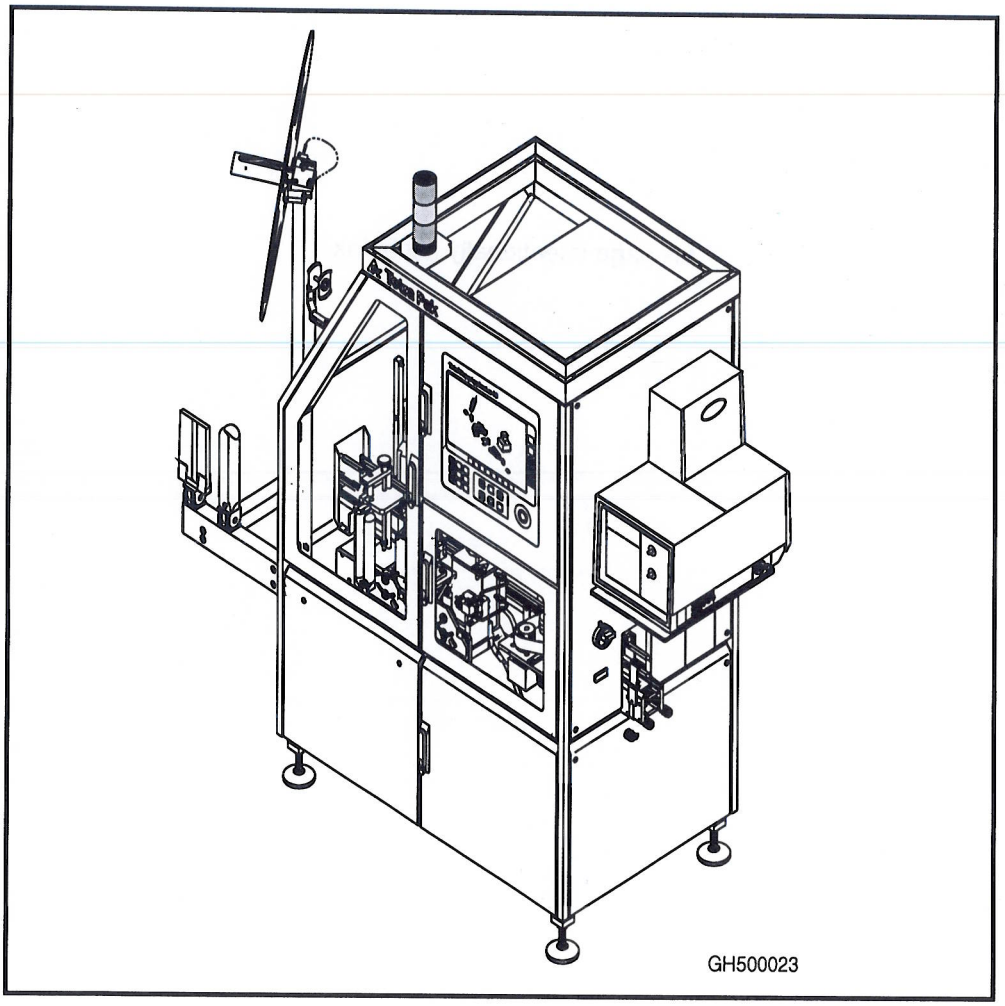
EM

Electrical Manual

Tetra Applicator 46

678547-040V



585402-0102.fro

Tetra Pak

Doc No EM-585402-0102

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This document is valid for:

Series No/ Machine No Sign.

Electrical Manual

BE-679256-030V

Tetra Applicator 46
678547-040V

Equipment included:

585402-0102.fro

Doc No EM-585402-0102

Issue 9711

Tetra Pak

Tetra Pak Distribution AB

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General

WARNING! **Risk of personal injury!**
To ensure maximum safety, always read the chapter Safety precautions before doing any work on the machine or making any adjustments.

Document information

About this Manual (EM)

The purpose of this Electrical Manual (EM) is to provide service technicians and electricians with all information on the electrical equipment required for service and maintenance.

Delivered documentation

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

Note! If any of these documents 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.

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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.

Document producer

This document has been produced by:

Tetra Pak Distribution AB
Ruben Rausings gata
221 86 Lund
Sweden

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Note! If any of these documents 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.

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Document producer

This document has been produced by:

Tetra Pak Distribution AB
Ruben Rausings gata
221 86 Lund
Sweden

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.

Number of 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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Machine introduction

Intended use of this Tetra Pak equipment

The Tetra Applicator 46 attaches a drinking straw or a UniCap onto Tetra Pak packages.

Service

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

Manufacturer

This Tetra Pak equipment was produced by:

Tetra Pak Distribution AB
Ruben Rausings gata
221 86 Lund
Sweden

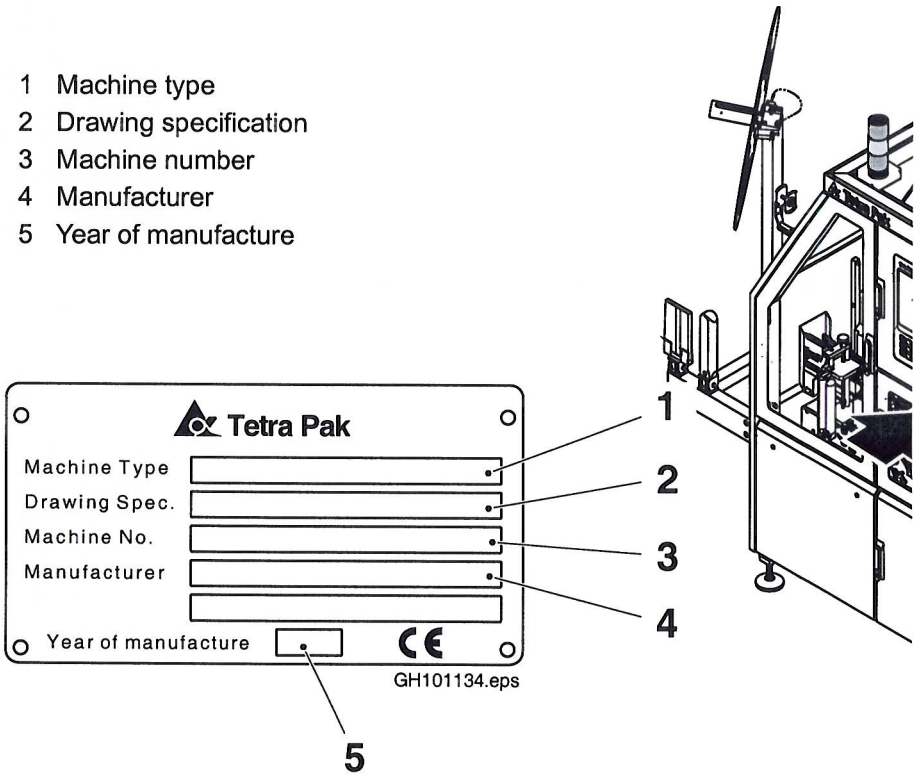
Machine identification

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)**.

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



How to use EM

General

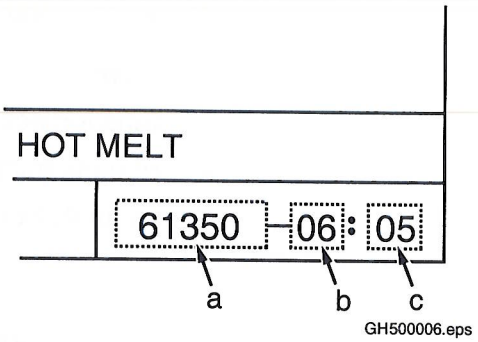
How to use EM is an explanation of how to find your way trough the chapters **Component location, Circuit diagrams, Connection diagrams, Mains connection diagrams** and **Program documents** in the EM.

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles. Enclosed find some examples of how to use EM.

Drawing identification

The identity of the drawings in above mentioned chapters consists of a:

- main number **(a)**
- sheet number **(b)**
- version number **(c)**



The sheet number **(b)** is the consecutive numbering of the parts (sheets) which belong to the main number **(a)** and is used as a reference in the diagrams.

Sheet 02 is a Position summary in the chapter **Circuit diagrams**, where all electrical components used in drawings are listed as a position and with a cross reference.

Sheet 05-88 in the **Circuit diagrams** are drawings.

Sheet 89 in the **Circuit diagrams** is the Earth summary.

Sheet 90 in the **Circuit diagrams** shows the connection of the lines.

Sheet 91 in the **Circuit diagrams** shows the Terminal summary.

Sheet 99 in the **Circuit diagrams** is the Alteration messages.

Chapter orientation

The second page in each chapter is always a table of contents, listing all the documents included in the chapter.

In the **Mains connection diagrams** the second connection diagram shows;

- how the equipment should be connected to the local supply
- dimension of the connection cable
- connection of the matching transformer (when used)

Caution! Concerning the dimension of the connection cable always consider the local regulations.

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The PLC-listing in the section **Program documents** consists of Ladder diagram, Cross reference list, Configuration and in some cases Variant depending document.

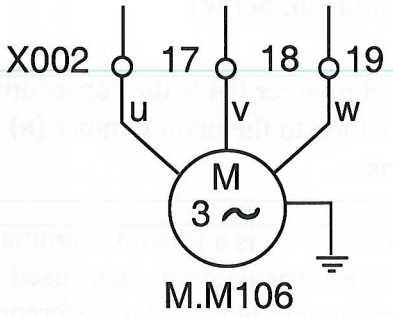
Machine deviation is a chapter reserved for those cases which the machine for some reason is delivered in a design that deviates from the basic design. This is used on the condition that the deviations are not deviations that would be accounted under the headings "Rebuilding kit" or "Option".

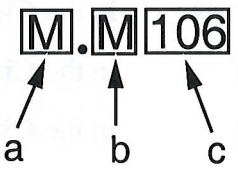
Numbering system for components

The position number is divided in three parts.

- prefix
- function designation
- running number

See example below





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a) Prefix

b) Function desi

c) Running numl

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Prefix (a)

The prefix **(a)** is showing the location of the component.

- Position numbers without prefix indicates that the component is mounted in the Electrical cabinet.
- The prefix **M** indicates that the component is mounted on the machine.
- The prefix **P** indicates that the component is mounted on a separate control panel.

Function designation (b)

The function designation (b) are indicated according to international standard.

Running number (c)

The electrical components are numbered in a consecutive illogical order.

How to trace a cable

Example: How to trace cable No. 5

- Go to chapter 6, **Connection diagrams**
- In the **Connection diagrams** find cable No 5
- Note the component connected to the cable (M.M005)
- Go to chapter 5, **Circuit diagrams**
- Go to the **Position summary** (first sheet(s) in the **Circuit diagrams**)

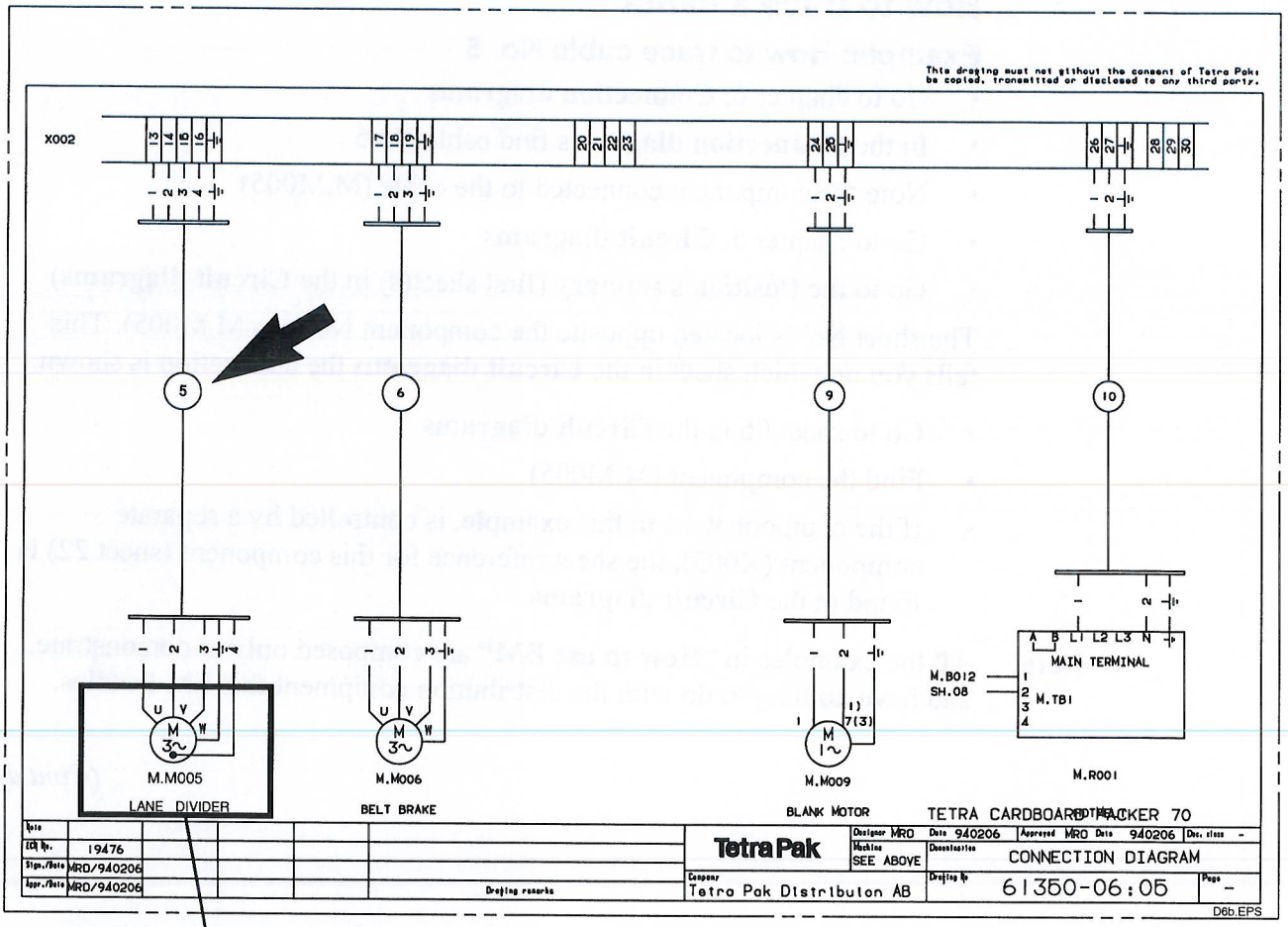
The sheet No. is located opposite the component No (pos M.M005). This tells you on which sheet in the **Circuit diagrams** the connection is shown.

- Go to sheet 06 in the **Circuit diagrams**
- Find the component (M.M005)
- If the component, as in this example, is controlled by a separate component (K005), the sheet reference for this component (sheet 22) is found in the **Circuit diagrams.**

Note! **All** the examples in "**How to use EM**" are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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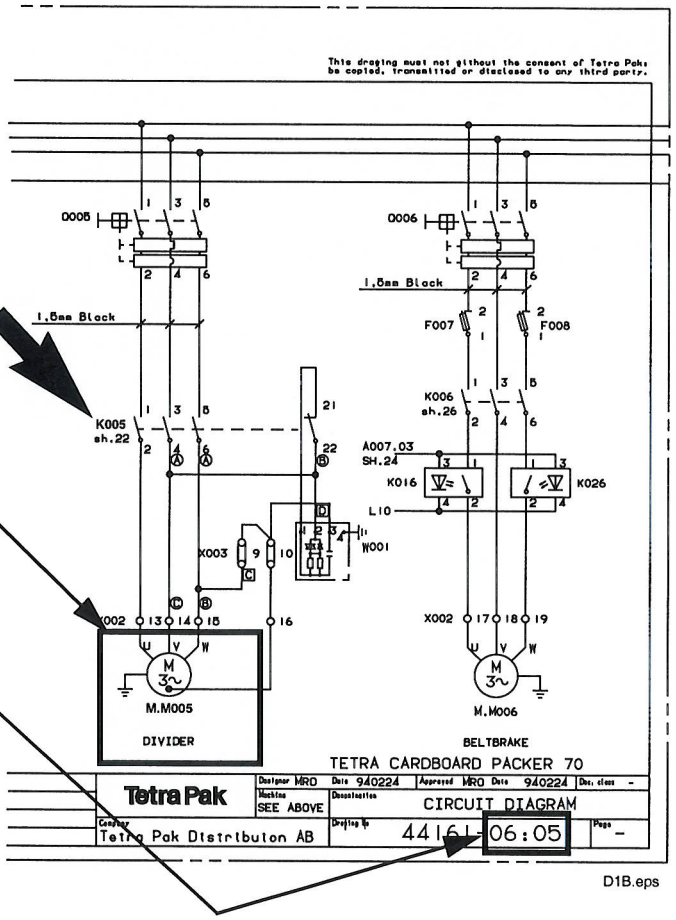


Pos	Sheet	Pos	Sheet
M.B018	17	M.B050	20
M.B019	17	M.B051	20
M.B020	16	M.B052	20
M.B021	16		
M.B022	16		
M.B023	16	M.B200	19
M.B024	16	M.B901	13
		M.B902	13
M.B030	18		
M.B031	18	M.H001	26
M.B033	18		
M.B034	18	M.M001	05
		M.M002	05
M.B036	18	M.M003	05
		M.M004	06
		M.M005	06
M.B040	19	M.M006	06
M.B041	19		
M.B042	19		
M.B043	19	M.M009	08

Position summary

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(Cont'd)

- Go to sheet 22 in the **Circuit diagrams**
- Find the controlling component (K005)

06 is a reference back to sheet 06.

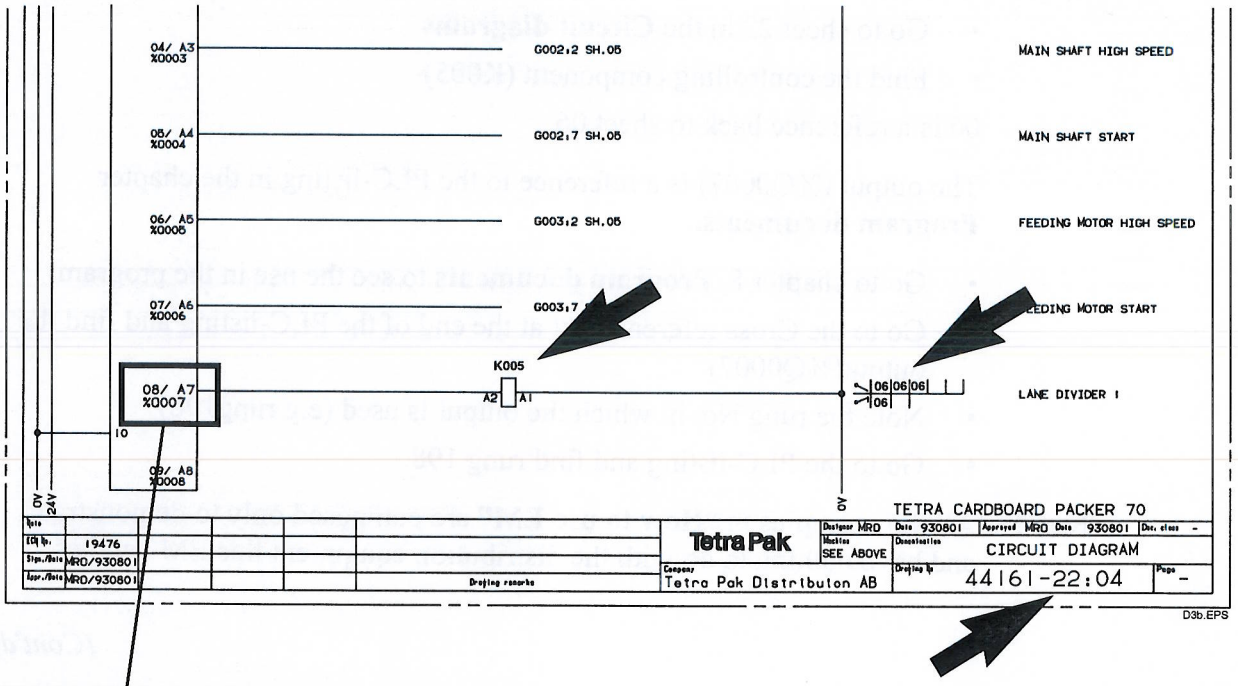
The output (%Q0007) is a reference to the PLC-listing in the chapter **Program documents.**

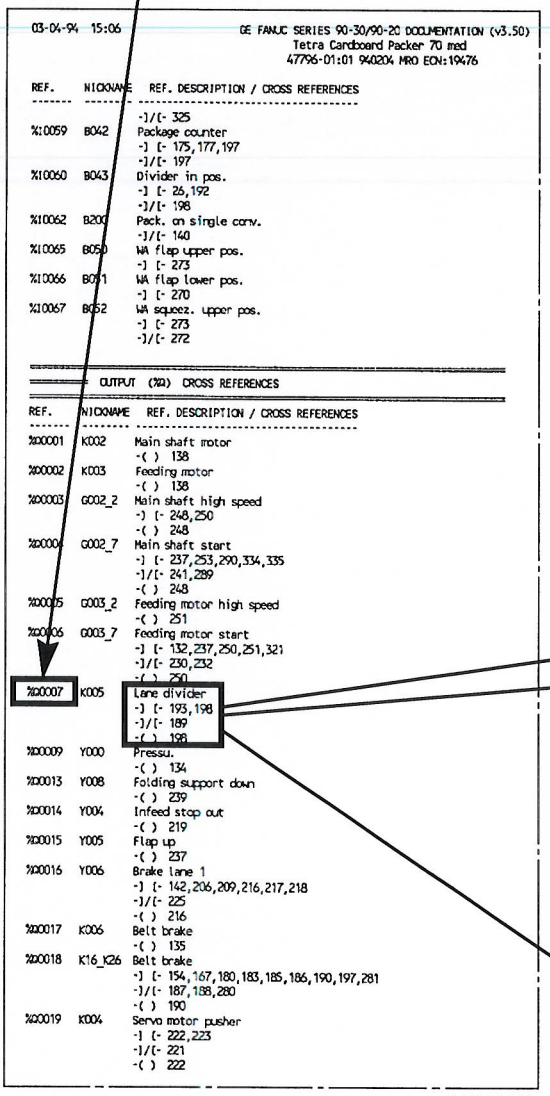
- Go to chapter 8, **Program documents** to see the use in the program
- Go to the Cross reference list at the end of the PLC-listing and find the output(%Q0007)
- Note the rung No. in which the output is used (e.g rung198)
- Go to the PLC-listing and find rung 198.

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

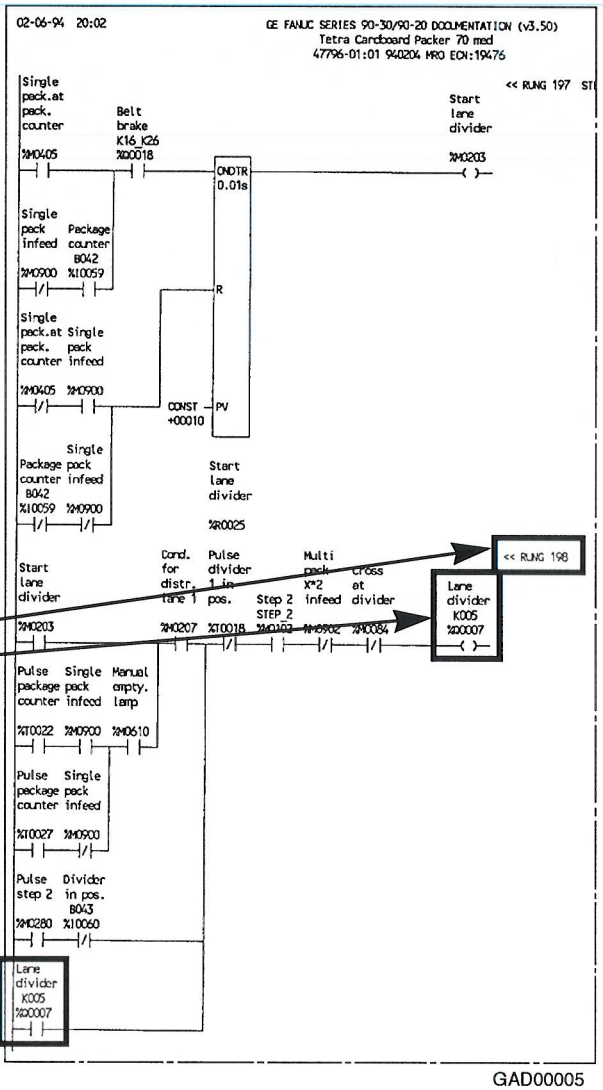
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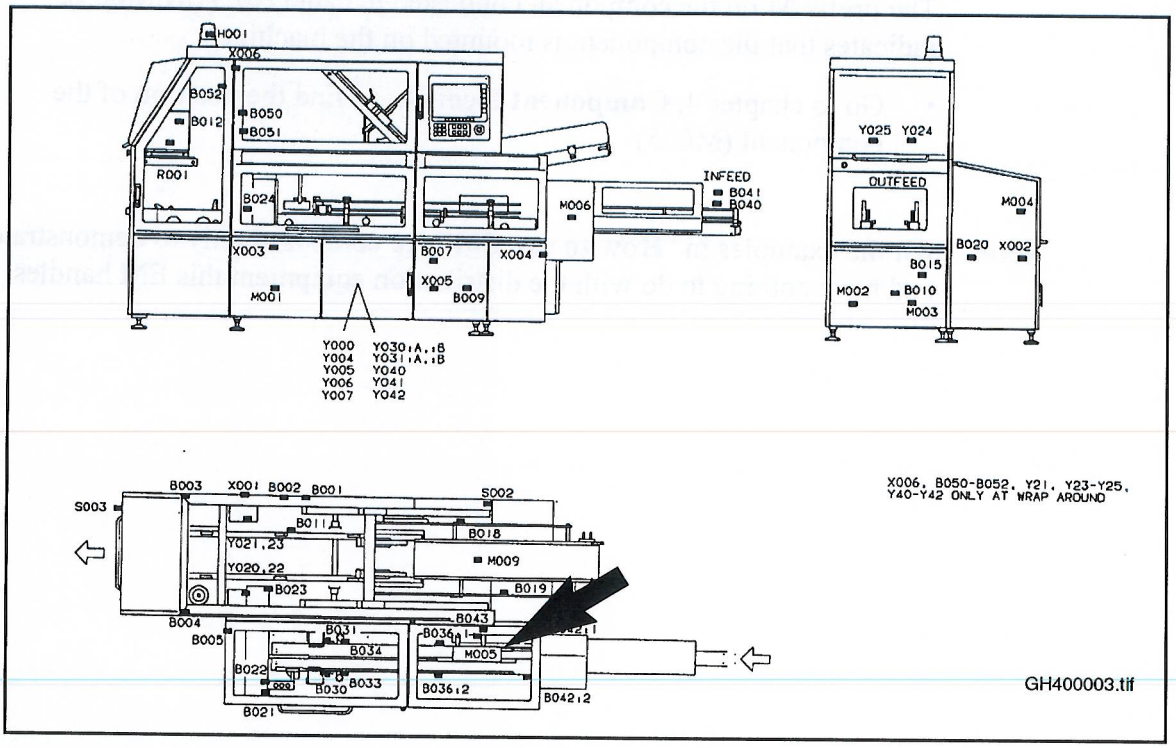
(Cont'd)

The prefix **M** on the component connected to cable No.5 (**M**.M005), indicates that the component is mounted on the machine.

- Go to chapter 4, **Component location,** to find the position of the component (M005)

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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How to trace a component

Example: How to trace sensor B011

- Go to chapter 5, **Circuit diagrams**
- Go to the **Position summary** (first sheet(s)) in the **Circuit diagrams**

The sheet No. (sheet 17) is located opposite the component No (pos M.B011). This tells you on which sheet in the **Circuit diagrams** the connection is shown.

- Go to sheet 17 in the **Circuit diagrams**
- Find the component (M.B011)
- Note the connections (X004, 21-23)
- Go to chapter 6, **Connection diagrams**
- Find the connection (X004 21-23)

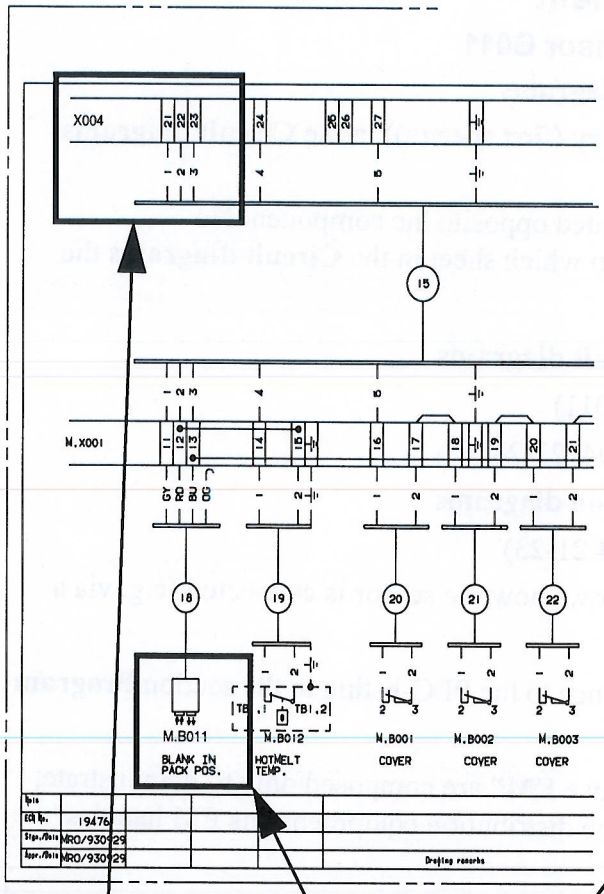
The **Connection diagrams** shows how the sensor is connected (e.g. via a connection box).

The input (%I0042) is a reference to the PLC-listing in the section **Program documents.**

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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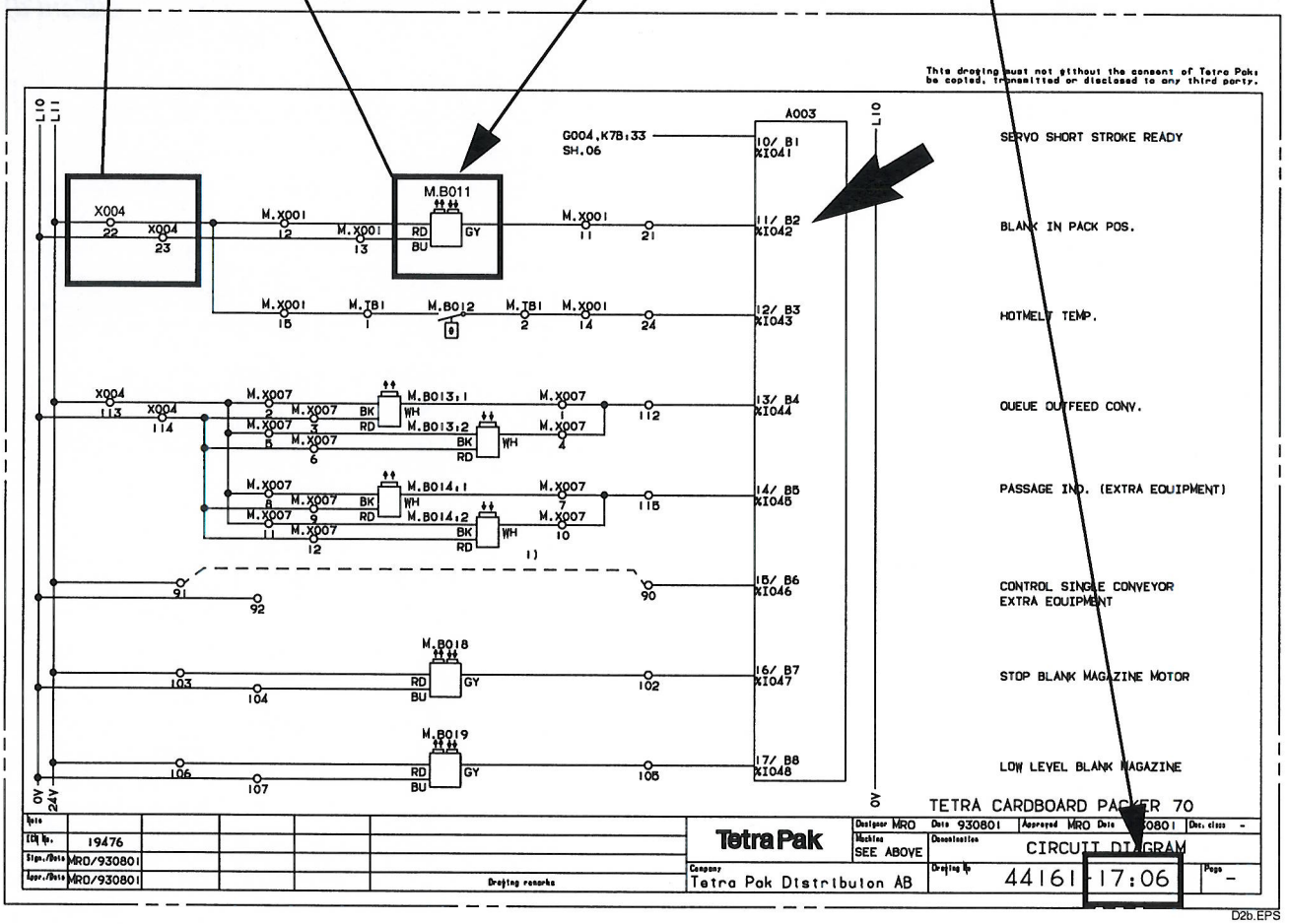


Pos	Sheet	Pos	Sheet	Pc
X007	08			
Z001	10	M.B018	17	M.
		M.B019	17	M.
		M.B020	16	M.
		M.B021	16	
		M.B022	16	
		M.B023	16	M.
M.B001	10	M.B024	16	M.
M.B002	10			M.
M.B003	10			
M.B004	10	M.B030	18	
M.B005	10	M.B031	18	M.
M.B007	13	M.B033	18	
M.B008	10	M.B034	18	M.
M.B009	14			M.
M.B010	15	M.B036	18	M.
M.B011	17			M.
M.B012	17			M.
M.B013	17	M.B040	19	M.
M.B014	17	M.B041	19	
M.B015	18	M.B042	19	
		M.B043	19	M.

Description: **Position summary**

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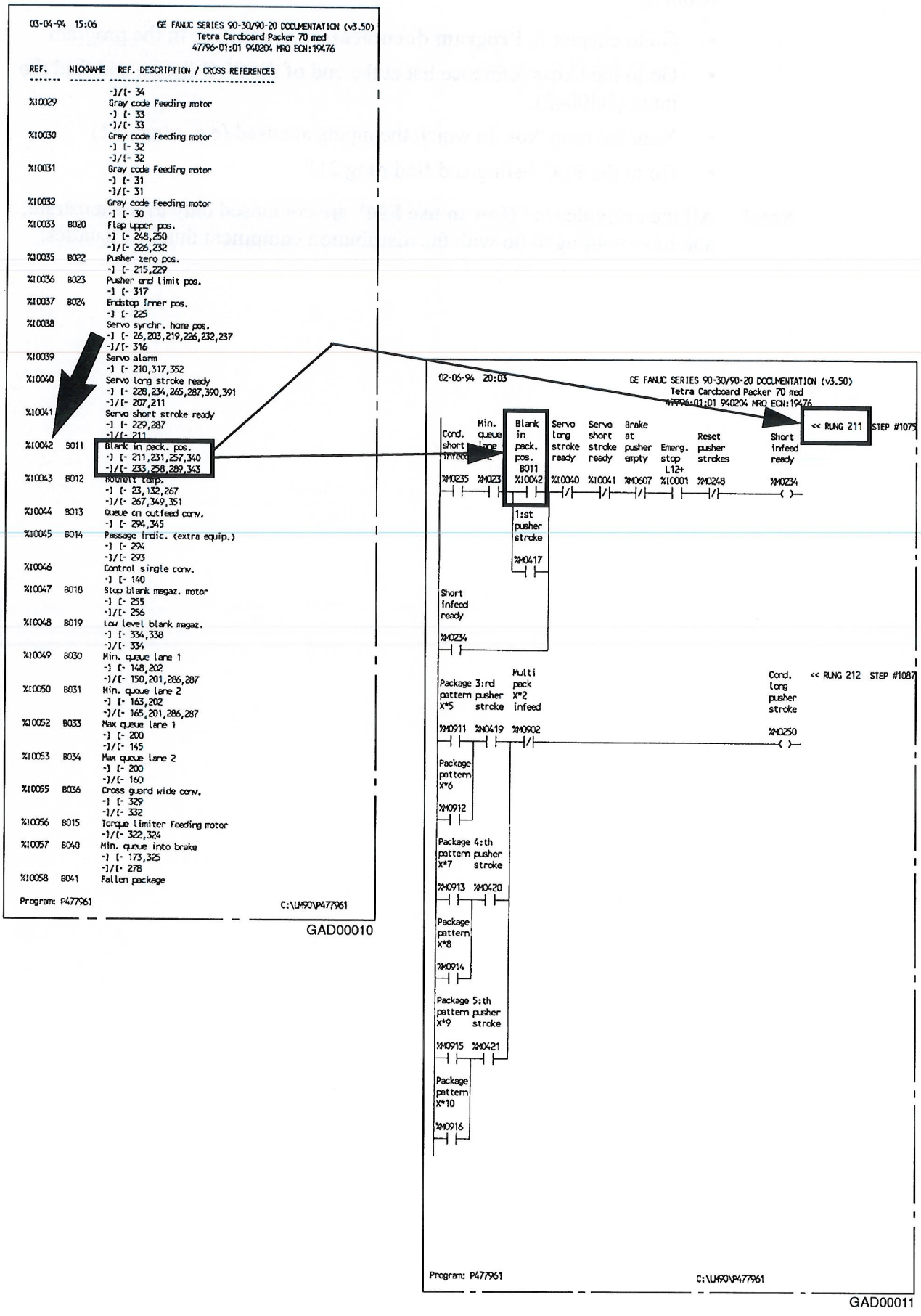
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- Go to chapter 8, **Program documents** to see the use in the program
- Go to the Cross reference list at the end of the PLC-listing and find the input (%I0042)
- Note the rung Nos. in which the inputs are used (e.g. rung 211)
- Go to the PLC-listing and find rung 211

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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Supply/line voltage

Supply voltage/Line connection order

The supply voltage in the Electrical cabinet is named:

- L1-L9: Power voltage
- L10-LXX: Control voltage

L10 is reserved for 0V, control voltage.

L11 is reserved for 24V, control voltage.

Line summary (sheet 90) in the **Circuit diagrams** (chapter 5), shows the line connection order with a cross reference to the valid circuit diagram for each connection (See example next side).

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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Line	Contact		Sheet	Area	Colour
L10	XL10	8		0.75mm2	BU
	A006	10	22		
	A006	20	23		
	XL10	9			
	A007	10	24		
	A007	20	25		
	XL10	10			
	A008	10	26		
	A008	20	27		
	XL10	11			
	A009	10	28		
	XL10	12			
	G002	11	05		
	G003	11	05		
	P001	-	25		
	XL10	13			
	K001	A1	25		
	K002	A1	22		
	K003	A1	22		
	K004	A1	24		
	K005	A1	22		
	K006	A1	24		
	V001	A1	26		
	XL10	14			
	K009	A1	25		
	K010	A1	26		
	G004.K7	24	06		

Line	Contact		Sheet	Area	Colour
L10	XL10	15			
	X004	2	14		
	X004	12	15		
	X004	23	17		
	X004	31	25		
	X004	64	27		
	X004	65	34		
	XL10	16			
	X004	68	16		
	X004	81	18		
	X004	92	17		
	X004	95	18		
	X004	98	19		
	X004	101	19		
	XL10	17			
	X004	104	17		
	X004	107	17		
	X004	114	17		
	X004	119	26		
	X004	122	23		
	X004	147	13		
	XL10	18			
	X004	150	26		
	X004	153	19		
	X004	164	20		
	X004	171	28		
	X004	177	26		

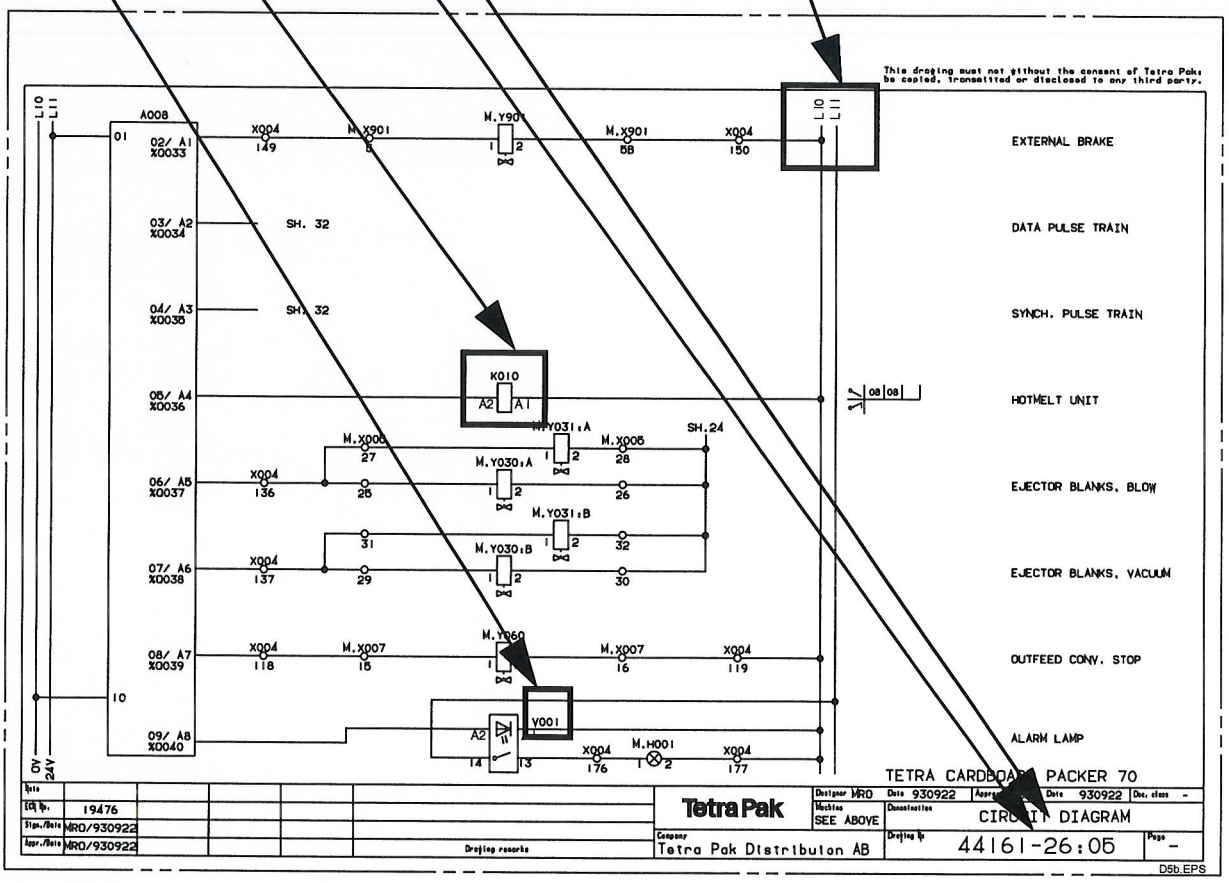
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Date			
Sign			

Description: **Line summary**

Tetra Cardboard Packer 70 | 44161-90:05 | Page: 2 Cont: 3

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How to trace a terminal

Example: Connection in connection box M.X005, terminal 11-12

- Go to chapter 6, **Connection diagrams**
- Find the connection box (M.X005 terminal block 11-12)
- Note the component connected (M.Y004)
- Go to chapter 5, **Circuit diagrams**
- Go to the **Position summary** (first sheet(s) in the **Circuit diagrams**)

The sheet No. (sheet 23) is located opposite the component No (Pos M.Y004). This tells you on which sheet in the **Circuit diagrams** the connection is shown.

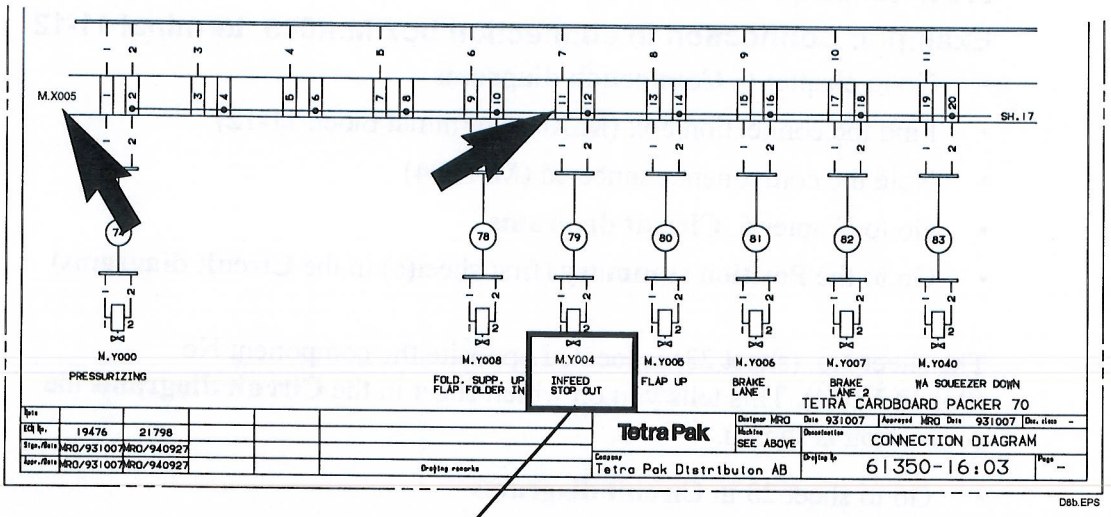
- Go to sheet 23 in **Circuit diagrams**
- Find the component (M.Y004)

The output (%Q0014) is a reference to the PLC-listing in chapter **Program documents.**

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

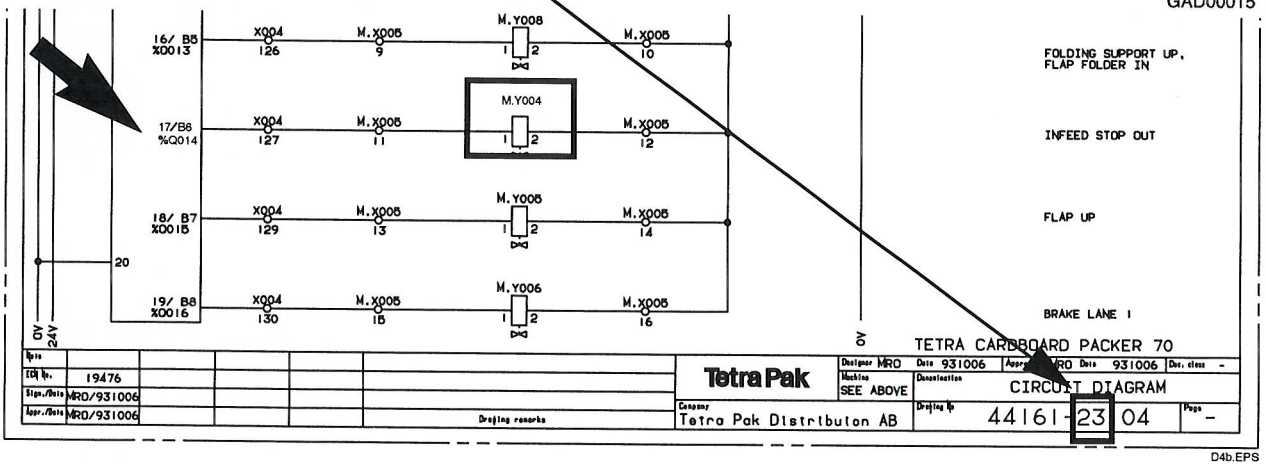
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Pos	Sheet	Pos	Sheet	Pos	Sheet	Pos	Sheet	Pos	Sheet	Pos	Sheet
						P.H001	32	P.H025	34		
		M.Y020	25			P.H002	32	P.H026	34	P.S01H	12
		M.Y021	25	M.Y060	26	P.H003	32	P.H027	34	P.S02H	12
M.R001	08	M.Y022	28					P.H028	34	P.S03H	12
		M.Y023	28					P.H029	27	P.S04H	12
		M.Y024	28	M.Y901	26	P.H006	33	P.H030	27		
		M.Y025	28			P.H007	33	P.H031	27		
M.S002	10					P.H008	33	P.H032	27	P.S07H	12
M.S003	10					P.H009	33	P.H033	27	P.S08H	13
						P.H010	33	P.H034	27	P.S09H	13
		M.Y030:A	26			P.H011	33	P.H035	27	P.S10H	13
		M.Y030:B	26								
M.Y000	23	M.Y031:A	26								
		M.Y031:B	26			P.H014	32	P.H01S	33		
						P.H015	32	P.H02S	33		
						P.H016	32	P.H03S	33		
		M.Y040	28			P.H017	32	P.H04S	33		
M.Y004	23	M.Y041	28			P.H018	32				
M.Y005	23	M.Y042	28	P.A021	12	P.H019	32				
M.Y006	23			P.A022	32	P.H020	34				
M.Y007	24					P.H021	34	P.S001	10		
M.Y008	23					P.H022	34				
						P.H023	34				
						P.H024	34				
Introd.AM	19476	Date 940224	MRO			Description:		Position summary			
Am No											
Date						Tetra Cardbo		acker 70	44161-02:05	Page:	2
Sign				Drawing remarks						Cont:	-

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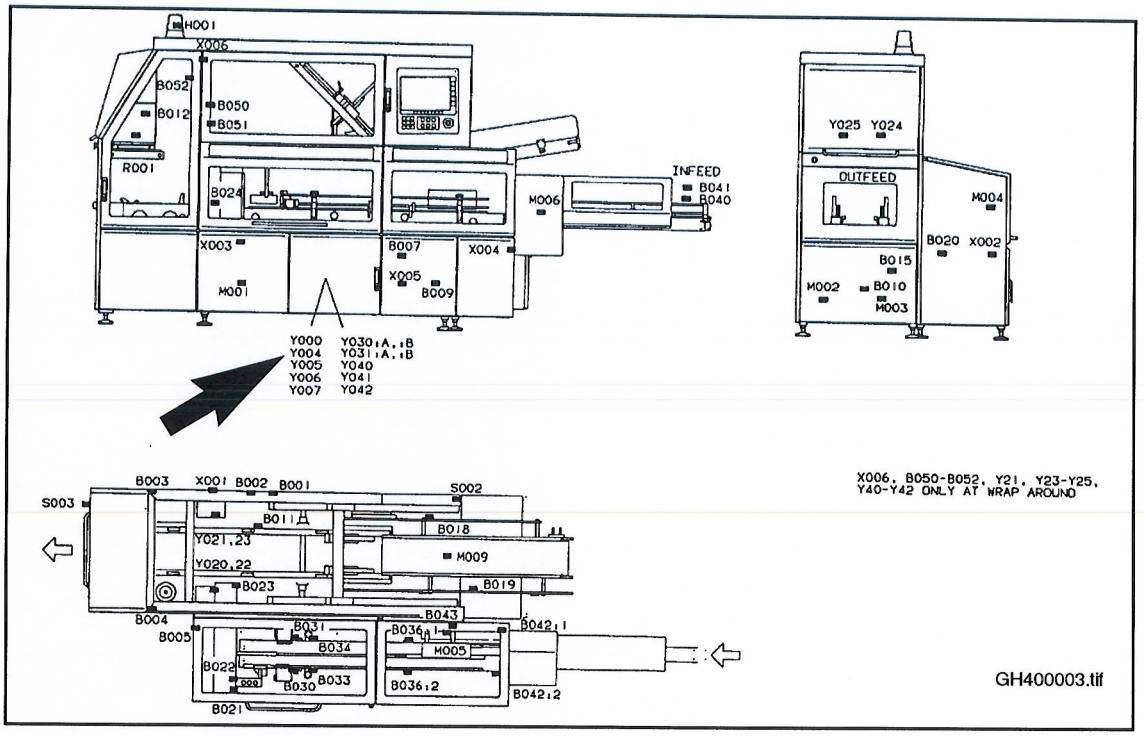
The prefix M indicates that the component is mounted on the machine.

- Go to chapter 4, **Component location**, to find the position of the component (Y004) on the machine
- Go to chapter 8, **Program documents** to see the use in the program
- Go to Cross reference list at the end of PLC-listing and find the output (%Q0014)

Note! **All** the examples in **"How to use EM"** are composed only to demonstrate, and have nothing to do with the distribution equipment this EM handles.

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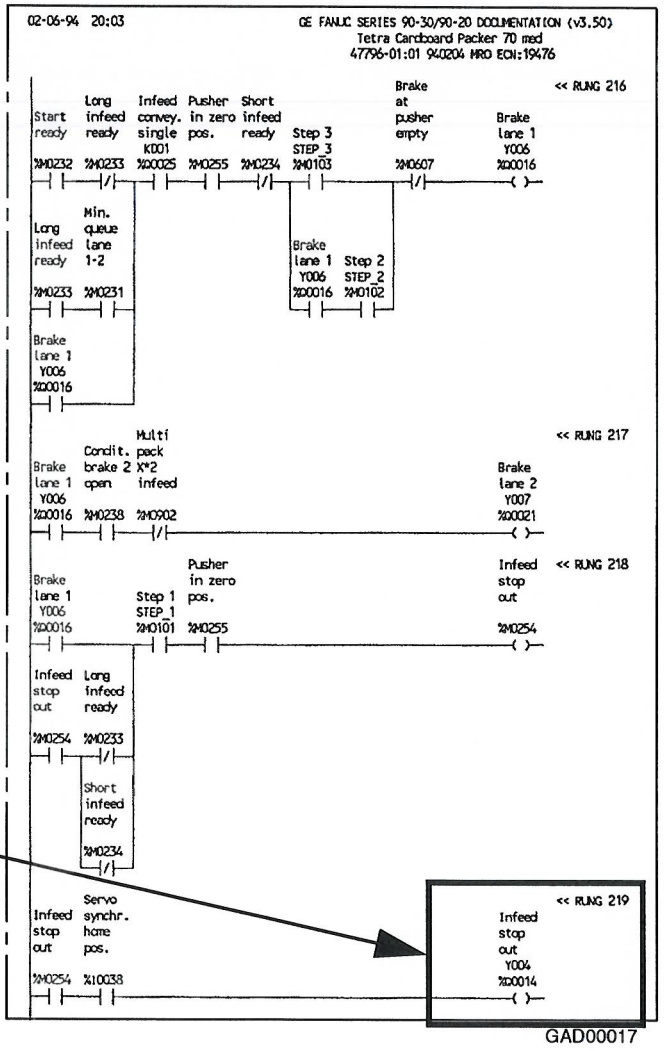
03-04-94 15:06 GE FANUC SERIES 90-30/90-20 DOCUMENTATION (v3.50)
Tetra Cardboard Packer 70 med
47796-01:01 940204 MRO ECN:19476

REF.	NICKNAME	REF. DESCRIPTION / CROSS REFERENCES
		-]/[- 325
%I0059	B042	Package counter
		-] [- 175,177,197
		-]/[- 197
%I0060	B043	Divider in pos.
		-] [- 26,192
		-]/[- 198
%I0062	B200	Pack. on single conv.
		-]/[- 140
%I0065	B050	WA flap upper pos.
		-] [- 273
%I0066	B051	WA flap lower pos.
		-] [- 270
%I0067	B052	WA squeez. upper pos.
		-] [- 273
		-]/[- 272

OUTPUT (%Q) CROSS REFERENCES

REF.	NICKNAME	REF. DESCRIPTION / CROSS REFERENCES
%Q0001	K002	Main shaft motor
		-( ) 138
%Q0002	K003	Feeding motor
		-( ) 138
%Q0003	G002_2	Main shaft high speed
		-] [- 248,250
		-( ) 248
%Q0004	G002_7	Main shaft start
		-] [- 237,253,290,334,335
		-]/[- 241,289
		-( ) 248
%Q0005	G003_2	Feeding motor high speed
		-( ) 251
%Q0006	G003_7	Feeding motor start
		-] [- 132,237,250,251,321
		-]/[- 230,232
		-( ) 250
%Q0007	K005	Lane divider
		-] [- 193,198
		-]/[- 189
		-( ) 198
%Q0009	Y000	Pressu.
		-( ) 134
%Q0013	Y008	Folding support down
		-( ) 239
%Q0014	Y004	Infeed stop out
		-( ) 219
%Q0015	Y005	Flap up
		-( ) 237
%Q0016	Y006	Brake lane 1
		-] [- 142,206,209,216,217,218
		-]/[- 225
		-( ) 216
%Q0017	K006	Belt brake
		-( ) 135
%Q0018	K16_K26	Belt brake
		-] [- 154,167,180,183,185,186,190,197,281
		-]/[- 187,188,280
		-( ) 190
%Q0019	K004	Servo motor pusher
		-] [- 222,223
		-]/[- 221
		-( ) 222

GAD00004



GAD00017

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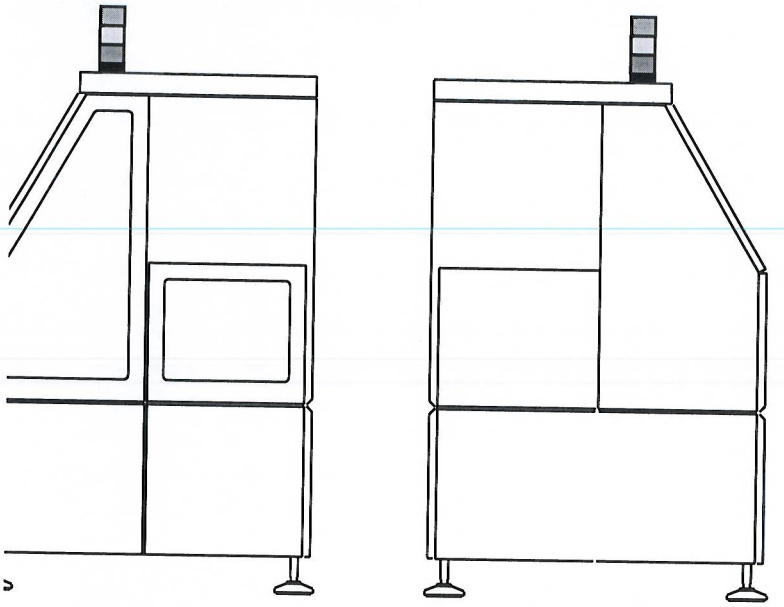
Terminology

Abbreviations

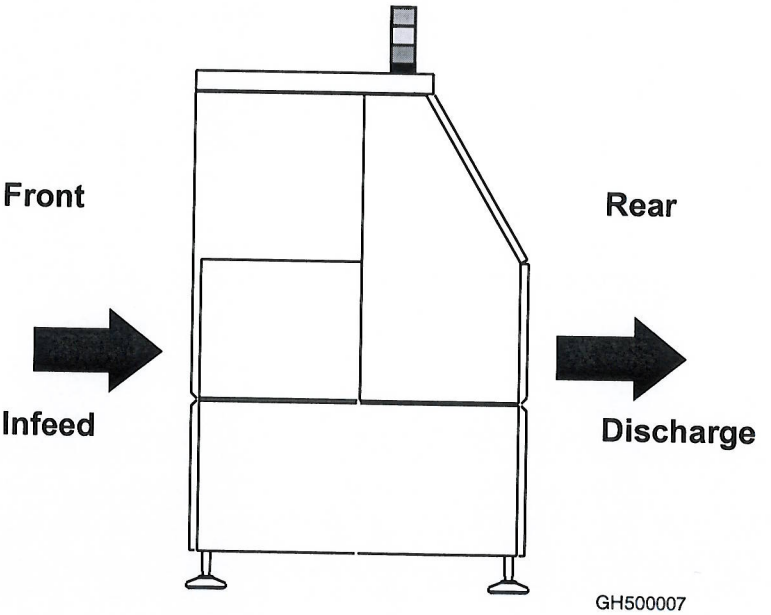
Words	Explanation
CE	Communautés Européennes / European Communities
EEA	European Economic Area
control voltage	voltage used to control the machine
operating voltage	main supply (the voltage that makes the machine work)

Machine orientation

Definition of direction



GH500008

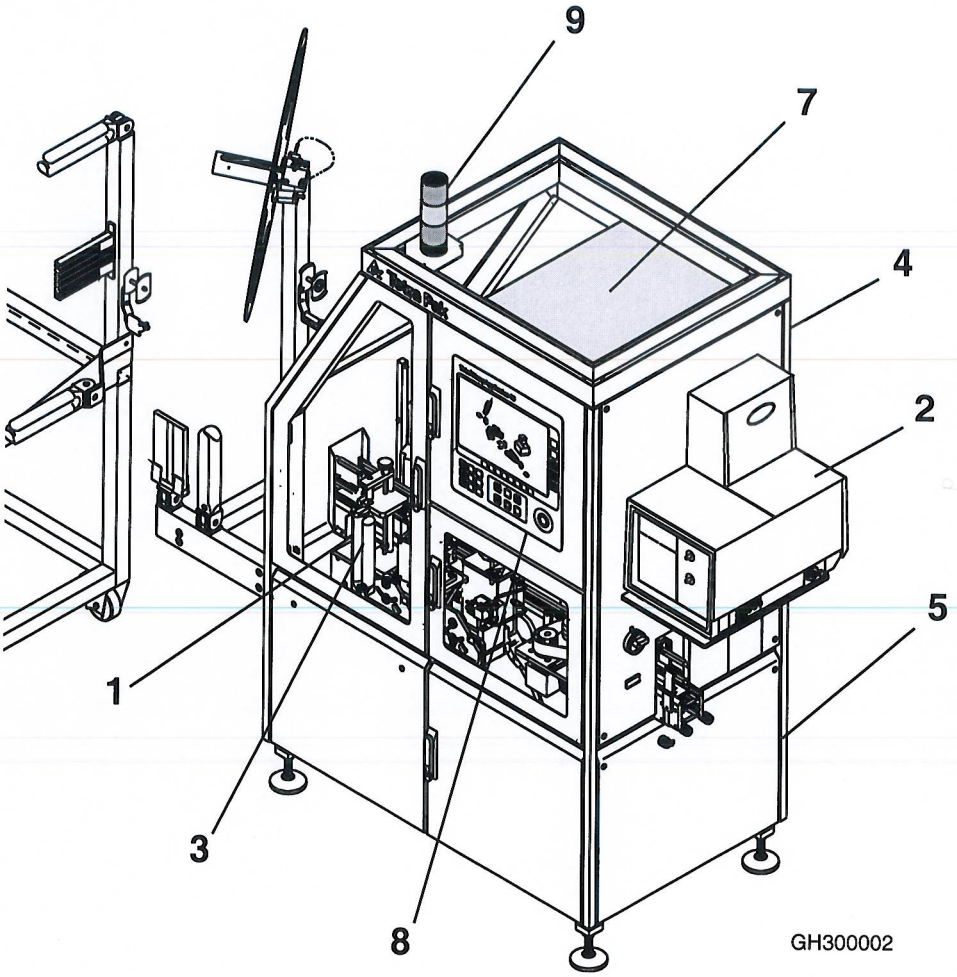


GH500007

1.0 TH400237.en

Main section location

1	Conveyor Section	B- 678583 - 040V
2	Hot Melt Equipment	B- 678584 - 020V
3	Applicator Unit	B- 678585 - 040V
4	Machine Covering	B- 678586 - 030V
5	Machine Body	B- 678587 - 030V
6	Magazine	B- 678588 - 020V
7	Electrical Cabinet	CE-42254-030V
8	Panel	CE-42255-030V
9	Warning Lamp	C-581689-020V



1.0 TH400237.en

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2. Safety precautions

1.0 TH400238.en

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Warning levels 2-3

Warning signs **2-3**

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Service technician 2-5

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Noise level in accordance with ISO 11201 2-15

Hearing protection **2-16**

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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 Electrical Manual (EM).

Warning levels

This Electrical Manual (EM) 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.

1.0 TH400238.en

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.



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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.



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WARNING! **Heat energy!**
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.



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1.0 TH400238.en

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

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 sevice technician and the electrician to assure that the machine safety devices are fully operational before he/she finishes the maintenance or service work.

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

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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).*

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

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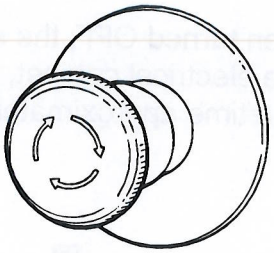
Emergency stop

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.

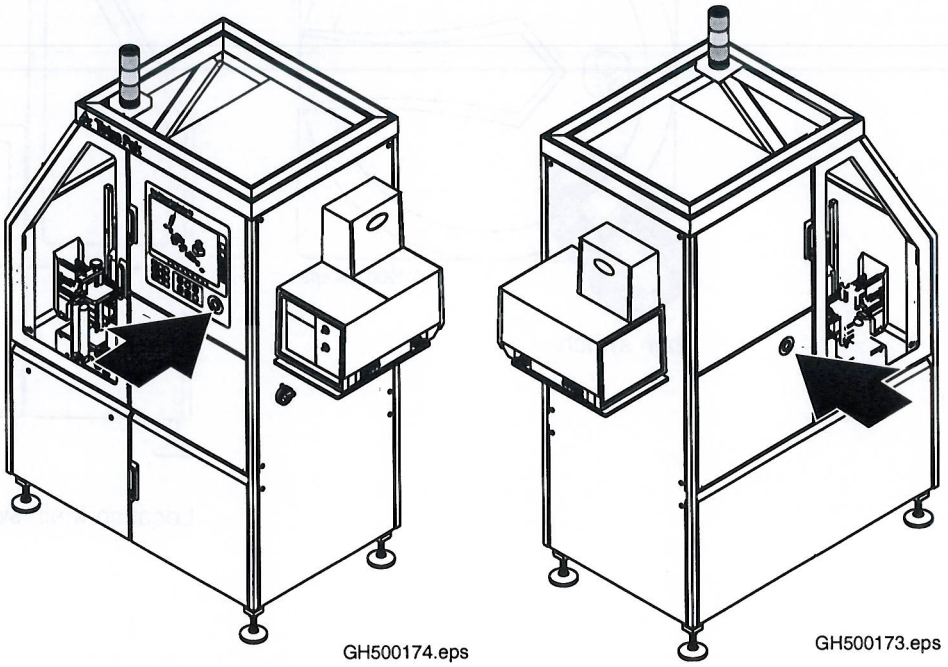
Emergency stop must only be used in case of danger to people or machine. To stop production in the normal way, see the **Stop**-section in the Operation Manual (OM).

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



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Emergency stop button



GH500174.eps GH500173.eps

Location Emergency stop buttons

1.0 TH400238.en

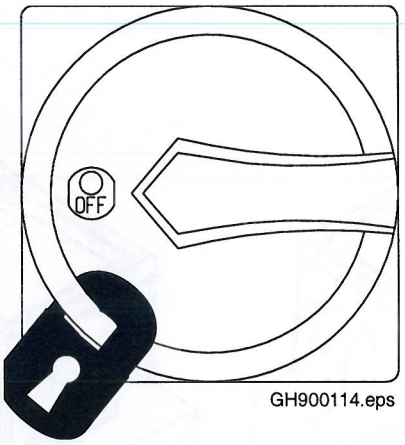
Main switch

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.

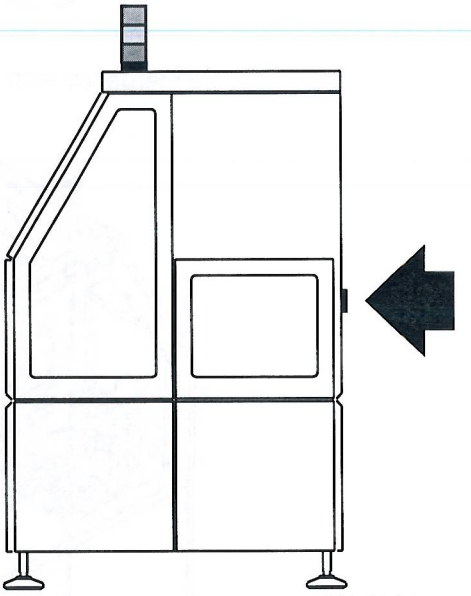
Turning the **Main switch** OFF will not cut the power supply to the machine. The cable, the connection and the **Main switch** itself will still be energized.

After the **Main switch** has been turned OFF, the step motor rack A030 located in the electrical cabinet, still can remain high voltage. Discharge time approximately five minutes.



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Main switch



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Location Main switch

1.0 TH400238.en

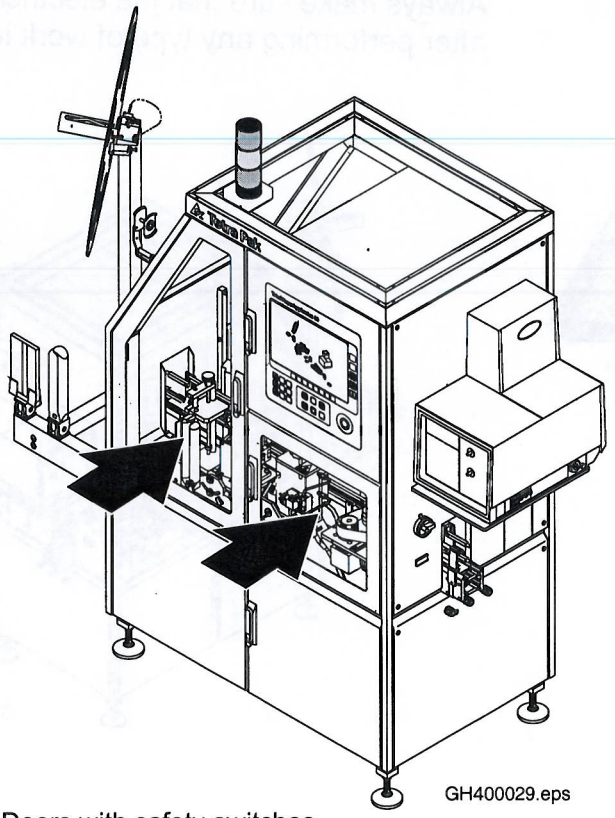
Doors and covers

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.



Doors with safety switches

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.

Electrical cabinet

DANGER!

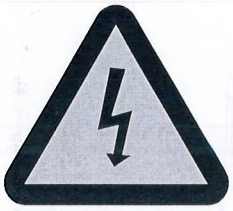
Risk of immediate danger to life!
The voltage is 400V inside the electrical cabinet. Risk of immediate danger to life through electrical shock. In case of accident, immediately call for medical attention.

After the **Main switch** has been switch OFF, the step motor rack A030, located in the electrical cabinet, still can remain high voltage. Discharge time approximately five minutes.

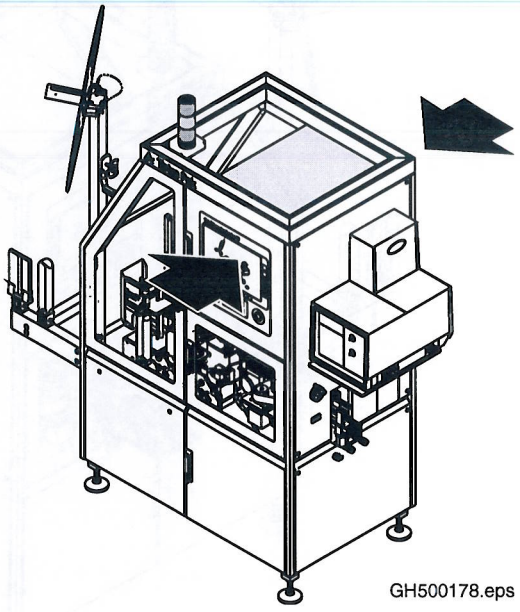
Work inside the electrical cabinet must be performed by skilled or instructed persons only. For more information, see section Requirements on personnel, on page 2-5.

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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1.0 TH400238.en

Hot melt equipment

General

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.

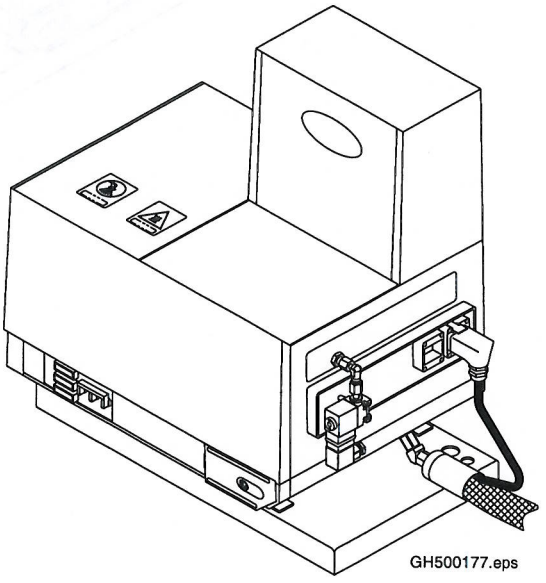
Always wear safety glasses, protective gloves, and other protective clothing to avoid injuries caused by splashing hot melt material.

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.

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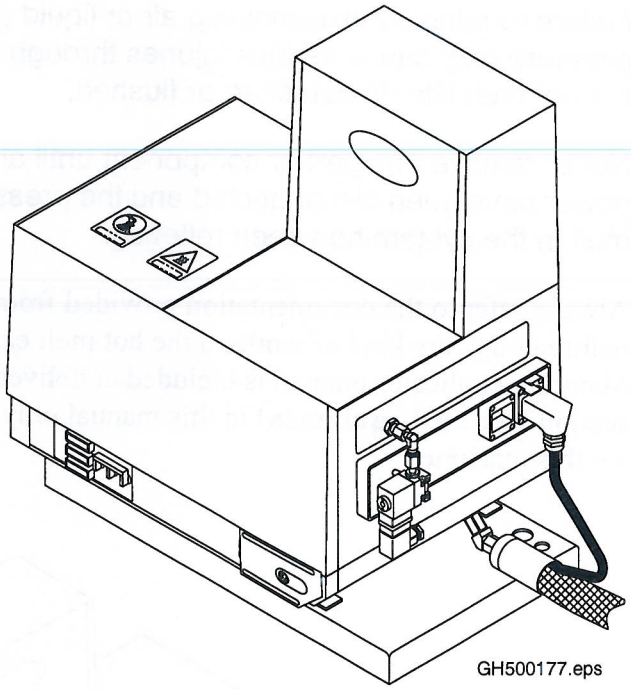

GH500177.eps

(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!



GH500177.eps

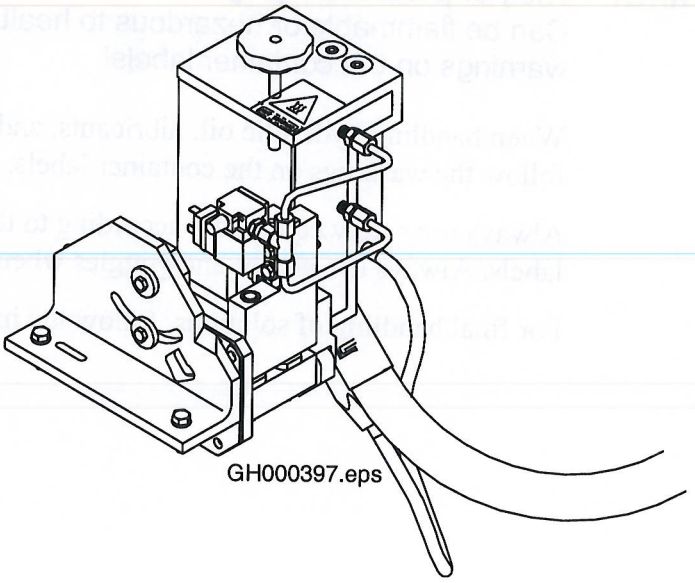
1.0 TH400238.en

(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 hot melt applicator is very hot and there is risk of severe burns. Never touch the cover of the hot melt applicator!



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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.

Chemical products

WARNING! **Risk of personal injury!**
Can be flammable or hazardous to health. Read the warnings on the container labels!

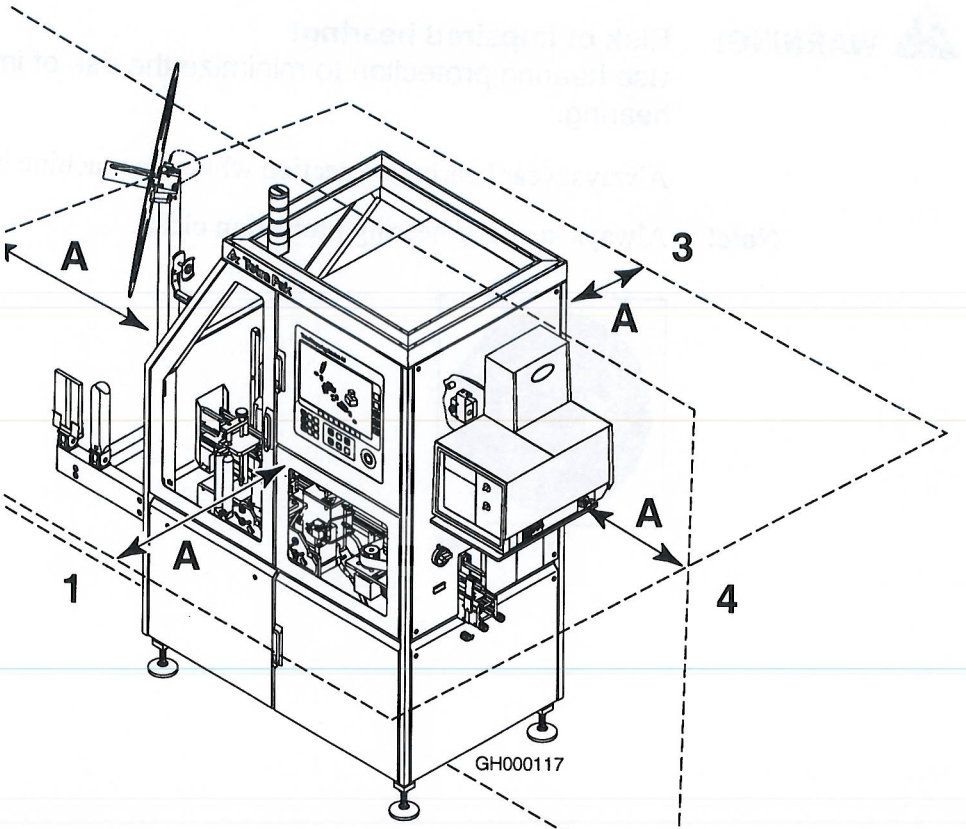
When handling hydraulic oil, lubricants, and cleaning solutions, carefully follow the warnings on the container labels.

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.

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Noise emission



A = 1 meter
Microphone placed 1.6 meters up

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Data

Document	DE 95/147
Date	95-02-13
Machine no	38014-28
Draw. spec.	678547-010V
Mech. ECN	22296
El. ECN	20909

Noise level in accordance with ISO 11201

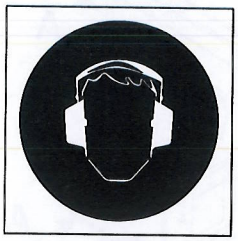
Measuring position number	Measured equivalent noise level dB(A) Production	dB(A) Production, no packages
1	65.8	60
2	65.0	-
3	65.6	-
4	66.2	-

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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1.0 TH400238.en

3. Electrical system description

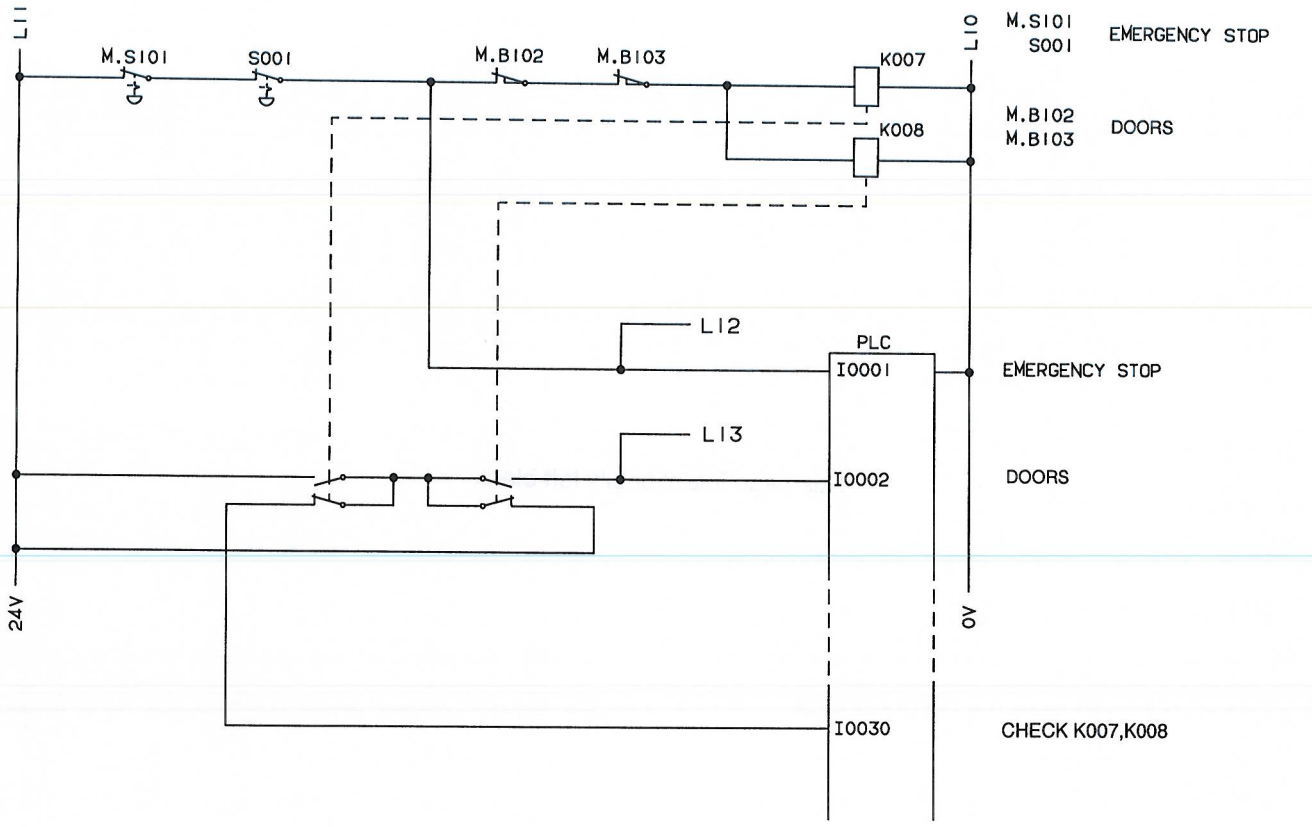
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Safety system 3-3

1.0 TH400239.en

Safety system



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1.0 TH400239.en

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4. Component location

2.1TH400240.en

Table of contents

CE-list 42257-030V Electrical document

ECN No 25768 Date 971125

Mounting drawing (electrical cabinet) 52608-05:03
. . . . . -06:02
. . . . . -07:03
. . . . . -12:02

(control panel) . . . . . -08:03

(safety components) . . . . . -09:02

(other components) . . . . . -10:02
. . . . . -11:02

Fuse panel sign 591263

2.1TH400240.en

5. Circuit diagrams

2.1TH400241.en

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CE-list 42257-030V Electrical document

ECN No 25768 Date 971125

Position summary ..... 44300-02:03 page 1-2

Circuit diagram ..... -05:03
..... -06:02
..... -07:03
..... -09:03
..... -10:03
..... -11:03
..... -12:03
..... -13:03
..... -14:03
..... -15:03
..... -16:03
..... -17:03
..... -18:03
..... -19:03
..... -20:03
..... -21:03
..... -22:03
..... -23:02
..... -24:02
..... -25:02
..... -26:02
..... -27:02

Earth summary ..... -89:03

Line summary ..... -90:03 page 1-5

Terminal summary ..... -91:03 page 1-2

Alteration message ..... -99:03

2.1TH400241.en

6. Connection diagrams

2.1TH400242.en

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CE-list 42257-030V Electrical document

ECN No 25768 Date 971125

Connection diagram 61443-05:03
..... -06:03
..... -07:03
..... -08:03
..... -09:03
..... -10:03
..... -11:03
..... -12:03

2.1TH400242.en

7. Mains connection diagrams

2.1TH400243.en

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CE-list 42257-030V Electrical document

ECN No 25768 Date 971125

Mains connection diagram 61444-05:02
.....-06:02

2.1TH400243.en

8. Program documents

2.1TH400244.en

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CE-list 42257-030V Electrical document

ECN No 25768 Date 971125

Ladder diagram ..... 47875-01:05 page 1-67

Cross reference list .....-01:05 page 68-81

Configuration .....-01:05 page 83-85

2.1TH400244.en

EM binder labels. 40 mm Full width *Note! This page is generated **automatically**. using the **variable definitions** made in the **front page** file!!*

Tetra Applicator 46
678547-040V

Issue 9711 Doc No EM-585402-0102

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678547-040V

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