

Hoyer A/S



**Freezer training**  
**Loseley Dairies**  
UK

1 Hoyer Info

2 Freezer Lay-out

3 Cylinder / Viscosity control

4 Air-system

5 Cooling system

6 Pumps

7 Shafts / Sealing / Bearings

8 Maintenance

9 Electrical system: Control panel

10 Electrical system: Power cabinet



We hope that this Hoyer training manual will be of assistance to you. Should you have any comments or questions please do not hesitate to contact your local representative or a Hoyer office.

Machine type                      KF-Freezers

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Production no.                    Z115,6425  
    Z115,6501

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**Loseley Daries**

Freezer training

From 13 feb. to 15 feb 1995

Loseley Daries UK

15/02-1995

Christian Bjørnsen

## SPARE PARTS INFORMATION

### Order of spare parts

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When you wish to order spare parts for your Hoyer machines, we kindly ask you to try to find the spare part number in the spare part catalogue (SPC) belonging to the machine .

If this is not possible, then we need the machine-number, i.e. the number which is stamped on the supplier sign. This number always begins with an Z followed by a three numbered type number and a four numbered serial number. E.g. **Z 115-6518**, for a KF 1200, with serial number 6518.

This number can help us find exactly the parts lists belonging to this specific machine.

If you are sure that you have found the right spare part number, you can send the order by telefax or telephone to one of our employees in our spare parts department.

After placing your order, you will receive a written order confirmation stating price and terms of delivery. This order confirmation will normally be sent by telefax the day after receipt of order.

### Opening hours

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In case of any doubts or further questions, these can be clarified by phoning the spare parts department. We can be reached from 8<sup>00</sup> - 17<sup>00</sup>, Danish time.

Outside normal opening hours, it is also possible to leave a message on Hoyers answering machine and we will contact you as soon as possible.

### Times of delivery

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Normally we are able to supply approx. 70% of the ordered goods within 2-4 days after placing the order. 20% within 4-8 days and 10% from 2-6 weeks after placing the order.

This counts working days, excl. holidays and weekends.

On payment of an additional charge, it is possible to have the goods sent by courier for delivery within approx. 24-36 hours. Likewise with reservation for holidays and weekends.

Order placed after 11<sup>00</sup> o'clock, Danish time, will due to paperwork and packing be sent the next day at the earliest.

### Service contracts

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Drafts for overhaul contracts of freezers are now available. These draft agreements are meant as basis for negotiation and can be adjusted to your needs and wishes.

For particulars concerning draft agreements, please apply to Hoyer After-sales department.

## Customer Service

## Training Courses

for operators of ice cream equipment

Running a modern ice cream plant efficiently demands a well-trained staff. The Hoyer Customer Service department, therefore, offers training tailored to meet your specific needs.

### Benefits of Hoyer training courses

- the course can be designed for the appropriate training level
- both theoretical and practical training is included
- the Hoyer instructors are expert service engineers with hands-on experience
- a well-trained staff improves line performance, reduces downtime, facilitates fault-finding and speeds up remedial action which all adds up to higher profits

### Freezer training courses

The Hoyer freezer training course is one of our most standardized courses, designed to cover all KF models.

A Freezer course lasts 3 days and if no other arrangements have been made, the content will be as follows:

#### A. INTRODUCTION

1. Basics about ice cream
2. The purpose of the freezer
3. Freezer operating principles

#### B. MECHANICAL PRINCIPLES

1. Mix/cream flow, MPS-system, pumps, barrel and dasher
2. Air system
3. Ammonia system

#### C. CONTROL SYSTEM

1. The entire process with manual control
2. Manual production
3. Automatic production
4. Remote control including computer principle

#### D. OPERATION

1. Programme selection
2. Manual production
3. Automatic production
4. Remote control including sensor principle

#### E. SAFETY

#### F. MAINTENANCE – SPARE PARTS

### FF 4000 Ingredient feeder raining course

The FF 4000 training course lasts one day and may be arranged separately or held together with the KF freezer training course. The content of the course is as follows:

#### A. INTRODUCTION

1. Basics about ice cream
2. The purpose of the FF 4000
3. FF 4000 operating principle

No. CS 80410 E	500
Reg. OGH 1	93.03.

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# Hoyer

The length of the course will also depend upon individual customer re-

- Managers
- Quality control
- Operators
- Technicians

be trained, e.g. varied according to the type of staff to suit the requirements of the particular customer and processing line. The content and level of the course can be Hoyer training courses can be designed

## Customer designed training courses

### F. MAINTENANCE - SPARE PARTS

#### E. SAFETY

5. Remote control including sensor principle
4. Interface
3. Automatic production
2. Manual production
1. Programme selection

#### D. OPERATION

5. Weight cells principle
4. Remote control including computer
3. Automatic production
2. Manual production
1. The entire process with manual control

### C. CONTROL SYSTEM

3. Mixer
2. Dosing unit
1. Feeder

### B. MECHANICAL PRINCIPLES

quirements. The following special courses are examples of customer designed training:

#### 1. Mixing and freezing of ice cream

Instruction of theoretical principles and practical difficulties of mixing and freezing ice cream.

#### 2. Straightline, Rollo, Viking, Extruline

Optimum use of the control panels. Optimum start-up with a minimum production loss.

Clarification of typical interruptions in production.

Maintenance and trouble shooting.

#### 3. Erection and running-in new lines

Instruction of operating personnel before and during commissioning of the new machinery in order to ensure efficient operation and performance.

Provide managers and technical personnel with an in-depth knowledge regarding the functioning and the possibilities of the new machinery.

All Hoyer training courses including both standardized and special courses may be integrated or combined according to individual requirements.



## Customer Service

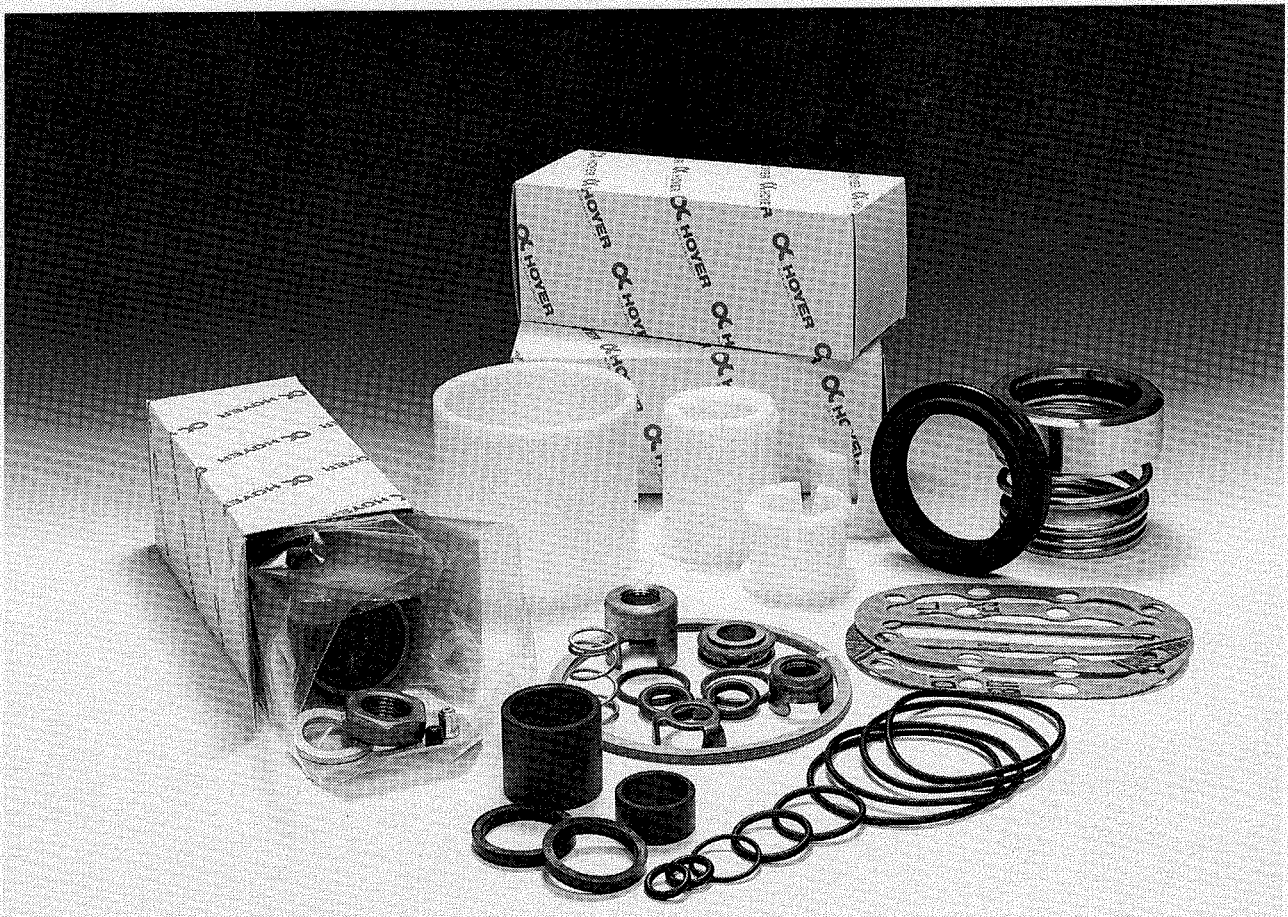
## Repair kits for Hoyer equipment

### Description

Hoyer repair kits are designed to improve the efficiency of the repair and maintenance of our equipment. Since even short interruptions in production may be very costly it is a wise policy to stock repair kits containing essential parts.

### Benefits

- easy to purchase parts since all necessary parts are covered by one order
- easier to order the correct parts
- supplier delivery is facilitated and delivery time is reduced because only one supplier is involved
- repair time and production losses are reduced since essential repair parts are on hand



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## Customer Service

### Description

The Customer Service department of Hoyer is able to offer the following exchange parts for Hoyer equipment:

- cylinders for freezers
- pumps for all types of freezers
- print cards
- displays for freezers
- manometers for NH<sub>3</sub> and cream pressure

### Warranty and quality

All Hoyer exchange parts are submitted to thorough quality control before leaving our workshop. Pumps are tested for leakage and capacity on our specially constructed test bench. Print cards, displays and electrical parts appear as new. Exchange cylinders are carefully controlled with regard to the thickness of the chromium layer and hardness.

**Consequently, all Hoyer exchange parts are guaranteed for one year from date of delivery.**

### Benefits of the Hoyer Exchange Parts Service

- In case of breakdowns or during overhauls you are ensured quick delivery of the exchange part which reduces downtime and costly production loss caused by lengthy traditional repairs.

## Exchange parts service with a 1 year guarantee

- Furthermore, the Hoyer exchange service ensures not only faster but also more efficient repair thus diminishing the risk of repeated repairs.
- Generally speaking, all exchange parts are in stock and urgent deliveries within Europe can take place by courier in approx. 24-36 hours.

### How the exchange parts service works

#### For pre-planned maintenance:

- you send the used or damaged part to Hoyer for repair. Hoyer then decides whether repair is possible.
- if yes, repair is made, and the reconditioned unit is sent as soon as possible. Invoice for normal repair is issued.
- if repair is not possible, you are informed at once.

#### For breakdown:

- you order an exchange part for prompt delivery and Hoyer invoices you the price of a new part.
- after receipt of the used or damaged part, Hoyer decides whether repair is possible.
- if so, you will receive a credit note amounting to the difference between actual cost of repair and the price of a new part.

# Hoyer

No. CS 80408 E
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## Customer Service

## Overhaul kits for KF freezers

### Description

Based on the knowledge and experience accumulated through many years of working within the ice cream industry the Hoyer Customer Service department has developed a set of standard overhaul kits for the following KF freezers:

KF 1150 N, X and XC types  
KF 1200 N, X, XC, EX and EXC types

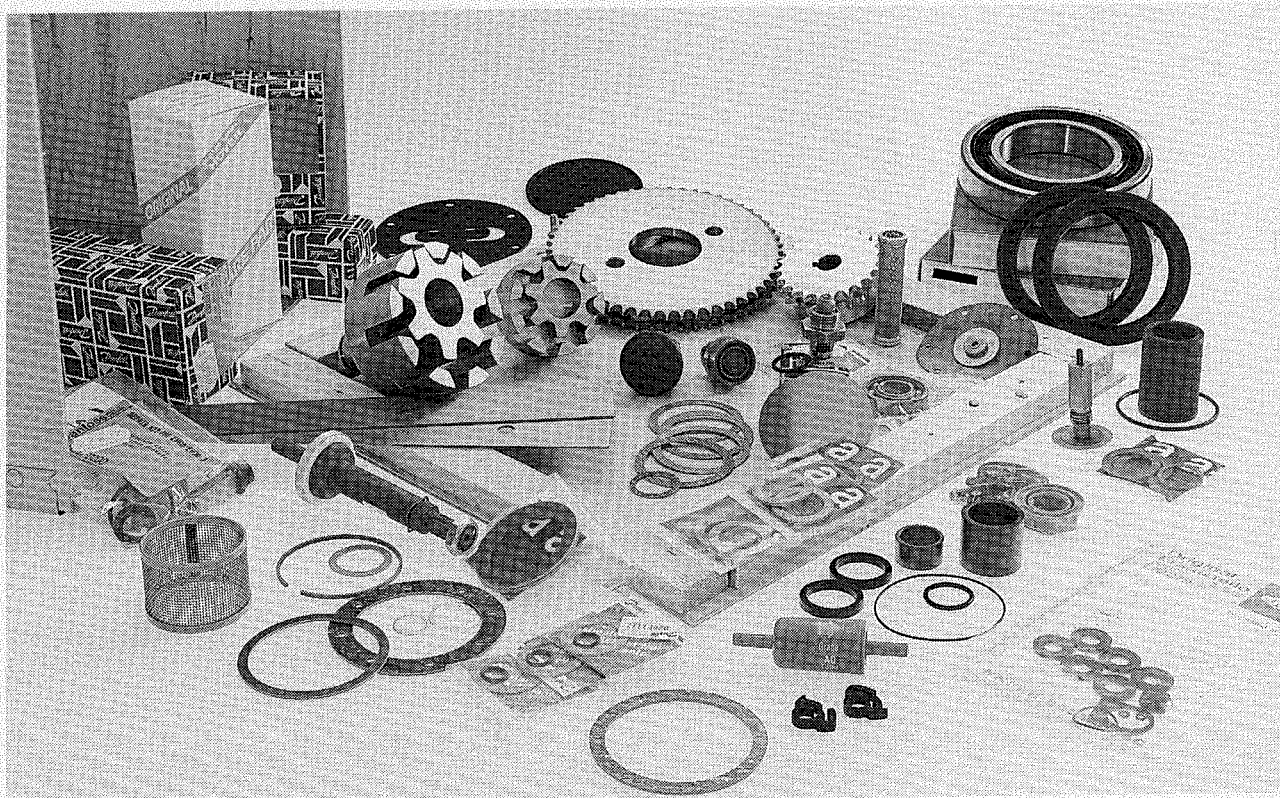
There are three overhaul kits for each type of freezer. Each kit is designed to meet the requirements of the individual freezer depending on the number of production hours run since the previous overhaul and/or the general condition of the freezer.

### Overhaul kit no. 1

This kit is designed for freezers which have been running between 1700 and 2000 hrs. Experience shows that a freezer that has logged this number of production hours should be overhauled. By fitting the replacement parts contained in this kit the freezer will be maintained at the best possible standard. It is, of course, especially important to carry out the overhaul before an up-coming high season.

### Overhaul kit no. 2

This kit is designed for freezers which have been running between 2000-4000 hrs.



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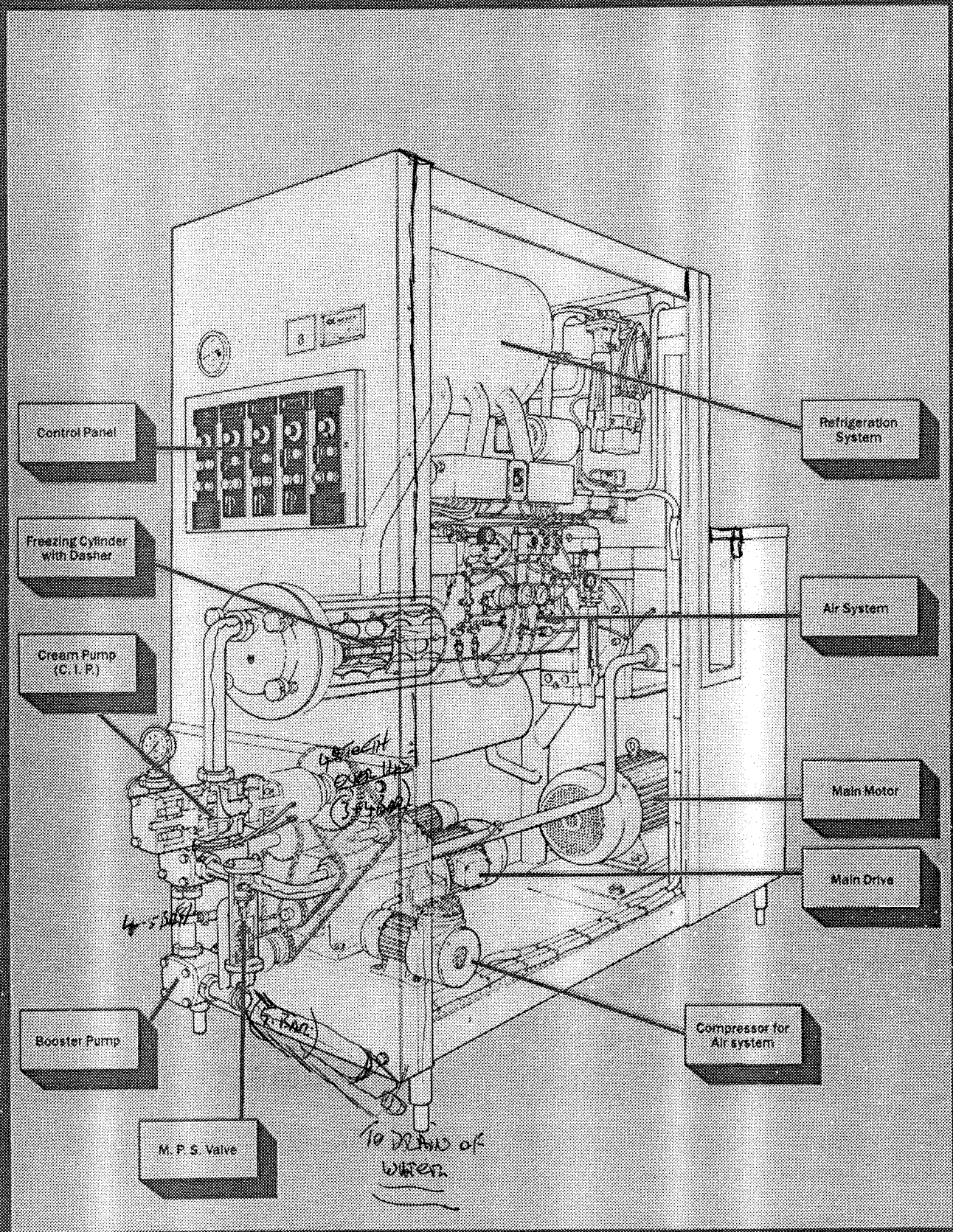
## Overhaul kit no. 3

This kit is designed for freezers where a total overhaul is required, for instance freezers which have been running for many years, or freezers bought second hand which need to be updated. In addition, freezers which have been maintained for a period of 5-6 years with kits 1 and 2 will normally also require a complete overhaul.

## Pump parts

The condition of the freezer pumps will always depend upon the type of product being run and it may be necessary therefore to supplement kits 1 and 2 with pump parts. **Important** When ordering overhaul kit 1, 2 or 3, always state the machine number to ensure delivery of the right parts.

# CONTINUOUS FREEZER KF 1200XC

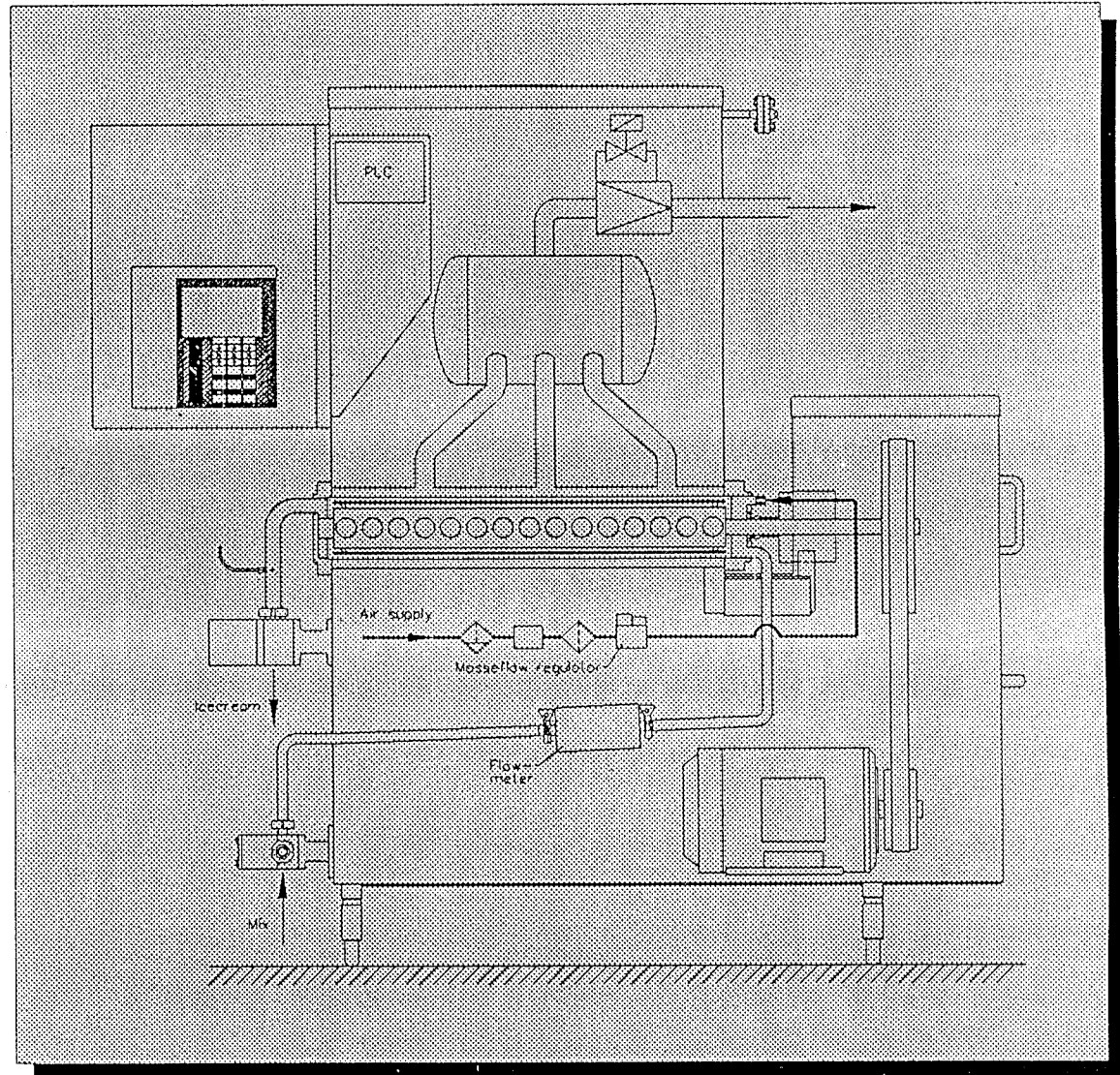


# Continuous Freezers

## Principle of operation

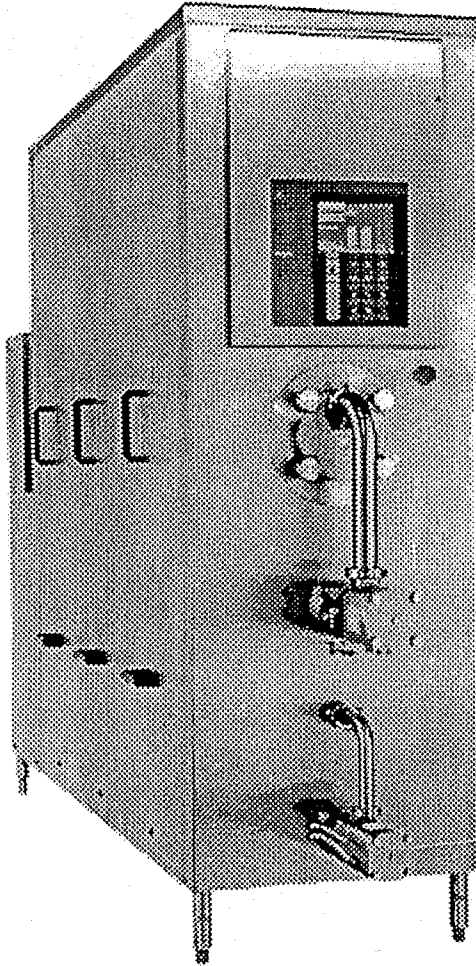
Freezing cylinder with dasher, surrounded by a refrigerant circulation jacket

Ice cream mix and air metering



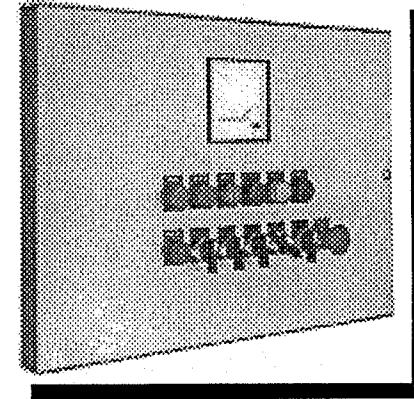
# Hoyer Continuous Freezers

## KF 500/1150/1200/1200E



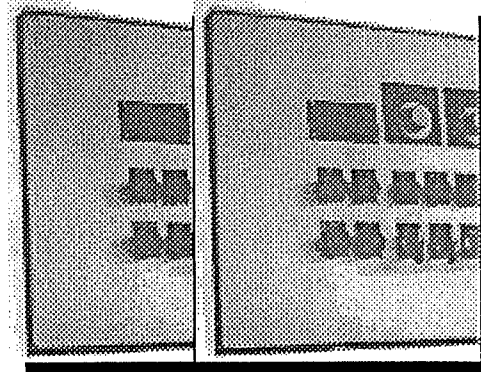
The XC-model  
-the fully computerized  
freezer:

- Total automatic control of overrun, capacity and viscosity



The N-model - basic freezer:

- All functions manually controlled



The X-model - includes:

- Easy start-up programme and control of overrun

# The Hoyer KF-series

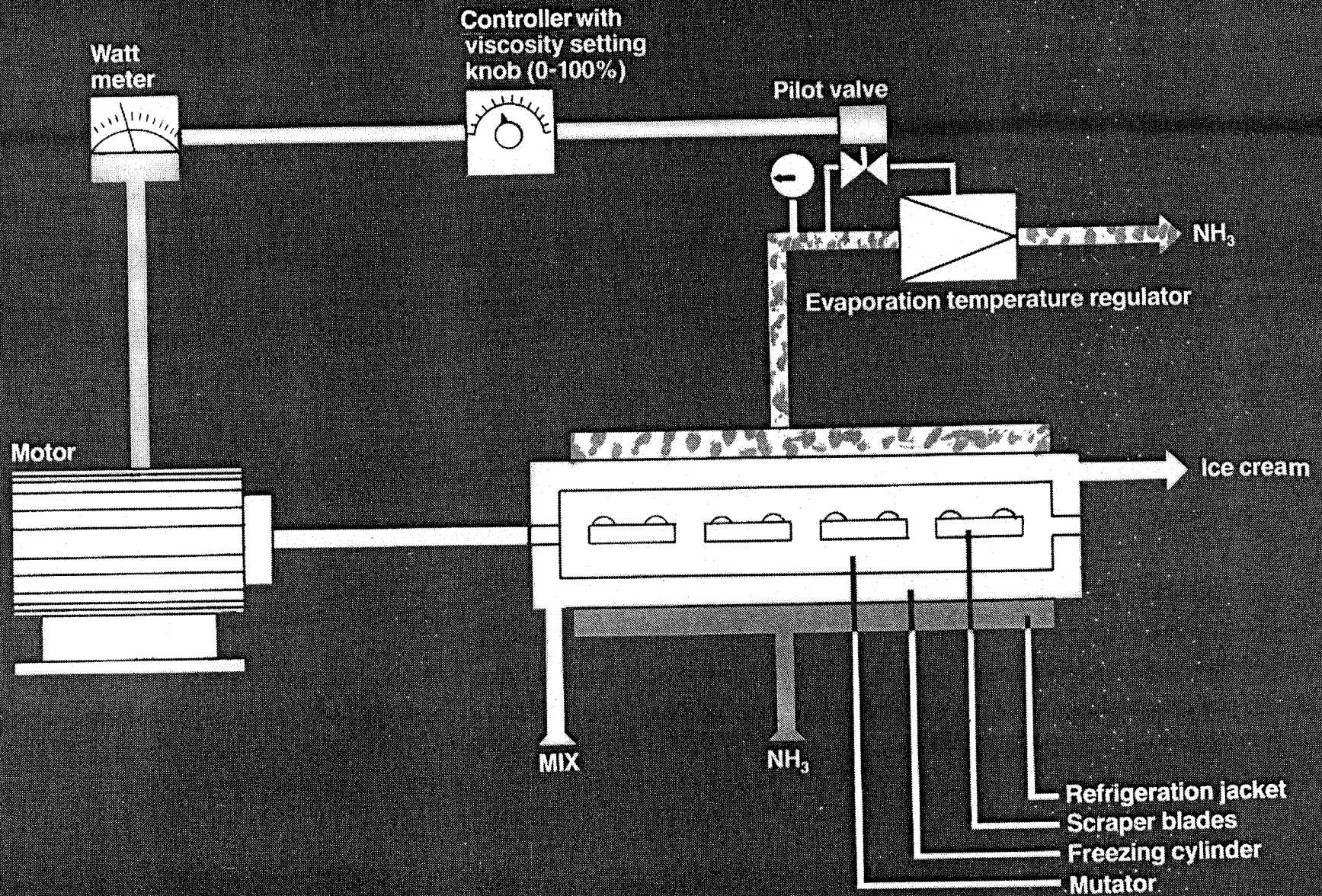
Freezer type	Nominal output per hour	
	Litres	U.S. Gall
KF 300	300	80
KF 500	500	130
KF 1150	1000	265
KF 1200 <sub>x</sub>	2300 <sub>+</sub>	600
KF 1200E	3000	800

Output figures are based on normal ice cream mix containing 38% solids produced under the following conditions:

Inlet temperature of mix.....+5°C/+41°F  
 Outlet temperature of ice cream.....- 5°C/+23°F  
 Overrun.....100%  
 Water inlet temperture (KF 300 only).....max. +20°C/+68°F  
 Suction temperature (except KF 300).....- 34°C/- 29°F  
 Oil content in ammonia (except KF 300).....max. 30 P.P.M.



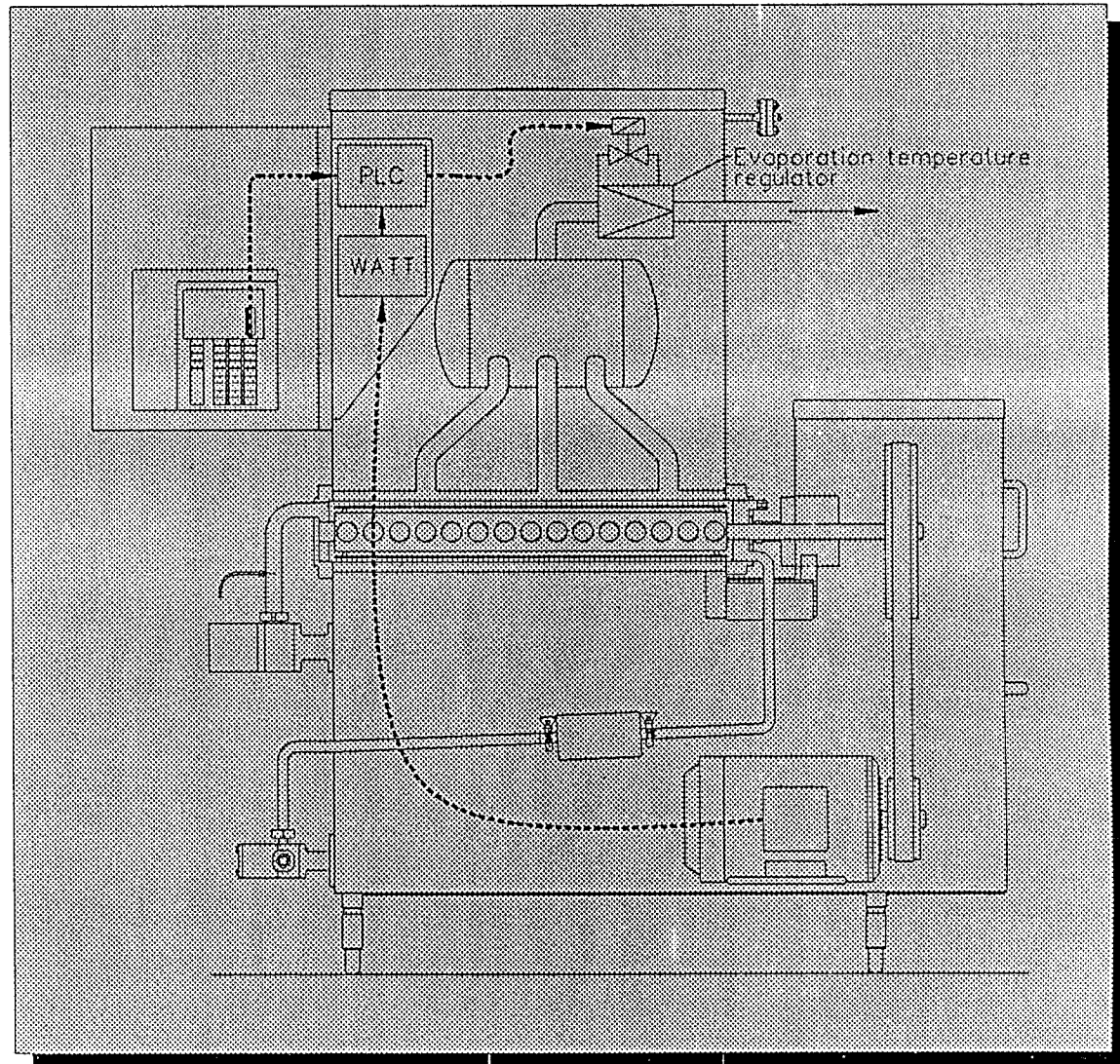
# VISCOSITY CONTROL



# Viscosity Control

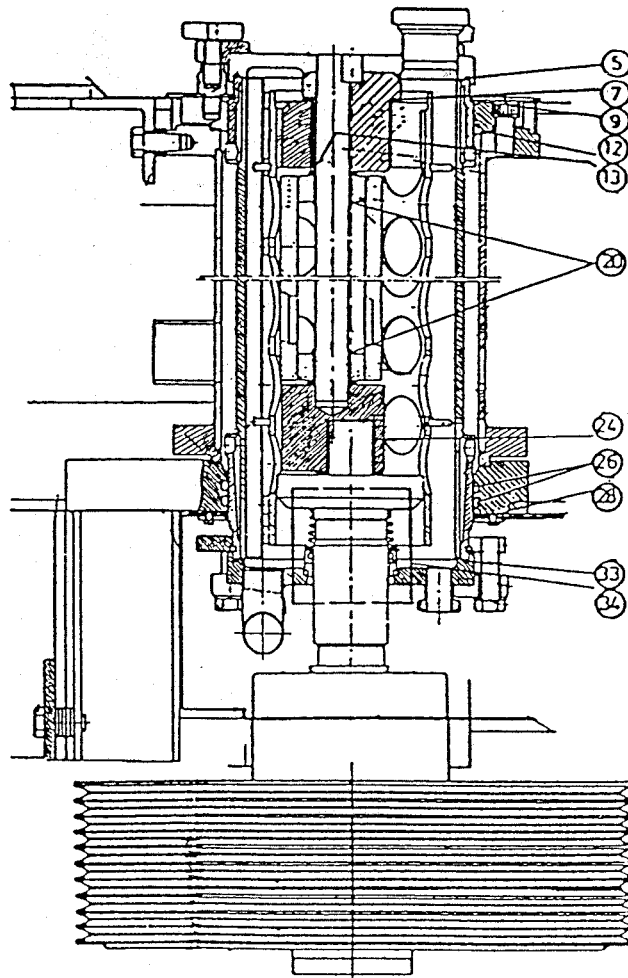
Viscosity control based on main motor load

Watt meter measuring motor load - PLC controlling refrigerant (Evaporation temp. regulator)



**REPAIR KIT KF 1200 - CYLINDER NH3**

<u>Pos. No.</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
	110,60264		Repair kit complete
Incl.:			
5	5124,5061	1	O-Ring
7	110,10083	1	Bearing bush
9	5124,5062	1	O-Ring
12	110,20014	2	Gasket
13	5124,5741	1	O-Ring
20	110,10199	5	Bearing bush
24	110,10120	1	Bearing bush
26	5124,9060	2	O-Ring
28	5124,5063	1	O-Ring
33	5124,5061	1	O-Ring
34	5128,0355	1	O-Ring
34	5128,0351	1	Carbon ring
34	5128,0354	1	O-Ring



stopgas 4 bar timer 3 min / turn by - pulse red run / stop  
 volume system 1150 27l rotor 5l  
 1200 54l

## Cylinder and rotor

### Disassembling rotor :

- Dismantle the cream outlet pipe
- Remove the notch bolts from the front cover
- Carefully pull out the front cover
- Carefully pull out the rotor from the cylinder



### Warning

The scraper blades are sharp and fitted loosely in the rotor.

### Rotor and dasher bearings:

The rotor and dasher bearings, which are manufactured in plastic, must be replaced when the clearance exceeds 1 mm.

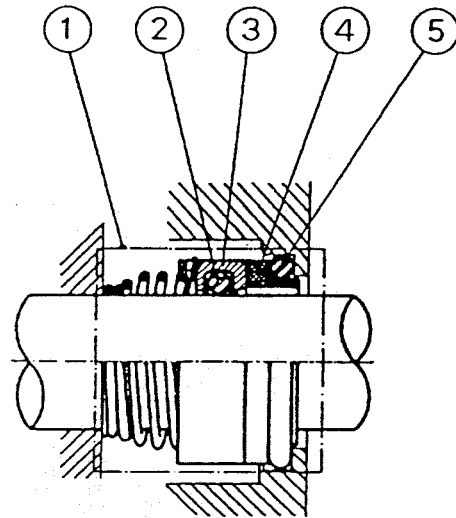


Fig. 1

### Installing rotor:

- Clean the shaft and shaft sealing and lubricate the parts with vegetable oil.
- Verify that the shaft sealing slides easily along the shaft.
- Just before pushing the rotor back into position: Pull the shaft sealing, pos. 3, a little forward so as to stretch the spring, pos. 1.
- Carefully push the rotor into position and verify that the freezing cylinder and the carbon ring, pos. 4, in the shaft sealing are not damaged.

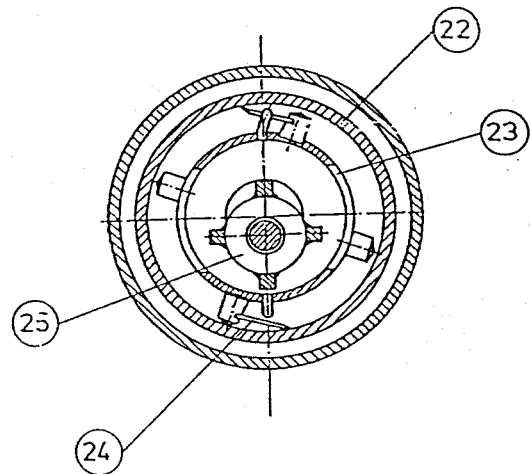


Fig. 2

### Checking and sharpening scraper knives:

See Figures 2 and 3.

The drawing at the top of fig. 3 shows one of the knives in the working position inside the freezing cylinder

The scraper knives should be sharpened when the width of the cutting edge exceeds 0.5 mm.

**Note:** Sharpening can only be done properly using a machine.

The width of the knives' cutting edges must be between 0.1-0.2 mm after sharpening. See the drawing at the bottom of Fig. 3.

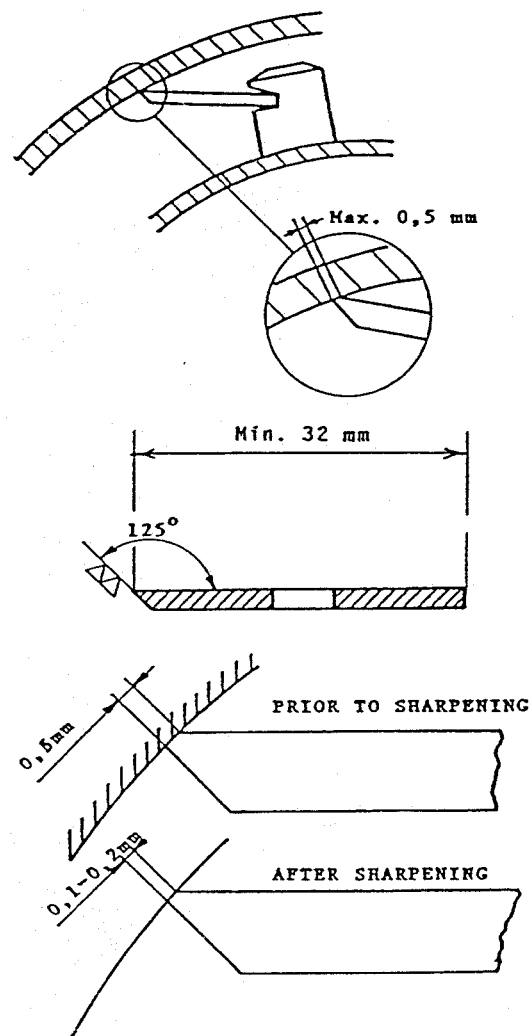
#### Disassembling cylinder:



**Important:** Completely drain the refrigerant from the freezer before starting to disassemble the freezing cylinder.

- Remove the front cover and carefully pull out the rotor. See the preceding section, "Disassembling rotor".
- Remove the rear cylinder cover.
- KF 1200 / 1200 E : Remove the lock ring, pos. 32, the cover ring, pos. 31, the seal ring, pos. 29, the O-ring, pos. 28, and the neck ring, pos. 27.
- Remove the bolts that hold the cover ring under the front cover and the corresponding O-ring.
- Remove the 8 umbraco bolts that hold the cylinder flange.
- Screw two 70 mm long dismantling screws (M16 thread for KF 1200 and M14 thread for KF 1150) into the threaded holes in the flange and pull the cylinder out of the cooling jacket by screwing the bolts through the flange.
- Pull the cylinder entirely out of the freezer and place it on a protective layer, for instance a sheet of cardboard.

#### Sharpening of scraperblades



**Fig. 3**

# Spare Parts List

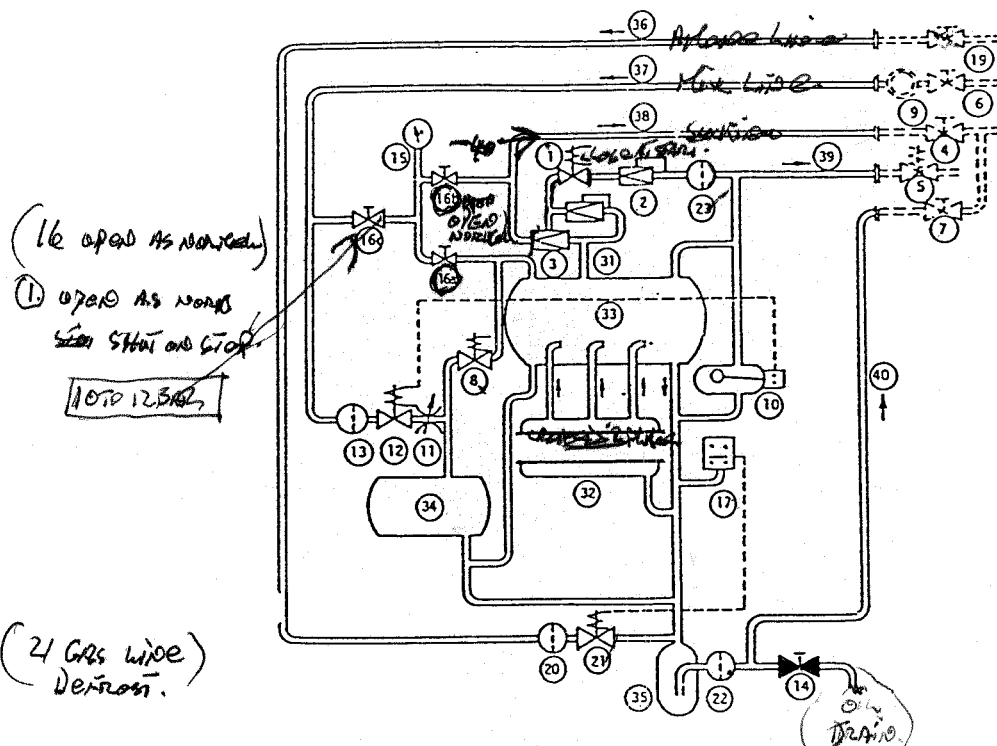
Date  
Page

26.08.1993  
2

MACHINE SERIAL NO. .... KF 1200 XC  
FIG. NO. .... 110,20721 AIR SYSTEM  
PART LIST NO. .... 110,80152

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0028	5318,4214	SOLENOID VALVE	1	Pc.
0036	5706,9008	PRESSURE TRANSFORMER	1	Pc.
0039	5441,9009	PRESSURE TRANSMITTER	1	Pc.
0040	5772,9005	THERMO SENSOR	1	Pc.
0041	5772,9005	THERMO SENSOR	1	Pc.
0045	5333,0466	PRESSURE GAUGE	1	Pc.
0075	5124,5911	O-RING	1	Pc.
0076	5335,0428	SILENCER	2	Pc.
0150	5162,9013	RETAINING BAND	2	Pc.
	110,20301	AIR SYSTEM		ASSEMBLY DRAWING

## Repair kits for KF 1200 XC Cooling system



				NH <sub>3</sub> SYSTEM (NC) NH <sub>3</sub> SYSTEM (NC) NH <sub>3</sub> SYSTEM (NC) SYSTEME NH <sub>3</sub> (NC)			115S04Y04006	5
				KF 1200			1/2	
Pos. No.	Pos. No.	Qty	Part No.	Rep.Kit	KF 1200xc	DESCRIPTION		
5	1	1	5403.9000		Solenoid valve	Magnetventil	Soupape solénoïde	
5	2	1	5403.4242	110-60203	Pilot valve	Pilotventil	Soupape pilote	
5	3		5403.9003	110-80056	Valve	Ventil	Soupape	
5	4*	1	5402.0435		Stop valve	Absperrventil	Soupape d'arrêt	
5	5	1	5402.9000		Safety valve	Sicherheitsventil	Soupape de sûreté	
5	6*	1	5402.0449		Stop valve	Absperrventil	Soupape d'arrêt	
5	7*	1	5402.0448		Stop valve	Absperrventil	Soupape d'arrêt	
5	8	1	5403.9010	5418-9017	Discharge valve	Auslaufventil	Soupape de décharge	
5	8	1	5705.9000		Spool	Spule	Bobine	
5	9	1	007.00108		Sight glass	Schauglas	Regard de passage	
5	10	1	5706.9010		Float switch	Schwimmerschalter	Interrupteur à flotteur	
5	11	1	5403.0577		Throttle valve	Drosselventil	Soupape d'étranglement	
5	12	1	5403.9010	5418-9017	Solenoid valve	Magnetventil	Soupape solénoïde	
5	12	1	5705.9000		Spool	Spule	Bobine	
5	13	1	5354.2384	5354-9022	Filter	Filter	Filtre	
5	14	1	5402.0448		Stop valve	Absperrventil	Soupape d'arrêt	
5	15	1	5442.1108		Pressure gauge	Manometer	Manomètre	
5	16	3	010.10302		Manometer valve	Manometerventil	Robinet à poiteau pour manometre	
5	17	1	5706.4250		Pressure control	Pressostat	Pressostat	
5	19*	1	5402.0449		Stop valve	Stopventil	Soupape d'arrêt	
5	20	1	5354.2384	5354-9022	Filter	Filter	Filtre	

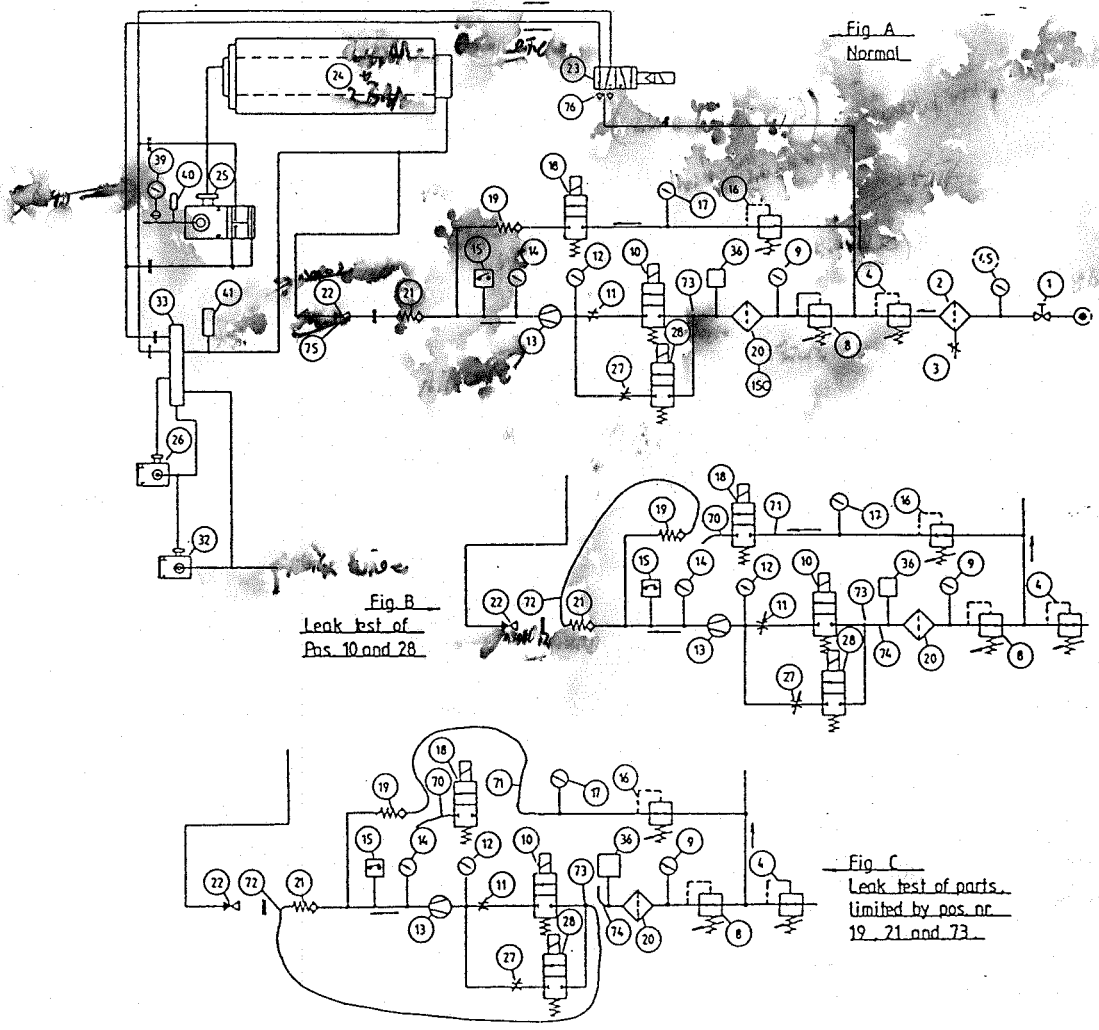


Fig. A  
Normal

Fig. B  
Leak test of  
Pos. 10 and 28

Fig. C  
Leak test of parts  
limited by pos. nr  
19, 21 and 73



## Spare Parts List

Date  
Page

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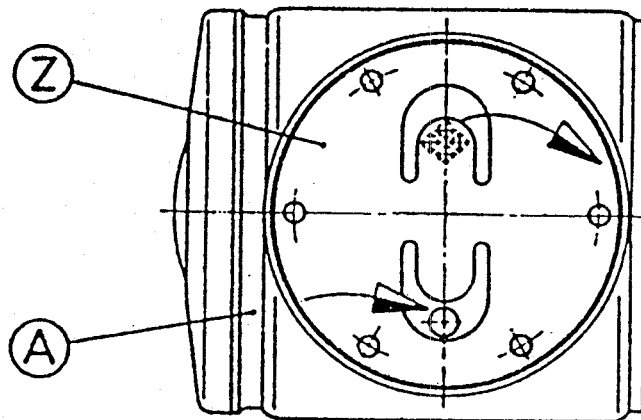
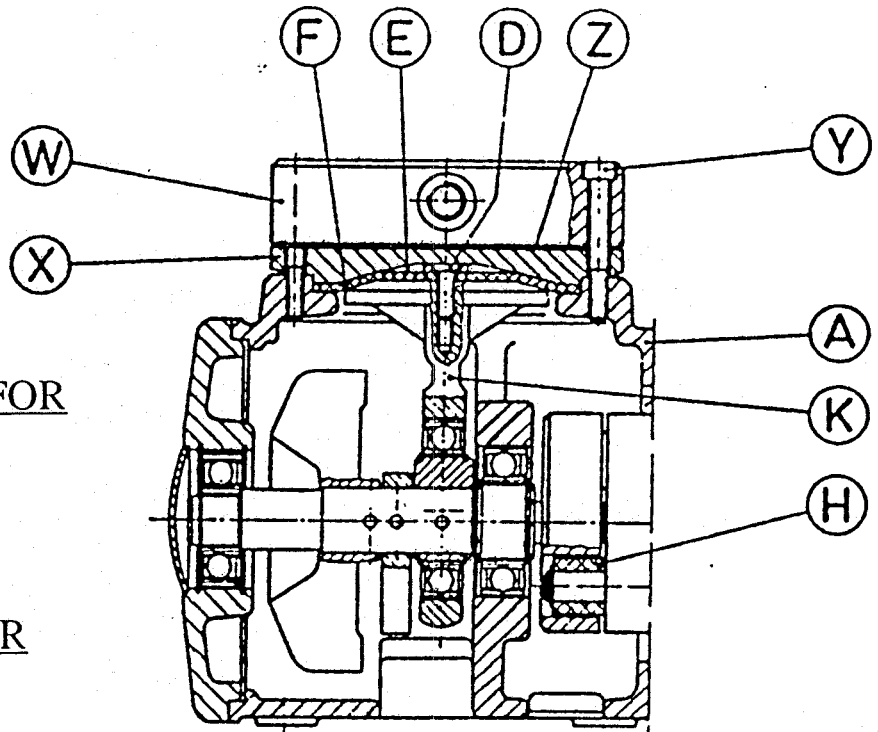
MACHINE SERIAL NO. ....		KF 1200 XC
FIG. NO. ....	110,20721	AIR SYSTEM
PART LIST NO. ....	110,80152	

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0001	5405,9001	BALL COCK	1	Pc.
0002	5354,2381	FILTER	1	Pc.
0003	5315,5120	THROTTLE VALVE	1	Pc.
0004	5318,0516	REDUCTION VALVE	2	Pc.
0008	110,60149	MOTOR VALVE, AIR	1	Pc.
0009	5333,0466	PRESSURE GAUGE	4	Pc.
0010	5318,4214	SOLENOID VALVE	3	Pc.
0011	007,20036	THROTTLE VALVE	2	Pc.
0012	5441,5146	PRESSURE GAUGE	1	Pc.
0013	5454,9005	COMPRESSOR	1	Pc.
0014	5333,0466	PRESSURE GAUGE	1	Pc.
0015	5706,4172	PRESSURE CONTROL	1	Pc.
0016	5318,0516	REDUCTION VALVE	1	Pc.
0017	5333,0466	PRESSURE GAUGE	1	Pc.
0018	5318,4214	SOLENOID VALVE	1	Pc.
0019	5313,5987	NON-RETURN VALVE	2	Pc.
0020	5354,5957	FILTER	1	Pc.
0021	5313,5987	NON-RETURN VALVE	1	Pc.
0022	006,10501	NON-RETURN VALVE	1	Pc.
0023	5313,9001	Udgår DSOLENOID VALVE	1	Pc.
0024	110,20490	CYLINDER	1	Pc.
0027	007,20036	THROTTLE VALVE	1	Pc.

## REPAIR KIT FOR AIR COMPRESSOR

SINGLE HEAD FOR  
KF 1150  
KF 1200

TWIN HEAD FOR  
KF 2200

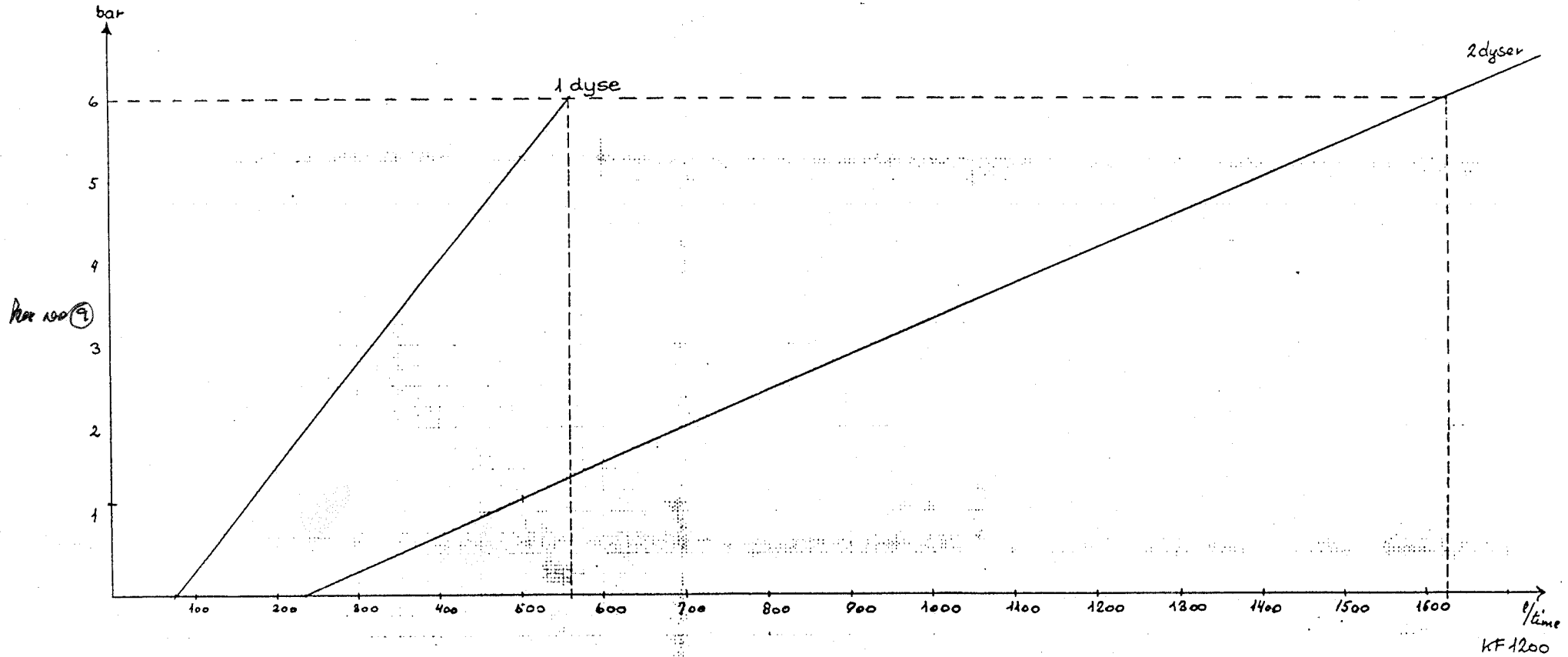


KF 1150 Part No. 110,60273 incl. pos. D-F-Y-Z

\* KF 1200 Part No. 110,60273 incl. pos. D-F-Y-Z \*

KF 2200 Part No. 110,60274 incl. pos. D-F-H-Y-Z

KF 1200



$$KF 1200 : Q_l = 73,42 + 72,53 \times P_{bar} \quad \frac{l}{\text{time}}$$

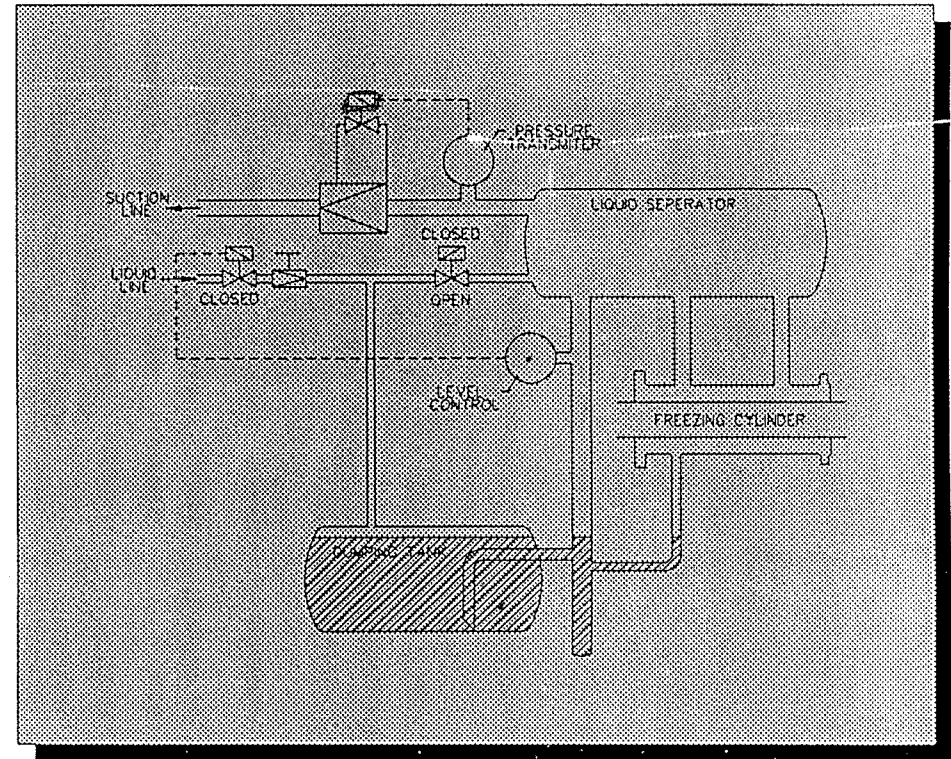
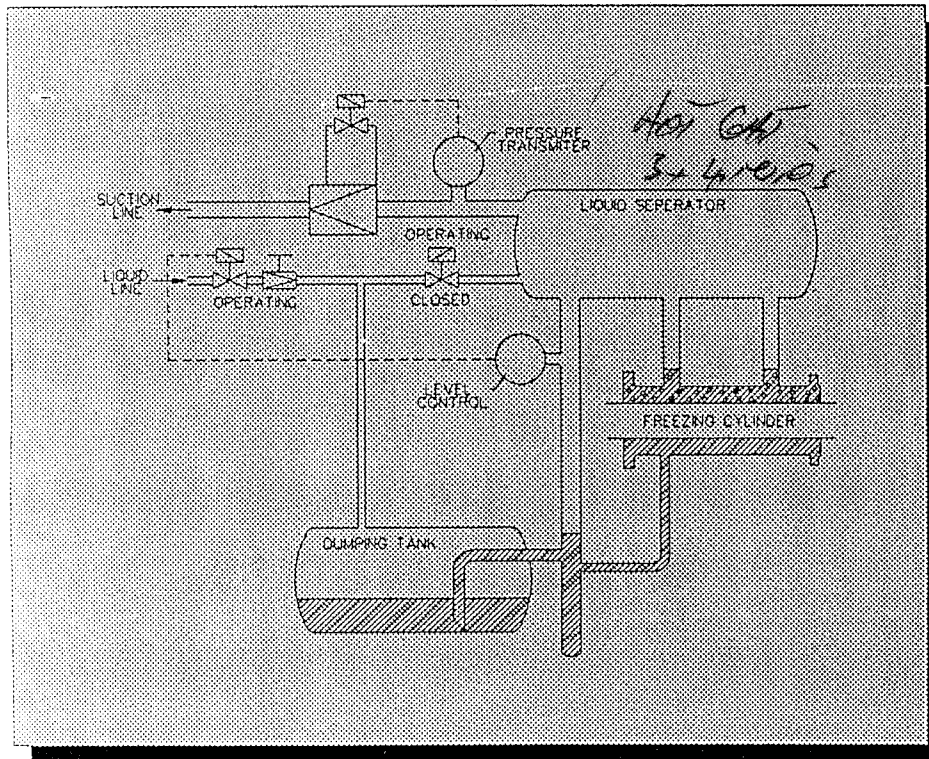
$$2dyser : Q_l = 234,91 + 232,1 \times P_{bar} \quad \frac{l}{\text{time}}$$

$$\left( \begin{array}{l} KF 1150 : Q_l = 36,71 + 36,26 \times P_{bar} \quad \frac{l}{\text{time}} \\ 2dyser : Q_l = 117,44 + 116,03 \times P_{bar} \quad \frac{l}{\text{time}} \end{array} \right)$$

# Refrigeration System with Dumping Tank

## Production

## Instant Stop



# Spare Parts List

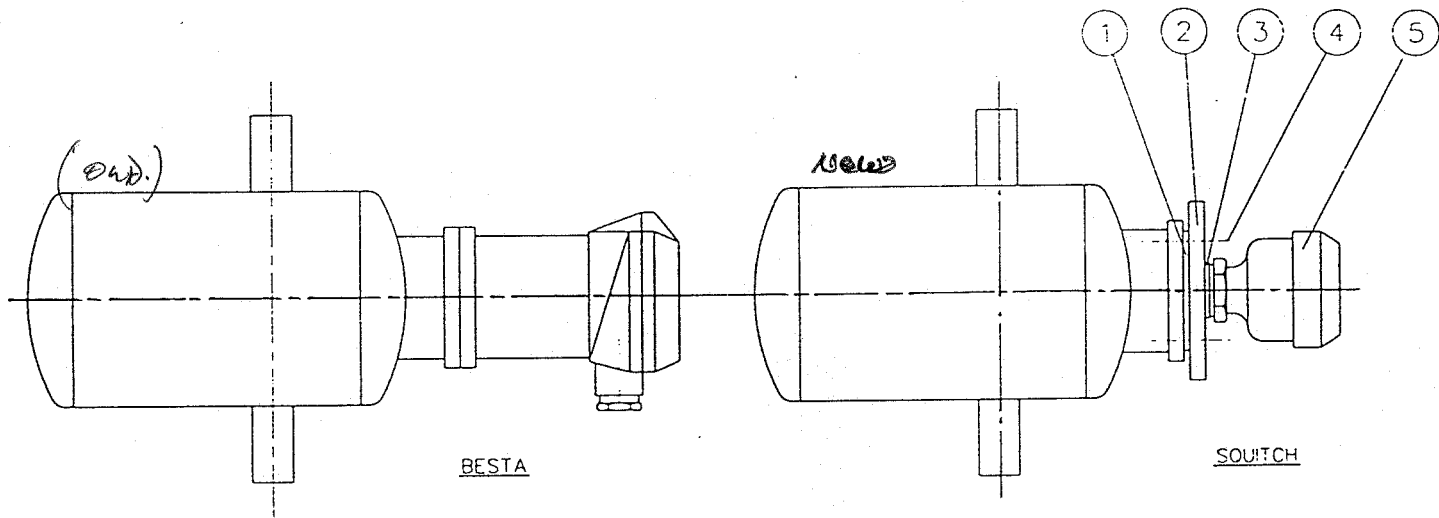
Date  
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MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20033	BRACKET
PART LIST NO. ....	009,00197	BRACKET FP-3

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0001	009,10208	SCREW	1	Pc.
0002	5116,3817	PARALLEL KEY	1	Pc.
0003	5127,0263	SIMMER RING	1	Pc.
0004	5117,2414	SEEGER RING	1	Pc.
0005	009,10166	SHAFT	1	Pc.
0006	5125,0303	V-RING	1	Pc.
0007	5221,2544	SCREW	4	Pc.
0008	5201,2782	SCREW	4	Pc.
0009	009,10159	BEARING COVER	1	Pc.
0010	5501,0868	BALL BEARING	1	Pc.
0011	009,10157	DISTANCE RING	1	Pc.
0012	009,10165	BEARING HOUSING	1	Pc.
0013	009,10145	BRACKET	1	Pc.
0014	5502,0816	BALL BEARING	1	Pc.
0015	009,10149	SEAL RING	1	Pc.
	009,20033	BRACKET		ASSEMBLY DRAWING

**Replacement of float switch for cooling system.**



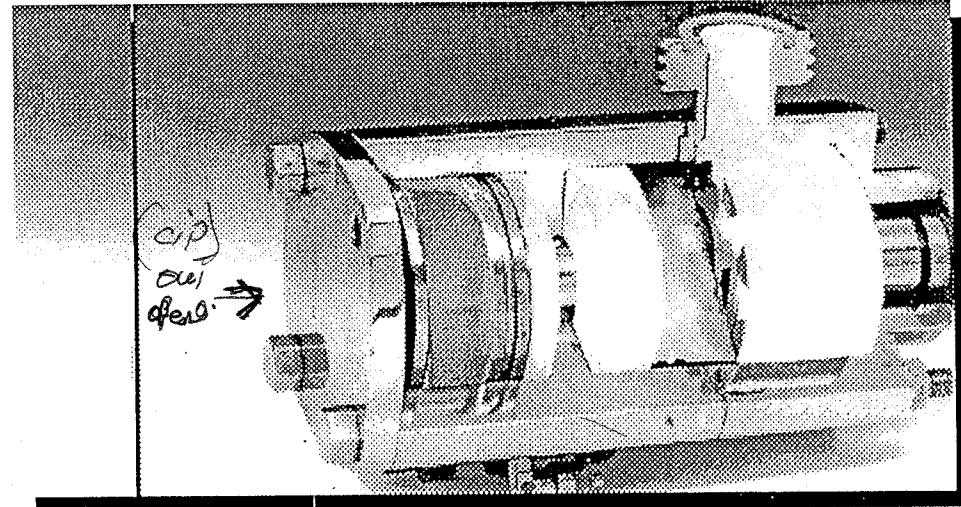
Repair kit for float switch

No. 110.80487

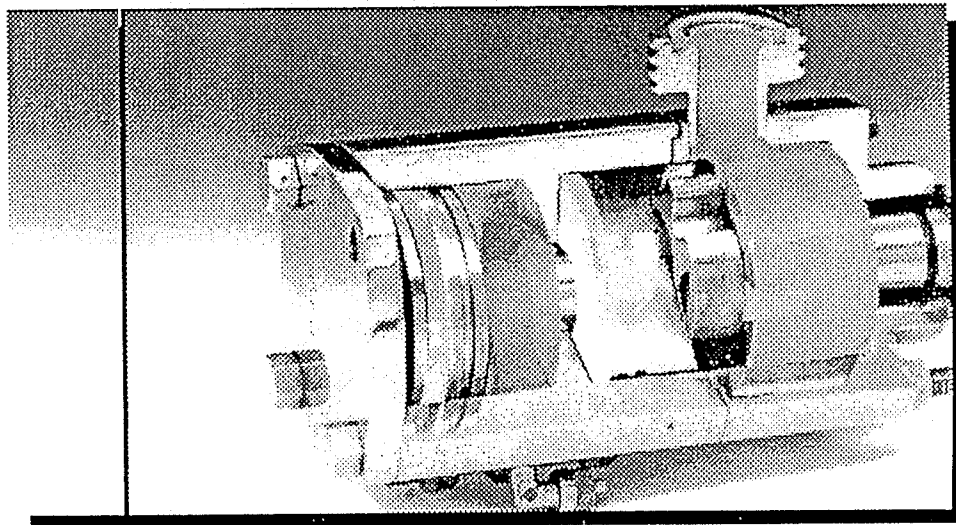
<u>Pos. No.</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
1	024,21675	0	Drawing for new Squitch swith
2	110,21249	1	Flange
3	110,21250	1	Gasket
3	5122,9083	1	Gasket
4	5201,2823	4	Screw
5	5706,9046	1	Float switch

# Hoyer KF Continuous Freezer CIP pump function

The CIP pump in normal operation. The centre wheel (starwheel), mounted on a pneumatical piston, in pump-position.

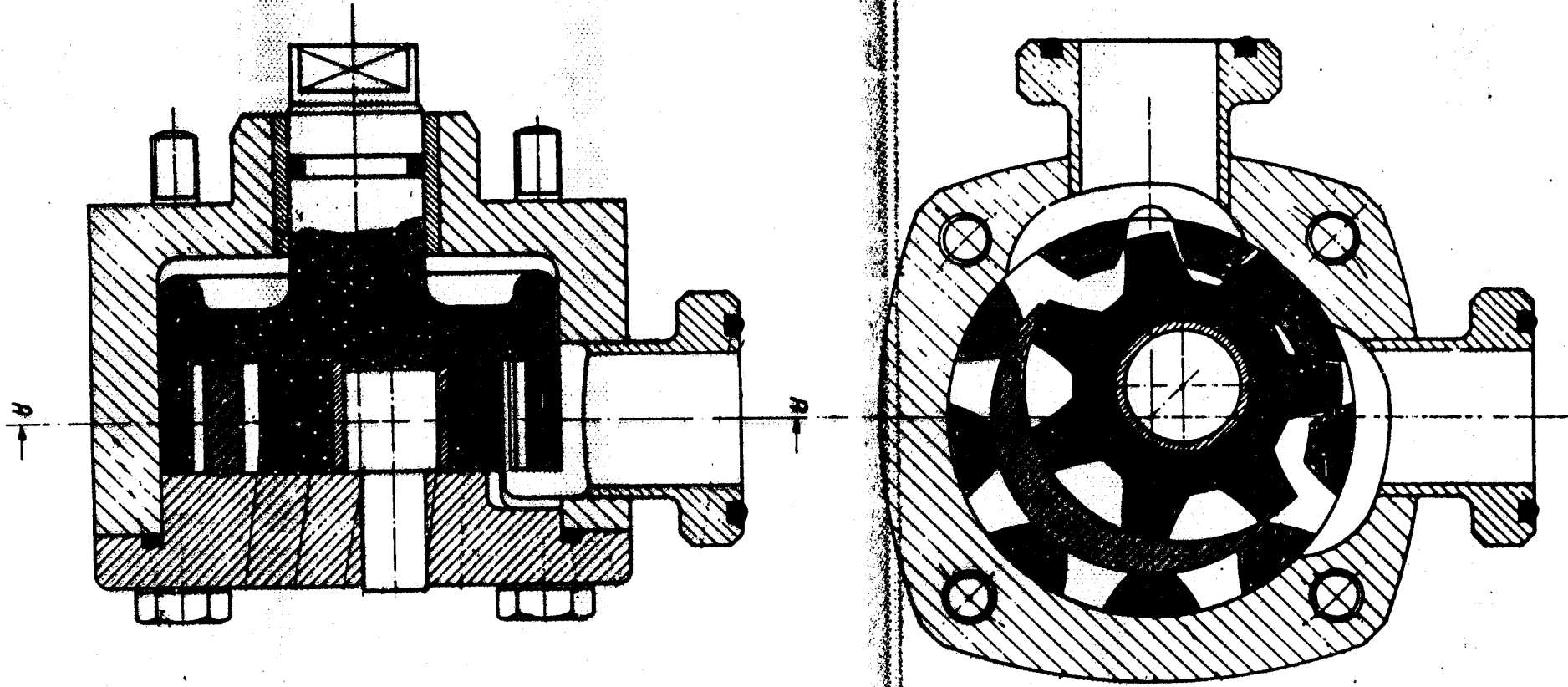


The pump in CIP position. The centre wheel is pulled out of pump position, and free flow of detergent through the pump is obtained.



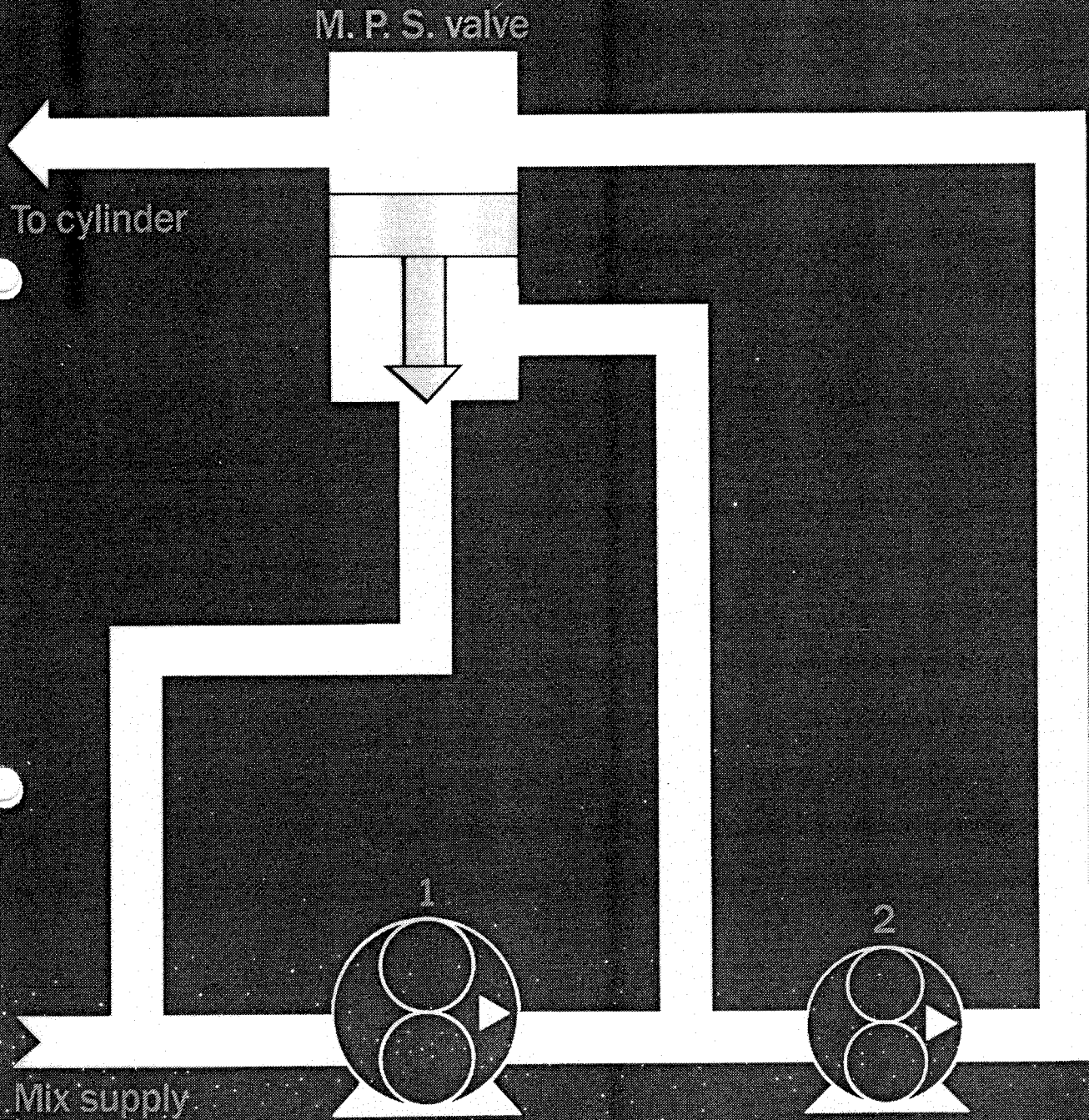
# CONTINUOUS FREEZERS

PUMP WITHOUT C.I.P.

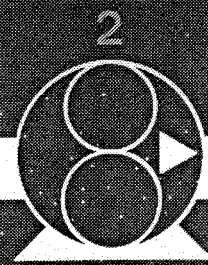
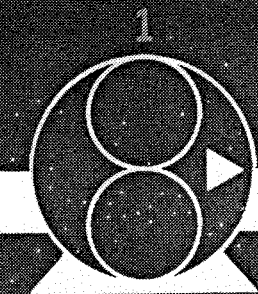




THE MPS SYSTEM  
MIX METERING SYSTEM



Mix supply



- Pump no. 1 ⇒ Booster pump
- Pump no. 2 ⇒ Metering device
- M. P. S. valve ⇒ Mix pump stabilizer

# Spare Parts List

Date  
Page

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1

MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20032	PUMP
PART LIST NO. ....	009,00225	PUMP FP-2-A

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0000	009,60017	SET OF GASKETS FP-2		ASSEMBLY DRAWING
0001	5122,0242	GASKET	2	Pc.
0002	5124,2157	O-RING	1	Pc.
0003	009,10031	BOLT	0	Pc.
0004	009,10247	COVER	1	Pc.
0005	009,10024	STAR WHEEL	1	Pc.
0006	001,03674	BEARING BUSH, CARBON	1	Pc.
0007	001,03673	BEARING BUSH, CARBON	1	Pc.
0008	009,10372	FEELER-GAUGE	1	Pc.
0009	5124,0053	O-RING	1	Pc.
0010	009,10009	IMPELLER	1	Pc.
0011	009,10032	BOLT	0	Pc.
0012	009,10400	PUMP HOUSING FP-2-A	1	Pc.
	009,20032	PUMP		ASSEMBLY DRAWING

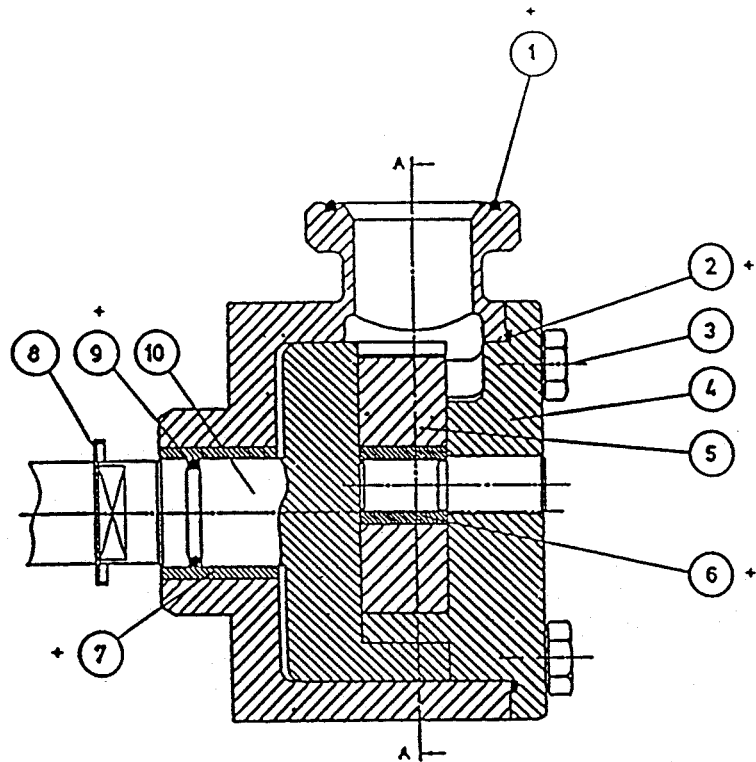
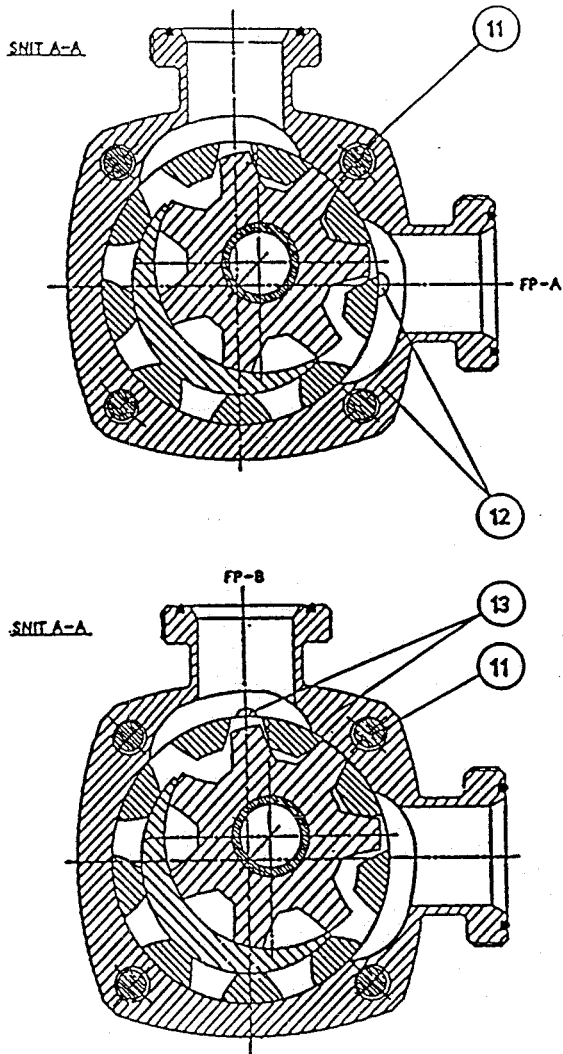
# Spare Parts List

Date  
Page

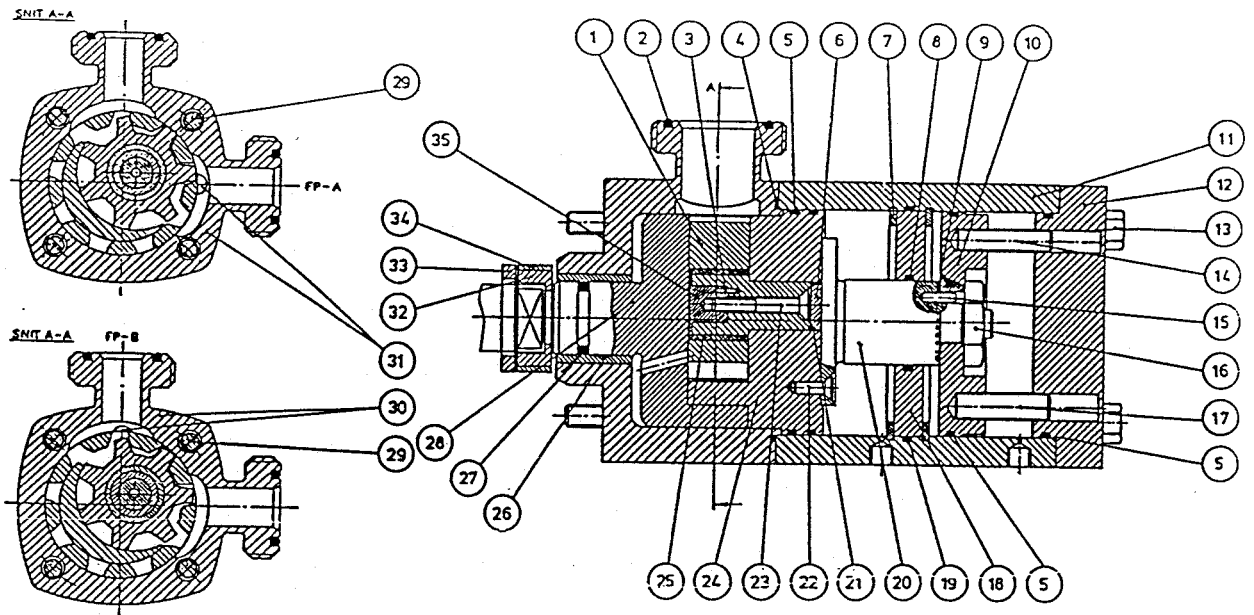
26.08.1993  
1

MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20032	PUMP
PART LIST NO. ....	009,00173	PUMP FP-2-B

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0000	009,60017	SET OF GASKETS FP-2		ASSEMBLY DRAWING
0001	5122,0242	GASKET	2	Pc.
0002	5124,2157	O-RING	1	Pc.
0003	009,10031	BOLT	0	Pc.
0004	009,10247	COVER	1	Pc.
0005	009,10024	STAR WHEEL	1	Pc.
0006	001,03674	BEARING BUSH, CARBON	1	Pc.
0007	001,03673	BEARING BUSH, CARBON	1	Pc.
0008	009,10372	FEELER-GAUGE	1	Pc.
0009	5124,0053	O-RING	1	Pc.
0010	009,10009	IMPELLER	1	Pc.
0011	009,10032	BOLT	0	Pc.
0013	009,10041	PUMP HOUSING FP-2-B	1	Pc.
	009,20032	PUMP		ASSEMBLY DRAWING



- + Pakningssæt
- Set of gaskets
- Dichtungssatz
- Assortiment de garniture
- Juego de empaquetadura



## Spare Parts List

Date  
Page

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MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20035	PUMP WITH CIP
PART LIST NO. ....	009,60013	PUMP FP-3-A WITH CIP

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0000	009,60021	SET OF GASKETS FP-3 CIP		ASSEMBLY DRAWING
0001	009,10025	STAR WHEEL	1	Pc.
0002	5122,0243	GASKET	2	Pc.
0003	5103,9000	CYLINDER PIN	1	Pc.
0004	5124,5708	O-RING	1	Pc.
0005	5124,0059	O-RING	4	Pc.
0006	009,10378	WASHER	1	Pc.
0007	5117,9005	SEEGER RING	2	Pc.
0008	5124,2172	O-RING	1	Pc.
0009	5124,2171	O-RING	1	Pc.
0010	009,10406	PISTON	1	Pc.
0011	009,10329	CYLINDER PIPE	1	Pc.
0012	009,10330	FLANGE	1	Pc.
0013	009,10336	BOLT	0	Pc.
0014	009,10411	GUIDE ROD	0	Pc.
0015	5103,9002	CYLINDER PIN	1	Pc.
0016	009,10307	NUT	1	Pc.
0017	009,10410	GUIDE ROD	0	Pc.
0018	009,10334	CYLINDER WALL	1	Pc.
0019	5124,2158	O-RING	1	Pc.
0020	009,10335	PISTON ROD	1	Pc.
0021	5124,0014	O-RING	1	Pc.

# Spare Parts List

Date  
Page

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2

MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20035	PUMP WITH CIP
PART LIST NO. ....	009,60013	PUMP FP-3-A WITH CIP

POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0022	5227,2643	MACHINE SCREW	3	Pc.
0022	5227,2650	MACHINE SCREW	1	Pc.
0023	5227,2647	MACHINE SCREW	1	Pc.
0024	009,20085	COVER	1	Pc.
0025	001,03838	BEARING BUSH, CARBON	1	Pc.
0026	001,03678	BEARING BUSH, CARBON	1	Pc.
0027	5124,0054	O-RING	1	Pc.
0028	009,10331	IMPELLER	1	Pc.
0029	009,10337	BOLT	0	Pc.
0031	009,10387	PUMP HOUSING FP-3-A CIP	1	Pc.
0032	009,10405	STOP RING	1	Pc.
0033	009,20000	FEELER-GAUGE	1	Pc.
0034	009,10369	LOCK RING	1	Pc.
0035	009,20079	LOCK NUT	1	Pc.
	009,20035	PUMP WITH CIP		ASSEMBLY DRAWING

once a week



### **Adjustment of pump**

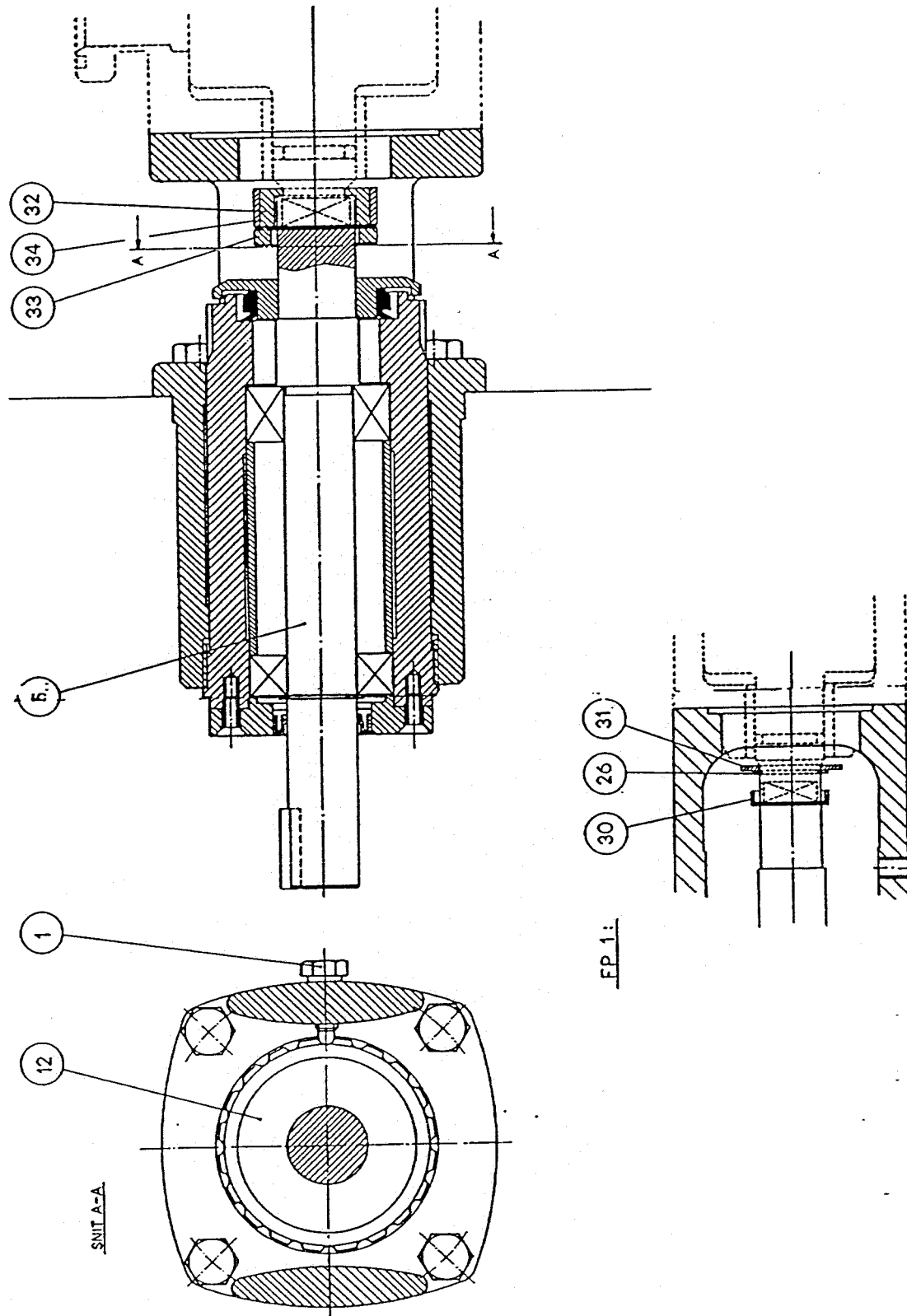
Adjustment of the pump is limited to adjusting the clearance between the impeller and the pump cover.

When the below adjustment procedure is performed, CIP pumps must be in operating position and the compressed air pressure must be 5 bar. See fig. 7.

1. Release the lock screw just enough to permit the cylindrical bearing wheel with the chain drive shaft to be easily turned in the thread.
2. Turn the bearing housing until the clearance sensors, positions 33/30 are secured. Then turn back the bearing housing to a position where it is just possible to move the clearance sensor radially but not axially.
3. Screw the lock screw into the nearest groove. Then you will not be able to turn the bearing housing.
4. Verify again that the clearance sensor can be moved as described in step 2. If this is not the case, repeat the above adjustment procedure.

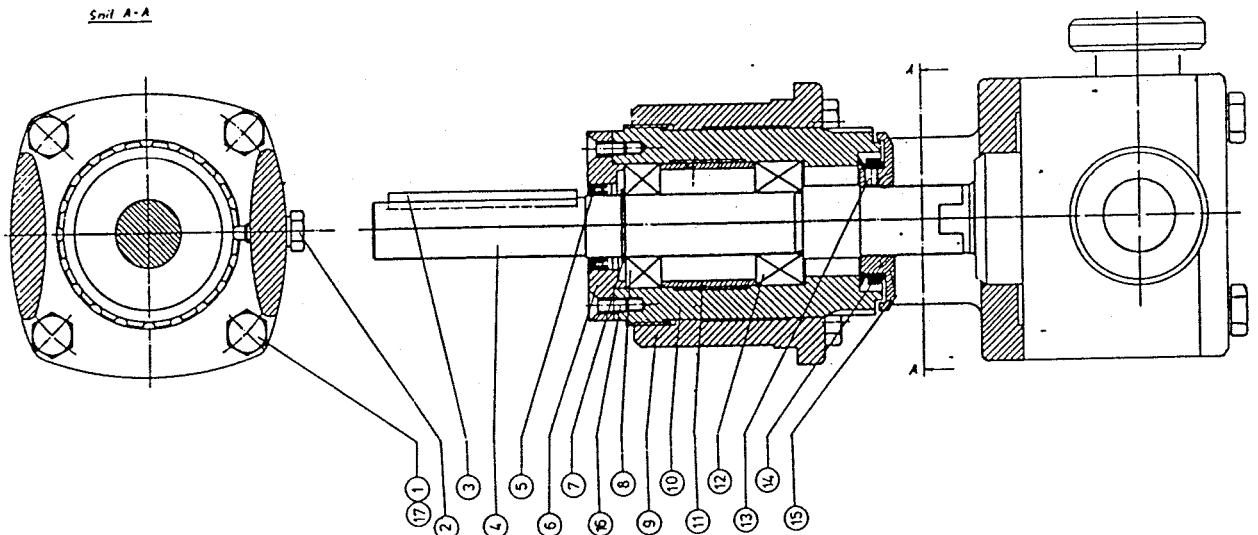


Fig. 7



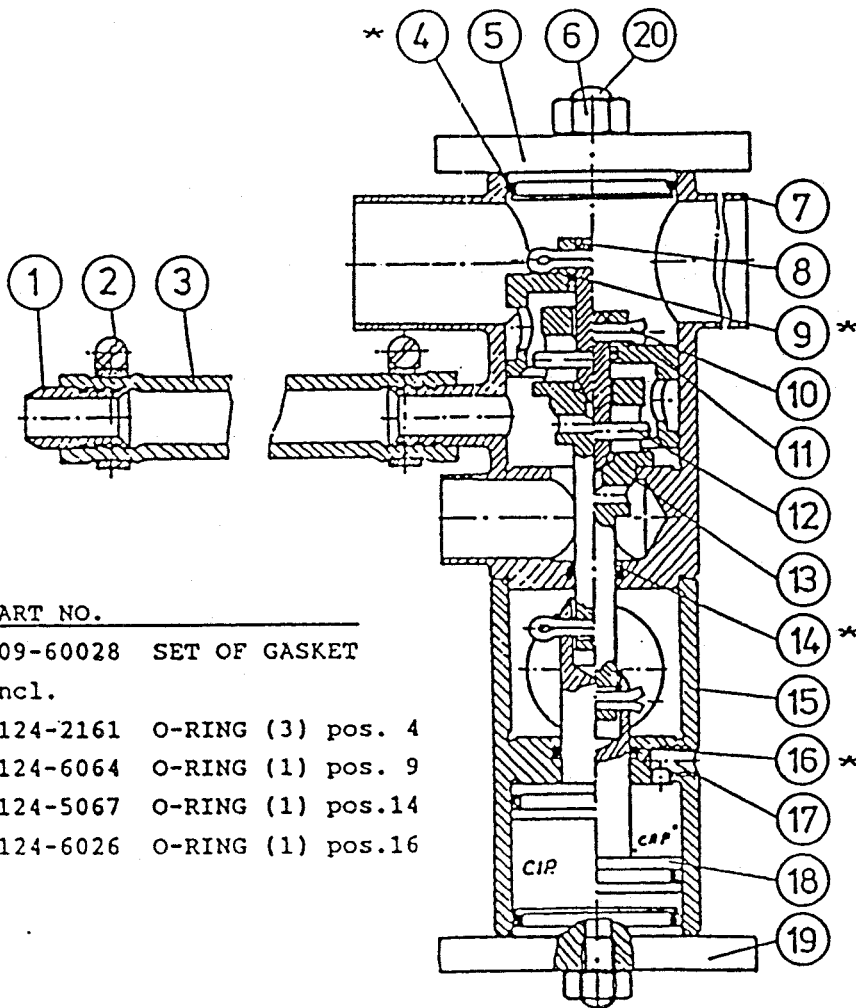
**BRACKET FOR CREAMPUMP KF 1200**

Pos. No.	Qty.	Part No.	Description		
1	4	5221.2544-5	Screw	Schraube	Vis
2	1	009.10208-0	Special screw	Spezial Schraube	Vis spéciale
3	1	5116.5331-5	Parallel key	Feder	Clé parallèle
4	1	009.10166-9	Shaft	Welle	Arbre
* 5	1	5127.0263-8	Simmer-ring	Simmer-ring	Anneau Simmer
6	1	009.10159-6	Bearing cover	Deckel für Lagergehäuse	Couvercle de support
* 7	1	5117.2414-0	Seeger ring	Seeger-ring	Anneau Seeger
* 8	1	5501.0868-6	Ball bearing	Kugellager	Roulement à bille
9	1	009.10145-7	Bracket	Konsole	Support
10	1	009.10165-1	Bearing housing	Lagergehäuse	Carter de support
11	1	001.10157-0	Spacer ring	Zwischenring	Anneau d'espacement
* 12	1	5502.0816-9	Ball bearing	Kugellager	Roulement à bille
13	1	5231.2687-3	Pointed screw	Reitstockschaube	Vis pointue
* 14	1	5125.0303-5	V-ring	V-Ring	Anneau en V
15	1	009.10149-7	Sealing ring	Dichtungsring	Anneau de scellage
16	4	5201.2782-3	Screw	Schraube	Vis
17	1	5241.2932-1	Nut	Mutter	Ecrou
*	1	009.60033	Repair kit	Rep.-satz	

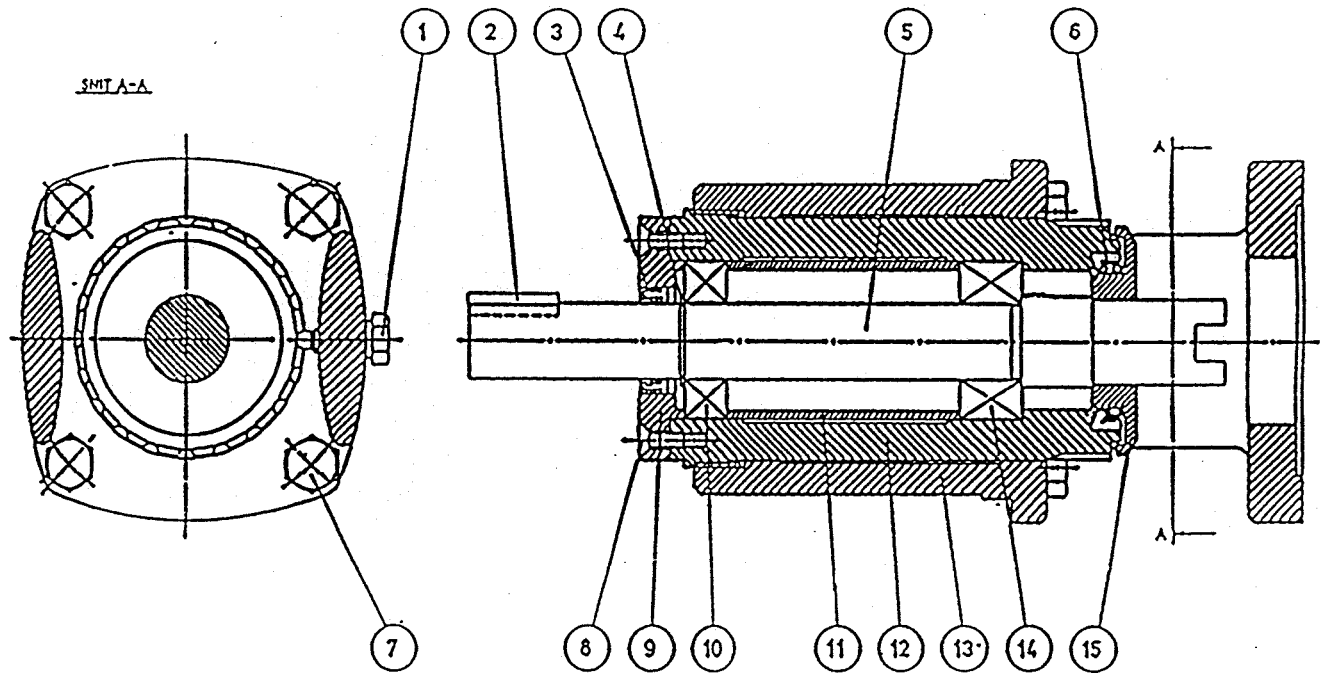


**SET OF GASKET MPS - VALVE**

*Review  
(once a year)*



- PART NO.
- 009-60028 SET OF GASKET  
incl.  
5124-2161 O-RING (3) pos. 4  
5124-6064 O-RING (1) pos. 9  
5124-5067 O-RING (1) pos.14  
5124-6026 O-RING (1) pos.16



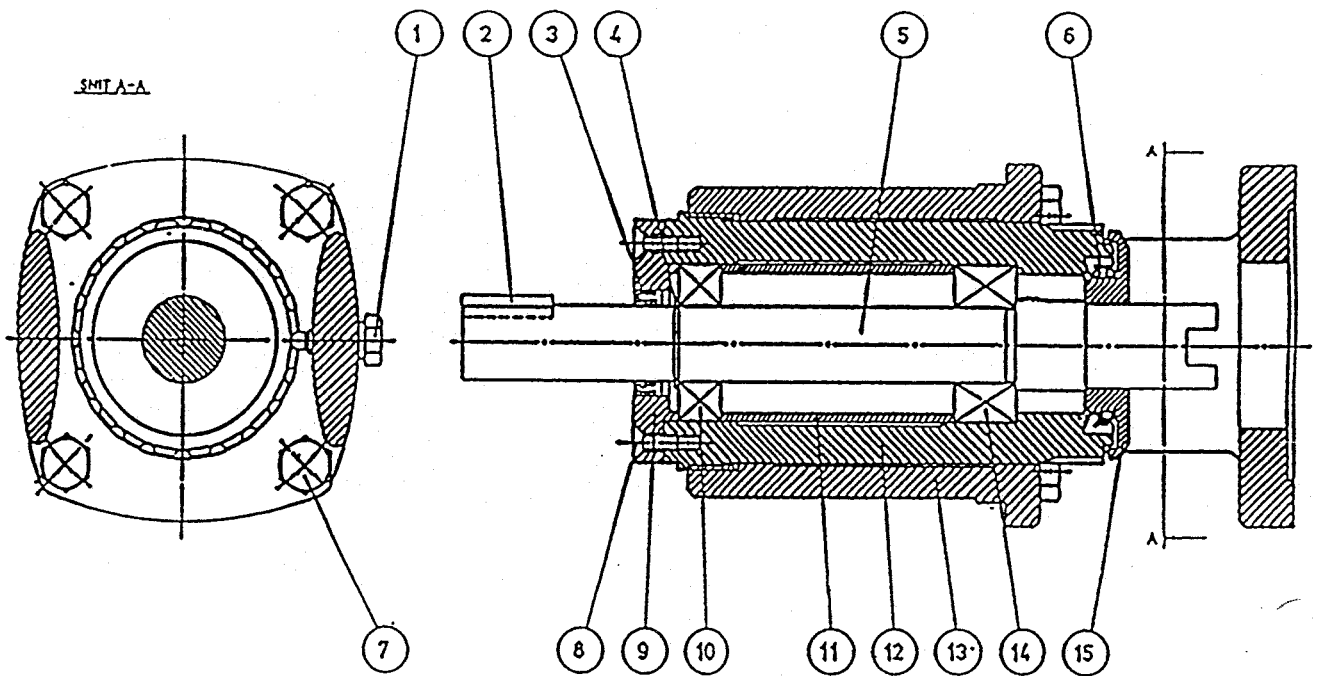
# Spare Parts List

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1

MACHINE SERIAL NO. ....	Z115,6400	KF 1200 BASIC MACHINE
FIG. NO. ....	009,20033	BRACKET
PART LIST NO. ....	110,60233	BRACKET FP-3+4

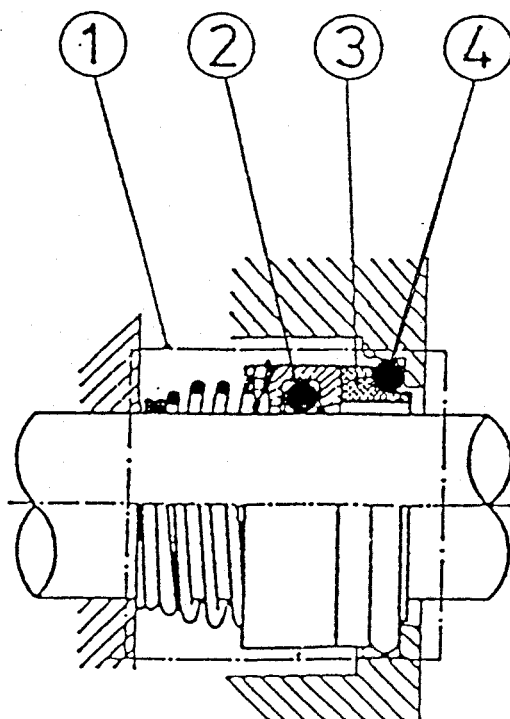
POS.NO	PART NO.	DESCRIPTION	QTY.	UNIT
0001	009,10208	SCREW	1	Pc.
0002	5116,3817	PARALLEL KEY	1	Pc.
0003	5127,0263	SIMMER RING	1	Pc.
0004	5117,2414	SEEGER RING	1	Pc.
0005	009,10166	SHAFT	1	Pc.
0006	5125,0303	V-RING	1	Pc.
0007	5221,4302	SCREW	4	Pc.
0007	5252,2710	CAP NUT	4	Pc.
0008	5201,2782	SCREW	4	Pc.
0009	009,10159	BEARING COVER	1	Pc.
0010	5501,0868	BALL BEARING	1	Pc.
0011	009,10157	DISTANCE RING	1	Pc.
0012	009,10165	BEARING HOUSING	1	Pc.
0013	110,20702	BRACKET	1	Pc.
0014	5502,0816	BALL BEARING	1	Pc.
0015	009,10149	SEAL RING	1	Pc.
	009,20033	BRACKET		ASSEMBLY DRAWING



SHAFT SEAL  
WELLENDICHTUNG  
AKSELTÆTNING

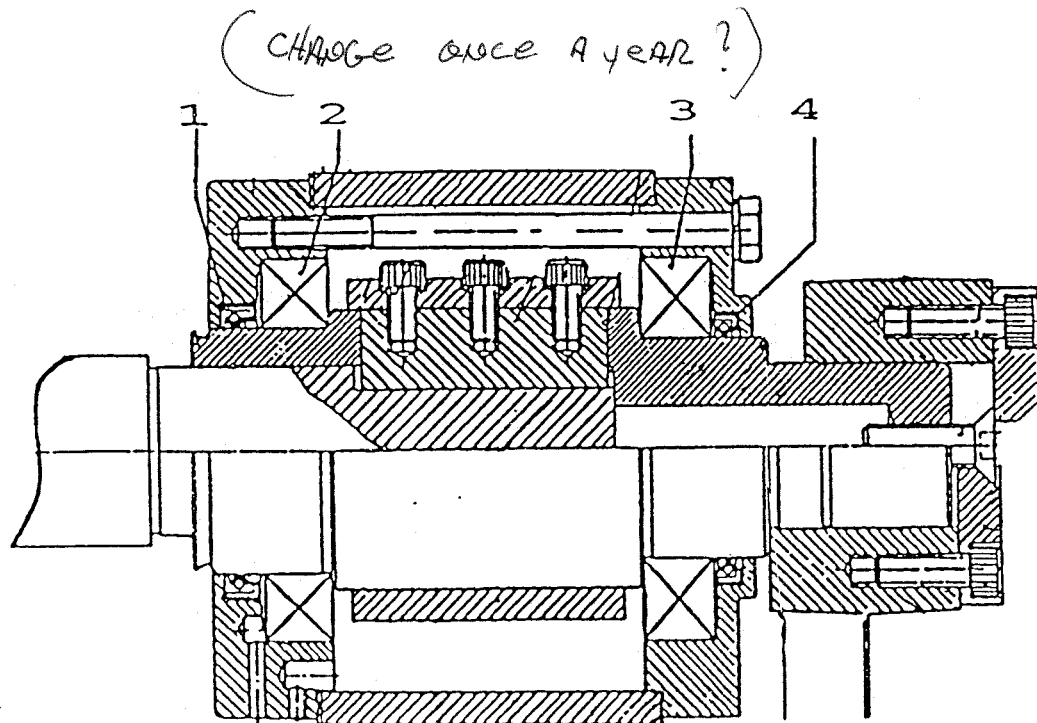
1 / 2

KF TYP	COMPL. POS. 1	O-RING POS. 2	CARBON RING POS. 3	O-RING POS. 4
400	5128-3414	5128-0355	5128-3415	5128-0354
600	006-60006	for parts - see page 2		
1000				
1150	5128-4208	5128-4210	5128-4209	5128-4211
→ 1200*	5128-0349	5128-0355	5128-0351	5128-0354
1200 E	5128-0349	5128-0355	5128-0351	5128-0354



## REPAIR KIT - MAIN BEARING

	POS 1	POS 2	POS 3	POS 4	KOMPLET
KF 1150	5127,4215	5501,9023	5501,9023	5127,4215	109,60168
* KF 1200	5127,5334	5501,9022	5501,9024	5127,0288	110,60288 *
KF 1200E	5127,5334	5501,9022	5127,0288	5505,3468	110,60369





## Hoyer

Machine section	Job	Period (Hours)
Cooling system	Oil drain	40
	Clean filters	1000
	Repair kits valves	4000
	Suction valve repair kit	4000
	Outside cleaning of cylinder	3000
Dasher	Resharpen knives	500
	Replacement of bearings	3000
	Check/replacement of shaftsealing	160/2000
	Check/replacement of non return valve - mix	200/1500
Airsytem	Replacement of Balston filter	500
	Replacement of insert for water seperator	2500
	Leakage check	4000
	Air pump valves/diaphram replacement	1000/2000
Pumps	Adjustment	100
	Inspection of moving parts	1000
	Replacement of bushes & sealings	3000
Drive for pumps	Adjustment of chains	100
	Replacement of bearings - chainwheels / chains	4000/2000
	Check oil level - drive	3000
	Change oil - drive	10000
Main drive	Tension of belts	100
	Replacement of belts	5000
	Replacement of bearings & sealings	2500
	Lubrication of motor	10000

## Preventive maintenance

### Log book

O.G. Hoyer A/S recommends the use of a log book for the KF XC freezer. Use the book to report causes and remedies in connection with irregularities of operation, replacement of parts, and dates and names of those responsible.

### Maintenance table

Number of operating hours	
40	- Drain the oil from the cooling system when the freezer is warm (=normal room temperature). Cf. chapter "Draining oil from freezers for NH3".
80	- Check oil level in pump gear. Cf. service instructions for gear. - Adjust pumps. - Lubricate driving chains for pumps. - Check tightening of driving belts for main motor.
200 - 320	- Check scraper knives. The knives will be subjected to the most wear when producing mix with low fat content and/or high sugar content. Cf. the chapter "Renovation of scraper knives".

320	<ul style="list-style-type: none"> <li>- Check air system for tightness. Cf. the chapter "Checking air system tightness".</li> <li>- Replace bacteria filter (Balston). Air diagram Pos. 20.</li> <li>- Replace condense filter, air diagram Pos. 2, and clean the filter housing. Set the drain valve at the bottom of the filter housing, Pos. 3, to approx. 300 litre blow-off per hour.</li> <li>- Replace air compressor valve plate.</li> <li>- Check all bushings on rotor and agitator, as well as shaft sealing and carbon ring. Cf. the chapter "Installing/disassembling rotor".</li> </ul> <p><b>Note:</b> The following two points apply to the KF 1200 E only.</p> <ul style="list-style-type: none"> <li>- Pressure-lubricate the main motor if it features a lubricating nipple.</li> <li>- Lubricate the rear main shaft bearing.</li> </ul>
640	<ul style="list-style-type: none"> <li>- Open pump heads and check them. Cf. the chapter "Pumps".</li> </ul>
1000	<ul style="list-style-type: none"> <li>- Overhaul Danfoss valves using the repair kit.</li> </ul> <p><b>Note:</b> This does not apply to the evaporation pressure regulator PM-3.</p> <ul style="list-style-type: none"> <li>- <del>Clean all cooling system filters.</del></li> </ul>
2000	<ul style="list-style-type: none"> <li>- <del>Remove the cooling cylinder and clean it for any oil sludge.</del></li> </ul> <p><b>Note:</b> Cleaning will only be necessary if the capacity of the freezer is fully exploited and provided that the cooling capacity is typically improved over a period of several weeks after cleaning has been carried out. Cf. the chapter "Installing/disassembling cooling cylinder".</p>
3000	<ul style="list-style-type: none"> <li>- Replace main bearings.</li> <li>- Replace chain tightener bearings.</li> <li>- Replace pump console bearings.</li> <li>- Replace V-belts.</li> <li>- Replace the pressure regulator membrane of the air system, air diagram Pos. 5 ("Conoflow").</li> <li>- Replace oil in pump gear. Cf. service instructions for gear.</li> <li>- Overhaul evaporation pressure regulator, Pos. 3, using repair kit.</li> </ul>
5000	<ul style="list-style-type: none"> <li>- Replace all chain wheels and chains.</li> </ul>



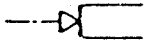
- Highly sensitive



- Spring



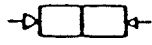
- Plunger



- Air pressure



- Diaphragm (vacuum)



- Differential pressure valve



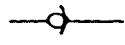
- Solenoid

## Auxiliary valves

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- Shut-off valve



- Non-return valve



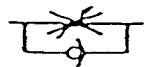
- Shuttle valve



- Quick exhaust valve



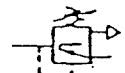
- Flow regulator (in valve exhaust port)



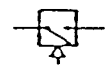
- Flow regulator (undirectional)



- Pressure switch (used as signal amplifier)



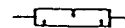
- Pressure regulator



- Pressure switch




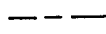
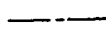
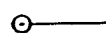
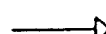
- Silencer



# COMPRESSED-AIR SYMBOLS







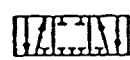
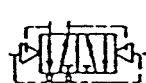
## Pipelines

---

-  • Working line
-  • Exhaust line
-  • Pilot line
-  • Main supply
-  • Exhaust to atmosphere

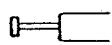
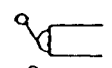
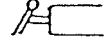

## Control valves

---

-  • 2-way valve
-  • 3-way piston valve
-  • 3-way poppet valve
-  • 4-way piston valve
-  • 4-way poppet valve
-  • 4-way valve (mid-position with blocked supply)
-  • 4-way valve (completely blocked in mid-position)
-  • 4-way (single-impulse)

## Valve actuation

---

-  • Pushbutton
-  • Lever
-  • Lever
-  • Roller

## TECHNICAL UNITS

Dimension	Symbol	Unit (SI)	Conversion
Length	L, l	m	
Area	A	m <sup>2</sup>	
Volume	V	m <sup>3</sup>	
Time	T	s, min, h	
Mass	m, M	kg, t (ton)	
Force	F	N	1 kp = 9.80665 N
Temperature	t, T	°C, °F, °K	T = t + 273.15°C
Pressure	p, P	kg/m <sup>3</sup>	1 bar = 10 <sup>5</sup> $\frac{\text{N}}{\text{m}^2}$ = 1.019 $\frac{\text{kp}}{\text{cm}^2}$
Density	$\rho$	kg/m <sup>3</sup>	
Mass rate of flow	G	kg/s, l/s, t/h	
Work, energy	W	kJ	1 kcal = 4.1868 kJ
Quantity of heat	Q	kJ	1J = 1 Nm = 1Ws = 1 kg m <sup>2</sup> / s <sup>2</sup>
Heat flow rate	q, Qs	kW, J/s	1 kcal/h = 1.1628 · 10 <sup>-3</sup> kW
Power	p, N	kW	860 kcal $\equiv$ 1 kWh = 3600 kW <sub>s</sub>
Thermal conductivity	$\lambda$	W/m °C	1 W/m °C = 0.86 kcal/mh °C
Specific heat capacity	c <sub>p</sub>	KJ/kg, °C	1 kpm = 9.80665 J
Heat capacity	c <sub>p</sub>	KJ/Nm <sup>3</sup> °C	
Specific enthalpy	i, h	KJ/kg, KJ/Nm <sup>3</sup>	
Volume rate of flow	V <sub>s</sub>	m <sup>3</sup> /s, m <sup>3</sup> /h	
Frequency	$\omega$ , f	s <sup>-1</sup> , h <sup>-1</sup>	
Efficiency	$\eta$		

### Prefixes :

tera: T = 10<sup>12</sup>

giga: G = 10<sup>9</sup>

mega: M = 10<sup>6</sup>

kilo: k = 10<sup>3</sup>

hecto: h = 10<sup>2</sup>

deca: da = 10

deci: d = 10<sup>-1</sup>

centi: c = 10<sup>-2</sup>

milli: m = 10<sup>-3</sup>

micro:  $\mu$  = 10<sup>-6</sup>

nano: n = 10<sup>-9</sup>

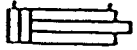
pico: p = 10<sup>-12</sup>

## Air cylinder

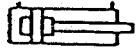
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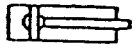
- Single acting cylinder (spring return)



- Double acting cylinder (non cushion)



- Double acting cylinder (air cushion)



- Double acting cylinder (mechanical cushion)

## Air treatment

---



- Filter (manual drain)



- Filter (automatic drain)



- Lubricator



# CONTROL-PANEL FOR KF-XC MODELS

DISPLAYS FOR:

VISCOSITY

OVERRUN

INFORMATION  
CODE

DATA  
REPORTING

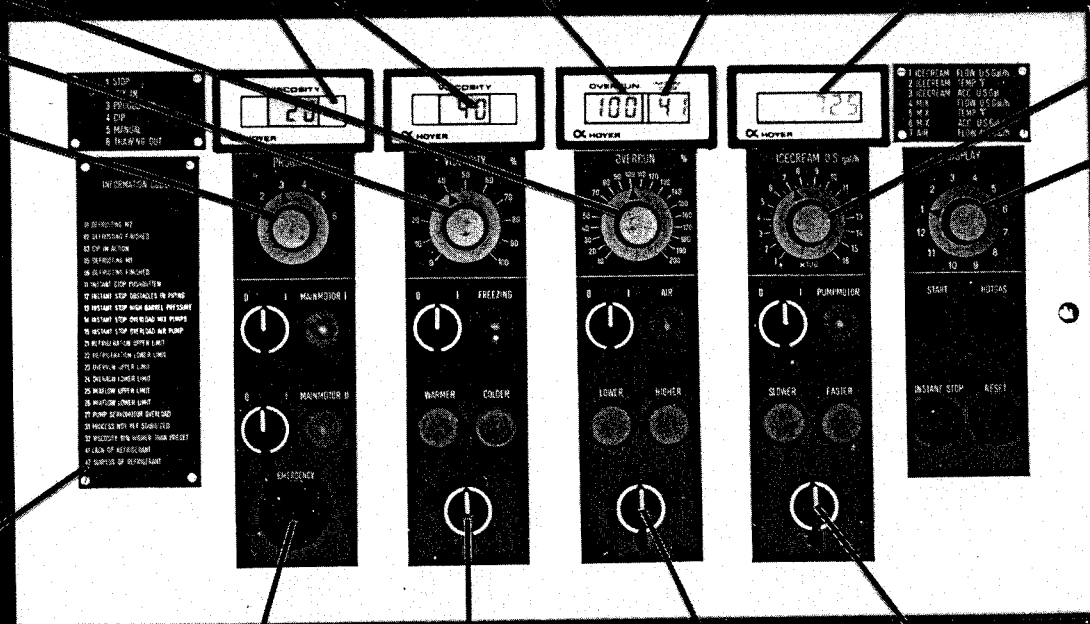
OVERRUN SELECTOR

VISCOSITY SELECTOR

PROGRAM SELECTER

CAPACITY SELECTOR

DATA SELECTER



INFORMATION KEY

SWITCHES AND PIOTLAMPS FOR:

START/STOP

FREEZING  
FUNCTIONS

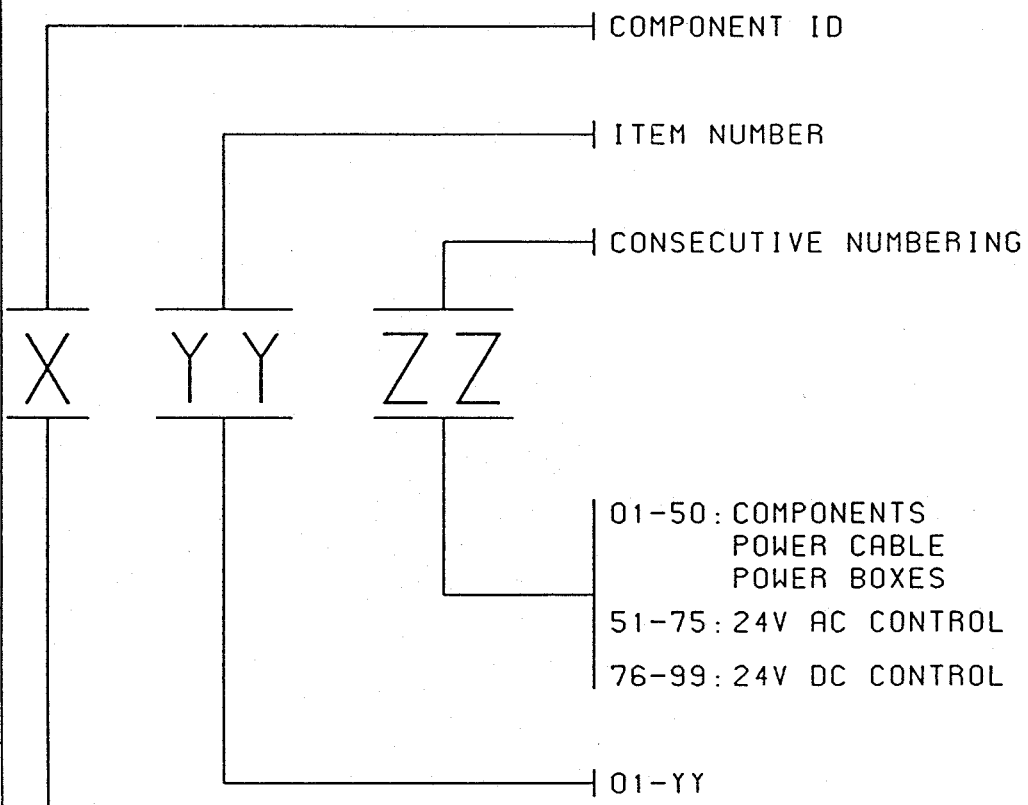
AIR SUPPLY  
FUNCTIONS

PUMP MOTOR  
FUNCTIONS



# HOYER EL-STANDARD

16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1

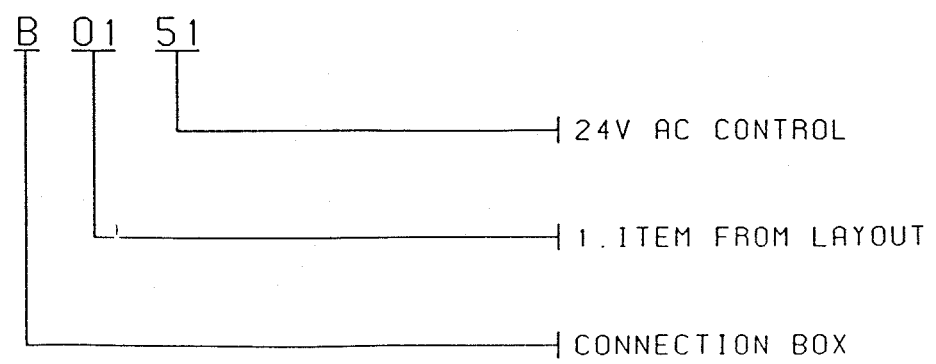


- 01-50: COMPONENTS  
POWER CABLE  
POWER BOXES
- 51-75: 24V AC CONTROL
- 76-99: 24V DC CONTROL

01-YY

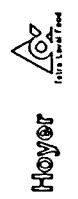
- M: MOTORS
- H: HEATING ELEMENTS
- U: UNITS
- P: POWER CABLE
- A: 24V AC CONTROL CABLE
- D: 24V DC CONTROL CABLE
- B: CONNECTION BOXES  
BOARDS ON MACHINERY

## EXAMPLE:



PL: PLUGS

TETRA LAVAL FOOD HOYER - EL-STANDARD  
NUMBERING OF COMPONENTS  
ENGLSK



HBOG  
Page 001

Order No. Sign. No. MA/PRA  
Date: 19.05.1994  
Scale: /

C94XXX, XXXXX

# HOYER EL-STANDARD

0001-3999	PLC
4000-4999	SERVODRIVE INPUT/OUTPUT
5000-5999	24V DC
6000-6999	TRANSFORMERS, AMPLIFIERS THERMISTORES, Pt100
7000-7999	EMERGENCY STOPS, SHIELD SWITCHES
8000-8999	24V AC
9000-9499	220V AC
9500-9899	380V AC
9900-9999	DC HIGH POWER

TETRA LAVAL FOOD HOYER - EL-STANDARD  
NUMBERING TERMINALS AND WIRES  
ENCELSK



ARRHUS

DENMARK

HBOG

Page 002

Draw. No.

Sign. MA/PRA

Drawn date: 19.05.1994

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

Scale: /

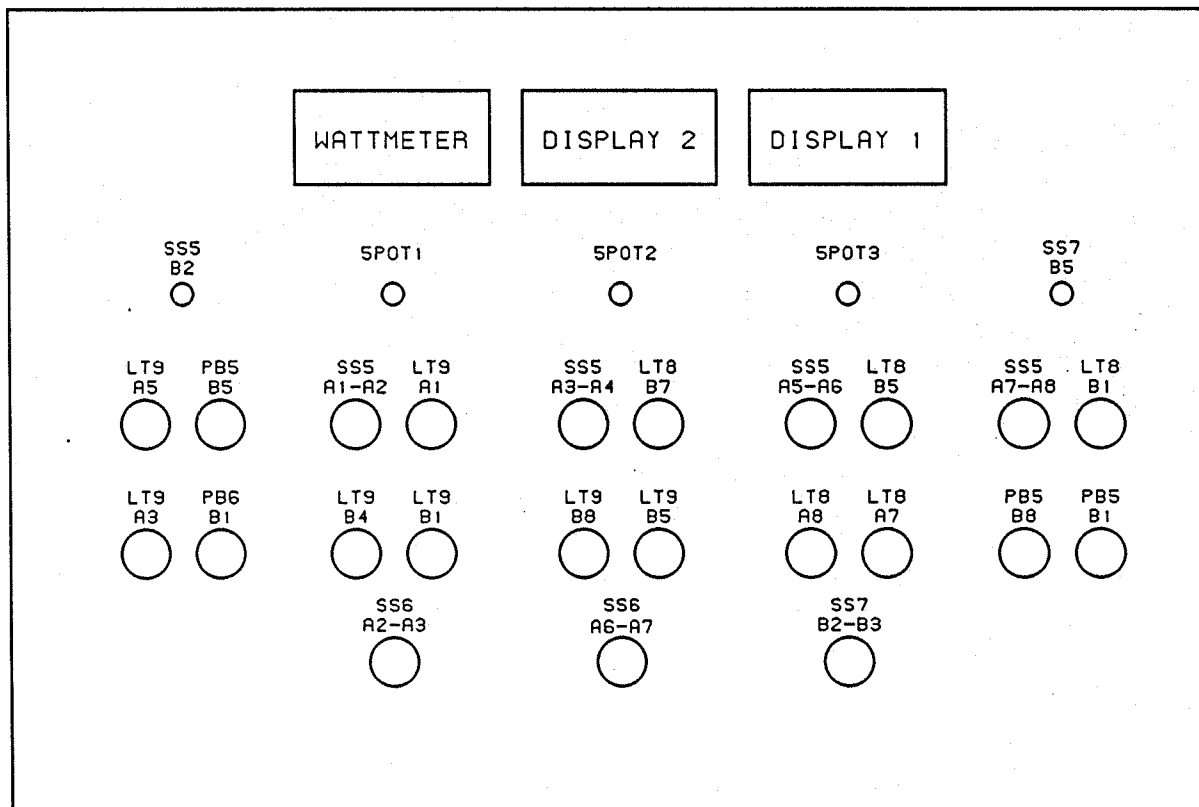
Scale: /

0000  
1000  
0100  
1100

PROGRAMMING OF KFXC CONSTANTS, KF 1200 XC AND KF 1150 XC

DISPLAY SELECTOR + KS 1 "ON" (LOAD RAM ENABLE)

PCS		RANGE	NOM.
1	CIP ON TIME	5 - 15 s	8 s
2	CIP OFF TIME	60 - 300 s	120 s
3			
4	INSTANT STOP TIME	120 - 600 s	180 s -
5	SKATING POINT	0.5 - 1.3 bar	0.8 bar
6			
7			
8	VISKOSITY DIFF. (START-UP)	0 - 20% (10 Before set point)	10%
9	STROKE VOLUME		
	- KF 1200 XC*	3790+/-10%	3790
	- KF 1150 XC	1110+/-10%	1110
10	VISKOSITY > PRESET + X% ↘	5 - 20%	10%
11	TIME BEFORE Y → Δ	10 - 30 s	15s
12			



**HOYER**  
ALFA-LAVAL GROUP  
AARHUS DENMARK

LOSELY DAIRY PRODUCTS UK  
KF 1200 XC Z115.6501  
CONTROL PANEL

A6501

Page 01 of 13

Scale: /

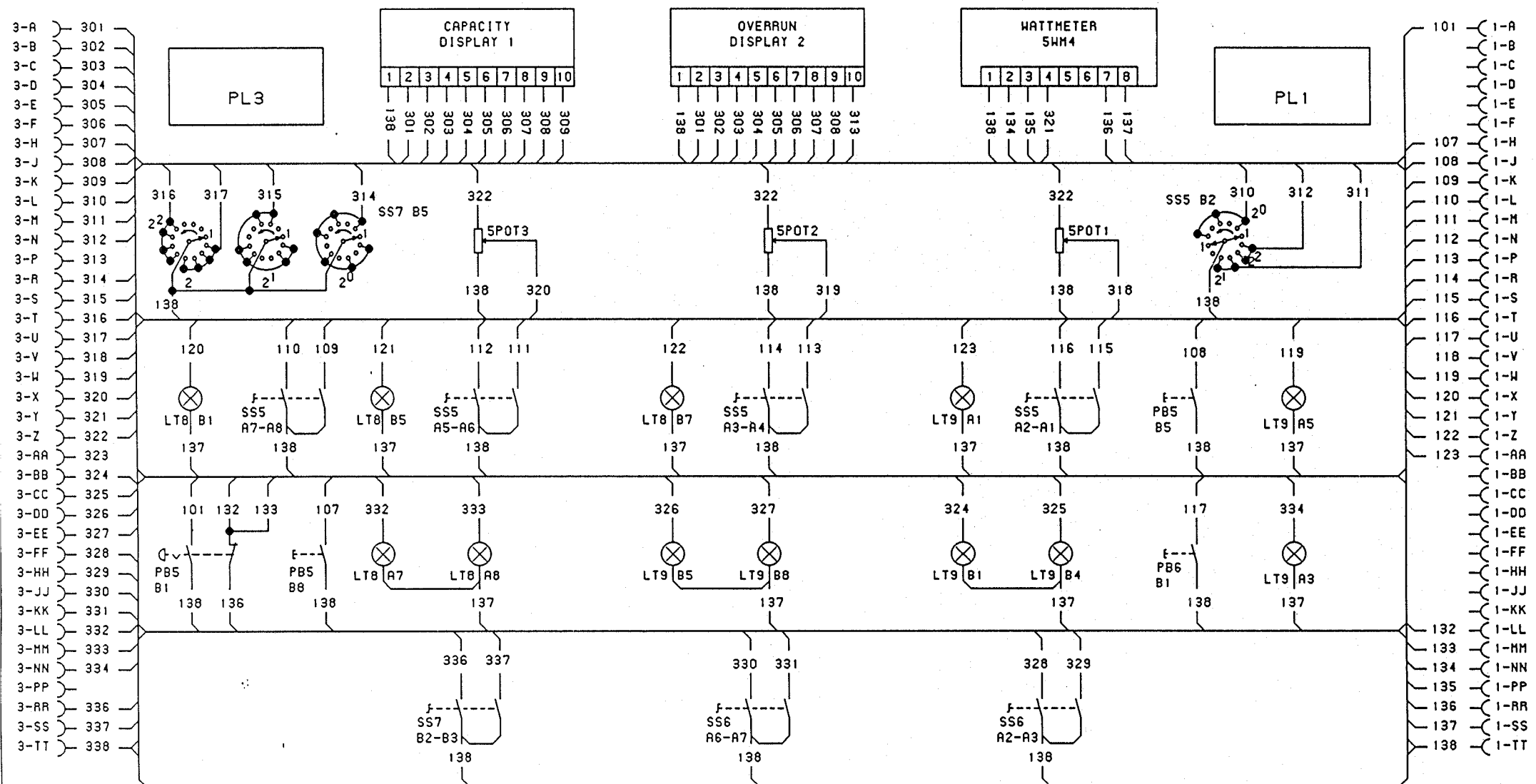
Drawn date:

220989

Sign: ES

Draw. No.:

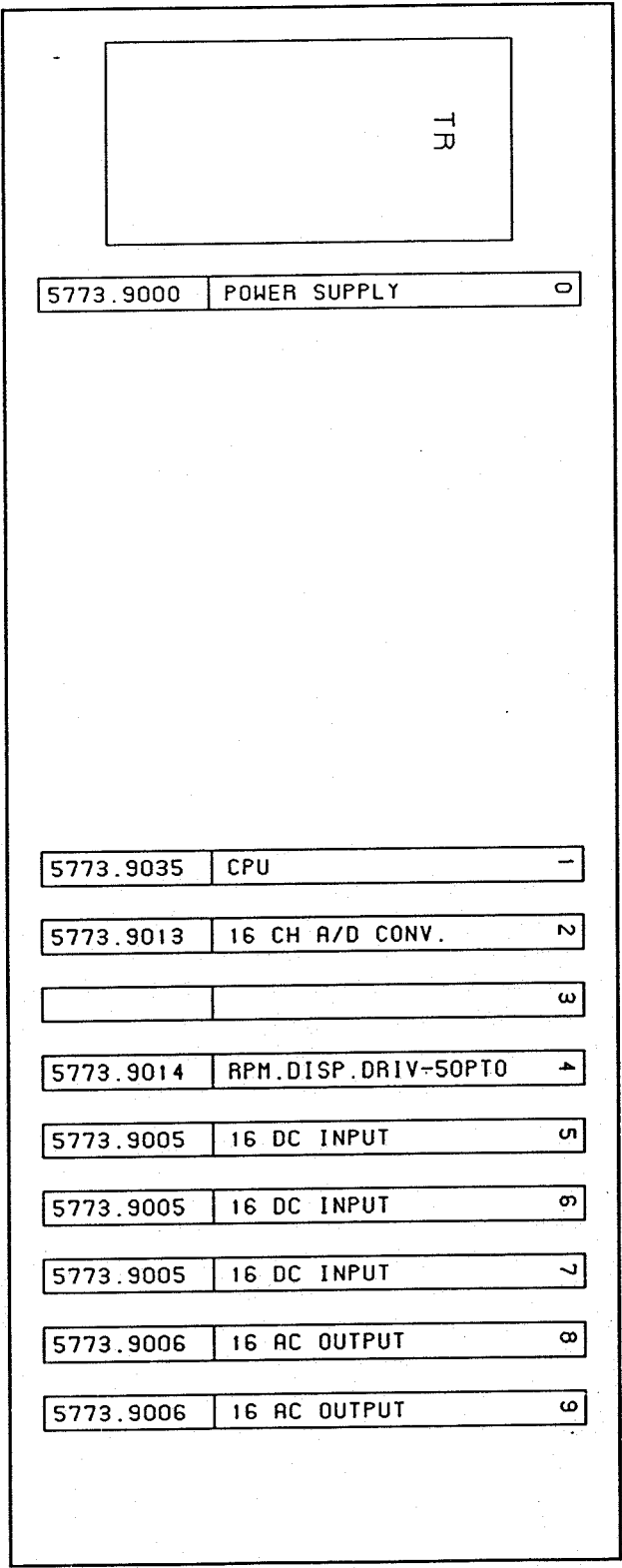
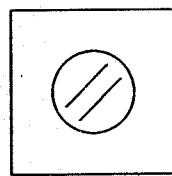
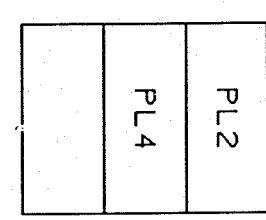
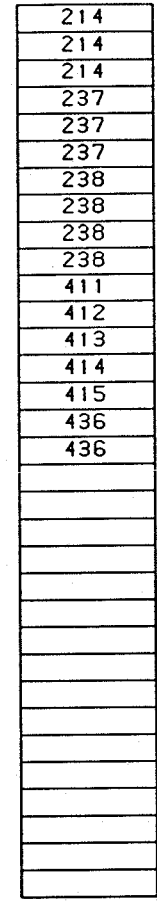
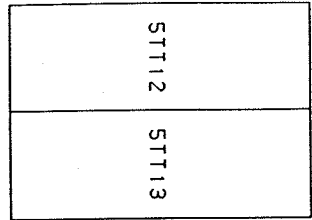
C94024, 20707

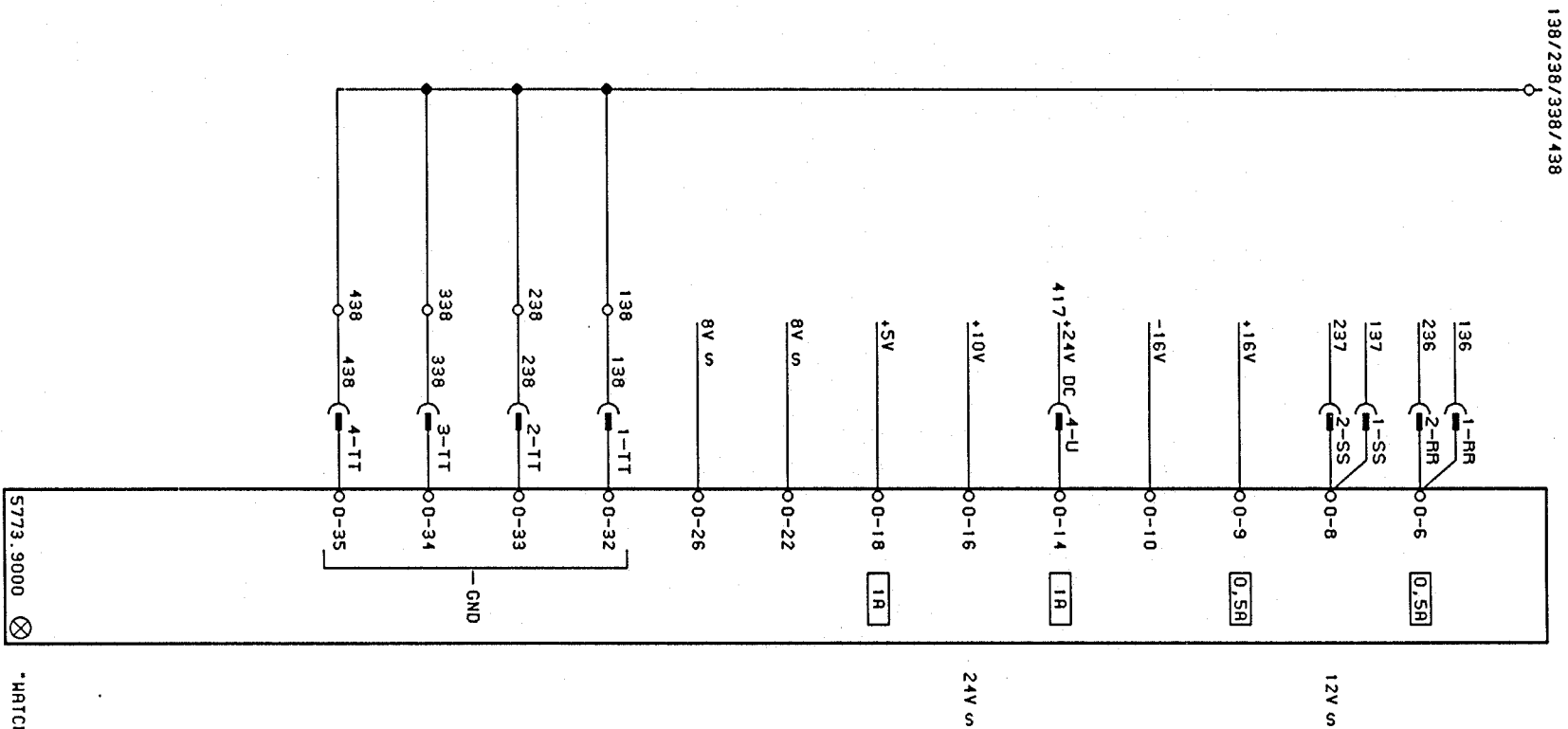


SEEN FROM WIRING SIDE

<p>ALFA-LAYAL GROUP AARHUS DENMARK</p>		LOSELY DAIRY PRODUCTS UK KF 1200 XC Z115.6501 FRONTPLATE	
		A6501 Page 02 of 13	
Scale: /	Drawn date: 220989	Sign: ES	Draw. No.: C94024, 20707

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16





LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 RACK CONNECTION

A6501

Scale: /

Drawn date: 220989

Sign: ES

Draw. No.:

C94024, 20707

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

EPROM 024.50018



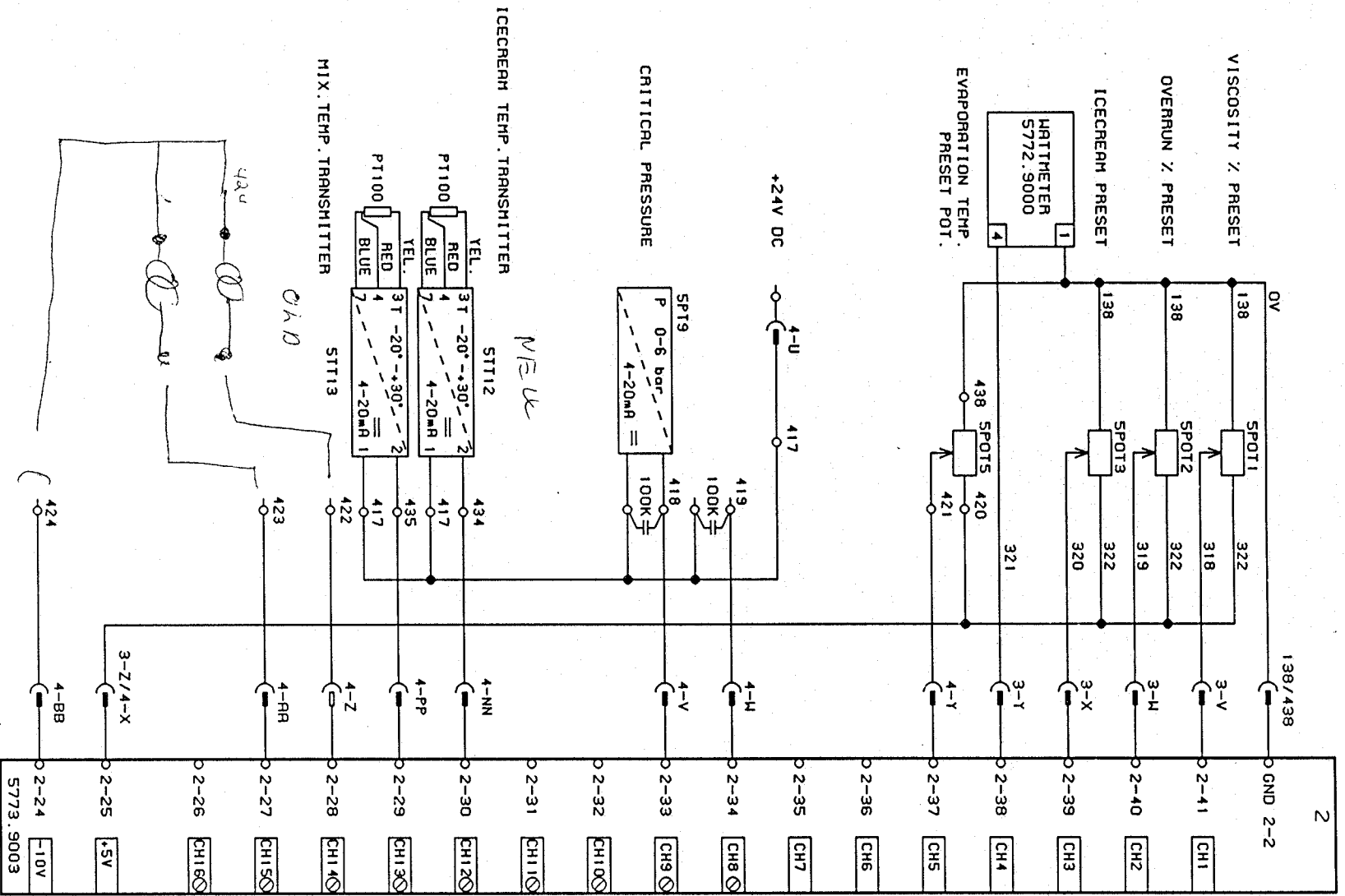
LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 RACK CONNECTION CPU

A6501

Page 05 of 13


Scale: /	Drawn date: 220989	Sign.: ES	Draw. No.: C94024, 20707
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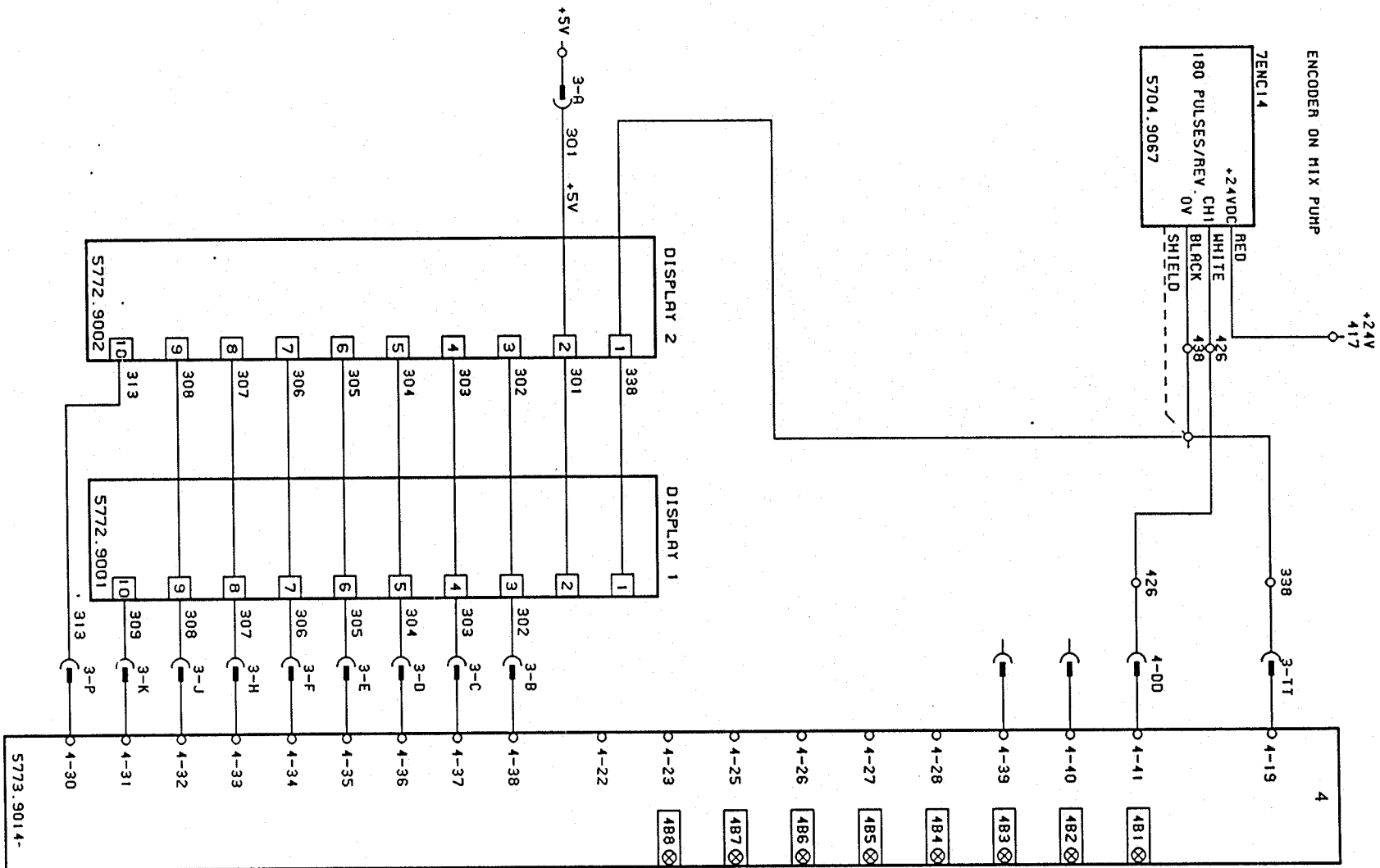




<p>ALFA-LAVAL GROUP AARHUS DENMARK</p>	<p>LOSELEY DAIRY PRODUCTS UK KF 1200 XC Z115.6501 RACK CONNECTIONS ANALOG INPUTS</p>		<p>A6501 Page 06 of 13</p>
	<p>Scale: /</p>	<p>Drawn date: 220989</p>	<p>Sign.: ES</p>

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

 ALFA-LAVAL GROUP AARHUS DENMARK	LOSELEY DAIRY PRODUCTS UK KF 1200 XC Z115.6501 RACK CONNECTIONS RS 232 (OPTIONS)			A6501
	Scale: /	Drawn date: 220989	Sign.: ES	Draw. No.: C94024, 20707



LOSELEY DAIRY PRODUCTS UK  
KF 1200 XC Z115.6501  
RACK CONNECTIONS

A6501

Page 08 of 13

Scale: /

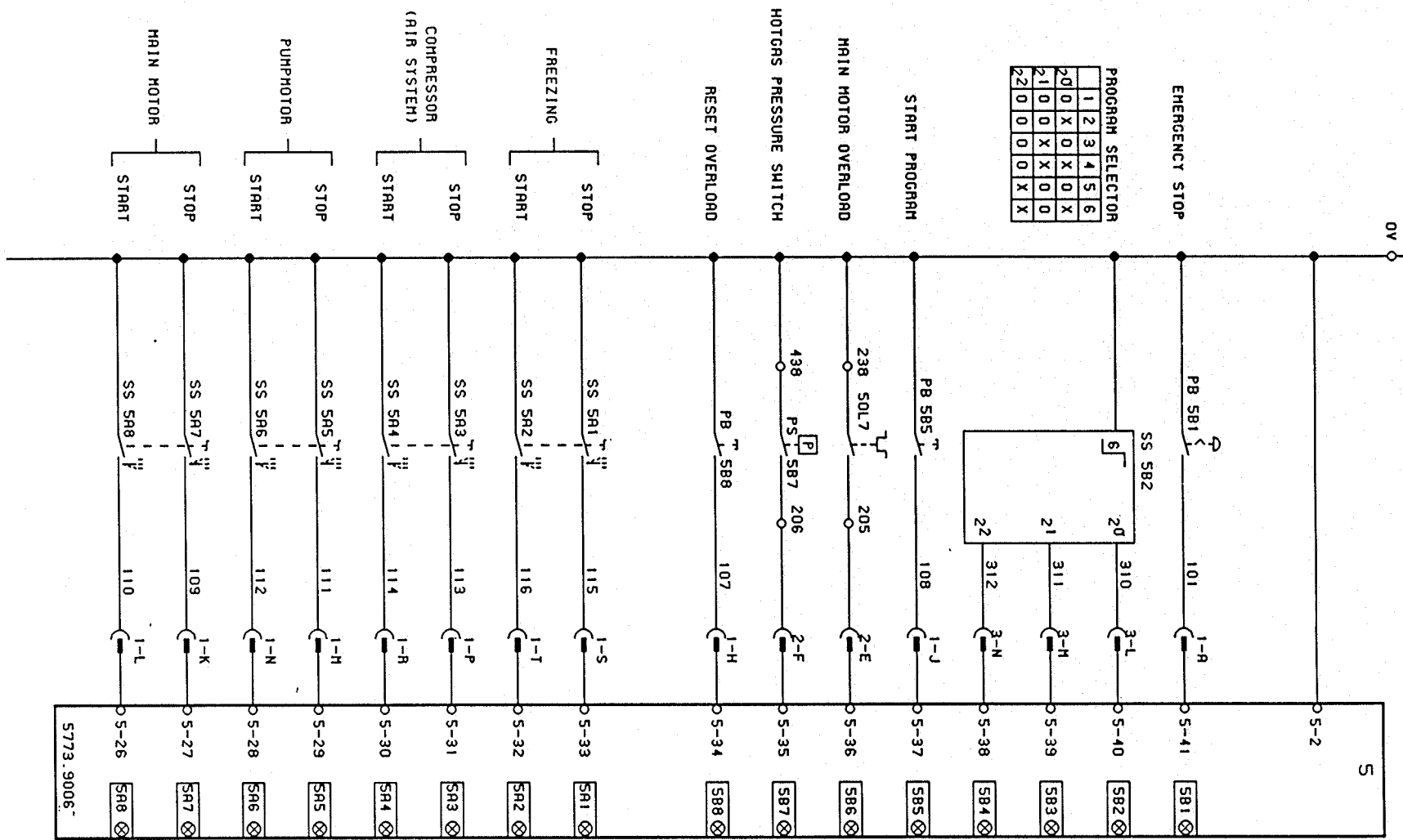
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Sign.: ES

Draw. No.:

C94024, 20707

138/238/338/438

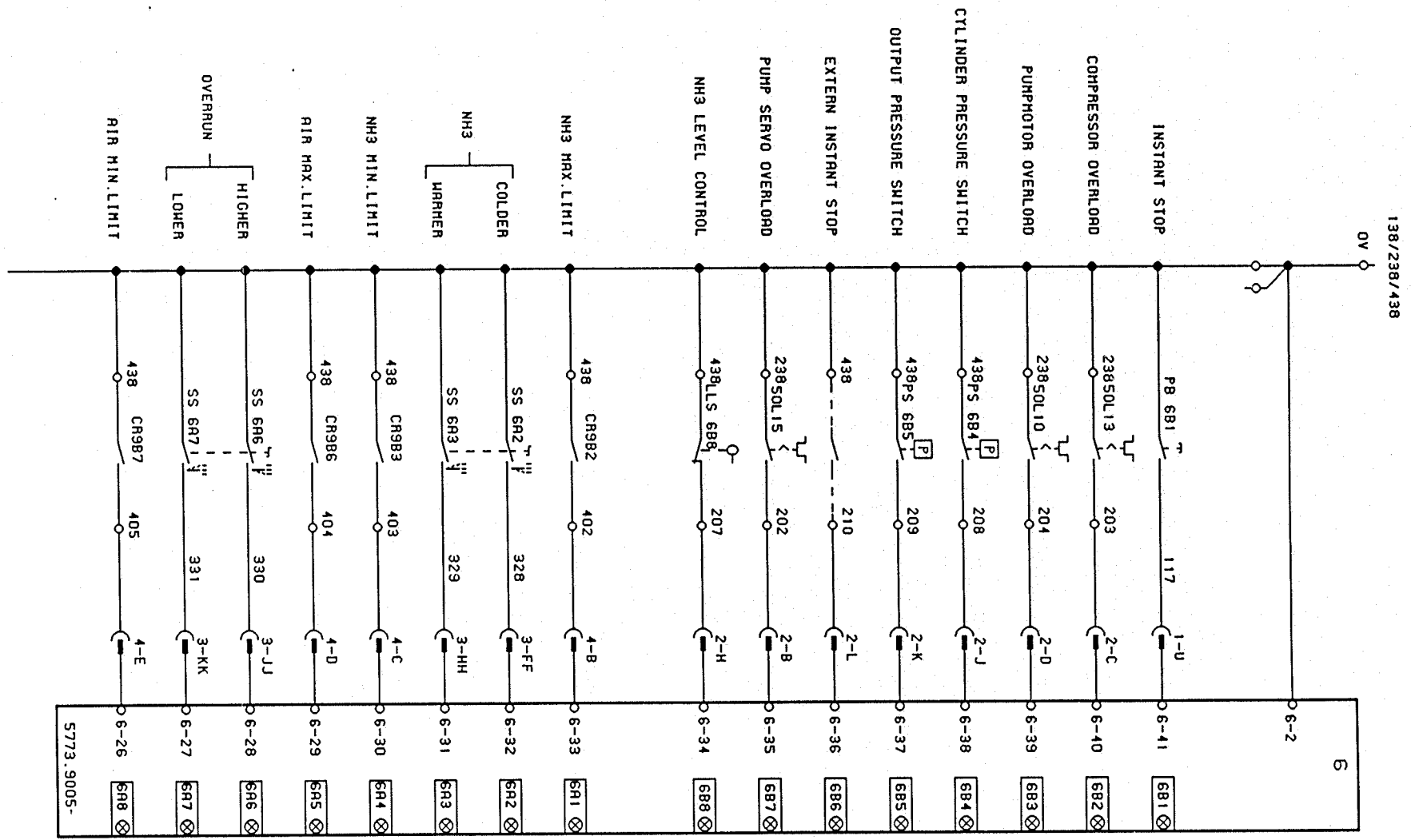


PROGRAM SELECTOR

1	2	3	4	5	6
20	0	X	0	X	0
21	0	0	X	X	0
22	0	0	0	0	X

5773.9006

<p>ALFA-LAVAL GROUP AARHUS DENMARK</p>	<p>LOSELEY DAIRY PRODUCTS UK KF 1200 XC Z115.6501 RACK CONNECTIONS 16 DC INPUT</p>		<p>A6501 Page 09 of 13</p>
	<p>Scale: /</p>	<p>Drawn date: 220989</p>	<p>Sign: ES</p>



5773.9005-



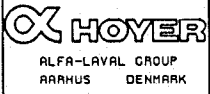
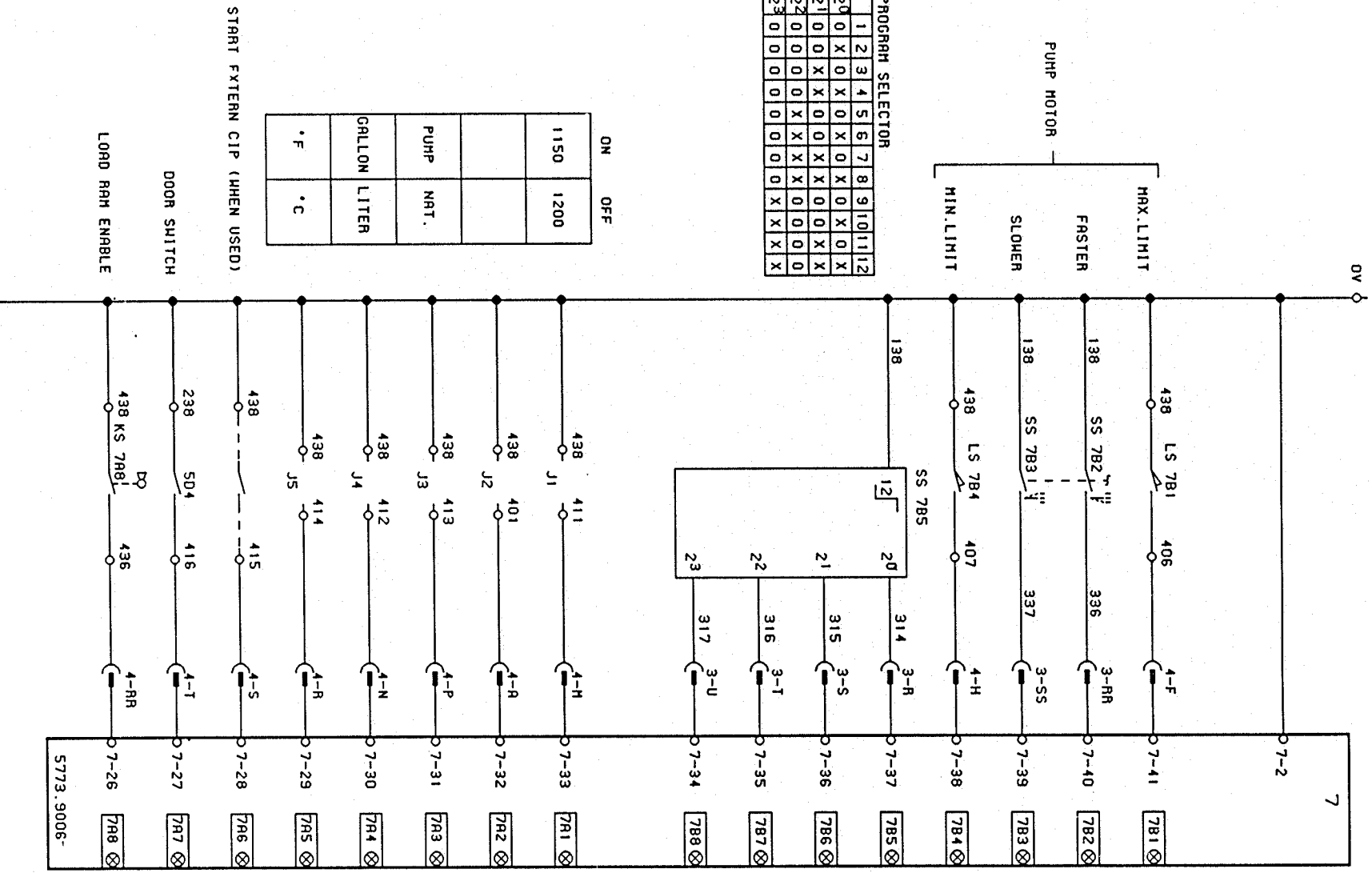
LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 RACK CONNECTIONS 16 DC INPUT

138/238/338/438

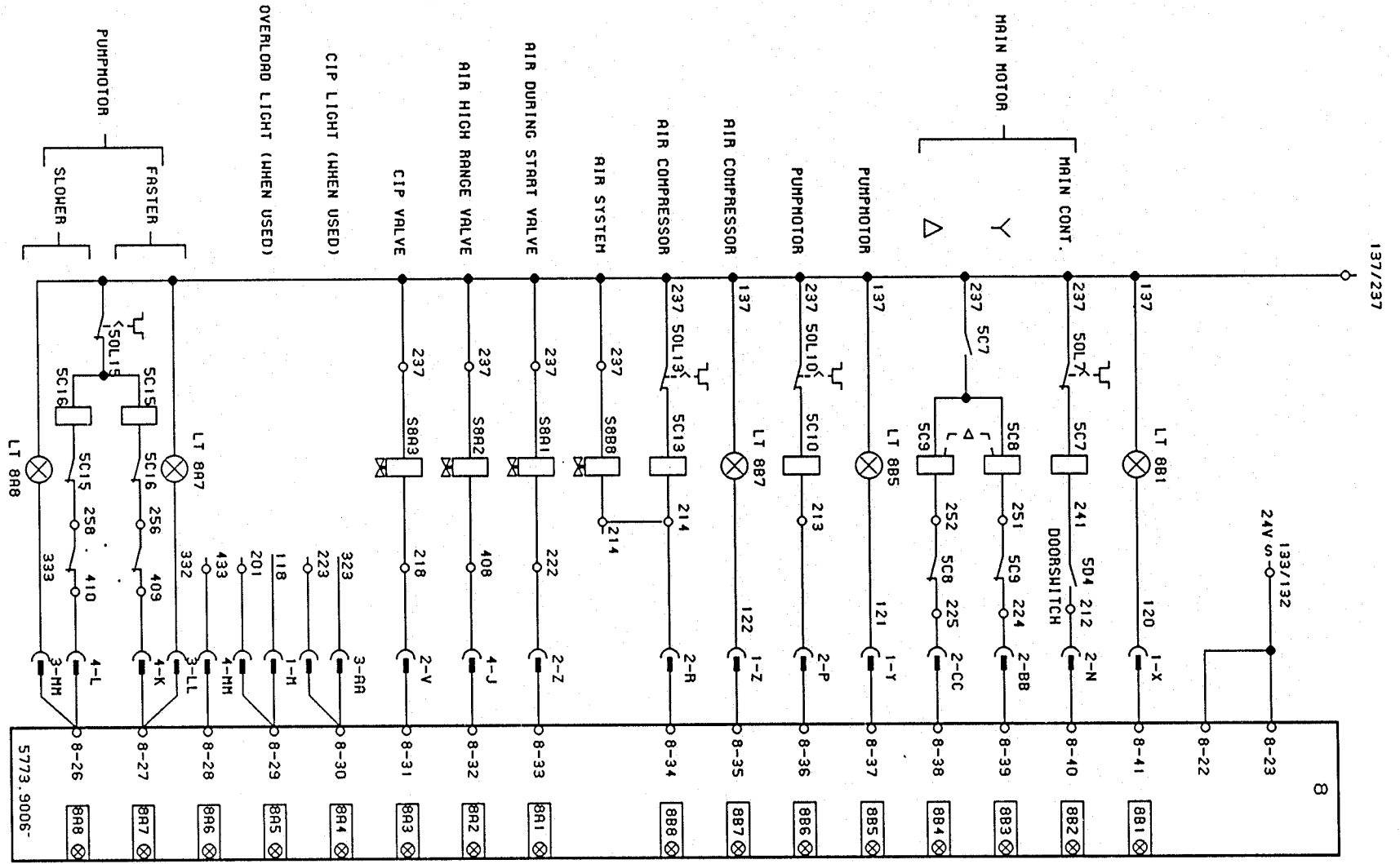
PROGRAM SELECTOR

1	2	3	4	5	6	7	8	9	10	11	12
20	0	X	0	X	0	X	0	X	0	X	0
21	0	0	X	X	0	0	X	X	0	0	X
22	0	0	0	0	X	X	X	0	0	0	0
23	0	0	0	0	0	0	0	0	X	X	X

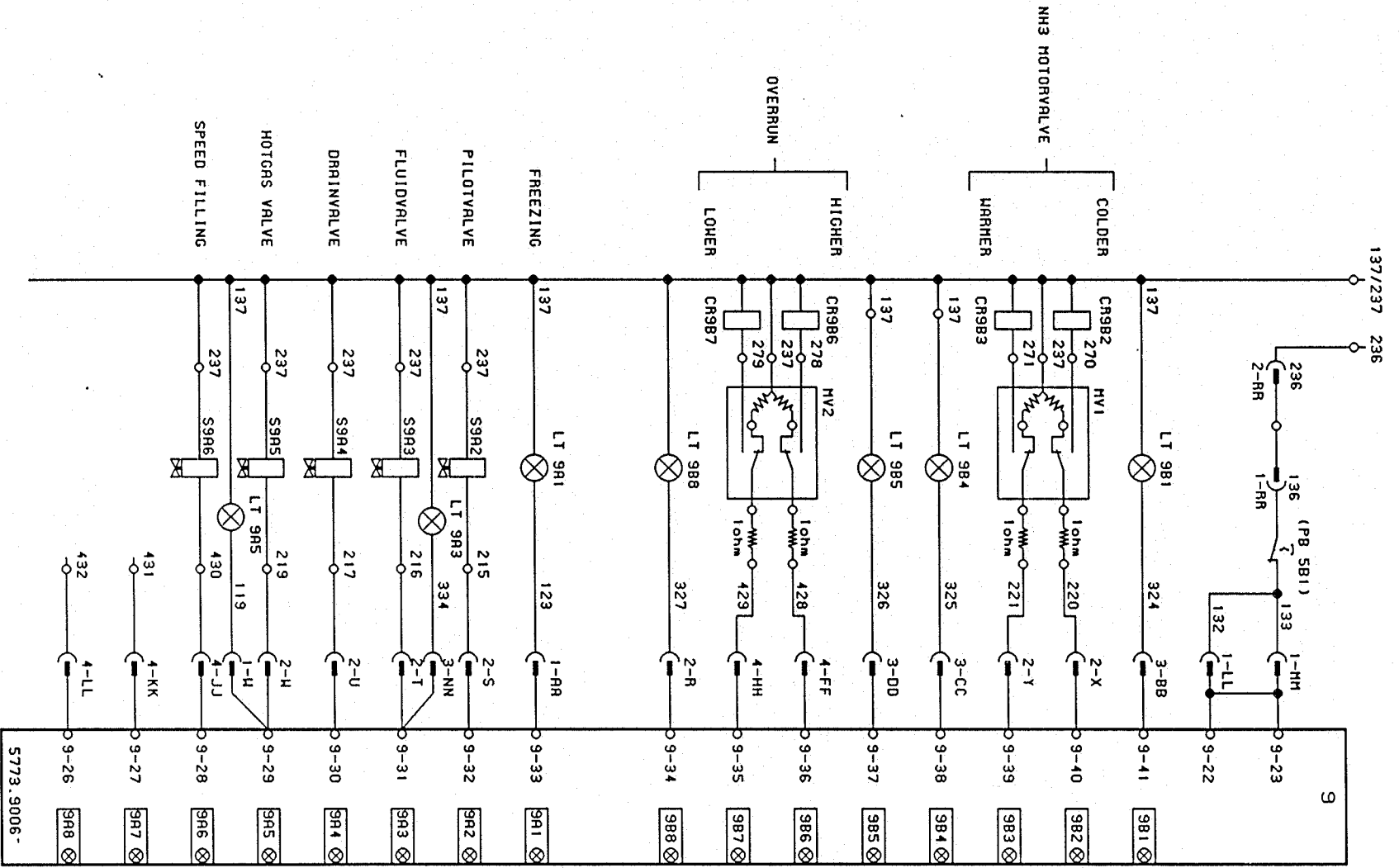
ON		OFF	
1150		1200	
PUMP	NRT.		
GALLON	LITER		
• F	• C		



LOSELEY DAIRY PRODUCTS UK  
KF 1200 XC Z115.6501  
RACK CONNECTIONS



LOSELEY DAIRY PRODUCTS UK  
KF 1200 XC Z115.6501  
RACK CONNECTIONS 16 AC OUTPUTS



5773.9006-



LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 RACK CONNECTIONS 16 AC OUTPUTS





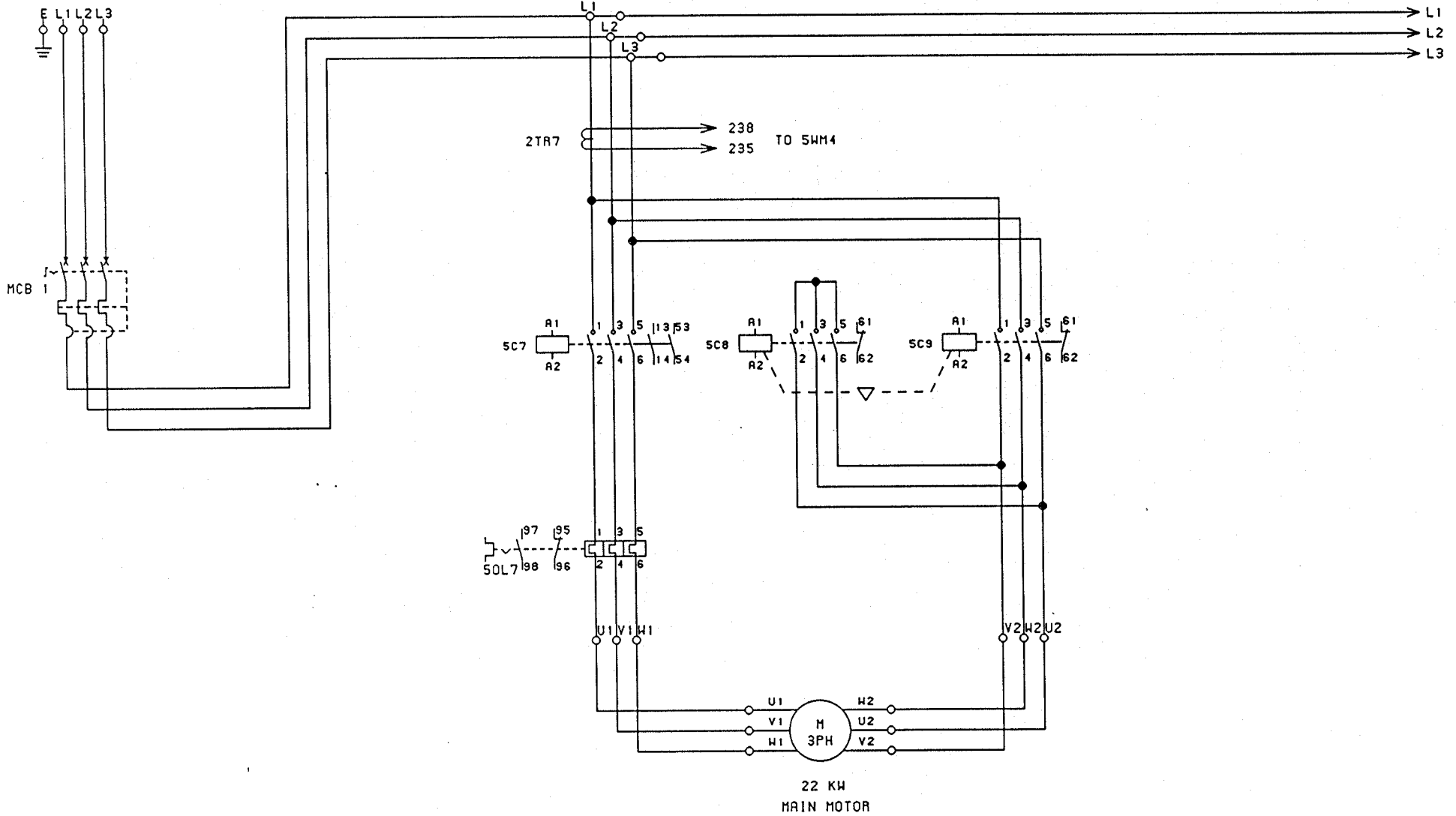
**HOYER**  
 ALFA-LAYAL GROUP  
 AARHUS DENMARK

LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 POWER CABINET

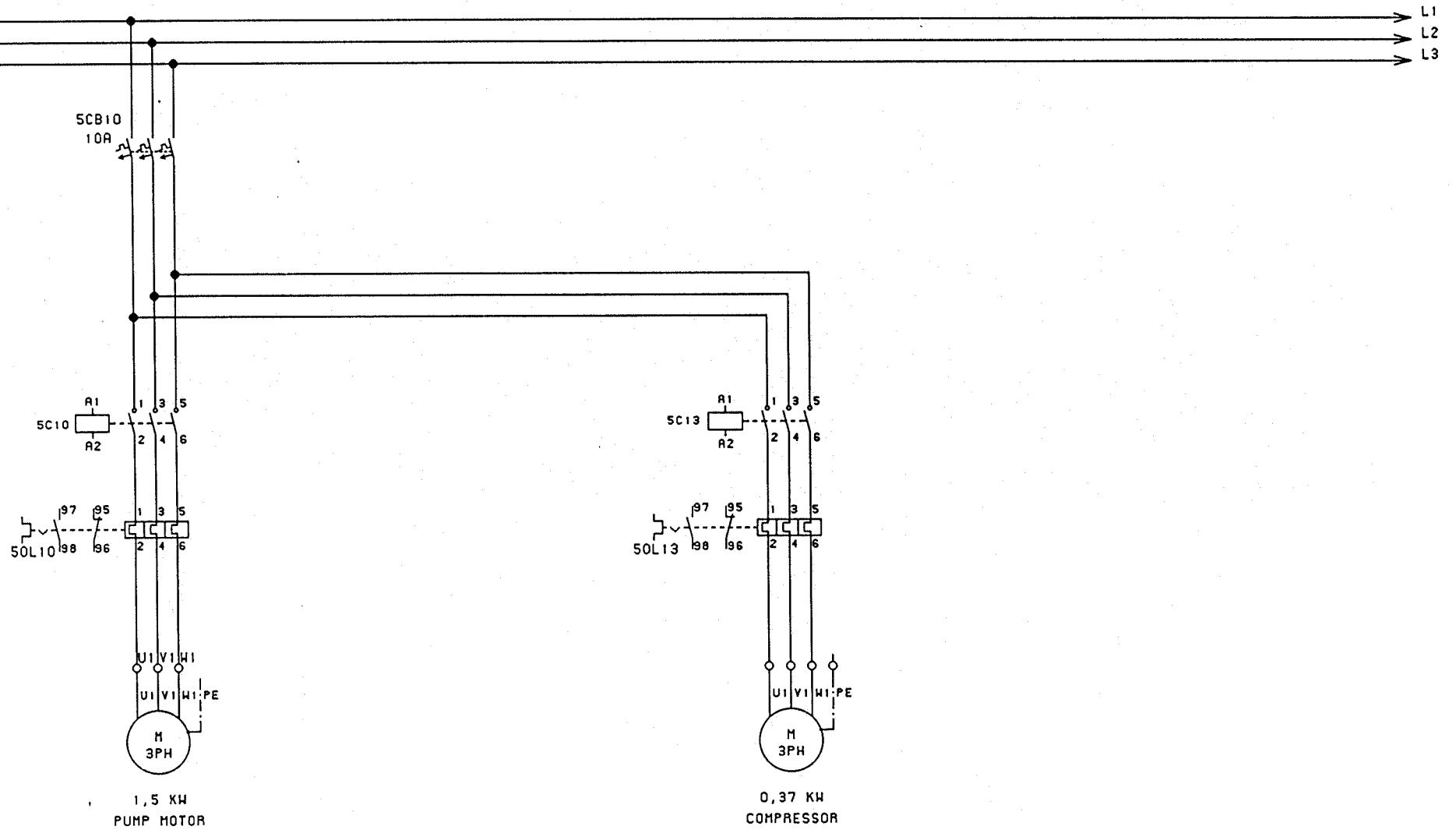
B6501  
 Page 01 of 05

Scale: / Drawn date: 250989 Sign.: ES Draw. No.: C94024, 20708

3 x 415V 59Hz



LOSELEY DAIRY PRODUCTS UK  
 KF 1200 XC Z115.6501  
 MAIN MOTOR



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AARHUS DENMARK

LOSELEY DAIRY PRODUCTS UK  
KF 1200 XC Z115.6501  
PUMPS

86501

Page 03 of 05

Scale: /

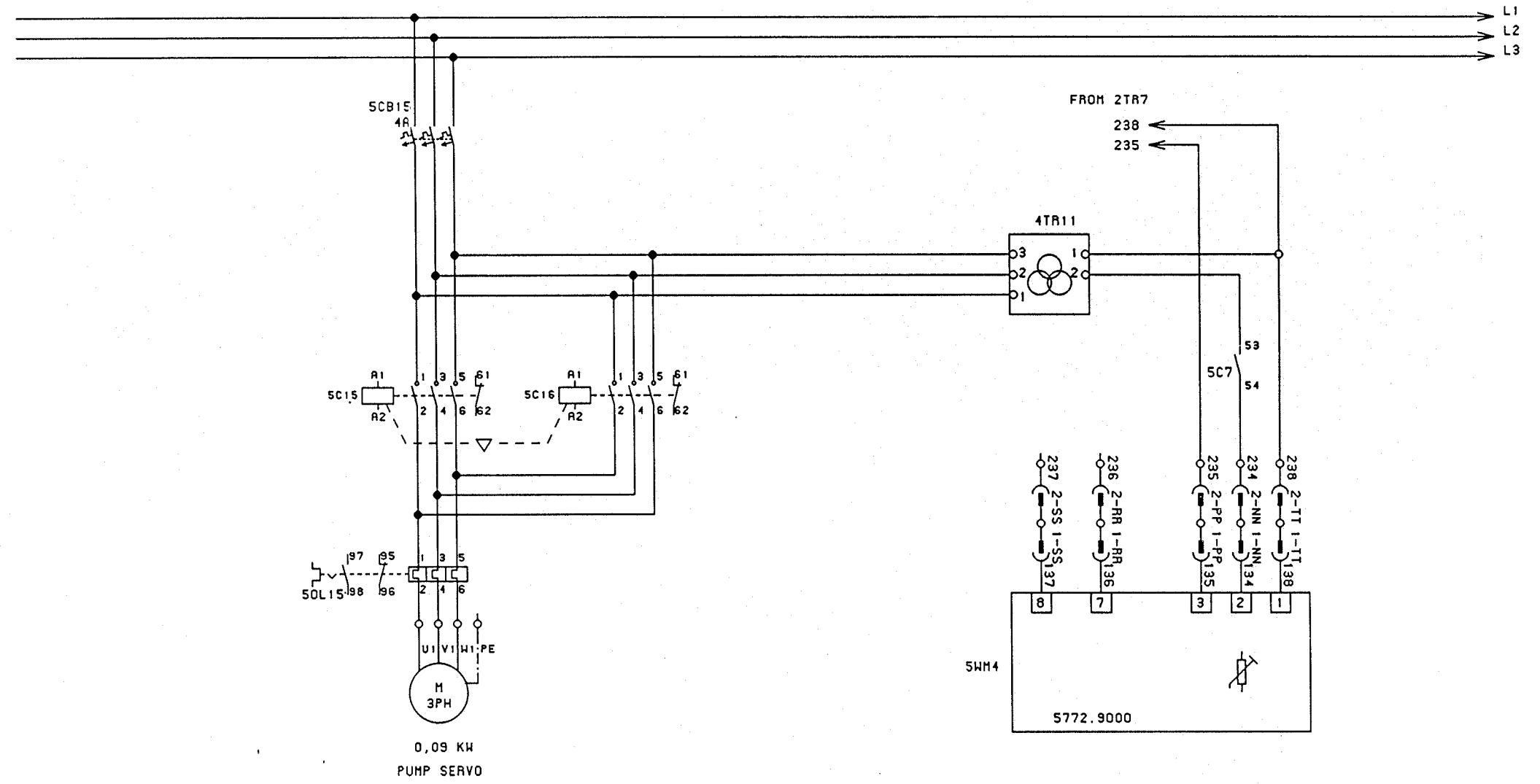
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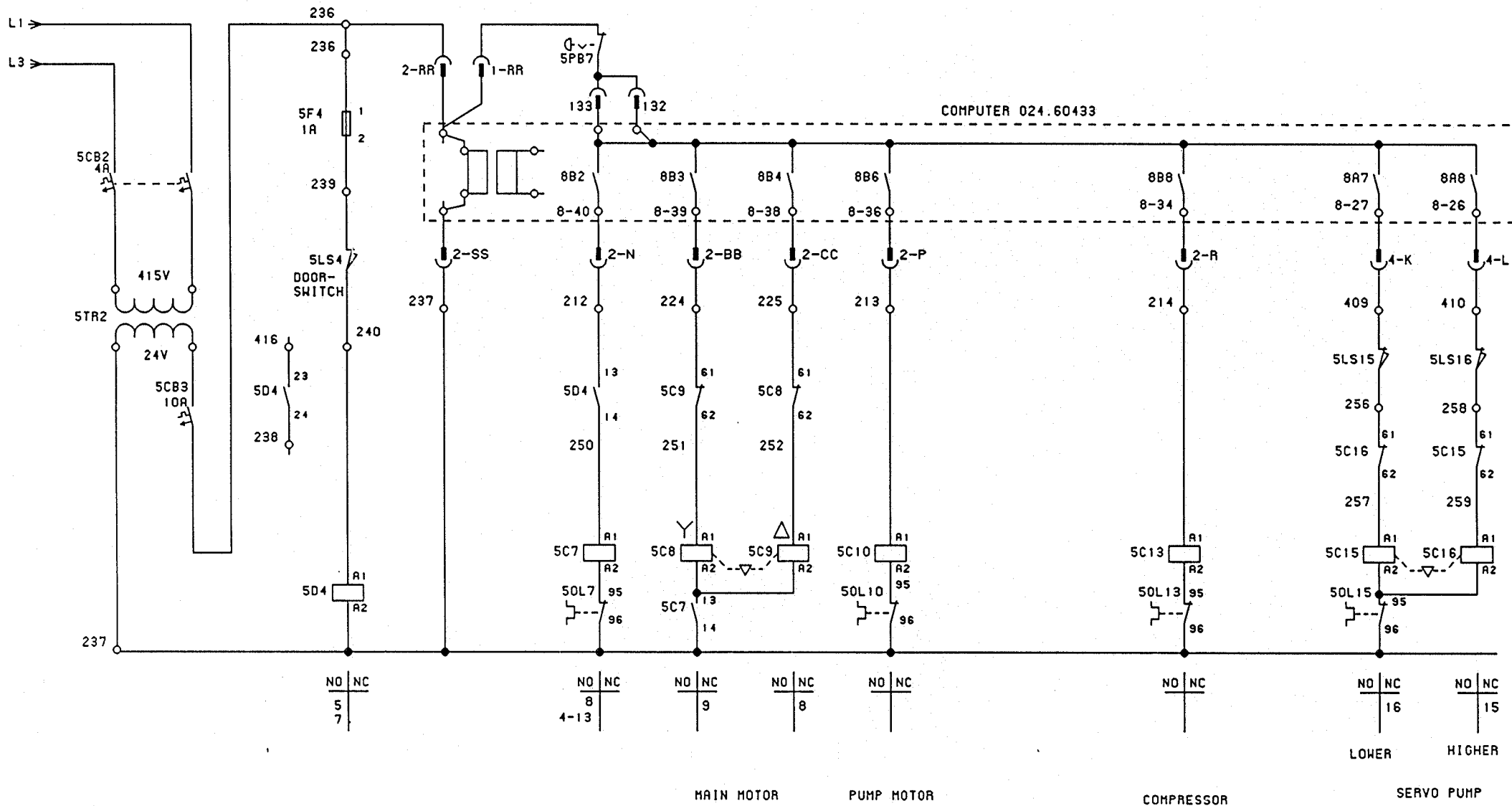
250989

Sign: ES

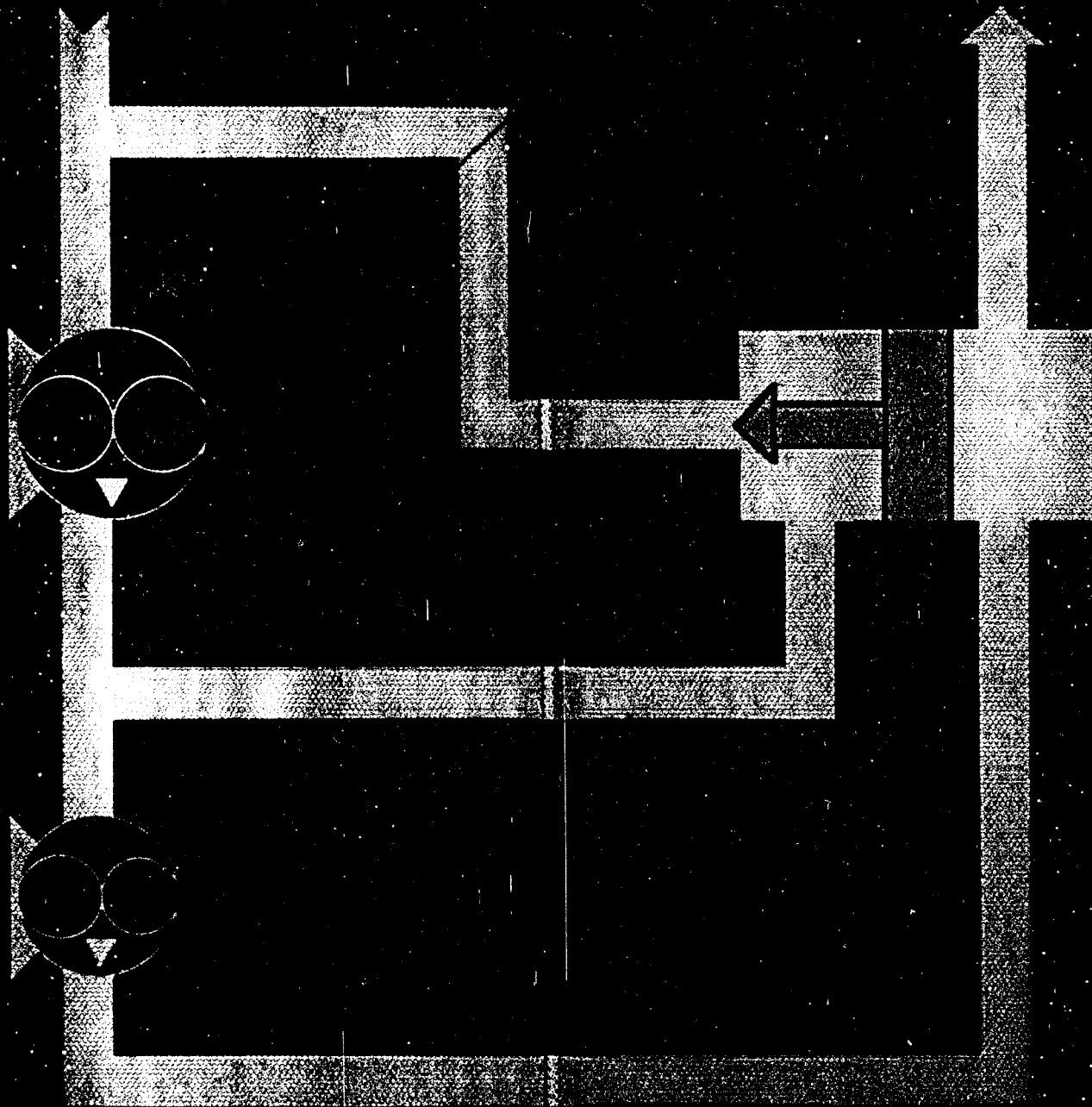
Draw. No.:

C94024, 20708



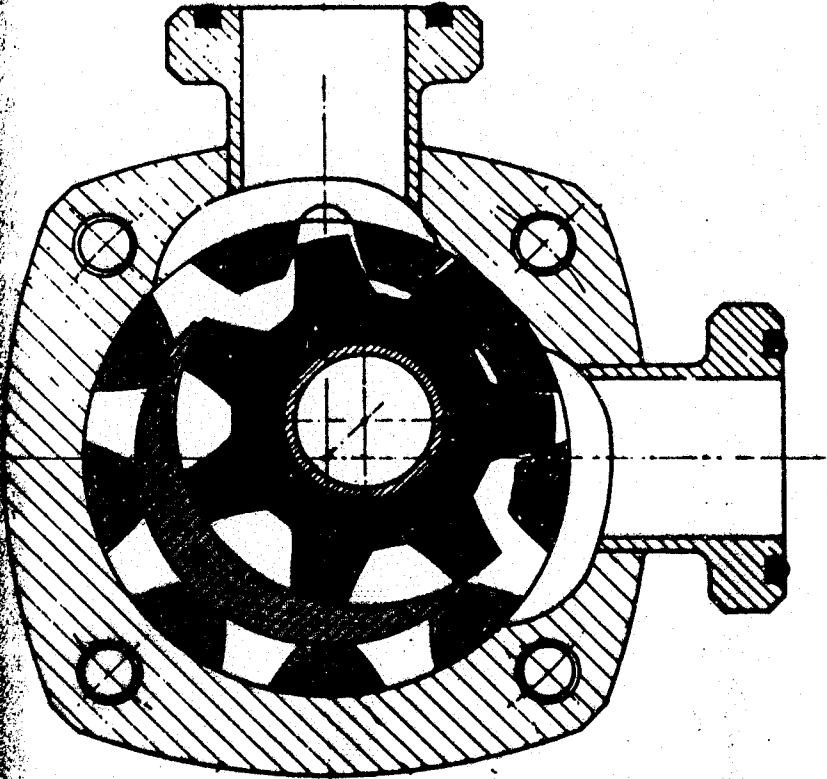
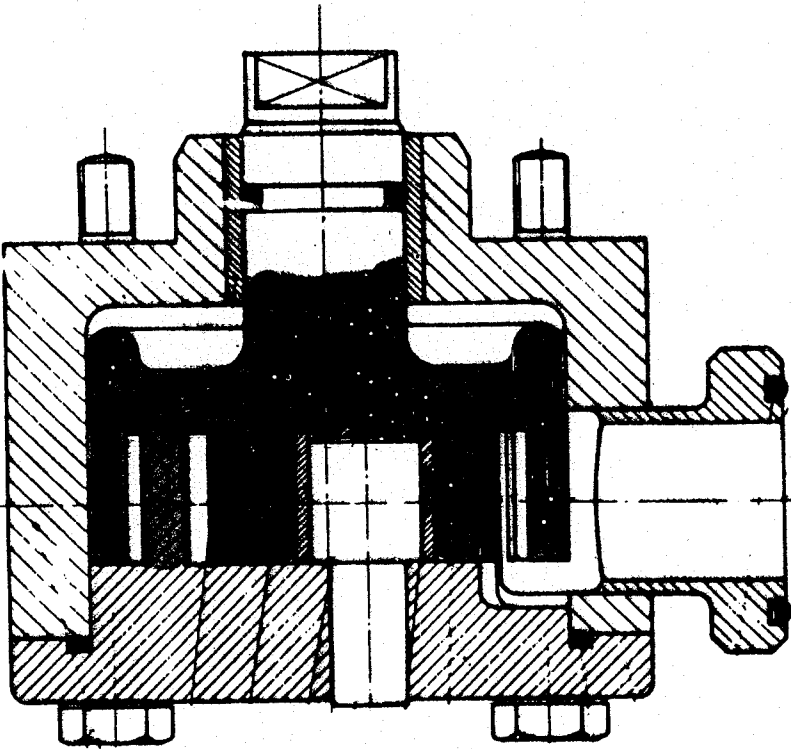


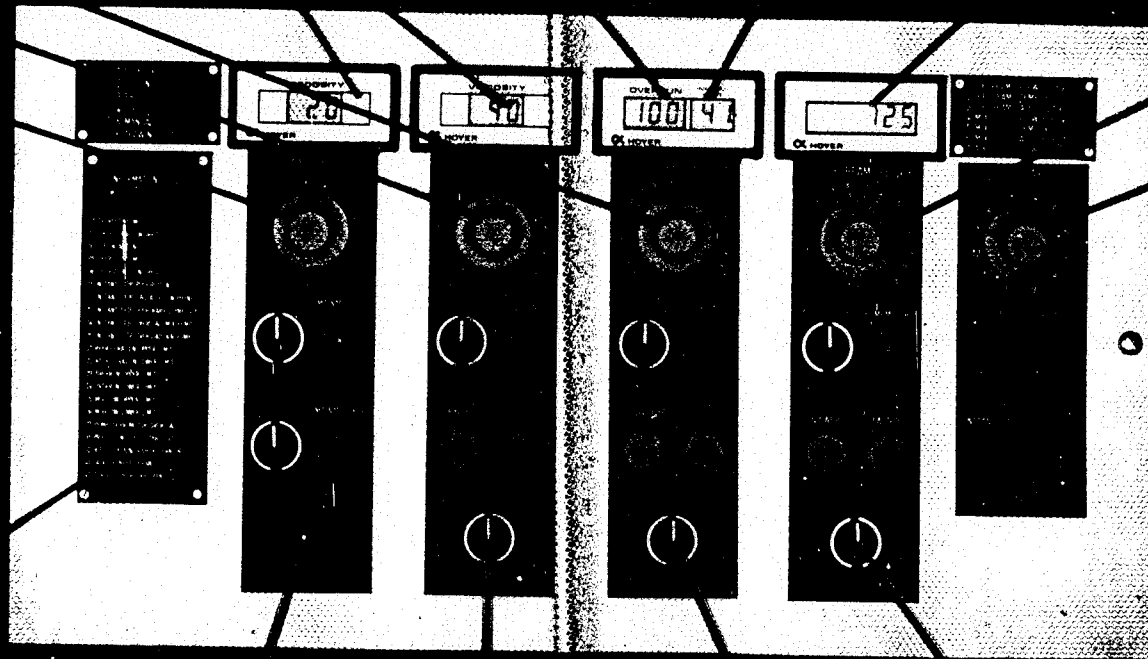
 <small>ALFA-LAVAL GROUP ARRHUS DENMARK</small>	LOSELEY DAIRY PRODUCTS UK KF 1200 XC Z115.6501		B6425 Page 05 of 05
	Scale: /	Drawn date: 250989	Sign.: ES



# CONTINUOUS FREEZERS

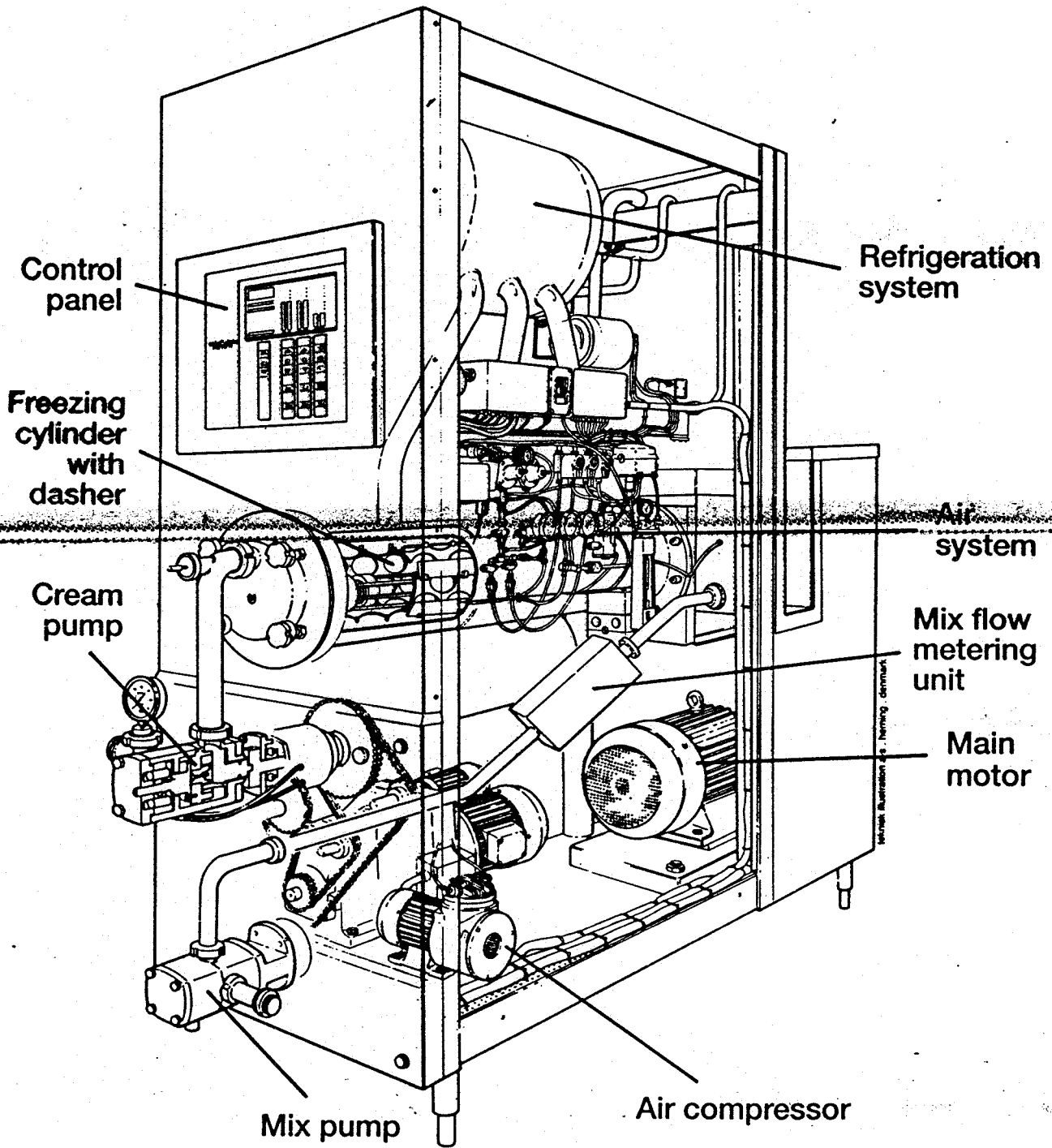
PUMP WITHOUT C.I.P.







# Continuous Freezer KF 1200XC



# CONTINUOUS FREEZER KF 1200XC

