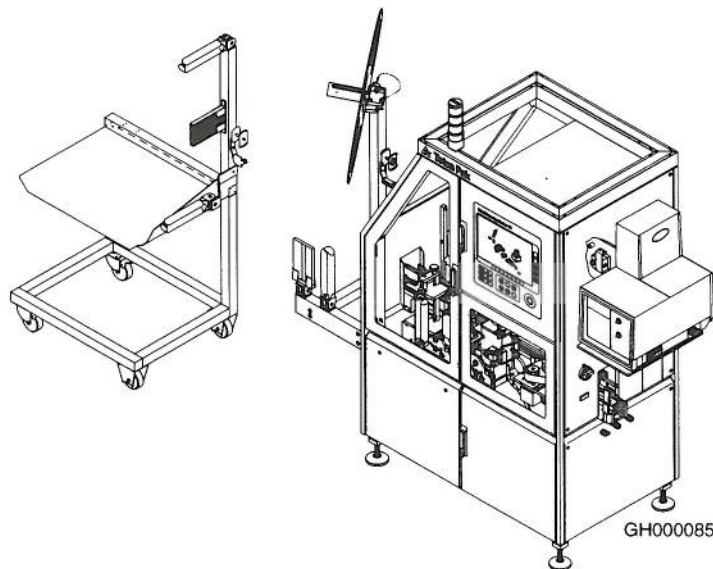


IM

Installation Manual

Tetra Applicator 46

678547-040V



IM1.158532301.1fo

 **Tetra Pak**

Doc No. IM-585323-01

This document is valid for:

--

Series No/ Machine No

Sign.

Tetra Applicator 46
678547-040V

IM1_158532301.fro

Issue 9611

Doc No. IM-585323-01

Tetra Pak
Tetra Pak Distribution AB

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1 Introduction

1.1 General



WARNING!

Risk of personal injury!

To ensure maximum safety, always read the Safety precautions before doing any work on the machine or making any adjustments.

1.2 Document information

1.2.1 About this Installation Manual

The purpose of this Installation Manual (IM) is to provide the installation technicians with information on the on-site installation process.

1.2.2 Delivered documentation

The technical documentation delivered with this machine is stated in the Machine Specification.

Note! If any document is missing, it must be reported in the document **Start Up Machine Quality Report**. For more information, see chapter 8 Preparation for Commissioning in the Installation Manual.

It is important that you keep these documents for the life of the equipment, and pass the documents on to any subsequent holder or user of the equipment.

1.2.3 Design modifications

The directives in this document are in accordance with the design and construction of the machine at the time it was released by a Tetra Pak machine production facility.

1.2.4 Document producer

This document has been produced by:

Tetra Pak Distribution AB
Ruben Rausings gata
221 86 Lund
Sweden

(Cont'd)

(Cont'd)

1.2.5 Additional copies

Additional copies can be ordered from nearest Tetra Pak service station.

When ordering technical publications, always quote the **document number** printed on the front cover of the document concerned.

1.2.6 Number of pages

This document contains a total of 58 pages.

All chapters have a front page to indicate the chapters beginning, followed by a table of contents (always the second page). To make sure that you have received a complete document, please check that the contents matches the table of contents for each chapter.

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1.3 Machine introduction

1.3.1 Intended use of this Tetra Pak equipment

The Tetra Applicator 46 attaches drinking straws or other equipment, such as a UniCap, onto Tetra Pak packages.

1.3.2 Service

In case of problems when operating the machine, contact the nearest Tetra Pak service station.

1.3.3 Manufacturer

This Tetra Pak equipment was produced by:

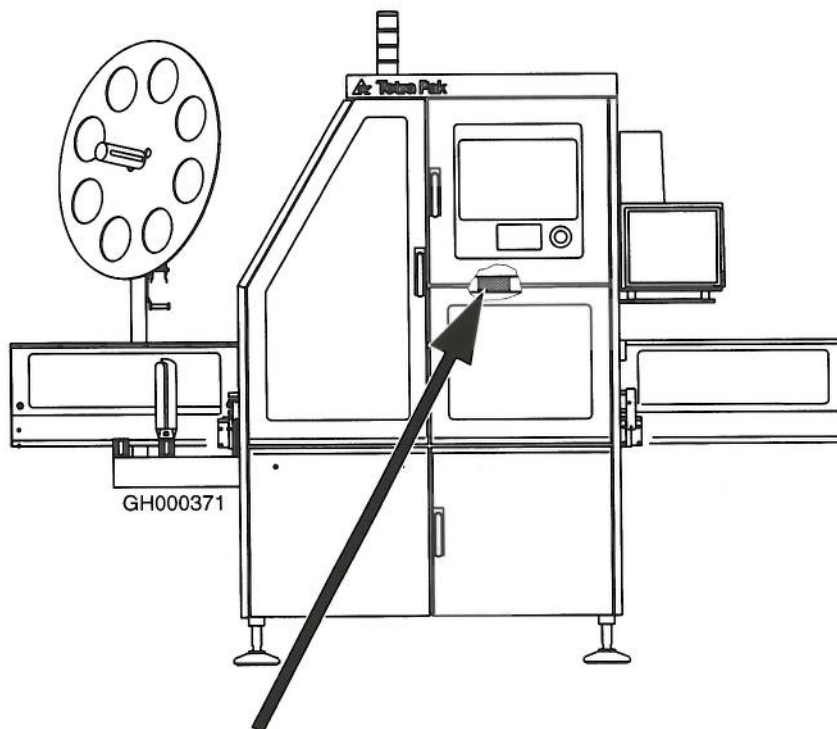
Tetra Pak Distribution AB
Ruben Rausings gata
221 86 Lund
Sweden

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1.4 Machine identification

The machine sign below is attached to the machine frame. It carries data needed when contacting Tetra Pak concerning this particular machine.

The machine sign is marked with a CE symbol. It means that this machine complies with the **essential health and safety requirements of the European Economic Area (EEA)**.



The machine sign is a rectangular plate with the Tetra Pak logo at the top. It contains five horizontal fields for identification data. The fields are labeled on the left: 'Machine Type', 'Drawing Spec.', 'Machine No.', 'Manufacturer', and 'Year of manufacture'. The 'Year of manufacture' field is a small box. A CE mark is located at the bottom right of the sign. Below the sign, the text 'GH101134.eps' is visible.

- 1 Machine type
- 2 Drawing specification
- 3 Machine number
- 4 Manufacturer
- 5 Year of manufacture

5

1.5 Machine orientation

1.5.1 Definition of direction

The below illustration shows the machine from above.

A indicates the **Rear** of the machine.

B indicates the **Front** of the machine.

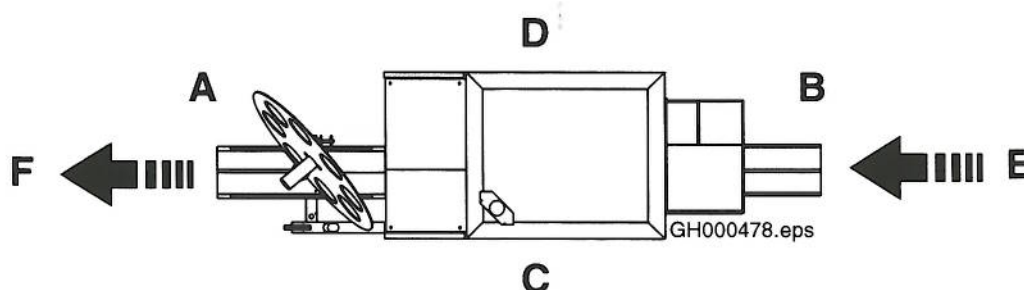
C indicates the **Left** of the machine.

D indicates the **Right** of the machine.

E indicates the **Infeed** of the machine.

F indicates the **Discharge** of the machine.

Note! The arrows indicate the flow direction in the machine.



1.6 Terminology

Abbreviations

Words	Explanation
CE	Communautés Européennes / European Communities
EEA	European Economic
EM	Electrical Manual
IM	Installation Manual
MM	Maintenance Manual
MRF	Maintenance Recommendation file
OM	Operation Manual
PIM	Project and Installation Manual
SPC	Spare Parts Catalogue
SUMOR	Start Up Machine Quality Report

2 Safety precaution

2.1 General



DANGER!

Incorrect use of the equipment may put your life in danger!

Tetra Pak will take no responsibility for any fatal accidents, injuries to personnel or damage to the machine if the Tetra Applicator 46 or associated equipment is serviced without following the instructions in this Installation Manual (IM).

2.2 Warning levels

This Installation Manual (IM) utilises three levels for warnings and an additional level for giving other important information. The following levels and symbols are used to emphasize information.



DANGER!

Immediate danger to life!

Failure to observe this information may result in immediate danger to life!



WARNING!

Risk of serious personal injury or major damage to equipment!

Failure to observe this information may result in serious personal injury or major damage to the equipment!

Caution!

Risk of minor personal injury or damage to equipment!

Failure to observe this information may result in minor personal injury or damage to the equipment!

Note! Is used to emphasize important information. A **Note** is not to be regarded as hazard information.

2.3 Warning signs



DANGER!

Risk of electrical shock!

Failure to observe may result in danger to your life.

Enclosures which do not clearly show that they contain electrical devices are marked with the warning sign below.



GH100784.eps



WARNING!

Hot surface!

Failure to observe may result in injuries caused by burning.

Hot surfaces are marked with the warning sign below. The temperature may exceed 60°C.



GH100787.eps



WARNING!

Hot surface!

Failure to observe may result in injuries caused by burning.

The warning sign below indicates entrapped heat energy in the area where the sign is placed. The temperature may exceed 60°C.



GH100788.eps

2.4 Prohibition signs



DANGER!

Keep dry!

Failure to observe may result in danger to your life.

Never flush water or any other liquid towards an area with the warning sign below



GH100785.eps

2.5 Requirements on personnel



DANGER!

Risk of immediate danger to life!

Not following the Safety precautions may mean risk of immediate danger to life. All personnel must regard all electrical equipment as live.

The work is to be carried out in such a way that there will be no risk of personnel injury.

General

During maintenance or service work, the service technician and the electrician are responsible not for the machine only, but for the personnel in the vicinity of the machine as well!

It is also the responsibility of the service technician and the electrician to assure that the machine safety devices are fully operational before he/she finishes the maintenance or service work.

(Cont'd)

(Cont'd)

Service technician

Only trained or instructed service technicians are allowed to work on the machine

Service technicians may be:

- technicians employed by **Tetra Pak**

The Tetra Pak technicians are Tetra Pak employees who have gone through training courses at the Tetra Pak Technical Training Centres or have an equivalent knowledge.

- technicians employed by the **customer**

Technicians employed by the customer must have the following skills:

- capable of reading (English or native) technical information
- understand technical drawings
- basic knowledge of mechanics and electronics
- basic knowledge of mathematics
- capable of handling (special) tools

Electrician

Electricians should:

- be certified according to local regulations
- have experience of similar types of installations
- have proven skills in reading and working from drawings and cable lists
- have knowledge of local safety regulations for power and automation

Work with the electrical equipment in the machine must be performed by **skilled or instructed persons only**.

According to EN 60204-1:1992 clause 3.55 a skilled person is:

- *An individual with technical knowledge or sufficient experience to enable that individual to avoid hazards which electricity can create*

According to EN 60204-1:1992 clause 3.30 an instructed person is

- *An individual adequately advised or supervised by a skilled person to enable that individual to avoid hazards which electricity can create (e.g. operating and maintenance staff).*

(Cont'd)

(Cont'd)

The use of a key or tool is necessary for access by skilled or instructed persons to carry out operations for which it may not be appropriate to disconnect the equipment. The supply disconnecting mains may be operated as needed while the door is open

Examples of such operations are:

- resetting of protective devices
- adjustment of device settings (e.g. preset timers)
- fault finding and diagnostic testing

Fork lift driver

Fork lift driver should be certified according to local regulations.

The fork lift driver's role during installation is:

- to unload transport vehicle
- to plan and transport the machine or machine parts within the plant in a safe and smooth way
- to assist when assembling Tetra Pak Distribution equipment

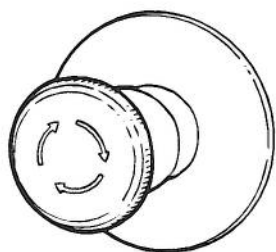
2.6 Emergency stop

In case of danger to people or risk of damage to the machine, one of the two **Emergency stop** buttons must immediately be depressed.

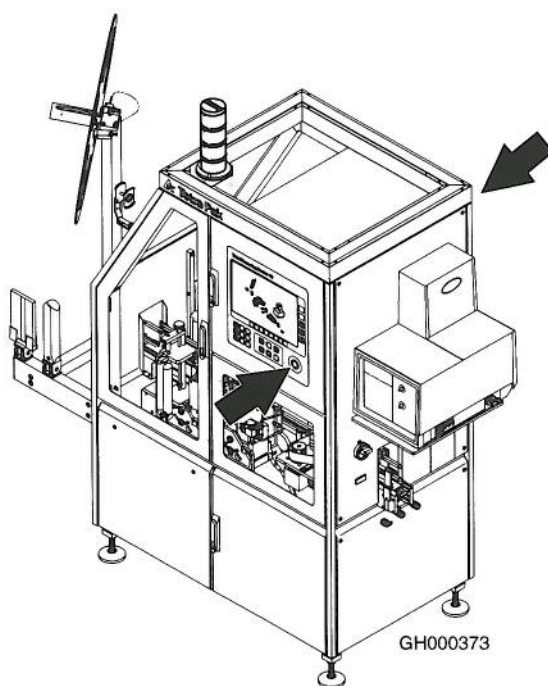
In order to stop the machine immediately in an emergency situation, you must know the exact location of the Emergency stop buttons.

Emergency stop must only be used in case of danger to people or machine. To stop production in the normal way, see the **Stop** section in the Operation Manual (OM).

Note! Emergency stops do not cut the **mains**.



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2.7 Main switch



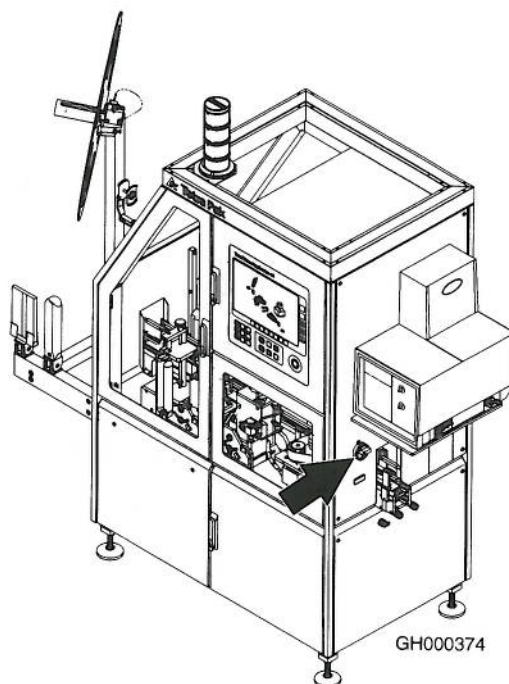
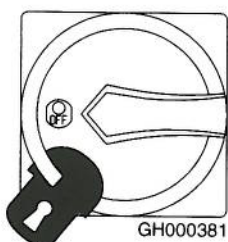
DANGER!

Risk of immediate danger to life!

Before starting service work the machine must be depressurized. The **Main switch** must also be turned OFF and locked in this position. The key to the padlock must be removed by the service technician or the electrician and retained in his/her possession until all work is completed

Turning the **Main switch** OFF will not cut the power supply to the machine. The cable, the connection and the **Main switch** itself will still be energized.

After the **Main switch** has been turned OFF there still can remain high voltage in the electrical cabinet. Discharge time approximately five minutes.



2.8 Doors and covers



WARNING!

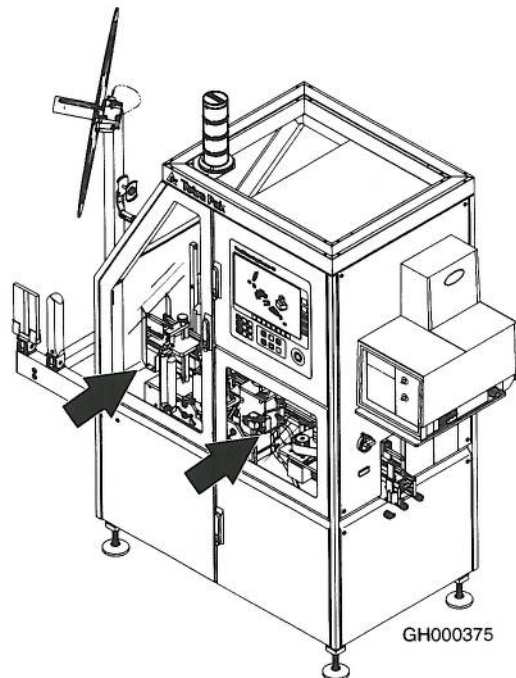
Moving parts and hot surfaces can cause serious injuries!

Never inch or run the machine if any safety switch is non-operational or any cover is not fitted.

Doors

All doors leading to risk areas are fitted with safety switches. These switches are part of the safety system and **must under no circumstances be bridged or by-passed or otherwise made non-operational.**

If any of these doors are opened during operation, the machine will stop immediately. Never use this as a method to stop the machine. The machine may perform a reciprocating movement during the first few seconds after a stop; also some machine parts may still be hot.



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Covers

All covers are screwed on to the machine.

Note! After maintenance, check that all covers are fitted to the machine before it is inched or run.

2.9 Electrical cabinet



WARNING!

Risk of immediate danger to life!

The voltage is 400V inside the electrical cabinet. Risk of immediate danger to life through electrical shock. In case of accident, immediately call for medical attention.

After the **Main switch** has been turned OFF there still can remain high voltage in the electrical cabinet. Discharge time approximately five minutes.

Work inside the electrical cabinet must be performed by skilled or instructed persons only. For more information, see section 2.5 Requirements on personnel, on page 7.



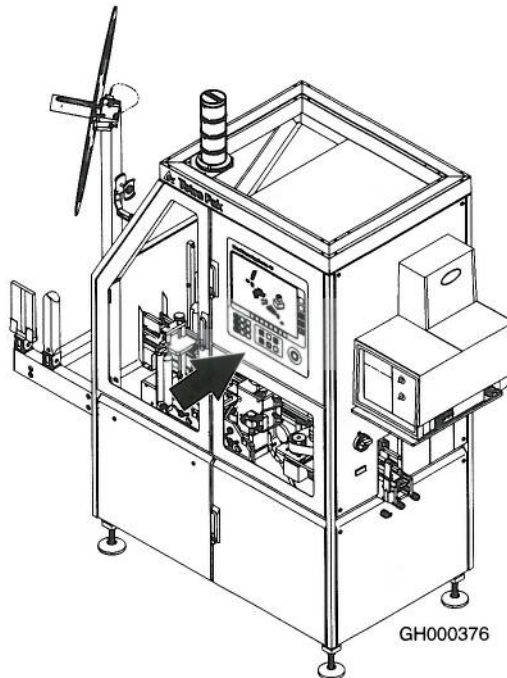
DANGER!

Risk of electrical shock!

Always make sure that the electrical cabinet door is locked after performing any type of work in the electrical cabinet.



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2.10 Hot melt equipment



DANGER!

Risk of immediate danger to life!

The voltage is 400V inside the hot melt unit. Risk of immediate danger to life through electrical shock.



WARNING!

Risk of personal injury!

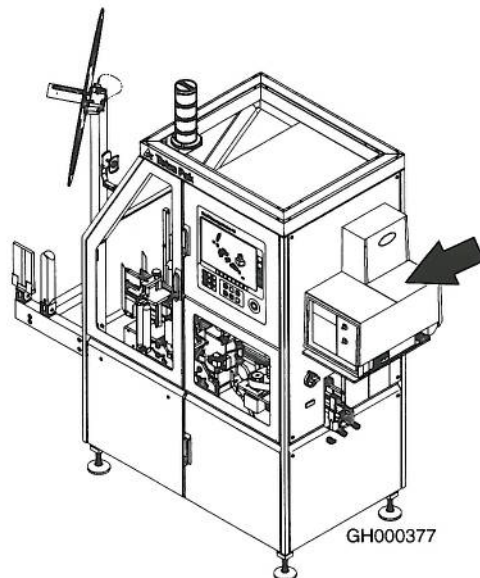
All service work on the hot melt unit must be carried out by authorized personnel.

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

Failure to relieve any remaining air or liquid (adhesive) pressure may cause serious injuries through burning when the hot melt filter is detached or flushed.

Never remove any part or component until air and electric power have been disconnected and the pressure of the hot melt in the system has been relieved.

Note! Always refer to the documentation provided from Nordson Corporation before doing any kind of work on the hot melt equipment. The Hot Melt Material Applicator manual is included at delivery from Tetra Pak. The section **Hot melt equipment** in this manual only deals with what is specific for this machine.



(Cont'd)

(Cont'd)

Hot melt unit



DANGER!

Risk of electrical shock!

Never flush water or any other liquid towards the hot melt unit when cleaning the machine. Failure to observe may result in danger to your life.



WARNING!

Risk of burning!

During heating and production the hot melt unit gets hot. Do not touch the hot melt unit and beware of the entrapped heat inside the unit when service is performed!



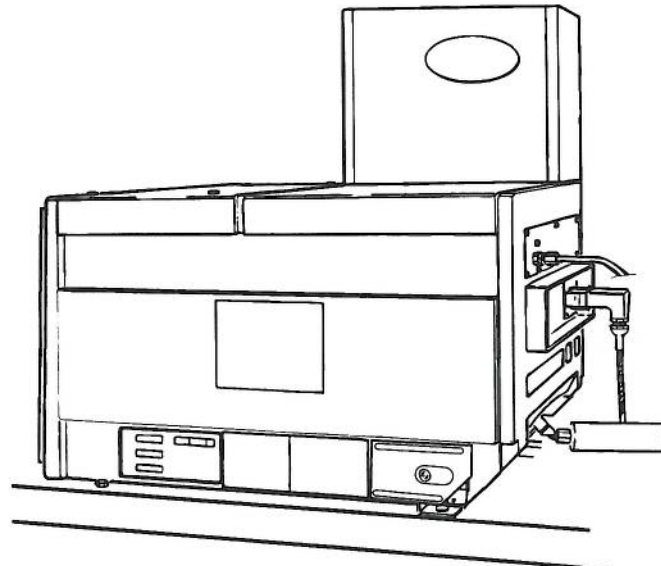
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GH100784.eps



GH100788.eps



GH100954.eps

(Cont'd)

2 Safety precaution

(Cont'd)

Hot melt applicator



DANGER!

Risk of electrical shock!

Never flush water or any other liquid towards the hot melt applicator when cleaning the machine. Failure to observe may result in danger to your life.



WARNING!

Risk of burning!

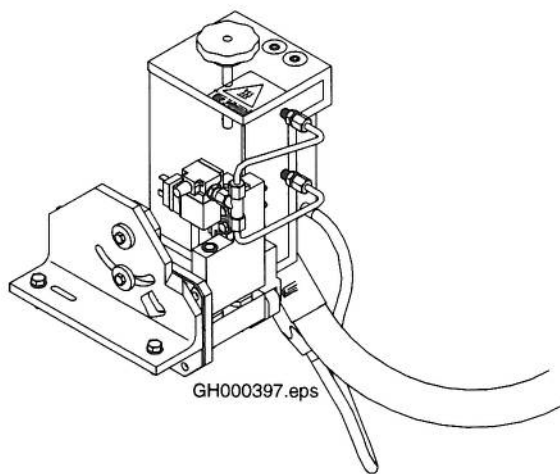
The cover over the wheel applicator is very hot and there is risk of severe burns. Never touch the cover of the wheel applicator!



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2.11 Risk areas



WARNING!

Risk of crushing or burning injuries!

Do not reach into the machine. Reaching into the machine from the side, top or from below may cause serious injury through crushing or burning.

Only authorized personnel should be allowed in the vicinity of the machine.

2.12 Chemical products



WARNING!

Risk of personal injury!

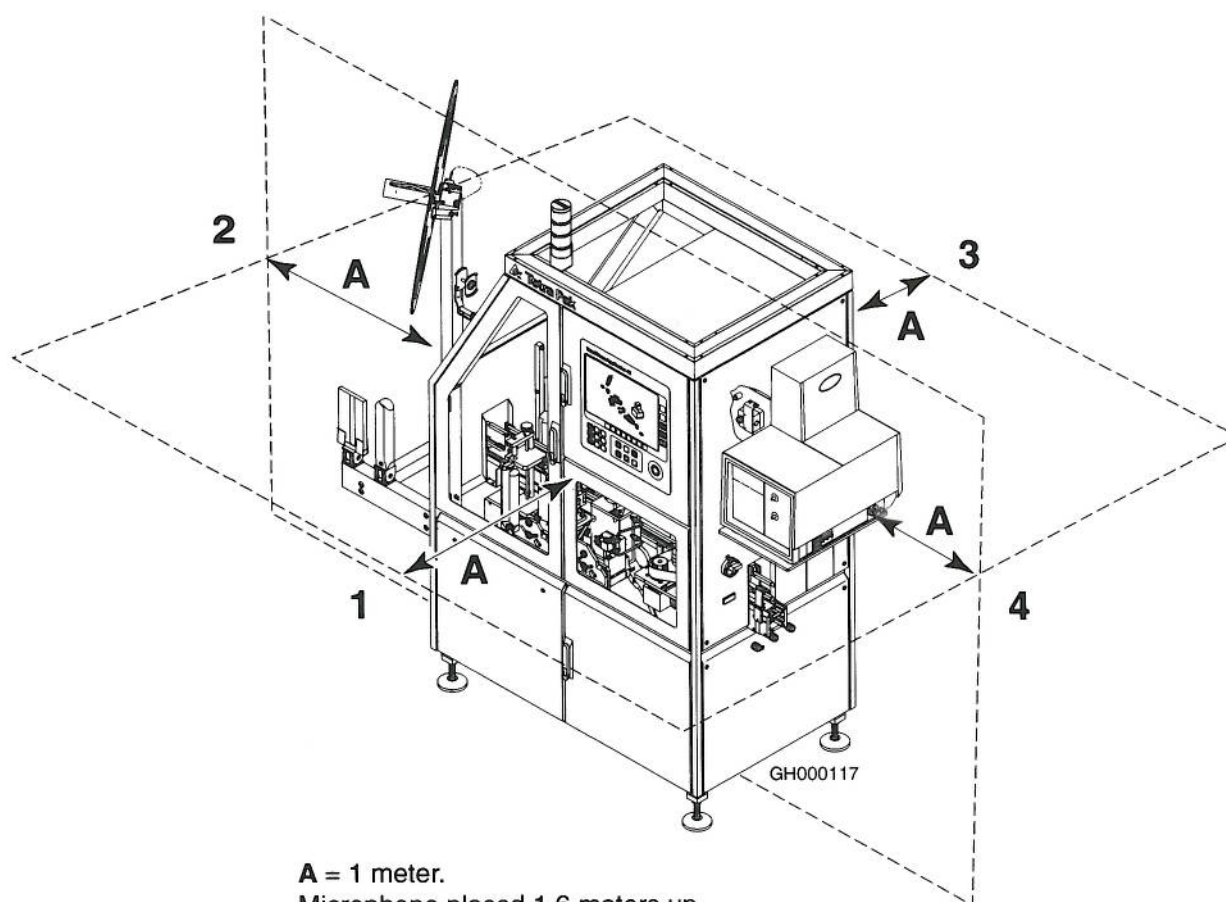
Can be flammable or hazardous to health. Read the warnings on the container labels!

When handling hydraulic oil, lubricants, and cleaning solutions, carefully follow the warnings on the container labels.

Always use safety equipment according to the instructions on the container labels. Always use gloves and goggles when handling chemical products.

For final handling of solutions, follow the instructions from the supplier.

2.13 Noise emission



A = 1 meter.
Microphone placed 1.6 meters up

Data

Document	DE 95/147
Date	95-02-13
Machine No.	38014-28
Drawing spec.	678547-010V
Mech. ECN	22296
EI. ECN	20909

Noise level in accordance with ISO 11201

Measuring position number	Measured equivalent sound pressure level dB(A) Production	dB(A) Production, no packages
1	65.8	60
2	65.0	-
3	65.6	-
4	66.2	-

2.14 Hearing protection



WARNING!

Risk of impaired hearing!

Use hearing protection to minimize the risk of impaired hearing.

Always wear hearing protection while the machine is running.

Note! Always keep the hearing protection clean.



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2 Safety precaution

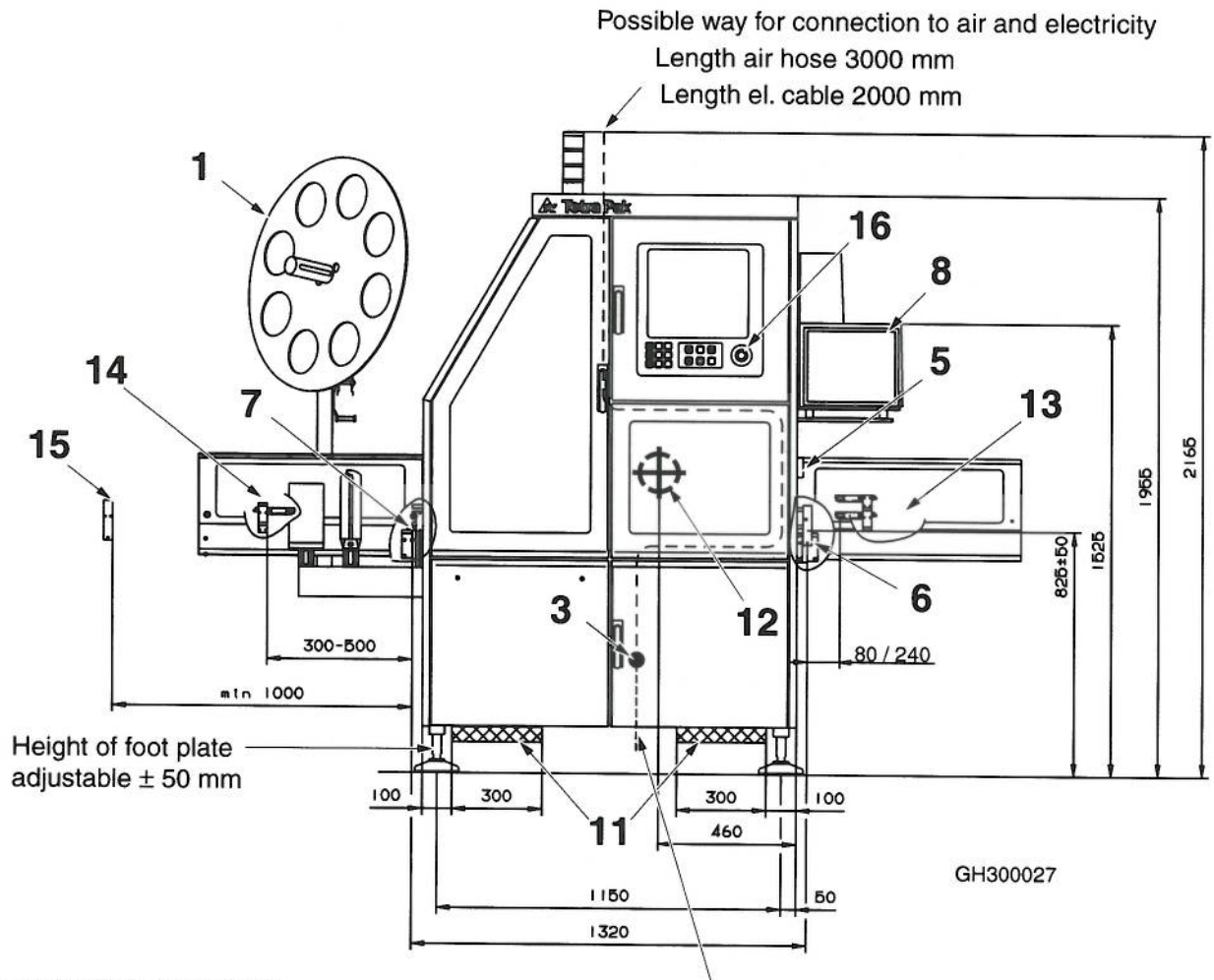
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3 Technical data & drawings

3.1 Installation drawing

3.1.1 Side view



- 1 Magazine for straw bobbin
- 3 Connection compressed air *
- 5 Main switch
- 6 Infeed *
- 7 Outfeed *
- 8 Refill hot melt *
- 11 Allowed fork lift points
- 12 Centre of gravity point
- 13 Queue guard double, infeed photocell **
- 14 Queue guard single, outfeed photocell **
- 15 Railing (only for outfeed straight) *
- 16 Emergency stop

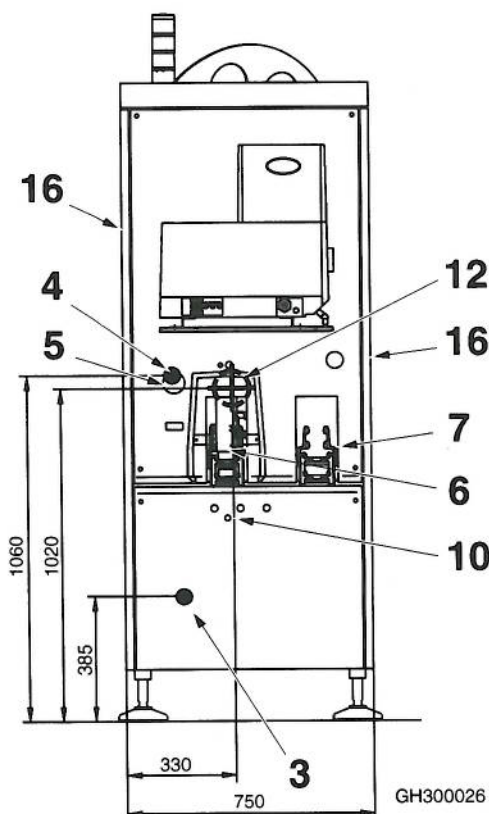
Possible way for connection to air and electricity
Length air hose 500 mm
Length el. cable 1500 mm

* See 3.2 Data on page 24.

** See 6.6 Setting of external equipment on page 42.

3 Technical data & drawings

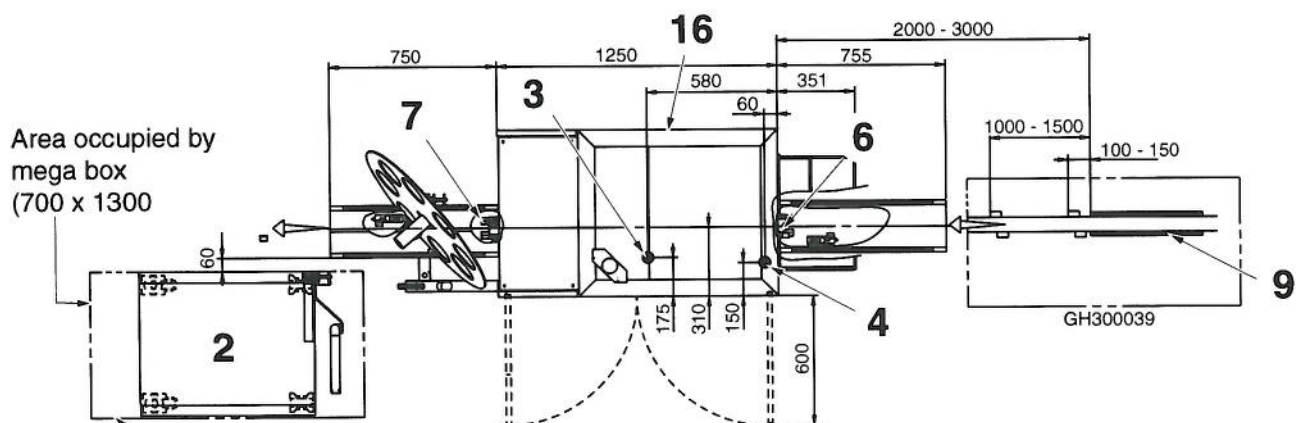
3.1.2 Front view



- 3 Connection compressed air *
- 4 Cable electricity
- 5 Main switch
- 6 Infeed *
- 7 Outfeed *
- 10 Connection for auxiliary equipment
- 12 Centre of gravity
- 16 Emergency stop

* See 3.2 Data on page 24.

3.1.3 Outfeed straight



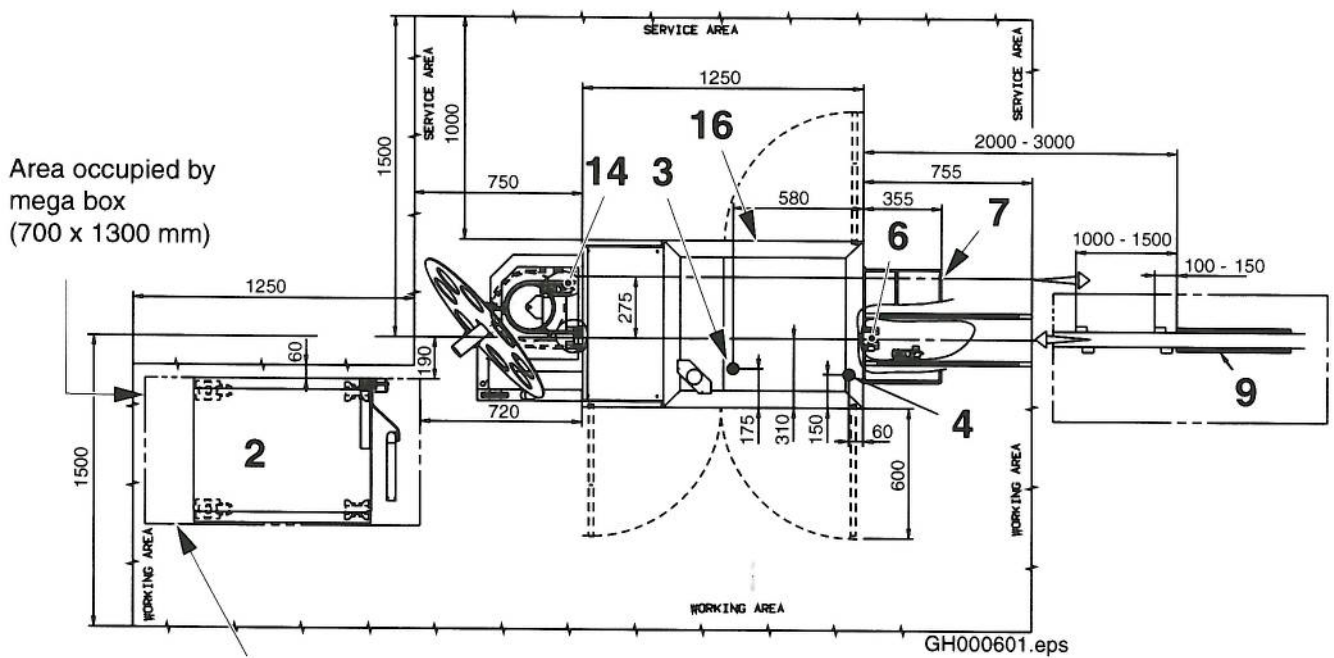
Area occupied by
mega box
(700 x 1300)

Recommended position, magazine
for straw box or UniCap box in all
layouts.

- 2 Magazine for straw box or UniCap box
- 3 Connection compressed air *
- 4 Cable electricity
- 6 Infeed *
- 7 Outfeed *
- 9 Tetra Accumulator or hose brake (not included in the machine) *
- 16 Emergency stop

* See 3.2 Data on page 24

3.1.4 Outfeed U



Recommended position, magazine for straw box or UniCap box in all layouts.

- 2 Magazine for straw box or UniCap box
- 3 Connection compressed air *
- 4 Cable electricity
- 6 Infeed *
- 7 Outfeed *
- 9 Tetra Accumulator or hose brake (not included in the machine) *
- 14 Queue guard single (outfeed photocell) **
- 16 Emergency stop

* See 3.2 Data on page 24

** See 6.6 Setting of external equipment on page 42.

3 Technical data & drawings

3.2 Data

Position No-s refer to 3.1 Installation drawing on pages 21 - 23.

Pos	Capacity	
	Package	8000 p/h +20%
	Compressed air	
	Consumption	60 NL/min
3	Connection thread	G 3/8" or quick release coupling Atlas Copco 10-H1
	Required pressure	0.6 - 1.0 MPa
	Electricity	
	Power consumption	3 kW
	Control system	GE FANUC
	For more information, read the Electrical Manual (EM), chapter 7.0 Mains connections	
	General	
6	Infeed	Tetra Package Conveyor 53
7	Outfeed	Tetra Package Conveyor 53
6, 7	Adapters and straight conveyor pieces	Used when connecting the machine to Tetra Package Conveyor 51. Have to be ordered separately. See table below.
8	Refilling Hot melt	Jowatherm Hotmelt 25700
	Consumption Hot melt	40g / 1000 straws 30g / 1000 caps
9	Tetra Pak recommends to install either Tetra Accumulator or a hose brake (not included in the machine) before Tetra Applicator 46	
15	Railing	Only for outfeed straight. TP No 1119526-010V

Adapters and straight conveyor pieces used for Tetra Package Conveyor 51

Conveyor width	Straight conveyor piece			Adapter type 1	
	TP No	Quantity outfeed straight	Quantity outfeed U	TP No	Quantity outfeed straight and U
B40	466073-203	2	1	499082-201	2
B55/B55S	499083-203	2	1	499082-202	2
B65	531498-203	2	1	499082-203	2

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3.2.1 Conveyors

The drive unit must be **power supplied and controlled** from machine in order to fulfil the safety regulations.

Conveyor lubrication must be used.

Conveyor parts through the machine are included.

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

Volume (ml)	Speed m/min.
200 S	~ 15
Other volumes	~ 21

Required chain	Length m
With outfeed Straight	2.6
With outfeed U	7.0

3.2.2 Options

Straw application

A machine with straw application can be equipped with totally four feed wheel units and maximum two types of spring clamps.

If more than one of these feed wheels and spring clamps respectively are required, this will be treated as optional equipment.

Only straw type and diameter is needed when ordering.

Straw type	Outer diameter mm
U	4
U	5
S	4 / 5
T	4 / 5
T	5 / 6

UniCap application

A machine with UniCap application is equipped with a unique applicator unit.

(Cont'd)

(Cont'd)

Outfeed U

Besides the straight outfeed the machine can as an option also be equipped with Outfeed U.

Extra volume kit

Option used when changing volumes on machines. Only needed when the extra volume has a different bottom configuration.

Hot melt equipment Quick Change

The machine can as an option be equipped with hot melt equipment Quick Change. Shortens the change-over time between different volumes, straw types and diameters.

3.3 Mass

Contents	Weight kg	Length mm	Width mm	Height mm
Tetra Applicator 46 (Net weight)	390	2755	750	2165

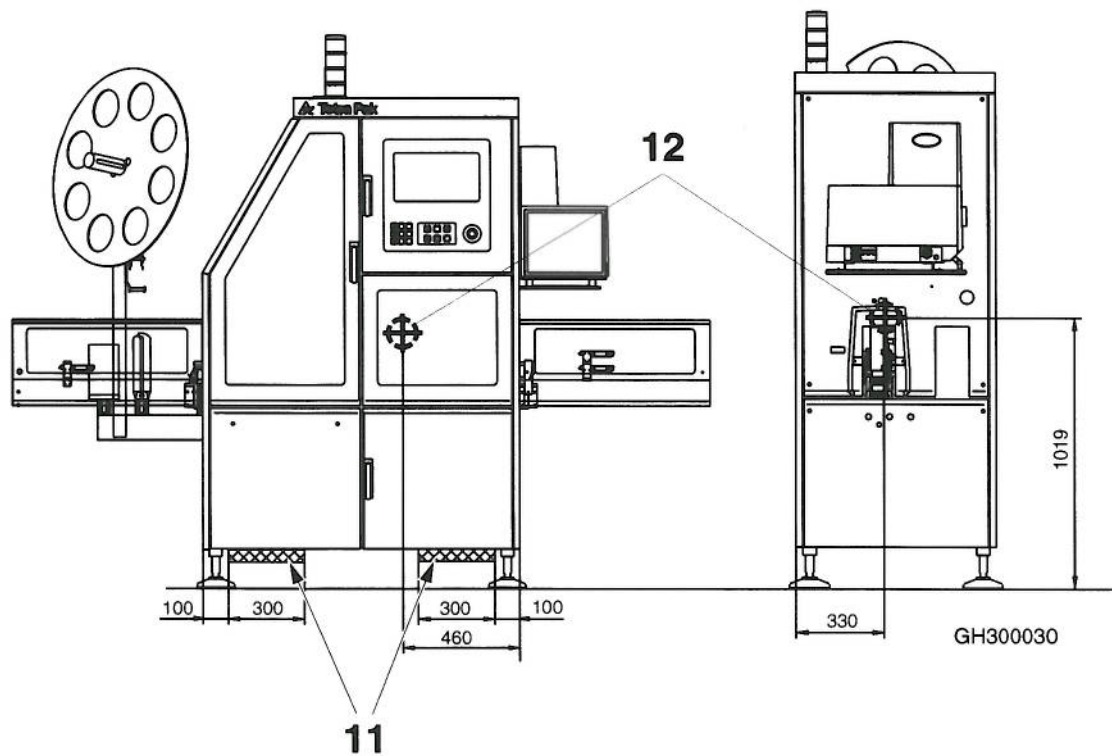
3.3.1 Centre of gravity point



DANGER!

Immediate danger to life!

The machine may tilt if not observing the centre of gravity (12) or the fork lift points (11). Failure to observe may result in immediate danger to life and/or major damage to equipment.



- 11 Fork lift position
- 12 Centre of gravity point

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4 Site preparation

4.1 General requirements on site

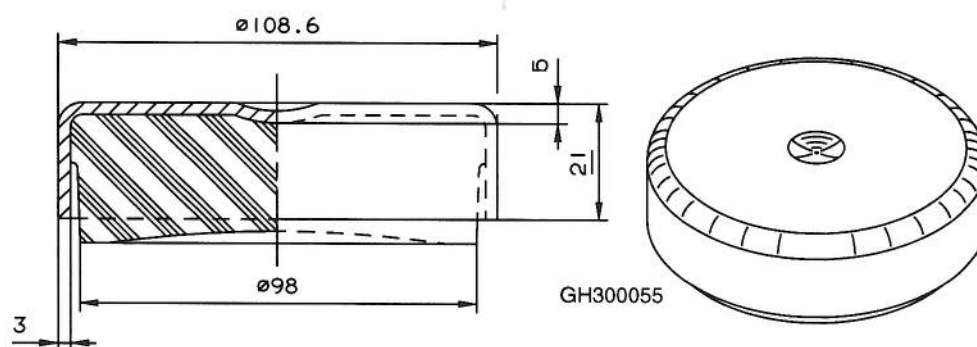
In order to obtain the best possible working condition for the machine, it is necessary to follow our recommendation of data according to section 3 Technical data & drawings on page 21.

4.1.1 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 state condition

4.1.2 Rubber pad

A rubber pad (order No. 470515-02) can be used between the floor and the adjustable foot if the floor is not in good state condition.



4 Site preparation

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5 Machine handling

5.1 Crate handling

5.1.1 Data

The following table contains data needed for handling the crate:

Contents	Weight kg	Length mm	Width mm	Height mm
Crate incl. machine (Gross weight)	630	2200	920	2100

5.1.2 Transport and auxiliary equipment



WARNING!

Risk of personal injury!

Follow the recommendations below to avoid injury!

Following equipment is recommended to make a smooth and safe handling:

Equipment	Capacity minimum kg	Quantity
Fork lift	1500	1

5 Machine handling

5.1.3 Lifting and unloading



DANGER!

Immediate danger to life!

To ensure safe and efficient handling of the crate, carefully study the following instructions.

Centre of gravity

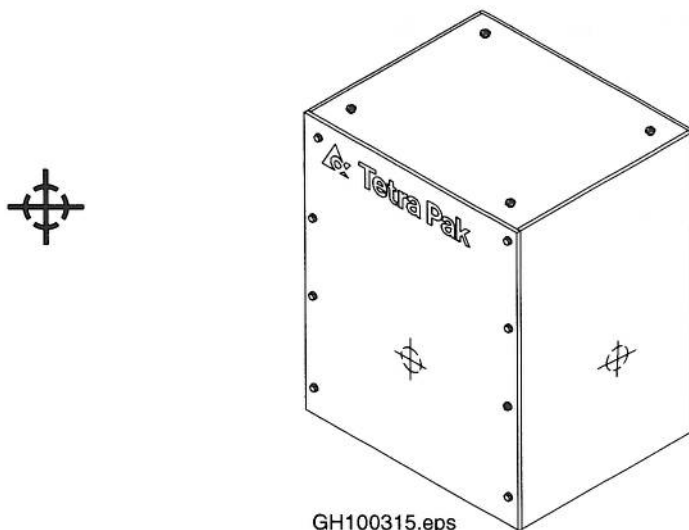
The below illustration shows how the centre of gravity is indicated on a Tetra Pak crate.



WARNING!

Example only!

The purpose of the illustration below is to give an example of how the centre of gravity is indicated on a crate! For information on the location of the centre of gravity for a specific crate, see the actual marks on the crate.



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(Cont'd)

(Cont'd)

Correct fork lift points



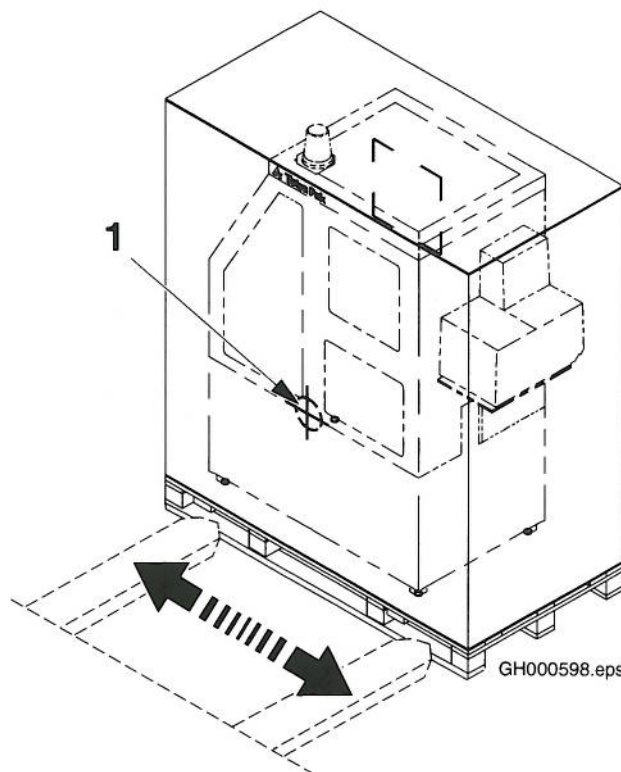
DANGER!

Immediate danger to life!

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

Insert the forks so that the centre of gravity (1) is placed between the forks. The forks should be set as wide as possible.

Also see section [5.4 Machine transport](#) on page [38](#).



1 Centre of gravity

5.2 Storage

Contents	Recommended storage temperature	Recommended storage humidity	Special recommendations
Tetra Applicator 46	- 20 °C to + 70 °C		
Drinking straws, UniCap caps	+ 30 °C	65%	The boxes should be stored indoors under dry condition and lying on the flat side. Never put a box directly on the floor, and never stack pallets on the top of each other.
Hot melt	- 30 °C to +10 °C		The hot melt can be stored for a maximum of one year. Avoid dust and damp in the storage facility. The first box in should be the first box out.

5.3 Unpacking and inspection

This section contains information needed for safe and efficient unpacking of the machine. The following information is supplied:

- required tools and equipment
- uncrating sequence
- inspection documentation
- disposal / re-use of used material



WARNING!

Risk of personal injury!

Follow the recommendations below to avoid injury when unpacking the machine.

5.3.1 Tools and auxiliary equipment

The following equipment is needed when unpacking the machine.

Equipment	Capacity kg	Quantity
Fork lift	1500	1

5.3.2 Uncrating sequence

Wooden crate

To uncrate the machine, perform the following steps:

- Unscrew the bolts (7) holding the lid (6).
- Remove the lid (6).
- Remove the cross beams (5).
- Unscrew the lower bolts (3) on each side of the front, but do not unscrew the top bolt (4) on each side.

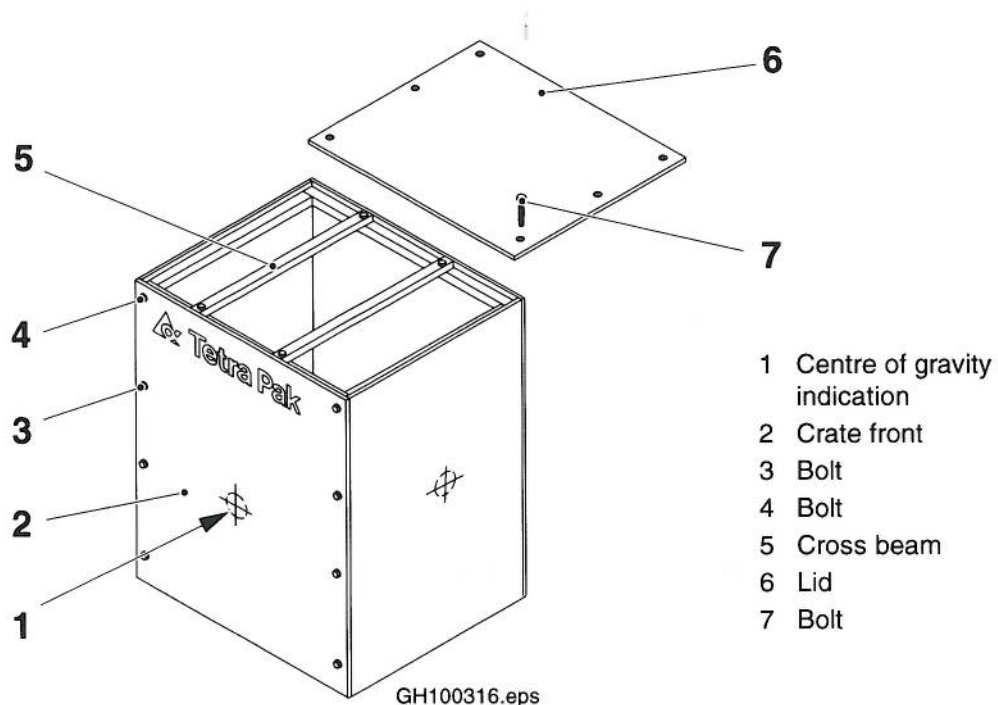


WARNING!

Risk of personal injury!

When loosening the left and right top bolt (4), the front (2) as well as loose machine parts may fall out.

- Remove the front (2).



DANGER!

Immediate danger to life!

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

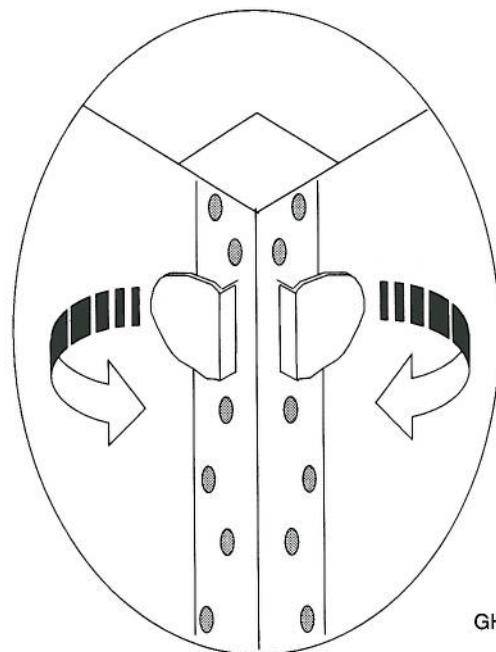
Remove the machine from the crate. When lifting the machine using a fork lift truck, use the fork lift positions as shown in [3.3.1 Centre of gravity point](#) on page [27](#).

Also see instructions in [5.4 Machine transport](#) on page [38](#).

(Cont'd)

Plywood crate

A plywood crate has locking devices instead of bolts. See illustration below.



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To uncrate the machine, perform the following steps:

- Undo the locking devices holding the lid
- Remove the lid
- Remove the cross beams.
- Undo the lower locking devices on each side of the front, but do not undo the top locking device on each side.



WARNING!

Risk of personal injury!

When undoing the top locking devices, the front as well as loose machine parts may fall out.

- Undo the top locking devices and carefully remove the front.



DANGER!

Immediate danger to life!

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

Remove the machine from the crate. When lifting the machine using a fork lift truck, use the fork lift positions as shown in [3.3.1 Centre of gravity point](#) on page 27.

Also see instructions in [5.4 Machine transport](#) on 38.

5.3.3 Inspection documentation

Enclosed you will find a Transport Damage Report. Fill in the report soon as the machine is uncrated and send it to the below address. If any Tetra Pak equipment is damaged when opening the crate, take pictures to illustrate the damage and enclose the photographs.

The report and the pictures (if any) should be sent to:

Tetra Pak Distribution AB
Quality Assurance
Ruben Rausing's gata
S-221 86 Lund
Sweden

Note! The Transport Damage Report must be filled in and returned even if there is no damage to report.

TRANSPORT DAMAGE REPORT

IMPORTANT
 PLEASE RETURN THIS FORM EVEN IF NO DAMAGE CAN BE FOUND.



WE NEED YOUR HELP TO IMPROVE OUR PACKING!

DO YOU HAVE ANY COMMENTS ON THE MODE OF PACKING THIS MACHINE OR ON THE EXPORT PACKING ITSELF? IF SO, PLEASE HELP US BY FILLING OUT THIS FORM. IF POSSIBLE ALSO TAKE PICTURES OF THE DAMAGED CASE OR MACHINE AND ENCLOSE THOSE PICTURES WITH THIS FORM WHICH SHOULD BE SENT TO:

Tetra Pak Distribution AB
 QUALITY ASSURANCE
 RUBEN RAUSINGS GATA
 S-221 86 LUND
 SWEDEN

PLEASE ACT ON THIS AS SOON AS YOU HAVE INSTALLED THE MACHINE.
 THANK YOU FOR YOUR COOPERATION.

TYPE OF MACHINE _____ MACHINE NO _____

DELIVERED EX COUNTRY _____ CUSTOMER _____

NO DAMAGE ☐

DAMAGE TO: CASE YES ☐ NO ☐ MACHINE YES ☐ NO ☐ OTHER PARTS YES ☐ NO ☐

VISABLE ART OF DAMAGE _____

OTHER DAMAGE SUCH AS: DUST ☐ LEAKAGE ☐ CORROSION ☐

DAMAGE PROBABLY CAUSED BY: _____

YOUR SUGGESTION TO PREVENT FURTHER DAMAGE _____

ISSUED BY (NAME IN BLOCK LETTERS) _____

STATION/TP COMPANY _____

DATE _____ PLACE _____



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5 Machine handling

5.3.4 Disposal / re-use

Re-usable packing materials and structures

Re-usable packaging materials and structures should be collected and re-used in accordance with local regulations.

Non re-usable packing materials and structures

Non re-usable packaging materials and structures should be collected and disposed of in accordance with local regulations.

5.4 Machine transport

5.4.1 General

Prior to move the machine into position for assembling, do the following:

- check that the machine can be transported to the assembly site without any problems regarding ceiling height, doors, passages, etc.



DANGER!

Immediate danger to life!

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

- make sure that the equipment can be lifted in accordance with the instructions in 3.3.1 Centre of gravity point on page 27.

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6 Position, assembly & connections

6.1 Space requirements

The space requirements for this machine are given in the installation drawings shown in chapter 3 Technical data & drawings.

Tetra Applicator 46 and its optional equipment do not require any extra space for pre-assembly procedures.

6.2 Positioning

Check that the machine can be transported to the assembly site without any problems as regards ceiling height, doors, passages, etc.



DANGER!

Immediate danger to life!

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

Make sure that the machine can be lifted and moved in accordance with sub-section 3.3.1 Centre of gravity point and section 5.4 Machine transport.

6.3 Levelling

Make sure that the machine is level by means of for example a spirit level. Place the spirit level on the cross beams as well as on the longitudinal beams. If necessary, adjust by turning the machine feet.

6.4 Assembly

6.4.1 Conveyors



WARNING!

Risk of damage to equipment!

To obtain the **security demands** the chain drive motor has to be supplied and controlled according to the Electrical Manual (EM), see 6.0 Connection diagrams.

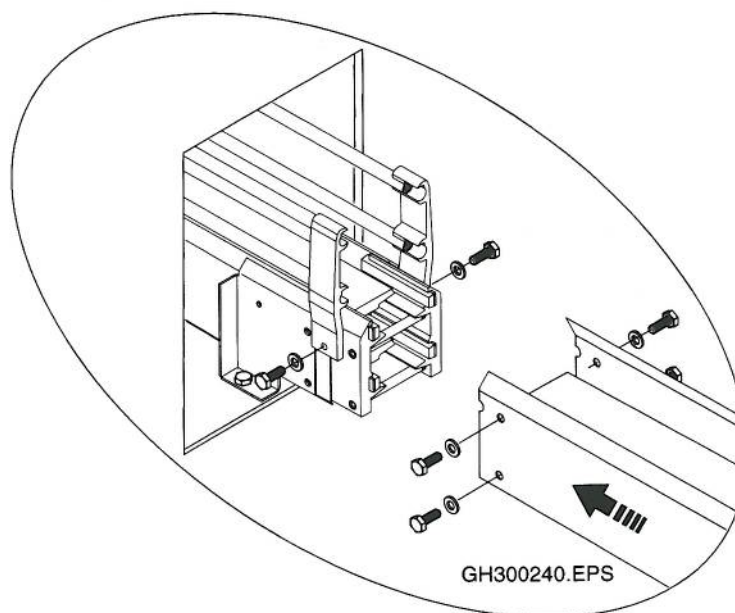
The drive motor for the chain is not part of the machine.

Connect the conveyors as illustrated. Use conveyor lubrication.

Note! When connecting a Tetra Applicator 46 to Tetra Package conveyor 51, also adapters and straight conveyor pieces are to be used. See [3.2 Data](#) on page [24](#).

Infeed

Connect the infeed conveyor to the machine as illustrated.



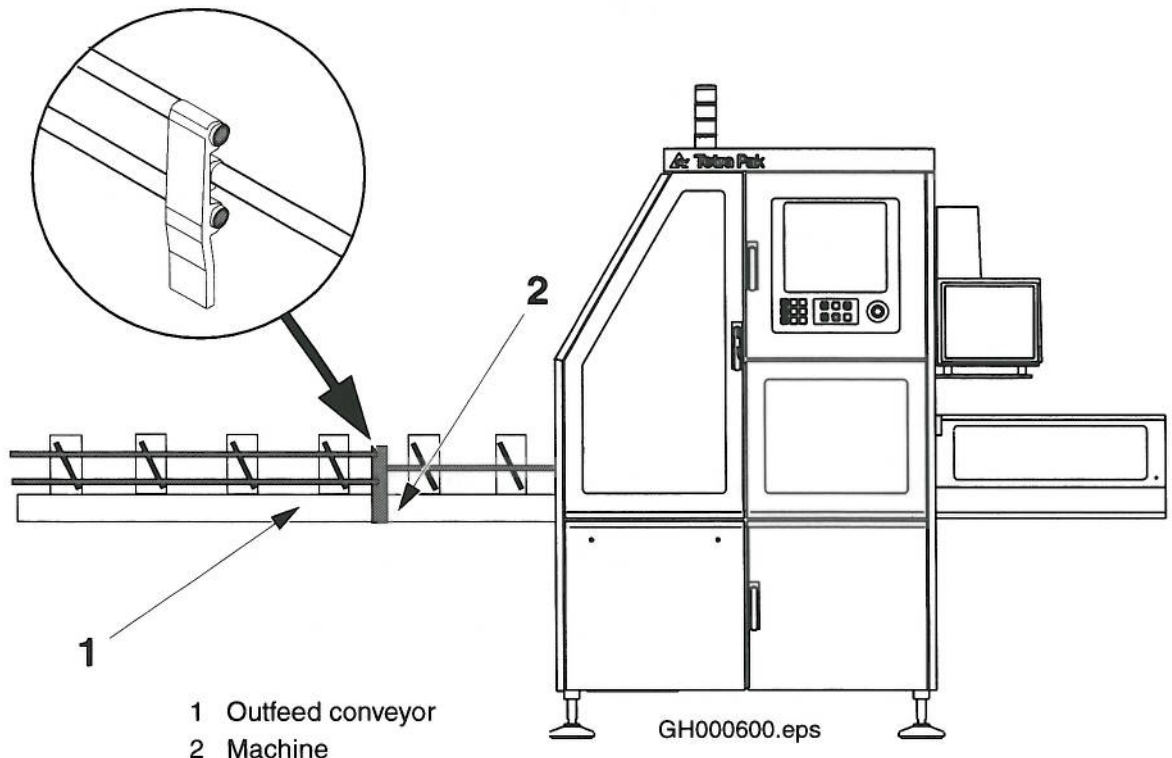
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Outfeed

Connect the outfeed conveyor (1) to the machine (2) as illustrated.



6.4.5 Chain



WARNING!

Risk of damage to equipment!

To obtain the **security demands** the chain drive motor has to be supplied and controlled according to the Electrical Manual (EM), see 6.0 Connection diagrams.

Assemble the chain through the machine.

6.4.2 Photocells infeed/outfeed

Assemble the photocells, see measures on the [3.1 Installation drawing](#) page [21](#).

To set the photocell sensitivity, see instructions in the Maintenance Manual (MM), chapter 8.

6.4.3 Queue guard

Assemble the queue guard.

6 Position, assembly & connections

6.4.4 Straw box equipment

Before assembling, read the Assembly instruction Doc. No. 567790 which is delivered together with the Straw Box magazine.

6.5 Connections

6.5.1 Compressed air



WARNING!

Risk of personal injury!

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

To connect the compressed air, see [3.1 Installation drawing](#) on pages [21](#) - [23](#), and [3.2 Data](#) on page [24](#).

6.5.2 Electricity



DANGER!

Risk of electrical shock and short circuits!

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

To connect the electricity, see the Electrical Manual, chapter 7 Main connecting diagram.

Also see [3.1 Installation drawing](#) on page [21](#)

6.6 Setting of external equipment

Also see [3.1 Installation drawing](#) on pages [21](#) - [23](#)

External equipment	Recommended clearance before machine mm	Recommended clearance after machine mm
Queue guard, double (Infeed photocell)	With conveyor speed 15 m/min.: 80	-
	With conveyor speed 21 m/min.: 240	-
Queue guard, single (Outfeed photocell)	-	300 - 500
Tetra Accumulator External hose brake	Min. 2000 Max. 3000	-
Packaging traps	Min. 1000	-
Curves	Min. 1000	Min. 1000

6.7 Tunnel



WARNING!

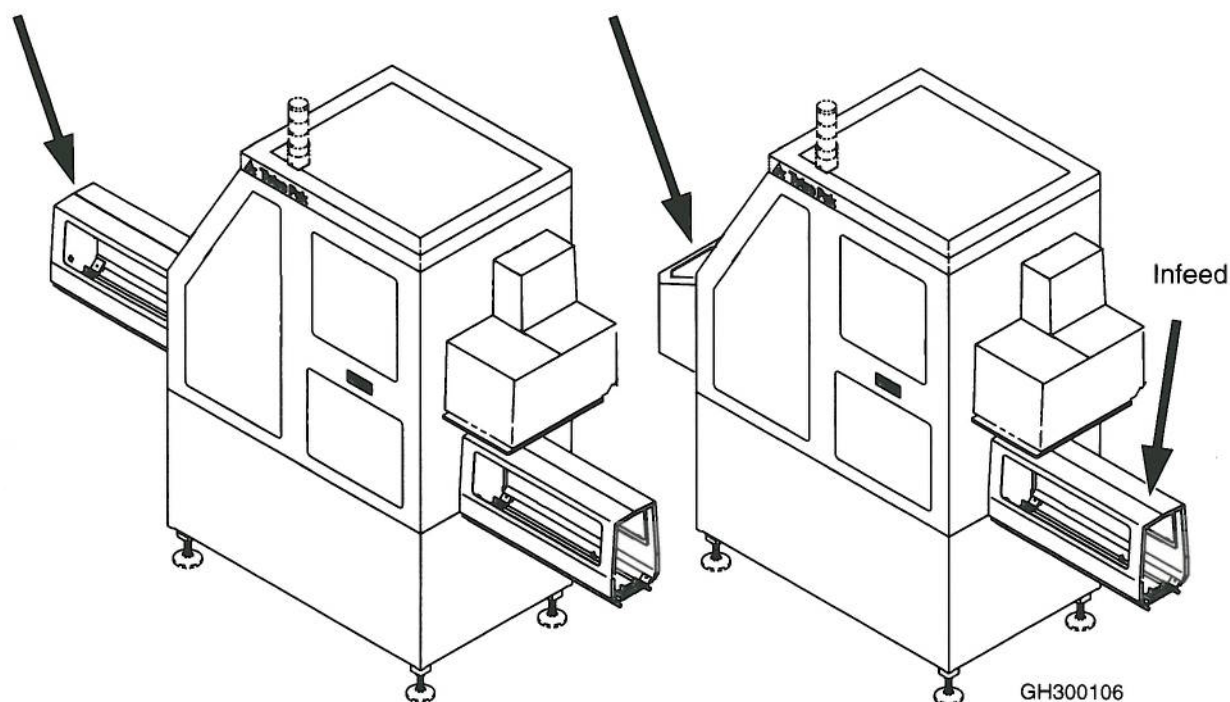
Risk of personal injury!

To avoid injury, assemble the tunnels before starting the machine.

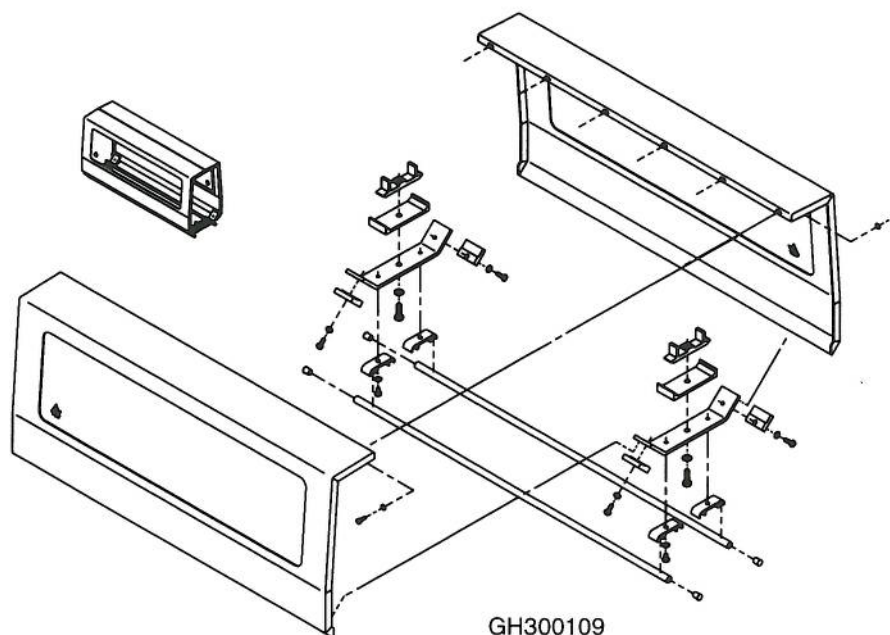
The machine can be equipped with two different outfeeds, Outfeed straight (standard) or Outfeed U (variant).

Outfeed straight

Outfeed U



Assemble drawing, infeed tunnel



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7 Installation check

7.1 Final installation check

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

When installation is complete, go through the checklist below.

Step	Text	✓
1	Inspect the compressed air connection. Make sure that the connection is done correctly.	
2	Inspect the electrical connection. Make sure that the connection is done correctly. Risk of electrical shock! The voltage is 400 V inside the electrical cabinet. Contact with a 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. See sub-section <u>2.6 Emergency stop</u> in the Safety precautions.	
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 all covers are fitted to the machine before it is run. See sub-section <u>2.8 Doors and covers</u> in the Safety precautions. 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 in accordance with the instructions in section <u>6.4 Assembly</u> in the Position, assembly & connection chapter.	
6	Make sure that the machine is correctly connected to the infeed and outfeed conveyors.	
7	Check the direction of all machine movements.	
8	Check all pressure gauge settings as described in the Operation Manual (OM).	
9	Check the machine program (function, program 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	



DANGER!



WARNING!

7 Installation check

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8 Preparation for commissioning

8.1 Start Up Machine Quality Report

Background

Tetra Pak Distribution uses a feedback system based on reporting product failures or short coming on newly delivered machines.

Description of the report

Start Up Machine Quality Report (SUMQR) is a user return card, providing check list which can be used to report the state of packing, appearance and the initial performance of the product.

The SUMQR is an important source of information. The information is the basis for the statistics, helping us to improve our products

The Start Up Machine Quality Report consists of three parts:

- Basic information
- Documentation
- Fault description

Note! The SUMQR should not be used as a claim form. Defective parts should be reported on the SUMQR, however to achieve replacement of defective parts or components, please handle in accordance with the general claim procedure.

Returning of the report

In accordance to the general claim procedure, issued by Tetra Pak Processing & Packaging Systems AB, we accentuate the need of returning this report, **even if you have nothing to report.**

Please send your SUMQR to:

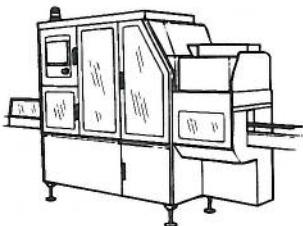
Tetra Pak Distribution AB
Quality Assurance Department
Ruben Rausings gata
S-221 86 Lund
Sweden

8 Preparation for commissioning

8.1.1 Basic information

The basic information part of the Start Up Machine Quality Report (SUMQR) lets you specify basic information about the customer and machine.

Complete the basic information part of the report

Tetra Pak Distribution AB	START UP MACHINE QUALITY REPORT	DE- Page 1 (5)												
														
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="background-color: #cccccc;">BASIC INFORMATION</td></tr><tr><td>SERVICE STATION:</td></tr><tr><td>SERVICE ENGINEER:</td></tr><tr><td>CUSTOMER:</td></tr><tr><td>ADDRESS:</td></tr><tr><td>COUNTRY:</td></tr><tr><td>INSTALLATION DATE:</td></tr><tr><td style="background-color: #cccccc;">MACHINE TYPE:</td></tr><tr><td>MACHINE No:</td></tr><tr><td>FINAL TESTER:</td></tr><tr><td>FINAL TEST DATE:</td></tr><tr><td>NOTES:</td></tr></table>			BASIC INFORMATION	SERVICE STATION:	SERVICE ENGINEER:	CUSTOMER:	ADDRESS:	COUNTRY:	INSTALLATION DATE:	MACHINE TYPE:	MACHINE No:	FINAL TESTER:	FINAL TEST DATE:	NOTES:
BASIC INFORMATION														
SERVICE STATION:														
SERVICE ENGINEER:														
CUSTOMER:														
ADDRESS:														
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MACHINE TYPE:														
MACHINE No:														
FINAL TESTER:														
FINAL TEST DATE:														
NOTES:														
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8.1.2 Documentation

The basic information part of the Start Up Machine Quality Report (SUMQR) lets you specify basic information about the customer and machine.

Complete the basic information part of the report

Tetra Pak Distribution AB

DE-

START UP

Page

MACHINE QUALITY REPORT

2 (5)

NOTE

The Start Up Machine Quality Report is an important source of information. The information is the basis for the statistics, helping us to improve our products. In accordance with the general claim procedure (issued by Tetra Pak Processing & Packaging Systems AB) we accentuate the need of returning this report, **even if you have nothing to report.**

Please send your SUMQR to:

Tetra Pak Distribution AB
Quality Assurance, Supply Department

Ruben Rausing's gata
S-221 86 Lund
Sweden

DOCUMENTATION				
POS	DOCUMENT	Quantity	AVAILABLE	
			YES	NO
1	Operating Manual (OM)	2		
2	Maintenance Manual (MM)	2		
3	Spare Parts Catalogue (SPC)	2		
4	Electrical Manual (EM)	2		
5	Installation Manual (IM)	2		
6	Pneumatic Drawings	1		
7	Machine Specification	1		
REMARKS				

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8 Preparation for commissioning

8.1.3 Fault description

The Fault description part of the Start Up Machine Quality Report (SUMQR) lets you specify any machine faults currently being found when installing the machine.

Note! This part of the report consists of three pages.

Follow these steps to complete the fault description part of the report

Step	Action
1	Enter the abbreviation of the concerned manual in the MANUAL field. Note! The abbreviations that may be used are listed in section Introduction, see 1.6 Terminology on page 4.
2	In the PAGE/POS field, enter the page number of the concerned manual as well as the position number from the SPC.
3	In the FAULT DESCRIPTION field, enter a short brief description of the fault, observation etc.
4	Enter an appropriate remark code in the REMARK field. Note! The available remark codes are listed in the left-most margin of the page.
5	Enter an appropriate action code in the ACTION field. Note! The available action codes are listed in the left-most margin of the page.

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8 Preparation for commissioning

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9 Disassembly and removal

9.1 Preparation

9.1.1 Personal requirements

Personnel requirements needed to disassemble and handle the machine, see the Safety precautions, [2.5 Requirements on personnel](#) on page [7](#).

9.1.2 Transport and auxiliary equipment

Required tools and auxiliary equipment needed for the job, see [5.4 Machine transport](#) on page [38](#).

9.1.3 Utility connections

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

9.2 Disconnect utilities

9.2.1 Compressed air



WARNING!

Risk of personal injury!

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

Disconnect the compressed air. For more information, see [6.5.1 Compressed air](#) on page [42](#).

9.2.2 Electricity



DANGER!

Risk of electrical shock and short circuits!

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

Disconnect the electricity, see the Electrical Manual.

9.3 Disassemble machine



WARNING!

Risk of personal injury!

Before disassembling the machine, read the Safety precautions.

Disassemble the machine in the reverse order as described in the 6.4 Assembly on page 40.

9.4 Hot melt equipment

9.4.1 Hot melt equipment



DANGER!

Immediate danger to life!

Carefully read the Safety precautions and the instructions in the Maintenance Manual before starting any work with the hot melt unit. Failure to observe this information may result in immediate danger to life or serious personal injury.

See instructions in the Safety precautions, 2.10 Hot melt equipment on page 14, and the Maintenance Manual, chapter 2 Hot melt equipment.

9.4.2 Hot melt



WARNING!

Risk of personal injury!

Read the instructions in the Nordson manual before handling the hot melt.

Following instructions are copied from the Nordson manual issue 3/92, and are a part of the Safety instructions in section A:

Danger of burns

Contact with hot melt materials or hot areas of the unit may produce a severe skin burn.

- *Be extremely careful when using hot melt material. Even solidified material may still be very hot.*
- *Always wear protective clothing which safely covers all exposed parts of the body.*

In cause of burns:

- *Immediately cool affected skin areas using cold, clean water.*
- *Do not forcefully remove hot melt material from the skin*
- *Immediately seek medical attention.*

9.5 Storage preparation

If the machine is going to be transported to a storage site, then see [5.2 Storage](#) on page 34 for more information about environmental factors, such as acceptable storage humidity and temperature range.



DANGER!

9.6 Moving

Immediate danger to life!

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

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 in accordance to the section [3.3 Mass](#) on page 27.

9.7 Re-crating

Read the instructions in [5.3 Unpacking and inspection](#) on page 34. Re-crate the machine in the reverse order.

9.8 Final disposal

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

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