Service manual VTS 098

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Battery backup system at start-up

This appliance is equipped with a battery back up system.
Please activate the battery backup before final placement (see fig. 2)

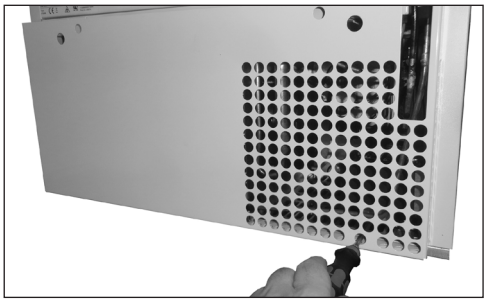

fig. 2

Use a pen or screwdriver to push the button through the above hole on the appliance backside. This will switch on the battery backup system.
Then please check the battery backup image − + appears in the front display lower left corner.
This shows the battery backup is activated.

NOTE!
The battery backup system does not supply the cooling system with power.

When starting up the appliance for the first time it is necessary to switch on the battery backup system.

NOTE!
The battery for back up should be changed every third year to secure 50 hours of back up. Please put this change in the maintenance schedule for every third year.

Battery backup function

The battery backup system supplies the controller and keyboard with power at power failure. This makes it possible to supervise the temperatures in the unit during the power failure.
The battery backup system makes it possible to supervise the temperatures for 50 hours.
After a power failure and at the first start up the battery needs to be recharged. To regain the full capacity the battery will be reloading for 10 days

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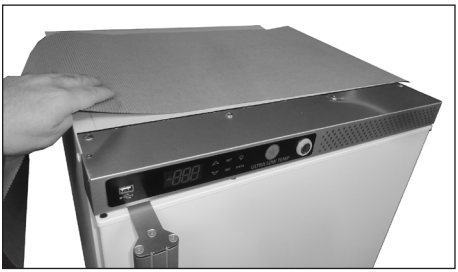
Reversing the door

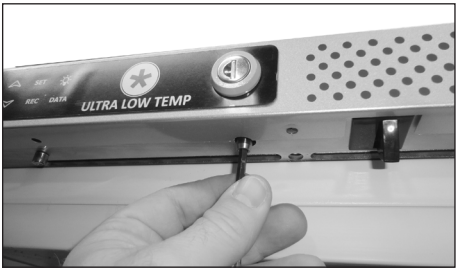


1. For a hingeside change turn off main power and place the appliance on a table. Protect top from scratches.

2. Loosen and remove visible top screws (use 3 mm allan key + Torx 20 tool)

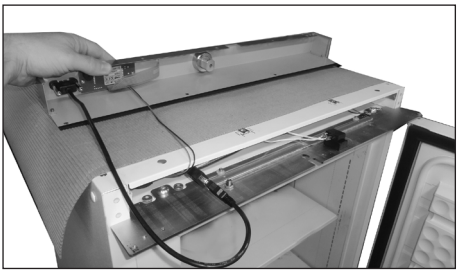
3. Open the door to gain access.

4. Remove three screws underneath the toppanel (use 3 mm allan key)

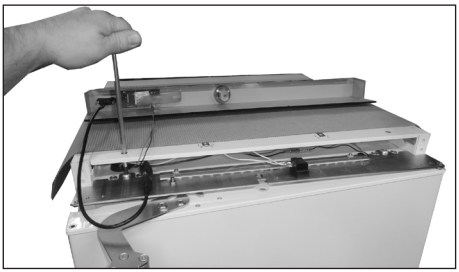


5. Remove lock pin (use 4 mm allen key)

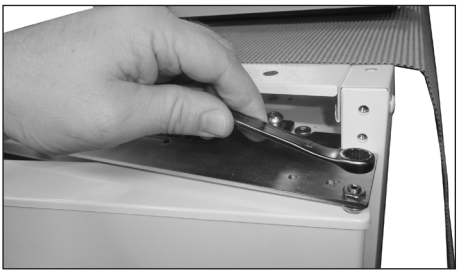
6. Carefully pull out the toppanel…



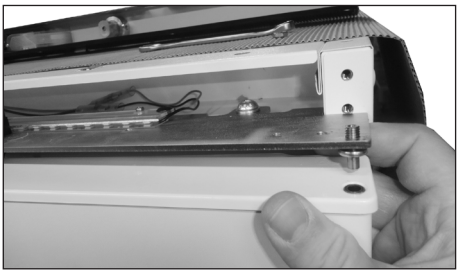
7. …and place it upside down on the cabinet top



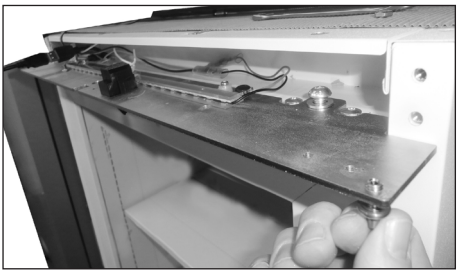
8. Loosen 2*M8 screws approx. 5 mm (use 5 mm allen key)



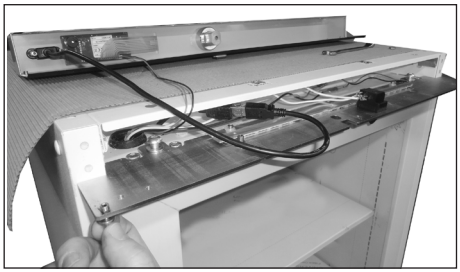
9. Loosen pivot nut (use 10 mm spanner)



10. Lift up the top bracket/pivot. Pull out the door and lift it off the bottom pivot



11. Loosen door top pivot (use 2,5 mm allen key if necessary)



12. Remount pivot in the new hinge side

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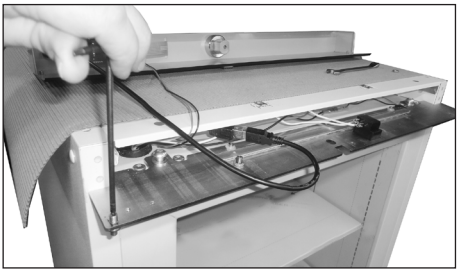
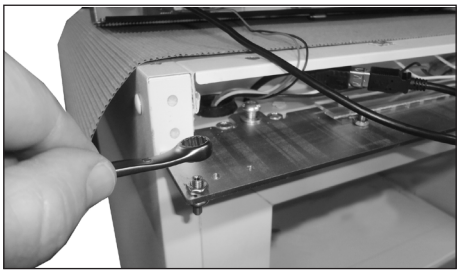
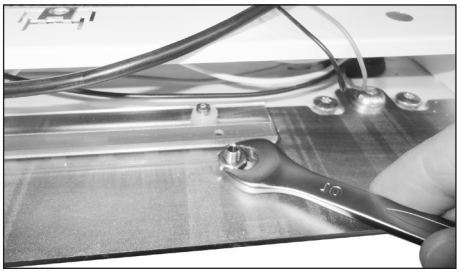


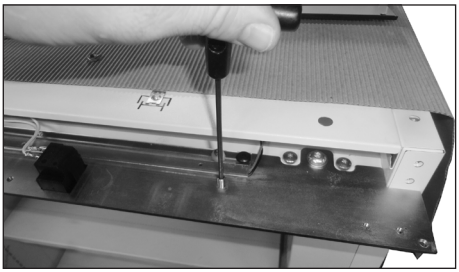
13. Tighten pivot (2,5 mm allen key)



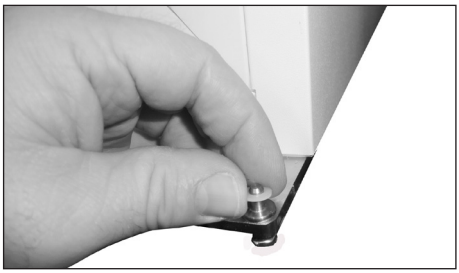
14. Tighten pivot nut



15. Demount fix nut and top handlelock pin

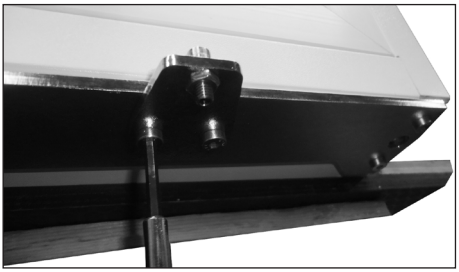


16. Remount the top handlelock pin in the opposite side. Tighten the fix nut again

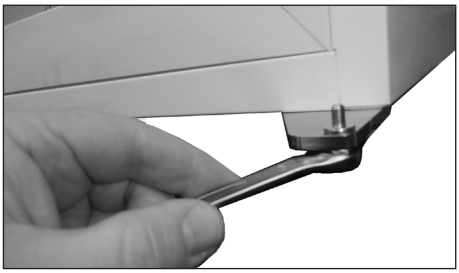


17. Go to bottom and remove the door pivot nylon washer

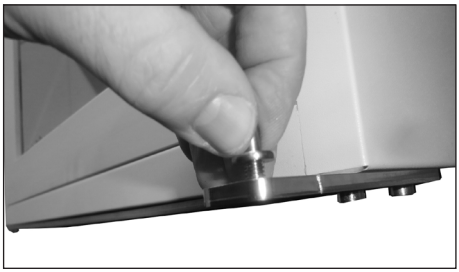
18. Remove the two front feet



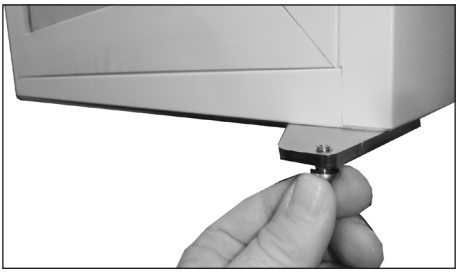
19. Remove bottom handlelock pin plate by loosening two screws (use 4 mm allen key)



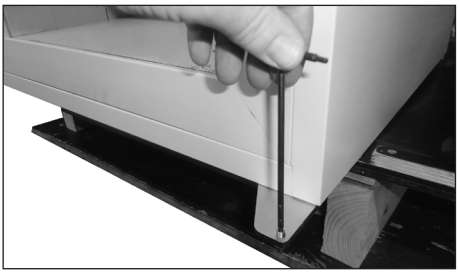
20. Loosen bottom pivot nut



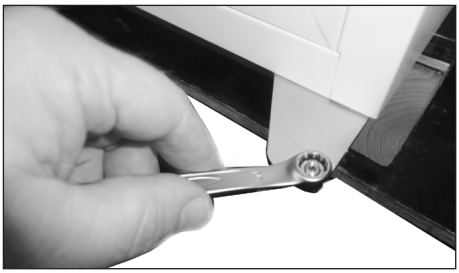
21. Loosen door bottom pivot



22. Remount door pivot for use in new hinge side



23. Tighten pivot



24. Remount and tighten pivot nut

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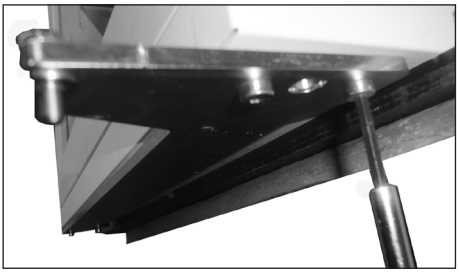
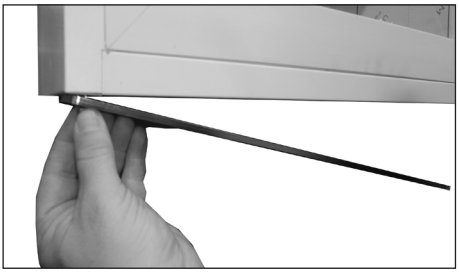
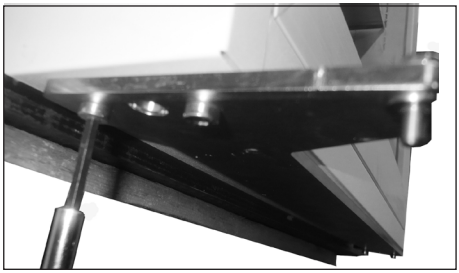


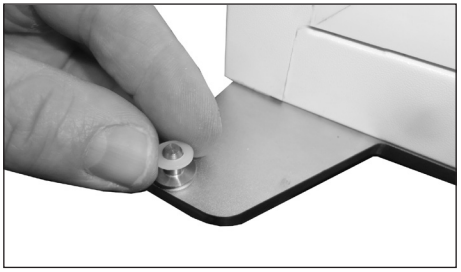
25. Loosen the bottom door bracket screws in one side (use 4 mm allen key)



26. Loosen the screws in the opposite side and rotate the bottom door bracket

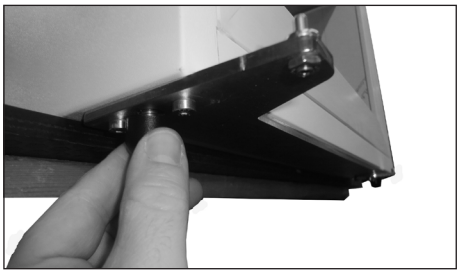


27. Then remount and tighten the screws in both sides



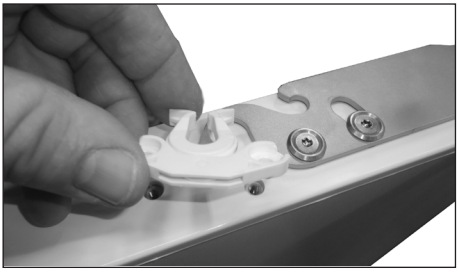
28. Re-position the door pivot nylon washer

29. Remount bottom handle lockpin plate in the opposite side by tightening the two screws again (use 4 mm allen key)

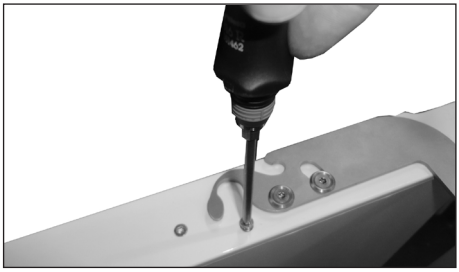


30. Remount and tighten the two front feet

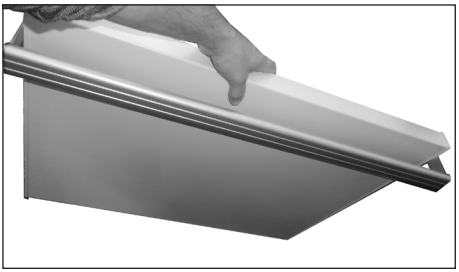
31. Go to the current door bottom and demount two screws from the door closer (use Torx 20 tool)



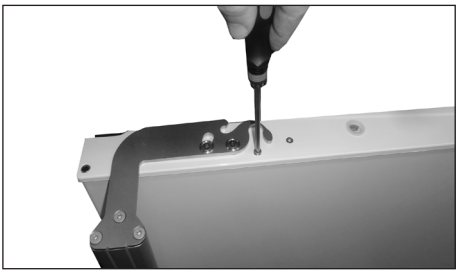
32. Remove the door closer and keep it ready for mounting in the “new” door bottom



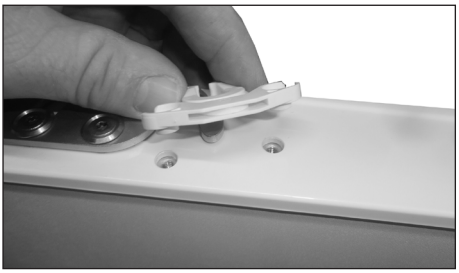
33. Remount the two screws without the door closer



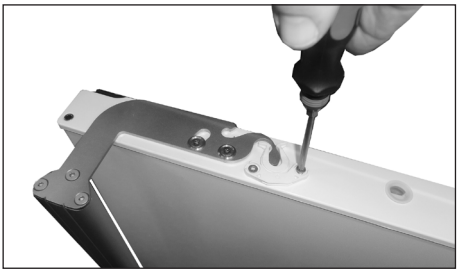
34. Rotate the door



35. Unscrew the two doorcloser screws in this new door bottom end (use Torx 20 tool)

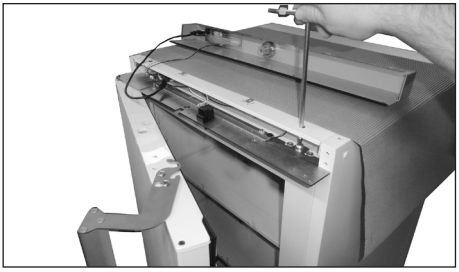


36. Place the doorcloser in the empty threadholes



37. Remount the two screws and the door-closer is fixed

38. Re-locate the door on the cabinet in the new hingeside



39. Tighten the two M8 screws in the top bracket

40. Carefully push the toppanel back into position

41. Remount the three screws upwards in the toppanel…

42.…and remember the screw close to the top door pivot is mounted in hole nr.2 inwards, to ensure sufficient space between the screw and the door end-cap during mounting

43. Remount the lock pin

44. Remount the four topscrews

45. The door re-hinging operation is now complete

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Controller. Operation and function

User interface

LEDS
Each LED function is described in the following table.

LED	MODE	Function
✻	ON	Compressor enabled
✻	Flashing	Anti-short cycle delay enabled
	ON	An alarm is occurring
	ON	Recording activated
	ON	Battery is fully charged
	Flashing	Battery is beeing charged
	Flashing	Charging problem or battery failure
°C/°F	ON	Measurement unit
°C/°F	Flashing	Programming phase

Buttons

SET	To display target set point; in programming mode it selects a parameter or confirm an operation.
	To enter fast access menu In programming mode it browses the parameter codes or increases the displayed value. (DOWN); n programming mode
	In programming mode it browses the parameter codes or decreases the displayed value. Push it for 3s to start a manual defrost
DATA	Export data from button
	Not used
REC	Log activation and deactivation from button (Password protected)

How to see and change the setpoint

How to: See the Set point

1. Push and immediately release the SET key: the display will show the Set point value.
2. Push and immediately release the SET key or wait for 60 sec to display the temperature in the unit

How to: Change the Set point

1. Push the SET key more than 2 sec to change the Set point value.
2. The value of the set point will be displayed and the “°C” LED will start blinking.
3. To change the Set value push the UP or DOWN arrows within 60 sec.
4. To save the new set point value, push the SET key again and wait for 3 sec.

NOTE: To exit without making any change to the set point, push the SET key or wait 60 sec.

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Clock settings and RTC alarm reset

1. Push the UP key once, to acces the menu.
2. The display shows HՈ, then push SET.
3. The parameters for setting time and date occurs. To set the parameter push SET, push the UP or DOWN button to change the parameter. Confirm by pushing SET.

The time and date parameters:
Hur: hour
Ոin: minutes
Udy: weekday
dAy: date
Ոon: month
yEA: year

To exit: Press **SET + UP** keys for about 10 sec. or wait 60 sec.

How to export data and alarms to USB

1. Insert the **USB** key
2. Push the **DATA** key for more that 3 sec.
3. Controller starts uploading data to **USB**
4. At the end the following message will be displayed:
   a.“**End**” if everything it’s ok
   b.“**Err**” if exporting has not taken place.

Alarms

The controller memorizes the last 100 alarms happened, together with their start and finish time. It’s possible to export the alarms as described in the previous chapter.

Active alarm

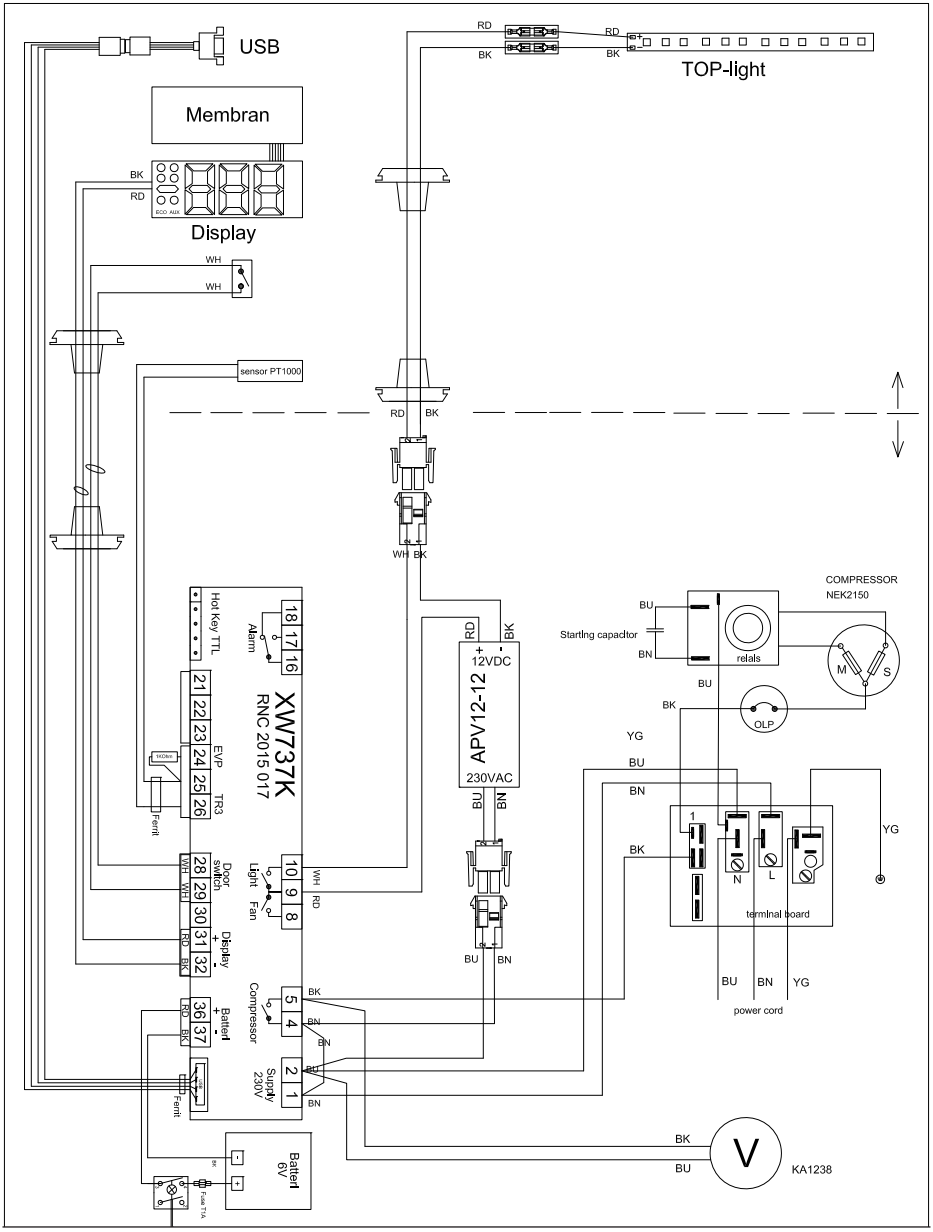
Controller will show active alarm alternated with the temperature inside the unit.

Alarm signals

Message	Cause
“P1”	Regulating probe TR3 failure
“HA1”	TR3 High Alarm
“LA1”	TR3 Low Alarm
“EA”	Door Open Alarm
“CA”	Serious Alarm

The alarm message is displayed until the alarm condition is recovered.
All the alarm messages are showed alternating with the temperature in the unit.
Except for the “P1” which is flashing.

Wire diagram



List of parameters

Group	Parameter	Description	Edit	Original	Vis. Level	Minimum	Maximum	Unit	Comment	Active
CLOCK AND RECORDING SETTING	itP	Recording interval	5	5	Pr1	1	255	min		True
CLOCK AND RECORDING SETTING	rC1	First probe recording enable	YES	YES	Pr2					True
CLOCK AND RECORDING SETTING	rC2	Second probe recording	YES	YES	Pr2					True
CLOCK AND RECORDING SETTING	rC3	Third probe recording enable	YES	YES	Pr2					True
CLOCK AND RECORDING SETTING	rC4	Fourth probe recording enable	NO	NO	Pr1					True
CLOCK AND RECORDING SETTING	rCb	Start recording SET key enabling	YES	YES	Pr1					True
CLOCK AND RECORDING SETTING	EU	Date format	EU	EU	Pr2					True
CLOCK AND RECORDING SETTING	rSd	Data erase	NO	NO	Pr2					True
CLOCK AND RECORDING SETTING	rSA	Alarms erase	NO	NO	Pr2					True
REGULATION	Set	Set point	-86	-86	Pr1	-100	-60	°C		True
REGULATION	Hy	Differential	1	1	Pr2	1	26	°C		True
REGULATION	LS	Minimum set point limit	-100	-100	Pr2	-100	-86	°C		True
REGULATION	US	Maximum set point limit	-60	-60	Pr2	-86	150	°C		True
PROBE INPUTS	ot	Regulation probe calibration (term. 1-2)	4	4	Pr2	-12	12	°C		True
PROBE INPUTS	P2P	Evaporator probe presence (term. 2-3)	YES	YES	Pr2					True
PROBE INPUTS	oE	Evaporator probe calibration	0	0	Pr2	-12	12	°C		True
PROBE INPUTS	P3P	Third probe presence (term. 4-5)	NO	NO	Pr2					True
PROBE INPUTS	o3	Third probe calibration	0	0	Pr2	-12	12	°C		True
PROBE INPUTS	P4P	Fourth probe presence (term. 5-6)	NO	NO	Pr2					True
PROBE INPUTS	O4	Fourth probe calibration	0	0	Pr2	-12	12	°C		True
PROBE INPUTS	odS	Outputs activation delay at start up	0	0	Pr2	0	255	min		True
PROBE INPUTS	AC	Anti-short cycle delay	5	5	Pr2	0	30	min		True
PROBE INPUTS	Con	Compressor ON time with faulty probe	3	3	Pr2	0	255	min		True
PROBE INPUTS	COF	Compressor OFF time with faulty probe	5	5	Pr2	0	255	min		True
DISPLAY	CF	Temperature measurement unit	°C	°C	Pr1					True
DISPLAY	rES	Resolution (for °C)	in	in	Pr1					True
DISPLAY	rEd	Remote display	P1	P1	Pr2					True
DISPLAY	dLy	Display delay	01:00	01:00	Pr2			min		True
DEFROST	dtE	Defrost termination temperature	-100	-100	Pr2	-100	150	°C		True
DEFROST	IdF	Interval between defrosts	120	120	Pr2	1	120	hour		True
DEFROST	MdF	(Maximum) duration of defrost	0	0	Pr2	0	255	min		True
DEFROST	dFd	Display during defrost	rt	rt	Pr2					True
DEFROST	dAd	Defrost display time out	15	15	Pr2	0	255	min		True
FANS	Fnc	Fan operating mode	O-y	O-y	Pr2					True

FANS	Fnd	Fan delay after defrost	0	0	Pr2	0	255	min	True
FANS	FSt	Fan stop temperature	-10	-10	Pr2	-100	150	°C	True
FANS	Fon	Fan ON time	0	0	Pr2	0	15	min	True
FANS	FoF	Fan OFF time	0	0	Pr2	0	15	min	True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1C	Temperature alarm configuration	rE	rE	Pr2				True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1U	High temperature alarm for P1	22	22	Pr2	0	50	°C	True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1L	Low temperature alarm for P1	30	30	Pr2	0	50	°C	True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1H	Differential for temperature alarm recovery	1	1	Pr2	1	26	°C	True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	A1d	Temperature alarm delay	4	4	Pr2	0	255	min	True
TEMPERATURE ALARMS FOR REGULATION PROBE P1	d1o	Delay of temperature alarm at start-up	00:00	00:00	Pr2			hour	True
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3U	High temperature alarm for P3	150	150	Pr2	1	150	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3L	Low temperature alarm for P3	1	1	Pr2	-100	150	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3H	Differential for temperature alarm 3 recovery	1	1	Pr2	1	26	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P3	A3d	Temperature alarm 3 delay	4	4	Pr2	0	255	min	True
TEMPERATURE ALARMS FOR LOGGING PROBE P3	d3o	Delay of temperature alarm 3 at start-up	01:30	01:30	Pr2			hour	True
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4U	High temperature alarm for P4	50	50	Pr2	-20	150	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4L	Low temperature alarm for P4	-20	-20	Pr2	-100	50	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4H	Differential for temperature alarm 4 recovery	1	1	Pr2	1	26	°C	True
TEMPERATURE ALARMS FOR LOGGING PROBE P4	A4d	Temperature alarm 4 delay	4	4	Pr2	0	255	min	True
TEMPERATURE ALARMS FOR LOGGING PROBE P4	d4o	Delay of temperature alarm 4 at start-up	01:30	01:30	Pr2			hour	True
ALARM RELAY MANAGEMENT	tbA	Alarm relay disabling	NO	NO	Pr2				True
ALARM RELAY MANAGEMENT	Aro	Alarm relay activation with power failure	YES	YES	Pr2				True
ALARM RELAY MANAGEMENT	ALF	Alarm relay activation for all the alarms	YES	YES	Pr2				True
ALARM RELAY MANAGEMENT	bon	Time of buzzer restart after muting, in case of alarm duration	30	30	Pr1	0	30	min	True
ALARM RELAY MANAGEMENT	AoP	Alarm relay polarity	CL	oP	Pr2				True
DIGITAL INPUTS	i1P	Digital input polarity	oP	oP	Pr2				True
DIGITAL INPUTS	i1F	Digital input configuration	dor	dor	Pr2				True
DIGITAL INPUTS	did	with i1F= EAL or i1F = bAL digital input alarm delay (13-14)	1	1	Pr2	0	255	min	True
DIGITAL INPUTS	odc	Compressor and fan status when open door	Fan	Fan	Pr2				True
DIGITAL INPUTS	rrd	Outputs restart after doA alarm	NO	NO	Pr2				True
DIGITAL INPUTS	HES	Temperature increase during the Energy Saving cycle	0	0	Pr2	-30	30	°C	True
OTHER	Adr	Serrial address	1	1	Pr1	1	247		True
OTHER	PbC	Type of probe	Pt1	Pt1	Pr2				True
OTHER	rEL	Release software			Pr2				True
OTHER	Ptb	Parameter table	1	1	Pr2	0	65535		True

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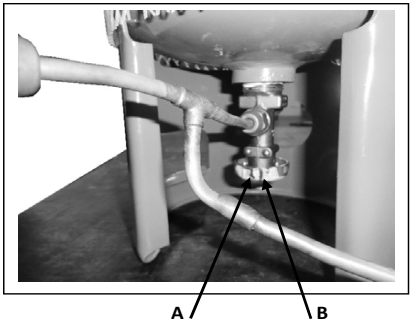
VTS 098
Recharging refrigerant from a service bottle



The recharging shall take place in a room where the ambient temperature is between 20 and 25 C.

1. The service bottle shall have ambient temperature, i.e. between 20 and 25°C.
2. The service bottle is turned upside down as shown in the picture.
3. If you have the possibility to measure the weight of the bottle before you start recharging, it is useful to determine when the charge is sufficiently.
4. The system of the VTS098 shall be evacuated thoroughly.
5. Connect the bottle to the system.
6. The valve shall only be opened a little (please see the 2 blue lines (A and B) on the valve wheel on the picture. At line **A**, the valve is closed and then just turn it to line **B**.
7. Let the valve be opened for 5 minutes, then open it fully and after ½ a minute closed it again.
8. Start the compressor and let it run for 10 minutes.
9. Check that the bottle, especially the valve on the bottle has ambient temperature. If the temperature is too cold after 10 minutes, then stop the compressor.
10. When the valve has reached the ambient temperature, then start the compressor and let it run for 1-2 minutes. Then open the valve slowly up to full open and then close it slowly again.
11. Stop the compressor. Waite until the valve on the bottle again has the ambient temperature.
12. Repeat 10 again. I.e. Start the compressor for 1-2 minutes. Then open the valve slowly up to full open and then close it slowly again.
13. Now the system normally is recharged. If you have the possibility to weigh the bottle, then the charge is ok if you have charged minimum 110 grams into the system.
14. If you have charged less than 110 grams, then repeat 10 once more.

Notice. If you start the compressor at point 8 with the valve open then you can ruin the compressor.

Reserving the right to alter specifications without prior notice.

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