LION HF295-HF445-HF545
HF500G-HF650G-LION HP

instructions for installation

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Revision: ***C***

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The wiring diagrams and setting specifications are delivered inside the cabinet, together with the "Instructions for use".

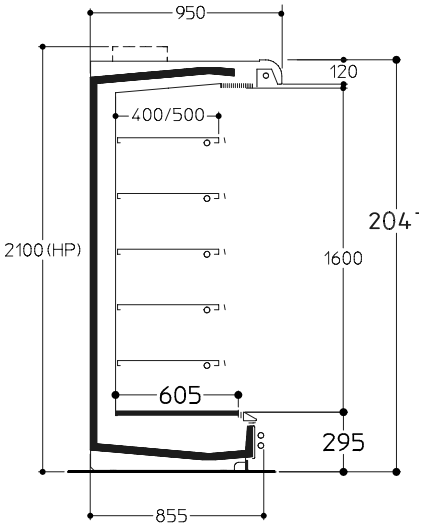
KEY

"-" First issue

A, B, C..... Chapter revision index

LION - LION HP HF295
CROSS-SECTIONS

LION 20 N 295



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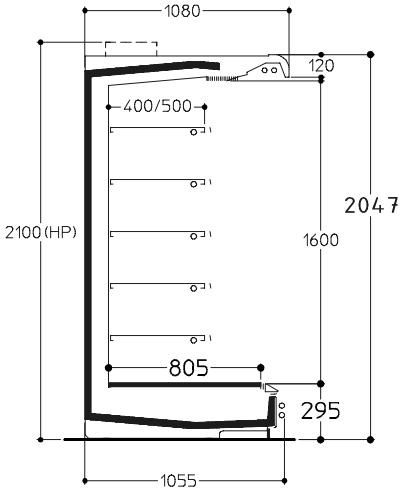

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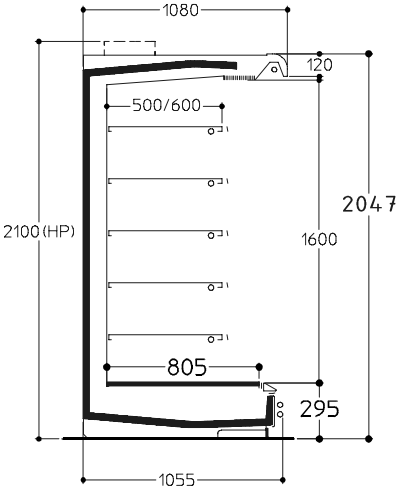

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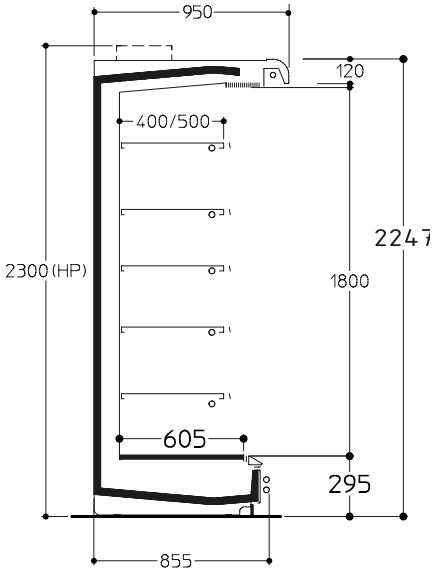

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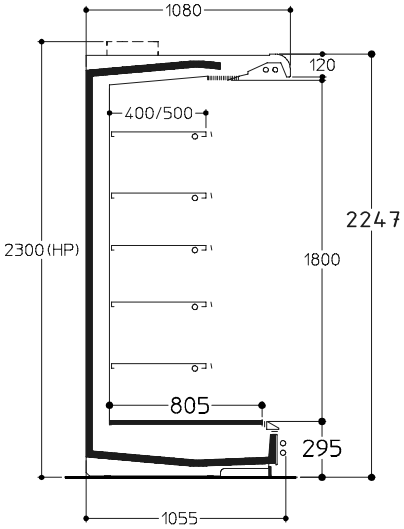

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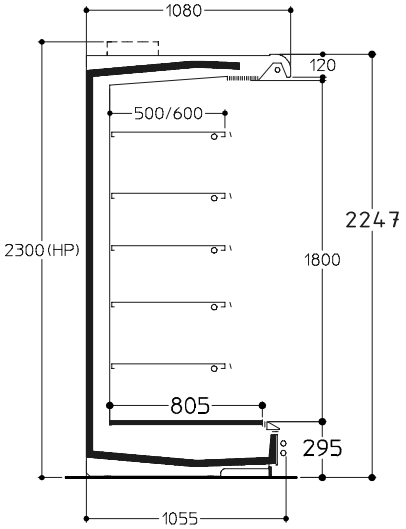

LION - LION HP HF445
CROSS-SECTIONS

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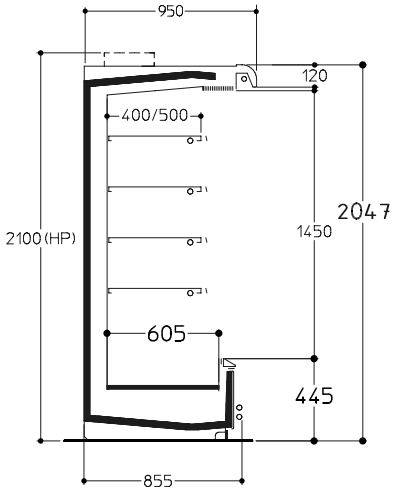

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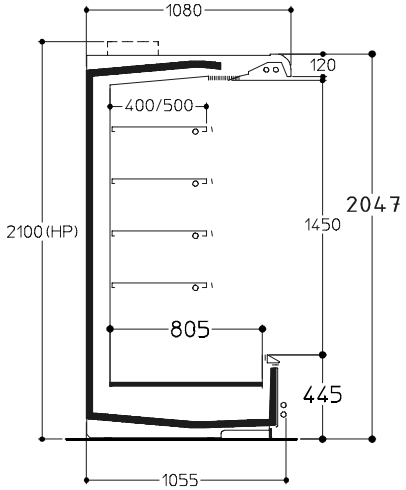

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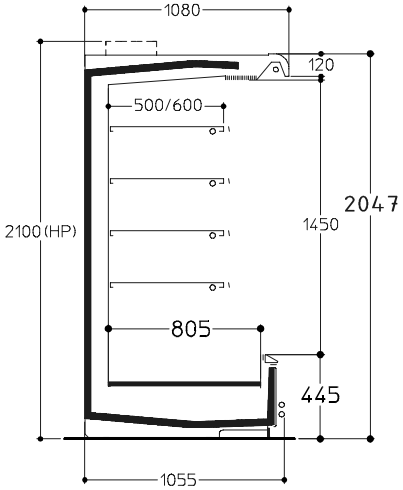

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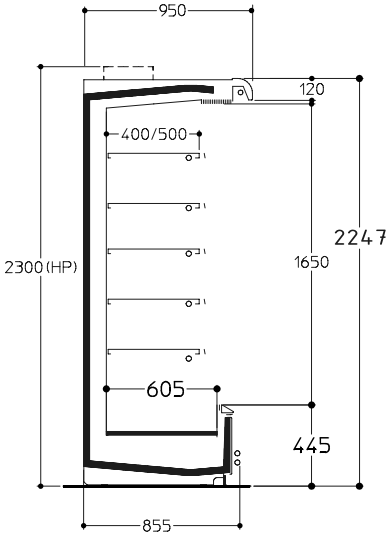

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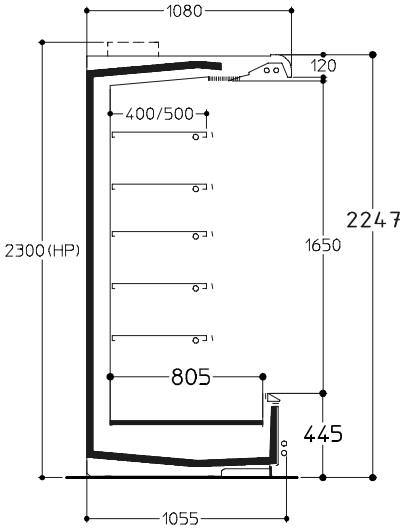

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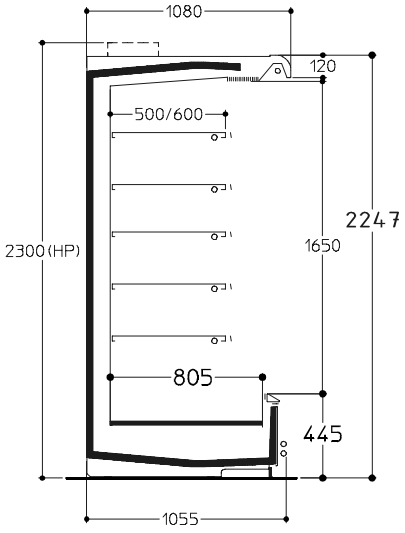

LION - LION HP HF545
CROSS-SECTIONS

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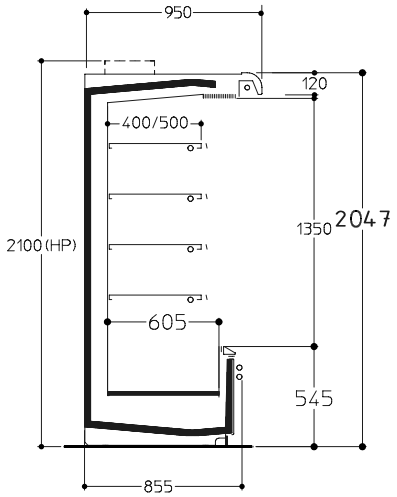

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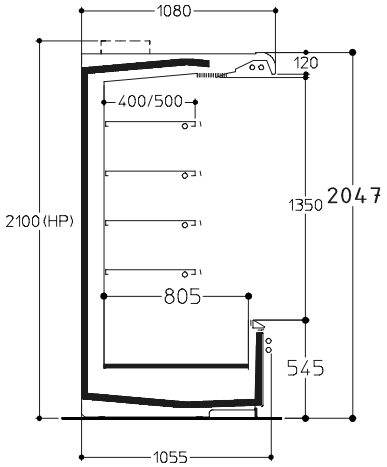

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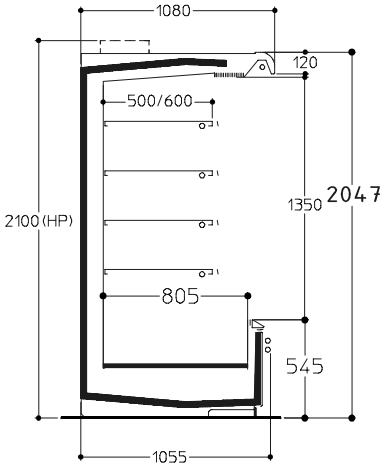

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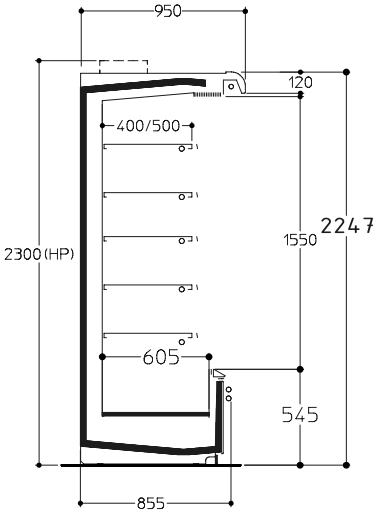

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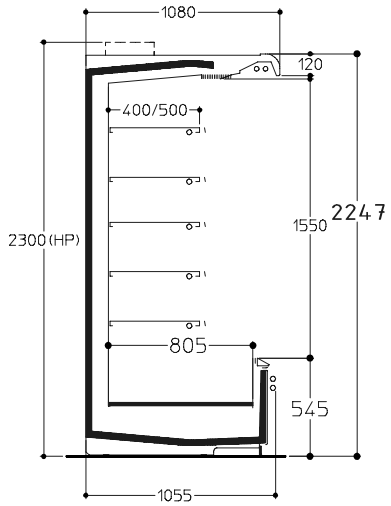

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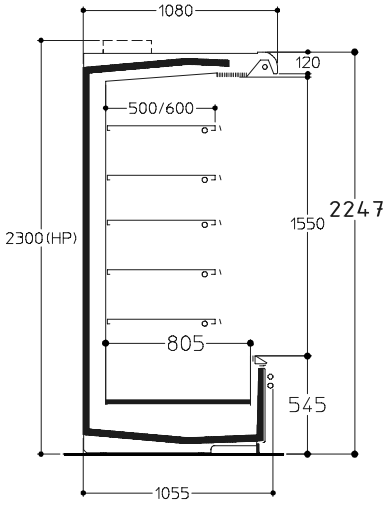

LION - LION HP HF500G
CROSS-SECTIONS

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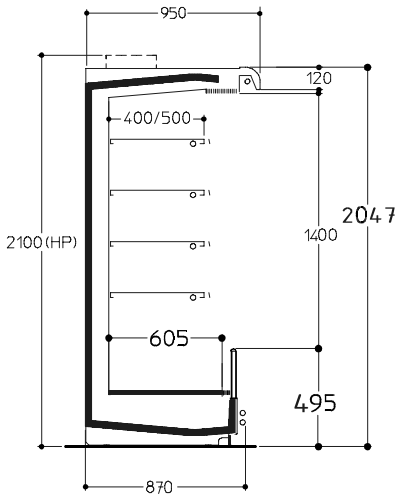

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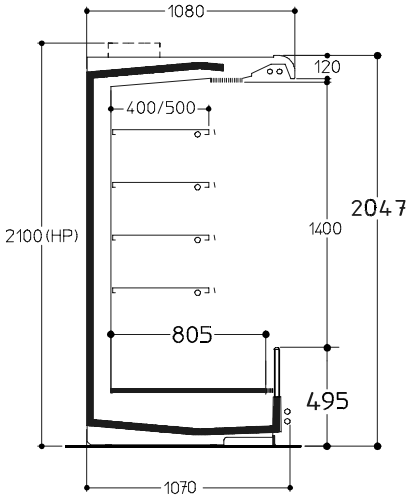

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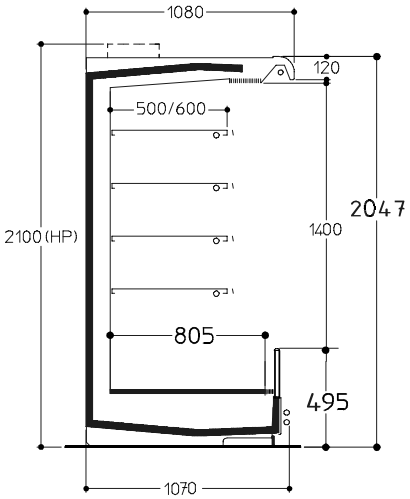

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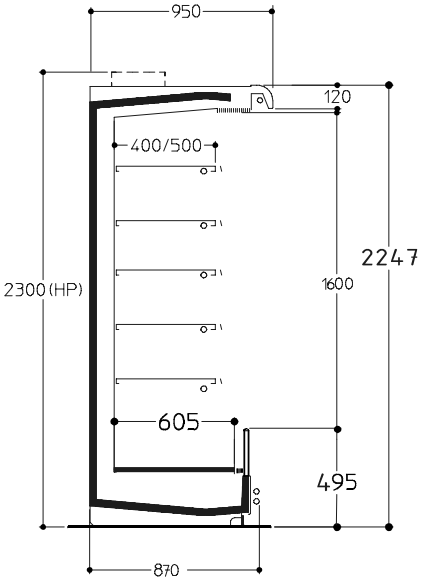

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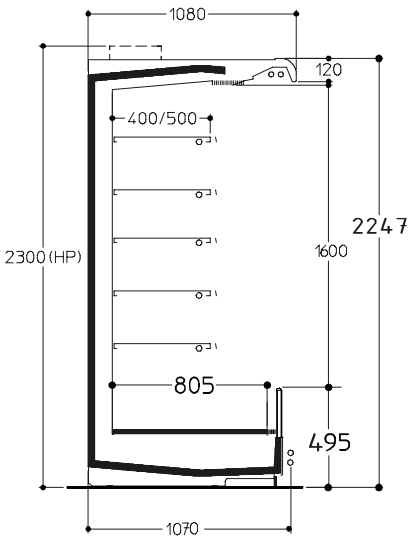

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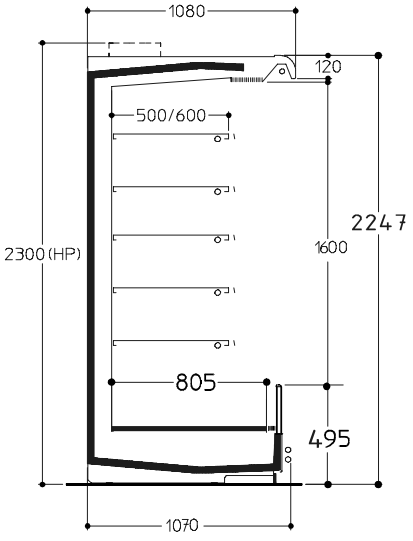

LION - LION HP HF650G
CROSS-SECTIONS0

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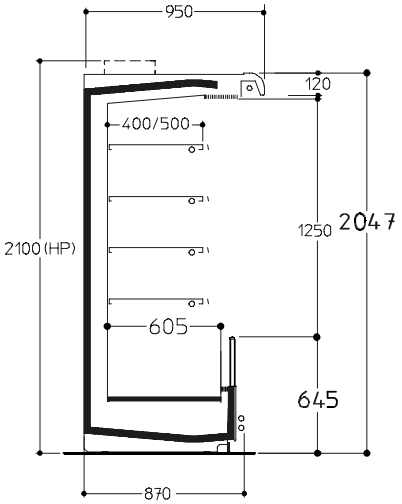

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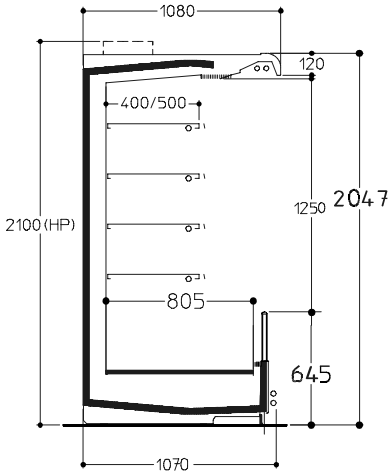

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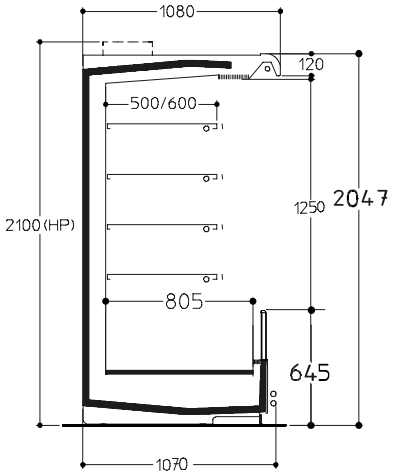

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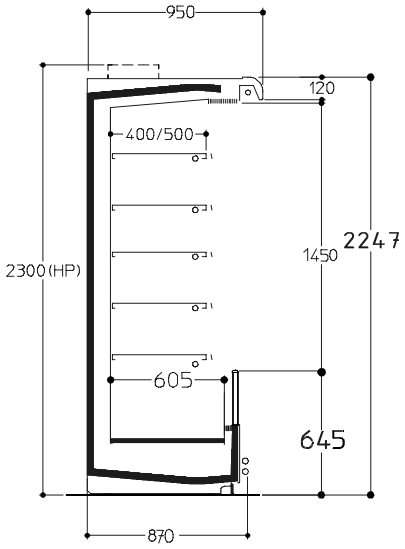

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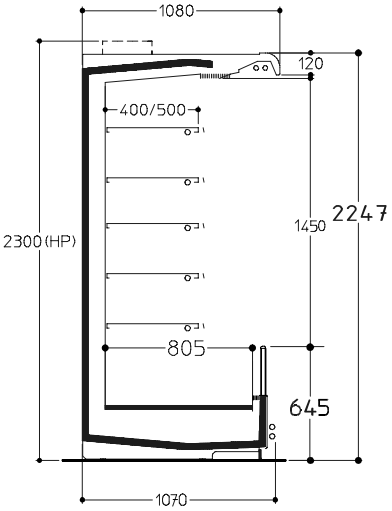

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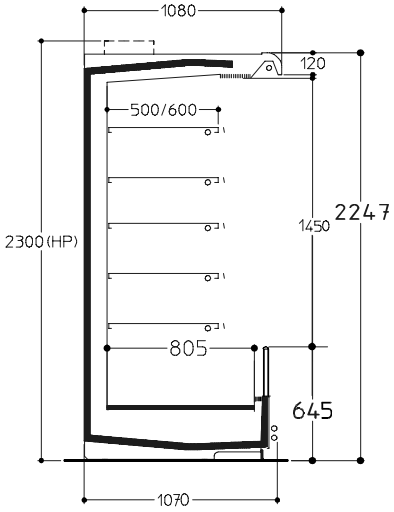
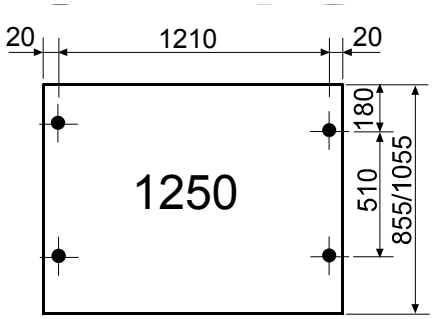
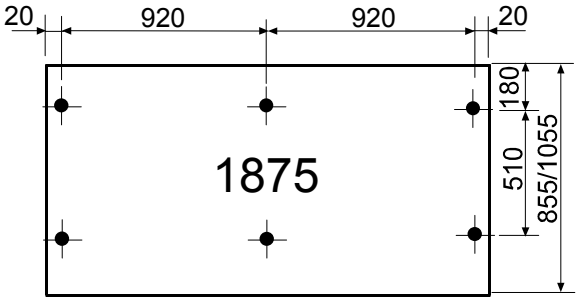
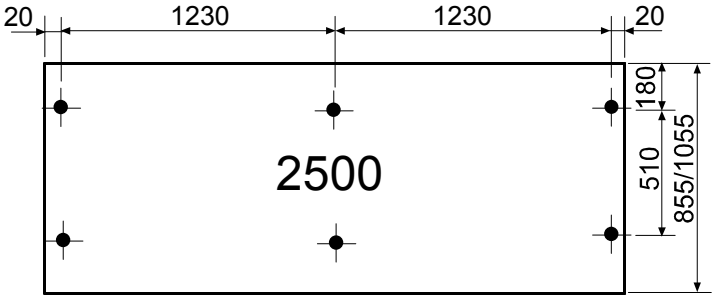
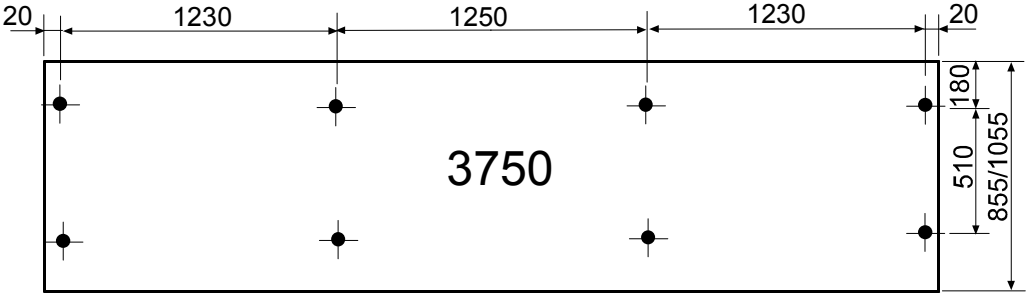


POSITION OF FEET IN LINEAR CABINETS

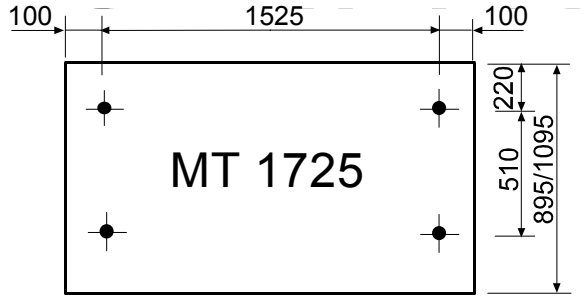


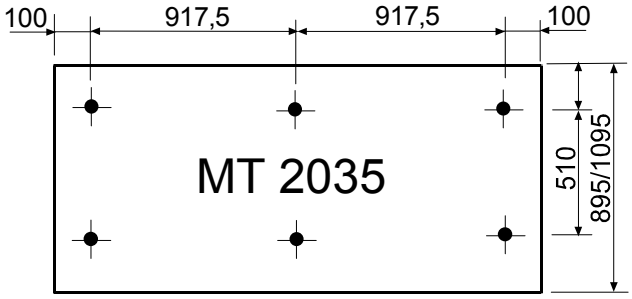


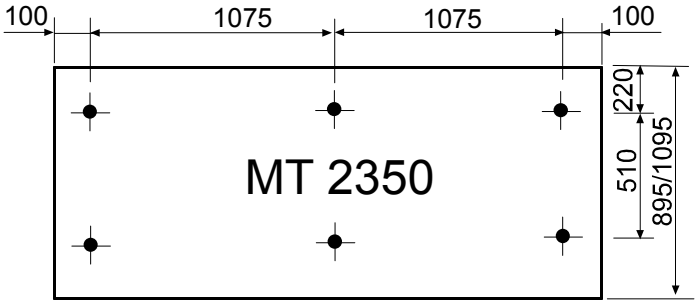




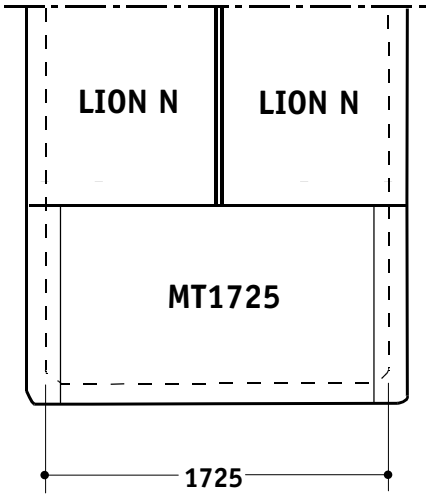
POSITION OF FEET IN HEAD CABINETS

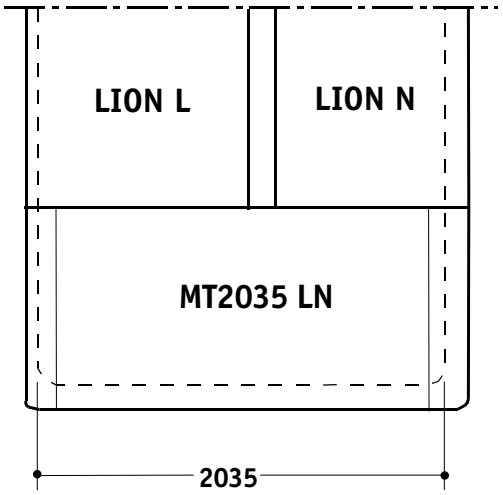


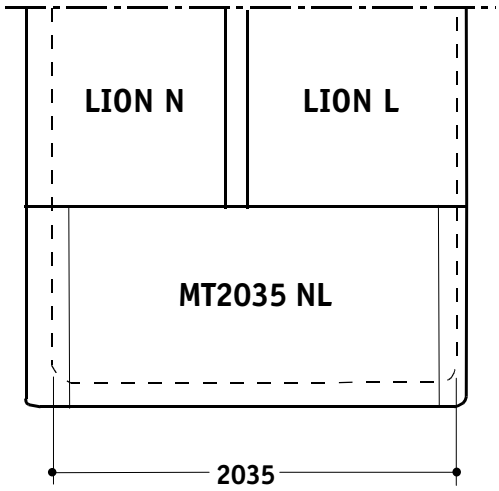


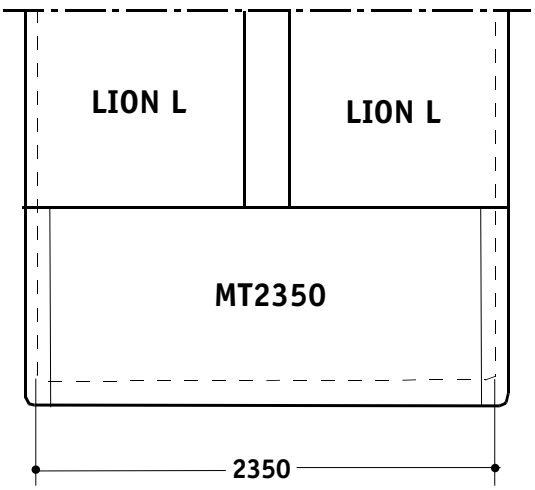


HEAD CABINETS



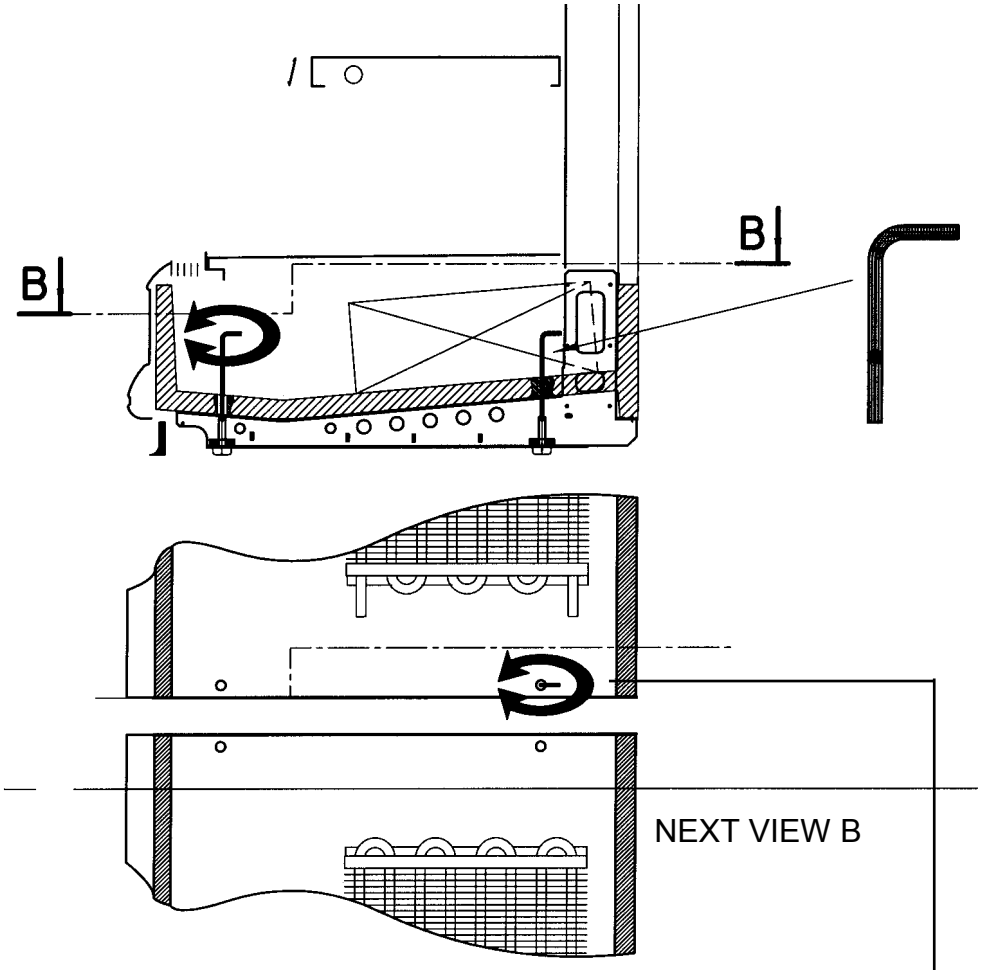


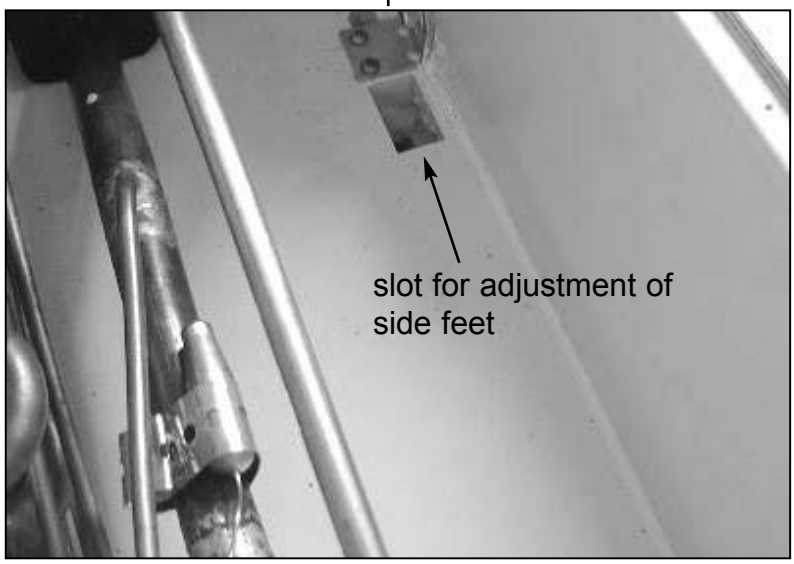




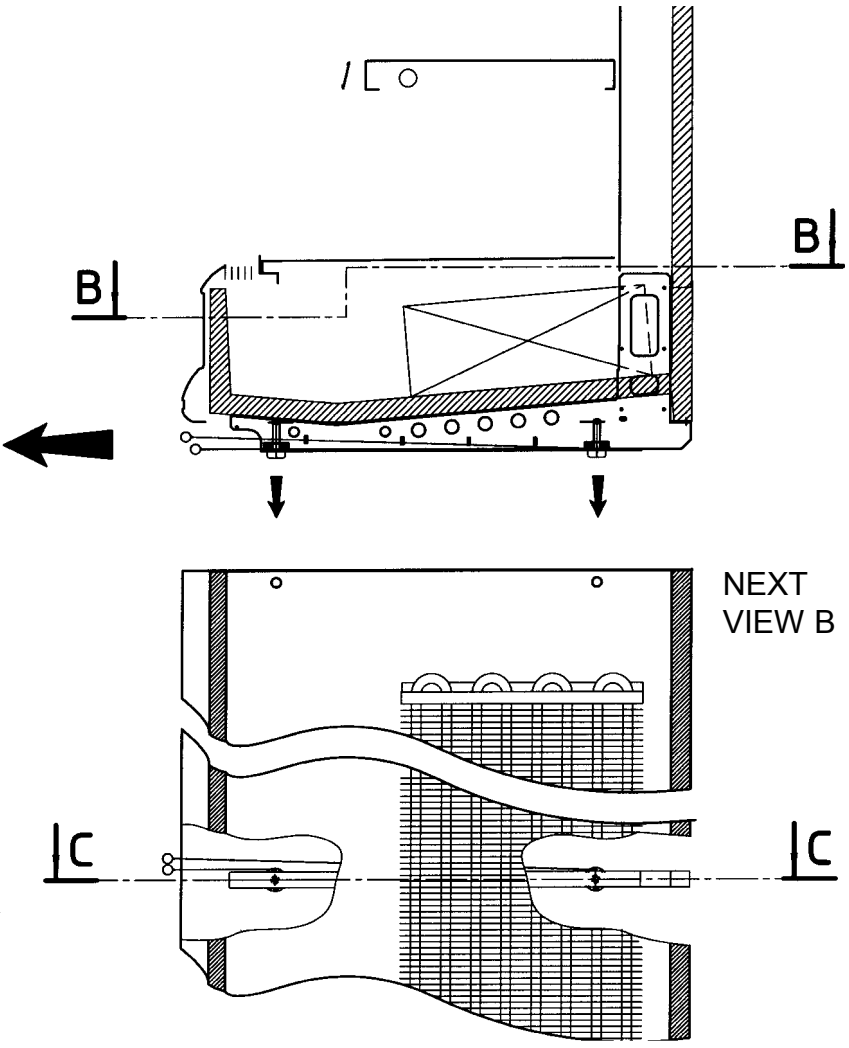
ADJUSTMENT OF FEET

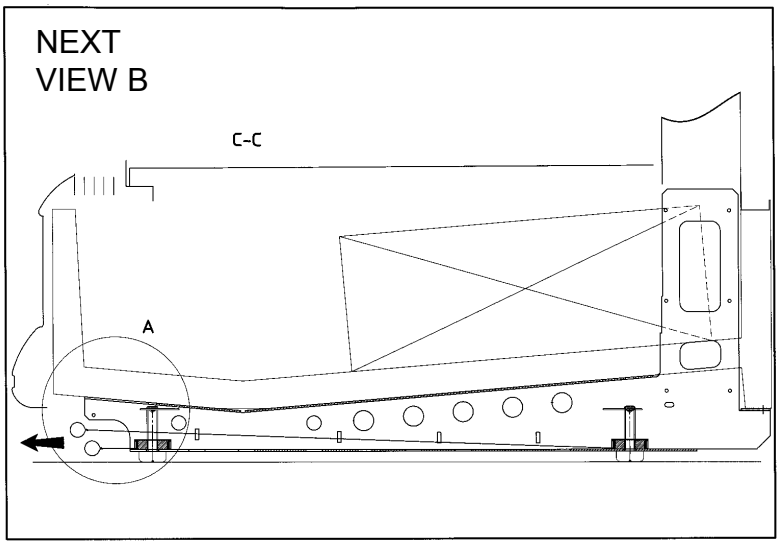
Cabinet side feet can be adjusted directly from within the chest, using an Allen wrench as shown in the figure.



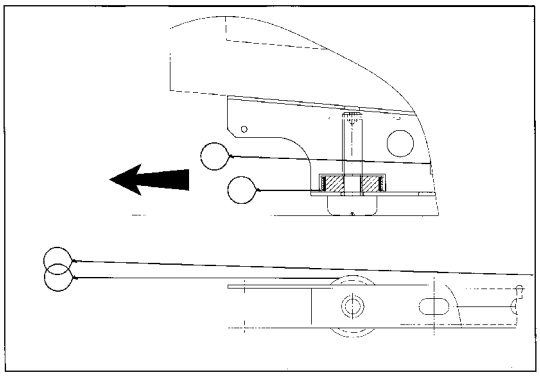


Cabinet middle feet must be adjusted on the floor by the aid of the appropriate strings, which are located under the cabinet, as shown in the figures.



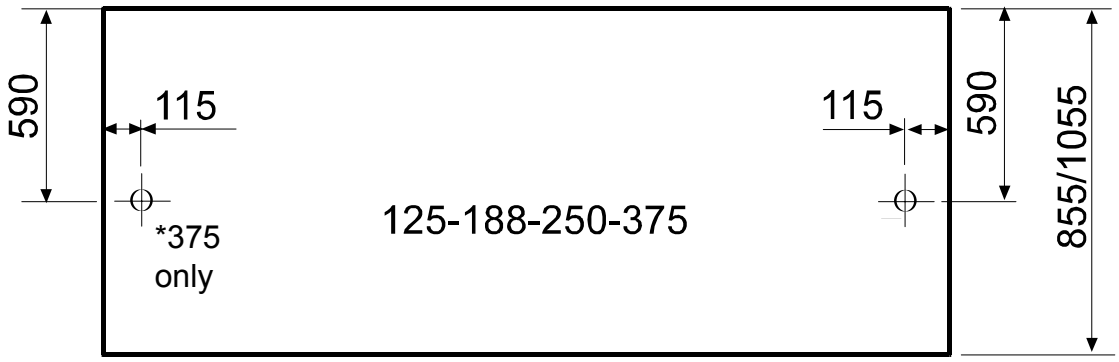


DETAIL A



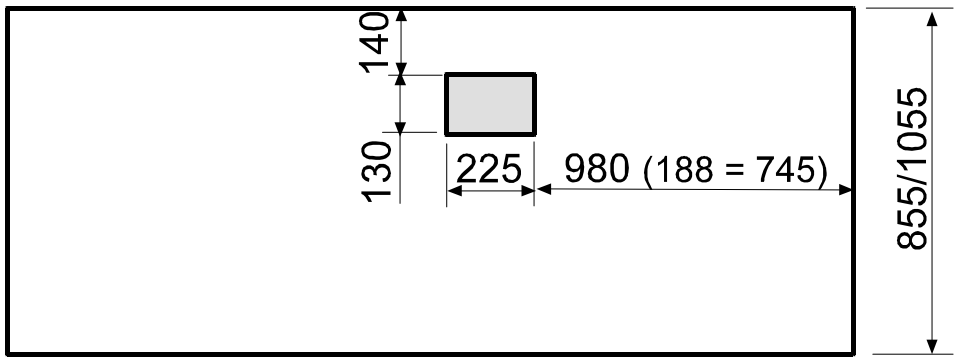
ELECTRICAL - WATER - REFRIGERANT CONNECTIONS
LINEAR CABINETS

WATER DRAINS



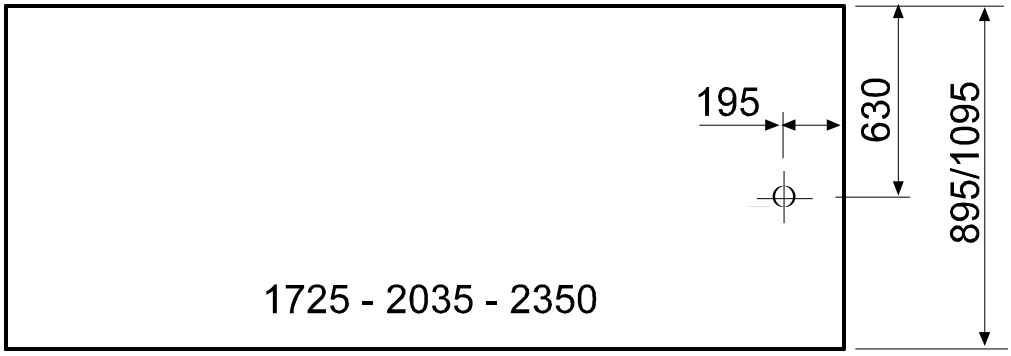
REFRIGERANT PIPES

ELECTRICAL BOARD

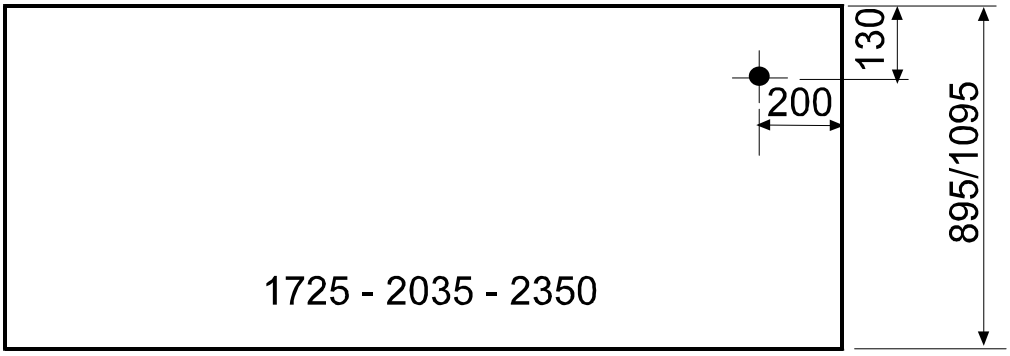


ELECTRICAL - WATER - REFRIGERANT CONNECTIONS
HEAD CABINETS

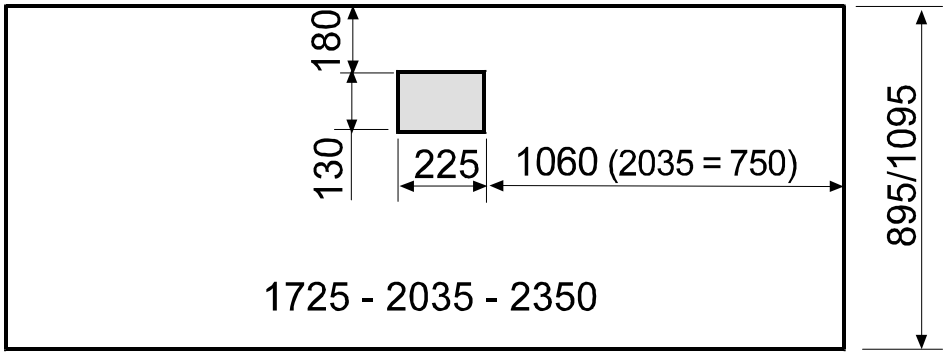
WATER DRAINS



REFRIGERANT PIPES



ELECTRICAL BOARD



LION N (width 855)

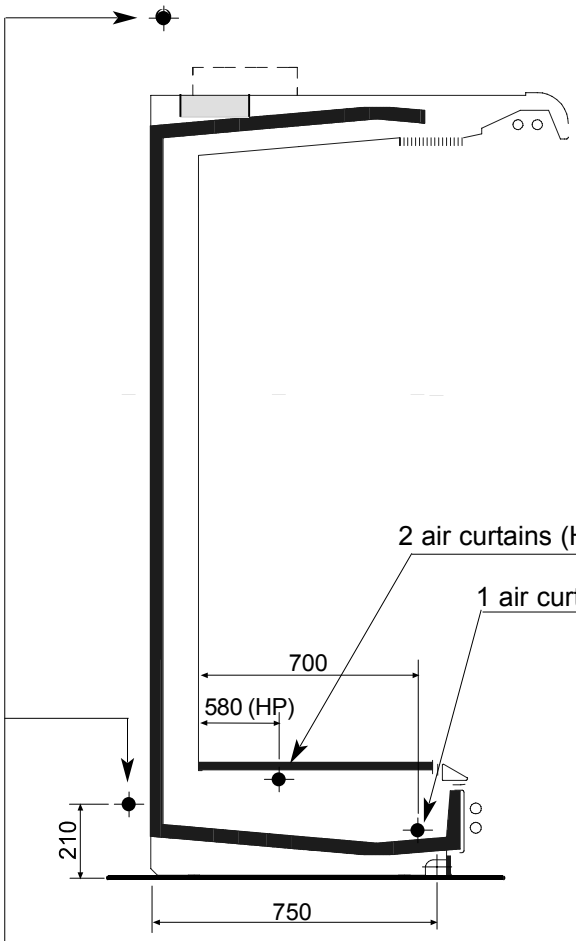
⊕ DRAINS Ø = 40 mm internal
Ø = 46 mm external

● REFRIGERANT PIPES

	Ø OUT LEADING PIPES (mm)								Ø IN LEADING PIPES (mm)	
	1250	1875	2500	3750	MT1725	MT2035	MT2350	CORNERS	with valve	without-valve
	15	18	18	18	18	18	18	18	10	12
HP	15	22	22	22	18	22	22	18	10	12

▨ ELECTRICAL BOARD

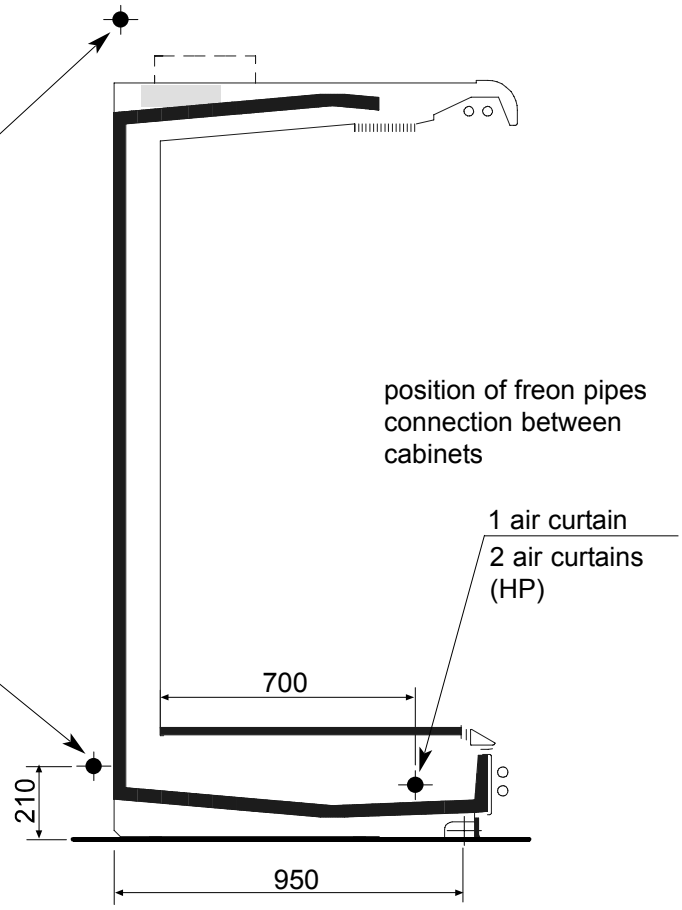
IMPORTANT: make sure that the electrical board cover is in place and that the power supply cords are fitted with the appropriate cable clamp and with a seal suiting the outer cable diameter.



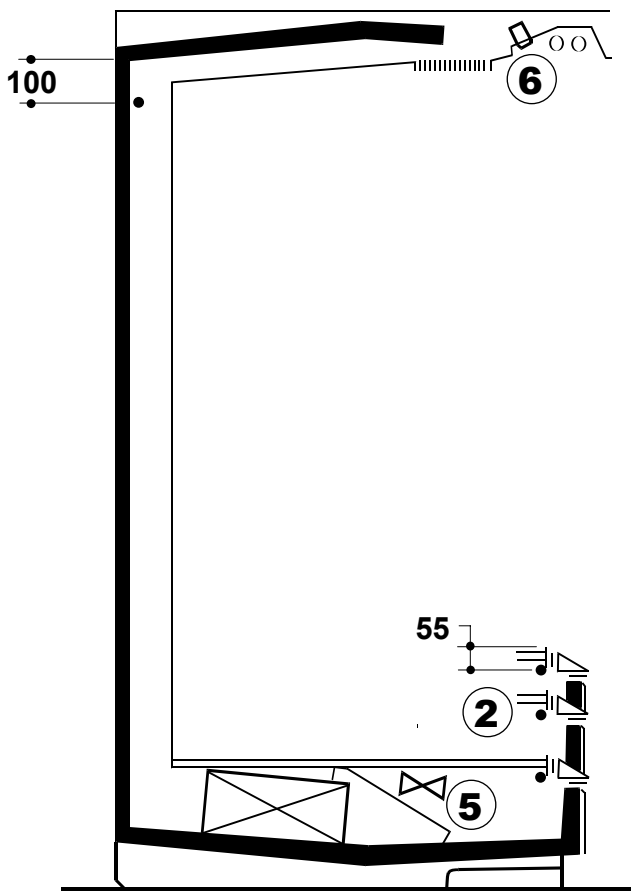
position of freon pipes connection between cabinets

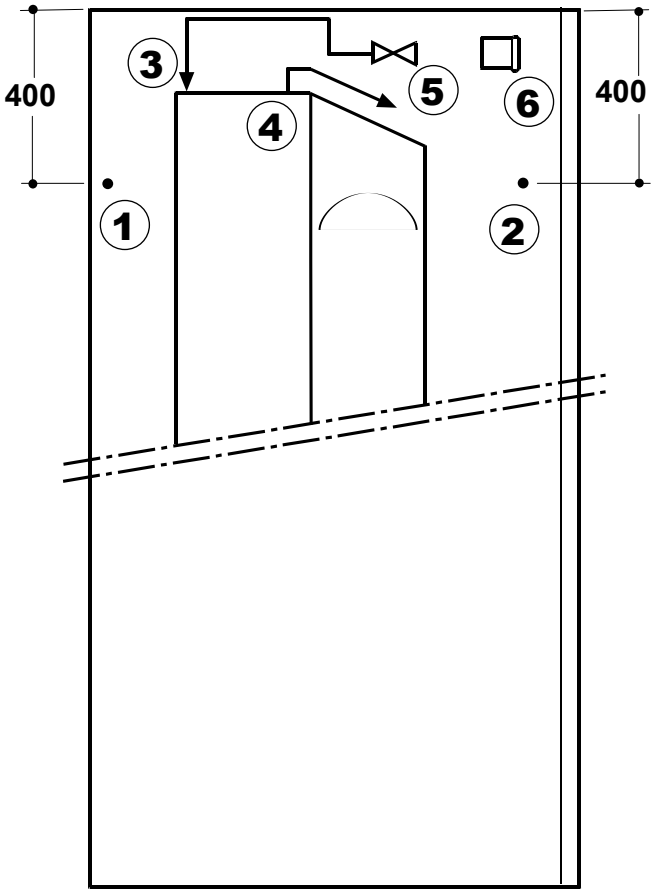
LION L1-L2 (width 1055)

position of freon pipe outlet from cabinet (up or down)



POSITION OF TELETHERMOSTAT PROBES AND THERMAL EXPANSION VALVE

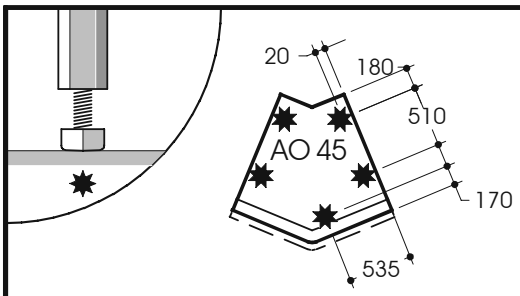


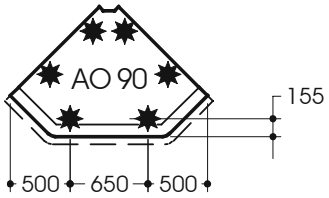


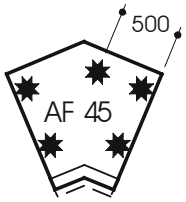
1. position of probe on air outlet
2. position of probe on air return
3. evaporator out-leading tubes
4. evaporator in-leading tubes
5. thermal expansion valve
6. telethermostat

CORNER CABINETS

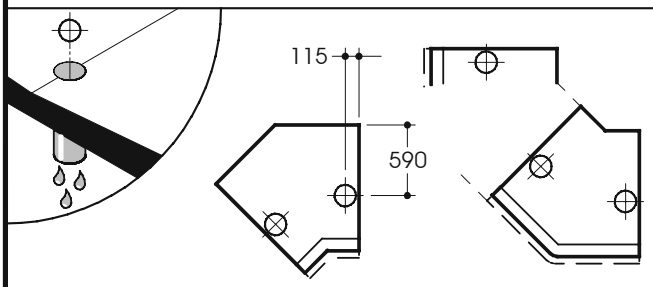
LION 20-21 L1-L2



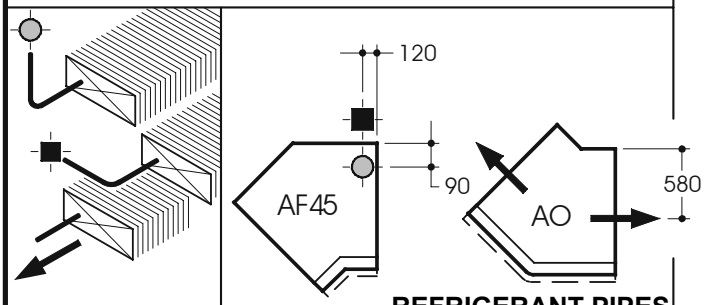




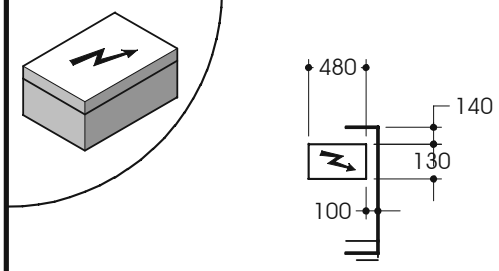
POSITION OF FFET



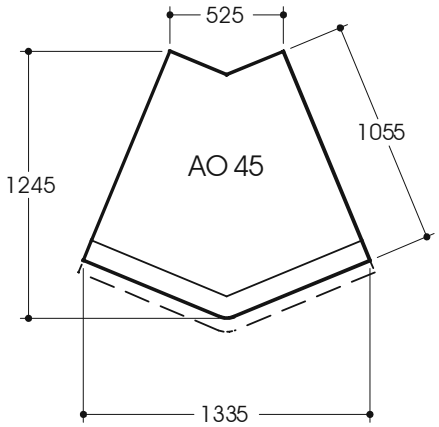
WATER DRAINS

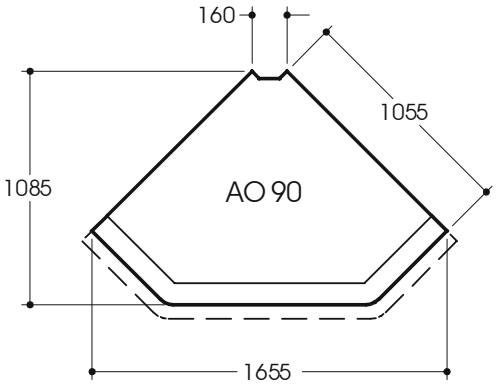


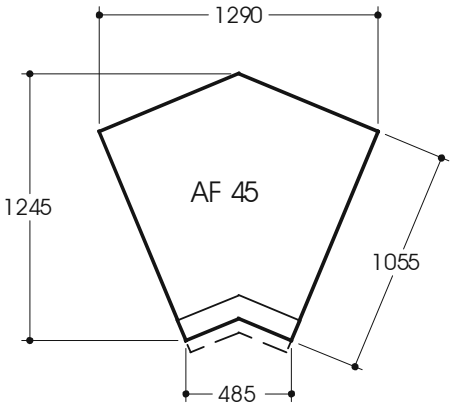
REFRIGERANT PIPES



ELECTRICAL BOARD







ELECTRICAL INPUT

POWER VOLTAGE: 230 V 1Ph 50 hz

W: Wattage (Watt)

A: Amperage (Ampere)

Power-corrected lighting 0,9<cos f <1

Add power correction according to actually connected fluorescent lamps: 4.5mF - 250V for parallel-connected fluorescent lamps.

Optional motor for night blinds:160W - 0,8 A.

		STANDARD									OPTIONAL					
	L	Fan			Heaters			Canopy lighting (1)			Defrost heaters			Shelf lighting (1)		
		N	W	A	N	W	A	N	W	A	N	W	A	N	W	A
1 air curtain	125	2	76	0,46				1	46	0,21	1	850	3,7	1	46	0,21
	188	2	76	0,46				2	92	0,42	1	1280	5,6	2	92	0,42
	250	3	114	0,69				2	92	0,42	1	1700	7,4	2	92	0,42
	375	4	152	0,92				3	138	0,63	1	2550	11,1	3	138	0,63
	MAC45	2	76	0,46												
2 air curtains (HP)	125	3	114	0,69				1	46	0,21	1	850	3,7	1	46	0,21
	188	5	190	1,15				2	92	0,42	1	1280	5,6	2	92	0,42
	250	6	228	1,38				2	92	0,42	1	1700	7,4	2	92	0,42
	375	9	342	2,07				3	138	0,63	1	2550	11,1	3	138	0,63
	MT156	5	190	1,15				1	46	0,21	1	1060	4,6	1	46	0,21
	MT188	5	190	1,15				2	92	0,42	1	1280	5,6	2	92	0,42
	MT219	6	228	1,38				2	92	0,42	1	1490	6,5	2	92	0,42
	MAA45	3	114	0,69												
	MAA90	5	190	1,15												

(1) per line of lamps

HEAT EXTRACTION RATE REQUIRED

LION 20 N

cl. 3 - 25 °C / 60 %													
LION	**C** classe	**IF**	**T_0** Temp. Evap. °C	**HER (Watt)**									
						MT1725	MT2035	MT2350					
				W/m	L125		L188		L250	L375	MAA45	MAC45	MAA90
1V 650G	3M2	HNLS	-8	1190	1495		2240		2975	4475			
	3H2	HNLS	-4	1025	1280		1930		2570	3845			
1V 500G	3M2	HNLS	-8	1290	1620		2430		3225	4850			
	3H2	HNLS	-4	1110	1390		2090		2785	4170			
1V 545	3M2	HNLS	-8	1210	1515		2280		3025	4545			
	3H2	HNLS	-4	1045	1310		1965		2610	3920			
1V 445	3M2	HNLS	-8	1300	1630		2445		3245	4880			
	3H2	HNLS	-4	1120	1400		2110		2800	4205			
1V 295	3M2	HNLS	-8	1435	1800		2700		3585	5390			
	3H2	HNLS	-4	1235	1545		2325		3095	4635			
HP 545	3M1	HNLS	-9	1420	1775	2215	2670	3110	3550	5325			
	3M2	HNLS	-6	1190	1490	1855	2240	2610	2980	4470			
		MNLS	-8	1400	1750	2185	2630	3065	3500	5250			
	3H1	HNLS	-3	1130	1415	1765	2125	2475	2825	4240			
		MNLS	-4	1255	1570	1960	2360	2750	3145	4715			
HP 445	3M1	HNLS	-9	1530	1915	2385	2875	3350	3825	5740			
	3M2	HNLS	-6	1285	1605	2000	2415	2810	3210	4810			
		MNLS	-8	1505	1885	2350	2825	3295	3760	5645			
	3H1	HNLS	-3	1215	1515	1890	2285	2655	3035	4550			
		MNLS	-4	1350	1685	2105	2535	2950	3370	5055			
HP 295	3M1	HNLS	-9	1685	2105	2630	3170	3690	4215	6320			
	3M2	HNLS	-6	1415	1765	2205	2655	3095	3535	5300			
		MNLS	-8	1660	2080	2590	3120	3640	4150	6230			
	3H1	HNLS	-3	1340	1675	2085	2515	2935	3350	5020			
		MNLS	-4	1485	1860	2320	2795	3255	3715	5580			
HP 500G	3M1	HNLS	-9	1480	1850	2315	2790	3245	3710	5560			
	3M2	HNLS	-6	1245	1555	1940	2335	2725	3110	4665			
		MNLS	-8	1460	1830	2280	2745	3205	3650	5480			
HP 650G	3M1	HNLS	-9	1345	1680	2100	2530	2950	3365	5050			
	3M2	HNLS	-6	1130	1410	1760	2125	2470	2825	4230			
		MNLS	-8	1325	1660	2070	2485	2900	3310	4965			

Internal equipment:
HNLS = with unlighted shelves
MNLS = with mirror and unlighted shelves

When calculating refrigerating systems to serve sales areas below 600 sqm., multiply HER values by:

Class 3H1 - 3H2 = x 1.15
Class 3M2 = x 1.15

Class 3M1 = unchanged

LION 20 L1-L2

cl. 3 - 25 °C / 60 %													
LION	C classe	IF	T_0 Temp. Evap. °C	HER (Watt)									
						MT1725	MT2035	MT2350					
				W/m	L125		L188		L250	L375	MAA45	MAC45	MAA90
1V 650G	3M2	HNLS	-9	1230	1545		2320		3085	4630			
	3H2	HNLS	-5	1080	1350		2030		2700	4050			
1V 500G	3M2	HNLS	-9	1335	1675		2515		3350	5020			
	3H2	HNLS	-5	1170	1460		2200		2930	4390			
1V 545	3M2	HNLS	-9	1260	1570		2365		3140	4715			
	3H2	HNLS	-5	1095	1370		2060		2745	4115			
1V 445	3M2	HNLS	-9	1345	1685		2535		3370	5055			
	3H2	HNLS	-5	1180	1480		2220		2950	4430			
1V 295	3M2	HNLS	-9	1485	1860		2795		3720	5580			
	3H2	HNLS	-5	1300	1625		2445		3255	4880			
HP 545	3M2	HNLS	-7	1190	1490	1855	2240	2610	2980	4470			
			-8										2765
		MNLS	-8	1400	1750	2185	2630	3065	3500	5250			
	3H1	HNLS	-3	1130	1415	1765	2125	2475	2825	4240			
		MNLS	-4	1255	1570	1960	2360	2750	3145	4715			
	3H2	HNLS	-6								1970	885	2600
HP 445	3M2	HNLS	-7	1285	1605	2000	2415	2810	3210	4810			
		MNLS	-8	1505	1885	2350	2825	3295	3760	5645			
	3H1	HNLS	-3	1215	1515	1890	2285	2655	3035	4550			
		MNLS	-4	1350	1685	2105	2535	2950	3370	5055			
	3H2	HNLS	-6								2000	900	2645
HP 295	3M2	HNLS	-7	1415	1765	2205	2655	3095	3535	5300			
	3M2	MNLS	-8	1660	2080	2590	3120	3640	4150	6230			
	3H1	HNLS	-3	1340	1675	2085	2515	2935	3350	5020			
	3H1	MNLS	-4	1485	1860	2320	2795	3255	3715	5580			
	3H2	HNLS	-6								2050	920	2710
HP 500G	3M2	HNLS	-7	1245	1555	1940	2335	2725	3110	4665			
		MNLS	-8	1460	1830	2280	2745	3205	3650	5480			
HP 650G	3M2	HNLS	-7	1130	1410	1760	2125	2470	2825	4230			
		MNLS	-8	1325	1660	2070	2485	2900	3310	4965			

Internal equipment:
HNLS = with unlighted shelves
MNLS = with mirror and unlighted shelves

When calculating refrigerating systems to serve sales areas below 600 sqm., multiply HER values by:

Class 3H1 - 3H2 = x 1.15
Class 3M2 = x 1.15

LION 22 N

cl. 3 - 25 °C / 60 %													
LION	**C** classe	**IF**	**T_0** Temp. Evap. °C	**HER (Watt)**									
						MT1725	MT2035	MT2350					
				W/m	L125		L188		L250	L375	MAA45	MAC45	MAA90
1V 650G	3M2	HNLS	-8	1245	1555		2340		3110	5495			
	3H2	HNLS	-4	1120	1400		2110		2810	4950			
1V 500G	3M2	HNLS	-8	1350	1685		2540		3375	5960			
	3H2	HNLS	-4	1215	1520		2285		3045	5370			
1V 545	3M2	HNLS	-8	1390	1740		2615		3470	6130			
	3H2	HNLS	-4	1200	1500		2250		2995	5290			
1V 445	3M2	HNLS	-8	1480	1850		2780		3950	6525			
	3H2	HNLS	-4	1275	1595		2400		3190	5625			
1V 295	3M2	HNLS	-8	1500	1875		2820		3750	6620			
	3H2	HNLS	-4	1350	1690		2540		3385	5965			
HP 545	3M1	HNLS	-9	1630	2040	2545	3065	3570	4075	6115			
	3M2	HNLS	-6	1370	1715	2135	2575	3000	3425	5135			
		MNLS	-8	1610	2015	2510	3025	3520	4020	6035			
	3H1	HNLS	-3	1295	1620	2020	2435	2840	3240	4860			
		MNLS	-4	1445	1805	2250	2715	3160	3610	5415			
HP 445	3M1	HNLS	-9	1695	2120	2645	3185	3710	4240	6355			
	3M2	HNLS	-6	1460	1825	2280	2750	3200	3650	5480			
		MNLS	-8	1715	2145	2675	3220	3750	4285	6425			
	3H1	HNLS	-3	1380	1720	2150	2590	3015	3450	5170			
		MNLS	-4	1535	1915	2395	2885	3360	3840	5755			
HP 295	3M1	HNLS	-9	1895	2370	2955	3565	4150	4740	7105			
	3M2	HNLS	-6	1590	1990	2485	2990	3485	3980	5970			
		MNLS	-8	1865	2330	2910	3510	4085	4665	6995			
	3H1	HNLS	-3	1505	1885	2350	2825	3295	3760	5645			
		MNLS	-4	1675	2090	2615	3150	3665	4185	6280			
HP 5005	3M1	HNLS	-9	1665	2085	2600	3135	3650	4170	6250			
	3M2	HNLS	-6	1400	1750	2185	2630	3065	3500	5255			
		MNLS	-8	1640	2050	2560	3090	3595	4105	6155			
HP 650G	3M1	HNLS	-9	1490	1865	2325	2800	3265	3730	5590			
	3M2	HNLS	-6	1285	1605	2005	2420	2815	3210	4820			
		MNLS	-8	1510	1885	2355	3220	3300	3770	5655			

Internal equipment:
HNLS = with unlighted shelves
MNLS = with mirror and unlighted shelves

When calculating refrigerating systems to serve sales areas below 600 sqm., multiply HER values by:

Class 3H1 - 3H2 = x 1.15
Class 3M2 = x 1.15

Class 3M1 = unchanged

LION 22 L1-L2

cl. 3 - 25 °C / 60 %													
LION	C classe	IF	T_0 Temp. Evap. °C	HER (Watt)									
						MT1725	MT2035	MT2350					
				W/m	L125		L188		L250	L375	MAA45	MAC45	MAA90
1V 650G	3M2	HNLS	-9	1290	1615		2430		3230	4845			
	3H2	HNLS	-5	1185	1485		2235		2970	4455			
1V 500G	3M2	HNLS	-9	1400	1750		2630		3500	5250			
	3H2	HNLS	-5	1285	1610		2425		3220	4835			
1V 545	3M2	HNLS	-9	1440	1800		2705		3605	5400			
	3H2	HNLS	-5	1260	1575		2370		3155	4735			
1V 445	3M2	HNLS	-9	1535	1915		2885		3835	5755			
	3H2	HNLS	-5	1345	1680		2525		3355	5035			
1V 295	3M2	HNLS	-10	1555	1945		2925		3890	5835			
	3H2	HNLS	-5	1430	1790		2695		3580	5370			
HP 545	3M2	HNLS	-7	1370	1715	2135	2575	3000	3425	5135			
			-8										2860
		MNLS	-8	1610	2015	2510	3025	3520	4020	6035			
	3H1	HNLS	-3	1295	1620	2020	2435	2840	3240	4860			
		MNLS	-4	1445	1805	2250	2715	3160	3610	5415			
	3H2	HNLS	-6								2035	910	2685
HP 445	3M2	HNLS	-7	1460	1825	2280	2750	3200	3650	5480			
		MNLS	-8	1715	2145	2675	3220	3750	4285	6425			
	3H1	HNLS	-3	1380	1720	2150	2590	3015	3450	5170			
		MNLS	-4	1535	1915	2395	2885	3360	3840	5755			
	3H2	HNLS	-6								2065	925	2730
HP 295	3M2	HNLS	-7	1590	1990	2485	2990	3485	3980	5970			
		MNLS	-8	1865	2330	2910	3510	4085	4665	6995			
	3H1	HNLS	-3	1505	1885	2350	2825	3295	3760	5645			
		MNLS	-4	1675	2090	2615	3150	3665	4185	6280			
	3H2	HNLS	-6								2115	945	2790
HP 500G	3 M2	HNLS	-7	1400	1750	2185	2630	3065	3500	5255			
		MNLS	-8	1640	2050	2560	3090	3595	4105	6155			
HP 650G	3 M2	HNLS	-7	1285	1605	2005	2420	2815	3210	4820			
		MNLS	-8	1510	1885	2355	3220	3300	3770	5655			

Internal equipment:
HNLS = with unlighted shelves
MNLS = with mirror and unlighted shelves

When calculating refrigerating systems to serve sales areas below 600 sqm., multiply HER values by:

Class 3H1 - 3H2 = x 1.15
Class 3M2 = x 1.15

EXCURSION OF HEAT EXTRACTION RATE ACCORDING TO CLIMATIC CLASS

Classe climatica ambiente di prova	**Temperatura sonda asciutta**	**Umidità relativa**	**Fattore di correzione* per potenza frigorifera**	**Correzione temperatura evaporazione (T_0 e T_{min})**	
	°C	%	Φ_0	T_0	T_{min}
2	22	*65*	**Φ_0 in classe 3 X 0,88**	**T_0 in classe 3 +1,5°C**	**T_{min} in classe 3 +1,5°C**
3	25	*60*	**Riferimento**		
4	30	*55*	**Φ_0 in classe 3 X 1,22**	**T_0 in classe 3 -2,5°C**	**T_{min} in classe 3 -2,5°C**
6	27	*70*			

*** Correction factors to be applied to multidecks with unlighted shelves. For each undershelf lamp add + 30 Watt/ml to "Φ_0"- 0,5 °C to evaporating temperature, the limit being -10 °C.**

WIRING DIAGRAMS

Special measure for double air-curtain cabinets equipped with night curtains:

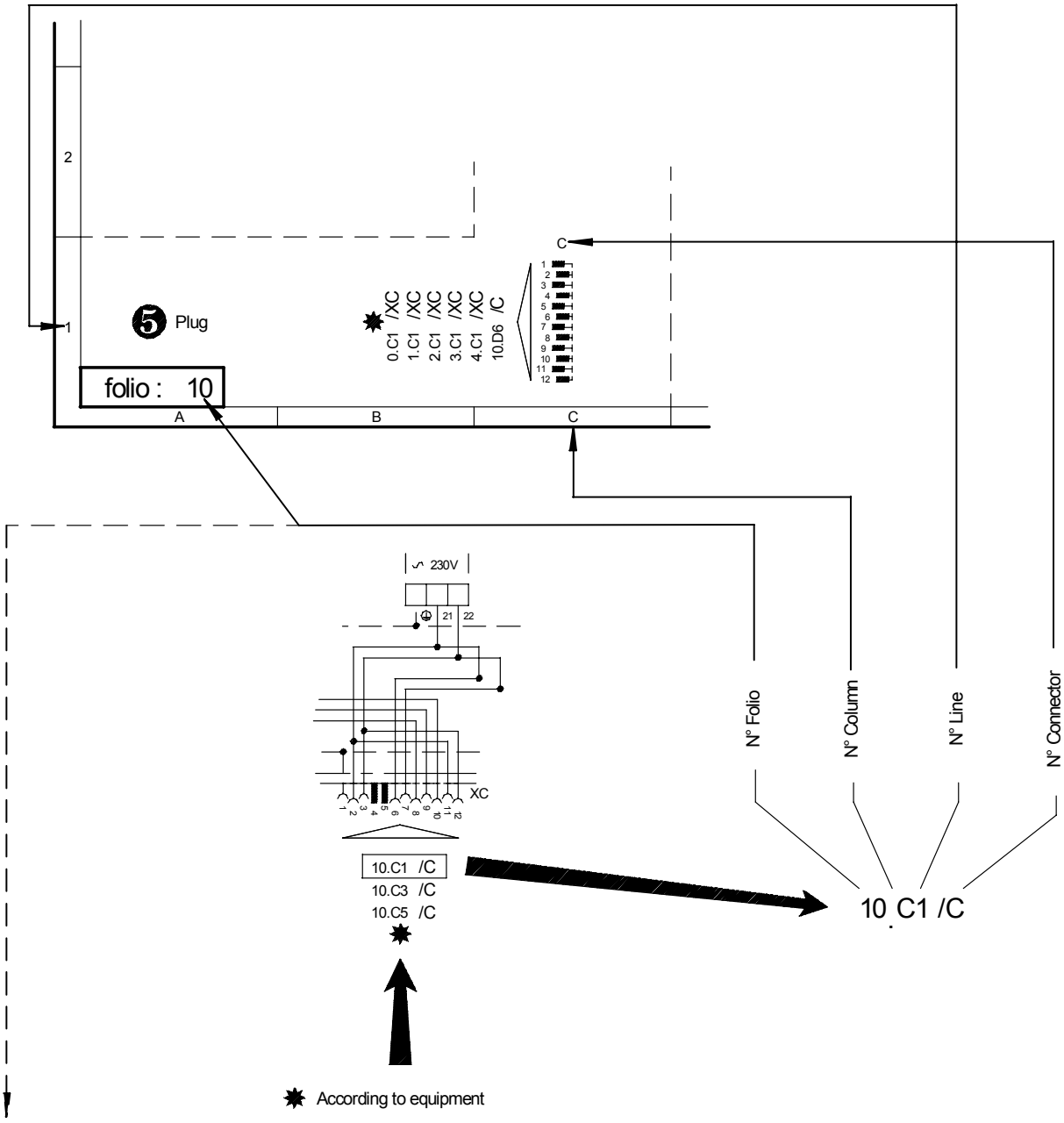
For correct cabinet operation it is necessary to switch the second air-curtain off when lowering night curtains. The SRTS/RTS board of the Bonnet Névé range are factory-supplied with the second air curtain interlocked with cabinet lighting. For cabinets with CTS board, the installer must perform the connection.

GENERAL KEY

Q1 Disconnecting-switch
Q2 Lighting cut-off switch
Q3 Cut-off-switch
K1 Lighting contactor
XA 1st air-curtain fans
XB Electric defrost (optional)
XC Anti-sweat heater - 2nd air-curtain fans Night blinds
XD Lighting
XE Regulation
XF VEM
XG Lighting switch
XH 24V lighting control relay (optional)
XJ 2nd air curtain control relay
XM FTB connection

ELFI.Cdd Development							145480.Aev1	
								28/10/02

READING PRINCIPLE OF WIRING DIAGRAM



Paging of folios

N° Folio	0.. ..9	10.. ..29
Function	Outside connection	Cabinet components

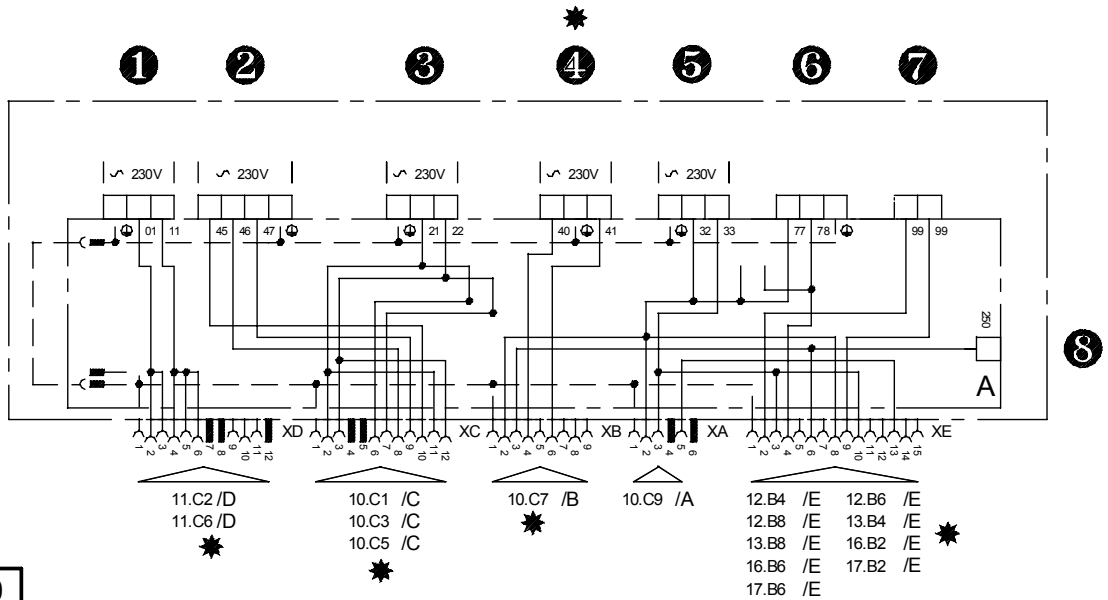
folio : 00

ELFI.Cold Development		145481.B	
			27/10/03

CABINET TERMINAL STRIP WIRING DIAGRAM

✸ According to equipment

1. Lights power supply
2. Night curtain power supply
   47 : Up
   45 : Down
3. Demist heater and/or second air-curtain power supply
4. Defrost heater power supply ✸
5. Fan + controller power supply
6. Solenoid valve
7. Alarm clean contact
8. Defrost start signal



folio : 0

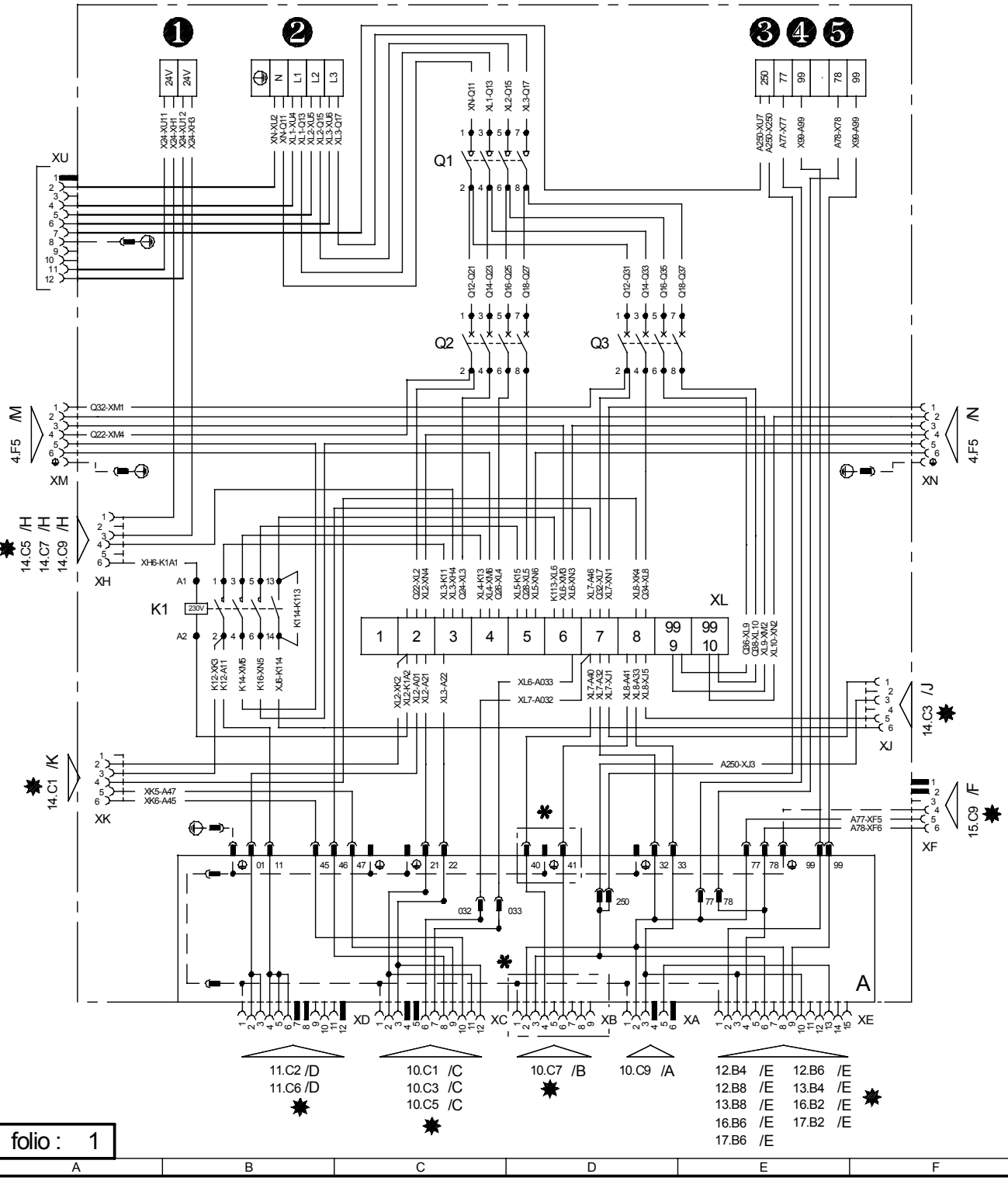
ELFI.Cold Development		145488.B	
			24/10/03

SRTS 3 (400V) WIRING DIAGRAM

(SAFETY RUN TERMINAL STRIP FOR 3 CABINETS)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 400V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



folio : 1

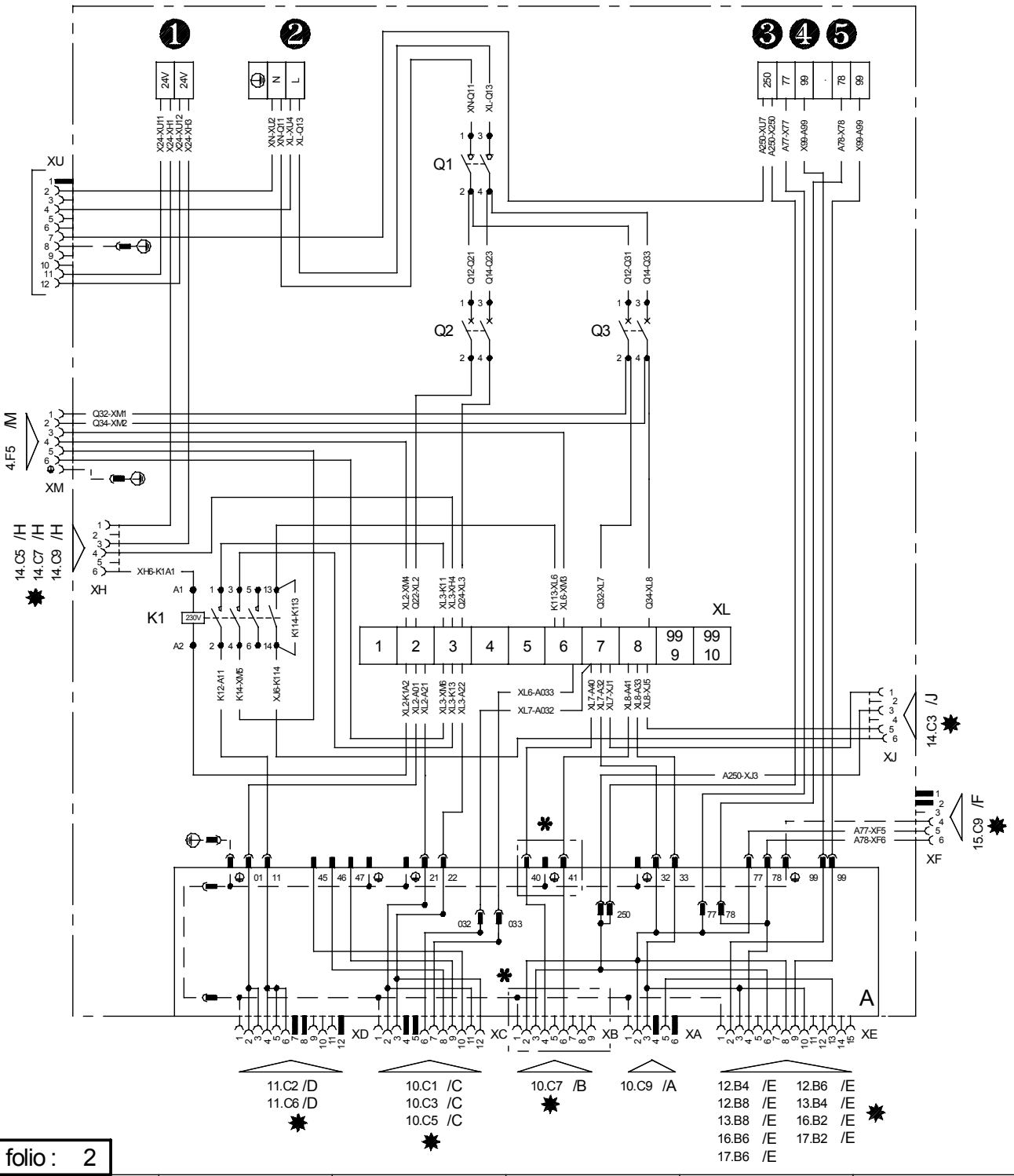
ELFI.Cold Development		145475.A	
			24/10/03

SRTS 2 (230V) WIRING DIAGRAM

(SAFETY RUN TERMINAL STRIP FOR 2 CABINETS)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 230V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



folio : 2

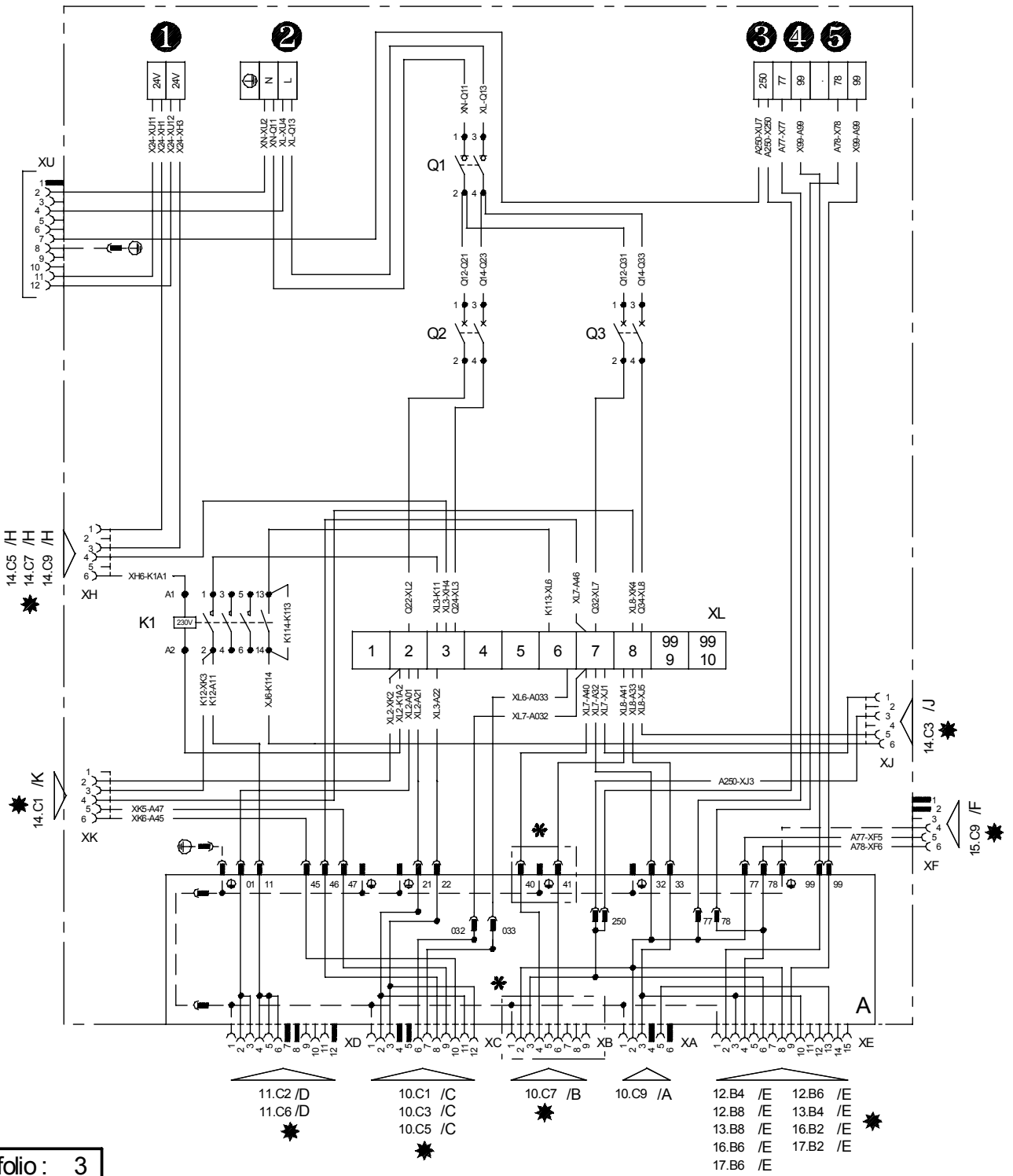
EL_FI.Cdd Development		145393.B	
			24/10/03

SRTS 1 (230V) WIRING DIAGRAM

(SAFETY RUN TERMINAL STRIP FOR 1 CABINET)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 230V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



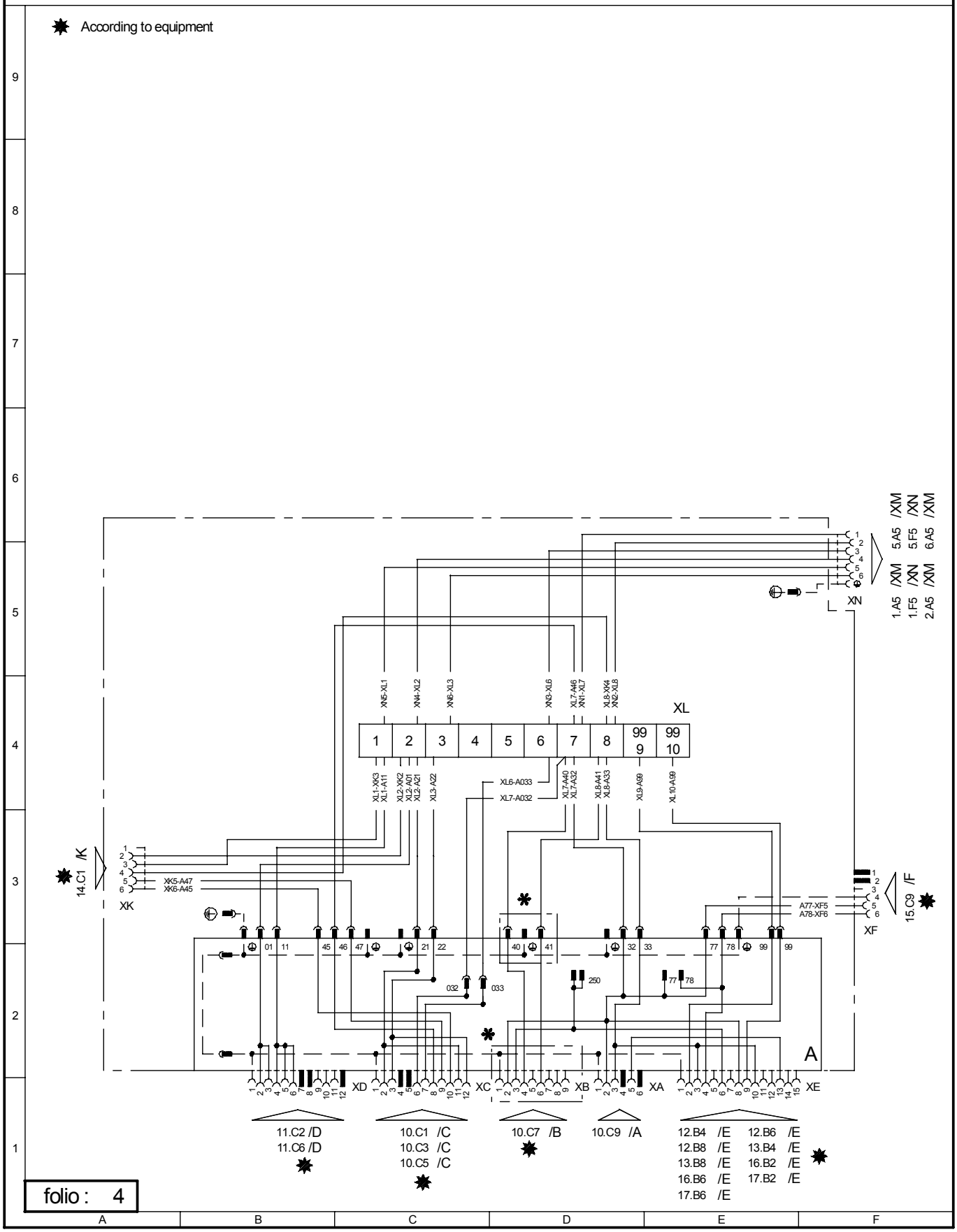
folio : 3

A	B	C	D	E	F

ELFI.Cold Development		145394.B	
			24/10/03

FTB WIRING DIAGRAM

(FINAL TERMINAL STRIP)



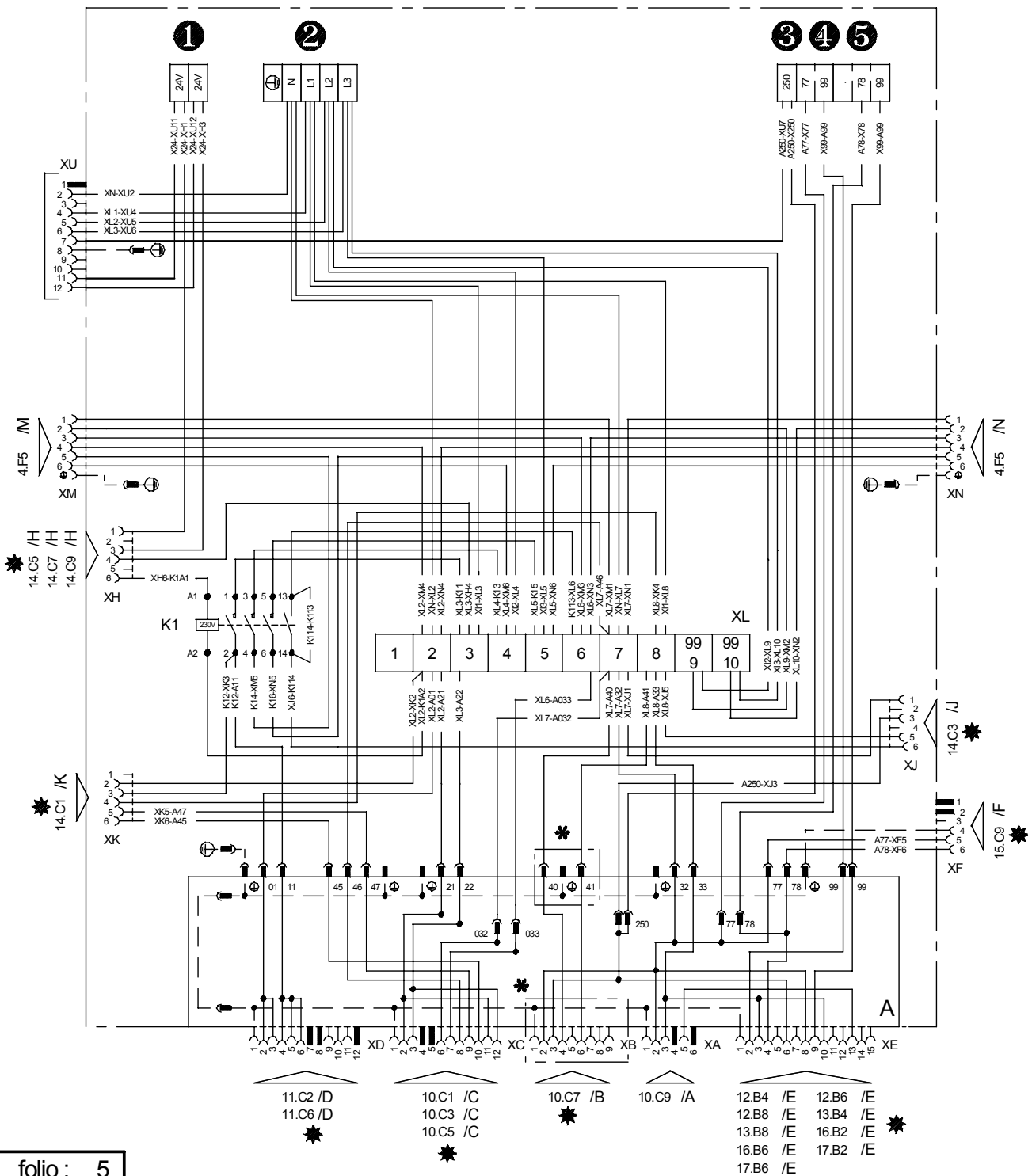
ELFI.Cold Development		145228.B	
			24/10/03

RTS 3 (400V) WIRING DIAGRAM

(RUN TERMINAL STRIP FOR 3 CABINETS)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 400V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



folio : 5

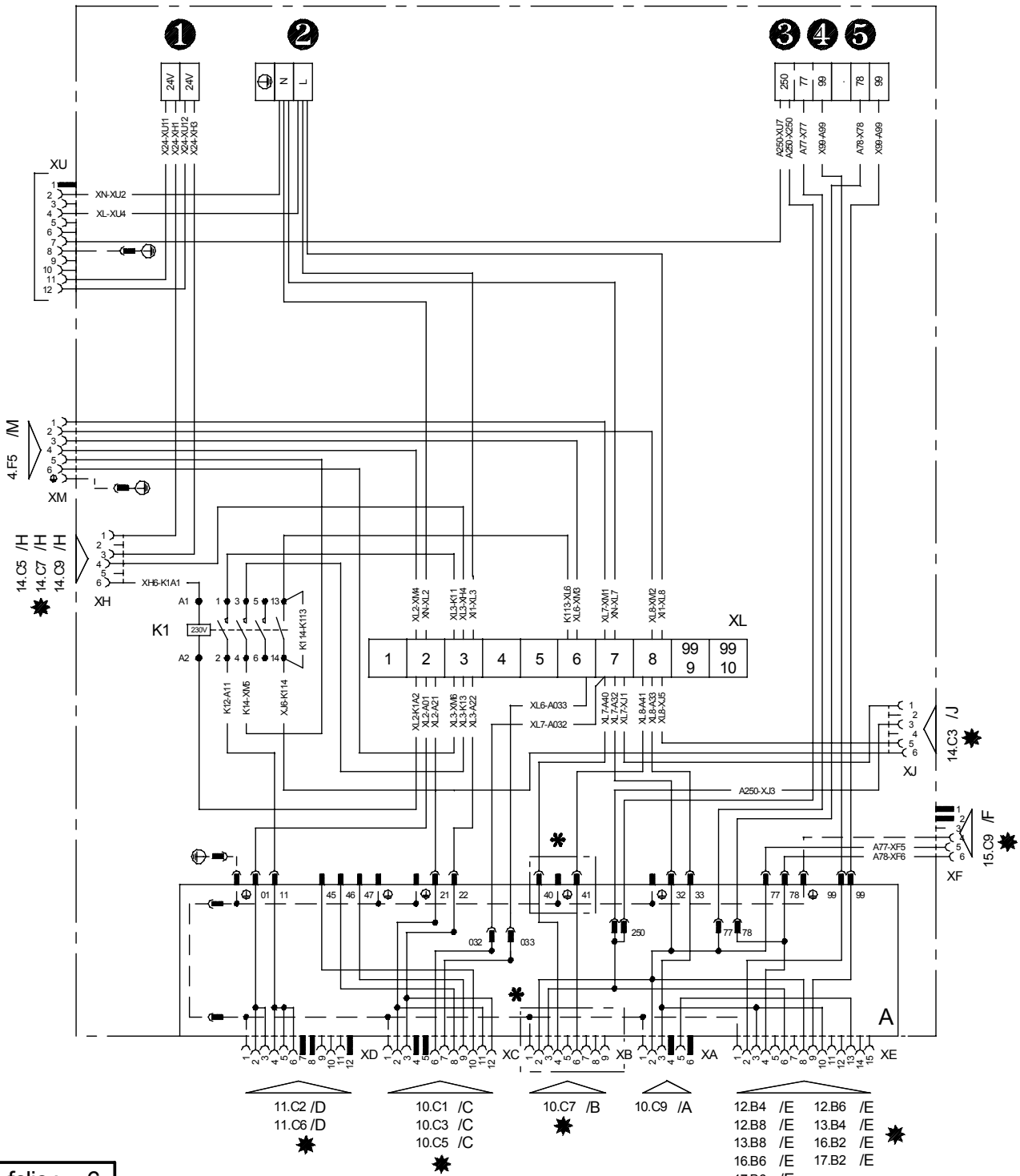
ELFI.Cold Development		145227.B	
			24/10/03

RTS 2 (230V) WIRING DIAGRAM

(RUN TERMINAL STRIP FOR 2 CABINETS)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 230V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



folio : 6

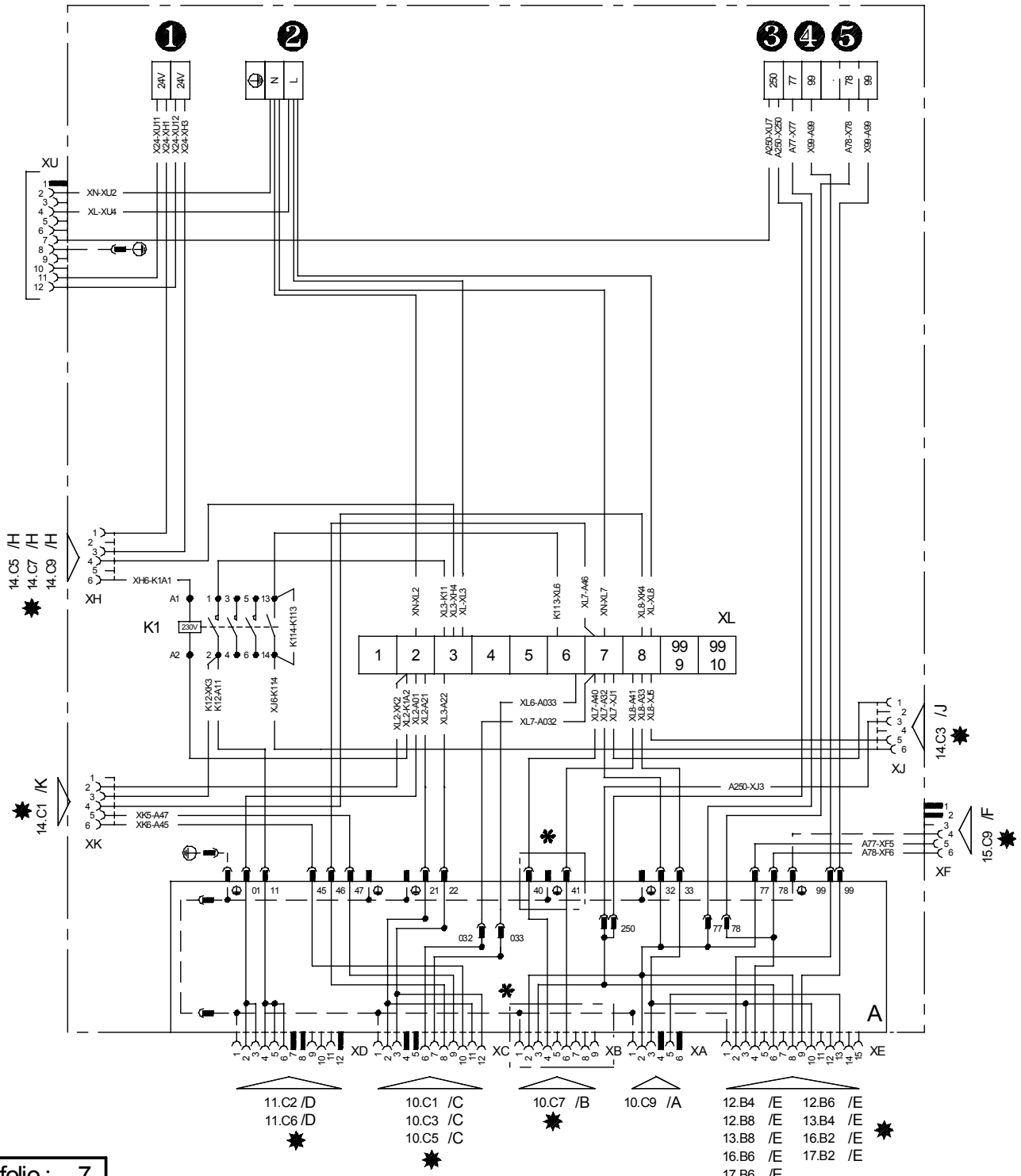
ELFI.Cold Development		145226.B	
			24/10/03

RTS 1 (230V) WIRING DIAGRAM

(RUN TERMINAL STRIP FOR 1 CABINET)

✸ According to equipment

1. Light Remote Control signal 24V AC
2. Power supply 230V AC
3. Defrost start signal (250)
4. Alarm clean contact (99-99)
5. Thermostat signal (77-78)



folio : 7

ELFI.Cold Development		145753.A	
			24/10/03

SRTS 3 (2x230V) WIRING DIAGRAM

(SAFETY RUN TERMINAL STRIP FOR 3 CABINETS)

✸ According to equipment

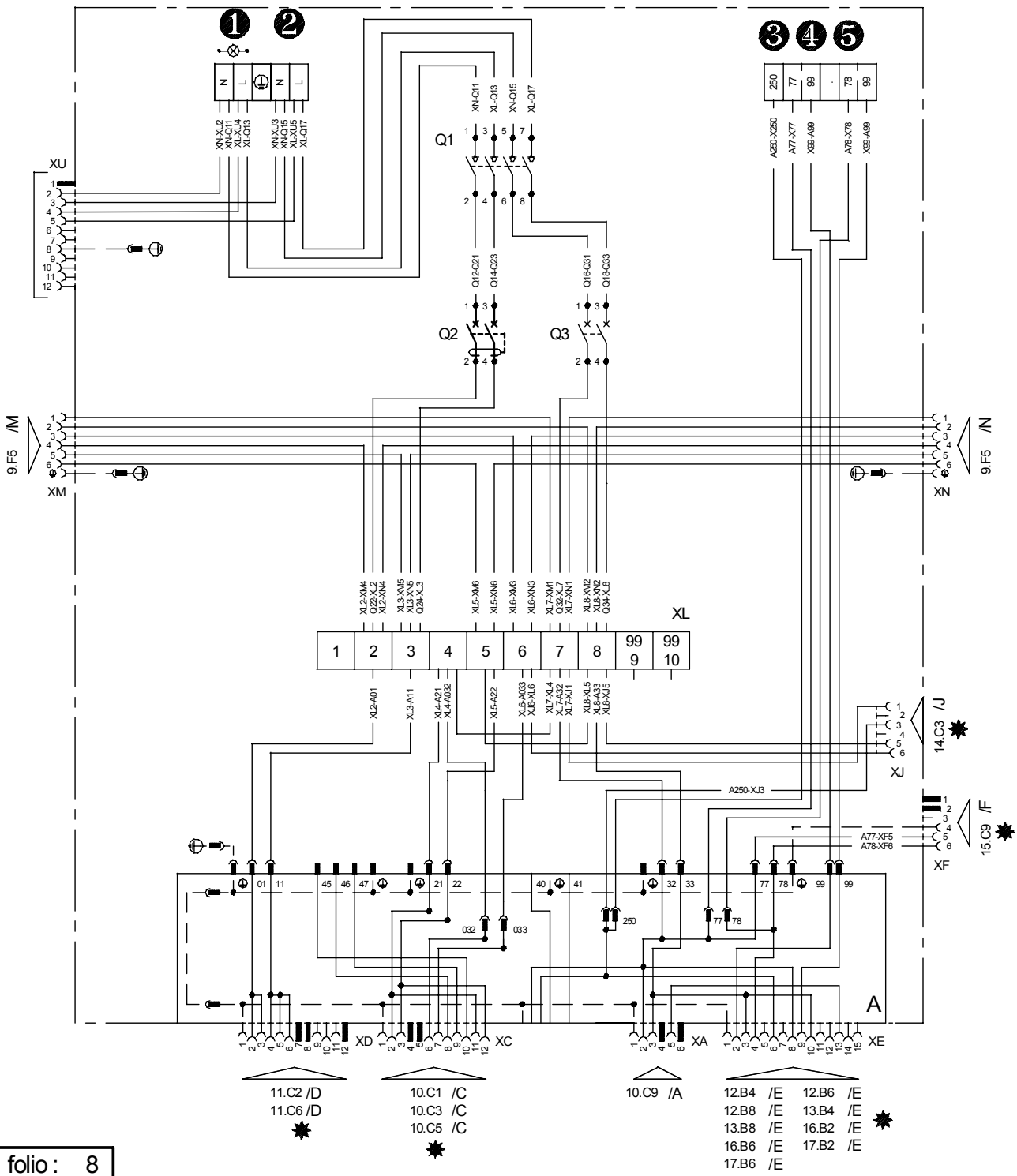
1 Light power supply 230V AC

2 Power supply 230V AC

3 Defrost start signal (250)

4 Alarm clean contact (99-99)

5 Thermostat signal (77-78)



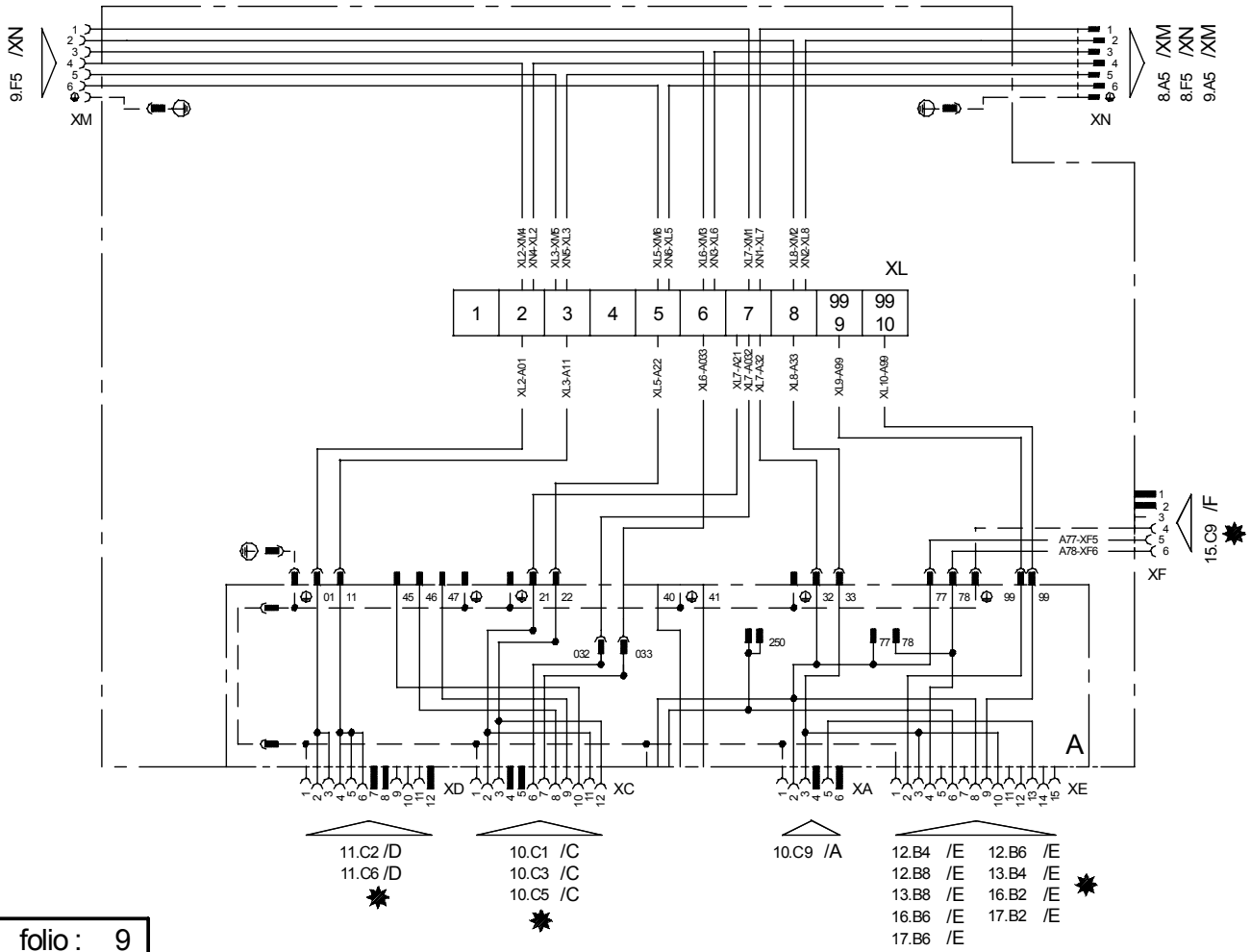
folio : 8

ELFI.Cold Development		145754.A	
			24/10/03

ITB WIRING DIAGRAM

(FINAL TERMINAL STRIP)

According to equipment



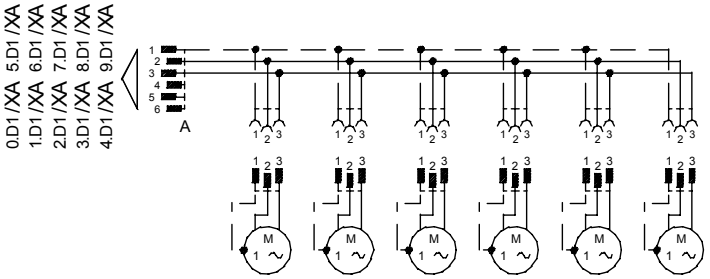
folio : 9

ELFI.Cold Development		145482.B	
			27/10/03

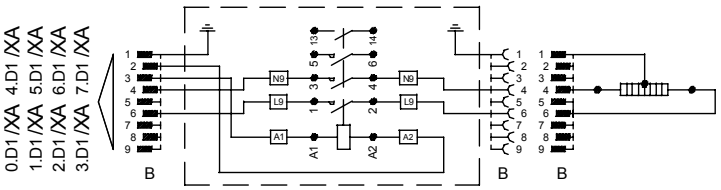
WIRING DIAGRAM (FANS/DEFROST/NIGHT CURTAIN)

According to equipment

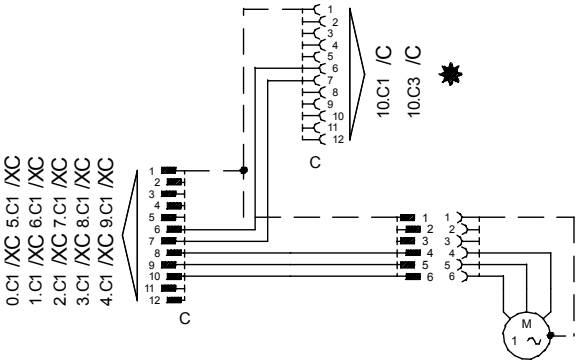
1 1R Fans



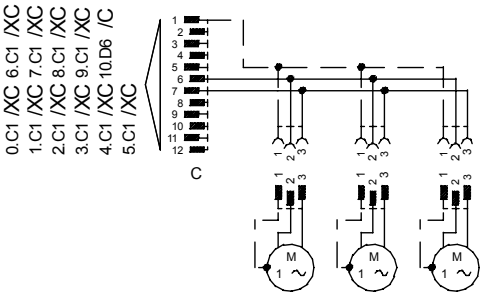
2 Electrical Defrost



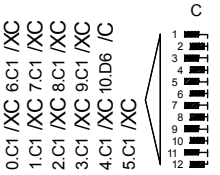
3 Night curtain



4 2R Fans



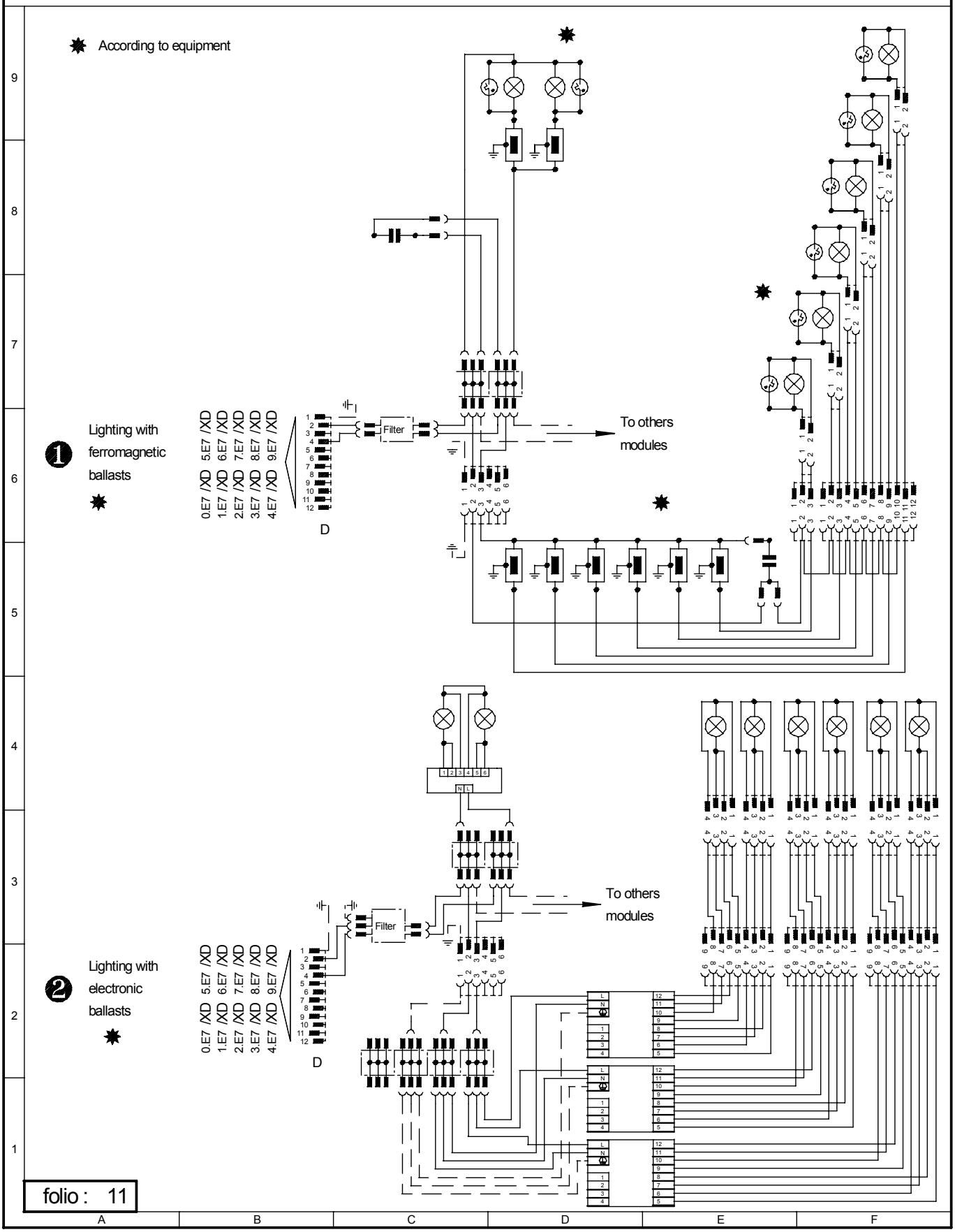
5 Plug



folio : 10

EL_FI.Cold Development		145483.C	
			27/10/03

WIRING DIAGRAM (LIGHT)

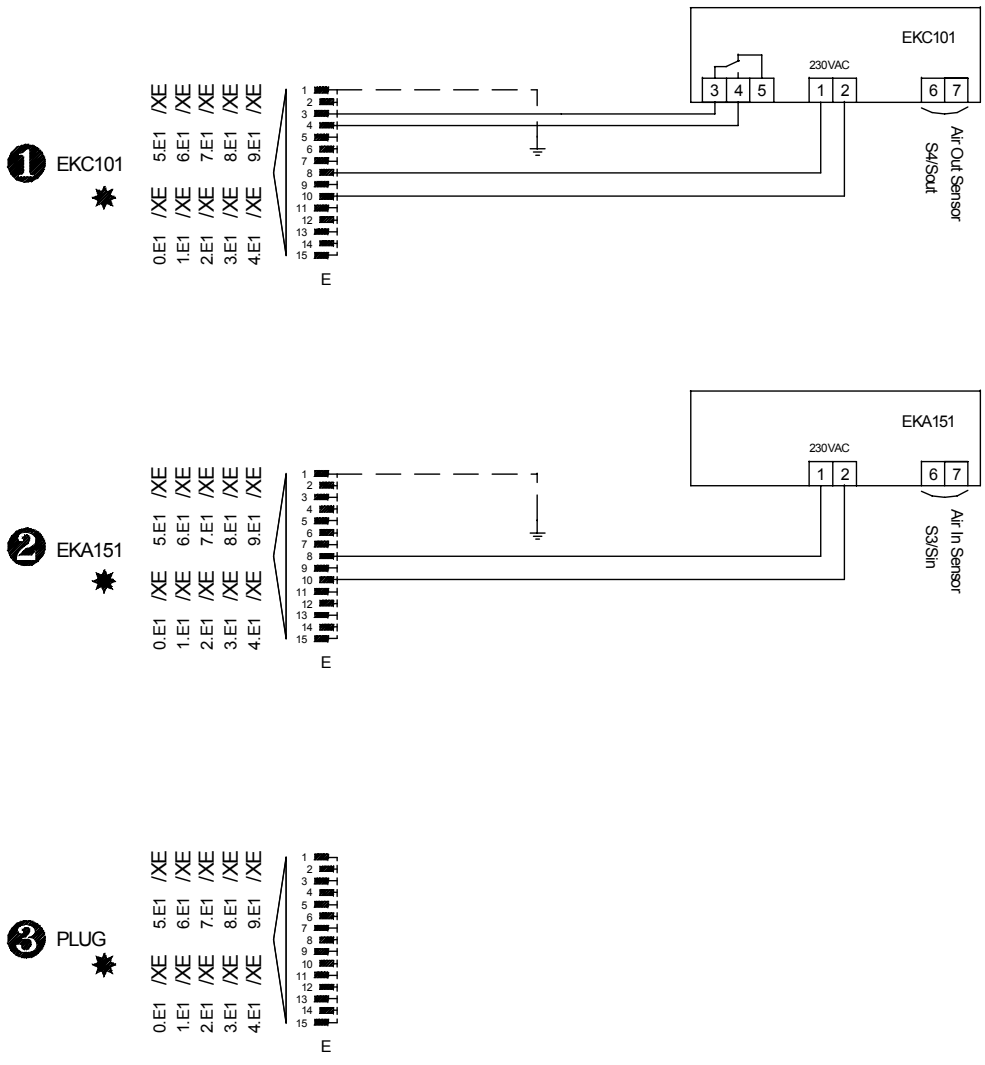


folio : 11

ELFI.Cold Development		145484.B	
			27/10/03

WIRING DIAGRAM (DISPLAY/THERMOSTAT)

✸ According to equipment

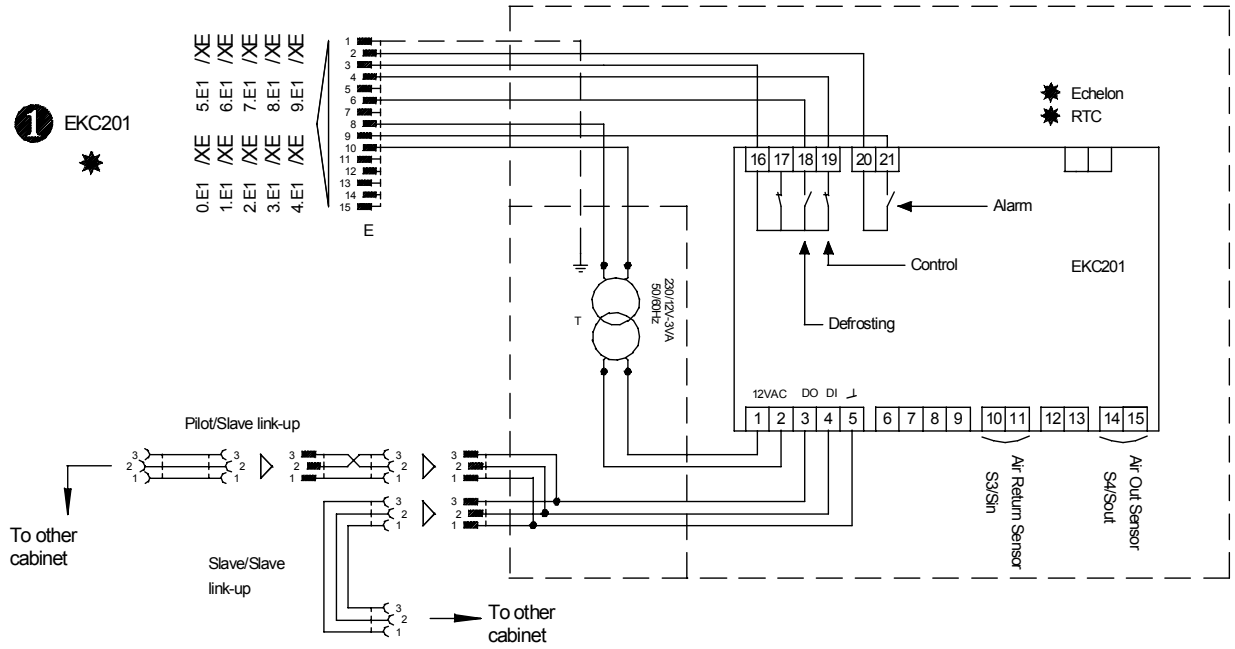


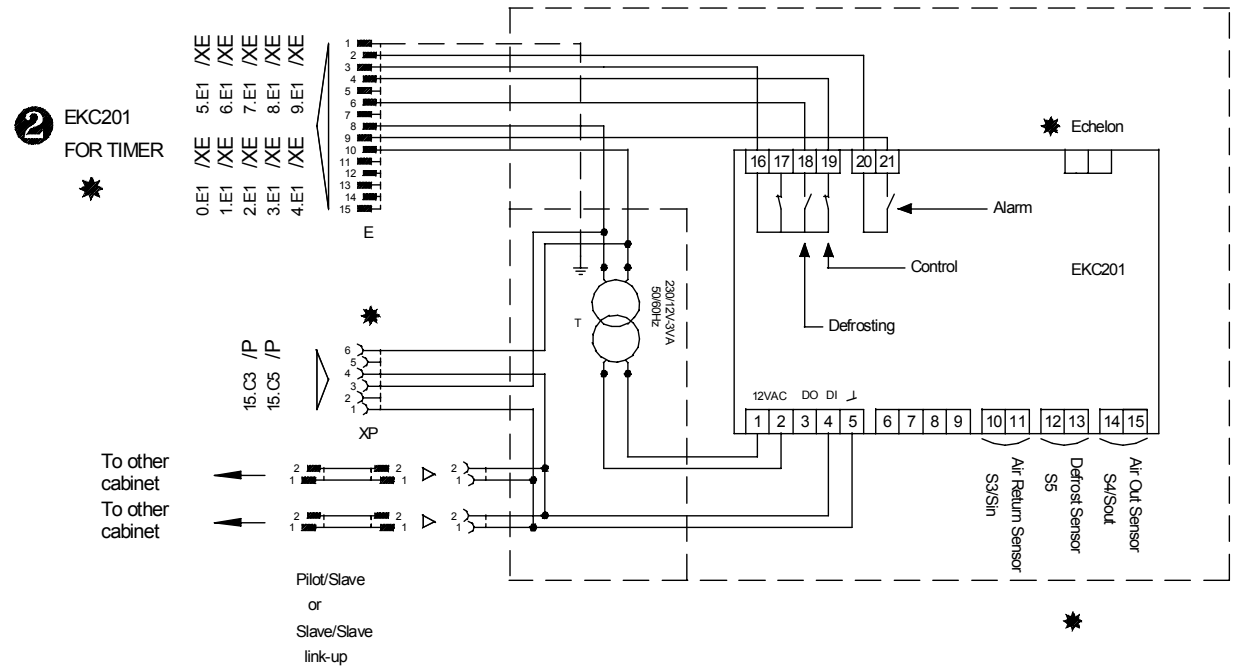
folio : 12

ELFI.Cold Development		145485.B	
			27/10/03

WIRING DIAGRAM (EKC201)

According to equipment





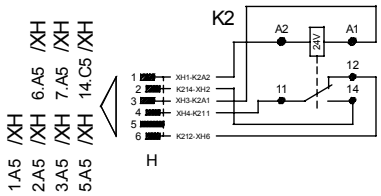
folio : 13

ELFI.Cold Development							145395.C	
								27/10/03

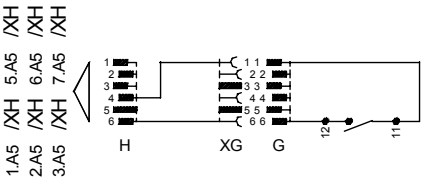
WIRING DIAGRAM (OPTIONS RTS-SRTS-FTB)

✸ According to equipment

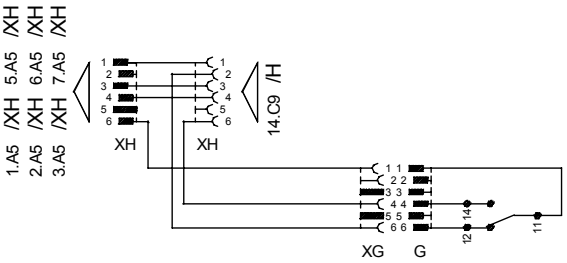
1 Light remote control relay (RTS/SRTS) ✸



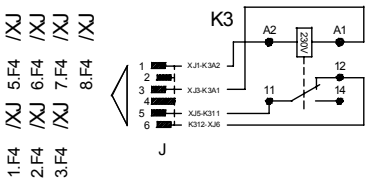
2 Light switch (RTS/SRTS) ✸



3 Light remote control relay + Light switch (RTS/SRTS) ✸

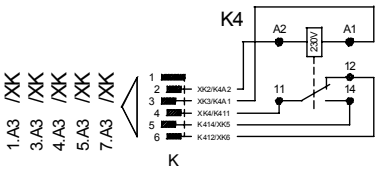


4 Fan stop relay (On cabinet with 2 air curtain) ✸



When this relay is present with a night curtain (electrical or manual) disconnet the shunt K113-K114 on 1.B4/K1 or 2.B4/K1 or 3.B4/K1

5 Motor blind relay (RTS1-SRTS1-FTB) ✸



folio : 14

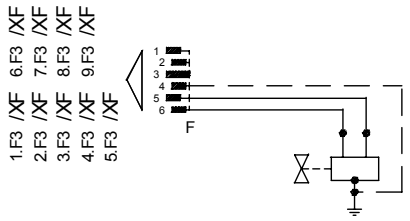
A	B	C	D	E	F

EL_FI.Cold Development		145487.C	
			27/10/03

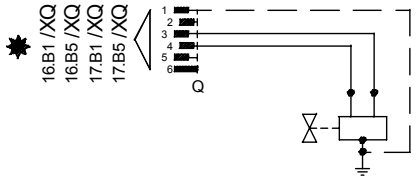
WIRING DIAGRAM (EMV AC-DC/DEF.RELAY/TIMER)

According to equipment

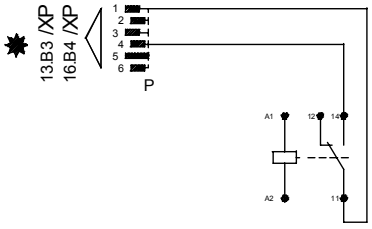
1 EMV AC



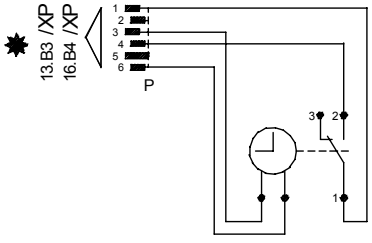
2 EMV DC



3 START DEFROST RELAY



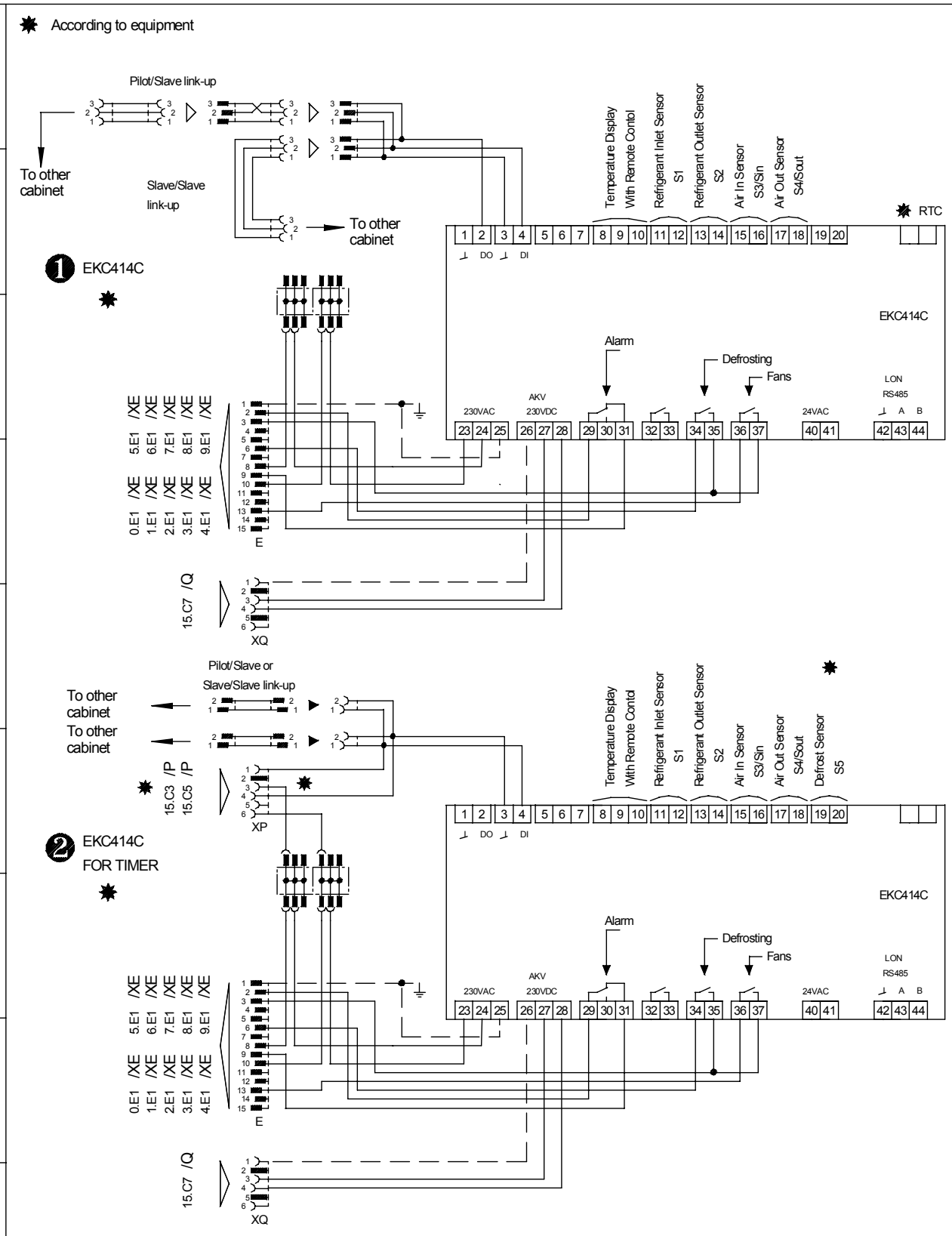
4 TIMER



folio : 15

ELFI.Cold Development		145486.B	
			27/10/03

WIRING DIAGRAM (EKC414C)

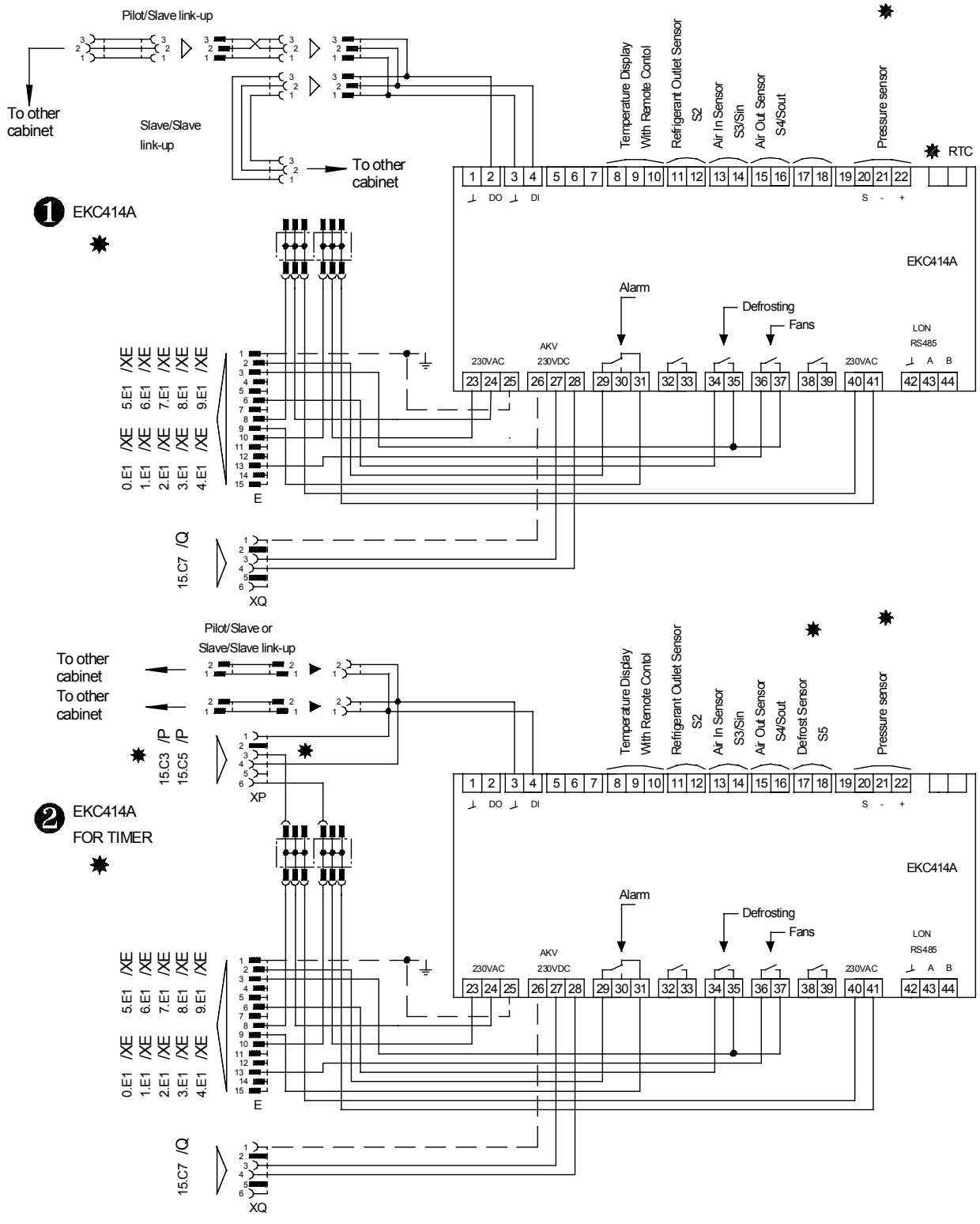


folio : 16

ELFI.Cold Development		145396.B	
			27/10/03

WIRING DIAGRAM (EKC414A)

✸ According to equipment



folio : 17

CONTROLLER SETTING SPECIFICATIONS

EKC201 - EKC414

EC1 – SETTINGS FOR CONTROLLER EKC201

	Parameter function	Parameters of Danfoss controller	Min. value of Danfoss controller	Max. value of Danfoss controller	VISEO VISEO L PROXIMA PROXIMA L D	AO/AF	VISEO VISEO L PROXIMA PROXIMA L S +
1.	Cutout T° for S4 / Sout *	OUT	-50°C	50°C	-2	1	2
2.	Cutout T° for S3 / Sin *	In	-50°C	50°C	2	3	5
Thermostat parameters							
1.	Temperature unit (°C/°F)	r05	°C	°F	°C	°C	°C
2.	S4 / Sout differential (r07 = Sout cut-in T° * - cut-out T°)	r07	0.1 K	20 K	1	2	1
3.	S3 / Sin differential (r08 = cut-in T° * - cut-out T° Sin)	r08	0.1 K	20 K	1	2	2
4.	Correction of signal from S4/Sout	r09	-20.0 K	20.0 K	0	0	0
5.	Correction of signal from S3/Sin	r10	-20.0 K	20.0 K	0	0	0
Alarm parameters							
1.	Timing of temperature alarm *	A03	0	90 mn	10	10	10
2.	Upper limit exceeded S4/Sout (A05 =threshold * - cut-out T° of Sout)	A05	0 K	50 K	6	5	4
3.	Lower limit of S4/Sout exceeded	A06	-50 K	0 K	-50	-50	-50
4.	Upper limit of S3/Sout exceeded (A07 =threshold * - cut-out T° of Sin)	A07	0 K	50 K	50	50	50
5.	Lower limit of S3/Sin exceeded	A08	-50 K	0 K	-50	-50	-50
6.	S3/Sin alarm time-lag with night covers	A09	-50 K	50 K	0	0	0
VEM Parameters							
1.	Min. ON-time	c01	0 min	15 min	0	0	0
2.	Gap between two defrosts	c02	0 min	15 min	0	0	0
3.	Cut-in frequency in case of probe fault	c03	0%	100%	100	100	100
Defrost parameters							
1.	Compressor On when under defrosting	d01	No	Yes	No	No	No
2.	Defrost-end T° * (probe selection automatic according to d10)	d02	0	25 °C	10	12	10
3.	Gap between 2 defrosts (d03=24 / n° of defrosts per day*)	d03	OFF	48 h	4	4	4
4.	Safety time *	d04	0	180 min	45	45	45
5.	Defrost signal time-lag after start-up	d05	0	60 min	0	0	0
6.	Drip off time	d06	0	20 min	0	0	0
7.	Timing of fan start on defrost end	d07	0	20 min	0	0	0
8.	Fan start temperature (>25C°=OFF)	d08	-25	26°C	OFF	OFF	OFF
9.	Fan operation when under defrosting (yes/no)	d09	No	Yes	Yes	Yes	Yes
10.	Defrost probe	d10	OUT	DEF	OUT	OUT	OUT
11.	Alarm delay on defrost end *	d11	0	200 min	35	35	35
12.	Delay of display view after defrost end	d12	0	30 min	0	0	0
13.	Defrost on start-up	d13	No	Yes	No	No	No
1. Defrost start, hour							
1.	Real time clock parameters	t01	OFF	23 h	Value to be defined at the time of installation only for controllers Danfoss model C or S/C		
2.	1. Defrost start, minutes	t11	0	59 min			
3.	2. Defrost start, hour	t02	OFF	23 h			
4.	2. Defrost start, minutes	t12	0	59 min			
5.	3. Defrost start, hour	t03	OFF	23 h			
6.	3. Defrost start, minutes	t13	0	59 min			
7.	4. Defrost start, hour	t04	OFF	23 h			
8.	4. Defrost start, minutes	t14	0	59 min			
9.	5. Defrost start, hour	t05	OFF	23 h			
10.	5. Defrost start, minutes	t15	0	59 min			
11.	6. Defrost start, hour	t06	OFF	23 h			
12.	6. Defrost start, minutes	t16	0	59 min			
13.	Adjustment of hour	t07	0	23 h			
14.	Adjustment of minutes	t08	0	59 min			
Ventilation parameters							
1.	Fans off when compressors are off	F01	No	Yes	No	No	No
2.	Fan off time	F02	0	15 min	0	0	0
Other parameters							
1.	Output delay on startup	o01	0	600 sec	0	0	0
2.	Digital input signals	o02	OFF	5	Values to be defined at the time of installation		
3.	Network address (from 0 to 60)	o03	0	990			
4.	LON service connector	o04	OFF	100			
5.	Access code	o05	OFF	100	Values to be defined at the time of installation, if necessary		
6.	Type of probe used (Pt/PTC)	o06	Pt	PTC	Pt / PTC	Pt / PTC	Pt / PTC
7.	Syncronised defrost with pilot	o13	OFF	2	Value to be defined at the time of installation only for controllers Danfoss model S or S/C		
8.	Selection of regulation probe	o14	Aut	Out	Out	Out	Out
9.	Temperature display scale	o15	No	Yes	Yes	Yes	Yes
10.	Max wait time after synchronized defrost	o16	1	30 min	30	30	30
11.	Selection of display probe signal	o17	Aut	In	In	In	In
12	Manual output command	o18	OFF	5	OFF	OFF	OFF

*** Parameters to be adapted to the climatic class required by the foods in questio**

** Aut: pre-set with night blinds or night cover option

EC1 - REGLAGE REGULATEUR EKC414

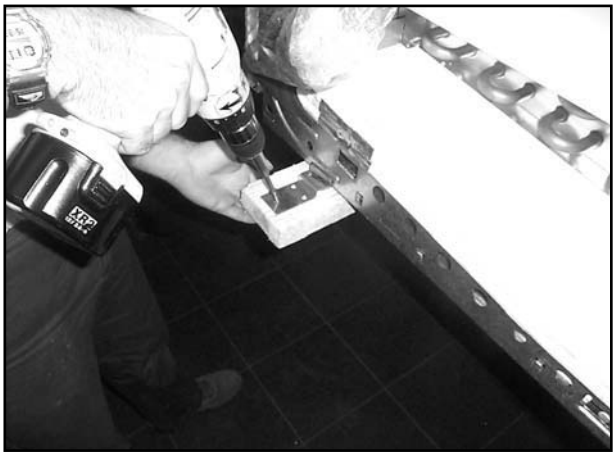
	Function	Parameter	MIN	MAX	VISEO VISEO L PROXIMA PROXIMA L D	AO/AF	VISEO VISEO L PROXIMA PROXIMA L S
	Thermostat						
	Set point •				**-2**	1	2
1	Differential	**r01**	0.1K	10.0K	**1**	2	1
2	Max. limitation of thermostat setpoint	**r02**	-49°C	50°C	**5**	5	5
3	Min. limitation of thermostat setpoint	**r03**	-50°C	49°C	**-5**	-5	-5
4	Temperature unit	**r05**	°C	°F	**°C**	°C	°C
5	Correction of the signal from S4 (S_{out})	**r09**	-10.0K	10.0K	**0**	0	0
6	Correction of the signal from S3 (S_{in})	**r10**	-10.0K	10.0K	**0**	0	0
7	Main switch for the controller	**r12**	OFF	ON	**ON**	ON	ON
8	Night Offset	**r13**	-20.0K	20.0K	**0**	0	0
9	Thermostat mode 1 = ON/OFF, 2 = Modulating	**r14**	1	2	**1**	1	1
10	Weighting of sensors for thermostat 100%=S4 (S_{out}), 0%=S3 (S_{in})	**r15**	0%	100%	**100**	100	100
11	Time between melt periods	**r16**	0 h	10 h	**0**	0	0
12	Melt period	**r17**	0 min	10 min	**0**	0	0
	Alarm						
1	Delay for temperature alarm	**A03**	0 min	120 min	**10**	10	10
2	Delay for door alarm	**A04**	0 min	90 min	**90**	90	90
3	Delay for Pulldown	**A12**	0 min	240 min	**60**	60	60
4	Hight temperature limit •	**A13**	-50°C	50°C	**4**	8	6
5	Low temperature limit	**A14**	-50°C	50°C	**-50**	-50	-50
	Compressor function						
1	Min. ON- time	**c01**	0 min.	50 min.	**0**	0	0
2	Min. OFF-time	**c02**	0 min.	50 min.	**0**	0	0
	Defrost						
1	Defrost stop temperature	**d02**	0	25°C	**10**	12	10
2	Interval between defrost starts •	**d03**	OFF	48 h	**4**	4	4
3	Max. defrost duration	**d04**	0	180 min	**45**	45	45
4	Defrost time delay after power up	**d05**	0	240 min	**0**	0	0
5	Dripp-off time	**d06**	0	60 min	**0**	0	0
6	Delay for fan start after defrost	**d07**	0	60 min	**0**	0	0
7	Fan start temperature	**d08**	-15	0°C	**0**	0	0
8	Fan cut in during defrost (yes/no)	**d09**	No	Yes	**No**	No	No
9	Defrost sensor 0=S4 (S_{out}), 1=S5 (S_{def}), 2=none i.e. stop on time	**d10**	0	2	**0**	0	0
10	Defrost start at power up	**d13**	no	yes	**No**	No	No
	Realtime clock						
1	1. Defrost start. Hours	**t01**	OFF	23hours	**Values have to be specified during the installation for the Danfoss Control C or S/C**		
2	1. Defrost start. Minutes	**t11**	0	59 min			
3	2. Defrost start. Hours	**t02**	OFF	23hours			
4	2. Defrost start. Minutes	**t12**	0	59 min			
5	3. Defrost start. Hours	**t03**	OFF	23hours			
6	3. Defrost start. Minutes	**t13**	0	59 min			
7	4. Defrost start. Hours	**t04**	OFF	23hours			
8	4. Defrost start. Minutes	**t14**	0	59 min			
9	5. Defrost start. Hours	**t05**	OFF	23hours			
10	5. Defrost start. Minutes	**t15**	0	59 min			
11	6. Defrost start. Hours	**t06**	OFF	23hours			
12	6. Defrost start. Minutes	**t16**	0	59 min			
13	Setting of Hours	**t07**	0	23hours			
14	Setting of Minutes	**t08**	0	59 min			
15	Start time day operation (0=constant day)	**t17**	0	23			
16	Start time night operation (0=constant day)	**t18**	0	23			
	Injection control						
1	Max. limitation of superheat reference	**n09**	3.0 K	15.0 K	**6**	6	6
2	Min. limitation of superheat reference	**n10**	3.0 K	10.0 K	**4**	4	4
3	MOP Temperature	**n11**	-50.0°C	15°C/off	**off**	off	off
5	Period time AKV pulsing	**n13**	3 sec.	6 sec.	**6**	6	6
10	Stability	**n18**	0	10	**4**	4	4
11	Forced closing ON =Akv closed	**n36**	OFF	ON	**OFF**	OFF	OFF
	Fan control						
1	Fan stop on compressor cut out	**F01**	No	Yes	**No**	No	No
2	Delay for fan stop when compressor cuts out	**F02**	0 min	30 min	**0**	0	0
3	Temperature limit for fan stopped via S5 (S_{def}) value	**F04**	-50.0	50.0/off	**OFF**	OFF	OFF
	Miscellaneous						
1	Delay of output signal after start up	**o01**	0 sec	600 sec	**0**	0	0
2	DI control OFF=not used, 1=door alarm, 2=Defros start, 3=Night, 4=Main switch, 5=Slave defrost	**o02**	OFF	5	**Values have to be specified during the installation**		
3	Network address	**o03**	0	990			
4	ON/OFF Switch (service-pin message)	**o04**	OFF	ON			
5	Access code	**o05**	OFF	100			
6	Used sensor type (Pt/PTC)	**o06**	Pt	PTC	**Pt / PTC**	Pt / PTC	Pt / PTC
7	Language 0=English, 1=German, 2=French, 3=Danish, 4=Spanish, 5=Italian	**o11**	0	5	**0**	0	0
7	50/60 Hz	**o12**	50	60	**50**	50	50
8	DO output controls OFF=not used, 1=Def. Master, 2=Def. Slave	**o13**	0	2	**Values have to be specified during the installation for the Danfoss Control S or S/C**		
10	Display step no=0.1, yes =0.5	**o15**	no	yes	**yes**	yes	yes
11	Max. standby time after defrost	**o16**	1 min	30 min	**30**	30	30
12	Display S4 % (S_{out}) 0%=S3 (S_{in}) 100%=S4 (S_{out})	**o17**	0%	100%	**0**	0	0
13	Manual control of output via EKC	**o18**	OFF	7	**OFF**	OFF	OFF
14	Pressure Min. Value	**o20**	-1 bar	5 bar	**-1**	-1	-1
15	Pressure Max. Value	**o21**	6 bar	36 bar	**12**	12	12
16	ON input control	**o29**	1	4	**1**	1	1
17	Refrigerant setting • ONLY for the use of R404A . WARNING : Wrong selection of refrigerant may cause damage to the compressor.	**o30**	0	30	**19**	19	19
	Service						
1	**u09 … u26**				**read only**		

• Parameters have to be adapted according to the food temperature class or the ambient class or the refrigerant use.

MULTIPLEXING CABINETS

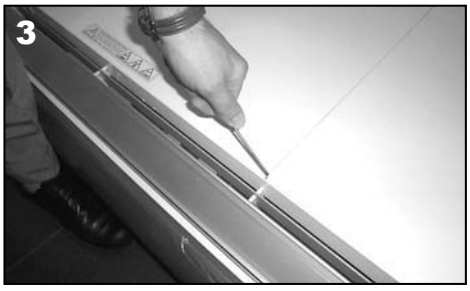
UNPACK THE CABINETS

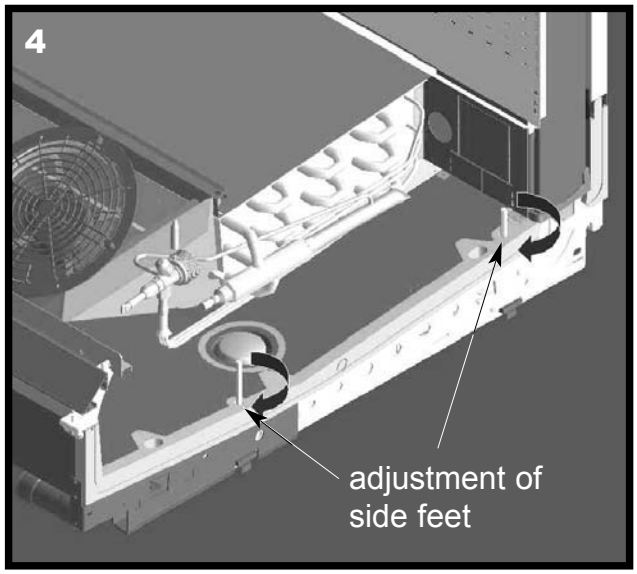
Unpack the cabinets, remove the trasportation platform and side fastening bars as shown in the pictures.



POSITION THE CABINET

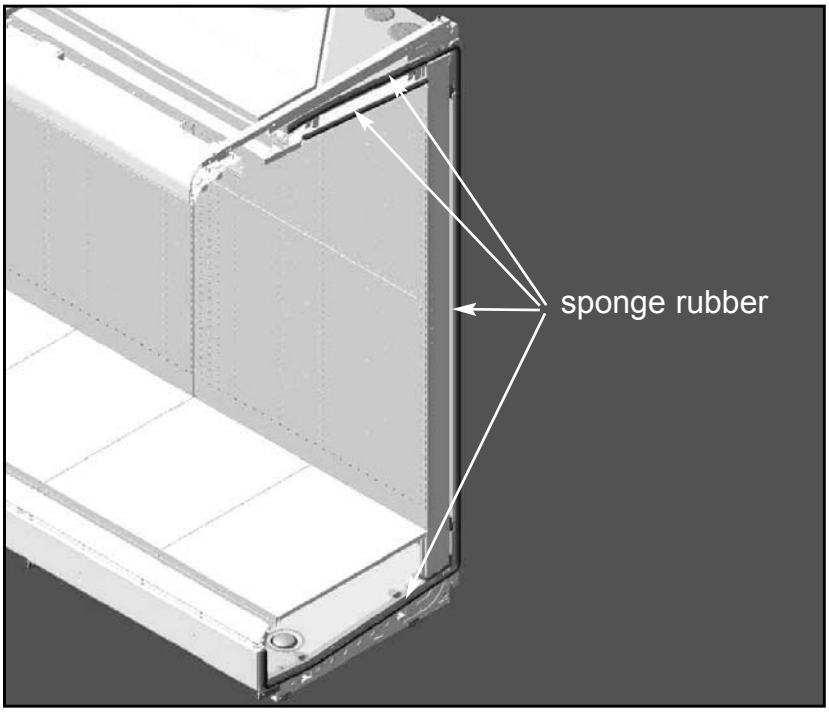
Put the cabinets in their service position. Check cabinet levelness both lengthwise and crosswise using a spirit level (1-2). Remove the bottom plates by the aid of a screwdriver (3). Correct cabinet levelness (4) using a ratchet wrench as explained in chapter 030.20.





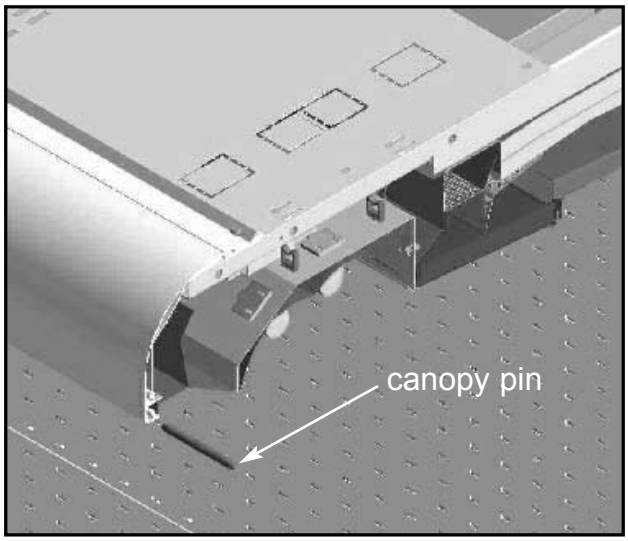
APPLY SPONGE RUBBER

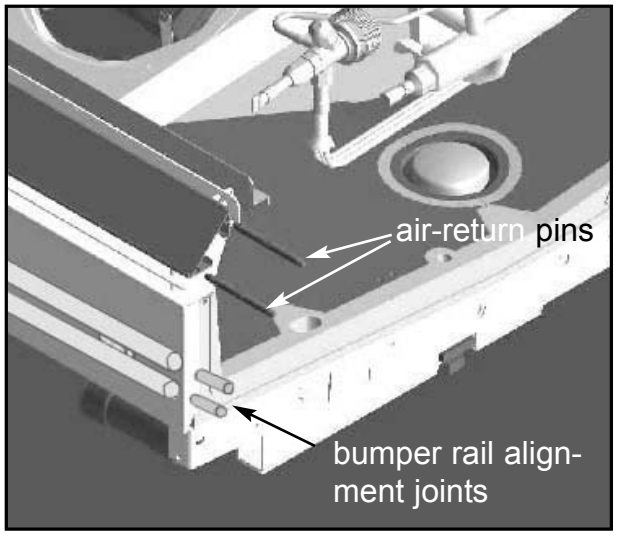
Stick sponge rubber onto the side of one of the cabinets to be multiplexed as indicated in the figure.



INSERT ALIGNMENT PINS AND JOINTS

Put an alignment pin in the canopy and two in the air return of one of the cabinets to be mutiplexed as shown in the figure.
Then insert the stainless steel bumper rail alignment joints.



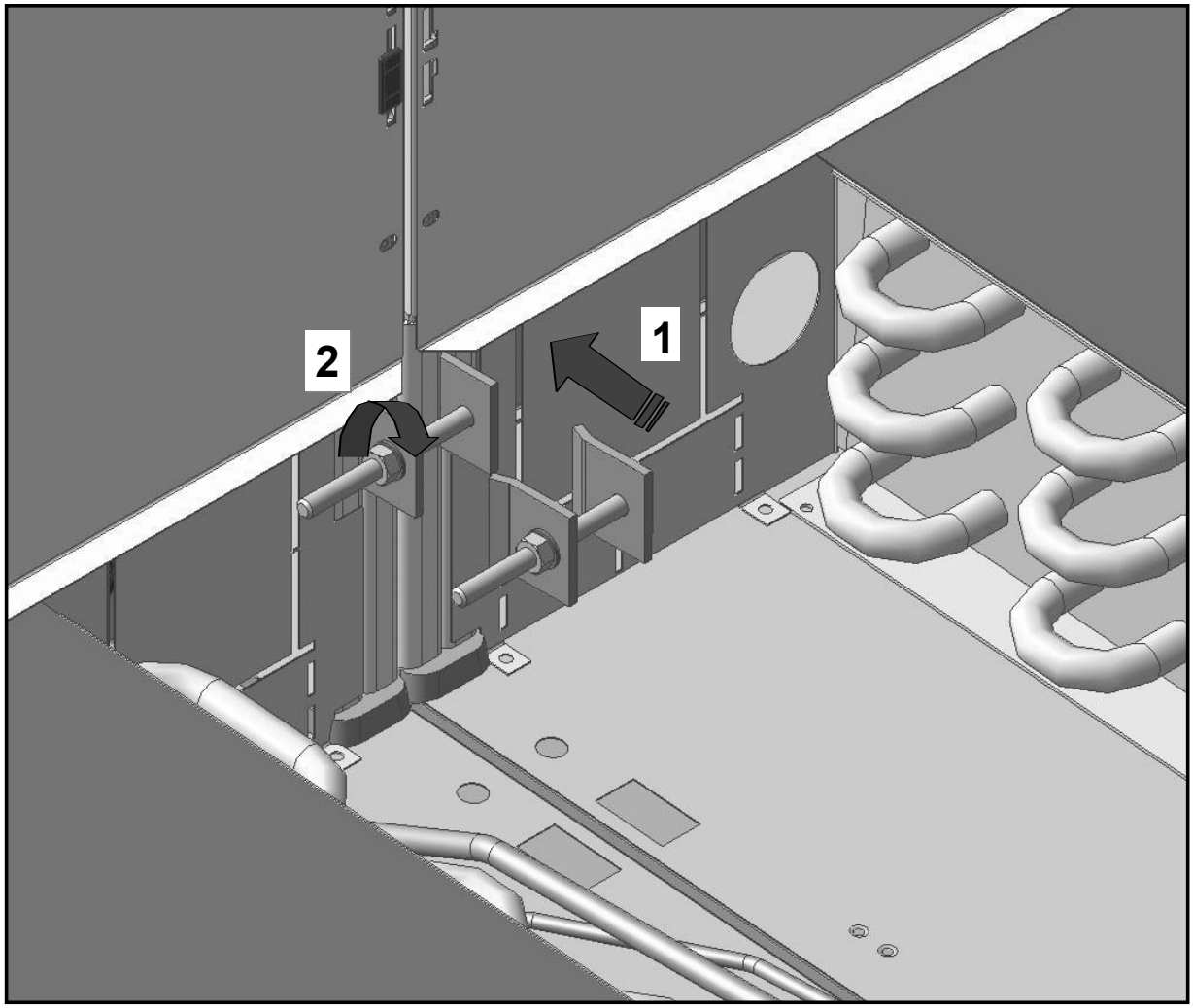


CABINET MULTIPLEXING: REAR FASTENING POINT

LINEAR CABINETS /LINEAR CABINETS

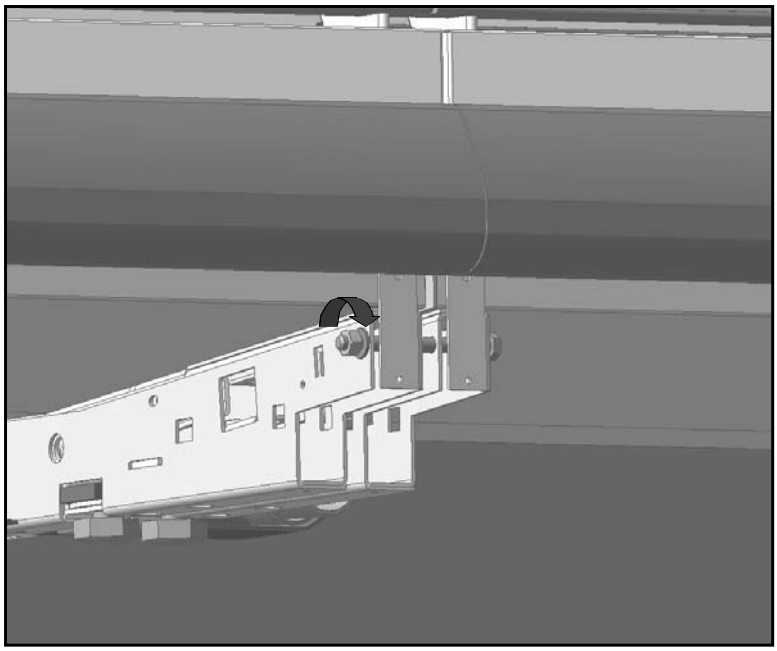
When pins are inserted, proceed as follows:

1) Insert the two small stirrups in the lower part of the cabinet
2) Insert an hexagonal head screw M8x90 and nut and join the cabinets.



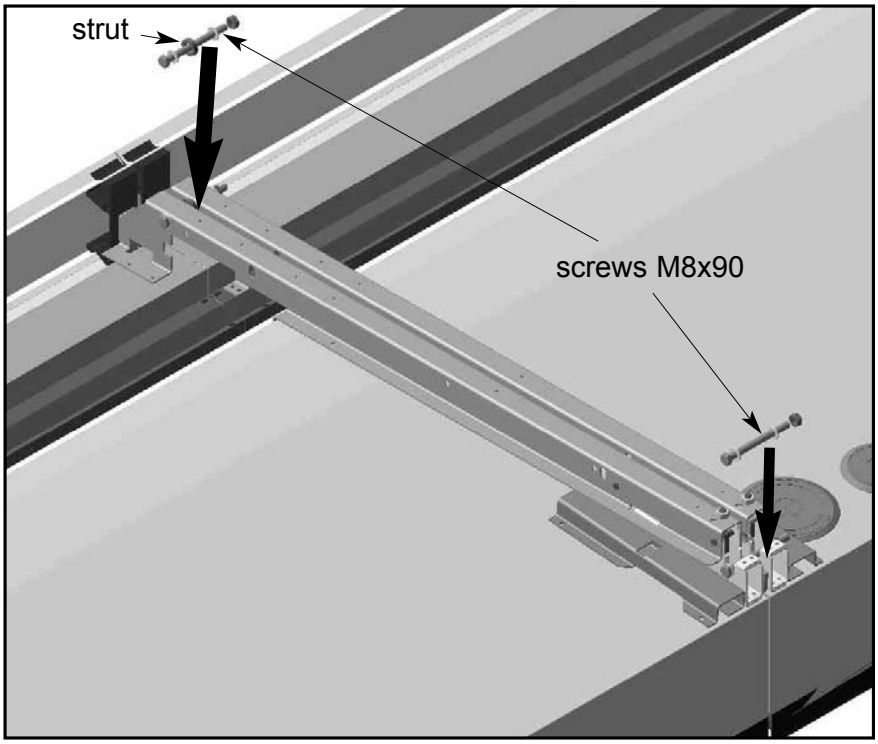
CABINET MULTIPLEXING: LOWER FASTENING POINT LINEAR CABINETS /LINEAR CABINETS

Join the cabinets using hexagonal-head screws TE M8x90 and the appropriate nuts in the front position down at the bottom of the cabinet.



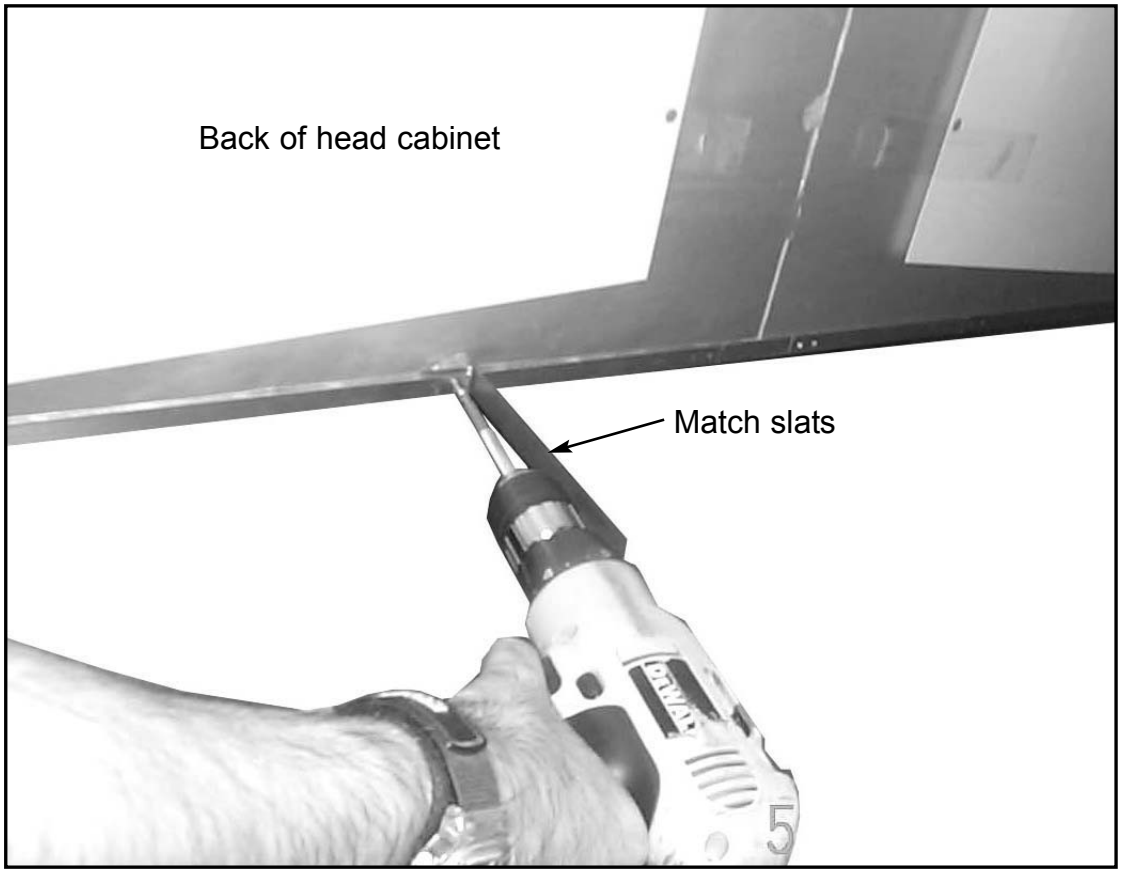
CABINET MULTIPLEXING: upper FASTENING POINT LINEAR CABINETS /LINEAR CABINETS

Join the cabinets using hexagonal-head screws TE M8x90 and the appropriate nuts in the two upper points shown in the picture.



BRING CABINETS NEAR AND SECURE THEM TO ONE ANOTHER LINEAR CABINETS /HEAD CABINETS

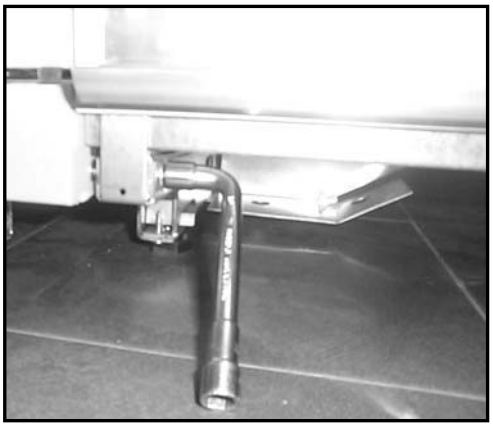
When multiplexing linear cabinets with head cabinets, use the above procedure as explained below:
- Fasten match slats using self-tapping screws (use a screwdriver with a crosswise bit P2), at the back of the head cabinet as shown in the figure and fit them into the linear cabinets;
- Place hexagonal pins on the match slats through the foot adjusrment holes on the chest of the linear cabinet;
- By the aid of a ratchet wrench, give the pins a turn to bring the cabinets closer and then tighten the pins up to secure the cabinets to one another.



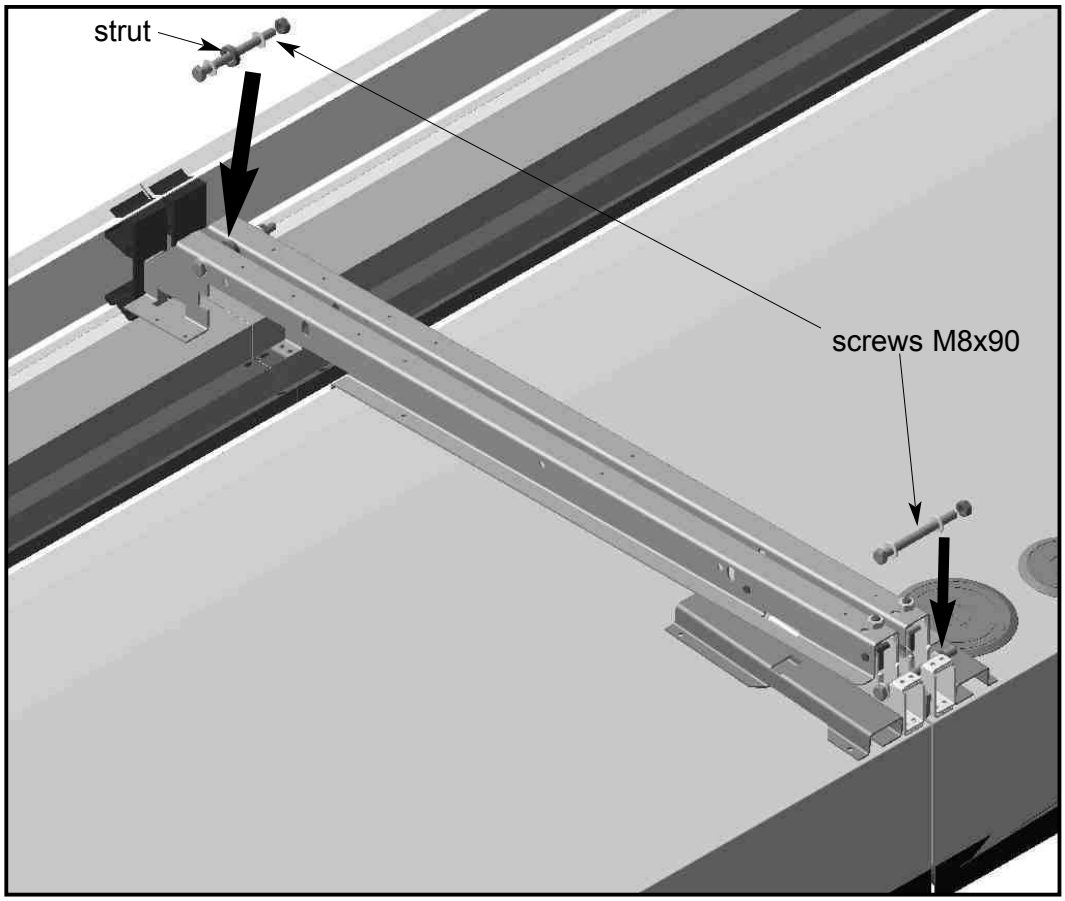
COMPLETE CABINET MULTIPLEXING - LINEAR CABINETS/HEAD CABINETS

Once the cabinets have been brought near and have been fastened, secure them using hexagonal-head screws TE M6x80 and the appropriate nuts in the front position down at the bottom of the cabinet and, using hexagonal-head screws TE M8x90, in the two upper points shown in the picture.

LOWER FASTENING POINT

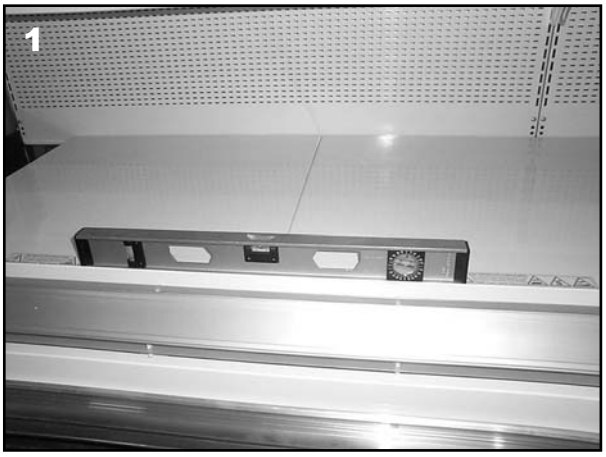


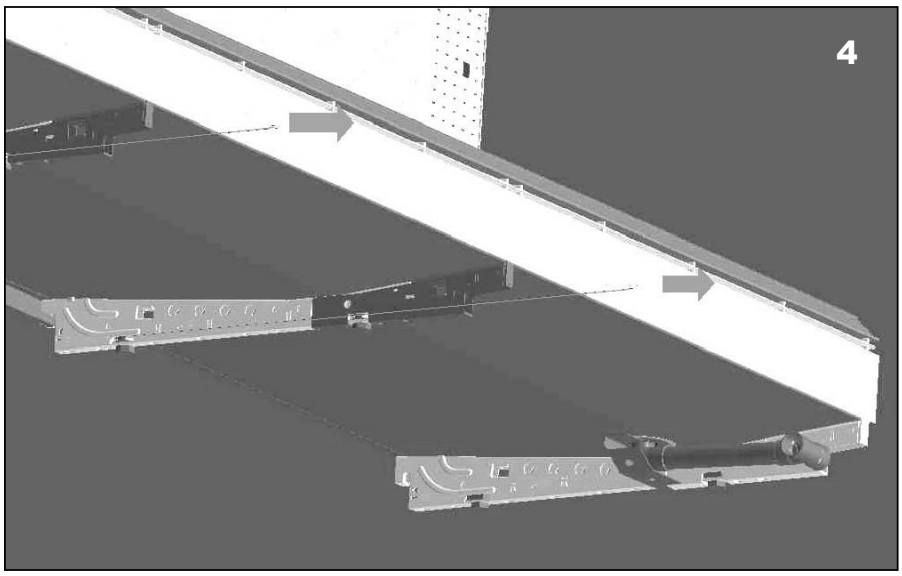
UPPER FASTENING POINTS



CHECK LEVELNESS

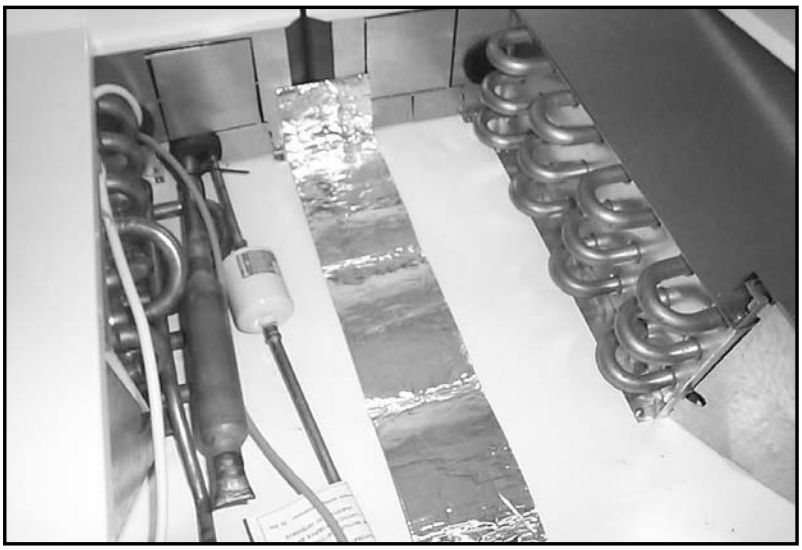
Once the cabinets have been fastened to each other, check that they are level both lengthways and crossways (fig. 1 - 2).
If need be, correct their level by the aid of the side feet (which can be adjusted from inside the cabinet as explained in chapter 030.20 - fig. 3) **and then, by pulling the ad-hoc strings (again as described in chapter 030.20) let middle feet down till they touch the floor (fig. 4).**





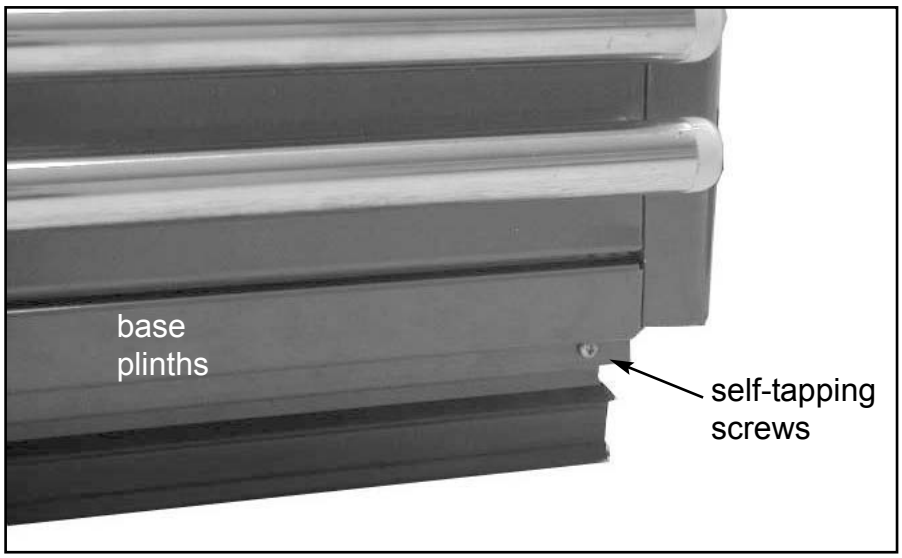
SEAL THE JOINT BETWEEN THE CHESTS

Seal the joint between the chests using aluminium tape as shown in the picture.



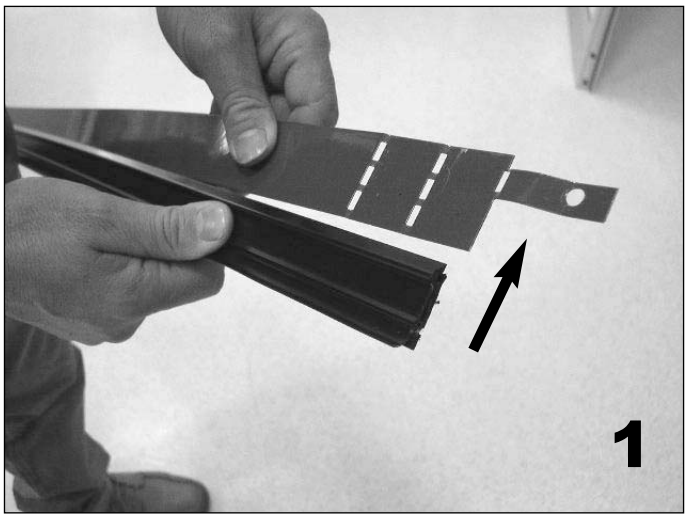
PLACE BASE PLINTHS

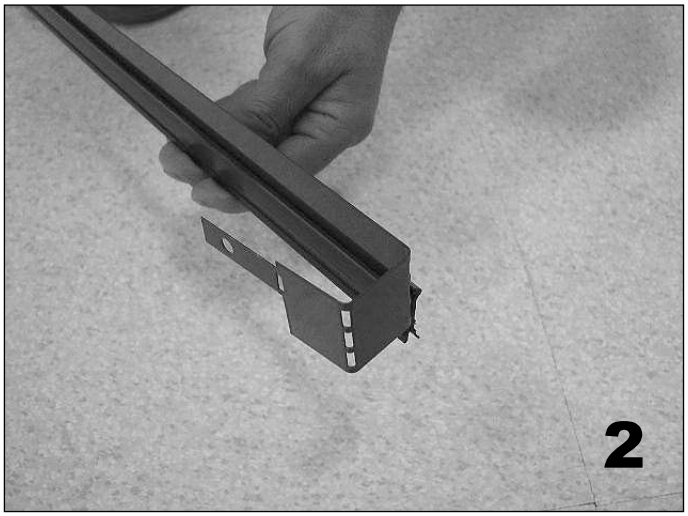
After completing electrical, water and refrigerating connections (as explained in chapter 030.30), fasten front plinths with self-tapping screws (use a screwdriver or electric screwer with a crosswise bit P2).

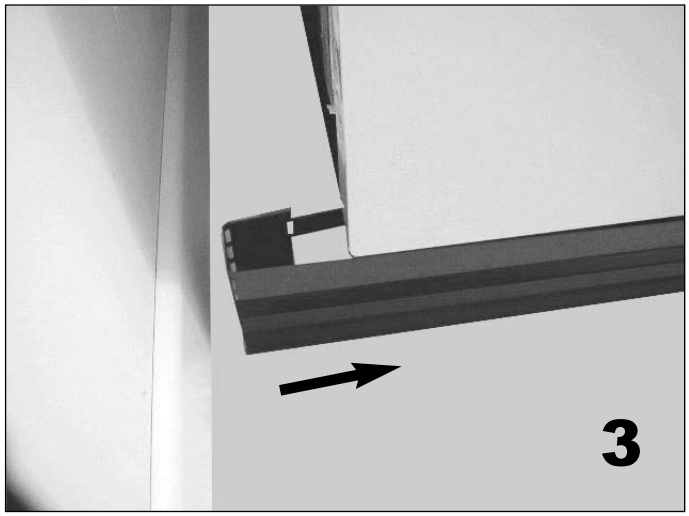


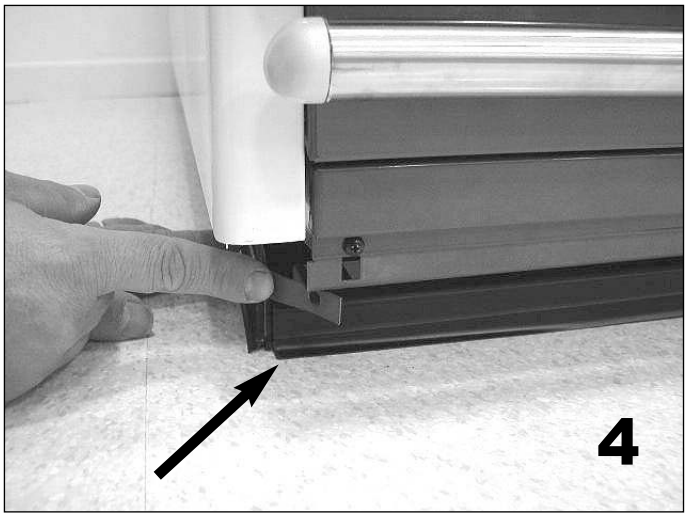
INSTALLATION OF SIDE BASEBOARD

Place the rubber piece (1), bend the baseboard rear portion as shown in the figure (2) and insert it in the rear side of the cabinet (3); then bend the rear plate of the baseboard inwards by 90° (4), drill and fasten using a self-tapping screw (5).



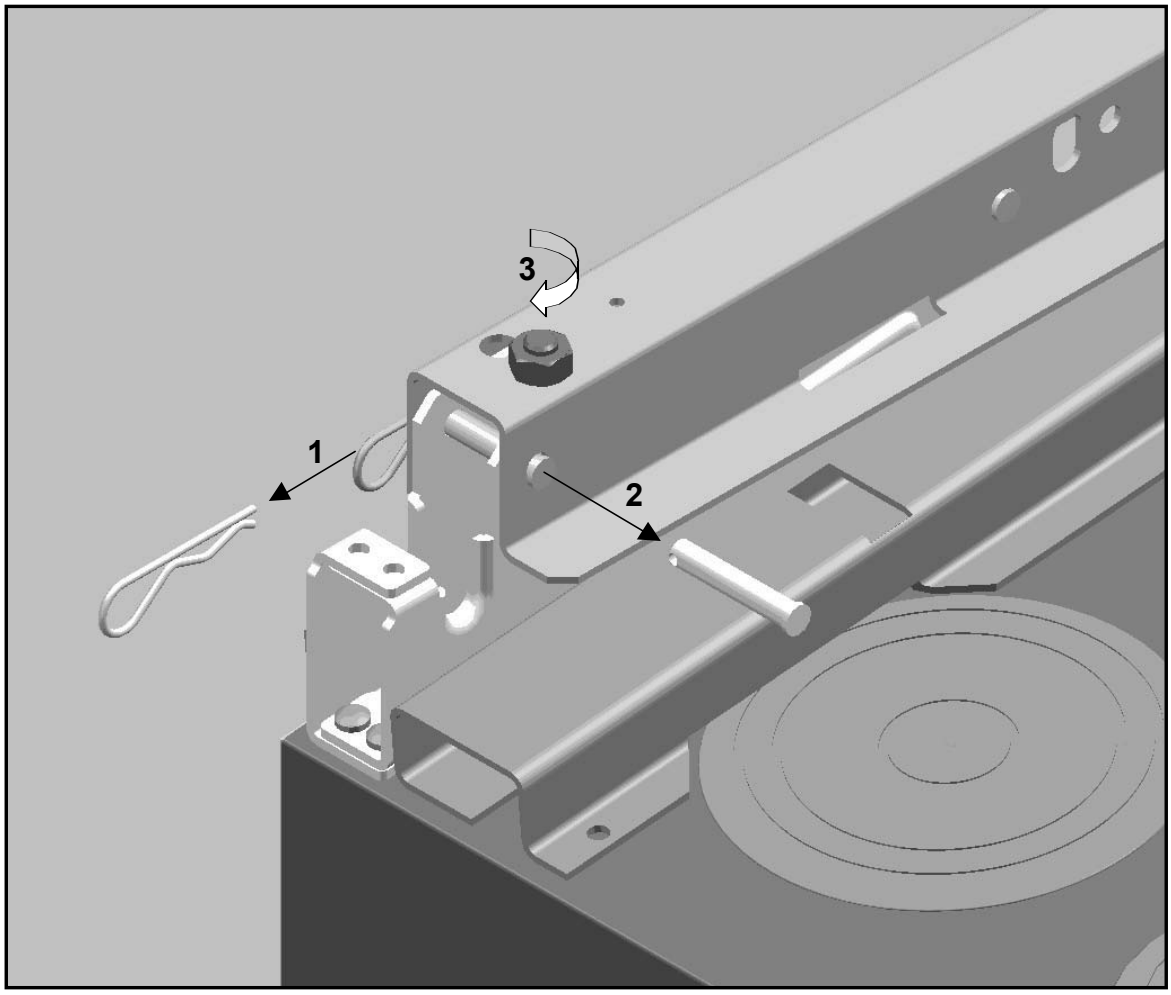






CANOPY REGULATION

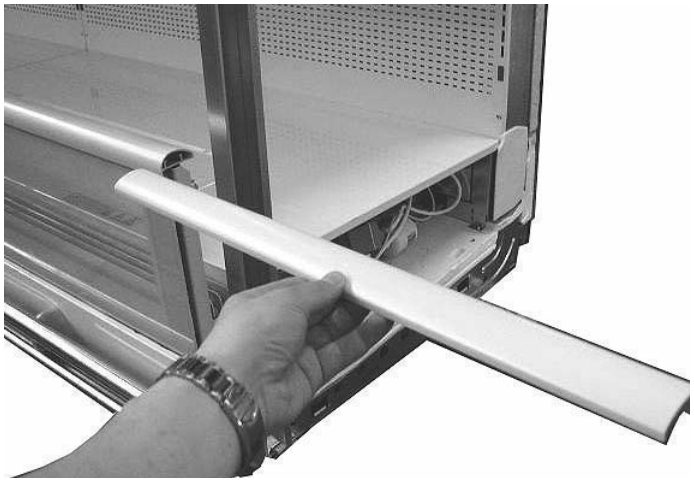
Remove the clasp 1 and the pivot 2, therefore regulate the canopy screwing for lifting and unscrewing for lowering.

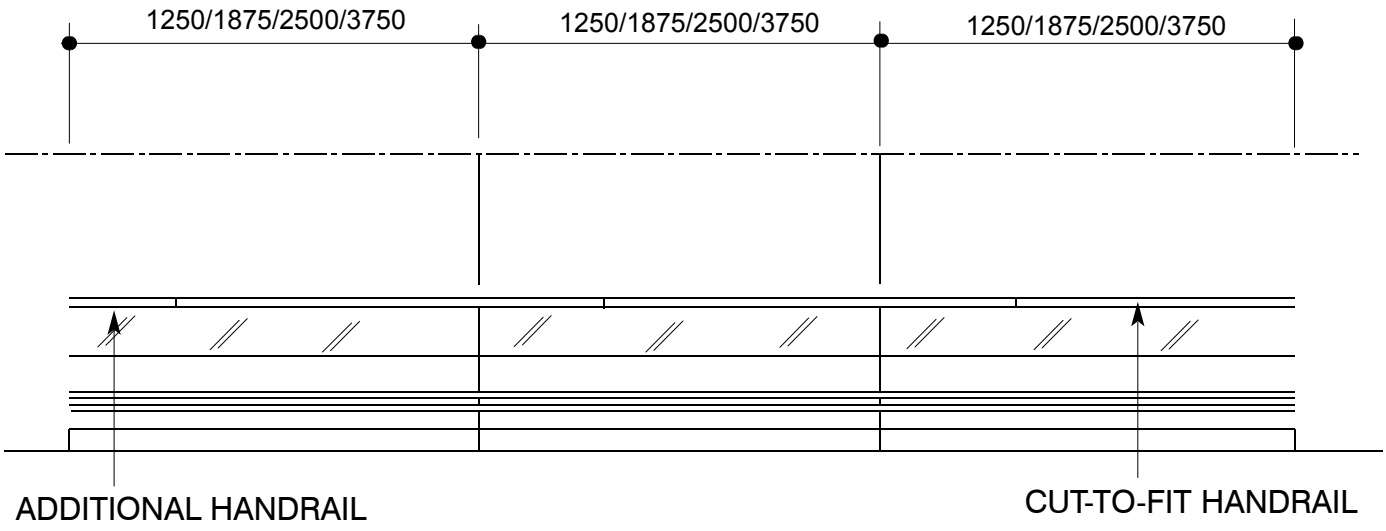


LION HF500G - 600G

HANDRAILS ASSEMBLY

An additional handrail is supplied with LION versions having front height 500 anf 650 mm wit glass, which must be mounted flush with one of the lateral ends in order to allow perfect alignment. Place all handrails except the last on their support.
Measure the remaining length, cut the last handrail accordingly and position it.

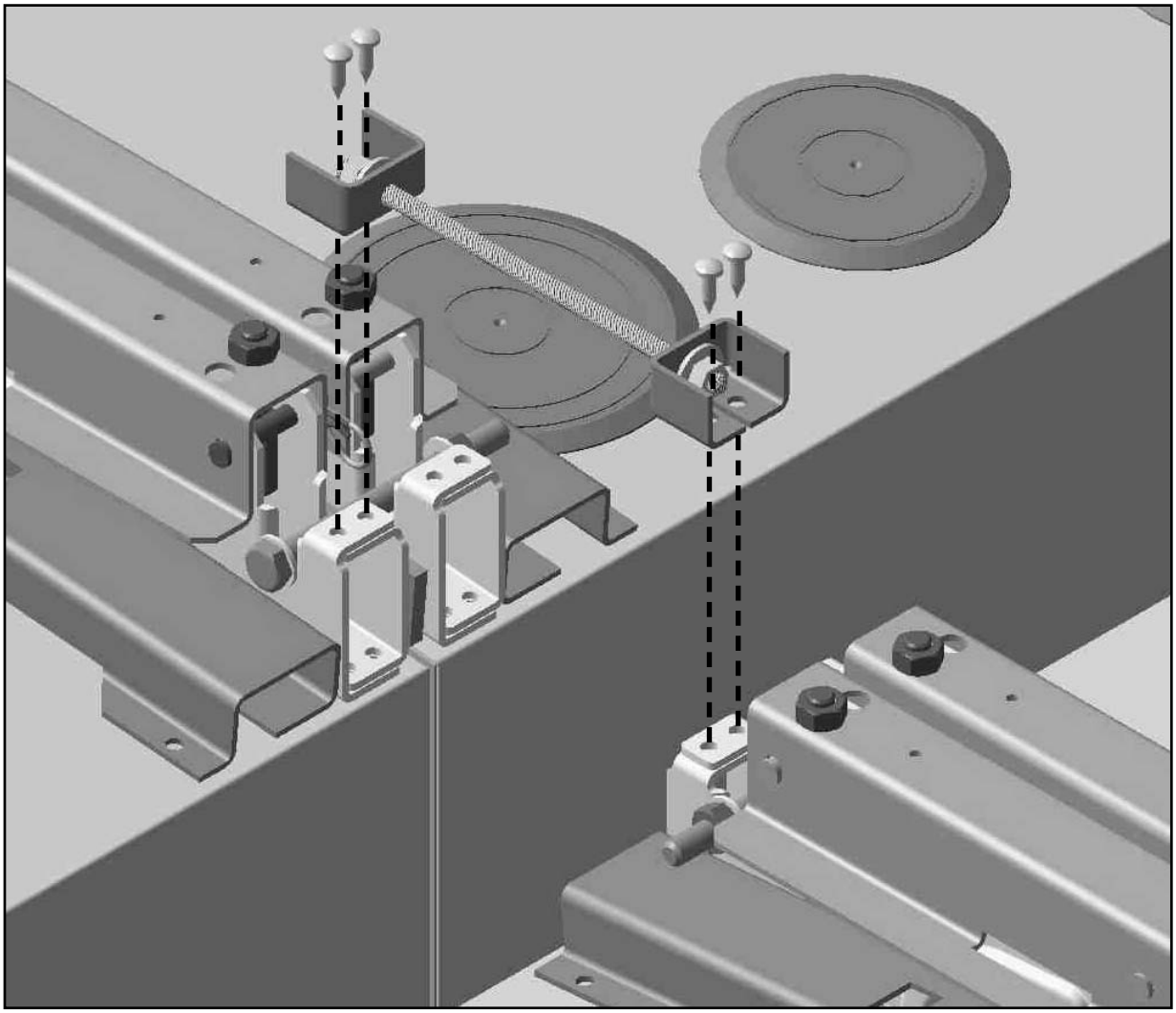




NOTE: for the cleaning of the glasses it is necessary to remove the handrails from his own center so that easly remove the glass. At the end of the cleaning, to reassemble the cabinet as in origin

ALIGNEMENT OF BACK TO BAK CASES

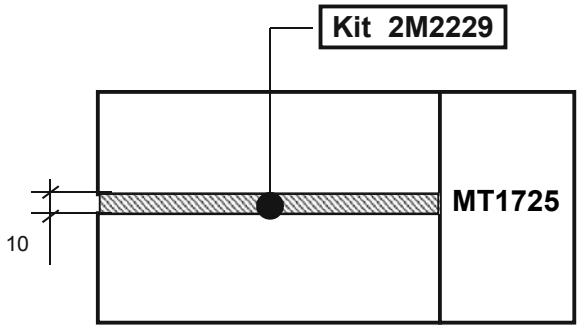
For correct and easy alignment of back-to-back installed cabinets, use one ad-hoc joining kit for each coupling and secure it by way of screws as shown in the picture..



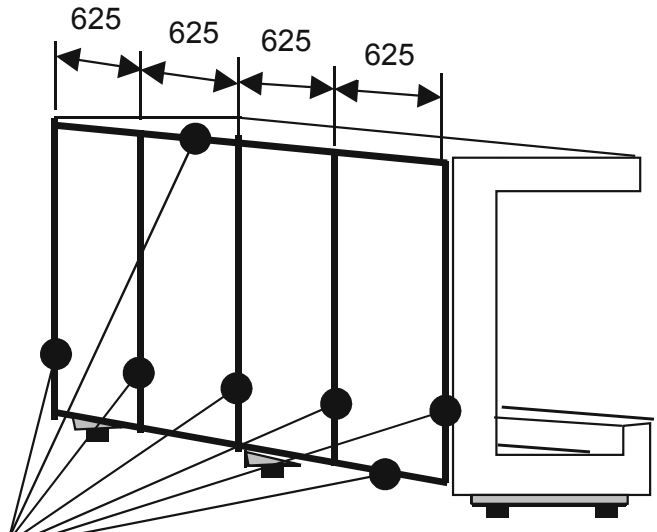
BACK TO BACK ISOLATION - Kit 2M2229 - FOR TG1725

Indispensable between the cases placed at the back of a TG1725

The space of 10 mm between the cases has to be dried up in order to avoid the air circulation and the development of condensation.
The kit has to be ordered with one of the two cases.



Method of installation of the join.
To paste on one of the two cases before the setting



Adhesive foam join 20x15 on one of the two cases back to back