



Brazed Plate Heat Exchanger replacement process

SandenVendo September 2021

This document presents the main steps for replacing the plate exchangers of a Sanden Condensing unit CDU-L with 2 plate exchangers
In a CDU-M unit, the process is similar but with only 1 plate exchanger

References:

Type	Model
CDU-L	R06A2A R06A2B R06A2C
CDU-M	R04A1A R04A1B R04A1C R04A1D

100% CO2 Condensing units

ECO-FRIENDLY REVOLUTION

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Plates Heat Exchanger replacement process

1. Remove all panels (right side + front + rear panel , and top panel)
2. Empty the refrigerant R744:
 - Loops A and B: first by the suction valves, then by the supply valves.
 - Loop C: gently cut the sealed charge tube on the LP side (see next pages)
3. Check the absence of pressure on the A/B and C loops (Ps and Pd reading parameters, CLA/CLb and CHC Pd=0 and Ps=0)
4. Turn off the condensing unit
5. Marking the cables (see next pages)
6. Disconnect and remove the cables in front of the exchangers.
Remove tube insulation, etc. (See next pages)
7. Unsolder the plate exchangers and remove the assembly (See next pages)
8. Prepare the new plate heat exchanger assembly. (See next pages)
Set up the new assembly and secure it with the bracket.
9. Soldering with nitrogen flux:
 - All connections of the plate heat exchanger assembly
 - Replace Loop C service tube (Schrader ¼' CO2 trans critical valve)
10. Leakage test at 80 bar from all loops, check brazing (see guide for piping work and start-up)
11. Reassemble the insulation and reconnect the cables (See next pages)
12. Turn on the condensation unit
13. Vacuum of all loops for 3 hours
14. Load R744:
 - Loops A and B: initial loads determined at commissioning
 - Loop C: see table opposite
15. Restart the entire installation, make sure it is working properly.
16. Close the panels

Reference CDU-L	Reference CDU-M	Load R744 Loop C
R06A2A R06A2B	R04A1A R04A1B	380gr
	R04A1C R04A1D	400gr
R06A2C		420gr

Plates Heat Exchanger replacement process

2. Release R744 from loop C

Gently cut the C-loop charging tube on the LP side with a clamp to release the R744



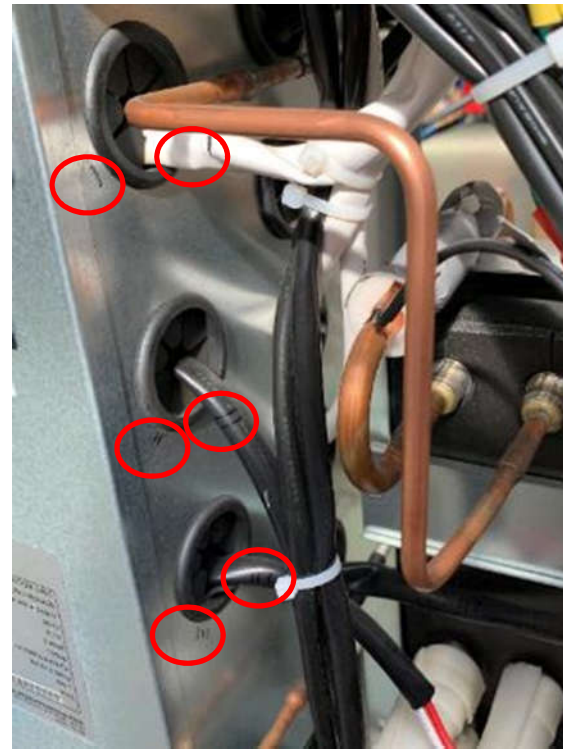
Plates Heat Exchanger replacement process

4. Marking of cables

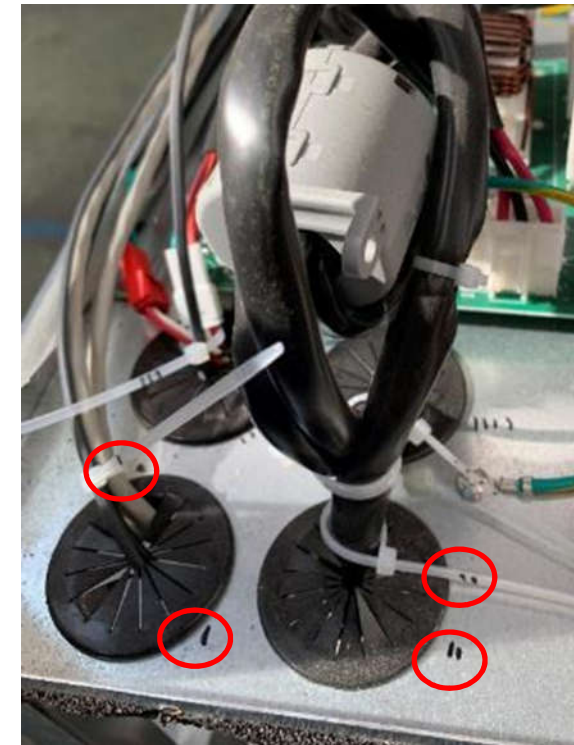
It is strongly recommended to mark the different cables and take pictures before removing them. This is to avoid errors in rewiring.



Initial position



Marking example



Marking example

Plates Heat Exchanger replacement process

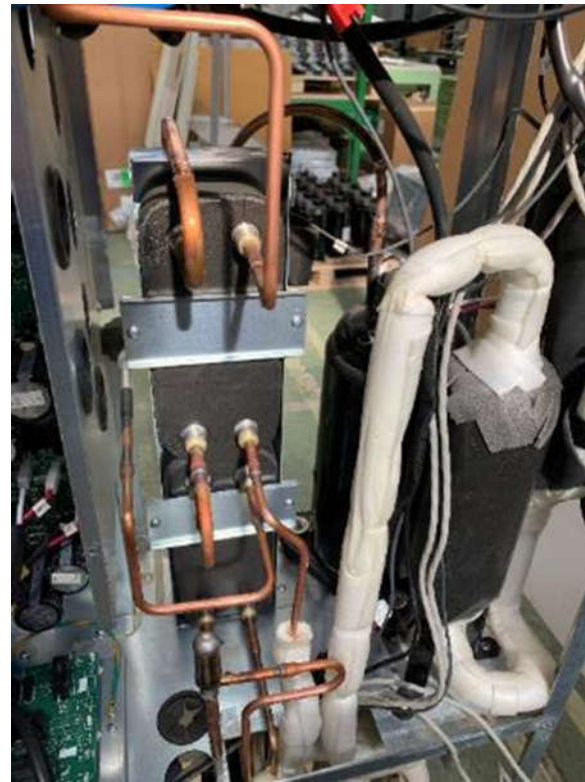
5. Disconnect and remove the cables in front of the exchangers.
Remove tube insulation, etc...

Necessary to disconnect the cables:

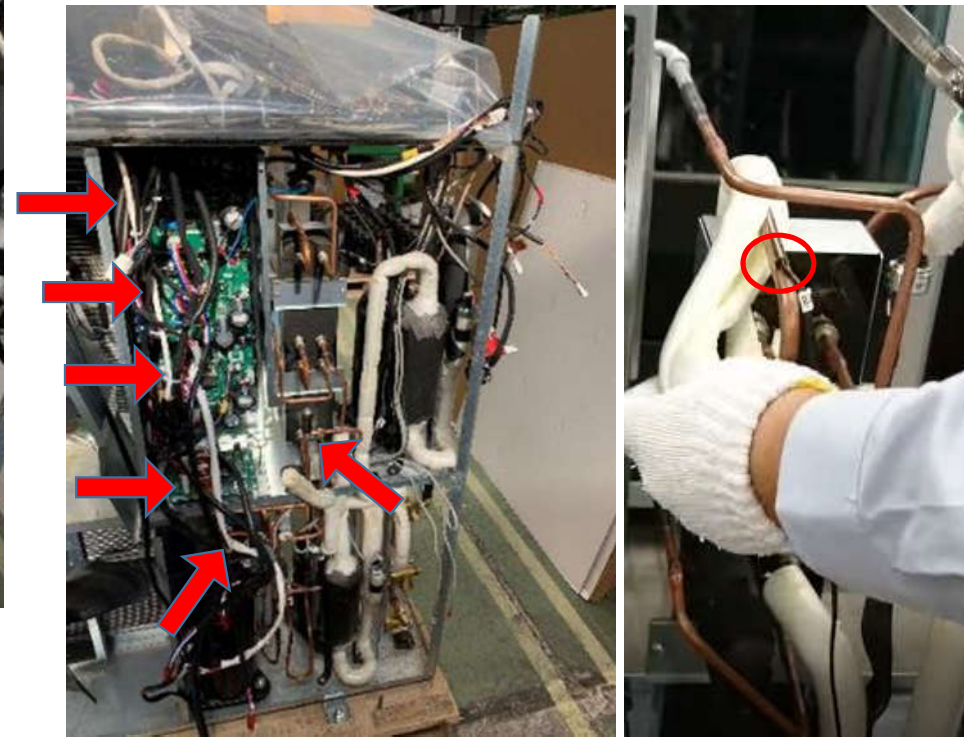
- of inverter PCBs,
- of filter PCB (below inverters),
- of expansion valve (EEV) of the Loop C,
- of compressors.
- of temperature sensors



Before disconnecting and removing cables



After disconnecting and removing cables

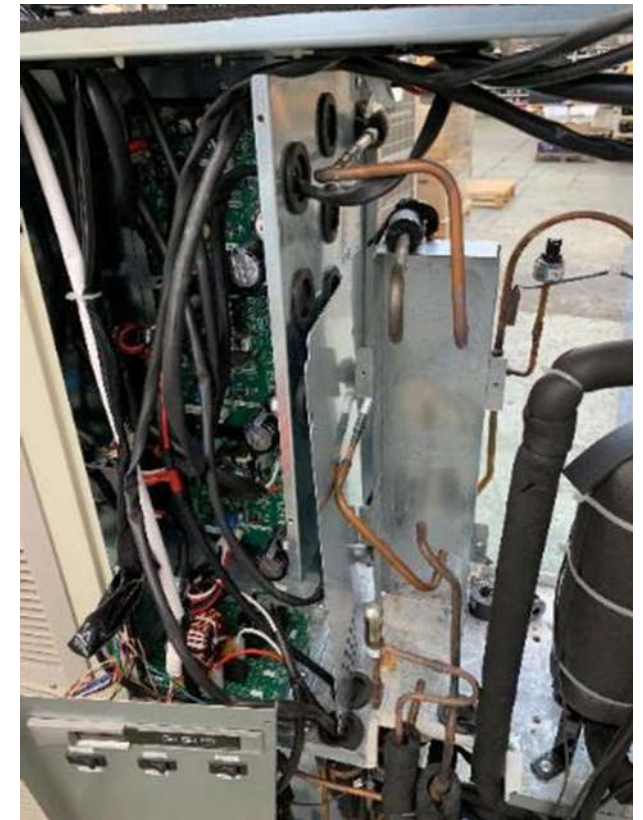
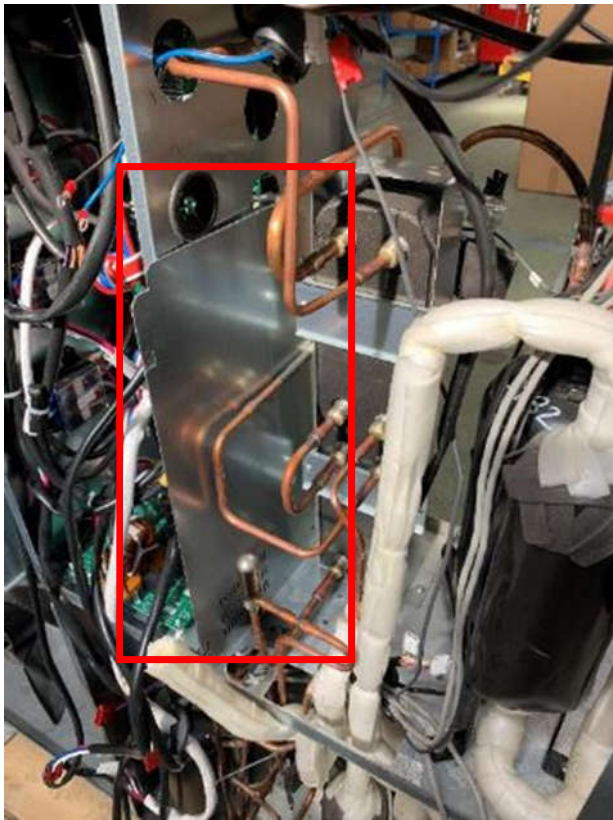


Plates Heat Exchanger replacement process

6. Unsoldering the plate exchangers and remove the assembly.

Place the shield plates and wet wipes needed for the unsoldering/soldering phase.

- Unsolder at the heat exchanger copper sleeves.
- Keep the U-tube between the heat exchangers
- Remove the heat exchanger fixing brackets
- Remove Exchanger Assembly from housing



Plates Heat Exchanger replacement process

7. Prepare the new plate heat exchanger assembly.

- Separate the exchangers and then solder the new ones to the same position using the U-tube
- Return the unit to its housing in the machine



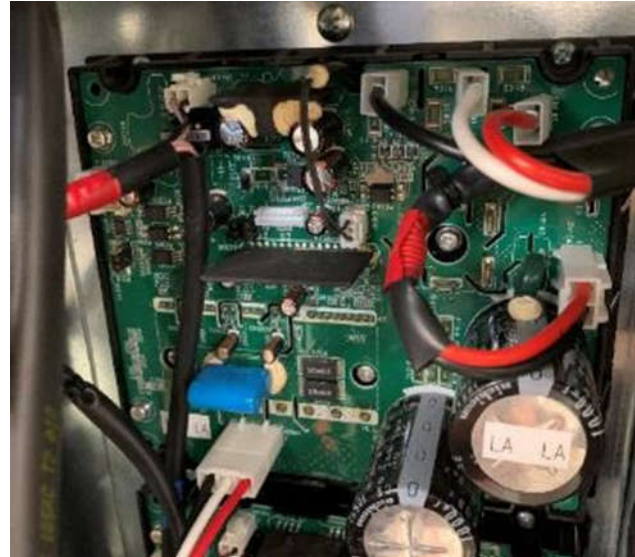
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10. Reinstall the insulation on the tubes
Reconnect the cables



CN10 - CN11 - CN12
Red - White - Black

Wiring PCB Filter
NFU-4SCR2



CN102 - CN101 - CN100
Black - White - Red

Wiring
PCB Inverter INV-SCRM1A



(R)	(S)	(T)	(N)	Communication
Red	White	Black	Blue	White - Red - Black

White - Black	/	White - White	-	Orange - Orange
Alarm		/		Cooling signal (A), (B)

Wiring Power
terminal blocks