

FX BLAST CHILLER



Service Manua









Contents

Environmental Management Policy	1
Disposal Requirements	1
Cabinet description	2
Controller Description	
Controller Operation	2 to 3
Alarms & Warnings	4
Parameter Setting and Adjustment	4 to 6
Technical Specification	6
Spare Parts List	7
Wiring Diagrams	8 to 15

Environmental Management Policy for Service Manuals and Duets.

Product Support and Installation Contractors

Foster Refrigerator recognises that its activities, products and services can have an adverse impact upon the environment.

The organisation is committed to implementing systems and controls to manage, reduce and eliminate its adverse environmental impacts wherever possible, and has formulated an Environmental Policy outlining our core aims. A copy of the Environmental Policy is available to all contractors and suppliers upon request.

The organisation is committed to working with suppliers and contractors where their activities have the potential to impact upon the environment. To achieve the aims stated in the Environmental Policy we require that all suppliers and contractors operate in compliance with the law and are committed to best practice in environmental management.

Product Support and Installation contractors are required to:

- Ensure that wherever possible waste is removed from the client's site, where arrangements are in place all waste should be returned to Foster Refrigerator's premises. In certain circumstances waste may be disposed of on the clients site; if permission is given, if the client has arrangements in place for the type of waste.
- 2. If arranging for the disposal of your waste, handle, store and dispose of it in such a way as to prevent its escape into the environment, harm to human health, and to ensure the compliance with the environmental law. Guidance is available from the Environment Agency on how to comply with the waste management 'duty of care'.
- 3. The following waste must be stored of separately from other wastes, as they are hazardous to the environment: refrigerants, polyurethane foam, oils.
- 4. When arranging for disposal of waste, ensure a waste transfer note or consignment note is completed as appropriate. Ensure that all waste is correctly described on the waste note and include the appropriate six-digit code from the European Waste Catalogue. Your waste contractor or Foster can provide further information if necessary.
- 5. Ensure that all waste is removed by a registered waste carrier, a carrier in possession of a waste management licence, or a carrier holding an appropriate exemption. Ensure the person receiving the waste at its ultimate destination is in receipt of a waste management licence or valid exemption.
- 6. Handle and store refrigerants in such a way as to prevent their emission to atmosphere, and ensure they are disposed of safely and in accordance with environmental law.
- 7. Make arrangements to ensure all staff who handle refrigerants do so at a level of competence consistent with the City Guilds 2078 Handling Refrigerants qualification or equivalent qualification.
- 8. Ensure all liquid substances are securely stored to prevent leaks and spill, and are **not** disposed of to storm drains, foul drain, surface water to soil.

DISPOSAL REQUIREMENTS

If not disposed of properly all refrigerators have components that can be harmful to the environment. All old refrigerators must be disposed of by appropriately registered and licensed waste contractors, and in accordance with national laws and regulations.

Cabinet Description

Controls located in the unit cover.

All of the cabinet range incorporates bottom mounted refrigeration systems with the evaporator located on the back wall.

The refrigerant used is R404a.

Door operated fan switches stop the fans when the door is opened.

FXBC10, FXBC 20, FXBC30 all 230/1/50Hz 13amp

FXBC40 230/1/50Hz 16amp.

The internal base is flat with drain connection in the centre to an external drain via a flexible hose. (Vaporisation tray with electric heater available as an option)

FXBC 10: Blast Chiller, 10kg capacity with three GN1/1 shelves.

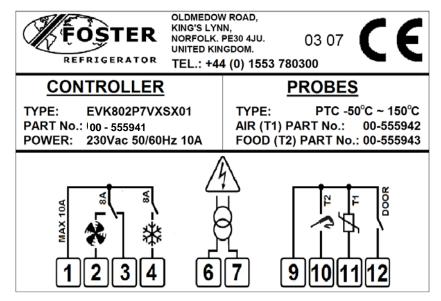
FXBC 20: Blast Chiller, 20kg capacity with five GN1/1 shelves.

FXBC 30: Blast Chiller, 30kg capacity with eight GN1/1 shelves.

FXBC 40: Blast Chiller, 40kg capacity with twelve GN1/1 shelves.

Controller Description

The controller is mains voltage 230-50/60-1





The device has the following operational states:

- 'ON' the controller is switched on and an operating cycle is running.
- 'stand-by' the controller is switched on but no operating cycle is running.
- · 'off' the controller is switched off

If there is a power failure during a timed blast chilling operation, when the power is restored, chilling will continue from the point at which the interruption occurred.

If there is a power failure during a set temperature blast chilling operation, when power is restored, chilling will start from the beginning.

If there is a power failure during the storage operation, when power is restored the storage operation will be continue.

Controller operation

Prior to starting a chill operation ensure the controller is in the 'stand-by' mode.

Timed chill operation

To place the controller in 'stand-by' press for 2 seconds, whilst in stand-by the cabinet internal air temperature will be displayed intermittently. 'PoS' will be displayed and the Timed Chilling LED will be flashing. Ö to display the chilling time, set to 90 minutes as standard, if no change to the time is required press to start the programme. If changes to the chill time are required press PoS' will be displayed and the Timed Chilling LED to display the chilling time followed by decrease the time or to decrease the time or increase. During chilling the display will show the time remaining with the Timed Chilling LED on. Once the chilling time is completed the controller switches to the storage mode with the display showing 'End' press any button to mute the alarm, press to cancel the message. Whilst the cabinet is in the storage mode the internal cabinet temperature will be displayed and the Timed Chilling LED and Storage LED will be illuminated. To stop the programme press for 2 seconds NOTE: If changes are made to the time settings on completion of the programme the time will revert back to the default setting of 90 minutes. Temperature chill operation Place the controller in 'stand-by' pressing for 2 seconds. Ensure that the food probe is inserted into the product prior to commencing the temperature chill programme. 'PoS' will be displayed and the Timed Chilling LED may be flashing, if it is Press again to display Set-Temperature Chilling LED flashing. the display will show the product end temperature, +3°C as standard, if no change to the temperature is required press to start the programme. If changes to the chill termination temperature are required press (PoS' will be displayed and the Set-O Temperature Chilling LED will be flashing, press to display the chilling temperature followed by to decrease the temperature or to increase. Once the product temperature has been achieved the controller switches to storage mode with the display showing 'End' press any button to mute the alarm, press to cancel the message. Whilst the cabinet is in the storage mode the internal cabinet temperature will be displayed and the Set-Temperature Chilling LED and Storage LED will be illuminated.

NOTE:

To stop the programme press

If changes are made to the temperature settings on completion of the programme the temperature will revert back to the default setting of +3°C.

for 2 seconds

Defrost

Defrost will be initiated automatically in the hold mode at pre-set intervals.

To initiate a manual defrost during the hold mode press for 5 seconds, defrost will start with — d—being displayed.

Alarm and Warnings

─ d ─ Defrost in operation

AL Low Temperature Alarm
AH High Temperature Alarm

PR1 Air Probe fault

PR2 Food Probe Fault

Parameter Setting and Adjustment

Setting the configuration parameters

The parameters are arranged on two levels

Access to the First Level

To access the parameters the controller must be in the stand-by mode.

To place the controller in 'stand-by' press for 2 seconds, whilst in stand-by the cabinet internal air temperature will be displayed intermittently.

Press and for 4 seconds the display will show 'PA'.

Press 'r0' will be displayed.

Press to display the value followed by to decrease the value or to increase the value.

Press to return to the followed by to move to the next parameter.

On completion of the changes press plus plus to exit or wait 60 seconds

First Level Configuration Parameters						
Mnem.	nem. Definition		Max	Default	Dim.	FXBC
r0	Parameter r7, r8, r9 and Ra hysteresis	0.1	15.0	2.0	°K	2.0
r1	Timed positive blast chilling duration	1	600	90	min.	90
r2	Timed negative blast chilling duration	1	600	240	min.	240
r3	r3 Positive blast chill end point temperature (food probe)		99.0	3.0	°C	3.0
r4	r4 Negative blast chill end point temperature (food probe)		99.0	-18.0	°C	-18.0
r5	r5 Set temperature positive blast chilling duration		600	90	min.	90
r6	r6 Set temperature negative blast chilling duration		600	240	min.	240
r7	r7 Positive blast chilling setpoint (air temp.)		99.0	0.0	°C	0.0
r8	r8 Negative blast chilling setpoint (air temp.)		99.0	-40.0	°C	-25.0
r9	r9 Post positive blast chilling storage setpoint		99.0	2.0	°C	2.0
rA Post negative blast chilling storage setpoint		-99.0	99.0	-20.0	°C	-20.0

Access to the second level

To access the parameters the controller must be in the stand-by mode.

To place the controller in 'stand-by' press for 2 seconds, whilst in stand-by the cabinet internal air temperature will be displayed intermittently.

Press and for 4 seconds the display will show 'PA'.

Press '0' will be displayed, press to change the setting to '-19'

Press 'PA' will be displayed.

Press and for 4 seconds the display will show 'CA1' the first parameter in the second level.

Press to display the value followed by to decrease the value or to increase the value.

Press to return to the followed by to move to the next parameter.

On completion of the changes press plus plus to exit or wait 60 seconds

Second Level Configuration Parameters						
Mnem.	Definition		Max	Default	Dim.	Default
CA1	Air probe offset		25	0	°K	0
CA2	Food probe offset		25	0	°K	0
P0	Probe type (0 = PTC, 1 = NTC)	0	1	0	flag	0
P1	Decimal point active (0 = No, 1 = Yes)	0	1	1	flag	0
P2	Temperature unit $(0 = {}^{\circ}C, 1 = {}^{\circ}F)$	0	1	0	flag	0
P3	Food probe activation (0 = No, 1 = Yes)	0	1	1	flag	1
r0	Differential of parameters r7, r8, r9 and rA	0.1	15.0	2.0	°K	2.0
r1	Timed positive blast chilling duration	1	600	90	min.	90
r2	Timed negative blast chilling duration	1	600	240	min.	240
r3	Positive blast chill end point temperature (food probe)	-99.0	99.0	3.0	°C	3.0
r4	Negative blast chill end point temperature (food probe)	-99.0	99.0	-18.0	°C	-18.0
r5	Set temperature positive blast chilling duration	1	600	90	min.	90
r6	Set temperature negative blast chilling duration	1	600	240	min.	240
r7	Positive blast chilling setpoint (air temp.)	-99.0	99.0	0.0	°C	0.0
r8	Negative blast chilling setpoint (air temp.)	-99.0	99.0	-40.0	°C	-25.0
r9	Post positive blast chilling storage setpoint	-99.0	99.0	2.0	°C	2.0
rA	Post negative blast chilling storage setpoint		99.0	-20.0	°C	-20.0
rb	Negative blast chilling and storage enabling	0 (NO)	1 (YES)	1	flag	0
rc	Test for food probe insertion differential (0 = no test)	0.0	99.0	5	°K	5
rd	Duration of probe insertion test	1	99	60	sec.	60
C0	Compressor start delay	0	240	0	min.	0
C1	Compressor interval between starts	0	240	5	min.	5
C2	Minimum compressor shut down time		240	3	min.	3
C3	Minimum compressor run time		240	0	sec.	0
C4	Compressor shut down with air probe error in hold (if 'C11' = 0)		240	10	min.	10
C5	Compressor shut down with air probe error in positive chill cycle (if 'C11' = 0)	0	240	10	min.	10
C6	Compressor shut down with air probe error in negative chill cycle (if 'C11' = 0)	0	240	20	min.	20
C11	Food probe operation with air probe failure	0	1	0	flag	0

d0	Defrost interval (0 = defrost not active)		99	8	hrs.	8
d3	Defrost duration (0 = defrost not active)		99	30	min.	20
d7	Drip time duration		15	2	min.	2
A1	Minimum temp alarm	0.0	99.0	10	°C	5
A2	Minimum temp alarm type (depends on 'r9' & 'rA' [or 'r9-A1' and 'rA-A1'])	0 (NO Alarm)	1	1	flag	1
A4	Maximum temp alarm	0.0	99.0	10	°C	5
A5	Maximum temp alarm type (depends on 'r9' & 'rA' [or 'r9+A4' and 'rA+A4'])	0 (NO Alarm)	1	1	flag	1
A6	Storage temp alarm delay (from start)	0	240	15	min.	15
A7	Temperature alarm delay	0	240	15	min.	15
A8	Drip time end high temperature alarm delay	0	240	15	min.	15
A9	Maximum high temperature alarm delay (only if i0 = 0 or 1)		240	15	min.	15
AA	Blast chill cycle completion alarm duration		240	5	sec.	20
F0	Evaporator fan operation during chilling (0 = off; 1 = on; 2 = with compressor)		2	2	flag	1
F2	Evaporator fan operation during hold (0 = off; 1 = on; 2 = with compressor)	0	2	1	flag	1
F8	Evaporator fan start up delay following defrost	0	99	0	min.	2
i0	Digital input operation (0 = Output a; 1 = output b; 2 = comp. protection)		2	1	flag	0
i1	Digital input contact type (0 = NO; 1 = NC; 2 = no input)	0	2	2	flag	1
i2	Digital input alarm delay (only if i0 = 0 or 1) [-1 = no alarm sound]	-1	120	30	min.	30
i3	Digital input effect duration (only if i0 = 0 or 1) [-1 = until input disabled]	-1	120	15	min.	-1
i7	Compressor protection deactivation delay (only if 'i0' = 2)		120	0	min.	0
u0	Relay K2 operation (0 = defrosting; 1 = evaporator fan)		1	1	flag	1
LA	Device address		247	1	flag	1
Lb	Baud rate (0 = 2.4k; 1 = 4.8k; 2 = 9.6k; 3 = 19.2k)		3	2	flag	2
LP	Parity (0 = none; 1 = odd; 2 = even)		2	2	flag	2
E9	Not used		1	1	exp.	1

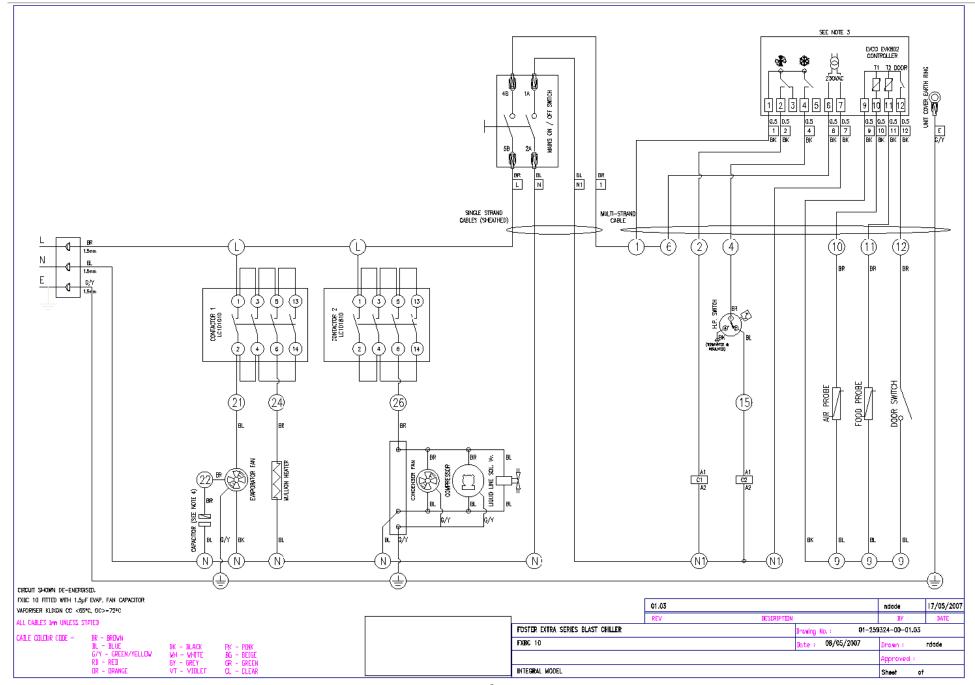
Technical Data

	FXBC10	FXBC 20	FXBC 30	FXBC 40
Nominal Chilling Capacity	10Kg	20Kg	30Kg	40Kg
Duty @ -15°C	826w	1182w		1909w
Fans	1	1	2	2
Defrost Load (amps)	N/A	N/A	N/A	N/A
Evaporating Temperature	-15°C	-15°C	-15°C	-15°C
Refrigerant Control	TEV	TEV	TEV	TEV
Refrigerant	R404a	R404a	R404a	R404a
Refrigerant Quantity	1300g	1500g	2700g	2700g
Electrical Supply	230/1/50 - 13amp	230/1/50 - 13amp	230/1/50 - 13amp	230/1/50 - 16amp
Dower Consumption	Watts 738	Watts 1089		Watts 1994
Power Consumption	Amps 3.44	Amps 5.1		Amps 9.05
Power absorbed W	730	1120		1990
Total Heat Rejection	1564w	2271w		3903w

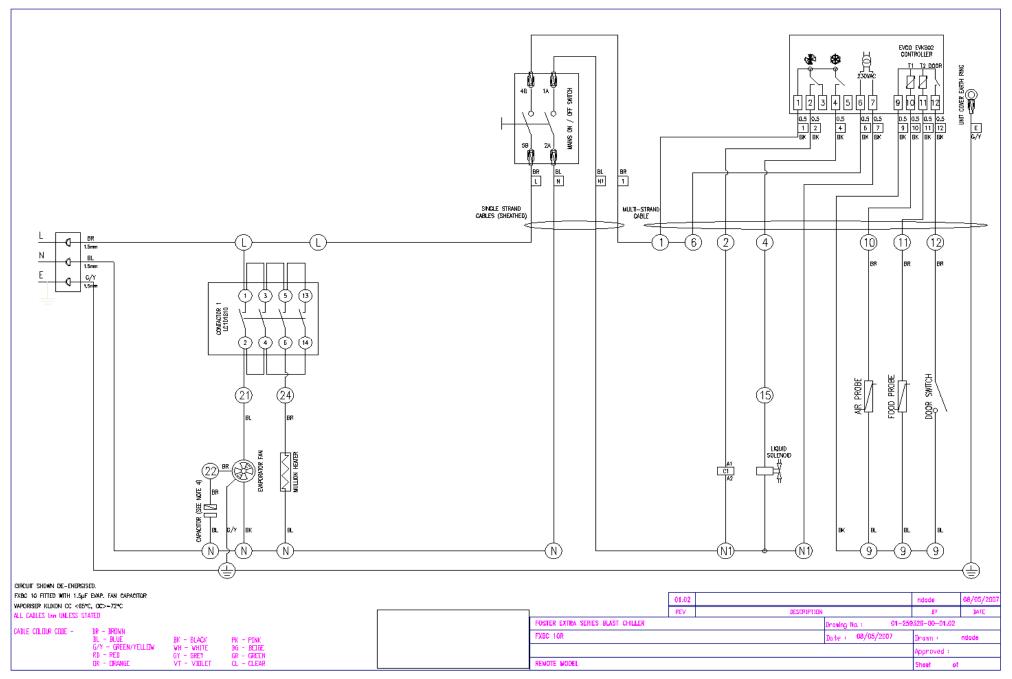
Spare Parts List

ITEM	DESCRIPTION	PART NUMBER	MODEL
Controller	EVK802	00-555941	All Models
Air Probe	ECSND0112A	00-555942	All Models
Food Probe	ECSNDX0008	00-555943	All Models
Compressor	MX16TB	00-555674	FXBC10
Compressor	CAJ9513Z	00-554334	FXBC20
Compressor	MS26TB	00-555682	FXBC30
Compressor	MS34TB	00-555677	FXBC40
Condenser Fan Motor	Grid Mount 16W	15470027	FXBC10, FXBC20,
Condenser Fan Motor		00-555413	FXBC30, FXBC40
Condenser Coil	Coil 012504	00-878508-01	FXBC10
Condenser Coil	Coil 012654	00-554998	FXBC20
Condenser Coil	Coil 013521	00-555405	FXBC30, FXBC 40
Drier	DML 033S	00-555388	All Models
Solenoid Valve	EVR6	15451215	FXBC30, FXBC 40
E analysis Osili	0.1040504	00 555440	EVPO40
Evaporator Coil	Coil 013584	00-555412	FXBC10
Evaporator Coil	Coil 013524	00-555410	FXBC20
Evaporator Coil	Coil 013475	00-555408	FXBC30, FXBC40
Evaporator Can Mater		00-555374	FXBC10
Evaporator Fan Motor		00-555374	FXBC10 FXBC20, FXBC30,
Evaporator Fan Motor		00-555375	FXBC40
			1 ABC40
Expansion Valve Body	TES2-N 68Z3417/68	15450385	All Models
Orifice	00 68-20900/68-207	15451102	FXBC10, FXBC20,
Orifice	02 68-2092/68-2072	15451104	FXBC30, FXBC40
Expansion Valve Solder Adaptor	02 00 2002/00 2012	15450910	All Models
Expansion valve colder / dapter		10100010	7 til Modele
High Pressure Switch	(28 BAR)	00-555386	All Models
Low Pressure Switch	(4PSI)	00-555387	FXBC30, FXBC 40
	(3.)		
Door Switch	Circular (Reed Type)	00-555829	All Models
Door Switch Magnet	Circular	00-555828	All Models
J			
Door Gasket	Magnet 597.5x385	01-232996-01	FXBC10
Door Gasket	Magnet 597.5x551.5	01-232909-01	FXBC20
Door Gasket	Magnet 597.5x1151.5	01-232852-01	FXBC30
Door Gasket	Magnet 597.5x1151.5	01-232852-01	FXBC40

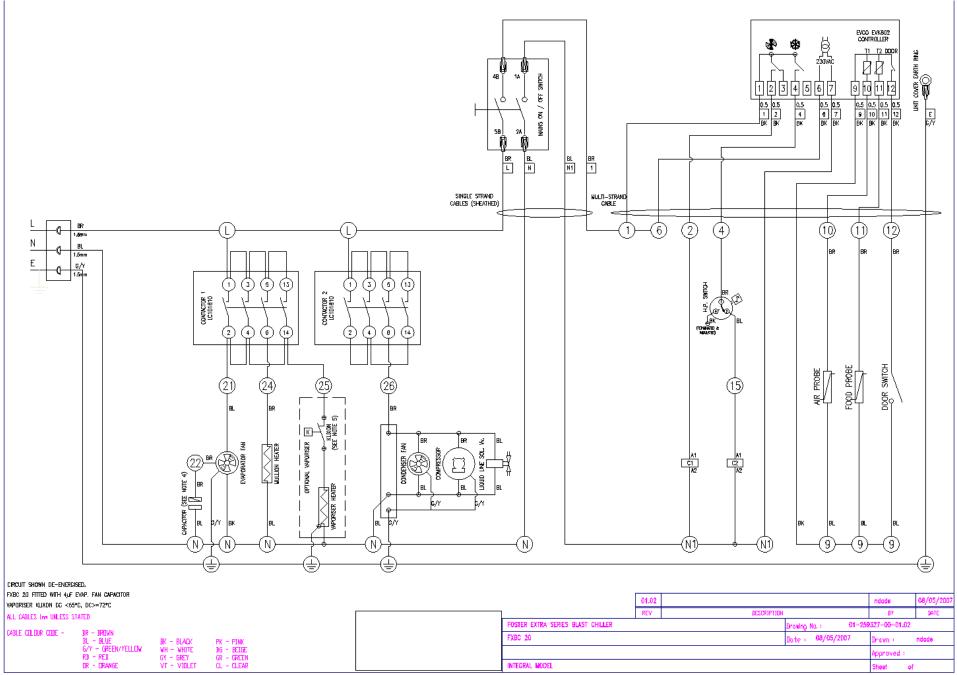
FXBC 10 Wiring Diagram



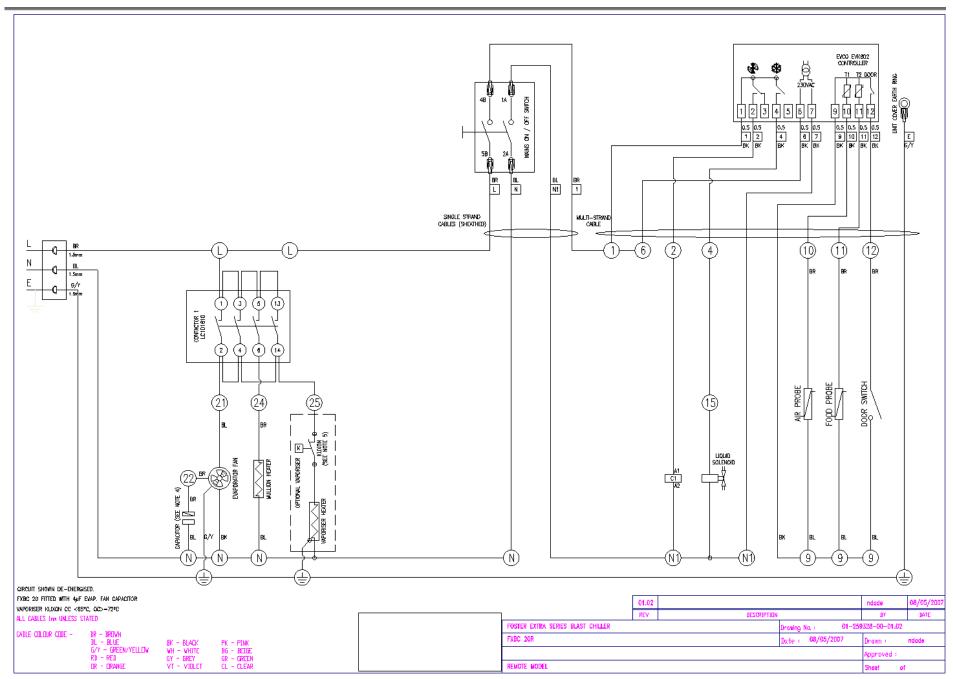
FXBC 10R Wiring Diagram



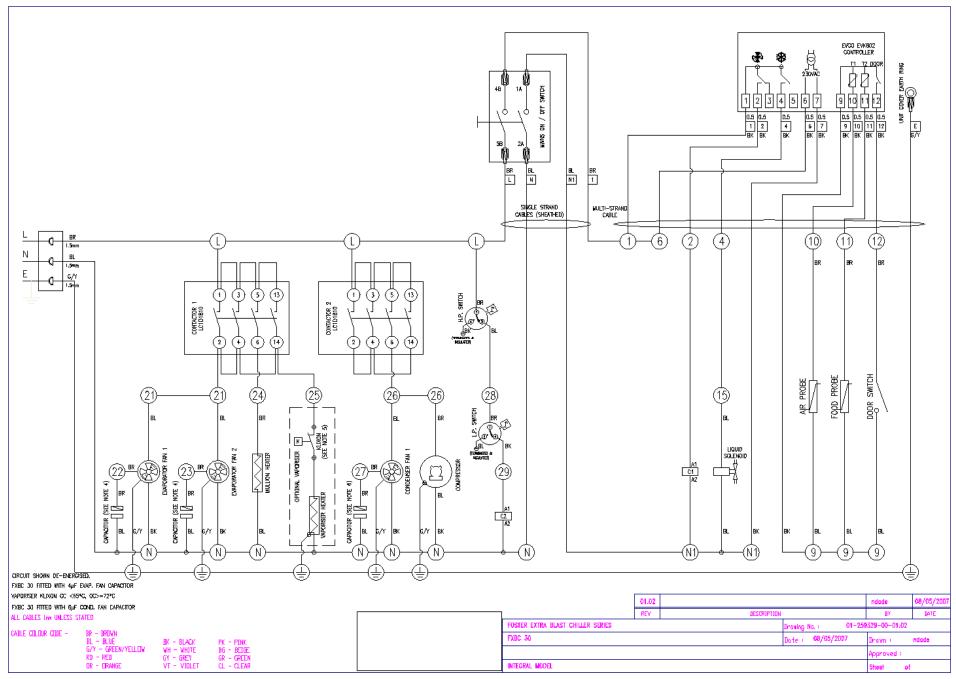
FXBC 20R Wiring Diagram



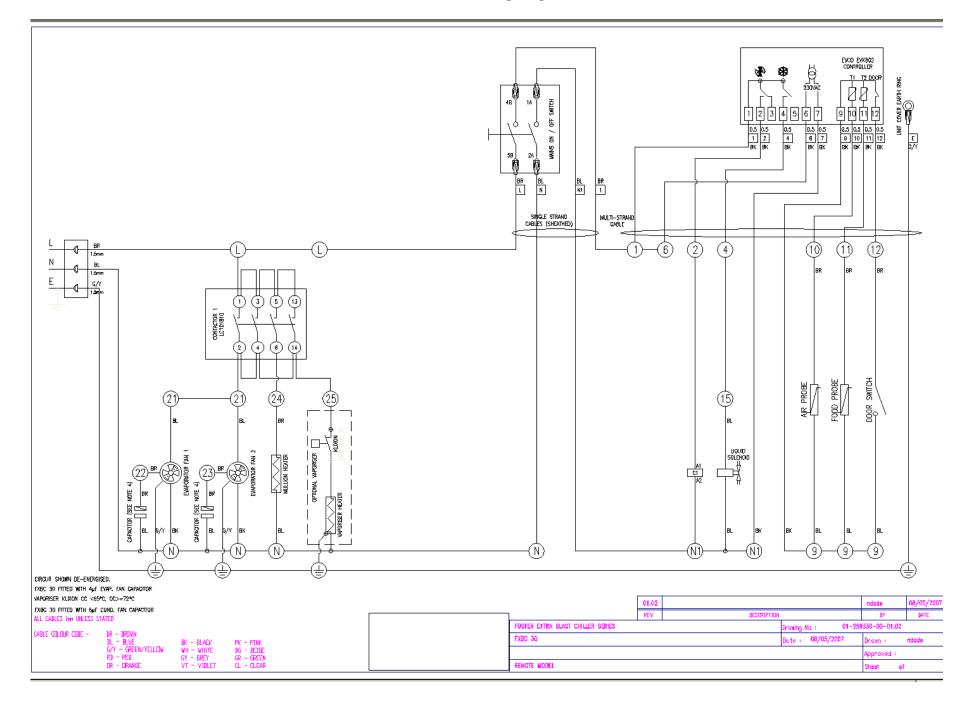
FXBC 20R Wiring Diagram



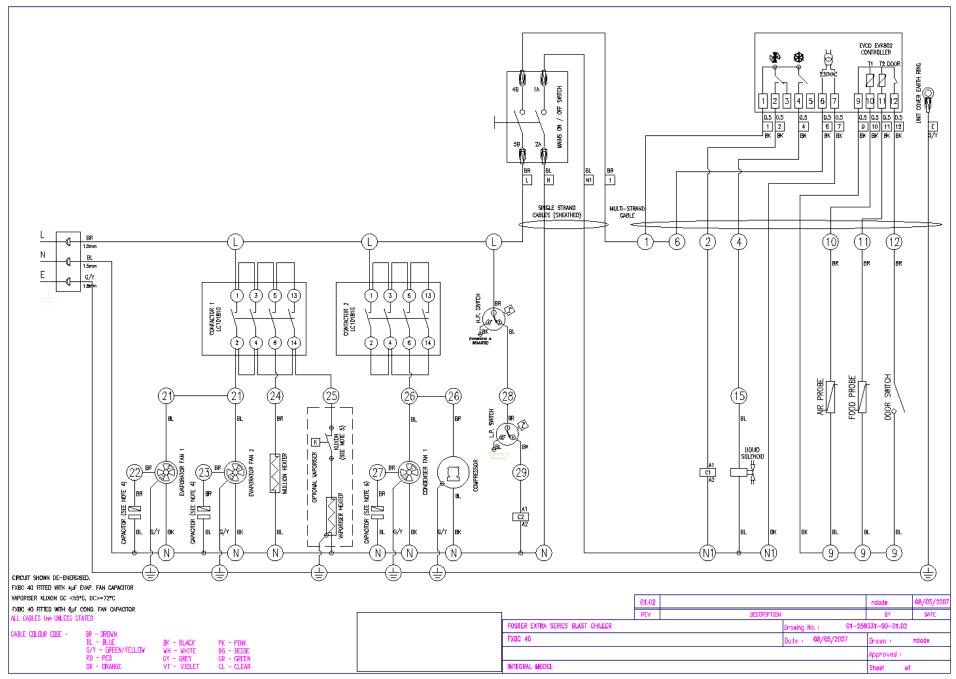
FXBC 30 Wiring Diagram



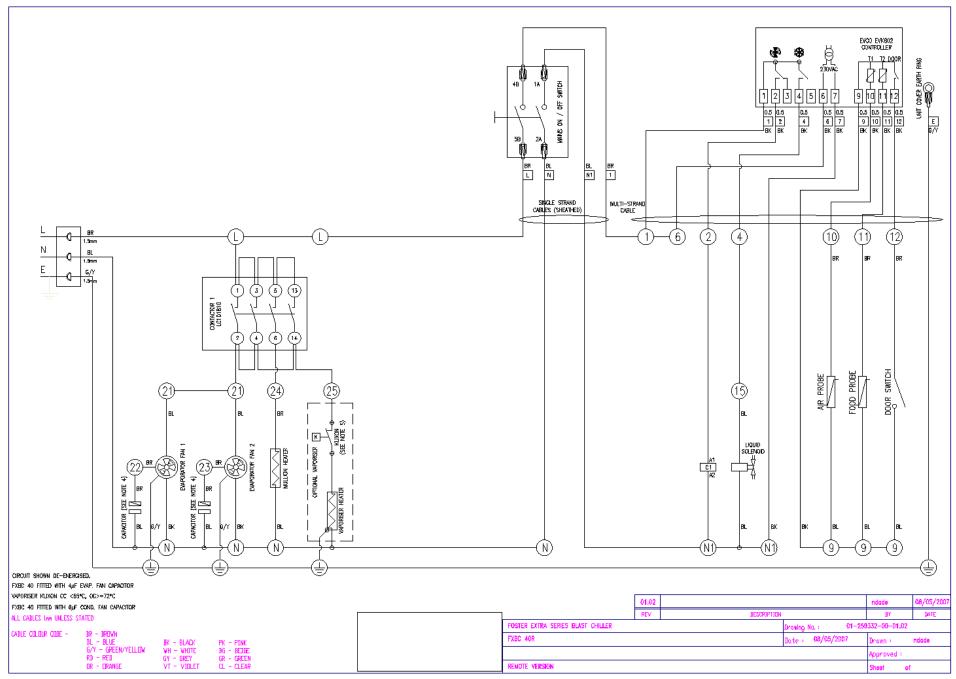
FXBC 30R Wiring Diagram



FXBC 40 Wiring Diagram



FXBC 40R Wiring Diagram





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