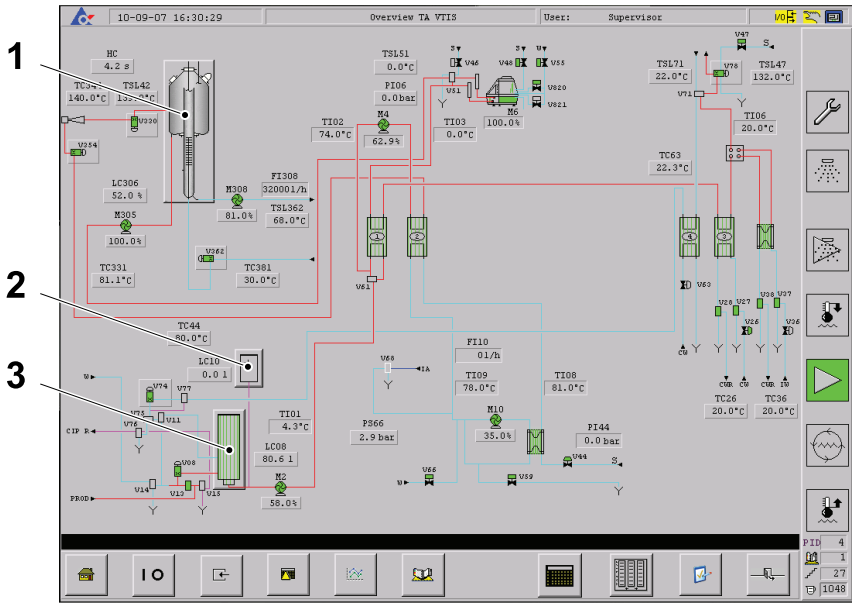


1 Balance Tank.
2 Output.
3 AFM indication ready.
4 Alsafe tank indication ready.
5 Ready.
6 Production.

3.7.2 Detailed Overview Window

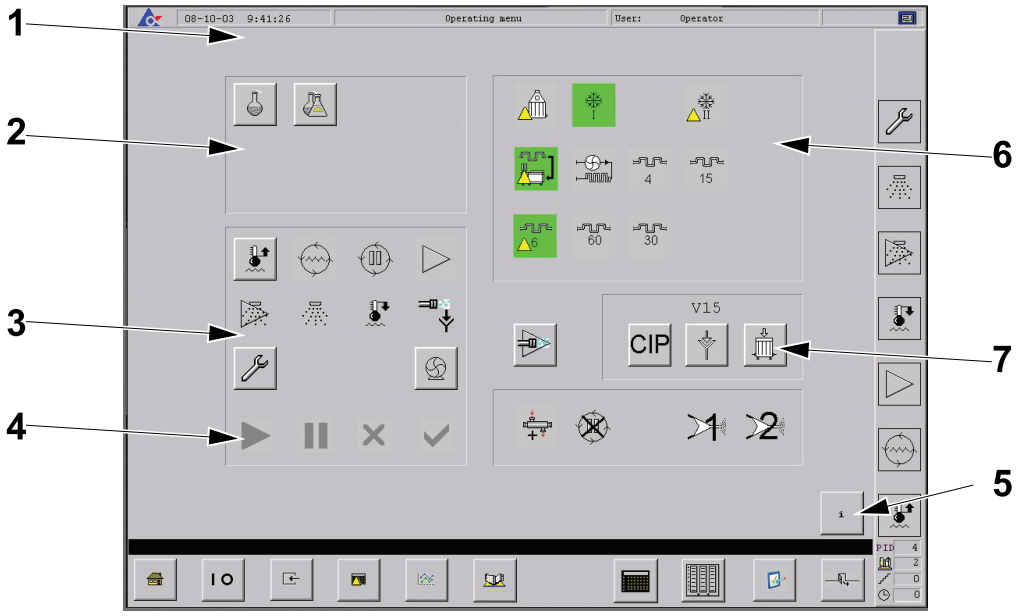
The detailed overview window shows a flowchart where more process values and data input/indication are available.

The symbols for the DHM (1) the CIP header batch tank (2) and the product balance tank (3) appears also as push buttons and brings up new detailed windows.



3.7.3 Operating Window

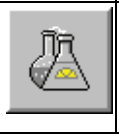
The operating window is divided into different areas.



1 Information text.
2 Phase mode buttons.
3 Control buttons.
4 Dialogue buttons.
5 Jump to window buttons.
6 Indication area.
7 One button action area.

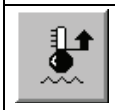
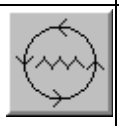
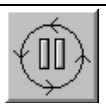
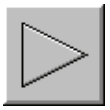
3.7.3.1 Phase Mode Buttons

The operator need in some circumstance to select phase modes when starting AIC or CIP. A phase mode button are always used together with a dialogue button

Symbol	Description	Symbol	Description	Symbol	Description
	Lye cleaning		Lye/Acid (Standard CIP)		PAC, Production Adapted Cleaning

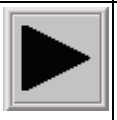
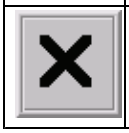
3.7.3.2 Control Buttons

Control buttons are always used together with a dialogue button

Symbol	Description	Symbol	Description	Symbol	Description
	Sterilisation or fill up BTD in step 0		Water circulation		Hibernation
	Production		AIC Intermediate CIP		CIP
	Shut down		AIC Emergency empty		Maintenance
	Product supply				

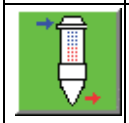
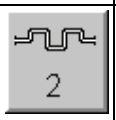
3.7.3.3 Dialogue Buttons

The operator need in some circumstance to select phase modes when starting AIC or CIP. A phase mode button are always used together with a dialogue button.

Symbol	Description	Symbol	Description	Symbol	Description
	Start		Restart		Hold
	Abort		Finalize		

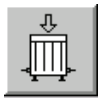
3.7.3.4 Indications

In this area indications are placed. This is objects that are selected via recipe or similar.

Symbol	Description	Symbol	Description	Symbol	Description
	Infuser		Extra cooler		Holding cell e.g. 2 sec.
	CIP back flush				

3.7.3.5 One Button Action Area

In this area push button with one button action are placed.

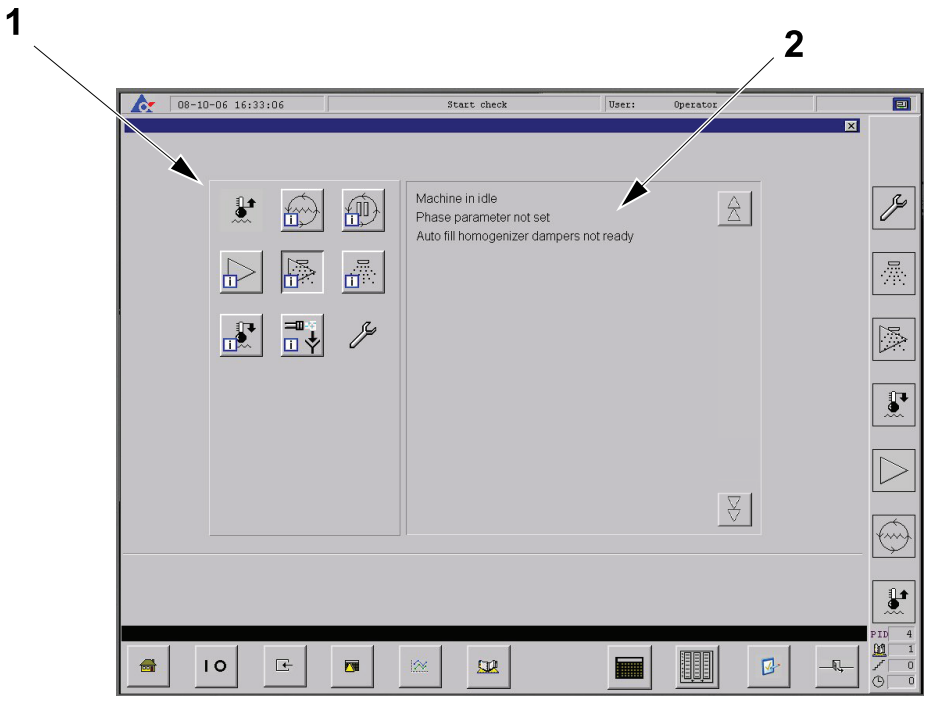
Symbol	Description	Symbol	Description
	Flush product. If selected then include the flush of the inlet pipe to the sterilizer and the last flush steps. Deselect if planned to run a new filling to save water.		CIP supply line. If selected the flow is routed to supply line by the valve V15. (Not US Version)
	V15 to drain. If selected the flow is routed to drain by the valve V15.		V15 to reject. If selected the flow is routed to a reject tank by the valve V15. (Not US Version)
	Disable hibernation. If selected it prevent that the hibernation function starts automatically after a preset time.		Fill aseptic dampers.
	Open BTD lid. A magnetic clutch release the lock after 30 seconds. (Optional)		

3.7.4 Start Condition

The start condition window. are divided into two parts where the left part (1) holds push buttons for all process phases and the right part (2) contains the actual start condition text.

If there is information concerning any process phase this is to be visualised with an `i` on the button.

By pressing a push button with an `i` corresponding information is displayed in the start condition text area.

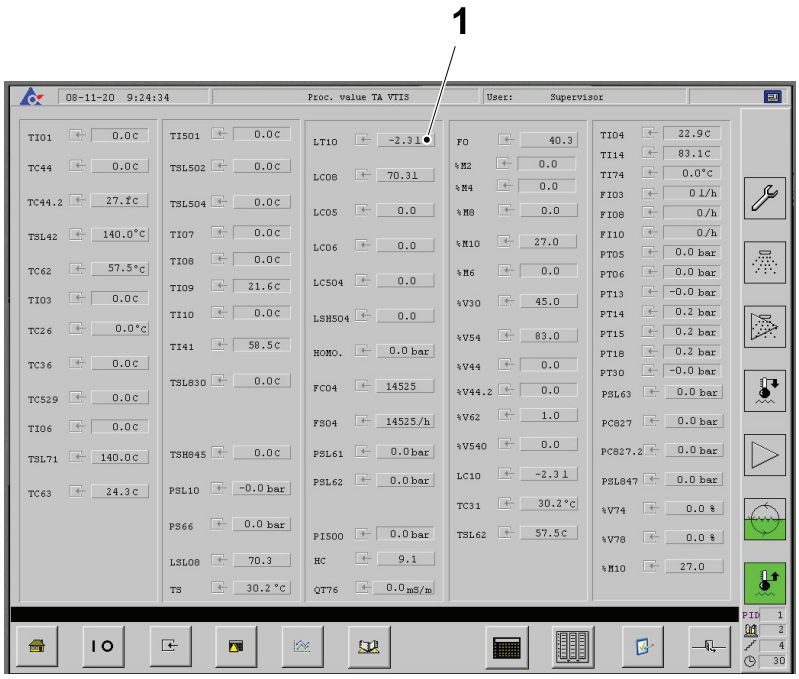


3.7.5 Process Value Window

The process value window consists of one or more windows displaying the process values and output values.

If a process value is used in a PID controller, a jump to the corresponding PID window is possible.

For example, press the selectable indication (1) for LT10 to get to 3.7.14.11 CIP Concentration on page 3-49.

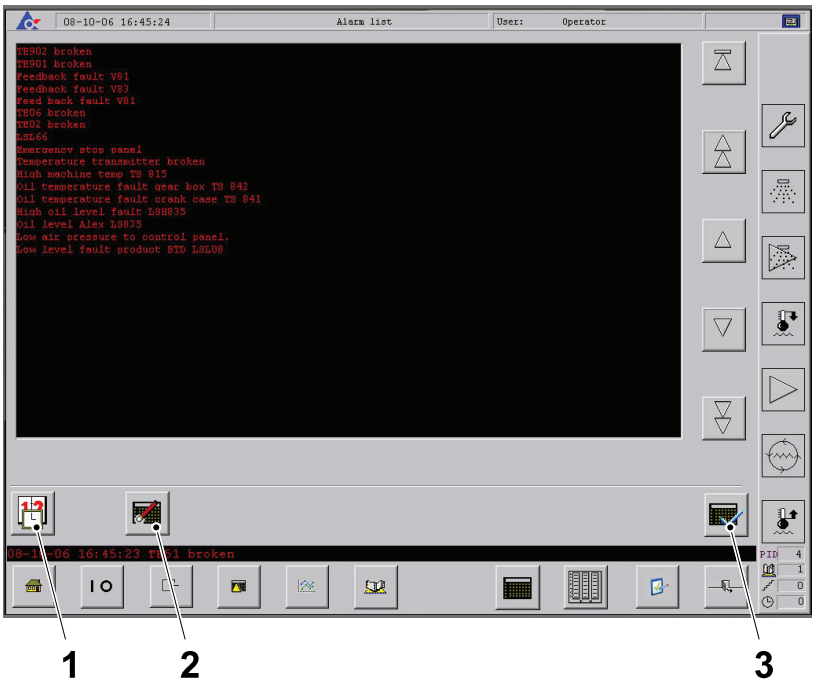


3.7.6 Alarm List

This window shows only an example of an alarm list. The alarms that are displayed varies depending on the configuration of the module.

Alarm indication:

- Red colour indicates active alarm, not acknowledged.
- Yellow colour indicates active alarm, acknowledged.
- Green colour indicates history, alarm inactive.



1 Toggle display of alarm time and date.
2 Erase alarm list.
3 Acknowledge alarms.

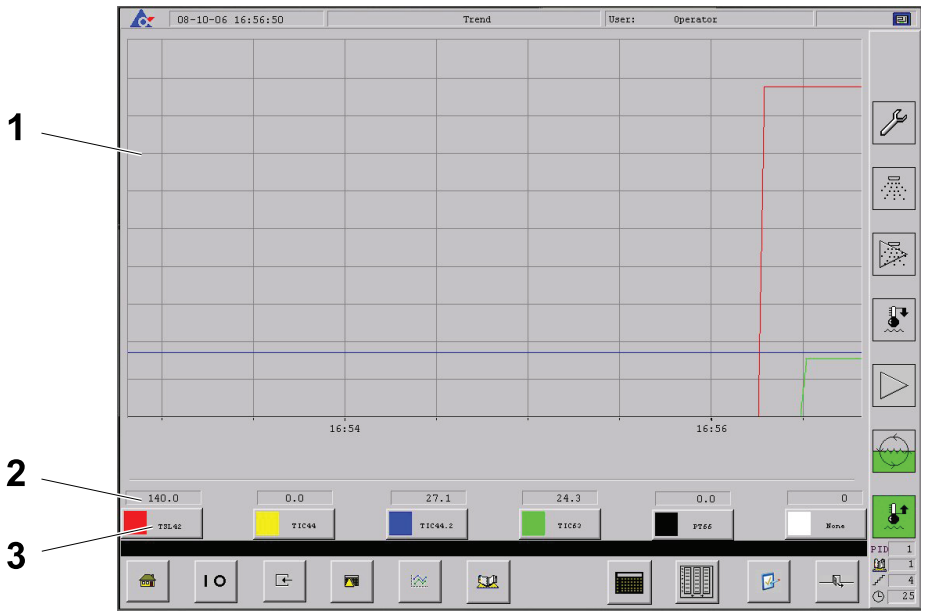
3.7.7 Trend Diagram Window

In the trend window, it is possible to view the trending of six simultaneous values. This is a trend only and the values is not saved.

The colour of the push button corresponds to the colour of the pen in the trend diagram.

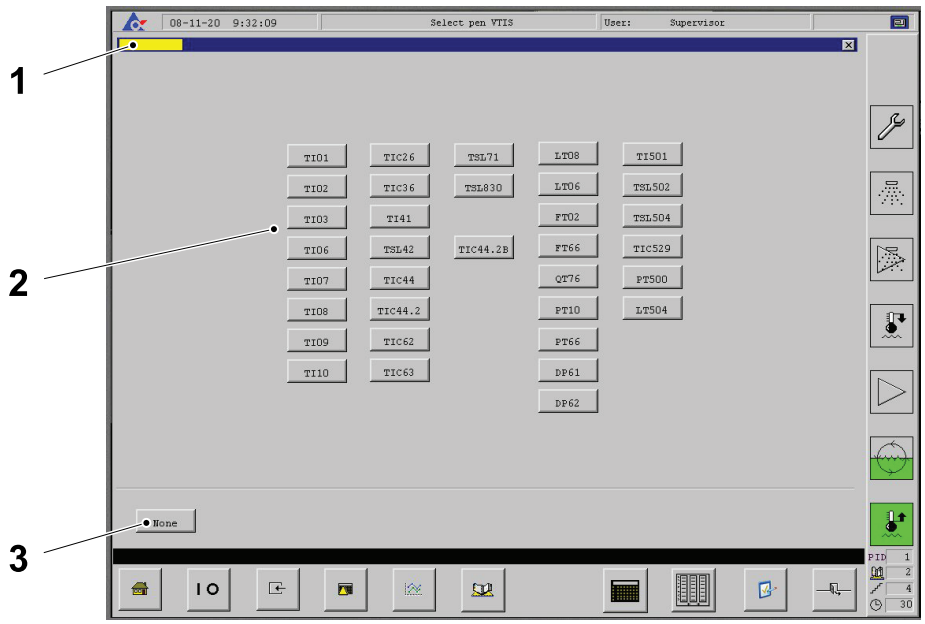
For example, push the red push button to select a variable for the red pen, see 3.7.7.1 Select Pen .

Note! To bring up historic values, touch the window.



1 Trend curve.
2 Display of selected value.
3 Select value for pen.

3.7.7.1 Select Pen



1 Selected pen colour.
2 Variables to trend.
3 Deselect variable.

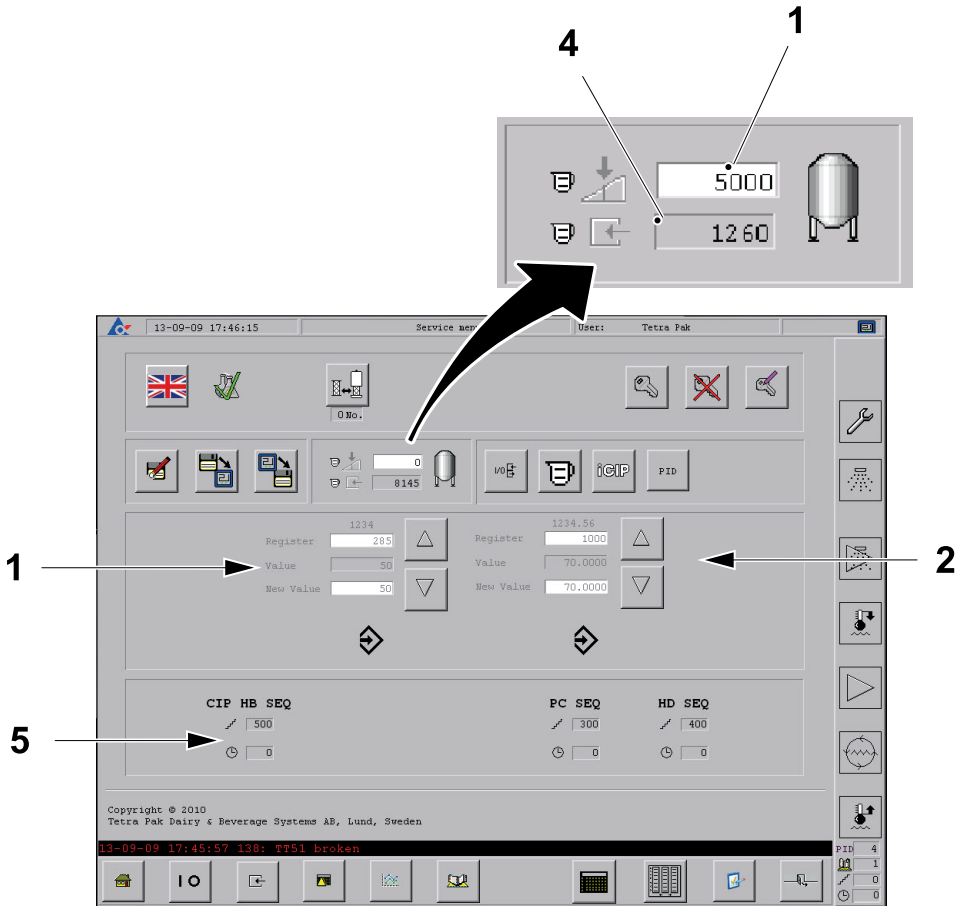
3.7.8 Service Window

To enter register number, select `Register` or scroll with arrow keys.

To enter new register value, select `New Value`.

`Value`: Displays current value in the register.

Note! Ensure that you are inspecting/changing the correct parameter value since integer and floating point parameters may have the same number.

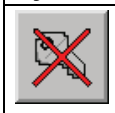
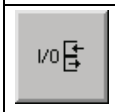


1 Integer parameter, always no decimals
2 Floating point parameters, with decimals
3 Target volume (setting and display)
4 Batch accumulated volume (counts up in step 29 - 43)
5 Status for sub sequences

Symbol	Description	Symbol	Description
	Change of language		Save data to memory card
	Set CIP memory		Log in

(Cont'd)

(Cont'd)

Symbol	Description	Symbol	Description
	Log out		Go to volume setting
	Change password		Go to intelliCIP
	Restore saved data from memory card		Transfer new value to the selected parameter
	Go to Force Main menu		

3.7.9 Product and Capacity Window

The machine can be configured for either filling machine selection AFM or capacity selection CAP.

The tank queuing function works as follows: The queue (stack) positions are filled up from the bottom in the order that the tank select buttons are pushed. It is emptied from the bottom with the higher positions shifting down.

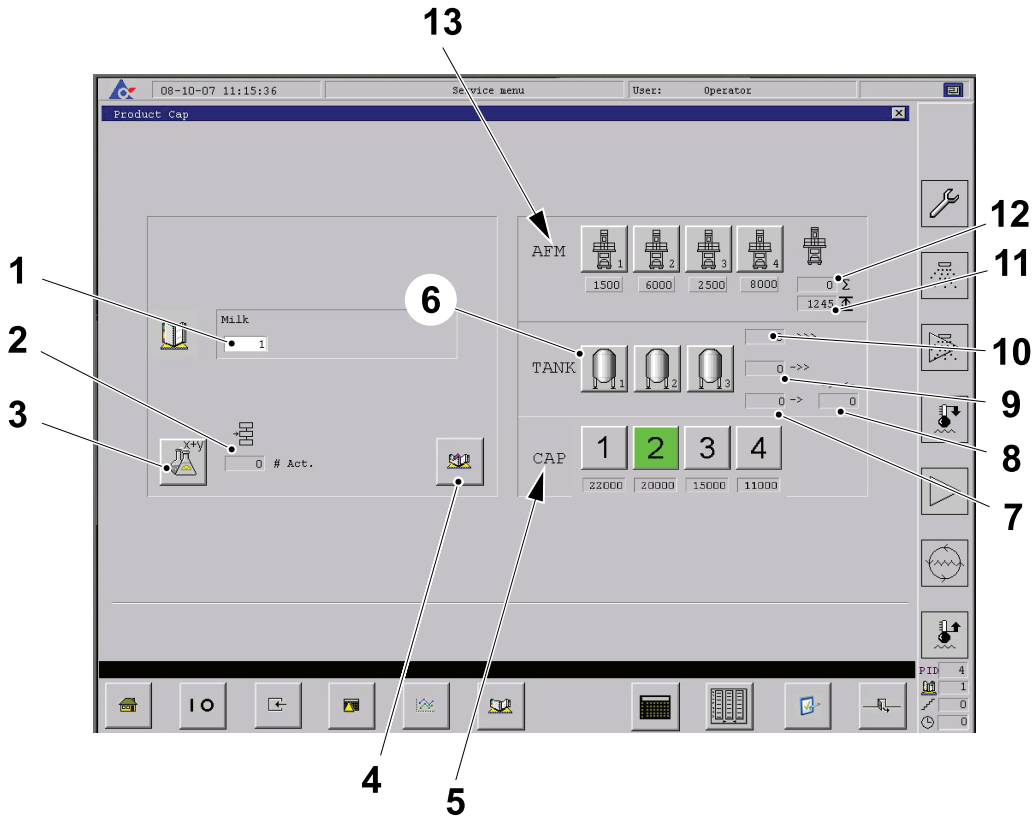
When production begins, the tank in position 1 is moved to the active tank position, the tank in position 2 is moved to position 1, and the tank in position 3 is moved to position 2.

If a tank that holds a place in the queue is deselected, the tanks above are moved down in consecutive order.

Note! The AFM indication will occur as push button to bring up AFM Capacity Configuration Window if logged on as supervisor.

(Cont'd)

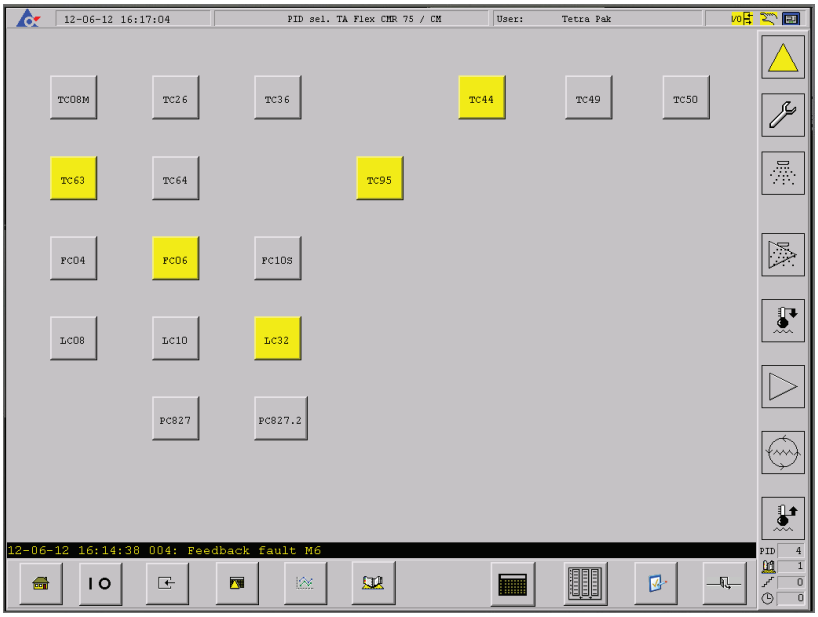
(Cont'd)



1 Indication and selection of running recipe.
2 Actual PAC cleaning sequence (1-6).
3 Go to PAC CIP setup screen.
4 Go to Product recipe edit.
5 Product capacity 1 - 4 with set point in l/h. (Highest flow rate - Lowest flow rate)
6 Tank selection buttons. (Option)
7 Queue position 1. (priority 1)
8 Active tank position
9 Queue position 2.
10 Queue position 3.
11 Available capacity span for selected HC.
12 Sum of selected AFM cap including active over capacity.
13 AFM selections and indication of nominal capacity

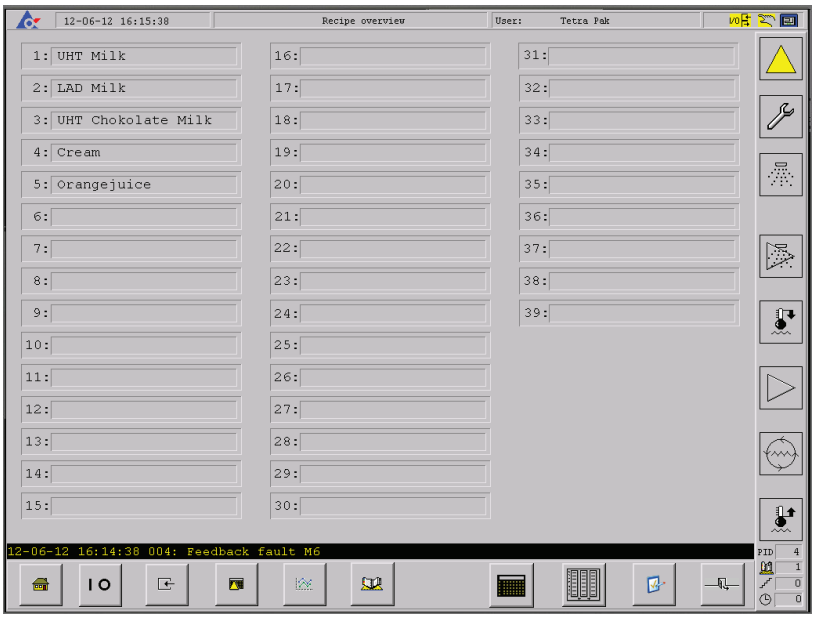
3.7.10 PID Overview

Push any button to go to corresponding PID controller. Yellow indication shows PID controller in manual mode.

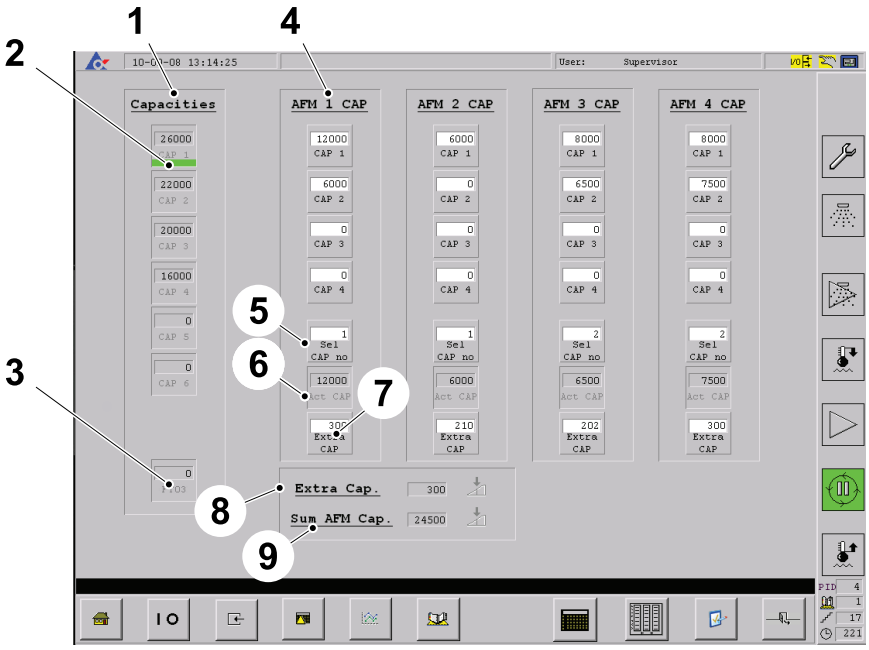


3.7.11 Recipe Overview

The window displays number and name of the available recipes.



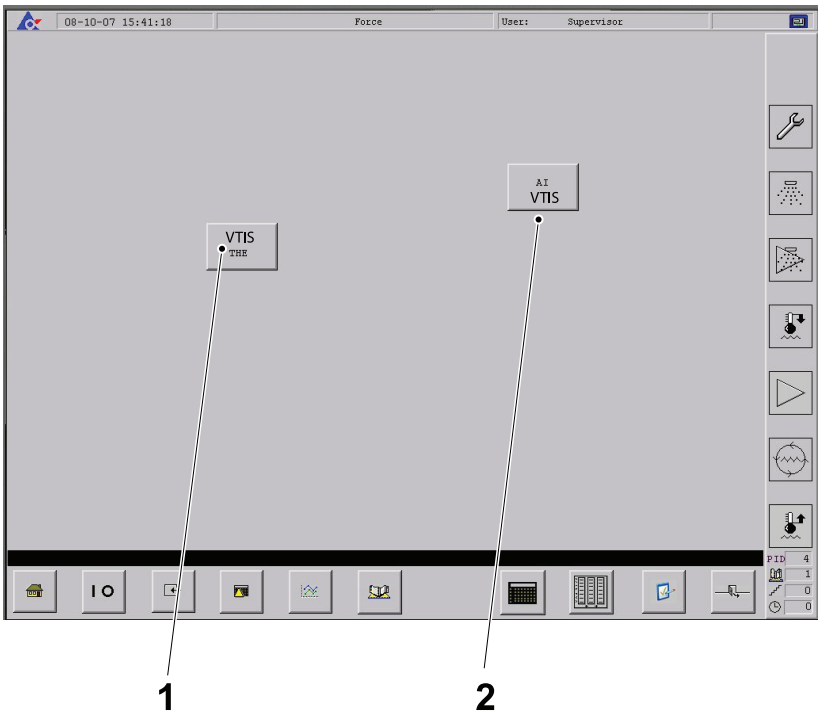
3.7.12 AFM Capacity Configuration



Pos	Description
1	Available production capacities in sterilizer with indication of selected capacity. Flow set point for flow controller FC06/FC04.
2	Indication of selected capacity. Program selects the capacity closest over the selected sum of AFM capacity + active extra capacity.
3	Return flow from FM back to product BTD (option).
4	Capacity configuration 1- 4
5	Selection of active configuration #.
6	Active capacity configuration.
7	Extra capacity overflow that is needed for start of AFM.
8	Active extra overflow that is needed for begin of AFM. (Program selects the highest selected as active).
9	Sum of selected nominal AFM capacity.

3.7.13 Force Main Window

Press VTIS THE (1) to bring up available valves and motors to force. see 3.7.14 Force I/O Valves and Motors. Press AI VTIS (2) to bring up available analogue inputs to force see 3.7.14.3 Analogue Object.



1 Valves and motors.
2 Analogue inputs.

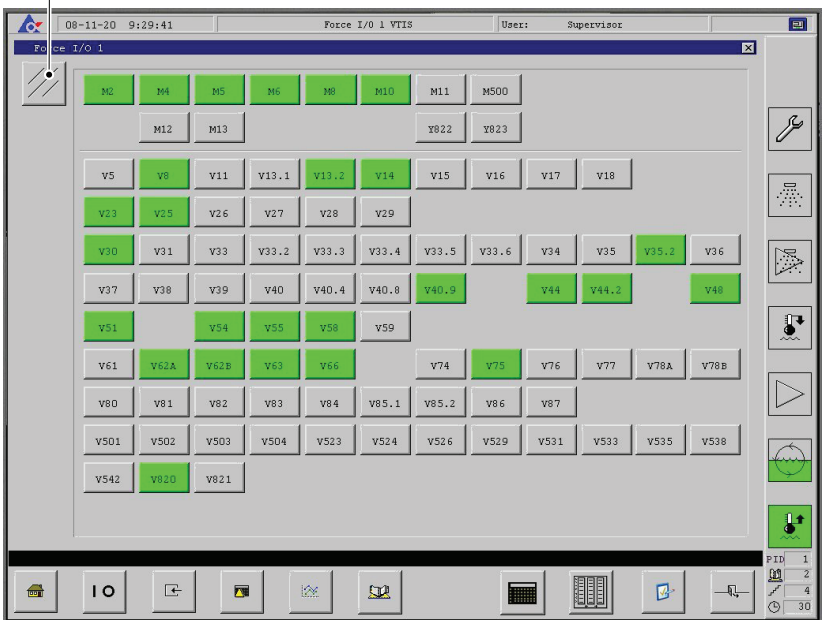
3.7.14 Force I/O Valves and Motors

Depending on what object selected, a motor or valve face plate appears, see 3.7.14.1 Motor Face Plate and 3.7.14.2 Valve Face Plate

Press (1) to reset all forces.

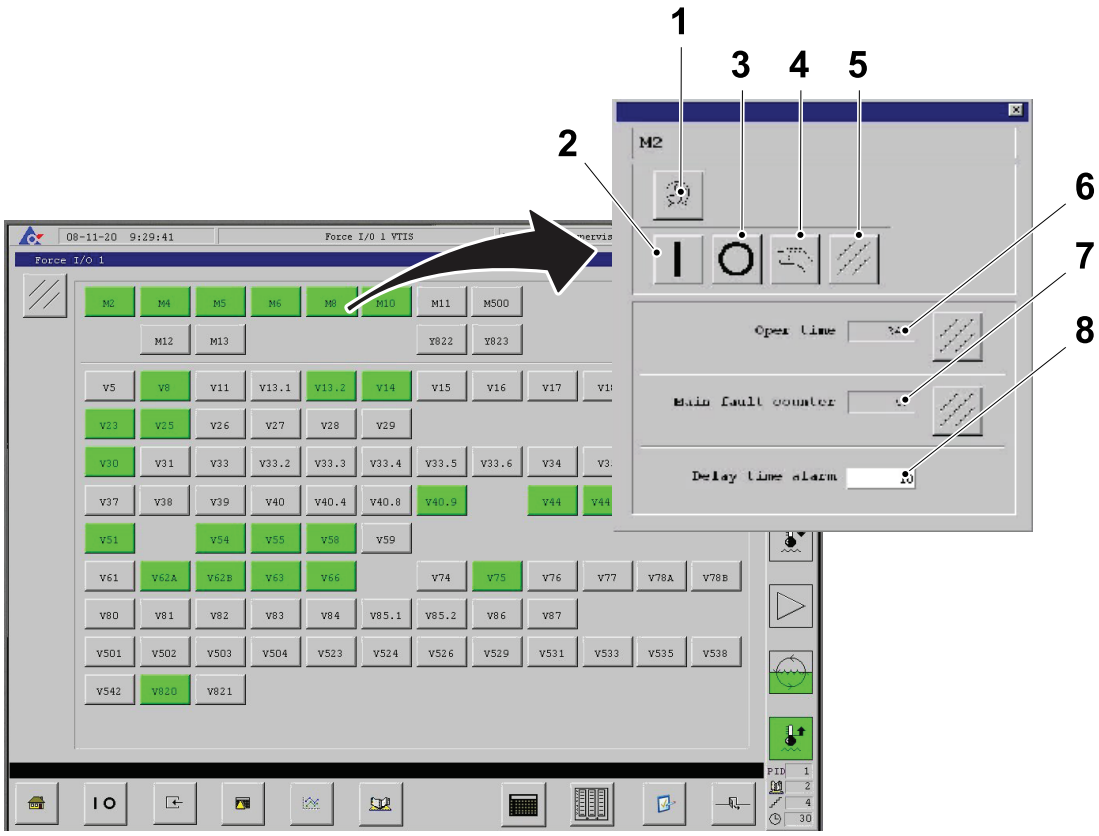
Note! Force of an object may cause actions such as start of pumps, opening of steam valve and so on.

1



Symbol	Description
Grey.	Not forced, not activated.
Green.	Not Forced, activated.
Dark yellow.	Forced, not activated.
Yellow.	Forced, activated.

3.7.14.1 Motor Face Plate



1 Select to force.
2 Force activate
3 Force deactivate
4 Put the object in force mode
5 Release/reset
6 Indicate operating time
7 Fault counter for the object
8 Delay time alarm. Press the white field to changed delay time.

In the motor face plate screen it's possible to view the status, change parameters and force the output of motors.

To force a motor to the current status: Press (4)

To change the force status of the motor: If a forced activation of the motor is requested; Press (4) and (1) followed by (2)

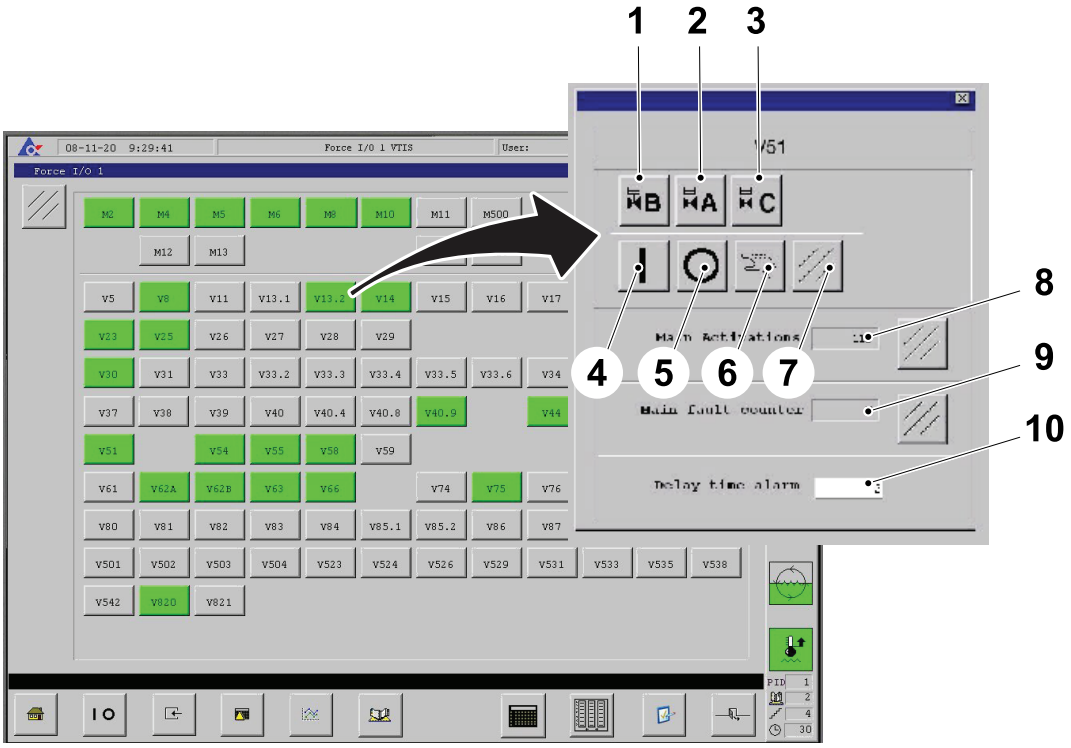
If a forced deactivation of the motor is requested; Press (4) and (1) followed by (3)

3.7.14.2 Valve Face Plate

In the valve face plate it's possible to view the status, change parameters and force the output of non single mix proof valves.

To force or change the force status of an object continue as for motors 3.7.14.1 Motor Face Plate on page 3-34

Note! If a valve with more than one air input, select correct air input to force see next page.



1 Main coil for valve
2 Middle position valve
3 Lower position valve
4 Force activate
5 Force deactivate
6 Put the object in force mode
7 Release/reset
8 Activation counter
9 Fault counter
10 Delay time alarm. Press the white field to change delay time

(Cont'd)

(Cont'd)

A = Intermediate position

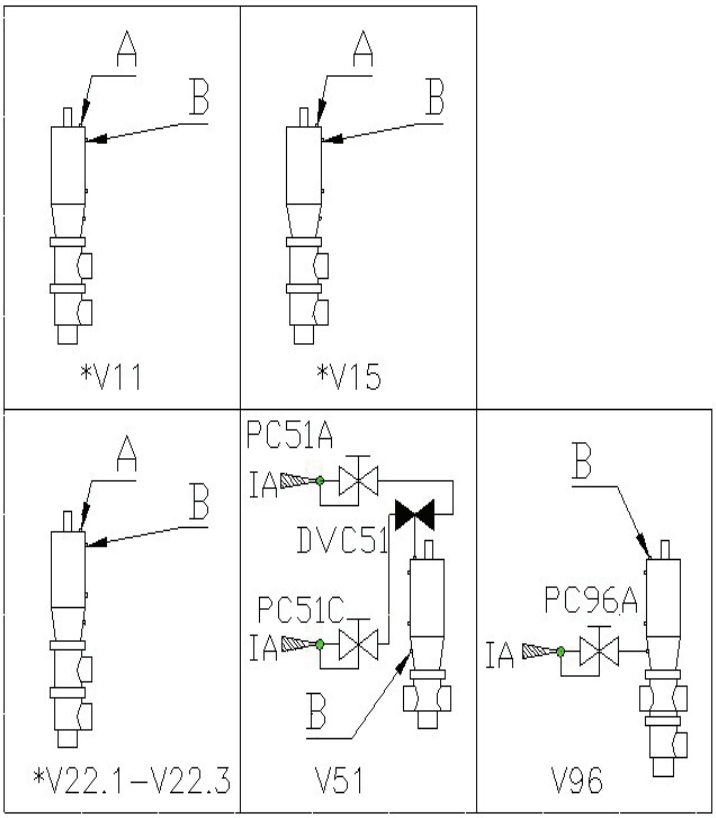
B = Open valve

PC51A = Help pressure to keep valve closed

PC51C = Help pressure to keep valve closed

PC96A = Help pressure to keep valve closed

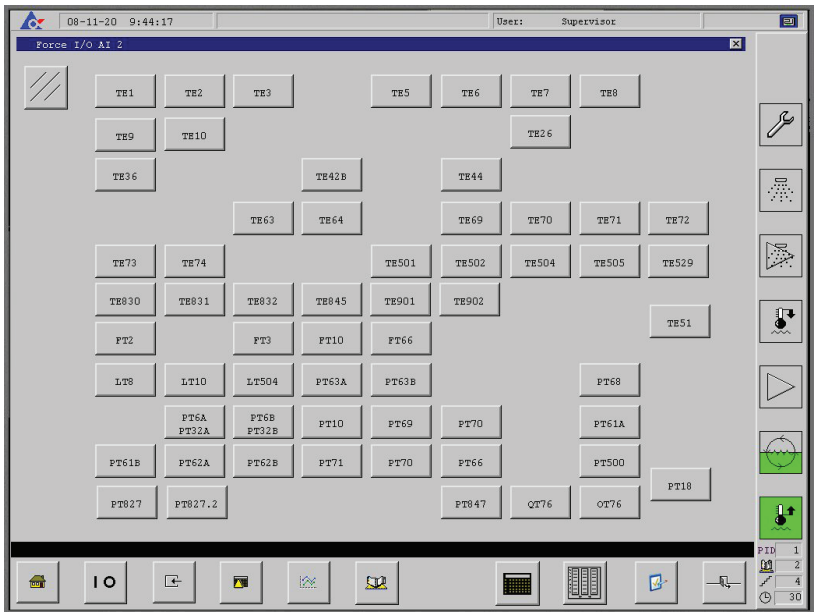
Note! This is just a general principle illustration, other valve configurations may occur.



3.7.14.3 Analogue Object

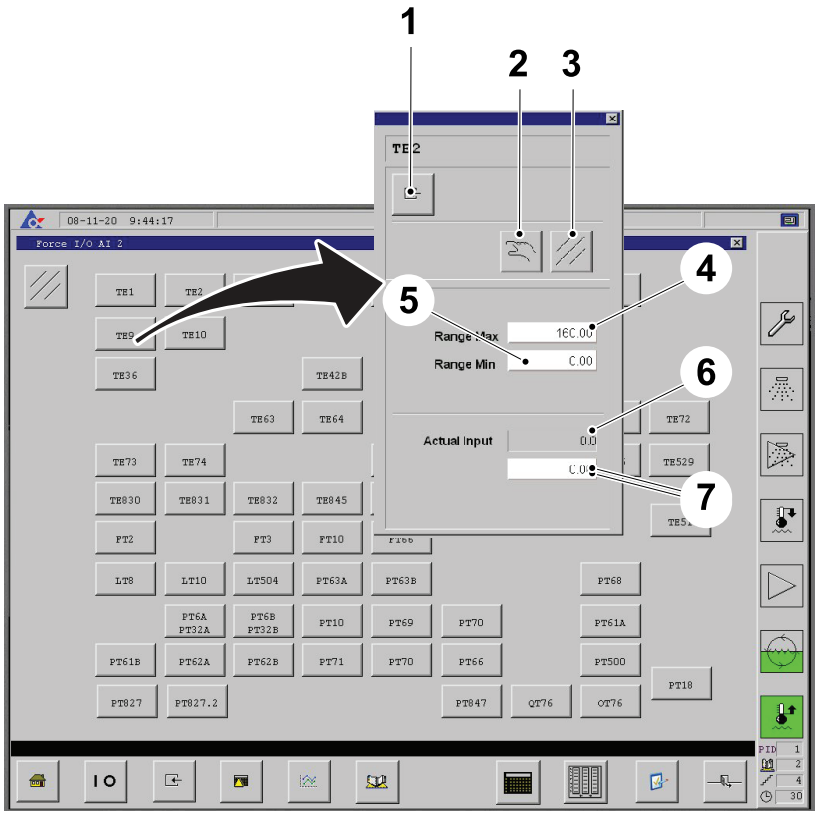
Selection of analogue inputs to force, brings up the analogue input face plate see 3.7.14.3.1 Analogue Input Face Plate.

Note! Critical inputs for food safety can not be forced.



3.7.14.3.1 Analogue Input Face Plate

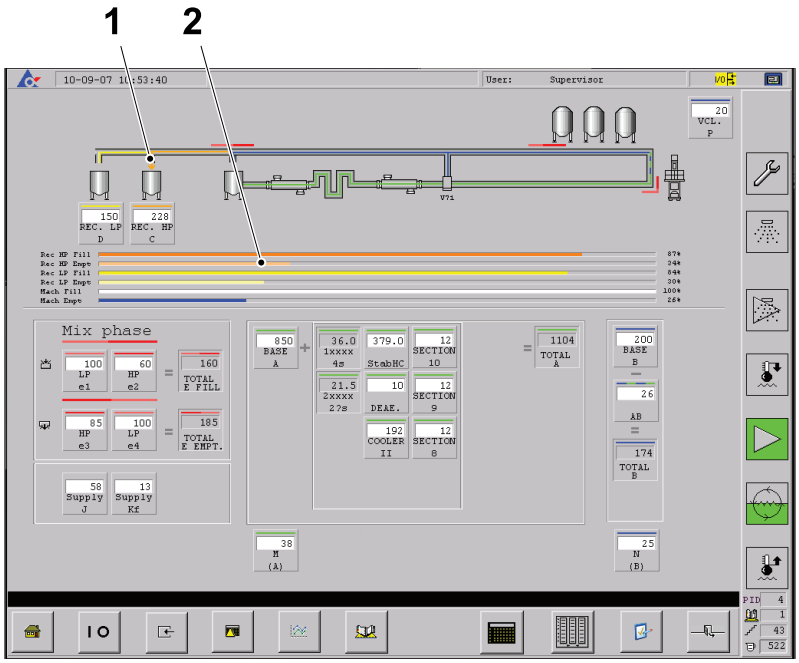
To force or change the force status of an object continue as for motors see 3.7.14.1 Motor Face Plate on page 3-34



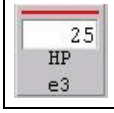
1 Select to force
2 Force activate
3 Release/reset
4 Maximum range. Press the white field to change value
5 Minimum range.. Press the white field to change value
6 Actual input
7 Press the white field to change value

3.7.14.4 Volume Set Up

Symbol (pos 1) indicating that reclaim HP mix zone reached the Reclaim HP tank machine is sending signal to reclaim destination. Bar graphs (pos 2) indicating progress of volume counters.

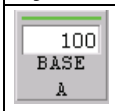
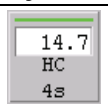
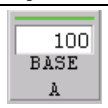
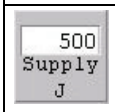
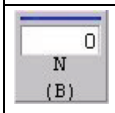


Volume A (Green)	Volume from BTD up to AFM / Alsafe (additional equipment such as extra cooler and so on adds to this volume).
Volume AB (Blue/green)	Volume between first AFM and first Tetra Alsafe. (Only when steriliser configured for filling both to Tetra Alsafe and direct to AFM.) Volume AB is added to volume A and subtracted from volume B. (Only if Alsafe is selected)
Volume B (Blue)	Volume after AFM / Alsafe back to V75.
Volume C (Orange)	Volume for transport to HP (High product content).
Volume D (Yellow)	Volume for transport from HP tank to LP (Low product content) tank..

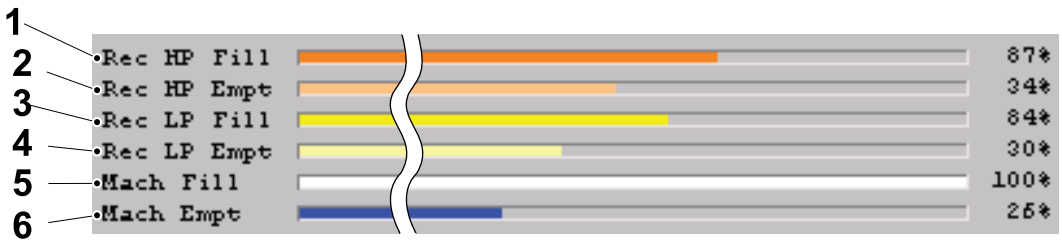
Symbol	Description	Symbol	Description	Symbol	Description
	Volume in pipe - LP tank.		Volume in pipe - V76 - HP		Volume between first and last tank to be added if more then one Alsafe tank
	LP Mix when filling		HP Mix when filling		Mix volume when filling
	HP Mix when emptying		LP Mix when emptying		Mix volume when emptying

(Cont'd)

(Cont'd)

Symbol	Description	Symbol	Description	Symbol	Description
	Volume up to AFM / Alsafe (Including equipment)		Additional vol. A for extra equipment ifor example HC.		Volume A
	Volume in supply line		Mix volume in supply line		Volume from V71 to first AFM/Alsafe
	Volume from first AFM/Alsafe back to V71		Volume after AFM/Alsafe back to V75		Volume between first AFM and first Alsafe.

3.7.14.4.1 Bar Graph Indicator



Position (1) `REC HP FILL`: Volume counter for keeping track of front end mix zone HP

Position (2) `REC HP EMPT.` : Volume counter for keeping track of back end mix zone HP

Position (3) `REC LP FILL` : Volume counter for keeping track of front end mix zone LP

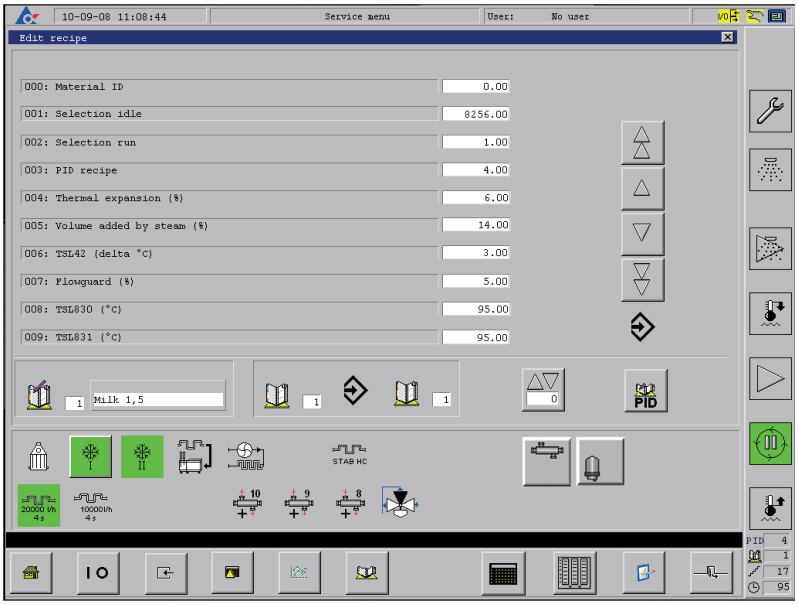
Position (4) `REC LP EMPT`: Volume counter for keeping track of back end mix zone LP

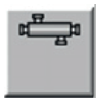
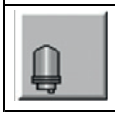
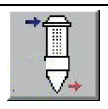
Position (5) `MACH TILL`: Volumes counter for keeping track of filling up machine with pure product. Total step volume for step 27 & 28

Position (6) `MACH EMPT`: Volumes counter for emptying of machine by filling up machine with water. Total step volume for step 43 & 44 or step 84

3.7.14.5 Recipe Edit Window

The displayed recipe parameters belong to the selected recipe. After selection or deselection of extra equipment, the recipe must be saved.



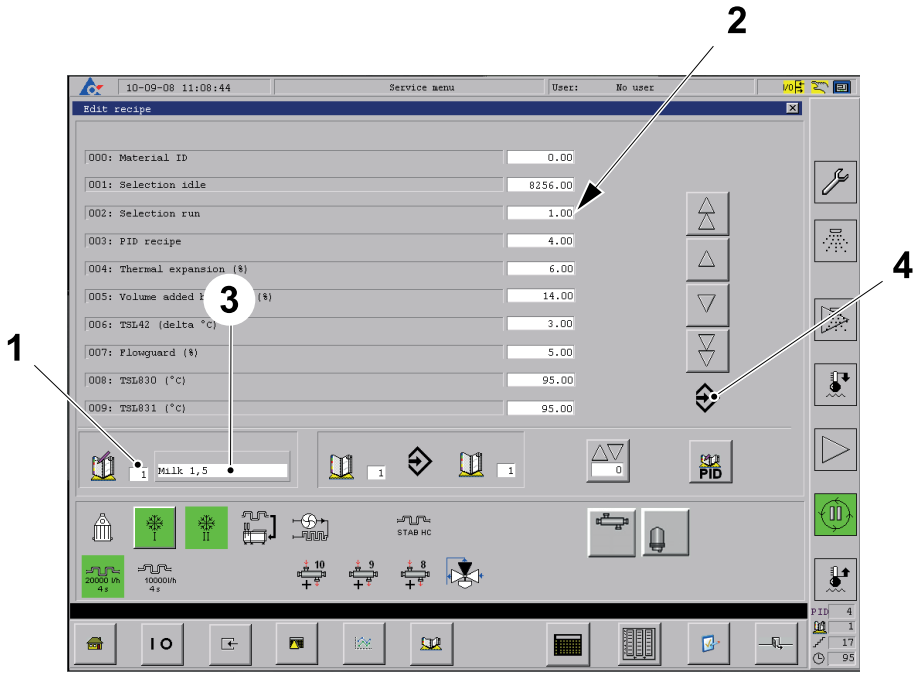
Symbol	Description	Symbol	Description
	Save changed parameters/Execute Copy Recipe.		Go to selected line in list.
	Go to PID RECIPE EDIT		Selection of holding cell (option). This example is a holding cell of 4 seconds.
	Stabilizing holding cell.		LAD, Low Acid Products (option).
	CIP Back Flush (option).		Select Flex mode. (If dual mode only)
	Select VTIS mode. (If dual mode only)		Select infuser.

3.7.14.5.1 Edit Recipe or Recipe name

a) Select recipe to edit (1).

b) Select ingredient to edit (2) or recipe name to edit (3).

c) Save (4).



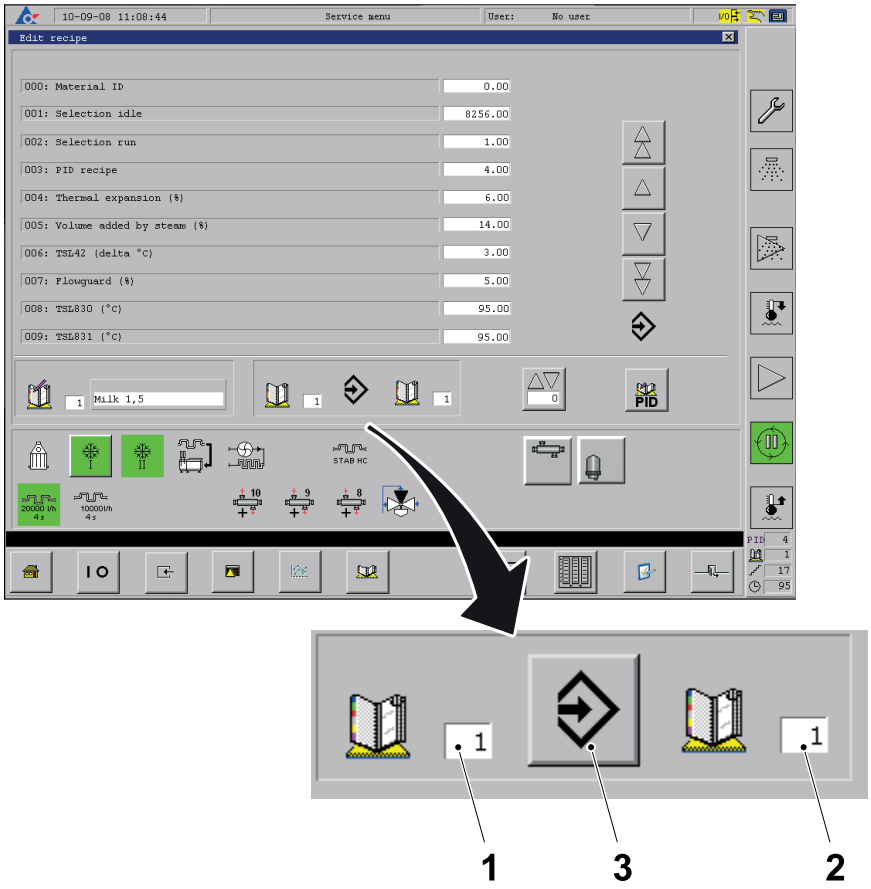
3.7.14.5.2 Copy Recipe

a) Select recipe to be copied (1).

b) Select recipe to be copy to (2.

c) Execute the copying (3).
If recipe to be copied from differs from the recipe to copy to, the push button turns yellow.

Note! It is not possible to copy to the running recipe.



3.7.14.6 PID Recipe Edit

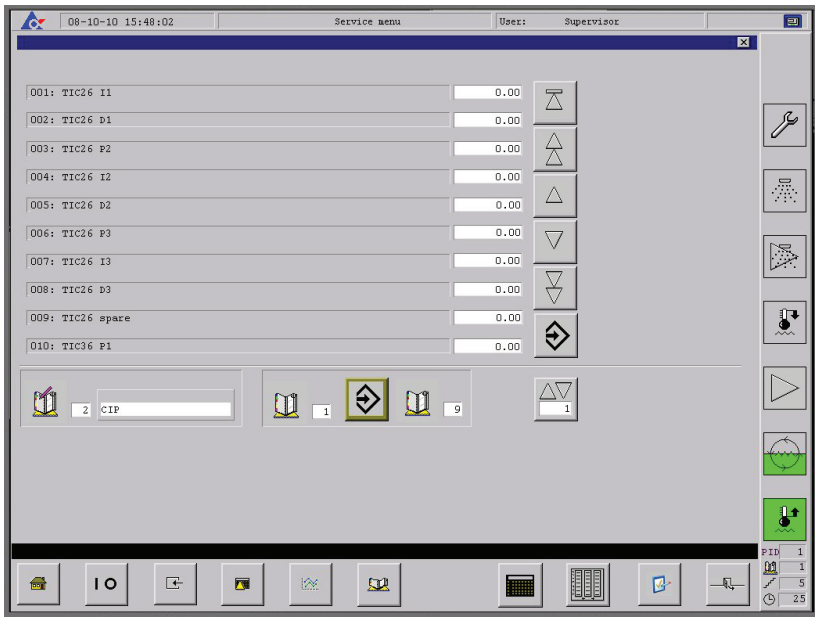
Note! The displayed recipe parameters belong to the selected recipe

Recipe 1 reserved for pre-sterilisation.

Recipe 2 reserved for main CIP.

Recipe 4-9 reserved for all other steps. (Selected from main Recipe.)

To edit recipe/recipe name see 3.7.14.5.1 Edit Recipe or Recipe name



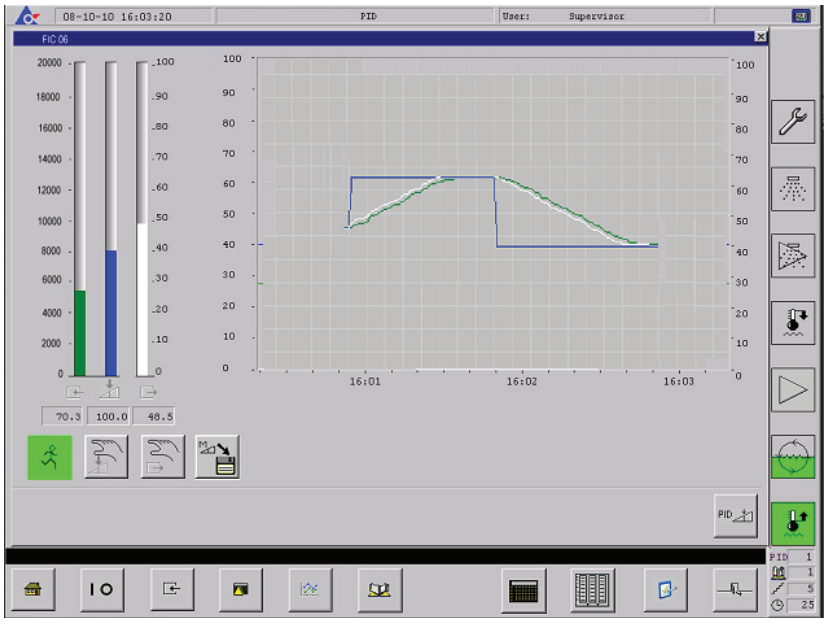
Symbol	Description	Symbol	Description
	Save changed parameters/Execute Copy Recipe.		Go to PID RECIPE EDIT
	Go to selected line in list.		

3.7.14.7 PID Controller

In the PID controller window it is possible to view and change PID controller mode, PV, SP and CV values.

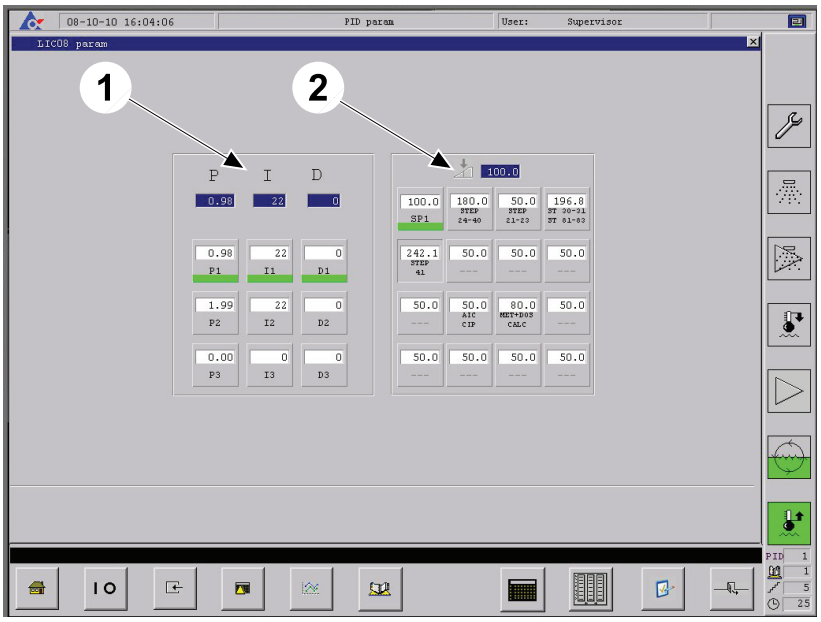
Press the screen to bring up historic values.

Note! Save output value, speed signal M6 (Only valid for FIC6) The output value only has to be saved after that the set point value has been changed. When saving value the PID controller must have stabilised the flow on the set point value.



Symbol	Description	Symbol	Description
	Enable		Force to fix value
	Set controller to use manual set point		Set controller to use manual output
	Go to PID PARAMETERS		Save output value (Speed value M6)

3.7.14.8 PID Parameter



1 PID parameters
2 Set point values

In the PID parameters window is it possible to view and change PID parameters P (gain), I (integration time), D (derivation time) and SP (set point) values.

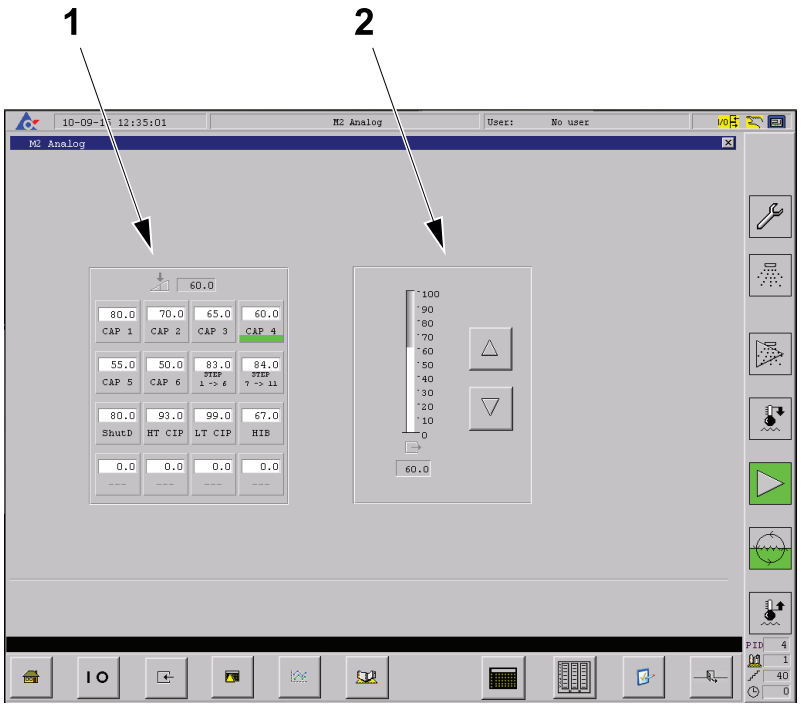


Push buttons for display and change of 3 sets of P,I, D parameters. Running set is indicated by green rectangle (1) at the bottom of the push button

Note! All parameter values are possible to change by pressing the corresponding value on the window.

3.7.14.9 Analog Settings for Motors and Valves

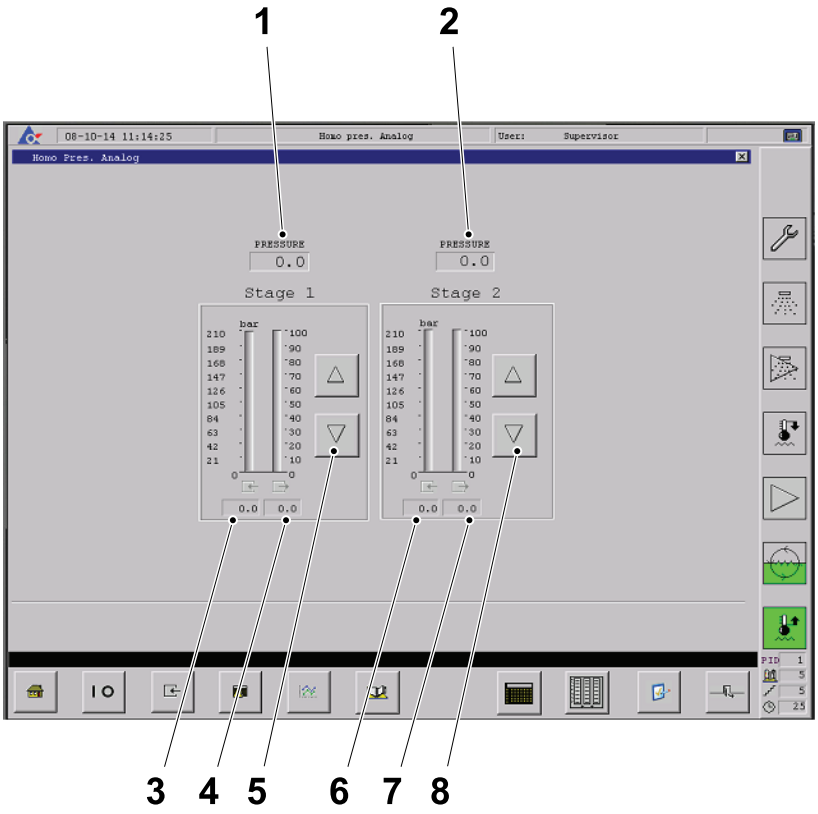
Note! M6 setting window only used if flow meter is broken.



Example for motor M2

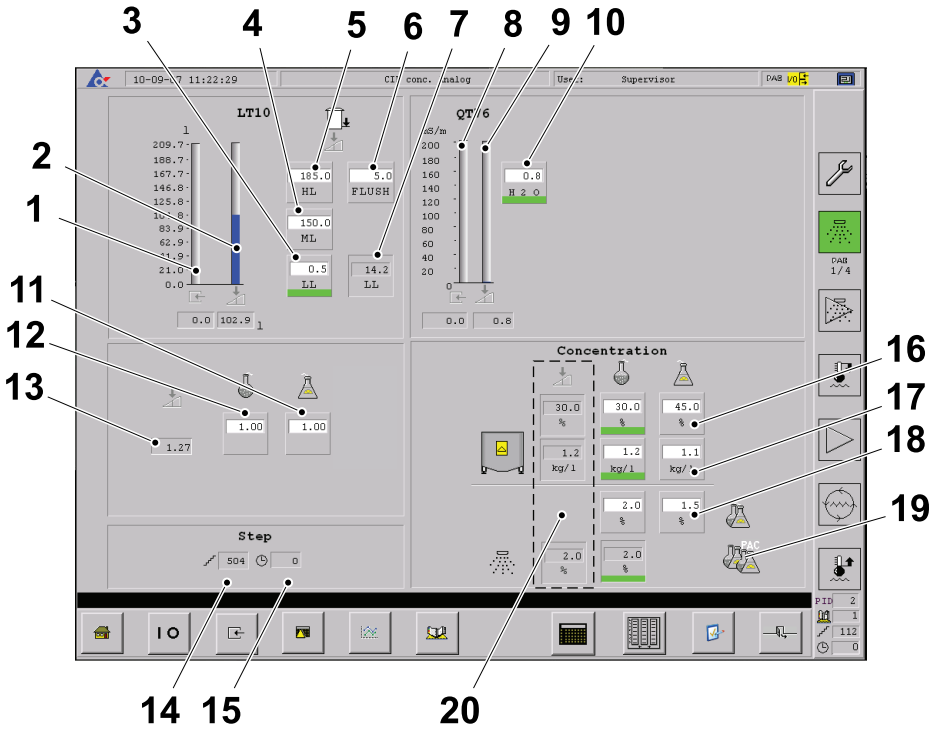
1 Output values in % for different capacities and program steps.
2 Actual output value.

3.7.14.10 Pressure Homogeniser



1 Product pressure stage 1 (bar)
2 Product pressure stage 2 (bar)
3 Hydraulic pressure stage 1 (bar)
4 Actual output value in % stage 1
5 Increment and decrement stage 1
6 Hydraulic pressure stage 2
7 Actual output value in & stage2
8 Increment and decrement stage 2

3.7.14.11 CIP Concentration



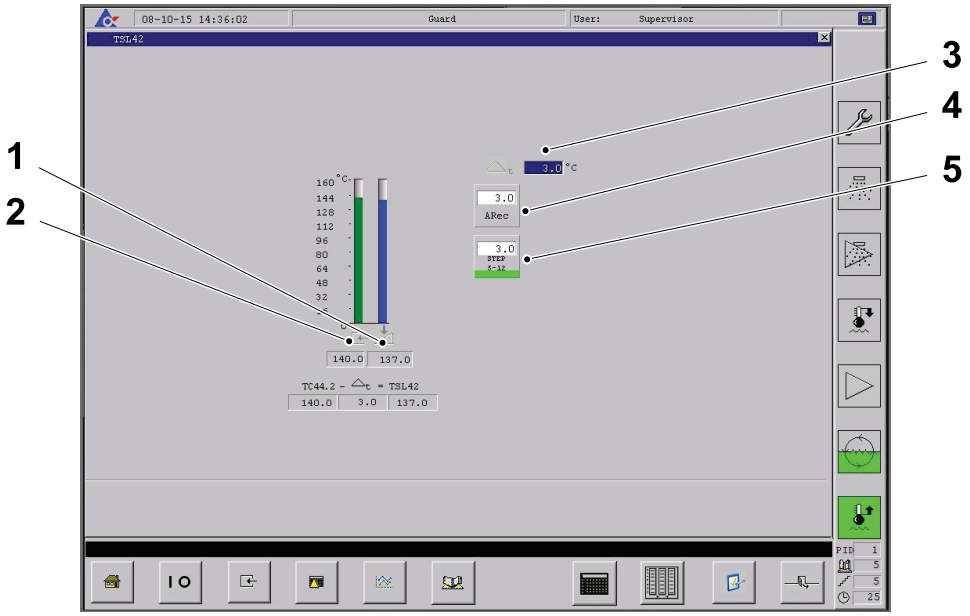
Pos	Description
1	Current level in the CIP header batch tank. (litres)
2	Current set point in the CIP header batch tank. (litres)
3	Low level in CIP header batch tank used in dosing steps (litres)
4	Medium level in CIP header batch tank used to open water valve in product filling steps. (litres)
5	High level in CIP header batch tank used when filling up tank before product filling steps. (litres)
6	Flush level in CIP header batch tank used in dosing steps. (litres)
7	Low level in CIP header batch tank used as safety level in product filling steps. Calculated value. (litres)
8	Current conductivity. (Option)
9	Current set point conductivity. (Option)
10	Conductivity in the rinse water, used for alarm. (Option)
11	Compensating factor acid for standard CIP program
12	Compensating factor lye for standard CIP program.
13	Actual compensating factor. (Over 1 will give higher concentration and under 1 will give lower concentration).
14	Step number
15	Remaining time in step (sec.)
16	Actual, lye and acid value for the concentrate concentration (weight %).
17	Actual, lye and acid value for the concentrate density (weight %).

(Cont'd)

(Cont'd)

Pos	Description
18	Actual, lye and acid value for the requested final concentration (weight %) for standard CIP program
19	Actual, lye or acid value for final concentration (weight %). Setting for the currently active sequence in PAC cleaning
20	Currently active values

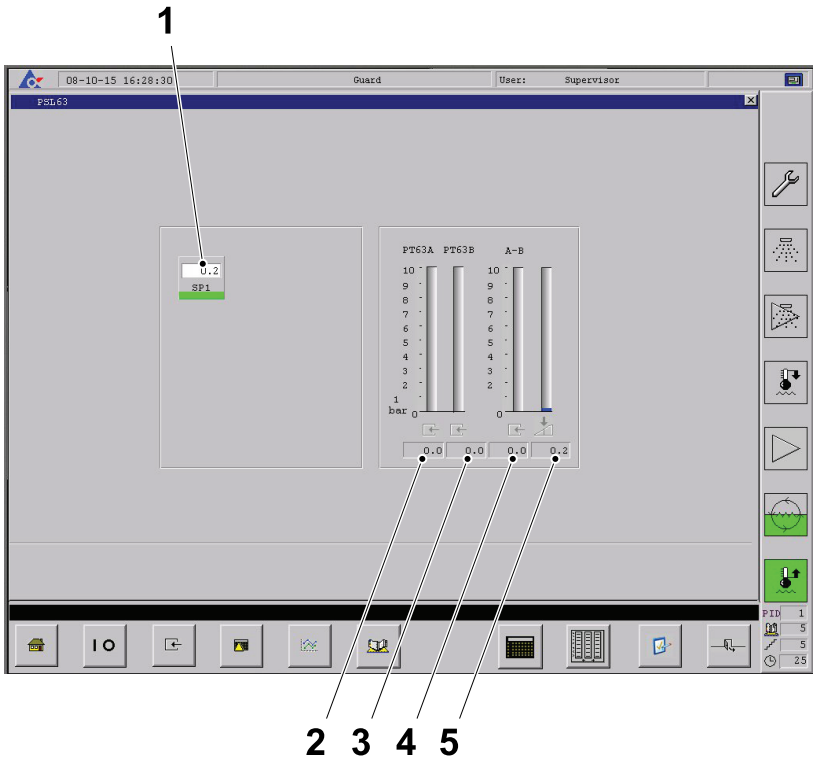
3.7.14.12 Temperature Guard (TSL42)



1 Current set point of the temperature guard
2 Current input signal to the temperature guard.
3 Current set point value
4 Actual recipe, indicates the current value
5 Step 5-12 sterilizing, indicates the current value

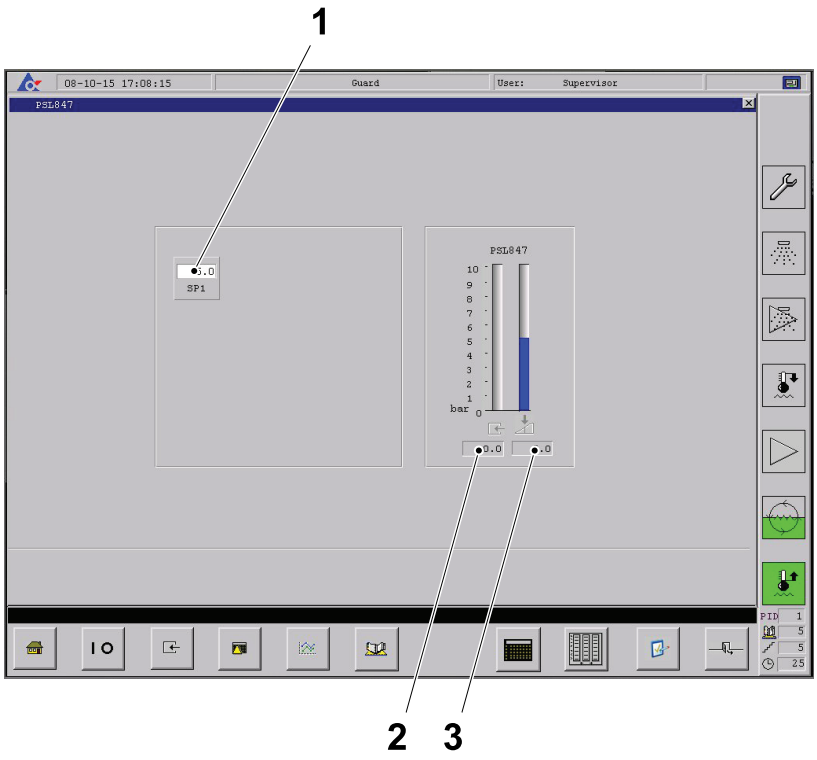
Note! High temperature product if set point TIC44 > 100 °C. Low temperature product if set point TIC 44 < 100 °C.

3.7.14.13 Differential Pressure Guard PSL61-64 (Option)



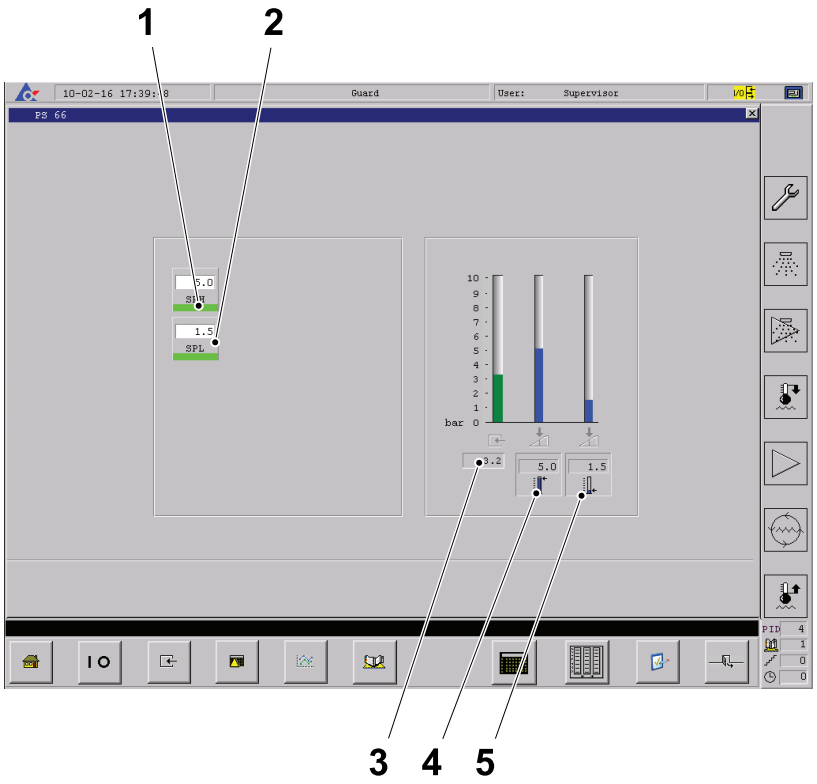
1 Differential pressure guard (bar)
2 Current pressure (bar)
3 Current pressure (bar)
4 Current delta pressure (bar)
5 Current delta pressure set point (bar)

3.7.14.14 Pressure Guard PSL847 (Option)



1 Differential pressure guard (bar)
2 Current pressure (bar)
3 Current pressure set point (bar)

3.7.14.15 Pressure Switch PS66



1 SPH; alarm high pressure in hot water circuit
2 SPL; alarm low pressure in hot water circuit
3 Current pressure (bar)
4 Current high alarm pressure set point (bar)
5 Current low alarm pressure set point. (bar)

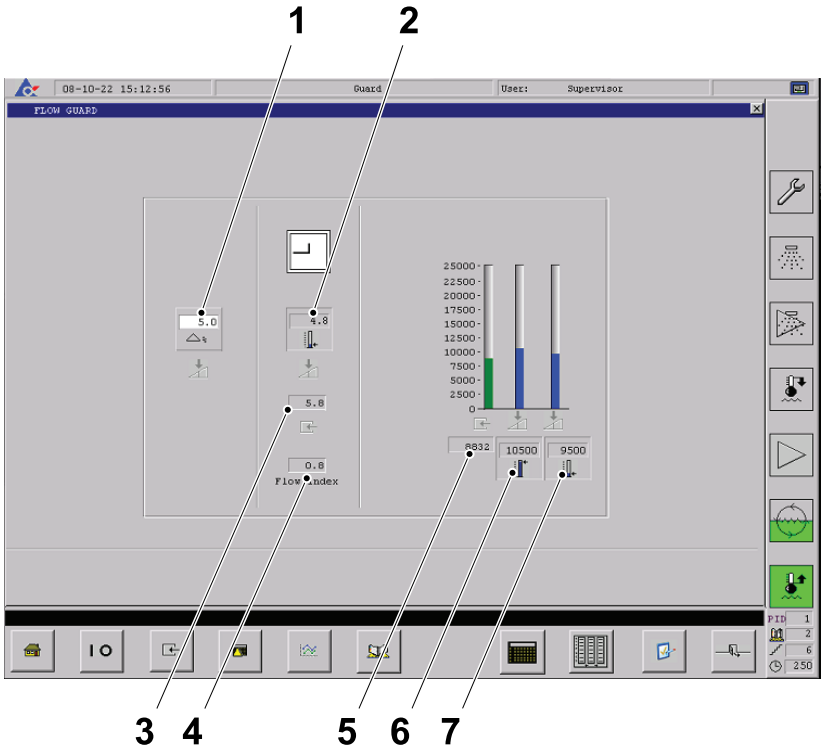
3.7.14.16 Flow and Holding Time Guards

If temperature compensation on low flow (Option) the value (2) is calculated. For example if actual flow is lower than normal the temperature compensation will lower the sterilization temperature and a longer holding cell time alarm set point will be calculated.

Note! During change of flow/capacity, holding time alarm is supervising Fo value instead of time.

The calculated flow index (4) is used if AIC flow is higher than the maximum flow for the actual holding time (Sterilization temperature is also higher to compensate.) and a shorter holding cell time alarm set point will be calculated.

If no temperature compensation this value will not be over 1.0 as the sterilization temperature will not be lowered.



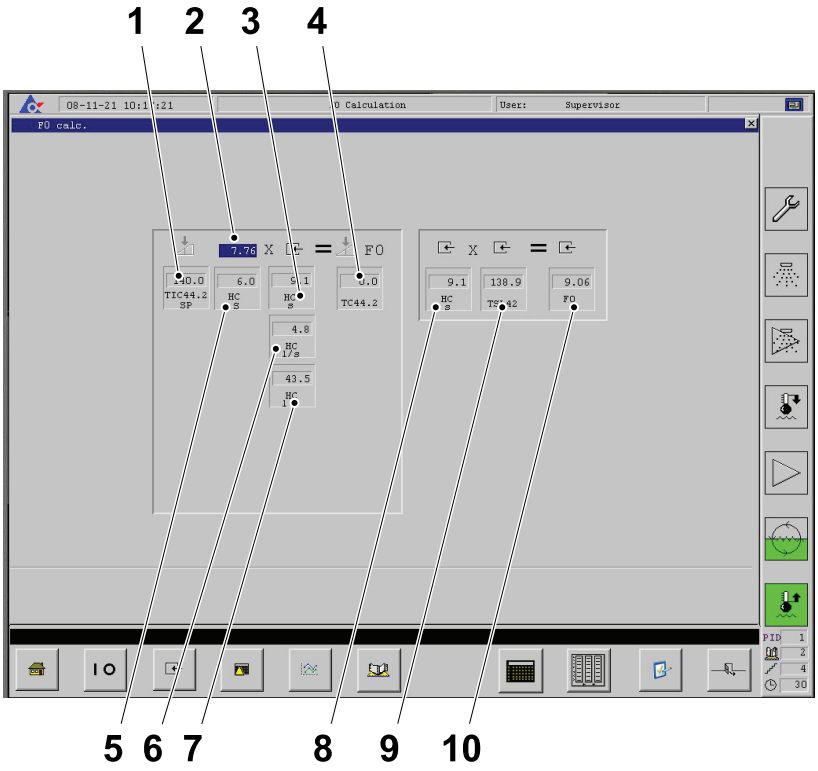
1 Deviation guard. (%) affects both flow alarm and short holding time alarm
2 Current holding time alarm limit set point
3 Current holding time (sec)
4 Calculated flow index
5 Current flow. (l/h)
6 Current maximum flow guard set point. (l/h)
7 Current minimum flow guard set point. (l/h)

3.7.14.17 Fo Calculation

The display of the current holding time (3) and (8) is taking in consideration flow, heat expansion and holding cells efficiency.

The sterilization point (4) displays the necessary set point to reach the requested Fo value.

The display of the current holding cell flow (6) is taking in consideration flow and heat expansion. (litres/sec).

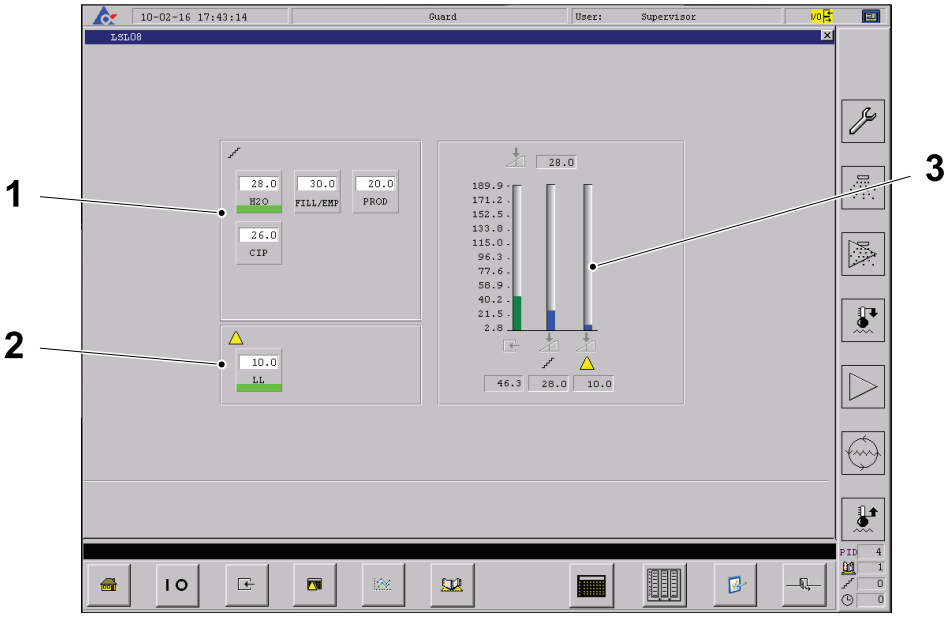


1 Current sterilization set point from recipe
2 Selected holding cells nominal Fo value
3 Current holding time
4 Sterilization set point
5 Selected holding cells nominal holding time
6 Current holding cell flow
7 Selected holding cells volume (litres)
8 Current holding time
9 Current temperature at the end of the holding cell
10 Holding cells current Fo value

3.7.14.18 Level Switch LS08

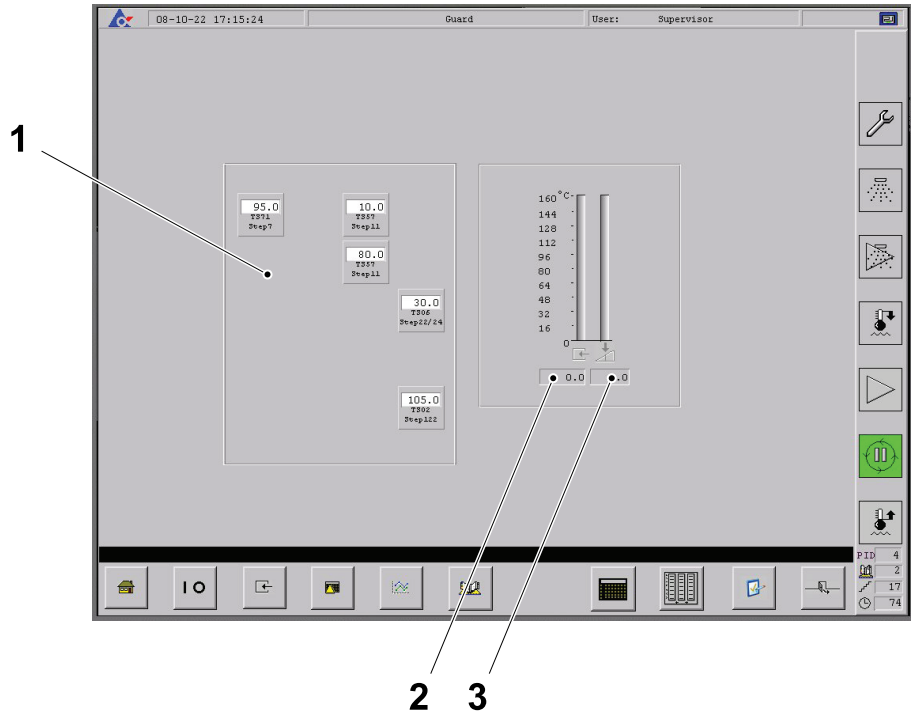
The low level set points (1) are used in the machine as condition to step forward as follows:

- The low level set point H2O is a default set point used if no other is active.
- The FILL/EMP is a set point used in step 23-40 (not 29) or 80 -83.
- The PROD is a set point used in step 29, and CIP is set point used in AIC and CIP steps.



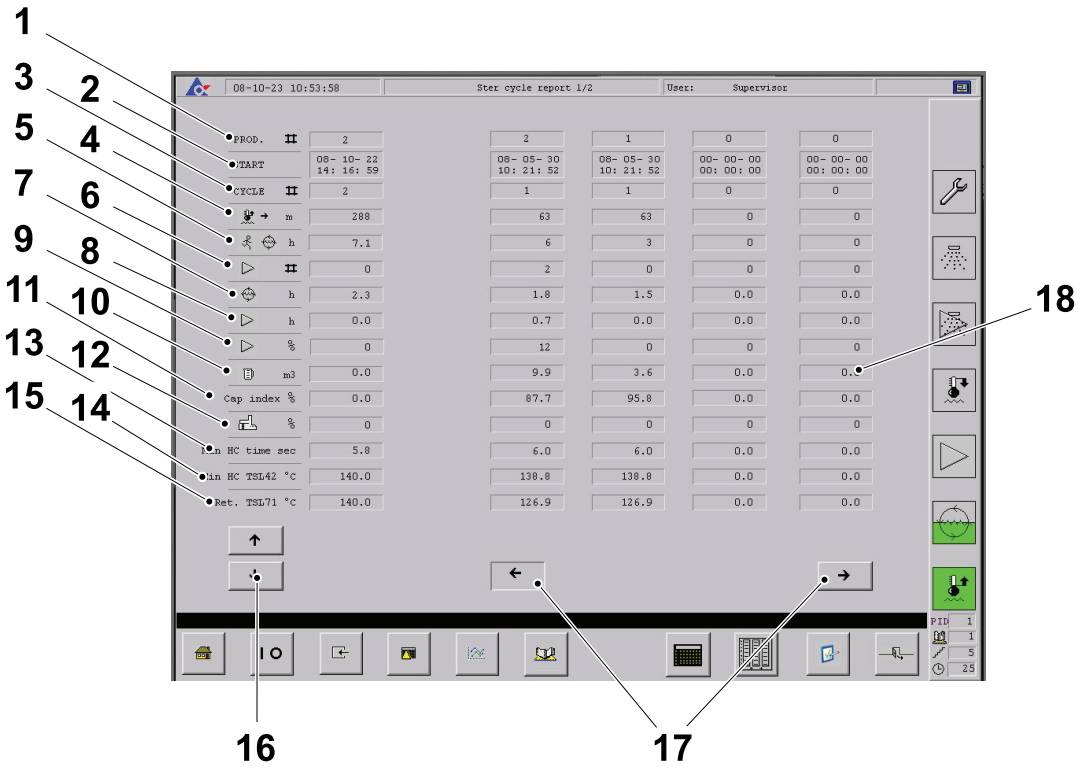
1 Low level set points
2 Level set point used to stop the machine.
3 Display of the level in the BTD (input level and alarm).

3.7.14.19 Step Forward on Temperature Settings



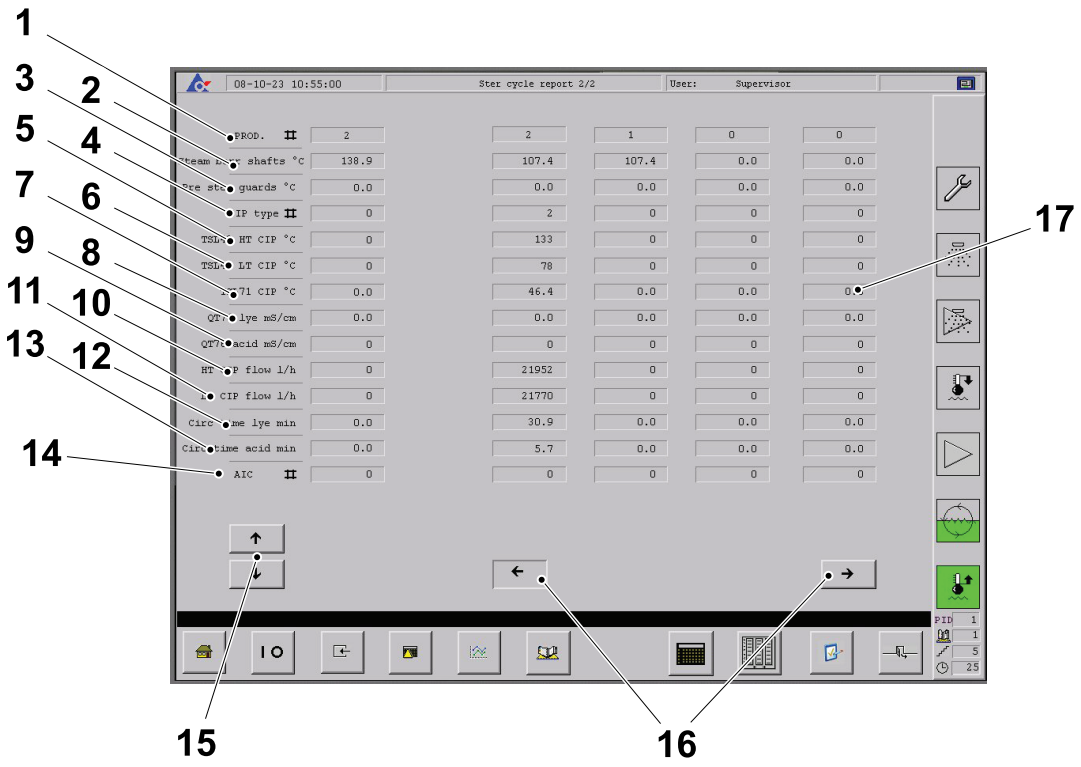
1 Temperature step set point. (ºC)
2 Current step input. (ºC)
3 Current step set point (ºC)

3.7.15 Logger Sterilization Report page 1



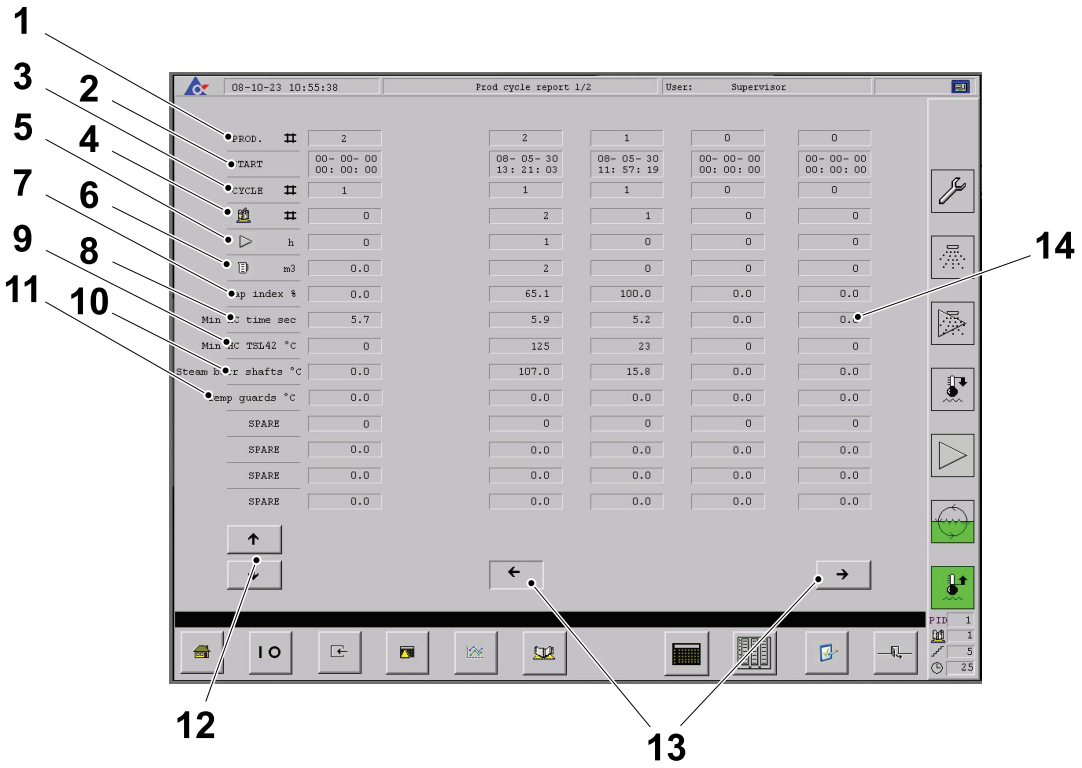
1 Production cycle report.
2 Sterilization cycle start
3 Sterilizing cycle report
4 Time taken step 1 - step 17 (min.)
5 Time taken entire cycle (h)
6 Number of production starts
7 Total time water circulation (h)
8 Total time in production (h)
9 Efficiency factor (Production time of total running time %)
10 Total amount of product (m^3)
11 Capacity index
12 Efficiency factor filling machines (Production time of total time with product available %)
13 Saved lowest HC time during step 7 -12 pre-sterilizing
14 Saved lowest HC temp during step 6 -12 pre-sterilizing
15 Saved lowest temp TSL71 during step 6 sterilization
16 Scroll between the 4 report pages
17 Scroll between the sterilization cycles
18 Historical sterilization cycles

3.7.16 Logger Sterilization Report page 2



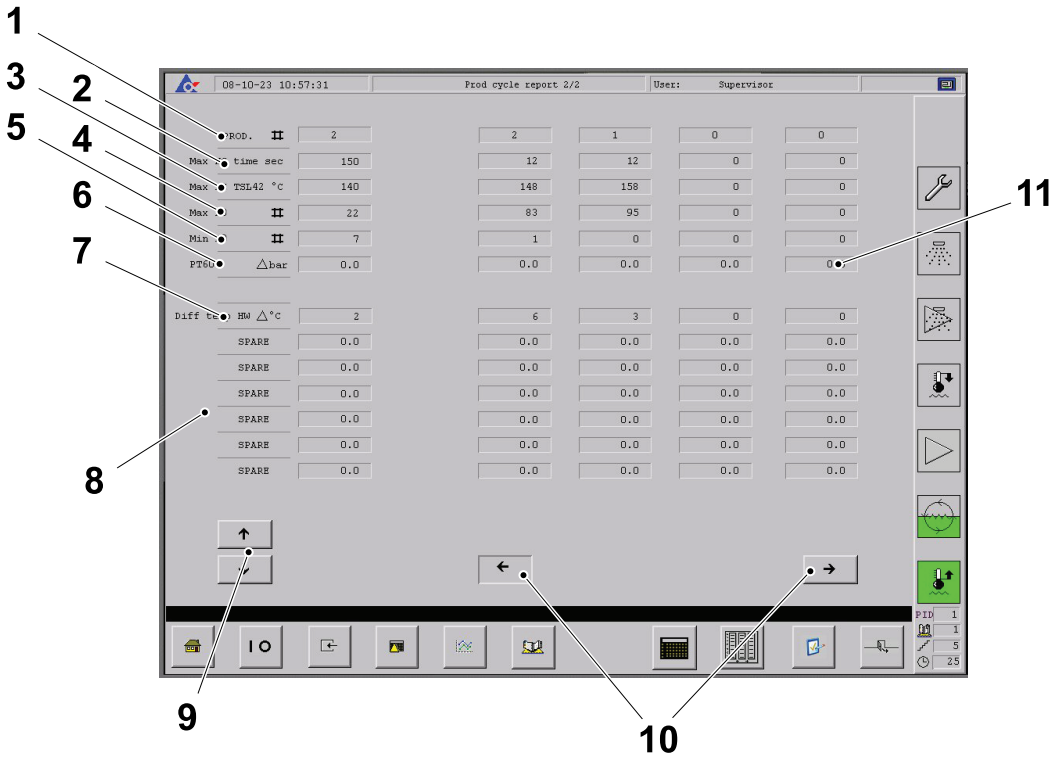
1 See production cycle report
2 Saved lowest temperature steam barrier on pump shaft seals
3 Saved lowest temperature pre-sterilizing guards in step 6
4 Type of final CIP
5 Average temp. circulation TSL42 during high temperature CIP
6 Average temp. circulation TSL42 during low temperature CIP
7 Average temp. circulation TSL71 during CIP
8 Average conductivity circulation QT76 during lye circulation.
9 Average conductivity circulation QT76 during acid circulation.
10 Average flow during high temp. CIP circulation
11 Average flow during low temp. CIP circulation
12 Total circulation time in lye during CIP
13 Total circulation time in acid during CIP
14 Number of AIC during a sterilization cycle
15 Scroll between the 4 report pages
16 Scroll between the sterilization cycles
17 Historical sterilization cycles

3.7.17 Logger Production Report page 1



1 Production cycle number
2 Production cycle start
3 Sterilization cycle report. Number to indicate which sterilization is used for this production.
4 Recipe number selected during production.
5 Total time in production (h)
6 Total amount of product (m^3)
7 Capacity index
8 Saved lowest HC time during step 17-62 production (s)
9 Saved lowest HC temp. during step 17-62 production
10 Saved lowest steam barrier pump shafts temp during step 17-62 production.
11 Saved lowest TSL 42 temp. during step 17-62 production.
12 Scroll between the 4 report pages.
13 Scroll between the sterilisation cycles.
14 Historical production cycles

3.7.18 Logger Production Report page 2



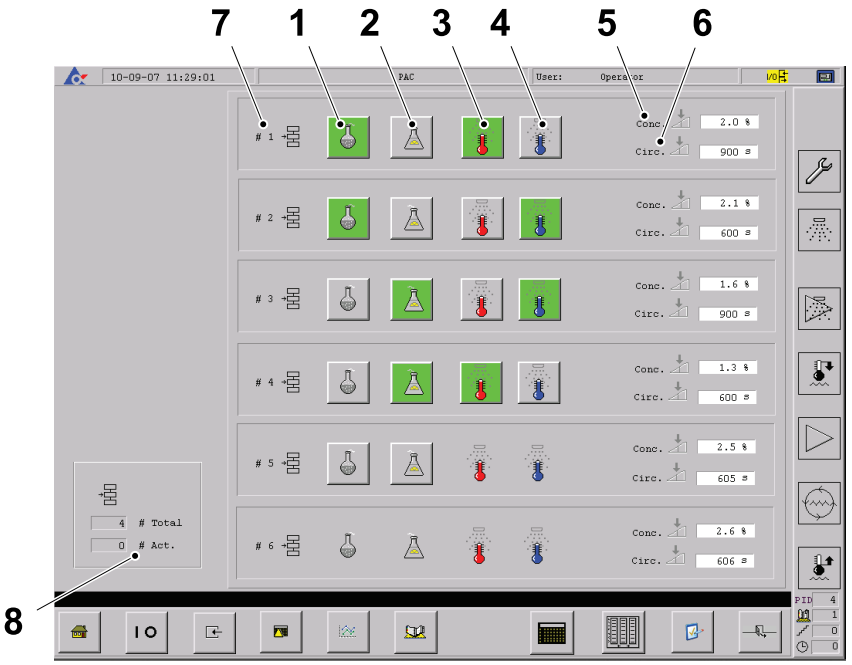
1 Production cycle number
2 Saved highest HC time during step 17-62 production.
3 Saved highest HC temp during step 17-62 production.
4 Saved highest Fo value during step 17-62 production.
5 Saved lowest Fo value during step 17-62 production.
6 Increase of pressure compared with clean machine. (Optional)
7 Saved highest diff temp TE09 - TE44 during step 17-62 production
8 Saved highest RFL value during production
9 Scroll between the 4 report pages
10 Scroll between the sterilization cycles
11 Historical sterilization cycles

3.7.18.1 PAC and CIP Setup

The PAC is a CIP program that can be configured by the operator to fit with the current production situation.

A PAC cleaning can contain up to six consecutive cleaning sequences. By activating sequence by sequence from top to bottom the different cleaning sequences are included in the PAC program.

Note! Excessive cleaning of equipment can shorten life time of equipment.



1 Select Lye
2 Select Acid
3 Select type HT CIP sequence
4 Select type LT CIP sequence
5 Set Concentration for sequence
6 Set Circulation Time for sequence
7 Sequence number
8 Total number and currently active sequence number

3.7.19 IntelliCIP™ 2.0

The IntelliCIP™ 2.0 (iCIP) is a function that indicates the degree of fouling in the most critical parts of the tubular heat exchanger (THE). The degree of fouling is referred to as Relative Fouling Level (RFL in short) and is expressed as an index value.

The index value is calibrated to work with reference to a verified totally clean machine and is indicated as RFL value = 1.00.

The iCIP function indicates individual RFL values for different parts of

During production and cleaning iCIP is updating RFL values to indicate the degree of fouling in the machine as it is developing in production or is removed in cleaning.

In short terms the function is as follows:

a) Starting with a clean machine iCIP will indicate a RFL value ~ 1.0, during production RFL value will increment to an index value > 1.00.

b) During cleaning AIC or CIP the RFL value will reduce and when the machine is fully cleaned and all fouling in THE is removed the RFL value will have returned to ~ 1.0.

In the HMI all functionality for iCIP is presented in two windows, one with numeric RFL values and settings, the intelliCIP window and the RFL graph showing value graphically.

The automatic iCIP function is activated by a push button (1). When the iCIP is selected active an icon is indicated to the right in the main header in HMI and on the push buttons for CIP selection in the operator menu a small “i” is indicated.

The individual CIP sensors are indicated as below (3). To the right the highest of the individual RFL values is presented as the “ruling” RFL (4)

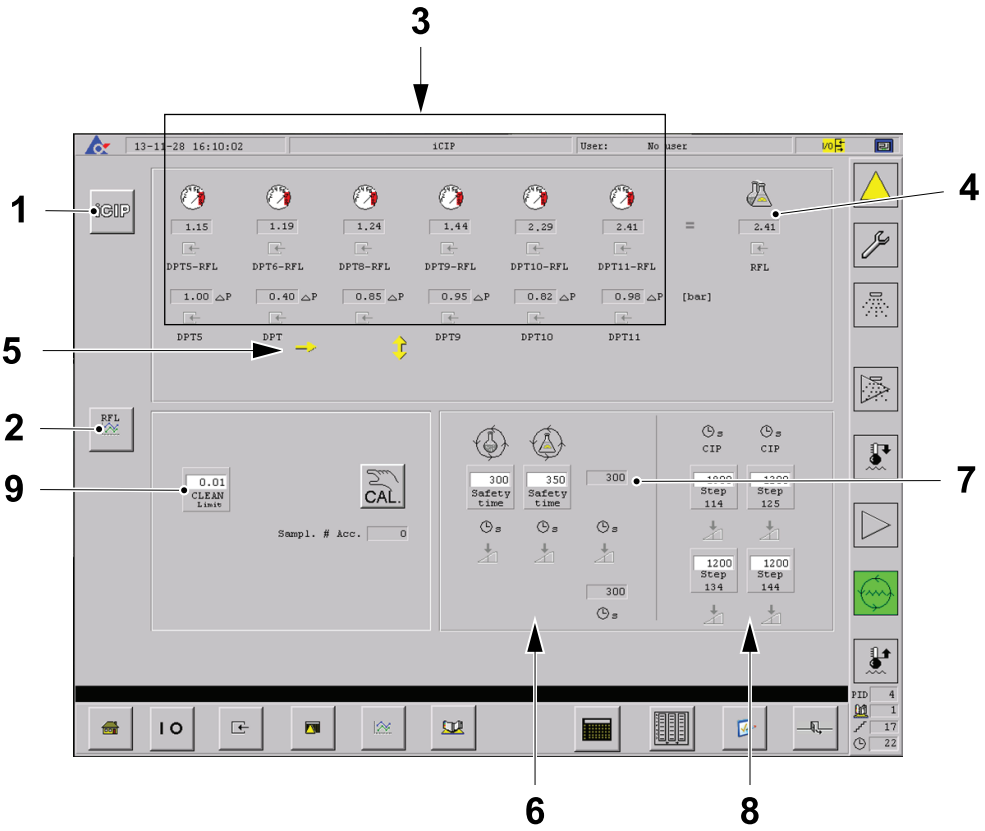
Below each RFL indicator there is a trend indicator (5). The trend indicator shows whether the RFL value is changing during a cleaning phase or whether it has stabilized at a final value.

Setting for safety finalizing timer, Lye / Acid (6) is set based on observations of the RFL values and an evaluation of cleaning result so that there is a confidence that the equipment is clean after the set time. The indication (7) displays current remaining safety time counting down.

(Cont’d)

(Cont'd)

Note! If the total CIP program is finished and not all RFL indicators have come to status "Clean" an alarm is trigged, Alarm text "Cleaning finished without iCIP indicating clean machine".

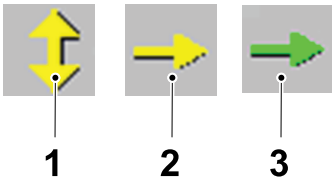


1 IntelliCIP.
2 Bring up the RFL value graph.
3 CIP sensors.
4 Ruling RFL.
5 Trend indicator.
6 Safety timer.
7 Remaining safety time.
8 Indication and setting circulation time normal CIP.
9 Input field and indication for limit "Clean Machine".

3.7.19.1 Trend Indicator Status

Status:

- RFL value changing either increasing or decreasing (pos 1).
- RFL value stable and not changing , flat trend, RFL value indicating value > clean (pos 2).
- RFL value stable and not changing , flat trend, RFL value indicating value < clean (pos 3).



3.7.19.2 RFL Graph

During a cleaning phase the individual RFL values will show a typical development profile, the characteristics for the profile depends on the placement of the transmitter and by that the type of fouling see page .

In general there are two typical profiles for white milk fouling:

- Type A: Low temperature range 80°C – 100°C, protein based fouling, reacts to lye cleaning, will initially respond with a increased RFL value in lye phase before decreasing.
- Type B: High temperature range 120 – 145°C, mineral based fouling, reacts to acid cleaning.

Transmitter A, placed in low temp range 75 - 95 °C with protein fouling, typical increased RFL value during dosing then decreasing value during circulation.

Transmitter B, placed in temperature range 95 - 125 °C, mixture of protein and mineral fouling, proteins giving increased RFL value also in this section.

Transmitter D, placed in temperature range 125 - 137 °C mainly mineral fouling, and no strong reaction in lye dosing phase, and slow decrease of RFL value during circulation.

An RFL value ~ 1.00 indicates that the section is clean. An RFL value that is flat, i.e. is no longer changing during the circulation phase indicates that continued circulation of cleaning solution will have no further effect in that particular section.

By studying the RFL values during cleaning phases, following their development graphically it is easy to gain an understanding of the cleaning progress. In both cases above, if RFL ~ 1.00 or RFL = flat continuation of the cleaning phase will be of no advantage.

The information gained from following up on RFL values can with advantage be used to optimise the CIP.

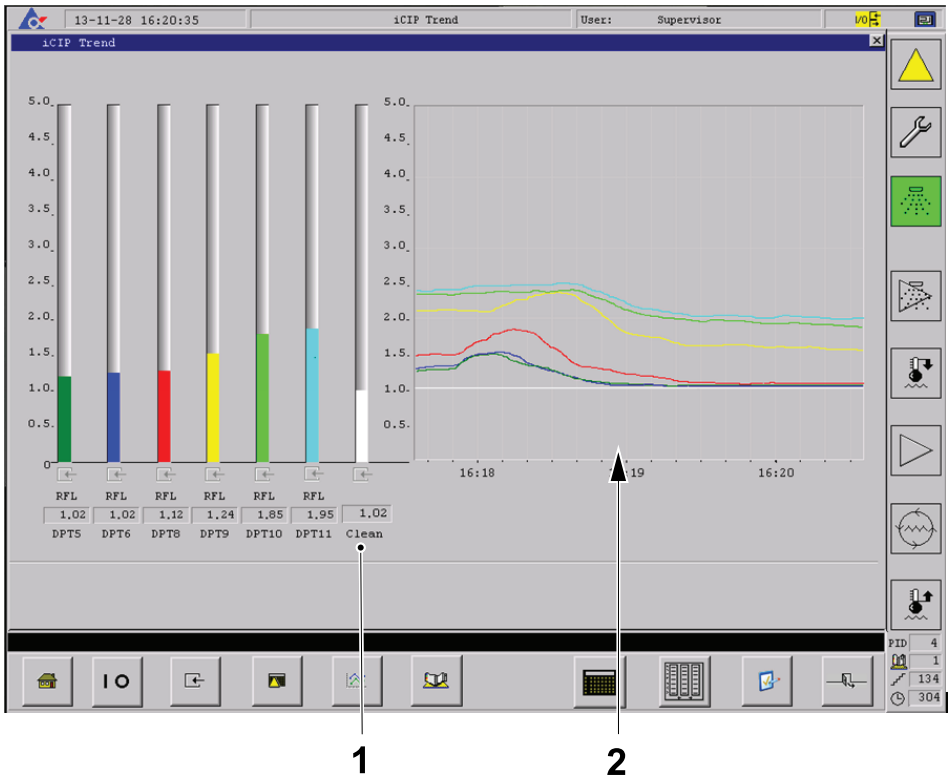
3.7.19.3 Clean Machine

When the machine is cleaned the RFL values (9) (see3.7.19 IntelliCIP™ 2.0) should indicate a value close to 1.00. For practical reasons there is a limit for when status clean should be set.

The setting of this limit must be based on evaluation of the cleaning results. Default value for RFL value clean machine (1) is 0,02 which gives that RFL value ≤ 1,02 will be considered as a clean machine.

Note! The iCIP is a tool for guidance; it is not an absolute verification of cleaning results, the normal procedure for evaluation of cleaning result must always be carried out.

The illustration shows a typical graph for lye dosing.



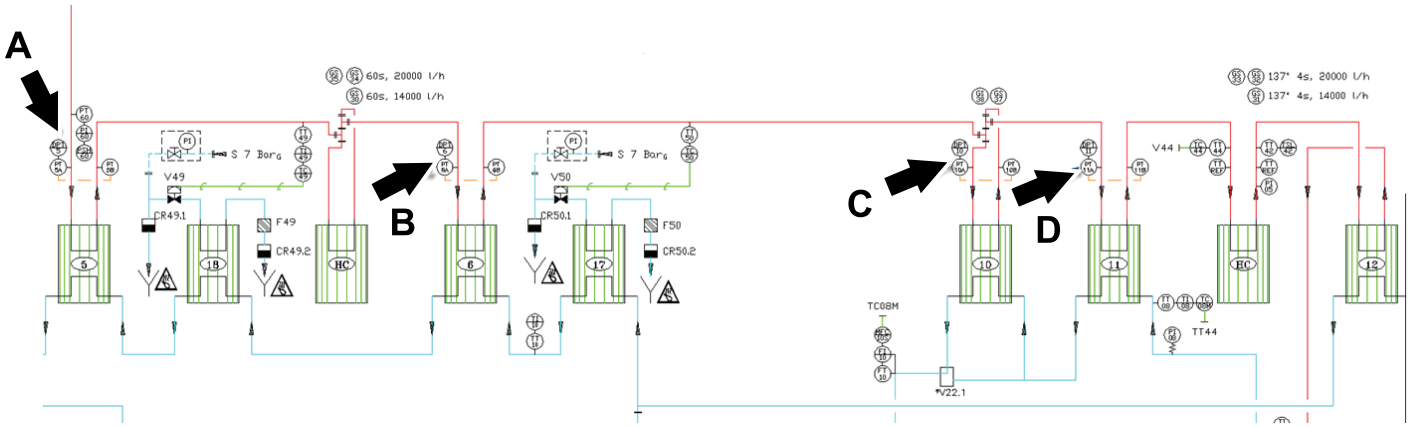
1 Limit “Clean machine” value (1.02) is presented also in the RFL trend

2 Trend RFL values and “Clean machine” value represented as trend.

3.7.19.4 Positioning of Differential Pressure Transmitters

The sections in THE that are monitored for fouling are equipped with differential pressure transmitters. These transmitters are placed in such a way that the most critical parts in terms of fouling of the machine are monitored.

Depending on the design and configuration of the actual machine the number and position of sensors may vary.



Section of flow diagram with example of placement of sensors, labelled A - D.

3.7.19.5 Calibration

When the machine is calibrated the nominal values for relationship between flow, media properties and pressure drop are tuned and set in the PLC program. Based on this nominal setting the RFL value is calculated and displayed as RFL value = 1.00 for status clean machine in each supervised section.

The machine is to be calibrated on cleaning solution during commissioning.

Prior to calibration of iCIP the following parameters in the machine should have been set and the cleaning solution should have been analysed and be within reasonable limits:

- Requested concentration for lye cleaning.
- Requested concentration for acid cleaning.
- Concentration of lye concentrate.
- Concentration of acid concentrate.
- Density of lye concentrate.
- Density of acid concentrate.
- Temperature settings for High and low temperature CIP set and verified.

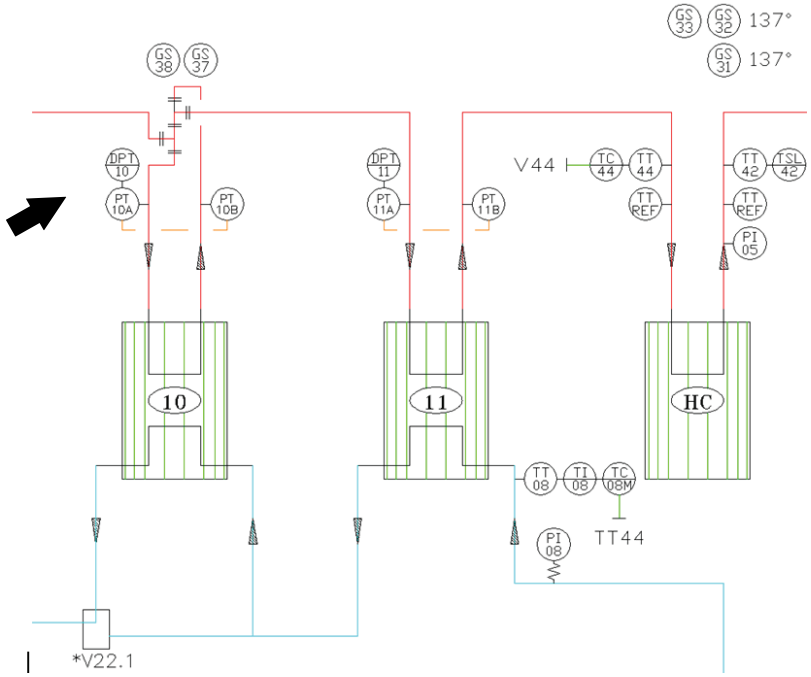
If any of the above listed parameters have drastically changed or if any of the pressure transmitters have been exchanged or tampered the iCIP should be recalibrated

3.7.19.5.1 Calibration Procedure

Prior to calibration all sections of the machine which have a CIP sensor must be connected and included in the current product recipe.

Note! All sections must be inspected and found to be perfectly clean.

Calibration can only be selected Water circulation (step 17), so the machine must be sterilized prior to calibration.



Example of machine equipped with by pas connections for sections with iCIP sensor

3.7.19.5.2 Start Calibration

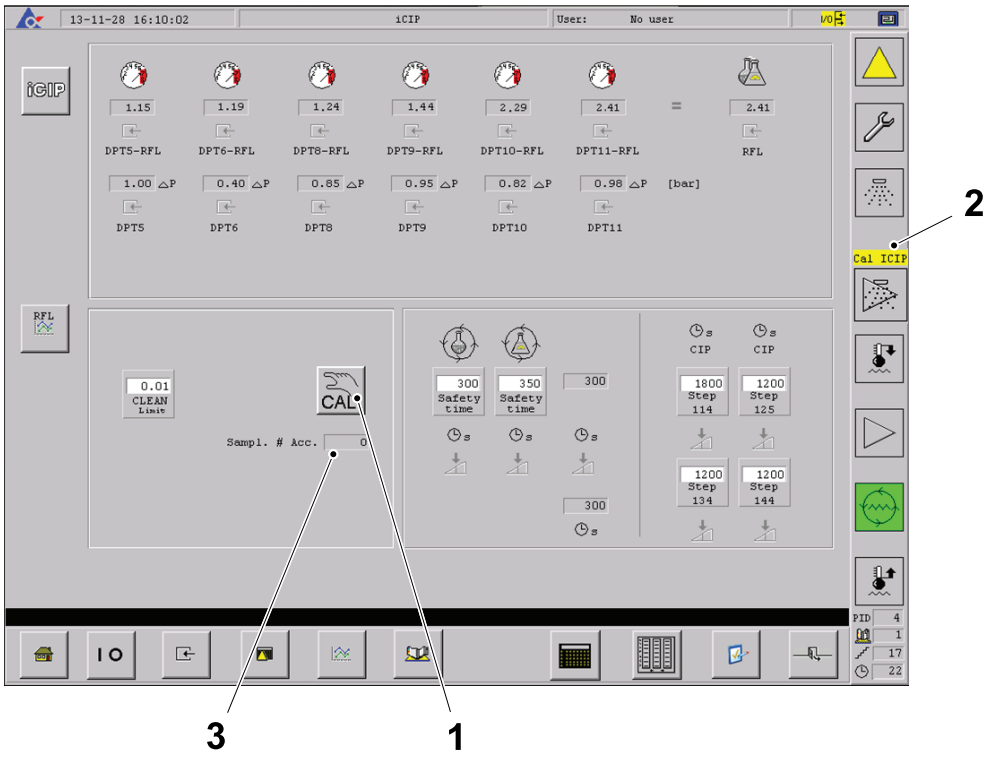
In sterile water (step 17)

Go to`ICIP WINDOW` and select CALIBRATION (1),

When calibration has been started an indication with the text `Calibration iCIP` will be displayed (2) in the phase status ladder to the right.

(Cont'd)

(Cont'd)



From the operators window, with calibration selected it will be necessary to run a full AIC followed by full PAC cleaning see Cleaning Sequence in chapter Operation. Only the required function will be available on the HMI at any stage.

When selecting full AIC cleaning, the machine will perform an AIC cleaning in normal way; after AIC finished the program will return to Water circulation (step 17).

When selecting PAC cleaning, the PAC cleaning that will be performed is including all phases possible for the machine in order to have possibility to tune process parameters for all combinations. After PAC cleaning finished the PAC set up will be restored to settings as prior calibration.

When PAC cleaning is finished the calibration mode is over and the machine is ready for normal use again.

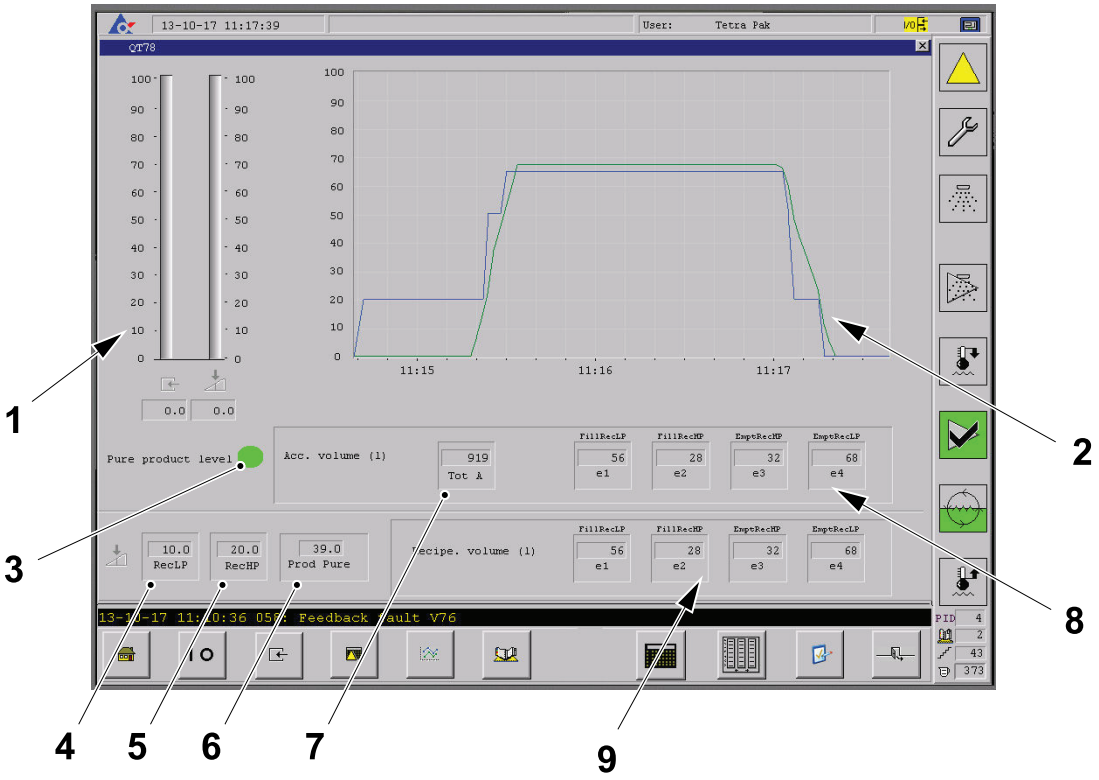
Only the required function will be available on the HMI at any stage.

From step 17 it is also possible to select shut down, which will deselect calibration mode see `Shut Down` sequence chapter Operation.

During cleaning the program will sample the process parameters during the circulation steps. The number of sampled values can be seen in the iCIP picture as shown above (3)

3.7.20 Turbidity Meter QT78 (Option)

Turbidity meter measures the turbidity in the product to determine the mix phases between product and water. Note that the turbidity will differ between different products.



Pos	Description
1	Bar graph and numerical display for QT78 (actual setpoint and process value).
2	Trend curves.
3	Indication if pure product level has been reached before enter step 29 (in production).
4	Setpoint when the low product content should enter the low product reclaim tank.
5	Setpoint when the high product content should enter the high product reclaim tank.
6	Setpoint when pure product is achieved.
7	Accumulated total fill volume if pure product level is achieved.
8	Accumulated volume for reclaim of low product content and high product content in filling and emptying with the settings in point 4 - 6. Before running production the values from previous production run with this recipe and with pure product signal achieved will be displayed.
9	Volume for reclaim of low product content and high product content in filling and emptying from running recipe.

3.7.20.1 How to use turbidity meter QT78 to fine tune volume settings

a) Determine which set point you want for, low product content, high product content and pure product for the product you are planning to run. (Just prepare three different samples for this, leave the samples for enough time to make air go out from the samples. Put the QT78 in the samples without the gasket, make sure that you do not trap any air in the transmitter and key in the set points in the recipe after the reading on the QT78.

Note! Put the pure product set point slightly lower than the value you got from the sample to make sure that you reach the pure product level.

b) Make sure that the M volume (volume from OT78 to the first Alsafe/AFM) is correct set. Just measure the length of the pipe in meters and multiply with volume/meter for that diameter of pipe.
Ø 38mm = 0.990 liters/meter
Ø 51mm = 1.847 liters/meter
Ø 63.5mm = 2.875 liters/meter
Ø 76mm = 4.072 liters/meter

c) Start production and observe the reading from QT78 in step 27 and 28.
When the QT78 is placed on the outlet from the sterilizer.
If the reading is reaching the pure product set point in the end of step 27/28 or when it has enter step 29 the setting for total A volume is to little.

d) Adjust accordingly in the volume setting screen, you will get a suggestion on the correct volume in the QT78 screen if you reach the pure product level.
If the reading reach the pure product set point long before it enters step 29 the setting for total A volume is to big.

e) Adjust accordingly in the volume setting screen, a suggestion on the correct volume will be displayed in the QT78 screen if the pure product level is reached.

f) After the production enter the values for the accumulated reclaim volumes e1- e4 into recipe.

Note! The settings in point two has to be correct otherwise the values for e1 - e4 will not be correct. The transmitter is not suitable for clear products.

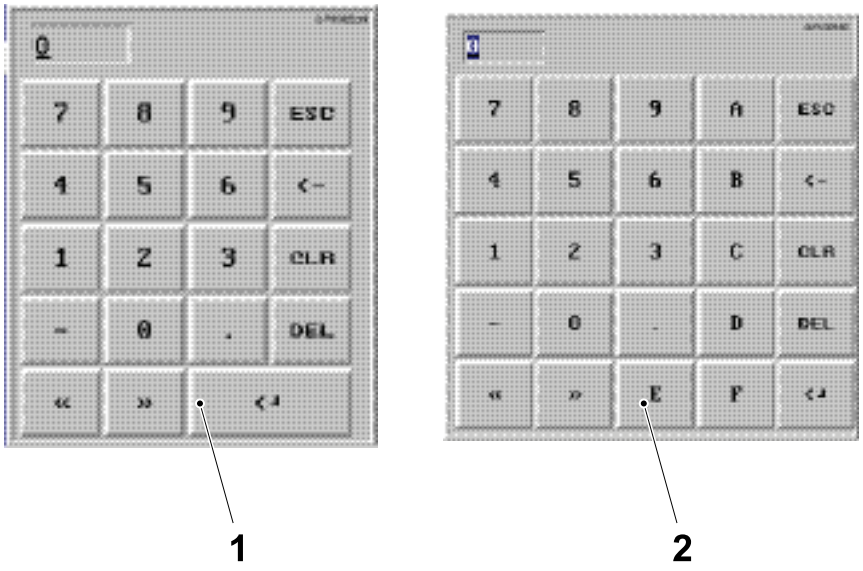
3.7.21 Keyboards

Different operator commands will bring up different keyboards on the screen.

3.7.21.1 Integer Numbers

The keyboard to the left in the illustration below will be brought up on the screen if the operator for example wants to choose a recipe number.

The keyboard to the right in the illustration below will be brought up on the screen if the operator for example wants to change a floating point number.



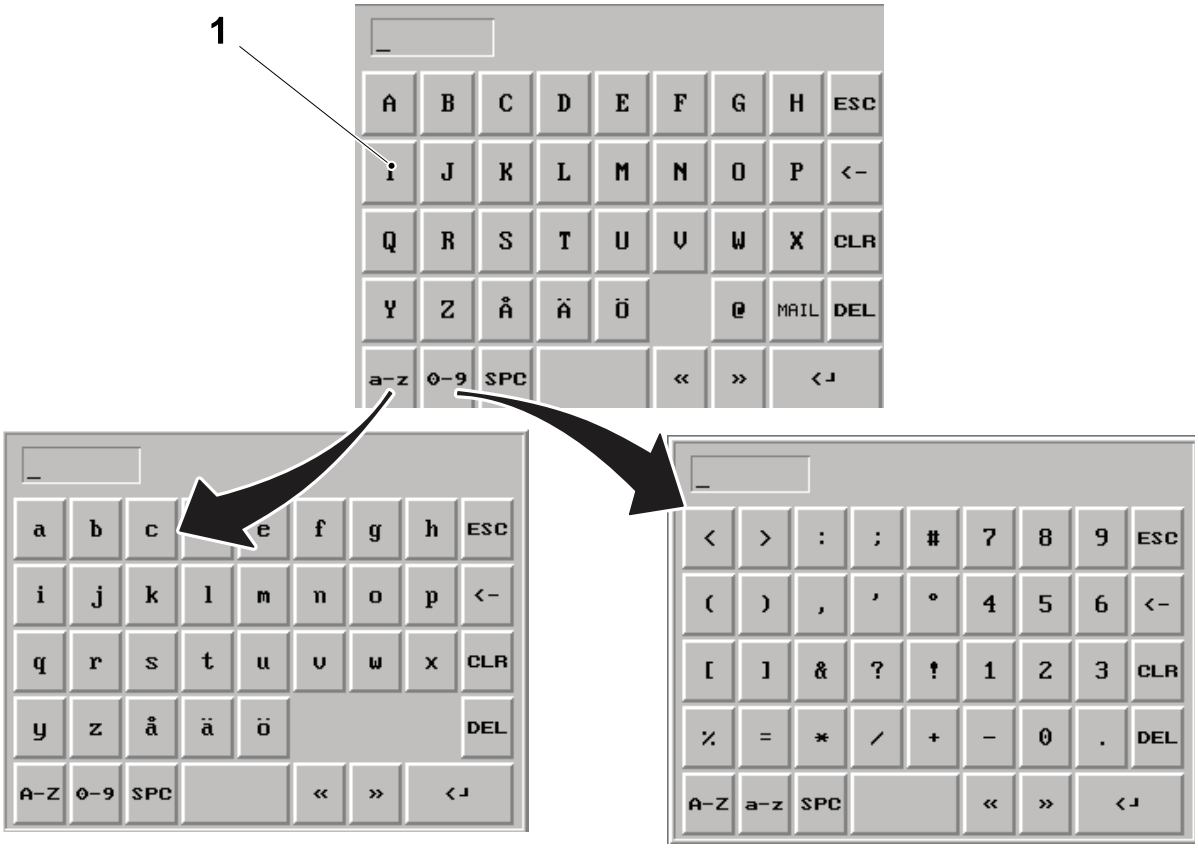
1 2

1 Integer numbers
2 Floating point numbers

3.7.21.2 Alphanumerical Keyboard

The keyboard (1) in the illustration will be brought up on the screen if the user for example wants to log in.

By pressing the key A-Z or 0-9 the operator brings up different keyboards.



This page intentionally left blank

4 Alarm

Description

This chapter describes what to do when alarms occur, and how to read the alarm list.

Description 4-2

4.1 Alarm Handling 4-5

4.2 Fault List 4-6

This page intentionally left blank

4.1 Alarm Handling

Press the ALARM WINDOW button to bring up the Alarm list to identify the alarm.

When the fault has been identified and taken care of press the ACKNOWLEDGE ALARM button.

Note! Alarm feedback fault caused by motors or/and valves has to be acknowledged before it is possible to restart a phase that has gone to Held due to an feedback fault

Alarms are divided into two categories as follows:

a) **A** Faults that will cause an alarm only. The faults are not critical but the alarm will make the operator aware of an incident.

b) **B** Faults that will cause action from the PLC, rectify the fault

The category **C** contains interlock conditions that prevents any sequence to be started see also “Start condition window” in chapter Control Panel.

4.2 Fault List

Note! Checked against Siemens PLC Program

Type A => Alarm only

Type B => Alarm and machine action

Type C => Start interlock

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 000: Feedback fault M2	Motor is not running	Machine stops, if CIP the function is held.	Check motor, check/reset overload device or Frequency Drive unit
-	Alarm 001:-	-	-	-
B	Alarm 002: Feedback fault M4	Motor is not running	Machine stops, if CIP the function is held.	Check motor, check/reset overload device or Frequency Drive unit
	Alarm 003:	-	-	-
B	Alarm 004: Feedback fault M6	Motor is not running	V51 opens bypass and M305 takes over control of level in vacuum chamber. If in production the production will be finalized automatically. Until alarm is fixed the production will be interlocked.	Check motor, check/reset overload device or Frequency Drive unit
-	Alarm 005:	-	-	-
A	Alarm 006: Feedback fault M7 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit
C	Alarm 007: Feedback fault M308	Motor is not running	Steam valve will be closed	Check motor, check/reset overload device or Frequency Drive unit
-	Alarm 008:	-	-	-
B,C	Alarm 009: Feedback fault M10	Motor is not running	Close the steam valve.	Check motor, check/reset overload device or Frequency Drive unit
-	Alarm 010:	-	-	-
A	Alarm 011: Feedback fault M12 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit
A	Alarm 012: Feedback fault M13 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit
A	Alarm 013: Feedback fault M14 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit
A	Alarm 014: Feedback fault M305 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 015: Feedback fault M500	Motor is not running	Only if Infuser.	Check motor, check/reset overload device or Frequency Drive unit
B	Alarm 016: Pre sterilisation fault TSL71	Temperature is too low at TT71 during sterilization.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B,C	Alarm 017: Low temp HC. Guard TSL42. Temperature transmitter TT342.	Temperature is too low in the holding cell.	If sterilizing, go back to the heating step. In production an emptying sequence take place and the product goes to reject. Interlocks the production and AIC.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 018: CIP temp fault TSL71	Temperature is too low at TT71 during circulation steps of cleaning.	The step timer is held until TT71 is at the required temperature.	Check/replace PT100 transmitter. Check that V75 is in position to circulate over the BTD.
B	Alarm 019: Low level fault product BTD LSL08	The product balance tank level is too low.	If in Production, leave production. If fault remains for too much time then immediate stop.If CIP the function is held.	Check supply to BTD
-	Alarm 020:	-	-	-
C	Alarm 021: Feedback fault V83	Valve position not confirmed	Interlock Production, AIC and CIP. If no feedback V83 CIP HB Sequence stopped in step 509	Feedback should give signal when valve deactivated, pipe open to drain.
A	Alarm 022: Caustic fault	Time exceeded for metering or dosing.	-	Check valve solenoid and air lines to V80 or Caustic supply.
A	Alarm 023: Acid fault	Time exceeded for metering or dosing.	-	Check valve solenoid and air lines to V82 or Acid supply.
B	Alarm 024: Filling machine not ready or ready but not started	Filling machine has not started production within a certain time	Activates return cooler.	Check condition of filling machine or selection of filling machine
C	Alarm 025: Low air pressure to control panel.	Inlet air pressure too low.	Interlocks Sterilisation, CIP and emergency emptying.	Check that air supply pressure is at least 6 bar.
A	Alarm 026: Product flow too high or too low	The product flow is out of its allowed limits.	-	The product flow is deviating too much from the set point of flow controller. Check flow controller settings, manual forces, back pressures in system,

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 027: Feed back fault M311 (Option)	Motor is not running	-	Check motor, check/reset overload device or Frequency Drive unit
A	Alarm 028: Battery for backup memory in PLC low	PLC processor backup battery is low.	-	Replace battery
B	Alarm 029: Alsafe not ready or high level	Alsafe is not ready for production or is full.	If in Production, leave production.	Check condition of Alsafe
B	Alarm 030: Low temp steam barrier TSL46	-	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 031: Low temp steam barrier TSL47	Low temperature steam barrier valve V78.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 032: Low temp steam barrier TS830	Temperature too low at the homogeniser.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 033: Cooling water pressure low PSL310	Low water pressure in spray condenser circuit.	Steam valve will close.	Check level in spray condenser LSL304, Check pump M308, Check back pressure valve V362, Check setting for alarm limit, Check activation of V314.
-	Alarm 034:	-	-	-
B,C	Alarm 035: Communication fault Alsafe 1	Fault in serial communications with PLC in Alsafe 1.	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
B,C	Alarm 036: Communication fault Source.	Fault in serial communications with PLC in Source (supply product).	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
B,C	Alarm 037: Communication fault Destination.	Fault in serial communications with PLC in Destination (reclaim and or product tanks).	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
A	Alarm 038:Low steam pressure or steam valve too much open.	The steam valve has been open for too long without the temperature rising or low steam pressure	-	Check steam supply.
A	Alarm 039: Low or high level in vacuum vessel.	Level in vacuum vessel is too low or too high.	-	Check level controller LC305 or LC306.
A	Alarm 040: Low pressure in hot water circuit PSL66	The water pressure in the hot water circuit is too low.	-	Check incoming water pressure. Check PS66. Check setting V68

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 041: Feed back fault compressor AC	Control panel air-conditioner is not operation properly.	-	Check panel air-conditioner.
B,C	Alarm 042: TT42 Broken	Temperature transmitter TT42 is out of its range.	If sterilizing, go back to the heating step. In production an emptying sequence take place and the product goes to reject. Interlocks the production and AIC.	Check/replace PT100 transmitter.
B	Alarm 043: TT71 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 044: TT46 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 045: TT47 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 046: TT830 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 047: TT44 broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
A	Alarm 048: Ratio TIC 44 / TIC31	Not correct difference in the temperatures between the pre-heater and the outlet of the vacuum vessel. Normally 1 degree higher on TT31.	-	Check temperature controller TC44, TC331, TC381. Check flow in spray condenser circuit FT308 and cooling media supply to V380 and or V390.
B	Alarm 049: Pre sterilisation fault TSL362	Temperature is too low at TT362 during sterilization.	If sterilizing, go back to the heating step.	Check flow i spray condenser (FT308), check level in spray condenser LSL304, check flow from V321 in spray ball. Check/replace PT100 transmitter.
B,C	Alarm 050: TT331 broken.	-	If in production an emptying sequence take place and the product goes to reject. Interlocks the production until new sterilization has been performed.	Check/replace PT100 transmitter.
B,C	Alarm 051: TSH331	Too high temperature at TT331.	If in production an emptying sequence take place and the product goes to reject. Interlocks the production until cause for alarm has been fixed.	Check temperature controller TC331, TC381. Check flow in spray condenser circuit FT308 and cooling media supply to V380 and or V390.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A,C	Alarm 052: Filter fault crank case PS837 (Optional)	-	Interlocks sterilisation, production and emergency emptying	Check TeM manual of homogenizer.
A,C	Alarm 053: Filter fault gear box PS838 (Optional)	-	Interlocks sterilisation, production and emergency emptying	Check TeM manual of homogenizer.
A,C	Alarm 054: Oil pressure fault crank case PSL814 (Optional)	Low oil pressure in crank case homogeniser	Interlocks sterilisation, production and emergency emptying	Check TeM manual of homogenizer.
A,C	Alarm 055: Oil pressure fault gear box PSL840 (Optional)	Low oil pressure in gearbox homogeniser	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogenizer.
A,C	Alarm 056: Oil temperature fault crank case TS841 (Optional)	High oil temperature in crank case homogeniser	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogeniser.
A,C	Alarm 057: Oil temperature fault gear box TS842 (Optional)	High oil temperature in gearbox homogeniser	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogeniser.
B	Alarm 058: Feedback fault V71	Valve position not confirmed	If sterilising, go back to the heating step, interlock production.	Check valve solenoid, air lines, operation, and feedback device.
A	Alarm 059: Feedback fault V84	Valve is not activated.	-	Check valve,
B	Alarm 060: Emergency stop panel	Emergency stop button pushed at main control panel	Immediate system stop	Reset the emergency stop button
B	Alarm 061: Low temp steam barrier TS831 (Optional)	Temperature too low at the homogeniser.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 062: TT831 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
A,C	Alarm 063: High oil temp TSH815 Tetra Alex (Optional)	-	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogeniser.
C	Alarm 064: Temperature transmitter broken	Summary of any broken PT100	Interlock start of sterilising	Check/replace PT100 transmitter.
A	Alarm 065: Differential pressure sterile cooler fault PSL63 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.	-	-
A	Alarm 066: Differential pressure sterile cooler fault PSL62 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.	-	-

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 067: Differential pressure sterile cooler fault PSL61 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.	-	-
A	Alarm 068: Not valid recipe	Operator trying to change to a recipe that is not allowed.	The change from currently running recipe to the requested new recipe is not accepted, so current recipe remains active.	Check that the selected equipment configuration (i.e extra cooler, HC, etc) is the same in the two recipe. Check that HC temperature in requested new recipe is < or = to the HC temp at current recipe.
A	Alarm 069: High oil temp Alex, TSH845 (Optional)	-	-	Check TeM manual of homogeniser.
A,C	Alarm 070: Oil level Alex LSH835 (Optional)	High oil level homogeniser	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogeniser.
A,C	Alarm 071: Oil level Alex LSL835 (Optional)	Low oil level homogeniser	Interlocks sterilisation, production and emergency emptying.	Check TeM manual of homogeniser.
B	Alarm 072: Pre sterilisation fault TSL504	Temperature is too low at TT504 during sterilization.	If sterilizing, go back to the heating step. Only if Infuser.	Check stem supply V535, V536, V547, Also check cooling water V546 & V548.
B	Alarm 073: Pre sterilisation fault TSL502	Temperature is too low at TT502 during sterilization.	If sterilizing, go back to the heating step. Only if Infuser.	Check stem supply V535, V536, V547,
B,C	Alarm 074: HC time fault infuser	-	If sterilizing, go back to the heating step. If in Production, leave production and reset product at outlet signal. Interlocks Production and AIC.	Check for disturbance in product flow or steam supply.
A	Alarm 075: High level in infuser LSH504	-	-	Check level controller LC504. Check V504. Check LT504.
B	Alarm 076: TE502 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step. Only if Infuser.	Check/replace PT100 transmitter.
B	Alarm 077: TE504 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step. Only if Infuser.	Check/replace PT100 transmitter.
	Alarm 078:	-	-	-
	Alarm 079:	-	-	-

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 080: Product not at unit (Optional)	Product at unit signal from source not available	Leaves production.	-
B,C	Alarm 081: Communication fault with CIP station	Fault in serial communications with CIP station	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
B,C	Alarm 082: Communication fault with CIP concentrate	Fault in serial communications with CIP concentrate	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
A	Alarm 083: Comp Index for lye too high	Comp index has been adjusted too much	Index =150.	Check and verify, data for CIP concentrate, and volume in machine
A	Alarm 084: Comp Index for lye too low	Comp index has been adjusted too much	Index = 50.	Check and verify, data for CIP concentrate, and volume in machine
A	Alarm 085: Comp Index for acid too high	Comp index has been adjusted too much	Index =150.	Check and verify, data for CIP concentrate, and volume in machine
A	Alarm 086: Comp Index for acid too low	Comp index has been adjusted too much	Index = 50.	Check and verify, data for CIP concentrate, and volume in machine
A	Alarm 087: Differential pressure fault PSL64 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.	-	-
A	Alarm 088: 10% storage left in recorder	-	-	Change memory card in recorder.
B,C	Alarm 089: LT504 broken	Level is not working as normal, No movement at float,	If in Production, leave production and reset product at outlet signal. Interlocks Sterilisation, Production and AIC. Opens V504 to 100 %. Only if Infuser.	Disassemble level transmitter, check function.
B,C	Alarm 090: Product flow transmitter broken	-	Step conditions based on volumes are replaced with backup timers. Reclaim handling for product is disabled.If in Production, leave production and reset product at outlet signal. Interlocks Sterilisation, Production and AIC.	-
A	Alarm 091: High pressure in hot water circuit PSH66	The water pressure in the hot water circuit is too high.	-	Check setting PC68 and or PC67.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
	Alarm 092:	-	-	-
B	Alarm 093: HC time fault	-	If sterilizing, go back to the heating step. If in Production, leave production and reset product at outlet signal. Interlocks Production and AIC.	Check for disturbance in flow controller FC04.
B	Alarm 094: Production not enabled (Optional)	Production enable signal from source not available	Leaves production.	-
B	Alarm 095: Water not enabled (Optional)	Water enable signal from source not available	If step 20 leaves production.	-
A	Alarm 096: Differential pressure fault PSL65 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.	-	-
B	Alarm 097: Low water level CIP HB tank	Not enough water in CIP HB for step 25 - 26 too long time spent to fill up product in BTD.	If step 25 - 26. Filling of product is interrupted, and emptying of machine is started.	Check supply of product.
A	Alarm 098: Cond High Fault QT76 rinse (Optional)	Too high conductivity in final rinse.	-	Check rinse volume setting
A	Alarm 099: Slow dosing of concentrate	Not low level reached in CIP HB Tank at end of dosing step.	-	Check level transmitter LT10 and outlet valves from CIP HB tank. Check level controller LC10 setting
A	Alarm 100: Fast dosing of concentrate	Low level reached in CIP HB Tank to early in the dosing step.	-	Check level transmitter LT10 and concentrate supply. Check level controller LC10 setting
B	Alarm 101: Water metering fault	Step 503 or 507, and max timer.	No action on alarm but the step sequence for CIP HB will be halted in step 503 or 507 until LT10 has reached it's set point.	Check water supply to CIP HB tank.
B	Alarm 102: Draining fault CIP HB tank	Not low level reached in CIP HB Tank.	No action on alarm but the step sequence for CIP HB will be halted in step 502, 508 509, 511 or 515 until tank is emptied (LT10 <LL or LS51).	Check drain valves on CIP HB tank.
B	Alarm 103: CIP HB tank over filled	High level in the CIP header tank.	Closes all supply to CIP HB tank.	Check supply valves to CIP header tank.
B	Alarm 104: Pre ster temp fault TS901 (Optional)	Temperature too low at the homogeniser Damper.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 105: Pre ster temp fault TS902 (Optional)	Temperature too low at the homogeniser Damper.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
B	Alarm 106: LSL66 Low Level Hot Water Circuit	The water pressure in the hot water circuit is too low.	Valve V66 opens.	Check incoming water pressure. Check LS66. Check that V66 opens.
A	Alarm 107: PSL847 - Tetra Alex Inlet Product Press Fault (Optional)	Inlet pressure to homogeniser to low	-	-
A	Alarm 108: TT04 Broken	Temperature is out of its normal range.	-	Check/replace PT100 transmitter.
A	Alarm 109: TT06 Broken	Temperature is out of its normal range.	-	Check/replace PT100 transmitter.
B	Alarm 110: TT362 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
A	Alarm 111: TT64 Broken	Temperature is out of its normal range.	-	Check/replace PT100 transmitter.
A	Alarm 112: No Tank in queue (Optional)	No Alsafe queued	-	-
A	Alarm 113: PSL846 - Tetra Alex Cooling Water Pressure Fault (Optional)	Tetra Alex Cooling Water Pressure to low	-	Check water supply
B,C	Alarm 114: LT10 Broken	Level is out of its normal range.	Interlocks AIC, CIP. Deactivates chemical valves and pumps.	Check/replace level transmitter.
C	Alarm 115: Product in module	Product still in machine. Machine has been shut down without completed emptying of product.	Interlocks emergency emptying if not alarm present and reclaim destination not available.	-
C	Alarm 116: TT63 Broken	Temperature is out of its normal range.	Interlocks sterilisation. Only US version.	Check/replace PT100 transmitter.
C	Alarm 117: TT63.2 Broken	Temperature is out of its normal range.	Interlocks sterilisation. Only US version.	Check/replace PT100 transmitter.
C	Alarm 118: TT73 Broken	Temperature is out of its normal range.	Interlocks sterilisation. Only US version.	Check/replace PT100 transmitter.
B,C	Alarm 119: DPT61 Differential Pressure Alarm	Pressure of the product side is too low compared to the media side of this heat exchanger.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Sterilisation, Production and AIC.	Only US version

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B,C	Alarm 120: DPT62 Differential Pressure Alarm	Pressure of the product side is too low compared to the media side of this heat exchanger.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Sterilisation, Production and AIC.	Only US version
B,C	Alarm 121: DPT63 Differential Pressure Alarm	Pressure before the steam injector is too low compared to downstream.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Sterilisation, Production and AIC.	Only US version
B,C	Alarm 122: DPT64 Differential Pressure Alarm	Pressure of the product side is too low compared to the media side of this heat exchanger.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Sterilisation, Production and AIC.	Only US version
B,C	Alarm 123: TSL42A Hold Tube ESL Temp Fault	Temperature in the hold tube is too low.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production and reset product at outlet signal if in production Interlock of Sterilisation, Production and AIC.	Only US version
B,C	Alarm 124: TSL42B Hold Tube Aseptic Temp Fault	Temperature in the hold tube is too low.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production and reset product at outlet signal if in production Interlock of Sterilisation, Production and AIC.	Only US version
B	Alarm 125: TSL47A Flash Vessel ESL Temp Fault	Temperature at the flash vessel is too low.	Go back to heating step if in step 6.	Only US version

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 126: TSL47B Flash Vessel Aseptic Temp Fault	Temperature at the flash vessel is too low.	Go back to heating step if in step 6.	Only US version
B	Alarm 127: TSL73 FDV ESL Temp Fault	-	Go back to heating step if in step 6.	Only US version
B	Alarm 128: PSL48 Hold Tube Pressure Fault	Pressure in the hold tube is too low	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Production and AIC.	Only US version
B,C	Alarm 129: FSH04 Flow Fault	Product flow is too low or too high.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production and reset product at outlet signal if in production. Interlock of Sterilisation, Production and AIC.	Only US version
B,C	Alarm 130: FDV Feedback Fault	Valve position is not confirmed.	Loss of sterility - If CIP memory step back to heating step. If no CIP memory step to shut down.Sets finalize production if in production. Interlock of Production and AIC.	Only US version
	Alarm 131:	-	-	-
	Alarm 132:	-	-	-
B,C	Alarm 133: TSHH331 Condensation guard	Too high temperature at TT331.	If in production an emptying sequence take place and the product goes to reject. Interlocks production and AIC.	Check temperature controller TC331, TC381. Check flow in spray condenser circuit FT308 and cooling media supply to V380 and or V390.
B	Alarm 134: TSL51 Steam barrier V51 (Optional)	Temperature too low at the steam barrier in V51.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
A	Alarm 135: Filter fault homogeniser dampers (Optional)	Dampers at homogeniser has been sterilised maximum number of times with same air filter.		Replace filters
B	Alarm 136: TT901 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 137: TT902 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 138: TT51 Broken (Optional)	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B,C	Alarm 139: BTD lid open or unlocked (Optional)	BTD Lid open or unlocked.	Interlocking start of sterilizing, AIC and CIP phases. Hold of step timer. Interlocking activation of V05.	Check lid on BTD.
A	Alarm 140: TT845 Broken (Optional)	Temperature is out of its normal range.		Check/replace PT100 transmitter.
A	Alarm 141: Differential pressure sterile cooler fault PSL67 (Optional)	Pressure of the product side is too low compared to the media side of this heat exchanger.		-
B,C	Alarm 142: Communication fault Alsafe 2	Fault in serial communications with Alsafe. 2	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
B,C	Alarm 143: Communication fault Alsafe 3	Fault in serial communications with Alsafe. 3	All incoming communication signals are reset. Interlock for sterilisation, production, AIC, CIP.	Check communication network and devices.
B	Alarm 144: Steam barrier low AFM1	Signal from filling machine indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply AFM1. Check signal exchange AFM 1.
B	Alarm 145: Steam barrier low AFM2	Signal from filling machine indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply AFM2. Check signal exchange AFM 2.
B	Alarm 146: Steam barrier low AFM3	Signal from filling machine indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply AFM3. Check signal exchange AFM 3.
B	Alarm 147: Steam barrier low AFM4	Signal from filling machine indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply AFM4. Check signal exchange AFM 4.
B	Alarm 148: Steam barrier low Alsafe 1	Signal from Alsafe indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply Alsafe. Check signal exchange Alsafe.
B	Alarm 149: Steam barrier low Alsafe 2	Signal from Alsafe indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply Alsafe. Check signal exchange Alsafe
B	Alarm 150: Steam barrier low Alsafe 3	Signal from Alsafe indication steam barrier OK is missing.	If sterilizing, go back to the heating step.	Check steam supply Alsafe. Check signal exchange Alsafe
	Alarm 151:	-	-	-
	Alarm 152:	-	-	-
B	Alarm 153: TE305 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 154: TSL305 Steam barrier M305 (Optional)	Temperature too low at the M305 shaft.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315 and setting V350.
B	Alarm 155:TE308 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 156: TSL308 Steam barrier M308 (Optional)	Temperature too low at the M305 shaft.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315 and setting V358.
B	Alarm 157: TE339 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 158: TSL339 Sterilization guard bottom flange (Optional)	Temperature too low at the bottom flange vacuum chamber.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315.
B	Alarm 159: TE340 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 160: TSL340 Sterilization guard sight glass (Optional)	Temperature too low at the sight glass vacuum chamber.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315.
B	Alarm 161: TE341 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 162: TSL341 Sterilization guard spray ball (Optional)	Temperature too low at the spray ball connections at vacuum chamber.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315.
B	Alarm 163: TE346 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 164: TSL346 Sterilization guard LT306. (Optional)	Temperature too low at the LT306 connections at vacuum chamber.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315.
B	Alarm 165: TE347 Broken (Optional)	Temperature is out of its normal range.	If in sterilizing, go back to the heating step.	Check/replace PT100 transmitter.
B	Alarm 166: TSL347 Sterilization guard V347 (Optional)	Temperature too low at the pressure relief valve at vacuum chamber.	If sterilizing, go back to the heating step.	Check steam supply V342, PI315.
B,C	Alarm 167: PT61A broken .	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B,C	Alarm 168: PT62A broken.	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.
B,C	Alarm 169: PT63A broken .	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.
B,C	Alarm 170: PT64A broken .	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.
B,C	Alarm 171: PT65A broken .	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.
B,C	Alarm 172: PT67A broken .	Broken transmitter for differential pressure.	If in production an emptying sequence take place and the product goes to reject. Interlocks production & Sterilization. If in sterilization the program steps back to heating step 5.	Check pressure transmitter.
B,C	Alarm 173: PSH500 to high pressure infuser	Pressure to high in infuser	Immediate system stop	Check infuser
B	Alarm 174: Low temp steam barrier	Temperature too low.	If sterilizing, go back to the heating	Check steam supply. Check/replacePT100 transmitter.
B	Alarm 175: TT90 Broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step.	Check steam supply. Check/replace PT100 transmitter.
C	Alarm 176: Low pressure to DHM control panel - PSL301	Inlet air pressure to low	Interlocks sterilization CIP and emergency emptying	Check that air supply pressure is at least 6 bar

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
B	Alarm 177: TT319 broken	Temperature is out of range	If in sterilization, go back to heating step	Check/replace PT100 transmitter
B	Alarm 178: TSL319 sterilization guard spray ball swing bend	Temperature too low at the spray ball swing bend	If in sterilization, go back to heating step	Check steams up ply V342, PI315
B	Alarm 179:TT381 broken	Temperature is out of its normal range	If in sterilization, go back to heating step	Check/replace PT100 transmitter
B	Alarm 180: Fuse fault	Electronic fuse tripped	Immediate system stop	Check fuse in control panel
B	Alarm 181: TT951 Broken (optional)	Temperature is out of its normal range	If sterilising, go back to the heating step	Check/replace PT100 transmitter
B	Alarm 182: TSL951 (optional)	Temperature too low at the homogeniser damper	If sterilising, go back to the heating step	Check steam supply. Check/replace PT100 transmitter
A	Alarm 183: High product outlet temp TSH06	Insufficient cooling media temperature or flow rate in product cooler	-	Check incoming cooling media supply
-	-	Insufficient hot water temperature or flow rate in product to water regenerative sections (CM)	-	Check hot water temperature and flow rate (
-	-	Insufficient product temperature or flow rate in product to product regenerative sections (CMR)	-	Check product temperature and flow rate
A	Alarm 184: Homog low product pressure PSL827	Product pressure is out of its normal range	-	Check product pressure valve in homogenizer
B	Alarm 185: LSL11 Low level Deaerator water circuit M11	The water pressure in water circuit to M11 is too low	Valve V29 opens.	Check incoming water pressure.Check LSL11.Check that V29 opens.
B	Alarm 186: LSL22 Low level Deaerator water circuit M14	The water pressure in water circuit to M14 is too low	Valve V21 opens.	Check incoming water pressure.Check LSL22.Check that V21 opens.
A	Alarm 187: TSH11 High temp at M11	High water temperature in water circuit at M11	-	Check incoming water pressure
A	Alarm 188: TT11 broken	Temperature is out of its normal range	-	Check/replace PT100 transmitter
A	Alarm 189: Air filling interrupted - LSL901 not reached in damper D901	Air filling supply is to low or air filling time is to less.	-	Check air filling supply. Check air filling time parameter and increase if to low
A	Alarm 190: Air filling interrupted - LSL902 not reached in damper D902	Air filling supply is to low or air filling time is to less.	-	Check air filling supply. Check air filling time parameter and increase if to low

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 191: High level in damper D901	Level to high in damper 901	-	Manual start air filling of damper D901 and decrease interval parameter for Damper D901 air filling.
	Alarm 192:	-	-	-
	Alarm 193:	-	-	-
	Alarm 194:	-	-	-
	Alarm 195:	-	-	-
	Alarm 196:	-	-	-
	Alarm 197:	-	-	-
	Alarm 198:	-	-	-
	Alarm 199:	-	-	-
	Alarm 200:	-	-	-
	Alarm 201:	-	-	-
	Alarm 202:	-	-	-
	Alarm 203:	-	-	-
	Alarm 204:	-	-	-
	Alarm 205:	-	-	-
	Alarm 206:	-	-	-
	Alarm 207:	-	-	-
A	Alarm 208: High level in damper D902	Level to high in damper 902	-	Manual start air filling of damper D902 and decrease interval parameter for Damper D902 air filling.
A	Alarm 209: Homog high product pressure PSH827	Product pressure is out of its normal range	-	Check product pressure valve in homogenizer
	Alarm 210:	-	-	-
	Alarm 211:	-	-	-
	Alarm 212:	-	-	-
A	Alarm 213: Commercial Power Fault	No commercial power on	-	Check incoming commercial power
	Alarm 214:	-	-	-
	Alarm 215:	-	-	-
	Alarm 216:	-	-	-
	Alarm 217:	-	-	-
	Alarm 218:	-	-	-
	Alarm 219:	-	-	-
	Alarm 220:	-	-	-
	Alarm 221:	-	-	-
-	Alarm 222:	-	-	-

(Cont'd)

(Cont'd)

Type	Alarm	Cause	Machine action	Instruction to operator
A	Alarm 223: Communication fault with AFM1	Fault in serial communications with AFM1	-	Check communication network and devices.
A	Alarm 224: Communication fault with AFM2	Fault in serial communications with AFM2	-	Check communication network and devices.
A	Alarm 225: Communication fault with AFM3	Fault in serial communications with AFM3	-	Check communication network and devices.
A	Alarm 226:Communication fault with AFM4	Fault in serial communications with AFM4	-	Check communication network and devices.
B,C	Alarm 227: TT342 broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step. In production an emptying sequence take place and the product goes to reject. Interlocks the production and AIC	Check/replace PT100 transmitter.
B,C	Alarm 228: TT505 broken	Temperature is out of its normal range.	If sterilizing, go back to the heating step. In production an emptying sequence take place and the product goes to reject. Interlocks the production and AIC	Check/replace PT100 transmitter.
B	Alarm 229: LT306 transmitter broken	Transmitter broken	Immediate system stop	Check/replace transmitter
-	Alarm 230:	-	-	-
-	Alarm 231:	-	-	-
-	Alarm 232:	-	-	-
B	Alarm 233: I/O device failure	I/O device failure	Immediate stop system	Check I/O devices and cables
C	Alarm 234: TSL44 (Only US version)	Low Temperature at pre heater	Sterilization Interlock	-
-	Alarm 235:	-	-	-
-	Alarm 236:	-	-	-
B	Alarm 237: TT909 Broken (Optional)	Temperature is out of its normal range	If sterilizing, go back to the heating step	Check/replace PT100 transmitter
B	Low temperature steam barrier TS909 (Optional)	Temperature too low at the homogenizer Damper	If sterilizing, go back to the heating step	Check steam supply. Check/replace PT100 transmitter

5 Preparations

Description

This chapter contains a list of necessary checkpoints prior to start.

Description 5-2

5.1 Introduction 5-5

5.2 General Checkpoints 5-6

5.3 Optional Checkpoints 5-7

This page intentionally left blank

5.1 Introduction

This chapter contains a list of necessary check points prior to starting the machine. Most points are always to be done, but others are valid only if the corresponding equipment is included in the machine and is going to be used for a certain product.

CAUTION
Risk of insufficient sterilisation effect
If product other than specified in Technical Data is processed the sterilisation effect might be insufficient. Other products may need other temperature program.

a) Turn the main switch to position on

b) Turn on the: compressed air

c) Turn on the: steam

d) Turn on the water

WARNING
Risk of exposure to pressurised hot liquid
The process equipment may contain trapped hot pressurized liquid in certain areas even during powerless conditions.

Note! Make sure that the homogeniser is prepared for operation according to the Homogenizer Operation Manual

5.2 General Checkpoints

CAUTION

Risk for unsterility and contaminated product

Leaking components and misleading temperature/flow rate may cause unsterility and contaminate the product.

If a leakage is detected, shut down production and make a CIP. Check/renew leaking parts prior to start up of a production. Processed product should be stored and carefully checked for contamination prior to distribution to market. It is recommended to perform a check/calibration according to local QA system

WARNING

Risk of injury caused by crushing / Risk of burning

Never remove covers or lids during operation

WARNING

Risk of scalds

This machine works under pressurised conditions and high temperatures. To avoid jets of hot liquid, steam or cleaning solution, make sure that any operation sequence is finalised, the machine is cooled down and without pressure before disassembling any parts.

Several of the following checkpoint are start conditions to be fulfilled before starting any sequences.

- Check that the equipment is cleaned.
  The equipment must be cleaned direct after each production and if the system has been closed down for a longer time.
- Check that the homogenizer dampers are free from any product residue after cleaning.
- Check that the steam supplier is drained from condensate.
- Check tightness of all connection.
- Check that the steam switch is in position on.
- Check that all hand/auto switches are in position Auto.
- Check that the emergency stop button is released.
- Check that the emergency stop relay is resetted.
- Check that all applicable downstream equipment are ready for production for example. steam barriers, AFM (aseptic filling machines), A-tanks (aseptic tanks).

5.3 Optional Checkpoints

- Check that all motor security breakers are in position on
- Check that the right holding tube according to the product/capacity you are going to run is correctly connected.
- Check that the extra cooler is correctly connected.
- Check that the correct operation mode is selected.

This page intentionally left blank

6 Operation

Description

This chapter describes how to operate the equipment.

Description 6-2

6.1 Sterilizing Sequence 6-5

Selection/Settings Prior to Start 6-5

Start Conditions 6-6

Start Sequence 6-6

Check During Sequence 6-6

6.2 Hibernation Sequence 6-8

Start Conditions 6-8

Start Sequence 6-8

Stop Sequence 6-8

6.3 Production Sequence 6-9

Selection/Settings Prior to Start 6-9

Start Conditions 6-10

Start Sequence 6-11

Check During Sequence 6-11

Check Functionality of Steam Barriers 6-12

Stop Sequence 6-12

6.4 Revert to Water Circulation 6-13

Revert to Water Circulation 6-13

6.5 Shut Down Sequence 6-14

6.6 Emergency Stop 6-15

Start after Emergency Stop 6-15

One Control Panel (Stand Alone) 6-16

Several Control Panels (Simultaneous Reset) 6-16

Several Control Panels (Individual Reset) 6-16

6.7 Cleaning Sequence 6-17

IntelliCIP 6-17

Aseptic Intermediate Cleaning - AIC 6-17

Start Sequence 6-18

Final Cleaning- CIP Sequence 6-18

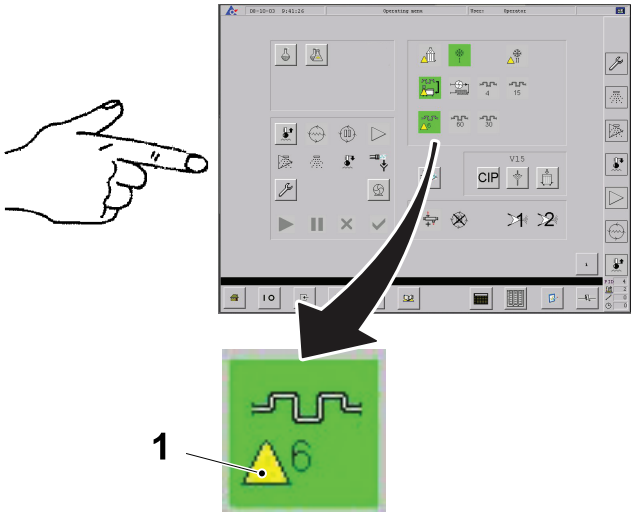
Start Sequence 6-19
Halt 6-19
Halt Sequence 6-19
Resume from Halt 6-20
Emergency Emptying 6-20
Start Sequence 6-20
Cleaning of Supply Line 6-21
Start /Stop 6-21
Maintenance Mode 6-21
Start Sequence 6-22

6.1 Sterilizing Sequence

WARNING

Risk of scalds.

This machine works under pressurised conditions and high temperatures. To avoid jets of hot liquid, steam or cleaning solution, make sure that any operation sequence is finalised, the machine is cooled down and without pressure before disassembling any parts.



1

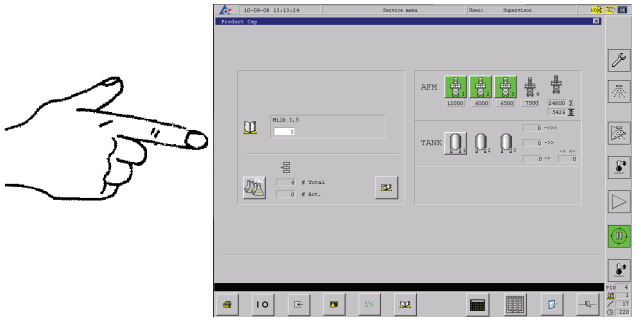
Selection/Settings Prior to Start

Note! This chapter describes how to operate the machine in local mode.

The selection must fit with the equipment connected. A yellow triangle (1) in the selection indicates that the selected equipment do not fit the equipment connected.

Select desired equipment see 3.7.14.5 Recipe Edit Window.

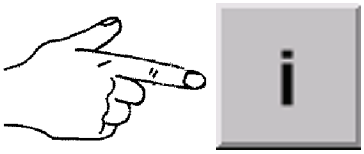
Check also chapter Preparations.

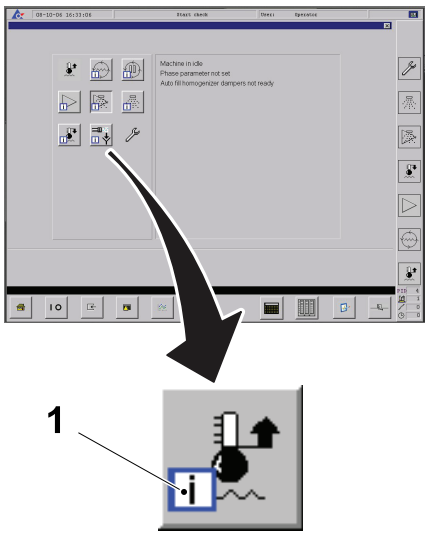


2

Select/Check recipe.

(Capacity can be selected/changed at any time during Sterile Water and Production).





3

Start Conditions

Press START CONDITIONS in the OPERATION WINDOW.

If the sterilizing icon appear as a push button with the information symbol (1) the start conditions are not full filled.

Press the STERILIZING button to check which start conditions are missing.



4

Start Sequence

a) Press STERILISATION followed by START in the OPERATION WINDOW.

- When the sterilizing temperature has been reached, the machine will be sterilizing for 30 minutes.
- The machine cools down by performing program steps Cooling 1-3 and Stabilising.

When the machine is cooled down, sterile water is indicated on the display.

5

Check During Sequence

During sterilizing step, visually check functionality of spray nozzle through the sight glass in flash vessel.

When the machine is cooled down to production temperature, sterile water is indicated on the display.

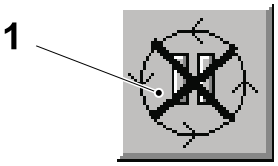
6

Continue with desired sequence:

- Hibernation
- Production
- AIC
- CIP
- Shut Down

6.2 Hibernation Sequence





1

Start Conditions

- In step Sterile Water (Step 17)

In hibernation the machine reduces energy consumption.

To prevent the automatically hibernation press DISABLE HIBERNATION (1).

Note! If no operator action is taken, the hibernation will start automatically after 900 seconds when in sterile water (step 17) first time after presterilizing. In the illustration 714 seconds remain.



2

Start Sequence

Press HIBERNATION followed by START (within 10 seconds).

During hibernation in order to save energy the capacity will decrease to a minimum, sterile water cooler temperature is changed and vacuum of deaerator shuts off.



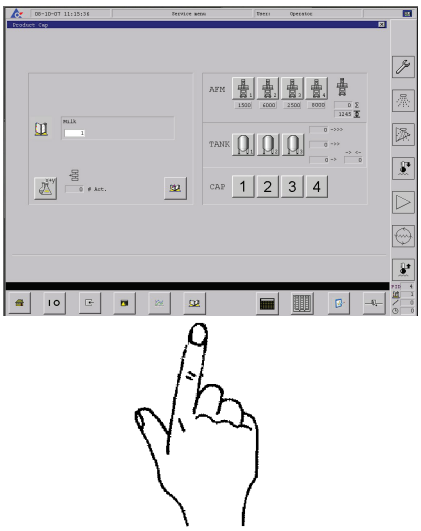
3

Stop Sequence

Before it is possible to start the filling/production sequence the hibernation has to be shut off

Press HIBERNATION followed by FINALIZE (within 5 seconds).

6.3 Production Sequence



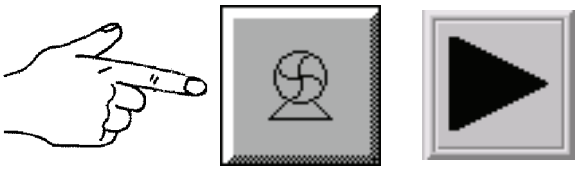
1

Selection/Settings Prior to Start

a) Select capacity/Filling machine in the PRODUCT AND CAPACITY window.

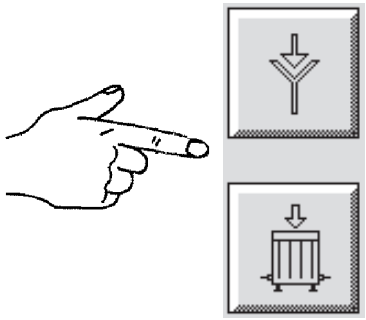
Note! Can be selected at any time during Sterile Water and Production. The change over sequence will take approx. 2 -5 min.

For production to Tetra Alsafe tank press TANK SYMBOL. (Option).



2

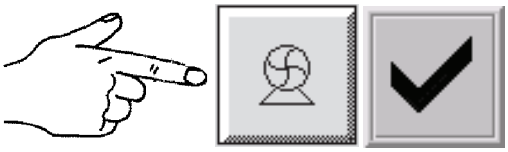
Press the PRODUCT SUPPLY PUMP followed by START in the OPERATING WINDOW.



3

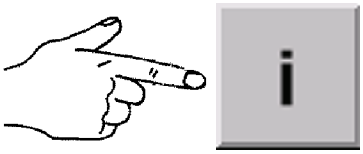
a) Fill the product supply line by pressing V15 to drain or V15 to reject.

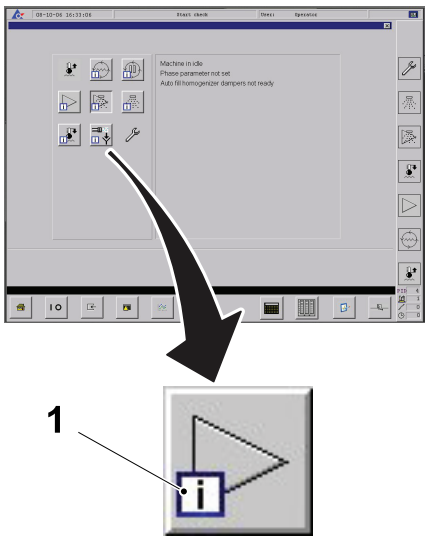
b) When the supply line is filled, press V15 to drain or V15 to reject again to close the valve.



4

Press the PROD SUPPLY PUMP followed by STOP. in the OPERATION WINDOW.





5

Start Conditions

Press START CONDITION in the OPERATING WINDOW.

If the production icon appear as a push button with an “i” (1) the start conditions are not fulfilled. Push the button to check which start conditions are missing.



6

Start Sequence

Press PRODUCTION followed by START in the OPERATION WINDOW..

- The first filling step is the prepare production step, which means that cold water enters the machine to bring down the filling temperature.
- When the filling temperature (TT6) has dropped to a preset temperature or a timer has elapsed, Filling is indicated on the display.
- The machine will now automatically drain the water from the balance tank, activate V13.1 and start the product supply pump.
- A flow counter controls when the product line contains product only, valve V75 reroutes the flow to the balance tank for recirculation. (Only if filling directly to filling machines.)

The machine is ready for production. Signal is given to the Filling Machines/Alsafe.

Note! If a disturbance occurs during Production, the machine will automatically proceed to Emptying and end up in Sterile water or Parking position.

If a permanent or longer stop at a filling machine occurs, it is possible to revert to Sterile water.

Reverting to this phase, sterile water displaces the product.

7

Check During Sequence

Regular check process values such as:

- flow rate
- temperature
- pressure

8

Check the pressure drop over the heat exchanger. If the pressure drop is too big, production must be stopped and cleaning has to be done.

It must be taken in consideration to stop production if the pressure drop has increased too a high level.

Note! Max pressure after the homogeniser/booster pump is stated on the machine sign.

Check the temperature difference between the heating medium and the product.

Note! Max temperature is stated on the machine sign.

9

Check Functionality of Steam Barriers
Verify condensate flow at drain point from the steam barrier.

CAUTION
Risk of damage
Too much steam might destroy the gasket

10

Stop Sequence

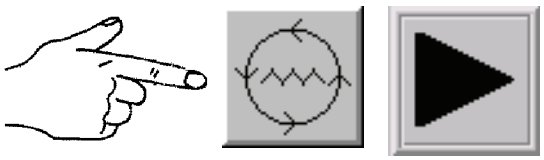
Press one of the following to stop the production:

- Press PRODUCTION followed by ABORT. (Only possible in step 20-22) The machine will immediately revert to sterile water.
- Press PRODUCTION followed by FINALIZE (Only possible in step 29, production.)

Stop AFM before product/water mix reaches AFM (volume controlled).

Continue with desired sequence.

6.4 Revert to Water Circulation



1

Revert to Water Circulation

Instead of continuing to circulate the product during any kind of disturbance, the machine can be reverted to water circulation.

Press WATER CIRCULATION followed by START in the OPERATION WINDOW.

The machine will now automatically:

- drain the product from the balance tank to reject or drain (V75 deactivated),
- deactivate V13,
- deactivation of signal "Product at inlet" to AFM which will stop filling, before mix-phase reaches AFM (volume controlled),
- deactivation of signal "Product at inlet" to Tetra Alsafe tank which will close inlet valve, before mix-phase reaches inlet valve (volume controlled).

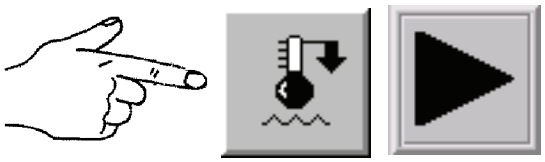
Note! Max. time for water circulation.

There is a limit for how long time the machine may run in water circulation before cleaning is required.

The time in water circulation is dependent of type of product, quality of product and temperature of the product in the product supply pipe.

For example; at a temperature of 15 °C milk (with a certain quality) can stand about 6 hours before it is destroyed.

6.5 Shut Down Sequence



1

Can be ordered from all programme steps except for CIP/AIC.

If ordered from Production, an emptying and a rinse sequence take place automatically before the shut down-sequence starts.

The machine will end in Parking position.

Press SHUT DOWN followed by START in the `OPERATION WINDOW`.

The balance tank is drained and a cold water rinse sequence is started. The cooling down and the machine is ended up in Parking position.

6.6 Emergency Stop

1

When there is a risk of danger to people or to the machine, push the EMERGENCY STOP as quickly as possible.

WARNING

Risk of exposure to pressurised hot liquid or cleaning solution

The process equipment may contain trapped hot pressurized liquid in certain areas even during powerless conditions.
To avoid exposure make sure that skilled maintenance personnel are available before any remedying action.

CAUTION

Risk of damage to equipment

The cause of the emergency must be remedied before attempting to restart the machine.
Pressing the EMERGENCY STOP stops all pumps and all valves are deactivated.

2

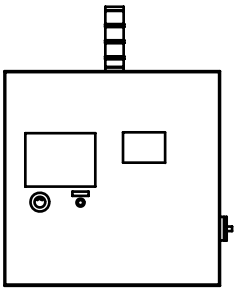
Start after Emergency Stop

Make sure to eliminate the cause of the stop.

Depending on the configuration of the emergency stop and the number of control panels that are connected to the processing equipment the procedures for resetting the emergency stop vary.

Continue according to applicable configuration:

- one control panel (stand alone)
- several control panels (simultaneous reset)
- several control panels (individual reset)



Stand alone panel

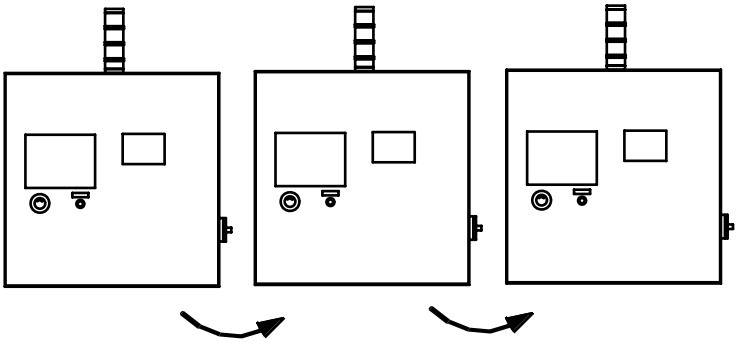
3

One Control Panel (Stand Alone)

a) Release the EMERGENCY STOP .

b) Press the EMERGENCY STOP RESET . The emergency stop relay is released and the blue lamp in the emergency stop reset button goes off.

c) Continue according to step 6



Master control panel, Slave Control panel 1 and slave control panel #

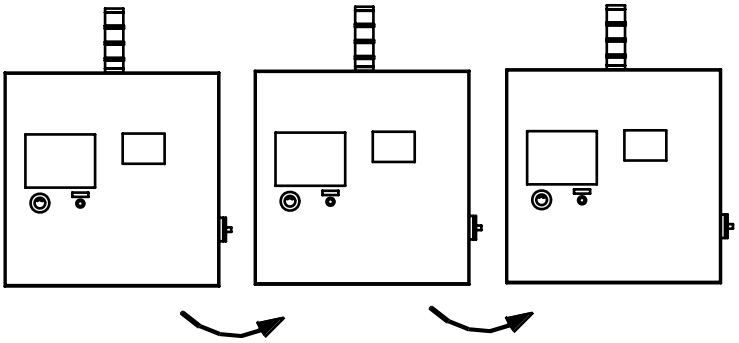
4

Several Control Panels (Simultaneous Reset)

a) Release all EMERGENCY STOPS .

b) Press the EMERGENCY STOP on the master control panel
The emergency stop relay is released in each and every cabinet and the blue lamp in the emergency stop reset buttons goes off.

c) Continue according to step 6



Master control panel, Slave Control panel 1 and slave control panel #

5

Several Control Panels (Individual Reset)

a) Release all EMERGENCY STOPS.

b) Press the EMERGENCY STOP. on the master control panel

c) Press the EMERGENCY STOP. on each and every control panel starting with slave control panel one.
The blue lamp in the emergency stop reset buttons goes off.

d) Continue according to step 6

6

The machine must be emptied using the emergency emptying.

A CIP must be selected if product has entered the machine.

Note! For more information see Emergency Stop Network in the Electrical Manual (EM)

6.7 Cleaning Sequence

Cleaning is carried out in the following sequences:

- Aseptic Intermediate Cleaning-AIC
- Final Cleaning-CIP
- Flush
- Cleaning of Supply Line

WARNING
Chemical hazard
Cleaning solution contains Caustic soda (NaOH) or Nitric acid (HNO_3).
These chemicals may cause severe burning to skin and eyes. Use protective clothes, goggles, and gloves during handling. If exposed-wash with water for at least 15 minutes. Follow the instructions that are given by the supplier.

CAUTION
Risk of insufficient cleaning
The cleaning program is designed for the products that are specified in the Technical Data. If any other product is processed, the cleaning result might be insufficient. Other products may need new CIP program setup.



IntelliCIP

1

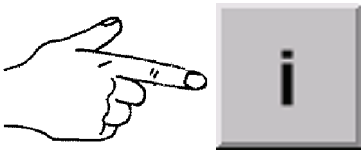
Press INTELLICIP in the `INTELLICIP WINDOW` before starting any CIP sequence

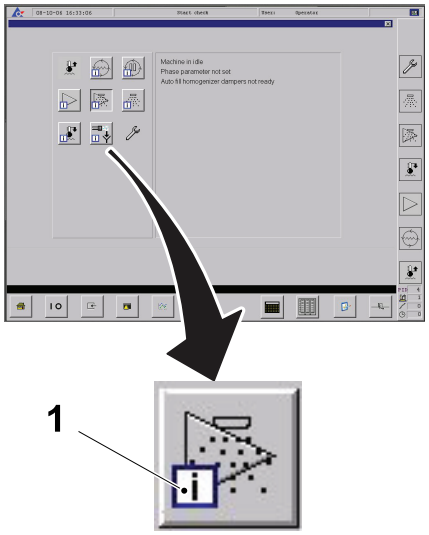
Aseptic Intermediate Cleaning - AIC

1

AIC can be ordered to extend the production period before a full cleaning, CIP, is required.

The AIC takes about 40 minutes. The machine remains sterile in its aseptic part.

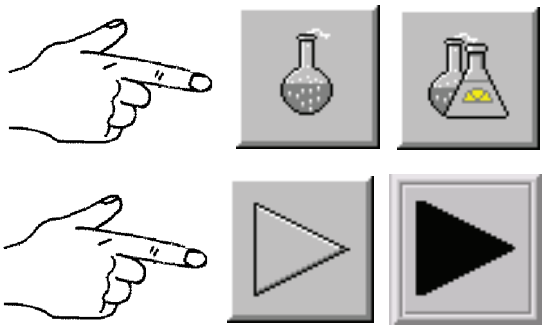




2

Press START CONDITION in the OPERATING WINDOW.

If the AIC icon appear as a push button with an “i” (1), the start conditions are not fulfilled. Push the AIC to check which start conditions are missing.



3

Start Sequence

a) Go to the operating window and press desired cleaning program LYE or LYE & ACID.

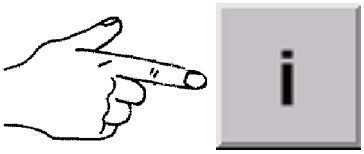
b) Press INTERMEDIATE CLEANING (AIC) followed by START within 10 seconds.

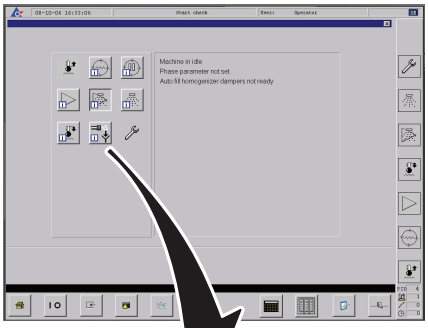
Final Cleaning- CIP Sequence

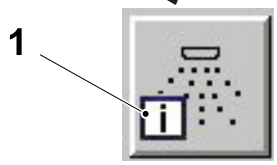
1

Press CIP directly after finished production.

The CIP takes approximately 120 minutes.



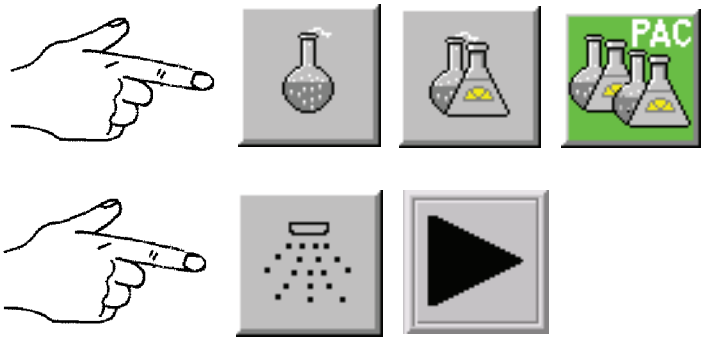




2

Press START CONDITION in the OPERATING WINDOW.

If the CIP icon appear as a push button with an “i” (1) the start conditions are not fulfilled. Push the CIP to check which start conditions are missing.



3

Start Sequence

a) Go to the operating window. and press desired cleaning program LYE, LYE & ACID. or PAC CIP.

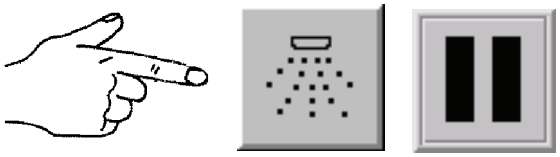
b) Press CIP followed by START within 10 seconds.

Halt

It is possible to temporary halt during cleaning.

Temporary suspension of the sequence will:

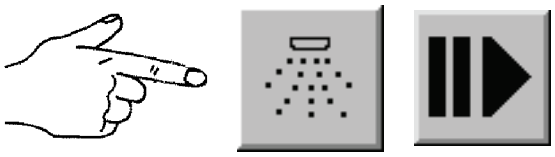
- stop the pumps
- deactivate all valve.
- hold step timer



1

Halt Sequence

Press CIP SEQUENCE followed by PAUSE within 10 seconds.

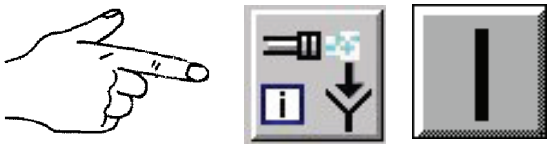


2

Resume from Halt

The halt function can be resumed when the hold condition is gone.

Press the CIP SEQUENCE followed by RESTART within 10 seconds.

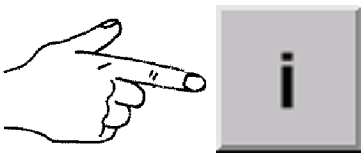


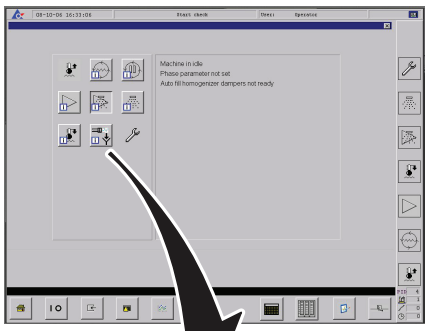
Emergency Emptying

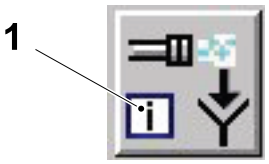
The emergency emptying function is only selectable from Parking position.

Use the emergency emptying function to:

- flush out the product
- emptying after an emergency stop to cool down the equipment.



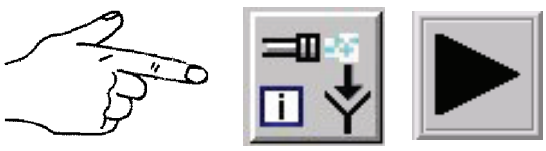




1

Press START CONDITION in the OPERATING WINDOW.

If the emergency emptying icon appear as a push button with an “i” (1) the start conditions are not fulfilled. Push the EMERGENCY EMPTYING to check which start conditions are missing.



2

Start Sequence

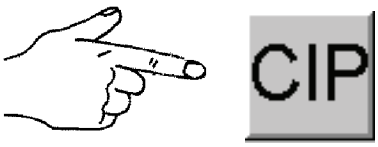
Press EMERGENCY EMPTYING followed by START in the OPERATION WINDOW.

Cleaning of Supply Line

The cleaning is carried out by an external CIP-system.

The cleaning solution will be directed through valve V15, which will pulse to drain for approx. 10 seconds every 5 minutes.

Valve V15 could be automatically controlled (if signal is connected).



1

Start /Stop

Press CIP to activate valve V15 during cleaning of the supply line.

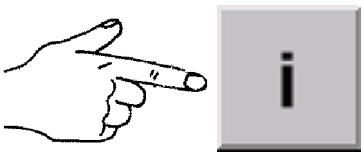
When cleaning of supply line is finished.

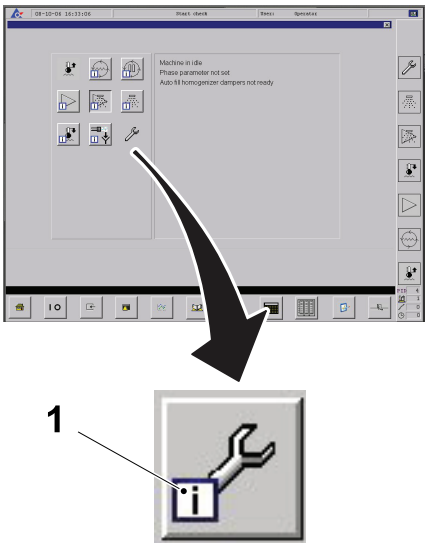
Press CIP again to deactivate valve V15.

Maintenance Mode

The maintenance function is only selectable from parking position.

Use the maintenance function to indicate that maintenance is going on.





1

Press START CONDITION in the `OPERATING WINDOW.`

If the maintenance icon appear as a push button with an “i” (1) the start conditions are not fulfilled. Push the button to check which start conditions are missing.



2

Start Sequence

Press MAINTENANCE followed by START in the OPERATING WINDOW.

7 Care And Cleaning

Description

This chapter contains a list of necessary checkpoints prior to care and clean the plant. Most points are always to be done, but others are valid only if the corresponding equipment is included in the plant.

Description 7-2

7.1 Care And Cleaning 7-5

7.1.1 Care 7-5

7.1.1.1 Self-Closing Gate 7-5

7.1.2 Safety Signs 7-6

7.1.3 Vessels 7-6

7.1.3.1 Option Infusion 7-6

7.1.4 Cleaning 7-6

7.1.4.1 Verify Cleaning 7-6

7.1.4.1.1 Lye/Acid Concentration 7-6

7.1.4.1.2 Recommended Detergents 7-7

7.1.4.1.3 Critical Control Points 7-7

7.1.4.1.4 After Every CIP 7-8

7.1.4.1.5 At Regularly Intervals 7-10

7.1.4.2 External Cleaning 7-10

This page intentionally left blank

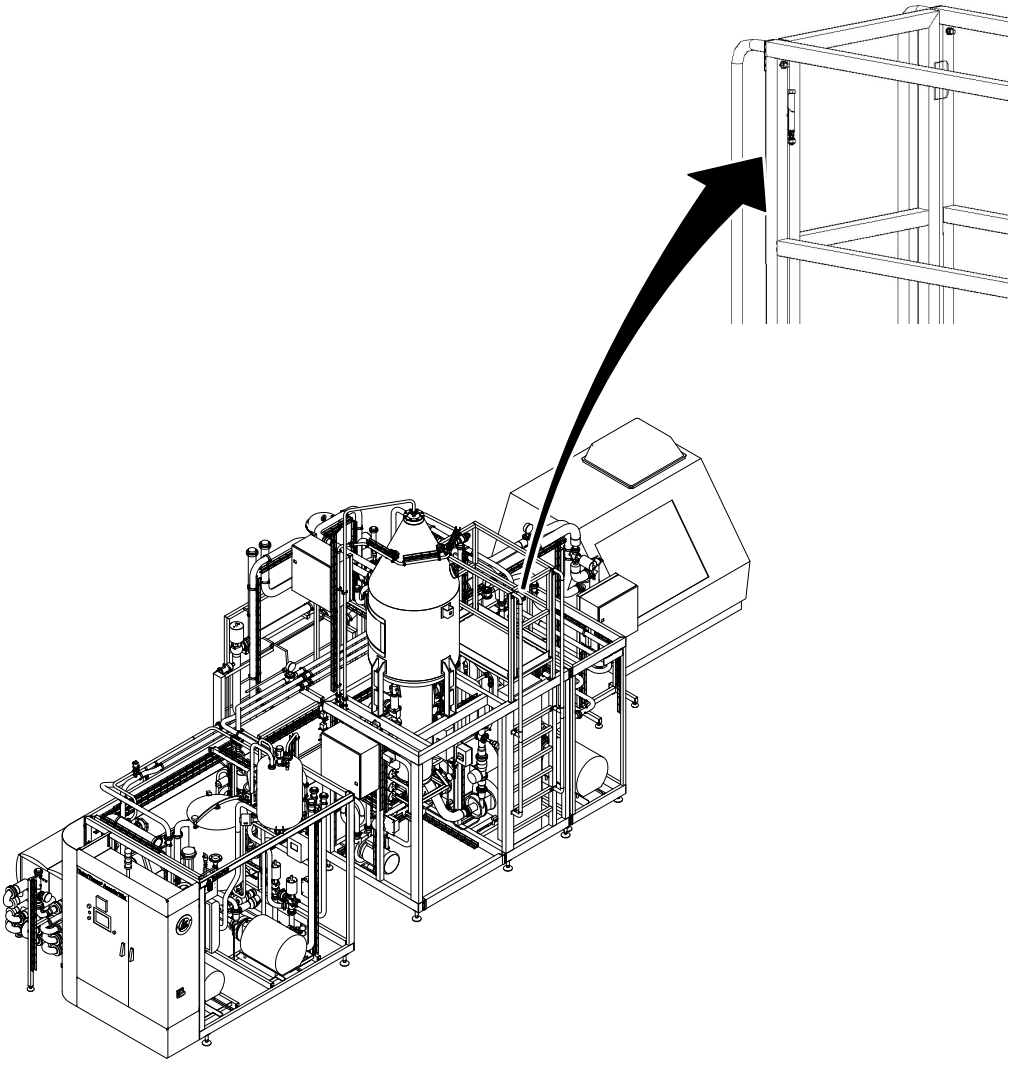
7.1 Care And Cleaning

7.1.1 Care

7.1.1.1 Self-Closing Gate

The platform is supplied with a self-closing gate. Make sure that gate is automatically closed after opening, adjust if necessary.

Check/clean the hinges at regularly intervals.



7.1.2 Safety Signs

Make sure that each safety sign is undamaged and in its correct position after installation and maintenance. Replace all missing or damaged safety signs immediately.

Clean the steel surface with ethanol or any fat dissolving cleaning agent and let it dry for 10 minutes before applying the sign. After application the adhesive of the sign must harden for 24 hours before the steel surface around the sign is reoiled.

For locations of safety signs see chapter Safety precautions.

7.1.3 Vessels

Verify functionality of the CIP nozzles on balance tank at regular basis.

7.1.3.1 Option Infusion

Verify functionality of the level pipe, distribution plate and the steam inlet of the infusion vessel on regular basis.

Note! No product enters the area during normal production at the steam inlet. Make inspection of steam inlet during replacement/maintenance of flange gaskets

7.1.4 Cleaning

7.1.4.1 Verify Cleaning

Check daily on the recorder that the cleaning has run the appropriate time with the appropriate temperatures.

If necessary, adjust cleaning circulation time and detergent concentration.

CAUTION

Risk of chemicals residues

To avoid residues of chemicals in the equipment a pH value of 6,5 to 7,5 measured in the final rinse water after any type of cleaning sequence is recommended. Check with a pH meter or similar equipment.

7.1.4.1.1 Lye/Acid Concentration

Check that the lye and acid concentrations during cleaning are appropriate.

7.1.4.1.2 Recommended Detergents

	Chemical	Concentration	Concentration during cleaning
Lye	NaOH	*35%	**1.5 - 2.0%
Acid	HNO_3	50%	**1-1.5%

*If the lye detergent origin from solids, it must be carefully mixed in order to avoid solid particles that will cause problems for the feed pumps.

**The equipment will be adjusted during commissioning to achieve the required cleaning detergent concentration.

CAUTION

Use of combined or complex detergents

To avoid damages make sure that the detergent supplier can guarantee that the materials in the machine are resistant to the chemicals in the detergent.

7.1.4.1.3 Critical Control Points

WARNING

Risk of scalds

This machine works under pressurised conditions and high temperatures. To avoid jets of hot liquid, steam or cleaning solution, make sure that any operation sequence is finalised, the machine is cooled down and without pressure before disassembling any parts.

It is recommended to, at regular intervals, verify the cleaning result visually and by a swab test at critical control points.

The number of control points for a specific Tetra Therm Aseptic VTIS vary due to the order specification and the installation layout.

Consider the following as a general recommendation for critical control points:

- Holding cell.
- Stabilising holding cell (if available).
- Aseptic or Non-aseptic dampers.
- Injector.
- Infusion vessel (if applicable).
- Valve V51 (if steam barrier).
- Valve V78 (if steam barrier).
- Back pressure valve V330.

7.1.4.1.4 After Every CIP

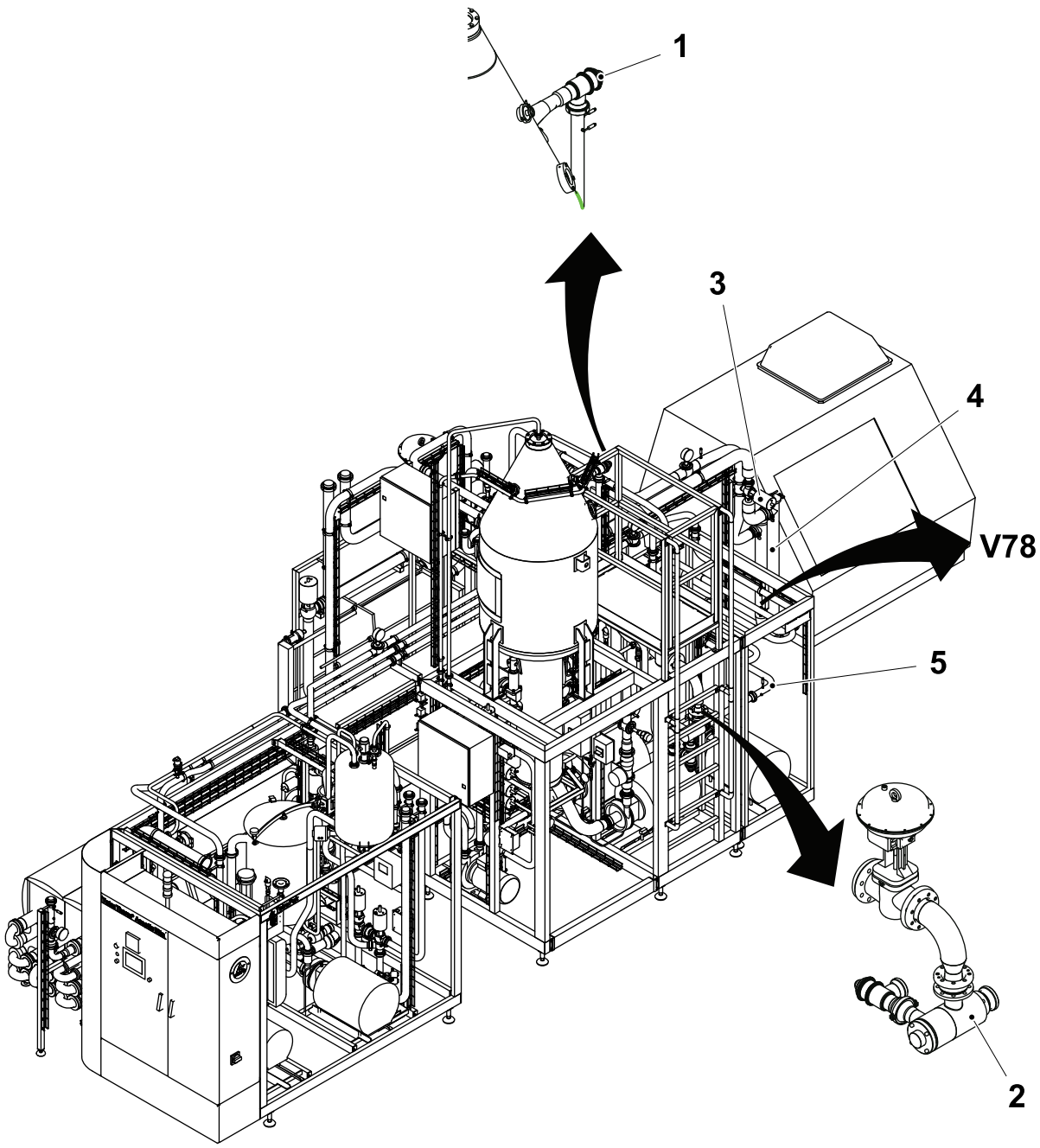
Disassemble the homogenizer damper to ensure an air cushion inside and:

- check that it is free from any product residues after cleaning,
- clean the damper manually if necessary.

Note! If the product balance tank has no CIP device, it is recommended to clean it manually.

(Cont'd)

(Cont'd)



The illustration shows an example of a Tetra Therm Aseptic VTIS installation and location of the critical control points.

1 Back pressure valve V330
2 Injector
3 Valve V51 (if steam barrier)
4 Aseptic dampers
5 Holding cell
6 Valve V78 (if steam barrier)

7.1.4.1.5 At Regularly Intervals

Depending on, product and running time the intervals for inspection may vary.

More frequent checks are recommended after commissioning when the equipment is new and when a new product is introduced.

Disassemble the holding cell(s), valve V51 (and V78 if steam barrier is included).

Note! Keep the area around the equipment clean and tidy

7.1.4.2 External Cleaning

DANGER

Hazardous voltage
The electrical supply disconnecting device must be turned off

CAUTION
Risk of destroyed equipment
Do not use foam cleaning or water on control panel or electrical components such as motors, regulating valves, transmitters etcetera.

- Rinse the walls, the floor, then the equipment.
- Rinse until visually free of soils.
- Use foam cleaning if possible and then spray with water.
- To minimise aerosols and condensation use lowest effective pressure.
- Lower pressure reduces risk of cross contamination and machine damage.
- Minimize spraying the floor once the equipment begins to be rinsed.
- Never use high pressure cleaning equipment due to risk of cross contamination.
- Important factors are; contact time and concentration of detergent, and mechanical action.

8 Option Machine Edition

Description

Description 8-2

8.1 General Information 8-7

8.1.1 Introduction 8-7

8.1.2 Log In/Out 8-7

8.1.3 General windows and definitions 8-8

8.1.3.1 Header 8-8

8.1.3.2 Main body 8-8

8.1.3.3 Set point selections 8-9

8.1.3.4 Button selections 8-9

8.1.3.5 Alarm indication 8-9

8.1.3.6 Any object is forced 8-9

8.1.3.7 Any PID controller in manual mode 8-10

8.1.3.8 Any phase allocated 8-10

8.1.3.9 CIP memory active 8-10

8.1.3.10 Indication of transport phase 8-10

8.1.3.11 Selectable indication area 8-10

8.1.3.12 Not selectable indication area 8-11

8.1.3.13 Local / Remote control 8-11

8.1.3.14 Go to parameter button 8-11

8.1.3.15 Interlock/Running fault button 8-11

8.1.3.16 Store Parameter Button 8-12

8.1.3.17 Leave Window Button 8-12

8.1.3.18 Zoom Down to Unit Window 8-12

8.1.3.19 Process Value 8-12

8.1.4 Key Scripts 8-13

8.1.5 Button Bar 8-13

8.1.5.1 Window Navigation 8-14

8.1.6 Window Structure 8-14

8.1.7 Window Overview 8-15

8.2 Production Control and Supervision 8-16

8.2.1 Process Line Window 8-16

8.3 Process unit window 8-17
8.4 Menu 8-19
8.4.1 Dialogue Buttons 8-20
8.4.2 Phase Buttons 8-21
8.4.3 How to start and stop sequences in the unit 8-21
8.5 Interlock/Running fault button 8-22
8.6 Parameters 8-23
8.7 Selection Parameter 8-24
8.8 Connections 8-25
8.9 Activations 8-26
8.10 PID Controllers, Guards and Analogue Ramp 8-27
8.10.1 PID Controller Window 8-27
8.10.2 PID Parameters Window 8-28
8.10.3 Guard Window 8-29
8.10.4 Ramp Window 8-30
8.10.5 Guard / Ramp Parameters Window 8-31
8.11 Service Menus and Trending 8-32
8.11.1 Service Menu Overview 8-32
8.11.2 Register Maintenance 8-33
8.11.3 Language Selection Window 8-34
8.11.4 Communication Window 8-35
8.11.5 Recipe Window 8-36
8.11.6 Control Module Window 8-37
8.11.6.1 Control Module - Motor 8-38
8.11.6.2 Control Module - Motor Parameters 8-38
8.11.6.3 Control Module - Motor Extended Parameters 8-39
8.11.6.4 Control Module - Valve 8-39
8.11.6.5 Control Module - Valve Parameters 8-40

8.11.6.6 Control Module - Valve Extended Parameters 8-40
8.11.6.7 Control Module - Analogue In 8-41
8.11.6.8 Control Module - Analogue In Parameters 8-41
8.11.6.9 Control Module - Analogue Out 8-41
8.11.6.10 Control Module - Analogue Out Parameters 8-42
8.11.6.11 Control Module - Digital In 8-42
8.11.6.12 Control Module - Digital In Parameters 8-42
8.11.6.13 Control Module - Digital Out 8-43
8.11.6.14 Control Module - Digital Out Parameters 8-43
8.11.7 Alarm Windows 8-44
8.11.8 Trend Window 8-45
8.11.8.1 Selection and Setup of Trends 8-46

This page intentionally left blank

8.1 General Information

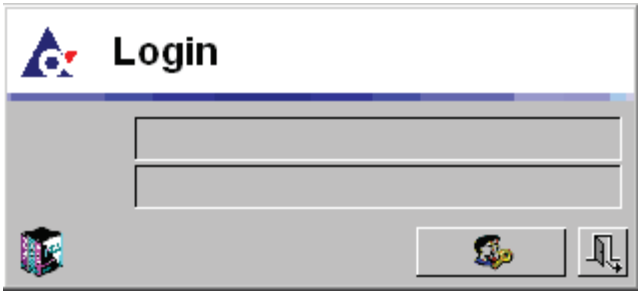
8.1.1 Introduction

Tetra Plant Master Machine Edition is a remote User Interface that allows operator to control the Branded Processing Unit with same functionality as described earlier plus logging of alarms and trends.

For detailed information on how to operate the Branded Processing Unit information please check chapter Operation.

8.1.2 Log In/Out

The system has a safety system allowing each user specific defined possibilities. Also all actions done are logged together with the name of the logged in user. Therefore it is important that each user does Log In and Log Out properly.



When logged on the Log In/Out window can be opened with the button always available in the Button Bar



Users can Log In or Log Out. Type your Name in the upper field and Password in lower field. Acknowledge by clicking Login the button with the key.

The name of the logged on user is shown in the Header.

To log out, press Logout button.



The User needs to logout when leaving the Operator Station. If a user leaves without logging out, the system logs out automatically after a specified time.

Depending on the user rights you have, different functions are controllable. There is however no limitation to view information.

Every user has personal access and user rights.

8.1.3 General windows and definitions

The operator interface is designed with some general functions and features, which always can be used in the operator interface.

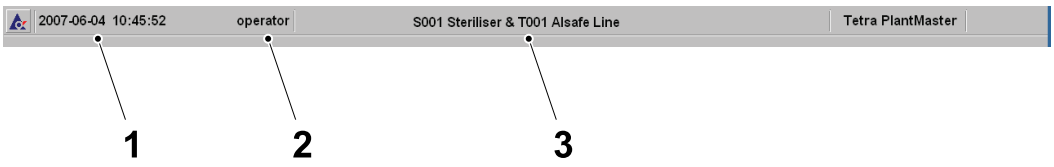
The operator is using the mouse and the screen in combination, in a way that most people using PCs already are familiar with.

With the mouse you can:

- **POINT** Move the pointer on the screen until it rests on the object you want to select.
- **DRAG** Hold the left mouse button down while moving the mouse. (On Pop-up windows)
- **SELECT and CLICK** Point at the object (unit) or function button. Press and release the left mouse button quickly. All objects and buttons, possible to click on, display a frame when you point at them.

8.1.3.1 Header

The header is placed in top of the screen and is always shown. The header shows, Date, Time, Logged on User and Current full-size window name.



1 Time/Date
2 Logged in user
3 Actual shown window

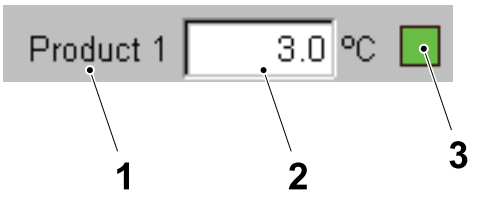
8.1.3.2 Main body

The main part of the screen will change as the user change between overview, process cell and support pictures.

8.1.3.3 Set point selections

On all Guard, Controller, Increase decrease pictures and other set point pictures this button is showed.

Note! Set point to change. If the area is white the change of set point is possible. To change set point it is necessary to be logged in as supervisor.



1 Set point name
2 Set point to change
3 Indication of actual set point selected

8.1.3.4 Button selections

On menu, parameter, controllers and service windows buttons is viewed. When selected its green when selected or grey when not selected with some buttons is there a white field connected with the name of the button function. To select a button function it is necessary to be logged in and the remote local key must be in remote position. When not in remote mode the buttons will be flat and if not logged in they will not be selectable. For more information about button see chapter Control Panel. Here are two examples.



8.1.3.5 Alarm indication

This symbol is visible when an alarm is active.



Alarm active

8.1.3.6 Any object is forced

This symbol is used to indicate when an object is forced in the machine.



Object is forced

8.1.3.7 Any PID controller in manual mode

This symbol is visible when any PID has manual mode selected.



PID controller in manual mode

8.1.3.8 Any phase allocated

This symbol is visible if any phase is allocated or if the machine is in local mode.



Any phase allocated/Local mode

8.1.3.9 CIP memory active

This symbol is visible if CIP memory is on (selects from setting menu).



CIP memory active

8.1.3.10 Indication of transport phase

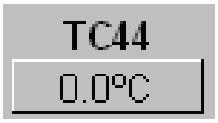
For example filling to filling machine or tank.



Indication of transport phase

8.1.3.11 Selectable indication area

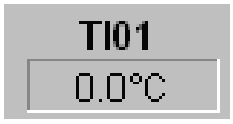
Here is a selectable area if the area upraised it is possible to select it.



Selectable indication area

8.1.3.12 Not selectable indication area

Here is an indication area only for viewing a process value or information.

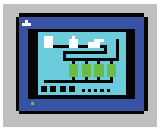


Not selectable indication area

8.1.3.13 Local / Remote control

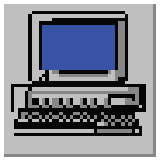
Local/ remote is selected by means of the key switch in the panel front. (PlantMaster ME is placed in a remote control room).

Local control means that the plant is operated from the TPOP control system. It is then possible to change windows on the PlantMaster ME and view everything, but it is not possible to operate from the PlantMaster ME.



Local control

Remote control means that the plant is operated from the Tetra PlantMaster Machine Edition.



Remote control

8.1.3.14 Go to parameter button

With this button is a parameter window opened.



Go to parameter

8.1.3.15 Interlock/Running fault button

With this button selected Interlock/Running fault window opened for a specific phase.



Interlock/Running fault

8.1.3.16 Store Parameter Button

With this button changed recipe or register value is stored into PLC.



Store parameter

8.1.3.17 Leave Window Button

With this button selected window (blue bar) is closed.



Leave window

8.1.3.18 Zoom Down to Unit Window

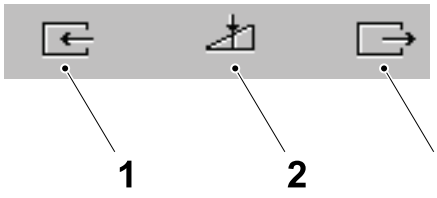
With this button selected window (blue bar) is closed.



Zoom down to unit

8.1.3.19 Process Value

Includes values set point, output and indication symbols. The symbol is used in several places.



1 Process value
2 Set point
3 Output

8.1.4 Key Scripts

The following key scripts are used in the application:

- **Ctrl + a** Show alarm window
- **Ctrl + l** Show login window
- **Ctrl + o** Log out
- **Ctrl + p** Print screen
- **F11** Show Trend window
- **F12** Show calculator
- **F3** Show previous window

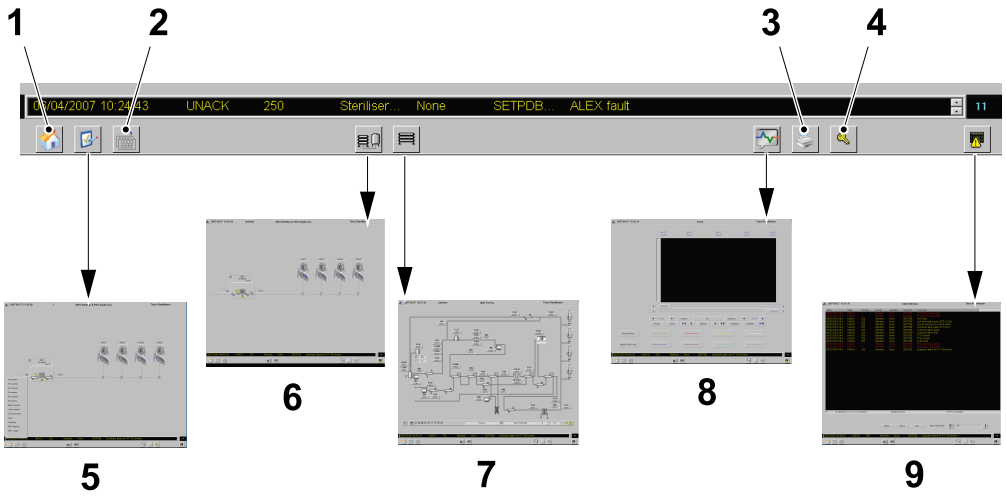
8.1.5 Button Bar

The alarm list is shown in the button bar window with the two latest occurred alarms and a scrolling possibility to more alarms. Each alarm shows date, time and alarm text. The alarm text defines WHICH item is wrong and WHAT the error is.



Button bar

Below the alarm the navigation button are shown with the actual windows that is possible to reach from here.



1 Go to home
2 Go back one window
3 Print screen
4 Log in/out window
5 Service menu
6 Line window
7 Unit window
8 Trend window
9 Alarm window

8.1.5.1 Window Navigation

After logged on, the User Interface is using full-size windows (called pictures), and pop-up windows. All buttons in the button bar allow change from one full-size window to another window. To open a Pop-up window move the mouse pointer over a unit or object on the full size window so a frame appear. Then click with the left mouse button inside the frame.

8.1.6 Window Structure

The information about the Branded Processing Unit is organised in a hierarchy of pictures.

The Overview picture gives an overview with basic information on plant status. All information regarding ongoing operations as well as process information is available here.

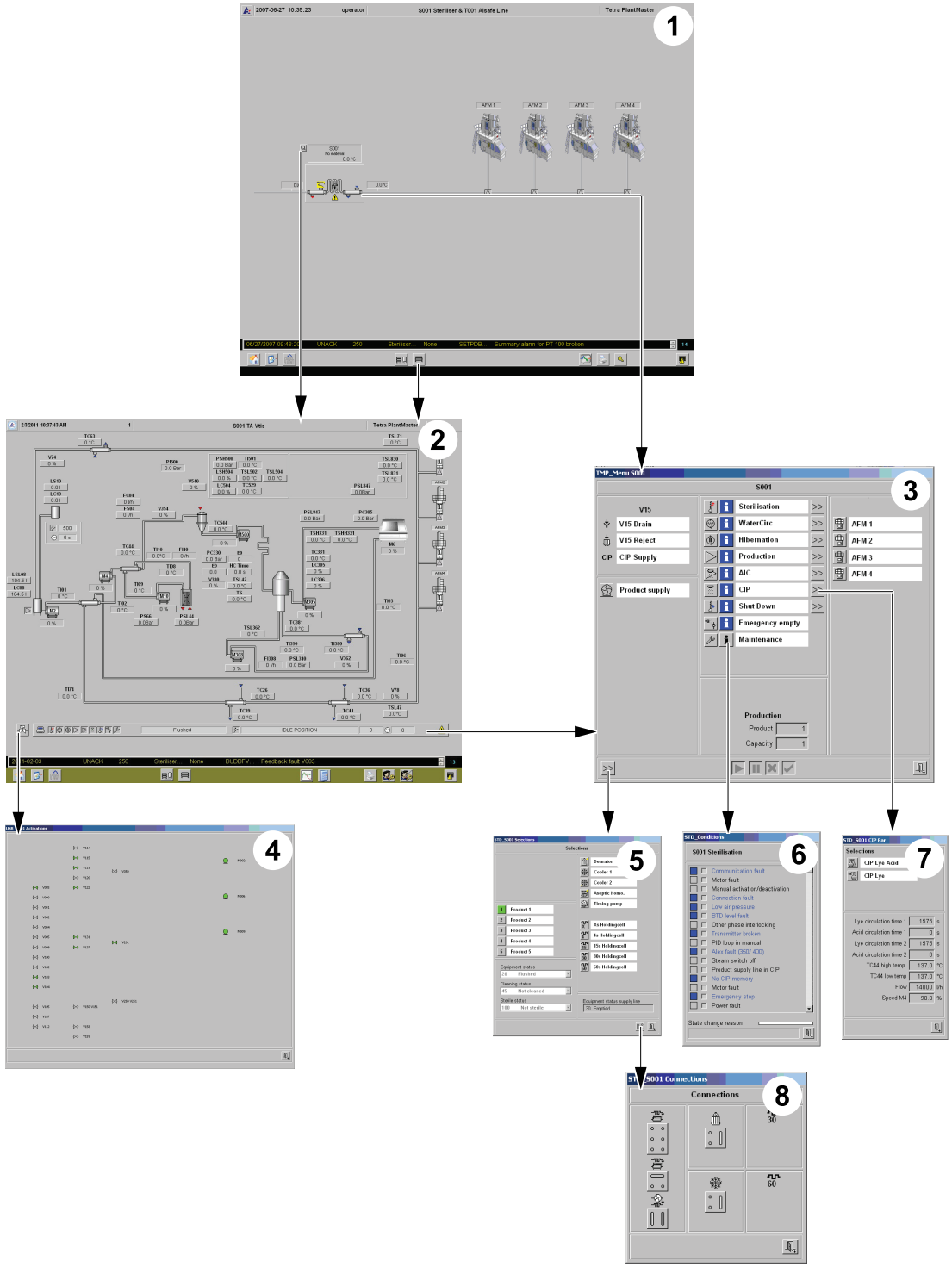
When operating should be done, a suitable Unit Button Menu must be popped up. The background process cell picture will remain.

It is possible to move around the menus on the screen. Point at the Title bar and drag. Several menus can be opened in a picture at the same time. When you change to another process picture, the menus will close.

Most windows have some information which the operator cannot change.

8.1.7 Window Overview

This is a typical window overview for a Plant Master ME.

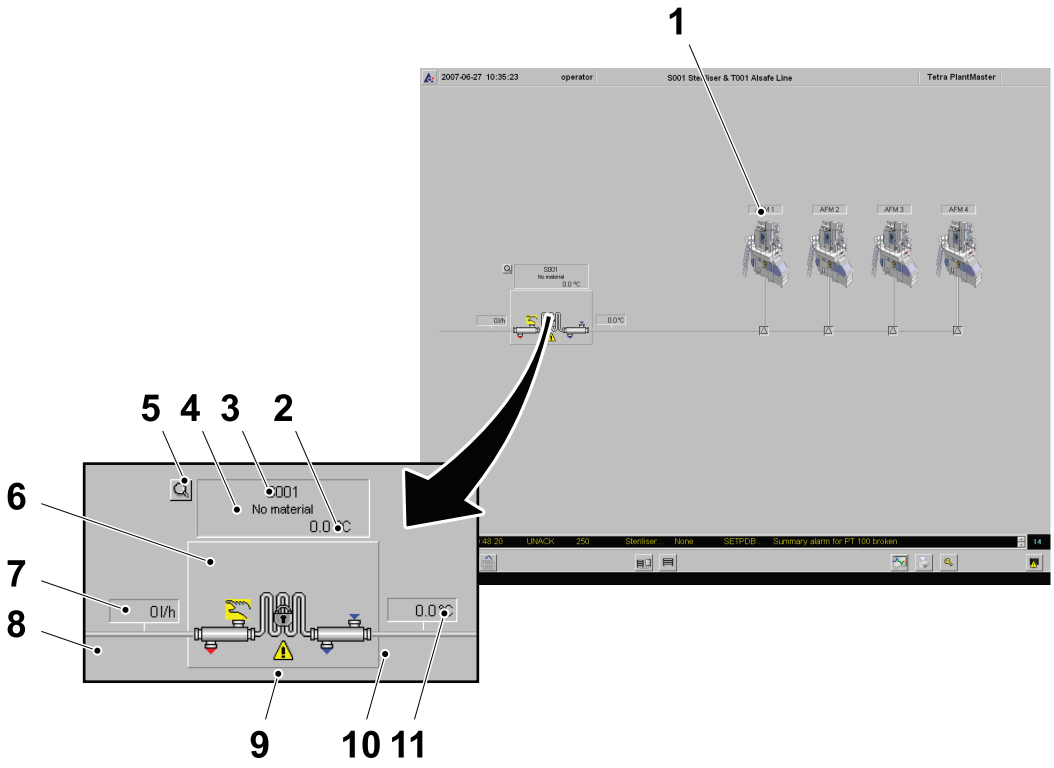


1 Line window
2 Unit window
3 Menu
4 Activation
5 Select parameter
6 Interlock/Running Fault
7 Parameters
8 Connection

8.2 Production Control and Supervision

8.2.1 Process Line Window

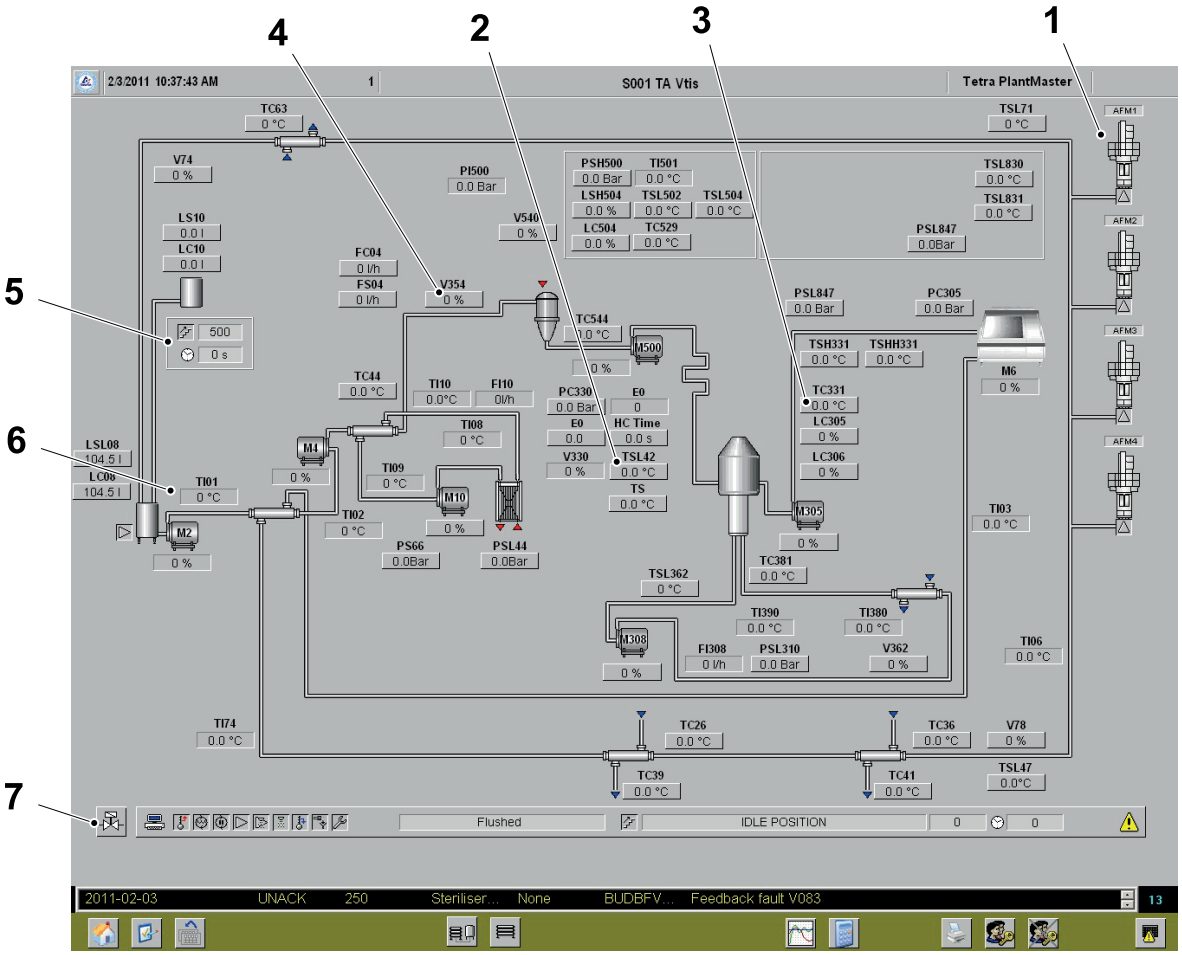
The process line overview window shows the unit line. It contains dynamic information on operation status for the unit or units. From here you can navigate to menu “pop-up” window and more detailed process unit.



Pos	Description
1	Filling machine indication with the status of filling machine and line
2	Production temperature in unit
3	Machine unit name
4	Material name in unit
5	Go to unit window
6	Go to menu, area with indication of functions and alarms of the machine unit, sequences etc.
7	Flow in unit in l/h
8	Sterile status of supply line
9	Sterile and CIP status of the machine unit
10	Main step number of the machine unit
11	Outlet temperature of the unit

8.3 Process unit window

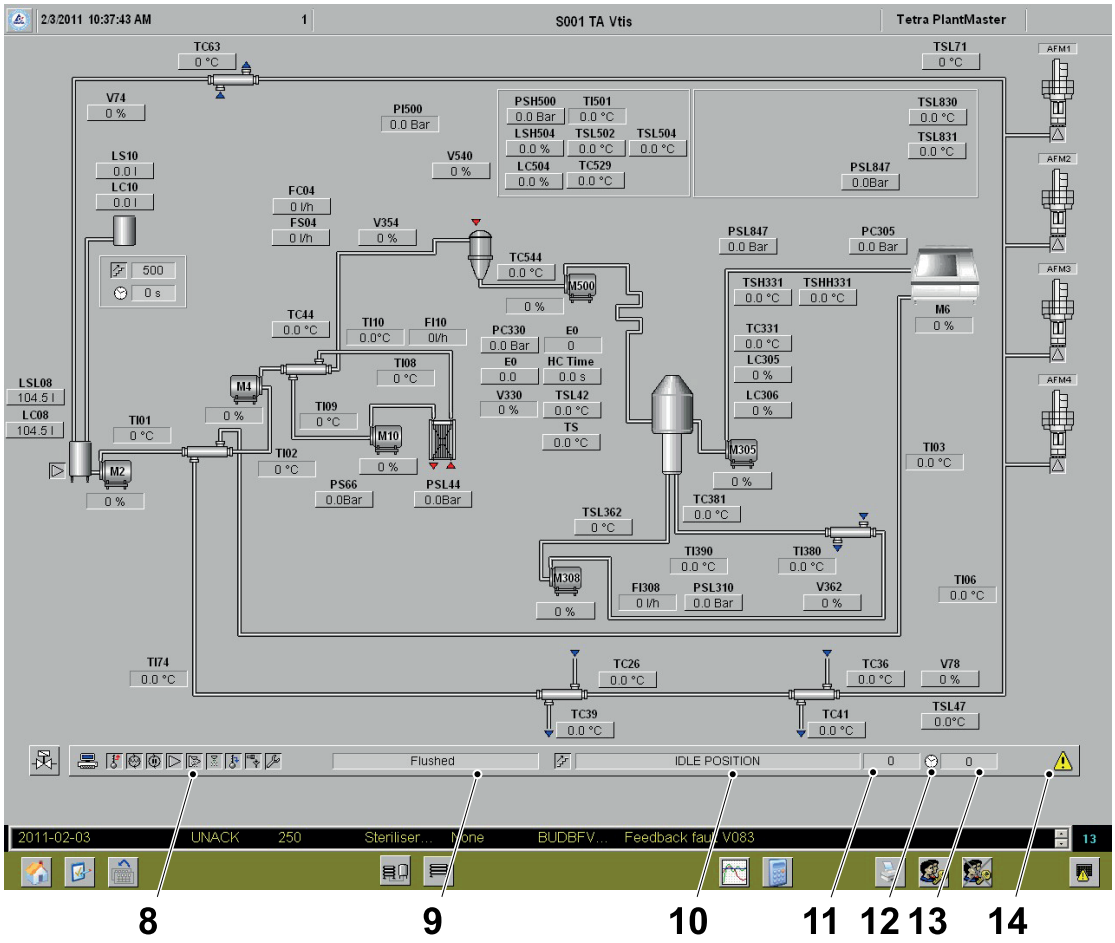
The process unit window shows the unit more detailed. It contains dynamic information on operation status for the unit. From here you can navigate to menu “pop-up” window go to activation “pop-up” window, PID controller, guard and ramp windows.



Pos	Description
1	Filling machine indication with the status of filling machine and line
2	Open guard window for the specific guard
3	Open PID controller window for the specific controller. If the button is yellow the specific controller is in manual mode
4	Open ramp window for the specific object
5	Sub step number, in this case CIP header batch step
6	Temperature indication
7	Go to activation window

(Cont’d)

(Cont'd)



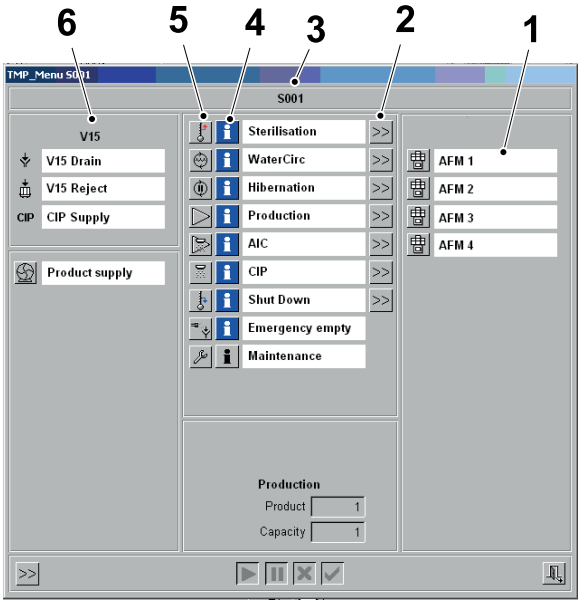
Pos	Description
8	Indication of phases in machine unit
9	Equipment status of the machine unit
10	Main step name of the machine unit
11	Main step number of the machine unit
12	Time or volume symbol indication
13	Step time/volume indication.
14	Any object forced, manual and alarm indication.

8.4 Menu

The menu pops up when main/button bar is clicked on line or unit window. It is used to start/stop, select/deselect functions on the machine.

The menu contains a number of phase operation buttons and selection buttons. The buttons also indicate the status of the operation by change of colour or icon.

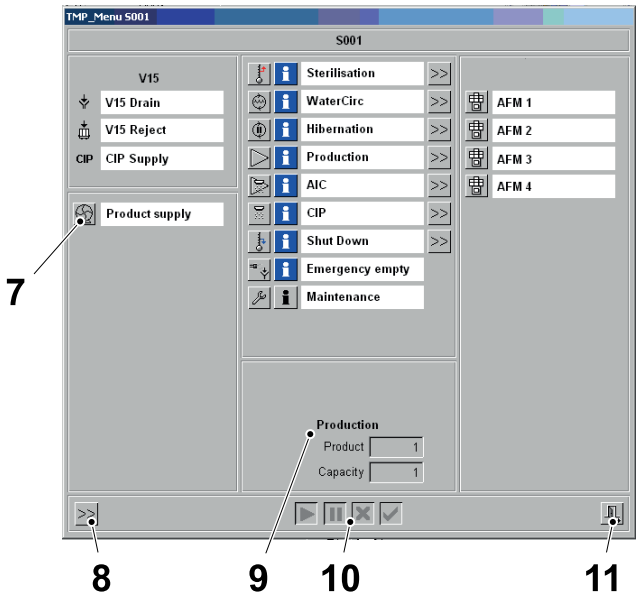
The menu is separated in source with tanks or supply equipment, Unit line phases and destination AFM, Alsafe or destination tanks. The operation product supply this case in source and all the control buttons in middle part of the menu are selectable by two command dialogue button only one operation can be selected at the time. See more about this in chapter Control Panel.



Pos	Description
1	Destination part of menu with buttons for selection of filling machines or destination tanks
2	Open the parameter window for the specific phase this button is blue if any interlock or running fault is active
3	The name and number of the specific unit line. Below is the selection of control button commands for the specific unit
4	Open interlock running fault window for the specific phase
5	Control button for indication and selection of phase command not start/stop of sequence
6	Source part of menu with buttons for selection of source equipment or source tanks

(Cont'd)

(Cont'd)



Pos	Description
7	Two command button in this case product supply pump. Start to push here and then at start or finalise to start and stop the pump
8	Open the selection parameters window
9	In this area is the material name, product number, recipe number or capacity number indicated
10	Here is the dialogue buttons to perform different operations
11	Leave unit menu

8.4.1 Dialogue Buttons

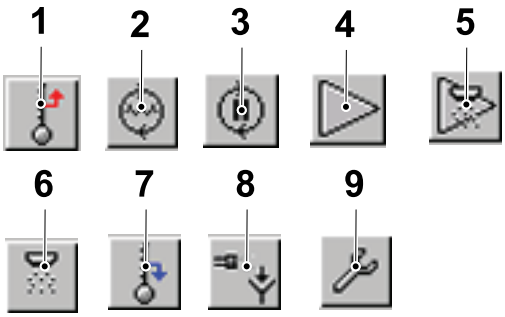
Here is a description of the dialogue buttons. You need to be logged in as at least operator to do any commands, for maintenance sequence you need to be logged in as maintenance.



Start Restart Hold Abort Finalise

8.4.2 Phase Buttons

The phase buttons depends on unit. Some example on phase buttons are illustrated below.



1 Sterilisation
2 irculationWater c
3 Hibernation
4 Production
5 AIC
6 CIP
7 Shut down
8 Emergency empty
9 Maintenance

8.4.3 How to start and stop sequences in the unit

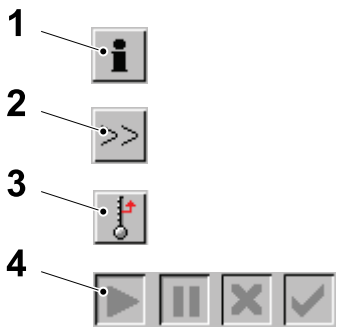
a) Start to log in as at least operator.

b) Start to check so you not have any Interlocks and running faults by checking so the “Interlock/Running fault” button (1) not is blue. If the button is blue then push it and check the blue texts they are the actual interlock and running faults if this text is blue "Phase parameter not OK" select the “Go to parameter” button (2) for the actual sequence and then select the right phase mode button used for the specific sequence.

c) Push for example one of the “Phase Buttons” (3) then will any of the dialogue buttons presented above be up raised selectable.

d) Finally select the command (4) you want to do.

For more information about how to start and stop sequences see chapter Operation.



8.5 Interlock/Running fault button

With this button selected Interlock/Running fault window opened for a specific phase.

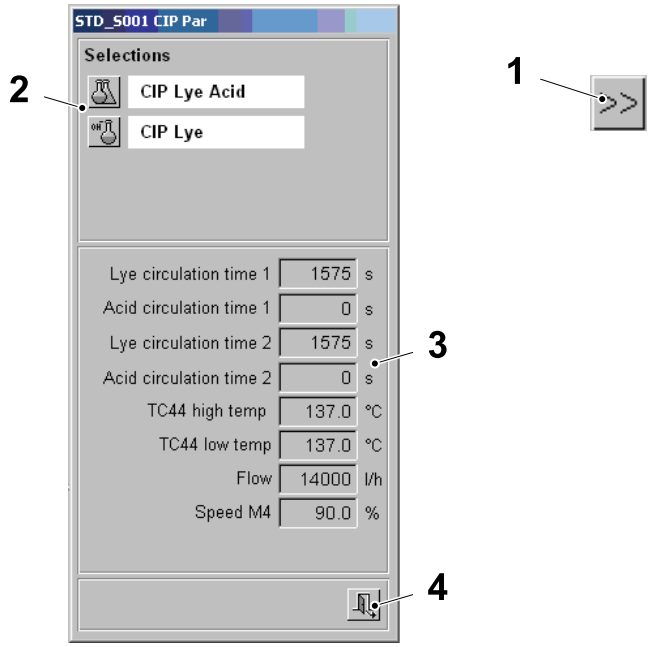


Interlock/Running fault

8.6 Parameters

Here is the parameters window. You reach this window by pressing the “Go to parameter” button (1).

There is one parameter window for each phase with parameters dedicated to the specific sequence. In these windows you can set the phase mode button if logged in as operator and change the parameters if logged in as supervisor. For more information about the buttons see chapter Control Panel.



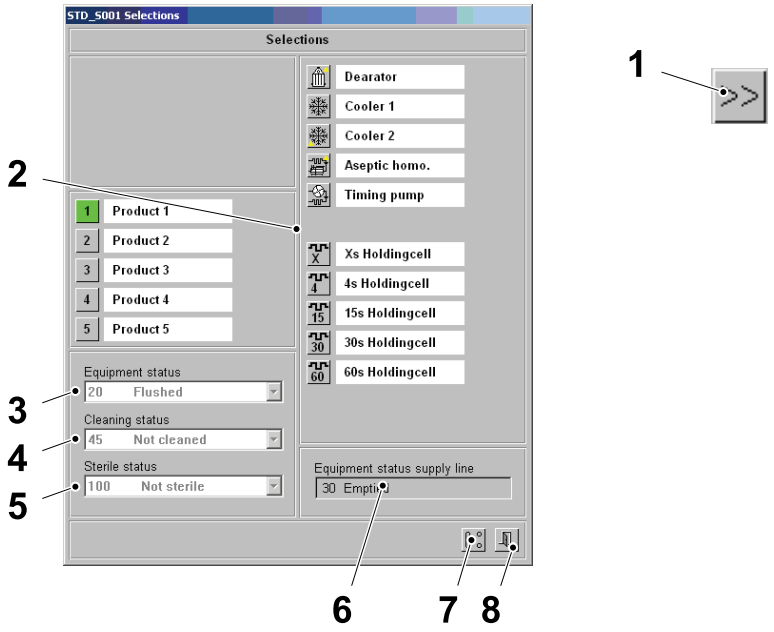
Pos	Description
1	Go to parameter button
2	Phase mode buttons for in this case CIP that needs to selected before selecting the phase sequence
3	Phase parameter, for in this case CIP.
4	Leave this window

8.7 Selection Parameter

Here is the parameter window for the whole machine unit. You reach this window by pressing the “Go to parameter” button (1) in the lower left corner of the unit menu.

In this window are selection buttons for process equipment etc. They are selectable if logged in as operator and key in remote mode. Here are also possibilities to change equipment, cleaning and sterile status if maintenance are running and logged in as maintenance by using a drop down box.

For more information about the buttons see chapter Control Panel.



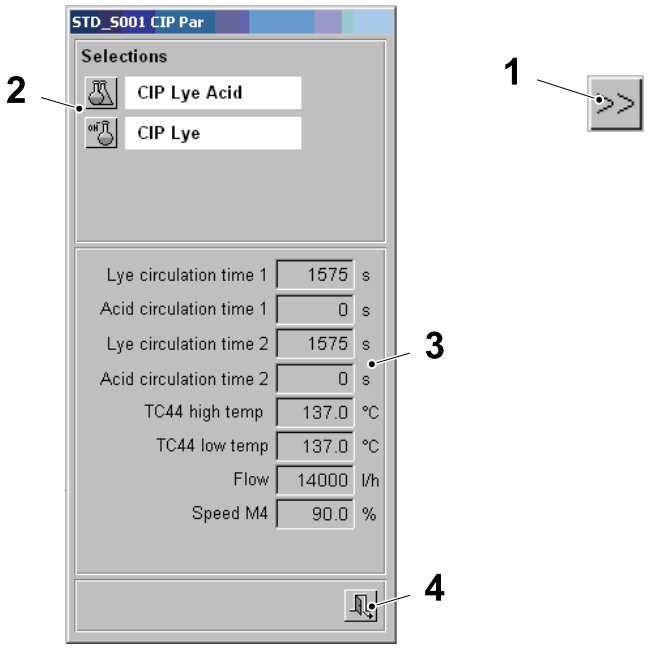
Pos	Description
1	Go to parameter button
2	Selection buttons for equipment, products and capacities
3	Drop down box for viewing and selection of equipment status
4	Drop down box for viewing and selection of cleaning status
5	Drop down box for viewing and selection of sterile status
6	Viewing of equipment status for the supply line to the machine unit
7	Go to connections window
8	Leave this window

8.8 Connections

Here is the connections window for the unit if used. You reach this window by pressing the button below, in the selection parameter window.

Here are swing bend panel for different equipment options.

- Grey colour means that here should a pipe be connected
- Yellow colour means that pipe is “wrong” connected for the selection
- Green colour means that the pipe is “right” connected for the selection



Pos	Description
1	Swing bend panel with pipes
2	Leave this window

8.9 Activations

Green colour means activated object and yellow colour means fault on the object. It is possible to click on the objects and force, suppress or adjust parameter for the selected object if logged in as at least maintenance.

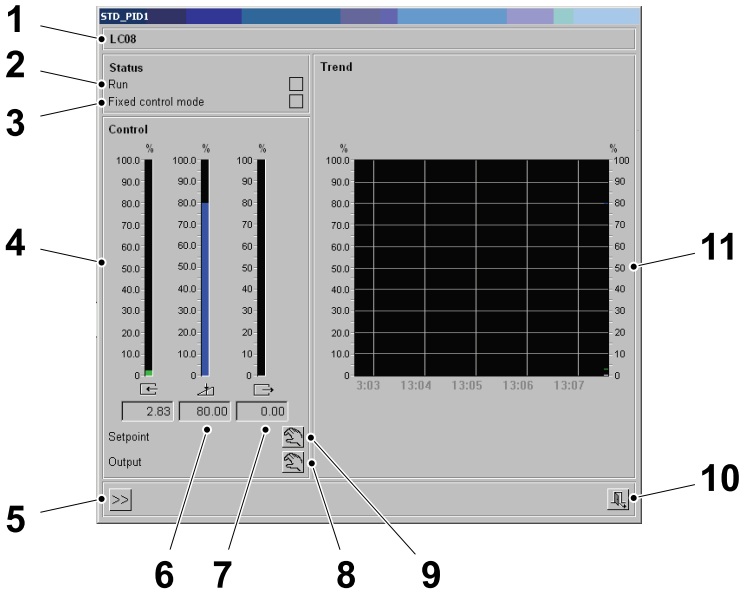


8.10 PID Controllers, Guards and Analogue Ramp

All on this windows is reachable from the process unit window. The unit must be in local mode and operator must be logged in as supervisor to change parameters or push buttons.

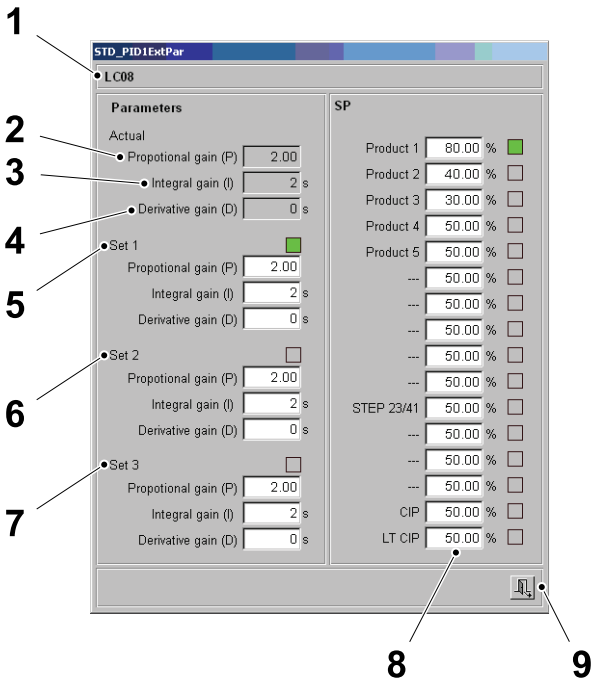
See below about windows for controller, guard, analogue ramp windows and set point windows.

8.10.1 PID Controller Window



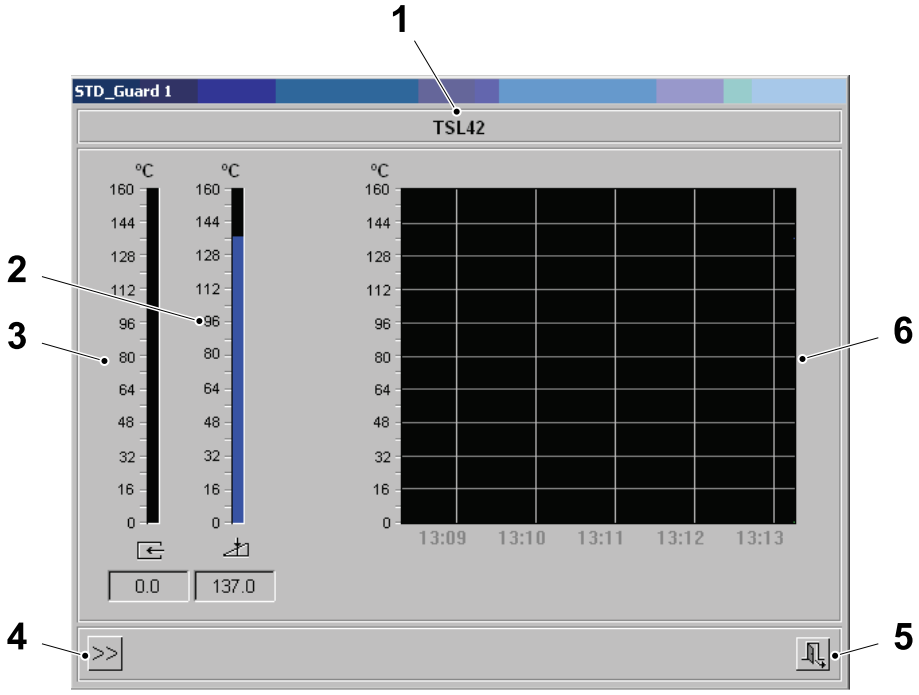
Pos	Description
1	PID controller name
2	If controller status is in running mode the square is green
3	If controller status is in running fixed output mode the square is green
4	Bar graph and numeric value for controller input signal
5	Go to PID parameter window
6	Bar graph and numeric value for controller set point signal. If set point in manual mode it is possible to set manual value here
7	Bar graph and numeric value for controller output signal. If out put in manual mode it is possible to set manual value here
8	Manual/Auto output button for PID controller indicates green if in manual mode
9	Manual/Auto set point button for PID controller indicates green if in manual mode
10	Leave this window
11	Trending of process values = green line, set points = blue line and output values = white line, last 5 min (only when window is open).

8.10.2 PID Parameters Window



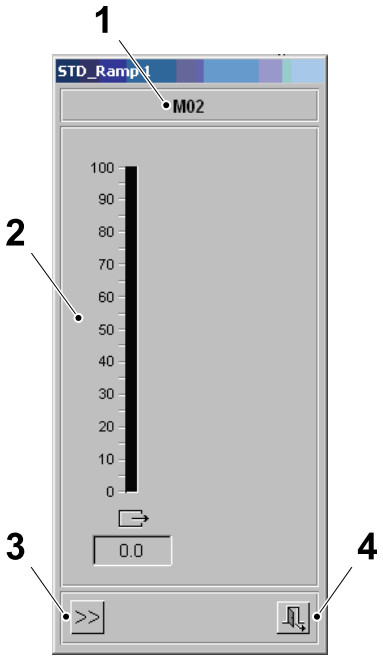
Pos	Description
1	PID controller name
2	Running P-value (gain) at selected controller
3	Running I-value (integration time) at selected controller
4	Running D-value (derivation time) at selected controller
5	Indication and setting of PID parameters set 1
6	Indication and setting of PID parameters set 2
7	Indication and setting of PID parameters set 3
8	Set points 1-16 only visible if used
9	Leave this window

8.10.3 Guard Window



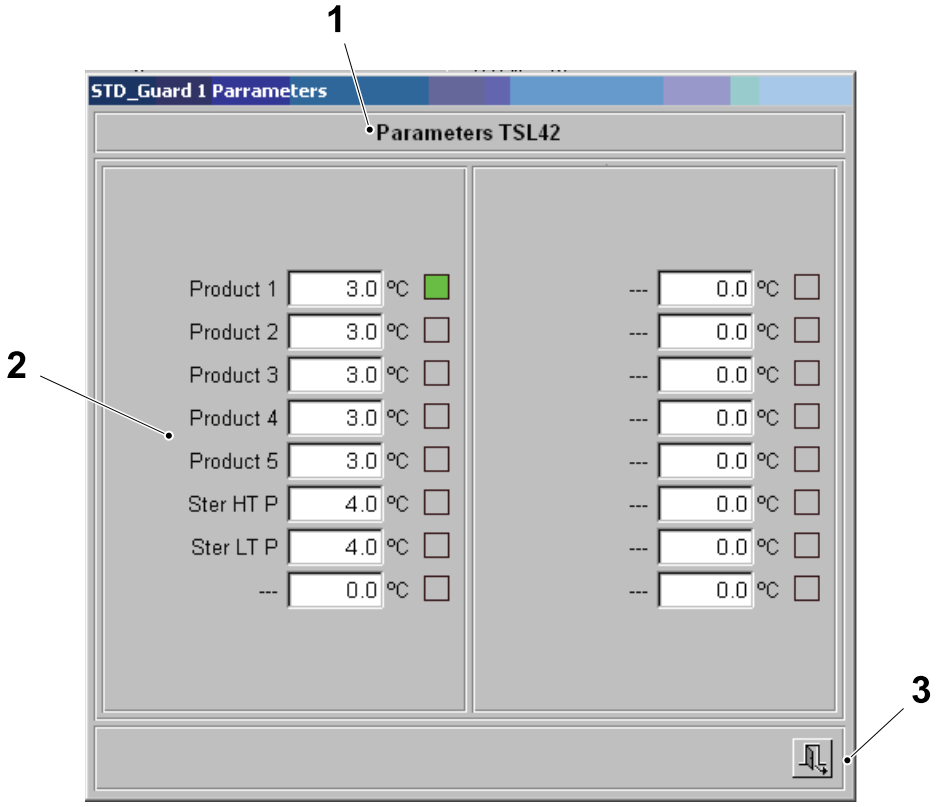
Pos	Description
1	Guard name
2	Bar graph and numeric value for guard set point signal
3	Bar graph and numeric value for guard input signal
4	Go to set point parameter window
5	Leave this window
6	Trending of process values = green line and set points = blue line, last 5 min (only when window is open)

8.10.4 Ramp Window



Pos	Description
1	Ramp name
2	Bar graph and numeric value for ramp set point signal
3	Go to set point parameter window
4	Leave this window

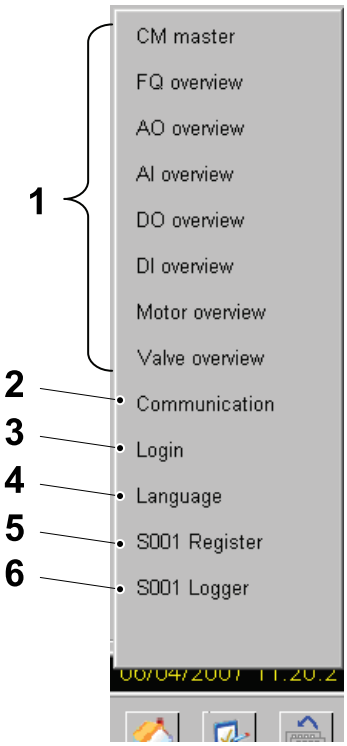
8.10.5 Guard / Ramp Parameters Window



Pos	Description
1	Guard / ramp name
2	Set points 1-16
3	Leave this window

8.11 Service Menus and Trending

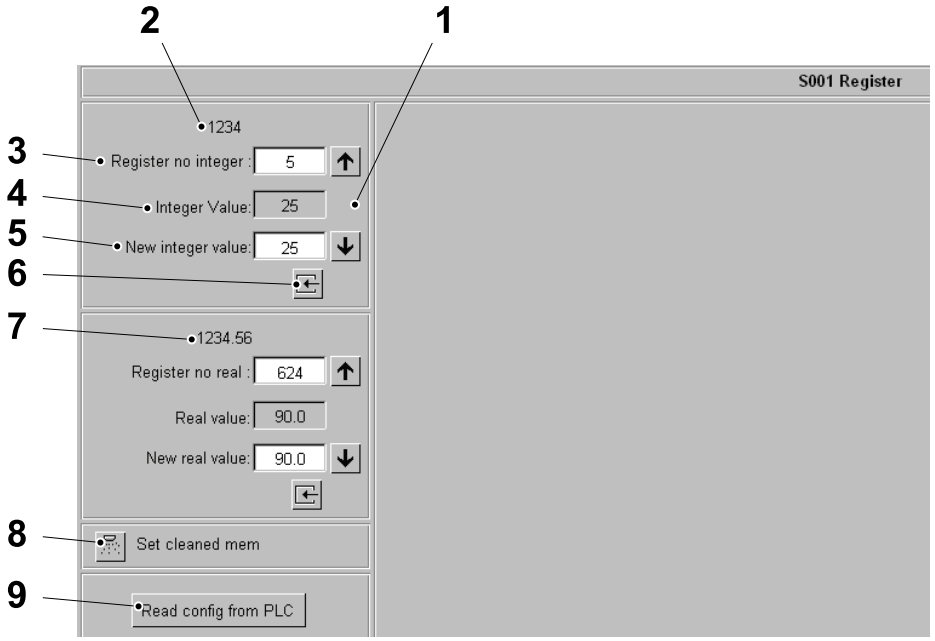
8.11.1 Service Menu Overview



Pos	Description
1	Control module windows
2	Communication window
3	Log in parameter window
4	Language selection window
5	Register maintenance
6	Recipe window or other

8.11.2 Register Maintenance

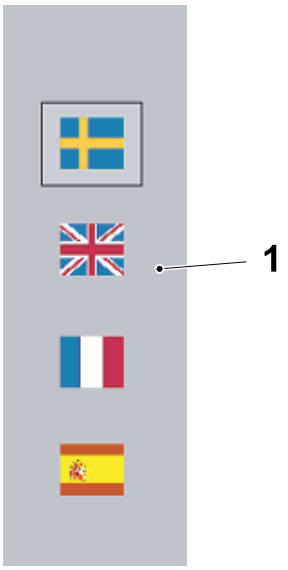
In this window are the same functions and buttons as in service menu for TPOP-E. For more information about this see chapter Control Panel.



Pos	Description
1	Increase decrease register number
2	Integer register values
3	Actual register number
4	Actual value in register
5	New value to send to register
6	Send to register if logged in as supervisor
7	Real register values
8	CIP Memory button
9	Read configure bits from PLC if logged in as supervisor

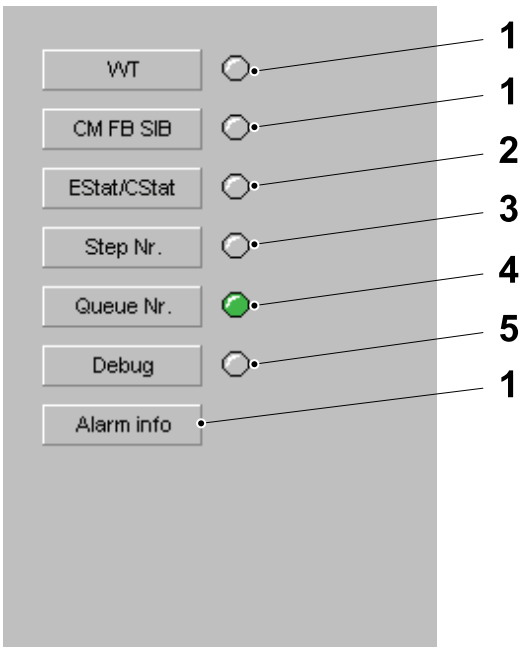
8.11.3 Language Selection Window

Select language by clicking on the flag (1) for the Tetra Plant Master ME application.



8.11.4 Communication Window

Used for configure views of steps, equipment and CIP status on the line window, green marked means viewed.

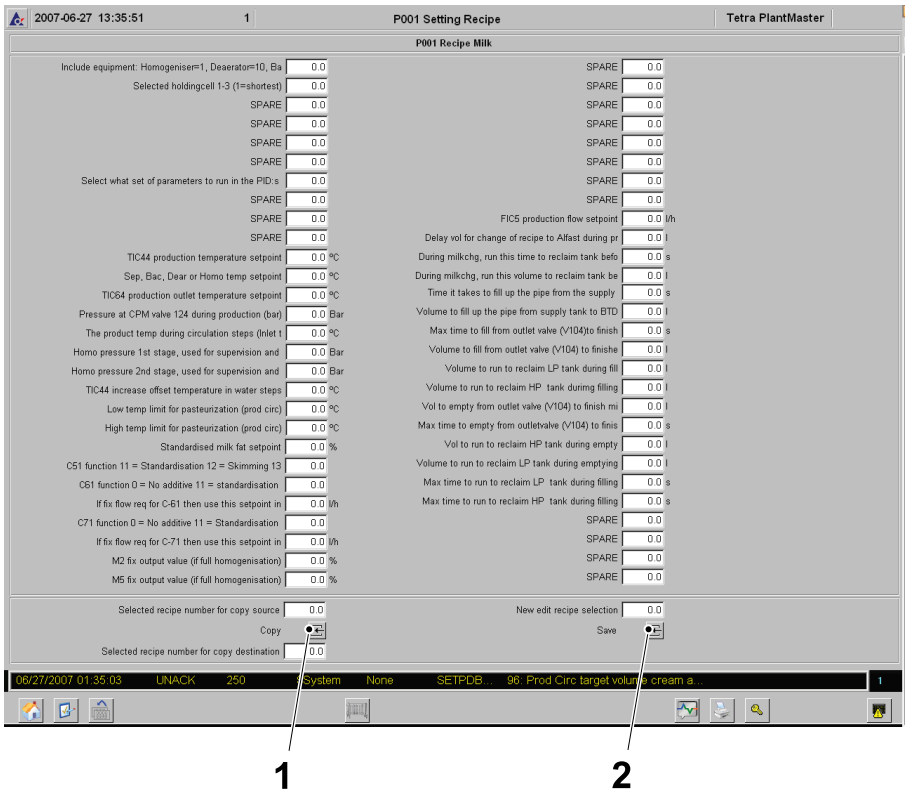


Pos	Description
1	Not used here
2	Equipment or CIP status
3	Step number
4	Queue number (not used here)
5	Only for Tetra Pak personnel

8.11.5 Recipe Window

Edit recipe for the Tetra Plant Master ME application. It is necessary be logged in as supervisor to change parameter here.

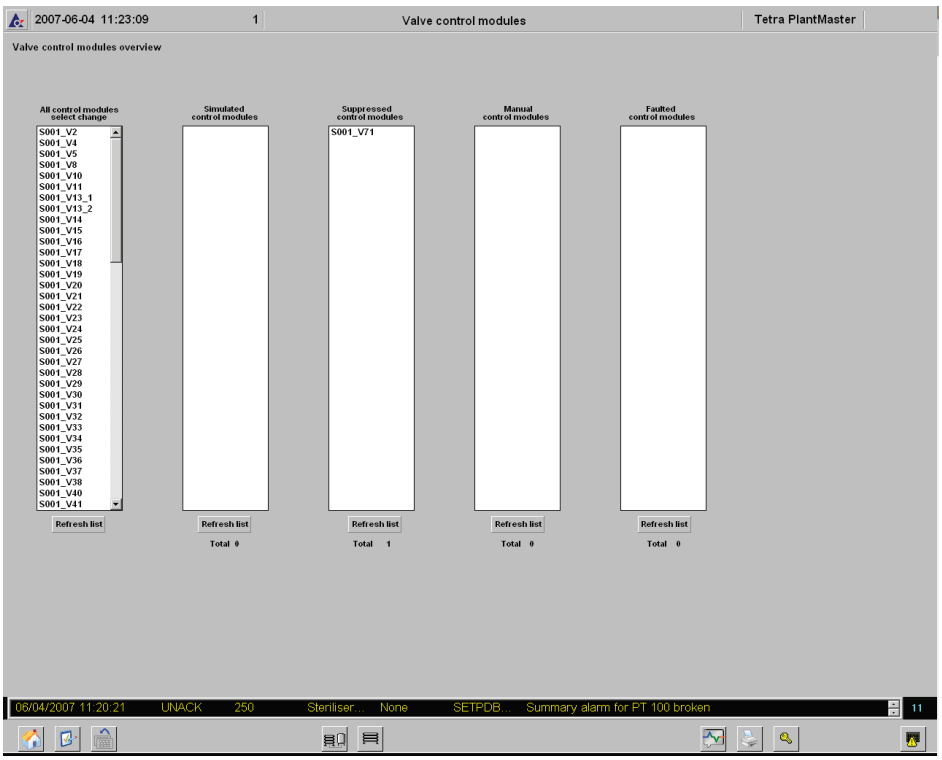
Note! New edit recipe selection may not be the same as source or destination recipe when copying or editing recipe.



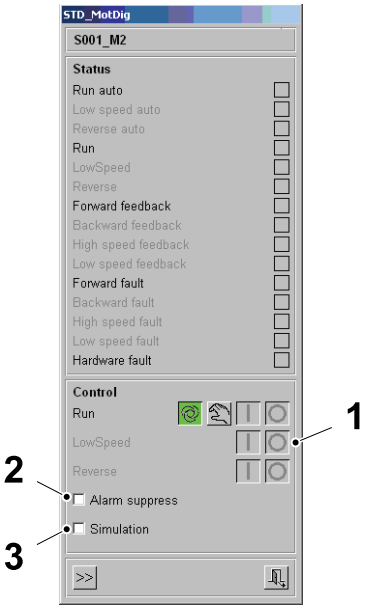
Pos	Description
1	Button to copy recipe
2	Button to save edited recipe. Yellow if recipe parameter is changed

8.11.6 Control Module Window

Detailed information is shown about forced and masked objects in the object overview window. Object Overview pictures are available from the service menu.

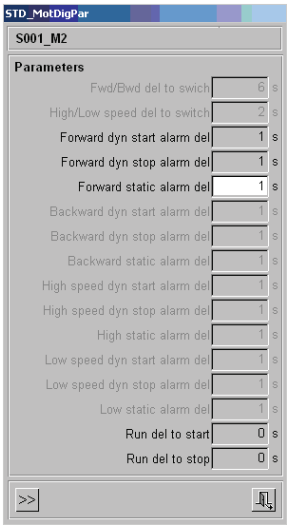


8.11.6.1 Control Module - Motor

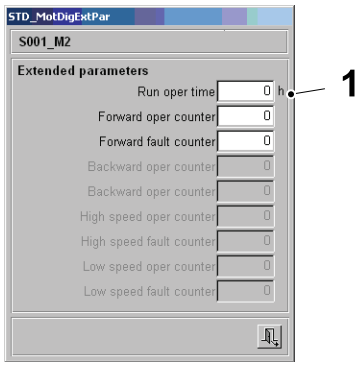


Pos	Description
1	Force on/off or Auto
2	Masking of alarm
3	Simulation On/Off

8.11.6.2 Control Module - Motor Parameters

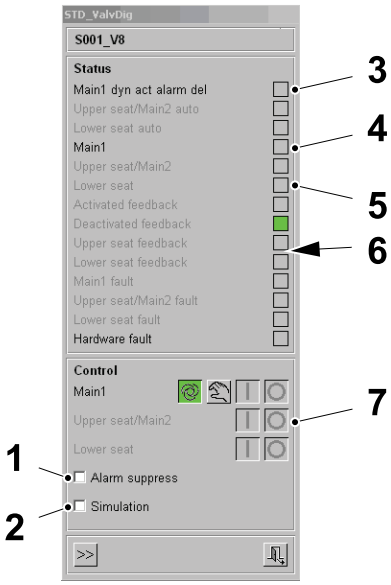


8.11.6.3 Control Module - Motor Extended Parameters



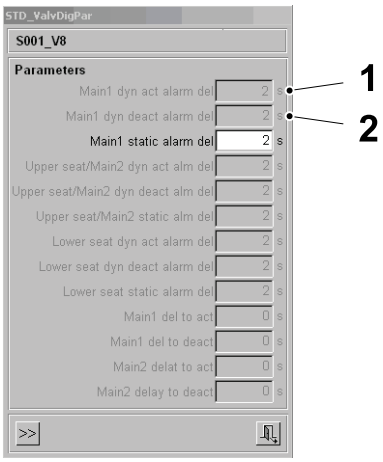
Pos	Description
1	Counter of strokes

8.11.6.4 Control Module - Valve



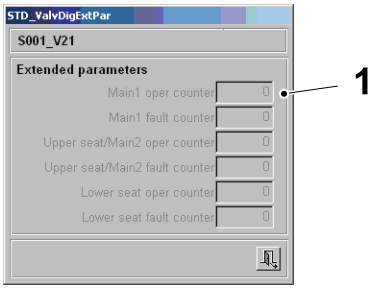
Pos	Description
1	Masking of alarm
2	Simulation on/off
3	Function on/off
4	Activate
5	De-activated
6	Feedback
7	Force on/off or Auto

8.11.6.5 Control Module - Valve Parameters



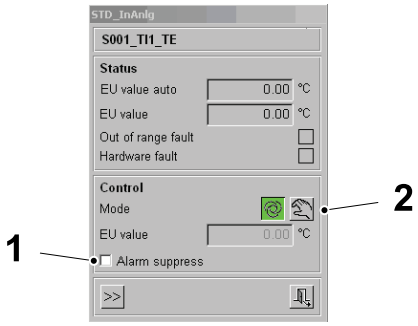
Pos	Description
1	Delay to activate
2	Delay to deactivate

8.11.6.6 Control Module - Valve Extended Parameters



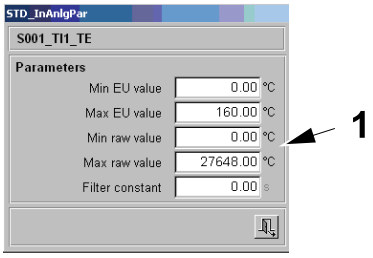
Pos	Description
1	Counter of strokes

8.11.6.7 Control Module - Analogue In



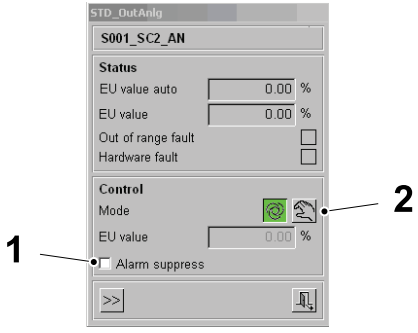
Pos	Description
1	Suppress of alarm
2	Force on/off or Auto

8.11.6.8 Control Module - Analogue In Parameters



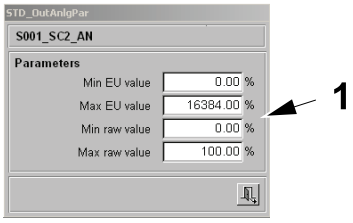
Pos	Description
1	Setting of limit parameters

8.11.6.9 Control Module - Analogue Out



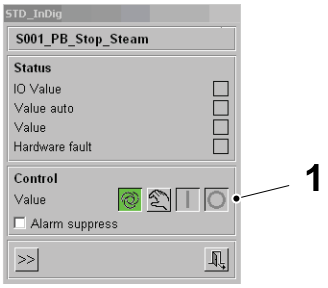
Pos	Description
1	Suppress of alarm
2	Force on/off or Auto

8.11.6.10 Control Module - Analogue Out Parameters



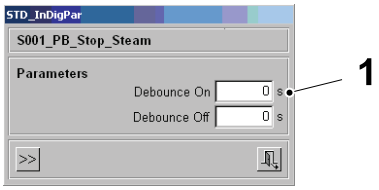
Pos	Description
1	Setting of limit parameters

8.11.6.11 Control Module - Digital In



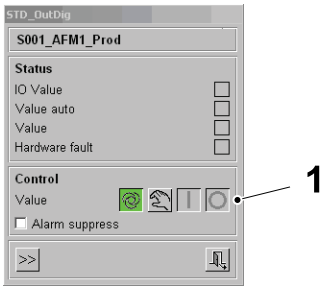
Pos	Description
1	Suppress of alarm

8.11.6.12 Control Module - Digital In Parameters



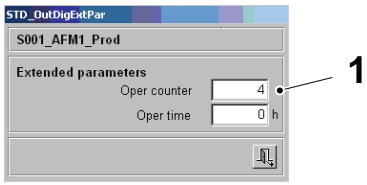
Pos	Description
1	Counter of strokes

8.11.6.13 Control Module - Digital Out



Pos	Description
1	Force on/off or Auto.

8.11.6.14 Control Module - Digital Out Parameters



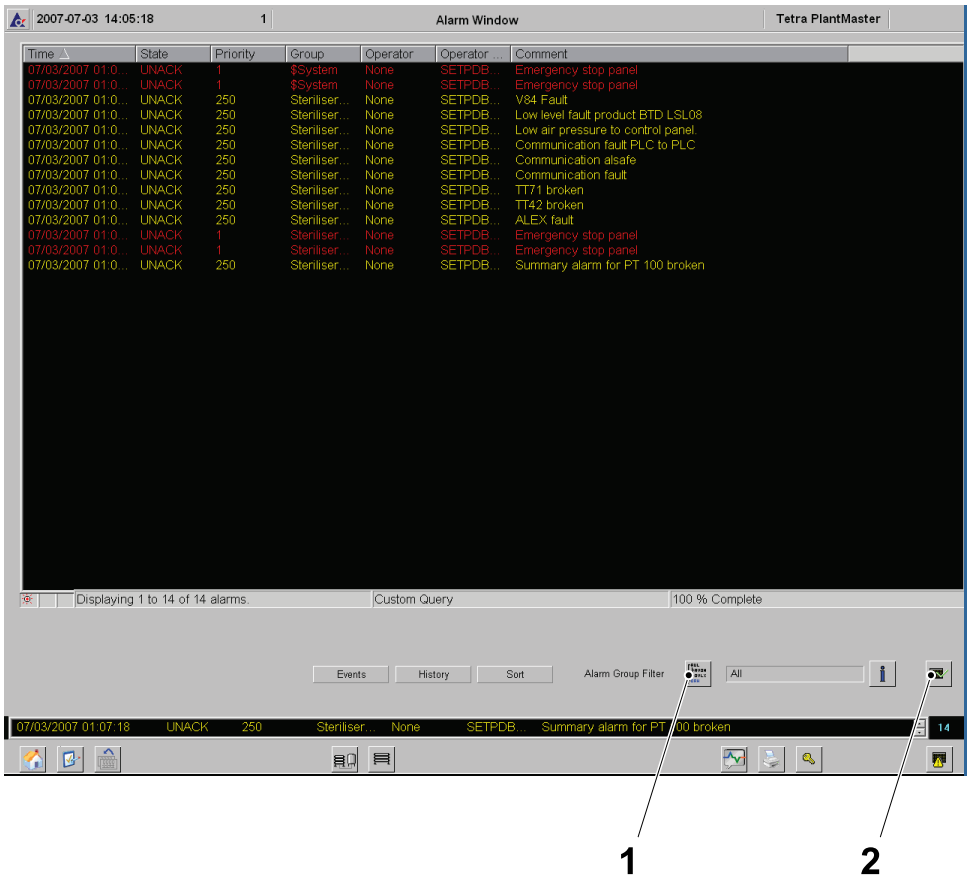
Pos	Description
1	Counter of strokes.

8.11.7 Alarm Windows

The alarm bar is visible on the lower part of the screen showing the latest alarm in all windows.



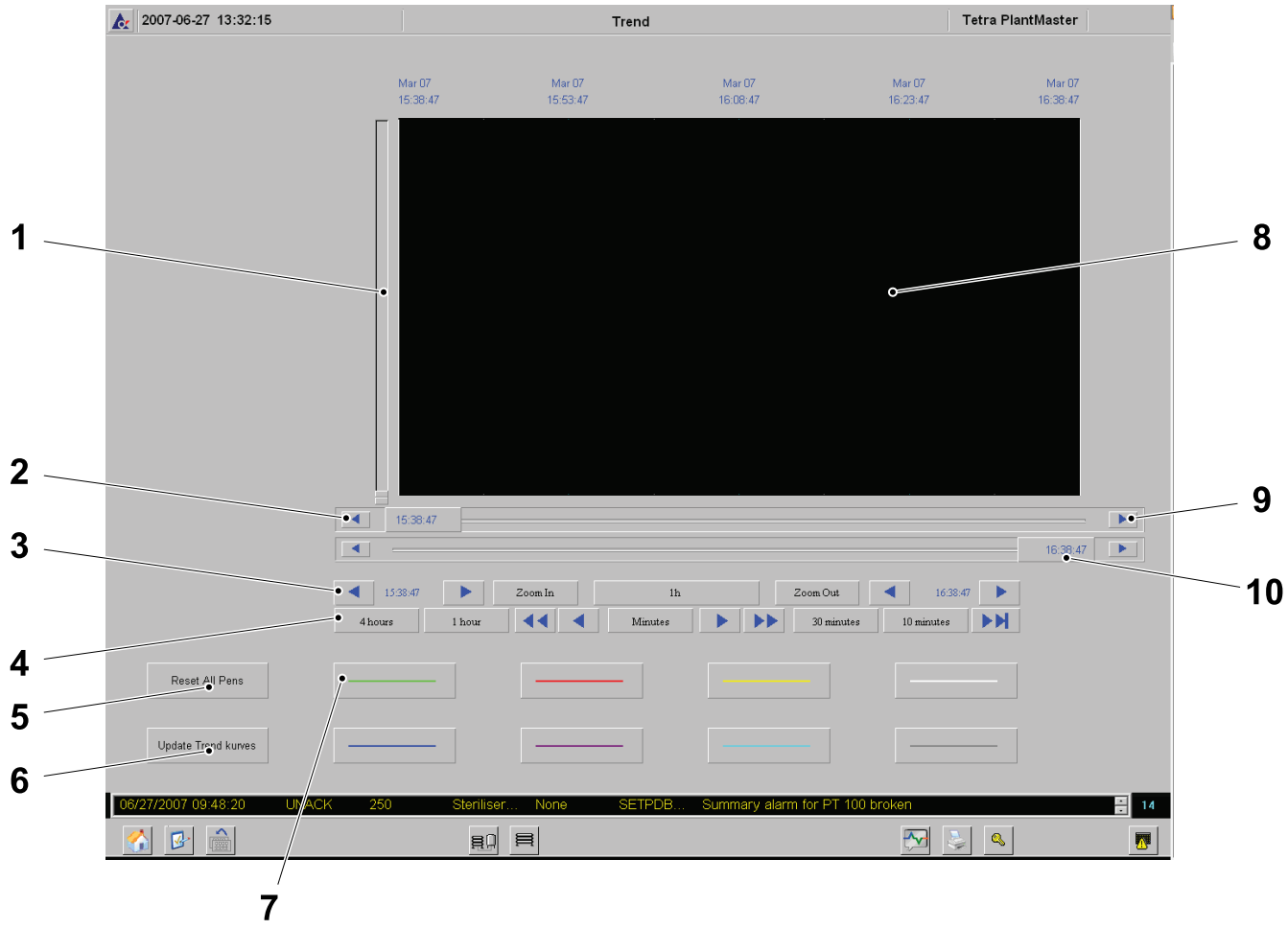
Clicking this button on the button bar will open the alarm list. It is possible to scroll the Alarm list and sort the alarm in groups or by click the header. The history alarms locks the same but without acknowledge button



Pos	Description
1	Group/sort alarms.
2	Acknowledge alarm button

8.11.8 Trend Window

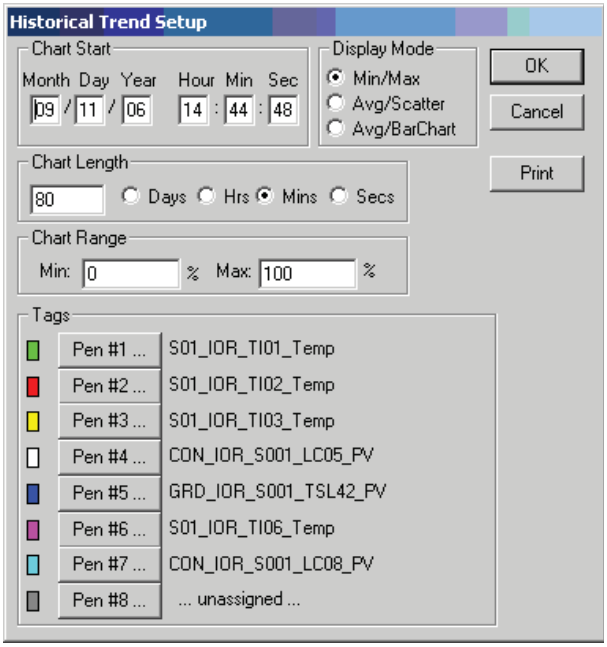
In the trend window selected parameters are visualised with the selected colour.



Pos	Description
1	Process value range
2	Move slider left
3	Settings for time span current view
4	Settings for scrolling historical trends
5	Reset all pens
6	Update trend curves
7	Select which process value to be represented by ex. Green curve
8	Push here to pick up selection and setup for trends see below
9	Move slider right
10	Measurement slide, there are two. Move them to check values and zoom in.

8.11.8.1 Selection and Setup of Trends

Here the trend values are selected and chart start, length and chart display mode are changed.



Tetra Pak®

Label for 40 mm binder ***Note!*** *This page is generated* ***automatically.***

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(2)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(2)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(2)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(2)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS1(3)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(3)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 3(3)
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS
Issue 2016-05
Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS3(3)
Issue 2016-05
Doc. No. OM-3284901-0103

Label for 55 mm binder ***Note!*** *This page is generated* ***automatically.***

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(2)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(2)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(3)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(3)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 3(3)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(3)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 1(2)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(3)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 2(2)

Issue 2016-05

Doc. No. OM-3284901-0103

Tetra Therm® Aseptic VTIS 3(3)

Issue 2016-05

Doc. No. OM-3284901-0103