Part 3. Repair

This part contains the following chapters:

3.1. Refrigerant repair procedures

Overview:

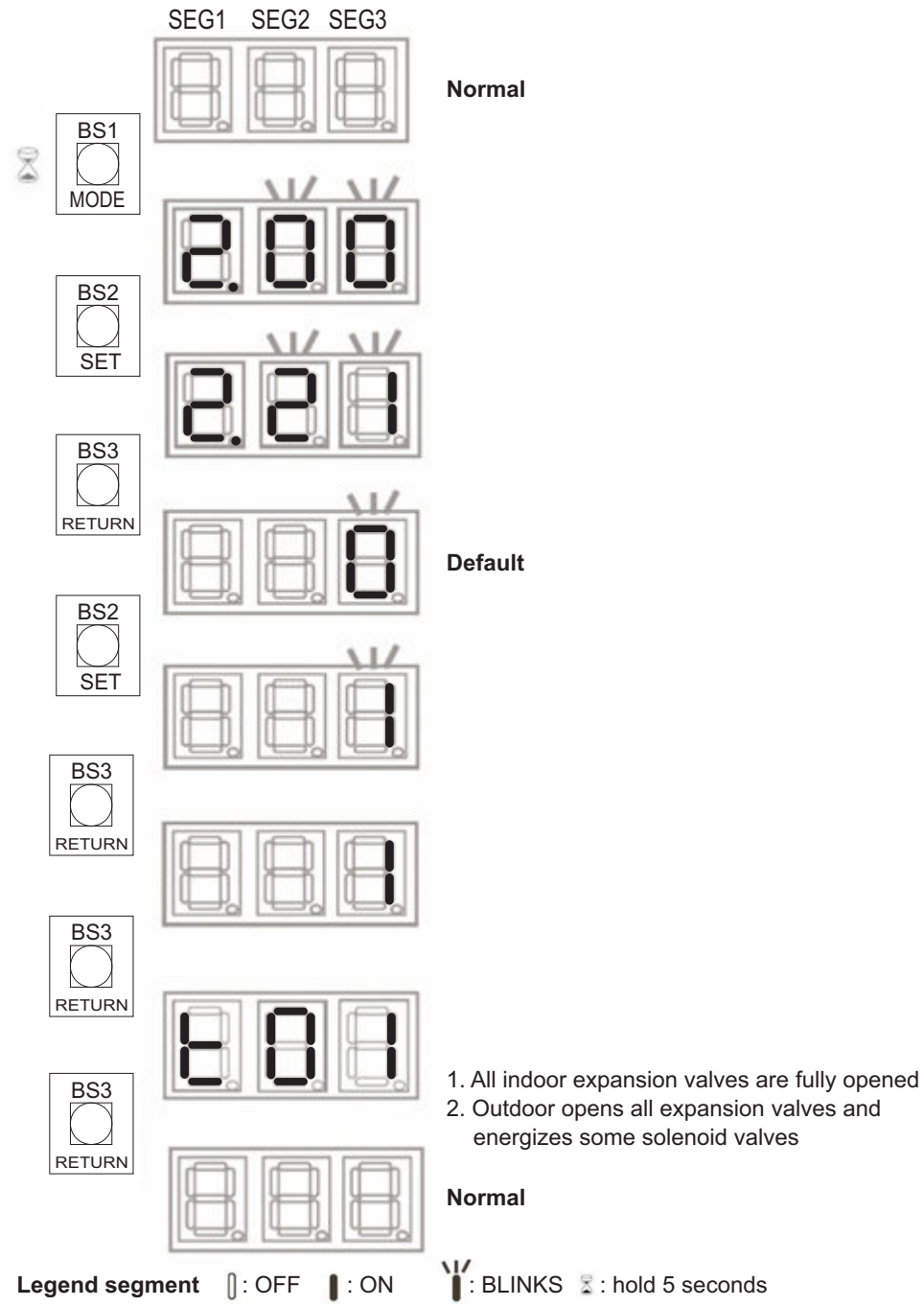
3.1.1. Refrigerant piping handling

- Make sure the applied pressure is never higher than the unit design pressure as indicated on the nameplate (PS).
- Work according the F-gas regulation and/or local regulations.
- Make sure the correct amount of refrigerant according the F-gas regulation label on the unit (factory + additional where required) is charged after repair.
- Make sure to use the appropriate equipment and tools according to the refrigerant and unit type.
- Charge non-azeotropic refrigerant (e.g. R-410A) always in a liquid state.
- Make sure to use a digital scale (no charging cylinder).
- Execute correct vacuum drying procedure after repair work:
  - ≦ -100,7 kPa or 5 Torr or 760 mmHg for at least 1 hour.
  - Connect the unit according the available service ports, refer to "Refrigerant recovery procedure" on page 94.
  - Use related field setting where necessary to open expansion valve/solenoid valve.

3.1.2. Refrigerant recovery procedure

1. Set outdoor 2-21-1, BS3 “return” press 2x => indication “t01.

Refrigerant recovery mode (2-21-1)



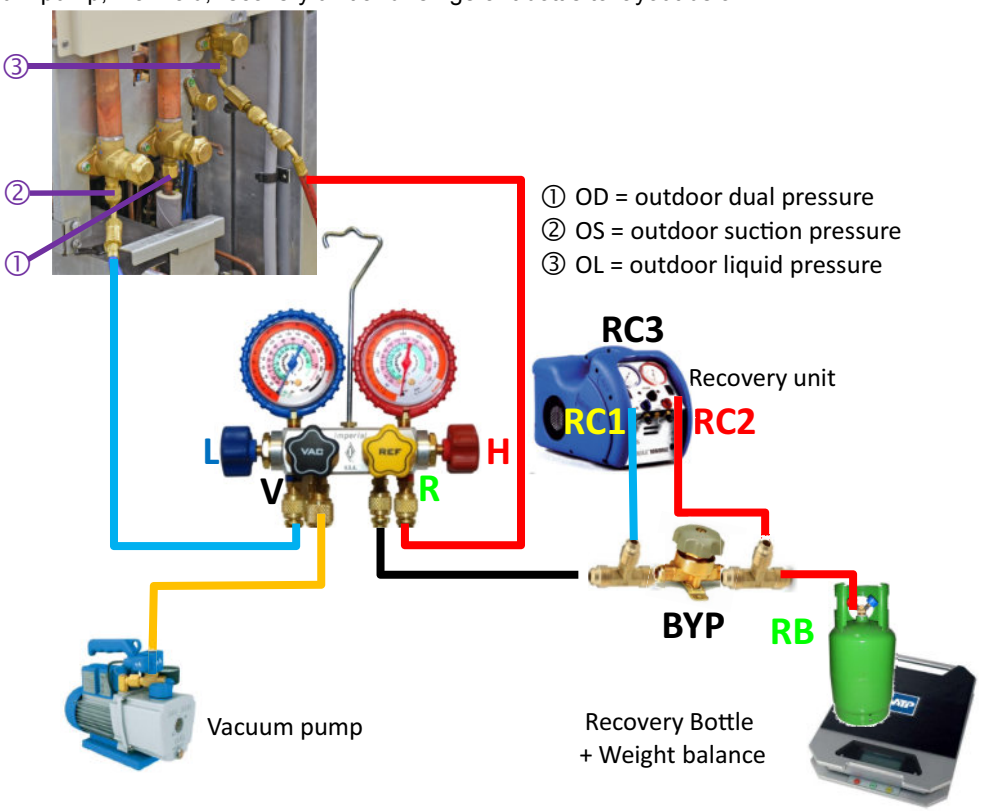
Remark:

If power supply is not available, open expansion valves RWEYQ-T9 by using the special service tool “permanent magnet”:

- For Y1E: magnet diameter 22.0 mm (tool part N° 999133T),
- For Y2E & Y3E: magnet diameter 17.5 mm (tool part N° 99S0038).

3.1.2.1. Setup without BS units

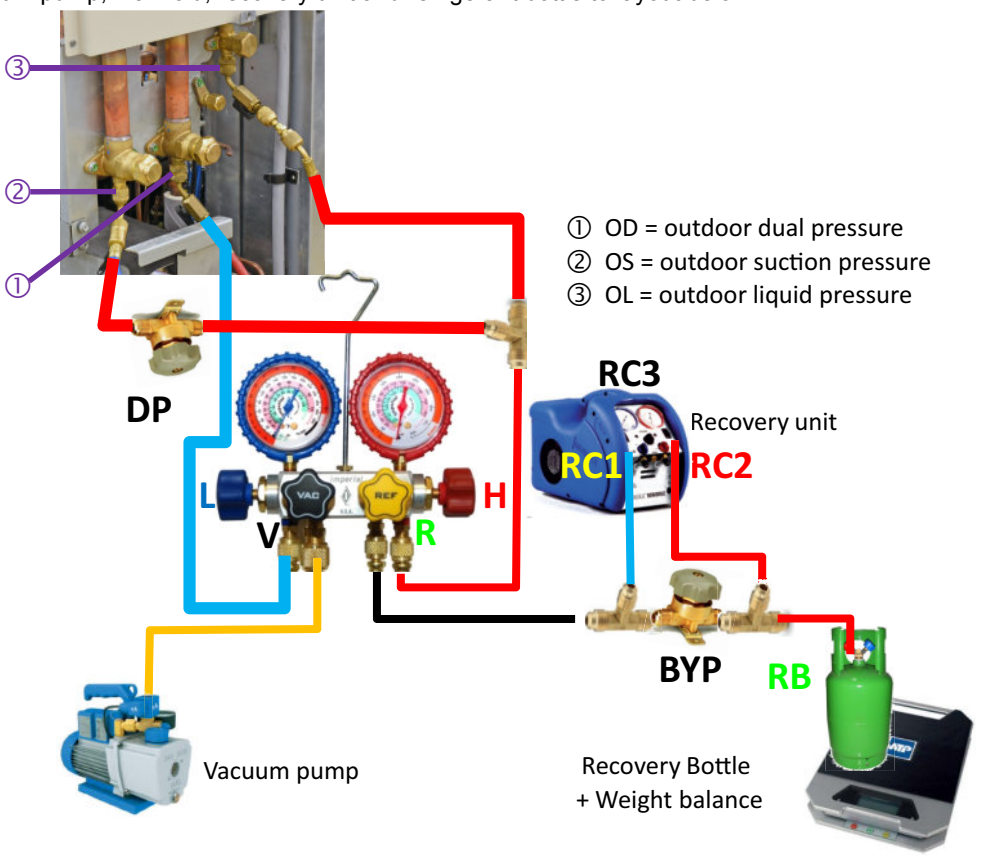
2. Connect vacuum pump, manifold, recovery unit and refrigerant bottle to layout below.



	Service port outdoor			Valve manifold					Valve recovery unit			Valve bottle	Operate	
Purpose	OL	OS	OD	L	V	R	H	BYP	RC1	RC2	RC3	RB	VP	RU
Connections	C	C	C	C	C	C	C	C	C	C	Rec	C	×	×
Start Vacuuming	C	C	C	O	O	O	O	O	O	O	Rec	C	✓	×
End vacuuming	C	C	C	O	C	O	O	C	O	O	Rec	O	×	×
Recover liquid	O	C	O	C	C	O	O	C	1/2	O	Rec	O	×	✓
Recover gas	O	C	O	O	C	O	O	C	O	O	Rec	O	×	✓
Purge	O	C	O	C	C	C	C	C	*	O	Pur	O	×	✓
Disconnect	C	C	C	C	C	C	C	C	C	C	Rec	C	×	×
End recovery	Press button BS3 “return” 1x => indication blank (normal)												×	×
OL= outdoor liquid, OS= outdoor suction, OD= outdoor discharge, C= closed, O= open, 1/2: between indication “liquid” & “gas”, Rec= recovery, Pur: purge, VP= vacuum pump, RU= recovery unit, * Change Inlet valve RC1 gradually to “purge” when pressure drops														

3.1.2.2. Setup including BS units

1. Connect vacuum pump, manifold, recovery unit and refrigerant bottle to layout below.

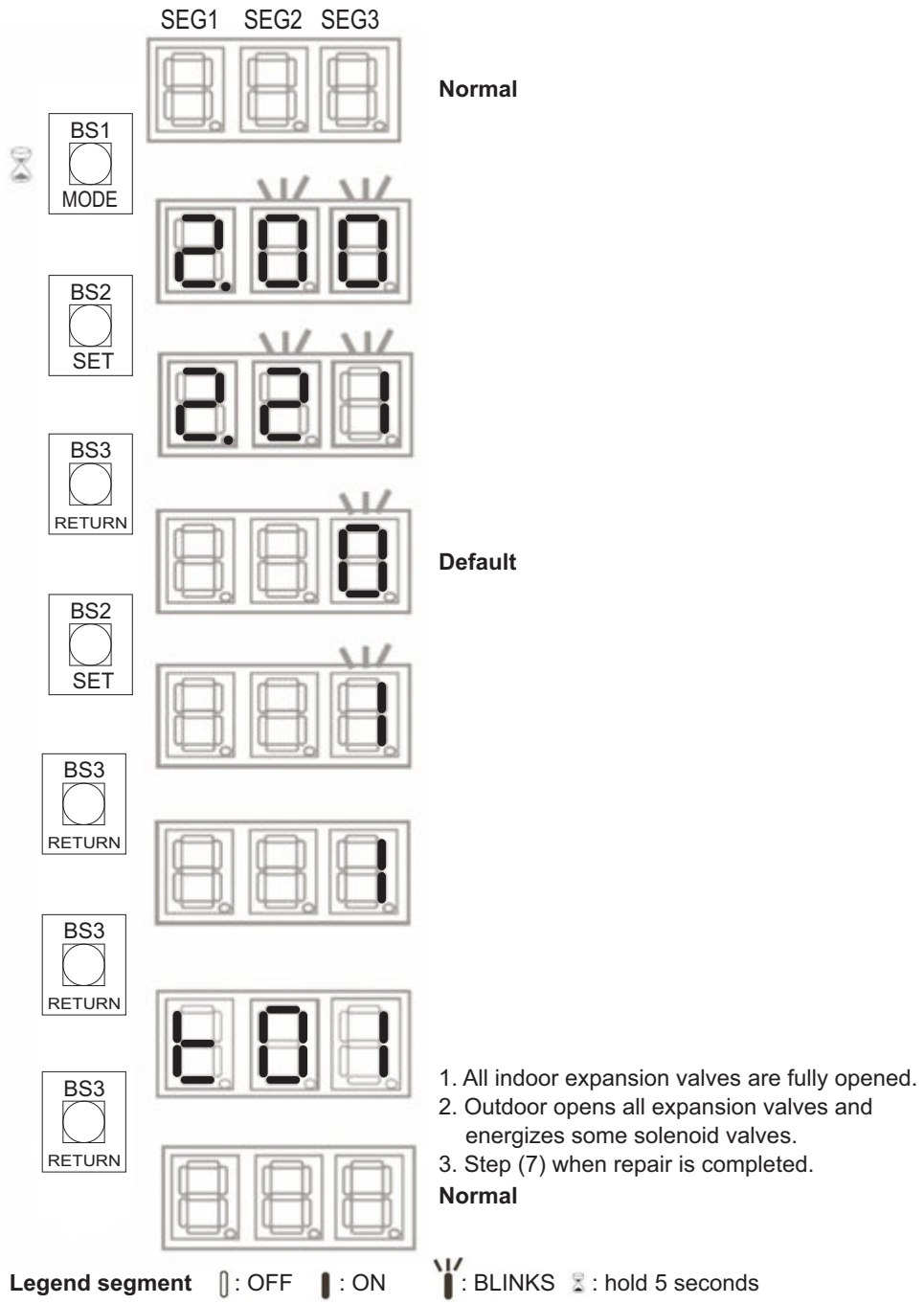


	Service port outdoor			Valve manifold					Valve recovery unit			Valve bottle	Valve HP/LP	Operate	
Purpose	OL	OS	OD	L	V	R	H	BYP	RC1	RC2	RC3	RB	DP	VP	RU
Connections	C	C	C	C	C	C	C	C	C	C	Rec	C	C	×	×
Start Vacuuming	C	C	C	O	O	O	O	O	O	O	Rec	C	O	✓	×
End vacuuming	C	C	C	O	C	O	O	C	O	O	Rec	O	O	×	×
Recover liquid	O	O	O	C	C	O	O	C	1/2	O	Rec	O	C	×	✓
Recover gas	O	O	O	O	C	O	O	C	O	O	Rec	O	O	×	✓
Purge	O	O	O	C	C	C	C	C	*	O	Pur	O	C	×	✓
Disconnect	C	C	C	C	C	C	C	C	C	C	Rec	C	C	×	×
End recovery	Press button BS3 “return” 1x => indication blank (normal)													×	×
OL= outdoor liquid, OS= outdoor suction, OD= outdoor discharge, C= closed, O= open, 1/2: between indication “liquid” & “gas”, Rec= recovery, Pur: purge, VP= vacuum pump, RU= recovery unit, * Change Inlet valve RC1 gradually to “purge” when pressure drops															

3.1.3. Preparation for repair

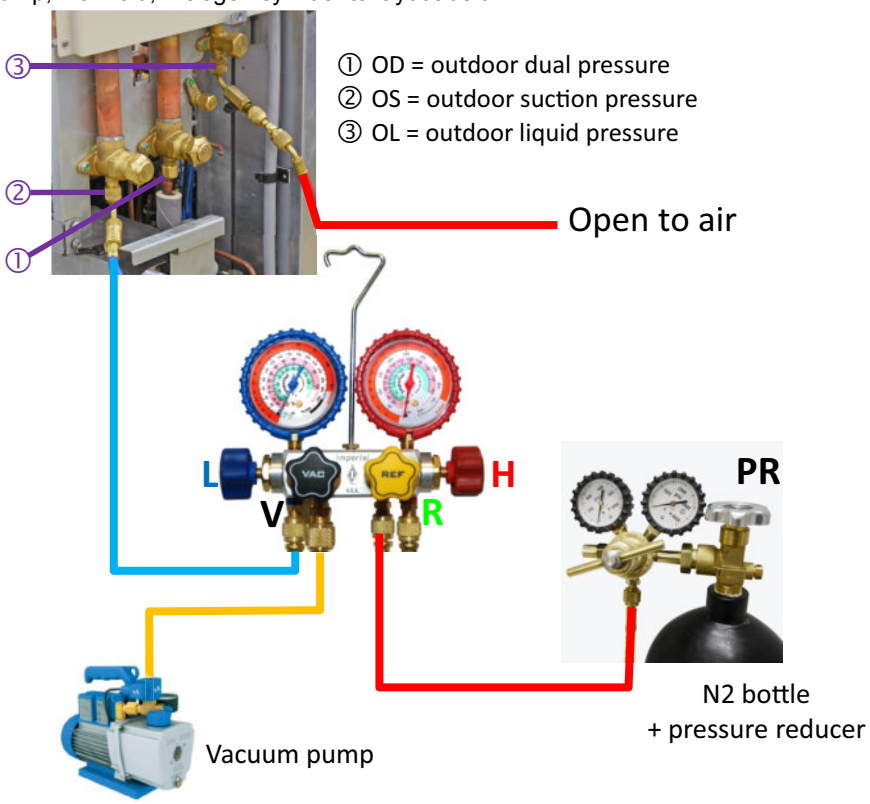
1. Set outdoor 2-21-1, BS3 “return” press 2x => indication “t01.

Refrigerant recovery mode (2-21-1)



3.1.3.1. Setup without BS units

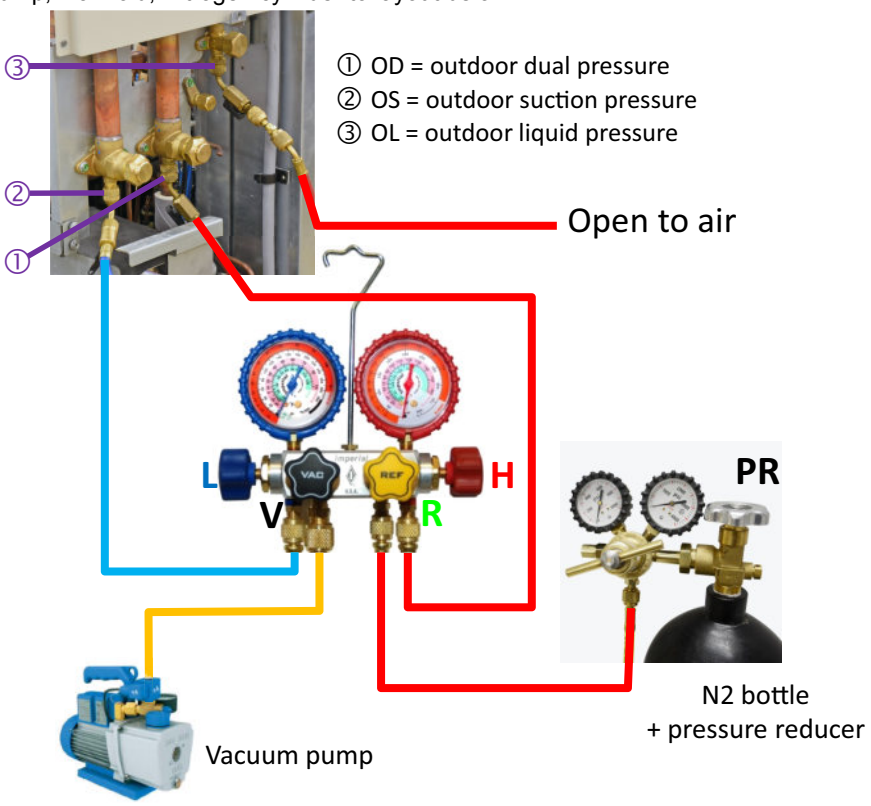
1. Connect vacuum pump, manifold, Nitrogen cylinder to layout below.



	Service port outdoor			Valve manifold				N2
Purpose	OL	OS	OD	L	V	R	H	BYP
Vacuuming	C	C	C	O	O	O	O	O
Pressurize	C	C	C	O	C	O	O	C
OL= outdoor liquid pressure, OS= outdoor suction pressure, OD= outdoor dual pressure								

3.1.3.2. Setup including BS units

1. Connect vacuum pump, manifold, Nitrogen cylinder to layout below.



	Service port outdoor			Valve manifold				N2
Purpose	OL	OS	OD	L	V	R	H	BYP
Vacuuming	O	O	O	O	O	O	O	C
Pressurize	O	O	O	O	C	O	O	O
OL= outdoor liquid pressure, OS= outdoor suction pressure, OD= outdoor dual pressure								

3.1.4. Piping repair procedures

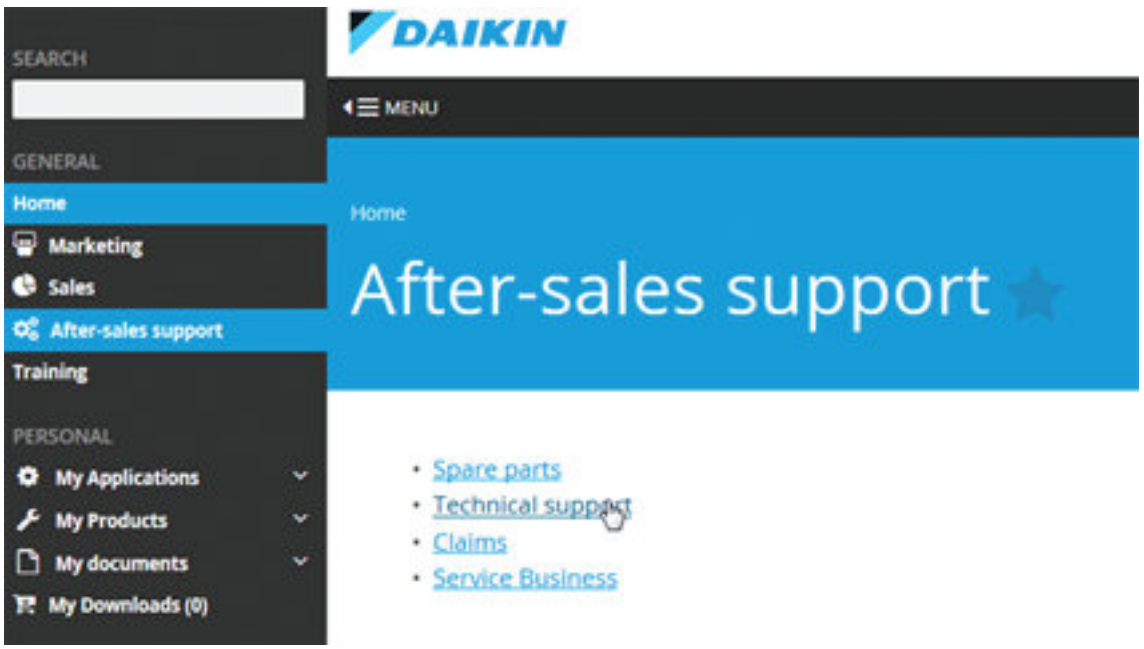
- Make sure to cover open pipe ends during repair work so no dust or moisture can enter.
- Make sure to re-apply insulation removed during repair.
- Pipe expansion / flare making:
  - Remove any burrs on the cut surface and use correct tool such as reamer or scraper (note that excessive deburring can thin the pipe walls and cause cracking of the pipe).
  - Make sure the flare connections at the indoor unit(s) has (have) the correct size (use a flare gauge).
  - Make sure no particles remain in the piping.
  - Apply just a drop of refrigerant oil on the inner surface of the flare.
  - Make sure the flare connection is tightened with the correct torque (torque values refer to installation manual).
- Brazing:
  - Use correct brazing tool.
  - Use a phosphor copper filler metal (silver composition of 0 to 2%). Do not use flux material.
  - Flush the piping before brazing with nitrogen to avoid oxidation of the inside of the copper tubes (nitrogen purity ≥ 99,99%).

3.2. Service tools

For an overview of the applicable service tools, please check the Daikin Business Portal of your country.

Country	Link Daikin Business Portal
Belgium	https://my.daikin.eu/dab/nl_BE/home.html https://my.daikin.eu/dab/fr_BE/home.html
Central Europe	https://my.daikin.eu/dace-at/de_AT/home.html
France	https://my.daikin.eu/daf/fr_FR/home.html
Germany	https://my.daikin.eu/dag/de_DE/home.html
Middle East & Africa	https://my.daikin.eu/dame/en_US/home.html
Netherlands	https://my.daikin.eu/danl/nl_NL/home.html
Poland	https://my.daikin.eu/content/dapo/pl_PL/home.html
Portugal	https://my.daikin.eu/dapt/pt_PT/home.html
Spain	https://my.daikin.es/dacs/es_ES/home.html
Sweden	https://my.daikin.eu/dasw/sv_SE/home.html
United Kingdom	https://my.daikin.eu/dauk/en_GB/home.html
Other	https://my.daikin.eu/content/denv/en_US/login.html

In case you do not have yet access to the Daikin Business portal, please contact the Daikin distributor in your country to be registered and receive a valid password.



To observe and judge operation condition of system, the input and output signals of RWEYQ-T9 and indoor units can be monitored by using following service tools:

- D-checker. The software and the extra required data labels can be found in the portal - Applications - Software finder - in the “Search” window: checker. Choose “D-checker”.
- Checker typeIII. Upgrade the software by included patch to operate minimum software version 1-60. Full software installation (if first time installing CheckerIII software) and patch can be found in the portal - Applications - Software finder - in the “Search” window: checker. Choose “CheckerIII”.

You will then find a button “Service tools” which gives you an overview on which service tool to use for which product. Also additional information on the service tool (instruction, latest software) can be found there.

3.3. Unit specific repair procedures

Overview:

3.3.1. Indoor unit

Not applicable.

3.3.2. RWEYQ-T9

3.3.2.1. Basic removal

3.3.2.1.1 Removing main front plate

PRELIMINARY ACTIONS

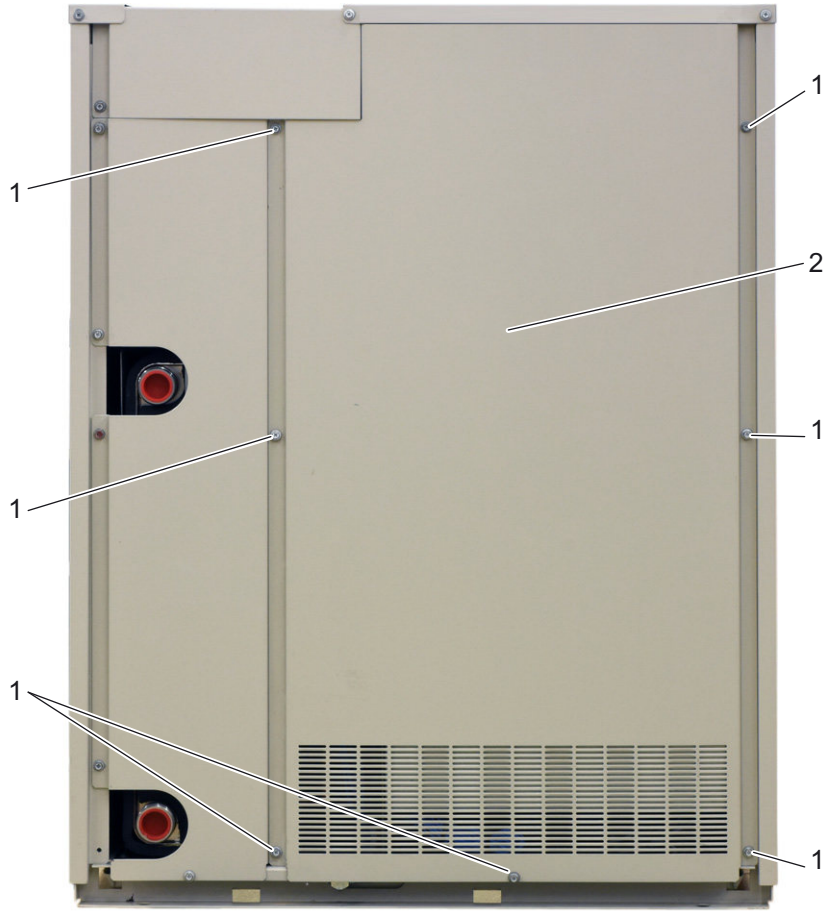
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Loosen and remove the 7 screws (1) that fix the main front plate (2).
2. Lift the main front plate (2) and push it slightly backwards, before lifting and removing it from the unit.

Figure 3-1: Removing the main front plate



1. Screw	2. Main front plate

Installation

1. Proceed in reverse order.

3.3.2.1.2 Removing PHE front plate

PRELIMINARY ACTIONS

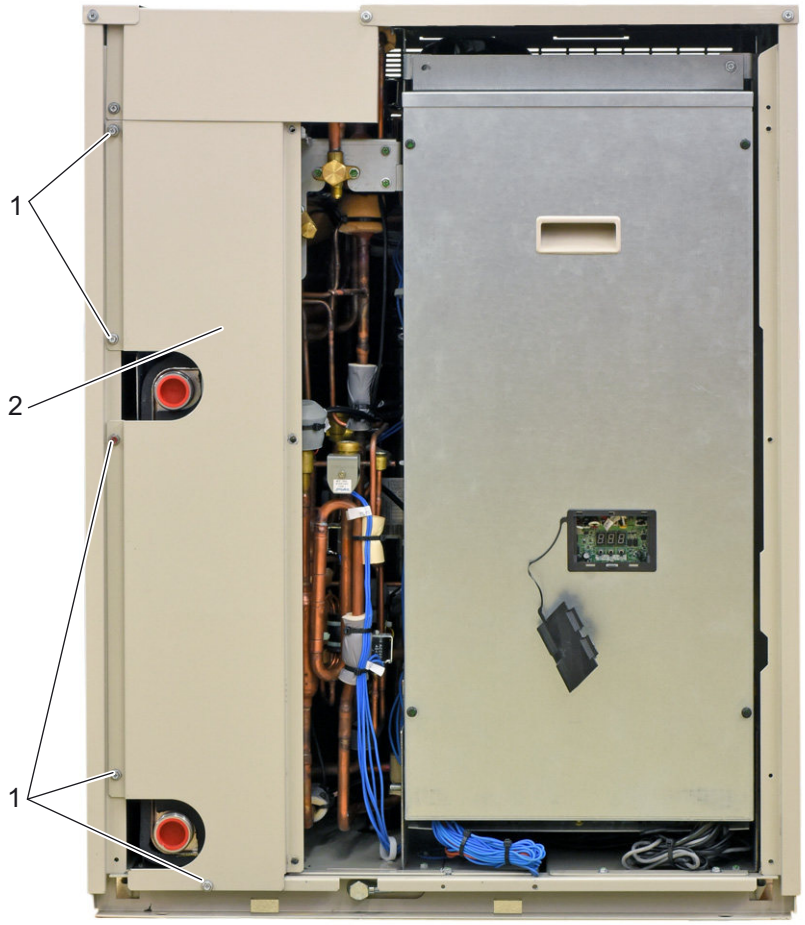
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.

PROCEDURE

Removal

1. Loosen and remove the 5 screws (1) that fix the PHE front plate (2).
2. Remove the PHE front plate (2) from the unit.

Figure 3-2: Removing the PHE front plate



1. Screw
2. PHE front plate

Installation

1. Proceed in reverse order.

3.3.2.1.3 Removing top plate

PRELIMINARY ACTIONS

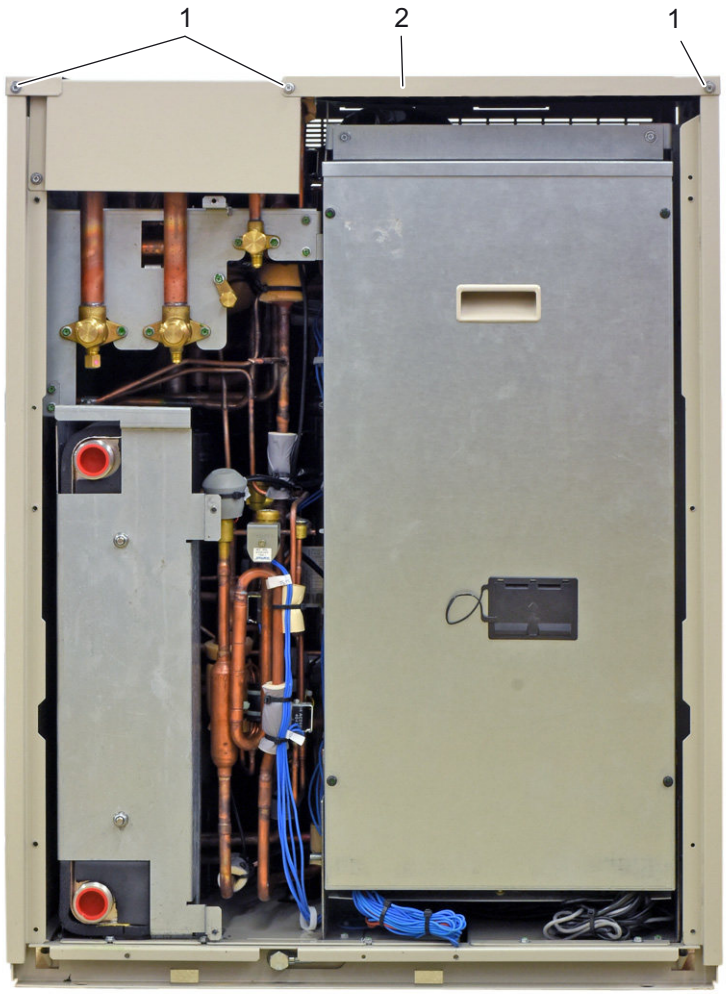
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.

PROCEDURE

Removal

1. Loosen and remove the 3 screws (1) that fix the top plate (2).
2. Lift the top plate (2) at the front and remove it from the unit.

Figure 3-3: Removing the top plate



1. Screw
2. Top plate

Installation

1. Proceed in reverse order.

3.3.2.1.4 Removing left side plate

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the PHE front plate, refer to "Removing PHE front plate" on page 103.
4. Remove the top plate, refer to "Removing top plate" on page 104.

PROCEDURE

Removal

1. Loosen the 5 screws (1) that fix the left side plate (2).
2. Lift the left side plate (2) and remove it from the unit.

Figure 3-4: Removing the left side plate

1. Screw
2. Left side plate

Installation

1. Proceed in reverse order.

3.3.2.1.5 Removing right side plate

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the top plate, refer to "Removing top plate" on page 104.

PROCEDURE

Removal

1. Loosen the 4 screws (1) that fix the right side plate (2).
2. Lift the right side plate (2) and remove it from the unit.

Figure 3-5: Removing the right side plate

1. Screw	2. Right side plate

Installation

1. Proceed in reverse order.

3.3.2.1.6 Lowering switch box

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.

PROCEDURE

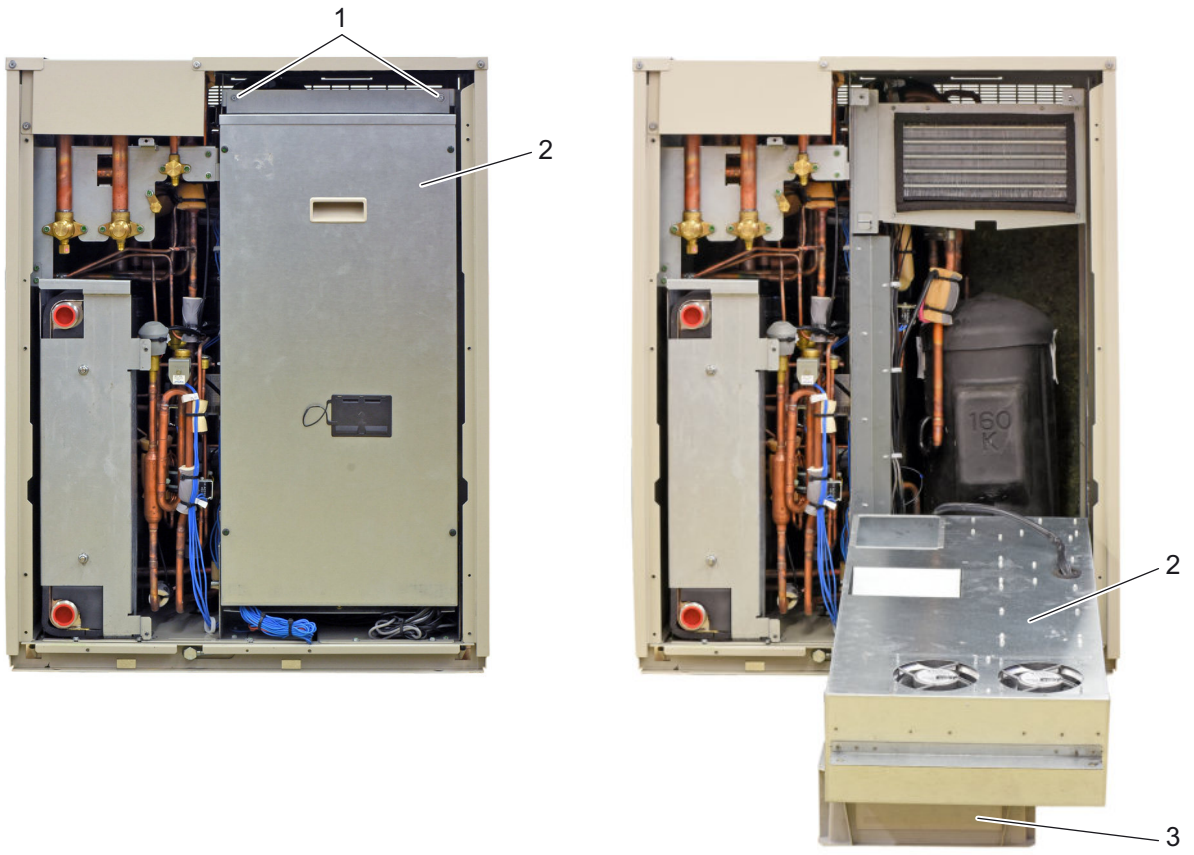
Removal

1. Loosen and remove the 2 screws (1) that fix the switch box (3).

> **INFORMATION**
> Use a solid support with a height of approximately 8 inch.

2. Place a support (3) for the switch box in front of the switch box (2).
3. Lower the switch box (2) until it rests on the support (3).

Figure 3-6: Lowering the switch box



1. Screw
2. Switch box
3. Support

Installation

1. Proceed in reverse order.

3.3.2.1.7 Opening switch box

PRELIMINARY ACTIONS

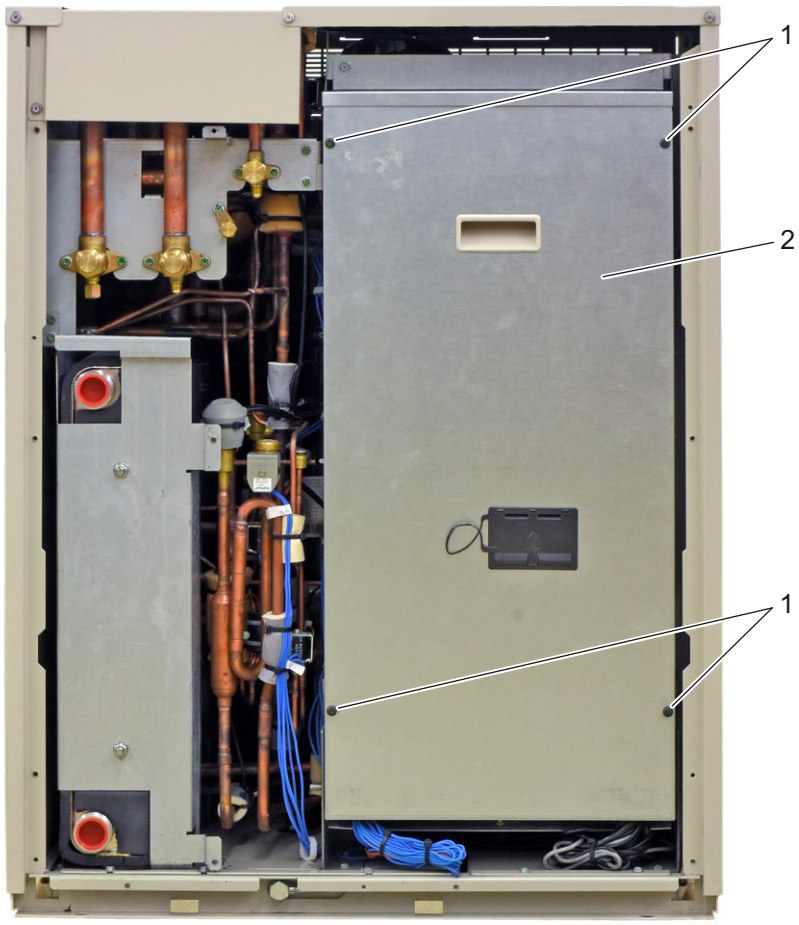
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.

PROCEDURE

Removal

1. Loosen and remove the 4 screws (1) that fix the switch box cover (2).
2. Lift and remove the switch box cover (2).

Figure 3-7: Opening the switch box



1. Screw	2. Switch box cover

Installation

1. Proceed in reverse order.

3.3.2.1.8 Removing the compressor jacket

PRELIMINARY ACTIONS

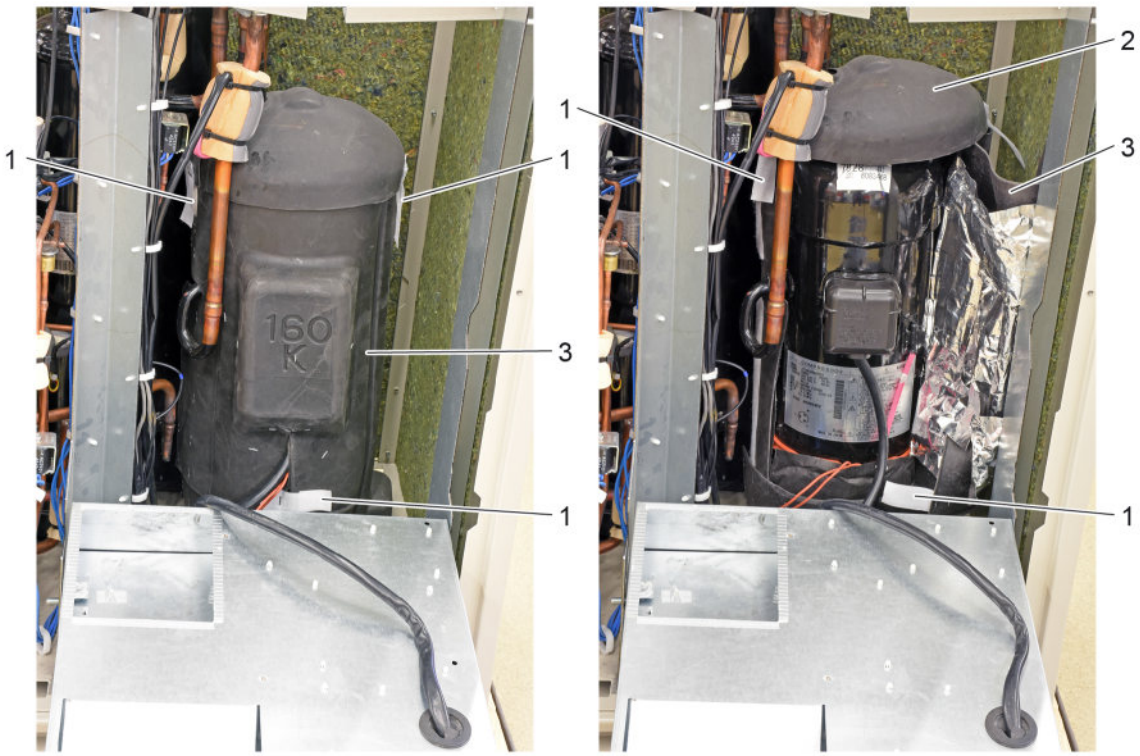
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Lower the switch box, refer to "Lowering switch box" on page 107.

PROCEDURE

Removal

1. Detach the velcro strips (1).
2. Remove the top jacket (2) from the compressor.
3. Detach the velcro strips (1) and remove the body jacket (3) from the compressor.

Figure 3-8: Removing the compressor jacket



1. Velcro strip
2. Compressor top jacket
3. Compressor body jacket

Installation

1. Proceed in reverse order.

3.3.2.2. Replacing thermistor

PRELIMINARY ACTIONS

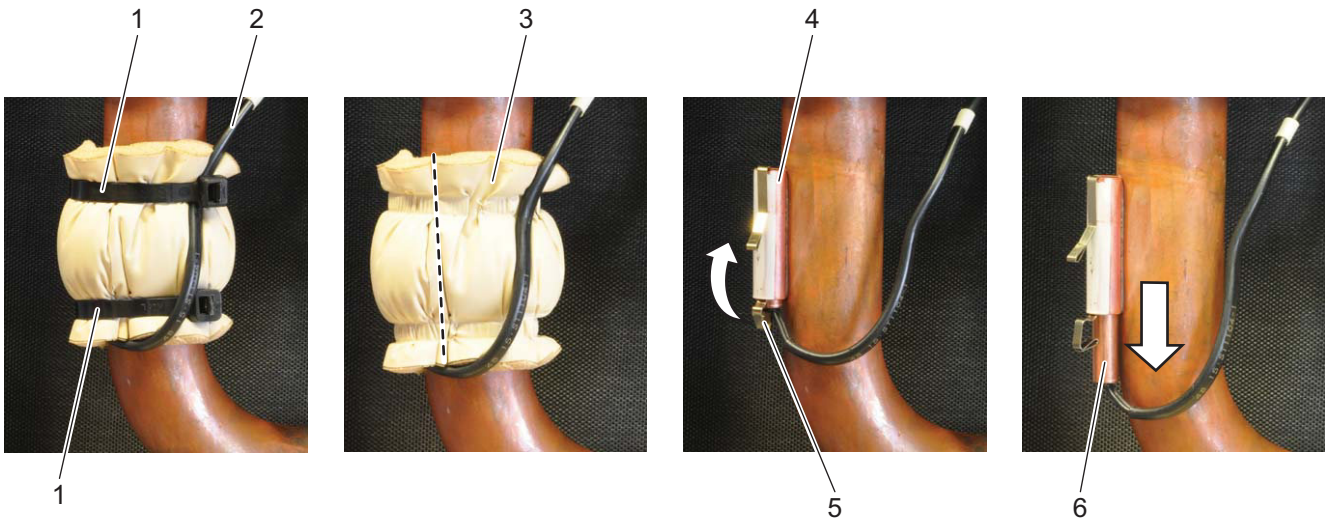
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, see "Basic removal" on page 102.

PROCEDURE

Removal

1. Locate thermistor that needs to be replaced, see "Component overview of unit" on page 162.
2. Cut the cable ties (1) that fix the insulation (3) and the thermistor wire (2).
3. Cut the insulation (3) and remove it.
4. Pull the clip (5) that fixes the thermistor (6).
5. Remove the thermistor (6) from the thermistor holder (4).

Figure 3-9: Replacing a thermistor



1. Cable tie
2. Thermistor wire
3. Insulation
4. Thermistor holder
5. Clip
6. Thermistor

Installation

1. Proceed in reverse order.

3.3.2.3. Replacing 4-way valve body

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
4. Remove plate work when required, refer to "Basic removal" on page 102.
5. Remove the 4-way valve coil, refer to "Replacing 4-way valve coil" on page 113.
6. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
7. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Remove any parts that block the way to the 4-way valve.
2. Cut the 3 pipes connected to the 4-way valve pipes (1).

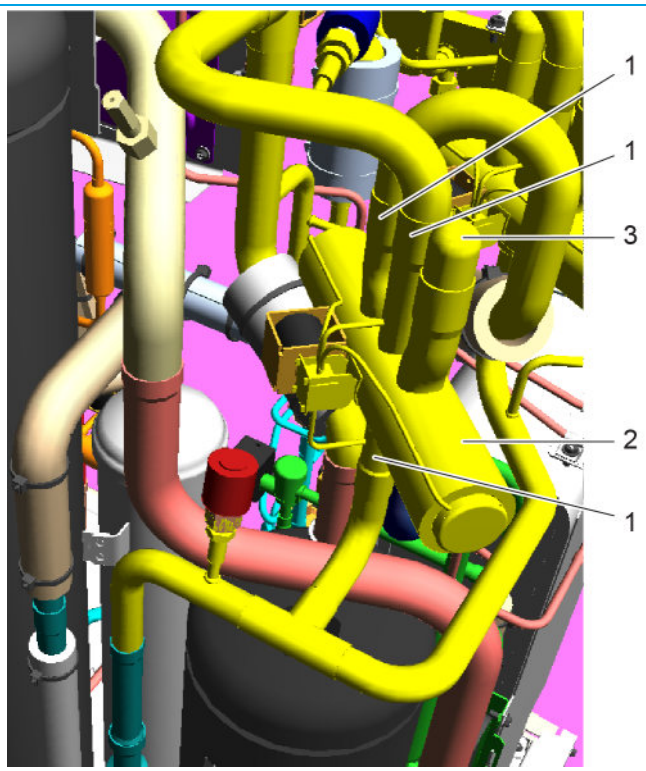
> **CAUTION**
> The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

3. Remove the 4-way valve (2).
4. Supply nitrogen to the piping circuit.
5. Heat the 4-way valve pipes (1) using an oxygen acetylene torch.
6. When the solder is liquid, remove the 4-way valve pipes (1).

> **INFORMATION**
> The stop end plug must be installed on the spare 4-way valve.

7. Heat the stop end plug (3) using an oxygen acetylene torch.
8. When the solder is liquid, remove the stop end plug (3).

Figure 3-10: Removing the 4-way valve body



1. 4-way valve pipe
2. 4-way valve
3. Stop end plug

Installation

WARNING

Overheating the 4-way valve will damage or destroy it.

1. Wrap a wet rag around the 4-way valve (2).
2. Proceed in reverse order.

3.3.2.4. Replacing 4-way valve coil

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Open the switch box, refer to "Basic removal" on page 102.

PROCEDURE

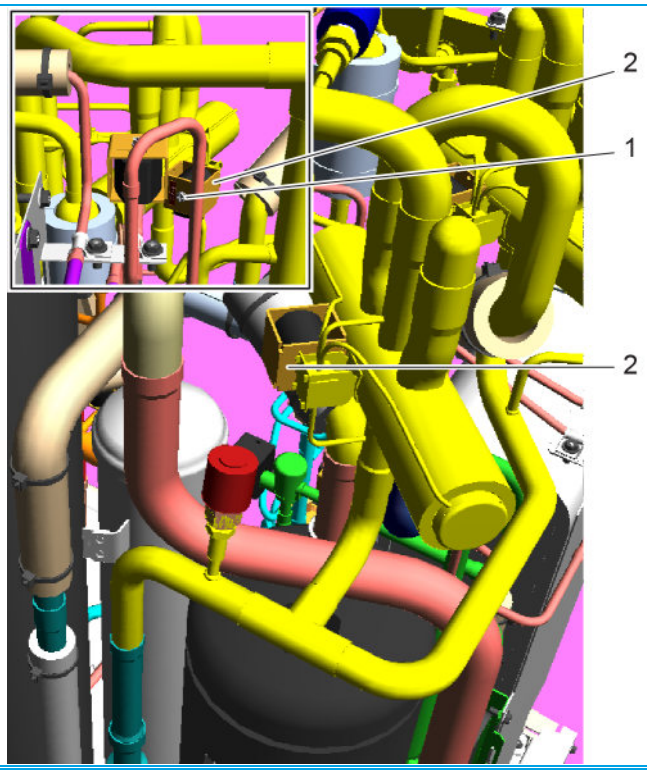
Removal

1. Loosen and remove the screw (1) that fixes the 4-way valve coil (2).
2. Cut the cable ties that fix the 4-way valve coil wiring.

> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3. Unplug 4-way valve connector from PCB.
4. Remove the 4-way valve coil from the 4 way valve.

Figure 3-11: Removing the 4-way valve coil



1. Screw	2. 4-way valve coil

Installation

1. Proceed in reverse order.

3.3.2.5. Replacing compressor

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
4. Remove plate work when required, refer to "Basic removal" on page 102.
5. Lower the switch box, refer to "Lowering switch box" on page 107.
6. Remove the compressor jacket, refer to "Removing the compressor jacket" on page 109.
7. Remove the crankcase heater, refer to "Replacing crankcase heater" on page 119.
8. Remove any part that blocks the way to the compressor.
9. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
10. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Remove the terminal cover (1).
2. Take a picture of the wiring and unplug the compressor wiring (2).
3. Cut the cable ties (3) that fix the insulation (4).
4. Slide the insulation (4) upwards.
5. Remove the thermistor (5) from the thermistor holder, put the thermistor away from the compressor.
6. Remove the clip (6) from the thermistor holder.
7. Loosen and remove the screw (7) that fixes the clamp (8).
8. Loosen and remove the screw (9) that fixes the clamp (10).

> **INFORMATION**
> The clamp (12) must be installed on the spare compressor.

9. Loosen and remove the screws (11) that fix the clamp (12).
10. Using a pipe cutter, cut the 3 compressor pipes (13) below the soldered joint.
11. Loosen and remove the 3 bolts (15) that fix the compressor (14).
12. Remove the compressor (14).
13. Remove the dampers (16) with bushings (17) from the compressor (14).

> **CAUTION**
> The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

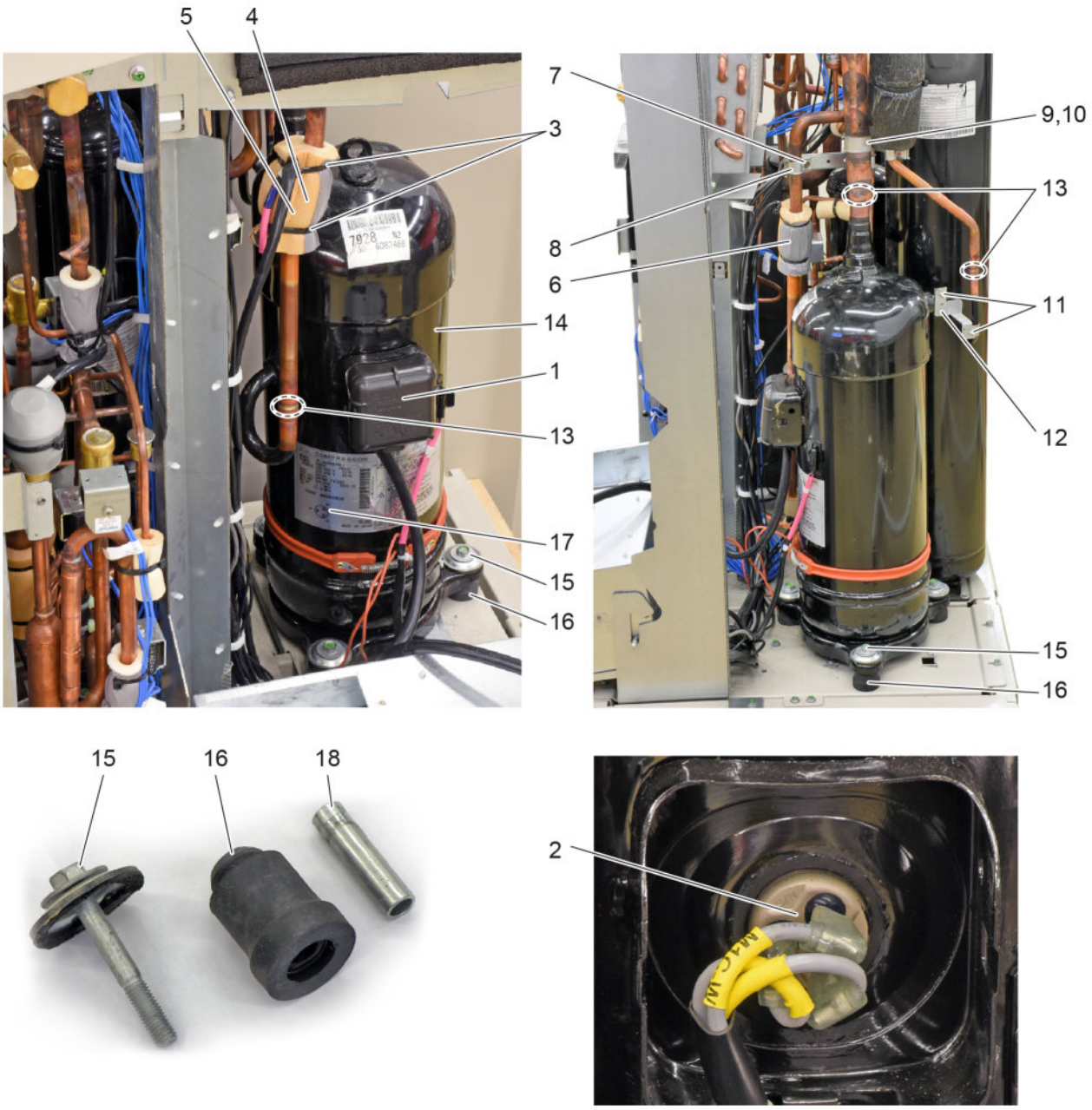
14. Supply nitrogen to the piping circuit.

15. Heat the 3 compressor pipes (13) using an oxygen acetylene torch.

16. When the solder is liquid, remove the 3 compressor pipes (13).

17. Cut the nitrogen supply when the piping has cooled down.

Figure 3-12: Removing the compressor



1. Terminal cover
2. Compressor wiring
3. Cable ties
4. Insulation
5. Thermistor
6. Clip
7. Screw
8. Clamp
9. Screw
10. Clamp
11. Screw
12. Clamp
13. Compressor pipe
14. Compressor
15. Bolt
16. Dampers
17. Bushing
18. Compressor wiring label

Installation

	**CAUTION** The oil in the compressor is hygroscopic. Remove the caps from the compressor piping as late as possible.
	**INFORMATION** Before installing a new compressor, determine the cause of the compressor failure and take all required corrective actions.
	**INFORMATION** If the dampers are worn, replace the dampers. The bushings inside the dampers are recuperated for use with the new dampers.
	**INFORMATION** Install the compressor sound insulation in the same location.

1. When installing the new compressor, remove the caps from the compression pipe and the suction pipe as late as possible.
2. Check damper status, replace when worn.
3. First install the 3 (new) dampers (without the bushings) on the new compressor.
4. Install the 3 bushings (17) in the dampers.
5. When soldering the compressor pipes, cover the compressor pipes with a wet cloth to prevent overheating the compressor (and the oil in the compression pipe).
6. Reconnect the compressor wires are indicated on the compressor wiring label (18).
7. Proceed in reverse order.

3.3.2.6. Replacing oil separator

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
4. Remove plate work when required, refer to "Basic removal" on page 102.
5. Lower the switch box, refer to "Lowering switch box" on page 107.
6. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
7. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Loosen and remove the 3 bolts (4) that fix the oil separator (6).
2. Loosen and remove the 2 screws (5) that fix the oil separator (6).
3. Using a pipe cutter, cut the oil separator pipe (1) below the soldered joint.

	**CAUTION** The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

4. Supply nitrogen to the piping circuit.
5. Heat and separate the oil separator pipe (2) without damaging it.
6. Heat and separate the oil separator pipe (3) without damaging it.
7. Remove the oil separator pipe.
8. Remove the oil separator (6).
9. Heat the oil separator pipe (1) using an oxygen acetylene torch.
10. When the solder is liquid, remove the oil separator pipe (1).

Figure 3-13: Removing the oil separator

1. Liquid receiver pipe	4. Bolt
2. Liquid receiver pipe	5. Screw
3. Liquid receiver pipe	6. Oil separator

Installation

1. Proceed in reverse order.

3.3.2.7. Replacing crankcase heater

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Lower the switch box, refer to "Lowering switch box" on page 107.
5. Open but do not remove the compressor jacket, refer to "Removing the compressor jacket" on page 109.

PROCEDURE

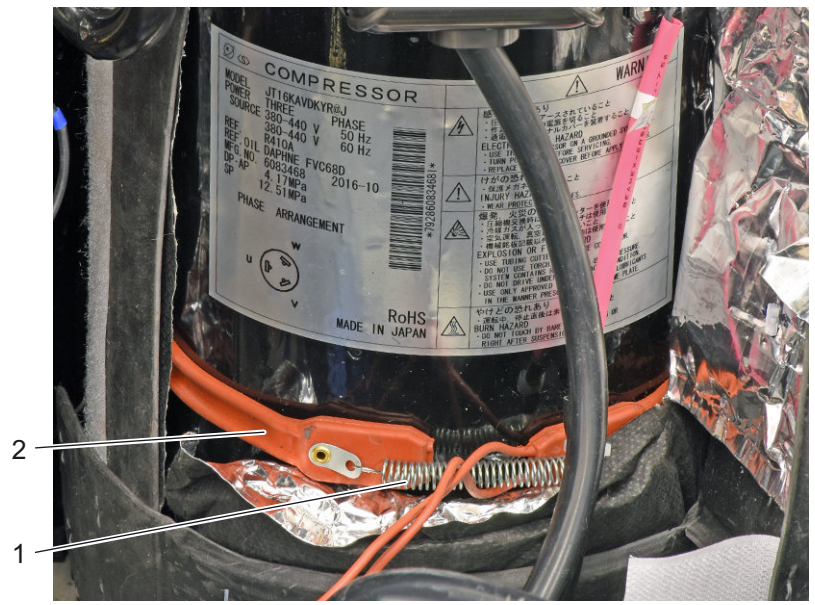
Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Unplug crankcase heater connector from PCB.
2. Detach the spring (1) that fixes the crankcase heater (2) on the compressor.
3. Cut all cable ties that fix the crankcase heater wiring.
4. Remove the crankcase heater (2).

Figure 3-14: Removing the crankcase heater



1. Spring
2. Crankcase heater

Installation

INFORMATION

Replace all cable ties that were cut during removal.

1. Proceed in reverse order.

3.3.2.8. Replacing AC fan inverter cooling

PRELIMINARY ACTIONS

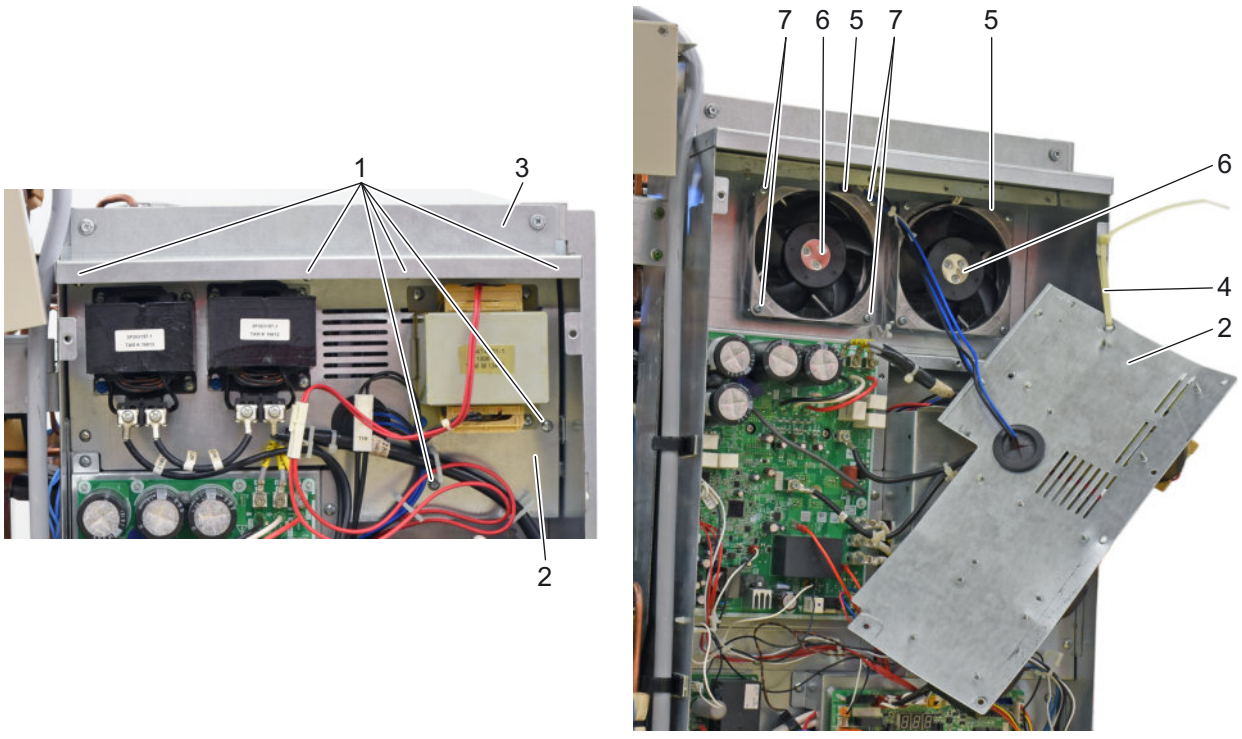
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

Removal

1. Loosen the 7 screws (1) that fix reactor plate (2) to the switch box (3).
2. Temporarily attach the reactor plate (2) to the switch box (3) using a cable tie (4).
3. Loosen the 4 screws (7) that fix the AC fan (6) to the switch box (3).
4. Disconnect the 2 Faston connectors (5) from the AC fan (6).
5. Remove the AC fan (6) from the reactor plate (2).

Figure 3-15: Removing the AC fan inverter cooling



1. Screw
2. Reactor plate
3. Switch box
4. Cable tie
5. Faston connector
6. AC fan
7. Screw

Installation

1. Proceed in reverse order.

3.3.2.9. Replacing expansion valve body

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Recover the refrigerant (refer to "Refrigerant recovery procedure" on page 94).
5. Remove the expansion valve coil (refer to "Replacing expansion valve coil" on page 122).
6. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
7. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

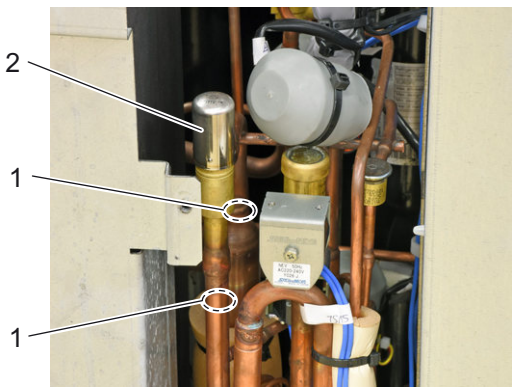
Removal

1. Cut the 2 expansion valve pipes (1).
2. Remove the expansion valve (2).

> **CAUTION**
> The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

3. Supply nitrogen to the piping circuit.
4. Using an oxygen acetylene torch, heat the 2 expansion valve pipes (1).
5. When the solder material is liquid, pull the 2 expansion valve pipes (1).
6. Cut the nitrogen supply when the piping has cooled down.

Figure 3-16: Removing the expansion valve



1. Expansion valve pipe
2. Expansion valve

Installation

1. Wrap a wet rag around the expansion valve (2).

> **WARNING**
> Overheating the expansion valve will damage or destroy it.

2. Proceed in reverse order.

3.3.2.10. Replacing expansion valve coil

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.

PROCEDURE

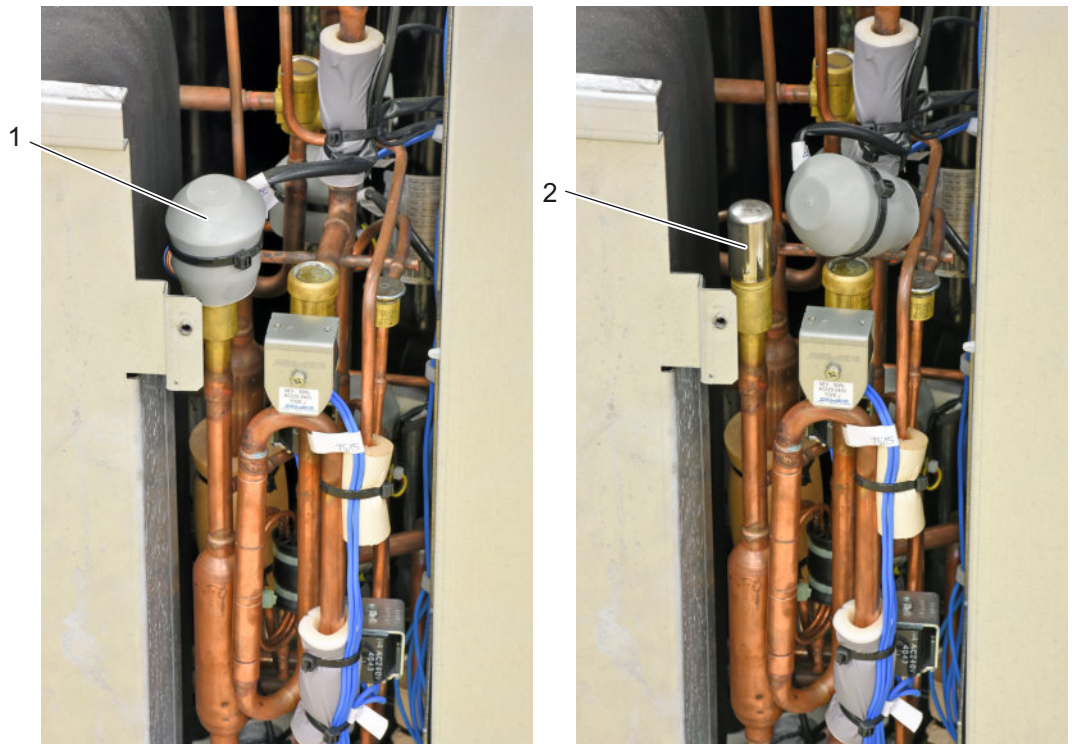
Removal

1. Pull the expansion valve coil (1) to remove it from the expansion valve body (2).
2. Cut all cable ties that fix the expansion valve coil wiring.

> **WARNING: RISK OF FIRE**
>
> When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

3. Unplug the expansion valve coil connector, see "Component checklist" on page 163.

Figure 3-17: Removing expansion valve coil



1. Expansion valve coil
2. Expansion valve body

Installation

> **INFORMATION**
>
> Replace all cable ties that were cut during removal.

1. Proceed in reverse order.
2. When installing the expansion valve coil (1), lock it on the expansion valve body (2).

3.3.2.11. Replacing high pressure sensor

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.

PROCEDURE

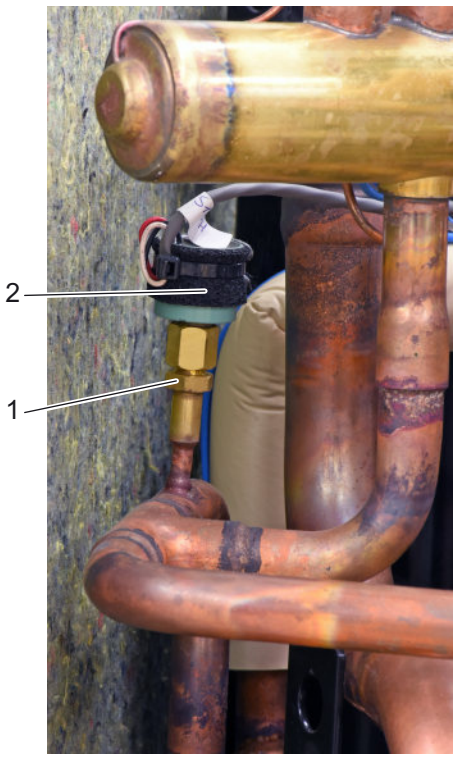
Removal

1. Unplug the high pressure sensor connector, refer to "Component checklist" on page 163.
2. Cut the cable ties that fix the high pressure sensor wiring.

⚠	**CAUTION** The nut (1) must be locked to prevent damage to the piping.

3. Lock the nut (1) with a 14 mm spanner.
4. Loosen and remove the high pressure sensor (2) with a 9/16” spanner.

Figure 3-18: Removing high pressure sensor



1. Nut
2. High pressure sensor

Installation

⚠	**CAUTION** The nut (1) must be locked to prevent damage to the piping.

1. Proceed in reverse order.

3.3.2.12. Replacing high pressure switch

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
5. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
6. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

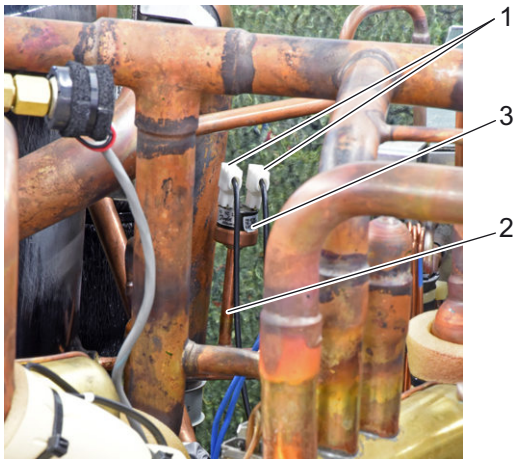
Removal

1. Unplug the high pressure switch Faston connector (1).

> **CAUTION**
> The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

2. Supply nitrogen to the piping circuit.
3. Heat the high pressure switch pipe (2) using an oxygen acetylene torch.
4. When the solder is liquid, pull the pressure switch (3).
5. Cut the nitrogen supply when the piping has cooled down.

Figure 3-19: Removing high pressure switch



1. Faston connector
2. High pressure switch pipe
3. High pressure switch

Installation

> **CAUTION**
> Overheating the high pressure switch will damage or destroy it.

1. Wrap a wet rag around the high pressure sensor.
2. Proceed in reverse order.

3.3.2.13. Replacing solenoid valve

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
5. Remove solenoid valve coil, refer to "Replacing solenoid valve coil" on page 127.
6. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
7. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

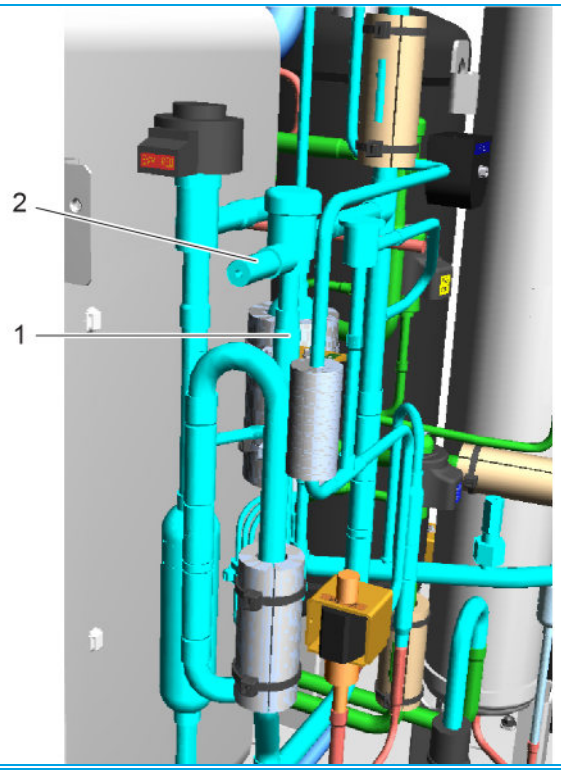
1. Cut the solenoid valve body pipes (1).
2. Remove the solenoid valve body (2).

CAUTION

The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

3. Supply nitrogen to the piping circuit.
4. Using an oxygen acetylene torch, heat the solder connections of the solenoid valve body pipes (1).
5. When the solder material is liquid, pull the solenoid valve body pipes (1).
6. Cut the nitrogen supply when the piping has cooled down.

Figure 3-20: Removing the solenoid valve body



1. Solenoid valve body pipe	2. Solenoid valve body

Installation

WARNING

Overheating the solenoid valve body (2) will damage or destroy it.

1. Wrap a wet rag around the solenoid valve body (2).
2. Proceed in reverse order.

3.3.2.14. Replacing solenoid valve coil

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.

PROCEDURE

Removal

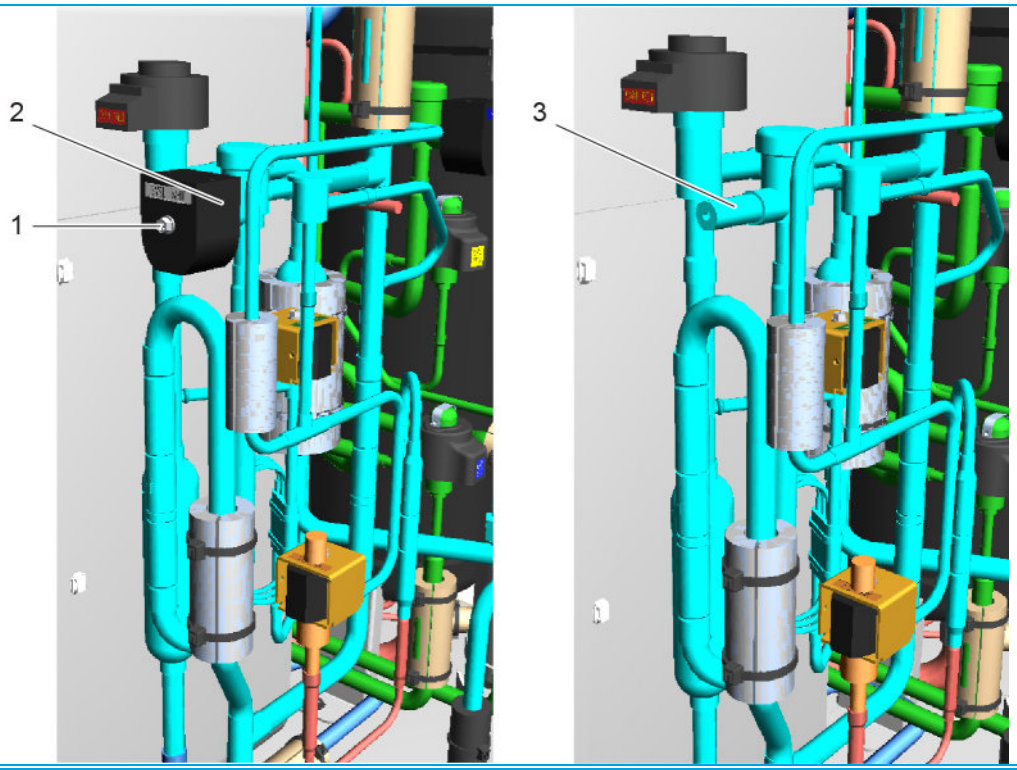
1. Loosen and remove the screw (1) that fixes the solenoid valve coil (2) to the solenoid valve (3).
2. Remove the solenoid valve coil (2) from the solenoid valve (3).
3. Cut all tie wraps that fix the solenoid valve coil (2) wiring.

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

4. Unplug the solenoid valve connector from the PCB, see "Component checklist" on page 163.

Figure 3-21: Removing the solenoid valve coil



1. Screw
2. Solenoid valve coil
3. Solenoid valve body

Installation

INFORMATION

Replace all tie wraps that were cut during removal.

1. Proceed in reverse order.

3.3.2.15. Replacing low pressure sensor

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.

PROCEDURE

Removal

1. Unplug the low pressure sensor connector, refer to "Component checklist" on page 163.
2. Cut the cable ties that fix the high pressure sensor wiring.

⚠	**CAUTION** The nut (1) must be locked to prevent damage to the piping.

3. Lock the nut (1) with a 14 mm spanner.
4. Loosen and remove the low pressure sensor (2) with a 9/16” spanner.

Figure 3-22: Removing low pressure sensor

1. Nut	2. Low pressure sensor

Installation

1. Proceed in reverse order.

⚠	**CAUTION** The nut (1) must be locked to prevent damage to the piping.

3.3.2.16. Replacing liquid receiver

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Refrigerant recovery procedure" on page 94.
4. Lower the switch box, refer to "Lowering switch box" on page 107.
5. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
6. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
7. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Loosen and remove the 2 screws (3) that fix the bracket (4) to the liquid receiver (2).
2. Loosen and remove the 2 screws (6) that oil separator to the liquid receiver (2).
3. Loosen and remove the 4 screws (5) that fix the liquid receiver (2).
4. Using a pipe cutter cut the 2 pipes (1) between soldering joint and the liquid receiver (2).
5. Using a pipe cutter cut the pipe (7) between soldering joint and the liquid receiver (2).
6. Remove the liquid receiver (2).

	**CAUTION** The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

7. Supply nitrogen to the piping circuit.
8. Heat the 3 pipes (1, 7) using an oxygen acetylene torch.
9. When the solder is liquid, remove the 3 oil separator pipes (1, 7).
10. Cut the nitrogen supply when the piping has cooled down.

Figure 3-23: Removing the liquid receiver

1. Liquid receiver pipe
2. Liquid receiver
3. Screw
4. Bracket
5. Screw
6. Screw
7. Liquid receiver pipe

Installation

1. Proceed in reverse order.

3.3.2.17. Replacing accumulator

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Lower the switch box, refer to "Lowering switch box" on page 107.
5. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.

	**CAUTION** The solenoid valve and coil (1) will be re-installed after replacing the accumulator. Do not cut the solenoid valve pipes, cut the oil return accumulator pipe.

6. Remove the solenoid valve, refer to "Replacing solenoid valve" on page 125.
7. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
8. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Using a pipe cutter, cut the 2 accumulator pipes (2) below the soldered joint.
2. Loosen the 3 screws (3) that fix the accumulator (4).
3. Remove the accumulator (4).

	**CAUTION** The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

4. Supply nitrogen to the piping circuit.
5. Heat the 2 accumulator pipes (2) using an oxygen acetylene torch.
6. When the solder is liquid, remove the 2 accumulator pipes (2).
7. Cut the nitrogen supply when the piping has cooled down.

Figure 3-24: Removing the accumulator

1. Solenoid valve with coil	3. Screw
2. Accumulator pipe	4. Accumulator

Installation

1. Proceed in reverse order.

3.3.2.18. Replacing plate heat exchanger H_2O

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
5. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
6. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

1. Isolate the plate heat exchanger H_2O (1) from the water circuit.
2. Drain the water from the plate heat exchanger H_2O (1).
3. Lift and detach the plate heat exchanger sub-Cool (2) from the plate heat exchanger H_2O plate (5).
4. Loosen and remove the 10 screws (3) that fix the plate heat exchanger H_2O plate (5).
5. Loosen and remove the 2 bolts and washers (4) that fix the plate heat exchanger H_2O (1) to the plate heat exchanger H_2O plate (5).
6. Remove the plate heat exchanger H_2O plate (5).

CAUTION

The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

7. Supply nitrogen to the piping circuit.
8. Heat the 2 plate heat exchanger H_2O pipes (6) using an oxygen acetylene torch.
9. When the solder is liquid, disconnect the 2 plate heat exchanger H_2O pipes (6).
10. Remove the plate heat exchanger H_2O (1) with the 2 plate heat exchanger H_2O pipes (6).
11. Cut the nitrogen supply when the piping has cooled down.
12. Separate the 2 plate heat exchanger H_2O pipes (6) from the plate heat exchanger H_2O (1).

Figure 3-25: Removing the plate heat exchanger

1. Plate heat exchanger H_2O
2. Plate heat exchanger sub-cool
3. Screws
4. Nut & washer
5. Plate heat exchanger H_2O plate
6. Plate heat exchanger H_2O pipe

Installation

1. Proceed in reverse order.

3.3.2.19. Replacing heat exchanger inverter cooling

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove plate work when required, refer to "Basic removal" on page 102.
4. Recover the refrigerant, refer to "Refrigerant recovery procedure" on page 94.
5. Connect a nitrogen hose to the gas service ports (HP/LP and suction).
6. Attach a hose with core-depressor to the liquid service port to allow the release of the nitrogen.

PROCEDURE

Removal

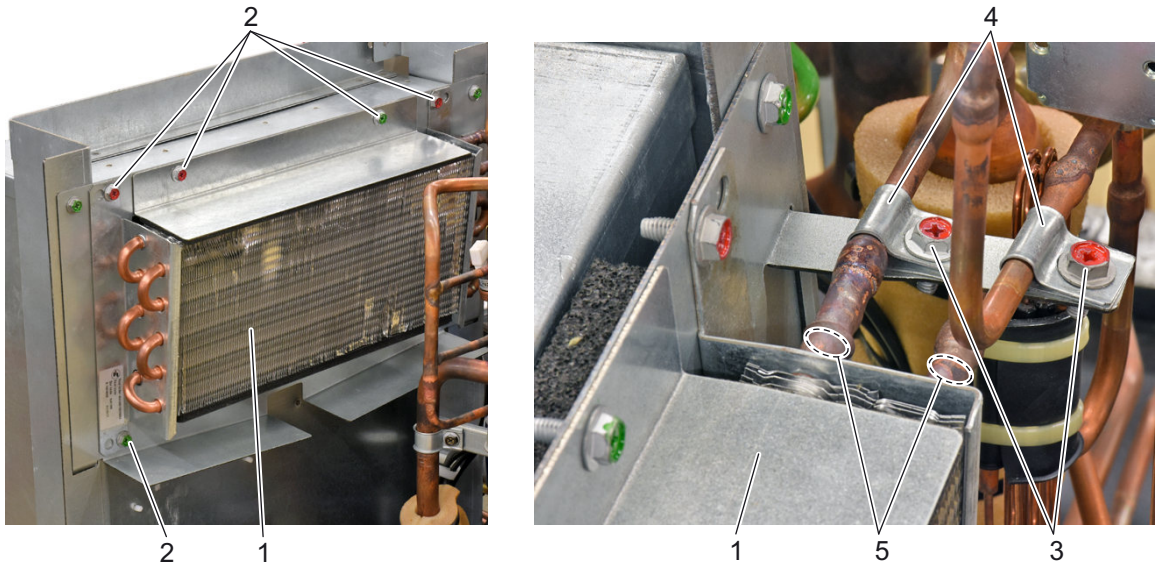
1. Loosen and remove the 6 screws (2) that fix the heat exchanger inverter cooling (1).
2. Loosen and remove the 2 screws (3) that fix the bracket (4).
3. Using a pipe cutter cut the 2 heat exchanger inverter cooling pipes (5).
4. Remove the heat exchanger inverter cooling (1).

CAUTION

The maximum applied Nitrogen pressure must not exceed 0.02 MPa.

5. Supply nitrogen to the piping circuit.
6. Heat the 2 heat exchanger inverter cooling pipes (5) using an oxygen acetylene torch.
7. When the solder is liquid, remove the 2 heat exchanger inverter cooling pipes (5).
8. Cut the nitrogen supply when the piping has cooled down.

Figure 3-26: Removing the heat exchanger inverter cooling



1. Heat exchanger inverter cooling
2. Screws
3. Screws
4. Bracket
5. Heat exchanger inverter cooling pipe

Installation

1. Proceed in reverse order.

3.3.2.20. Replacing reactor

PRELIMINARY ACTIONS

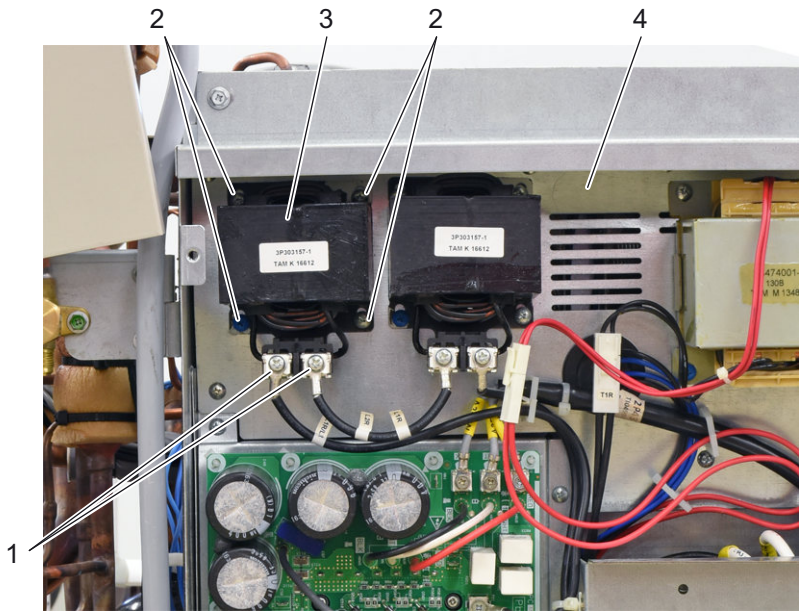
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

Removal

1. Loosen and remove the 2 screws (1) that fix the reactor wiring.
2. Loosen the 4 screws (2) that fix the reactor (3) to the switch box (4).

Figure 3-27: Removing the reactor



1. Screw	3. Reactor
2. Screw	4. Switch box

Installation

1. Proceed in reverse order.

3.3.2.21. Replacing transformer

PRELIMINARY ACTIONS

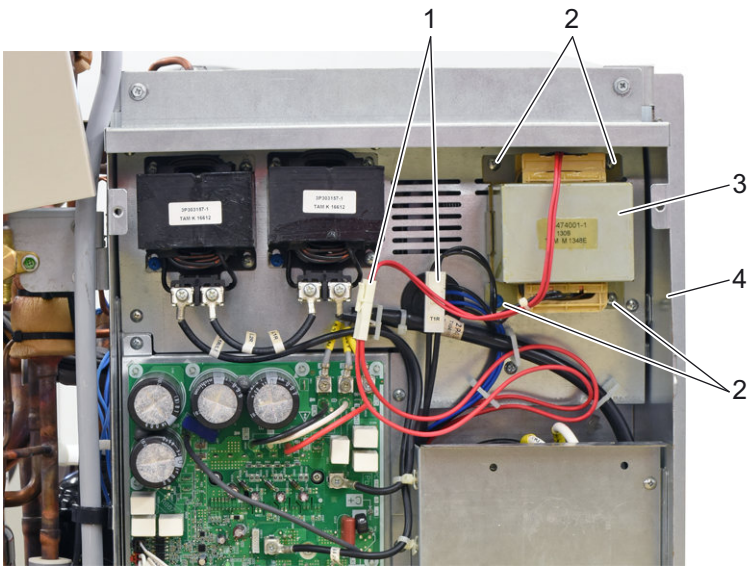
1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

Removal

1. Unplug the 2 connectors (1).
2. Loosen the 4 screws (2) that fix the transformer (3) to the switch box (4).

Figure 3-28: Removing the transformer



1. Connector	3. Transformer
2. Screw	4. Switch box

Installation

1. Proceed in reverse order.

3.3.2.22. Replacing inverter board A3P

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

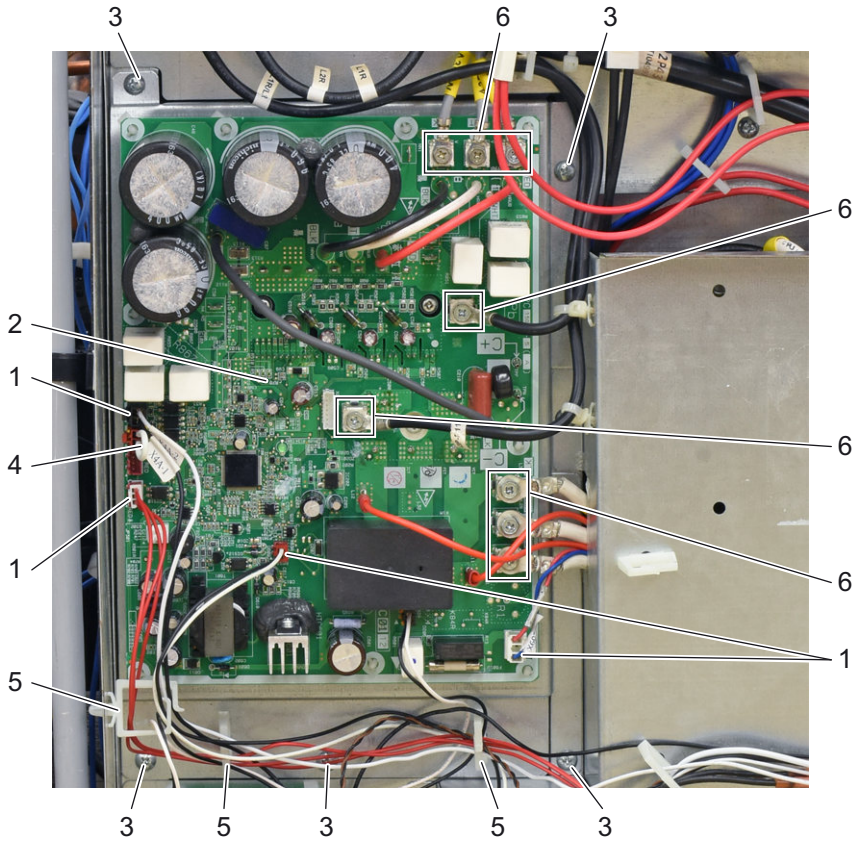
1. Unplug all connectors (1) from the inverter board (2), refer to "Component checklist" on page 163.
2. Remove the 8 screws (6) that fix the wiring to the inverter board (2).
3. Remove the wiring from the cable clamps (5).
4. Remove the 5 screws (3) that fix the inverter board (2).
5. Remove the inverter board (2) from the switch box (7).

INFORMATION

The jumper must be plugged on the spare inverter board, refer to "Component checklist" on page 163.

6. Unplug the jumper (4) from the inverter board (2).

Figure 3-29: Removing the inverter board A3P



1. Connector
2. Inverter board
3. Screw
4. Jumper
5. Cable clamp
6. Screw
7. Switch box

Installation

1. Proceed in reverse order.

3.3.2.23. Replacing main PCB A1P

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

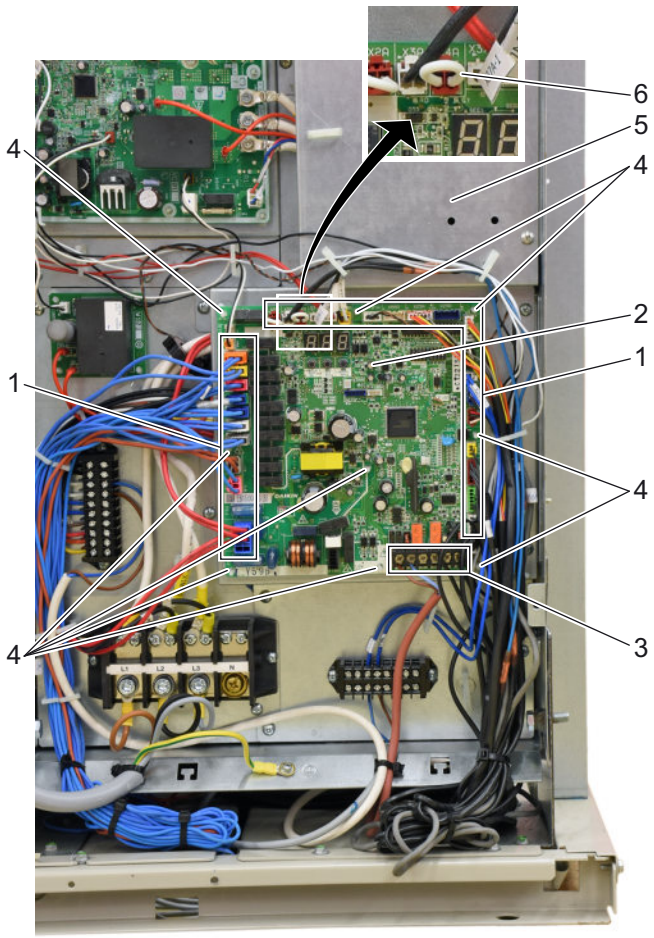
1. Unplug all connectors (1) from the main PCB (2), refer to "Component checklist" on page 163.
2. Remove the screws (3) that fix the wiring to the main PCB (2).
3. Unlatch all PCB stand-offs (4) that fix the main PCB (2).
4. Remove the main PCB (2) from the switch box (5).

INFORMATION

The jumper must be plugged on the spare main PCB, refer to "Component checklist" on page 163.

5. Unplug the jumper (6) from the main PCB (2).

Figure 3-30: Removing the main PCB A1P



1. Connector	4. PCB stand-off
2. Main PCB	5. Switch box
3. Screw	6. Jumper

Installation

1. Proceed in reverse order.
2. Set dip switch on main PCB “A1P” as follows:

   Ensure to change dip switches without power supply to Main PCB “A1P”

Table 3-6: DIP switch setting spare part PCB RWEYQ-T9Y1B (pcb ref. EB15004-14)

		DS1					DS2				Spare part only
Model-name	**Set**	-1	-2	-3	-4		-1	-2	-3	-4	**Setting method dip switches**
RWEYQ8T9Y1B	ON							■			DS2-2: ON (up)
	OFF	■	■	■	■		■		■	■	other dip switches OFF (down)
RWEYQ10T9Y1B	ON								■		DS2-3: ON (up)
	OFF	■	■	■	■		■	■		■	other dip switches OFF (down)
RWEYQ12T9Y1B	ON							■	■		DS2-2 + DS2-3: ON (up)
	OFF	■	■	■	■		■			■	other dip switches OFF (down)
RWEYQ14T9Y1B	ON									■	DS2-4: ON (up)
	OFF	■	■	■	■		■	■	■		other dip switches OFF (down)

3. If you turn the power back on, perform a re-initialization of the communication: hold the BS3 “Return” button for minimum 5 seconds. Check that the voltage at the terminals “F1F2 IN/D” changes few times between ±16 VDC and ±0 VDC. (Re-)initialization takes maximum 12 minutes. At the end of the initialization, the segment display goes off.

4. Perform a test run: after (re-)initialization is completed, press and hold BS2 “SET” till segment display indicates “t01”. Test run will take about 20 minutes.

   If you do not perform a test run, error U3-01 appears when turning on the indoor unit.

5. Test run is completed normally when segment display goes off.

3.3.2.24. Replacing noise filter PCB A2P

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

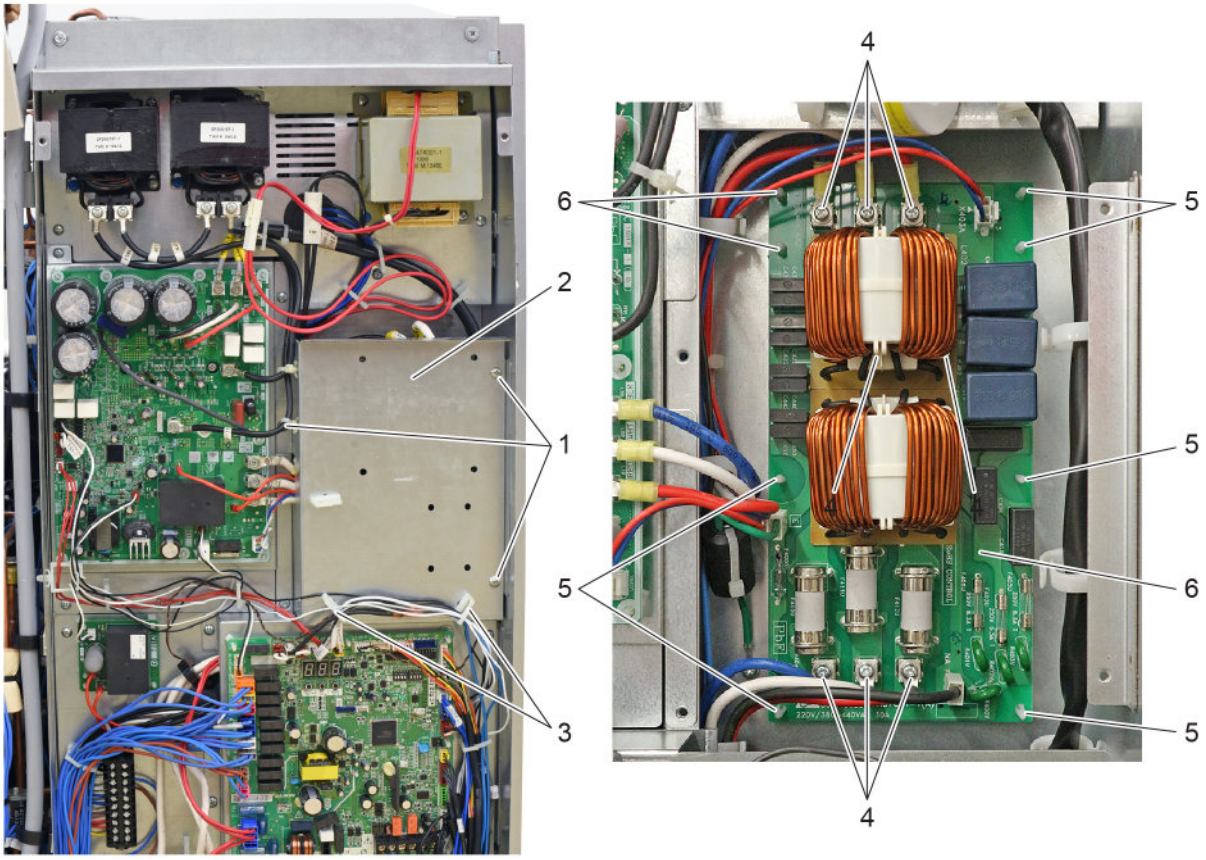
Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Loosen the 3 screws (1) that fix the mounting plate optional boards (2).
2. Remove the wiring from the cable clamps (3).
3. Turn the mounting plate optional boards (2) to the left.
4. Remove the 6 screws (4) that fix the wiring to the noise filter PCB (6).
5. Unlatch all PCB stand-offs (5) that fix the noise filter PCB (6).
6. Remove the noise filter PCB (6) from the switch box.

Figure 3-31: Removing the noise filter PCB A2P



1. Screw	4. Screw
2. Mounting plate optional boards	5. PCB stand-off
3. Cable clamp	6. Noise filter PCB

Installation

INFORMATION

Replace all cable ties that were cut during removal.

1. Proceed in reverse order.

3.3.2.25. Replacing SUB PCB A4P

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

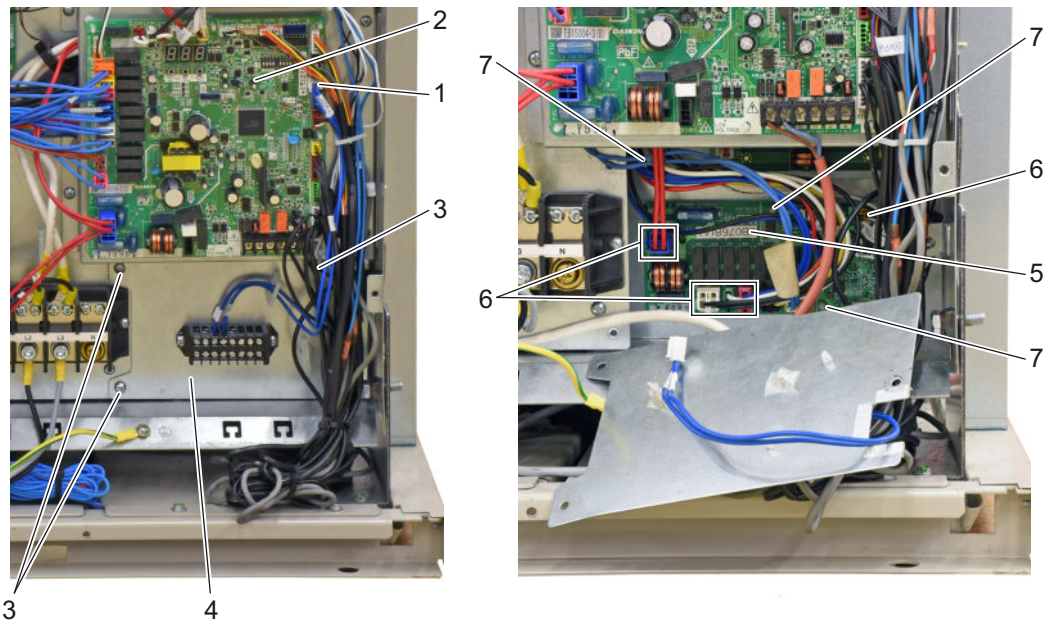
Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Unplug connector X36 (1) from the main PCB (2), refer to "Component checklist" on page 163.
2. Remove the 4 screws (3) that fix the mounting plate low voltage terminal block X2M (4).
3. Turn over and lower the mounting plate low voltage terminal block X2M (4).
4. Unplug the connectors (6) from the SUB PCB “A4P” (5), refer to "Component checklist" on page 163.
5. Unlatch the 6 PCB stand-offs (7) that fix the SUB PCB “A4P” (5).
6. Remove the SUB PCB “A4P” (5) from the switch box (8).

Figure 3-32: Removing the SUB PCB A4P



1. Connector X36
2. Main PCB
3. Screw
4. mounting plate low voltage terminal block X2M
5. Sub PCB “A4P”
6. Connectors
7. PCB stand-off
8. Switch box

Installation

1. Proceed in reverse order.

3.3.2.26. Replacing Adapter PCB A8P

PRELIMINARY ACTIONS

1. Switch off the Daikin unit via the user interface.
2. Switch off the Daikin unit with the field supplied circuit breaker.
3. Remove the main front plate, refer to "Removing main front plate" on page 102.
4. Open the switch box, refer to "Opening switch box" on page 108.

PROCEDURE

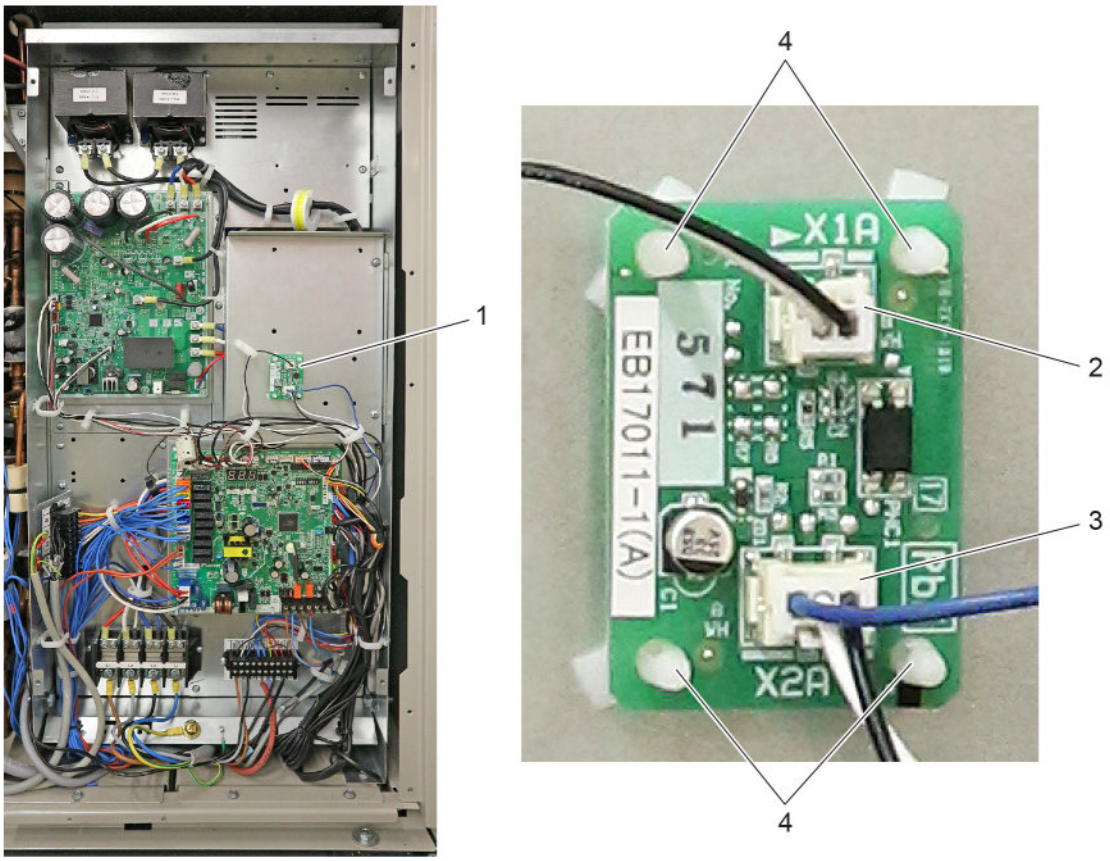
Removal

WARNING: RISK OF FIRE

When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Unplug connector X1A (2) and X2A (3) from the Adapter PCB “A8P” (1), refer to "Switch Box RWEYQ-T9Y1B" on page 167.
2. Unlatch the 4PCB stand-offs (4) that fix the Adapter PCB “A8P” (1).
3. Remove the Adapter PCB “A8P” (1) from the switch box.

Figure 3-33: Removing the Adapter PCB A8P



1. Adapter PCB A8P
2. Connector X1A
3. Connector X2A
4. PCB stand-off

Installation

1. Proceed in reverse order.

3.3.3. Branch Selector (BS) box

3.3.3.1. Replace control board BS box

PRELIMINARY ACTIONS

1. Switch off circuit breaker for power supply to BS unit.
2. Loosen and remove the 4 screws (1) that fix the BS box cover (2).
3. Lift the BS box cover (3) and remove it from the BS box.
4. Check power supply is disconnected: green LED be off, and check power supply terminals L-N = 0 VAC

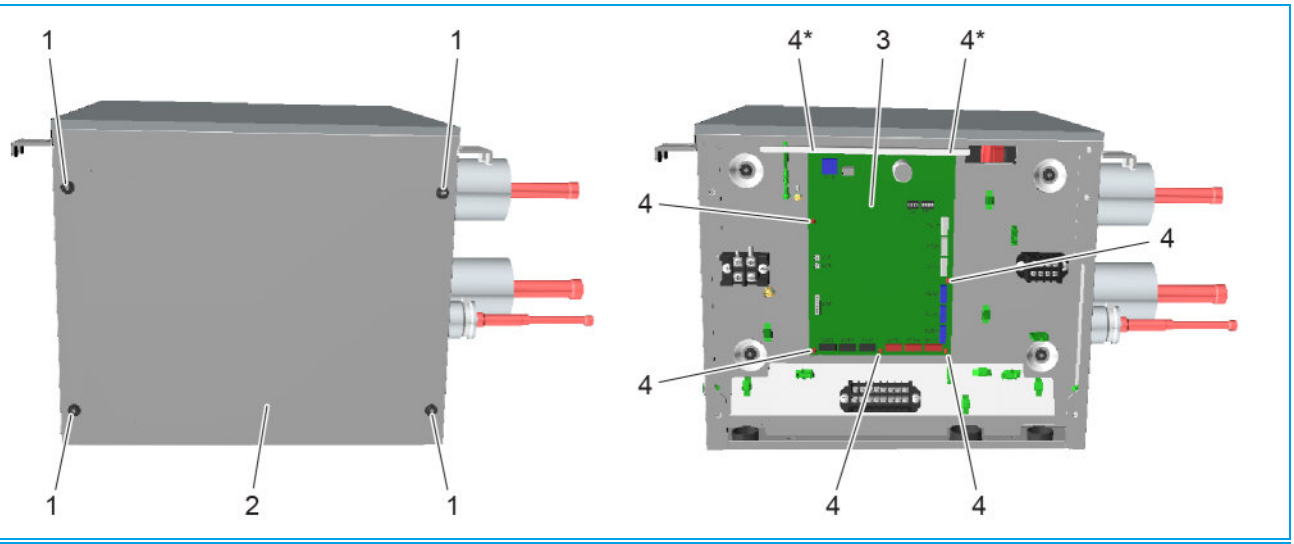
PROCEDURE

Removal

	**WARNING: RISK OF FIRE** When reconnecting a connector to the PCB, do not apply force, as this may damage the connector or connector pins of the PCB.

1. Unplug all connectors from the control board (3).
2. Unsnap the control PCB carefully from its 7 PCB stand-offs (4).
3. Remove the control board (3) from the BS box.

Figure 3-34: Removing the control board PCB (e.g. for BS box BS4Q14A)



1. Screw	3. Control board
2. BS box cover	4. PCB stand-off (* stand-off not visible)

Installation

1. Proceed in reverse order.

3.3.3.2. Replacing expansion valve coil BS box

PRELIMINARY ACTIONS

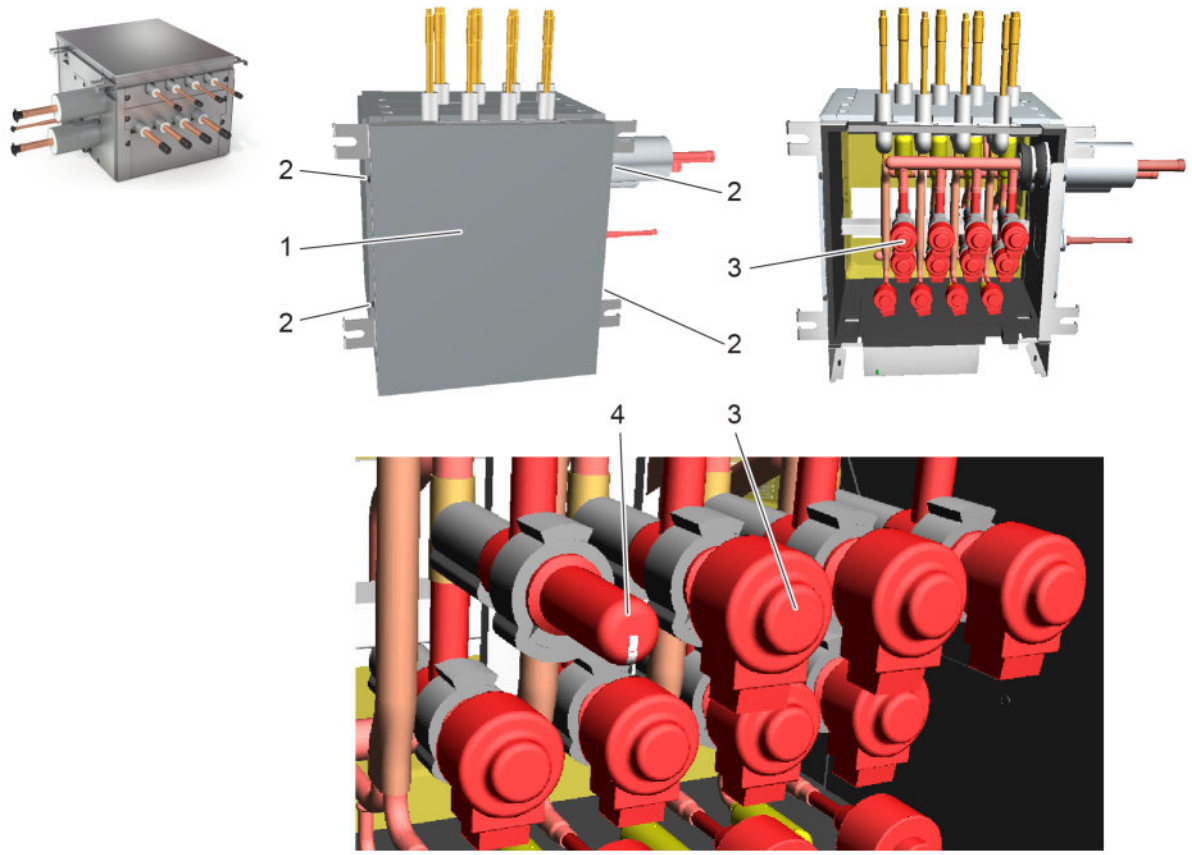
1. Remove the 4 screws (2) that fix the top panel (1).
2. Remove the top panel (1).

PROCEDURE

Removal

1. Locate the expansion valve coil (3)
2. Unlock the expansion valve coil (3) turning clockwise or counter clockwise.
3. Remove the expansion valve coil (3) from the expansion valve (4)

Figure 3-35: Removing expansion valve coil (e.g. for BS box BS4Q14A)



1. Top panel	3. Expansion valve coil
2. Screw	4. Expansion valve

Installation

1. Proceed in reverse order.