

Frigo Top 24 RT-D | RT-DG

Transport refrigeration



EN	Installation Instructions.....	2
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These Installation Instructions are valid for:

- Frigo Top 24 R134a RT-D 12V
- Frigo Top 24 R452A RT-DG 12V

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1 About this document

1.1 Purpose of this document

These Installation Instructions (II) are part of the product and contain the information you need for correct and safe installation.

1.2 Using this document

- ▶ Read these Installation Instructions (II) carefully before installing the unit.

1.3 Use of symbols and highlighting

	DANGER This signal word denotes a hazard with a high degree of risk which, if not avoided, may lead to death or serious injury.
	WARNING This signal word denotes a hazard with a moderate degree of risk which, if not avoided, may lead to minor or moderate injury.
	CAUTION This signal word denotes a hazard with a low degree of risk which, if not avoided, will lead to minor or moderate injury.
	NOTE This signal word denotes a Special Technical Feature or (if not observed) potential damage to the product.
	Refers to separate documents which are enclosed or can be requested from Webasto.

✓ Requirements for the following necessary action.

1.4 Used abbreviations

Abbr.	Description
CRO	Pressure limiting valve (Close on Rise of Outlet pressure)
FT	Frigo Top
HVAC/R	Heating, Ventilation, Air-Conditioning and Refrigeration
NC	Normally Closed
NO	Normally Open
RT-D	Roof Top, Direct drive (Refrigerant R134a)
RT-DG	Roof Top, Direct drive, Green (Refrigerant R452A)
TXV	Thermostatic eXpansion Valve

Table 1: Used abbreviations

1.5 Measurements

NOTE
All measurements are in mm, unless stated otherwise.

1.6 Warranty and liability

Webasto shall not assume liability for defects or damages that are the result of disregarding the installation and operating instructions. This liability exclusion particularly applies to:

- Installation by untrained personnel.
- Improper use.
- Repairs not carried out by a Webasto service workshop.
- Use of non-genuine parts.
- Conversion of the unit without permission from Webasto.

- Mechanical damage to the equipment.
- Non-compliance with inspection and maintenance instructions.

2 Safety

2.1 Intended use

The Frigo Top 24 RT-DG is approved for cargo space refrigeration on vehicles according category N1 as defined by Regulation (EU) 2018/858.

Vehicles designed and constructed for the carriage of goods and having a maximum mass not exceeding 3,5 tonnes.

2.2 Qualifications of installation personnel

The installation personnel must have the following qualifications:

- Successful completion of Webasto training.
- Corresponding qualification for working on technical systems.
- Certified to work on refrigeration systems.

Installation personnel must use personal protective equipment (PPE):

Wear eye protection	Wear protective gloves
Wear safety footwear	Wear head protection

Table 2: Required personal protective equipment (PPE)

2.3 Safety information on installation

	DANGER Live parts are dangerous ▶ Disconnect the vehicle from the power supply before installation. ▶ Make sure that the electrical system is earthed correctly. ▶ Always comply with all legal requirements. ▶ Observe the information on the type label.
	WARNING Danger of lacerations on sharp edges ▶ Fit protectors on sharp edges.

It is the responsibility of the application developer to:

- have the required safeguards installed according to the risk analysis carried out on the target system.

2.4 Safety information on operation



CAUTION

Incorrect handling causes damage to the unit

- ▶ Protect the unit against mechanical stress, such as dropping, impacts, or knocks.
- ▶ Do not place heavy objects on top of the unit.
- ▶ Do not sit or stand on the unit.



CAUTION

Cables damaged on sharp edges can cause short circuits

- ▶ Fit protectors on sharp edges.

The unit is intended for professional use only and therefore the driver must be adequately trained in handling perishable goods.

3 Scope of delivery

The Frigo Top system consists of a number of packages containing all the components required for correct installation.

The Frigo Top 24 RT-DG comes standard with:

- a condenser (external unit).
- an evaporator (internal unit).



NOTE

The hose kit is not part of the scope of delivery

The hose kit must be ordered separately. See the price list for part numbers.
The hose kit includes fittings.



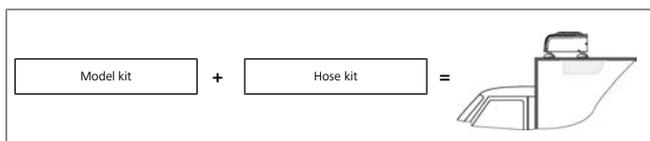
NOTE

The road compressor and its gas hose connections are sold separately. Specifications depend on the requirements of the installation.

System identification:

- Technical data label:
Applied by Webasto to the frame in the evaporating zone. The label shows the system data and the nominal refrigerant charge.
- ATP plate:
Applied by Webasto to the evaporator. The label indicates the ATP type.
- System charge sticker:
Supplied in the bag with manuals. For information on use, See chapter 9.6, "Fill in the system charge sticker" on page 12.
- CE and ATP declarations of conformity:
Supplied in the bag with manuals and should be kept by the customer.

3.1 Frigo Top 24 RT-D | RT-DG



Description	
	Condenser (external unit) R134a
	Condenser (external unit) R452A

Description	
	Cover for condenser (external unit)
	Bag with small parts for condenser
	Evaporator (internal unit)
	Evaporator cover (internal unit)
	Bag with small parts for evaporator
	Drilling template
	Rubber studs, roof mount only
	Oil 250 ml
	Documents and instructions
	Control panel
	Control panel accessories: Control panel housing Control panel support bracket Housing for screw plug Screw cover plug Bag with accessories
	Electrical accessories: Strip type fuse box, fuse and terminals Blade type fuse box, fuse and terminals Connector for compressor Terminals

3.2 Hose kit

Description	
	Gas hoses (5/16", 13/32", 5/8")
	Fittings (R134a only): Clamps for gas hose connections (5/16", 13/32", 5/8") Gas hose connections (5/16", 13/32", 5/8")
	Fittings (R452A only):

Description	
	Clamps for gas hose connections (5/16", 13/32", 5/8")
	Gas hose connections (5/16", 13/32", 5/8")

3.3 Optional parts

- De-Icing kit.
- Heating kit.

4 Installation and handling

4.1 Installation options

The Frigo Top 24 RT-DG condenser is solely designed for roof mounting.

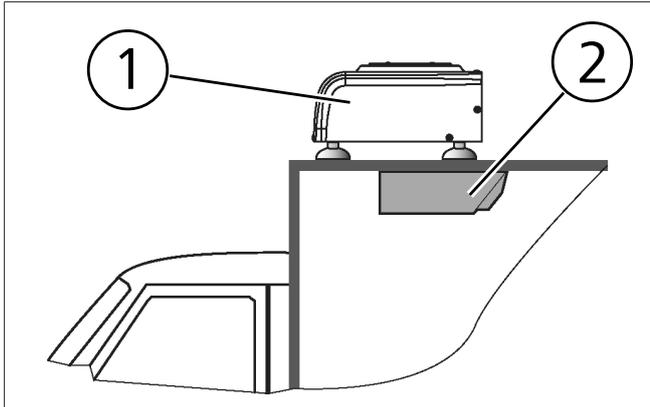


Fig. 1 Roof mounting

1	Condenser
2	Evaporator

4.2 Optimal working range

The refrigeration system works optimal when the vehicle is placed within the ranges shown in the images below.

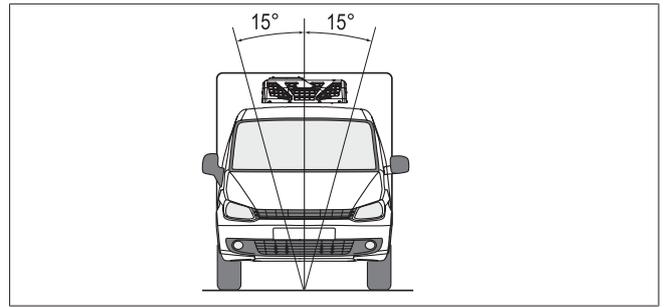
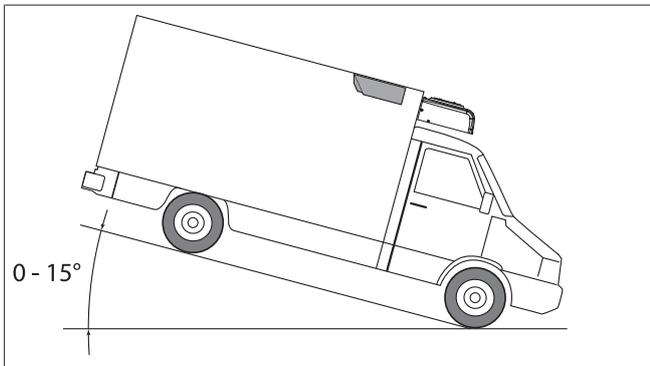
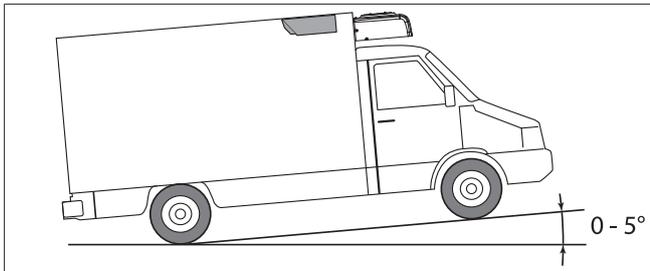


Fig. 2 Frigo Top working ranges (Top mount and Roof mount)

4.3 Safe lifting of the A/C frame

Make sure the Frigo Top 24 RT-DG condenser is lifted carefully. There are no designated lifting points.

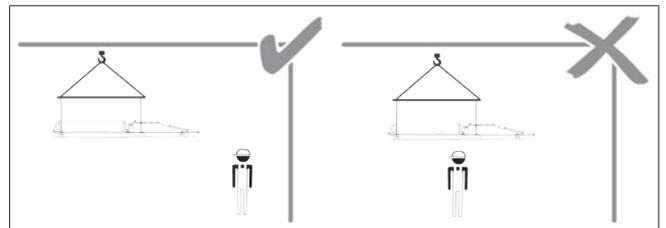


Fig. 3 Do not stand under lifted load

5 Installation of the condenser and evaporator

5.1 Drilling holes



CAUTION

Incorrectly chosen location of the Frigo Top condenser and evaporator

Result: Damage to components inside the wall and roof of the cooling compartment, such as wiring for lights.

- ▶ Follow the vehicle manufacturer instructions.
- ▶ Check wall and roof before drilling holes.

The drilling templates need to be aligned on the vehicle.

- ▶ Locate the place for the evaporator and condenser.
- ▶ Align templates.
- ▶ Drill the holes according template.

5.2 Required parts

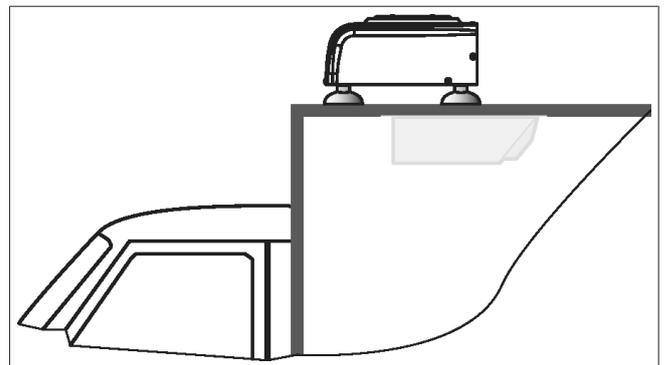


Fig. 4 Frigo Top 24 RT-DG roof mount, rubber studs

1. Place the 4 rubber studs between roof and condenser unit.

Description	
	Rubber stud (4x)
	Hex bolt M10x150 (4x)

Description	
	Washer 12x30x2 (8x)
	Nut, self locking M10 (4x)

Table 3: Condenser parts

Description	
	Screw 6x25 mm (5x)
	Washer 6x18x2 INOX A2 DIN9021 (5x)

Table 4: Evaporator parts

5.3 Roof mount installation

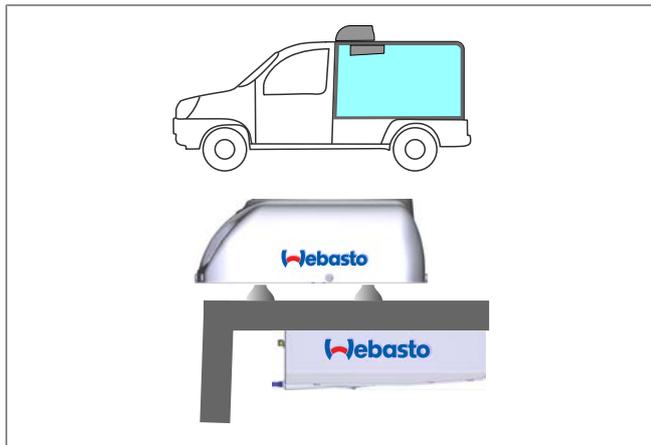


Fig. 5

1. Select the location for the condenser and the evaporator.

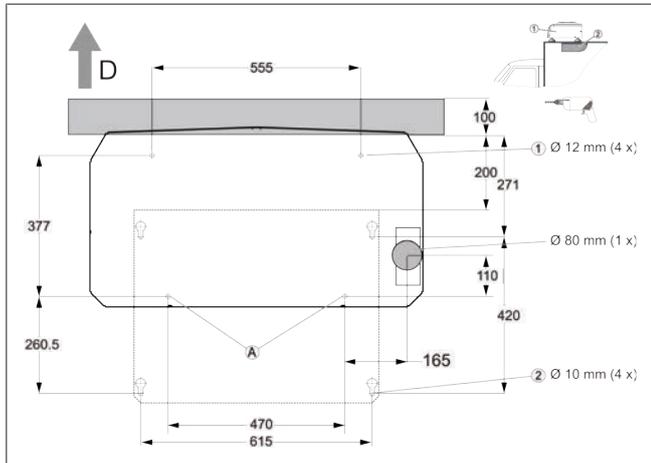


Fig. 6

A	Common fixing points
D	Driving direction, top view

2. Drill holes according to Fig. 6.
3. Install the evaporator with 4 screws (6 x 25 INOX) and washers (Ø6 x Ø18 x 2 INOX).
4. Install the condensate drain unions complete with OR seal on the electric fan conveyor.
5. Install the electric fan conveyor on the evaporator with 8 screws (M6 x 20 3.2 Nm MAX).
6. Connect the plug for the electric fan.

7. Finish the drain: install the condensate drain pipe and T-shape condensate connection.
 - Do not install the side covers yet.
8. Install the condenser with 4 rubber studs, 4 screws (M10 x 150), 8 washers (12 x 30 x 2) and 4 self-locking nuts (M10).
9. Install the condenser bottom cover under the condenser with 4 screws (M6 x 20 3.2Nm MAX).

Do not install the upper cover yet.

6 Install the compressor

The road compressor and its gas hose connections are sold separately.

6.1 Fill the compressor with oil

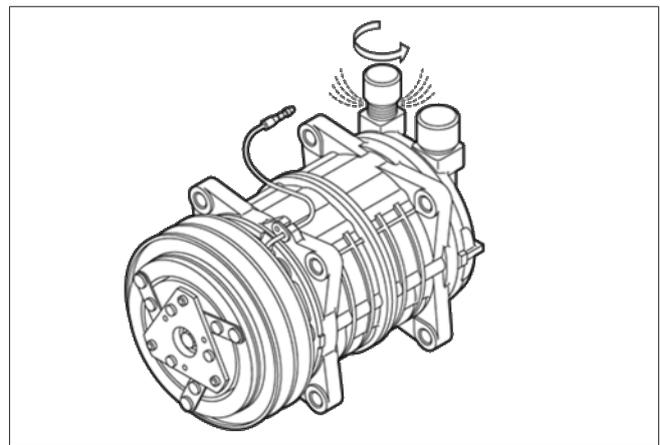


Fig. 7 Nitrogen can escape

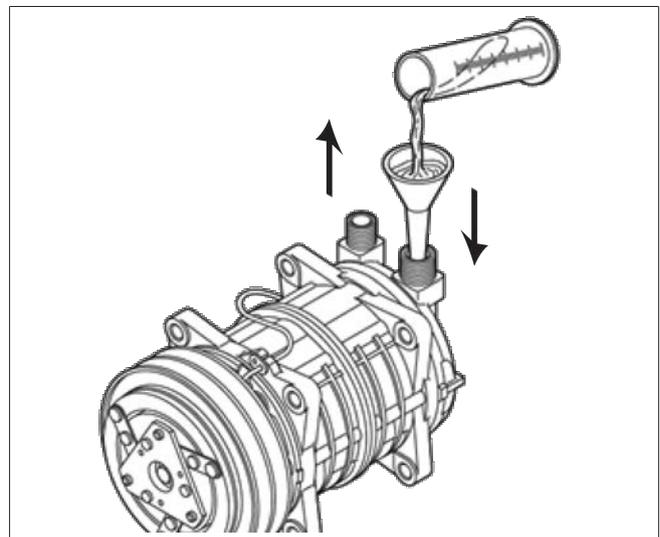


Fig. 8 Fill the compressor with oil

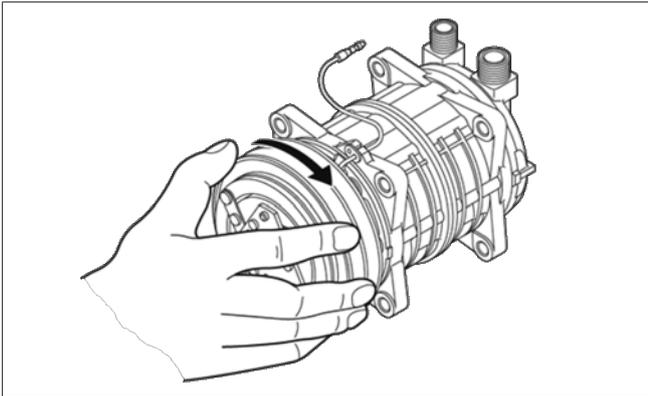


Fig. 9 Distribute the oil in the cylinders

- ✓ Make sure that the compressor is filled with oil.

NOTE For compressor specific information, refer to the documents supplied with the compressor.

Additional oil required
In addition to the compressor oil, the system requires additional oil as indicated in chapter 9, "Vacuum and charge the system" on page 10.

1. Remove the plugs from the compressor.

NOTE
New compressors are often filled with nitrogen. When you remove the plugs nitrogen can escape.

NOTE
Make sure you use the correct oil.
The oil specified by the compressor's manufacturer must be the same as supplied by Webasto.

2. Fill the compressor through the suction port with oil according to the specifications of the compressor's manufacturer.
3. Turn the compressor pulley 5 times to distribute the oil in the cylinders.
4. Mount the compressor according to the supplier instructions.

NOTE
If the compressor is not mounted immediately, then close the compressor with the plugs.

Refrigerant	Oil Type
R134a	PAG
R452A	POE68

Table 5: Oil Type

Information on safe use

- ✓ Oil must be free of dust and metal parts.
- ✓ Do not mix oils.
- ✓ Close the oil can directly after use. The oil easily absorbs humidity. The humidity of the oil should never exceed 1,000 ppm.

7 Installation of the hoses

The hoses are not part of the scope of delivery and must be ordered separately.

1. Install the hoses according to Fig. 13 or Fig. 14.
See chapter 7.1, "Hose assembly instructions" on page 7 for detailed hose assembly instructions.

NOTE
New condensers and evaporators are filled with nitrogen. Remove the gas connection caps to release the nitrogen.

7.1 Hose assembly instructions

This chapter describes the general procedure how to assemble the fitting to a hose.

7.1.1 Cut hose and lubricate the O-rings



Fig. 10 Lubricate fittings

1. Check the dimensions of fitting and hose.
2. Place the clamp on the hose.
3. Lubricate the O-ring of the fitting. (Use the same oil as used in the refrigeration system).

DANGER
Incorrectly cut hose.
A hose that is cut incorrectly can result in leakage. Leaking refrigerant can result in fire.
▶ Make sure that the hose is cut at a right angle (90°).

7.1.2 Inserting the fitting



Fig. 11 Insert fittings

Fitting with inserted hose:

1. Check that the tab of the clamp is aligned with the end of the hose.
2. Insert the fitting in the hose.
3. Position the fitting.

7.1.3 Tightening the clamp



Fig. 12 Tighten the clamps

1. Make sure the fitting and clamp are correctly positioned.
2. Lock the 2 clamps using the correct pliers.

7.2 Hose diagrams

7.2.1 Frigo Top 24 RT-D R134a

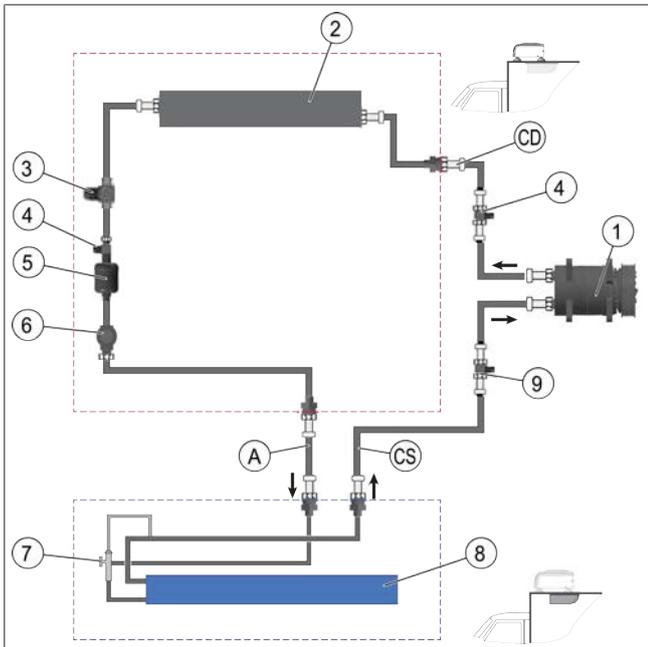


Fig. 13 Diagram Frigo Top 24 RT-D R134a

Ref	Description
1	Compressor
2	Condenser
3	High- and low-pressure switch
4	High-pressure service port (2x)
5	Liquid receiver & Filter dryer / Charge point
6	Sight glass
7	Thermostatic expansion valve (TXV)
8	Evaporator
9	Low-pressure service port
A	Liquid line
CS	Compressor suction
CD	Compressor discharge

7.2.2 Frigo Top 24 RT-DG R452A

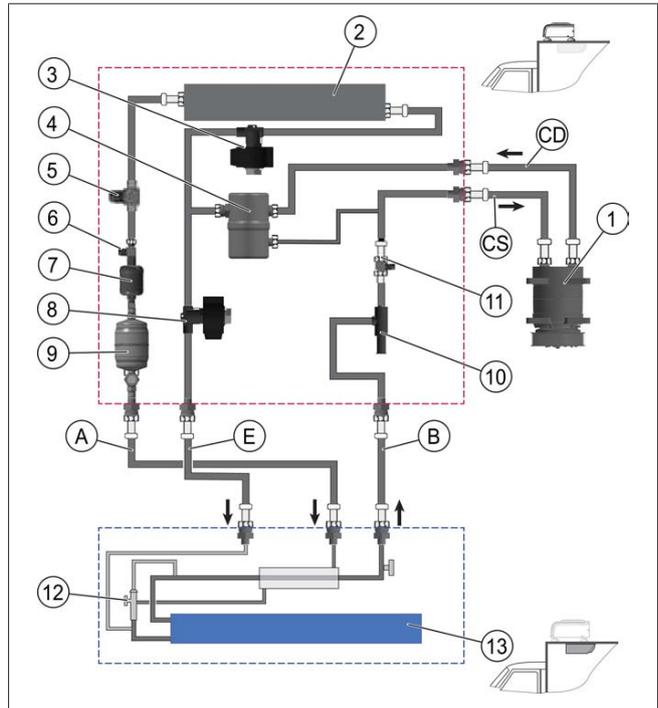


Fig. 14 Diagram Frigo Top 24 RT-DG R452A

Ref	Description
1	Compressor
2	Condenser
3	Heating valve (NO) (Optional)
4	Oil separator
5	High-pressure switch
6	High-pressure service port
7	Liquid receiver & Filter dryer / Charge point
8	Defrost valve (NC)
9	Filter dryer with sight glass (humidity indicator)
10	Pressure regulator (CRO)
11	Low-pressure service port
12	Thermostatic expansion valve (TXV)
13	Evaporator
A	Liquid line
B	Evaporator outlet
E	Defrost line
CD	Compressor discharge = oil separator inlet
CS	Compressor suction

7.3 Hose connections

New condensers and evaporators are filled with nitrogen. Remove the gas connection caps to release the nitrogen.

Torque values:

5/16"	17 Nm
13/32"	20 Nm
5/8"	25 Nm

7.3.1 Frigo Top 24 RT-D R134a hose connections

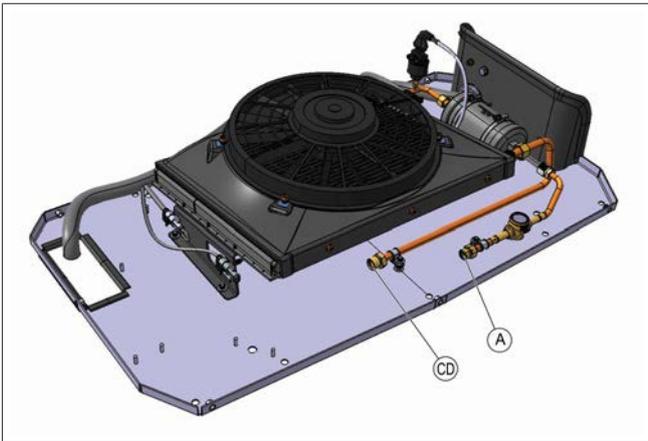


Fig. 15 Frigo Top 24 RT-D, Connections, condenser R134a

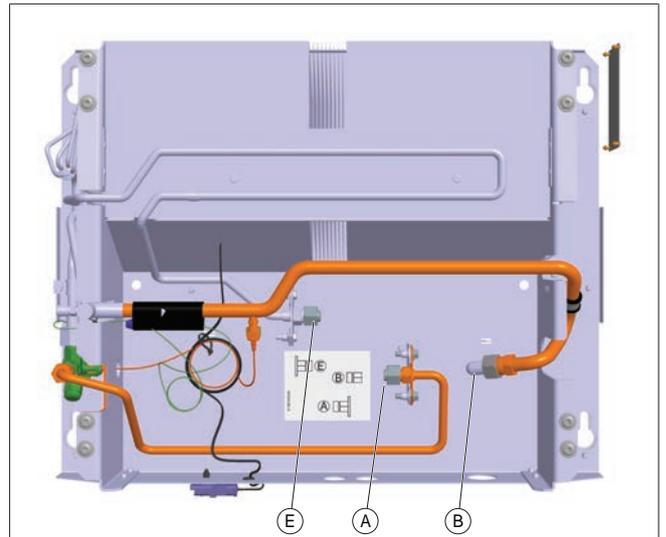


Fig. 16 Frigo Top 24 RT-DG, Connections, evaporator R452A

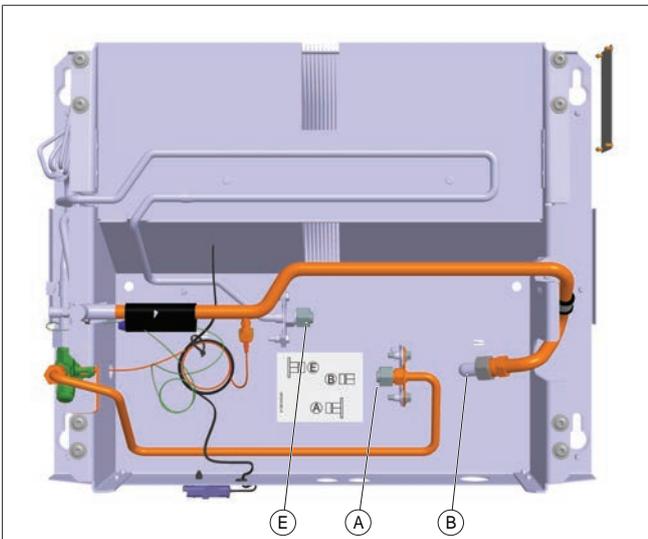


Fig. 16 Frigo Top 24 RT-D, Connections, evaporator R134a

A	Liquid line
CD	Compressor discharge
B=CS	Compressor suction
E	Defrost (closed on R134a)

7.3.2 Frigo Top 24 RT-DG R452A hose connections

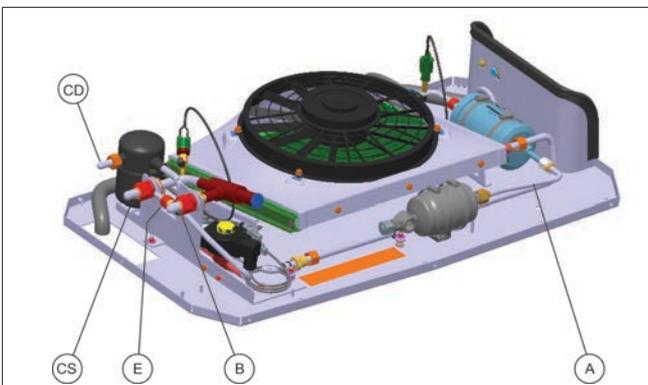


Fig. 17 Frigo Top 24 RT-DG, Connections, condenser R452A

A	Liquid line
B	CRO inlet = evaporator outlet
CD	Compressor discharge = oil separator inlet
CS	Compressor suction
E	Defrost line

7.4 Hose lay-out in Frigo Top

The images below show the hose lay-out in the Frigo Top.

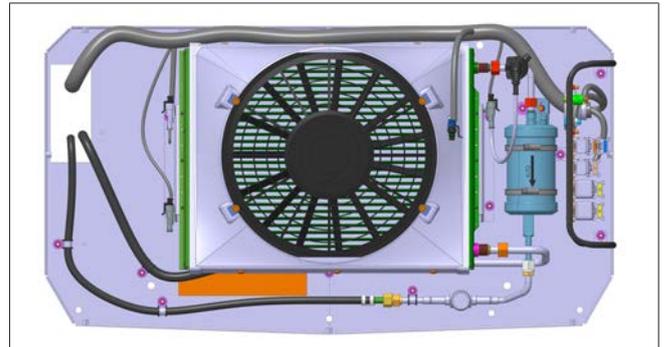


Fig. 19 Frigo Top 24 RT-D, hose lay-out condenser R134a

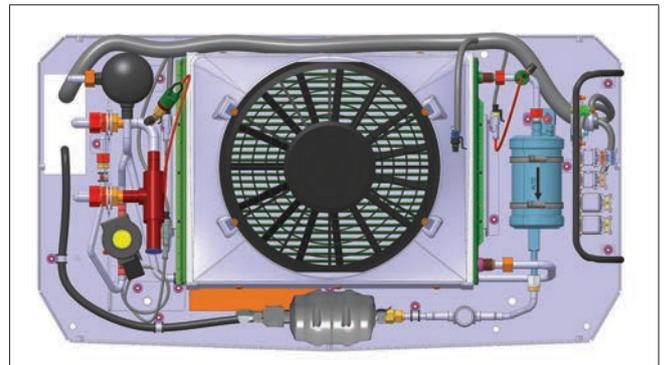


Fig. 20 Frigo Top 24 RT-DG, hose lay-out condenser R452A

8 Installation of the wiring harness

Install the wiring harness according to the wiring diagrams (See chapter 12.5, "Wiring Diagrams" on page 16).



WARNING

Safe installation position for the control panel

For left hand drive vehicles mount the control panel on the left the steering wheel.

For right hand drive vehicles mount the control panel on the right the steering wheel.

8.1 Installation of the control panel in the dashboard

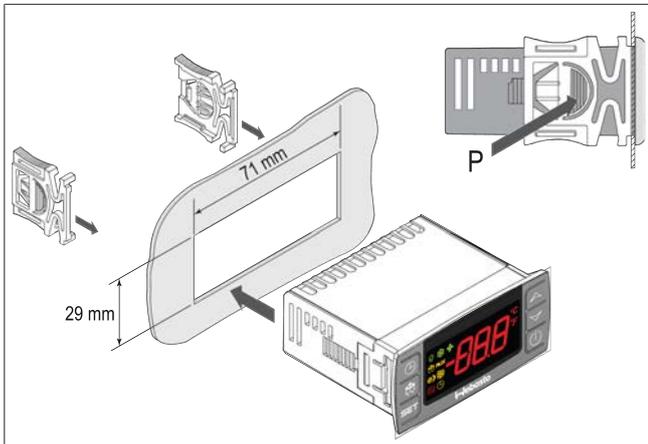


Fig. 21 Panel cut-out

P = press to release the brackets

- ✓ Find the right place in the drivers cabin where the display will fit.



CAUTION

Incorrectly chosen location for cut-out

Result: Damage of wiring and or components behind the panel.

- ▶ Check space behind panel before making the cut-out.

- ✓ Location for control panel has been checked.

1. Make a cut out of 71 mm wide and 29 mm high.

8.2 Installation of the control panel in a box

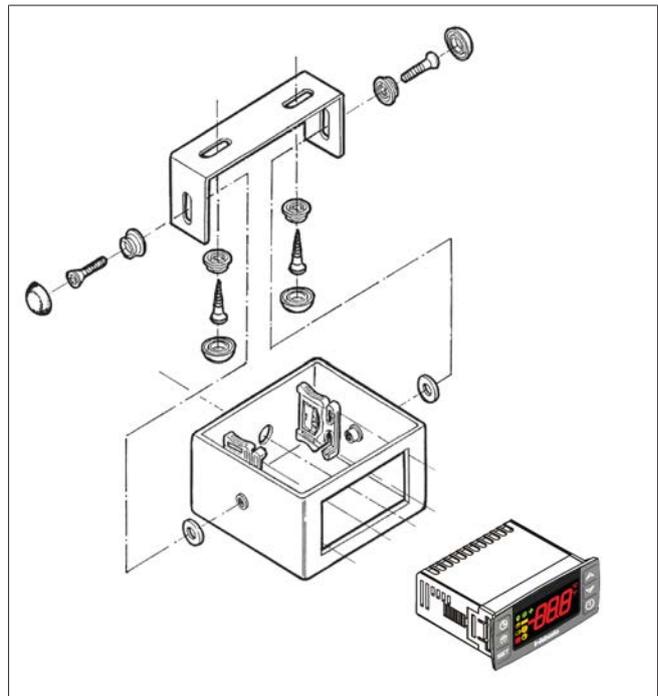


Fig. 22 Housing for the control panel

If there is no place to make a cut-out then use the supplied housing for the control panel.

1. Mount the housing as shown in Fig. 22.

8.3 Connection of the control panel

1. Feed the wiring through the vehicle.
2. Connect the wires to the control panel.

The wiring diagrams show the cable connections.

9 Vacuum and charge the system

9.1 General procedure

- ✓ The refrigeration system is fully installed.
 - ✓ Hoses are checked on correct and tight connections.
 - ✓ Refrigerant type has been checked with system type label.
 - ✓ Correct oil type for refrigerant has been checked.
1. Connect the gauge set to the refrigeration system.
 2. Check the system on leakage with nitrogen.
 3. Vacuum down the refrigeration system.
 4. Charge the system with refrigerant.
 5. Check the system on leakage.
 6. Adjust the pressure regulator (CRO) (for systems with R452A only).

9.2 Vacuum down the system

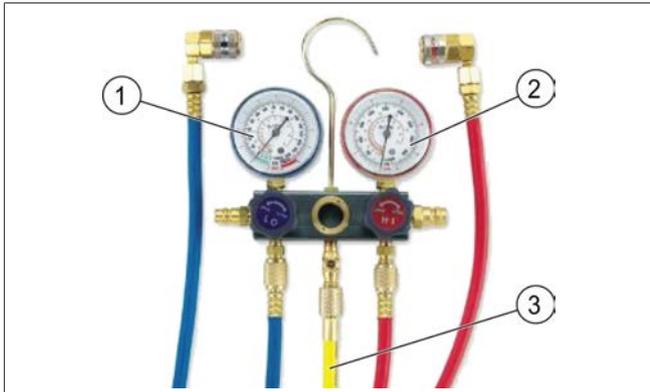


Fig. 23 Gauge set

1	Low-pressure side (Blue)
2	High-pressure side (Red)
3	Vacuum hose / refrigerant supply (Yellow)

Prepare gauge set

The figure shows a common gauge set for vacuum and charging the system. (Gauges can differ from the one shown here)

1. Close all gauge valves before connecting the hoses to the A/C system.

Connect the gauge to the refrigeration system

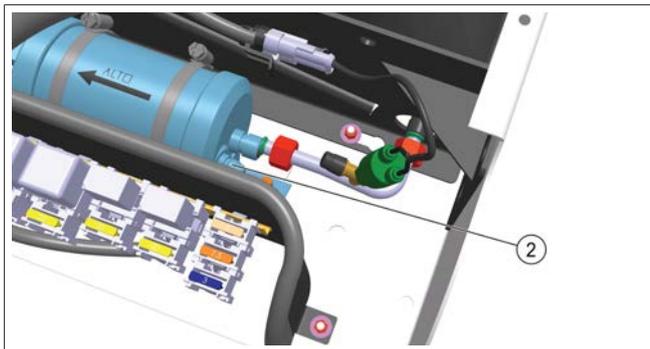


Fig. 24 Frigo Top Charge point, high-pressure side

- ✓ The instruction below is only valid for new systems not already charged with refrigerant.
1. Connect the low-pressure gauge (Blue) to the low-pressure service port on the compressor suction line (R134a: Fig. 13) or on the condenser unit (R452A: Fig. 14).
 2. Connect the high-pressure gauge (Red) to the high-pressure service port on the Liquid receiver / Filter drier in the condenser unit, (R132a: Fig. 13) or (R452A: Fig. 14).
 3. Connect the vacuum hose (yellow) to the vacuum pump.
 4. Vacuum down the system.

i **Make sure that the vacuum reaches 60 Pa.**
The sight glass must be green.

5. Close the gauge valves and switch off the vacuum pump.

NOTE
After the vacuum pump is disconnected a maximum pressure increase of 30 Pa is allowed.

6. If the system is losing vacuum then there is a leakage.
 - Use a leak detector to check the system on leakage.

9.3 Fill the service station with oil



Fig. 25 Add the correct quantity of lubricant

- ✓ Keep the service station always lubricated according the instructions on the service station.
- ✓ Refrigerant type has been checked.
- ✓ Make sure that the oil type matches with the refrigerant type.



CAUTION

Use of the wrong refrigerant type

Result: System damage.

- ▶ Check the refrigerant type stated on the type label.

Refrigerant	Oil type	Quantity supplied [ml]
R134a	PAG	250
R452A	POE68	

Table 6: Oil type and quantity

9.4 Charge the system with oil and refrigerant (Frigo Top 24 RT-D R134a)

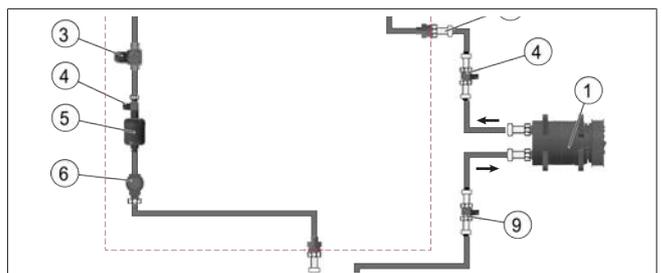


Fig. 26 R134a Compressor/Condensor, high-pressure service port, position 4

1. Add 50 ml of oil in the system via the high-pressure service port.
 - You can use the high-pressure service port in the compressor line or the high-pressure service port in the condenser unit.
2. Charge system with refrigerant. For the amount of refrigerant see chapter 11, "Technical data" on page 14.
3. Check system on leakage.

9.5 Charge the system with oil and refrigerant (Frigo Top 24 RT-DG R452A)

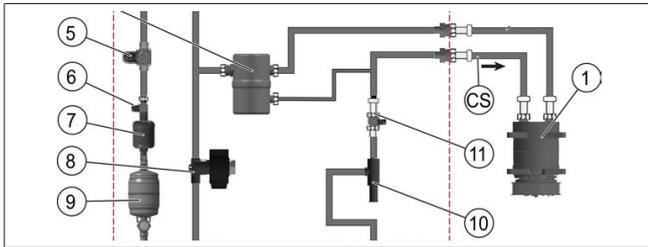


Fig. 27 R452A, Condenser, high-pressure service port, position 6

1. Add 50 ml of oil in the system via the high-pressure service port in the condenser.
2. Charge system with refrigerant. For the amount of refrigerant see chapter 11, "Technical data" on page 14.
3. Check system on leakage.

9.6 Fill in the system charge sticker

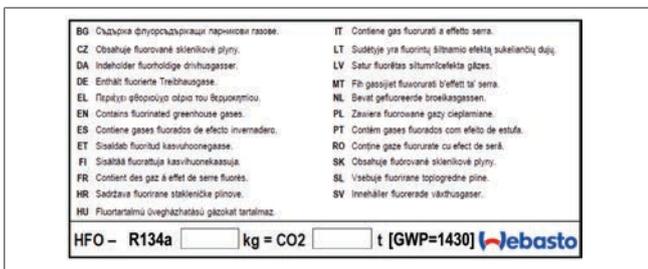


Fig. 28 System charge sticker R134a

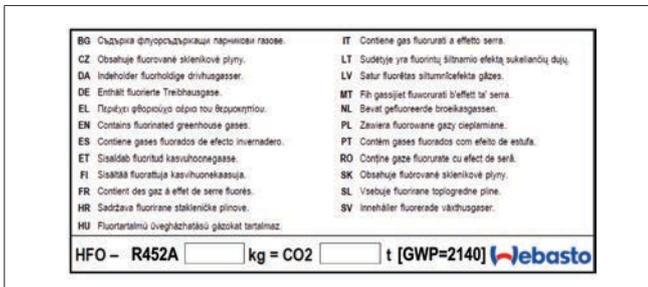


Fig. 29 System charge sticker R452A

1. Write the correct amount of refrigerant used to charge the system and the tonnes of CO₂ equivalent on the system charge sticker.
2. Place the sticker next to the service point for charging.

9.7 Adjust the compressor intake valve (CRO)

CRO adjustment is only valid for systems with refrigerant R452A.

The CRO valve prevents overload of the compressor due to high suction pressure. The CRO valve limits the compressor intake pressure. A pressure limiting valve is only sensitive to its outlet pressure, the valve Close on Rise of Outlet pressure.



NOTE

Adjust the CRO in one of the following operating modes:

- Heating
- Defrost
- First start in a hot cell (T ≥ 25 °C)

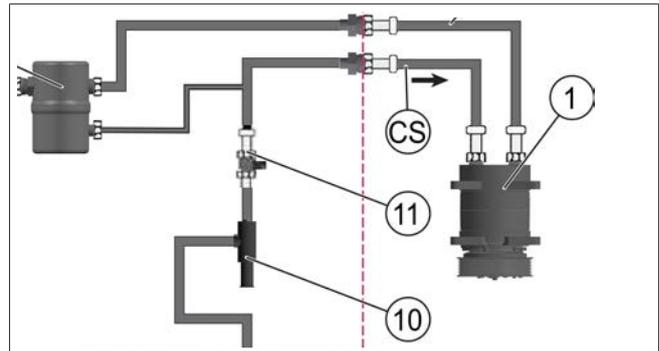


Fig. 30 CRO and low-pressure service port

1	Compressor
10	Pressure regulator (CRO)
11	Low-pressure service port



CAUTION

Pressure in the return line is too high
Result: System damage.

- ▶ The maximum suction pressure must not exceed 2.2 bar.

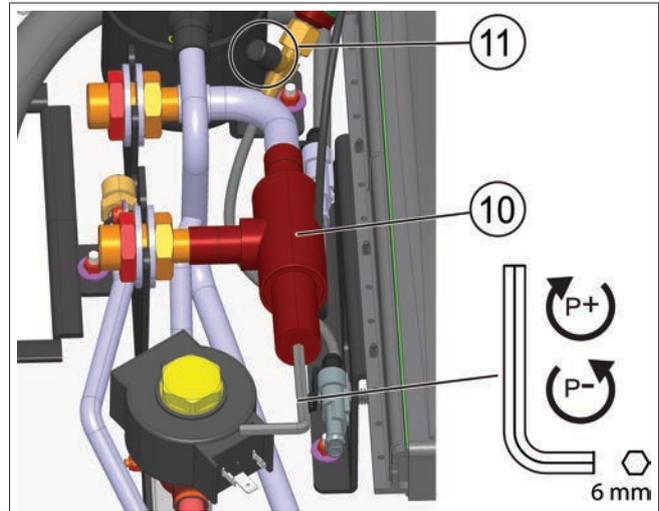


Fig. 31 CRO Adjustment

10	Pressure regulator (CRO)
11	Low-pressure service port

1. Connect a manometer to the low-pressure service port (11).
2. Adjust the CRO pressure setting with an Allen key (6 mm). Pressure setting: 2.2 bar (relative).
 - Turn clockwise to increase the pressure. Turn counter-clockwise to decrease the pressure.
 - Turn the Allen key half a turn and monitor the pressure change.
 - Wait for 30 seconds between two CRO adjustments.

10 Finish the installation



See the workshop manual of the control device for:

- ▶ How to program parameters.
- ▶ Description of the parameters.
- ▶ Used abbreviations for the parameters.
- ▶ Standard settings of the parameters.

10.1 Frigo Top 24 condenser cover



Fig. 32 Place cover of the Frigo Top condenser

1. Place cover.
2. Tighten bolts.

	Description	Max. torque [Nm]
	INOX screw torx M6x20 (8x)	3
	Washer 7x19x2 (8x)	

10.2 Initial operation

On initial operation, carry out the following checks:

- ✓ General performance check:
 - ▶ Check the fan speed and the airflow.
 - ▶ Check the air temperature.

- ✓ High- and low-pressure check:
 - ▶ Check the gas working pressures and temperatures.

- ✓ Correct operation check:
 - ▶ Check the power consumption.
 - ▶ Check that there are no abnormal noises.
 - ▶ Check that there are no abnormal vibrations.
 - ▶ Check the management of condensed water.

11 Technical data

Parameter	Frigo Top 24 RT-D	Frigo Top 24 RT-DG
Nominal voltage Road function [VDC]	12	
Max. power consumption [A]	21.5 (13.5 V)	
Cooling capacity 5 °C [kW] ($T_{amb} = 30^{\circ}\text{C}$)	2184 (Road)	-
Cooling capacity 0 °C [kW] ($T_{amb} = 30^{\circ}\text{C}$)	1908 (Road)	-
Cooling capacity -5 °C [kW] ($T_{amb} = 30^{\circ}\text{C}$)	1669 (Road)	-
Cooling capacity -10 °C [kW] ($T_{amb} = 30^{\circ}\text{C}$)	-	-
Cooling capacity -20 °C [kW] ($T_{amb} = 30^{\circ}\text{C}$)	-	-
PS [bar] (2014/68/UE) Refrigerant	32	
Refrigerant	R134a	R452A
Refrigerant charge [kg]	1.2	-
Air flow [m ³ /h]	950	-
Storage ambient temperature range [°C]	-30...+80	
Working ambient temperature range [°C]	-30...+40	
A-weighted emission sound pressure level, LpA [dB] Measured according to standard UNI EN ISO 11204 June 2010	72.1	
Weight Condenser [kg]	15	12
Weight Evaporator [kg]	10	
Dimensions Condenser (LxWxH) [mm]	900x496x190	
Dimensions Evaporator (LxWxH) [mm]	660x530x158	

Table 7: Technical data

12 Annex

12.1 Cable assignment

Cable	Component	Cross section [mm ²]	Colour
002		0.5	red
003		0.5	blue
004		0.5	blue
021		0.5	blue
025		0.5	green
026		0.5	blu
100	EVC1	2.5	white
101	EVE1	2.5	white
102	YV1 - YV2	1.5	white
103	YC1	1.5	white
203		0.5	blue
226		0.5	blue
B+		10	red
B-		10	black
B+01		2.5	red
B+02		2.5	red
B+03		2.5	red
B+04		2.5	red
B+05		1.5	red
B+06		1.5	red
B+07		1.5	red
B+08		1.5	red
B-01	EVC1	2.5	black
B-02	EVE1	2.5	black
B-03	YV1 - YV2	1.5	black
B-05		0.5	black
B-06		0.5	black
B-07		0.5	black
B-08		0.5	black

Table 8: Cable assignment

12.2 Components

Abbreviation	Description	Specification (12V)
GB1	Battery	
B+	Clamp 30	
B-	Clamp 31	
15	Clamp 15	
EVC1 - EVC2	Axial fan condenser	
EVE1 - EVE2	Axial fan evaporator	
YV1 - YV2	Defrost Valve/ Heating Valve	
YC1	Clutch Compressor	4 A
RL11	Relay axial fan condenser	70 A
RL12	Relay axial fan evaporator	70 A
RL13	Relay Valve	15/25 A
RL14	Relay Compressor	15/25 A

Abbreviation	Description	Specification (12V)
K11	Coil relay RL11	
K12	Coil relay RL12	
K13	Coil relay RL13	
K14	Coil relay RL14	
F100	Main fuse	80A
F101	Fuse axial fan condenser	20A
F102	Fuse axial fan evaporator	20A
F103	Fuse valve	5A
F104	Fuse compressor	7,5A
F105	Fuse electronic part	3A
F108	Fuse clamp 15	3A
H1	Control panel	
BP1	High-pressure switch	
BP2	Low-pressure switch	
BP3	Pressure switch trinary	
BT1	Room temperature sensor	
BT2	Defrost temperature sensor	

Table 9: Components

12.3 Cable colours

Abbreviation	Colour
WHT / White	White
BLU / Blue	Blue
YEL / Yellow	Yellow
GRY / Grey	Grey
BN / Brown	Brown
BLK / Black	Black
PNK / Pink	Pink
RED / Red	Red
GRN / Green	Green
VT / Violet	Violet
WHT / White	White

Table 10: Cable colours

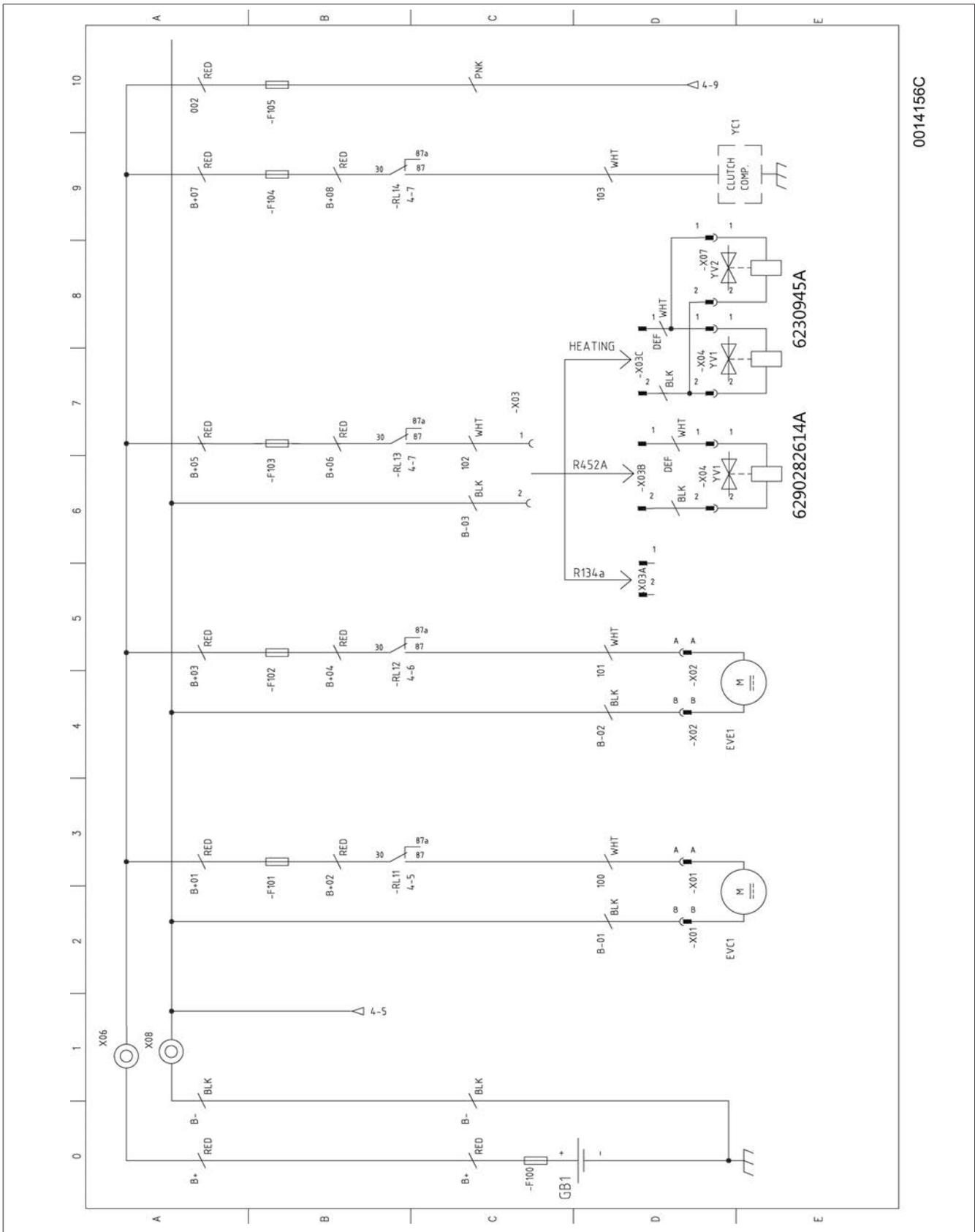
12.4 Wiring diagram symbols

Symbol	Description
	Female connector
	Male connector
	Wire continues in other wiring diagram. Code refers to sheet and coordinates Example 5.3/D: <ul style="list-style-type: none"> ■ 5 refers to sheet number shown in right lower corner ■ 3 refers to column number ■ D refers to row number

Table 11: Wiring diagram symbols

12.5 Wiring Diagrams

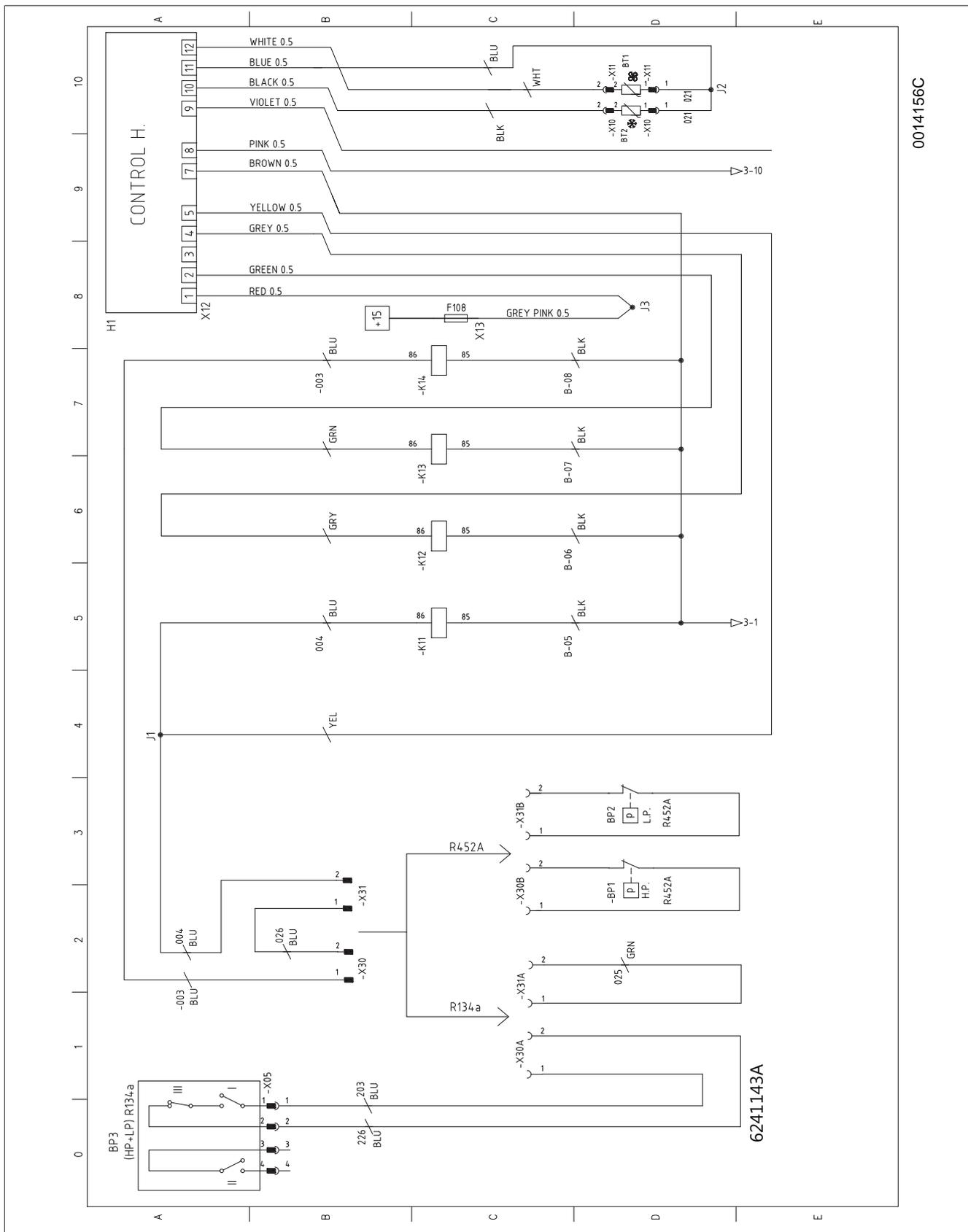
12.5.1 Diagram Frigo Top 24 RT-D (R134a) | RT-DG (R452A), 12 V, power circuit



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Fig. 33 Wiring diagram Frigo Top 24 RT-D, 12 V, power circuit, (R134a, R452A)

12.5.2 Diagram Frigo Top 24 RT-D (R134a) | RT-DG (R452A), 12 V, auxiliary



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Fig. 34 Wiring diagram Frigo Top 24 RT-D, 12 V, auxiliary, (R134a, R452A)

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