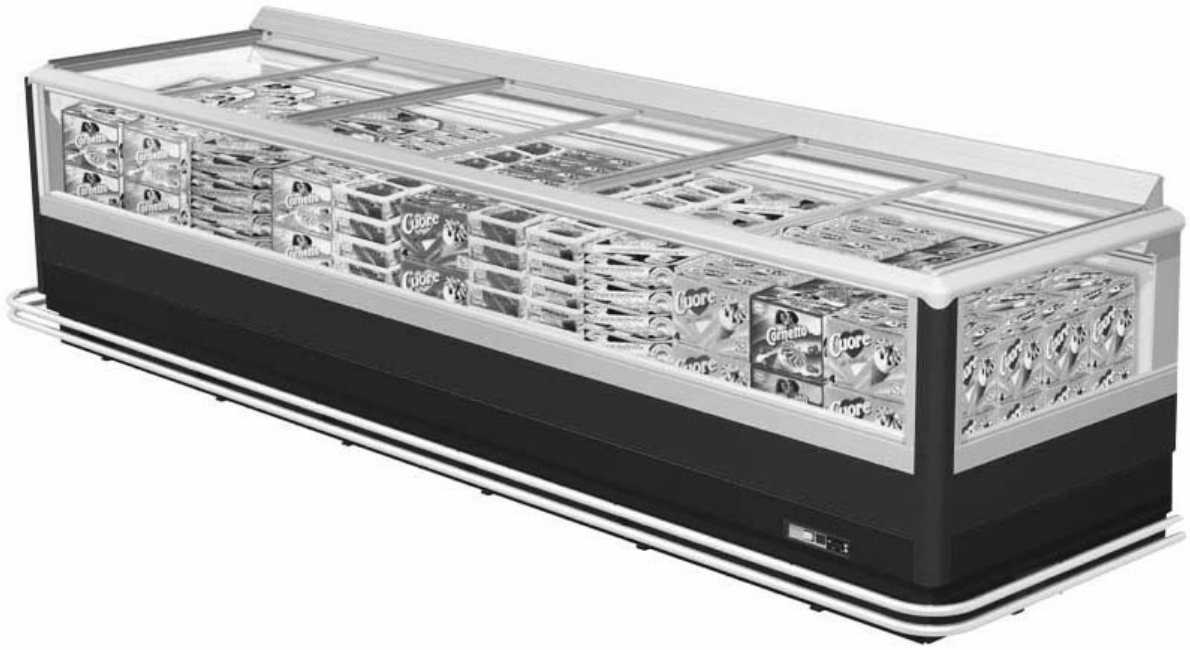
instructions for installation

Epta

CROCODILE



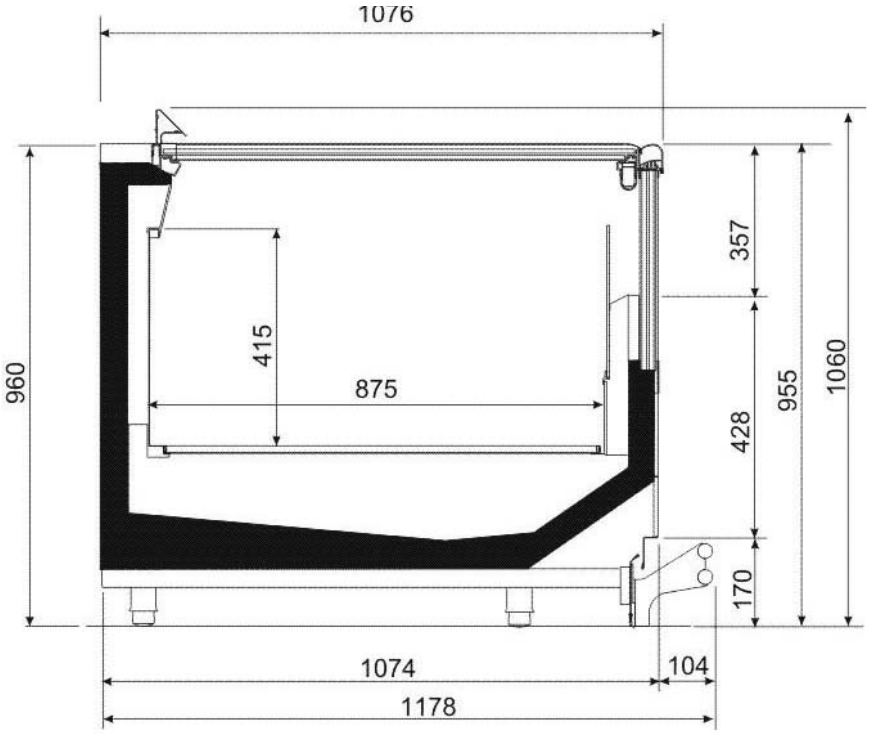
COSTAN®
REFRIGERATION
member of Epta-Group

N° DOC. QSM000420E - 15/06/07- rev. A

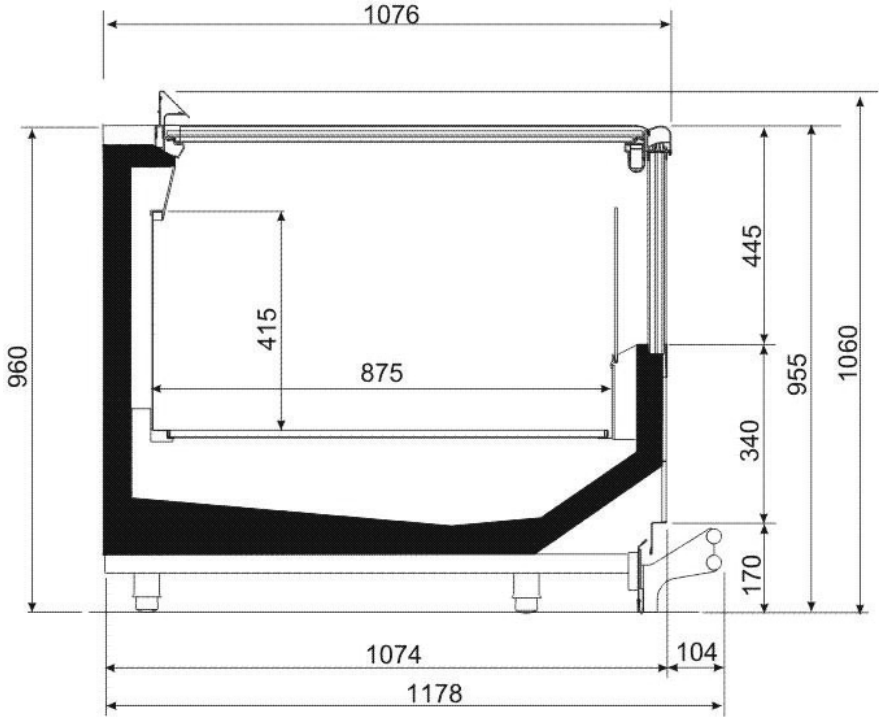
KEY

"-" First issue:
A, B, C..... Revision index

CROCODILE LG300

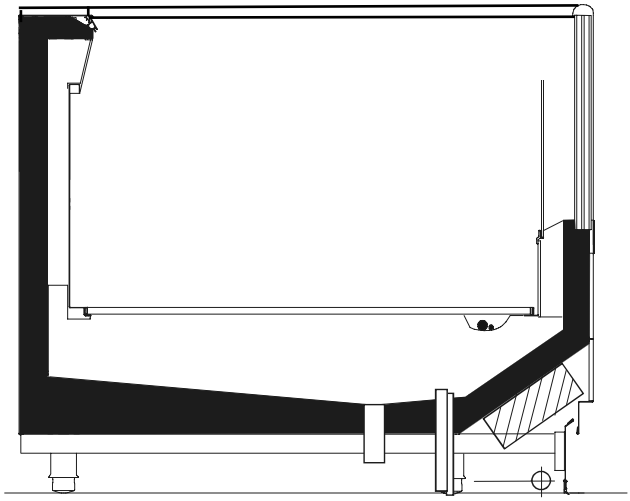


CROCODILE HG400



INSTALLATION DIAGRAMS

CONNECTIONS - CROSS SECTION



water drain outlet Ø40

way in of refrigerating pipes

refrigerating connection
inlet Ø 10 mm
outlet Ø 20 mm

electrical board

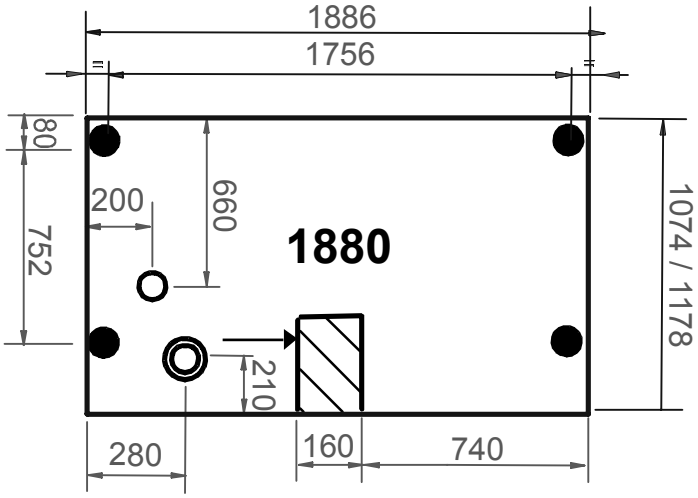
route of drain piping

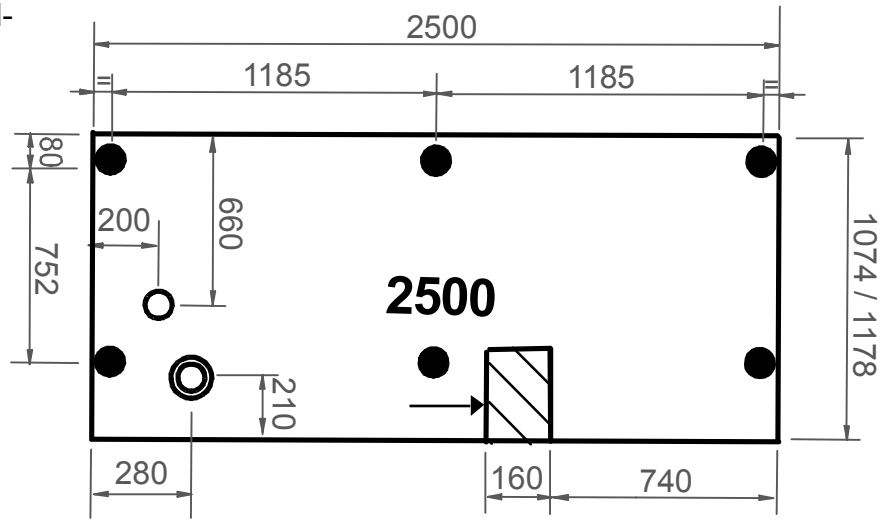
CONNECTIONS - CROSS SECTION FOR CROCODILE straight cabinet - without endwalls

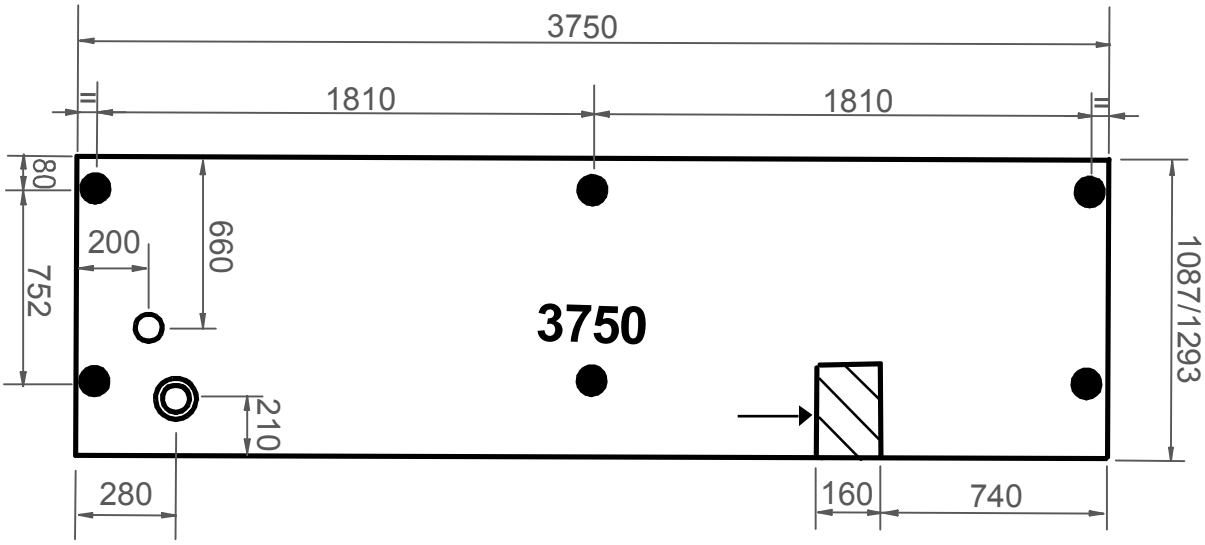
- feet
- water drain outlet Ø40
- refrigerating connection
- electrical board
- electrical board inlet

Thickness of blind end-walls = 51 mm
Thickness of glass end-walls = 70 mm

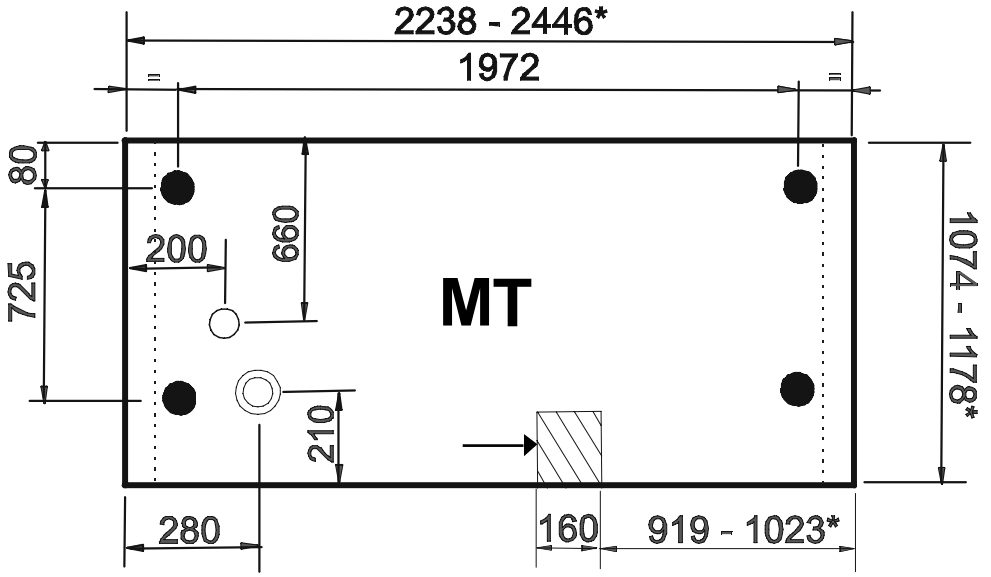
IMPORTANT: do not unscrew cabinet feet completely. The handrail must be 910 mm from the floor.







CONNECTION PLAN FOR CROCODILE END CABINET



* ·optional bumper rail

● feet

○ water drain outlet Ø40

◎ refrigerating connection

▨ electrical board

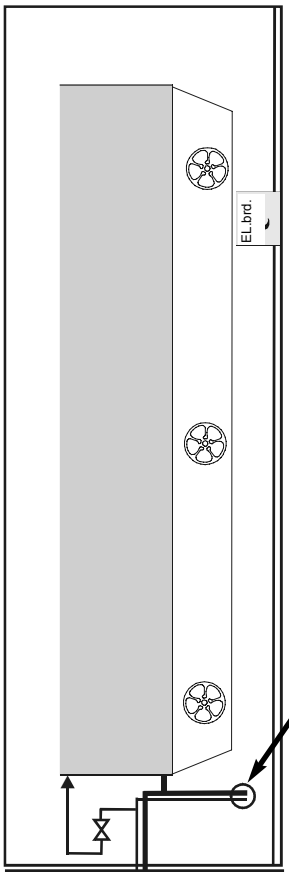
→ electrical board inlet

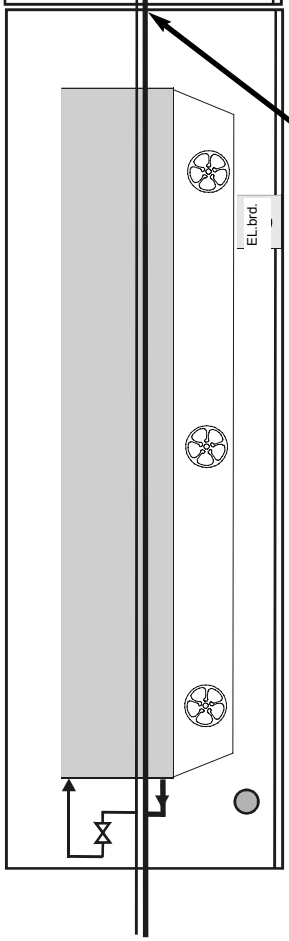
IMPORTANT: do not unscrew cabinet feet completely. The handrail must be 910 mm from the floor.

USE OF THE CABLE SUPPLIED WITH THE ACCESSORIES BOX

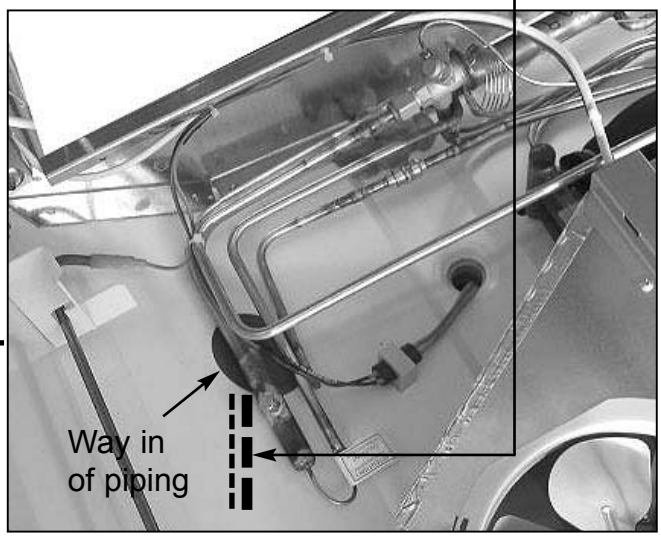
The cable shown in the picture below, which is attached to the accessories box, **needs to be used when the cabinet is to be controlled by device EKC201 with sync.**
In this case, the transmission of signals between MASTER and SLAVE must be inverted. Use the said cable series-connected to the long cable (cur. relevant wiring diagram for further details).

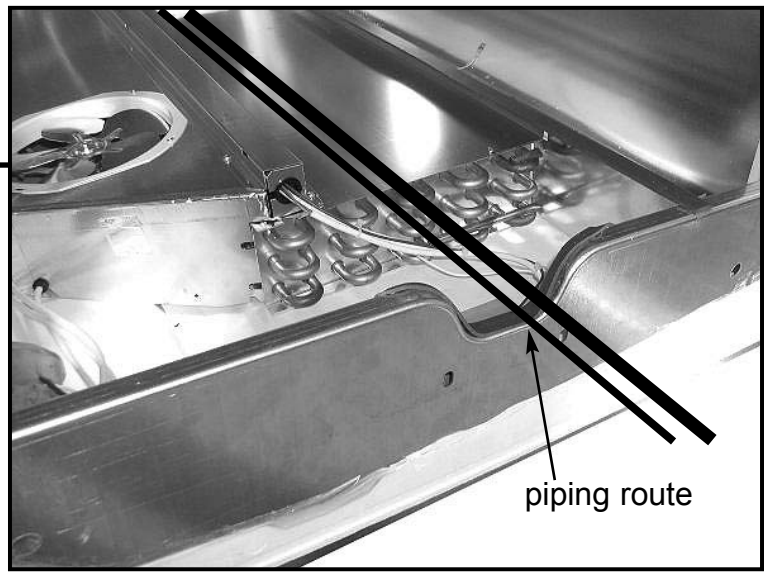
CONNECTION OF PIPING IN THE BASE DECK FOR CROCODILE CABINETS





After sliding the pipes into the base deck seal the hole again.
The suction pipe must be insulated just outside the cabinet. It is not necessary to insulate it inside the base deck.



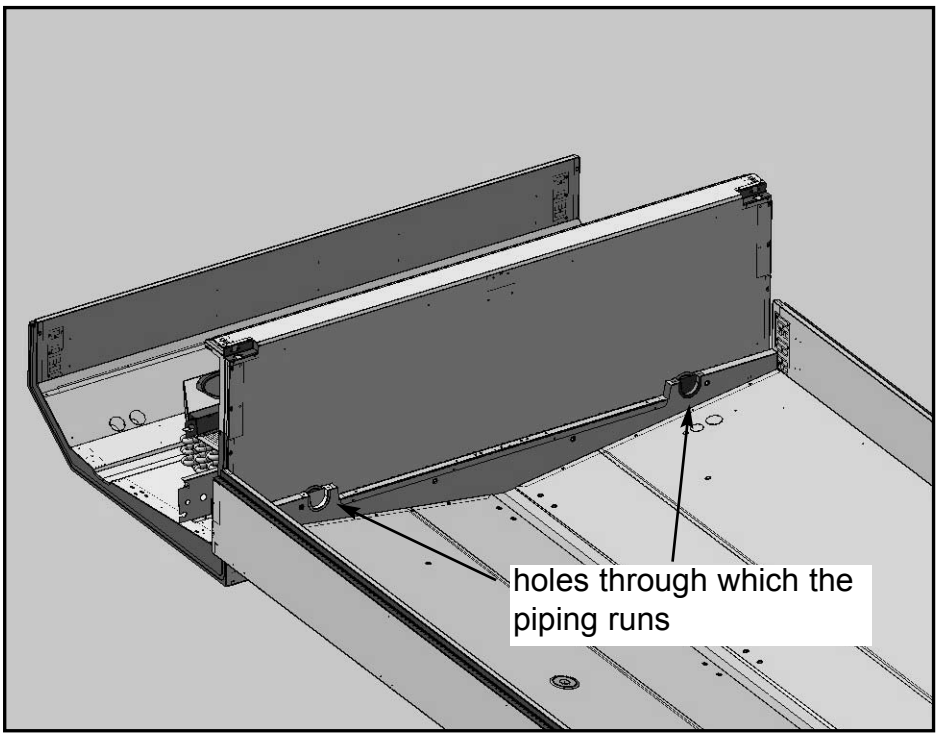


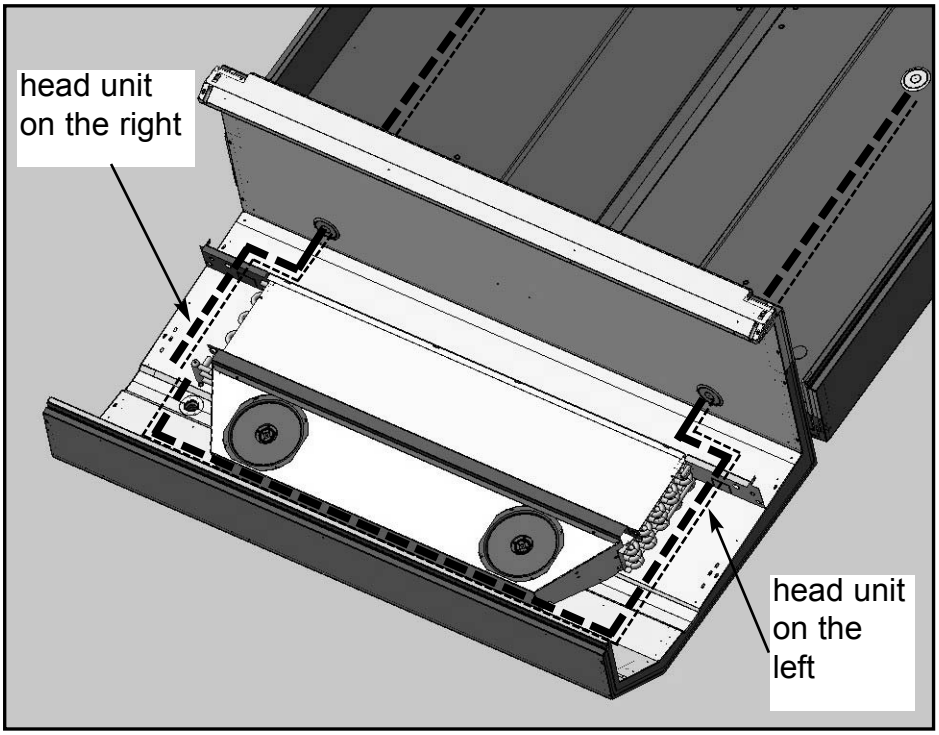
discharge piping

suction piping

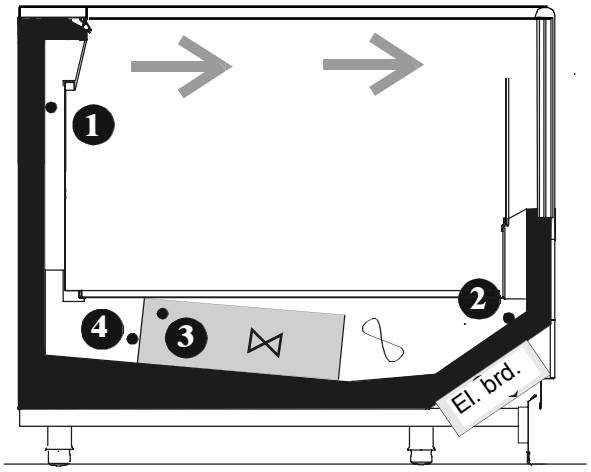
CONNECTION OF PIPING IN THE BASE DECK OF END CABINETS

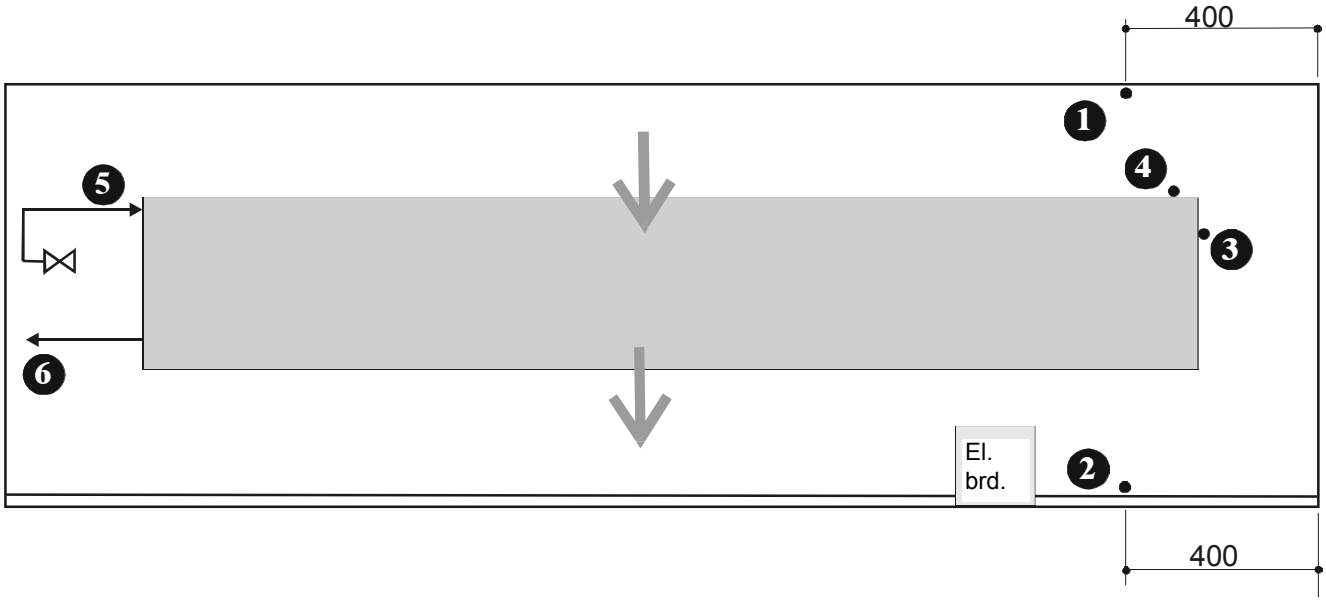
The end cabinets feature holes at the back, near the area where the piping of straight cabinets runs. To link the piping between straight cabinets and end units, follow the diagram below.





POSITION OF PROBES - CROCODILE





❶ air-discharge probe sensor (AO)

❷ air-return probe sensor (AR)

❸ defrost-end probe sensor (ED)

❹ safety thermostat

❺ evaporator in-going piping Ø10 mm

❻ evaporator out-going piping Ø20 mm

REQUIRED HEAT EXTRACTION RATE - ADJUSTMENT

EN ISO 23953-2005
CLA 3 : 25°C - 60% R.H.

BT VERSION

M	C	T_o (°C)	Φ_O (W)					
			W/m		188	250	375	TG/MT
CROCODILE	3L	-30	210		390	520	780	470

S.L.C.									
M	C	Ctrl		Def					
		Ci ° C	Co ° C	Type	N/48 h	T°ter °C	t_d min	t_{egout} min	t_{ventil} min
CROCODILE	3L3	-27	-28	**Electrique** *Electric* Elettrico	1	+5	25	0	0

t_d = defrost time / t_{egout} = drip time / t_{ventil} = fan restart delay time

HEAT EXTRACTION RATE VARIATION CONTINGENT ON ENVIRONMENTAL CLASS

CLA	Température bulbe sec *Dry bulb temperature* Temperatura bulbo secco °C	Humidité relative *Relative humidity* Umidità relativa %	Facteur de correction pour bilan thermique *Correction factor for heat extraction rate* Fattore di correzione per la potenza frigorifera Φ_O	Correction température d'évaporation *Evaporating temperature correction* Correzione della temperatura di evaporazione T_o	Dégivrage *Defrost* Sbrinamento N / 24h
2	22	65	(Φ_O CLA 3) **x 0,96**	**Reference**	2
3	25	60	**Reference**		2
4	30	55	(Φ_O CLA 3) **x 1,2**		3
6	27	70			

SETTINGS FOR SHOP CONDITIONS

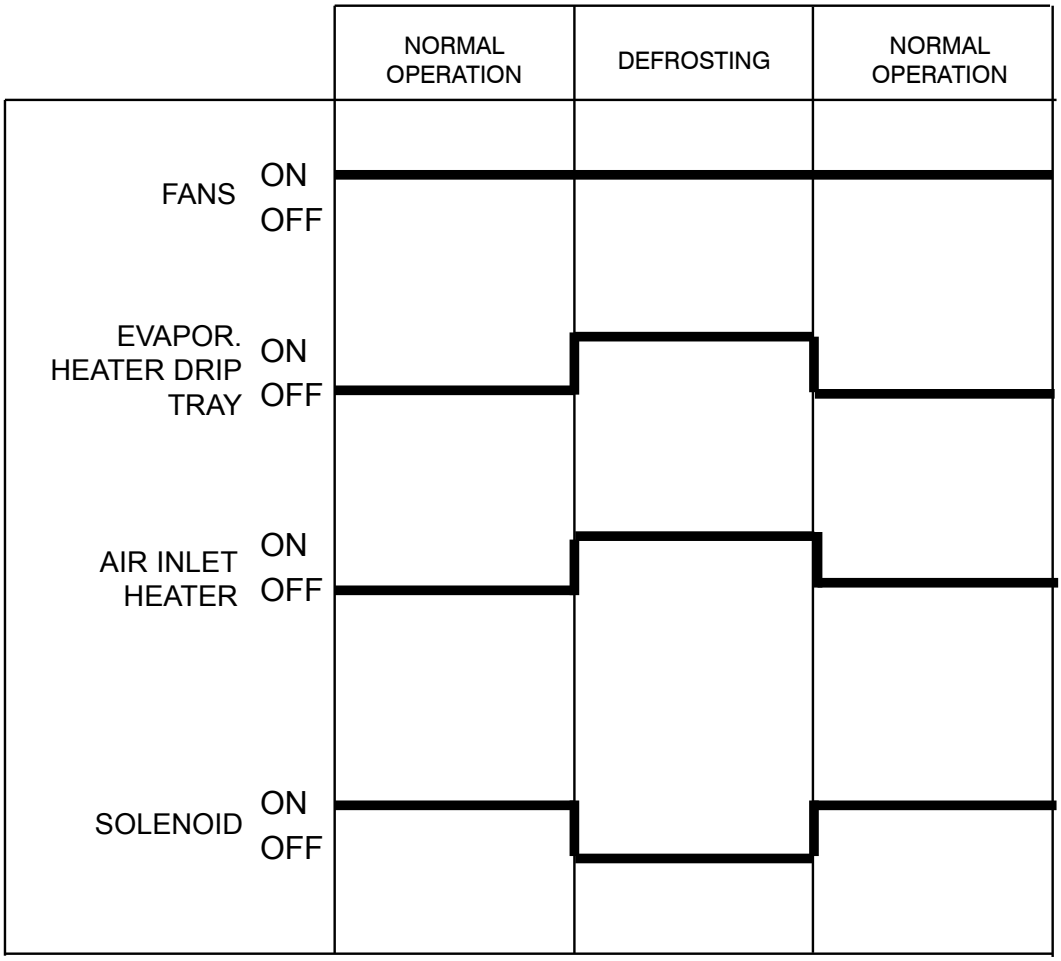
M	Temps de sécurité pour les dégivrages *Safety time for defrost* tempo massimo di sbrinamento min	Alarme hors période de dégivrage *Alarm out of defrost time* Allarmi fuori dal periodo di sbrinamento Seuil / *Threshold* / Soglia °C		Temporisation *Delay time* Ritardo min	Période d'occultation après fin de dégivrage *Minimum time after defrost termination* tempo di ritardo allarme dopo lo sbrinamento min	Température maxi de l'air à la reprise hors période de dégivrage *Maxi air temperature at the air return out of defrost time* Massima temperatura dell'aria fuori dal periodo di sbrinamento °C
BT	45	S in	-11	30	60	-18
		S out	-22			
TN		S in	+5			2
		S out	+2			

For cabinets with or without night blinds it is possible to optimise performance and reduce consumption by using two probes with the following settings:

M	S out		S in	
	Ci °C	Co °C	Ci °C	Co °C
BT	-28	-32	-18	-20
TN	-4	-8	2	0

The reduction in refrigerating energy consumption is approximately 18% when the specified night blinds are put.

PRINCIPLE OF OPERATION



ELECTRICAL INPUT

Power supply: 380-400V 3Ph+N 50 Hz

β : Ventilateur basse consommation d'énergie */ Energy saving fan* / Ventilatori a basso consumo

MODELES MODELS MODELLE	**L**	**Ventilateurs** *Fans* Ventilatori				**Cordons chauffants** *Heaters* Antiappannanti				**Éclairage** *Lighting* Illuminazione		**Dégivrage** *Defrost* Sbrinamento							
												Gaz chaud */ Hot gas* / Gas caldo			électrique */ Electric* / Elettrico				
		230 Vac mono 50 Hz												230V mono			230V mono	230V tri	400V tri+N
			Nr	W	A	W(1)	A	W(2)	A	W	A	Nr	W	A	Nr	W	A	A	A
CROCODILE	**188**	β	2	25	0.17	118	0.5	27	0.1	42	0.28	1	530	2.3	3	1970	8.6	5.5	3.1
	250	β	2	25	0.17	155	0.7	27	0.1	56	0.37	1	710	3.1	3	2650	11.5	7.5	4.2
	375	β	3	37	0.25	215	0.9	27	0.1	84	0.41	1	1090	4.7	3	4160	18.1	11.5	6.6
	TG/MT	β	2	25	0.17	131	0.6	27	0.1	42	0.28	1	620	2.7	3	2250	9.8	6.0	3.5

W(1)= Standard */ Standard* / Standard

W(2)= 1 joue panoramique */ 1 glass end wall* / 1 spalla panoramica

THERMOSTATIC VALVE FEATURES

CARACTERISTIQUES DETENDEURS THERMOSTATIQUES MARQUE DANFOSS - SANS MOP - GAMME B - AVEC ADAPTATEUR A BRASER

THERMOSTATIC EXPANSION VALVES REQUIREMENTS TRADE MARK DANFOSS - WITHOUT MOP - RANGE B - WITH BRAZING ADAPTER

CARATTERISTICHE DELLA VALVOLA TERMOSTATICA TIPO DANFOSS - SENZA MOP - GAMMA B - CON ADATTATORE A BRASARE

Règles de sélection :
- **puissance frigorifique utile et température d'évaporation en chambre d'essai à 25 °C 60% HR classe 3;**
- **pression de condensation correspondant à la température à + 35 °C ;**
- **sous-refroidissements de 10 K / 30 K.**

Selection rules :
- *useful refrigeration capacity and test room evaporation temperature of 25 °C 60% RH class 3;*
- *condensation pressure corresponding to temperature of + 35 °C ;*
- *subcoolings 10 K / 30 K.*

Regole di selezione:
- Potenza frigorifera utile e temperatura di evaporazione in camera di prova a 25 °C 60% UR classe 3;
- Pressione di condensazione corrispondente alla temperatura di +35 °C;
- Sottoraffreddamenti di 10 K / 30 K.

		R404A			
		Gamme *Range* Gamma **- B**			
		10 K		*30 K*	
M	**L**	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO
TORTUGA	**188**	**TES2**	**00**	*TES2*	*00*
	250		**01**		*00*
	375		**02**		*01*
	TG/MT		**00**		*00*
TORTUGA 1EV	**188**		**00**		*00*
	250		**01**		*00*
	375		**02**		*01*
	TG/MT		**00**		*00*
CROCODILE	**188**		**0X**		*0X*
	250		**00**		*0X*
	375		**00**		*00*
	TG/MT		**00**		*0X*

Les données frigorifiques sont établies pour des meubles ayant des détendeurs réglés pour obtenir une surchauffe de l'ordre de 5 K.

The data are given for cabinets having expansion valves adapted for having a superheat temperature of 5 K.

.I dati frigoriferi fanno riferimento ai mobili con valvola termostatica regolata per avere un surriscaldamento di 5K

CARACTERISTIQUES DETENDEURS ELECTRONIQUES MARQUE DANFOSS

ELECTRONIC EXPANSION VALVES REQUIREMENTS TRADE MARK DANFOSS

CARATTERISTICHE DELLA VALVOLA ELETTRONICA MARCA DANFOSS

Règles de sélection :

- **puissance frigorifique utile et température d'évaporation en chambre d'essai à 25 °C 60% HR classe 3 ;**
- **pression de condensation correspondant à la température de + 35 °C ;**
- **sous-refroidissement de 10 K / 30 K ;**
- **prise en compte de la surcapacité de 60% et du degré d'ouverture de la vanne compris entre 50 et 75% maxi conseillés par DANFOSS.**

Selection rules :

- *useful refrigeration capacity and test room evaporation temperature of 25 °C 60% RH class 3 ;*
- *condensation pressure corresponding to temperature of + 35 °C ;*
- *subcooling 10 K / 30 K;*
- *provision for 60% of overcapacity and valve opening between 50 and 75% max as recommanded by DANFOSS.*

Regole di selezione :

- potenza frigorifera utile alla temperatura d'evaporazione in camera di prova a 25°C 60%UR classe3;
- pressione di condensazione corrispondente alla temperatura di 35°C;
- sottoraffreddamento 10 K / 30 K;
- sovra capacità del 60% e grado di apertura compreso tra 50 e 75% massimo consigliato da DANFOSS.

		R404A		
M	**L**	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO	
			Sous-refroidissement *Subcooling* Sottoraffreddamento	
			10 K	*30 K*
TORTUGA	**188**	**AKV 10**	**2**	*1*
	250		**2**	*2*
	375		**3**	*3*
	TG/MT		**1**	*1*
TORTUGA 1EV	**188**		**2**	*1*
	250		**2**	*2*
	375		**3**	*3*
	TG/MT		**1**	*1*
CROCODILE	**188**		**1**	*1*
	250		**1**	*1*
	375		**2**	*2*
	TG/MT		**1**	*1*

Les données frigorifiques sont établies pour des meubles ayant des détendeurs réglés pour obtenir une surchauffe d l'ordre de 5 K.

The data are given for cabinets having expansion valves adapted for having a superheat temperature of 5 K.

I dati frigoriferi fanno riferimento ai mobili con valvola termostatica regolata per avere un surriscaldamento di 5K

CARACTERISTIQUES DETENDEURS THERMOSTATIQUES MARQUE DANFOSS - SANS MOP - GAMME B - AVEC ADAPTATEUR A BRASER

THERMOSTATIC EXPANSION VALVES REQUIREMENTS TRADE MARK DANFOSS - WITHOUT MOP - RANGE B - WITH BRAZING ADAPTER

CARATTERISTICHE DELLA VALVOLA TERMOSTATICA TIPO DANFOSS - SENZA MOP - GAMMA B - CON ADATTATORE A BRASARE

Règles de sélection :
- **puissance frigorifique utile et température d'évaporation en chambre d'essai à 25 °C 60% HR classe 3;**
- **pression de condensation correspondant à la température à + 35 °C ;**
- **sous-refroidissemenst de 10 K / 30 K.**

Selection rules :
- *useful refrigeration capacity and test room evaporation temperature of 25 °C 60% RH class 3;*
- *condensation pressure corresponding to temperature of + 35 °C ;*
- *subcoolings 10 K / 30 K.*

Regole di selezione:
- Potenza frigorifera utile e temperatura di evaporazione in camera di prova a 25 °C 60% UR classe 3;
- Pressione di condensazione corrispondente alla temperatura di +35 °C;
- Sottoraffreddamenti di 10 K / 30 K.

		R22			
		Gamme *Range* Gamma **- B**			
		10 K		*30 K*	
M	**L**	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO
TORTUGA	**188**	**TEX2**	**00**	*TEX2*	*0X*
	250		**00**		*00*
	375		**01**		*00*
	TG/MT		**0X**		*0X*
TORTUGA 1EV	**188**		**00**		*0X*
	250		**00**		*00*
	375		**01**		*00*
	TG/MT		**0X**		*0X*
CROCODILE	**188**		**0X**		*0X*
	250		**0X**		*0X*
	375		**00**		*00*
	TG/MT		**0X**		*0X*

Les données frigorifiques sont établies pour des meubles ayant des détendeurs réglés pour obtenir une surchauffe de l'ordre de 5 K.

The data are given for cabinets having expansion valves adapted for having a superheat temperature of 5 K.

I dati frigoriferi fanno riferimento ai mobili con valvola termostatica regolata per avere un surriscaldamento di 5K

CARACTERISTIQUES DETENDEURS ELECTRONIQUES MARQUE DANFOSS

ELECTRONIC EXPANSION VALVES REQUIREMENTS TRADE MARK DANFOSS

CARATTERISTICHE DELLA VALVOLA ELETTRONICA MARCA DANFOSS

Règles de sélection :

- **puissance frigorifique utile et température d'évaporation en chambre d'essai à 25 °C 60% HR classe 3 ;**
- **pression de condensation correspondant à la température de + 35 °C ;**
- **sous-refroidissement de 10 K / 30 K ;**
- **prise en compte de la surcapacité de 60% et du degré d'ouverture de la vanne compris entre 50 et 75% maxi conseillés par DANFOSS.**

Selection rules :

- *useful refrigeration capacity and test room evaporation temperature of 25 °C 60% RH class 3 ;*
- *condensation pressure corresponding to temperature of + 35 °C ;*
- *subcooling 10 K / 30 K;*
- *provision for 60% of overcapacity and valve opening between 50 and 75% max as recommanded by DANFOSS.*

Regole di selezione :

- potenza frigorifera utile alla temperatura d'evaporazione in camera di prova a 25°C 60%UR classe3;
- pressione di condensazione corrispondente alla temperatura di 35°C;
- sottoraffreddamento 10 K / 30 K;
- sovra capacità del 60% e grado di apertura compreso tra 50 e 75% massimo consigliato da DANFOSS.

		R22		
M	**L**	**TYPE** *MODEL* TIPO	**ORIFICE** *ORIFICE* ORIFICIO	
			Sous-refroidissement *Subcooling* Sottoraffreddamento	
			10 K	*30 K*
TORTUGA	**188**	**AKV 10**	**1**	*1*
	250		**2**	*1*
	375		**3**	*2*
	TG/MT		**1**	*1*
TORTUGA 1EV	**188**		**1**	*1*
	250		**2**	*1*
	375		**3**	*2*
	TG/MT		**1**	*1*
CROCODILE	**188**		**1**	*1*
	250		**1**	*1*
	375		**2**	*1*
	TG/MT		**1**	*1*

Les données frigorifiques sont établies pour des meubles ayant des détendeurs réglés pour obtenir une surchauffe de l'ordre de 5 K.

The data are given for cabinets having expansion valves adapted for having a superheat temperature of 5 K.

I dati frigoriferi fanno riferimento ai mobili con valvola termostatica regolata per avere un surriscaldamento di 5K

SETTING SPECIFICATIONS - Display L.O.Q.E EKC201C/S (Pt1000)
Referred to climatic class 3 according to EN ISO 23953-2005

Modifica =**01**Aggiunto versione con scorrevoli

DESCRIZIONE PARAMETRI	DISPLAY	UNITA'	Default	CROCODILE EKC201C S L.O.Q.E **Con Scorrevoli**
TERMOSTATO				**BT**
Cout set point (Sout)	**Out**	°C	3.0	**-30°**
Unità di temperatura	r05		°C	°C
Sout differenziale	**r07**	°C	2.0	**1°**
Sin differenziale	r08	°C	2.0	2
Sout calibrazione	r09	°C	0.0	0
Sin calibrazione	r10	°C	0.0	0
Set point notturno (Sin=OUT+r20)	**r20**	K	6.0	**0**
ALLARMI				
Ritardo allarmi	**A03**	MIN	10	30
Ritardo allarme porta	A04	MIN	60	60
Sout alta temperatura	**A05**	°C	10	**19**
Sout bassa temperatura	**A06**	°C	-10	**0**
Sin alta temperatura	**A07**	°C	10	**0**
Sin bassa temperatura	**A08**	°C	-10	**0**
Sin ultriore margine temperatura notte	A09	°C	10.0	10
COMPRESSORI				
Minimo funzionamento	c01	MIN	0	0
Ritardo accensione	c02	MIN	0	0
Ciclo funzionamento avaria sonde	c03	%	50	50%
Compressore fermo a porta aperta (Yes / No)	c04		No	NO
SBRINAMENTO				
Tipo sbrinamento(no=el;si=gas)	d01		No	NO
Temperatura fine sbrinamento	**d02**	°C	10°	**5°**
Intervallo sbrinamenti	**d03**	ore	8	**48**
Durata max sbrinamento	**d04**	minuti	45	**45**
Tempo offset sbrinamento	d05	minuti	0	0
Tempo gocciolamento	**d06**	minuti	0	**2**
Avvio vetole fine sbrinamento	**d07**	minuti	0	**0**
Temperatura avvio ventole (>25=OFF)	**d08**	°C	25	**OFF**
Funzionamento ventole durante sbrinamento(0=no;1=si)	d09		No	**YES**
Sonda defrost (out=Sout;Def=Sdef)	d10		Out	**Def**
Ritardo allarmi fine sbrinamento	d11	minuti	90	**60**
Durata scritta DEF su display a fine sbrinamento	**d12**	minuti	1	**30**
Avvio sbrinamento all'accensione	d13		No	NO
VENTOLE				
Ventole ferme con compressore fermo	F01		No	NO
Ritardo fermata ventole rispetto al compressore	F02	minuti	0	0
Ventole ferme con porta aperta (Yes/No)	F03		YES	YES
ALTRE FUNZIONI				
Ritardo dei segnali d'uscita all'accensione del termostato	o01	sec	5	5
Segnale all'ingesso DI *3)	**o02**		OFF	**5**
Indirizzo (0-60)	o03		0	0
LON service pin(0=off,1=on)	o04		OFF	OFF
Password	o05		OFF	OFF
Tipo sonda(0=Pt;1=Ptc)	**o06**		Pt	**0**
Uscita digitale *4)	**o13**			**2**
Sonda Attiva (0=Aut;1=out)	**o14**		Out	OUT
Risoluzione Display (0=0,1°;1=0,5°)°C	o15		No	NO
Tempo max attesa slave fine sbrinamento	o16	minuti	20	**25**
Sonda visualizzata *5)	**o17**		In	**OUT**
Controllo manuale uscite *6)	o18		OFF	OFF
Configurazione Relay (Allarme / Luce)	o36		1	1

CON SERIALE

L.O.Q.E=LATO OPPOSTO QUADRO ELETTRICO

*3)off=non usato ;1=bus;2=defrost;3=notte;4=main switch;5=Slave defr.IN;6=porta

*4)off=non usato;1=master defr.out;2=slave defr. Out;

*5)aut=automatico giorno-notte;Out=sonda out;In=sonda In

*6)OFF=Uscite non forzate;1=Comp.ON;2=Def ON;3=Fan ON;4=Alarm ON;5=Dig.ON

SETTING SPECIFICATION - Controller EKC414_A (With RTC + PT1000)
Referred to climatic class 3 according to EN ISO 23953-2005

DESCRIZIONE PARAMETRI	DISPLAY	UNITA'	CROCODILE BT	CROCODILE BT
Sout set point		**°C**	**-30°**	**-30°**
TERMOSTATO				
Differenziale	r01	K	**1°**	**1°**
Massimo valore impostabile set point	r02	°C	-20°	-20°
Minimo valore impostabile set point	r03	°C	-40°	-40°
Unità di temperatura 0=°C , 1=°F	r05	\	°C	°C
Calibrazione sonda S4(Sout)	r09	K	0	0
Calibrazione sonda S3(Sin)	r10	K	0	0
Switch controllore	r12	\	ON	ON
Offset notte	r13	K	0	0
Modo funzionamento 1=ON/OFF, 2=Modulante	r14	\	1	1
Sonda termostatazione 100%=S4 (Sout) , 0%=S3(Sin)	r15	%	100	100
Intervallo melt	r16	h	0	0
Intervallo melt	r17	min	0	0
ALLARMI				
Ritardo allarmi di temperatura	A03	min	30	30
Ritardo allarme porta aperta	A04	min	60	60
Ritardo allarme pulldown	A12	min	120	120
Limite alto temperatura	A13	°C	-22°	-22°
Limite basso temperatura	A14	°C	-38°	-38°
COMPRESSORE				
Funzionamento minimo	c01	min	0	0
Fermata minima	c02	min	0	0
DEFROST				
Temperatura fine sbrinamento	d02	°C	**5°**	**5°**
Intervallo sbrinamenti	d03	h	**48**	**48**
Durata massima sbrinamento	d04	min	45	45
Ritardo inizio sbrinamento	d05	min	0	0
Tempo gocciolamento	d06	min	**2**	**2**
Tempo ritardo avvio ventole a fine sbrinamento	d07	min	**0**	**0**
Temperatura avvio ventole	d08	°C	-15	-15
Ventole accese in sbrinamento	d09	\	**YES**	**YES**
Sonda fine sbrinamento 0=S4(Sout) , 1=S5(Sdef) , 2=Fine sbrinamento a tempo	d10	\	1	1
Sbrinamento all'accensione del controllore	d13	\	NO	NO
INIEZIONE				
Valore massimo surriscaldamento	n09	K	5	5
Valore minimo surriscaldamento	n10	K	3	3
MOP temperatura	n11	°C	OFF	OFF
Periodo pulsazione AKV	n13	sec	6	6
Stabilità	n18	\	\	\
Chiusura AKV forzata	n36	\	OFF	OFF
VENTOLE				
Ventole ferme con compressore fermo	F01	\	NO	NO
Ritardo fermata ventole rispetto al compressore	F02	min	0	0
Temperatura fermata ventole in funzionamento con S5(Sdef) -50 , 50/Off	F04	\	OFF	OFF
ALTRE FUNZIONI				
Ritardo dei segnali d'uscita all'accensione del controllore	o01	sec	5	5
Segnale all'ingesso DI (off=non usato;1=porta;2=sbrin;3=notte;4=main switch;5=slave in)	o02	\	5	5
Indirizzo (0-60)	o03		\	\
LON service pin(0=off,1=on)	o04		OFF	OFF
Password	o05		OFF	OFF
Tipo sonda(0=Pt;1=PTC)	o06		**0**	**0**
Lingua (0=English:1=German;2=French;3=Danish;4=Spanish;5=Italian)	o11		5	5
Frequenza 50-60 Hz	o12		50	50
Uscita digitale DO (off=non usato , 1=Def.Master , 2=Def.Slave)	o13	**Master**	**1**	**1**
	o13	**Slave**	**2**	**2**
Massima Attesa in fermata dopo lo sbrinamento	o16	minuti	**25**	**25**
Sonda visualizzata display S3(Sin)=0% , S4(Sout)=100%	o17		0%	0%
Controllo manuale relè (**1** = RELE COMPRESSORE ON **/ 2** = RELE SBRINAMENTO ON / **3** = RELE VENTOLE ON / **4** = ALLARME OFF / **5** = USCITA DO ON / 6 = AKV ON / 7=LUCI ON)	o18		OFF	OFF
Range trasduttore di pressione - min.valore (-1 bar…. 5bar)	o20	bar	*	*
Range trasduttore di pressione - max.valore (6 bar….36 bar)	o21	bar	*	*
ON Input control (**1** = AVK OFF - FAN ON - ALARM **/ 2** = AKV OFF - FAN OFF - ALARM / **3** = AKV OFF - FAN ON - NO ALARM **/ 4** = AKV OFF - FAN OFF - NO ALARM.	o29		\	\
Tipo refrigerante (1=R12;2=R22;3=R134a;4=R502;5=R717;6=R13;7=R13b1;8=R23;9=R500;10=R503; 11=R114;12=R142b;13=n.n;14=R32;15=R227;16=R401A;17=R507;18=R402A;19=R404A;20=R407C;21=R407A; 22=R407B;23=R410A;24=R170;25=R290;26=R600;27=R600a;R28=R744;29=R1270;30=R417A **)**	o30		*	*

= VALUES TO BE SET ON SITE DEPENDING ON THE TRANSDUCER AND REFRIGERANT TYPE

SETTING SPECIFICATION - Controller EKC201C S/C (With RTC + Pt1000)
Referred to climatic class 3 according to EN ISO 23953-2005

DESCRIZIONE PARAMETRI	DISPLAY	UNITA'	Default	CROCODILE
TERMOSTATO				**BT**
Cout set point (Sout)	**Out**	°C	3.0	**-30°**
Unità di temperatura	r05		°C	°C
Sout differenziale	**r07**	°C	2.0	**1°**
Sin differenziale	r08	°C	2.0	2
Sout calibrazione	r09	°C	0.0	0
Sin calibrazione	r10	°C	0.0	0
Set point notturno (Sin=OUT+r20)	**r20**	K	6.0	**0**
ALLARMI				
Ritardo allarmi	**A03**	MIN	10	30
Ritardo allarme porta	A04	MIN	60	60
Sout alta temperatura	**A05**	°C	10	**8**
Sout bassa temperatura	**A06**	°C	-10	**-6**
Sin alta temperatura	**A07**	°C	10	**19**
Sin bassa temperatura	**A08**	°C	-10	**0**
Sin ultriore margine temperatura notte	A09	°C	10.0	10
COMPRESSORI				
Minimo funzionamento	c01	MIN	0	0
Ritardo accensione	c02	MIN	0	0
Ciclo funzionamento avaria sonde	c03	%	50	50%
Compressore fermo a porta aperta (Yes / No)	c04		No	NO
SBRINAMENTO				
Tipo sbrinamento(no=el;si=gas)	d01		No	NO
Temperatura fine sbrinamento	**d02**	°C	10°	**5°**
Intervallo sbrinamenti	**d03**	ore	8	**48**
Durata max sbrinamento	d04	minuti	45	45
Tempo offset sbrinamento	d05	minuti	0	0
Tempo gocciolamento	d06	minuti	0	**2**
Avvio vetole fine sbrinamento	**d07**	minuti	0	**0**
Temperatura avvio ventole (>25=OFF)	**d08**	°C	25	**OFF**
Funzionamento ventole durante sbrinamento(0=no;1=si)	d09		No	**YES**
Sonda defrost (out=Sout;Def=Sdef)	d10		Out	def
Ritardo allarmi fine sbrinamento	**d11**	minuti	90	**60**
Durata scritta DEF su display a fine sbrinamento	**d12**	minuti	1	**30**
Avvio sbrinamento all'accensione	d13		No	NO
PROGRAMMAZIONE SBRINAMENTI CON RTC				
Ora inizio sbrinamento 1	t01	ore	ore	OFF
Minuti inizio sbrinamento 1	t12	minuti	minuti	0
Ora inizio sbrinamento 2	t02	ore	ore	OFF
Minuti inizio sbrinamento 2	t12	minuti	minuti	0
Ora inizio sbrinamento 3	t03	ore	ore	OFF
Minuti inizio sbrinamento 3	t13	minuti	minuti	0
Ora inizio sbrinamento 4	t04	ore	ore	OFF
Minuti inizio sbrinamento 4	t14	minuti	minuti	0
Ora inizio sbrinamento 5	t05	ore	ore	OFF
Minuti inizio sbrinamento 5	t15	minuti	minuti	0
Ora inizio sbrinamento 6	t06	ore	ore	OFF
Minuti inizio sbrinamento 6	t16	minuti	minuti	0
Regolazione ora	t07	ore	ore	0
Regolazione minuti	t08	minuti	minuti	0
VENTOLE				
Ventole ferme con compressore fermo	F01		No	NO
Ritardo fermata ventole rispetto al compressore	F02	minuti	0	0
Ventole ferme con porta aperta (Yes/No)	F03		YES	YES
ALTRE FUNZIONI				
Ritardo dei segnali d'uscita all'accensione del termostato	o01	sec	5	5
Segnale all'ingesso DI *3)	**o02**		OFF	**5**
Indirizzo (0-60)	o03		0	0
LON service pin(0=off,1=on)	o04		OFF	OFF
Password	o05		OFF	OFF
Tipo sonda(0=Pt;1=Ptc)	**o06**		Pt	**0**
Uscita digitale *4)	o13	**Master (S/C)**		**1**
	o13	**Slave(S)**		**2**
Sonda Attiva (0=Aut;1=out)	**o14**		Out	OUT
Risoluzione Display (0=0,1°;1=0,5°)°C	o15		No	NO
Tempo max attesa slave fine sbrinamento	o16	minuti	20	25
Sonda visualizzata *5)	o17		In	**IN**
Controllo manuale uscite *6)	o18		OFF	OFF
Configurazione Relay (Allarme / Luce)	o36		1	1

CON SERIALE

*3)off=non usato ;1=bus;2=defrost;3=notte;4=main switch;5=Slave defr.IN;6=porta
*4)off=non usato;1=master defr.out;2=slave defr. Out;
*5)aut=automatico giorno-notte;Out=sonda out;In=sonda In
*6)OFF=Uscite non forzate;1=Comp.ON;2=Def ON;3=Fan ON;4=Alarm ON;5=Dig.ON

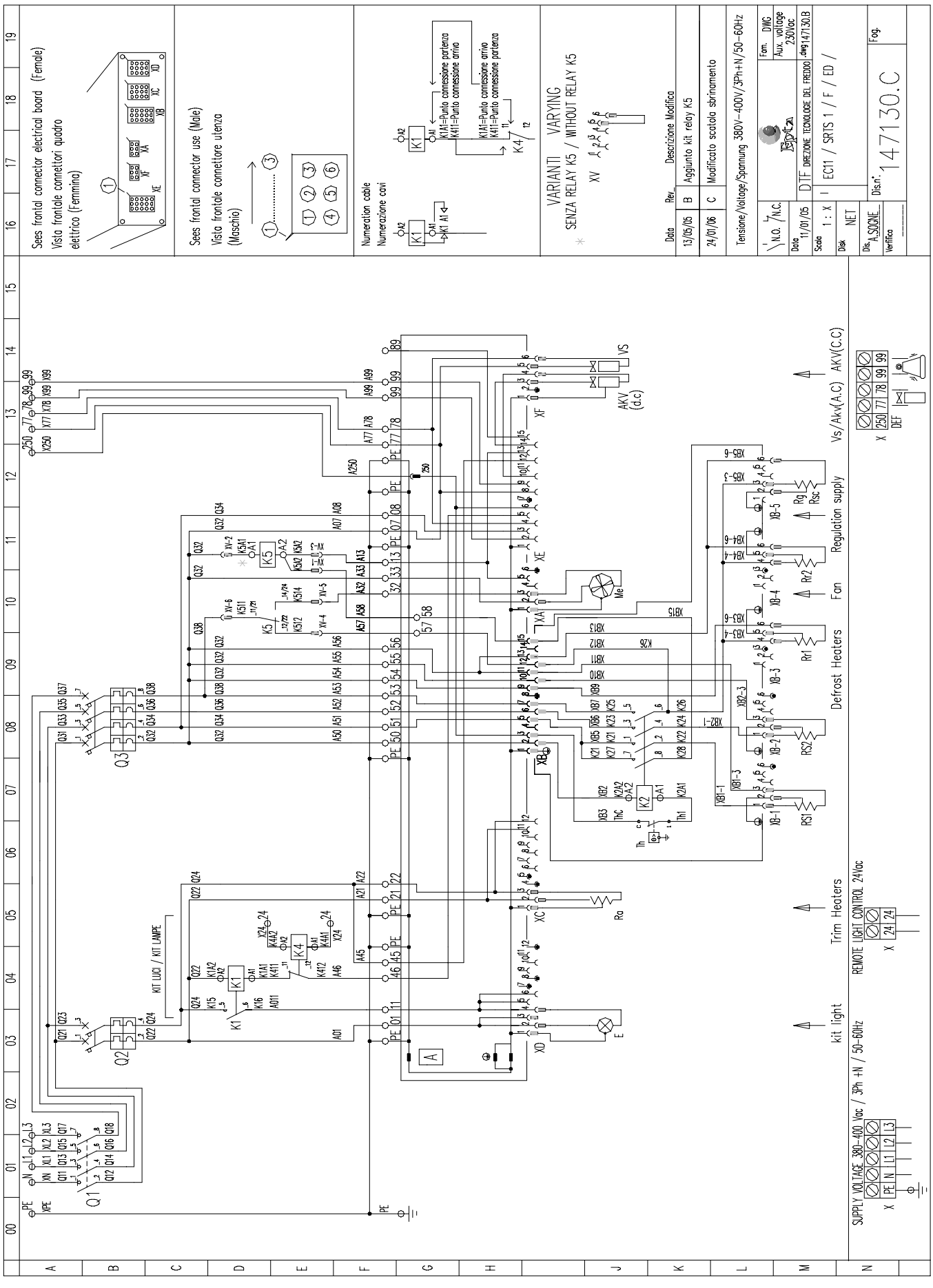
WIRING DIAGRAMS

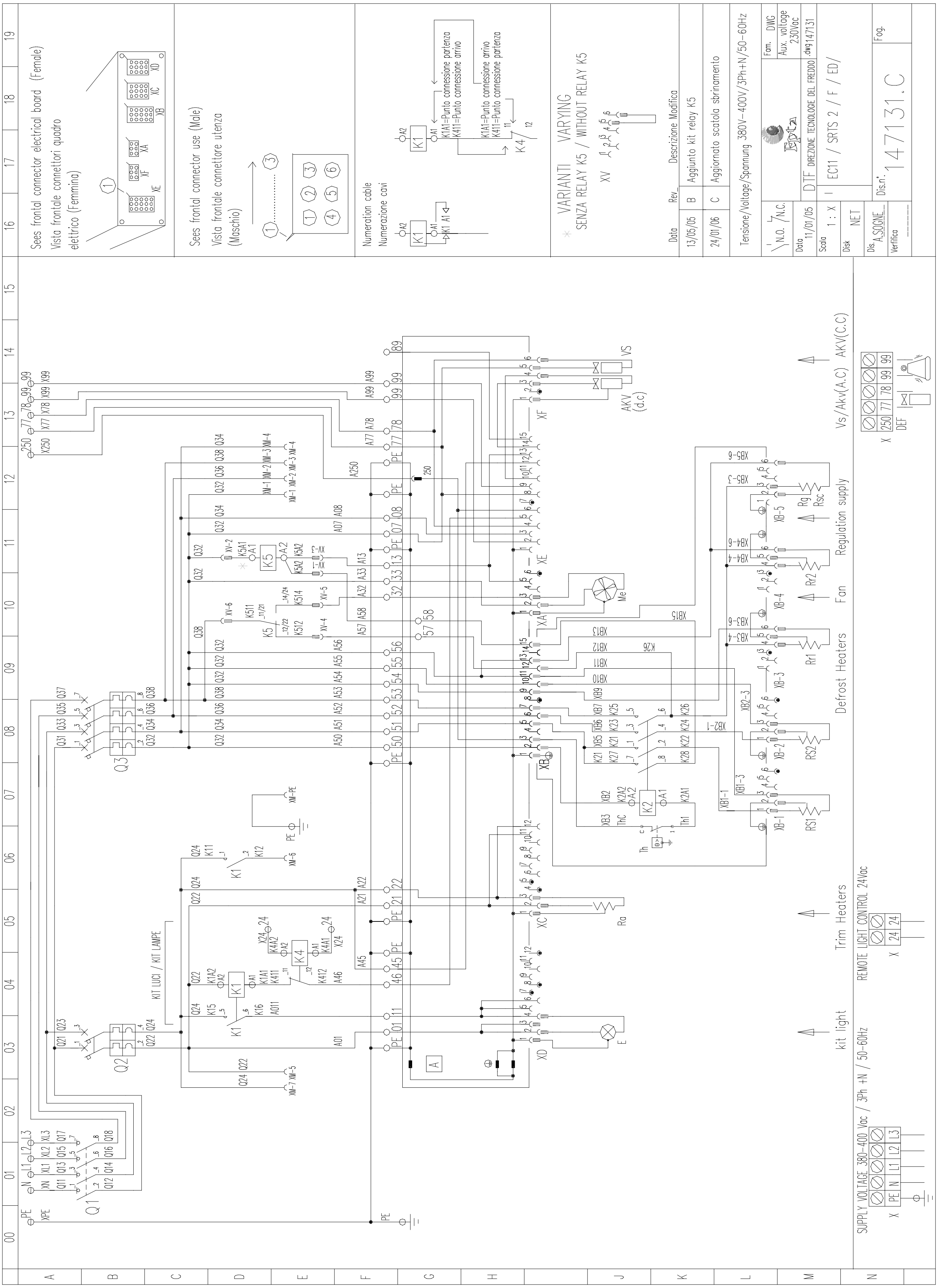
COMPONENTI

	LEGENDA SCHEMA ELETTRICO
QRd	Microinterruttore dissipazione Acqua
QRac	Pulsante anticondensa
DRac	Timer Anticondensa
XM-XN	Connettore Master-Slave
Q2…	Interruttore automatico
Q1…	Interruttore generale
E	Lampada
L	Filtro antidisturbo
Z	Compressore
Mt	Tenda motorizzata
Ra1.....9	Resistenze antiappannanti
Rp	Resistenze pannelli
Rpt	Resistenze pannelli tetto
Rc	Resistenze cornice telaio
Rv	Resistenze vetri e porte
Rm	Resistenze montanti telaio
Rs1...4	Resistenze sbrinamento
Rg	Resistenze sbrinamento gocciolatoio
Rsc	Resistenze sbrinamento scarico
Rr	Resistenze ripresa
Rt	Timer ritardo ventola
S4	Sonda mandata aria
S5	Sonda fine sbrinamento
S3	Sonda ripresa aria
T	Trasformatore
Ts	Termostato fine sbrinamento
Tf	Termostato funzionamento
Th	Protettore termico
Tv	Termostato ritardo ventole
DS	Timer sbrinamento
QMt	Deviatore azionamento tenda
Me	Ventola/e evaporatore
Mf	Ventilatori frontali
Ml	Ventilatori laterali
Mv	Ventilatore tetto
Vs	Valvola solenoide
Mc1	Ventola/e condensatore
QE	Interruttore luci
K	Contattore tenda motorizzata
K1	Contattore luce
K2-3A-3B	Contattore di sbrinamento
K3	Relè per inizio sbrinamento
K4	Relè comando luci a distanza
K5-6	Relè ritardo ventole evaporatore
K7	Contattore resistenze ripresa

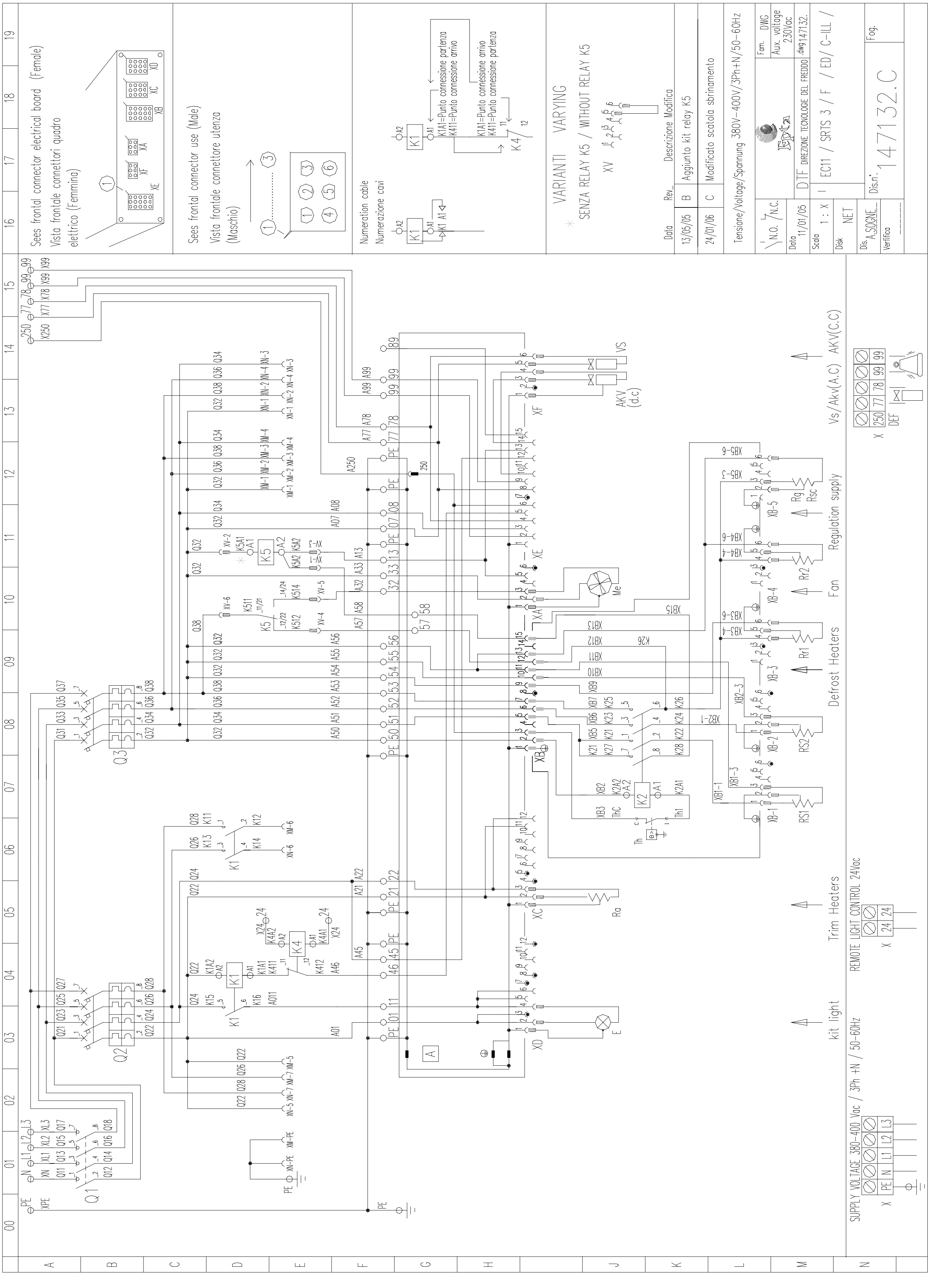
MORSETTIERA

1-2	Fine sbrinamento
3-4	Segnale termostatazione
4 / 77-78	Segnale termostatazione
5-6	Alimentazione luci
7-8	Alimentazione resistenze antiappannanti
7a-8a	Alimentazione ventole+controllore
9-10R.S.T	Alimentazione resistenze sbrinamento
14	Segnale per funzionamento freddo
15	Segnale per inizio sbrinamento
16/250	Segnale sbrinamento attivo
18-19	Segnale per attivazione ritardo ventole
30-31	Alimentazione per valvola solenoide
99-99	Contatto pulito allarme
J-C	Segnale termostatazione
N-L	Alimentazione banco 230V-50Hz
N-R-S-T	Alimentazione banco 380-400V /3P+N/50Hz
0-24V	Segnale per comando luci remoto
a-a	Valvola solenoide

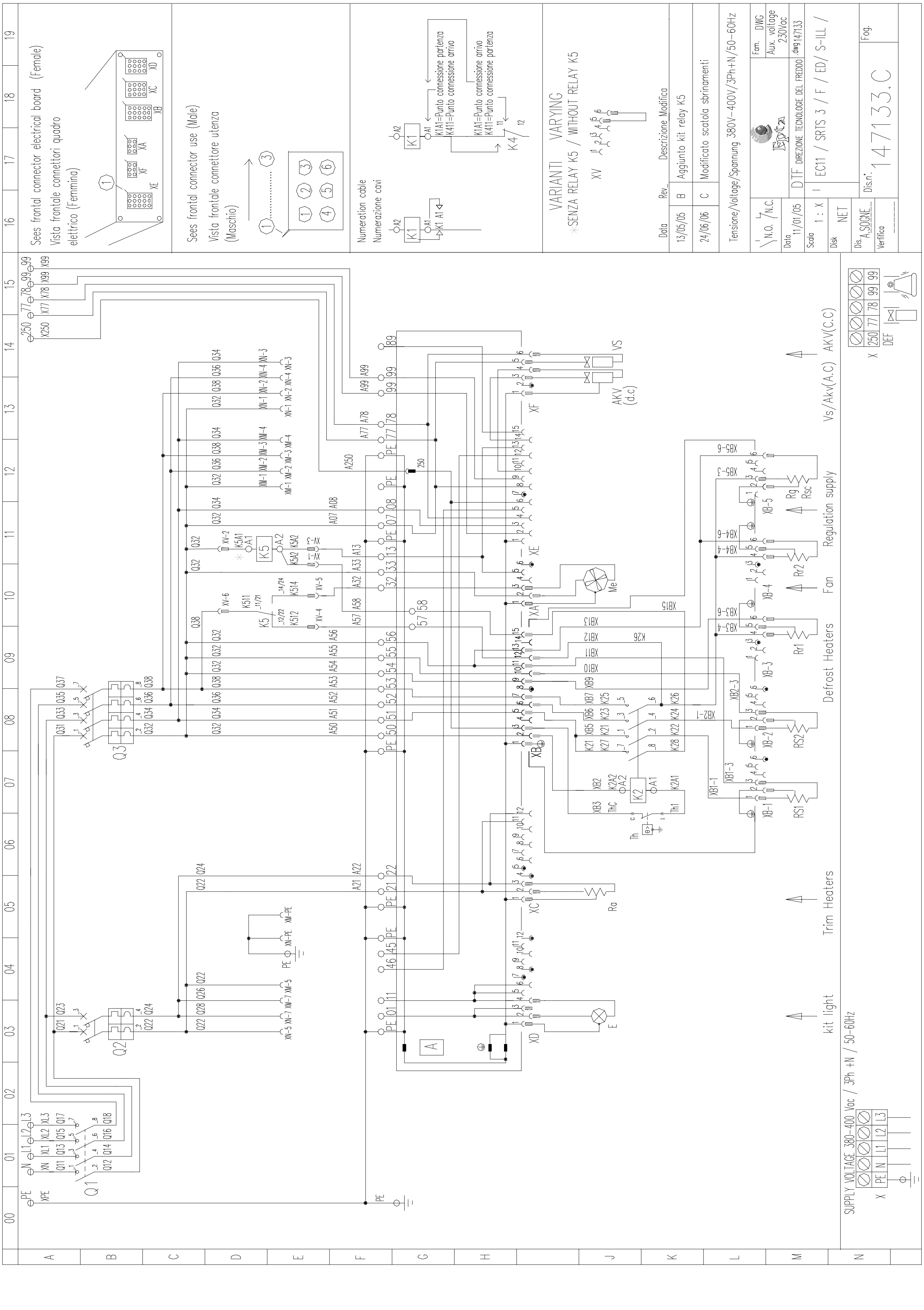

Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K11=Punto connessione partenza
K411=Punto connessione arrivo
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Data 13/05/05 Rev. B Descrizione Modifica: Aggiunto kit relay K5
Data 24/01/06 Rev. C Modificato scatola sbrinamento
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
Aux. voltage 230Vac
DTF DIREZIONE TECNOLOGIE DEL FREDDO
Scale 1 : X
Disk NET
Dis. A.SIGNE
Verifica
Dis.n°: 147130.C
Fog.
SUPPLY VOLTAGE 380-400 Vac / 3Ph +N / 50-60Hz
REMOTE LIGHT CONTROL 24Vac
kit light
Trim Heaters
Defrost Heaters
Fan
Regulation supply
Vs/Akv(A.C) AKV(C.C)
AKV (d.c)
VS
Me
Ra
Rr1
Rr2
Rg
Rsc
RS1
RS2
KIT LUCI / KIT LAMPE



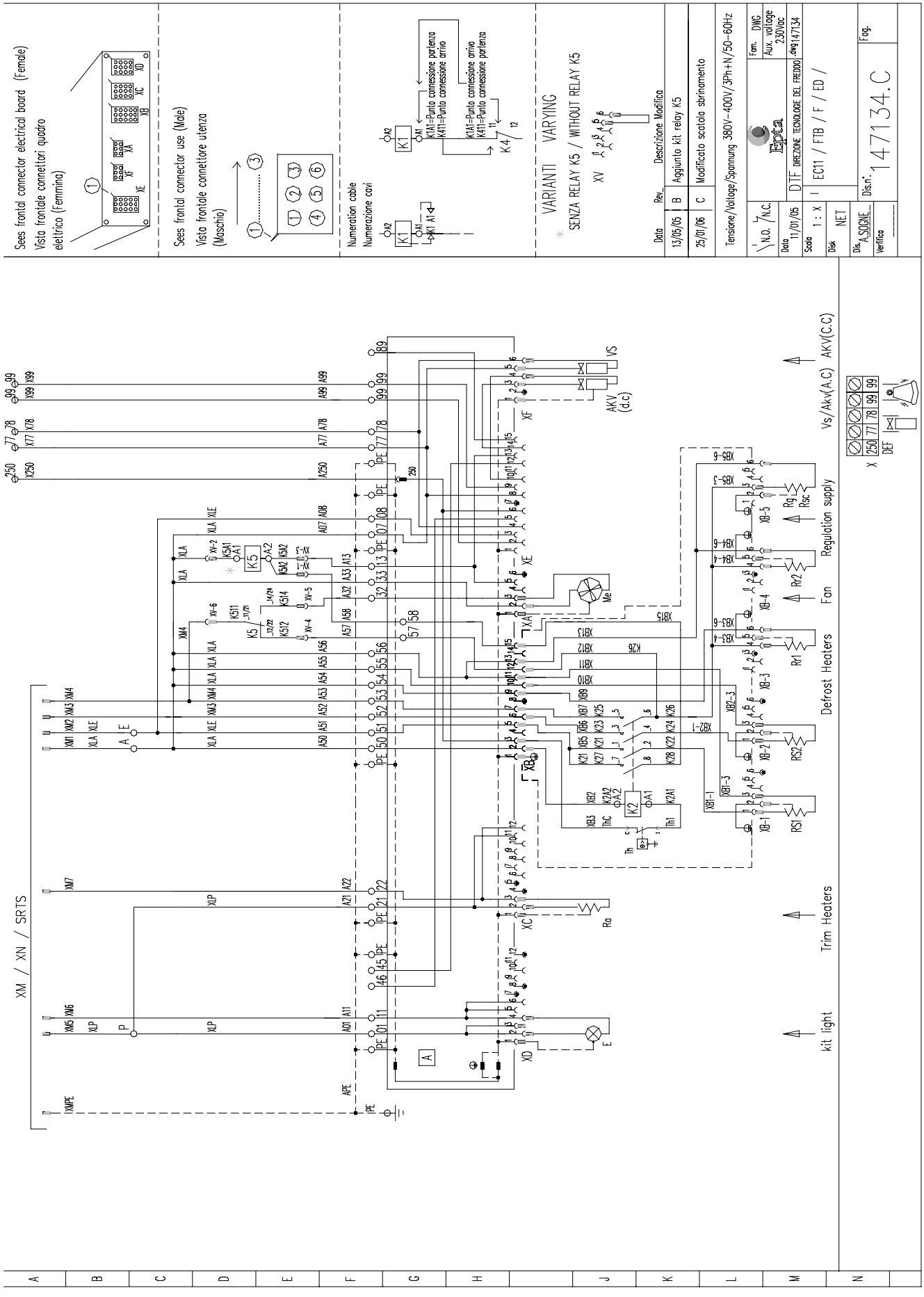
Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punto connessione partenza
K411=Punto connessione arrivo
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Data Rev. Descrizione Modifica
13/05/05 B Aggiunto kit relay K5
24/01/06 C Aggiornato scatola sbrinamento
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
Aux. voltage 230Vac
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / SRTS 2 / F / ED/
147131.C
Vs/Akv(A.C) AKV(C.C)
Regulation supply
Fan
Defrost Heaters
Trim Heaters
kit light
KIT LUCI / KIT LAMPE
REMOTE LIGHT CONTROL 24Vac
SUPPLY VOLTAGE 380-400 Vac / 3Ph +N / 50-60Hz

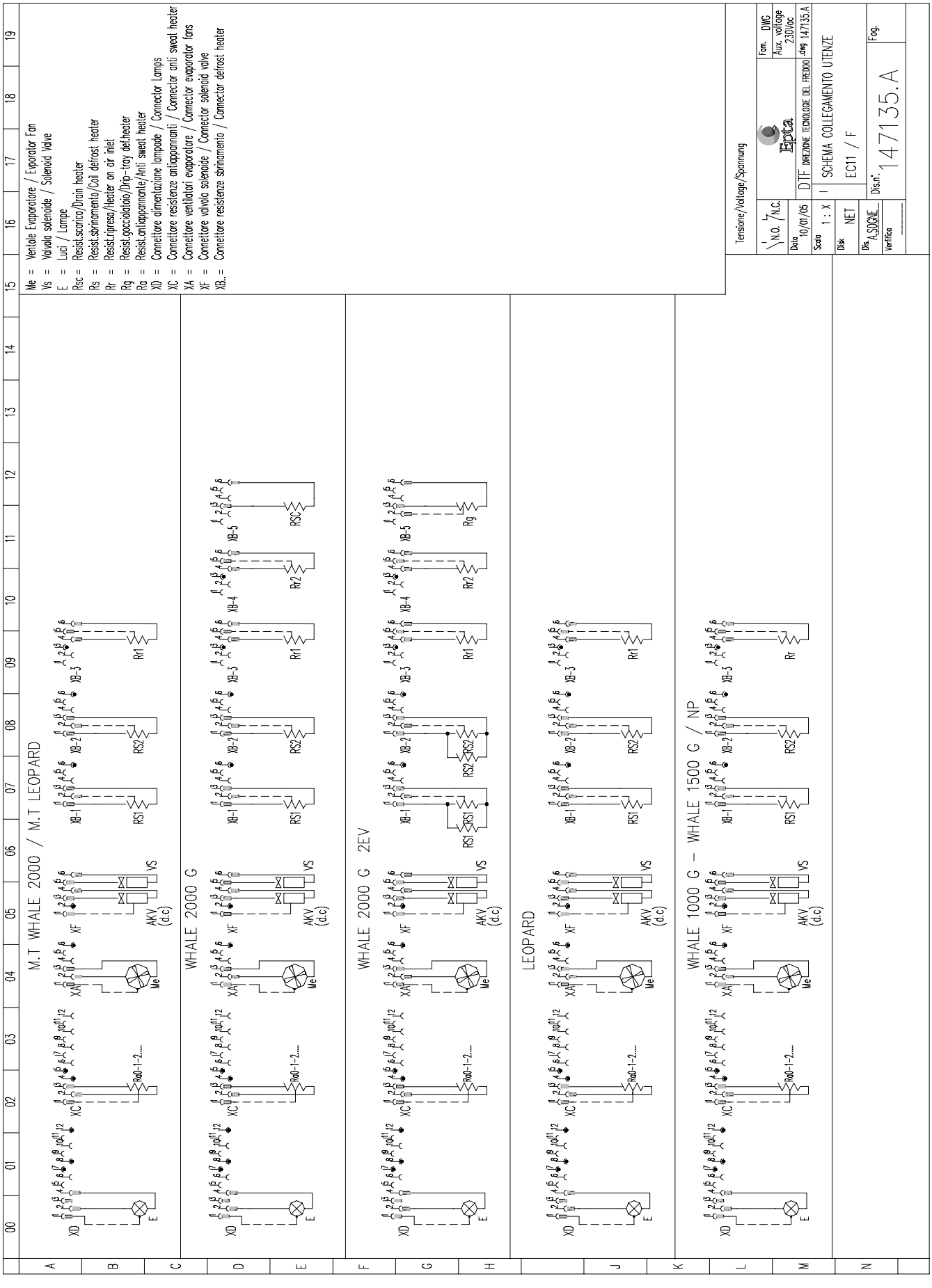


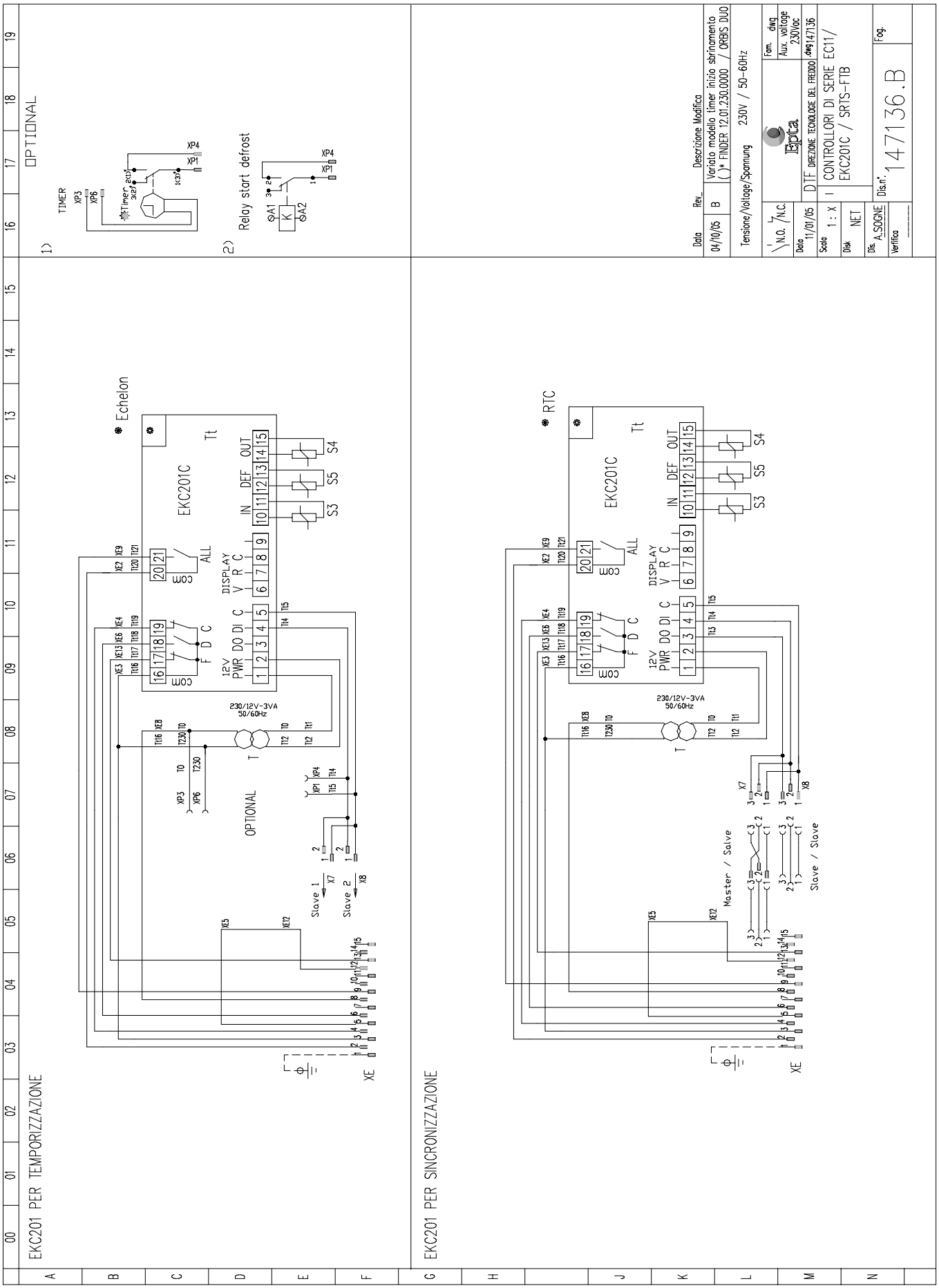
Sees frontal connector electrical board (Female)
Visto frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punto connessione partenza
K411=Punto connessione arrivo
K1A1=Punto connessione arrivo
K411=Punto connessione partenza
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Data
Rev
Descrizione Modifica
13/05/05
B
Aggiunto kit relay K5
24/01/06
C
Modificato scatola sbrinamento
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
N.O. / N.C.
Data 11/01/05
Scala 1 : X
Disk NET
Dis. A.SOGNE
Verifica
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / SRTS 3 / F / ED/ C-ILL /
Fam. DWG
Aux. voltage 230Vac
dwg147132.
Dis.n°. 147132.C
Fog.
Vs/Akv(A.C) AKV(C.C)
Regulation supply
Fan
Defrost Heaters
Trim Heaters
kit light
REMOTE LIGHT CONTROL 24Vac
SUPPLY VOLTAGE 380-400 Vac / 3Ph +N / 50-60Hz

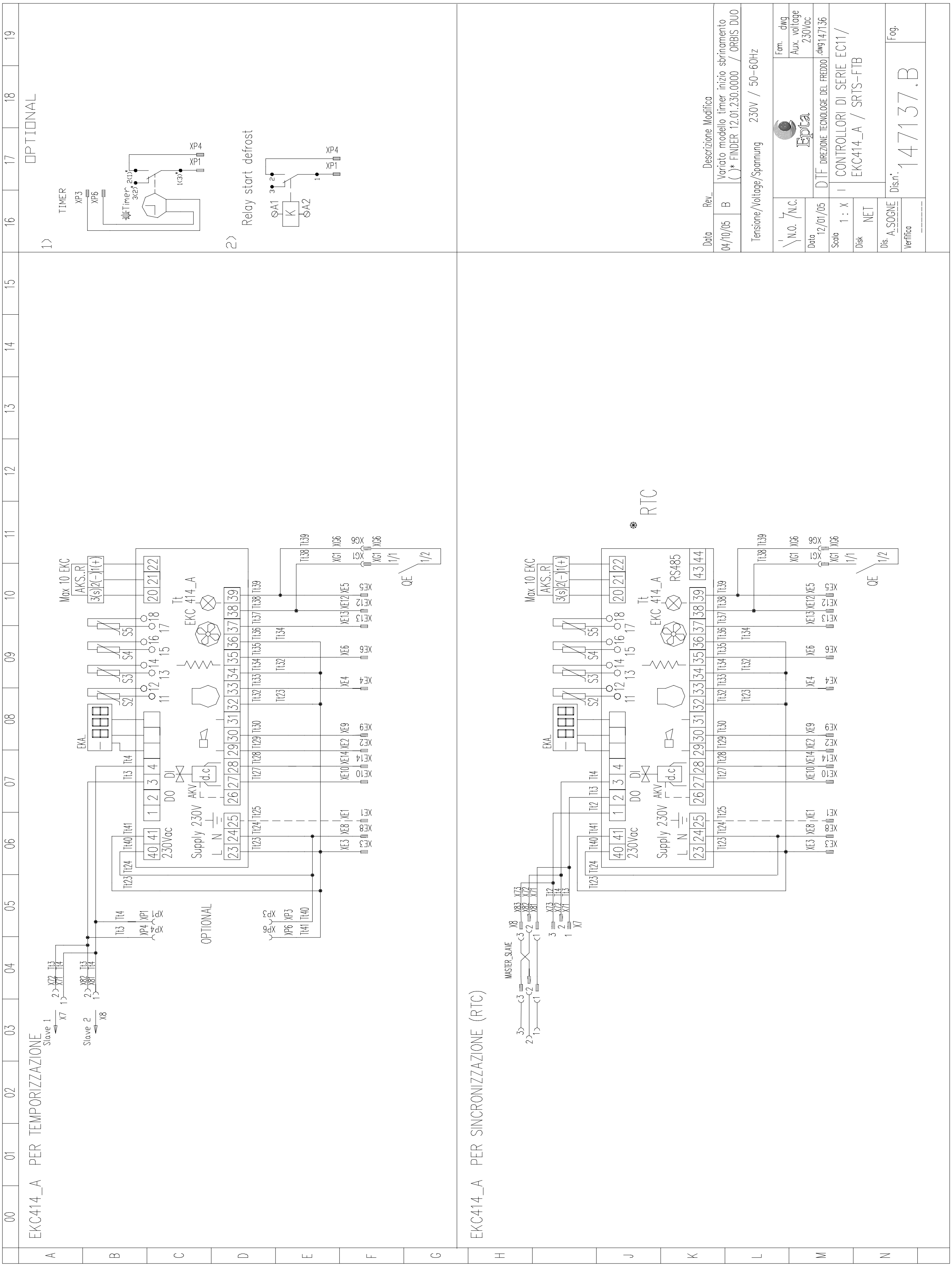


Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punto connessione partenza
K411=Punto connessione arrivo
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Data Rev. Descrizione Modifica
13/05/05 B Aggiunto kit relay K5
24/06/06 C Modificato scatola sbrinamenti
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / SRTS 3 / F / ED/ S-ILL /
147133.C
Vs/Akv(A.C) AKV(C.C)
Regulation supply
Fan
Defrost Heaters
Trim Heaters
kit light
SUPPLY VOLTAGE 380-400 Vac / 3Ph +N / 50-60Hz

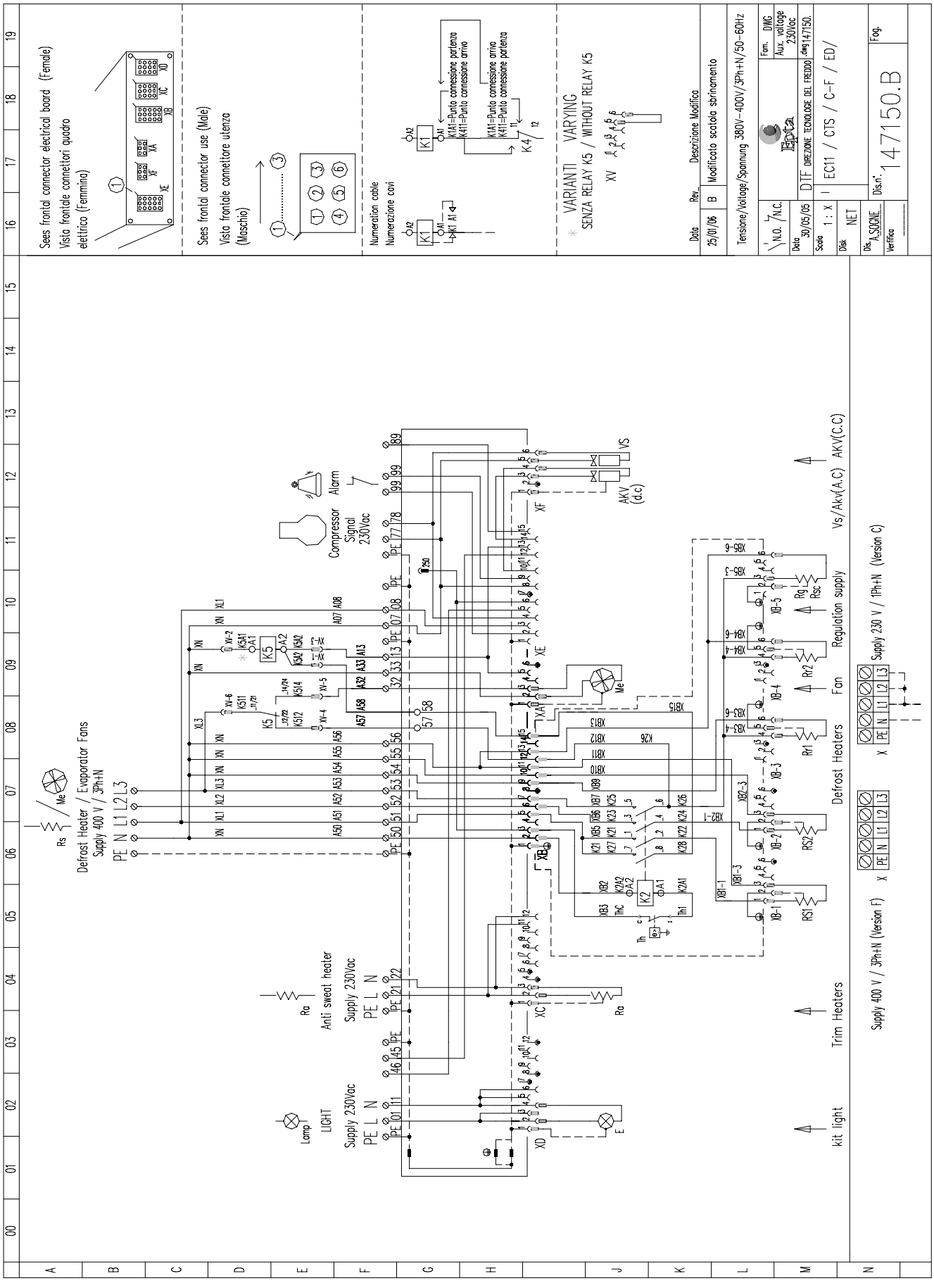

Seen frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Seen frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Data Rev. Descrizione Modifica
13/05/05 B Aggiunto kit relay K5
25/01/06 C Modificato scatola sbrinamento
Tensione/Voltage/Spannung 380V~400V/3Ph+N/50~60Hz
Fam. DWC
Aux. voltage 230Vac
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / FTB / F / ED /
Dis.n°: 147134.C
Fog.
XM / XN / SRTS
kit light
Trim Heaters
Defrost Heaters
Fan
Regulation supply
Vs/Akv(A.C)
AKV(c.c)
VS
AKV (d.c)

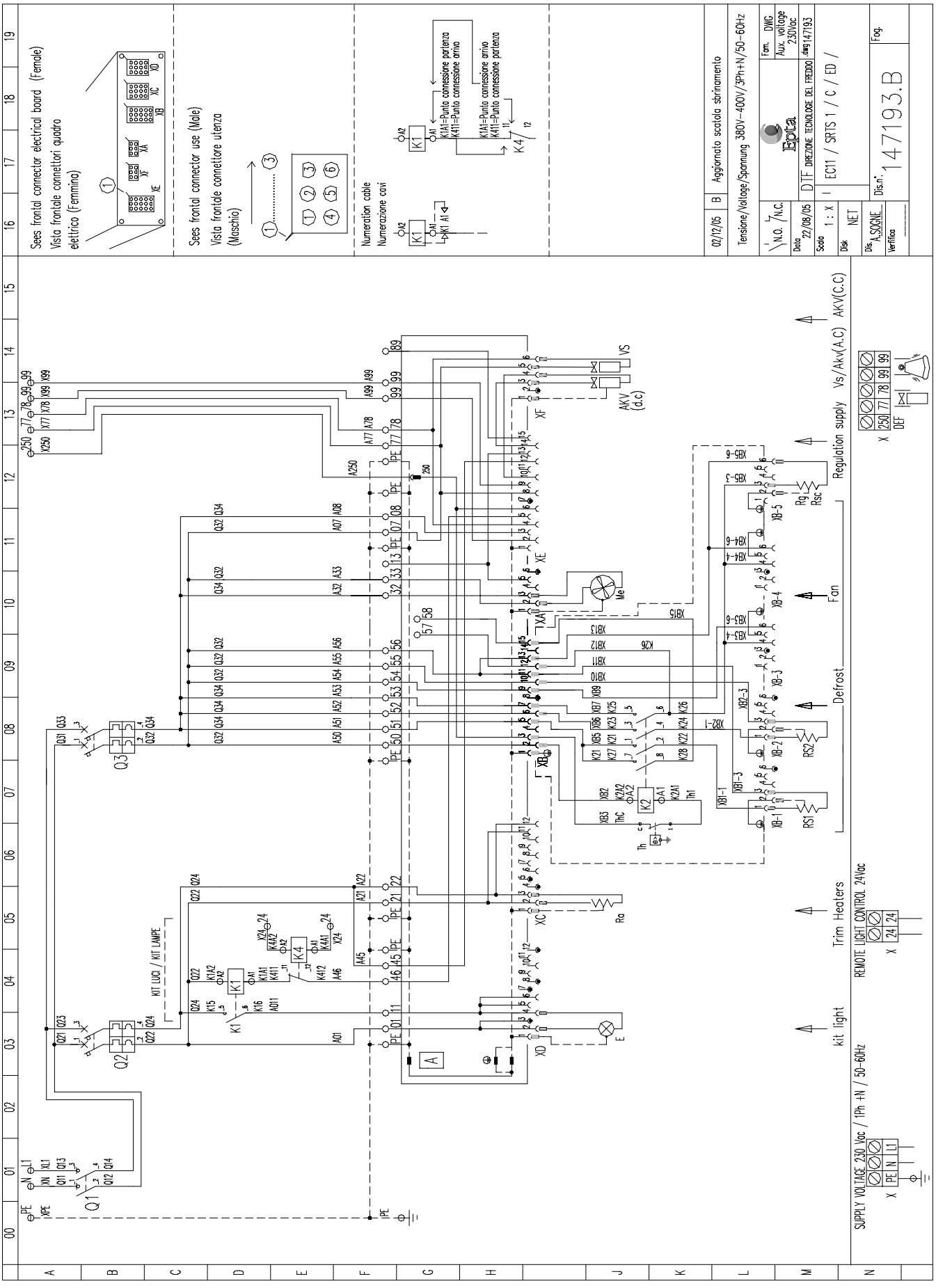

Me = Ventole Evaporatore / Evaporator Fan
Vs = Valvola solenoide / Solenoid Valve
E = Luci / Lampe
Rsc = Resist.scarico/Drain heater
Rs = Resist.sbrinamento/Coil defrost heater
Rr = Resist.ripresa/Heater on air inlet
Rg = Resist.gocciolatoio/Drip-tray def.heater
Ra = Resist.antiappannante/Anti sweat heater
XD = Connettore alimentazione lampade / Connector Lamps
XC = Connettore resistenze antiappannanti / Connector anti sweat heater
XA = Connettore ventilatori evaporatore / Connector evaporator fans
XF = Connettore valvola solenoide / Connector solenoid valve
XB.= Connettore resistenze sbrinamento / Connector defrost heater
M.T WHALE 2000 / M.T LEOPARD
WHALE 2000 G
WHALE 2000 G 2EV
LEOPARD
WHALE 1000 G - WHALE 1500 G / NP
Tensione/Voltage/Spannung
N.O. / N.C.
Data 10/01/05
Scala 1 : X
Disk NET
Dis. A.SIGONE
Verifica
Espera
DTF DIREZIONE TECNOLOGIE DEL FREDDO
SCHEMA COLLEGAMENTO UTENZE
EC11 / F
Dis.n°: 147135.A
Fog.
Form. DWG
Aux. voltage 230Vac
.dwg 147135.A

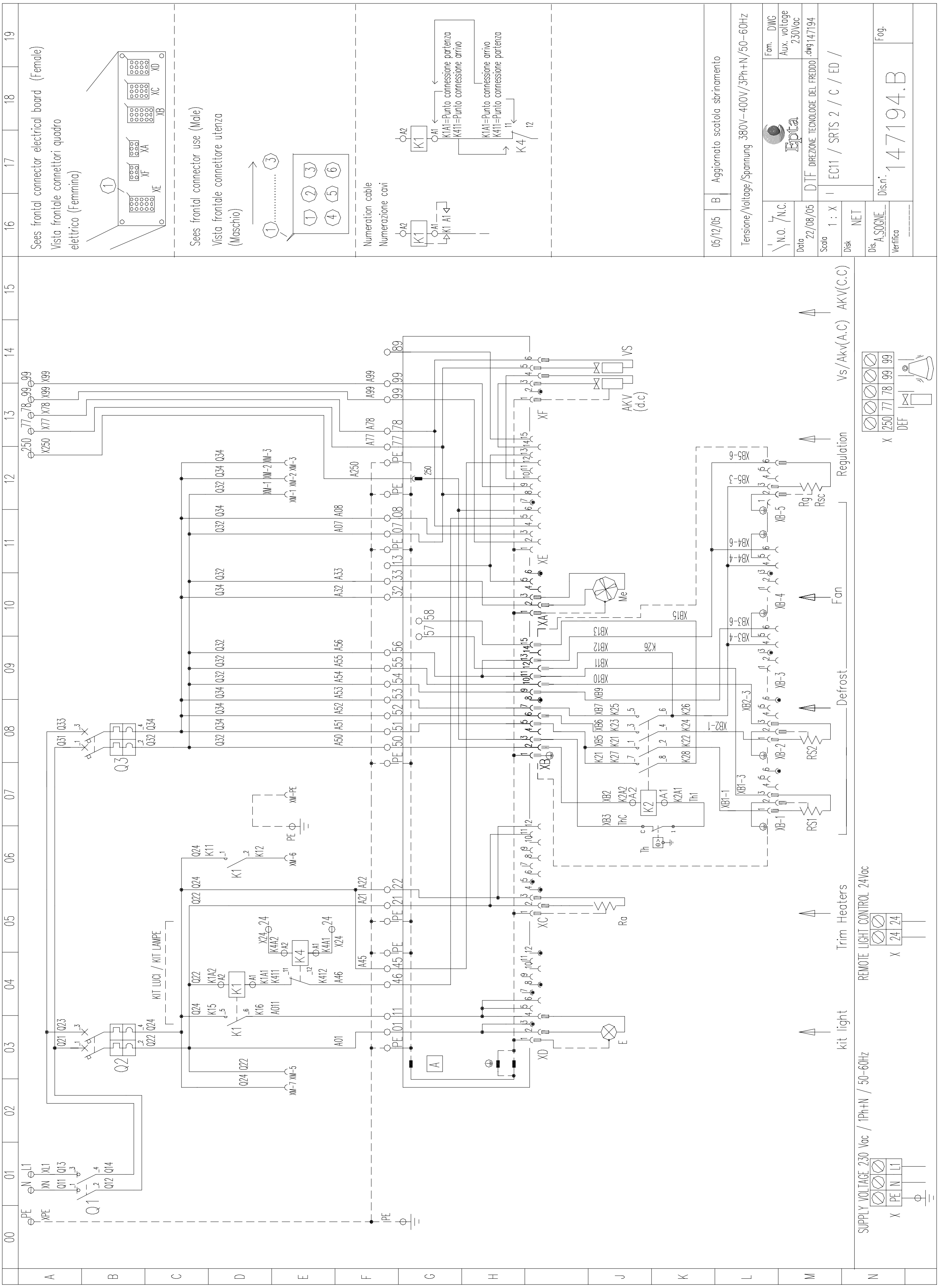

OPTIONAL
1)
TIMER
XP3
XP6
Timer
XP4
XP1
2) Relay start defrost
XP4
XP1
A1
K
A2
Data 04/10/05
Rev. B
Descrizione Modifica
Variato modello timer inizio sbrinamento
(*) = FINDER 12.01.230.0000 / ORBIS DUO
Tensione/Voltage/Spannung 230V / 50-60Hz
N.O. / N.C.
Date 11/01/05
Scala 1 : X
Disk. NET
Dis. A_SOGNE
Verifica
DTF DIREZIONE TECNOLOGIE DEL FREDDO
CONTROLLORI DI SERIE EC11/
EKC201C / SRTS-FTB
Dis.n.° 147136.B
Fog.
Fam. dwg
Aux. voltage 230Vac
dwg 147136
EKC201 PER TEMPORIZZAZIONE
Echelon
EKC201C
Tt
IN DEF OUT
DISPLAY
12V PWR DO DI C
F D C
COM
ALL
S3 S4 S5
230/12V-3VA 50/60Hz
T
OPTIONAL
XP3 XP6
XP4 XP1
Slave 1
Slave 2
X7 X8
XE
EKC201 PER SINCRONIZZAZIONE
RTC
EKC201C
Master / Salve
Slave / Slave



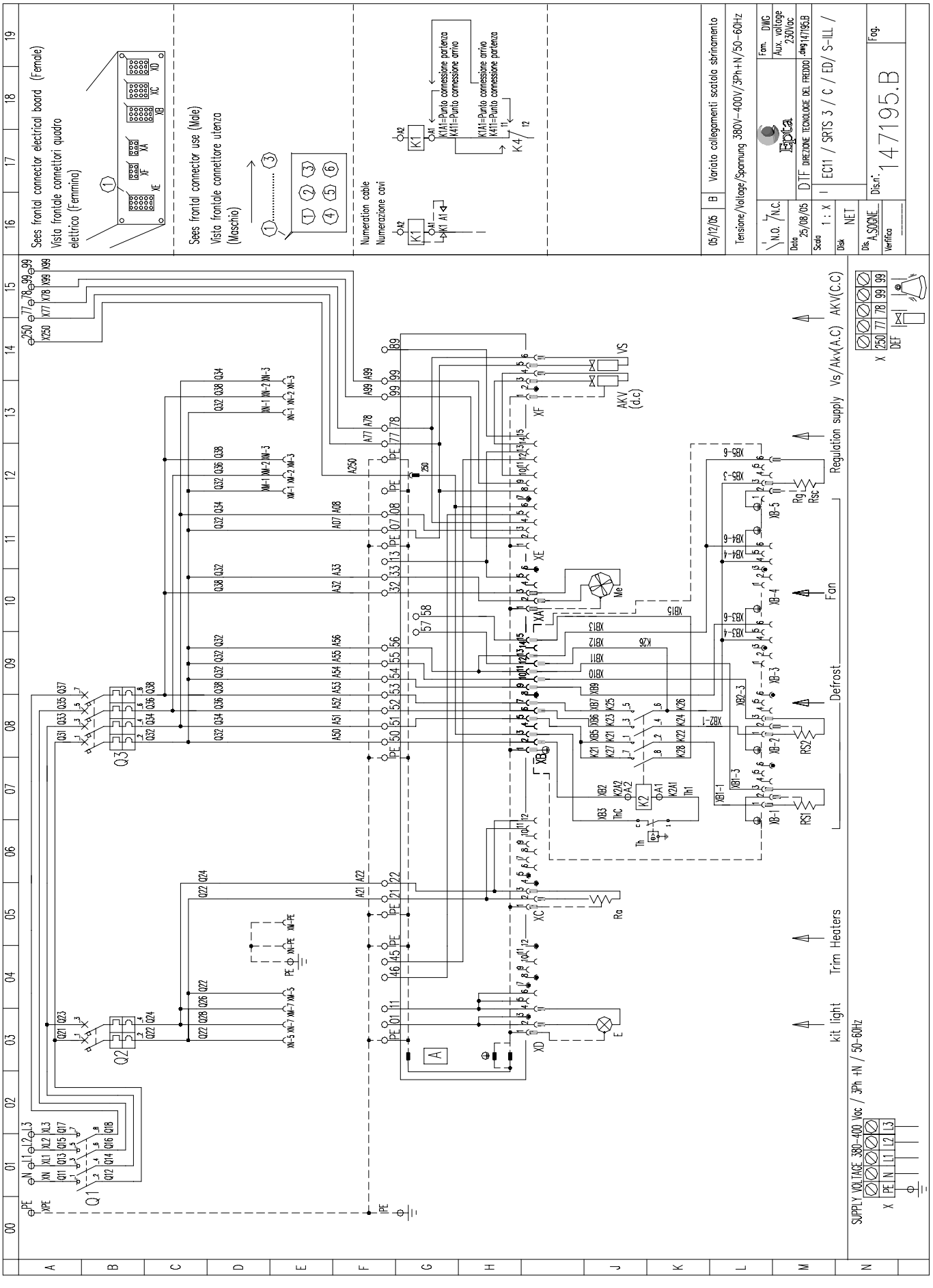
EKC414_A PER TEMPORIZZAZIONE
EKC414_A PER SINCRONIZZAZIONE (RTC)
OPTIONAL
1) TIMER
2) Relay start defrost
RTC
Max 10 EKC
EKC 414_A
RS485
Supply 230V
230Vac
MASTER_SLAVE
Slave 1
Slave 2
Data 04/10/05 Rev. B Descrizione Modifica: Variato modello timer inizio sbrinamento ( )* FINDER 12.01.230.0000 / ORBIS DUO
Tensione/Voltage/Spannung 230V / 50-60Hz
Aux. voltage 230Vac
DTF DIREZIONE TECNOLOGIE DEL FREDDO
CONTROLLORI DI SERIE EC11/ EKC414_A / SRTS-FTB
Data 12/01/05
Scala 1 : X
Disk NET
Dis. A.SOGNE
147137.B


Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K11=Punto connessione partenza
K11=Punto connessione arrivo
K11=Punto connessione arrivo
K11=Punto connessione partenza
VARIANTI VARYING
SENZA RELAY K5 / WITHOUT RELAY K5
Date 25/01/06
Rev. B
Descrizione Modifica
Modificato scatola sbrinamento
Tensione/Voltage/Spannung 380V~400V/3Ph+N/50~60Hz
N.O. N.C.
Data 30/05/05
Scala 1 : X
Disk NET
Dis. A.SGONE
Verifica
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / CTS / C-F / ED/
Dis.n°: 147150.B
Fog.
Fam. DWG
Aux. voltage 230Vac
dwg147150.
Defrost Heater / Evaporator Fans
Supply 400 V / 3Ph+N
PE N L1 L2 L3
Rs
Me
Compressor Signal 230Vac
Alarm
VS
AKV (d.c)
AKV(C.C)
Vs/AKv(A.C)
Regulation supply
Defrost Heaters
Fan
Supply 230 V / 1Ph+N (Version C)
Supply 400 V / 3Ph+N (Version F)
Anti sweat heater
Supply 230Vac
Ra
Trim Heaters
LIGHT
Supply 230Vac
Lamp
kit light
K5
K2
Rq
Rsc
Rr1
Rr2
RS1
RS2
Th

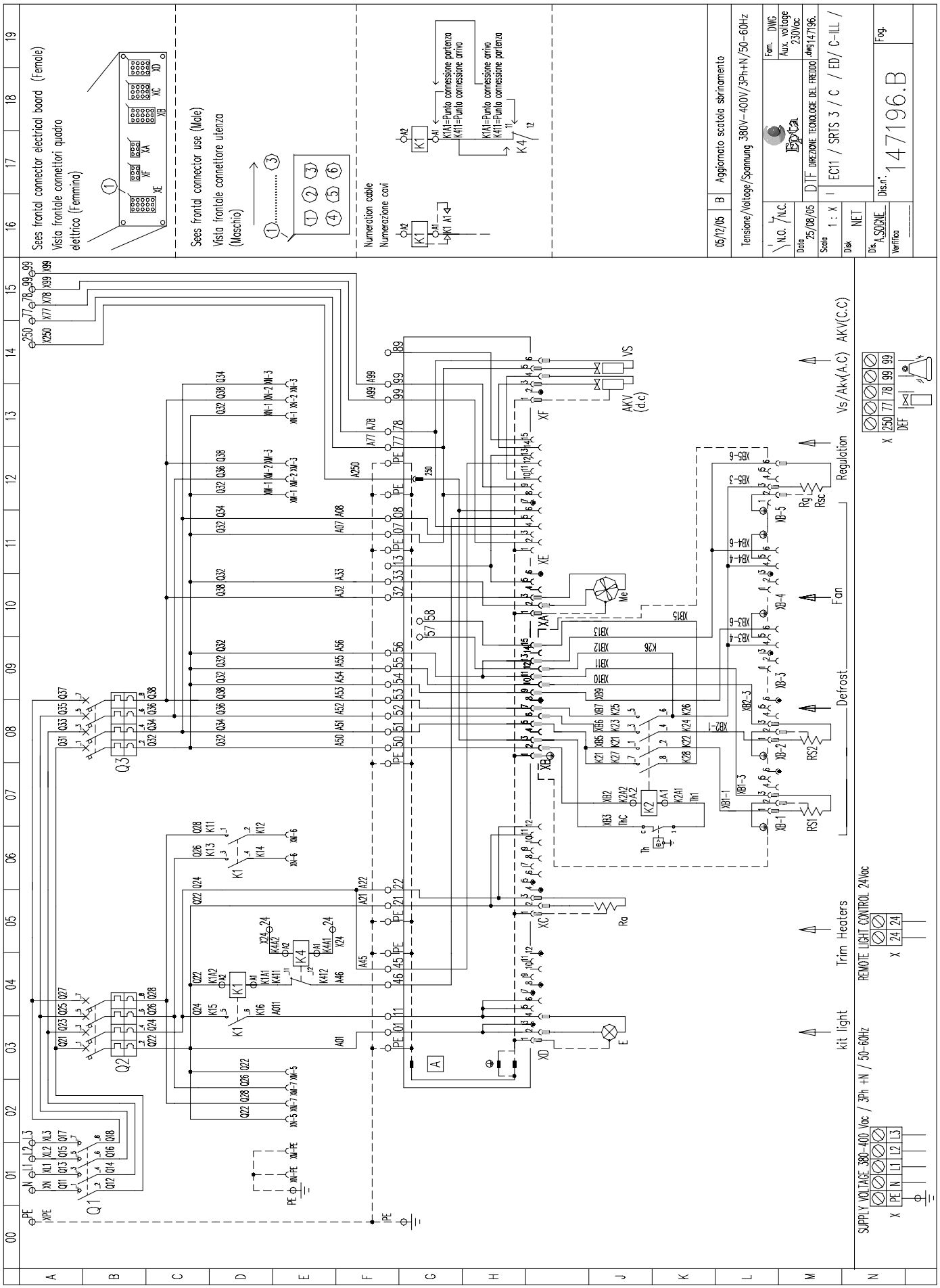

Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punta connessione partenza
K411=Punta connessione arrivo
02/12/05 B Aggiornato scatola sbrinamento
Tensione/Voltage/Spannung 380V~400V/3Ph+N/50~60Hz
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / SRTS 1 / C / ED /
147193.B
SUPPLY VOLTAGE 230 Vac / 1Ph +N / 50-60Hz
REMOTE LIGHT CONTROL 24Vac
kit light
Trim Heaters
Defrost
Fan
Regulation supply Vs/Akv(A.C) AKV(C.C)
KIT LUCI / KIT LAMPE
AKV (d.c)
VS
DEF

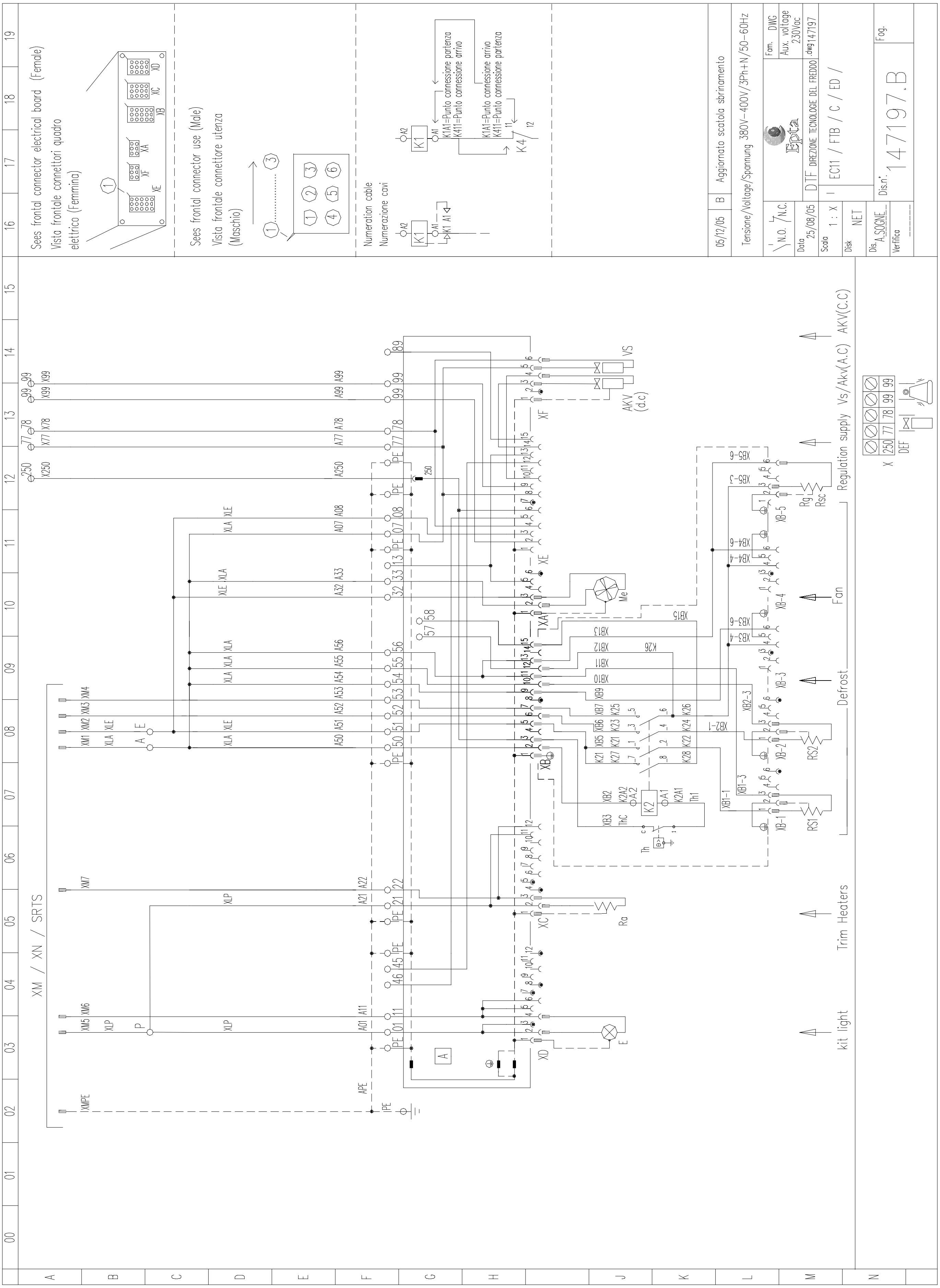


Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punto connessione partenza
K411=Punto connessione arrivo
K1A1=Punto connessione arrivo
K411=Punto connessione partenza
05/12/05 B Aggiornato scatola sbrinamento
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
Fam. DWG
Aux. voltage 230Vac
dwg 147194
DTF DIREZIONE TECNOLOGIE DEL FREDDO
Epta
EC11 / SRTS 2 / C / ED /
Data 22/08/05
Scala 1 : X
Disk NET
Dis. A.SOGNE
Verifica
Dis.n°. 147194.B
Fog.
Vs/Akv(A.C)
AKV(C.C)
Regulation
Fan
Defrost
Trim Heaters
kit light
REMOTE LIGHT CONTROL 24Vac
SUPPLY VOLTAGE 230 Vac / 1Ph+N / 50-60Hz
KIT LUCI / KIT LAMPE


Seen frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Seen frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1=Punto connessione partenza
K41=Punto connessione arrivo
Variato collegamenti scatola sbrinamento
Tensione/Voltage/Spannung 380V~400V/3Ph+N/50~60Hz
EC11 / SRTS 3 / C / ED/ S-ILL /
DTF DIREZIONE TECNOLOGIE DEL FREDDO
147195.B
Regulation supply Vs/AKv(A.C) AKV(C.C)
Defrost
Fan
Trim Heaters
kit light
SUPPLY VOLTAGE 380~400 Vac / 3Ph +N / 50~60Hz

COSTAN TECHNICAL DOCUMENTATION	CHAPTER REVISION STATUS				CONFORMS TO APPROVED ORIGINAL	PAGE: **14/15**
	ORD.	DATE	ORD.	DATE		
CABINET: **CROCODILE**	A		D			
CHAP. No.. **9** DOC No. **QSM000420E**	B		E			DATE OF 1ª ISSUE: **20.10.05**
CHAPTER: **WIRING DIAGRAMS**	C		F			



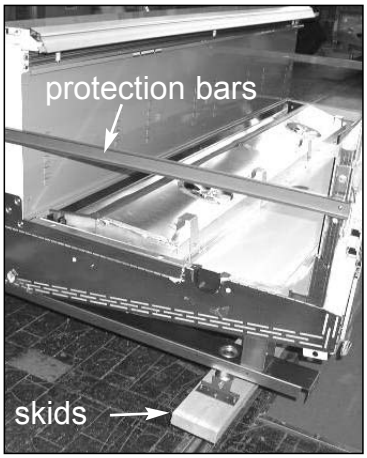


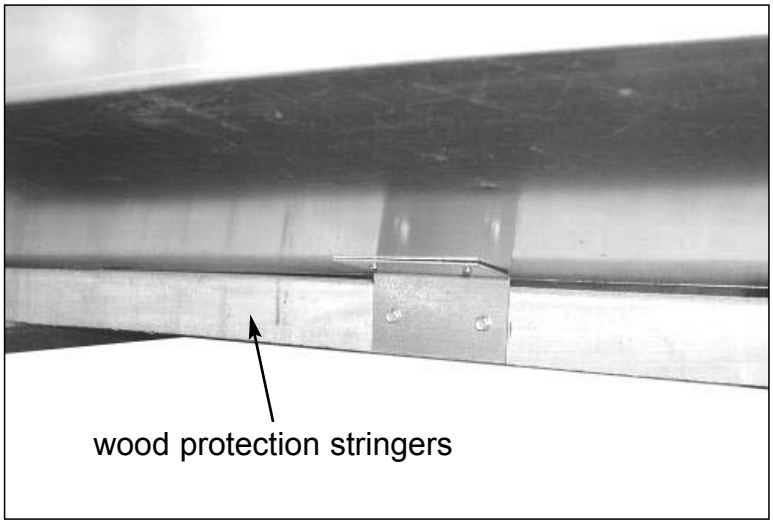
Sees frontal connector electrical board (Female)
Vista frontale connettori quadro elettrico (Femmina)
Sees frontal connector use (Male)
Vista frontale connettore utenza (Maschio)
Numeration cable
Numerazione cavi
K1A1=Punto connessione partenza
K411=Punto connessione arrivo
K1A1=Punto connessione arrivo
K411=Punto connessione partenza
05/12/05 B Aggiornato scatola sbrinamento
Tensione/Voltage/Spannung 380V-400V/3Ph+N/50-60Hz
Fam. DWG
Aux. voltage 230Vac
.dwg 147197
DTF DIREZIONE TECNOLOGIE DEL FREDDO
EC11 / FTB / C / ED /
Data 25/08/05
Scala 1 : X
Disk NET
Dis. A.SOGNE
Verifica
Dis.n° 147197.B
Fog.
XM / XN / SRTS
kit light
Trim Heaters
Defrost
Fan
Regulation supply Vs/Akv(A.C) AKV(C.C)
VS
AKV (d.c)
Me
Ra
RS1
RS2
Rg
Rsc
Th
K2
DEF

CABINET MULTIPLEXING

UNPACK THE CABINETS

Remove the side bars that are meant to protect the cabinet during transportation as well as the wood skids.
Remove the wood stringers located under the cabinet, which are meant to protect this during transportation (see photo). Unpack the cabinets with the utmost care to avoid scratching or denting.

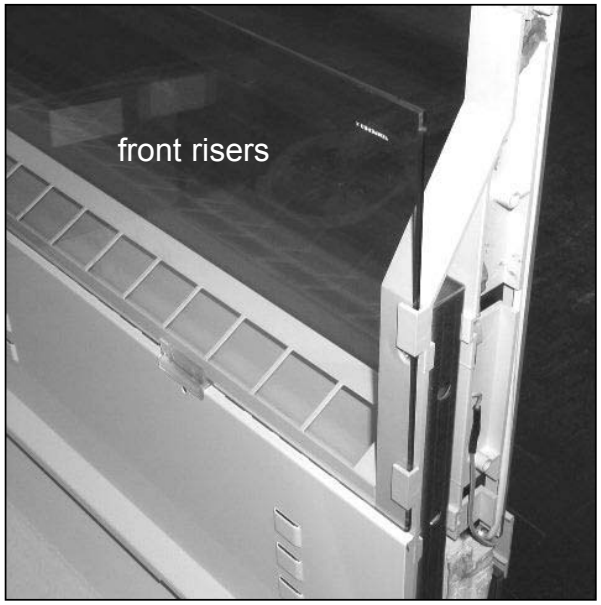


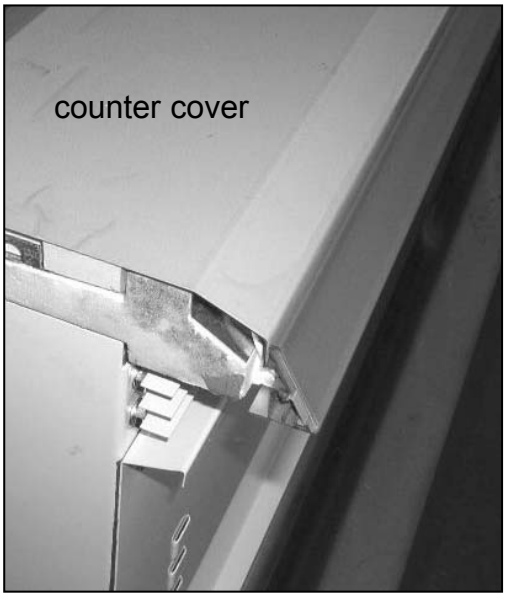


WHERE NECESSARY, INSTALL THE ELECTRICAL BOARD AS INDICATED IN CHAPTER 11.1.

REMOVE FRONT RISERS, BOTTOM PLATES AND COUNTER COVER

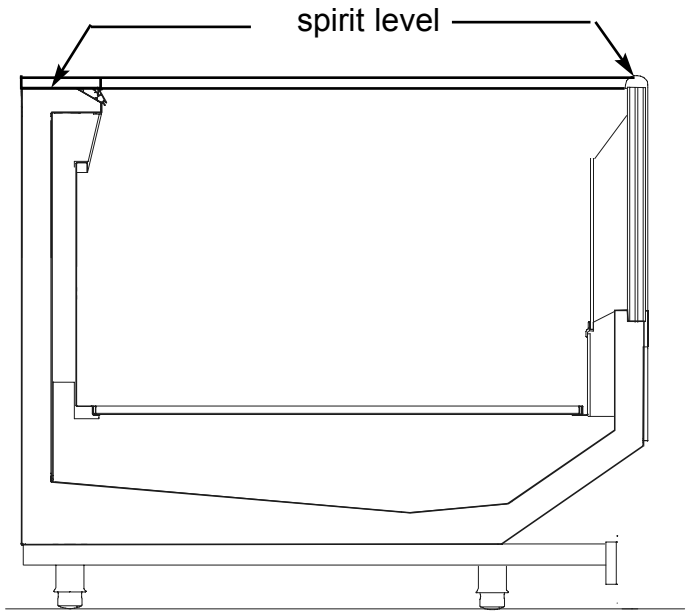
Remove front risers from the cabinet side to be multiplexed. Remove the bottom plates.
Lift counter cover off and remove it from the multiplexing side.





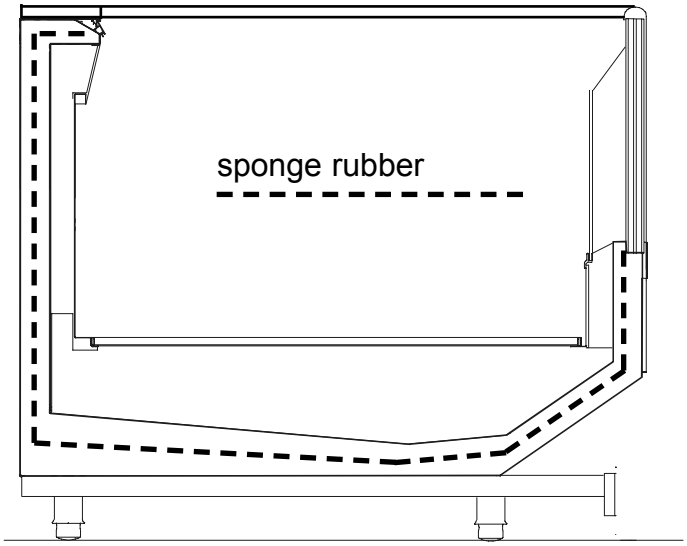
PLACE THE FIRST CABINET

Bring the cabinet wherever this is to be installed. When multiplexing involves an end cabinet, **position the end cabinet first.**
Check that it is level both crosswise and lengthwise by the use of a spirit level.
Level the cabinet by applying a cylinder-section tool on the feet (Ø = 8 mm).
IMPORTANT: do not unscrew cabinet feet completely. When the cabinet is delivered, the feet are NOT IN THEIR FINAL POSITION; the height of the cabinet is bigger then design height. This is why, when installing, it is necessary to alter the height of feet in order for the **upper edge of the handrail to be 910mm high.**



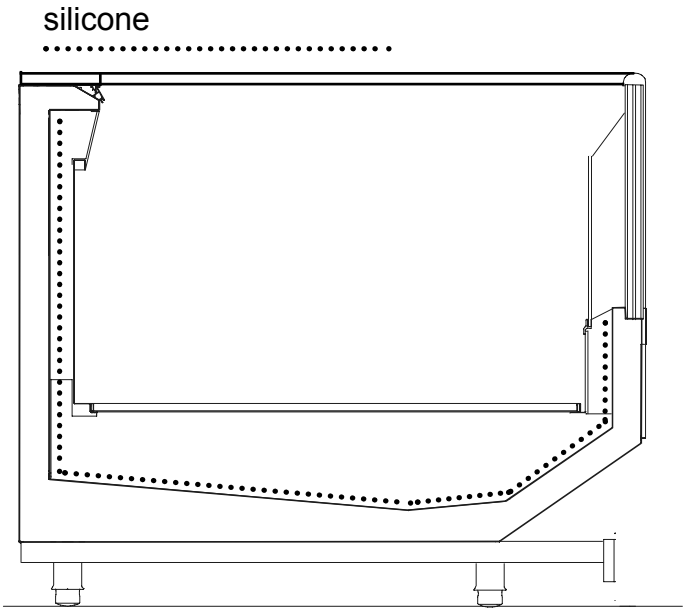
APPLY SPONGE RUBBER AND SILICONE

Apply sponge rubber and a smooth seam of silicone onto the side of one of the cabinets to be multiplexed following the instructions in the figure.



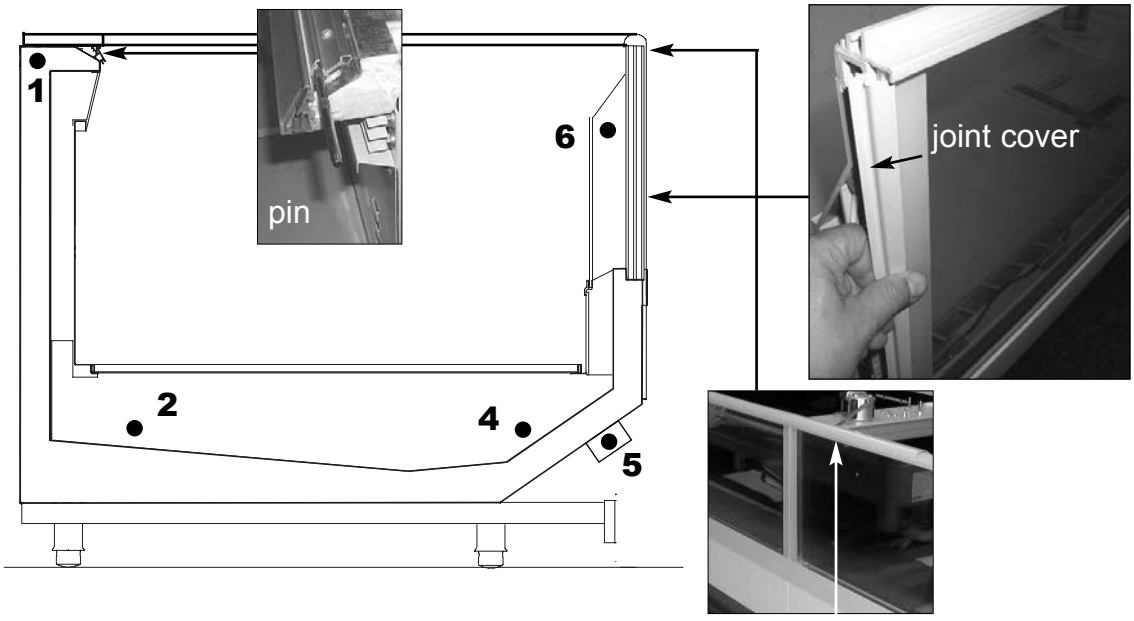
CAULK THE SIDE WITH SILICONE

Apply a smooth seam of silicone as shown in the photo.



BRING THE CABINETS TOGETHER AND JOIN THEM

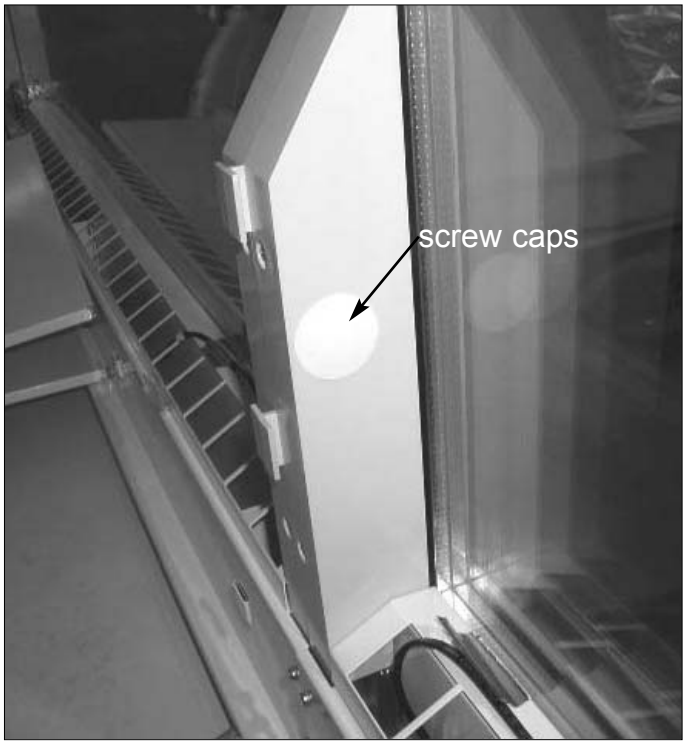
Before bringing the cabinets near each other, **place the front glazing joint-cover onto one of the cabinets to be multiplexed, and the counter alignment pin**. Bring the cabinets near each other and check their levelness. Then join them the points indicated following the sequence below. A) points 2-4 by hex-head screws M8x90; B) point 5 by a hex-head screw M8x35 and the respective nut; C) point 1 by a bolt HM6x30; D) point 6 by hex-head screws M8x35 and the respective nut.



When multiplexing the cabinets, for best alignment between the glazing of straight cabinets and end cabinets, use the "all-purpose" handrail pieces. Place them on their respective supports while aligning the glazing. Once the cabinets have been multiplexed, remove the "all-purpose" handrail-piece, which will later be used for the assembly of handrail, as explained further on in this document.

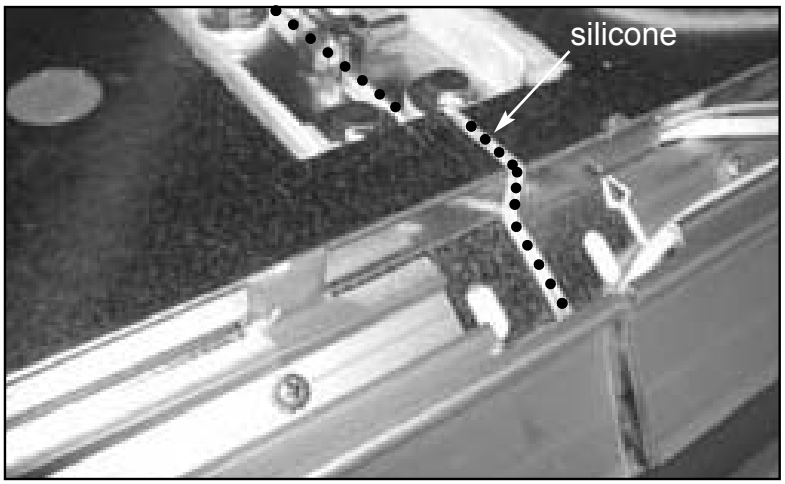
PLACE SCREW CAPS

When the cabinets have been joined, place screw caps in points 1 and 10 on the straight cabinets.



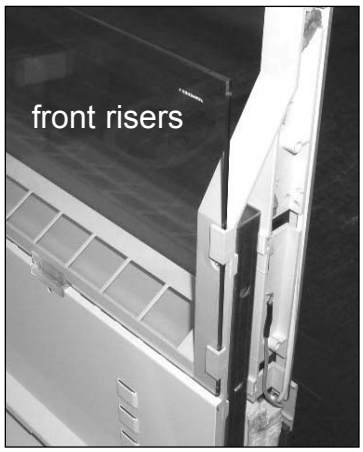
CAULK THE JOINT BETWEEN THE COUNTERS WITH SILICONE

Apply a smooth seam of silicone to the joint between the counters.
Put the counter covers back in place and fix them with silicone.



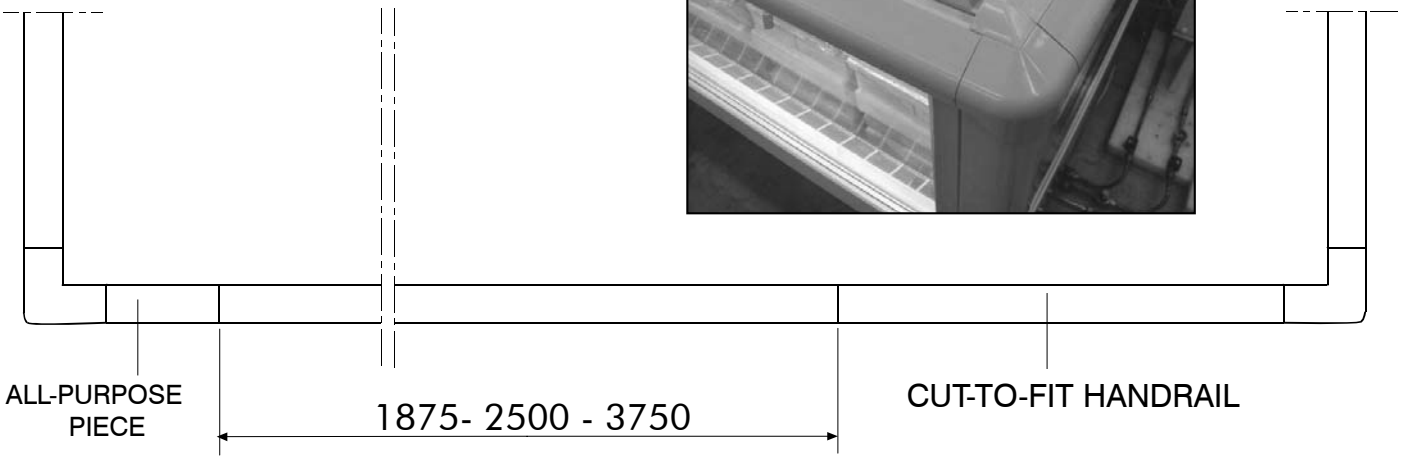
PUT FRONT RISERS BACK IN PLACE

Put the previously removed front risers back in place.



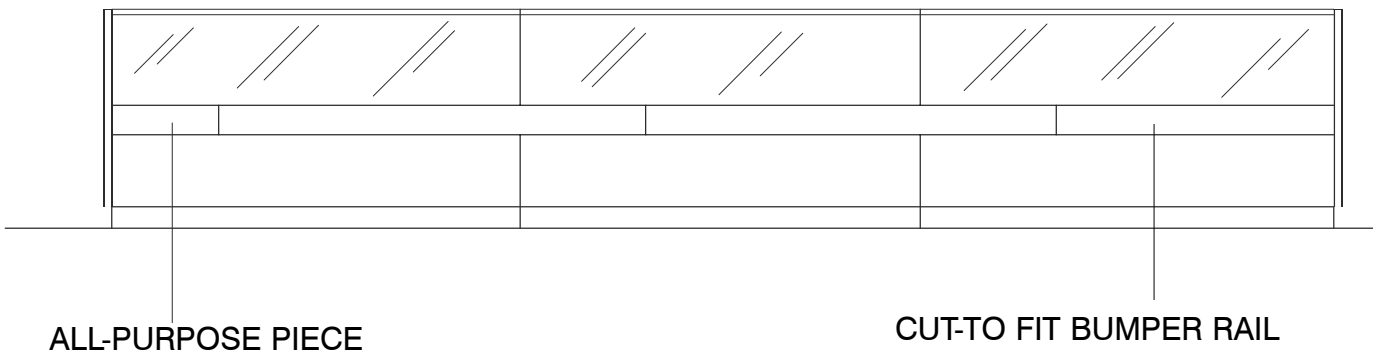
INSTALL HANDRAIL

Side handrail and corner pieces are factory-assembled. **End cabinets too are delivered with the handrail on. It is therefore necessary to remove them and then proceed as follows**.
To enable a perfect alignment of the front handrail on multiplexed cabinets, some pieces of the effective cabinet length (1880, 2500 or 3750 mm) plus an all-purpose piece are attached .
Before being mounted, the handrail need to be properly cooled inside the base deck of the cabinet for some time.
Then place the all-purpose handrail flush to one of the corner pieces on the profiles, and then all the others but the last likewise. Determine the remaining length, cut the last handrail to fit and install it on the profile.



PLACE THE INTEGRAL BUMPER RAIL

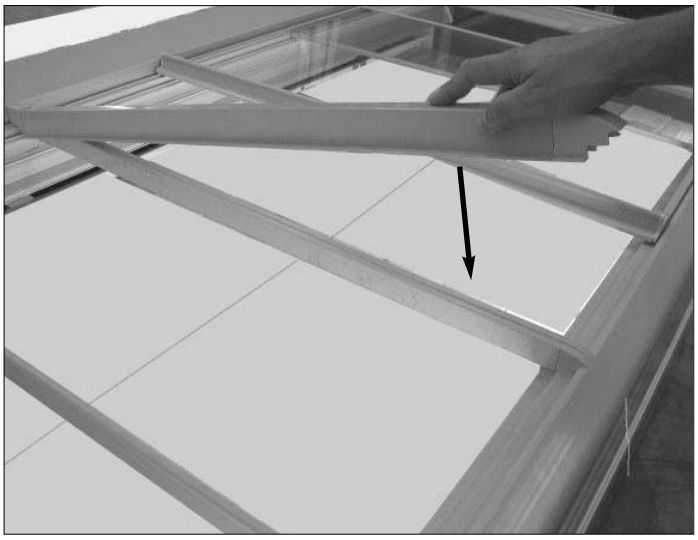
To enable a perfect alignment of the plastic bumper rails integral with the cabinet, an extra "all-purpose" piece, which is to be used to bring bumper rails backward or forward. Mount the all-purpose bumper rail flush to one of the endwalls on the supports, and then all the others but the last likewise. Determine the remaining length, trim the last bumper rail to fit and secure it to the support.

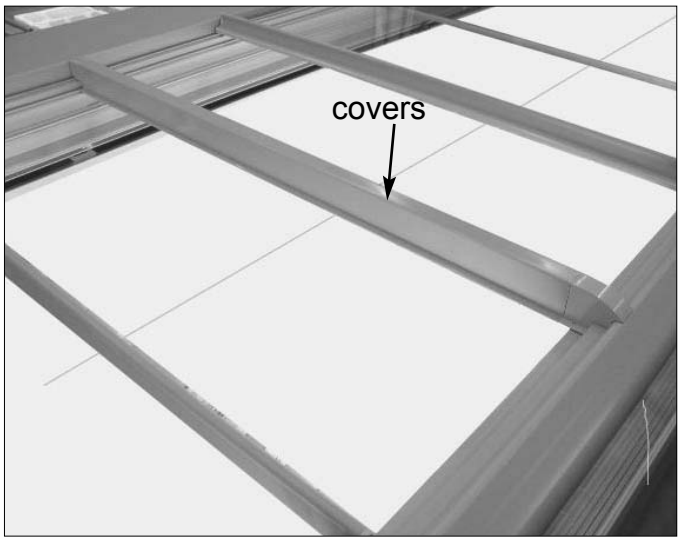


INSTALL THE FRAME COVERS

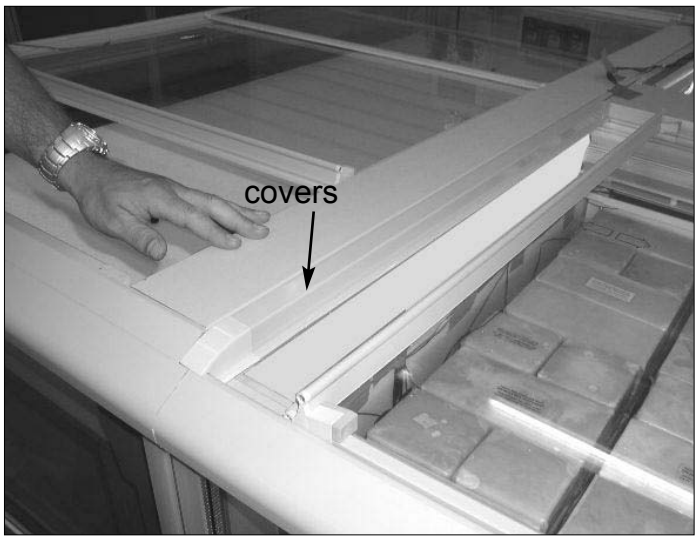
Install frame covers between straight cabinets and, if need be, also between the straight cabinet and the end cabinet.

STRAIGHT CABINETS / STRAIGHT CABINETS



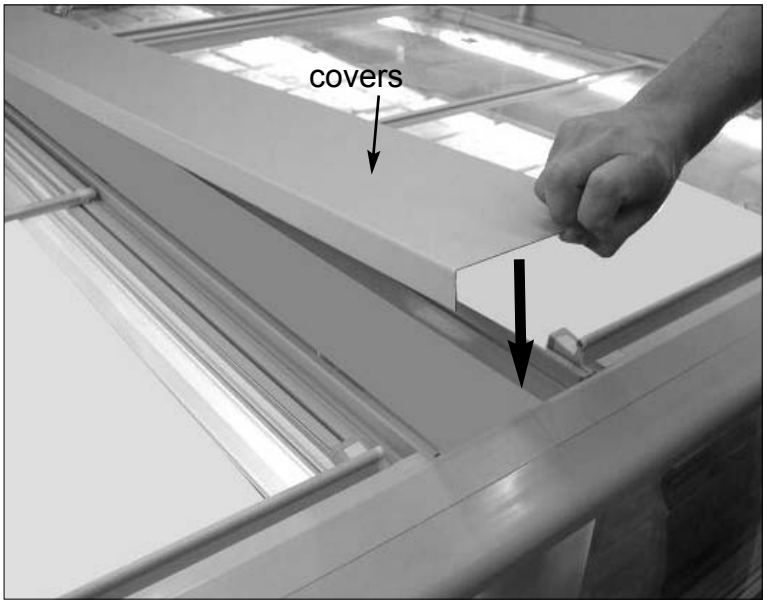


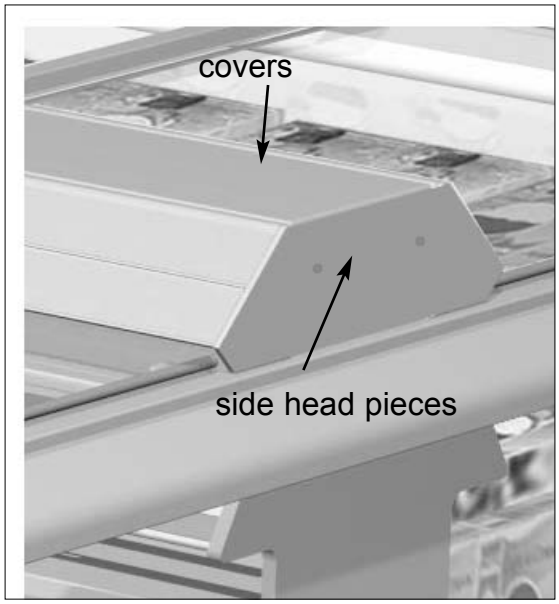
STRAIGHT CABINETS/END CABINETS



INSTALL COUNTER COVERS

Install counter covers in their position. If the cabinet is going to be fitted with price holders, also install side head pieces as shown in the picture.

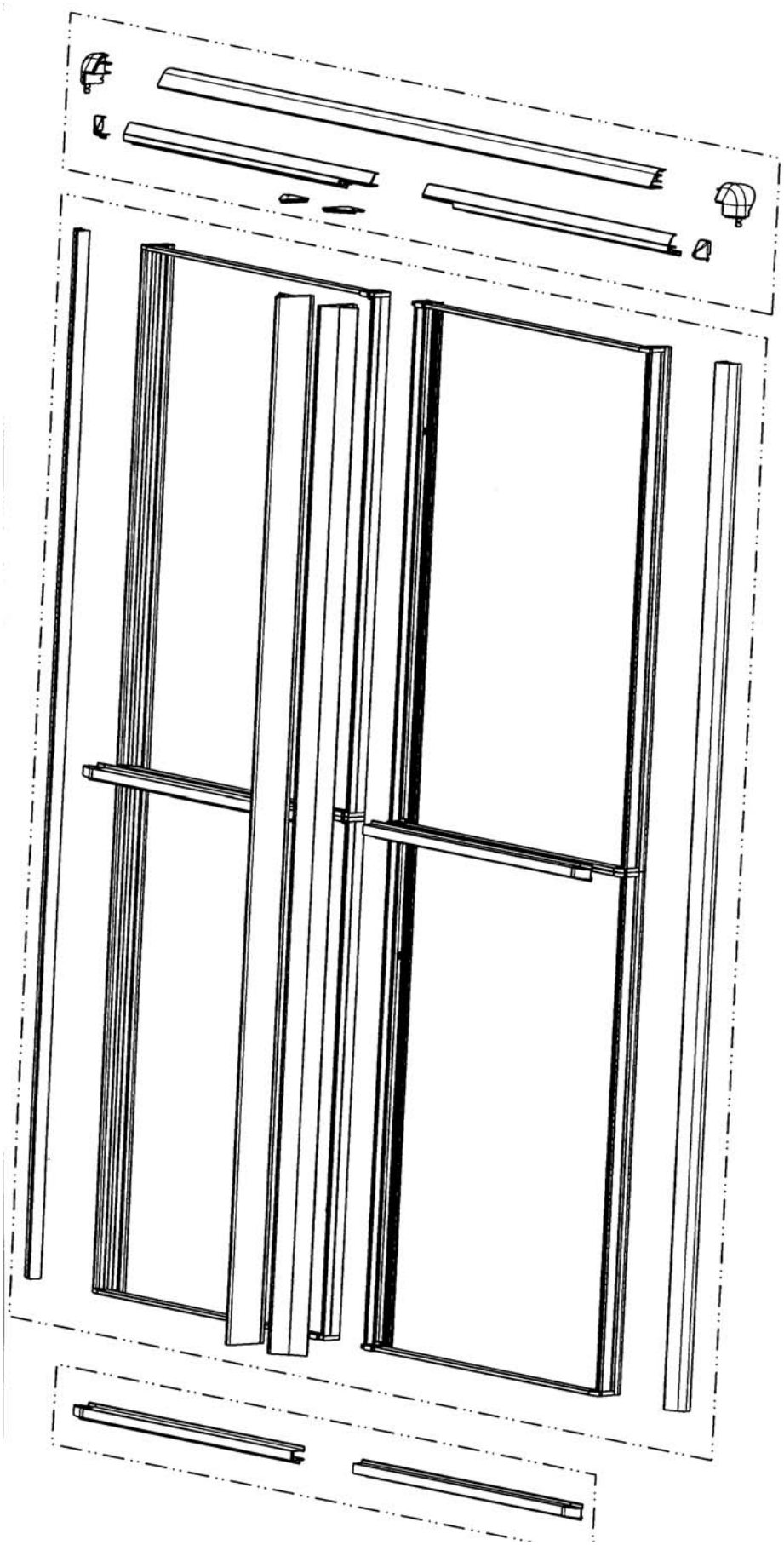




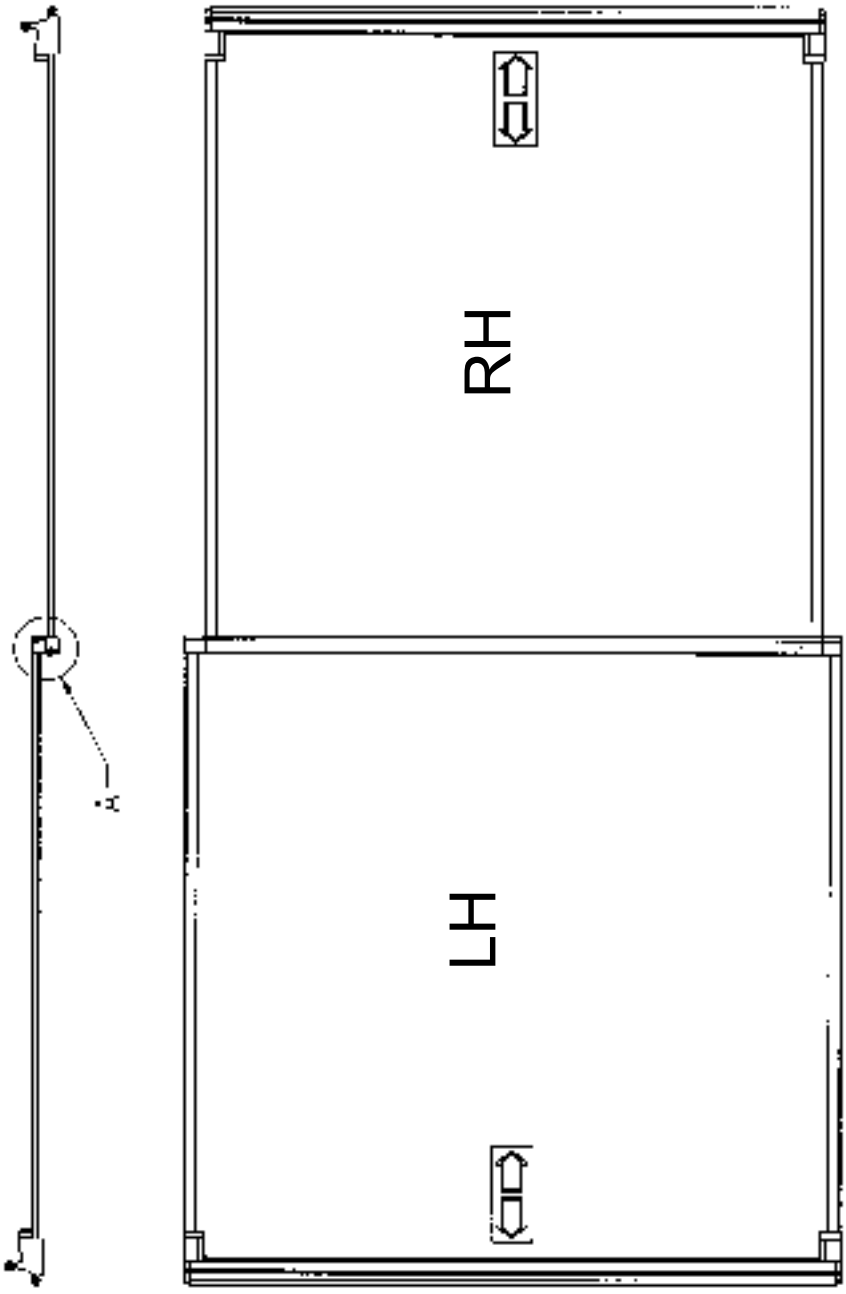
INSTALL GLASS SLIDERS

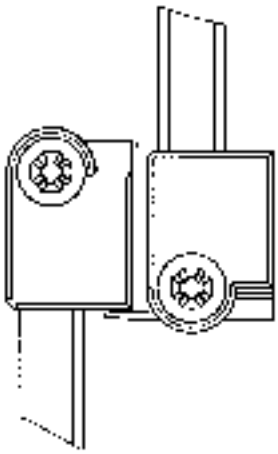
Place glass sliders in their runners on the frame.

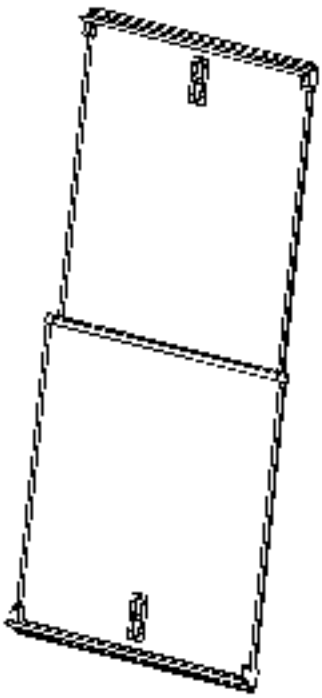
DIAGRAM OF COMPONENTS SLIDERS + FRAME



ASSEMBLY DIAGRAM SLIDERS

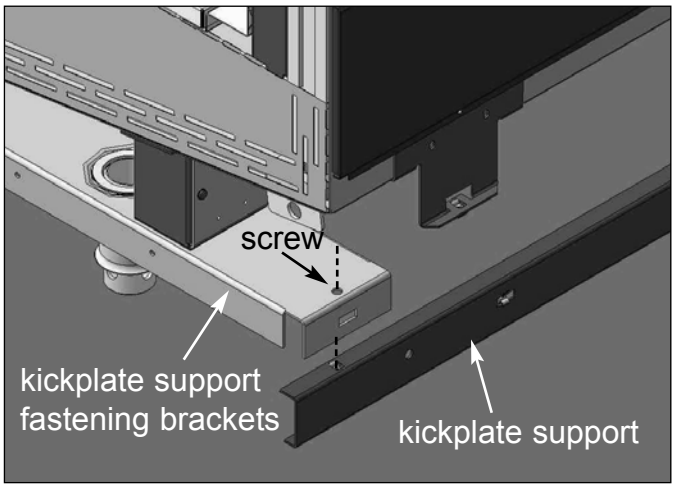


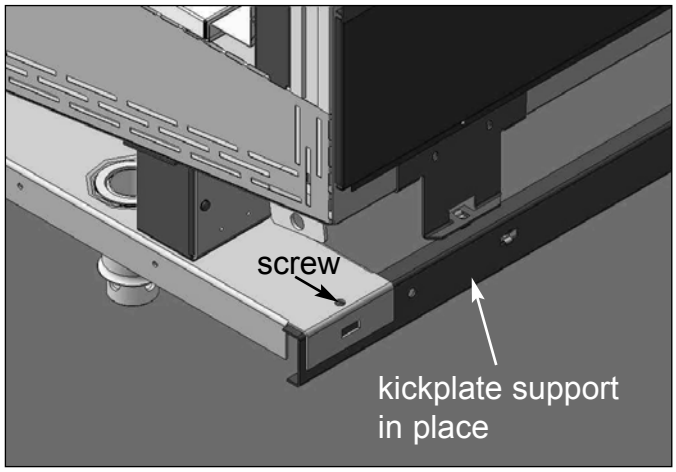




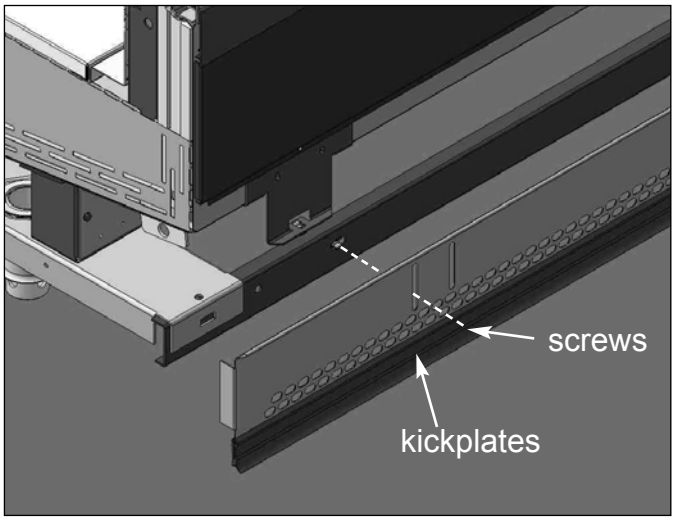
INSTALL THE BASE PANEL AND KICKPLATES

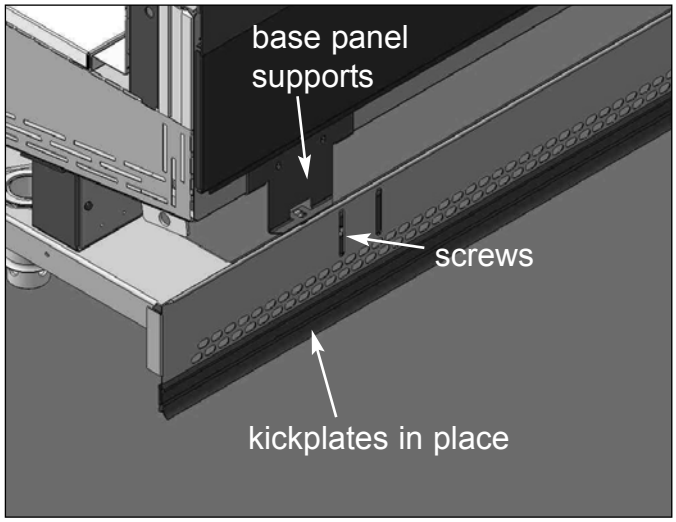
Place the support for the kickplate and screw it onto the appropriate holders using the screws attached, as shown in the figure.



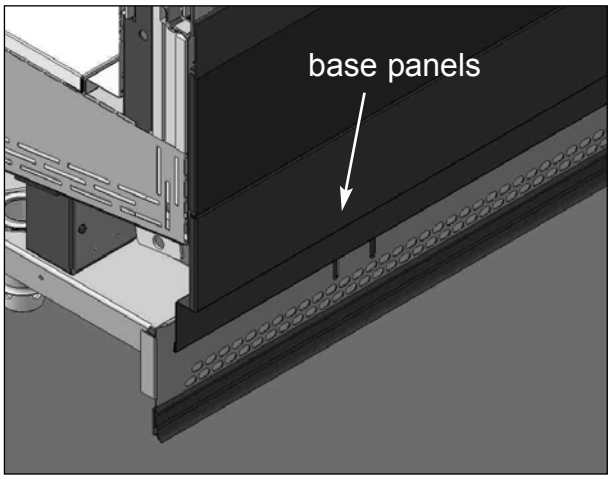


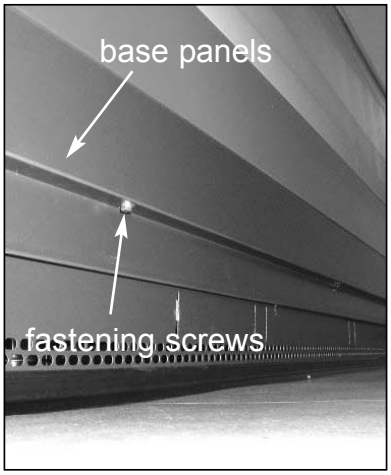
Place the kickplates onto the just installed supports by the screws supplied, as shown in the figures.



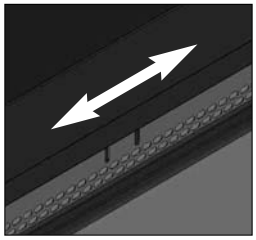


Lastly, install and fasten the base panels to their supports on the cabinet using the screws attached.



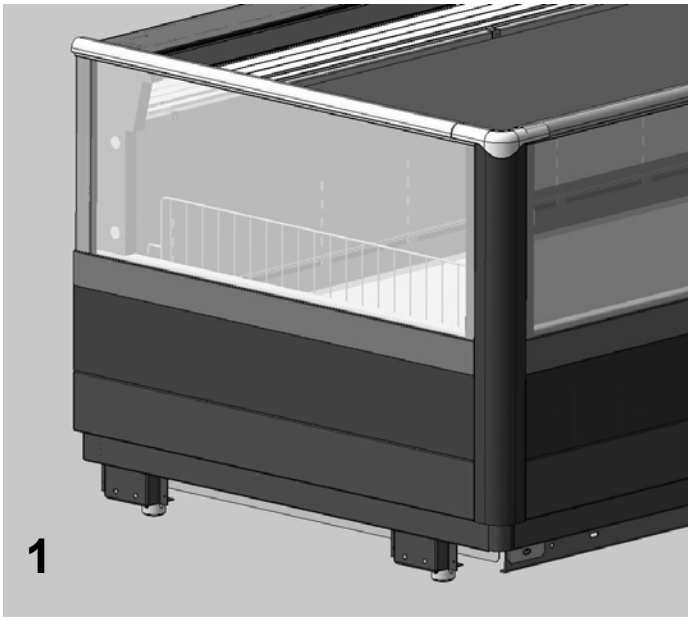


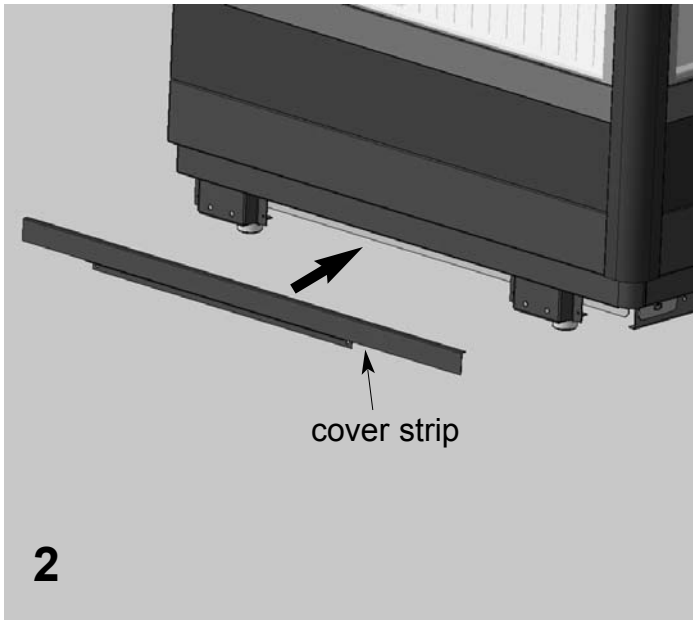
IMPORTANT: the front panel of end cabinets feature some slots that need to be used to adjust and correctly position the panel horizontally.

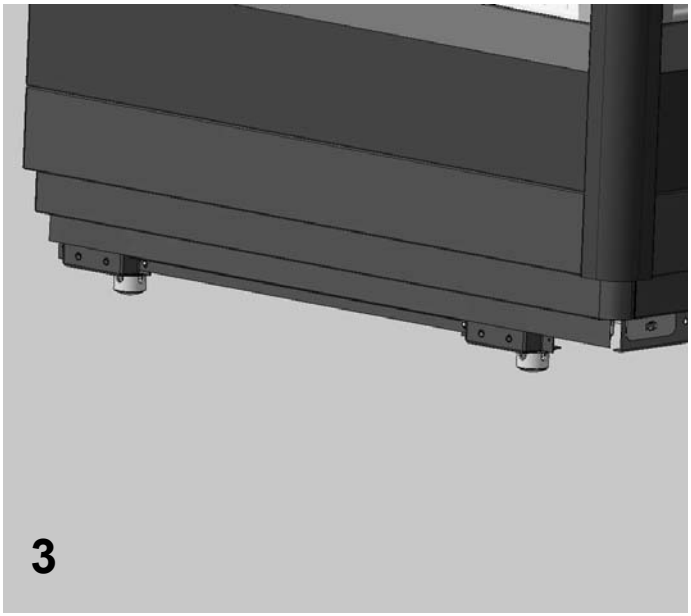


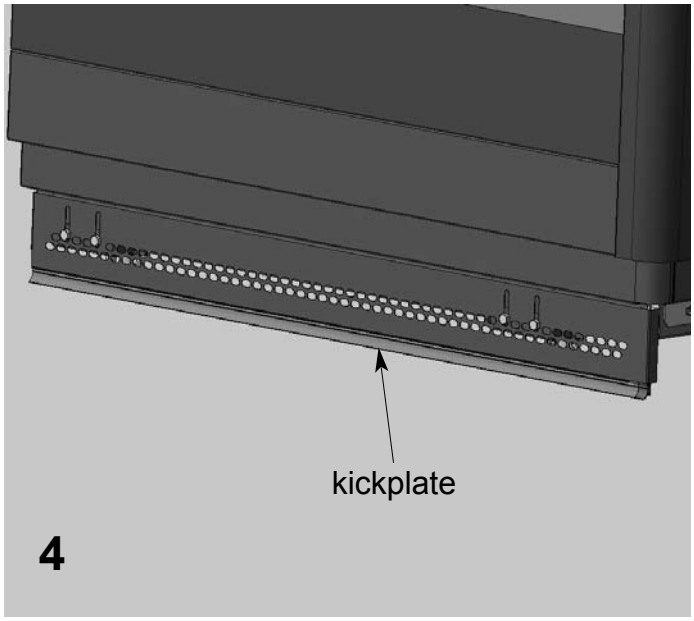
PLACING COVER STRIPS ON THE KICKPLATE OF EC11 ENDWALLS

Cover strips needs to be secured using self-tapping screws.







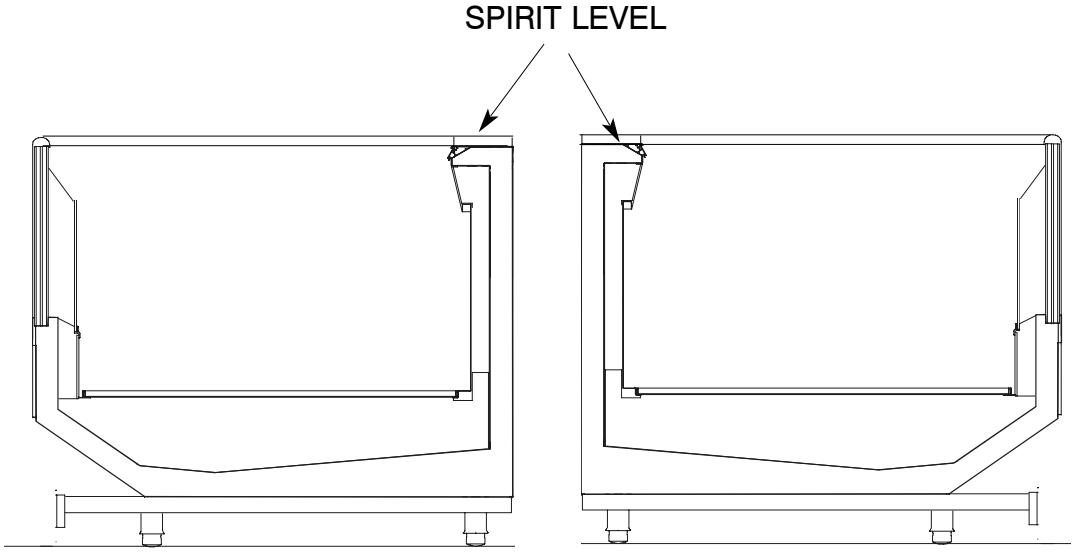


JOINING BACK-TO-BACK CABINETS AND END CABINETS

Follow all the steps in the previous section. The instructions for back-to-back multiplexing are provided here below. **Position the end cabinet first.**

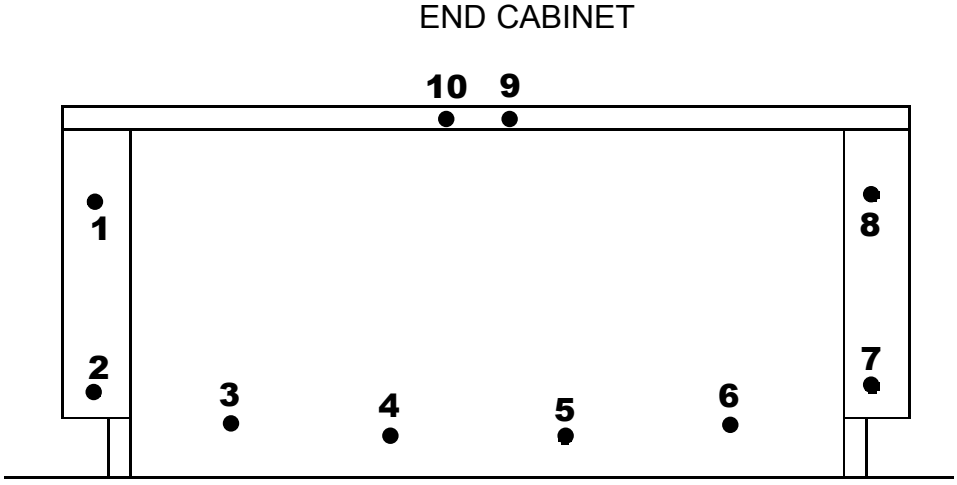
POSITION STRAIGHT CABINETS

Apply sponge rubber and silicone as explained in the previous section. Then bring straight cabinets back to back in their service position.
Check levelness by resting a spirit level on the counter. If needed, correct cabinet levelness using the adjustable feet.



JOINING A STRAIGHT CABINET TO AN END CABINET

When multiplexing straight cabinets with an end cabinet, bring the cabinets close to each other, check their levelness and then join them as indicated.



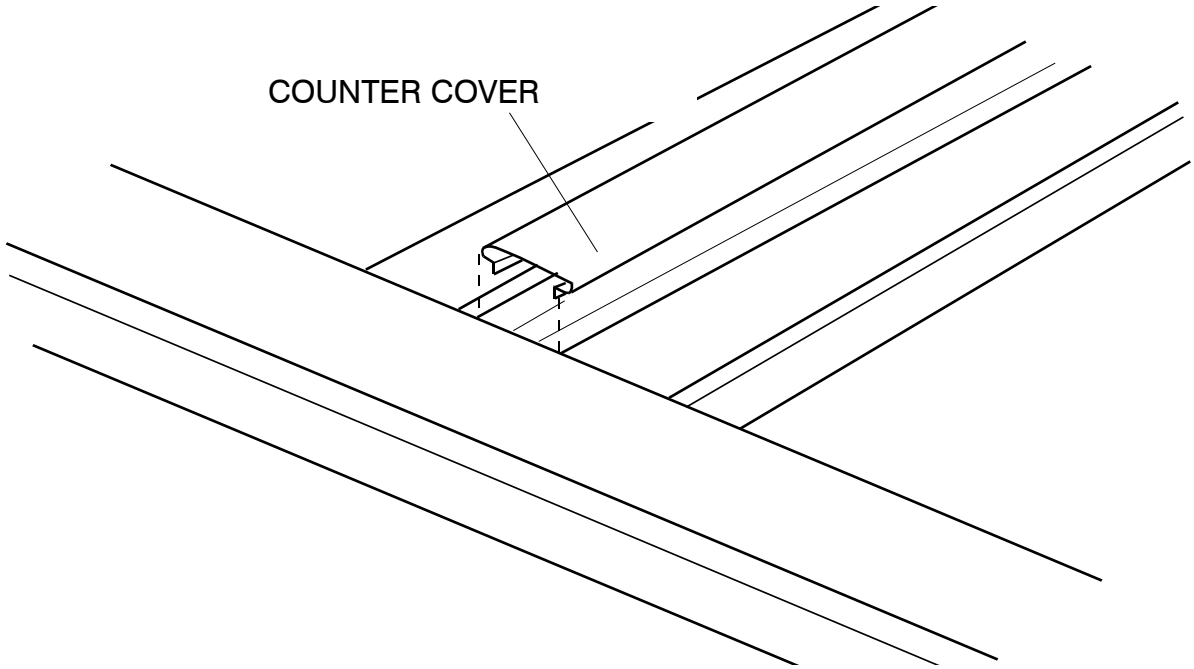
POINTS 1-2-7-8
SCREWS H M8v55

POINTS 3-4-5-6
HEX-HEAD
SCREWS M8x90

POINTS 9-10
SCREWS H M6x30

INSTALL COUNTER MIDDLE COVERS

Place the counter middle covers on the back-to-back cabinets and fix them with silicone.

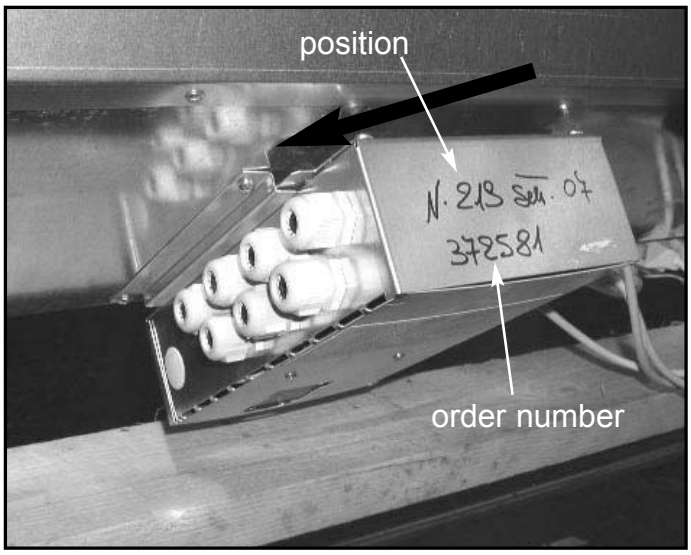


ELECTRIC BOARD INSTALLATION

The electrical board of many models is supplied separately in order to avoid damage during transportation. It is therefore necessary to install it on site.

How to identify the electrical board correctly: electrical boards are marked with the order number and position. Using the production label attached to the cabinet it is possible to track down the electrical board of every cabinet with no margin for errors.

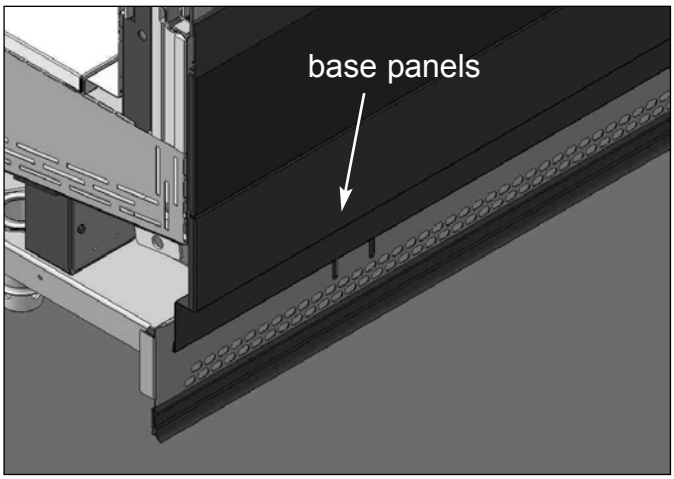
Place the electrical board in the respective runners under the cabinet, on the side opposite the drain.
Fasten the electrical board using a self-tapping screw as shown in the picture.

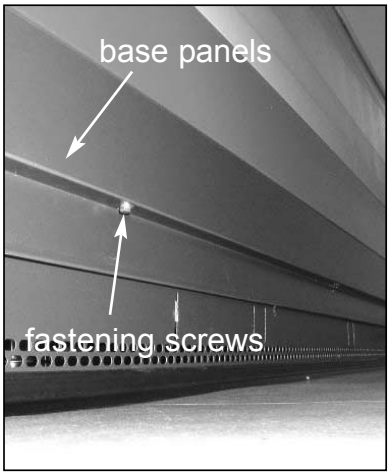


ELECTRICAL BOARD REMOVAL

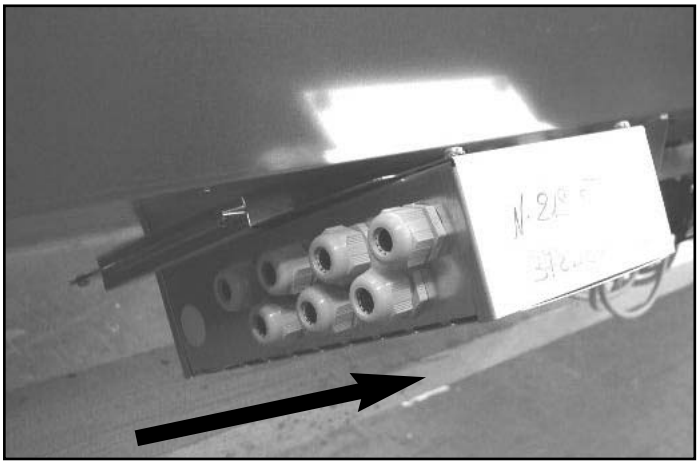
When it is necessary to perform jobs on the electrical board, proceed as explained below.

Unscrew and remove the base panel.





Pull the electrical board off the runner.



ASSEMBLY OF PLEXIGLAS PARTITIONS

Partitions are necessary to keep ventilation separate between technical line-ups of BT cabinets when defrosting is not in sync.
Partitions must be placed following the rules below:
MASTER1/MASTER-SLAVE/TERMINAL-BOARD

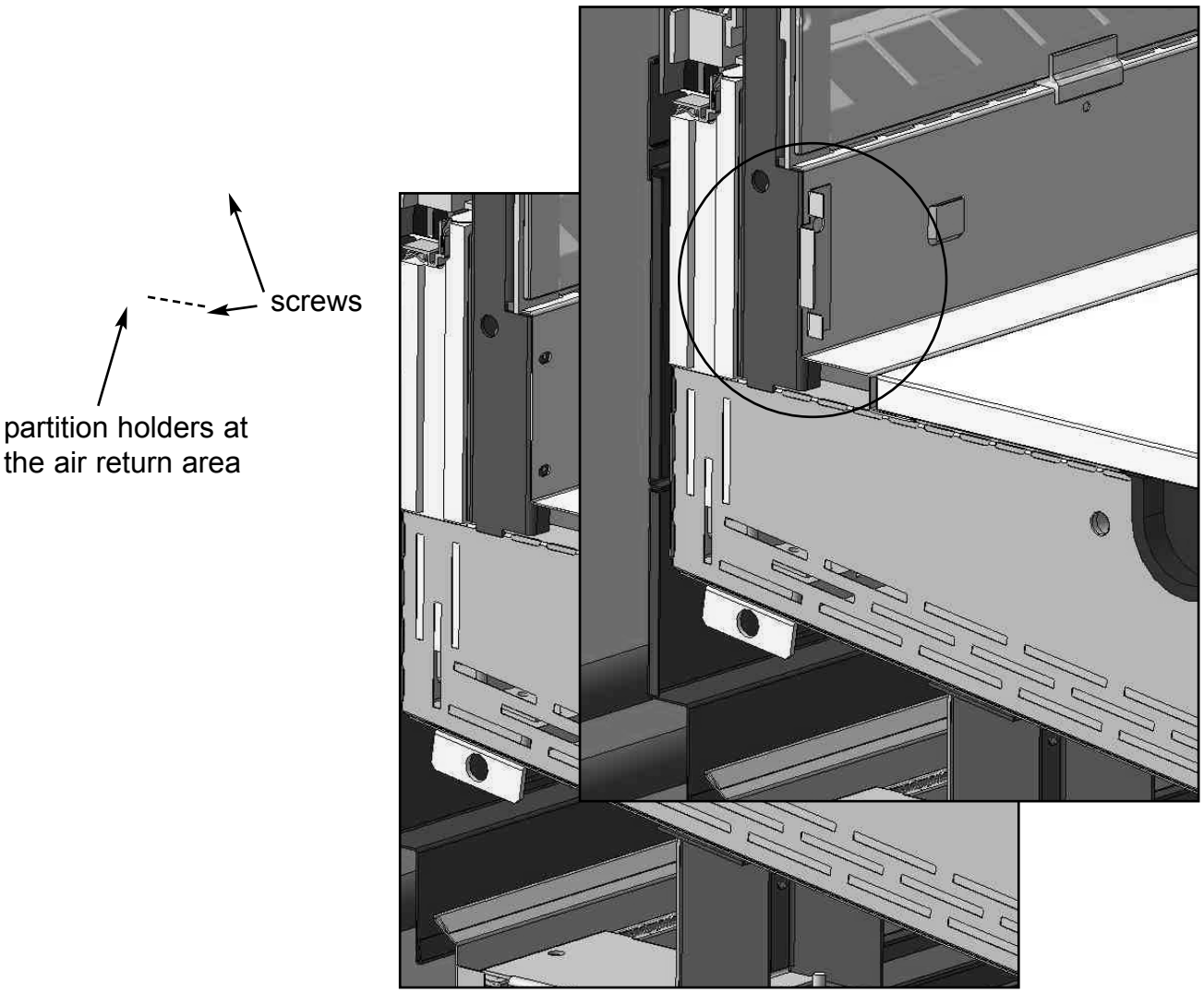
TECHNICAL LINE-UP 1	=	q.ty 0
2 TECHNICAL LINE-UPS	=	q.ty 1
3 TECHNICAL LINE-UPS	=	q.ty 2 etc.

Cooling technical line-ups can be formed as follows:

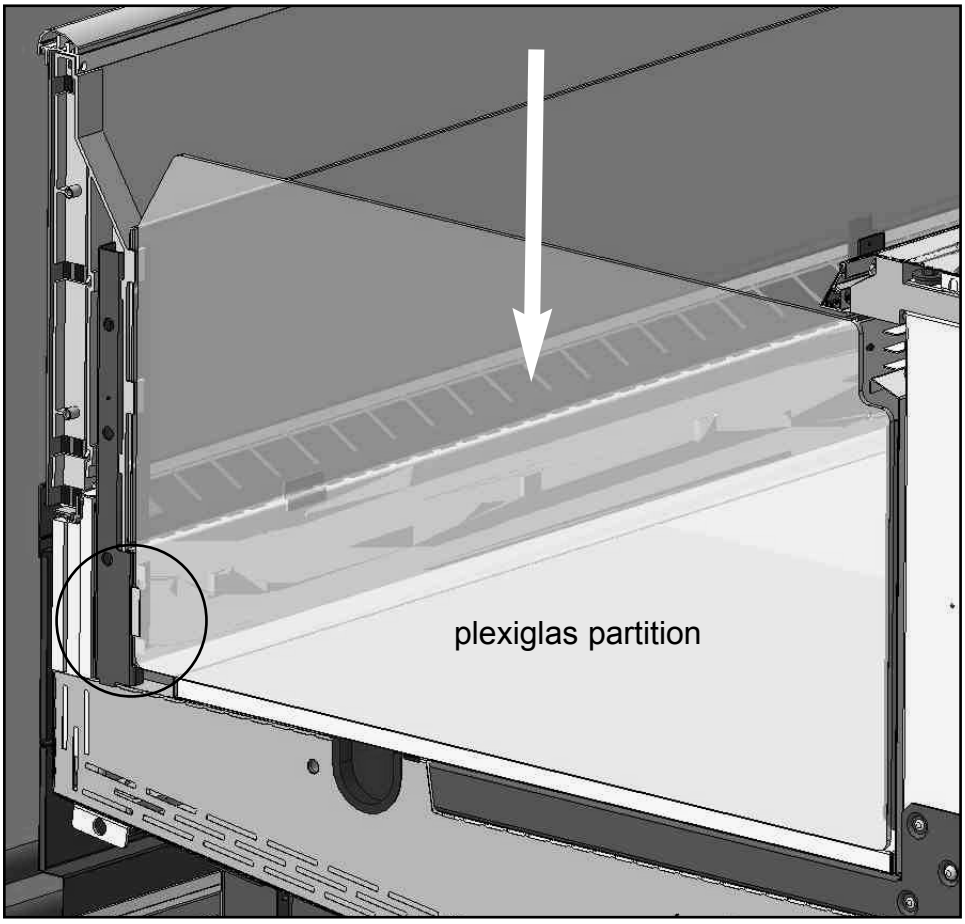
MASTER 1	1 CABINET
MASTER/SLAVE	1-2-3 CABINETS
TERMINAL BOARD	1-2-3 CABINETS
MASTER 2 (2EV)	1 or 2 cabinets

Plexiglas technical partitions are not required between straight cabinets and end cabinets.

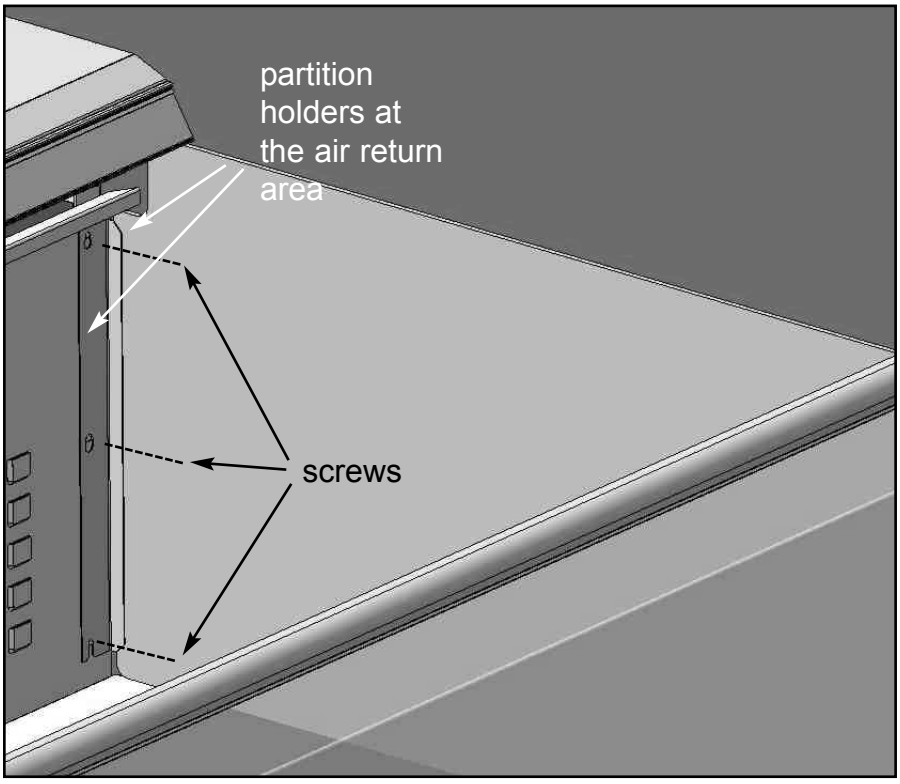
Install the brackets to hold the partitions in the air return area of cabinets as shown in the figures.



Place plexiglas partitions in the just-mounted holding brackets.



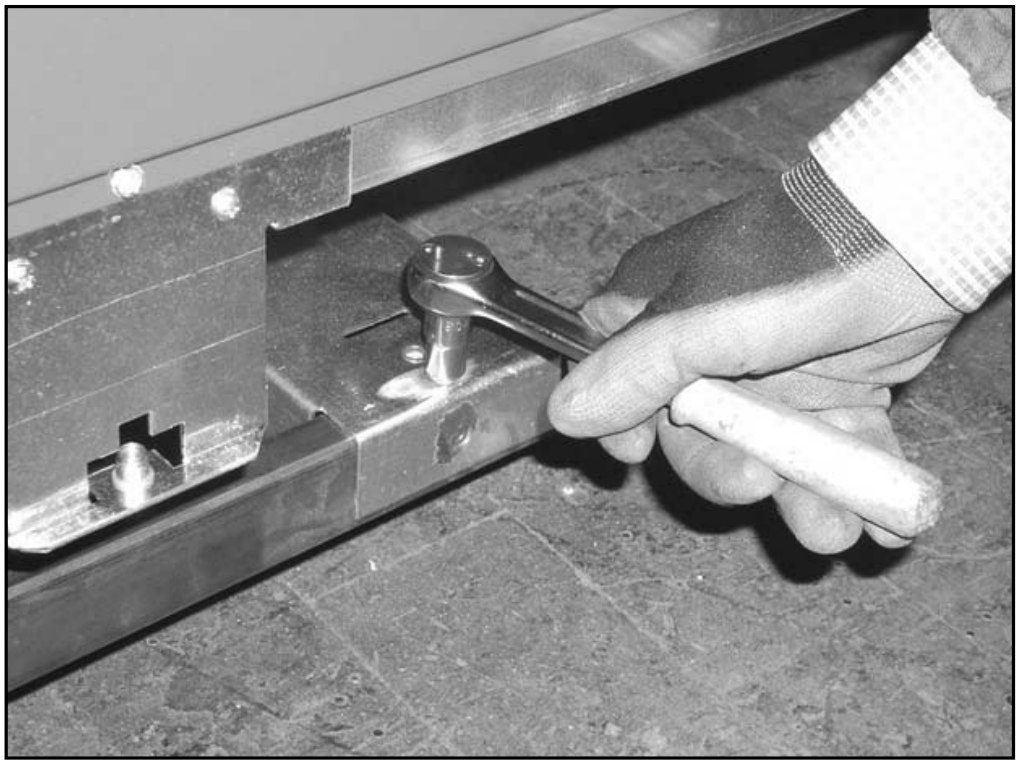
To complete partition assembly, fasten them at the air discharge area using the appropriate holding brackets, **which need to be mounted on both sides of the partition.**



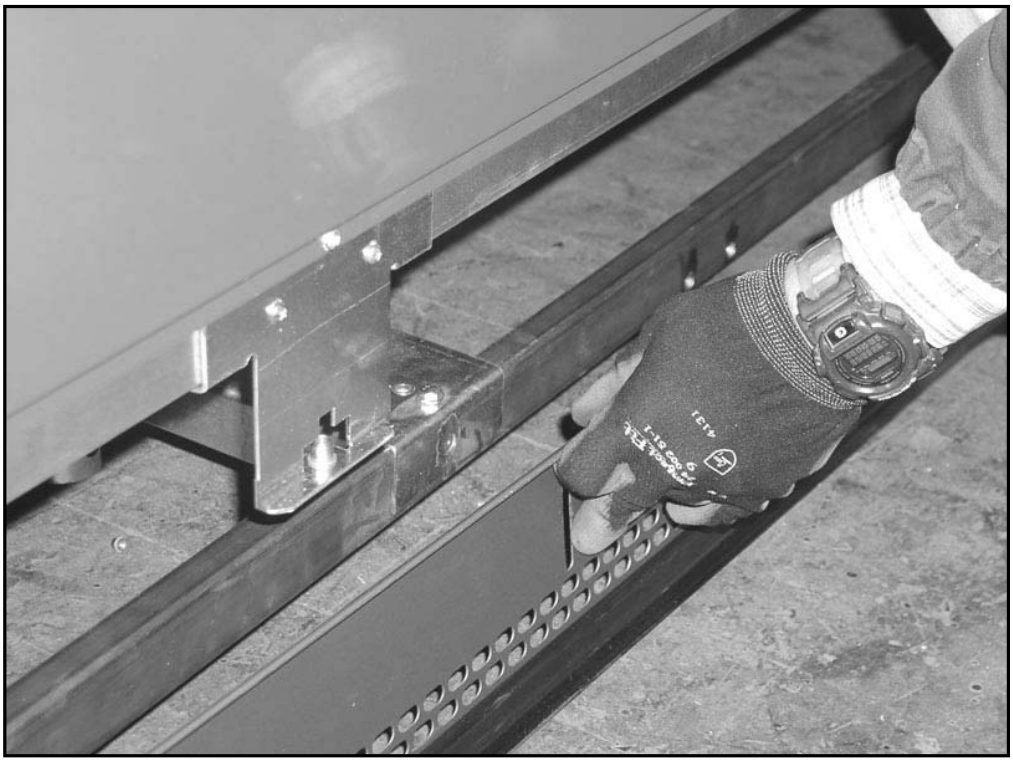
ASSEMBLY OF OPTIONAL STAINLESS-STEEL BUMPER RAIL

Place the support stringer on the holding stirrups.

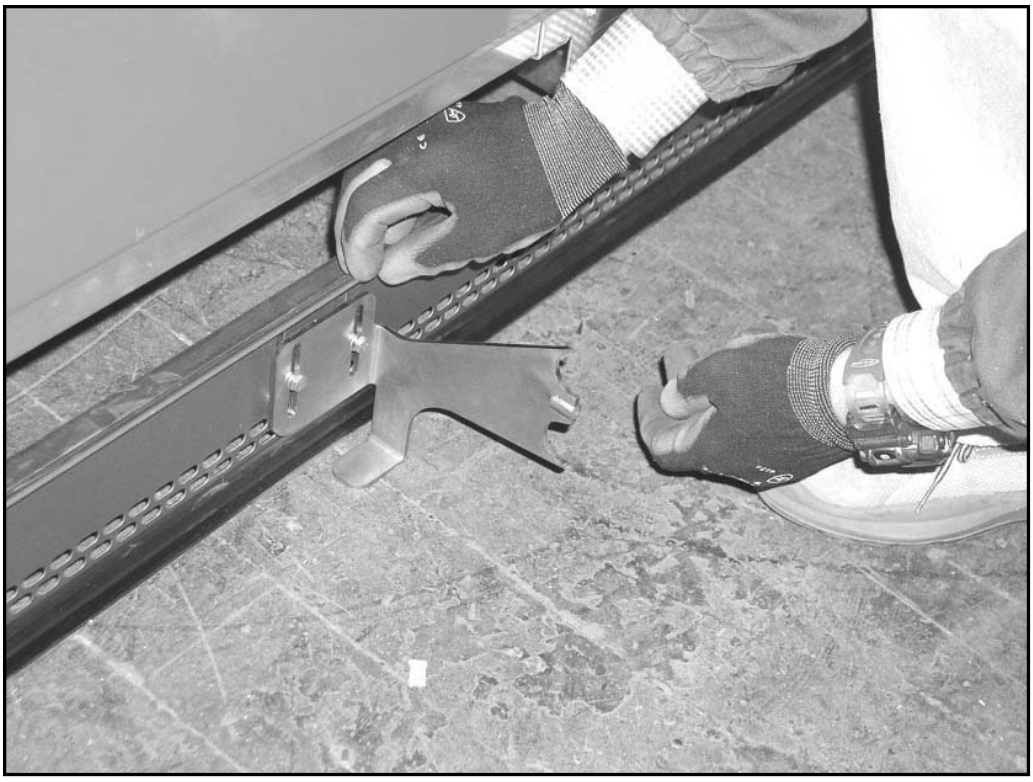
Fasten the stringers to the stirrups using the attached hex-head screws M6X30+washers.



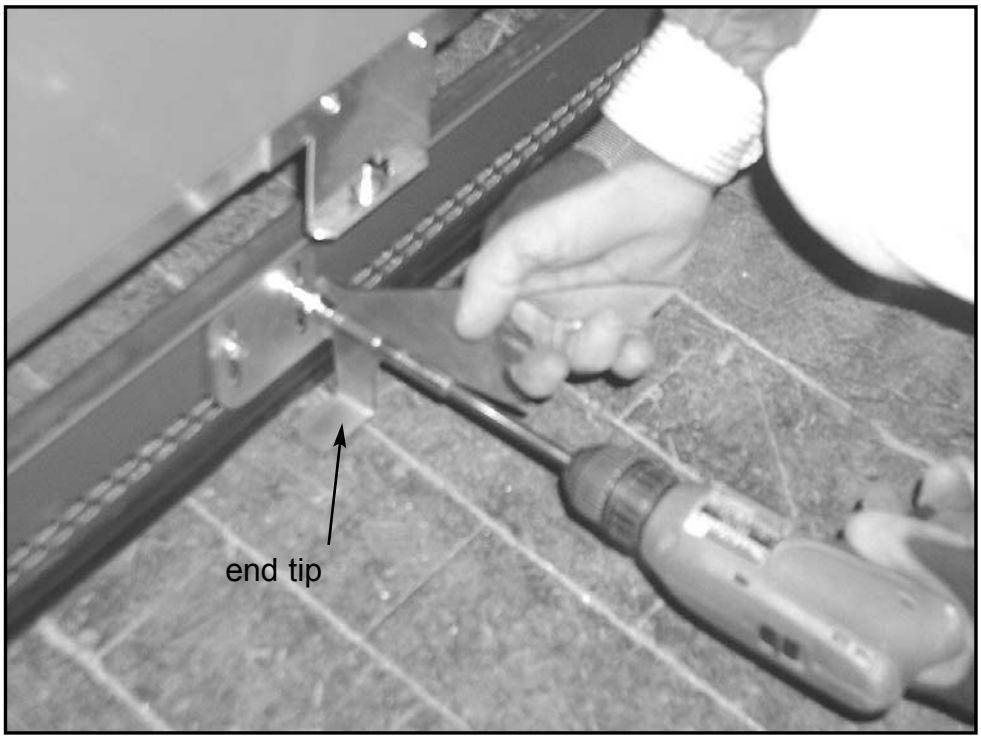
Lean the kickplates onto the just assembled stringers.



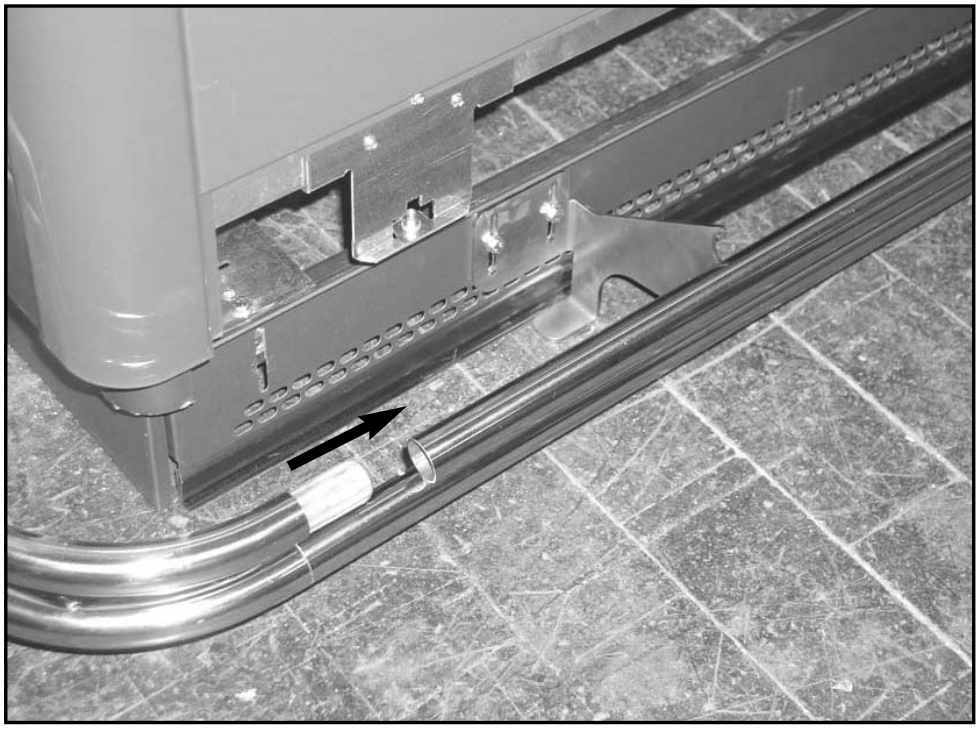
Mount the bumper rail supports using the slots on the stringer and the slots on the bumper rail.



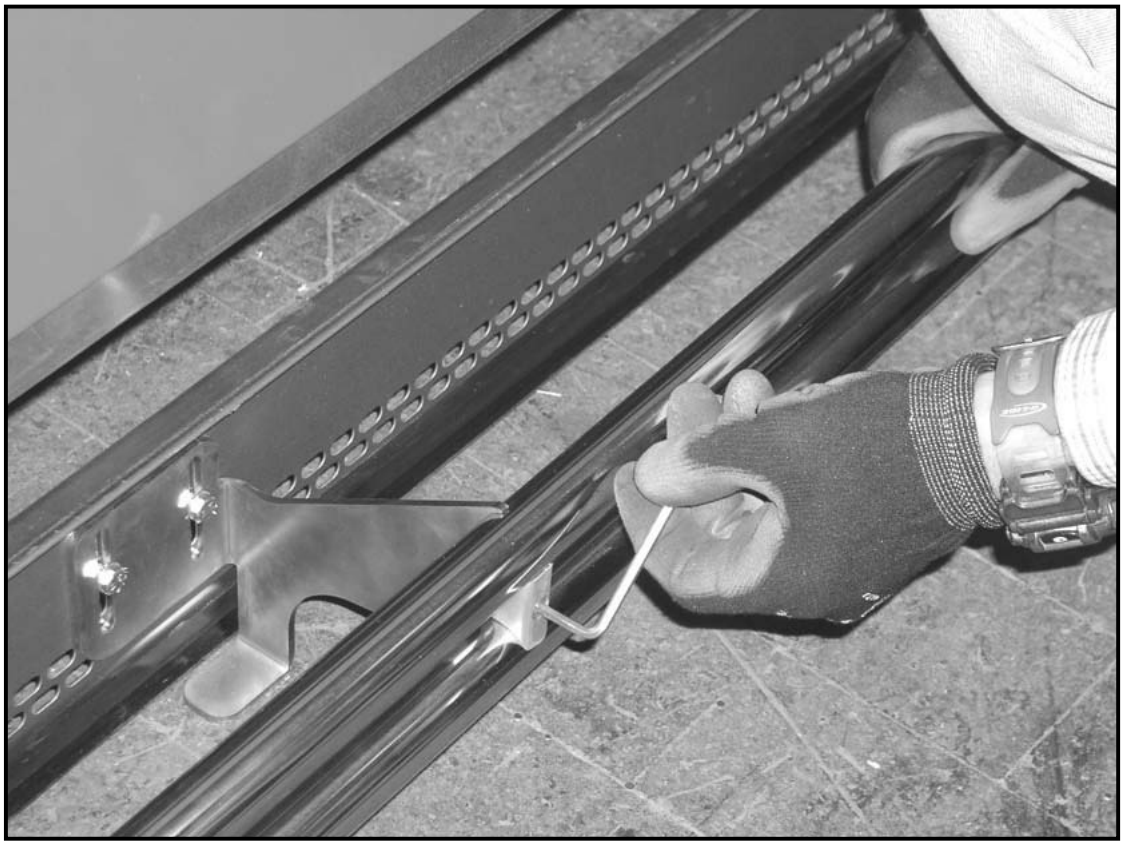
Secure the bumper rail using the hex-head screws M6X30+washers attached. **Ensure that the end tip rests directly on the floor.**



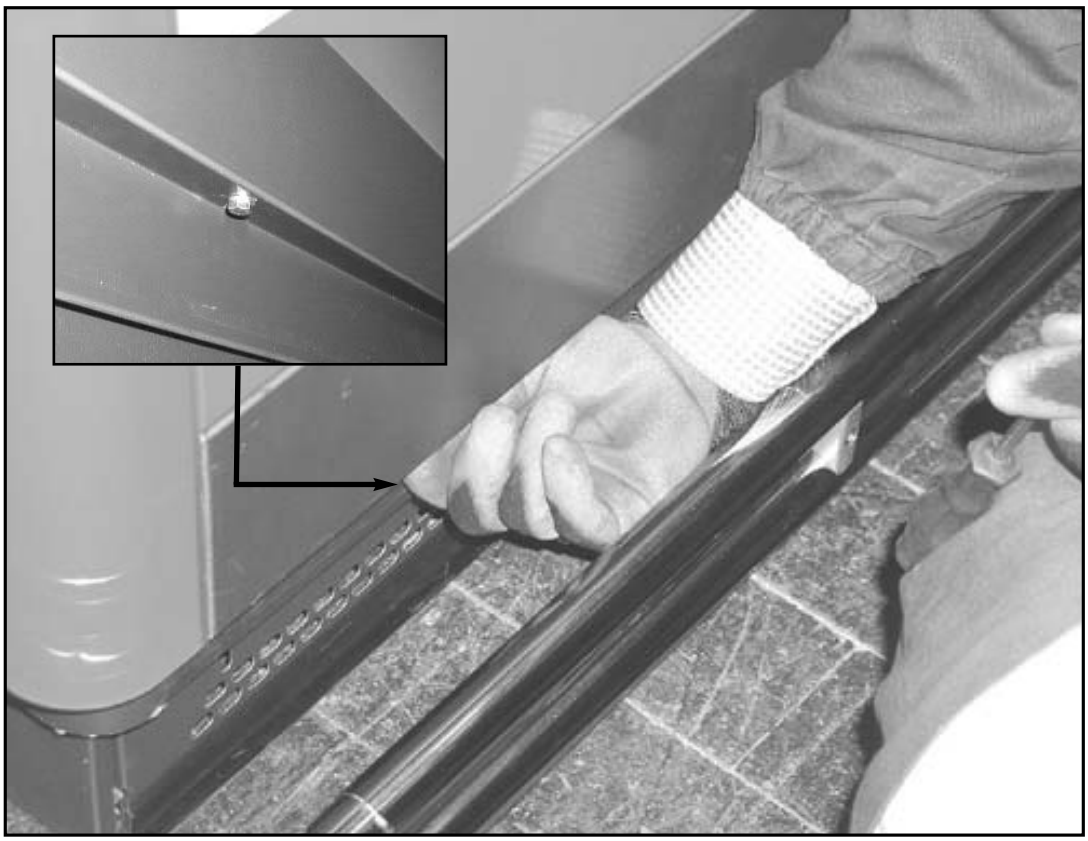
Place steel tubular bumper rails on their supports and insert side bumper rails with bends using the appropriate plastic joints.



Insert and fix the attached stop-blocks for tubular bumper rails, using the Allen screw supplied.



Lastly, mount base panels on their supports and secure them from below with hex-head screws M4x15.



ASSEMBLY OF OPTIONAL NIGHT BLINDS

- Drill the counter cover (1) with a Ø 2,5 drill bit with reference to the holes on the support (2).
- Fasten the supports (4) to the counter cover using self-tapping screws (3).
- Place the night blind (5) on its support and fasten with self-tapping screws (6).