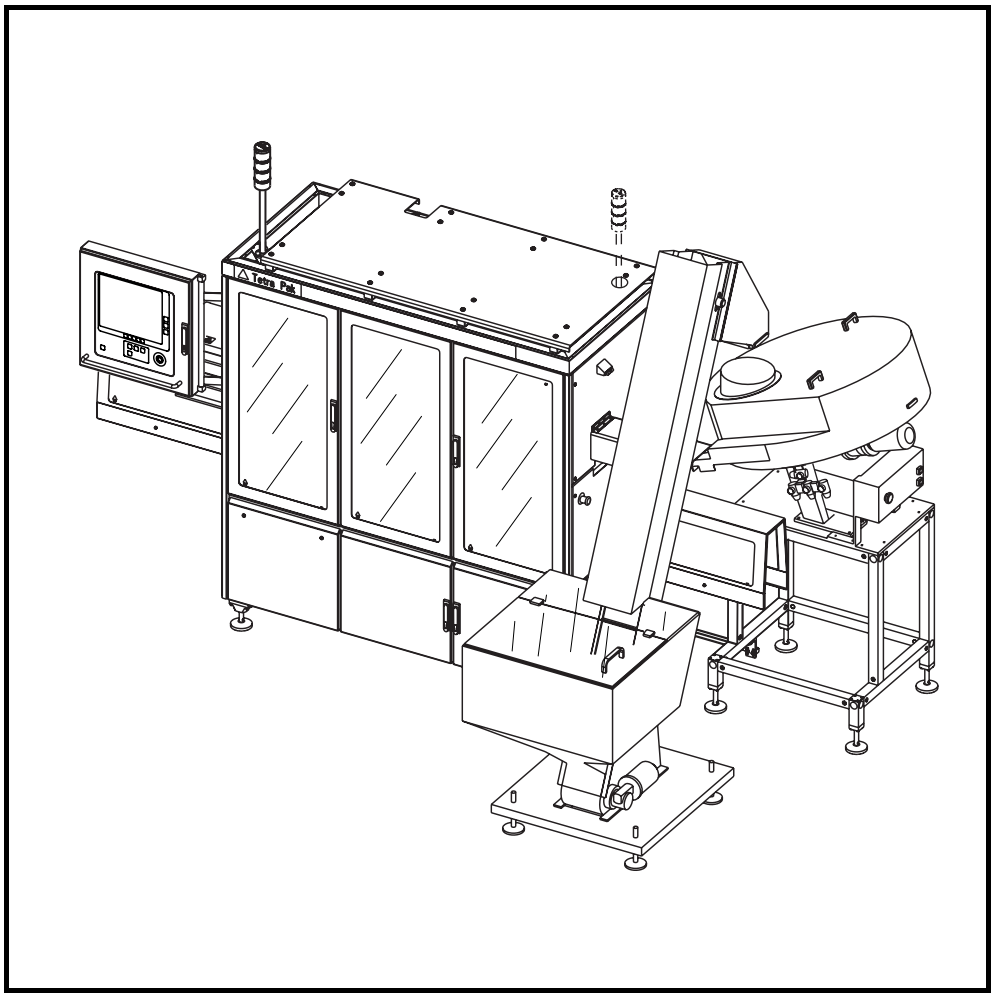
IM

Installation Manual

Tetra Cap Applicator 47

662251-0100



WARNING

Read and follow all safety precautions before working on or near this equipment.

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

Tetra Pak

Doc No. IM-2531132-0103

The content of this manual is in accordance with the design and construction of the machine or equipment at the time of publishing. Tetra Pak reserves the right to introduce design modifications without prior notice.

This document was produced by:

Tetra Pak Carton Ambient S.p.A.
Via Delfini 1
41100 MODENA
Italy

Additional copies can be ordered from Tetra Pak Parts or the nearest Tetra Pak office. When ordering additional copies, always provide the document number. This can be found in the machine specification document. It is also printed on the front cover and in the footer on each page of the manual.

Doc No. IM-2531132-0103

Issue 2004-12

This manual is valid for:

Series No./ Machine No. Sign.

IM
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Tetra Pak

Tetra Pak Carton Ambient S.p.A.

Valid for:

Update Log to Doc No. IM-2531132-0103

This table shows all changes made to this manual, such as kits installed and pages added or removed.

Date	Installed Kit	New Pages (Doc. No.)	Removed Pages	Signature

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i Introduction

About the Introduction Chapter

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

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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.

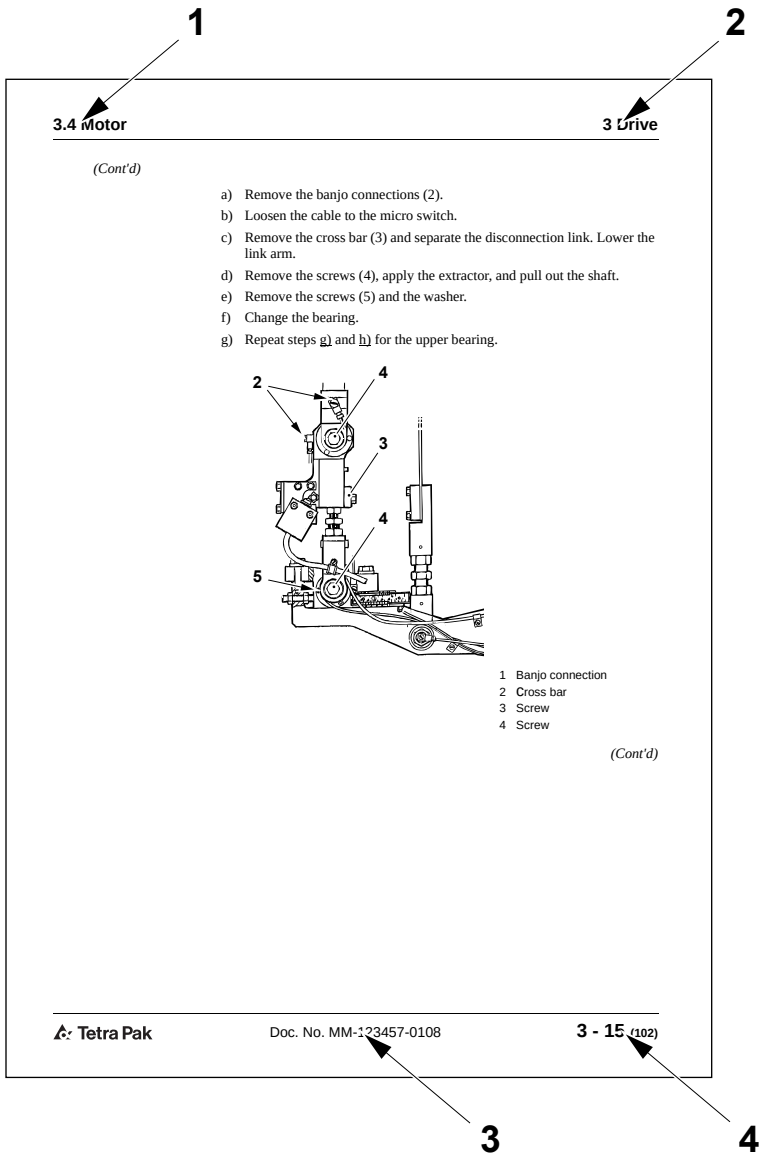
Delivered Manuals

The manuals delivered with this equipment include

- Electrical Manual (EM)
  This manual provides technicians with information about the equipment's electrical system.
- Installation Manual (IM)
  This manual provides technicians with information required to safely install the equipment.
- Maintenance Manual (MM)
  This manual provides technicians with information on maintaining the equipment.
- Operation Manual (OM)
  This manual provides the operator with information on handling and operating the equipment before, during, and after production.
- Spare Parts Catalogue (SPC)
  This manual provides the information necessary to order spare parts from Tetra Pak

Page Layout

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

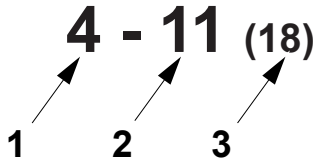


1 Section name
2 Chapter name
3 Document number
4 Page number

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

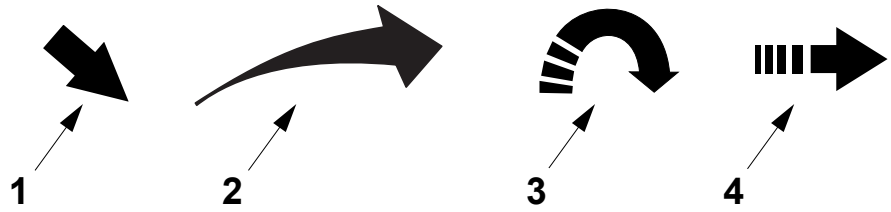
Controls on the operator panel, emergency stop devices, and program steps are printed in CAPITAL LETTERS.

Cross-references are underlined.

Symbols

The following symbols are used in illustrations:

- A pointer arrow (1) indicates the position of an object.
- A zoom arrow (2) indicates that an object view is enlarged. The arrow points towards the enlarged view of the object.
- A rotation movement arrow (3) indicates rotational movement of an object. The arrow points in the direction of rotation.
- A straight movement arrow (4) indicates movement of an object. The arrow points in the direction of movement.



1 Pointer arrow
2 Zoom arrow
3 Rotation movement arrow
4 Straight movement arrow

Machine Introduction

Intended Use of the Equipment

The intended use of this Tetra Pak equipment is to apply recloseable plastic cap to Tetra Brik or Tetra Prisma packages. Packages that are to be provided with caps must have pull tabs. The PullTab strips are applied by a PullTab applicator, incorporated in the filling machine.

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 Carton Ambient S.p.A.
Via Delfini 1
41100 MODENA
Italy

Service

If you encounter problems when operating this equipment, contact the nearest Tetra Pak office.

Contact the Liaison with other inquiries, comments, or suggestions for improvement regarding the equipment and its documentation.

Identification

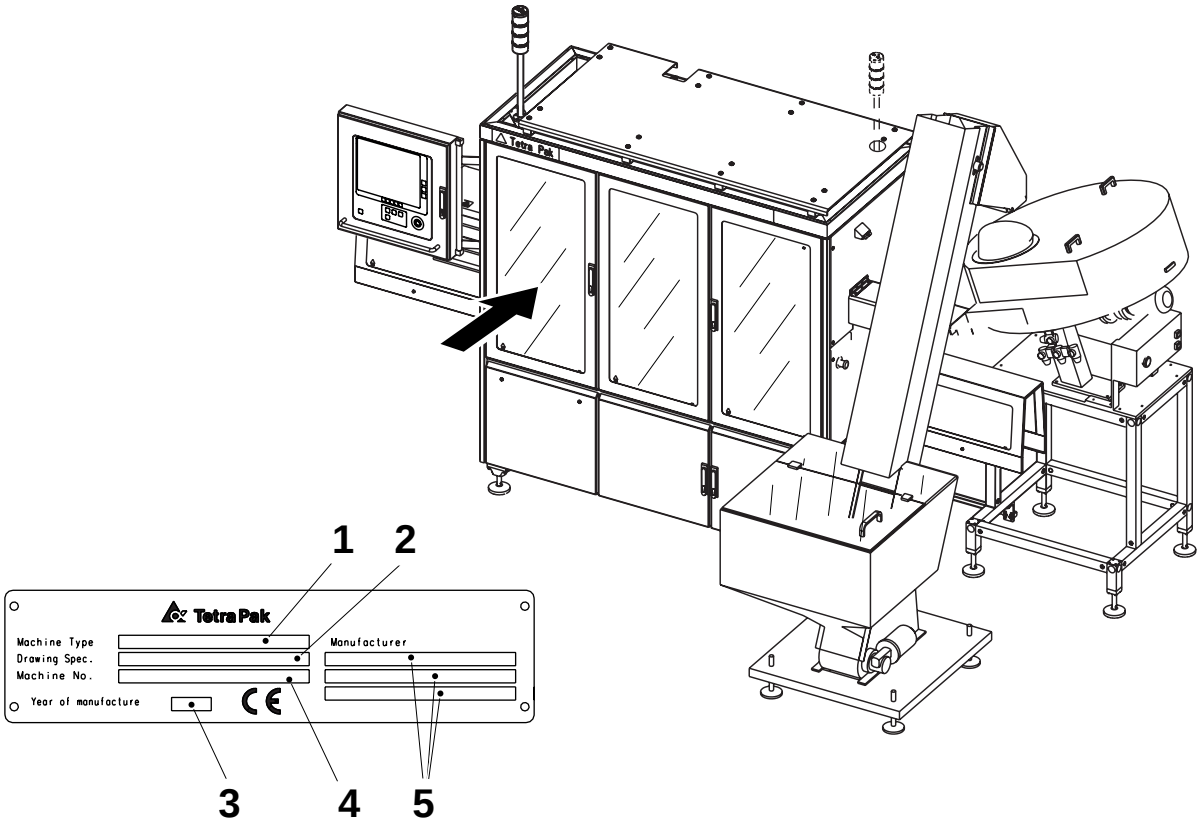
CE Classification

This equipment complies with the basic health and safety regulations of the European Economic Area (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.

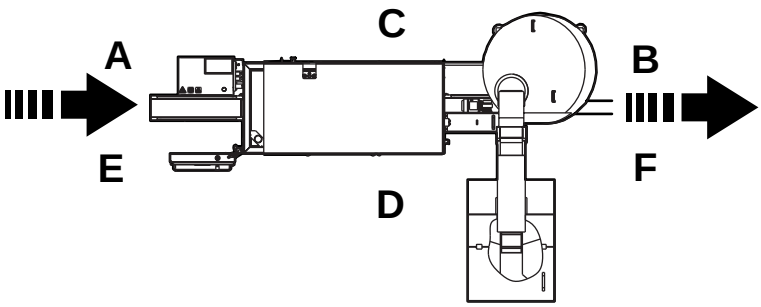
Make sure that the equipment data in the front pages of this manual corresponds to the machine plate data and the machine specification.



1 Machine number
2 Drawing specification
3 Machine type
4 Manufacturer (name and address)
5 Year of manufacture

Orientation

The illustration below shows the orientation of the equipment. This orientation information will be used throughout this manual.



A Back
B Front
C Right-hand side
D Left-hand side
E Infeed
F Discharge

Hygiene

Avoid microbiological pollution of the packaging material:

- Always keep the doors to the filling room (area) closed. To prevent contamination via air streams, never open a window when the equipment is in production.
- Never clean the floors or the equipment in the filling room (area) when the equipment is in production.
- Compressed air used for cleaning purposes is to be used only for cleaning filters and should only be used outside of the filling room (area) or in the final folder compartment of the filling machine.
- Prepare the splicing of the packaging material as late as possible.
- Disinfect your hands before touching anything that may come into contact with the product. Use disinfectant code H. See the Technical Data chapter.
- 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.

Abbreviations and Terminology

Abbreviation/ Terminology	Meaning	Translation
CE	Communautés Européennes / European Communities	
EEA	European Economic Area	
EM	Electrical Manual	
IM	Installation Manual	
MM	Maintenance Manual	
OM	Operation Manual	
PIM	Project and Installation Manual	
SPC	Spare Parts Catalogue	
SUMQR	Start Up Machine Quality Report	

ii Safety Precautions

Read the Safety Precautions

WARNING

Read and follow all safety precautions before working on or near this equipment.

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

Definitions

Energy Isolating Device. A mechanical device that physically prevents transmission or release of energy.

Power Supply Disconnector. The energy isolating device for the electrical power supply to the equipment.

Lockout. The use of a device, such as a padlock, to make sure that an energy isolating device, such as a power supply disconnector, cannot be operated.

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

Safety Messages Description

A safety message is always accompanied by a safety alert symbol and a signal word.

This is the **safety alert symbol**. It 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 electricity, mechanical systems, and so on.

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.

Safety Signs

WARNING

Damaged or missing safety signs increase the risk of death or serious injury.

Replace all missing or damaged safety signs immediately.

There are two types of safety sign

- ISO signs are used worldwide
- ANSI signs are used in the United States only

When ordering, please refer to the following SPC-number 1367677-0100, ISO signs.

The table shows all safety signs that are located on this equipment.

Note! The position numbers (Pos.) in the table refer to the positions in the illustration(s) in the Locations of Safety Signs section.

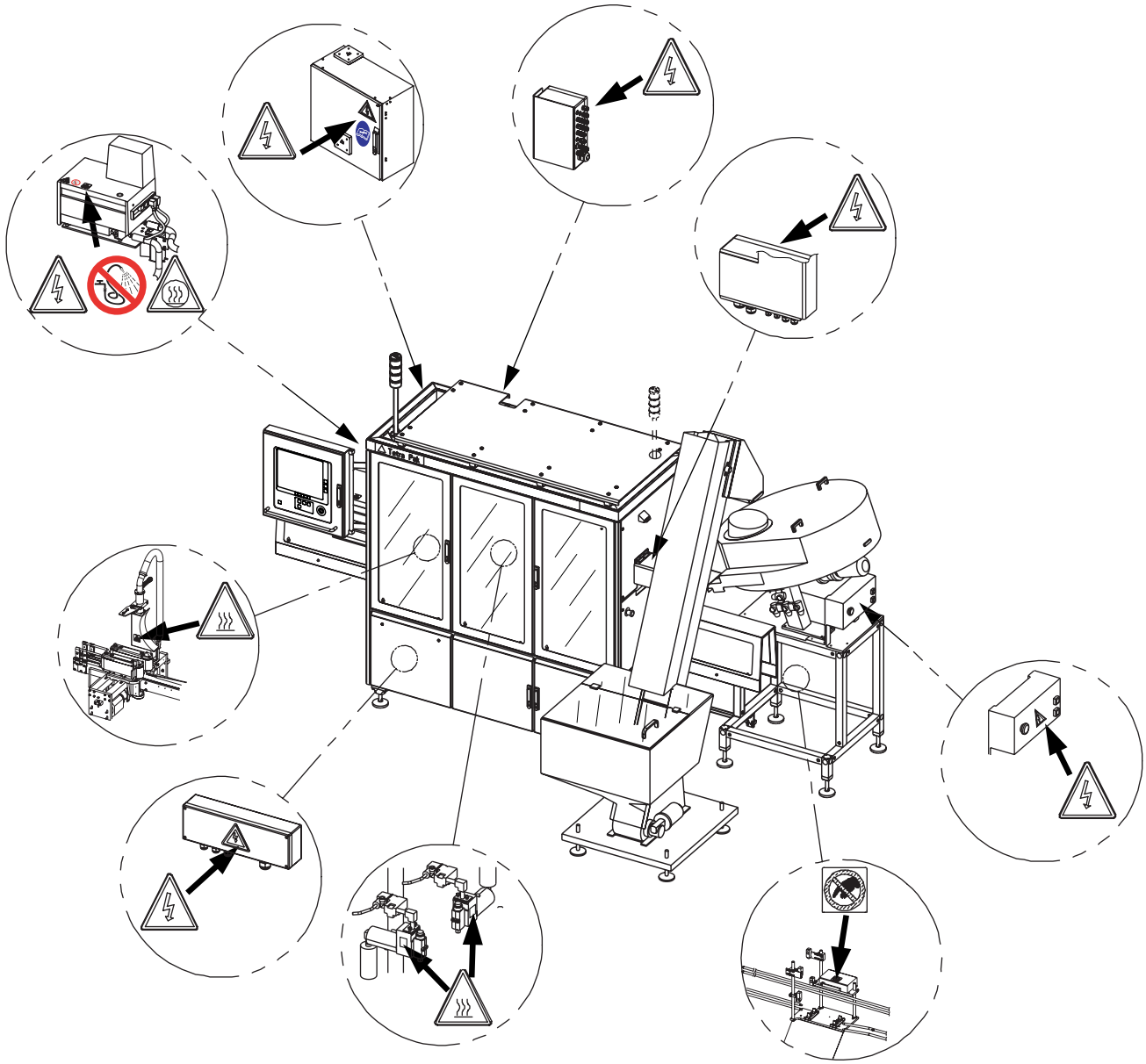
Pos.	ISO sign	ANSI sign
1	 **Blade hazard.** Do not touch	
2	 **Hazardous voltage.** Will shock, burn, or cause death. Follow lockout procedure before maintenance.	
3	 **Risk of equipment damage.** Do not let water into this area.	

Pos.	ISO sign	ANSI sign
4		
	Burn hazard. Trapped heat energy. Do not touch.	
5		
	Hot surface. Do not touch. Follow lockout procedure before maintenance.	

Locations of Safety Signs

Note! 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.

The illustration shows where the safety signs are located. The position numbers refer to the table in the Safety Signs section.



Safety Devices

WARNING
Unshielded hazards.
Never inch or run this equipment if any safety device is inoperative.

Change inoperative components of the safety system immediately.

WARNING
Hazardous Voltage.
Activating a safety device, such as pressing an EMERGENCY STOP push-button or opening a door, does not disconnect the power supply from this equipment.

Emergency Stop

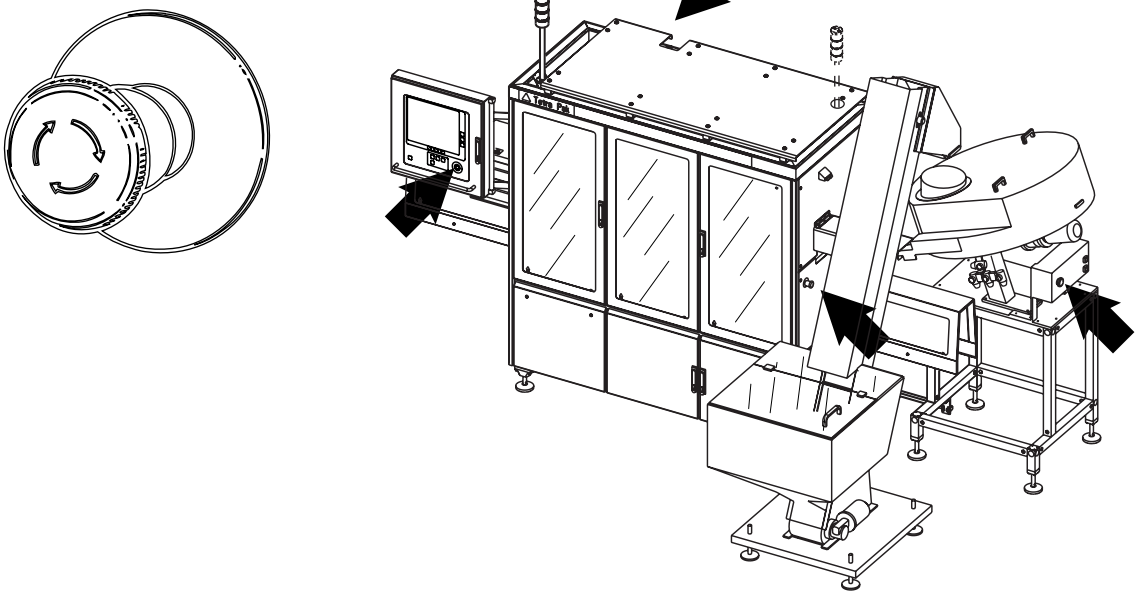
Emergency stop devices are used to stop this equipment immediately in an emergency. Learn the positions of all emergency stop devices and how to use them.

Instructions for a normal production stop are included in the Stop chapter of the Operation Manual.

Emergency Stop Push-Buttons

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

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



Safeguards

WARNING
Moving machinery.
Never defeat or bypass the interlocking devices.

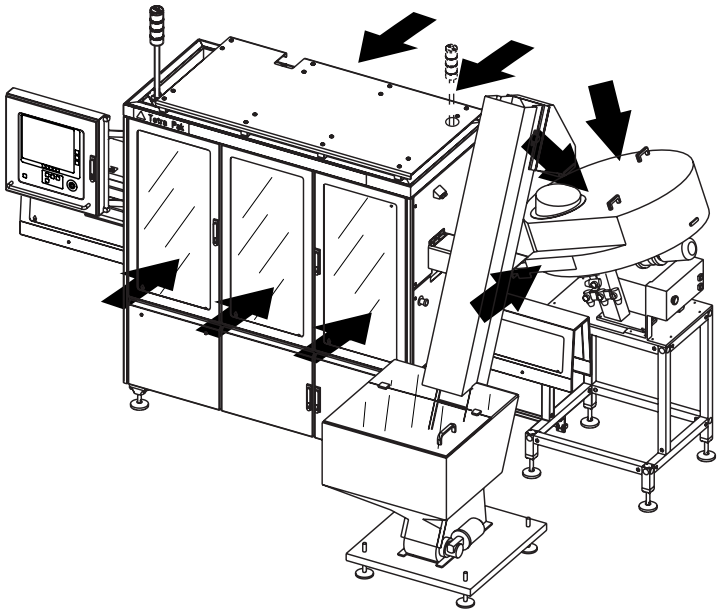
All movable guards, such as doors and covers, leading to hazardous areas are fitted with interlocking devices, usually electric safety switches. These devices are part of the safety system and must never be defeated, bypassed, or otherwise made inoperative.

CAUTION
Burn hazard.
Parts of this equipment protected by safeguards may be thermally 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.

CAUTION
Equipment damage.
Never stop this equipment by opening a movable guard.

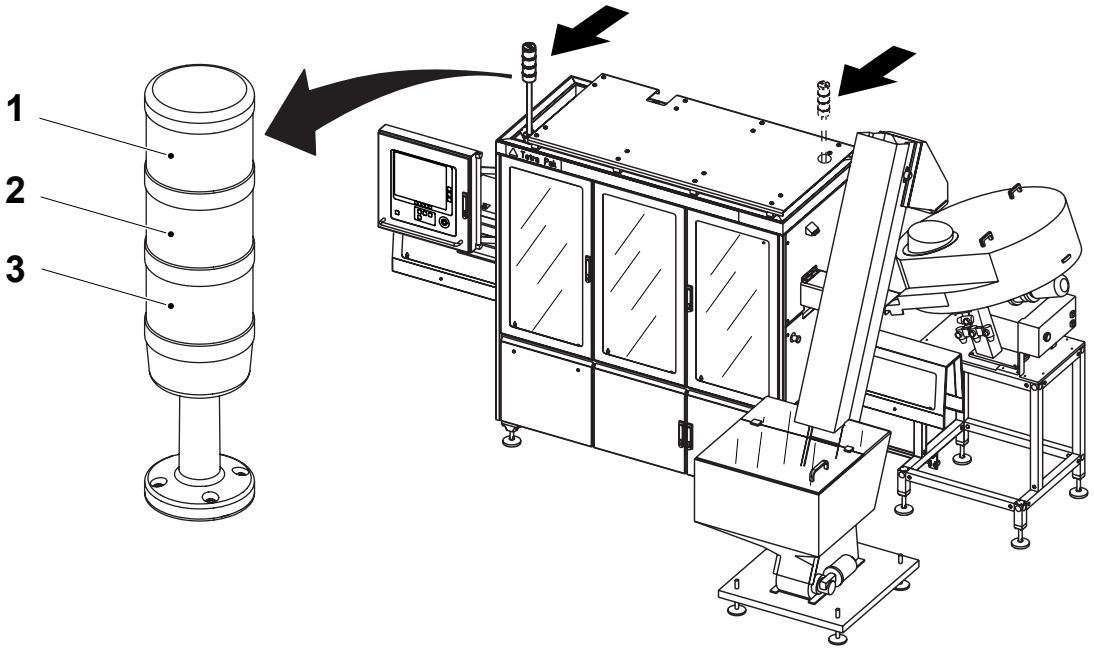
The location of each movable guard is shown by an arrow.



Warning Lamp

A warning lamp is a column of warning lights:

- A red **light** (1) indicates a hazardous condition. This is an emergency situation that requires immediate action.
- A yellow **light** (2) indicates an abnormal condition. This is an impending critical condition calling for action by the operator.
- A blue **light** (3) indicates that operator action is required.



1 Red light
2 Yellow light
3 Blue light

A warning light flashes when operator action is required. 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 goes off.

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 materials, see the Hazardous Materials section.

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 Materials

WARNING

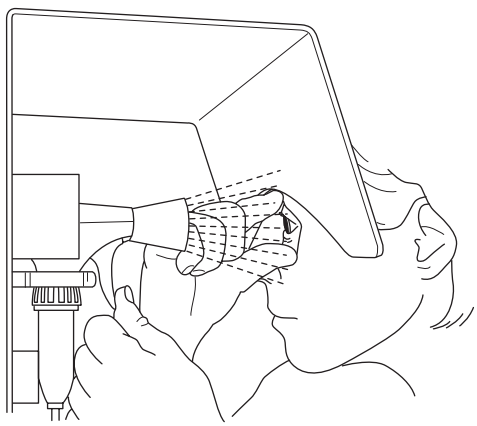
Contact with chemicals can cause death, serious injury, and illness.

Always follow the chemical manufacturer’s instructions when handling chemicals.

Make sure that:

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

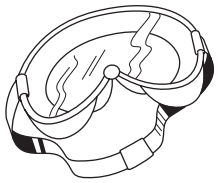
Note! Learn the locations of all washing facilities in order to act immediately in case of an accident.

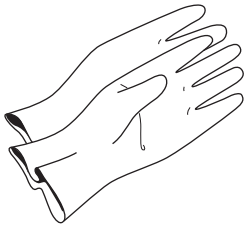


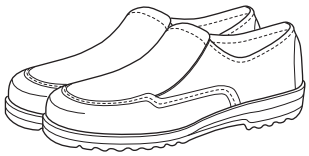
Personal Protective Equipment

Wear personal protective equipment when working with this equipment. The following equipment is required:

- safety goggles (TP No 90303-11)
- protective gloves made of neoprene (TP No.90303-12)
- shoes made of PVC, PE plastic, or rubber.







Hazardous Equipment

Hotmelt Equipment

DANGER

Risk of electrical shock.

The voltage is 400V inside the hotmelt unit. Risk of immediate danger to life from electrical shock.

WARNING

Risk of personal injury.

All service work on the hotmelt unit must be carried out by authorized personnel.

Always wear safety glasses, protective gloves, and other protective clothing to avoid injuries caused by splashing hotmelt material.

DANGER

Risk of electrical shock.

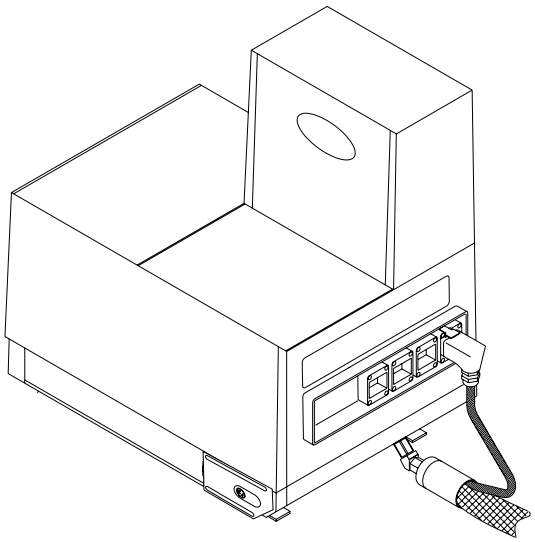
Never flush water or any other liquid towards the hotmelt unit when cleaning the machine. Failure to obey will result in danger to your life.

WARNING

Risk of burns.

During heating and production the hotmelt unit gets hot.

Do not touch the hotmelt unit and beware of the entrapped heat inside the unit when service is performed.



Hotmelt gun

DANGER

Risk of electrical shock.

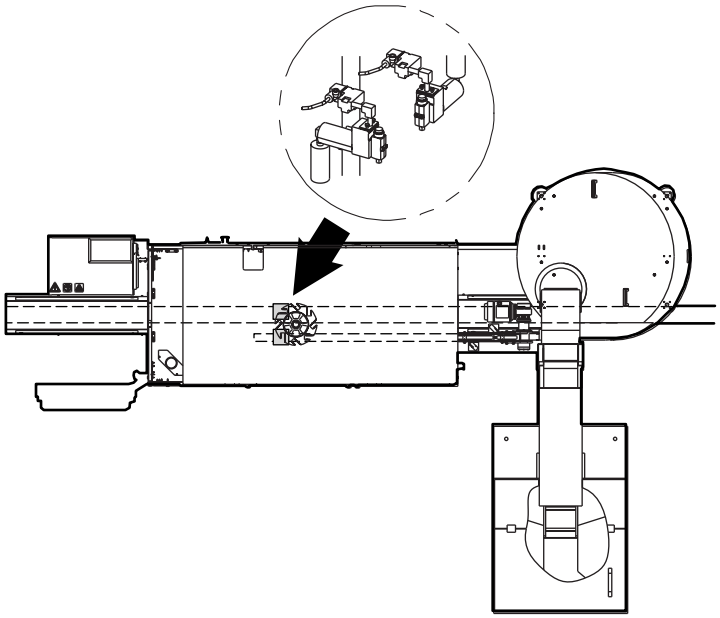
Never flush water or any other liquid towards the hotmelt gun when cleaning the machine. Failure to obey will result in danger to your life.

WARNING

Risk of burns.

During heating and production the hotmelt gun and its cover gets hot and there is risk of severe burns.

Do not touch the hotmelt gun or the cover around it and beware of the entrapped heat inside the unit when service is performed.

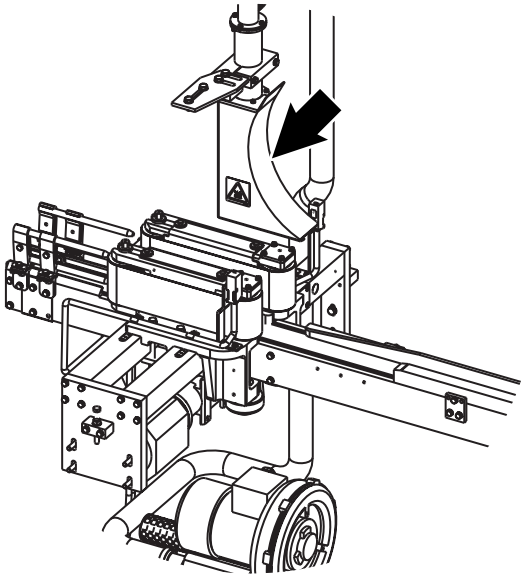


Preheating Equipment

WARNING

Risk of burns.

The preheating equipment is very hot and there is risk of severe burns. Never touch the preheating equipment.

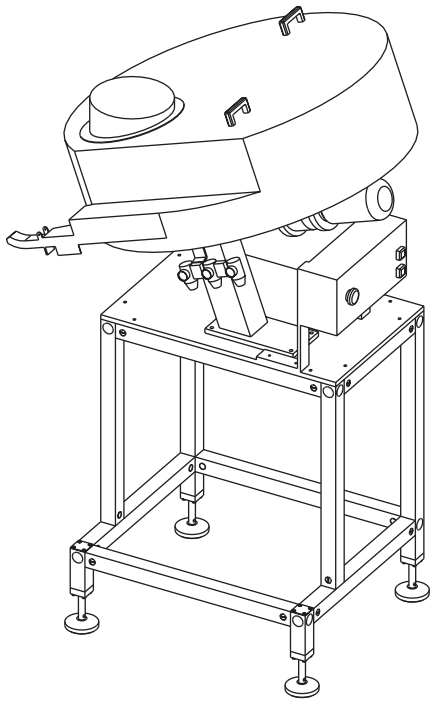


Infeeder

DANGER

Risk of electrical shock.

Never flush water or any other liquid towards the feeder panel when cleaning the machine. Failure to obey will result in danger to your life.

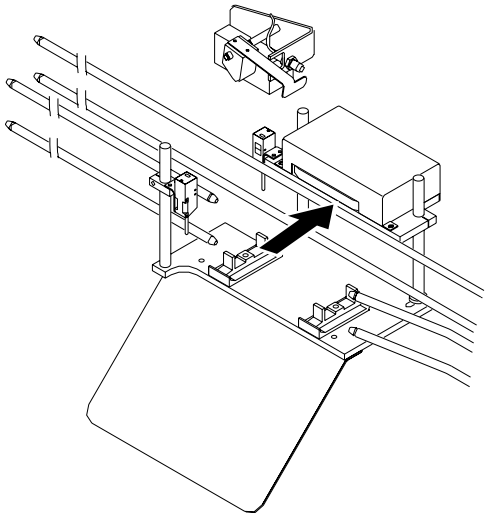


Cap Detector

CAUTION

Risk of injuries caused by movable pusher.

Never put any part of the body such as a hand at the cap detector when running the machine. Risk of injuries caused by the movable pusher.

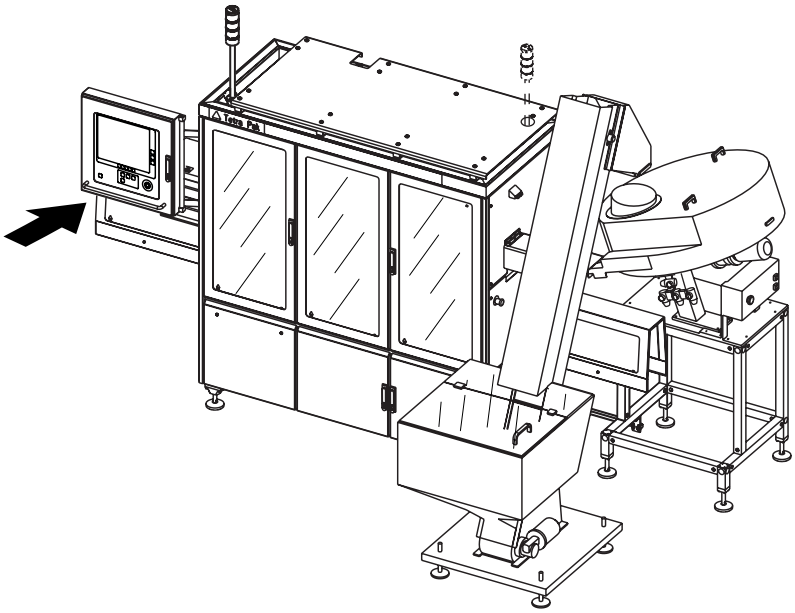


Control Panel

WARNING

Risk of personal injury.

Be aware of the control panel due to risk of personal injury caused by sharp edges of the control panel.



Supply Systems

Electrical Cabinet

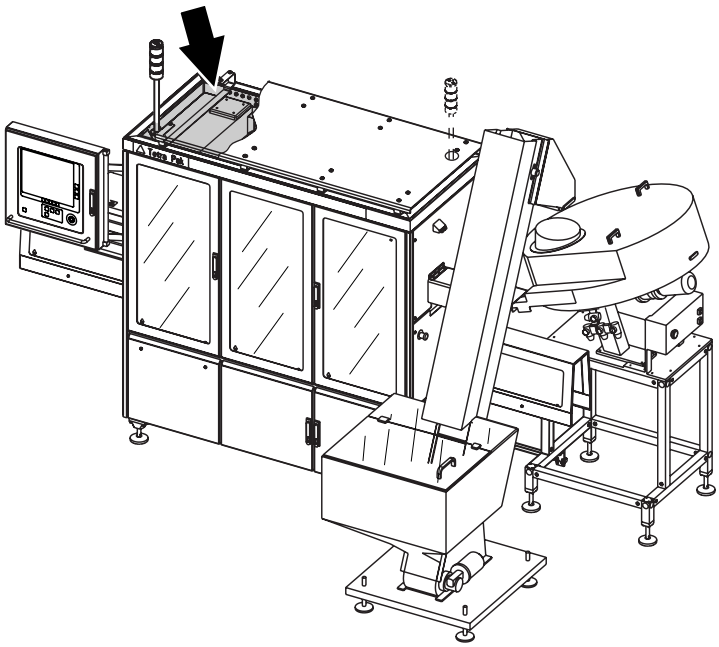
DANGER

Hazardous voltage.
Will shock, burn, or cause death.
The power supply disconnector must be switched 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.

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

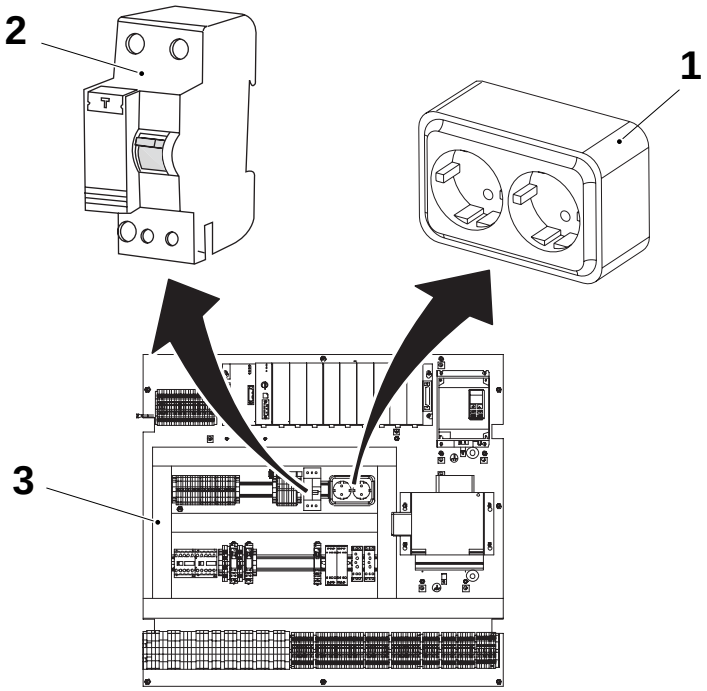
The location of each electrical cabinet is shown by an arrow.



Socket Outlet

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

The illustrations show the socket outlet (1) and the residual current device (2). Their locations in the electrical cabinet (3) are shown by arrows.



1 Socket outlet
2 Residual current device Q070
3 Electrical cabinet

Power Supply

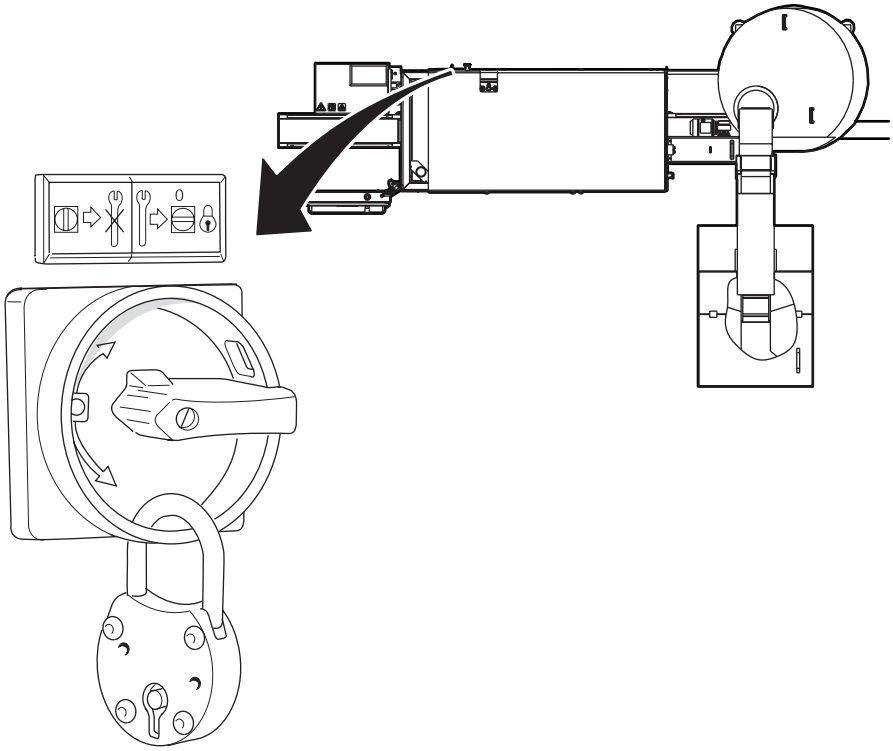
DANGER

Hazardous voltage and moving machinery.
The power supply disconnector must be switched 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.

Certain maintenance procedures may require power supply systems to be on. These exceptions are clearly stated in the Maintenance Manual.

The illustration shows the power supply disconnector. The arrow shows its location on this equipment.



Air Supply

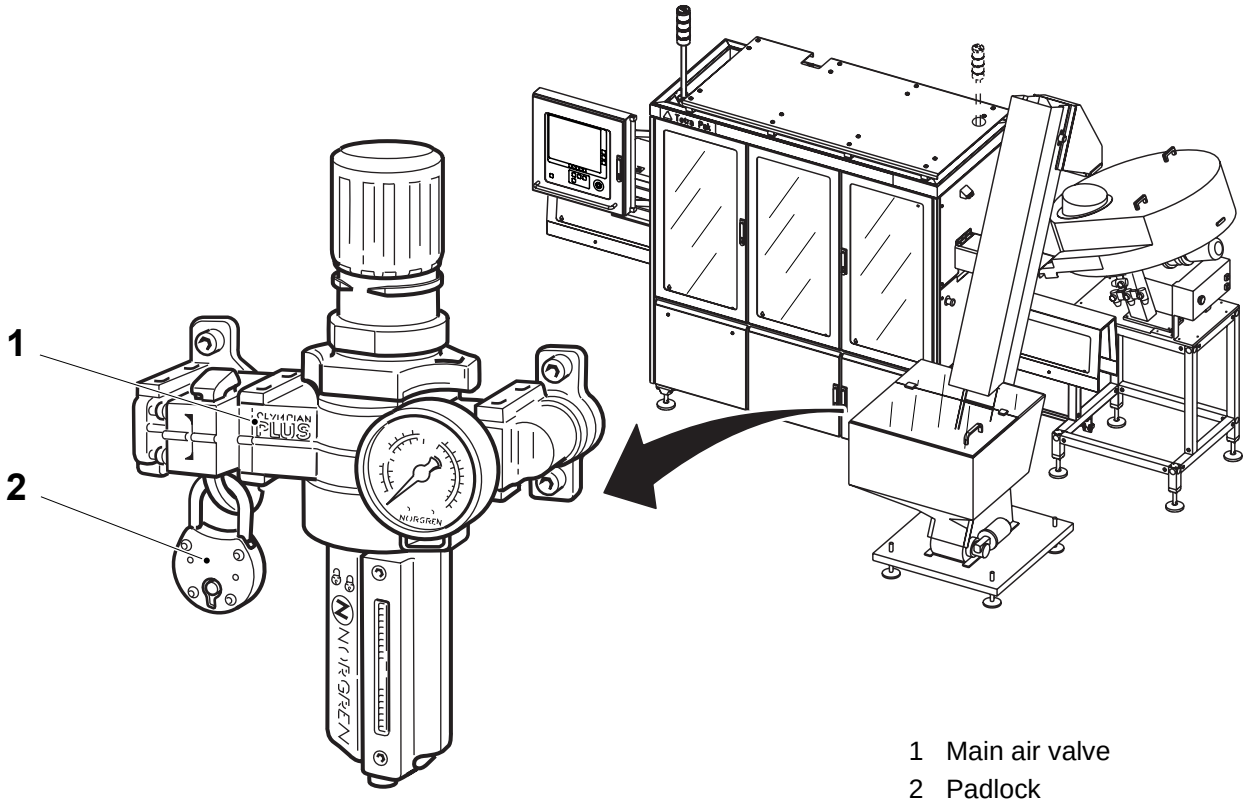
WARNING

Compressed air and moving machinery.
Close the main air valve and secure it 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.

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

The illustrations show the main air valve (1) and the lock (2). Their locations are shown by arrows.



1 Main air valve
2 Padlock

Equipment for lifting and moving loads

WARNING

Risk of crushing injury.

Make sure that the capacity of the lifting equipment is adequate and that the equipment itself is in proper working order.

If lifting tackle must be joined to make up the necessary lengths, make sure that the joints are secure and have the same lifting capacity as the rest of the lifting tackle.

Always engage safety clips fitted to lifting hooks to prevent the lifting tackle from slipping off.

Use ropes or poles to steady and manoeuvre suspended loads. Do not use hands or feet.

Make sure that the route and destination are free from obstacles before moving a suspended load. It must always be possible to quickly and safely lower the load to the floor in an emergency.

When depositing loads, keep lifting tackle in place until the stability of the load has been substantiated.

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1 Technical Data & Drawings

Technical Data and Drawings - Description

This chapter includes drawings showing overall dimensions, connection positions and dimensions, and access dimensions. Values are in millimetres unless otherwise stated. All dimensions must be respected.

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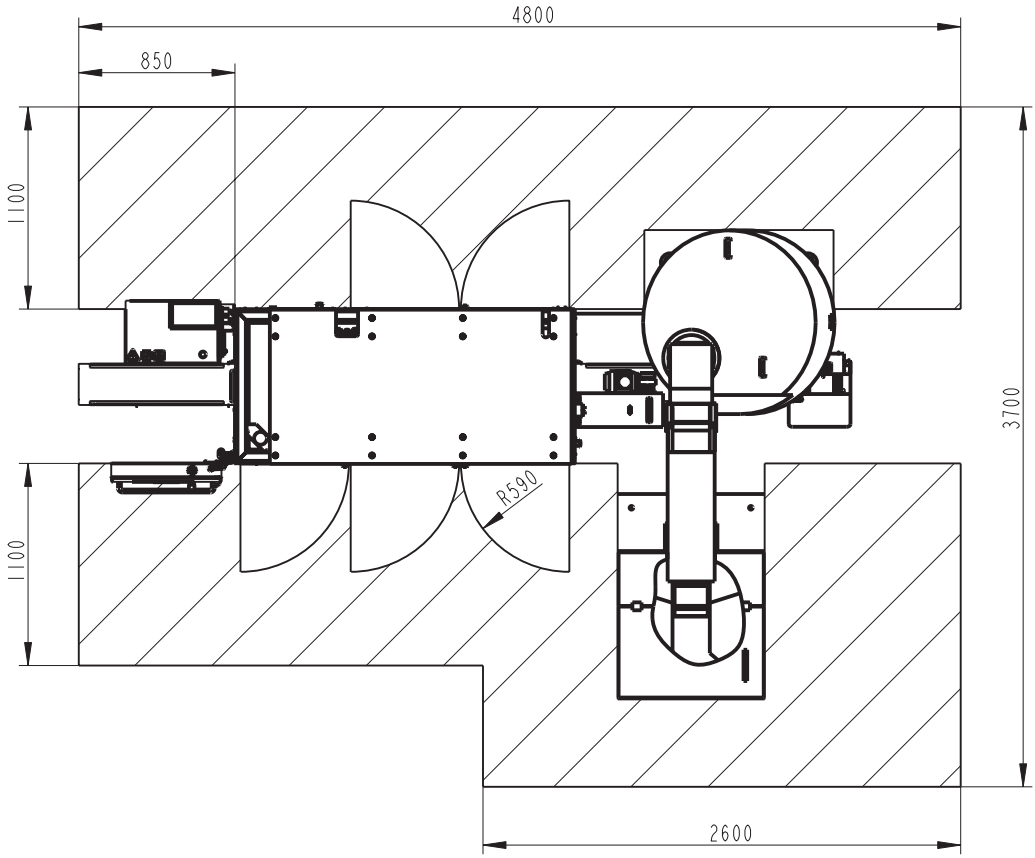
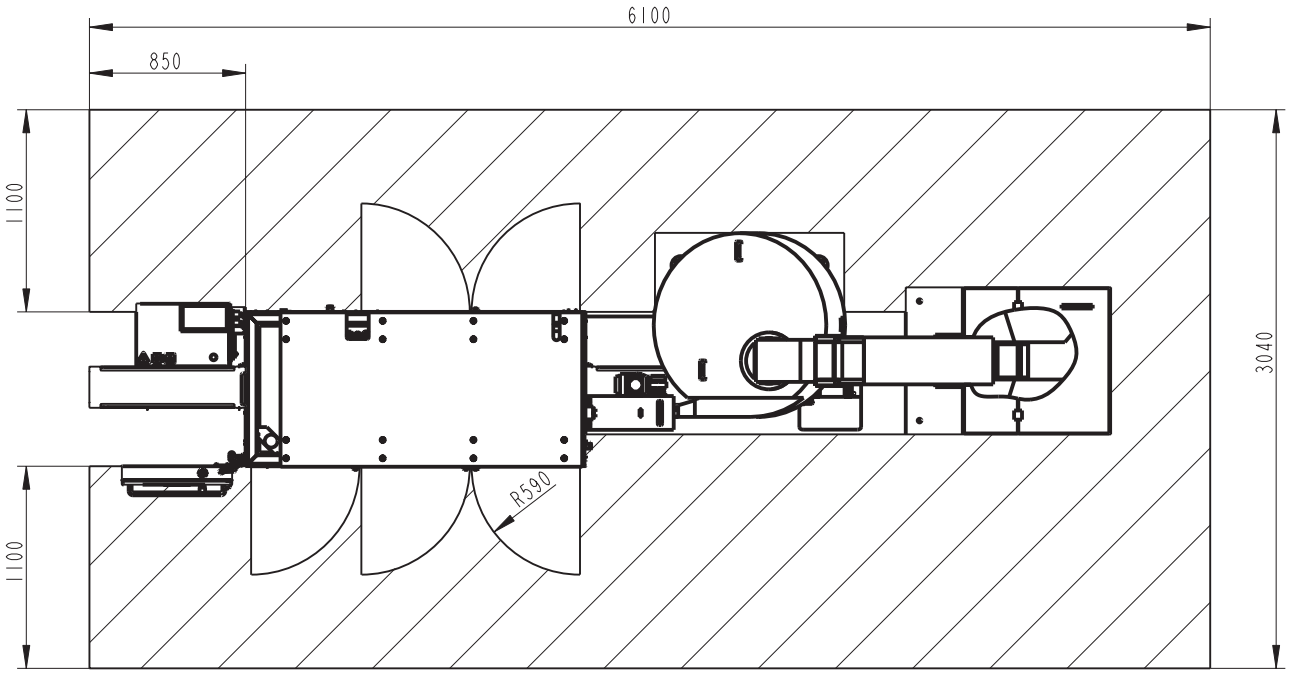
Installation Drawings

1.1.1 Working Area

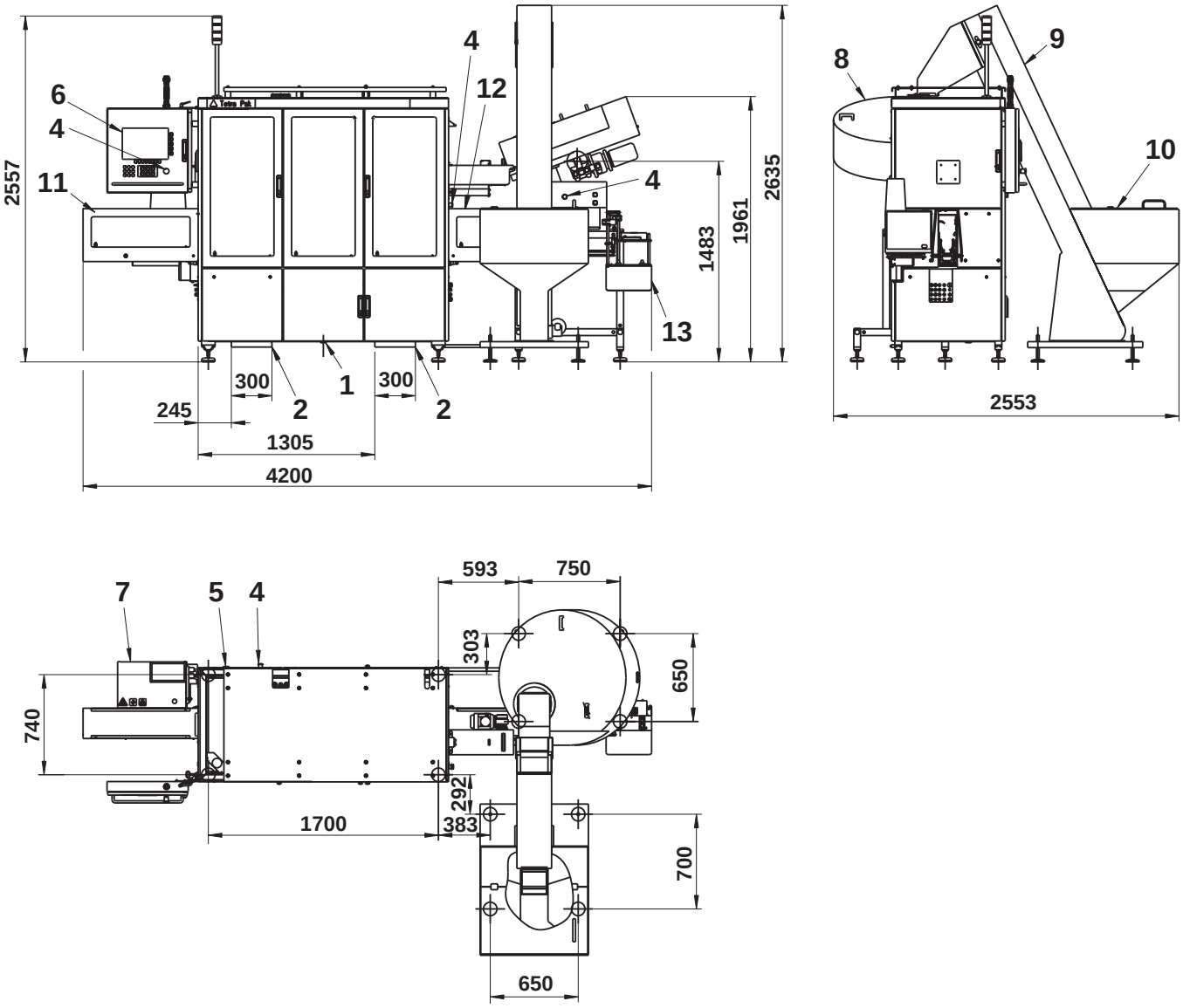
Crosswise elevator installation



Crosswise elevator installation



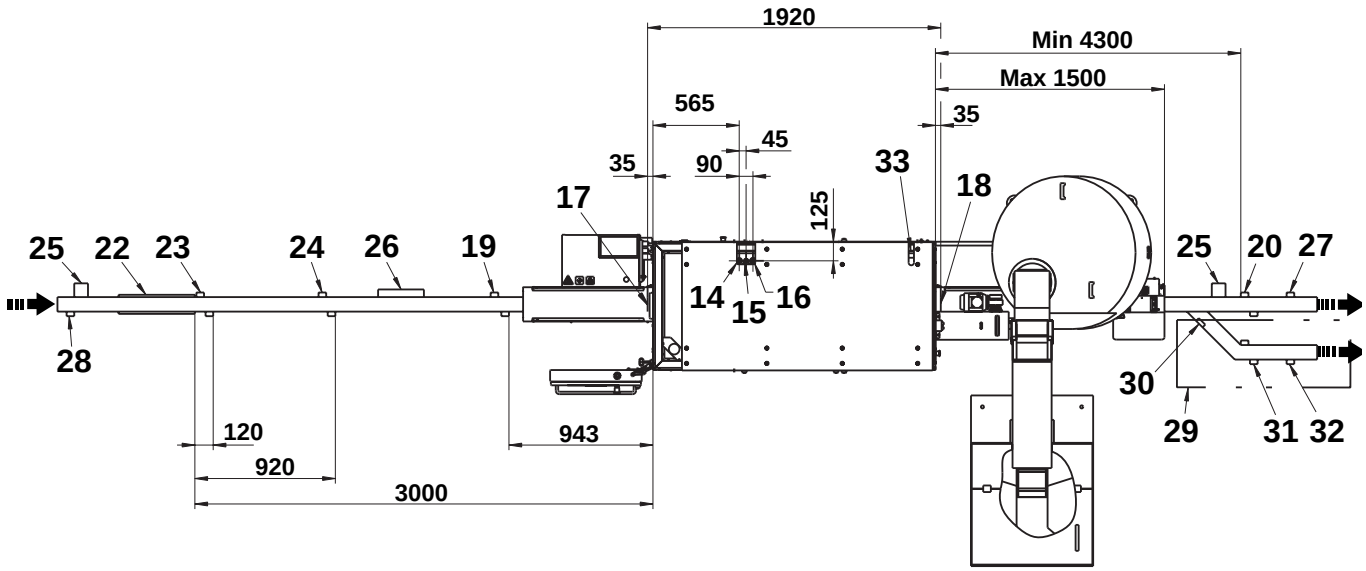
1.1.2 Drawing Crosswise Elevator Installation



1 Drain
2 Allowed lift position for fork-lift truck
4 Emergency stop
5 Main switch
6 Control panel
7 Hot melt unit
8 Infeeder
9 Elevator
10 Hopper
11 Infeed tunnel, L= 850 mm
12 Discharge tunnel, L= 850 mm
13 Cap detector

(Cont'd)

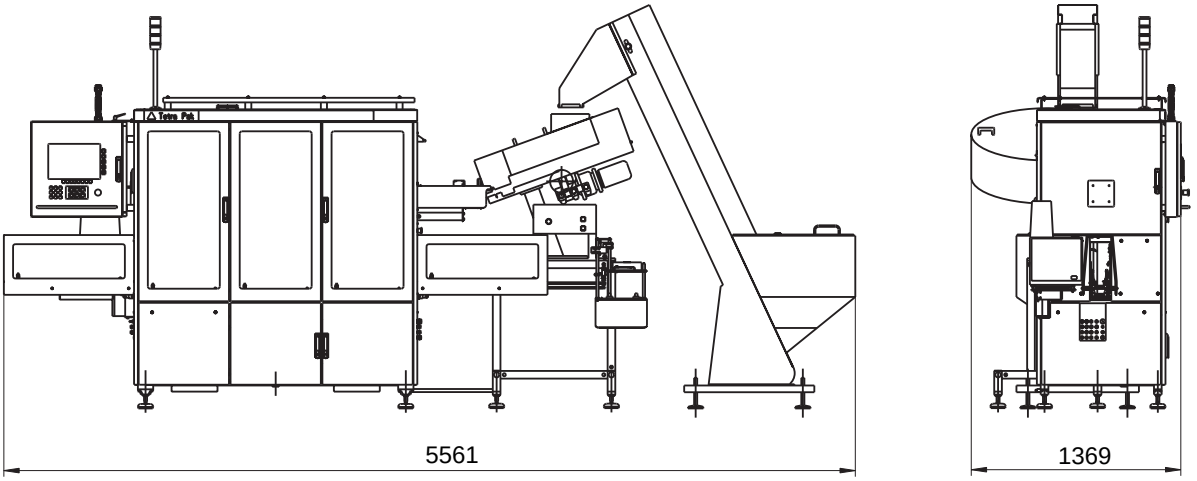
(Cont'd)

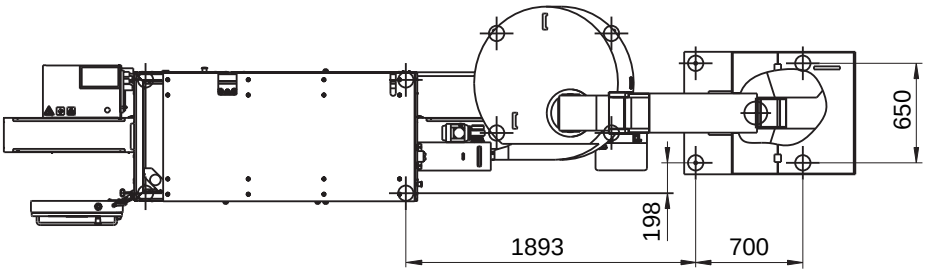


14 Air connection, height 1950mm
15 Electrical connection, height 1950mm
16 Water connection, height 1950mm
17 Connection point Infeed
18 Connection point Discharge
19 B903.1, B903.2 and B904.1, B904.2 (Lower and upper queue infeed photocells)
20 B905.1, B905.2 (Queue discharge photocells)
22 Hose brake
23 B901.1 and B901.2 (External hose brake photocells)
24 B902.1 and B902.2 (External hose brake photocells)
25 Drive and End unit
26 Package trap
27 B906 (Low speed photocell)
28 B925 (Start infeed conveyor photocell) (Option) (To be placed before Drive / End unit)
29 Discharge photocells, 2 lines (Option) (Needed when packages are distributed to more than one line) (Position 30, 31 and 32 included)
30 B918 (Gate indicator) (Option)
31 B917.1, B917.2 (Queue discharge photocells) (Option) (To be placed on next conveyor directly after Drive / End unit)
32 M918 (Low speed photocell) (Option)
33 Alternative position of Warning lamp

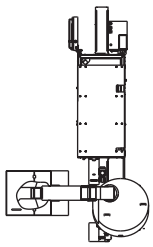
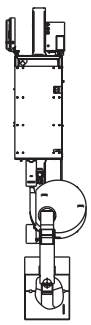
NOTE! Position 22, 23, 24, 25 and 26 are not included in the machine.

1.1.3 Drawing Lengthwise Elevator Installation





1.2 Technical Data

Documentation	
Installation drawing	**2547953**
Selections	
Volume/Cap type	**TBA 1000S SlimCap, TBA 1500s SlimCap**
Elevator installation: - Crosswise - Lengthwise	Crosswise  Lengthwise 
Communication	**Genius**
Compressed air	
Max particles size	50 µm
Max particles size	25 mg/m^3
Dew point	2°C (35,6°F)
Oil content	0,01 mg/m^3
Momentary peak consumption	
Average consumption during an 8 hour shift	**574 Nl/min**
Connection thread	**G 1/2" internal**
Required pressure	**0.63-1.0 MPa**
Electricity	
Control system	**GE Fanuc 90-30**
Power consumption	
Pre-heating/maximum power consumption Production	**2.3 kW 4.7 kW**
Phase	**3N~**
Frequency	**50/60 Hz** ± 2%
Voltage	**400/230 V +10/-15%**
Fuse dimension	**16 A**
Cable area (copper min.)	**2.5 mm^2**
Cable type	**Follow local regulations**

Conveyors

Infeed

Type (standard)	**Tetra Package Conveyor 21**
Type of **chain**	**TP No. 542586-201**
Width	R79
Infeed height (Top of Chain)	**825 ± 50 mm**
Speed	**21 m/min**
Infeed side	Rear
Throughgoing chain design	**Yes**
Required chain length	**12.3 m**
Maximum chain **length** that can be pulled (equivalent to straight conveyor)	**10 m**
Drive unit driven from the machine	**No**
External drive units driven from the machine	1
Drive unit controlled from the machine	**Yes**
Chain tensioner required	**Yes**
Conveyor chain lubricant	**Dicolube TP**

Production material

One-way material

Type of hotmelt	National 134135b
Hotmelt consumption	**200 g/1000 cap**s

Miscellaneous

Maximum nominal capacity	**7000 packages/hour+20% during a shorter period**
PLMS-version (SNP only)	5.0
PLMS cable (SNP only)	**TP No. 90220-0091**
PLMS cable (Genius only)	**TP No. 90220-0091**
Genius Bus Module only	**TP No. 90031-0031**
Line control (I/O)	Yes
Line control cable (SNP only)	**TP No. 351150-0405**
Machine has air supply, power supply & control for hose brake	Yes
Machine has control function for conveyor lubrication solenoid valve	No
Noise emission	76 **dB(A)** **(Equivalent sound pressure level according to ISO 11201)**
Thermal load (heat emission)	**10 kW**
Attachment of the machine to the floor	**No**

Scope of delivery

Optional equipment

Start infeed conveyor photocells. Discharge photocells 2 lines.

Included in delivery

Cap detector

NOT included in delivery, according to the Installation drawing (Parts are sold by TP GTS AB)

Consumables

Shipping data

Machine weight Box 1 (Applicator unit) Box 2 (Paddle elevator and Infeeder))	**1200 kg** 300 kg
Number of boxes	**2**
Shipping weight Box 1 (Applicator unit) Box 2 (Paddle elevator and Infeeder))	**1550 kg** 525 kg
Shipping volume Box 1 (Applicator unit) Box 2 (Paddle elevator and Infeeder))	**3400x1140x2250** 2930x1130x1900 L x W x H

Order

The Technical Order Specification has to be filled in.

1.3 Additional Information

1.3.1 Distribution Units

Miscellaneous

Tetra Pak recommend to use 2-3 hose brakes evenly spaced before the Tetra Cap Applicator 47. This number of hose brakes are required to cut down the length of package queue that can form. If any queue is over 2 m, packages may be deformed.

Distance Queue Discharge Photocell

The queue discharge photocell shall be placed after the drive and end station See section 1.1.2 Drawing Crosswise Elevator Installation.

Conveyor

The conveyor through the machine, must be driven by a drive and an end unit. The **power supplied and controlled** from the machine in order to fulfil the safety regulations.

Conveyor lubrication must be used, see below.

Conveyor parts through the machine are included.

The machine must always be connected to at least 1 m uncut conveyor at the infeed due to the mounting of an infeed tunnel.

A curve can be placed directly in front of the infeed tunnel.

Conveyor Lubrication

DICOLUBE KB (TP. No. 90459-0822)

This lubricant is for all types of packages and conveyors **except** the following; TB/TBA 200 S, TB/TBA 250 S, TBA 1000 Sq,
all TPA packages, all Tetra Top packages, all Tetra Rex packages and all packages printed with water soluble colours.

(Cont'd)

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General Settings

Note! These are the general settings recommended for TP production lines.

KB (VL32 DiverseyLever Denomination)

- Lubricant/water Ratio 1:300
- Time: 12-15 sec. ON, 40-50 sec. OFF.
  Valid for 6 m conveyor 21 m/min. If longer conveyor, longer ON time.
- The optimum value for friction is 0,14 - 0,18 depending on which package type and the conveyor speed. Friction calculation = push force on one package/weight on the package (in unit kilogram).
  To measure push force, place one package on a straight piece of conveyor, start the conveyor and measure the push force with a dynamo meter or equivalent tool (in unit kilogram).
- Use minimum 2 lubrication points/valve with TP 30 and 6 lubrication points/valve with TP 85.
- One lubrication nozzle for each Drive & End unit.
  Type of nozzle:
  Green, flow 0.05 l/min. Part 534270-101
  Yellow, flow 0.08 l/min. Part 534270-102
  Blue, flow 0.11 l/min. Part 534270-103

TP (VL 6 DiverseyLever Denomination)

- Lubricant/water Ratio 1:250
- Time: 9-14 sec. ON, 70-75 sec. OFF.
  Valid for 6 m conveyor 21 m/min. If longer conveyor, longer ON time.
- The optimum value for friction is 0,10 - 0,15 depending on which package type and the conveyor speed. Friction calculation = push force on one package/weight on the package (in unit kilogram).
  To measure push force, place one package on a straight piece of conveyor, start the conveyor and measure the push force with a dynamo meter or equivalent tool (in unit kilogram).
- Use minimum 2 lubrication points/valve with TP 30 and 6 lubrication points/valve with TP 85.
- One lubrication nozzle for each Drive & End unit.
  Type of nozzle:
  Green, flow 0.05 l/min. Part 534270-101

Note! Conveyor lubricants can be ordered from Tetra Pak Global Technical Support AB Ruben Rausings gata SE-22186 Lund or directly from the Diversey companies.

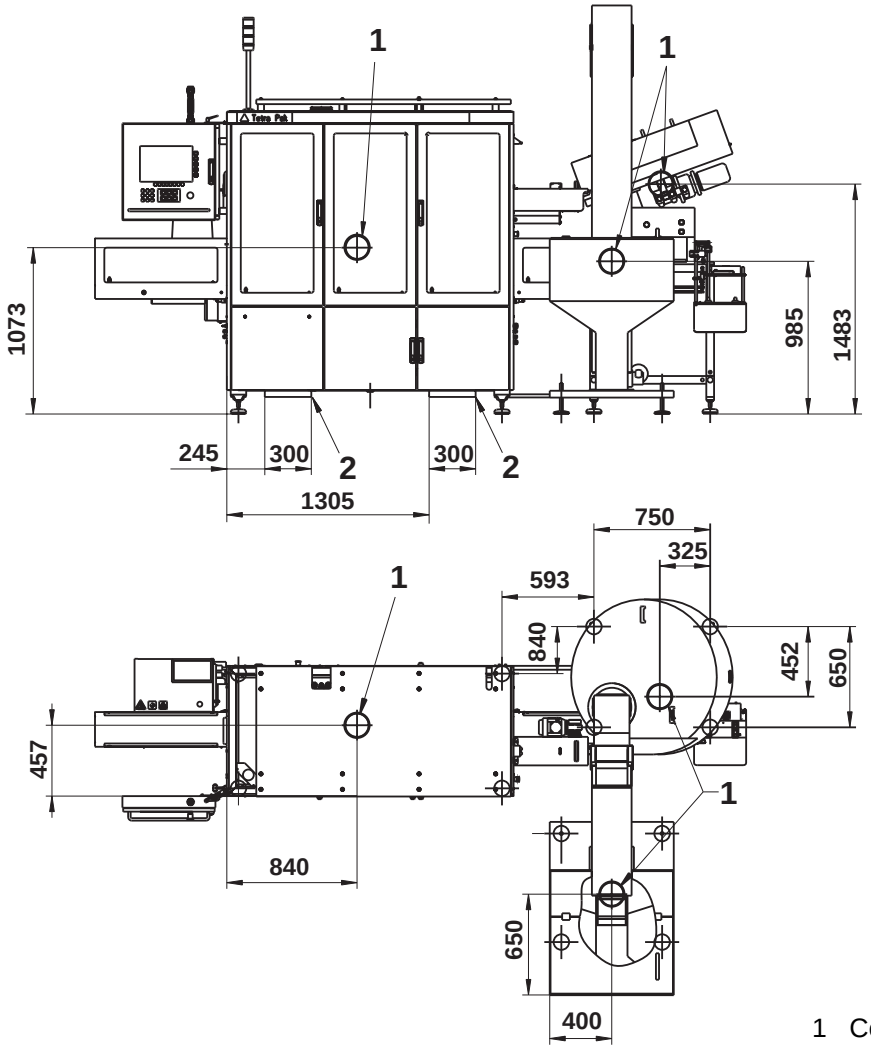
1.4 Centre of Gravity

1.4.1 Position of Centre of Gravity

WARNING

Risk of serious personal injury.

The machine can be overturned if not observing the centre of gravity points (1). Always use the recommended lift positions for fork-lift truck (2) to avoid personnel injury and/or major damage to equipment.



1 Centre of gravity
2 Lift position for fork-lift truck

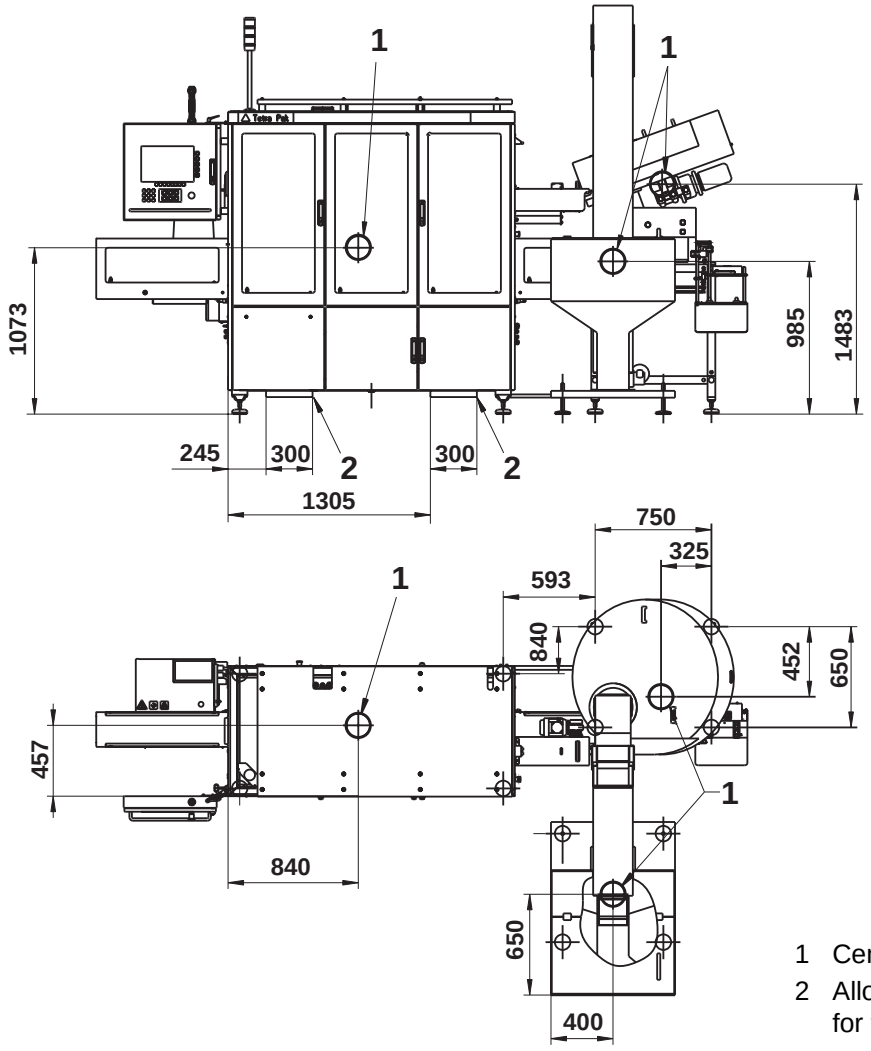
1.4.2 Fork Lift Position

Instruction for Moving the Machine with Fork-lift Truck
Place the forks according to the drawing below.

WARNING
Risk of serious personal injury.
The machine can be overturned if not observing the centre of gravity points (1). Always use the recommended lift positions for fork-lift truck (2) to avoid personnel injury and/or major damage to equipment.

CAUTION
Risk of equipment damage.
Beware not to hit the machine feet with the fork lift. It could result in serious frame damage on the machine.

Note! After any moving of the machine, it should be put down gently.



1 Centre of gravity
2 Allowed lift position for fork-lift truck

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2 Site Preparation

Site Preparation - Description

This chapter describes the requirements for the installation site of the equipment.

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2.1 General Requirements On Site

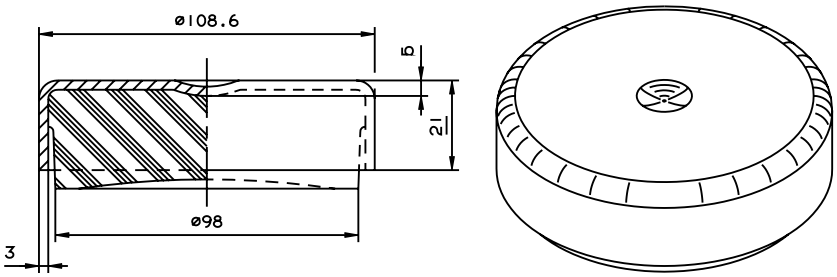
In order to obtain the best possible working condition for the machine, it is necessary to follow our recommendation of data according to section 1 Technical Data & Drawings.

2.1.1 Floor

To obtain a proper production it´s necessary that the machine is standing stable on the floor. It is important that the floor is in a good condition.

2.1.2 Damper

A damper (TP No. 90347-0080) can be used between the floor and the adjustable foot if the floor isn't is in good state condition.



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3 Positioning, Assembly & Connections

Positioning, Assembly and Connections - Description

This chapter describes the unpacking and installation of this equipment.

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3.1 Space Requirements

The space requirements for this machine are given in the installation drawings according to section 1 Technical Data & Drawings.

3.2 Positioning

Check that the machine can be transported to the final site without any problems with the ceiling height, doors, passages, etc.

DANGER

Immediate danger to life.

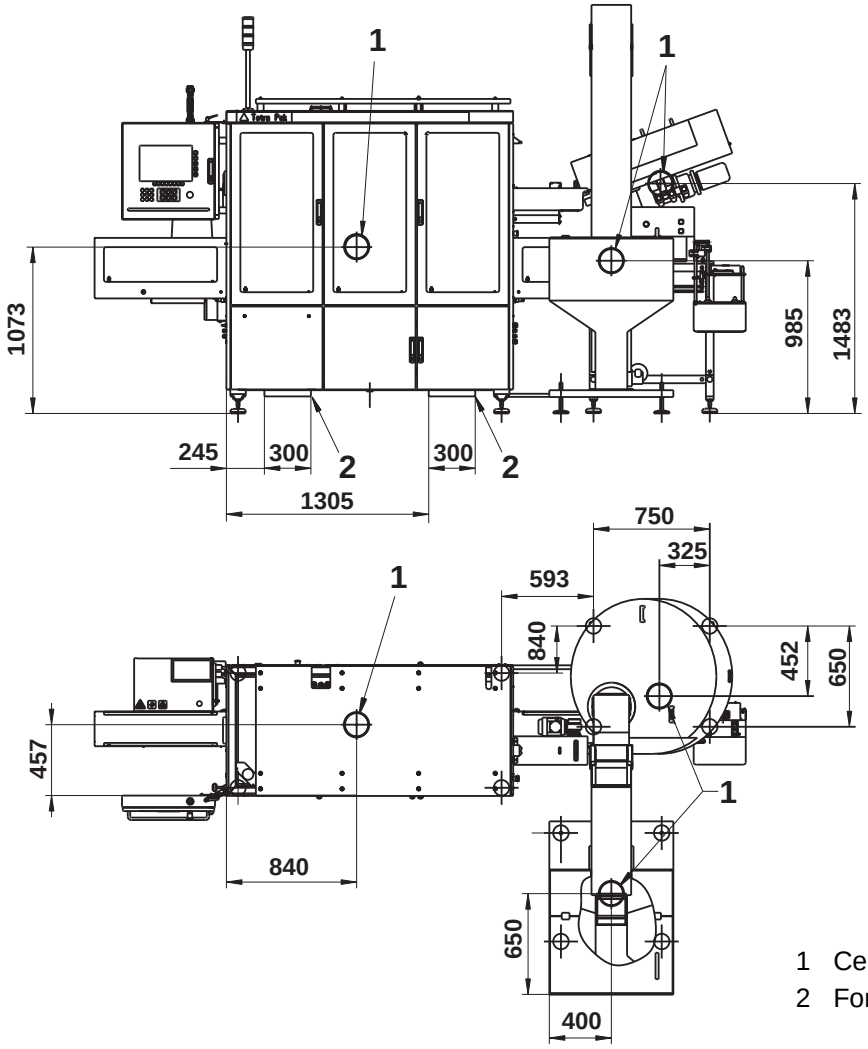
The machine may tilt if not observing the centre of gravity (1) or the fork lift points (2). Failure to observe will result in immediate danger to life and/or major damage to equipment.

Prior to moving the machine into final position, make sure that the machine can be lifted and moved, 1.2 Technical Data.

DANGER

Incorrect use of the equipment will put your life in danger.

Failure to observe information, written and illustrated, according to section 1.2 Technical Data, will cause injury or death. It can also result in damage to or destruction of equipment



1 Centre of gravity
2 Fork lift position

3.3 Levelling

To obtain proper production it‘s necessary to check that the machine is in level before production. Check the level on a cross beam and a longitudinal beam in the machine. Use a spirit level to check the level. If necessary adjust the level by turning the adjustable foot plate.

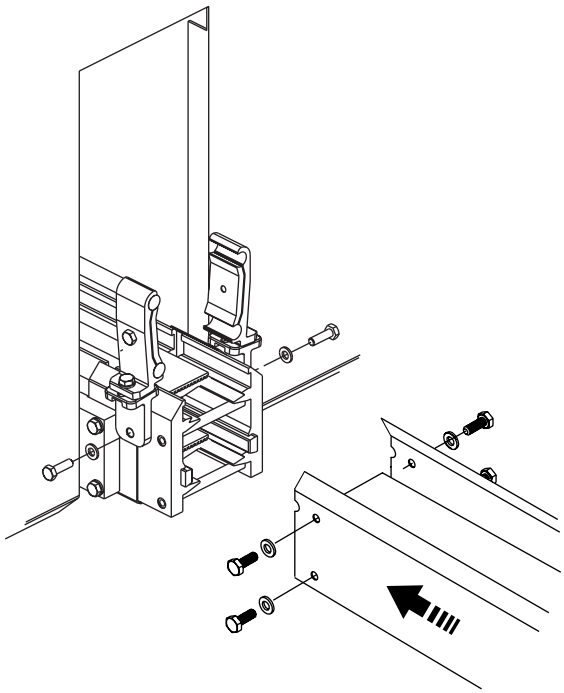
3.4 Assembly

To make the assembly smooth and safe it is necessary to assemble according to our recommendation.

3.4.1 Conveyor

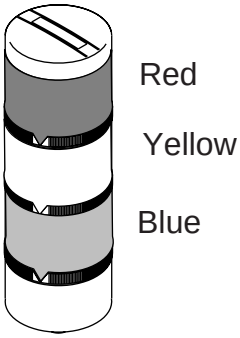
Drive motor for the conveyor chain is not part of the machine.
To obtain the **security demands** the chain drive motor must be power supplied and controlled according to the Electrical manual, (EM).

Conveyor lubrication has to be used.
Connect the conveyors as illustrated.



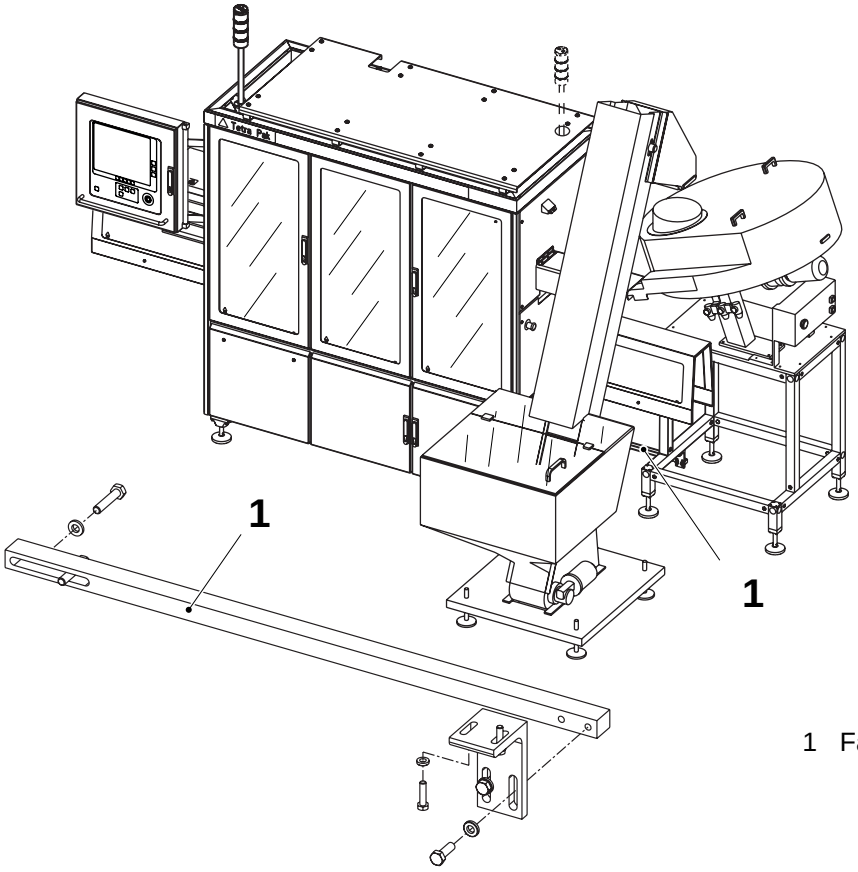
3.4.2 Warning Lamp

Mount the warning lamp.



3.4.3 Mechanical Feeder

The mechanical feeder shall be secured to the Tetra Cap Applicator 47 by means of the fastener (1). Assemble the fastener according to the Maintenance Manual (MM).



1 Fastener

3.5 Connections

3.5.1 Electricity

The electrical connection should be done according to the Electrical Manual (EM). See 7.0 Main connection diagrams. Use the cable lead in (1).

DANGER

Risk of electrical shock.

The voltage is 400V inside the electrical cabinet. Will cause electrical shock or serious injury. In case of accident, immediately call for medical attention.

CAUTION

Risk of damage to equipment.

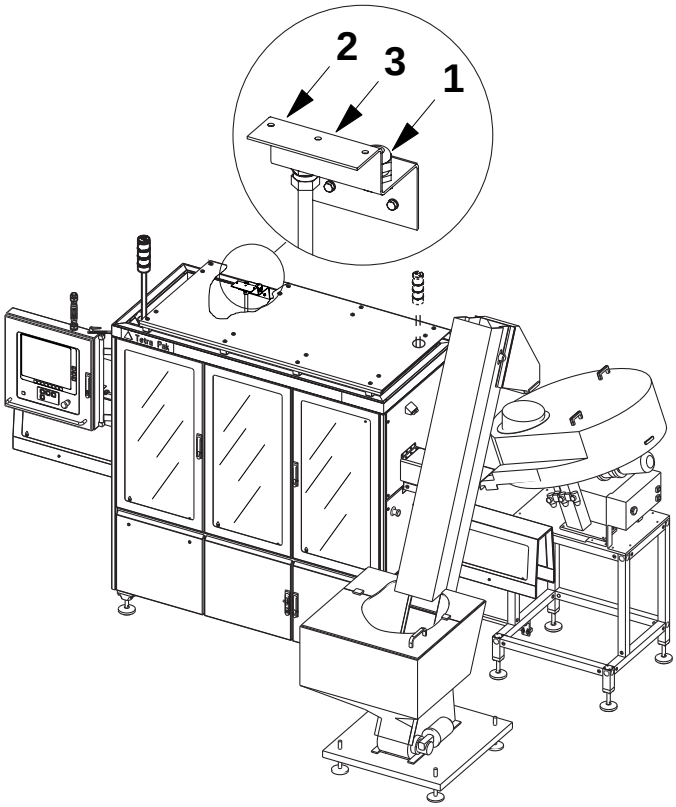
Failure to observe this information could result in damage to equipment.

3.5.2 Compressed Air

Connect the compressed air (2) where illustrated.

3.5.3 Water

Connect the water (3) where illustrated.



1 Cable lead-in
2 Compressed air connection
3 Water connection

3.6 Setting of External Equipment

To make the machine work optimal in production the external equipment must be set according to our recommendation.

External equipment	Recommended clearance to the machine Min / Max mm	Recommended clearance from the machine Min / Max mm
Infeed photocell Queue discharge photocell External hose brake	Read section 1 Technical Data & Drawings.	Read section 1 Technical Data & Drawings.
Package traps	Min. 1000	Min. 1000
Curves	Min. 1000	Min. 1000
Cap detector		Read section 1 Technical Data & Drawings.

3.6.1 Queue Discharge Photocell

Mount the queue discharge photocell according to section
This chapter includes drawings showing overall dimensions, connection positions and dimensions, and access dimensions. Values are in millimetres unless otherwise stated. All dimensions must be respected.1.1 Installation Drawings.

3.6.2 Conveyor Chain

Mount the conveyor chain through the machine.

WARNING
Moving parts could cause serious injuries.
The conveyor drive unit must be power supplied and controlled from the machine.
Connected in any other way the conveyor could cause serious injuries to personnel.

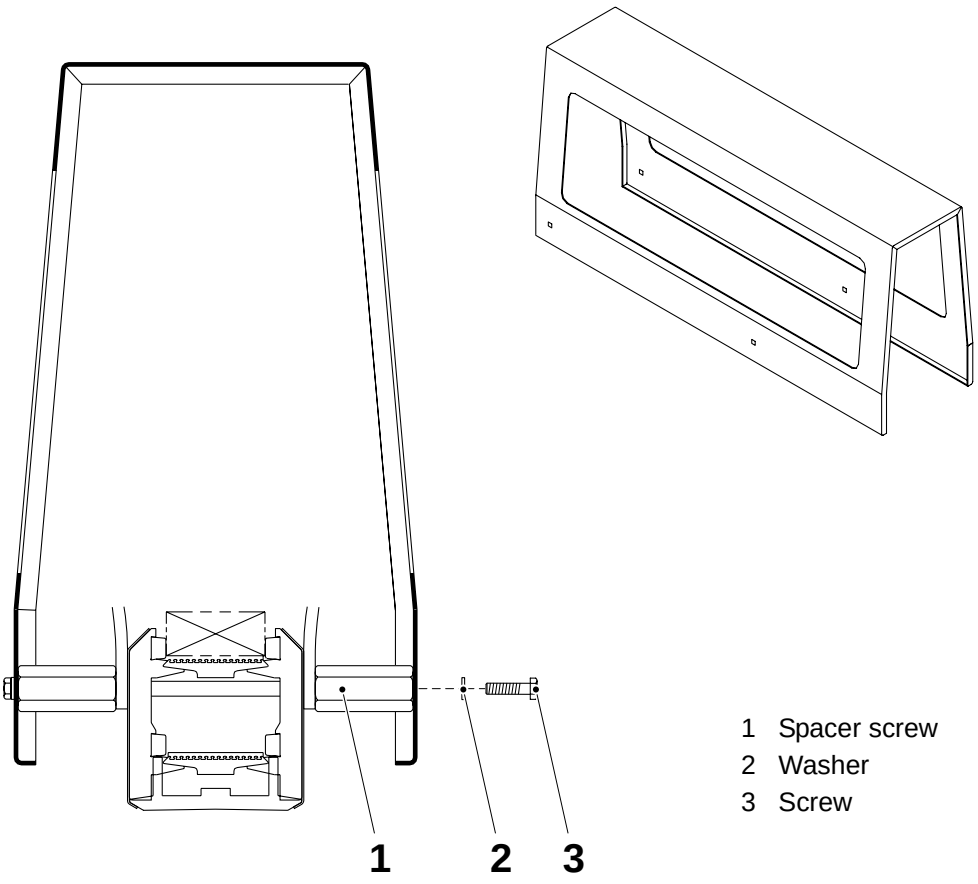
3.6.3 Infeed and Discharge Tunnel

WARNING

Risk of personal injury.

To avoid personnel injuries the infeed and discharge tunnel must be fitted on the machine before start.

Mount the tunnel on the conveyor with the spacer screw (1), the washer (2) and the screw (3) on both sides and in both ends of the tunnel.



1 Spacer screw
2 Washer
3 Screw

3.6.4 Cap Detector

To position the cap detector (1) do the following.

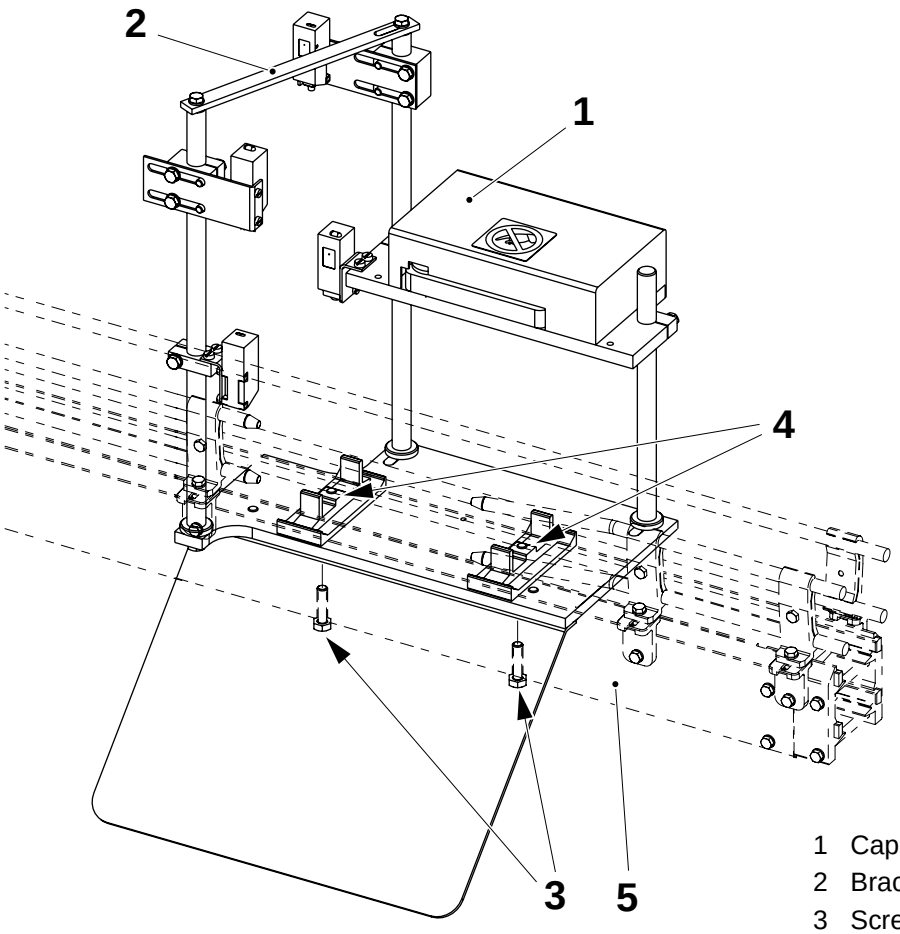
a) Remove the bracket (2) and the screws (3) to the brackets (4).

b) Place the brackets (4) under the conveyor (5) on the right position according to section This chapter includes drawings showing overall dimensions, connection positions and dimensions, and access dimensions. Values are in millimetres unless otherwise stated. All dimensions must be respected.1.1 Installation Drawings.

c) Fit the cap detector (1) by placing it from below. Lock the position with the screws (3) and mount the bracket (2).

Connect and set the cap detector according to the Maintenance Manual (MM) and the Electrical Manual (EM).

Note! Change the position for the queue guard. See section This chapter includes drawings showing overall dimensions, connection positions and dimensions, and access dimensions. Values are in millimetres unless otherwise stated. All dimensions must be respected.1.1 Installation Drawings.



1 Cap detector
2 Bracket
3 Screw
4 Bracket
5 Conveyor

3.6.5 Line Communication Connection (Genius Bus Module)

Follow the Circuit Diagram 2543127-3, see the Electrical Manual (EM), Chapter 4 Circuit Diagrams, to connect the incoming communication cable for the Genius Bus module in the Electrical Cabinet. The outgoing cable is connected to the Genius Bus module and should be connected to the next machine in the line

4 Final Installation Checks

Installation Checks - Description

This chapter describes the checks to be made after the installation has been completed and prior to the start of the commissioning of this equipment.

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4.1 Checklist

Note! Some steps will require only mechanical checks, others will require running tests.

Follow these steps to complete the installation check:

Step	Text	
1	Inspect the compressed air connection. Make sure that the connection is done correctly.	
2	Inspect the electrical connection.Make sure the connection is done correctly. **DANGER** **Risk of electrical shock.** The voltage is 400V inside the electrical cabinet. Contact with 400 V voltage may cause electrical shock or serious injury. In case of accident, immediately call for medical attention	
3	Make sure that the machine stops when an **Emergency stop** button is pushed. Test **all Emergency stop** buttons, according to section Emergency Stop in the Safety precautions. **WARNING** **Risk of serious injuries.** Never run the machine if any of the emergency stop buttons is non-operational.	
4	Make sure that the machine stops when doors fitted with safety switches are opened. This should be tested for **all** safety switches. Make sure that all covers are fitted to the machine before it is run, according to section Safeguards in the Safety precautions. **WARNING** **Risk of serious injuries.** Never run the machine if any safety switch is non-operational or any safety cover is not fitted.	
5	Make sure that all delivered equipment is assembled, according to the instruction in section 3.4 Assembly in the Position, assembly & connection chapter.	
6	Make sure that the machine is correctly connected to the infeed and outfeed conveyors.	
7	Check the directions of all machine movements.	
8	Check all pressure gauges settings according to Operation Manual (OM).	
9	Check the machine programme (function, programme steps, and alarms) as described in the Operation Manual (OM).	
10	Make sure there are no abnormal noises, vibrations, etc. when the machine is running.	
11	Make sure that the Start-up kit is delivered together with the machine.	

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5 Preparation for Commissioning

Preparation for Commissioning - Description

This chapter describes how to prepare and run the equipment for the first time.

Note! Commissioning covers only the functioning of the individual machine. A line performance test is required to check the functioning of the machine as part of a complete line. Check with the local service organisation as to what arrangements have been made for a line performance test.

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5.1 Documentation

Note! No claims will be accepted for machines in commercial production if the **Start-Up Machine Quality Report** (SUMQR) has not been returned to the manufacturer.

a) Compile the **Transport Damage Report** (a section of the SUMQR). If no damage has occurred during transport, state “NO TRANSPORT DAMAGE”.

b) Compile the **Feedback from MC** form **only in case of claims on the equipment**.
For further information about claims see the **Claim and Complaint Handling** procedure, available from the local Service Organisation.

c) Compile the **Start-Up Machine Quality Report**.
List all work, besides the installation work, performed to ensure correct functioning.

The installation work covered by this manual is now complete.

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6 Disassembly and Removal

Disassembly and Removal - Description

This chapter describes what must be done if the equipment will be placed in long or short term storage and how to permanently dispose of this equipment.

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6.1 Preparation

6.1.1 Personnel Requirements

Personnel requirements needed to disassemble and handle the machine, according to section Personnel Requirements.

6.1.2 Utility Connections

De-energize the machine, that is, shut off supplies of electricity and compressed air.

6.2 Disconnect Utilities

6.2.1 Compressed Air

Disconnect the compressed air. For more information, according to section 3.5.2 Compressed Air.

WARNING

Risk of serious personal injury.

Make sure that air supply to the machine is switched OFF before performing any disconnection work.

6.2.2 Electrical Connection

Disconnect the electricity according to the Electrical Manual (EM) chapter 7.0.

DANGER

Risk of electrical shock.

Make sure that the power is switched OFF upstream before performing any work on cables and electrical components.

6.2.3 Water

Disconnect the water. For more information, according to section 3.5.3 Water.

6.3 Disassemble Machine

WARNING

Risk of serious personal injury.

Before disassembling the machine, read the Safety precautions.
If safety precautions are not followed, there is risk of personal injury.

Disassemble the machine in the reverse order, according to section 3.4 Assembly.

6.4 Hazardous Material

6.4.1 Hotmelt Unit

WARNING

Risk of serious personal injury.

Always read the instructions in the Maintenance Manual (MM) chapter Hotmelt unit before performing any work with the hotmelt unit.

Read the Maintenance Manual (MM) chapter Hotmelt unit before performing work as:

- emptying of hotmelt tank
- cleaning of hotmelt tank
- removal fitting.

6.4.2 Hotmelt

WARNING

Risk of personal injury

Following safety instructions are copied from the Nordsons Technical manual in section 1, safety summary issue 2/91 (Doc No 104 374).

Safety when using Hotmelt adhesives and solvents

- Use extreme care when working with molten materials. The molten materials solidify rapidly at high temperatures and present a hazard. Severe burns can occur if the molten materials come in contact with the skin. Even when first solidified, they are still hot.
- Always wear protective clothing and eye protection when handling molten materials or working near equipment containing hotmelt adhesive under pressure

If molten materials comes in contact with the skin.

- **DO NOT** try to remove molten materials from the skin.
- Immediately immerse the affected area in cold, clean water. Keep the affected areas immersed until the materials has cooled.
- **DO NOT** try to remove the cooled materials from the skin.
- Cover the affected area with a clean, wet compress.
- In cases of serve burns, look for sign of shock. If shock is suspected, have patient lie down, use a blanket to preserve body heat and elevate the feet.
- Call a physician immediately.

6.5 Moving

DANGER

Immediate danger to life.

The machine may tilt if not observing the centre of gravity or the fork lift points. Failure to observe will put your life in danger.

Prior to lift and move the machine from its production site, do the following:

- Check that the machine can be transported without any problems with the ceiling height, doors, passages, etc.
- Make sure that the machine can be lifted according to section 1.2 Technical Data.

6.6 Final Disposal

Contact your Tetra Pak market company for more information about final disposal and reuse.

7 Technical Order Specification

Technical Order Specification - Description

This chapter describes the Technical Order Specification form.

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7-1 Use of the Technical Order Specification

The sheet in is supposed to be used during the first project phase. It specifies the information necessary to plan the whole product line at the customer site and guarantee a correct delivery.

7.1 Technical Order Specification

Buyers order
DE

❑ = Standard selection
❍ = Extra charge

1 CHOOSE VOLUME	
TBA 1000 S	❑
TBA 1500 S	❑

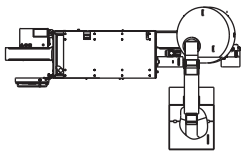
2 CHOOSE OPTION IN THE FOLLOWING CATEGORIES

Infeed type

❑ Tetra Package Conveyor 21

Crosswise elevator installation

❑



Communication

Genius

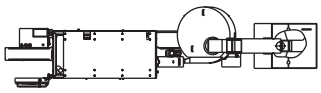
❑

Half doors

❑ Half doors
❑ No half doors

Lengthwise elevator installation

❑



3 CHOOSE THE DESIRED OPTION(S) IN THE FOLLOWING CATEGORIES

Electricity
Voltage/frequency

❑ 3/N/PE~50Hz 400/230V
❑ 3/N/PE~60Hz 400/230V

Technical documentation
Language_____

Filling
Type and capacity (p/h)_____

Optional equipment

❍ Photocell unit Start Infeed Conveyor Photocells
❍ Photocell unit Discharge Photocells 2 Lines

4 OTHER

Other information to Sales Administration

_____
_____
_____
_____
_____

Date and issuer

_____
_____
_____
_____
_____

Tetra Pak

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