

**Leonardo - Michelangelo
Donatello - Caravaggio**

instructions for installation

Document number:: SM00011Q

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COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO DOC. No. SM00011Q SECTION No. 010 SECTION: TABLE OF CONTENTS	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL PAGE: 1/1 DATE OF 1st ISSUE: 10.October.02 ISSUED BY MKT
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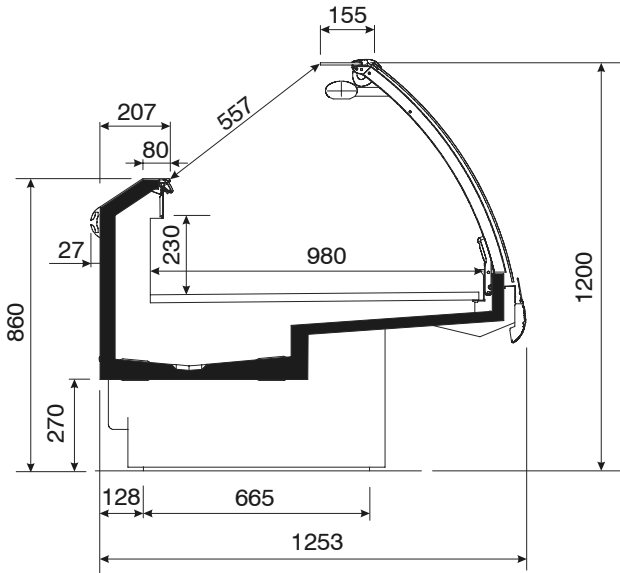
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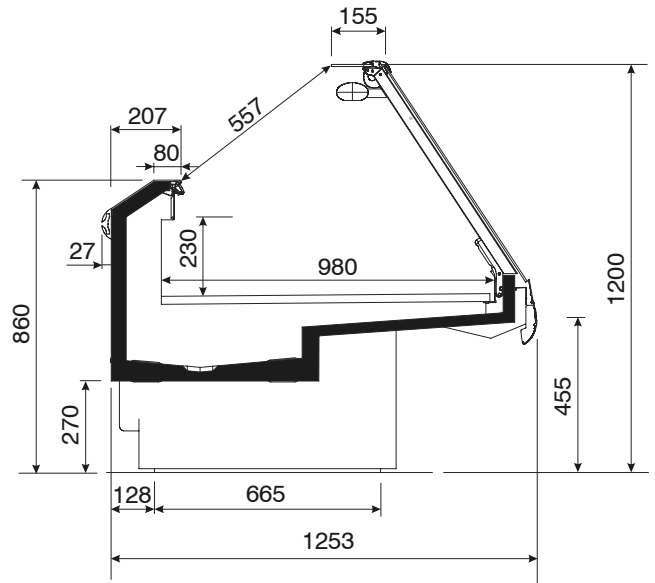
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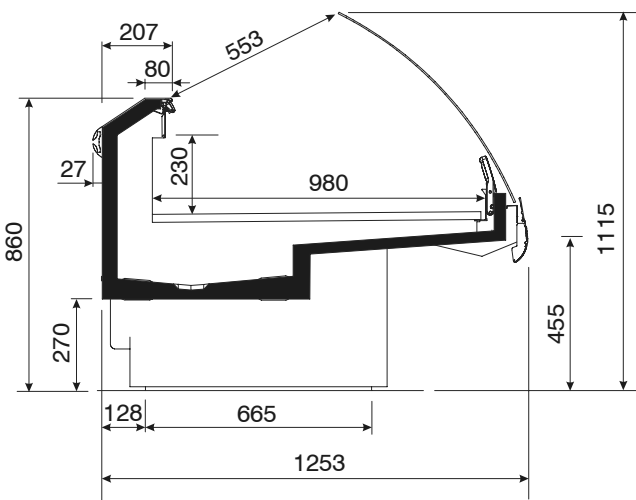
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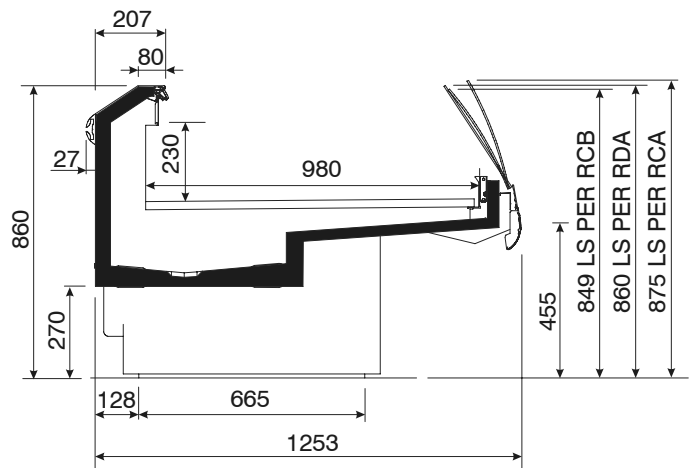
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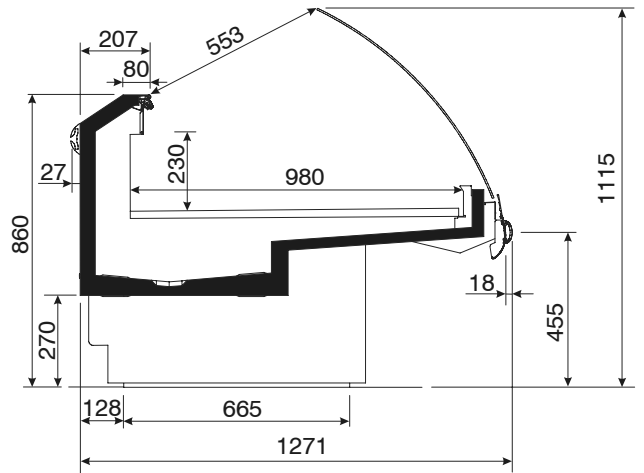
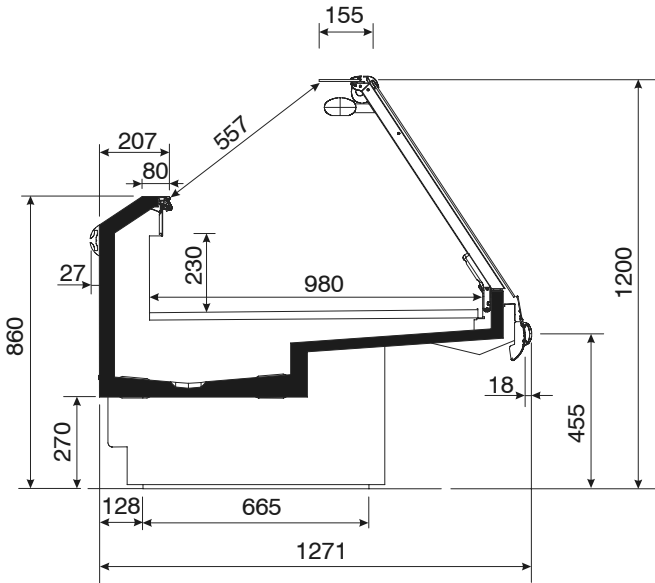


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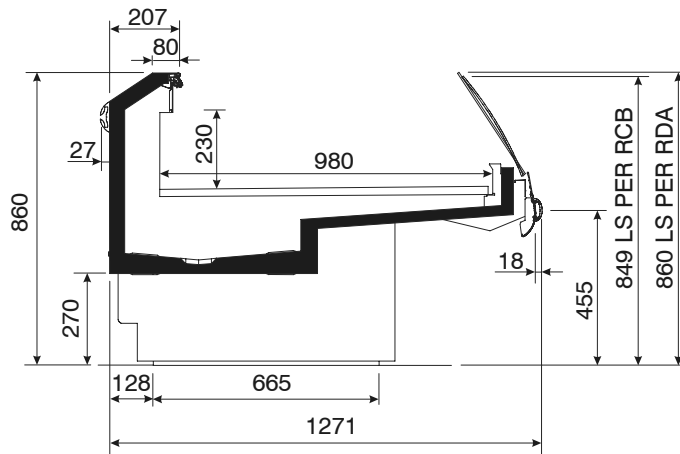
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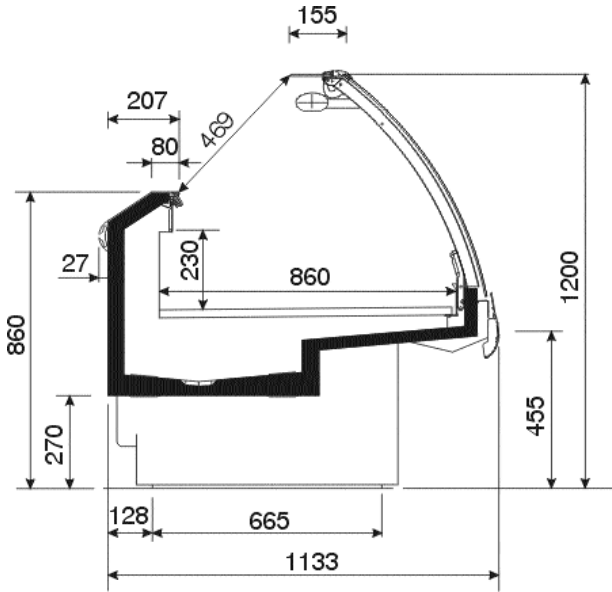
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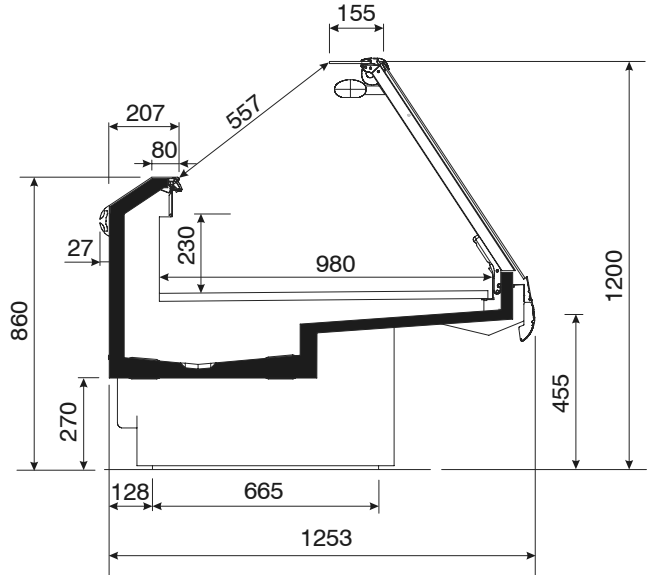
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DONATELLO - CROSS-SECTIONS -

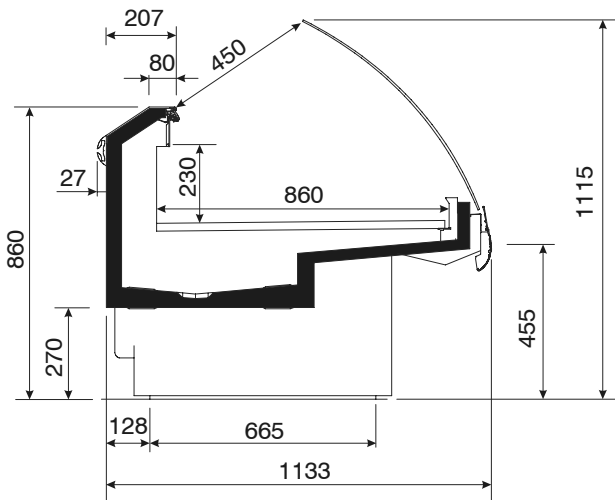
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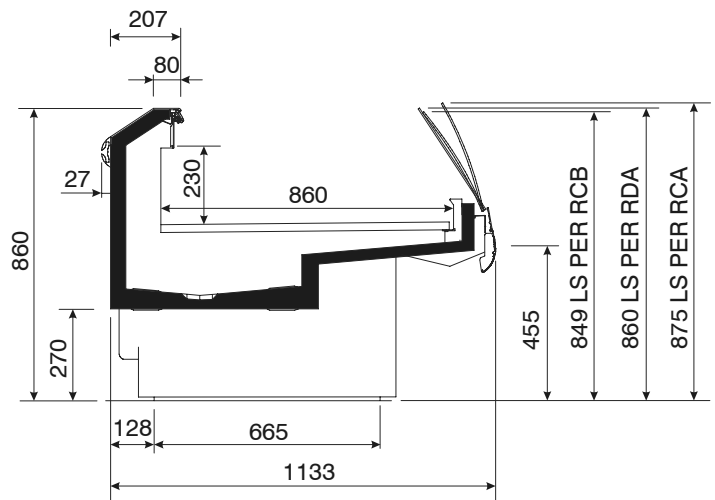
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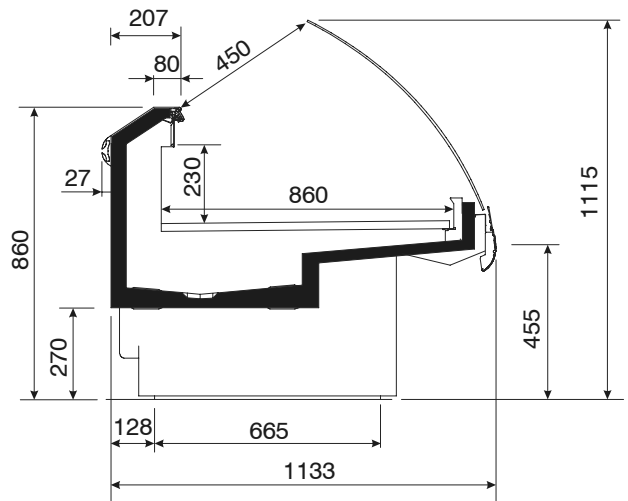
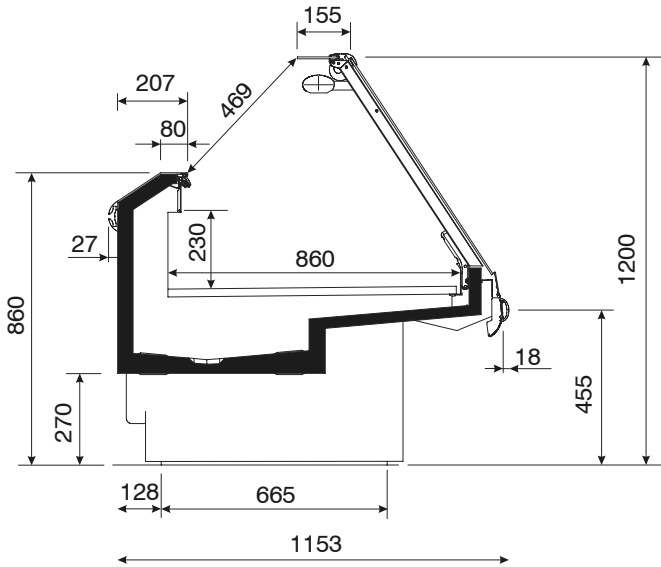


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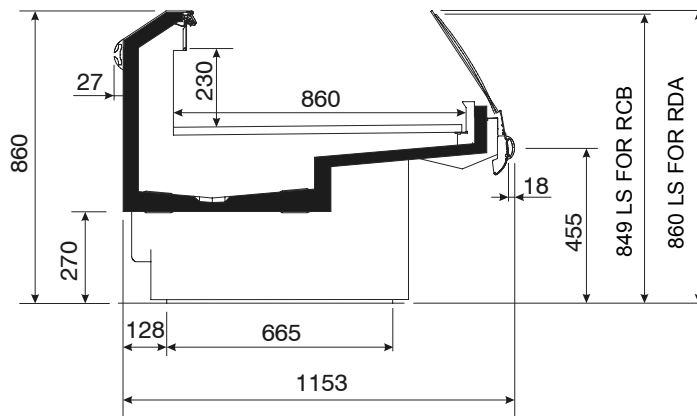
CARAVAGGIO - CROSS-SECTIONS -

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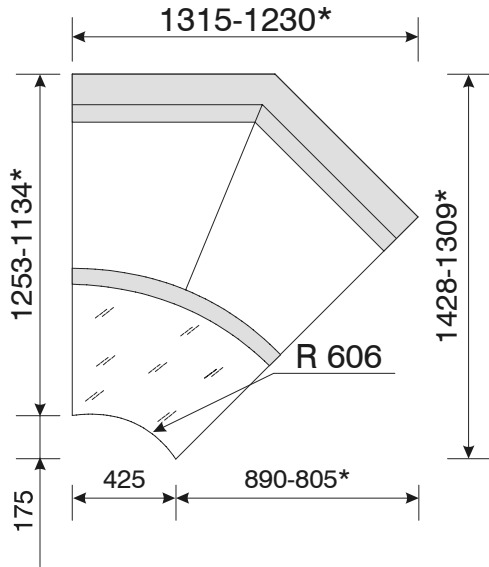


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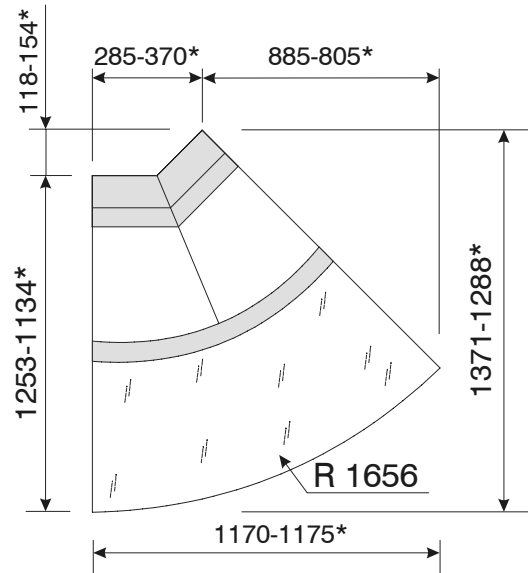


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LEONARDO - DONATELLO DIMENSIONS OF CORNERS 45°



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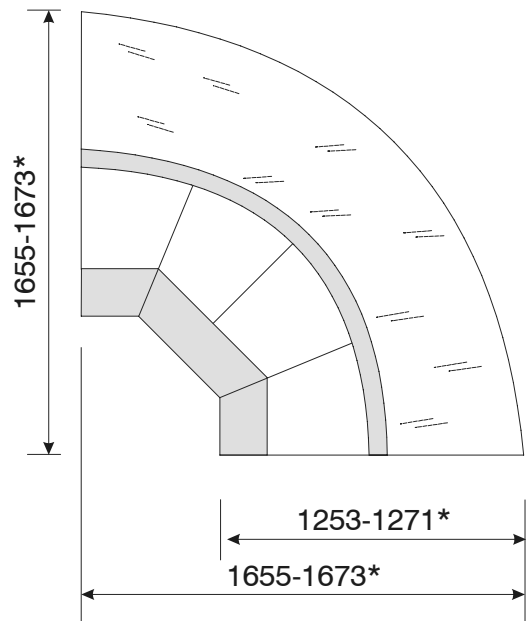
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LEONARDO - MICHELANGELO DIMENSIONS OF CORNERS 90°



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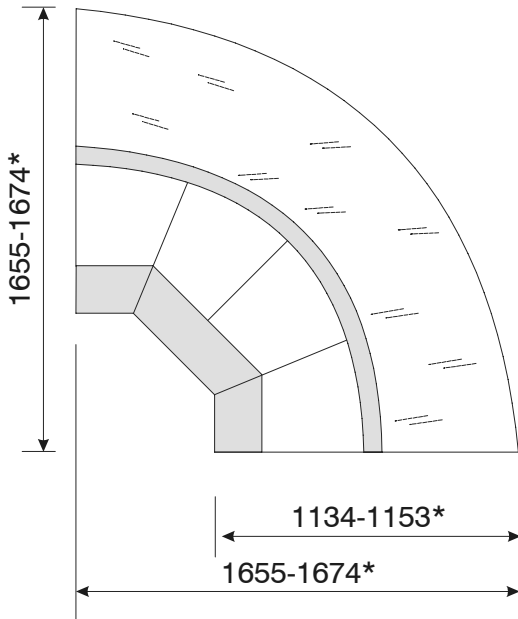
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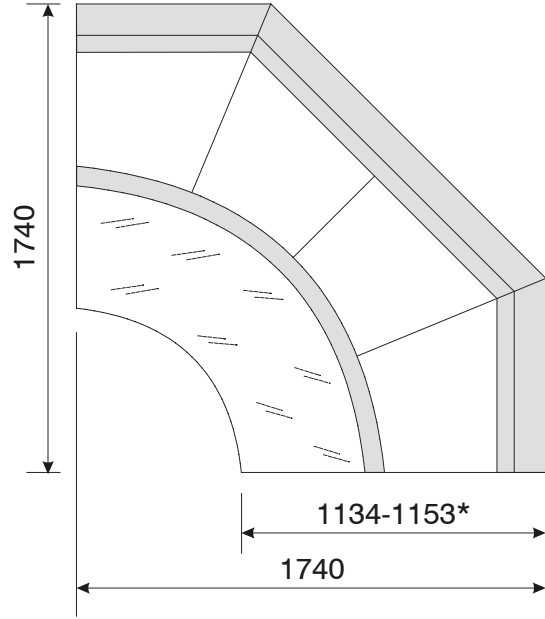
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DONATELLO - CARAVAGGIO CORNER CABINETS - DIMENSIONS -

corners 90°



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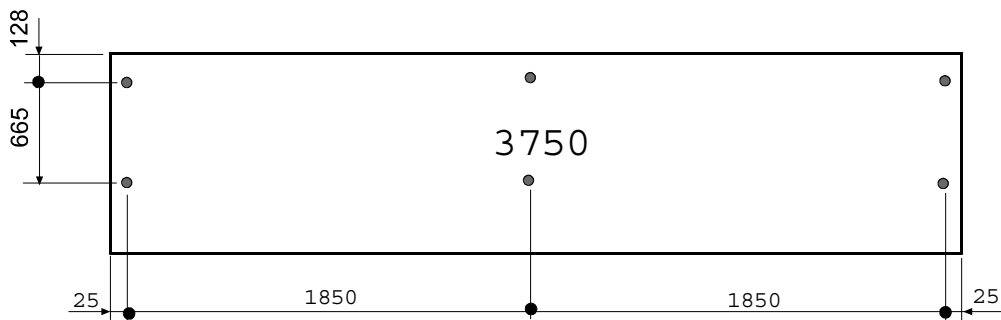
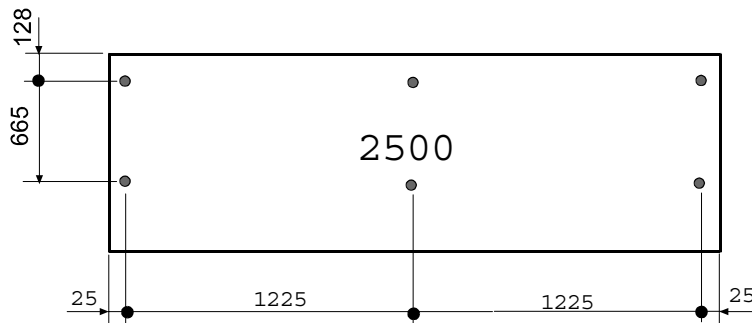
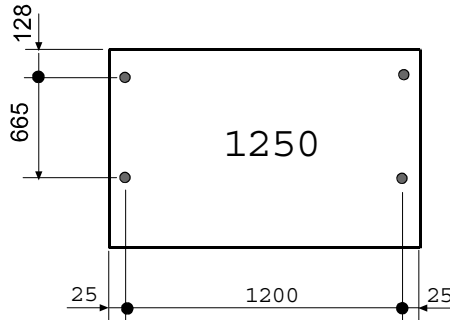
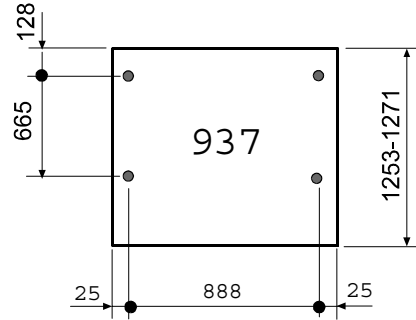


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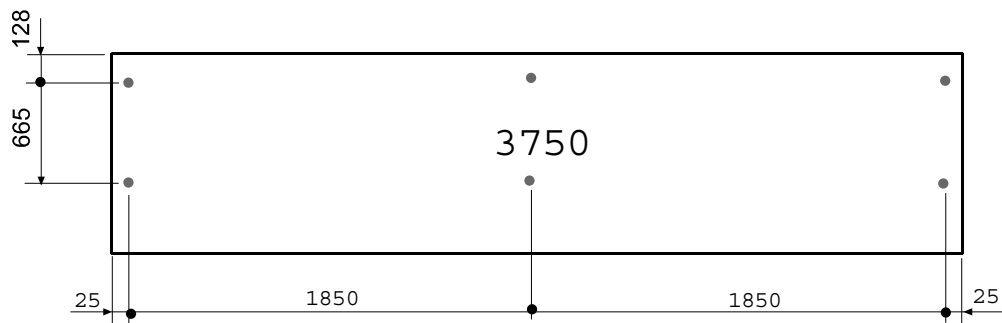
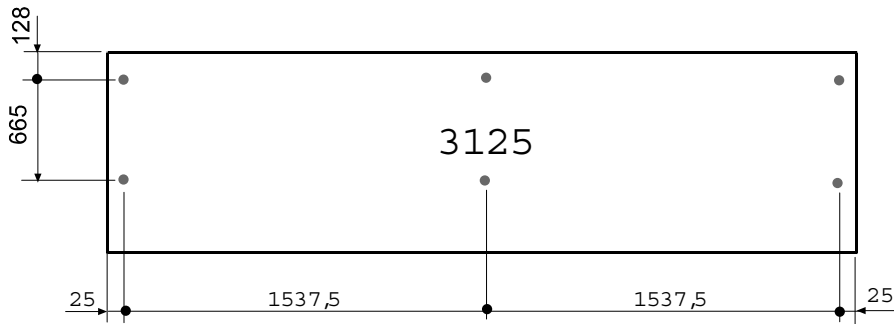
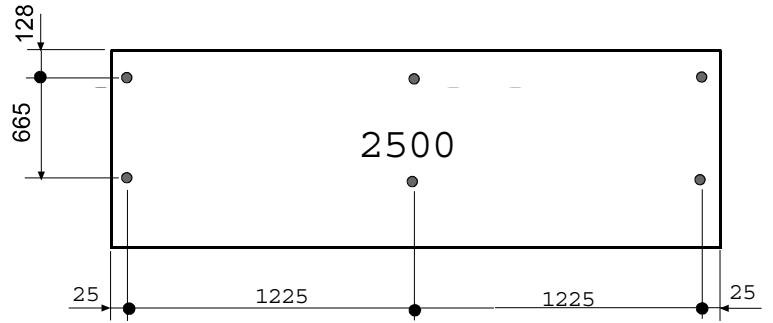
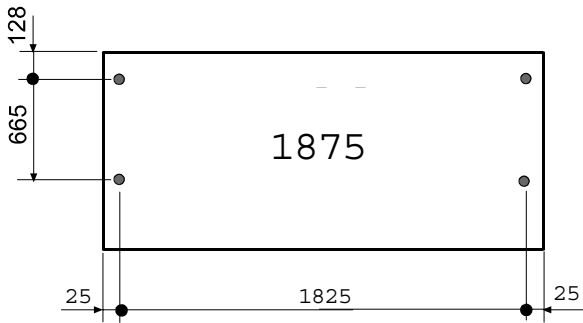
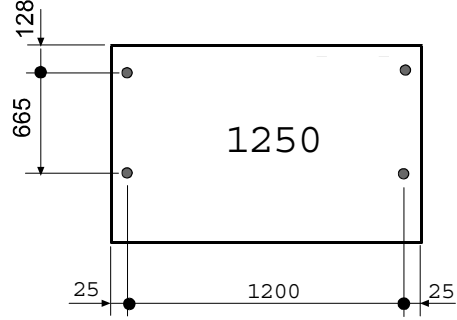
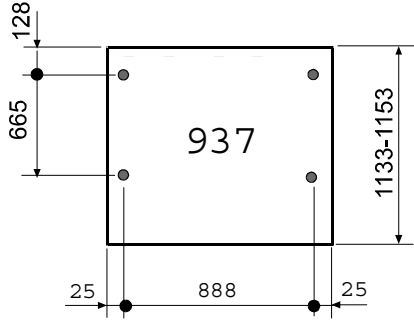
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LEONARDO - MICHELANGELO - POSITION OF FEET ON SGR CABINETS -



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DONATELLO - CARAVAGGIO - POSITION OF FEET ON SGR CABINETS -

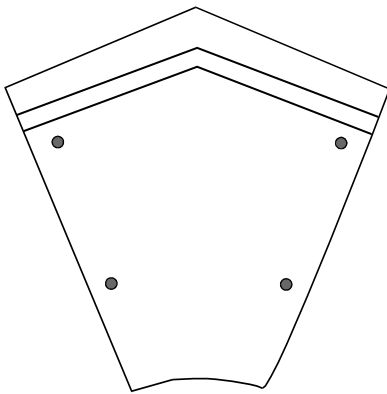


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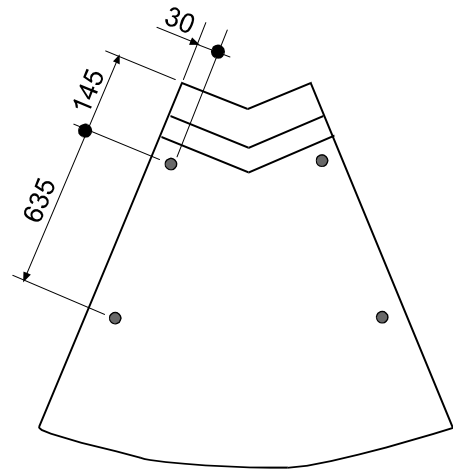
FEET POSITION OF CORNERS

LEONARDO - DONATELLO 45° CORNER CABINETS

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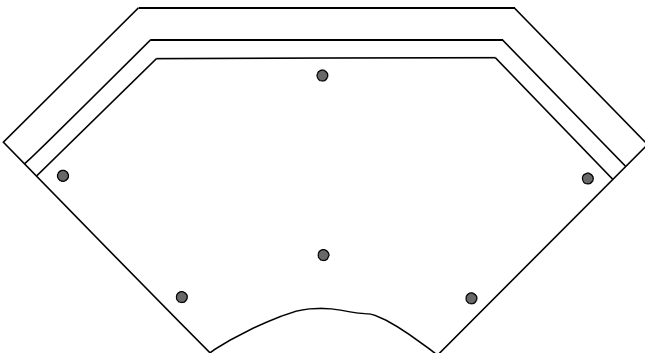


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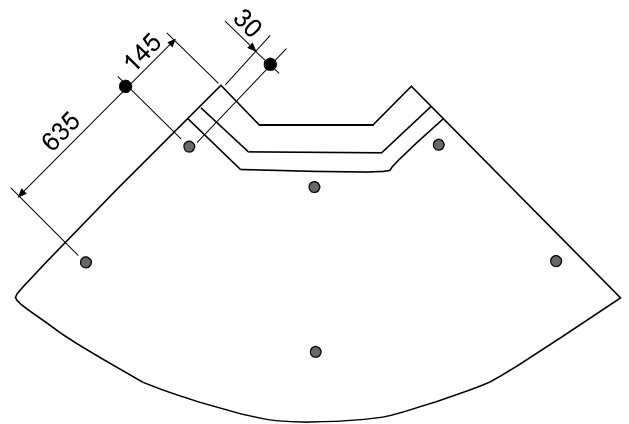


LEONARDO - MICHELANGELO - DONATELLO - CARAVAGGIO 90° CORNER CABINETS

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LEONARDO - DONATELLO CYLINDRICAL FEET: POSITION SCHEMATIC

Leonardo and Donatello showcases can be fitted with cylindrical feet mounted on sliding runners as explained in section 090.40.

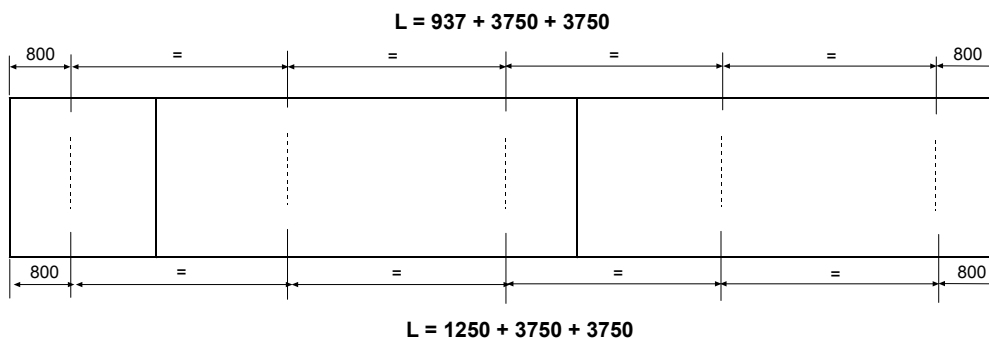
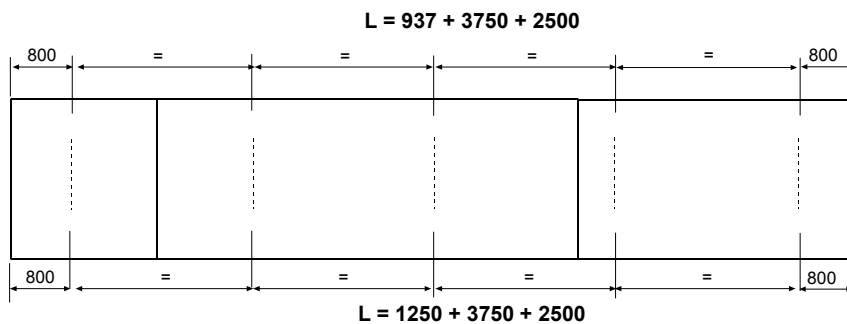
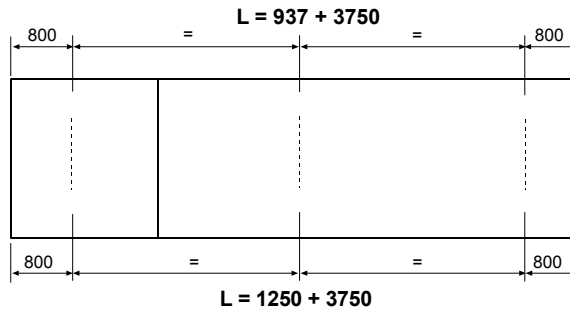
As for determining the number of feet to be ordered according to the specific showcase or showcase line (each kit is composed of a fore foot and a rear foot), follow the instructions below.

In case of standalone linear cabinets, always provide for **two foot kits per length**.

For multiplexed cabinets, the basic rule is:

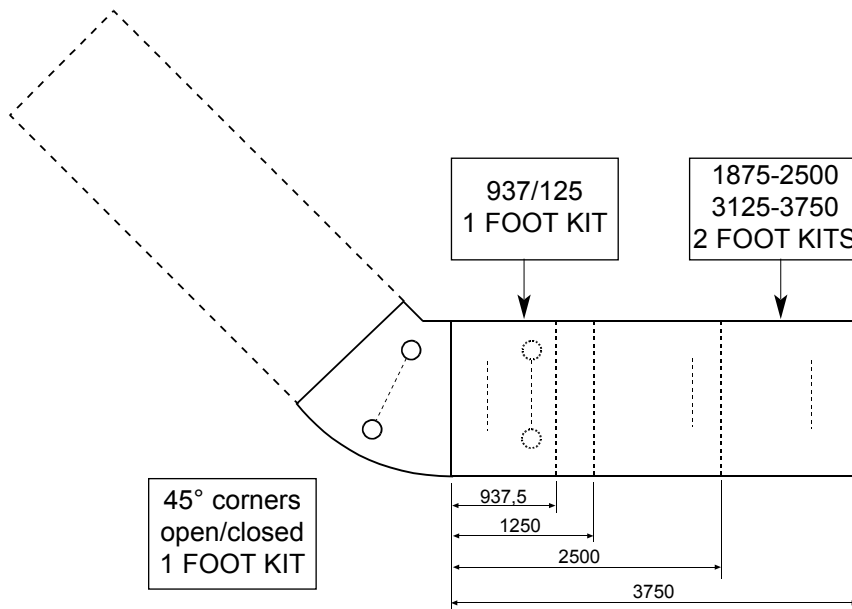
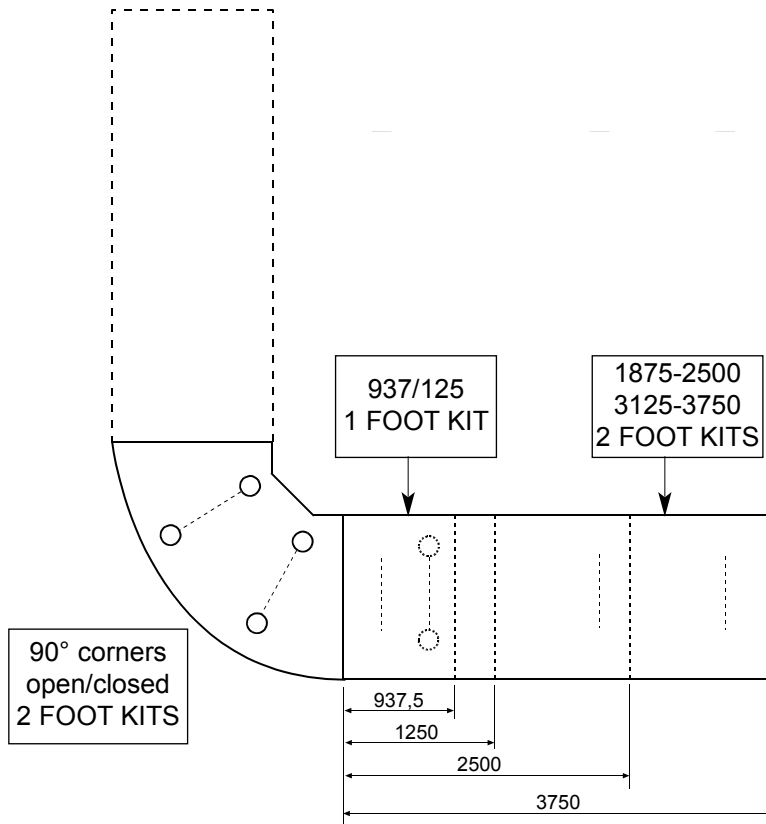
- lengths 937 - 1250 = **1 foot kit**
- lengths 1875 - 2500 - 3125 - 3750 = **2 foot kits**
- 45° corner cabinets - closed and open = **1 foot kit**
- 90° corner cabinets - closed and open = **2 foot kits**

Here are some examples



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CYLINDRICAL FEET ASSEMBLY DIAGRAM FOR CORNER MAKE-UPS

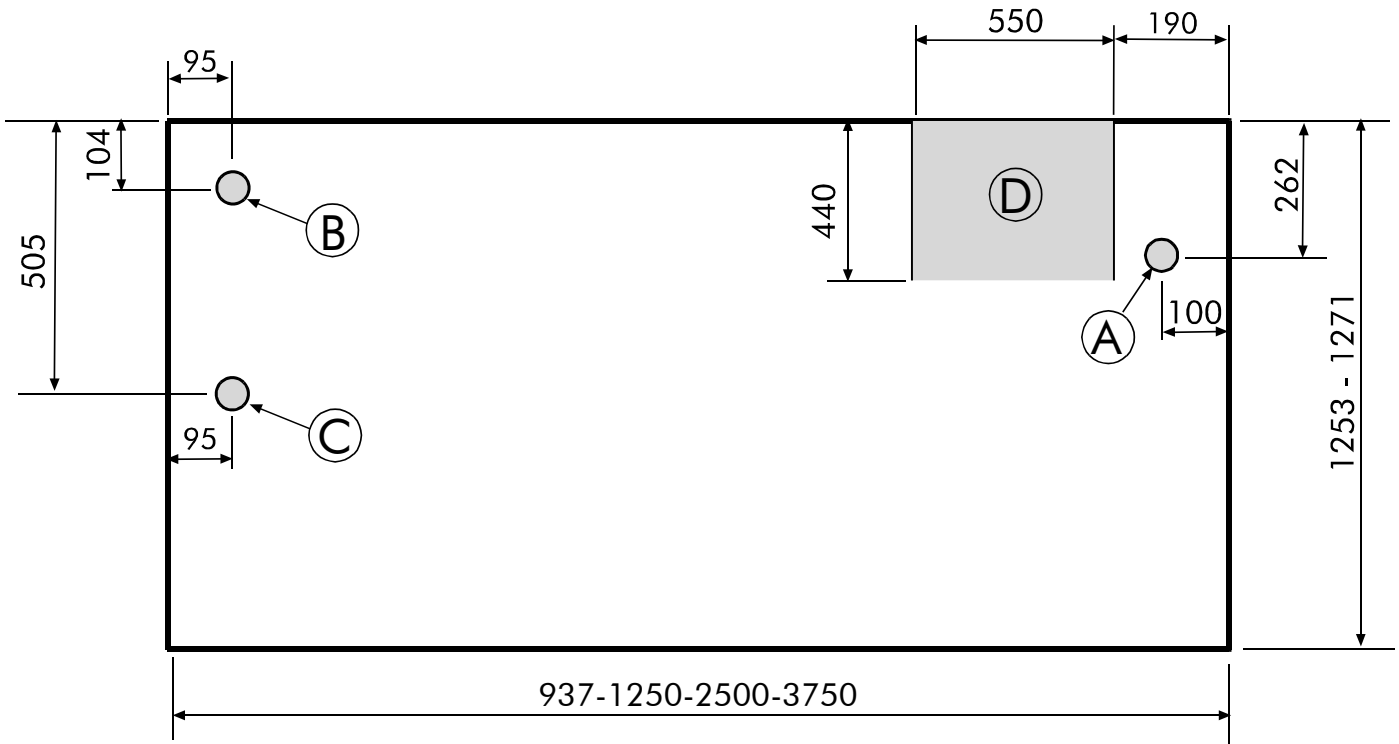


To adjust the height of cylindrical feet and level the cabinet, raise this slightly using a fork-lift truck, increase or decrease foot height by turning the base of the foot and lastly put the cabinet back in place.

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ELECTRICAL - WATER - REFRIGERANT CONNECTIONS

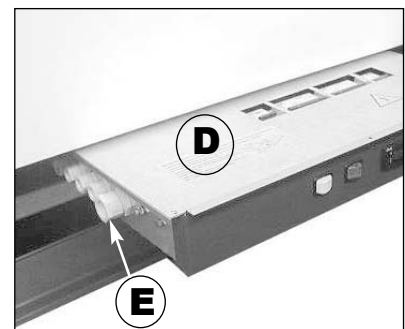
LEONARDO - MICHELANGELO LINEAR CABINETS



- A** = water drain int. Ø 35 mm - ext. Ø 40 mm
- B** = refrigerant tubes outlet on fairing-fitted cabinets
- C** = refrigerant tubes outlet on cabinets with feet
- in-leading pipes Ø = 6 mm
- out-leading pipen Ø = 15 mm
- D** = electrical board

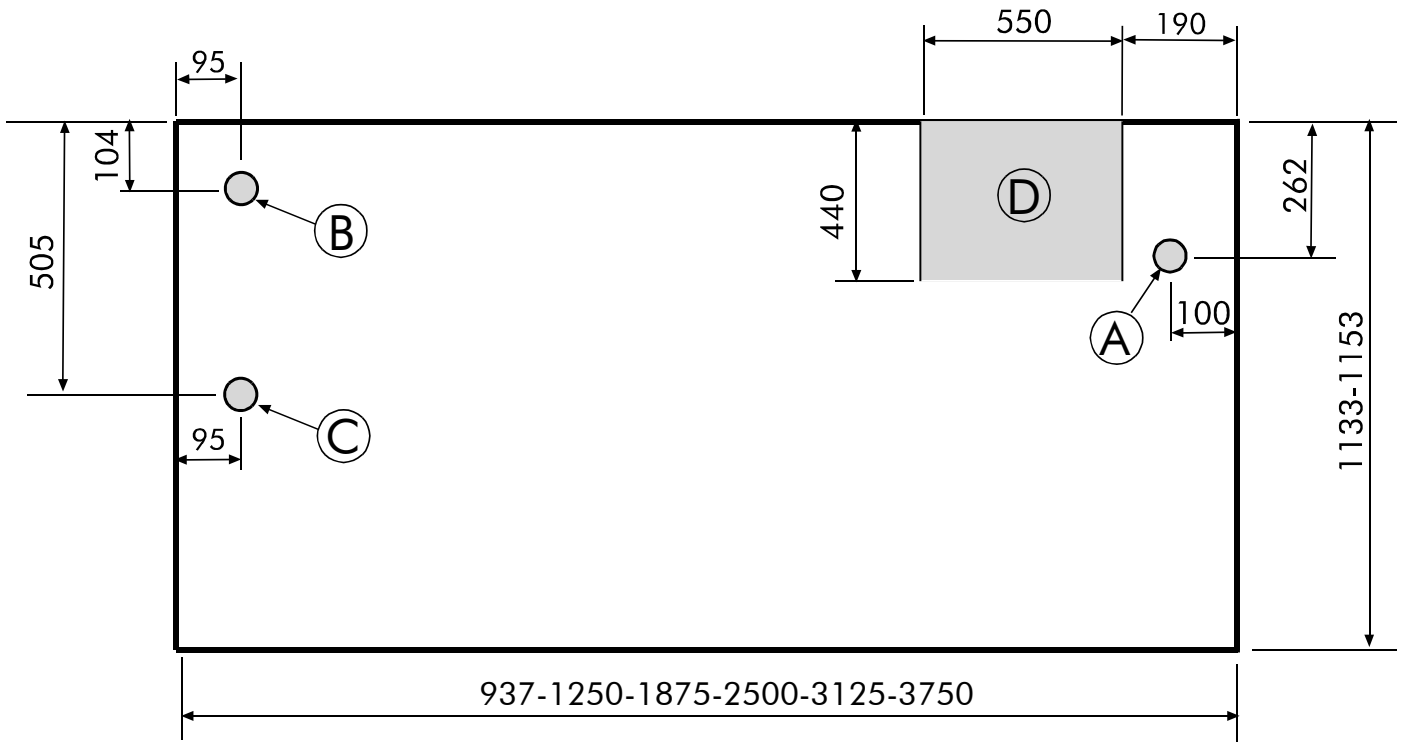
IMPORTANT: make sure that the electrical board cover is in place (D) and that the power supply cord is fitted with the appropriate cable clamp and with a seal suiting the outer cable diameter.

IMPORTANT: on installation and before start up, pour a litre of water into the drain hole (A) of each cabinet.



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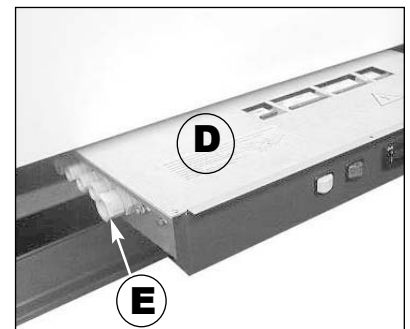
DONATELLO - CARAVAGGIO LINEAR CABINETS



- A** = water drain int. Ø 35 mm - ext. Ø 40 mm
- B** = refrigerant tubes outlet on fairing-fitted cabinets
- C** = refrigerant tubes outlet on cabinets with feet
 in-leading pipes Ø = 6 mm
 out-leading pipen Ø = 15 mm
- D** = electrical board

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

IMPORTANT: on installation and before start up, pour a litre of water into the drain hole (A) of each cabinet.

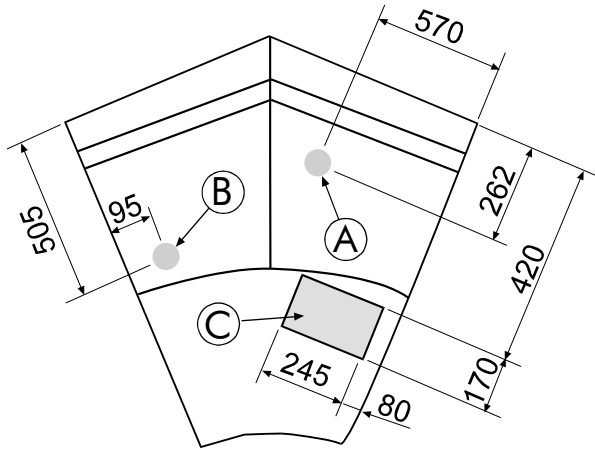


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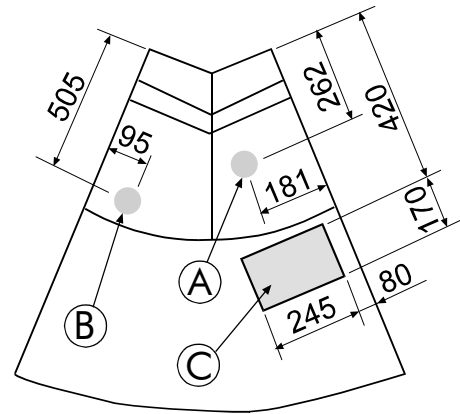
ELECTRICAL - WATER - REFRIGERANT CONNECTIONS

LEONARDO - DONATELLO 45° CORNER CABINETS

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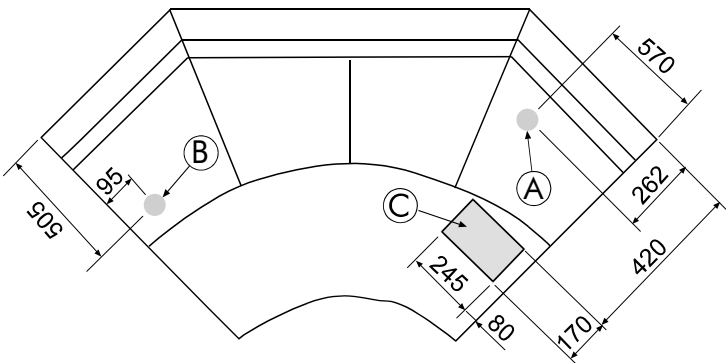
A = water drain

B = refrigerant tubes outlet on fairing-fitted cabinets and cabinets with feet

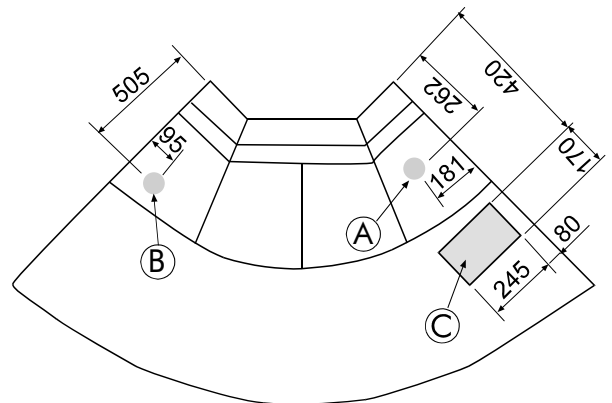
C = electrical board

LEONARDO - MICHELANGELO - DONATELLO - CARAVAGGIO 90° CORNER CABINETS

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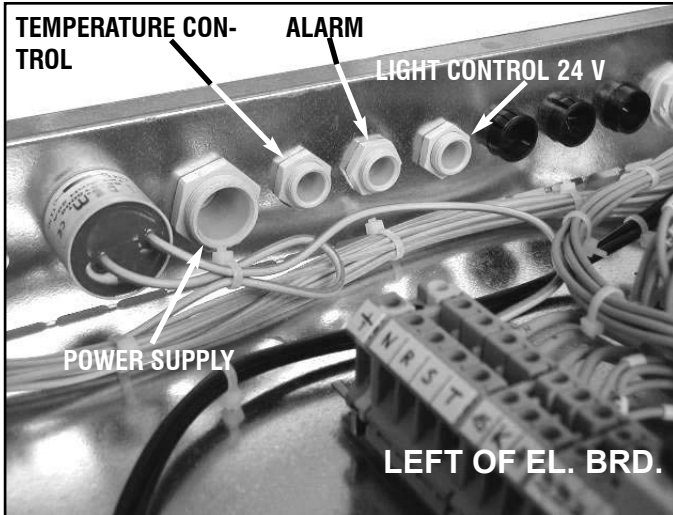
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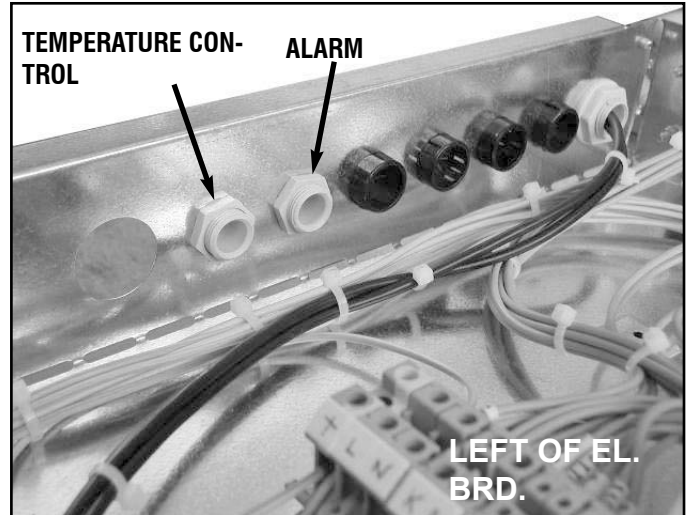
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ACCESSING CABINET ELECTRICAL BOARD

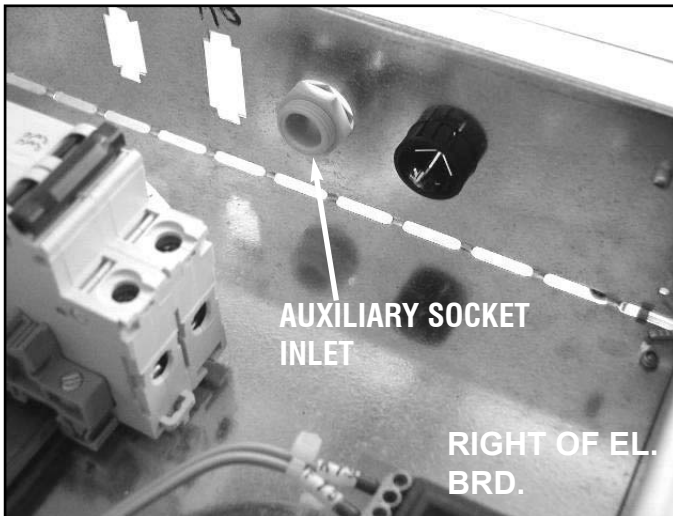
MASTER BOARD



SLAVE BOARD



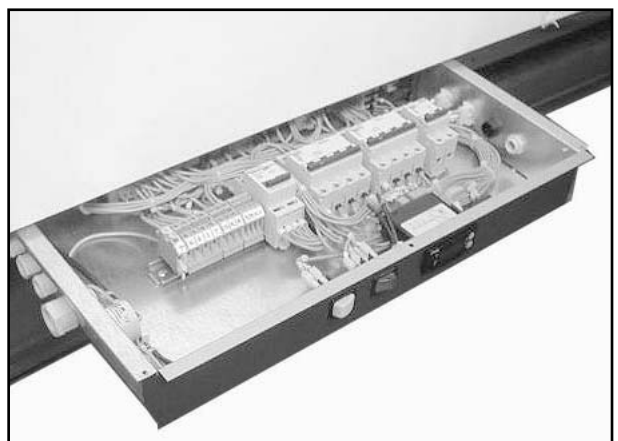
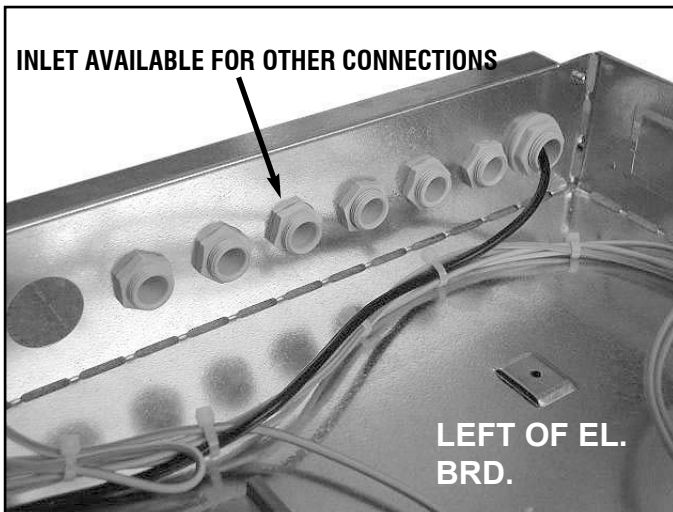
TERMINAL-BOARD AND MASTER/SLAVE CABINETS



To access the electrical board, remove the screws that secure it to the back of the cabinet and then the cover likewise. Use a manual or electric screwdriver with a P2 crosswise bit.

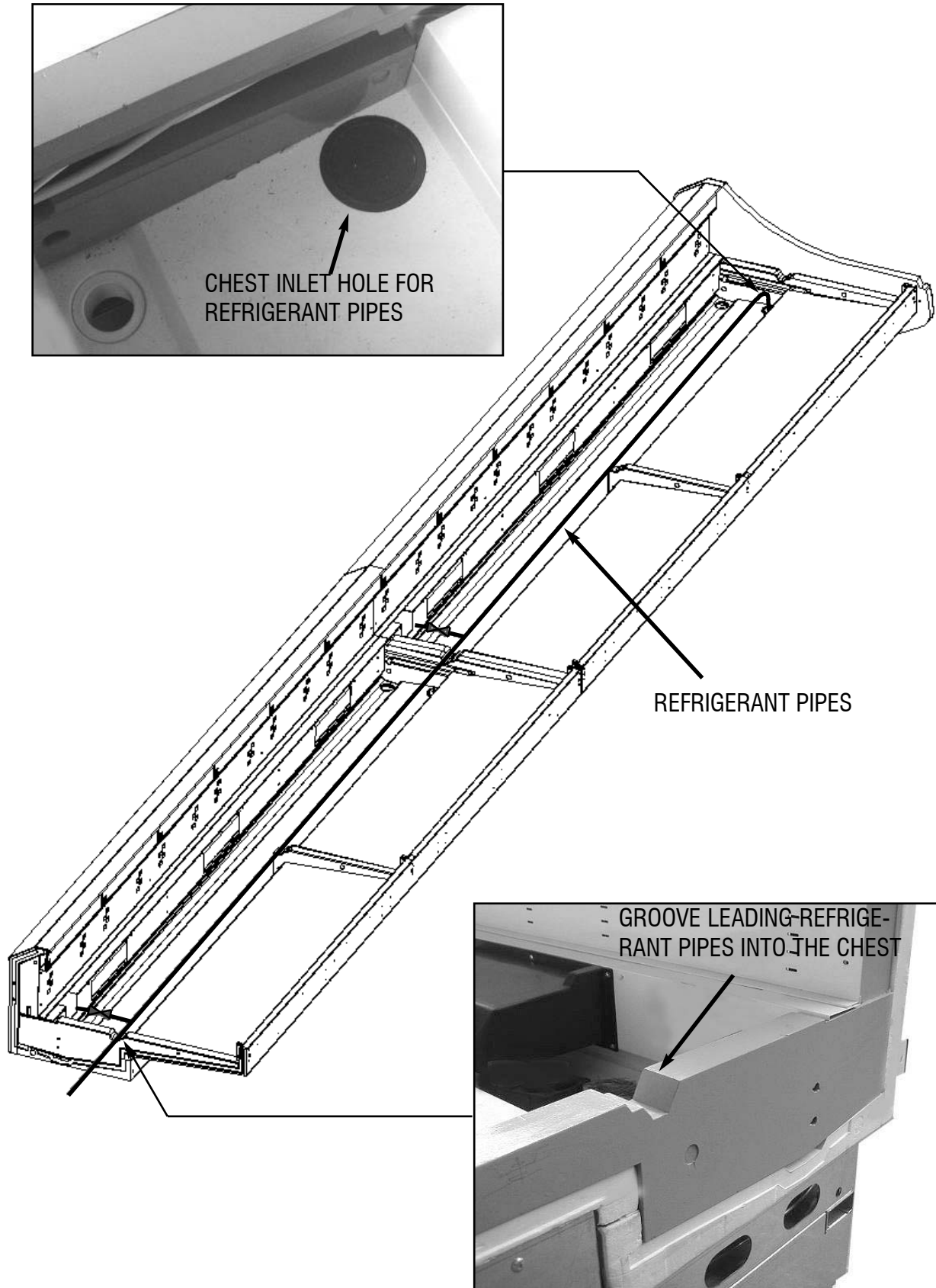


TERMINAL-BOARD CABINETS



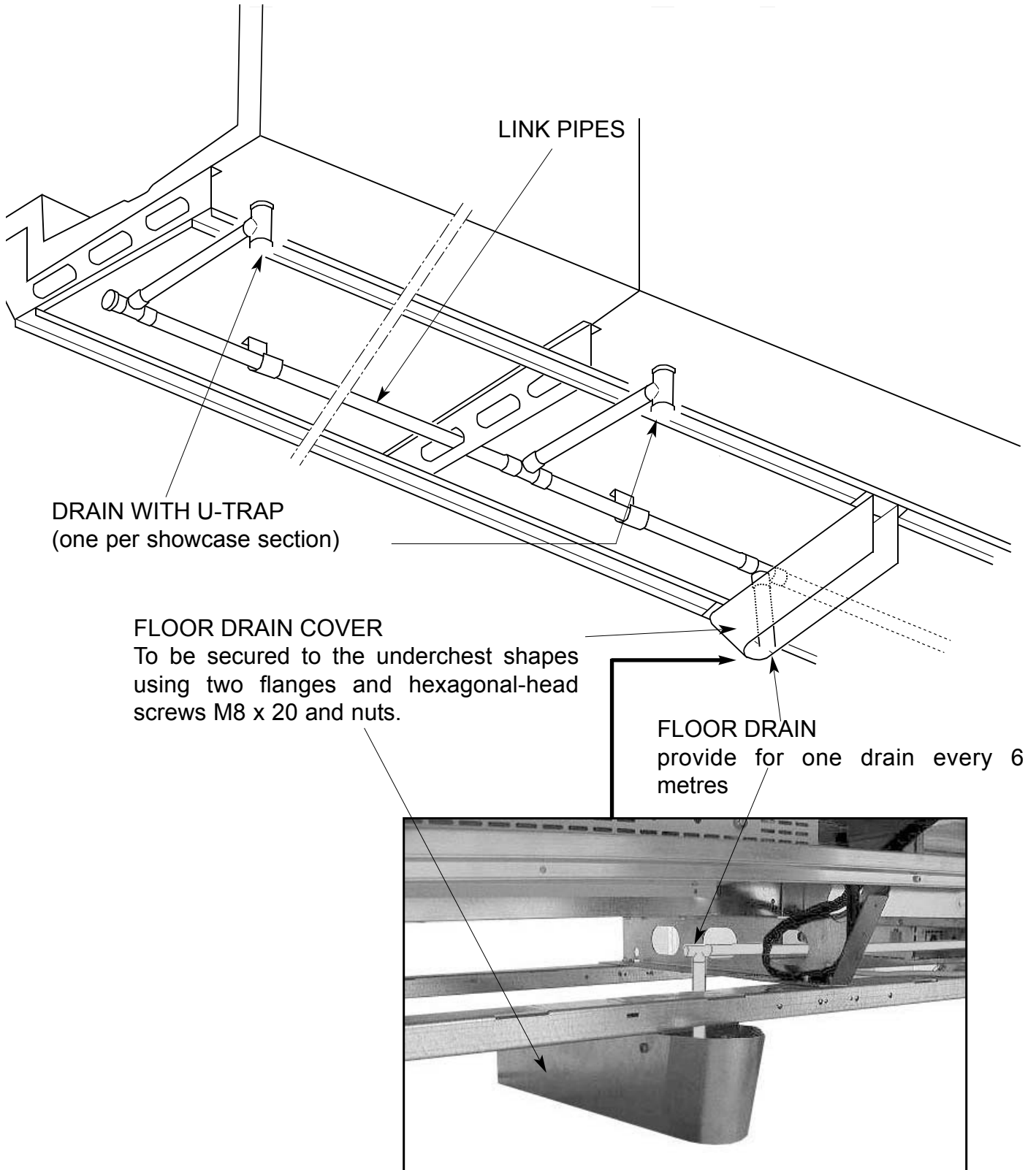
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WAY OF REFRIGERANT PIPES INTO THE CABINET



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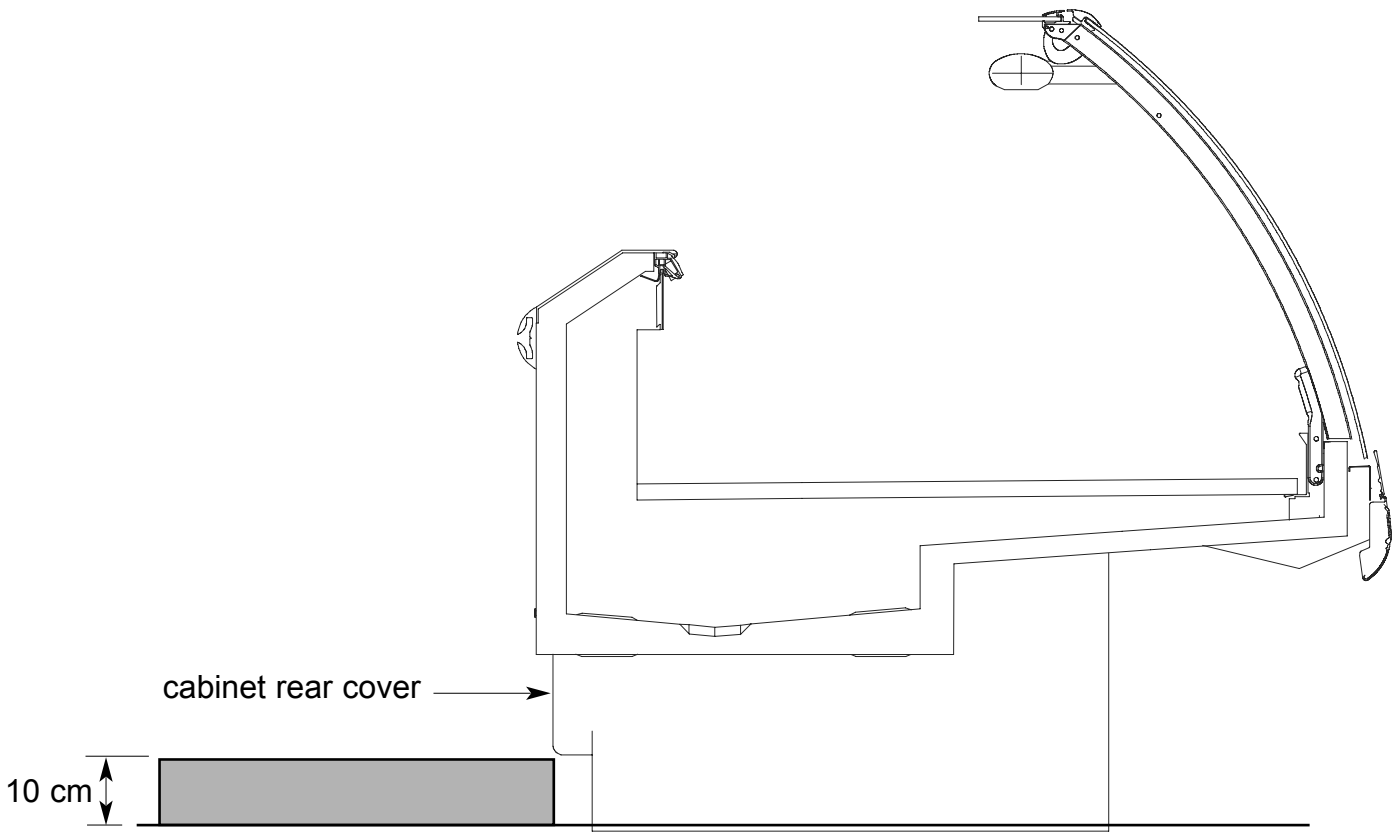
CONNECTION OF FLOOR DRAINS



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PLATFORM BEHIND THE CABINET

If there should be a platform behind the cabinet, it should not exceed 10 cm in height, in order for the cabinet rear cover to be removed in case of maintenance



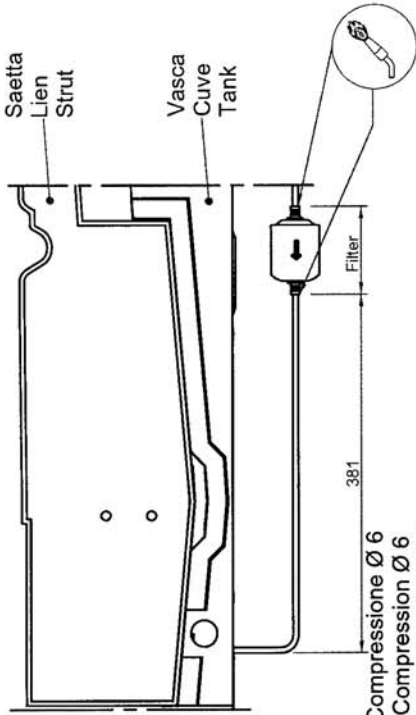
PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO
 DOC. No. SM00011Q SECTION No. 040.33
 SECTION: SOLENOID VALVE

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A			D		
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10.October.02

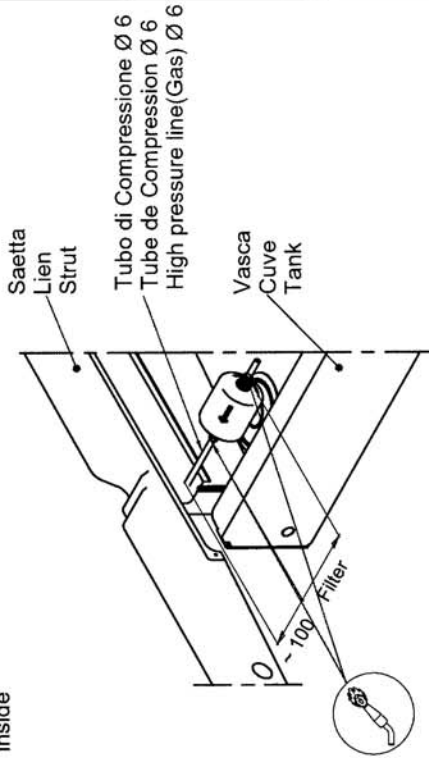
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2 Evaporatore c/uscita tubi - Vaporisateur avec sortie tubes - Evaporator with copper pipes outside



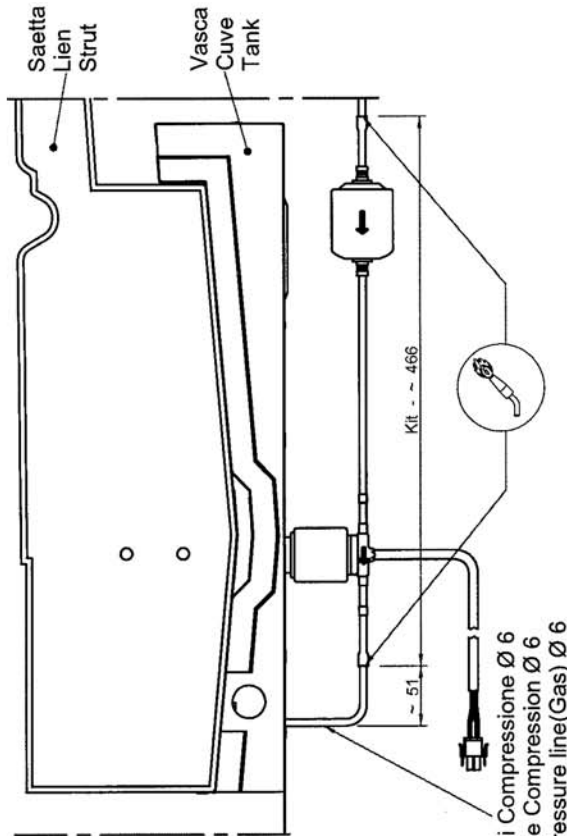
Tubo di Compressione Ø 6
 Tube de Compression Ø 6
 High pressure line(Gas) Ø 6

4 Evaporatore s/uscita tubi - Vaporisateur sans sortie tubes - Evaporator without copper pipes inside



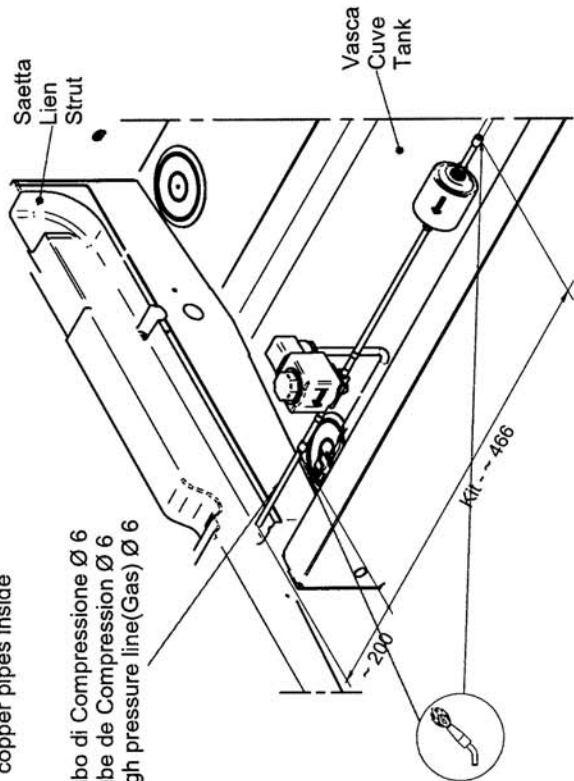
Tubo di Compressione Ø 6
 Tube de Compression Ø 6
 High pressure line(Gas) Ø 6

1 Evaporatore c/uscita tubi - Vaporisateur avec sortie tubes - Evaporator with copper pipes outside



Tubo di Compressione Ø 6
 Tube de Compression Ø 6
 High pressure line(Gas) Ø 6

3 Evaporatore s/uscita tubi - Vaporisateur sans sortie tubes - Evaporator without copper pipes inside



Tubo di Compressione Ø 6
 Tube de Compression Ø 6
 High pressure line(Gas) Ø 6

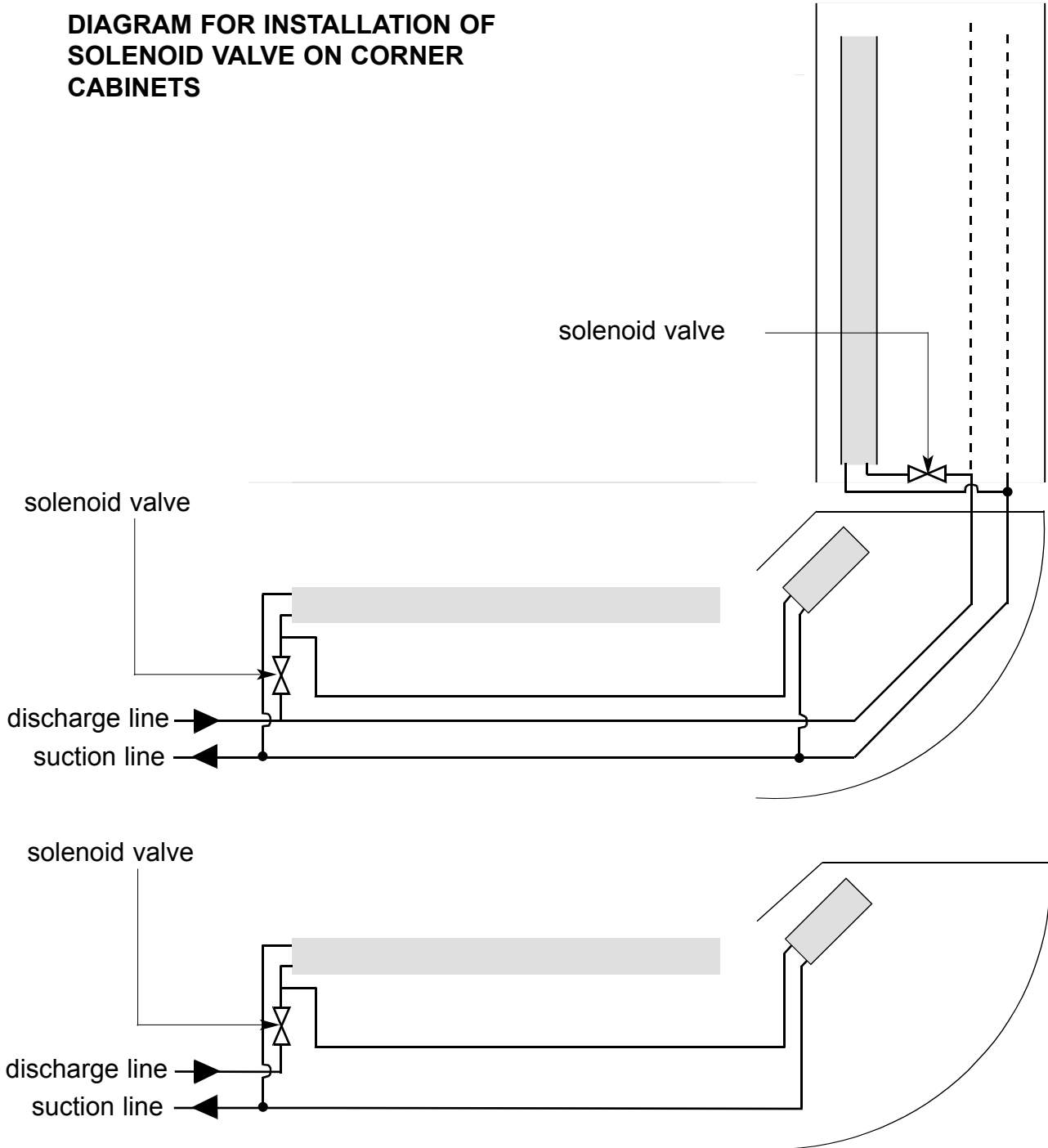
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EL.FI. Cold Development		Completamento descrizione		Completamento descrizione		Completamento descrizione	
Scale	Echelle	Scale	Echelle	Scale	Echelle	Scale	Echelle
1	1	1	1	1	1	1	1
UNIT: mm	UNIT: mm	UNIT: mm	UNIT: mm	UNIT: mm	UNIT: mm	UNIT: mm	UNIT: mm
GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1	GENERAL: 2:1
.MTG.SOLENOID VALVE AND FILTER		.MTG.SOLENOID VALVE AND FILTER		.MTG.SOLENOID VALVE AND FILTER		.MTG.SOLENOID VALVE AND FILTER	
.MTG.VALVE SOLENOIDE ET FILTRE		.MTG.VALVE SOLENOIDE ET FILTRE		.MTG.VALVE SOLENOIDE ET FILTRE		.MTG.VALVE SOLENOIDE ET FILTRE	
.MTG.VALV.SOLENOIDE E FILTRO		.MTG.VALV.SOLENOIDE E FILTRO		.MTG.VALV.SOLENOIDE E FILTRO		.MTG.VALV.SOLENOIDE E FILTRO	
INDICE		INDICE		INDICE		INDICE	
352068.A		352068.A		352068.A		352068.A	
D. COSTAN		D. COSTAN		D. COSTAN		D. COSTAN	
02/04/2002		02/04/2002		02/04/2002		02/04/2002	

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CHAPTER REVISION STATUS					
ORD.	DATE	FORWARD. DOC.	ORD.	DATE	FORWARD. DOC.
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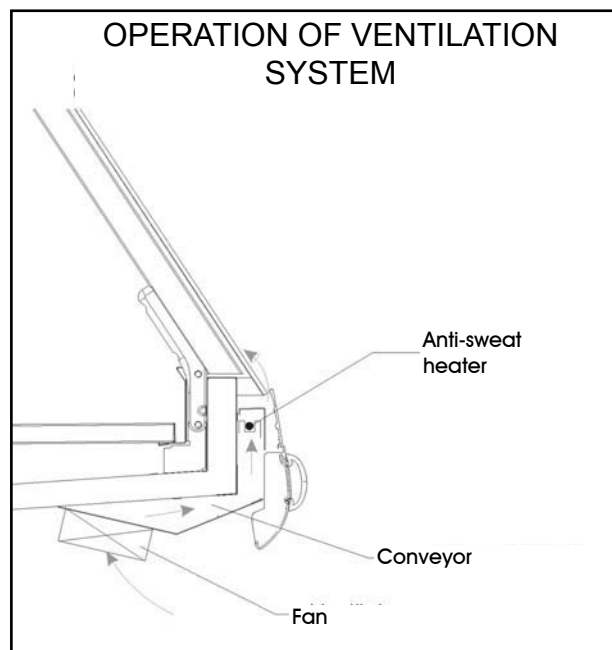
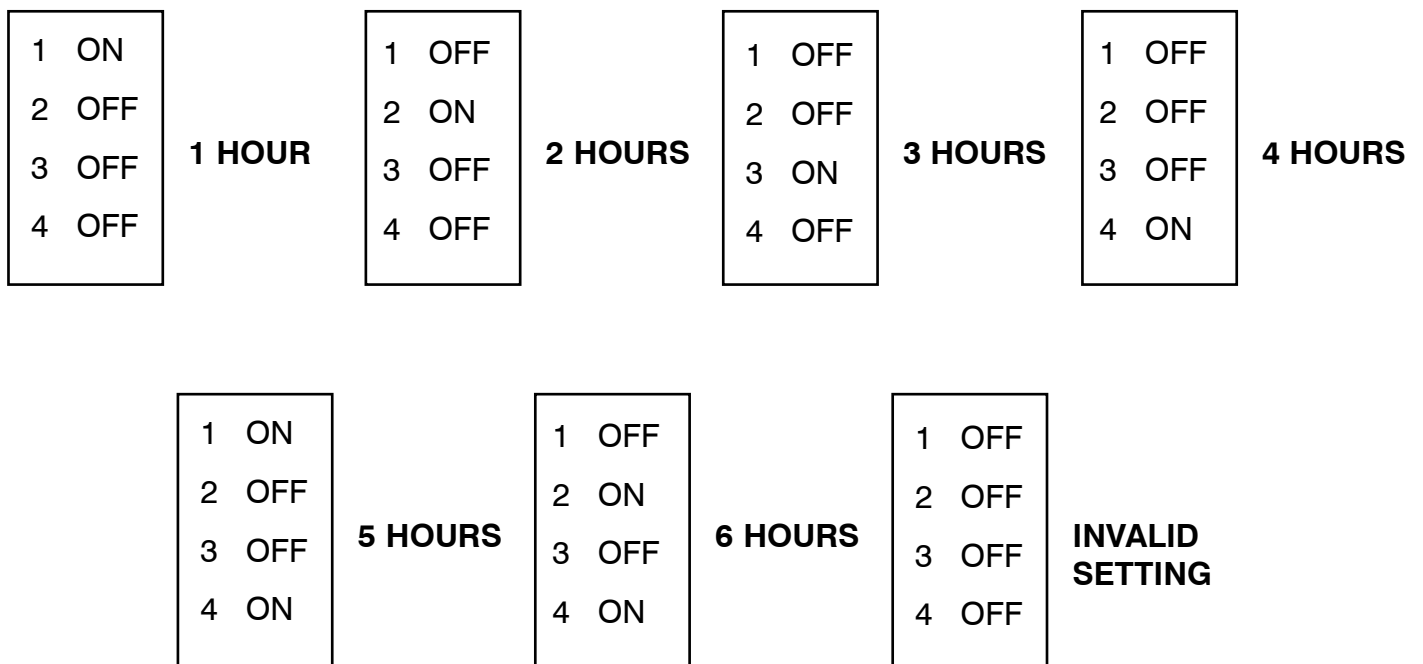
DIAGRAM FOR INSTALLATION OF SOLENOID VALVE ON CORNER CABINETS



COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO DOC. No. SM00011Q SECTION No. 040.40 CHAPTER: PRINCIPLE OF OPERATION	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGE: 3/4
	ORD.	DATE	FORWARD. DOC.	ORD.	DATE	FORWARD. DOC.		DATE OF 1st ISSUE: 10.October.02
	A			D				ISSUED BY MKT
	B			E				
			C			F		

ADJUSTMENT OF THE GLAZING ANTI-SWEAT HEATER OPERATING TIME

The operating time of anti-sweat heaters is adjustable. To adjust or change it, proceed as follows:
 Remove the electrical board located on the front of the cabinet.
 Select operating time using the switches, which must be selected one by one.
 Selections are expressed in hours. The possible combinations are illustrated below.



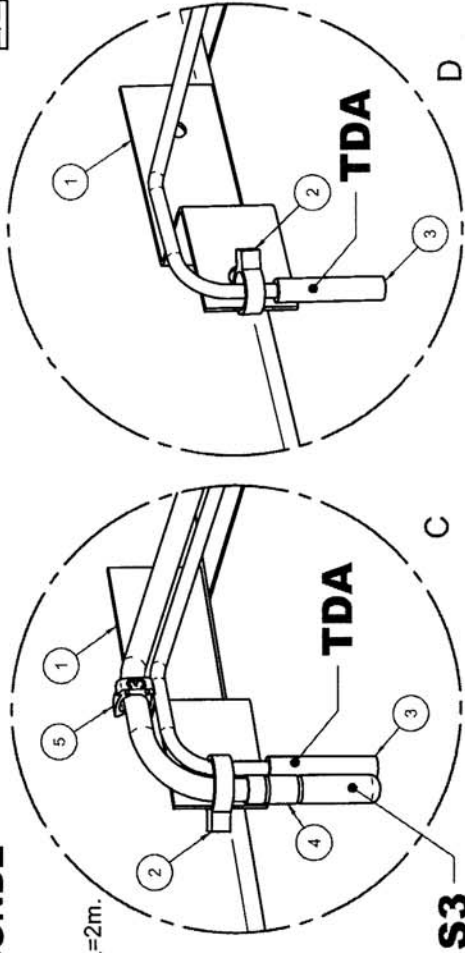
PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO
 DOC. No. SM00011Q SECTION No. 040.50
 SECTION: POBE POSITION

ORD.	DATE	FORWARD. DOC.	ORD.	DATE	FORWARD. DOC.
A			D		
B			E		
C			F		

DATE OF 1st ISSUE:
10.October.02

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2/2



N°	Codice	Descrizione	Q.tà
1	300177	STAFFA FISSAGGIO BULBO SONDA T3	1
2	540401012	FASCETTA THOMAS TY 24M	1
3	140223	TERM. TDA LCD KOCH TB58 L=2m.	1
4	TAB.	SONDA S3	1
5	600502603	SEGNALINO "3" PER SONDE DANFOSS	1

- Il mobile con Teletermometro TDA LCD KOCH TB58 ha solo la sonda TDA
- Cabinets with remote thermometer TDA LCD KOCH TB58 has only probe TDA
- Le meuble avec thermomètre à distance TDA LCD KOCH TB58 a seulement la sonde TDA
- Il mobile con Teletermometro Danfoss EKC 201 + teletermometro TDA LCD KOCH TB58 ha sempre le sonde S3 + S4 + TDA
- Cabinets with remote thermostat Danfoss EKC 201 + remote thermometer TDA LCD KOCH TB58 always has probes S3 + S4 + TDA
- Le meuble avec thermostat à distance Danfoss EKC 201 + thermomètre à distance TDA LCD KOCH TB58 a toujours les sondes S3 + S4 + TDA

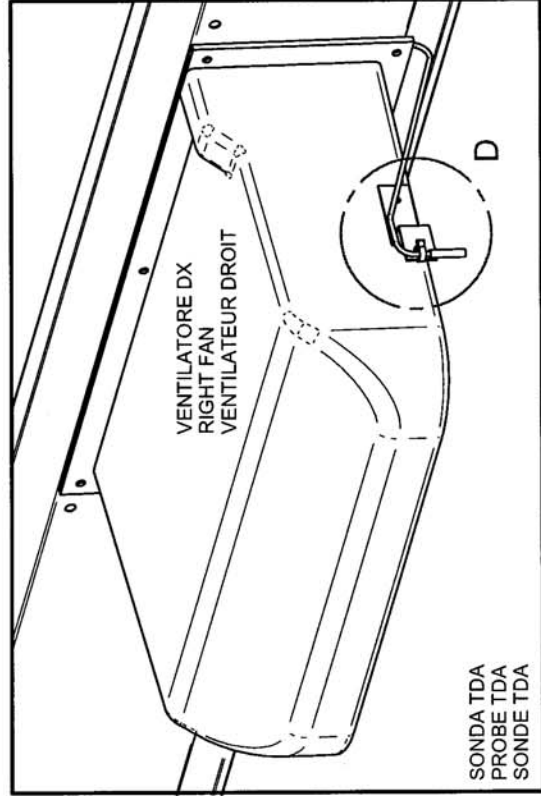
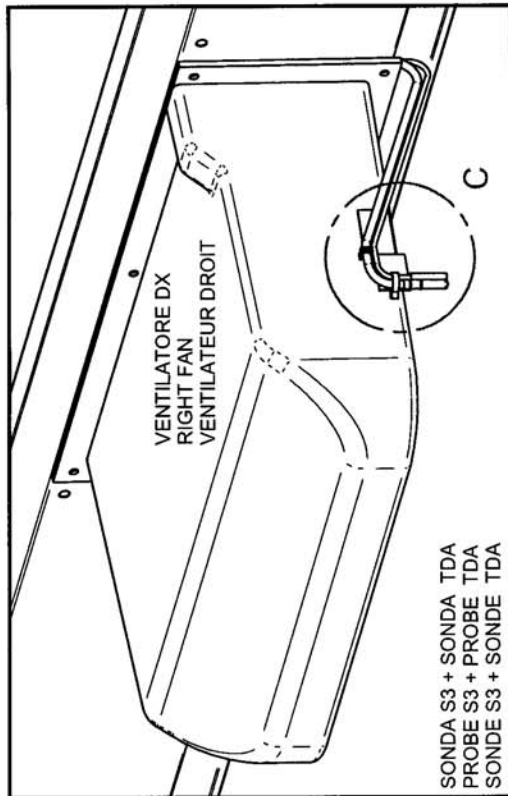
All dimensions are external where not specified - Toutes cotations externes sauf specification - Tutte le dimensioni sono riferite all'esterno se non specificato.

E.L.F.I. Cold Development		Completamento descrizione		Material Used	
Scale	Scale	Completamento descrizione	Completamento descrizione	Material Used	Material Used
UNIT	UNIT	Completamento descrizione	Completamento descrizione	Material Used	Material Used
GRAN T/L 45	GRAN T/L 45				
ASS. PROBE S3 - S4 - TDA POSITION		ASS. PROBE S3 - S4 - TDA POSITION		ASS. PROBE S3 - S4 - TDA POSITION	
MTG. POSITION SONDE S3 - S4 - TDA		MTG. POSITION SONDE S3 - S4 - TDA		MTG. POSITION SONDE S3 - S4 - TDA	
MTG. POSIZIONE SONDE S3 - S4 - TDA		MTG. POSIZIONE SONDE S3 - S4 - TDA		MTG. POSIZIONE SONDE S3 - S4 - TDA	
Drawn by		Drawn by		Drawn by	
Designe per		Designe per		Designe per	
Project		Project		Project	
350699.B		350699.B		350699.B	
Date		Date		Date	
15/03/02		15/03/02		15/03/02	

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POSIZIONE SONDE - PROBE POSITION - POSITION SONDE

Sonda TDA = Visualizzazione temperatura termometro TDA LCD KOCH TB58 L=2m.
 Probe TDA = TDA LCD KOCH TB 58 thermometer temperature reading L=2m.
 Sonde TDA = Visualisation de la température du thermomètre TDA LCD KOCH TB 58 L=2m.



COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO DOC. No. SM00011Q SECTION No. 040.60	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGES: 4
	ORD.	DATE	FORWARD. DOC.	ORD.	DATE	FORWARD. DOC.		DATE OF 1st ISSUE: 10.October.02
	A	15.03.04		D				ISSUED BY MKT
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	C			F				

Controller setting specifications

EKC201 for SRTS
 EKC201 + 101 + 151 for linear CTS
 EKC414 for linear SRTS and CTS

CONTROLLER SET POINTS
Referred to climate class 3 in accordance with EN441

CODE: RSP2017C CHANGE: 01-Final version / 02- set-point changed from 0° to -3°

DESCRIPTION	SET POINT	U.of M.	EC2
TEMPERATURE CONTROLLER			FS
Set point		°C	-3°
Differential	r1	K	2
Max. possible setting	r2	°C	10°
Min. possible setting	r3	°C	-6°
Probe reading compensation	r4	K	0°
COMPRESSOR			
Min.ON time	c1	minutes	0
Min.OFF time	c2	minutes	0
Cyclic operation	c3	%	50%
DEFROSTING			
Defrost end temperature	d2	°C	8°C
Gap between defrosts	d3	ore	OFF
Max. defrost time	d4	minutes	60'
Delay of display reading on defrost end	d5	minutes	10
Delay on controller switch-on	d6		OFF
OTHER			
Delay of output signal on controller switch-on	o1	minutes	0
Access code	o5		OFF
Cooling (rE) / Heating (HE)	o7		rE
TIMER DEFROST LENGTH SETTING		minutes	60'
NUMBER OF DEFROSTS PER DAY			4

DESCRIPTION	CHANGE	DATA	CODE	SIGNATURE
EC2 Terminal-board FS	01 =07/Dec/01	26/Oct/01	RSP2017C	
With EKC 101	02=18/July/02			

CONTROLLER SET POINTS

Referred to climate class 3 in accordance with EN441

CODE: RSQ2005C CHANGE: 01- Addition of version Pt 1000 / 02 - Change of parameter r07 cabinets from 3 to 2 /
03 - Addition of cold storage

DESCRIPTION OF PARAMETERS	DISPLAY	U.of M.	Default	EC2		EC2		COLD STORAGE	
				FS	ED	PTC 1000	PT 1000	PTC 1000	Pt1000
Set point for Sout	Out	°C	3	-3°	-3°	-3°	-3°	-1°	-1°
Set point for Sin	In	°C	3	-3°	-3°	-3°	-3°	-1°	-1°
THERMOSTAT									
Temperature unit	r05	°C	°C	°C	°C	°C	°C	°C	°C
Differential for Sout	r07	°C	2	2	2	2	2	2	2
Differential for Sin	r08	°C	2	2	2	2	2	2	2
Calibration for Sout	r09	°C	0	0	0	0	0	0	0
Calibration for Sin	r10	°C	0	0	0	0	0	0	0
ALARMS									
Alarm delay	A03	MIN	10	30	30	30	30	30	30
High temperature Sout	A05	°C	10	10	10	10	10	10	10
Low temperature Sout	A06	°C	-10	-6	-6	-6	-6	-6	-6
High temperature Sin	A07	°C	10	10	10	10	10	10	10
Low temperature Sin	A08	°C	-10	-6	-6	-6	-6	-6	-6
Further night temperature gap Sin	A09	°C	10	0	0	0	0	0	0
COMPRESSORS									
Minimum ON period	c01	MIN	0	0	0	0	0	0	0
Switch-on delay	c02	MIN	0	0	0	0	0	0	0
Probe failure operation cycle	c03	%	50	50	50	50	50	50	50
DEFROSTING									
Defrost type (no=el, yes=gas)	d01	C	NO	NO	NO	NO	NO	NO	NO
Defrost end temperature	d02	°C	10	8°	8°	8°	8°	8°	8°
Gap between defrosts	d03	hours	8	6	6	6	6	6	6
Max. defrost duration	d04	minutes	45	60	60	45	45	45	45
Defrost offset time	d05	minutes	0	0	0	0	0	0	0
Drip time	d06	minutes	0	0	0	0	0	0	0
Fan start on defrost end	d07	minutes	0	*0	*0	*0	*0	*0	*0
Fan start temperature (>25=OFF)	d08	°C	25	*25	*25	*25	*25	*25	*25
Fan operation under defrosting (0=no;1=yes)	d09	C	NO	*NO	*NO	*NO	*NO	*NO	*NO
Defrost probe (out=Sout; Def=Sdef)	d10		OUT	OUT	OUT	OUT	OUT	OUT	OUT
Alarm delay on defrost end	d11	minutes	90	60	60	60	60	60	60
Length of reading DEF on display	d12	minutes	1	25	25	25	25	25	25
Defrost start on switch-on	d13		NO	NO	NO	NO	NO	NO	NO
FANS									
Fans off when compressor is off	F01		NO	NO	NO	NO	NO	NO	NO
Fans stop delay on compressors	F02	minutes	0	0	0	0	0	0	0
OTHER FUNCTIONS									
Delay of output signal on thermostat switch-on	o01	sec	5	5	5	5	5	5	5
DI input signal (off=idle;1=bus;2=def;3=night;4=main switch;5=slave in)	o02		OFF	2	2	2	2	2	2
Address	o03		0	0	0	0	0	0	0
LOn service pin (0=off;1=on)	o04		OFF	OFF	OFF	OFF	OFF	OFF	OFF
Password	o05		OFF	OFF	OFF	OFF	OFF	OFF	OFF
Probe type (0=Pt;1=Ptc)	o06		Pt	PTC	PTC	Pt	Pt	PTC	Pt
Digital signal DO (Off=not used; 1=master; 2=slave)	o13		OFF	OFF	OFF	OFF	OFF	OFF	OFF
Probe activation (0=Aut;1=out)	o14		OUT	AUT	AUT	AUT	AUT	OUT	OUT
Controller resolution (0=0.1°;1=0.5°)°C	o15		NO	YES	YES	YES	YES	YES	YES
Max slave wait on defrost end	o16	minutes	20	20	20	20	20	20	20
Probe display (0=aut;1=out;2=in)	o17		IN	IN	IN	IN	IN	IN	IN
Forced output (off=none;1=comp;2=def;3=fan;4=alarm;5=dig out)	o18		OFF	OFF	OFF	OFF	OFF	OFF	OFF

DESCRIPTION 19/April/02 **DATE** 19/April/02 **CHANGE** 01-23/May/02
02-18/July/02
03-05/Sept./02

DESCRIPTION Settings for EC2 Master-Slave / FS-ED **CHANGE** RSQ2005C **CODE** RSQ2005C **SIGNATURE**

WITHOUT DEFROST SYNCHRONISATION
(EKC 201 3 Probes - 4 Relays) DN1.11

CONTROLLER SET POINTS

Referred to climate class 3 in accordance with EN441

CODE: RSP2020C

CHANGE: 02- Addition of version Pt 1000 - set-point changed / 03- par. .r07 changed from 3 to 2

Ventilation is not managed by the controller

DESCRIPTION OF PARAMETERS	DISPLAY	U.of M.	Default	PTC 1000		Pt 1000		
				FS	ED	FS	ED	
Set point for Sout	Out	°C	3	-3°	-3°	-3°	-3°	
Set point for Sin	In	°C	3	-3°	-3°	-3°	-3°	
THERMOSTAT								
Temperature unit	r05		°C	°C	°C	°C	°C	
Differential for Sout	r07	°C	2	2	2	2	2	
Differential for Sin	r08	°C	2	2	2	2	2	
Calibration for Sout	r09	°C	0	0	0	0	0	
Calibration for Sin	r10	°C	0	0	0	0	0	
ALARMS								
Alarm delay	A03	MIN	10	30	30	30	30	
High temperature Sout	A05	°C	10	10	10	10	10	
Low temperature Sout	A06	°C	-10	-6	-6	-6	-6	
High temperature Sin	A07	°C	10	10	10	10	10	
Low temperature Sin	A08	°C	-10	-6	-6	-6	-6	
Further night temperature gap Sin	A09	°C	10	0	0	0	0	
COMPRESSORS								
Minimum ON period	c01	MIN	0	0	0	0	0	
Switch-on delay	c02	MIN	0	0	0	0	0	
Probe failure operation cycle	c03	%	50	50	50	50	50	
DEFROSTING								
Defrost type (no=el; yes=gas)	d01		NO	NO	NO	NO	NO	
Defrost end temperature	d02	C	10	8°	8°	8°	8°	
Gap between defrosts	d03	hours	8	OFF	OFF	OFF	OFF	
Max. defrost duration	d04	minutes	45	60	45	60	45	
Defrost offset time	d05	minutes	0	0	0	0	0	
Drip time	d06	minutes	0	0	0	0	0	
Fan start on defrost end	d07	minutes	0	*0	*0	*0	*0	
Fan start temperature (>25=OFF)	d08	C	25	*25	*25	*25	*25	
Fan operation under defrosting (0=no;1=yes)	d09		NO	*NO	*NO	*NO	*NO	
Defrost probe (out=Sout; Def=Sdef)	d10		OUT	OUT	OUT	OUT	OUT	
Alarm delay on defrost end	d11	minutes	90	60	60	60	60	
Length of reading DEF on display	d12	minutes	1	25	25	25	25	
Defrost start on switch-on	d13		NO	NO	NO	NO	NO	
FANS								
Fans off when compressor is off	F01		NO	NO	NO	NO	NO	
Fans stop delay on compressors	F02	minutes	0	0	0	0	0	
OTHER FUNCTIONS								
Delay of output signal on thermostat switch-on	o01	sec	5	5	5	5	5	
DI input signal (off=idle;1=bus;2=def;3=night;4=main switch;5=slave in)	o02		OFF	2	2	2	2	
Address	o03		0	0	0	0	0	
LON service pin (0=off;1=on)	o04		OFF	OFF	OFF	OFF	OFF	
Password	o05		OFF	OFF	OFF	OFF	OFF	
Probe type (0=Pt;1=Ptc)	o06		Pt	PTC	PTC	Pt	Pt	
Digital signal DO (Off=not used; 1=master; 2=slave)	o13		OFF	OFF	OFF	OFF	OFF	
Probe activation (0=Aut;1=out)	o14		OUT	AUT	AUT	AUT	AUT	
Controller resolution (0=0,1°;1=0,5°)°C	o15		NO	YES	YES	YES	YES	
Max slave wait on defrost end	o16	minutes	20	20	20	20	20	
Probe display (0=aut;1=out;2=in)	o17		IN	IN	IN	IN	IN	
Forced output (off=none;1=comp;2=def;3=fan;4=alarm;5=dig out)	o18		OFF	OFF	OFF	OFF	OFF	
TIME SETTING ON TIMER				minutes	60	45	60	45
NUMBER OF DEFROSTS PER DAY					4	4	4	4

DESCRIPTIONSettings EC2 with terminal-board / ED-FS
(EKC 201 3 probes - 4 relays) DN1.11**CHANGE**02-23/May/02
03=18/July/02**DATE**

19/Apr/02

CODE

RSP2020C

SIGNATURE

CONTROLLER SET POINTS

Referred to climate class 3 in accordance with EN441

CODE : Rsr2006C

Ventilation is not managed by the control unit

DESCRIPTION OF PARAMETERS	DISPLAY	U. of M.	EC2	EC2
			FS	ED
Sout set point				
THERMOSTAT				
Differential	r01	K	2	2
Maximum programmable set point	r02	°C	5	5
Minimum programmable set point	r03	°C	-5	-5
Temperature unit 0=°C , 1=°F	r05	\	°C	°C
Probe calibration S4(Sout)	r09	K	0	0
S3 probe (Sin)	r10	K	0	0
Controller switch	r12	\	ON	ON
Night offset	r13	K	0	0
Operation mode 1=ON/OFF, 2=modulation mode	r14	\	1	1
Temperature control probe 100%=S4 (Sout) , 0%=S3(Sin)	r15	%	100	100
Melt interval	r16	h	0	0
Melt interval	r17	min	0	0
ALARMS				
Temperature alarm delay	A03	min	60	60
Door open alarm delay	A04	min	60	60
Pulldown alarm delay	A12	min	120	120
Temperature high threshold	A13	°C	10	10
Temperature low threshold	A14	°C	-10°	-10°
COMPRESSOR				
Minimum on time	c01	min	0	0
Minimum off time	c02	min	0	0
DEFROST				
Defrost end temperature	d02	°C	8°	8°
Gap between defrosts	d03	h	6	6
Maximum defrost length	d04	min	60	45
Defrost start delay	d05	min	0	0
Drip time	d06	min	0	0
Fan start delay on defrost end	d07	min	0	0
Fan start temperature	d08	°C	-5	-5
Fans on when defrosting	d09	\	NO	NO
Defrost end probe 0=S4(Sout) , 1=S5(Sdef) , 2=Time-controlled defrost end	d10	\	0	0
Defrost on controller switch-on	d13	\	NO	NO
INJECTION				
Maximum overheating value	n09	K	5	5
Minimum overheating value	n10	K	3	3
Temperature MOP	n11	°C	OFF	OFF
AKV pulse period	n13	sec	6	6
Stability	n18	\	\	\
AKV forced shut-up	n36	\	OFF	OFF
FANS				
Fans off when compressor off	F01	\	NO	NO
Fan stop delay on compressor	F02	min	0	0
Fan stop temperature during operation with S5(Sdef) -50 , 50/Off	F04	\	OFF	OFF
OTHER FUNCTIONS				
Delay of output signals on controller switch-on	o01	sec	5	5
DI input signal (off=not used;1=door;2=defr.;3=night;4=main switch;5=slave in)	o02	\	2	2
Address (0-60)	o03	\	\	\
LON service pin(0=off,1=on)	o04		OFF	OFF
Password	o05		OFF	OFF
Probe type (0=Pt;1=PTC)	o06		PTC	PTC
Language (0=English;1=German;2=French;3=Danish;4=Spanish;5=Italian)	o11		5	5
Frequency 50-60 Hz	o12		50	50
DO digital output (off=not used , 1=Def.Master , 2=Def.Slave)	o13		0	0
Maximum wait time under defrosting	o16	minutes	20	20
Displayed probe S3(Sin)=0% , S4(Sout)=100%	o17		0%	0%
Relay manual control (1 = COMPRESSOR RELAY ON / 2 = DEFROST RELAY ON / 3 = FANS RELAY ON / 4 = ALARM OFF / 5 = DO OUTPUT ON / 6 = AKV ON / 7=LIGHTS ON)	o18		OFF	OFF
Range of pressure transducer - min.value (-1 bar.... 5bar)	o20	bar	*	*
Range of pressure transducer - max.value (6 bar....36 bar)	o21	bar	*	*
ON Input control (1 = AVK OFF - FAN ON - ALARM / 2 = AVK OFF - FAN OFF - ALARM / 3 = AVK OFF - FAN ON - NO ALARM / 4 = AVK OFF - FAN OFF - NO ALARM.	o29		\	\
Refrigerant type (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		*	*

DESCRIPTION
Settings for cabinets EC2 with controller EKC414_A

DATE
28/Apr/03

CHANGE

CODE
Rsr2006C

SIGNATURE

* =VALUES TO BE SET ON SITE ACCORDING TO TRANSDUCER AND REFRIGERANT TYPE

COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO MICHELANGELO DONATELLO CARAVAGGIO DOC. No. SM00011Q SECTION No. 050	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGES: 26
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	A	05.11.02		D				ISSUED BY MKT
	B	15.03.04		E				
	C			F				

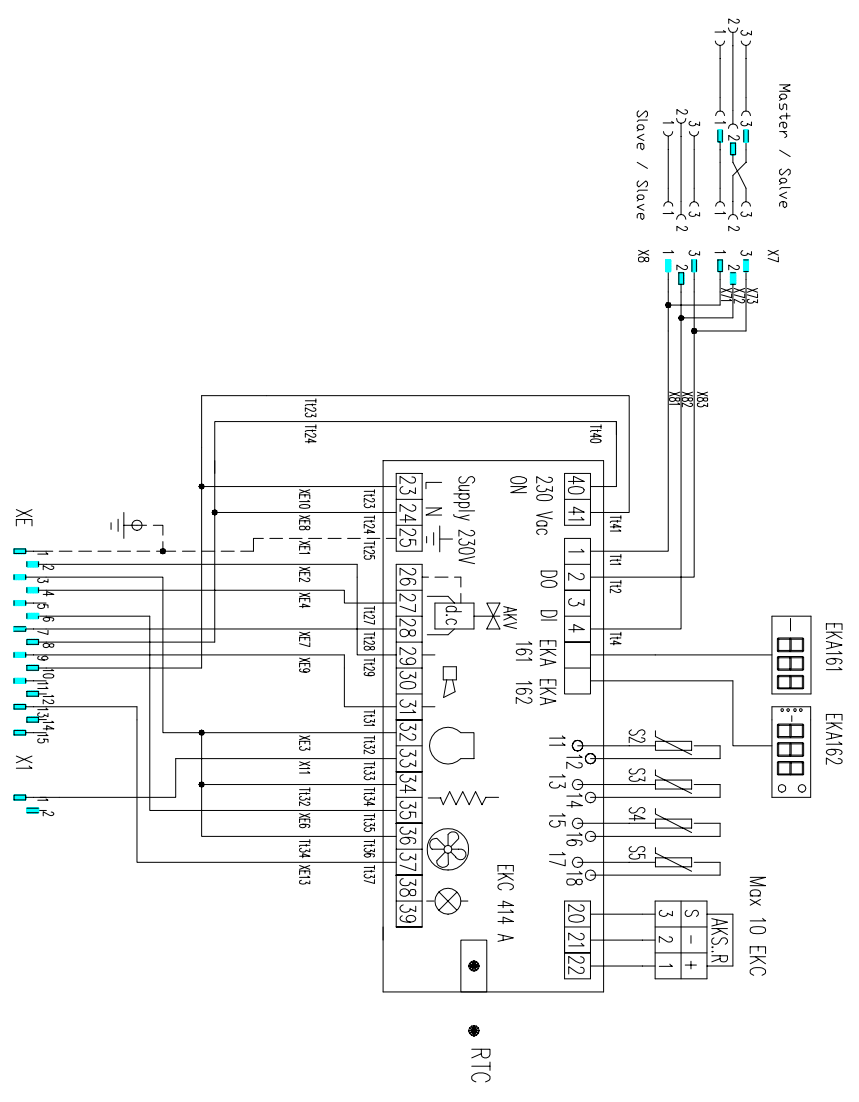
WIRING DIAGRAMS

COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO-MICHELANGELO-DONATELLO-CARAVAGGIO DOC. No. SM00011Q SECTION No. 050	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGEs: 12
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	C			F				

WIRING DIAGRAMS

MASTER/SLAVE CABINETS STD SRTS-FTB

EKC414_A CON SINCRONIZZAZIONE



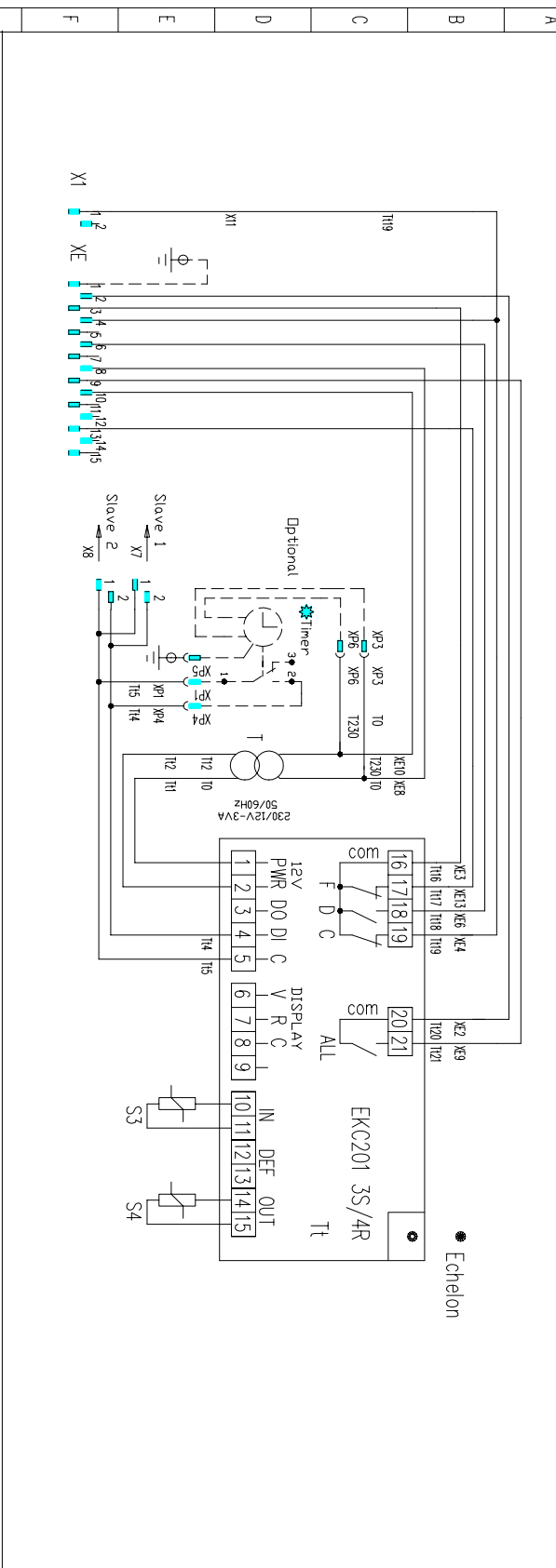
Tensione/Voltage/Spannung 230V / 50Hz

1	M.O.	EL.FI Cold Development	Form. dng
2	M.C.		Aux. voltage 230V/ac

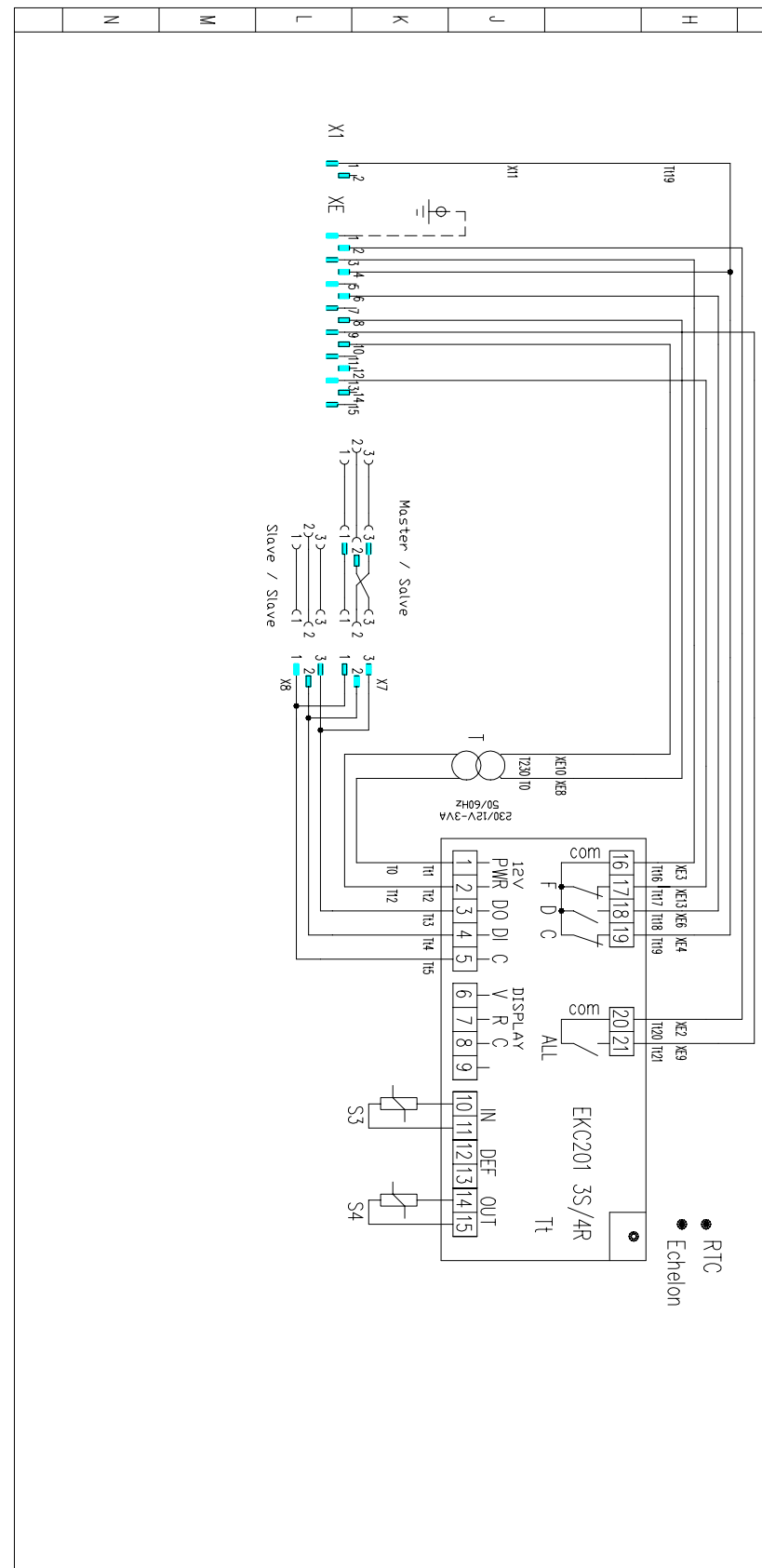
Date	26/06/03	DTF	DIREZIONE TECNOLOGIE DEL FREDDO	dmg	146447
Scale	1 : X	I	CONTROLLORE EKC414_A / RTC / SINCRONIZZAZIONE / PER EC2		

Disk	NET		
Dis.	A.SOGNE	Dis.n°	146447.A
Verifico			Fog.

EKC201 PER TEMPORIZZAZIONE

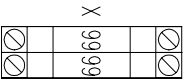
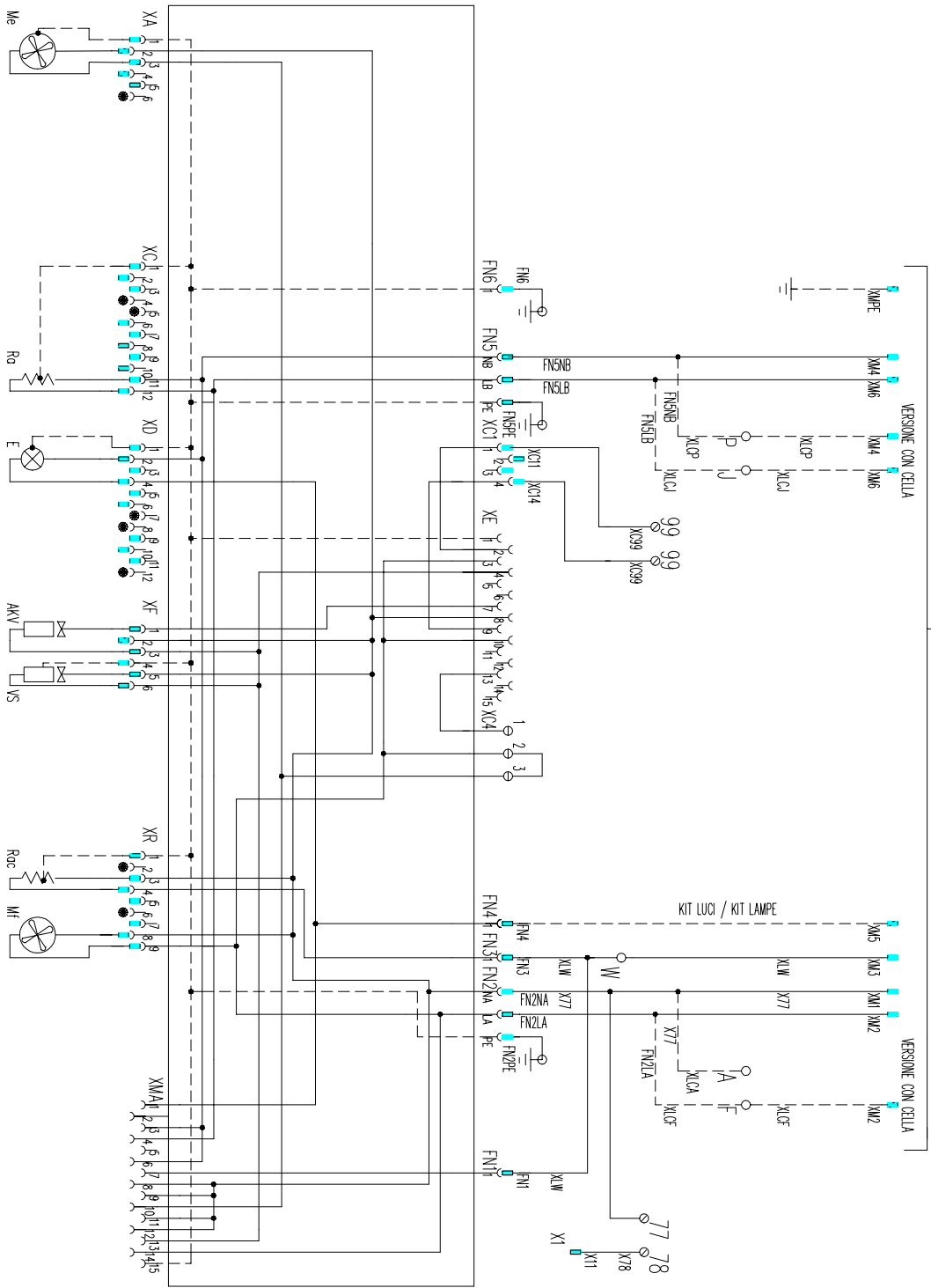


EKC201 PER SINCRONIZZAZIONE

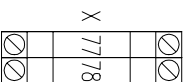


Tensione/Voltage/Spomnung 230V / 50-60Hz		EL.FI Cold Development		Fm. dmq	
N.° M.C.		Development		Aux. voltage 230Vdc	
Data 10/06/03		DITE DIREZIONE TECNOLOGIE DEL FREDDO		dmq146438	
Scala 1 : X		I CONTROLLORI DI SERIE EC2 / EKC201 3Sonde 4Rete / SRTS / FTB			
Dis. A.SOGNE		Dis. n° 146438.B		Fog.	
Verifico					

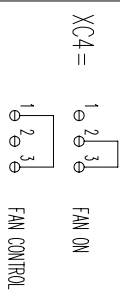
SRTS / XM / XN



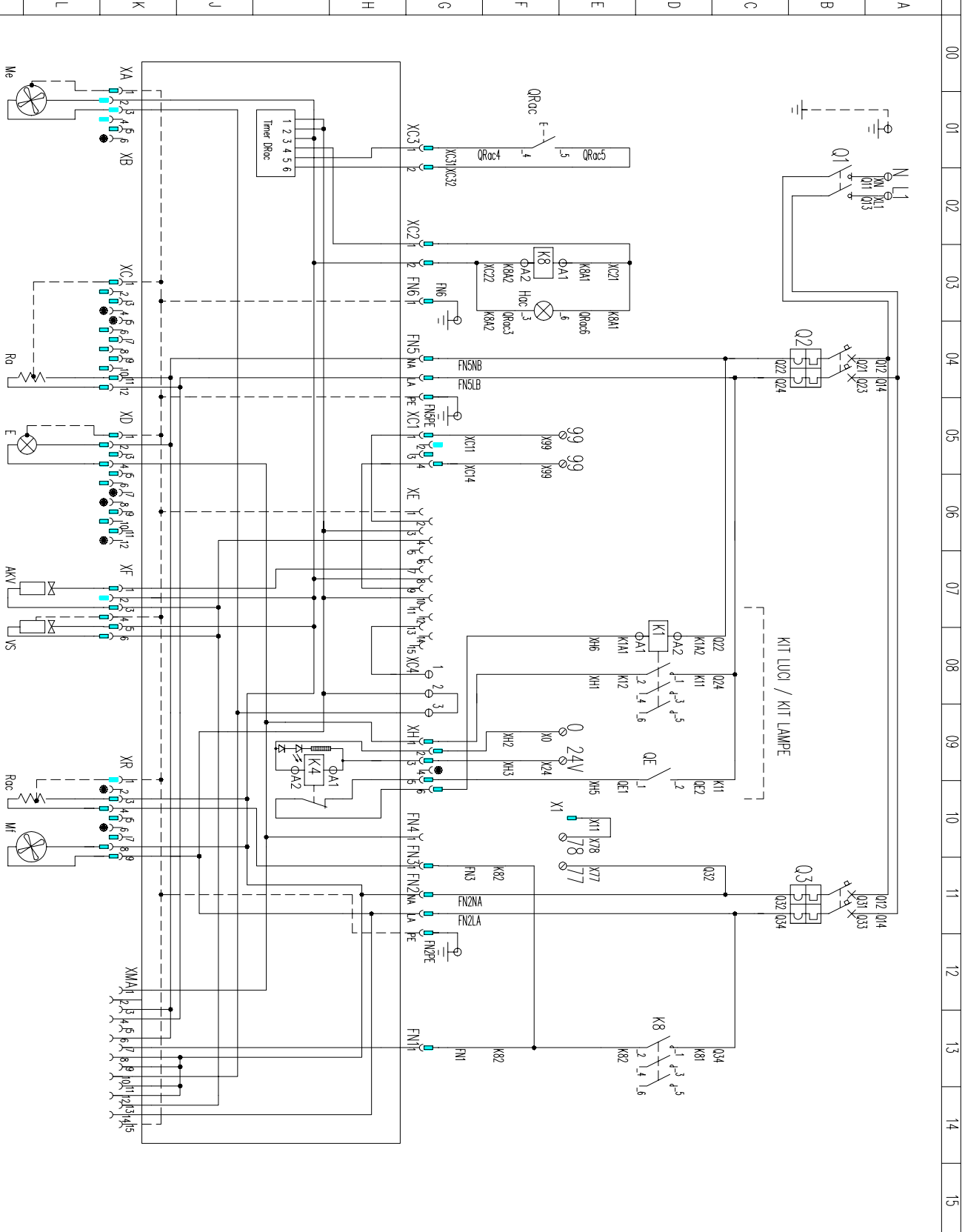
XL [W]



Segnale termostatazione
Signal for temp control
230Vcc



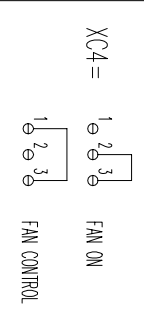
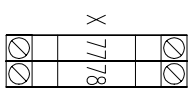
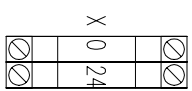
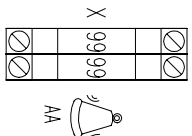
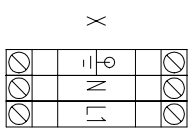
<p>1 N.O. / N.C.</p> <p>Scale 1 : X</p> <p>Disk NET</p> <p>Dis. A.SOONE</p> <p>Verifica</p>	<p>EL.FI Cold Development</p> <p>DTF DIREZIONE TECNOLOGIE DEL FREDDO dmg146437</p> <p>EC2 / FTB ND /</p> <p>Dis.n° 146437.B</p> <p>Fog.</p>	<p>Form. dmg</p> <p>Aux. voltage 230Vcc</p>
<p>Tensione/Voltage/Spannung 230V / 1Ph+N / 50-60Hz</p>	<p>Descrizione Modifica</p>	
<p>Data 30/09/03</p> <p>Rev. B</p> <p>Aggiornamento numerazione cavi</p>		



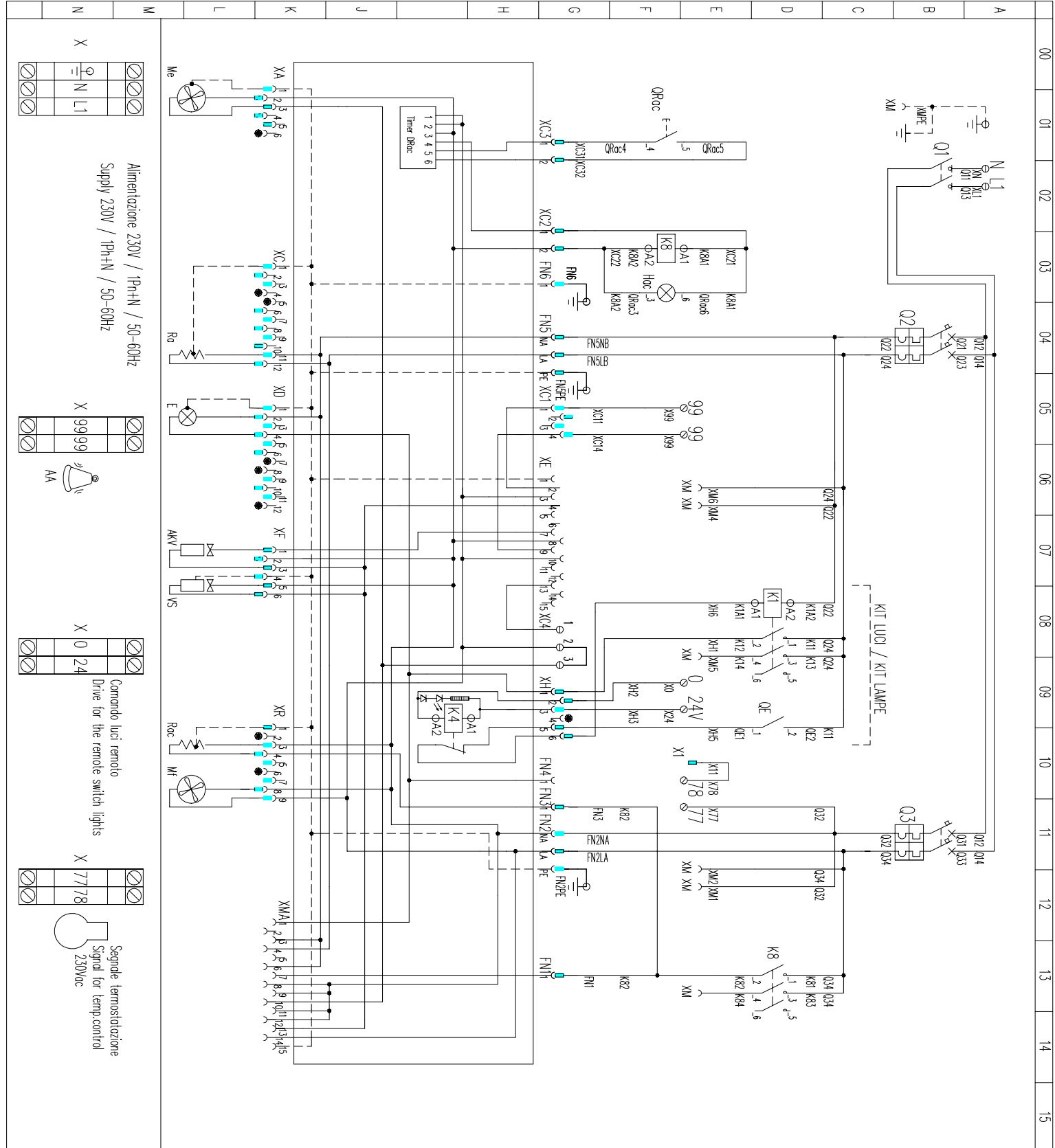
Alimentazione 230V / 1P+N / 50-60Hz
 Supply 230V / 1P+N / 50-60Hz

Comando luci remoto
 Drive for the remote switch lights

Segnale termostatazione
 Signal for temp control



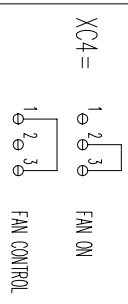
Tensione/Voltage/Spannung 230V / 1P+N / 50-60Hz		M.O. / N.c.		ELFI Cold Development		Fm. dng	
Date 12/06/03		DTF		DIREZIONE TECNOLOGIE DEL FREDDO		Aux. voltage 230Vcc	
Scala 1 : X		I		EC2 / SRTS 1 / ND			
Disk NET		Dis. A.SOCOME		Dis.n. 146436.A		Fog.	
Verifica							



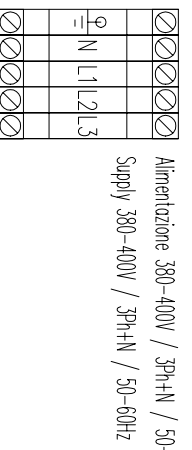
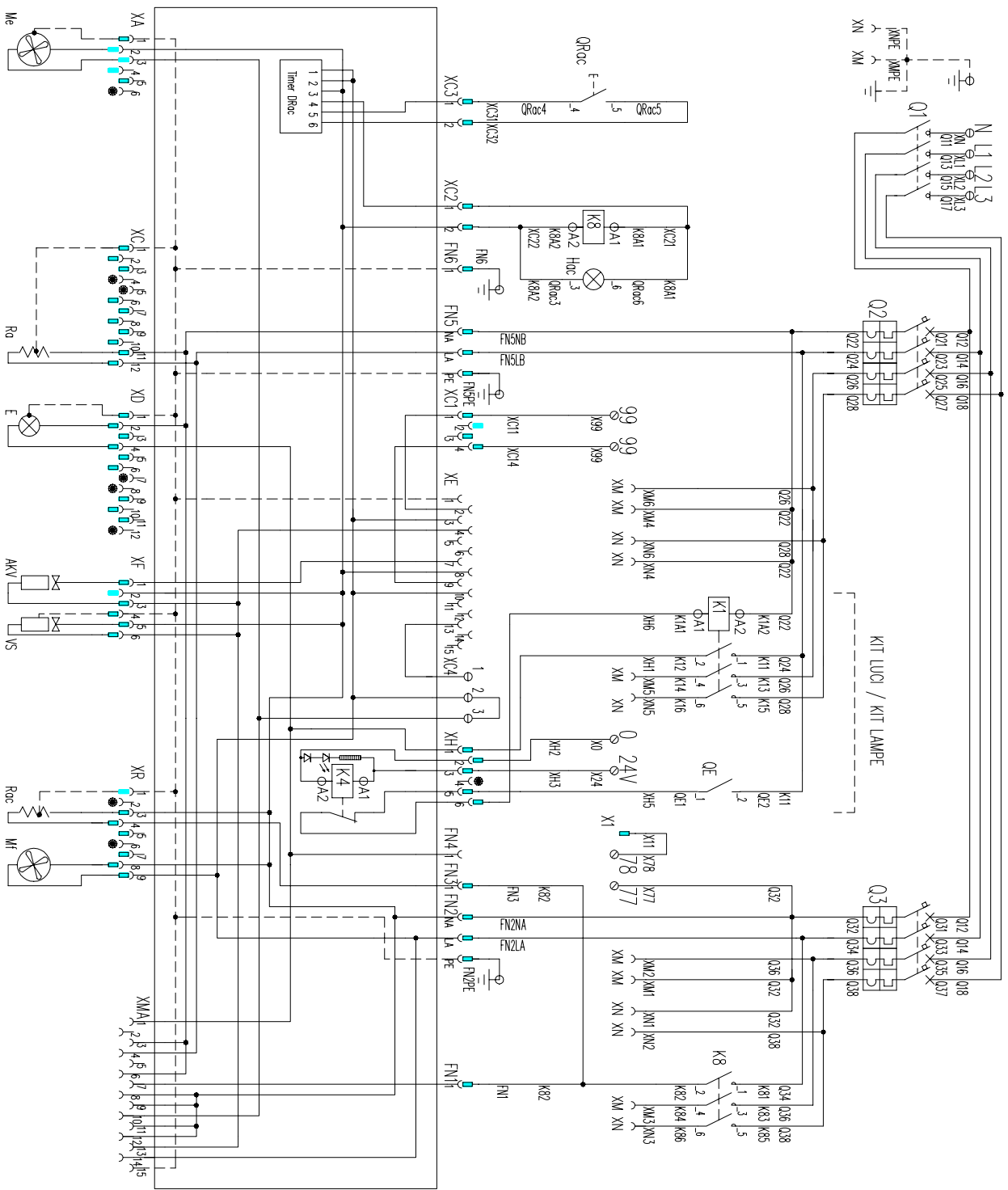
Alimentazione 230V / 1Ph+N / 50-60Hz
Supply 230V / 1Ph+N / 50-60Hz

Comando luci remoto
Drive for the remote switch lights

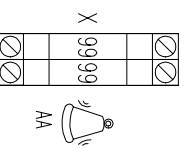
Segnale termostatazione
Signal for temp control



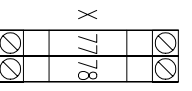
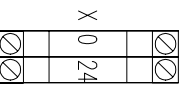
Tensione/Voltage/Spomung 230V / 1Ph+N / 50-60Hz		ELFI Cold Development		Form. dmqg
No. /N.c.		Development		Aux. voltage 230Voc
Date 12/06/03	DTE DIREZIONE TECNOLOGIE DEL FREDDO		146435	
Scale 1 : X	EC2 / SRTS 2 ND /			
Disq NET				
Dis. A.SQAUE	Dis.n. 146435.A		Fog.	
Verifica				



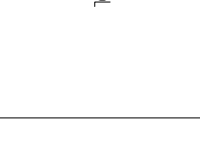
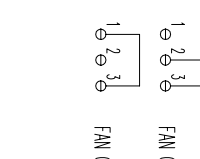
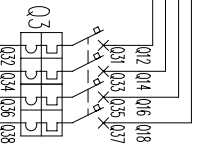
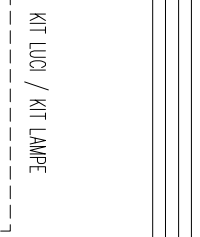
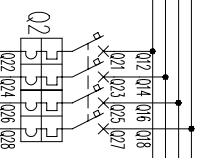
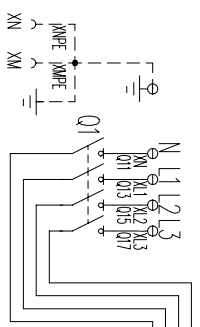
Alimentazione 380-400V / 3Ph+N / 50-60Hz
Supply 380-400V / 3Ph+N / 50-60Hz



Comando luci remoto
Drive for the remote switch lights



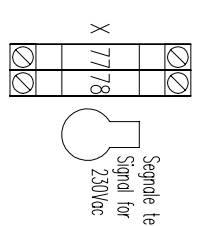
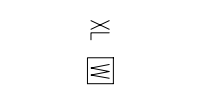
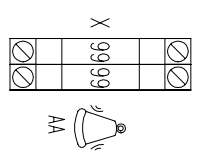
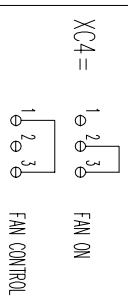
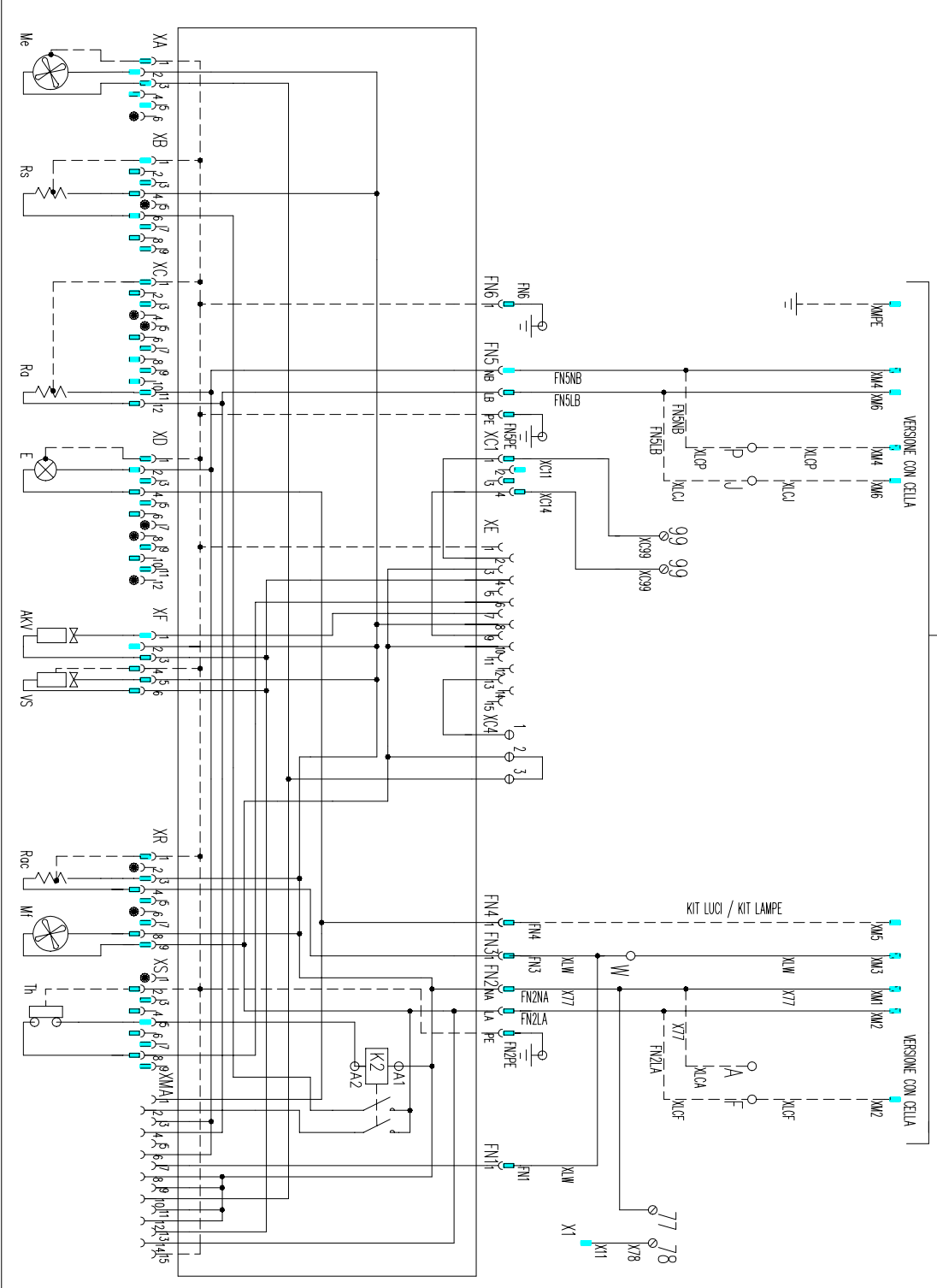
Segnale termostatazione
Signal for temp control



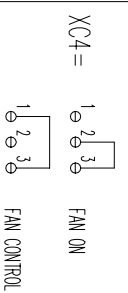
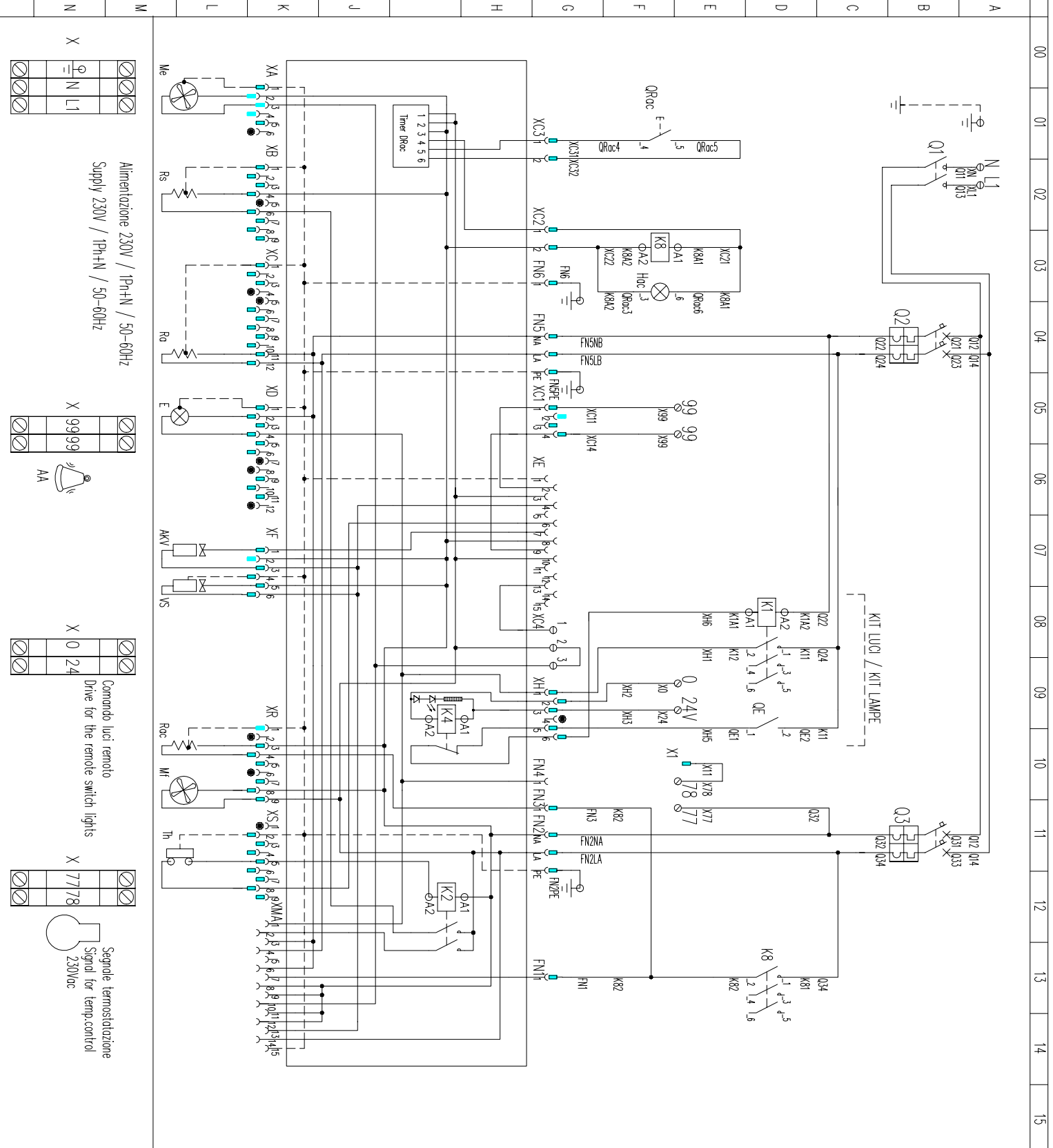
XC4 = 1 2 3
FAN ON
1 2 3
FAN CONTROL

Tensione/Voltage/Spornung		380-400V / 3Ph+N / 50-60Hz	
N.º / No. / N.º	EL.FI Cold Development	Fam. / dmq	
Data / Date	12/06/03	Aux. voltage	230Voc
Scala / Scale	1 : X	DIREZIONE TECNOLOGIE DEL FREDDO	dmg 146434
Dist. / Dist.	NET	EC2 / SRTS 3 ND /	
Dis. / Dis.	A.SOGNE	Dis.n.º	146434.A
Verifico		Fog.	

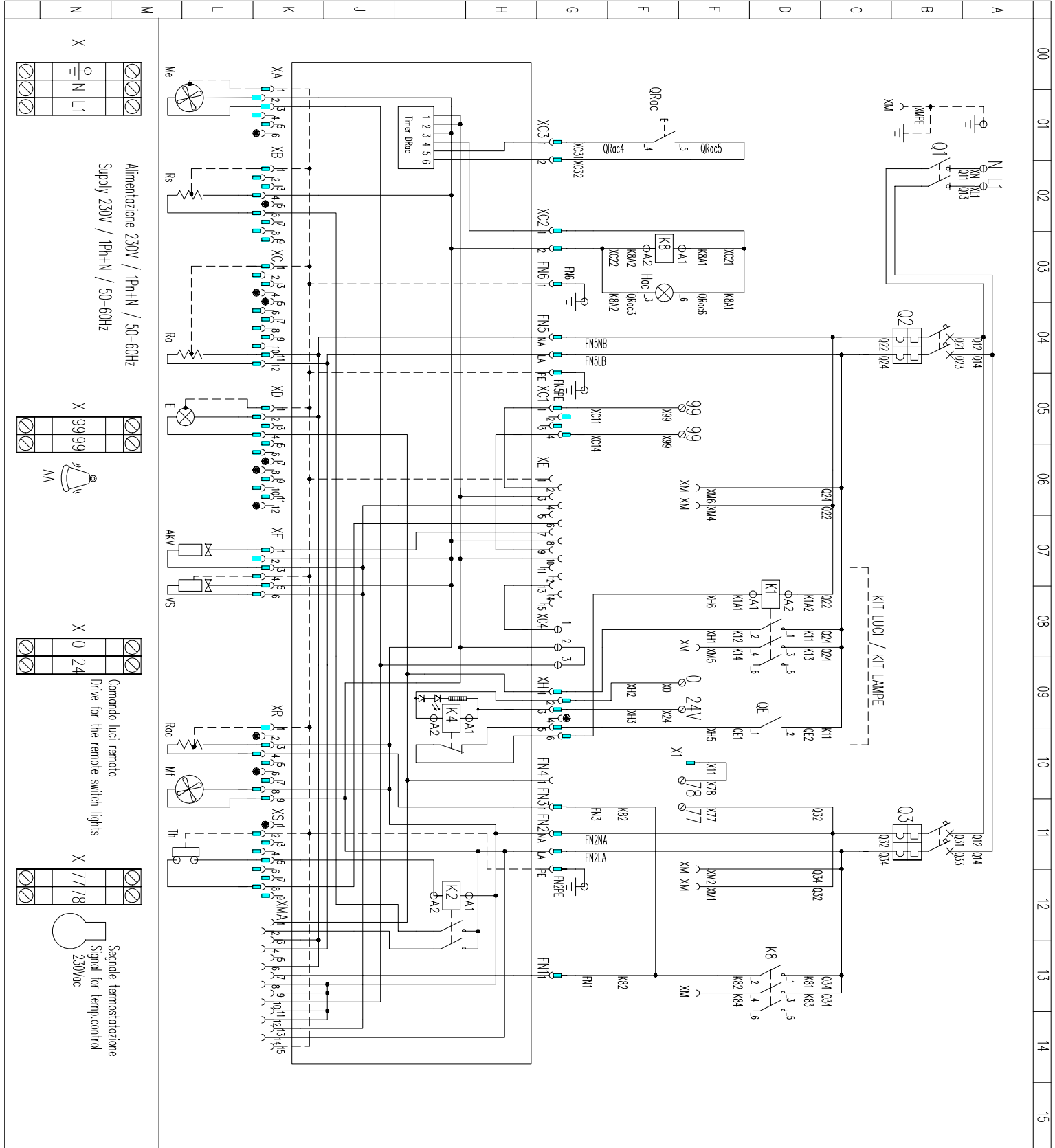
SRTS / XM / XN



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
																XN4 =		FAN ON	
																XN5 =		FAN CONTROL	
Data Rev. Descrizione Modifica 30/09/03 B Aggiornamento numerazione cavi																			
Tensione/Voltage/Spinning 230V / 1Ph+N / 50-60Hz																			
\ N.O. / N.C. EL.FI Cold Development																			
\ N.C. / N.O. Form. dwg 230Vac																			
Scala 1 : X I EC2 / FTB ED /																			
Dis. A.SOGNE Dis.n. 146433.B Fog.																			
Verifica																			



Tensione/Voltage/Spannung 230V / 1Ph+N / 50-60Hz		E.L.F.I Cold Development		Form. dmq
No. /N.c.		DTF DIREZIONE TECNOLOGIE DEL FREDDO - dmq 146432		Aux. voltage 230Vacc
Data 09/06/03		1 : X		EC2 / SRTS 1 ED /
Scale		Dis. NET		
Dis. A.SOGNE		Dis.n. 146432.A		Fog.
Verifica				

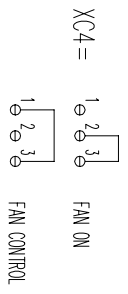


Alimentazione 230V / 1Ph+N / 50-60Hz
Supply 230V / 1Ph+N / 50-60Hz

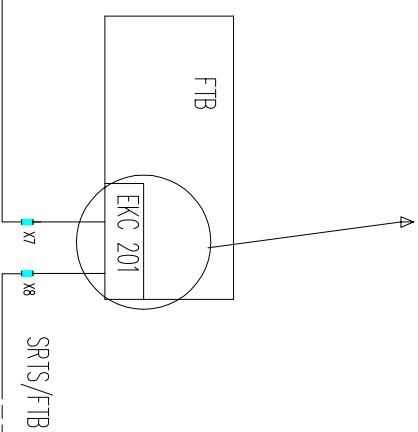
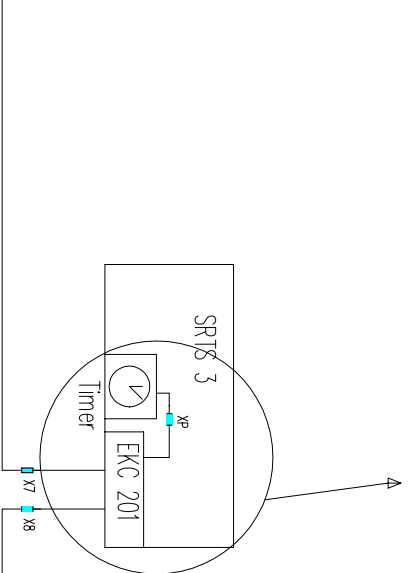
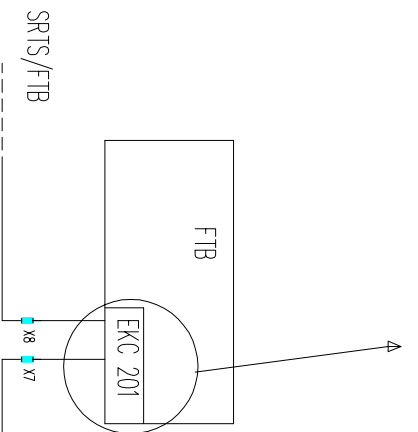
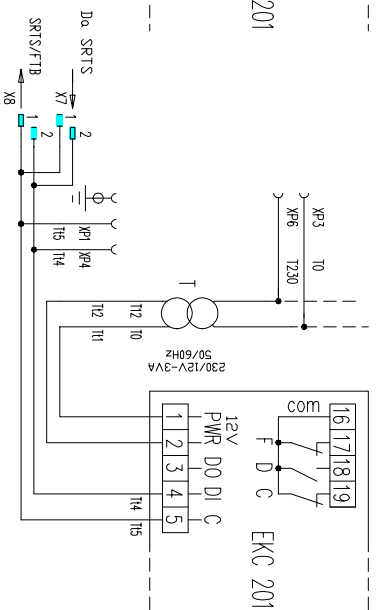
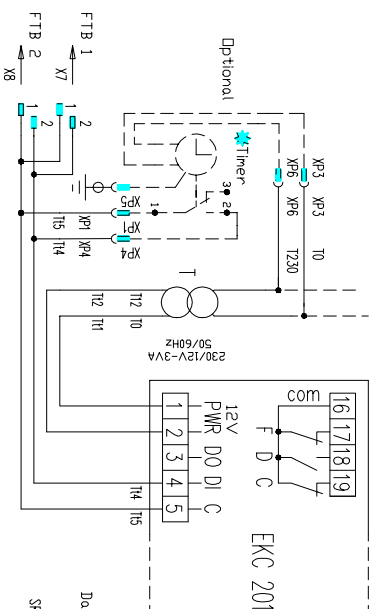
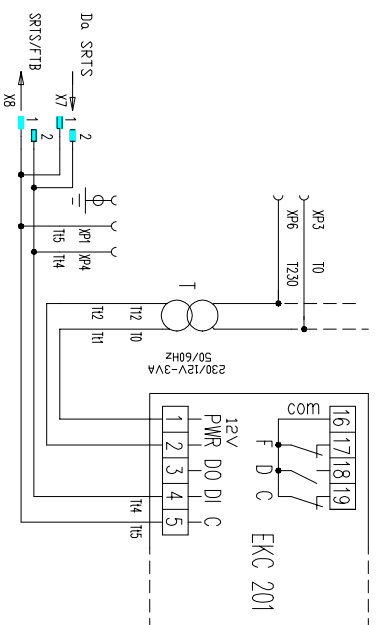
Comando luci remoto
Drive for the remote switch lights

Segnale termostatazione
Signal for temp. control

Tensione/Voltage/Spomung 230V / 1Ph+N / 50-60Hz		E.L.F. Cold Development		Form. dwg
No. / N.C.		Development		Aux. voltage 230Vacc
Date 09/06/03	DTF DIREZIONE TECNOLOGIE DEL FREDDO			Dis'n. 146431.A
Scale 1 : X	EC2 / SRTS 2 ED /			Fog
Dwg ASSQANE	Verifica			



SET PARAMETRO 002=2



Tensione/Voltage/Spannung

1	M.O.	N.C.	Form.	D.M.C.
			Aux. voltage	
			230Vacc	
Date	DTF DIREZIONE TECNOLOGIE DEL FREDDO dwg			
Scale	1 : X			
Disk	NET			
Dis.	A.SOGNE			
Verifica				

1 INIZIO SPRINAMENTO MOBILI EC2
CON TIMER REMOTO
(ctt6)

Descrittivo

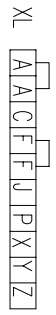
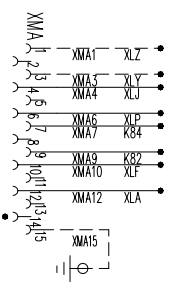
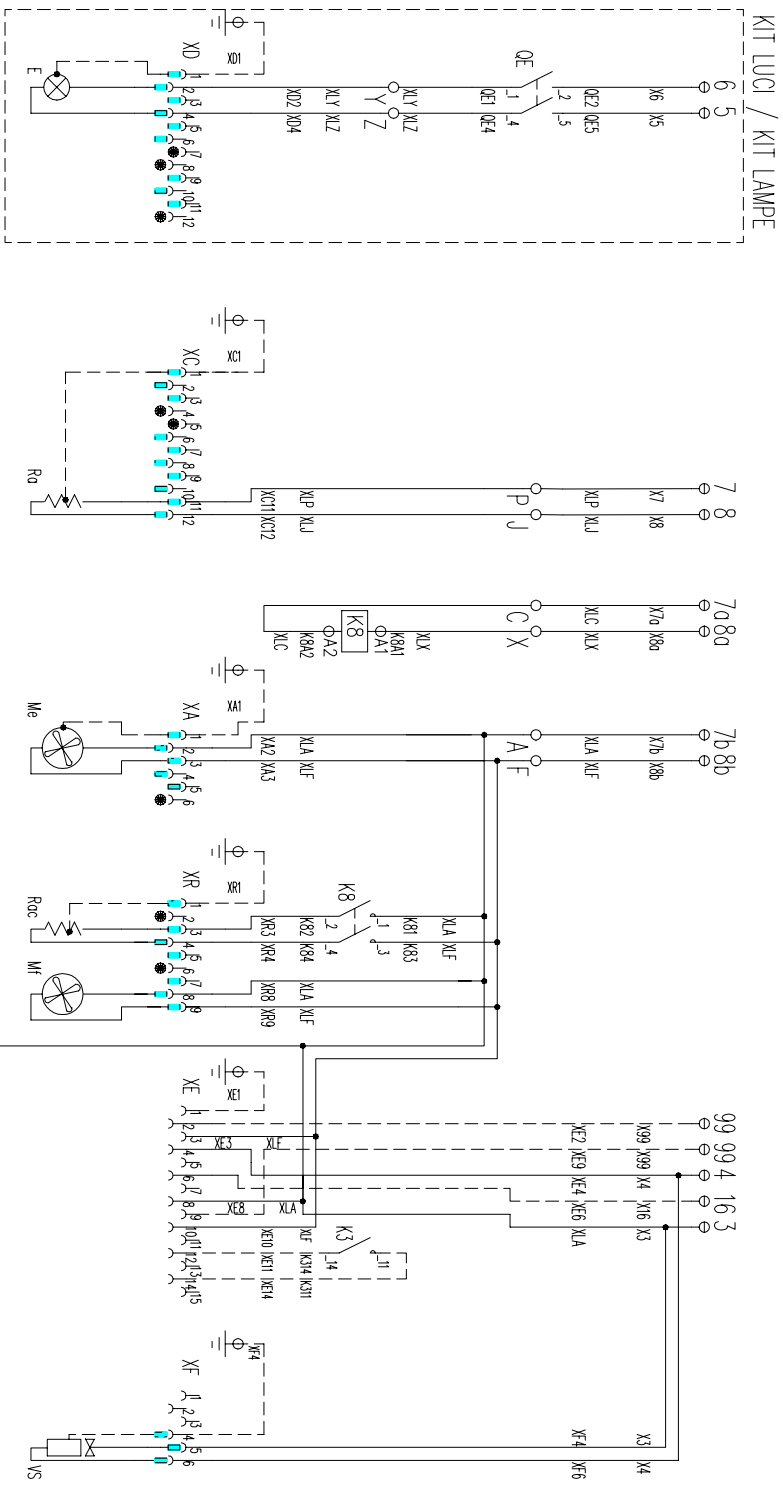
Fog.

A TERMINI DI LEGGE E' TASSATIVAMENTE .SE NON AUTORIZZATA DALLA COSTIM.
LA RIPRODUZIONE TOTALE O PARZIALE DELLA PRESENTE DOCUMENTAZIONE.

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	B	15.03.04		E				
	C			F				

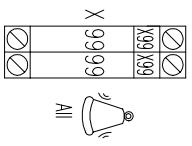
WIRING DIAGRAMS

TERMINAL BOARD CABINETS STD CTS

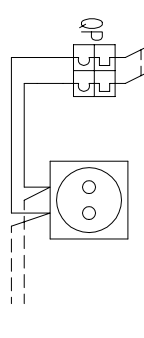


Da mobile pilota
From master cabinet →

Al successivo mobile derivato
→ To second cabinet slave



Tensione/Voltage/Spennung 230V / 50-60Hz

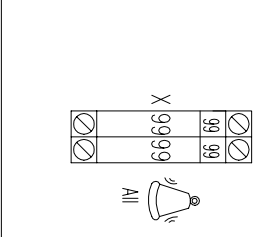
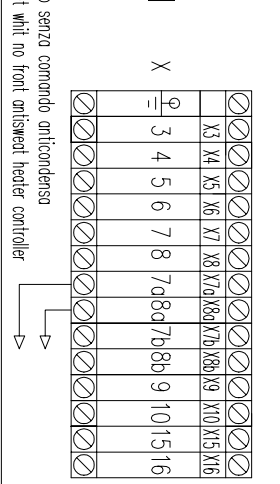
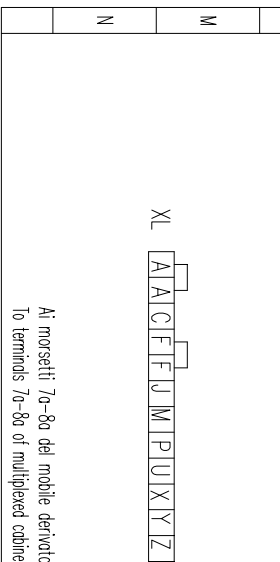
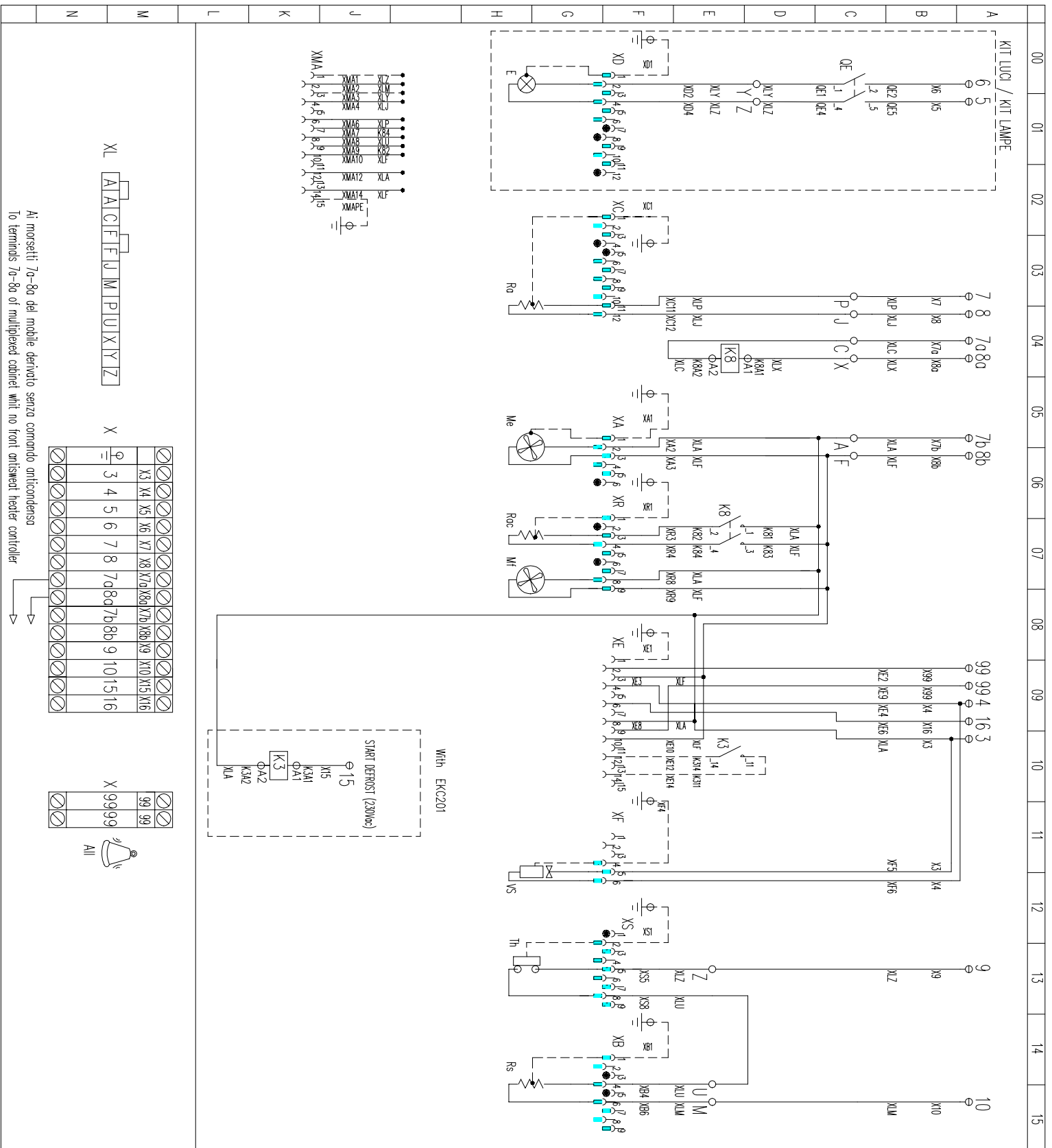


230V / 50-60Hz

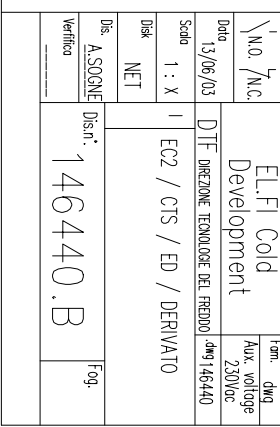


PRESE/SOCKETS

N.°	N.C.	EL.FI Cold	Fam. dWg
Development			Aux. voltage
16/06/03		D.T.F. DIREZIONE TECNOLOGIE DEL FREDDO	230V/ac
Scala 1 : X		EC2 / CTS / ND / DERIVATO	
Dis. NET			
Dis. ASOONE			
Verifica		Dis.n° 146442.A	Fog.



Data		Rev.		Descrizione Modifica	
13/11/03		B		Variazio collegamento Th	
Tensione/Voltage/Spannung 230V / 50-60Hz					
No. / N.c.		E.L.F.I Cold Development		Form. dmq	
Data 13/06/03		D.T.F. DIREZIONE TECNOLOGIE DEL FREDDO		Aux. voltage 230Vcc	
Scala 1 : X		EC2 / CTS / ED / DERIVATO			
Dis. ASSOGNE		Dis.n° 146440.B		Fog.	
Verifica					

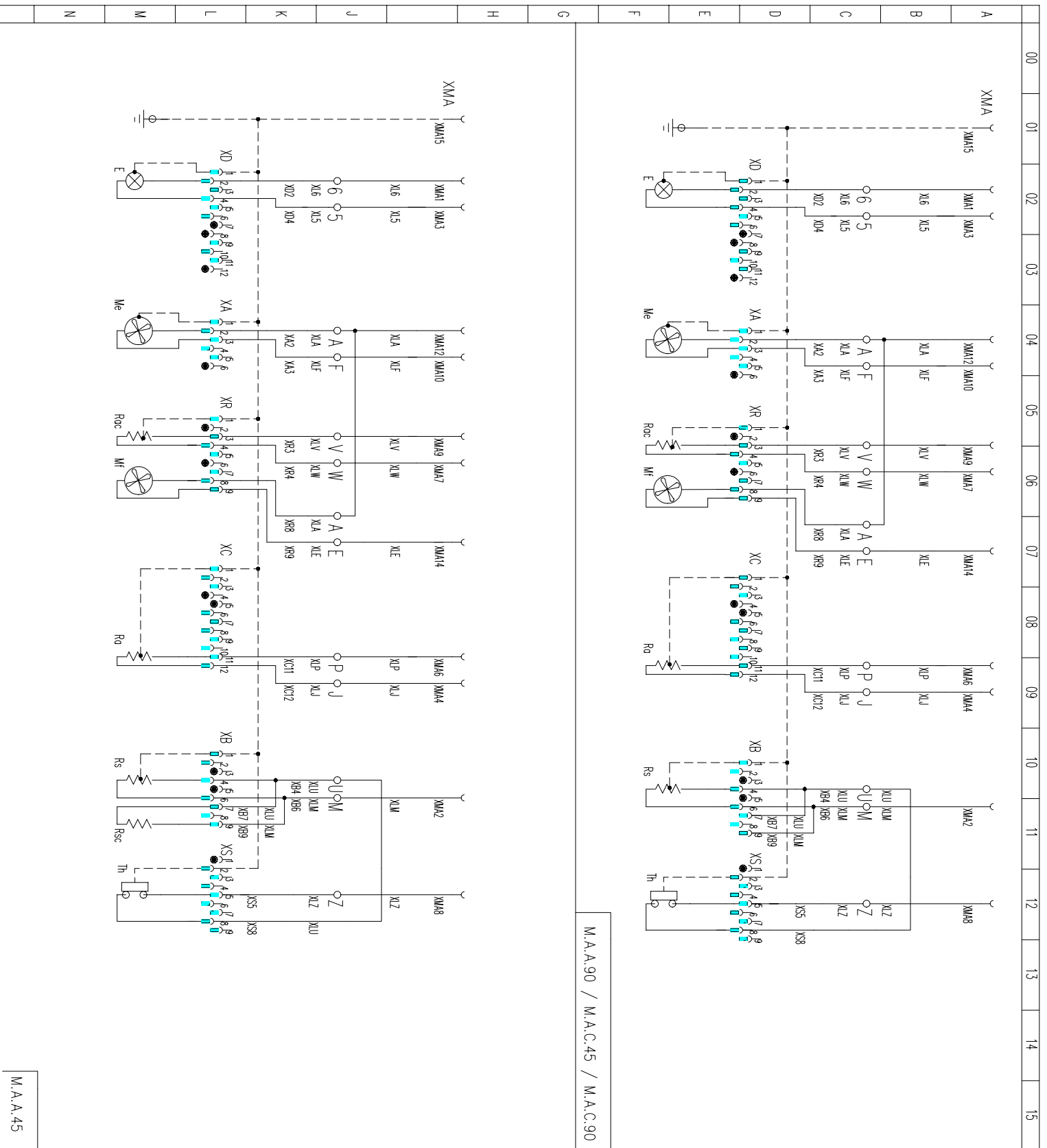


Ai morsetti 7a-8a del mobile derivato senza comando anticondenso
To terminals 7a-8a of multiplexed cabinet whiti no front antiseat heater controller

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			C					

WIRING DIAGRAMS

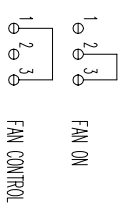
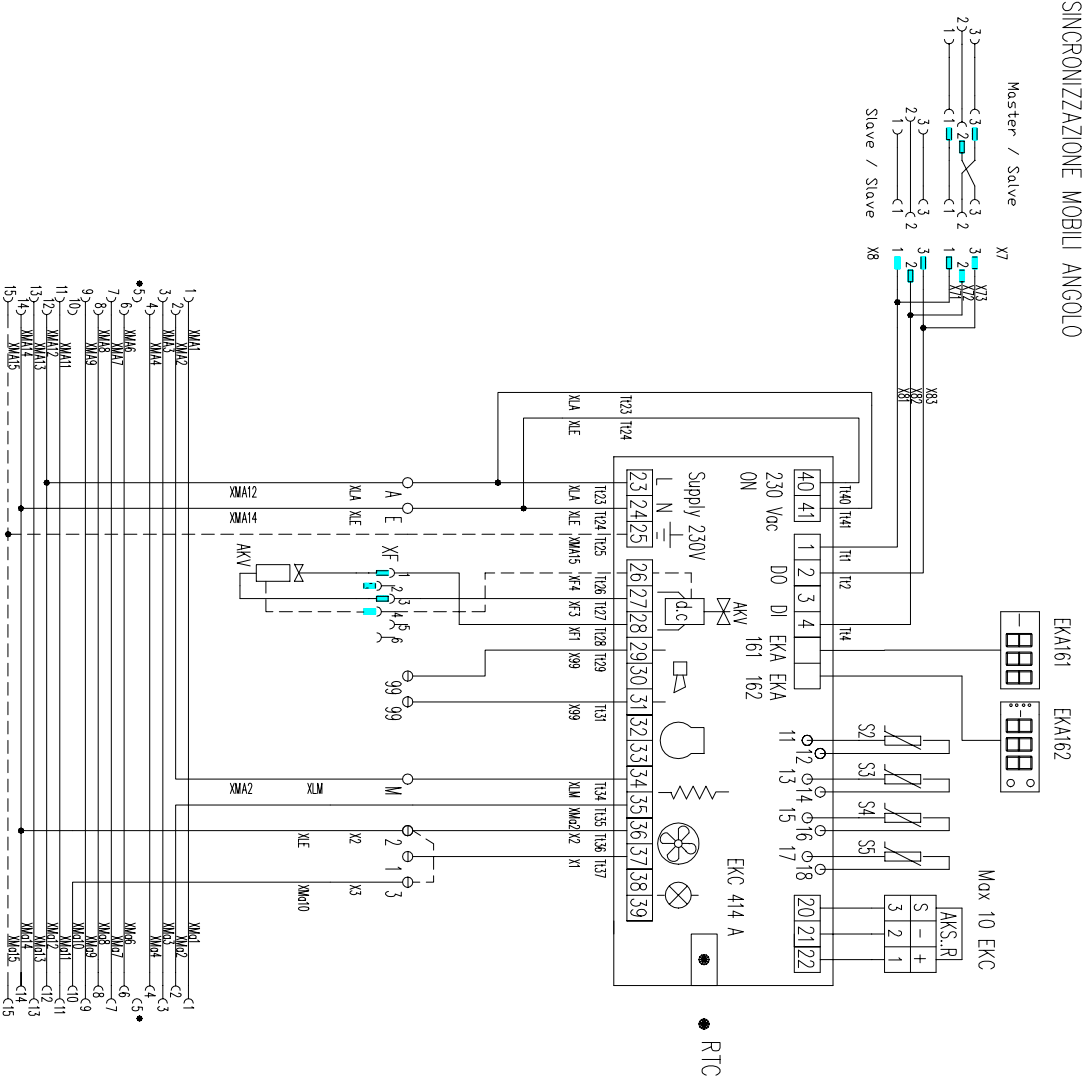
CORNER CABINETS STD CTS



M.A.A.90 / M.A.C.45 / M.A.C.90

M.A.A.45

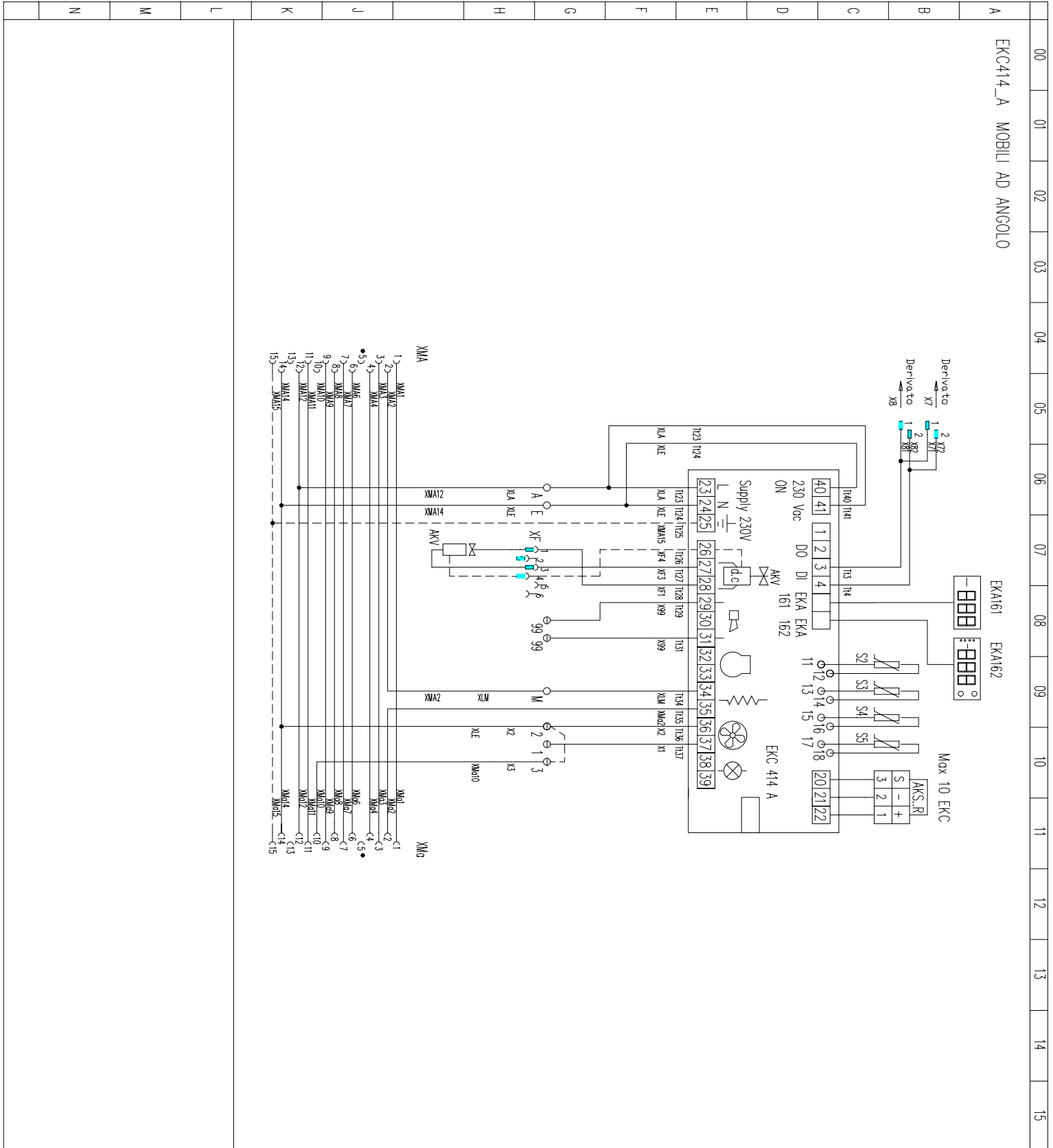
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<table border="1"> <tr> <td colspan="2">Data</td> <td>Rev.</td> <td colspan="17">Descrizione Modifica</td> </tr> <tr> <td colspan="2">01/10/03</td> <td>B</td> <td colspan="17">Variato collegamenti ventole frontali</td> </tr> <tr> <td colspan="2">12/11/03</td> <td>C</td> <td colspan="17">Variato collegamento termostato Th</td> </tr> <tr> <td colspan="3">Tensione/Voltage/Spornung</td> <td colspan="17">230V / 50-60Hz</td> </tr> <tr> <td colspan="2">N.O. 7Ac.</td> <td colspan="15">EL.FI Cold Development</td> <td colspan="2">Fam. DWG</td> </tr> <tr> <td colspan="2">Data 02/07/03</td> <td colspan="15">DTF</td> <td colspan="2">Aux. voltage 230Voc</td> </tr> <tr> <td colspan="2">Scale 1 : X</td> <td colspan="15">EC2 / MAA 45-90 / M.A.C 45-90</td> <td colspan="2">dmg146448</td> </tr> <tr> <td colspan="2">Disk NET</td> <td colspan="18"></td> </tr> <tr> <td colspan="2">Dis. A.SOGNE</td> <td colspan="18">Dis.n°: 146448.C</td> </tr> <tr> <td colspan="2">Verifico</td> <td colspan="18">Fog.</td> </tr> </table>																				Data		Rev.	Descrizione Modifica																	01/10/03		B	Variato collegamenti ventole frontali																	12/11/03		C	Variato collegamento termostato Th																	Tensione/Voltage/Spornung			230V / 50-60Hz																	N.O. 7Ac.		EL.FI Cold Development															Fam. DWG		Data 02/07/03		DTF															Aux. voltage 230Voc		Scale 1 : X		EC2 / MAA 45-90 / M.A.C 45-90															dmg146448		Disk NET																				Dis. A.SOGNE		Dis.n°: 146448.C																		Verifico		Fog.																	
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Tensione/Voltage/Spannung 230V / 50Hz

№. / N.º.	ELFI Cold Development	Form. dng
Data	03/07/03	Aux. voltage 230Vdc
Scodo	1 : X	
Disk	NET	
Dis. A.SOGNE		
Verifica	Dis.n.º 146449.A	Fog.

DIREZIONE TECNOLOGIE DEL FREDDO - 049146449
 CONTROLLORE EKC414_A /
 RTC / SINCRONIZZAZIONE /
 PER EG2 ANGOLO

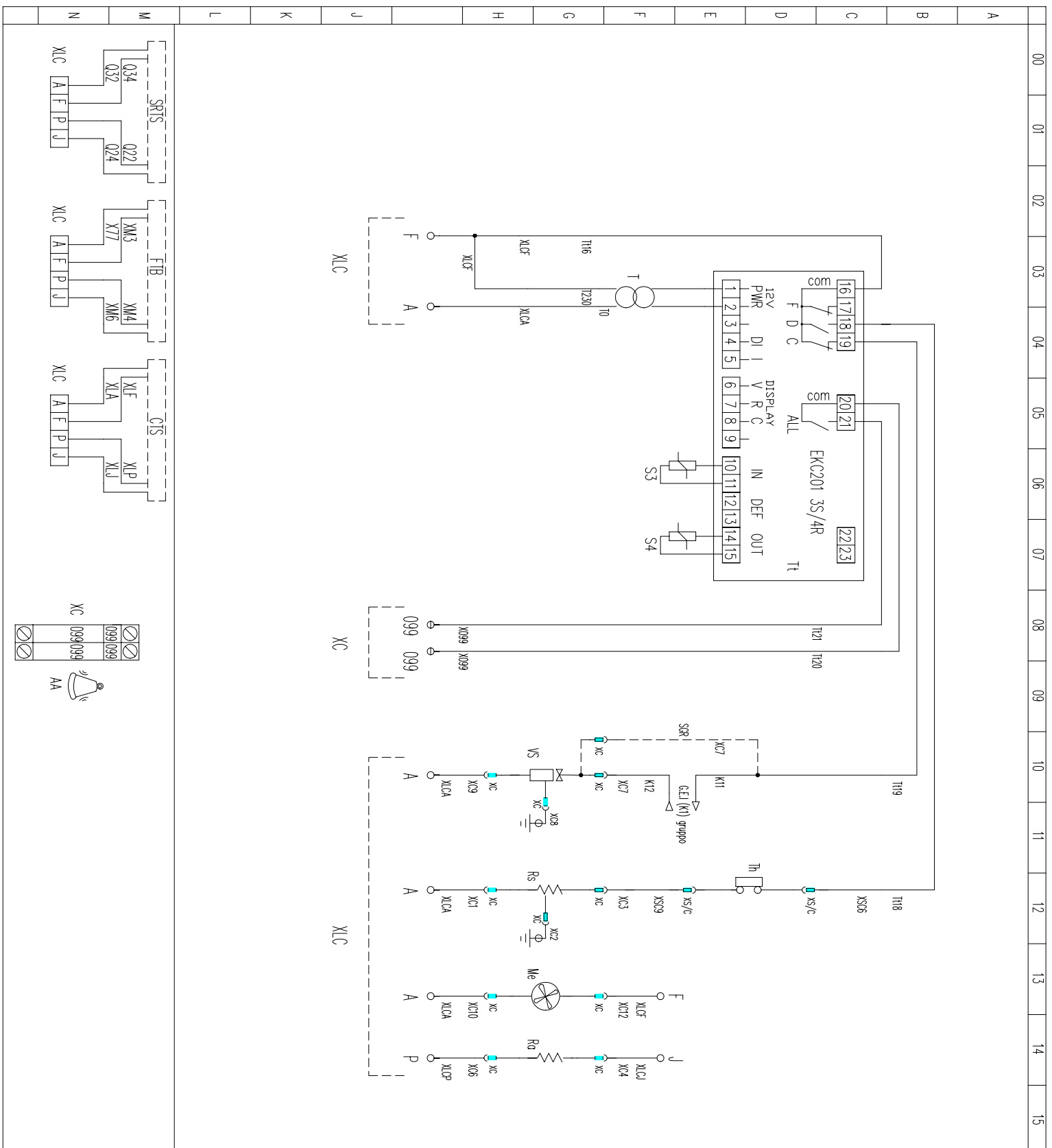


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<p>EKC414_A MOBILI AD ANGOLO</p>																<p>FAN ON 1 2 3</p> <p>FAN CONTROL 1 2 3</p>			
<p>Tensione/Voltage/Spamung 230V / 50Hz</p>																<p>ELFI Cold Development</p>			
<p>Nome / N.c. / No. / N.c.</p>																<p>Form. dmq</p>			
<p>Data 04/07/03</p>																<p>Aux. voltage 230Vdc</p>			
<p>Scodo 1 : X</p>																<p>DTF DIREZIONE TECNOLOGIE DEL FREDDO dmq 147002</p>			
<p>Disk NET</p>																<p>I CONTROLLORE EKC414_A / PER EC2 ANGOLO</p>			
<p>Dis. A.SOGNE</p>																<p>Dis.n. 147002.A</p>			
<p>Verifica</p>																<p>Fog.</p>			

COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO MICHELANGELO DONATELLO CARAVAGGIO DOC. No. SM00011Q SECTION No. 050	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGE: 1
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WIRING DIAGRAMS

COLD STORAGE

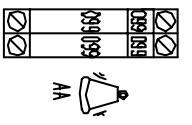
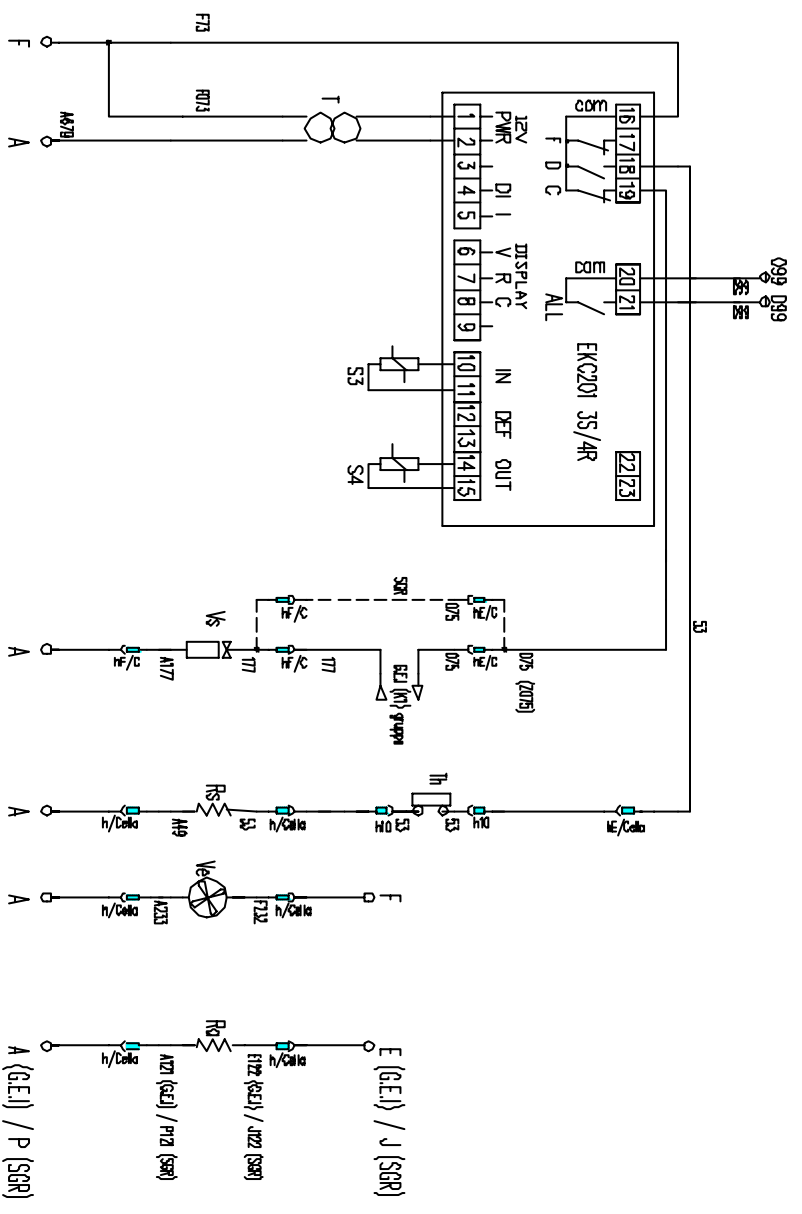


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WIRING DIAGRAMS

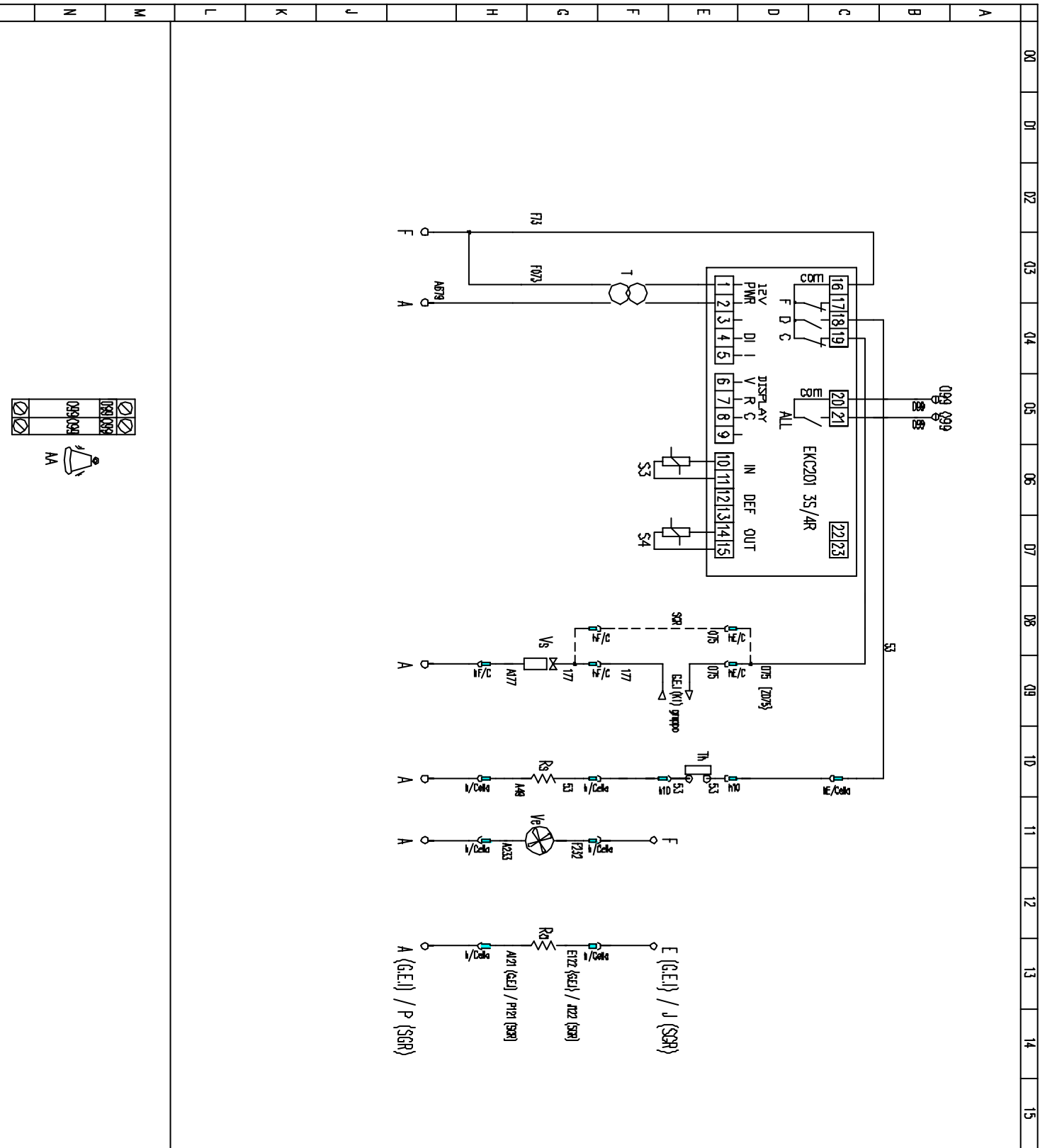
UNIT CABINETS



Tensione/Voltage/Spinning 230V / 50Hz

Mod. / N. / A.L.	Fan. / Inq.
Data 20/05/02	Aud. / Voltage 230V/50
Scad. 1 : X	DITE AZIENDE TECNICHE DEL FREDDO s.p.a. UQQA8065
Dok. NET	EC2 / CELLA REFRIGERATA /
Re. A.SQDNE	SGR / G.E.I. / EKC 201
Verifica	Def. UQQA8065.A
	Inq.

UQQA8065.A



Tensione/Voltage/Spannung 230V / 50Hz		Verifica	
N.O. / N.C.	1	Verifica	Verifica
Scala 1 : X	20 / 05 / 02	Dis.n° UQA8065.A	
Dis. NET	DTF PREZINNE TECNOLOGIE DEL FREDDO	Fog.	
Dis. A.S. OSINE	EC2 / CELLA REFRIGERATA /		
Verifica	SCR / G.E.I / EKC 201		

CHAPTER REVISION STATUS					
ORD.	DATE	FORWARD. DOC.	ORD.	DATE	FORWARD. DOC.
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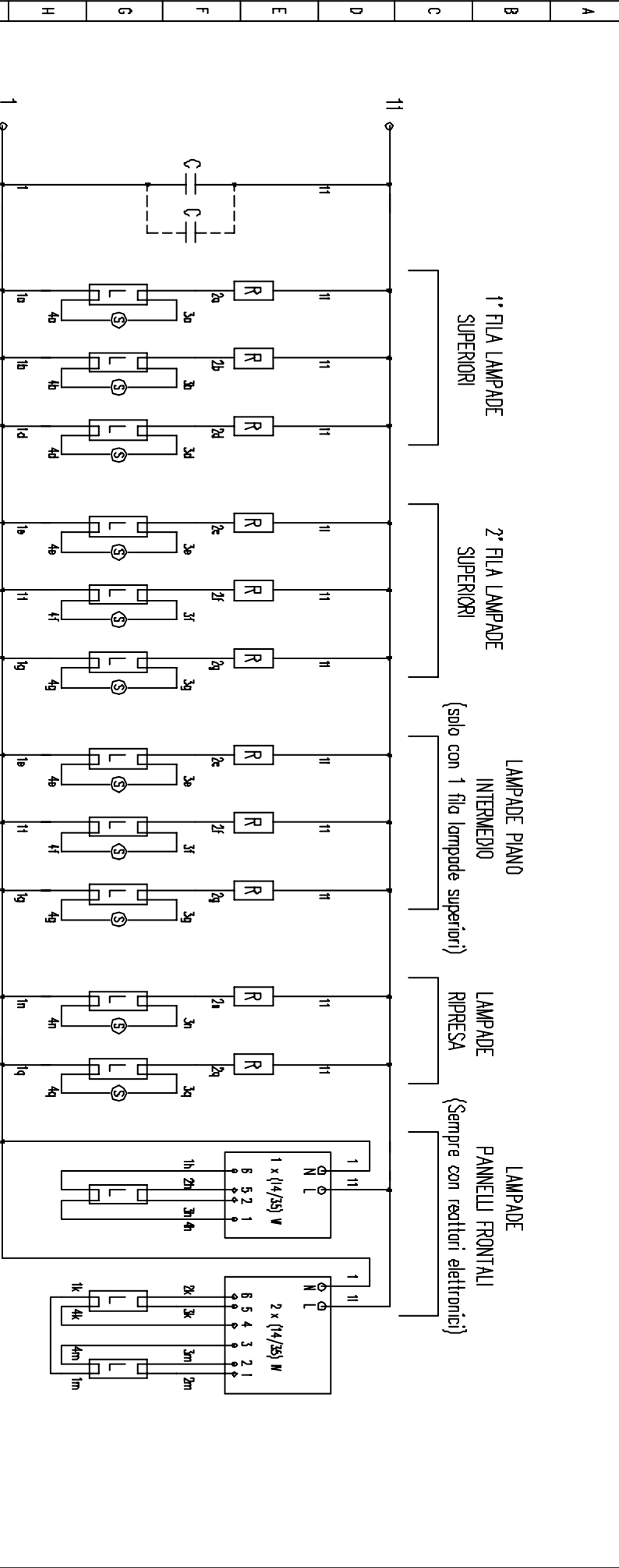
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DATE OF 1st ISSUE:
20.02.04
ISSUED BY
MKT

WIRING DIAGRAMS

LIGHTING

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19



Tensione/Voltage/Spannung 230V / 50 Hz

1	NO	NC	Form	DMS
2	NO	NC	Max voltage	230V a.c.
3	NO	NC	Date	28/11/01
4	NO	NC	Scale	DTF
5	NO	NC	1 : X	1
6	NO	NC	NET	REATTORI ILLUMINAZIONE EC2
7	NO	NC	ASSEMB	REATTORI STANDARD
8	NO	NC	Version	UPQA8097

UPQA8097.A

COSTAN TECHNICAL DOCUMENTATION PRODUCT: LEONARDO MICHELANGELO DONATELLO CARAVAGGIO DOC. No. SM00011Q SECTION No. 050.50	CHAPTER REVISION STATUS						SIGNED AS IN CONFORMITY WITH APPROVED ORIGINAL	PAGEs: 1
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WIRING DIAGRAMS

LEGENDA

COMPONENTI		COMPONENTS	COMPONENTS	COMPONENTS	COMPONENTS
LEGENDA SCHEMA ELETRICO		KEY TO THE WIRING DIAGRAM	LEGENDE DU SCHEMA ELETRIQUE	ZEICHNERKLÄRUNG FÜR SCHALTPLAN	LEYENDA ESQUEMA ELECTRICO
C1-C2	Connettore Master-Slave	Master-Slave Connector	Connexion Master-Slave	Klemme Master-Slave	Conector Master-Slave
D	Interruttore automatico	Automatic switch	Interrupteur automatique	Automatischer Übersstromschalter	Interrupitor automático
I	Interruttore generale	Main switch	Interrupteur général	Haupttrennschalter	Interrupitor general
Lamp	Lampada	Lamp	Lampe	Leuchstofföhre	Interrupitor general
Fad	Filtro antisturbo	Suppression filter	Filter antiparasites	Entstörfilter	Filtro de interferencia
Mic	Compressor	Compressor	Compresseur	Verdichter	Compresor
M	Tenda motorizzata	Motor night blind	Rideau motorisé	Motorbetriebener Nachttollo	Corrima motorizada
Ra1.....9	Resistenze antipannanti	Panel heaters	Résistances anti buée	Antischwitzheizung	Resistenças desempañamiento
Rp	Resistenze pannelli	Roof panel heaters	Résistances panneaux	Verkleidungsheizung	Resistenças painéis
Rpt	Resistenze pannelli tetto	Frame canopy heater	Résistances panneaux toit	Antischwitzheizung Deckenverkleidung	Resistenças painéis de techo
Rc	Resistenze cornice telaio	Door and glass heaters	Résistances fronton châssis	Simsheizung	Resistenças cornisa marco
Rv	Resistenze vetri e porte	Mullions heaters	Résistances montants	Heizungen für Glasscheiben und Tür	Resistenças montantes marco
Rm	Resistenze sbrinamento	Coil defrost heaters	Résistances dégivrage	Abtauheizung	Resistenças desescarche
Ra1.....4	Resistenze sbrinamento gocciolatoio	Drip-tray defrost heaters	Résistances de dégivrage égouttoir	Abtauheizung Tropfrinne	Resistenças desescarche bandeja de goteo
Rsc	Resistenze sbrinamento scarico	Drain defrost heater	Résistances dégivrage écoulement	Abtauheizung	Resistenças desescarche desagüe
Rr	Resistenze ripresa	Heaters on air inlet	Résistances entrée d'air	Luftentrittheizung	Resistenças toma de aire
Rt	Timer ritardo ventola	Fan delay timer	Horloge retard ventilateur	Zeitschaltuhr Verzögerung Lüfterbetrieb	Temporizador retraso ventilador
S1	Sonda mandata aria	Air outlet probe	Sonde sortie d'air	Temperaturfühler Luftaustritt	Sonda salida de aire
S2	Sonda fine sbrinamento	Defrost end probe	Sonde fin du dégivrage	Temperaturfühler Abtauende	Sonda fin de desescarche
S3	Sonda ripresa aria	Air inlet probe	Sonde entrée d'air	Temperaturfühler Luftentritt	Sonda toma de aire
T	Trasformatore	Transformer	Transformateur	Stromwandler	Transformador
Ts	Termostato fine sbrinamento	Defrost thermostat	Thermostat de dégivrage	Abtaubegrenzungsthermostat	Termostato fin de desescarche
Tf	Termostato funzionamento	Temperature control thermostat	Thermostat de fonctionnement	Betriebsthermostat	Termostato de funcionamiento
Th	Protettore termico	Thermal protection	Protecteur thermique	Motorschütz	Protector térmico
Tv	Termostato ritardo ventole	Fans delay thermostat	Thermostat retard ventilateurs	Thermostato Verzögerung Lüfterbetrieb	Termostato retraso ventiladores
TE	Timer sbrinamento	Timer	Horloge dégivrage	Zeitschaltuhr Abtauung	Temporizador desescarche
U	Deviatore azionamento tenda	Night blind switch	Déviateur rideau motorisé	Schalter motorbetriebene Nachttollos	Desviador cortinas
Ve	Ventolare evaporatore	Evaporator fan/s	Ventilateur/s évaporateur	Verdampferlüfter	Ventilador/es evaporador
Vf	Ventilatori frontali	Front fans	Ventilateurs frontaux	Vordere Lüfter	Ventiladores frontales
Vi	Ventilatori laterali	Side fans	Ventilateurs latéraux	Seitliche Lüfter	Ventiladores laterales
Vv	Ventilatore tetto	Top fan	Ventilateur supérieur	Oberer Lüfter	Ventilador techo
Vs	Valvola solenoide	Solenoid valve	Vanne solénoïde	Magnetventil	Valvula solenoide
VC1.....	Ventolare condensatore	Condenser fan/s	Ventilateur/s condenseur	Verflüssigerlüfter	Ventilador/es condensador
Z	Interruttore luci	Light switch	Interrupteur éclairage	Lichtschalter	Interrupitor luces
K	Contattore tenda motorizzata	Motor blind contactor	Contacteur rideau motorisé	Kontaktgeber motorbetriebener Nachttollo	Contactor cortina motorizada
K1	Contattore luce	Lighting contactor	Contacteur éclairage	Kontaktgeber Beleuchtung	Contactor luces
K2-3A-3B	Contattore di sbrinamento	Defrost contactor	Contacteur dégivrage	Kontaktgeber Abtauung	Contactor desescarche
K3	Relè per inizio sbrinamento	Defrost starting relay	Relais début dégivrage	Relais für Beginn der Abtauung	Relé comienzo de desescarche
K4	Relè comando luci a distanza	Light remote control relay	Relais contrôle à distance éclairage	Relais für Fernbedienung Beleuchtung	Relé control remoto luces
K5-6	Relè ritardo ventole evaporatore	Evaporator fan delay relay	Relais retard ventilateurs évaporateur	Relais Verzögerung Lüfterbetrieb	Relé retraso ventiladores del evaporador
K7	Contattore resistenze ripresa	Air inlet heater contactor	Contacteur résistances entrée d'air	Kontaktgeber Luftentrittshheizung	Contactor resistencias toma de aire
MORSETTIERA		TERMINAL BOARD	BORNIER	KLEMMENBRETT	REGLETA DE BORNES
1-2	Fine sbrinamento	Defrost end	Fin du dégivrage	Abtauende	Fin de desescarche
3-4	Segnale termostatazione	Thermostat signal	Signal thermostat	Signal Thermostat	Signal termostato
4	Segnale termostatazione	Thermostat signal	Signal thermostat	Signal Thermostat	Signal termostato
5-6	Alimentazione luci	Lights power supply	Alimentation éclairage	Speisung Beleuchtung	Alimentación luces
7-8	Alimentazione resistenze antipannanti	Demist heater power supply	Alimentation résistances anti-buée	Speisung Antischwitzheizungen	Alimentación resistencias desempañamiento
7a-8a	Alimentazione ventole-controllore	Fan-controller power supply	Alimentation ventilateurs-contrôleur	Speisung Lüfter u. Kontrollleinheit	Alimentación ventiladores+controlador
9-10R.S.T	Alimentazione resistenze sbrinamento	Defrost heater power supply	Alimentation résistances dégivrage	Speisung Abtauheizungen	Alimentación resistencias desescarche
14	Segnale per funzionamento freddo	Cooling signal	Signal fonctionnement refrigeration	Signal Kühlung in Betrieb	Signal refrigeración
15	Segnale per inizio sbrinamento	Defrost start signal	Signal début dégivrage	Signal Abtaubeginn	Signal comienzo de desescarche
16	Segnale sbrinamento attivo	Defrosting signal	Signal en dégivrage	Signal Abtauung in Betrieb	Signal en desescarche
18-19	Segnale per attivazione ritardo ventole	Fan delay beginning signal	Signal activation retard ventilateurs	Signal Verzögerung Lüfterbetrieb	Signal activación atraso ventiladores
30-31	Alimentazione per valvola solenoide	Solenoid valve power supply	Alimentation vanne solénoïde	Speisung Magnetventil	Alimentación valvula solenoide
99-99	Contacto pulito allarme	Alarm clean contact	Contact propre alarme	Leistungsloser Alarmkontakt	Contacto limpio alarma
J-L	Segnale termostatazione	Thermostat signal	Signal thermostat	Signal Thermostat	Signal termostato
N-R	Alimentazione banco 230V-50Hz	Showcase power supply 230V-50Hz	Alimentation meuble 230V-50Hz	Speisung Möbel 230V-50Hz	Alimentación mueble 230V-50Hz
0-24V	Alimentazione banco 380-400V /3P+N/50Hz	Showcase power supply 380-400V /3P+N/50Hz	Alimentation meuble 380-400V /3P+N/50Hz	Speisung Möbel 380-400V /3P+N/50Hz	Alimentación mueble 380-400V /3P+N/50Hz
a-a	Segnale per comando luci remoto	Light remote control signal	Signal contrôle à distance éclairage	Signal Fernbedienung Beleuchtung	Signal control remoto luces
	Valvola solenoide	Solenoid valve	Vanne solénoïde	Magnetventil	Valvula solenoide

HEAT EXTRACTION RATE REQUIRED

Climatic Class 3

		cabinet class	T evap °C	L=937	L=1250	L=1875	L=2500	L=3125	L=3750	MAA45°	MAA90°	MAC45°	MAC90°
		[W]											
Donatello Caravaggio	RCA	3M1	-9	400	490	710	890	1110	1330	390	740	470	890
	RDA	3M1	-9	400	490	710	890	1110	1330	390	740	470	890
	RCB	3M1	-9	400	490	710	890	1110	1330	390	740	470	890
	LS	3M1	-10	440	534	780	970	1210	1460	430	820	510	970
Leonardo Michelangelo	RCA	3M1	-9	420	510	/	930	/	1400	410	780	480	910
	RDA	3M1	-9	420	510	/	930	/	1400	410	780	480	910
	RCB	3M1	-9	420	510	/	930	/	1400	410	780	480	910
	LS	3M1	-10	460	570	/	1030	/	1540	460	870	540	1030

		cabinet class	T evap °C	L=937	L=1250	L=1875	L=2500	L=3125	L=3750	MAA45°	MAA90°	MAC45°	MAC90°
		[W]											
Donatello Caravaggio	RCA	3M2	-7	340	420	610	760	950	1140	340	650	400	760
	RDA	3M2	-7	340	420	610	760	950	1140	340	650	400	760
	RCB	3M2	-7	340	420	610	760	950	1140	340	650	400	760
	LS	3M2	-8	380	460	670	840	1050	1260	370	700	440	840
Leonardo Michelangelo	RCA	3M2	-7	360	440	/	800	/	1200	350	670	420	800
	RDA	3M2	-7	360	440	/	800	/	1200	350	670	420	800
	RCB	3M2	-7	360	440	/	800	/	1200	350	670	420	800
	LS	3M2	-8	400	480	/	880	/	1320	380	720	460	870

		cabinet class	T evap °C	L=937	L=1250	L=1875	L=2500	L=3125	L=3750	MAA45°	MAA90°	MAC45°	MAC90°
		[W]											
Donatello Caravaggio	RCA	3H2	-6	320	390	560	700	880	1050	310	590	370	700
	RDA	3H2	-6	320	390	560	700	880	1050	310	590	370	700
	RCB	3H2	-6	320	390	560	700	880	1050	310	590	370	700
	LS	3H2	-7	350	420	620	770	960	1160	340	650	400	760
Leonardo Michelangelo	RCA	3H2	-6	330	400	/	730	/	1100	320	610	380	720
	RDA	3H2	-6	330	400	/	730	/	1100	320	610	380	720
	RCB	3H2	-6	330	400	/	730	/	1100	320	610	380	720
	LS	3H2	-7	360	450	/	810	/	1210	360	680	430	820

Corrective factors for class 2 and class 4 (depending on environmental load and ambient conditions)

RCA - RDA - RCB classe 2 = 0.96
 classe 4 = 1.08

LS classe 2 = 0.94

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CHAPTER: ASSEMBLY OF SUPERSTRUCTURE	C			F				

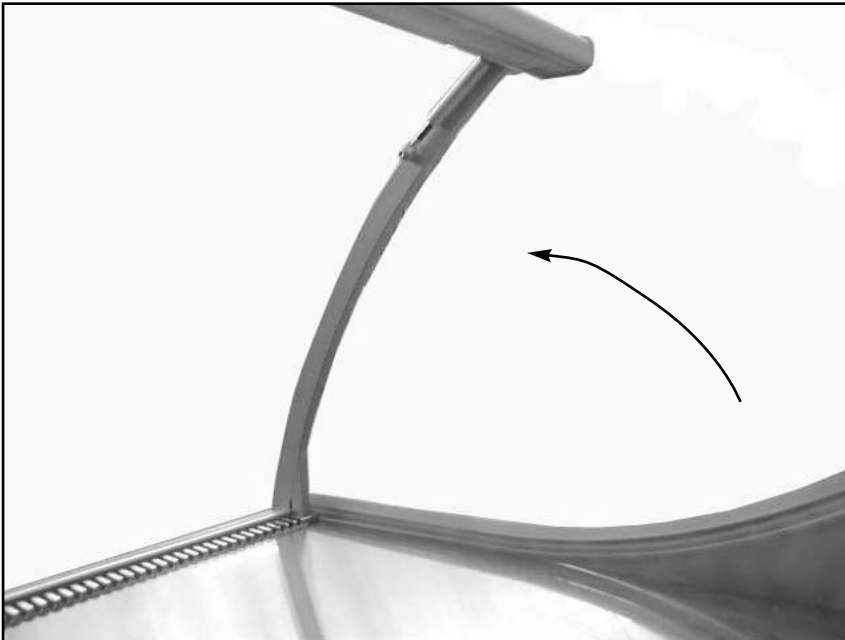
ASSEMBLY OF SUPERSTRUCTURE

Thanks to a special upright-fastening method, the superstructure of cabinets delivered in crate packing is brought down into the cabinet chest.

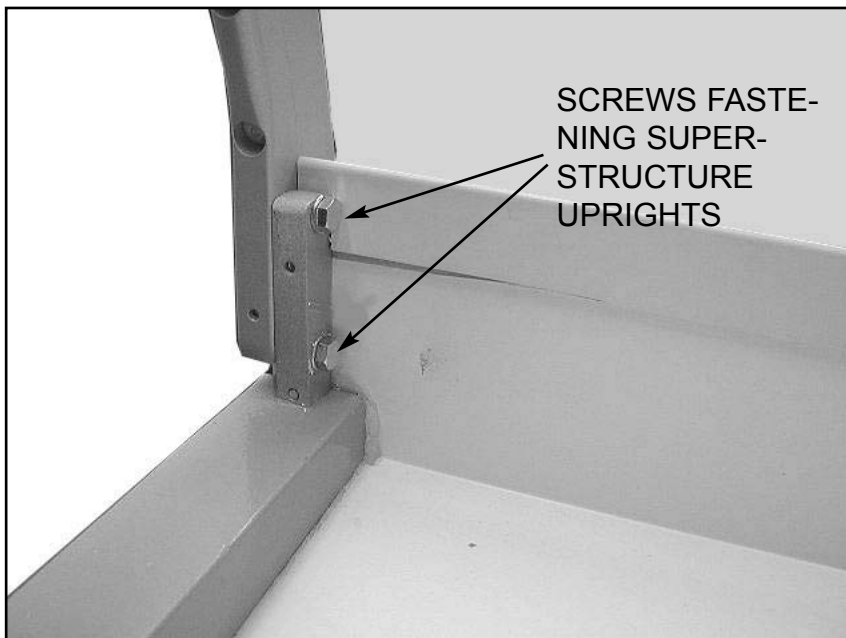
Prior to multiplexing and completing the cabinets it is therefore necessary to put the superstructure in its correct position; proceed as described below:

- raise and place superstructure uprights in the correct position (picture 1)
- secure the superstructure using the two fastening screws (picture 2) using a 13 mm Allen wrench (If the cabinet is to be multiplexed, do not tighten the screws up)

If the cabinet must not be multiplexed, complete superstructure assembly with the side glass ends and the glass top as explained in the following chapters.



PICTURE 1

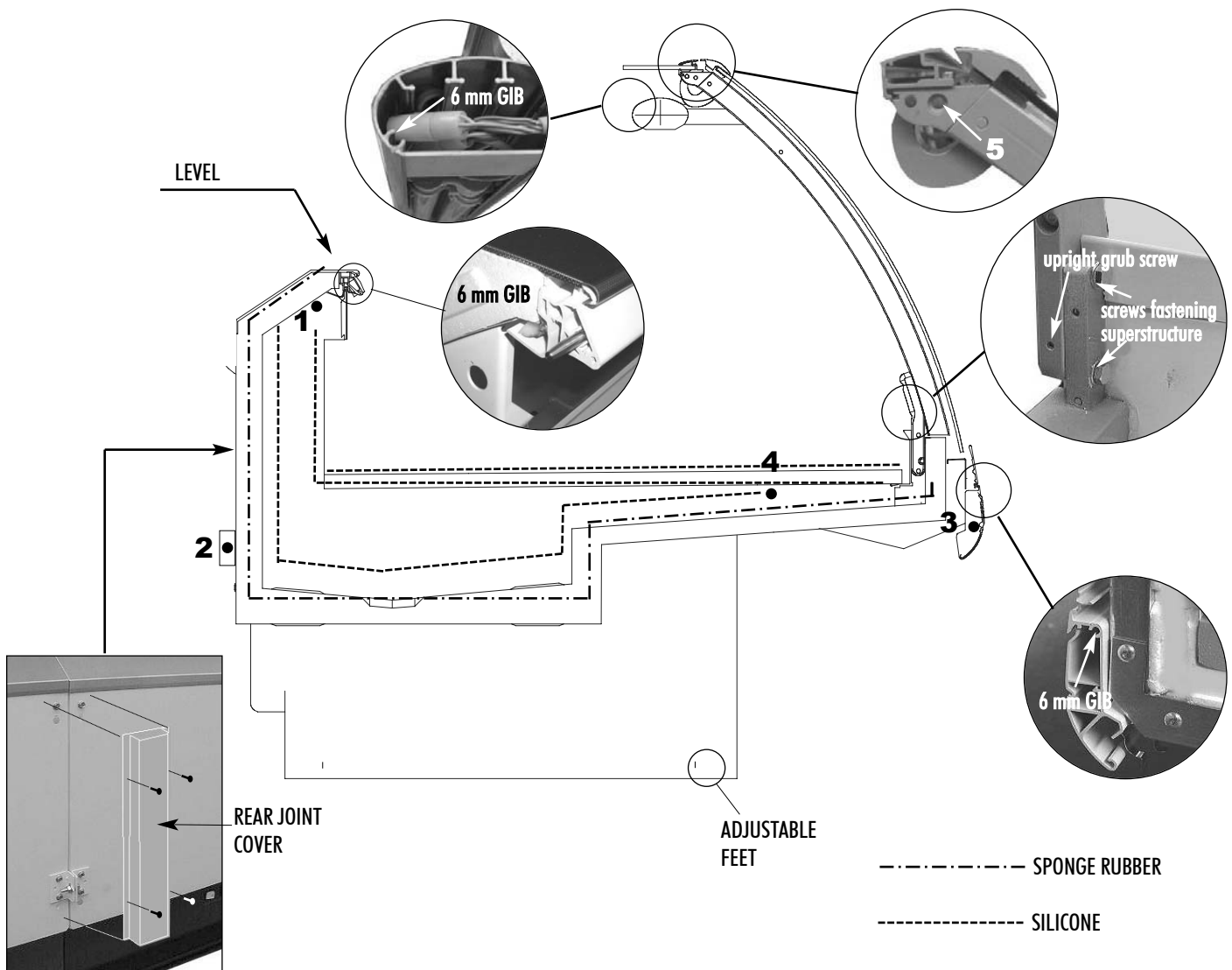


PICTURE 2

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CABINET MULTIPLEXING

- 1) Adjust the feet to level the cabinet with reference to the service counter top (when provided, assemble cylindrical feet first; see section 090.40).
- 2) Apply sponge rubber (as in the dash-dot line) and silicone (as in the dashed line) on the side of one of the cabinets to be multiplexed following the instructions in the picture.
- 3) Bring the cabinets to be multiplexed near each other and level with reference to service counter tops.
- 4) Insert one 6 mm gibs in the front shapes and one 6 mm gibs in the lamp-holders and one 6 mm gibs in the ticket holder of one of the cabinets as indicated in the drawing and pictures.
- 5) Join the cabinets and secure them to one another in the 1-2-3-4 points indicated in the figure, using hexagonal-head screws M8x15 - washers of d. 8,4:17 - M8 nuts and in point n.4 (superstructure) using one screw FE TCEI M6x20 - M8 nuts.
- 6) Seal using a silicone seam on the joint between the chests.
- 7) Using 4 self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit, secure the plastic rear joint-cover as illustrated in the picture.
- 8) Adjust the alignment of superstructure uprights using the appropriate grub screw and a 4 mm Allen wrench as indicated in the drawing and picture. Tighten the screws fastening the superstructure for good.

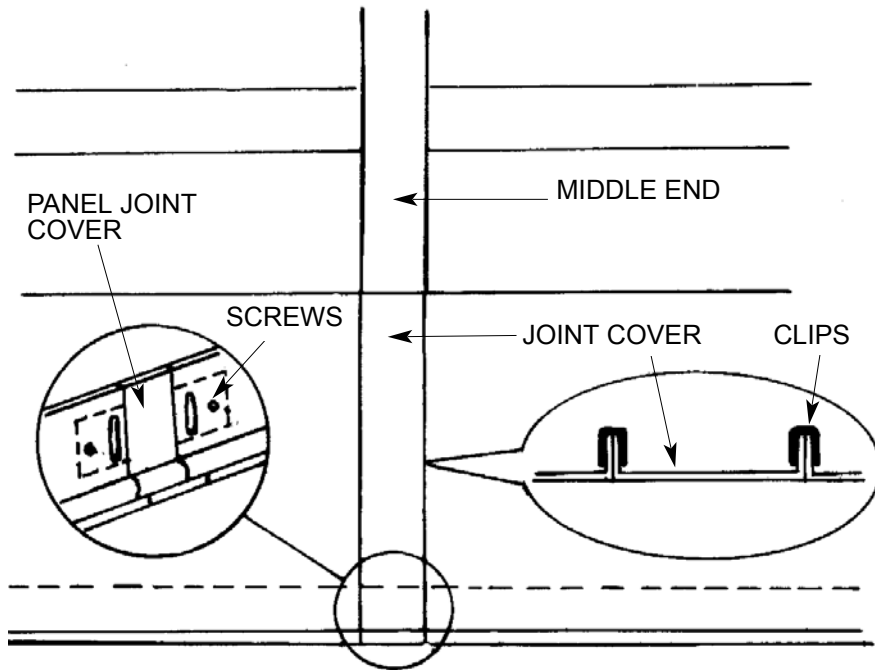


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MULTIPLEXING WITH A MIDDLE END IN BETWEEN - ASSEMBLY OF JOINT COVERS

When the display cases are multiplexed with a middle end in between, it will be necessary to mount joint covers on the panels and base plinths.

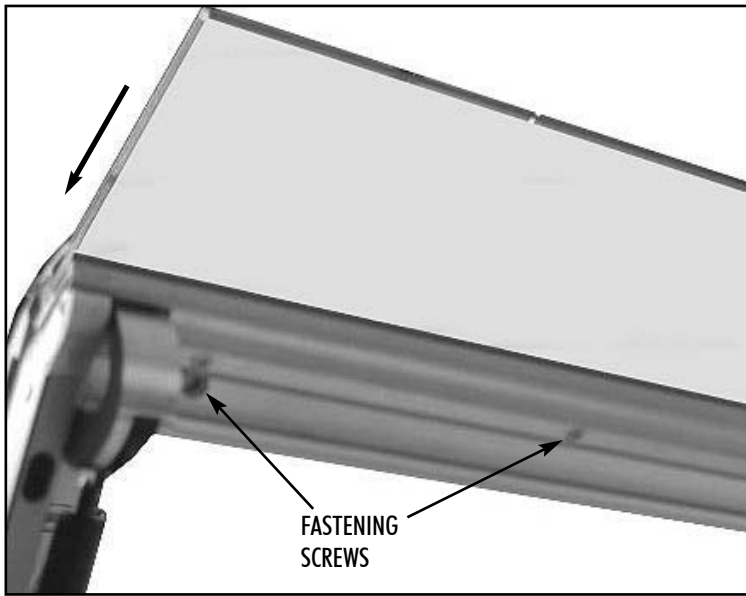
Joint covers must be fastened directly onto the front and rear panels and base plinths by the aid of clips.



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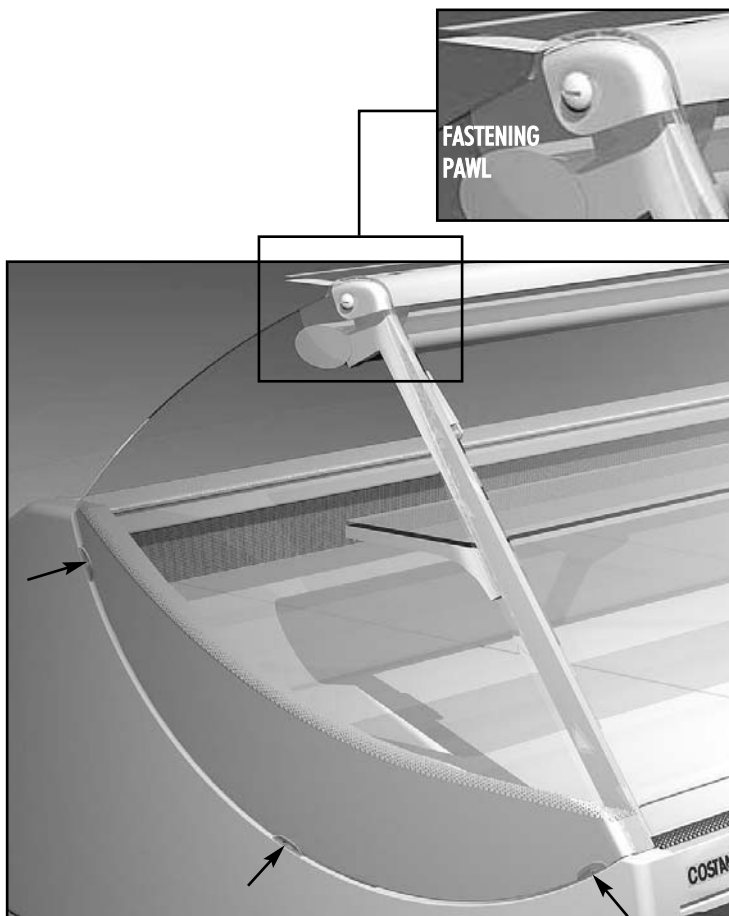
CABINET COMPLETION

After multiplexing cabinets as described in the previous section, complete them following the instructions below.



ASSEMBLY OF GLASS TOP

Place the glass top in the appropriate seat on the superstructure and secure it (use a Allen wrench) by way of the fastening screws shown in the picture.



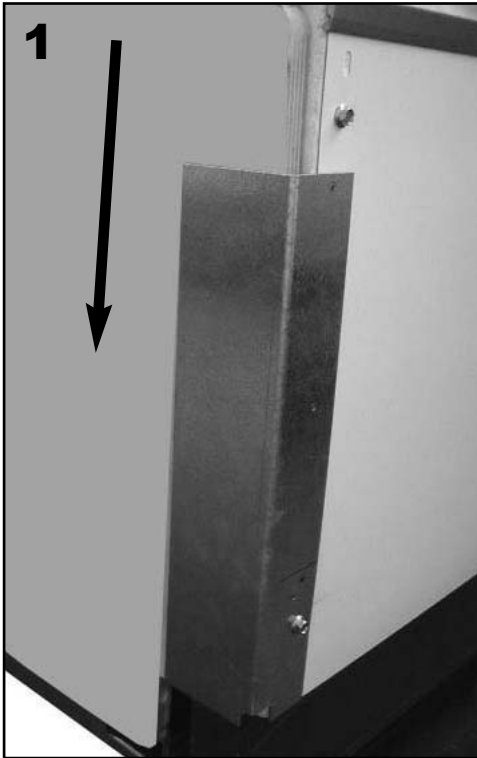
ASSEMBLY OF PLEXIGLAS SIDE END cabinets MICHELANGELO CARAVAGGIO

Fit the plexiglas side into the appropriate holders on the cabinet's end as shown in the picture.

Secure the plexiglass upper part using the ad-hoc pawl.

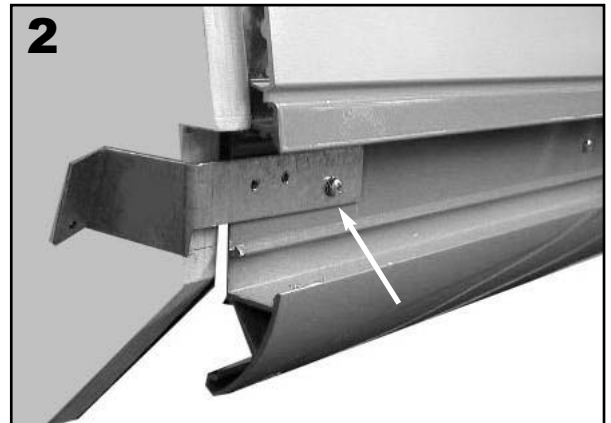
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ASSEMBLY OF GLASS END ON LEONARDO - DONATELLO CABINETS

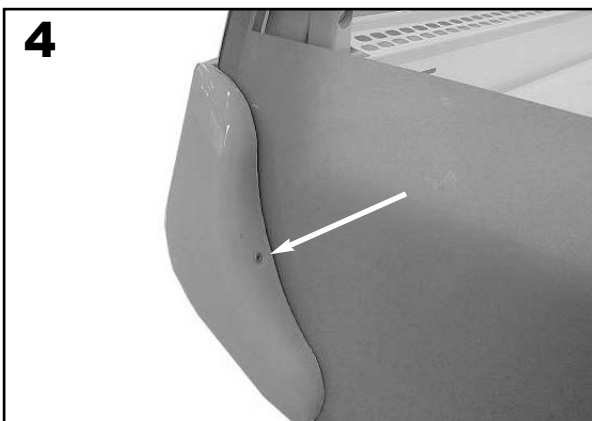


Slide the glass end into the sheet-metal hold.

Secure the side end at the front, making use of the bracket glued onto the cabinet. Employ self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.

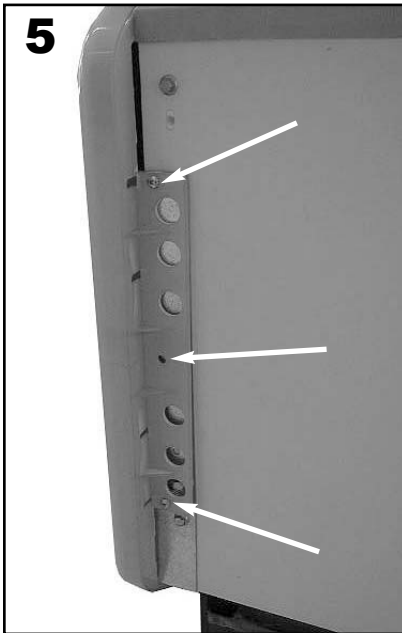


Mount the side end's fore corner and fasten it as indicated in the picture using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.



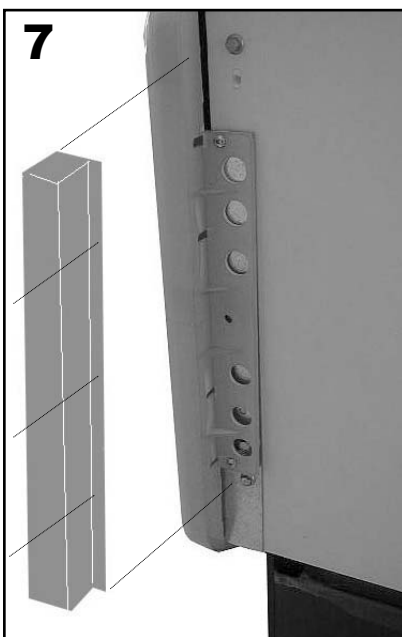
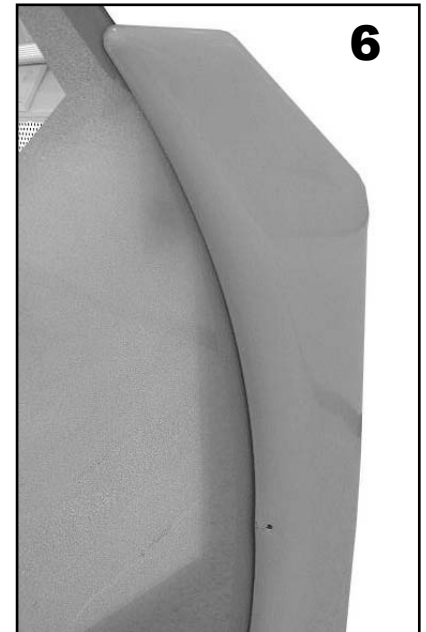
Fasten the fore corner at the back as shown in the picture using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.

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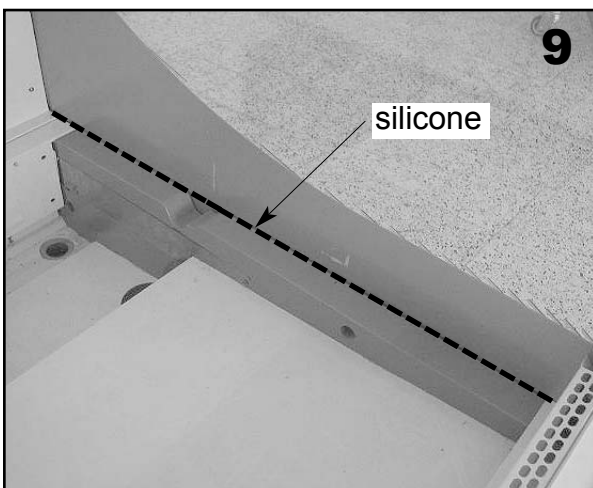
Secure the side-end rear corner as shown in the picture, using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.

Fasten the side-end rear corner at the front using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.



Mount the rear side-end cover using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.

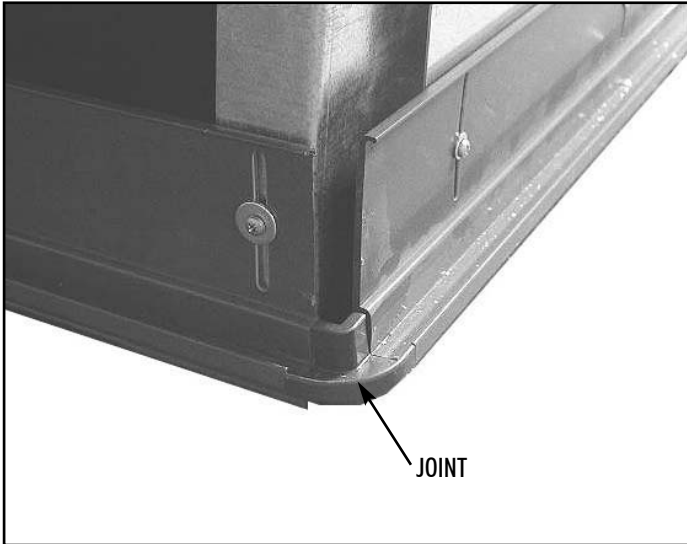
Secure the glass side end at the top using the screws supplied.



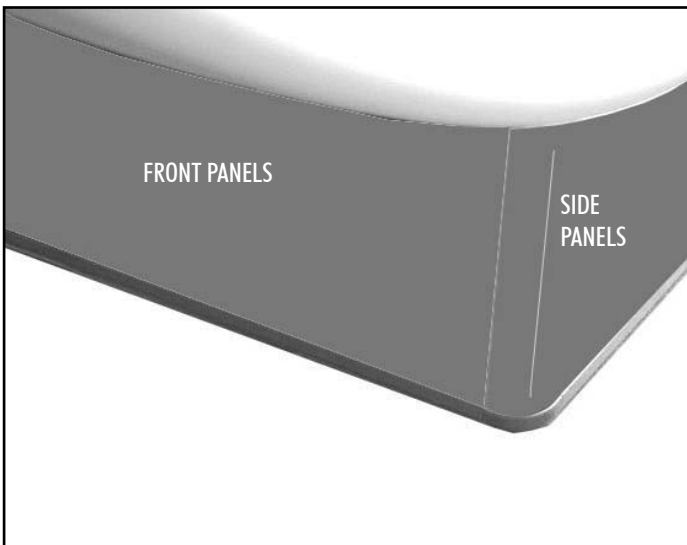
Seal the joint between the glazing and the cabinet using a silicone seam

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ASSEMBLY OF FAIRING-FITTED BASE



Fasten base elements in the following order: front panel-holding shape, rear panel-holding shape, side hold shapes. When mounting these shapes, place the appropriate plastic joint at every corner.



Fit the side and front panels into the newly-mounted holding shapes.



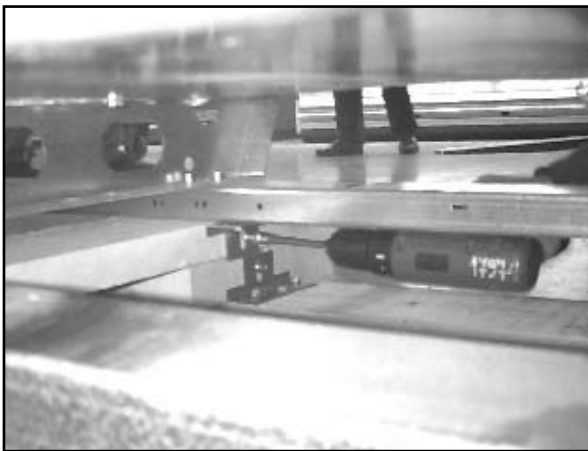
Place front panels in the holding shapes. Secure the rear fairing to the chest of the cabinet using self-tapping screws and a screwdriver or electric screwdriver with a P2 crosswise bit.

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ASSEMBLY OF CYLINDRICAL FEET MAXIMA - MAXIMA L CABINETS

When provided, the feet of the cabinet must be installed in the positions shown in chapter 040.20 and according to the clues given in the picture.

Remove the wood pallets from the cabinet as shown in the picture using a 10 mm Allen wrench

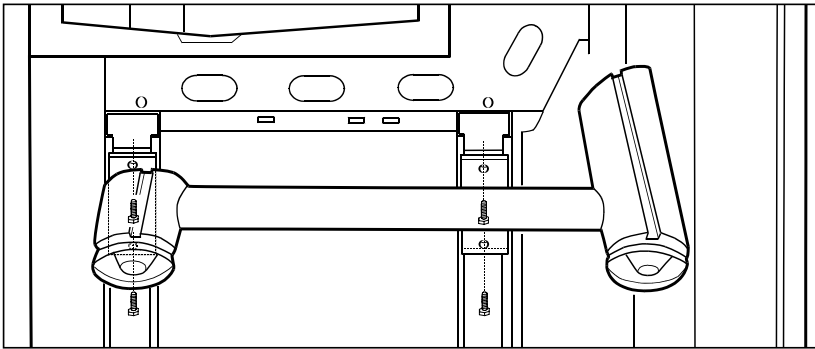


Lift the cabinet by way of a lift truck and install feet as shown in the next page

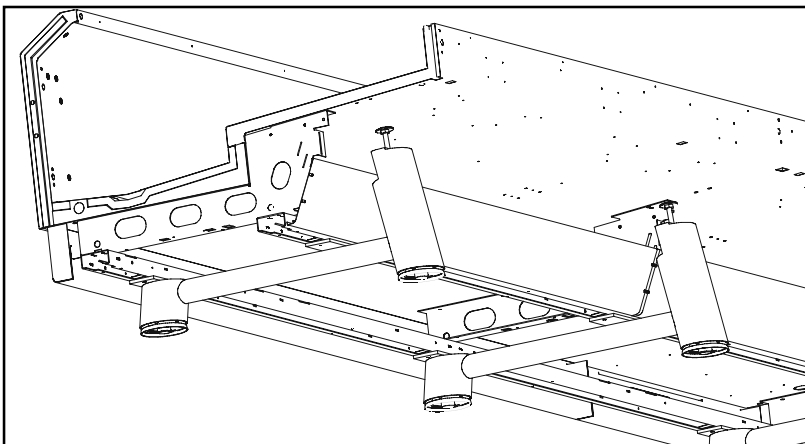


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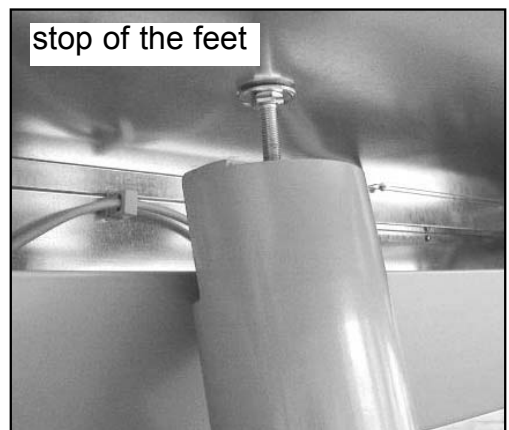
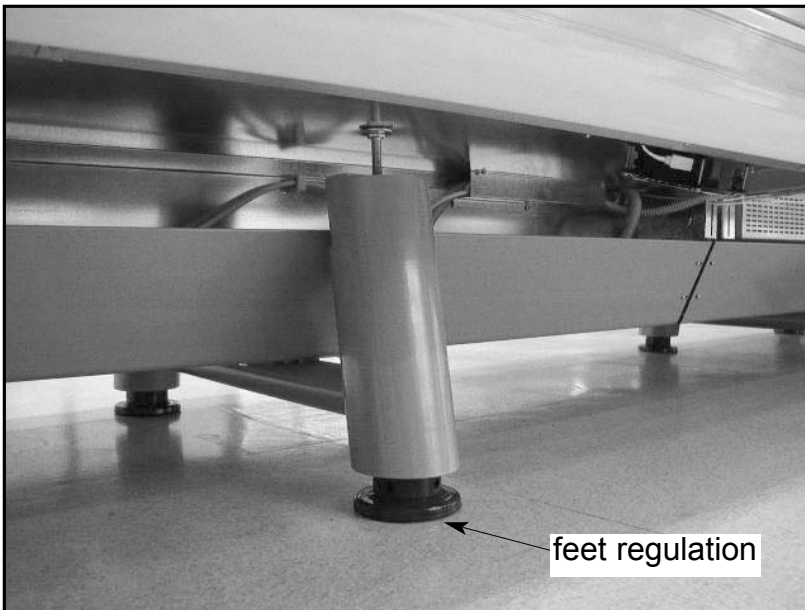
ASSEMBLY OF CYLINDRICAL FEET



These feet consist of a single sliding block that must be fastened to the shapes existing under the chest of the case in the 4 points shown in the figure, using 2 flanges plus hexagonal-head screws M8 x 20 and the appropriate nuts.



The feet must be stopped to the inferior part of the chest of the mobile using the special screws as suitable in the photos



To adjust the height of cylindrical feet and level the cabinet, increase or decrease foot height by turning the base of the foot and lastly put the cabinet back in place.

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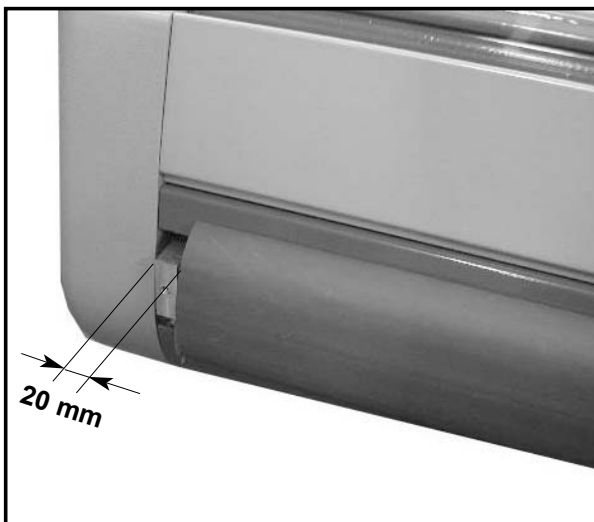
ASSEMBLY OF RUBBER BUMPER RAIL ON MICHELANGELO - CARAVAGGIO CABINETS

Cabinets Michelangelo and Caravaggio are fitted with a front rubber bumper-rail spanning from end to end even on multiplexed cabinet lines. Proceed as described below.

Push the bumper rail into the holding shape near one of the side ends.

To complete the assembly, push the bumper rail into the holding profile over the entire length of the cabinet or multiplexed cabinets.

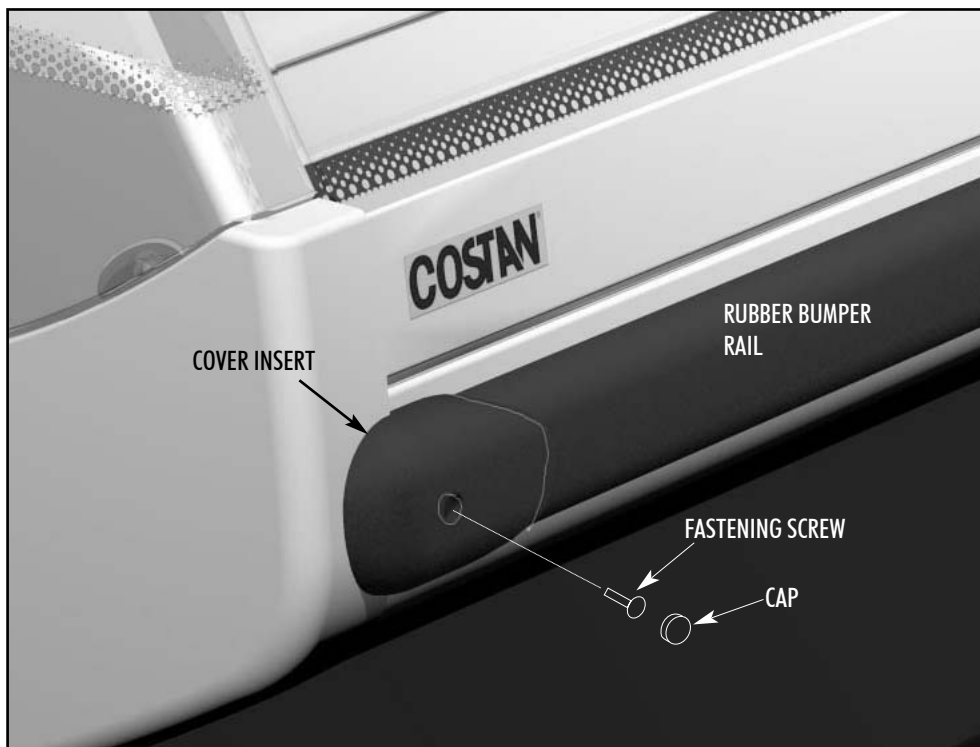
Proceed as shown in the picture: with one hand bend the rubber outwards as much as possible while gradually pushing it into place with the other.



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Once bumper-rail assembly is complete, place the plastic cover inserts (which act as hiding and fastening elements) at both ends. Proceed as follows:

- put the plastic insert in place and drill the cabinet's front shape using a 4 mm drill bit and the hole existing on the cover insert as a reference;
- secure the cover insert with a self-tapping screw and a screwdriver or an electric screwdriver with a P2 crosswise bit);
- push the plastic cap on the screw.



NOTE

The bumper rail must be mounted from end to end. In case of joints, mind that the mounting direction is kept and bring the ends together exactly (which are factory-prepared). Best fit may be obtained using a few drops of cyan-acrylic glue at both ends.

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CONNECTION OF AUXILIARY POWER SOCKETS

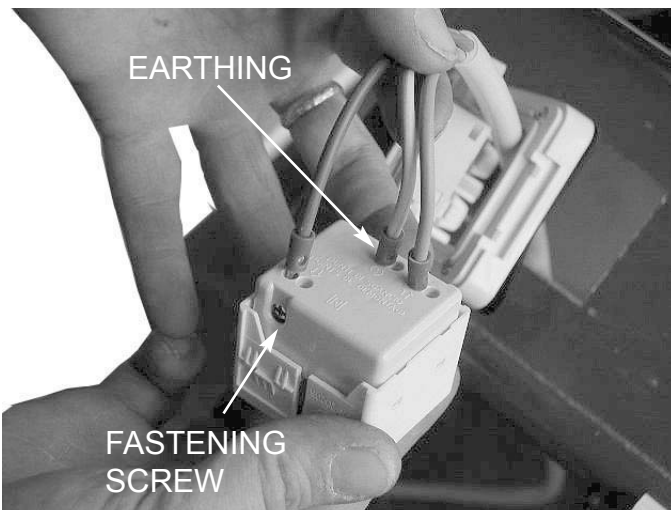
For transportation purposes, auxiliary power sockets are not factory-connected. They consequently need connecting as described below.



Remove the socket outer shell using a screwdriver or electric screwdriver with a P2 cross-shaped bit.

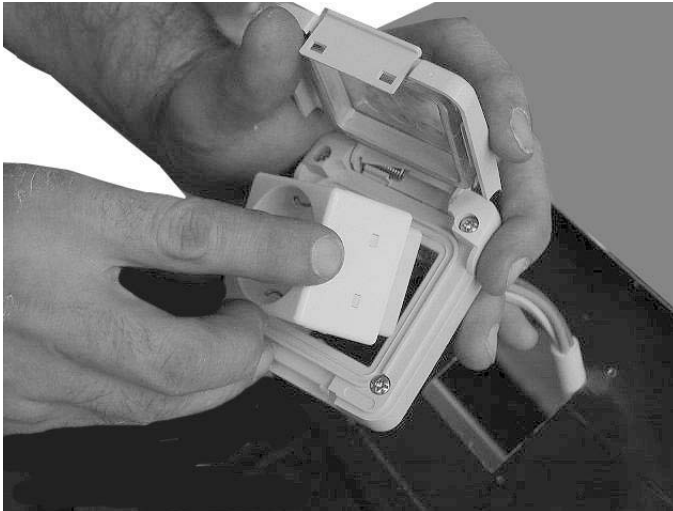


Retrieve connection cables from inside the base of the display case.

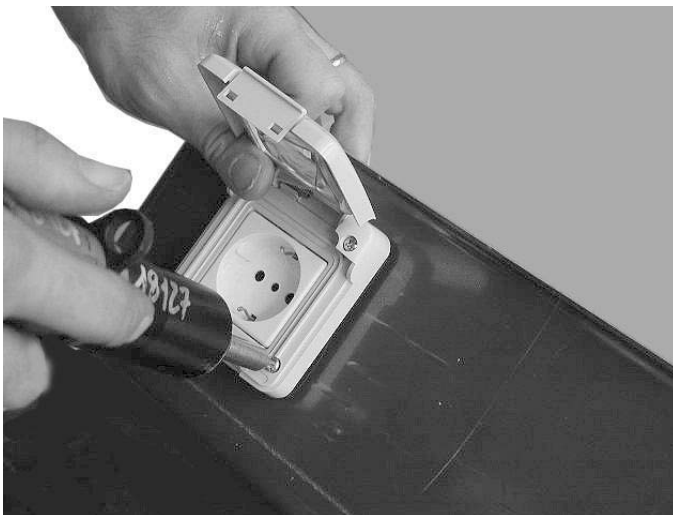


Plug cable connection plugs in as appropriate and secure them by the ad-hoc screws. Cable position is indicated on the power socket box.

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Put the socket box into the plastic shell.



Reassemble the socket using the previously removed self-tapping screws.