WAECO

AirCon Service

ASC 7.3, 7.4

EN **A/C service unit**
Operating Manual.....

Copyright

English

Please read these instructions carefully and follow all instructions, guidelines, and warnings included in this product manual in order to ensure that you install, use, and maintain the product properly at all times. These instructions MUST stay with this product.

By using the product, you hereby confirm that you have read all instructions, guidelines, and warnings carefully and that you understand and agree to abide by the terms and conditions as set forth herein. You agree to use this product only for the intended purpose and application and in accordance with the instructions, guidelines, and warnings as set forth in this product manual as well as in accordance with all applicable laws and regulations. A failure to read and follow the instructions and warnings set forth herein may result in an injury to yourself and others, damage to your product or damage to other property in the vicinity. This product manual, including the instructions, guidelines, and warnings, and related documentation, may be subject to changes and updates. For up-to-date product information, please visit documents.dometic.com.

2 Cyber security

We confirm that this product meets the requirements of the Security and Telecommunications Infrastructure regulation (UK). You can find the statement of compliance on https://www.dometic.com. To report a security incident, send an email to https://www.dometic.com/contact.

3 Target Group

Only people that have proven understanding to identify and avoid the hazards involved may operate and maintain the A/C service unit. This knowledge maybe gathered by any appropriate training or supervision.

4 Hotline

If you need more information on the A/C service unit that is not contained in this manual, please contact the hotline: Tel.: +49 (0) 2572 879-0

5 Explanation of symbols

A signal word will identify safety messages and property damage messages, and also will indicate the degree or level of hazard seriousness.

WARNING!
Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION!
Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE!
Indicates a situation that, if not avoided, can result in property damage.

NOTE Supplementary information for operating the product.

6 Safety instructions

WARNING! Failure to obey these warnings could result in death or serious injury.

- Observe national work safety regulations.
- Observe the safety instructions in this operating manual.
- The A/C service unit may only be used by personnel who are able to demonstrate the appropriate specialist training and are familiar with the operation and basic principles of the A/C service unit, of air conditioning systems and of refrigerants.
- The A/C service unit may only be repaired by personnel authorized by Dometic.
- Only use the device for its intended purpose.

CAUTION! Failure to obey these cautions could result in minor or moderate injury.

- Do not make modifications to the A/C service unit.
- Risk of injury from bursting components if the permitted temperature limits are exceeded: Only transport the A/C service unit without refrigerant to avoid excess pressure.
- The A/C service unit may not be stored outdoors.
- Store the service hoses in the hose pocket when the A/C service unit is not in use.

6.1 Operating the device safely

WARNING! Failure to obey these warnings could result in death or serious injury.

- Do not operate the A/C service unit in areas where there is a risk of explosion (for example, battery charging rooms or spraying booths). Operate only according the respective national health and safety regulations.
- Do not pump compressed air into the refrigerant lines of the A/C service unit or the vehicle air conditioning system. A mixture of compressed air and refrigerant can be flammable or explosive.
- Risk of injury due to unplanned or unintended switching on of the A/C service unit: Switch off the A/C service unit prior to all maintenance work and disconnect the mains cable from the mains supply. Pull the plug from the socket or from the A/C service unit.
- Risk of burns from cold or hot components: Wear protective gloves.

CAUTION! Failure to obey these cautions could result in minor or moderate injury.

- Do not start up the A/C service unit if it is damaged.
- Each time you start up or top up the A/C service unit, first check whether the A/C service unit and all the service hoses are undamaged and that all valves are closed.
- Lay the service hoses in such a way that they pose no tripping hazard for other persons.
- Serious injuries due to overturning or falling load: The handle is not used to lift the A/C service unit. Only push the A/C service unit on rollers to transport it.
- Always position the A/C service unit on level ground and secure the wheels.
- Only use approved refrigerant vessels with safety valves to refill the A/C service unit.
- Always use the main switch of the A/C service unit to switch it on and off. Do not leave the device unattended when it is switched on.
- Risk of injury from leaking fluids: Leaking fluids on the floor can cause persons to slip and injure themselves. Wipe up leaked or dripped fluids immediately or absorb them with a suitable binding agent. Dispose of them in an environmentally sound manner.

NOTICE! Indicates a situation that, if not avoided, can result in property damage.

- Never expose the A/C service unit to heavy moisture.
- Do not operate the A/C service unit outdoors when it is raining.
- Do not operate the A/C service unit near heat sources (such as heaters) or in direct sunlight.
- Only use the refrigerant that you have set in the A/C service unit. If other refrigerants are mixed in, this can damage the A/C service unit and the vehicle air conditioning system.
- Before you shut down the A/C service unit, make sure that the selected program has ended and that all valves are shut. Otherwise refrigerant can leak.
- When you modify values in the menus, always compare them with the specifications on the vehicle.
- When parking, use the brake lever on the front wheels to secure the A/C service unit from rolling away.

6.2 Handling the refrigerant safely

WARNING! Failure to obey these warnings could result in death or serious injury.

Do not carry out maintenance work on the vehicle air conditioning system when the engine is at operating temperature. When performing maintenance on the vehicle air conditioner, the surface temperature of attachment parts or surrounding parts must be less than the refrigerant's flashpoint:

- R1234yf: 405°C
- R134a: 743°C
- R456A: not applicable
- R513A: not applicable

CAUTION! Failure to obey these cautions could result in minor or moderate injury.

› Wear personal safety equipment (safety goggles and protective gloves) and avoid coming into contact with the refrigerant. Contact with the refrigerant draws out body heat and the affected areas can freeze.
› Do not inhale refrigerant vapor. Although the vapor is non-toxic, it displaces the oxygen you need to breathe.
› Only use the device in well-ventilated areas.
› Refrigerant may not be used in low-lying spaces such as assembly pits or soakaways. Refrigerant is heavier than oxygen and therefore displaces the air you need to breathe. This can cause a lack of oxygen when working in unventilated assembly pits.

NOTICE! Indicates a situation that, if not avoided, can result in property damage.

› Make sure that refrigerant is not able to escape and leak into the environment during operation, when filling or draining refrigerant or during repair and service work. This will protect the environment. It also avoids the difficulty or impossibility of detecting leaks in the vehicle or in the A/C service unit due to the presence of refrigerant in the vicinity of the A/C service unit.
› Take suitable precautions to ensure that leaking refrigerant is not able to get into the drainage system.

NOTE Supplementary information for operating the product.
Special information on the refrigerant and safety measures as well as the protection of personnel and objects, including fire protection, can be found in the safety sheets of the refrigerant manufacturer.

6.3 Safety measures by the operator

The operator must provide operating instructions according to respective national regulations for each A/C service unit. These operating instructions must be used to train personnel in handling the A/C service unit.

The operator must ensure that personnel are instructed in the following points at least once a year:

- Special dangers when dealing with compressed gases
- Safety guidelines when dealing with compressed gases
- Health precautions when dealing with compressed gases
- Operating the A/C service unit and performing service work on the A/C service unit

The operator must ensure that personnel appointed to perform service and repair work as well as leak inspections are certified to deal with refrigerant and filling systems.

Certification and knowledge of the applicable guidelines and standards can be acquired from a training course at a chamber of trade, chamber of industry and commerce or at any other recognized training facility.

The system operator must ensure that all service hoses are laid in such a way that they cannot be damaged when the A/C service unit is used.

7 Warnings on the A/C service unit

	Observe the operating manual.
	Wear goggles when handling refrigerants.
	Wear gloves when handling refrigerants.
	Protect the A/C service unit against rain.

8 Scope of Delivery

The A/C service unit was tested for leaks before shipping.

After delivery, check that all the parts listed below are present and undamaged.

If any parts are missing or damaged, notify the company responsible for transport immediately.

Description
A/C service unit

NOTICE! Damage hazard

› For safe operation and calibration a refrigerant (R1234yf, R134a, R456A, R513A; not in scope of delivery) is required.

› Refrigerant vessels are supplied with various connecting threads and adapters; these are not in the scope of delivery.

9 Accessories

Available as accessories (not included in the scope of delivery):

Description	Ref. no.
Hose kit R134a/R456/R513A ASC7k (3 m)	8885500019
Hose kit R134a/R456/R513A ASC7k (5 m)	8885500020
Hose kit R134a/R456/R513A ASC7k (8 m)	8885500021
Hose kit R1234yf ASC7k (3 m)	8885500022
Hose kit R1234yf ASC7k (5 m)	8885500023
Hose kit R1234yf ASC7k (8 m)	8885500024
Dryer filter ASC S7k	4440400012
Spare printer roll (thermal paper) (4 pieces)	4445900088
Vacuum pump oil (500 mL)	8887200081
Printer ASC S7k	8885200327
Goggles/gloves	4445900107

10 Intended use

The A/C service unit is intended for performing maintenance on vehicle air conditioning systems. The A/C service unit is intended for commercial use.

The A/C service unit may only be used to service vehicle air conditioning systems in which one of the following refrigerants is used:

- R1234yf
- R134a
- R456A
- R513A

The A/C service unit is only suitable for approved operating fluids.

This product is only suitable for the intended purpose and application in accordance with these instructions.

This manual provides information that is necessary for proper installation and/or operation of the product. Poor installation and/or improper operation or maintenance will result in unsatisfactory performance and a possible failure.

The manufacturer accepts no liability for any injury or damage to the product resulting from:

- Incorrect installation, assembly or connection, including excess voltage
- Incorrect maintenance or use of spare parts other than original spare parts provided by the manufacturer
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in this manual

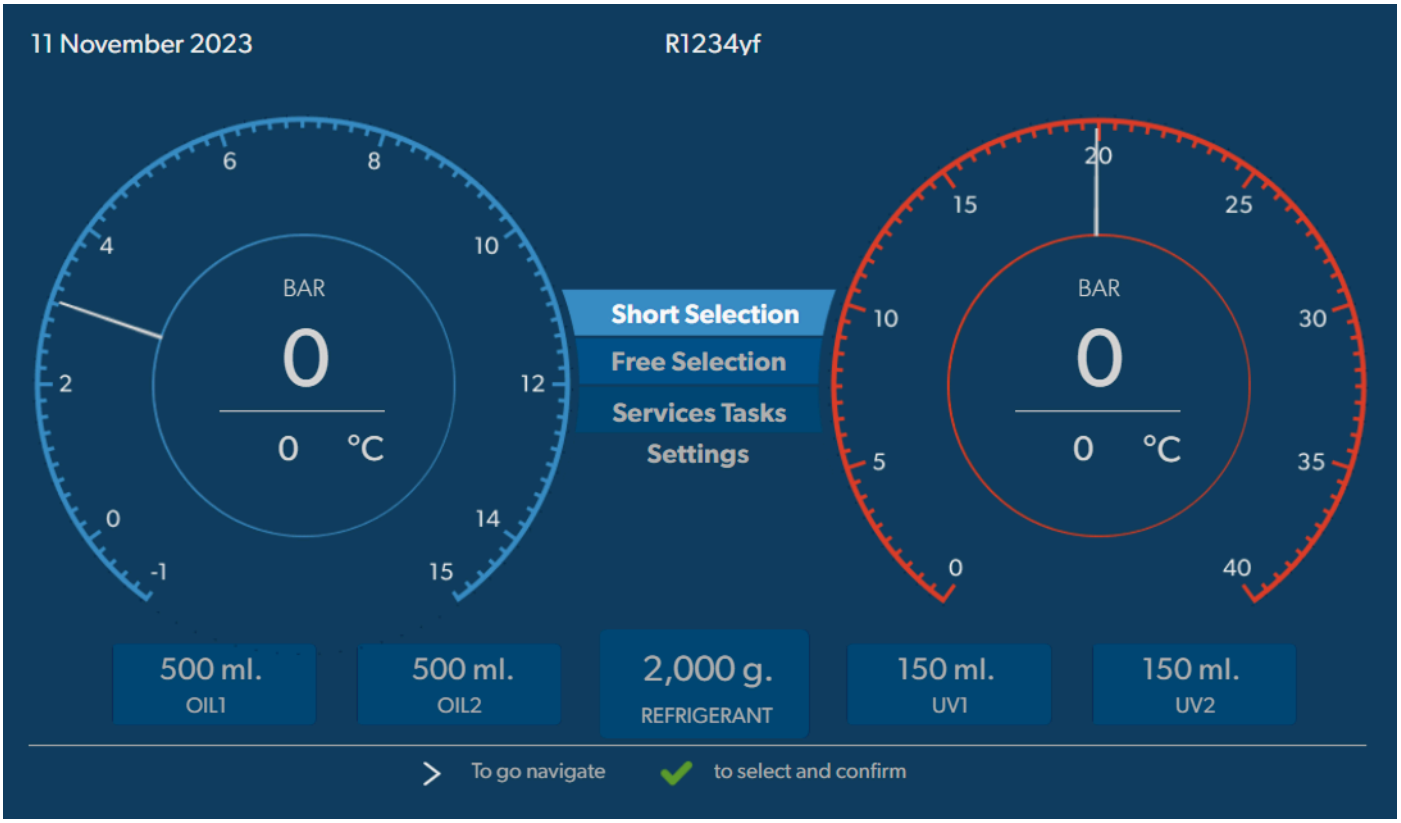
Dometic reserves the right to change product appearance and product specifications.

11 Technical description

11.1 Safety devices

- Pressure monitor: Switches the compressor off if normal operating pressure is exceeded.
- Pressure relief valves: Additional safety mechanism to protect lines or vessels from bursting if the pressure continues to rise despite the safety pressure monitor.
- Fan monitor: Checks the fans work properly at start-up.

11.2 Basic menu



The basic menu shows the following information:

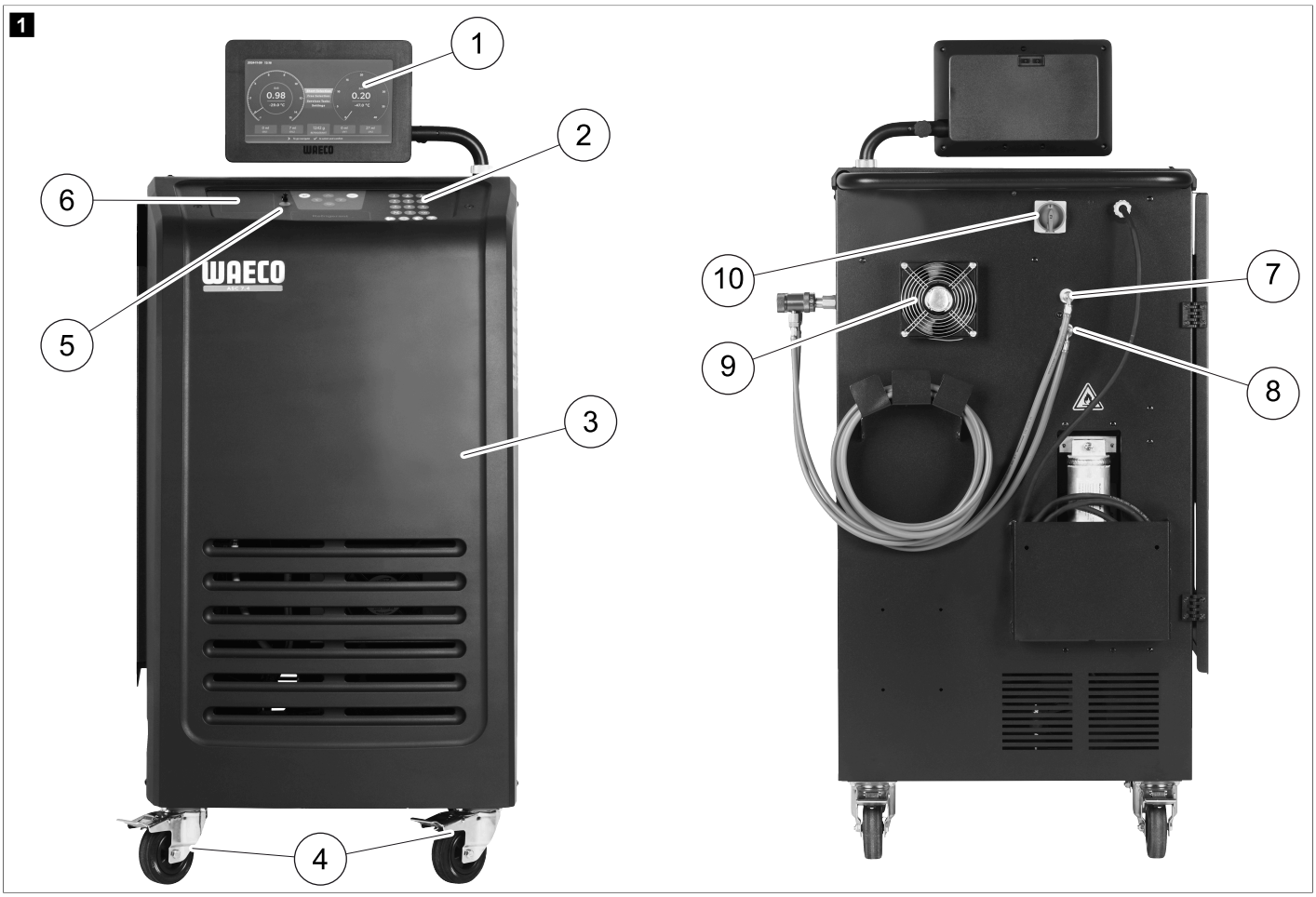
- Refrigerant
- Refrigerant quantity
- Fresh oil quantity
- UV additive quantity
- Time
- Date
- If connected, system pressure

The basic menu is shown when the device is in standby.

The basic menu also is the start menu to the following functions:

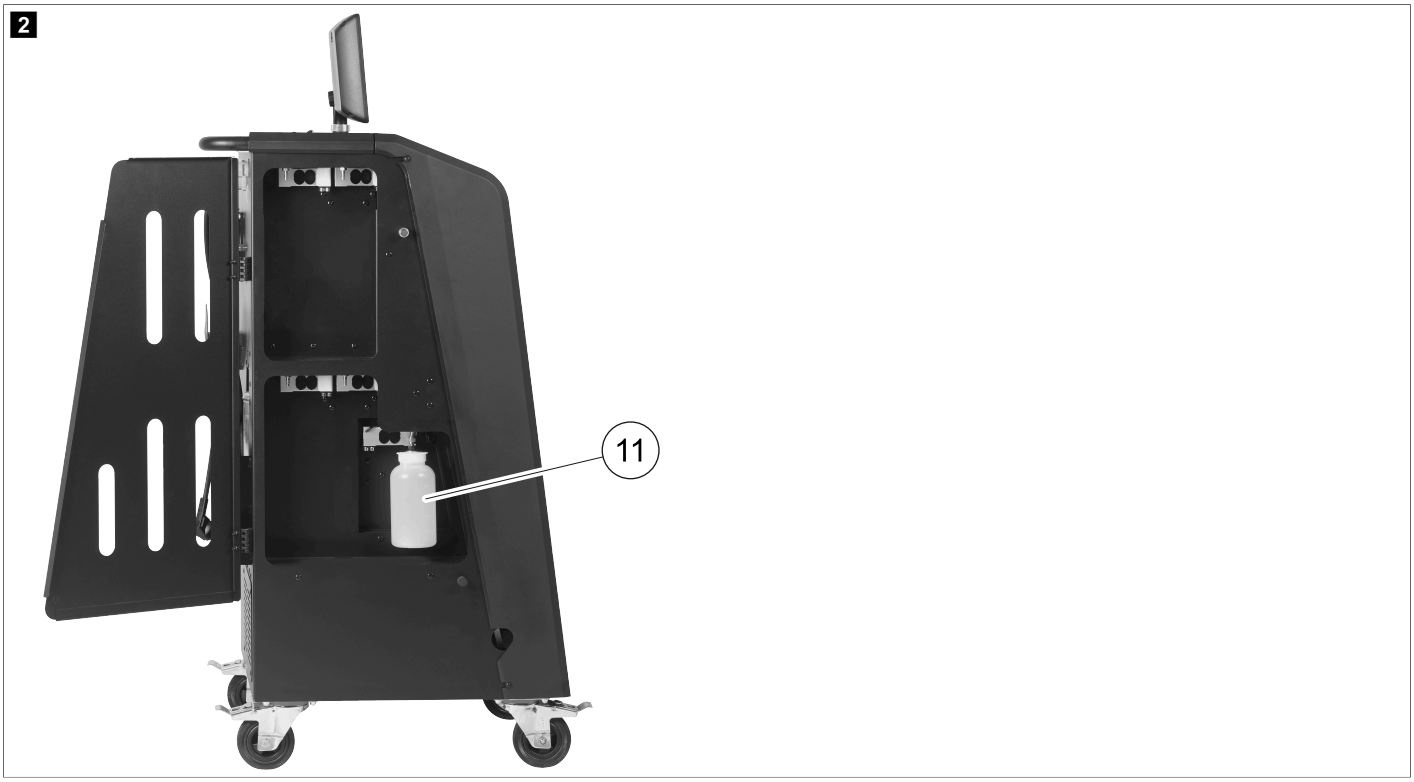
- `Short Selection`
- `Free Selection`
- `Service Tasks`
- `Settings`

12 Overview of the A/C service unit



1 Display
2 Keypad
3 Front cover
4 Front wheels with wheel stops
5 USB port
6 Printer (optional)
7 Service coupling for low pressure connection (blue)
8 Service coupling for high pressure connection (red)
9 Fan
10 Main switch

2



11 Drained oil receptacle

NOTE The drained oil receptacle must be installed. Otherwise the A/C service unit does not start correctly.

13 Using the display

The display shows status information and, if applicable, the name of menus you can open. Settings and values are entered in the corresponding menus. Chosen values are highlighted. Each menu on the display shows at the bottom the possible options to end the settings. In many menus the display shows the instructions that have to executed. These instructions are not listed in this manual.

To enter values or text use the keypad of the device and the cursor keys. To switch between upper and lower case press the key. To delete a character press the key. To delete the current line press and hold down the key.

› To navigate on the display and to choose values and settings use the , , , cursor keys.
› Press the button to select and confirm values and settings, to continue to the next display, or to start a process.
› Press the button briefly to go back to the previous display.
› Press and hold the button to cancel the current setting. The previous menu is opened.

14 Initial start-up

This chapter describes the procedures you have to carry out before you can operate the A/C service unit.

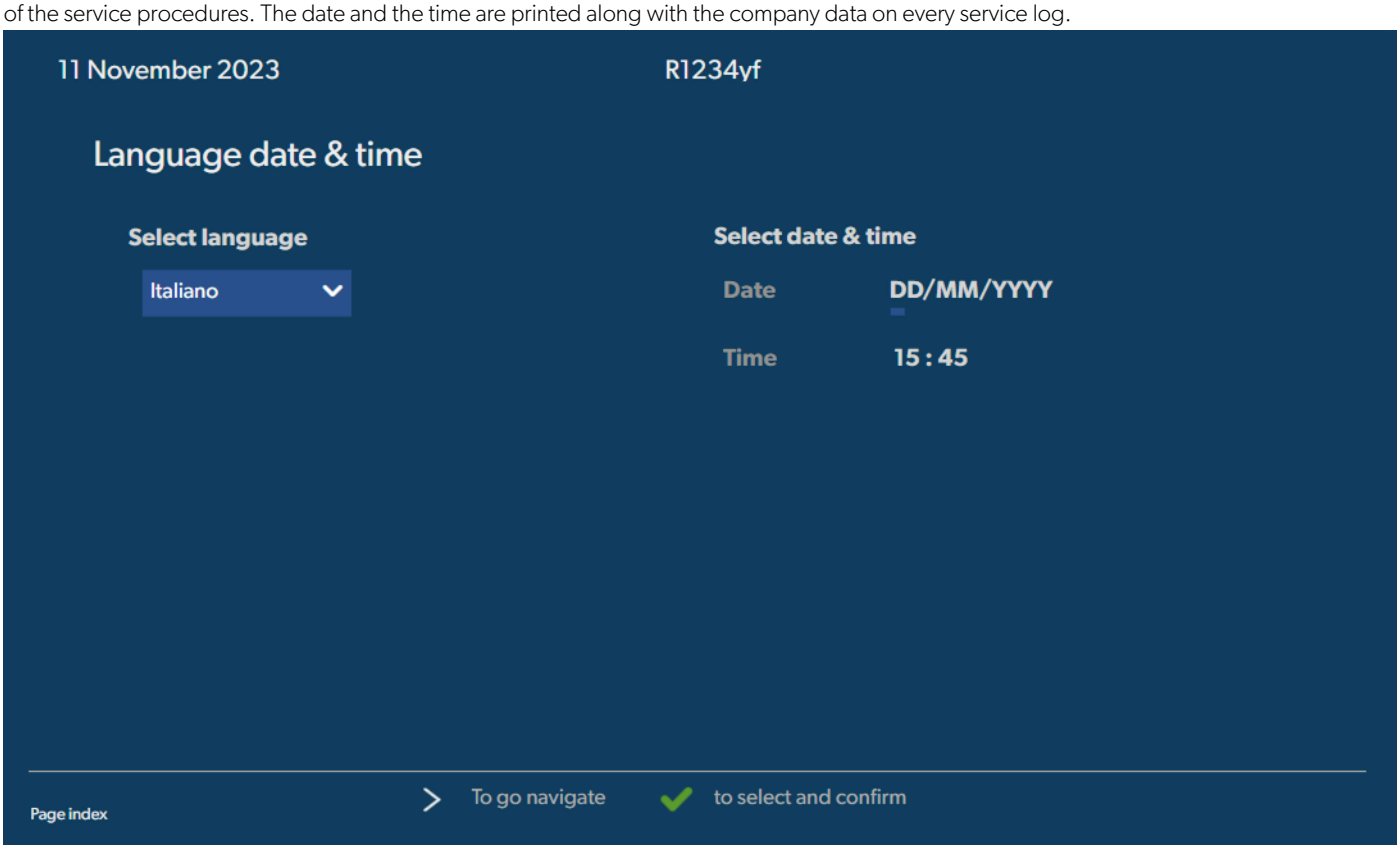
14.1 Setting up and switching on

NOTE In order to achieve correct measurements, the A/C service unit must be placed on a level flat surface during operation. Ignore any error codes which occur during commissioning (Troubleshooting on page 34) and skip by pressing .

1. Wheel the A/C service unit to the workplace and lock the front wheels.
2. Mount the service hoses.
3. Set the length of the service hoses (Setting the length of the service hoses on page 12).
4. Connect the A/C service unit to the power supply.
5. To switch the A/C service unit on, set the main switch to I.
   ˅ The switch-on delay runs for 35 s and the housing is ventilated. The status information is shown on the display for several seconds.
6. Once the start-up procedure is complete, the A/C service unit requires the selection of the refrigerant (Selecting the refrigerant on page 12).

14.2 Setting the language and date and time

The A/C service unit displays the language and date and time setting menu. Date and time are required for logging of the service procedures. The date and the time are printed along with the company data on every service log.



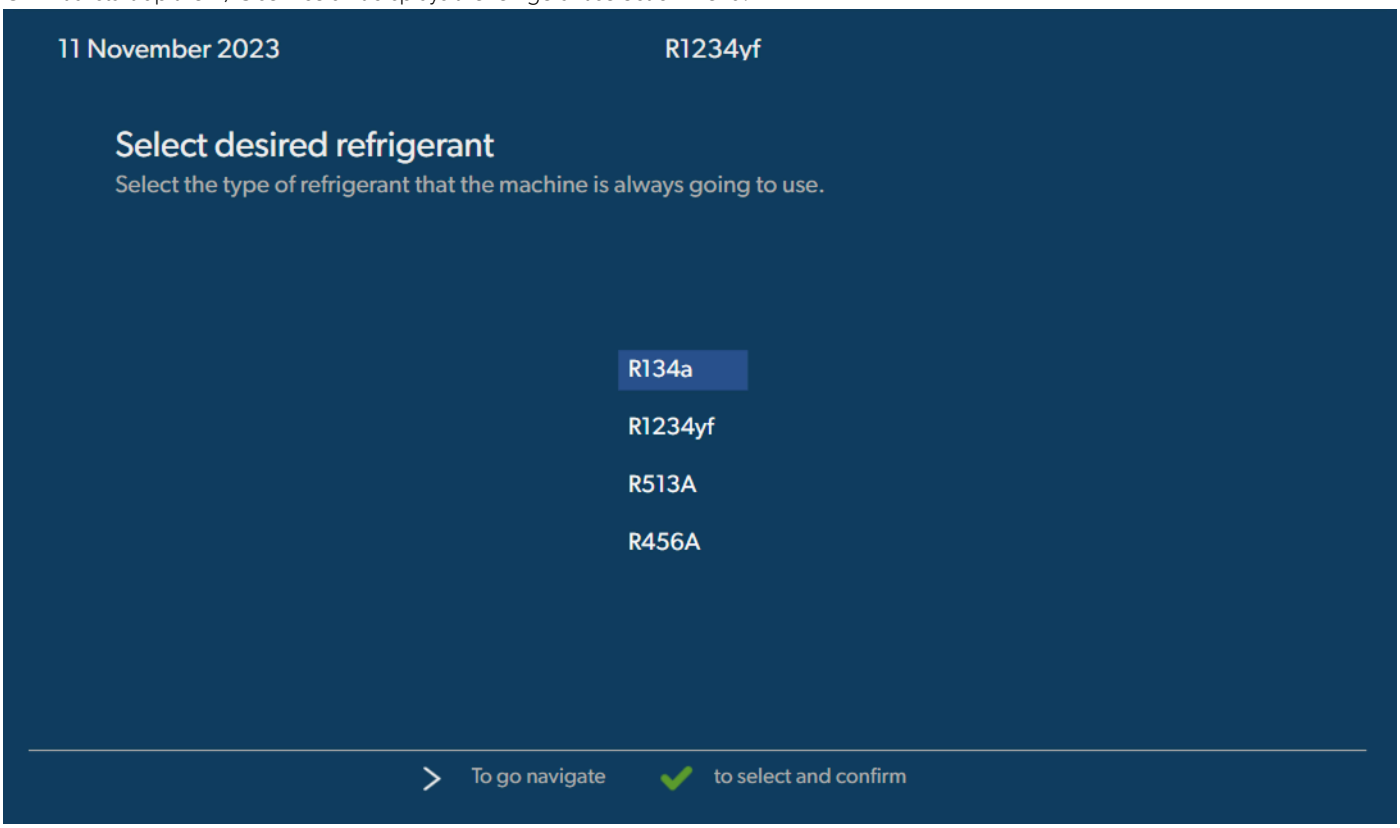
The chosen language is highlighted.

NOTE The default language is English. If this language is not changed, the date and time can be changed directly. If the language is changed, the A/C service unit restarts.

1. Press to open the language list.
2. Choose the desired language.
3. Enter the current date in the format "Day/Month/Year".
4. Enter the current time in the format "Hour: Minutes".
5. Press to select and confirm.

14.3 Selecting the refrigerant

On initial start-up the A/C service unit displays the refrigerant selection menu.



The chosen refrigerant is highlighted.

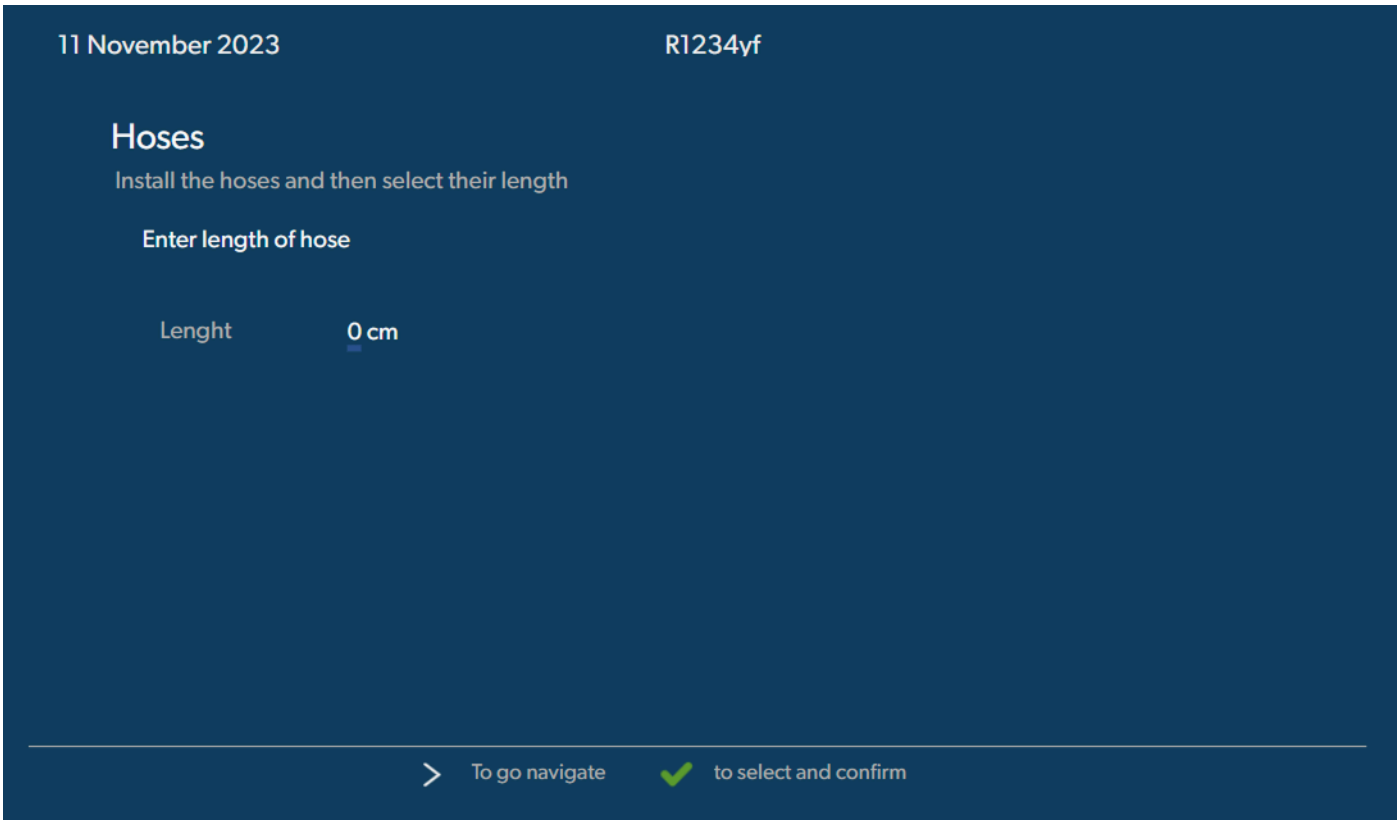
NOTE The adjustment of the refrigerant is a one-off process.

› Choose the desired refrigerant.
› Press to confirm.
› Follow the instructions on the display.
⌄ The A/C service unit sets up the refrigerant:
- The A/C service unit runs a cleaning phase of the internal vessel pressure.
- The A/C service unit runs a software test.
- Afterwards the A/C service unit displays the basic menu.

14.4 Setting the length of the service hoses

NOTE

› If longer or shorter service hoses are required for the unit, you have to adjust the filling quantities to the new hose lengths.
› The service hoses for the high and low pressure sides must always be of the same length as otherwise the filling quantities will not be correctly measured.

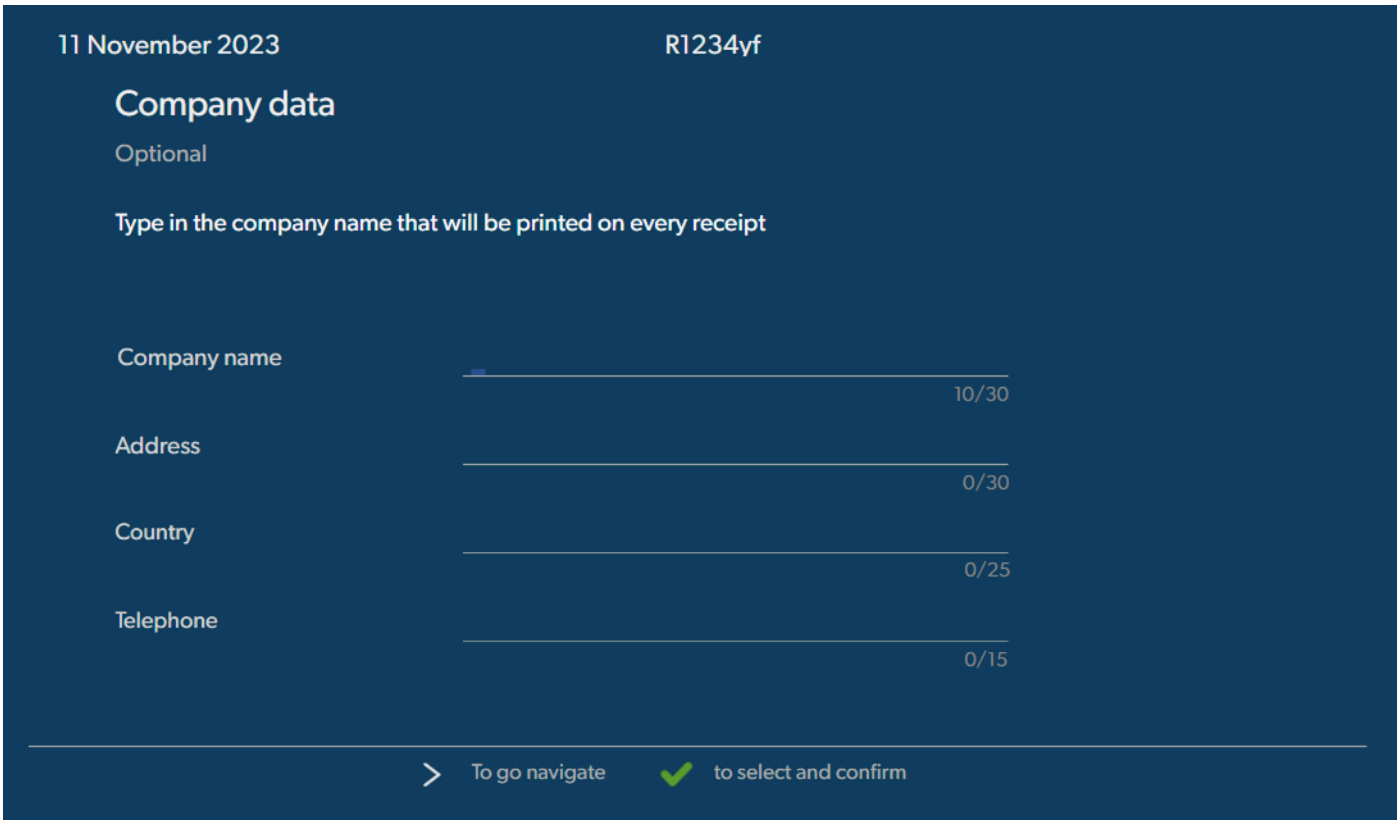


The chosen length is highlighted.

1. Enter the hose length in centimetres.
2. Press to select and confirm.

14.5 Entering the company data

The company data is printed out with every service log. You can enter four lines, each with up to 30 characters. The display shows the number already entered letters. Use the keypad and the cursor keys to enter the data. To switch between upper and lower case press the key. To delete a character press the key. To delete the current line press and hold down the key.



1. Enter the name, the address, the country, and the telephone number of the company.
2. Press ✓ to select and confirm.

14.6 Editing default values

The A/C service unit has preset values for the most important service tasks. The default values appear automatically when you select the respective menu.

You can alter the following default values if necessary:

Parameter	Default value
Pressure increase test time	5 min
Vacuum test time	4 min
Vacuum time	20 min
Additional PAG oil	0 mL
Addititive PAG quantity	0 mL
Additional Oil/UV quantity	0 mL
Refrigerant quantity	0 g
Hose type	HP & LP

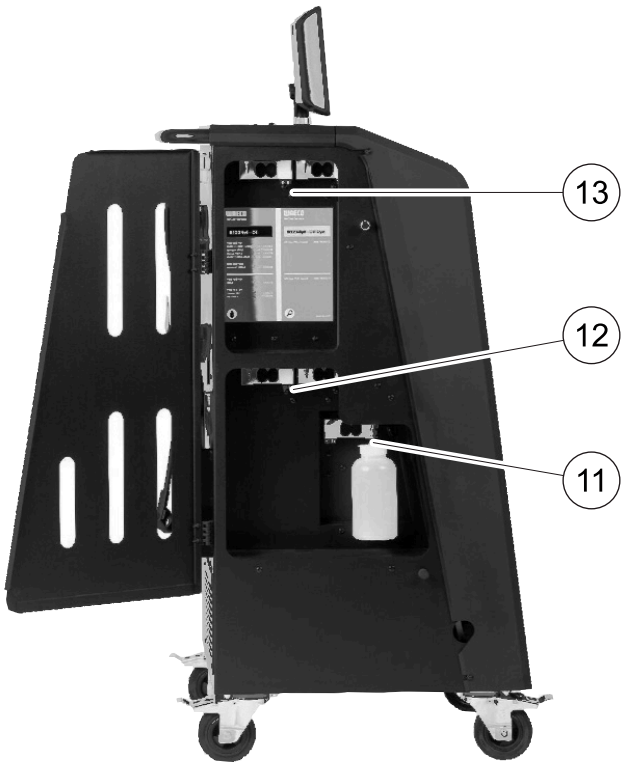
1. In the basic menu select `Service Tasks`.
2. In the `Service Tasks` menu select `Set default values`.
3. Enter the desired values.
4. Press ✓ to confirm.

14.7 Inserting the containers for oil and UV additive

NOTICE! Damage hazard
Only use oils approved for the corresponding refrigerant. Observe the manufacturer's instructions.

› Push the containers into the snap locks:
  • Container Oil1 for fresh oil/UV tracer (13)
  • Container Oil2 for fresh oil/UV tracer (12)
  • Drained oil receptacle (11)

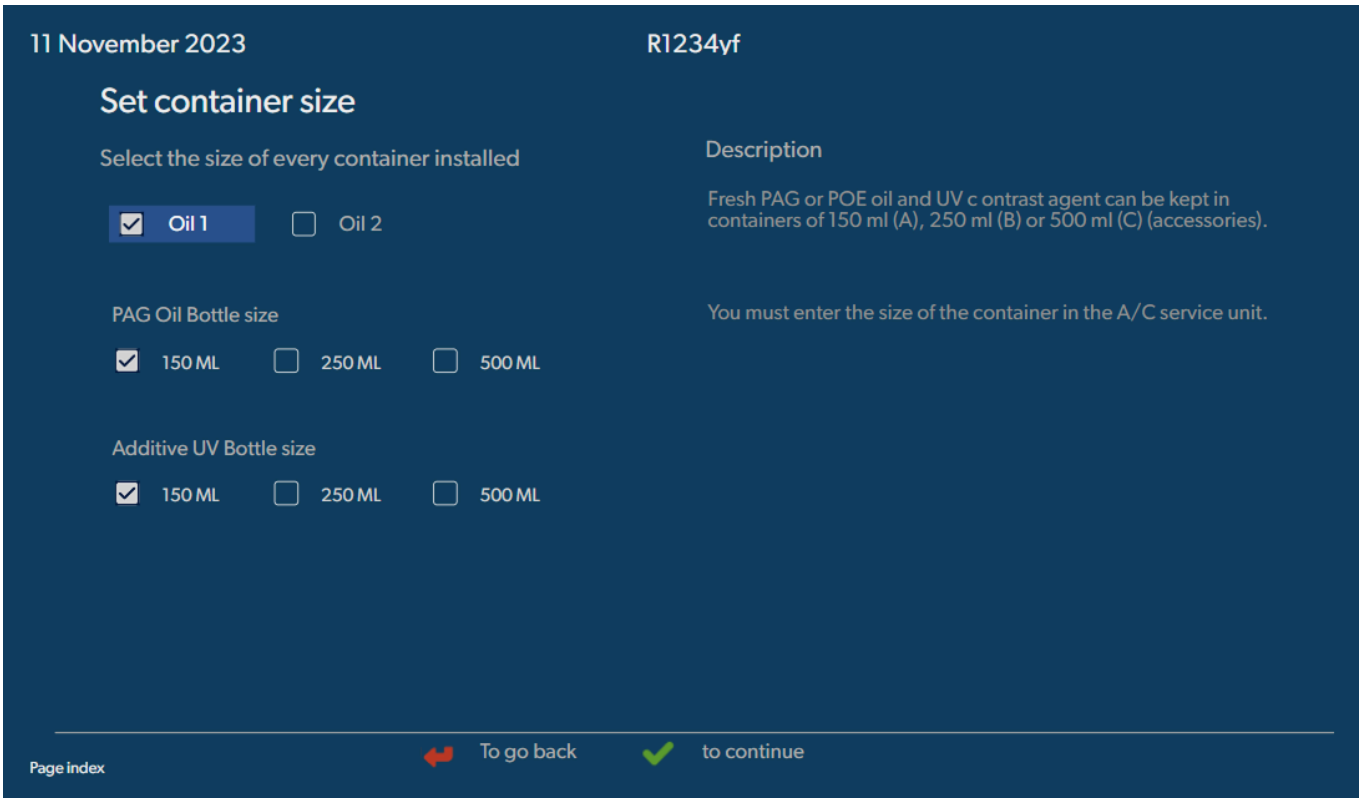
3



14.8 Setting the container size

Fresh oil and UV contrast agent can be kept in containers of 150 mL, 250 mL or 500 mL (accessories). You must enter the size of the container in the A/C service unit.

1. In the basic menu select `Settings`.
2. In the `Settings` menu select `Set container size`.



3. Choose the corresponding container sizes.
4. Press to continue.
5. Perform a hybrid flushing after changing the oil type.

14.9 Filling up the internal refrigerant container

When the A/C service unit is started for the first time, the A/C service unit displays `Error 12`, because the internal refrigerant vessel must be filled from an external refrigerant vessel with at least 2000 g of refrigerant.

1. Press to confirm.

v The current supply quantities are displayed in the basic menu.

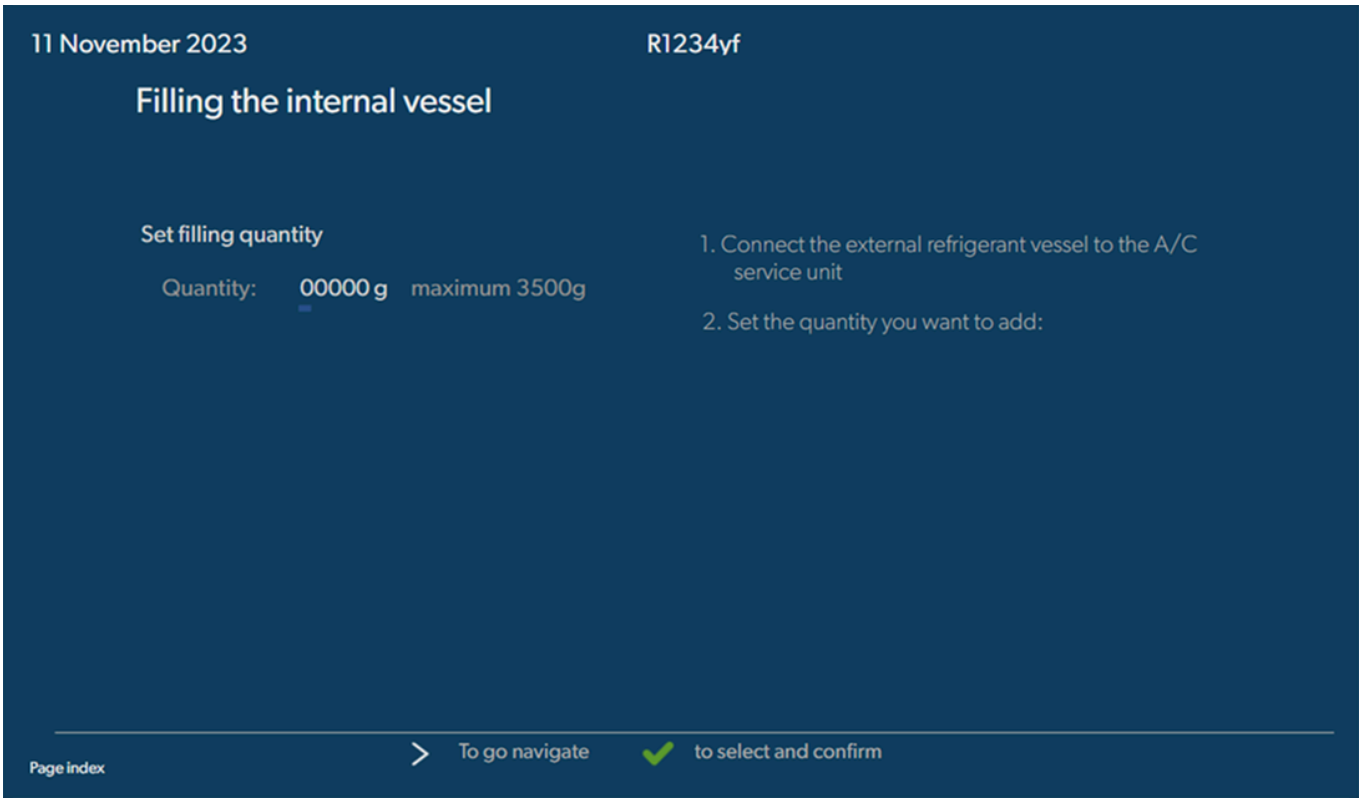
2. Connect the external refrigerant vessel via the high pressure hose to the A/C service unit.

NOTE Observe the instructions on the refrigerant vessels. Vessels for the R1234yf refrigerant have a left-hand thread.

There are three different types of refrigerant vessel available:

- Refrigerant vessels without rising pipe: These refrigerant vessels have one connection. When filling the A/C service unit, the connection must be on the bottom (turn the vessel upside down).
- Refrigerant vessels with rising pipe: These refrigerant vessels have one connection. When filling the A/C service unit, the connection must be at the top (place the vessel upright).
- Refrigerant vessels with rising pipe: These refrigerant vessels have two connections. To top up the A/C service unit, use the connection marked with L (= liquid). When filling the A/C service unit, the connection must be at the top (place the vessel upright).

3. In the basic menu select `Service Tasks`.
4. In the `Service Tasks` menu select `Internal vessel filling`.



5. Enter the required amount and press to confirm.
v The internal refrigerant vessel is filled.

   When the filling process is finished, this will be confirmed by an acoustic signal.

6. Follow the instructions on the display.
7. When the process is completed disconnect the external refrigerant vessel from the A/C service unit.
v The A/C service unit is now ready for operation.

15 Operation

NOTICE! Damage hazard
When the air conditioning system is being serviced, the engine and the A/C service unit must be switched off.

NOTE
The A/C service unit is only suitable for 230 V / 240 V (see Technical Data on page 36).

15.1 Shutdown in case of repair, emergencies and malfunctions

1. To ensure that the device is disconnected from the power supply for repairs, switch it off using the main switch and also pull out the power plug.
2. To turn off the A/C service unit in an emergency or malfunction, turn off the main switch.

15.2 Short selection

A fully automatic air conditioning service is started using the `Short Selection` menu. Included is a leak test that must be carried out before working on the vehicle air conditioner. The vehicle air conditioner is filled with a sample refrigerant. The pressure in the vehicle air conditioner must remain constant over a period of 5 min . The vehicle air conditioner can only be completely filled if this test has been successfully completed. The sample filling is then drained and the vehicle air conditioner evacuated. The final filling quantity is completely filled up to ensure high filling accuracy.

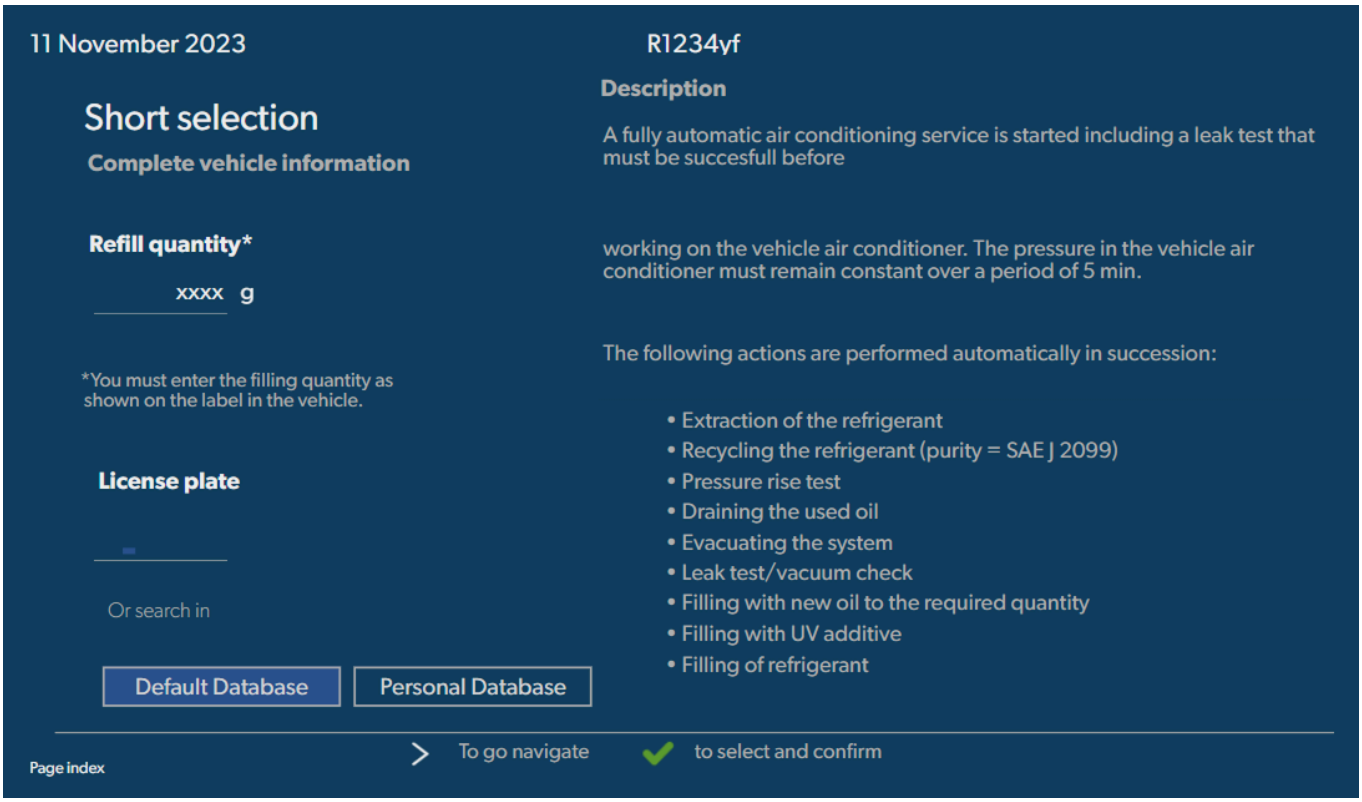
The following actions are performed automatically in succession in the `Short Selection` menu:

- Extraction of the refrigerant
- Recycling the refrigerant (purity = SAE J 2099)
- Pressure rise test
- Draining the used oil

- Evacuating the system
- Leak test/vacuum check
- Filling with new oil to the required quantity
- Filling with UV additive
- Filling of refrigerant

After each process has been performed a service report is printed. Subsequent actions are only initiated once the preceding action has been completed successfully.

1. Fit the service hoses for the A/C service unit to the vehicle air conditioning system, and open the service couplings.
2. Press one of the cursor keys to access the basic menu.
3. In the basic menu select `Short Selection`.



4. Enter the refrigerant filling quantity in the `Refill quantity` field. Use the value shown on the filling quantities sticker in the vehicle.
   This entry is mandatory.
5. If desired, enter the licence plate data.
   You can choose a vehicle from the `Default database` or your `Personal database`.
6. Press ✓ to select and confirm.
7. Press › to enter the `Select hoses` menu.
8. Choose the connected hose type:
   - `HP & LP port` : The A/C system has a high pressure and a low pressure connection
   - `HP Port` : The A/C system only has a high pressure connection
   - `LP Port` : The A/C system only has a low pressure connection
9. Press ✓ to select and confirm.
10. Press › to enter the `Confirm short selection test` menu.
11. Press ✓ to select and confirm.

˅ The fully automatic air conditioning service is started.

12. Follow the instructions on the display.

15.3 Transferring the consumption of the refrigerant onto a USB flash drive

Each time a suction or filling process (single process or fully automatic) is completed, the A/C service unit stores all the data in the internal memory. A report of this data can be generated and transferred to a USB flsh drive.

NOTE The USB flash drive must be formatted with the FAT32 file system.

Each report is saved in two formats:

- As an HTML file (to be opened with any internet browser)
- As an XLS file (to be opened with Microsoft Excel)

The report may contain a logo (e.g. the workshop logo) if a graphic is copied to the USB flash drive that meets the following requirements:
- File format: JPEG format
- File name: logo.jpg (each letter in lower case)
- Screen size: 370 x 50 pixels

The company address in the report is taken from the A/C service unit (Entering the company data on page 13).

Annual reports

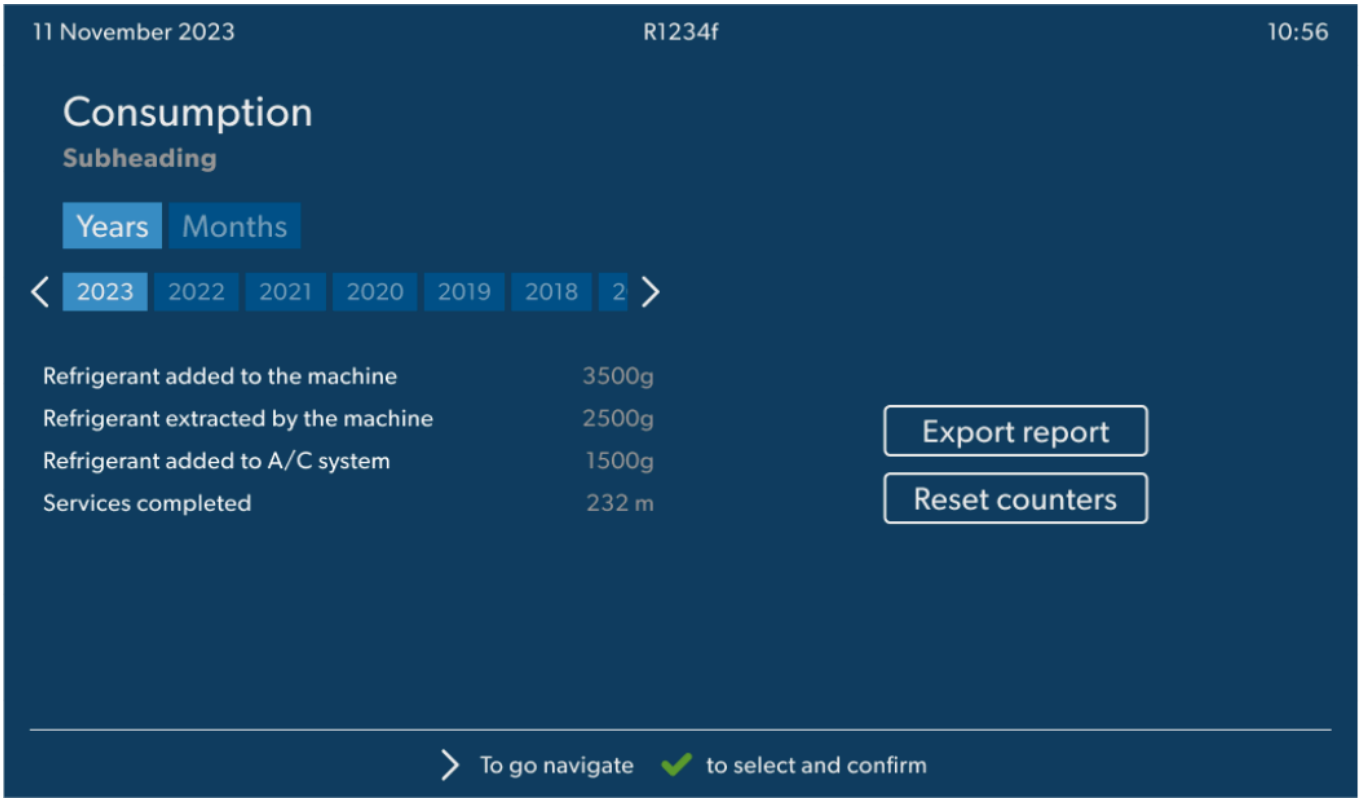
After the calendar year has changed, the A/C service unit indicates that the data stored from the previous calendar year should be transferred to a USB flash drive. After transferring the annual data to a USB flash drive, it is deleted from the A/C service unit's internal memory.

1. Insert the USB flash drive in the USB port.
2. Follow the instructions on the display.

Manual reports

You can at any time manually transfer a monthly or annual report to a USB flash drive.

1. Insert the USB flash drive in the USB port.
2. In the basic menu select `Settings`.
3. In the `Settings` menu select `Display consumption`.



4. Enter the password and press ✓ to confirm.
   - `4910`: Monthly report
   - `4918`: Annual report

   If a USB flash drive has not been inserted or is not recognised, the `Error 52` message appears.
5. Choose the desired entry.
6. Choose **Export report** to confirm.
7. Follow the instructions on the display.

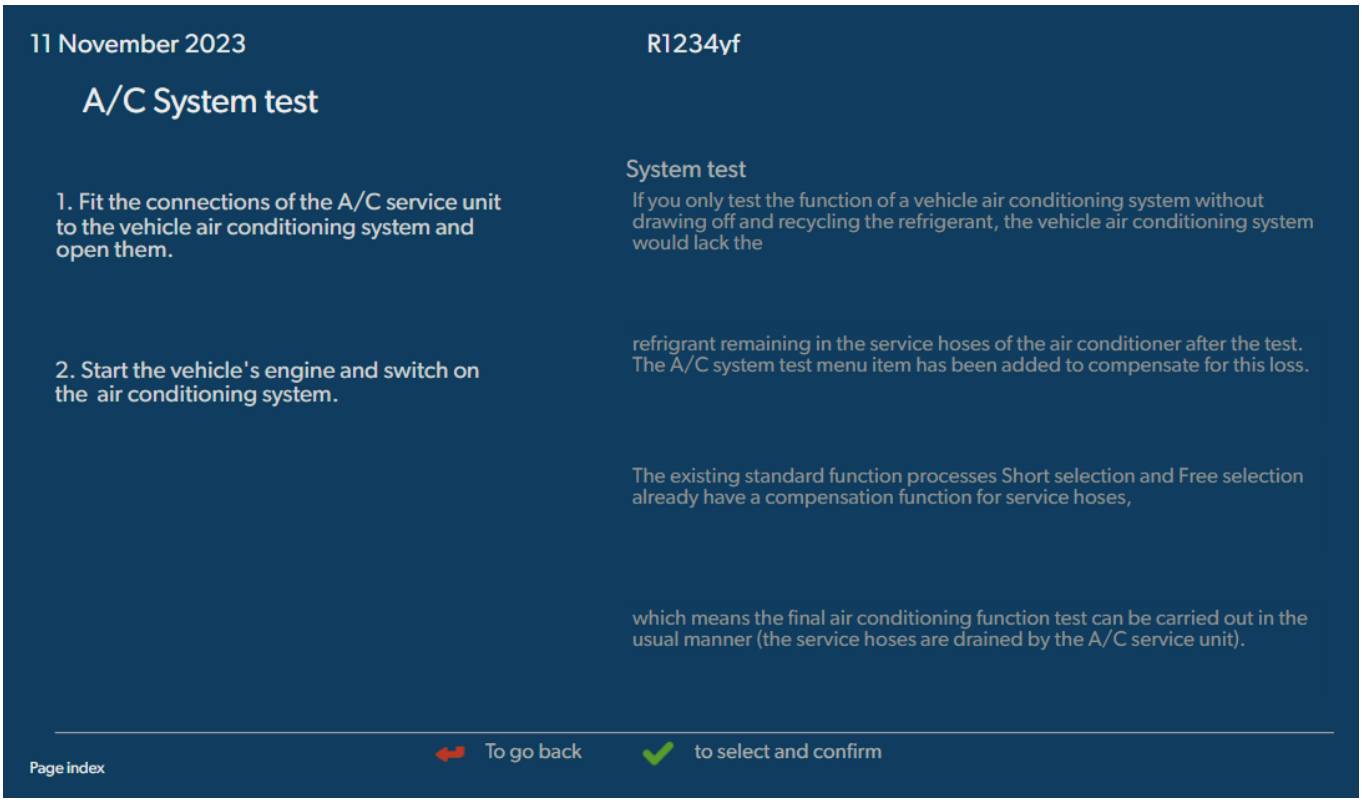
15.4 Testing the air conditioning system without refrigerant service

NOTE The air conditioning system can only be tested on vehicles with a low pressure port and a high pressure port or with a low pressure port only.

If you only test the function of a vehicle air conditioning system without drawing off and recycling the refrigerant, the vehicle air conditioning system would lack the refrigerant remaining in the service hoses of the air conditioner after the test. The `A/C system test` menu has been added to compensate for this loss.

The existing standard function processes `Short Selection` and `Free Selection` already have a compensation function for service hoses, which means the final air conditioning function test can be carried out in the usual manner (the service hoses are drained by the A/C service unit).

1. First, fit the connections of the A/C service unit to the vehicle air conditioning system and open them.
2. Start the vehicle's engine and switch on the air conditioning system.
3. In the basic menu select `Service Tasks`.
4. In the `Service Tasks` menu select `A/C system test`.



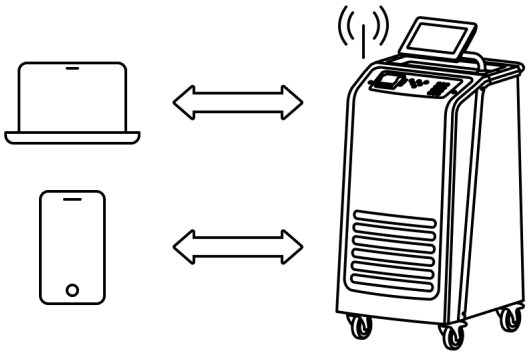
5. Press ✓ to continue.
6. Follow the instructions on the display.

15.5 Setting up the WiFi kit (optional)

The ASC Wi-Fi can be used in the Access Point Mode (default setting) or in the Client Mode.

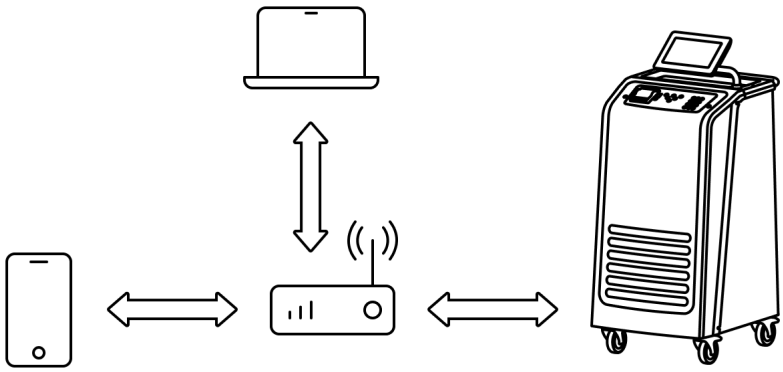
When used in Access Point Mode the ASC Wi-Fi serves as a hot spot. You can log into the Wi-Fi kit's network with any device to connect to the A/C service unit.

4



When used in Client Mode the ASC Wi-Fi is connected to your existing Wi-Fi network and you can use all devices connected to this network to connect to the A/C service unit.

5



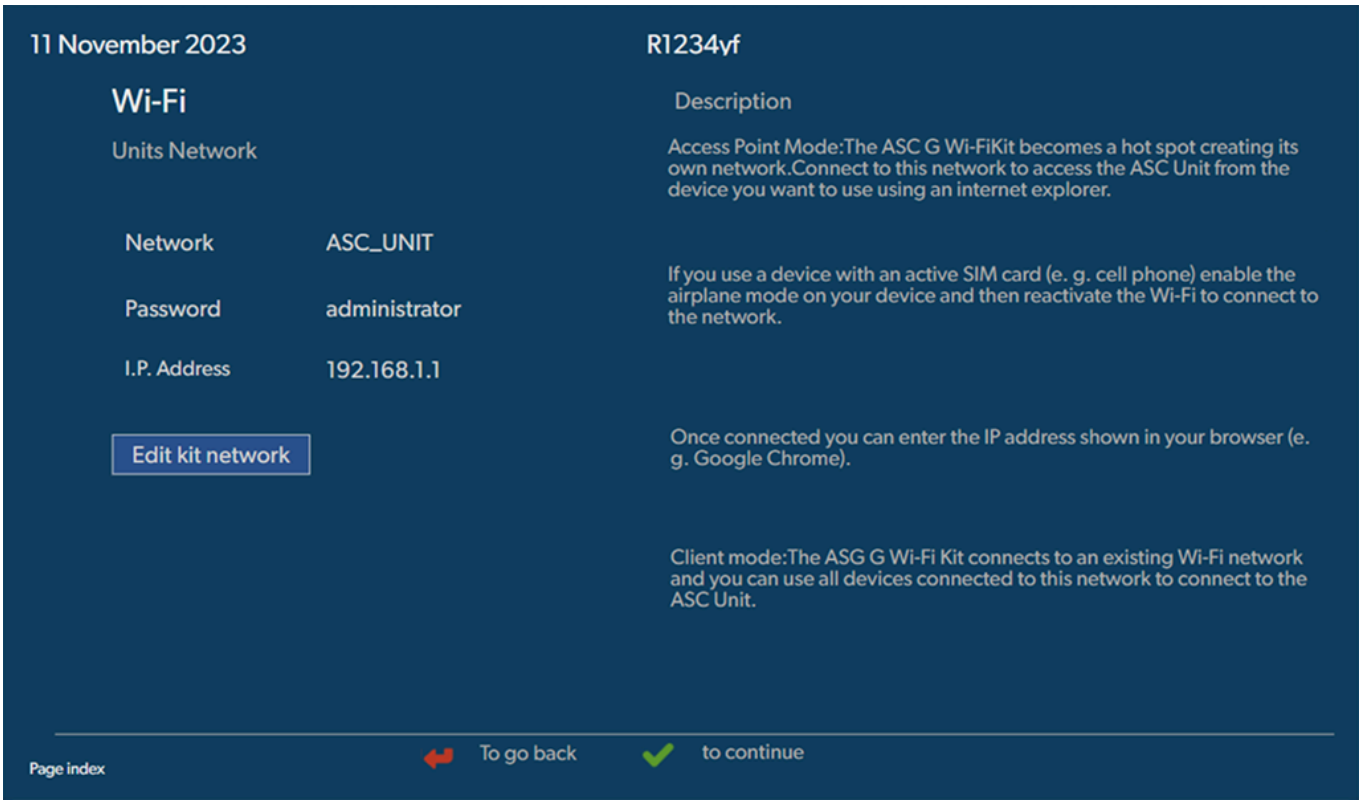
The A/C service unit always starts in the Access Point Mode. To change into the Client Mode (Connecting to the A/C service unit in Client Mode on page 23).

Setting Wi-Fi to Access Point Mode

NOTE
The default setting is a Wi-Fi network of the A/C service unit with:
- SSID: ASC_UNIT
- Password: administrator

The default Wi-Fi network can be used for the initial setup of a connection.

1. In the basic menu select `Settings`.
2. In the `Settings` menu select `Wi-Fi configuration`.



Connecting to the A/C service unit in Access Point Mode

1. If you use a device with an active SIM card (e.g., a cell phone) enable the “airplane mode” on your device.
2. Ensure Wi-Fi is enabled on your device.
3. If necessary, connect your device to the A/C service unit’s Wi-Fi network.
4. Open a browser and enter the IP address shown on the A/C service unit's display in the URL field of the browser.

5. If you connect for the first time to the A/C service unit set a bookmark to remember the IP address of the user interface.

v After successfully connecting you have access to following user interface.

You can access the functions by pressing the corresponding button in the menu bar.

On a PC the menu bar is placed on the upper right corner.

On a tablet and on a cell phone the menu bar is placed at the bottom.

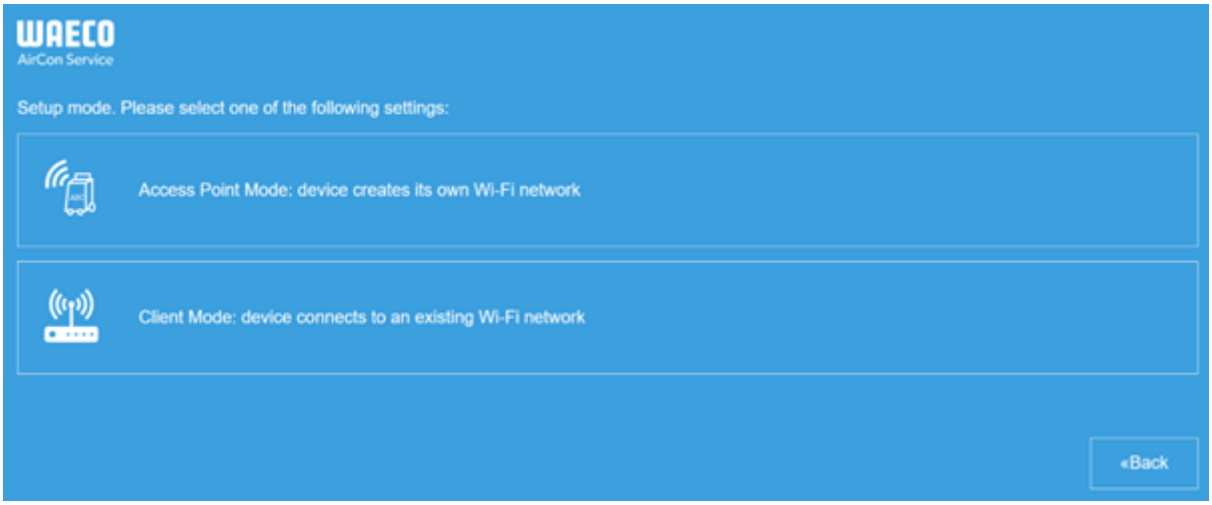
Icon	Command	Function
	Sensors	Shows the A/C service unit's current operating values.
	Send task	Creates a task and sends it to the A/C service unit ().
	Task history	Shows all finished tasks.
	Maintenance counters	Shows the A/C service unit's current meter readings and the total meter readings since the A/C service unit was produced.
	Unit info	Shows the data of the A/C service unit. Accesses the Wi-Fi setup.

Connecting to the A/C service unit in Client Mode

To connect the A/C service unit into the Client Mode you first have to connected it via Access Point Mode.

1. In the browser enter the Unit info menu.

2. Press the **Wi-Fi Setup** button.



3. Press the **Client Mode** button.

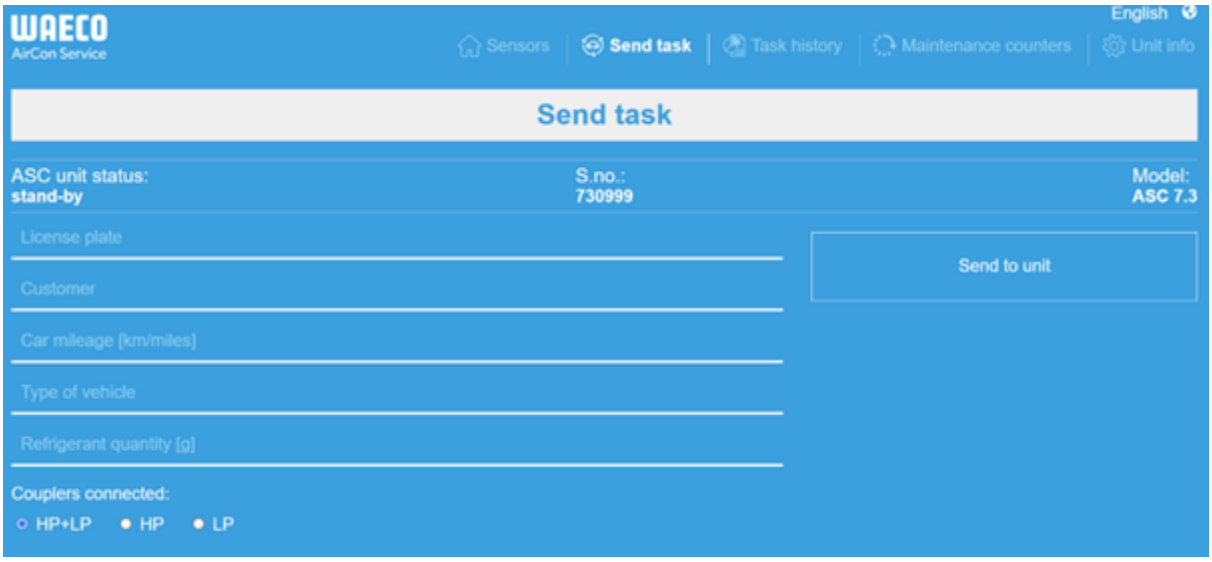
Creating and processing a task in the A/C service unit

Instead of creating a task in the A/C service unit you can create a task via the browser and send it to the A/C service unit.

1. Enter the requested values like data plate, client name, etc.
2. Press the Send to unit button to send the task to the A/C service unit.

v The A/C service unit's display shows “New task available”.

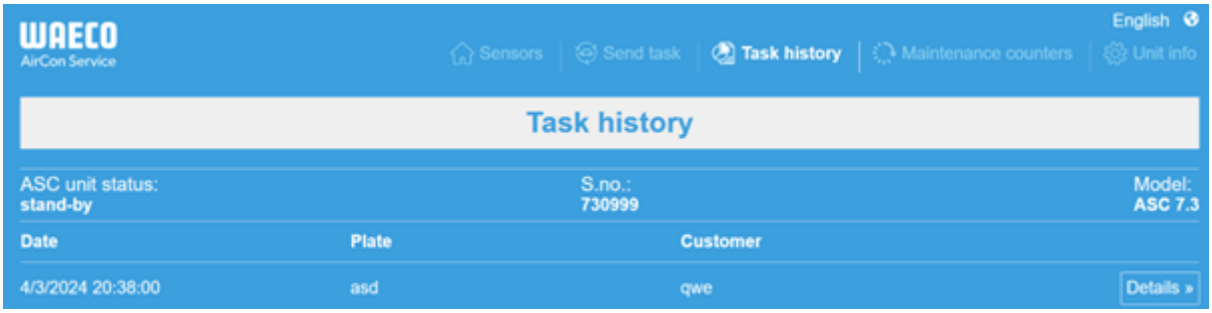
3. To start the task press the button on the A/C service unit.
4. To discard the task press the button on the A/C service unit.



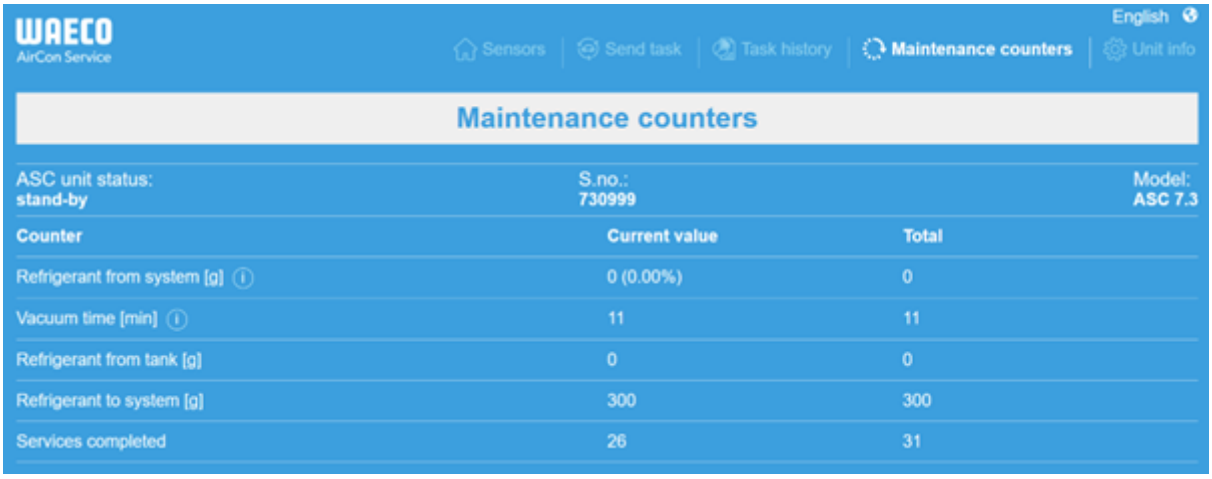
Task history and maintenance counters

After finishing a process the internal storage saves the report and it can exported as a PDF or CSV file at any time.

1. Enter the `Task history` menu to view or export the task history.



2. Enter the `Maintenance counters` menu to view or export the counters.



15.6 Free Selection

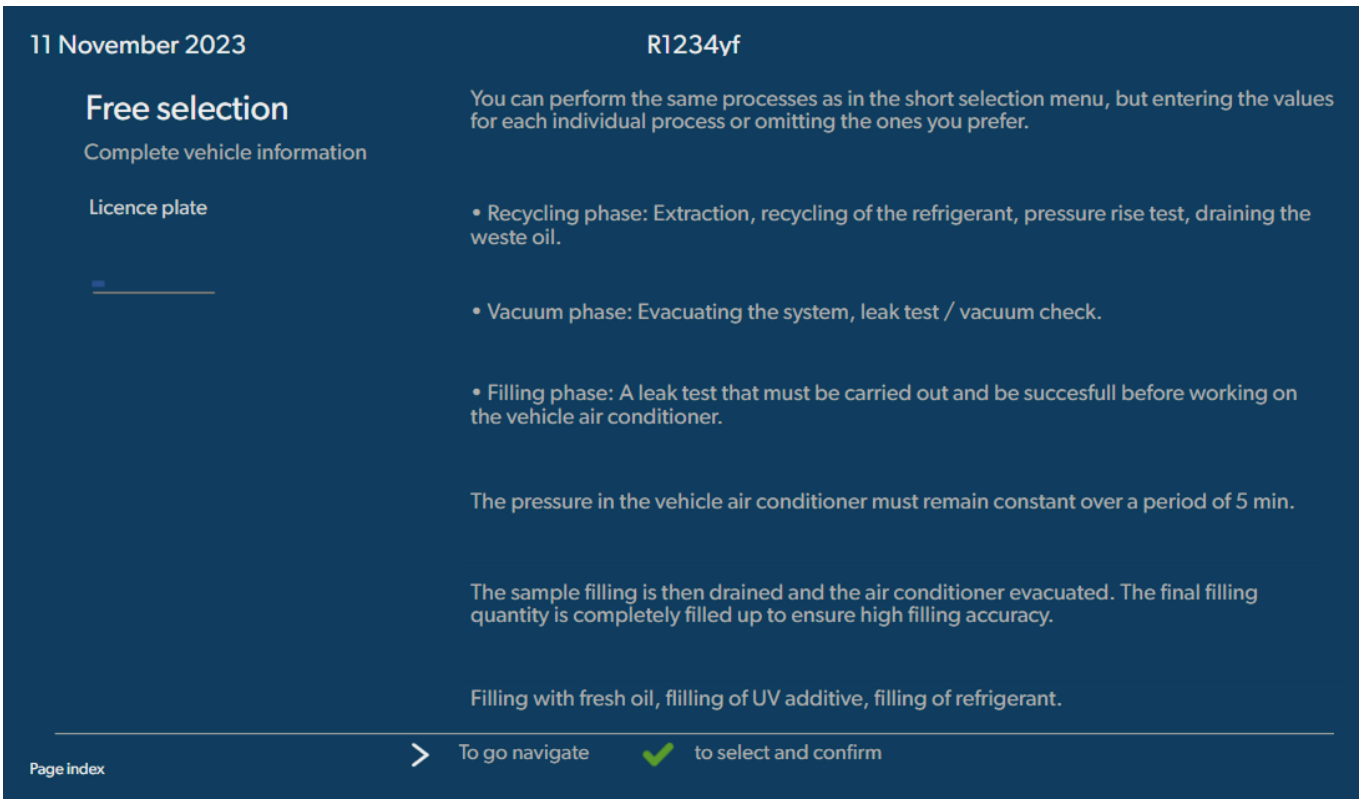
The `Free Selection` menu is used to perform air conditioning maintenance step-by-step. You can perform the same processes as in the `Short Selection` menu but also omit individual procedures. In addition, it is possible to enter the values for each individual process using the keypad. You can also enter the vehicle data for the service report in this menu.

The following processes can be performed individually in the `Free Selection` menu:

- `Recovery Phase`: Extraction and recycling of the refrigerant, pressure rise test. The waiting time ensures that any residual refrigerant vaporises and can then be extracted. The vaporising residual refrigerant triggers an increase in pressure.
- `Eco Phase`: Recovering waste oil.
- `Vacuum Phase`: Evacuating the system, leak test/vacuum check. The air conditioning system is drained completely by the vacuum pump. This is used to remove any remaining carrier gases or moisture and to prepare the air conditioning system for the filling process. Any residual refrigerant extracted which is still bonded in the refrigerant oil is collected by the A/C Service unit and recycled.
- `Filling Phase`: Filling with fresh oil, filling of UV additive, filling of refrigerant. Before working on the vehicle air conditioner a leak inspection must be carried out. The air conditioner is filled with a sample of refrigerant. The pressure in the air conditioner must remain constant over a period of 5 min . The air conditioner can only be completely filled if this test has been successfully completed. The sample filling is then drained and the air conditioner evacuated. The final filling quantity is completely filled up to ensure high filling accuracy. If extraction is taking place in the same process sequence, the quantity of fresh oil is counted as an additional filling quantity, and is added to the drained oil quantity extracted beforehand. If this value is set to 0, exactly the quantity of oil which was extracted will be filled again. To add fresh oil or UV additive, a vacuum process must be performed in the same process sequence. If no vacuum process has been selected, only refrigerant can be selected in this menu.

After each process has been performed a service report is printed.

1. Start by fitting the connections of the A/C service unit to the vehicle air conditioning system and opening them.
2. In the basic menu select `Free Selection`.

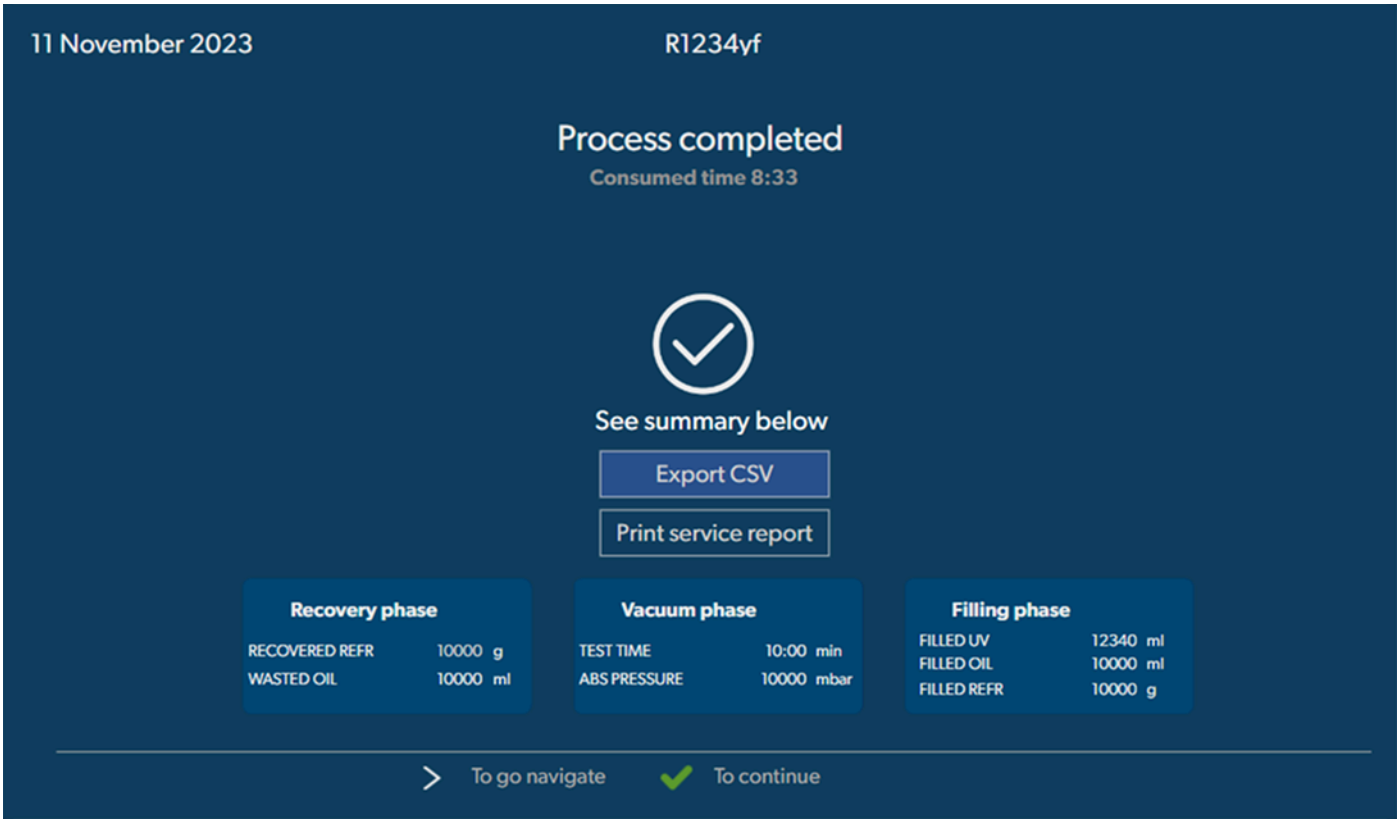


3. Enter the license plate number.
4. Press ✓ to select and confirm.

˅ The `Select desired process` menu is opened:

5. If desired, deactivate a phase by setting the corresponding amount values to 0.
6. Press to continue.
7. Follow the instructions on the display.

When the process is sucessfully completed, you can save a service report:



- To save a csv file on a flash drive press the **Export CSV**.
- To print a report on the printer press the **Print service report**.

16 Service tasks

16.1 Leak test

Check the A/C service semiannually for leaks in accordance with the applicable legal requirements. Use an electronic leak detector for this purpose.

16.2 Resetting the counters

After you have finished one or more service tasks you must reset the respective counters.

The following counters can be reset:

- `Refrigerant extracted from system` indicates how many grams of refrigerant have been extracted from air conditioning systems using the `Short Selection` or the `Free Selection` menu since the last reset (see date).
- `Refrigerant added to the tank` indicates how many grams of refrigerant were added to the A/C service unit using the `Internal vessel filling` menu since the last reset (see date).
- `Refrigerant added to the system` indicates how many grams of refrigerant have been added to the air conditioning systems using the `Short Selection` or the `Free Selection` menu since the last reset (see date).
- `Time in vacuum` indicates how long the vacuum pump has operated since the last reset (see date).
- `A/C Services completed` displays the amount of service work performed using the A/C service unit since the last reset (see date).

1. In the basic menu select `Service Tasks`.
2. In the `Service Tasks` menu select `Reset counters`.

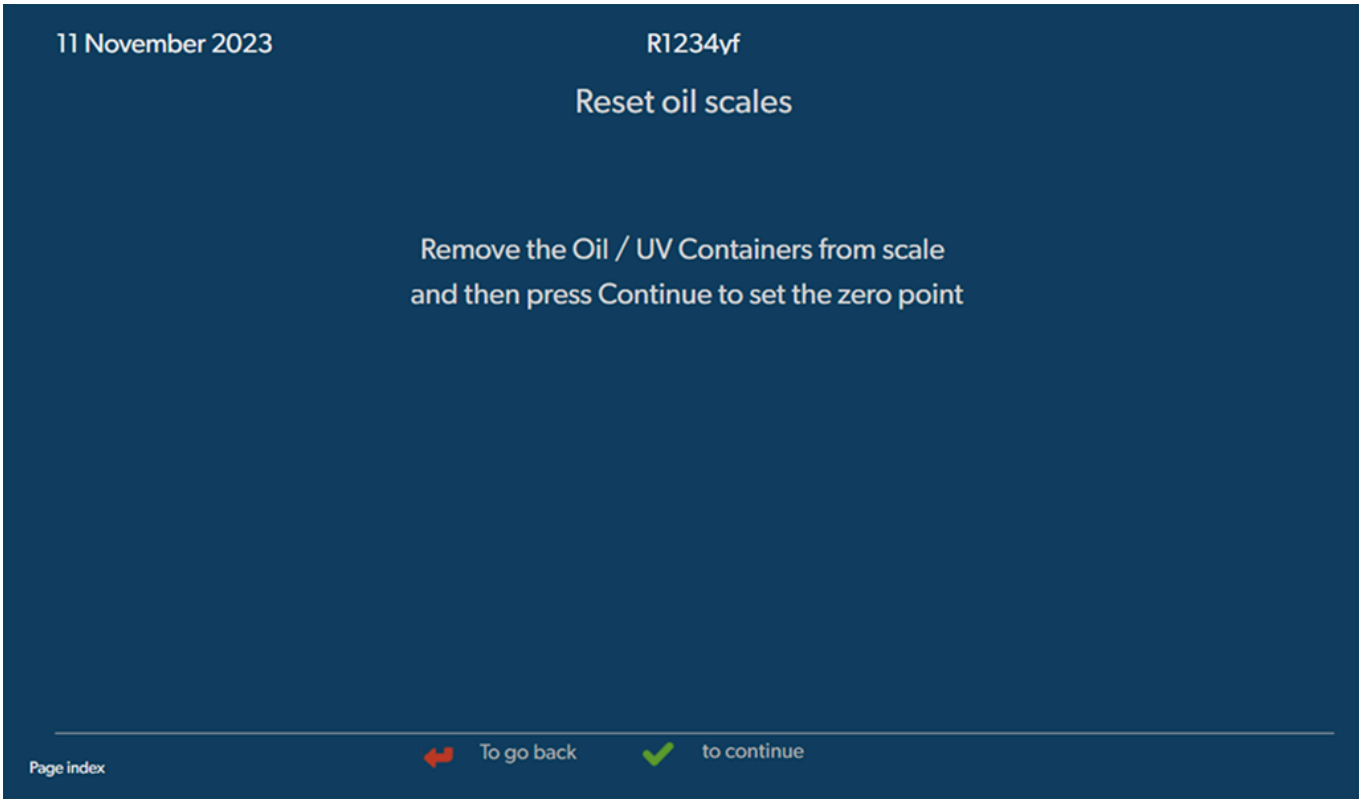
3. Enter the code `7782`.
4. Choose each counter that you wish to reset.
5. Press **Reset counters** to reset the marked counters.
6. Press ✓ to continue.

16.3 Resetting the oil scales

NOTE In order for the oil quantities and the UV additive to be measured correctly, the zero point of the scales must be checked regularly and reset if necessary. Resetting is necessary:

- If the quantity in a container deviates by more than 10 mL from the target value
- If the A/C service unit has been shaken, for example during transport on bumpy roads
- Every four to six weeks

1. In the basic menu select `Service Tasks`.



2. In the `Service Tasks` menu select `Reset oil scales`.
3. Press to continue.
4. Follow the instructions on the display.

16.4 Changing the dryer filter

1. In the basic menu select `Service Tasks`.
2. In the `Service Tasks` menu select `Change dryer filter`.

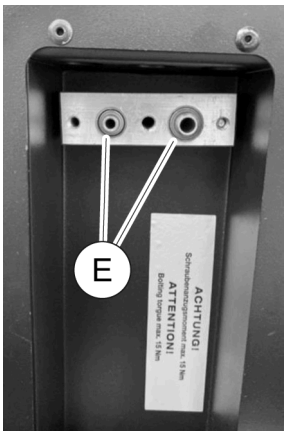
3. Follow the instructions on the display.

˅ The service hoses will now be drained and the A/C service unit's basic menu will be activated. The compressor has produced a slight internal vacuum so that the filter can be replaced with minimal refrigerant loss.

4. Switch off the A/C service unit.
5. Pull out the power supply plug.
6. **CAUTION! Health hazard**
   The following steps may only be performed by authorized personnel. Wear protective gloves and goggles.

   Unscrew the screw (D) from the holder, and pull the dryer filter straight out.

7. Replace the O-rings (E). Moisten new O-rings with refrigerant oil before installing.

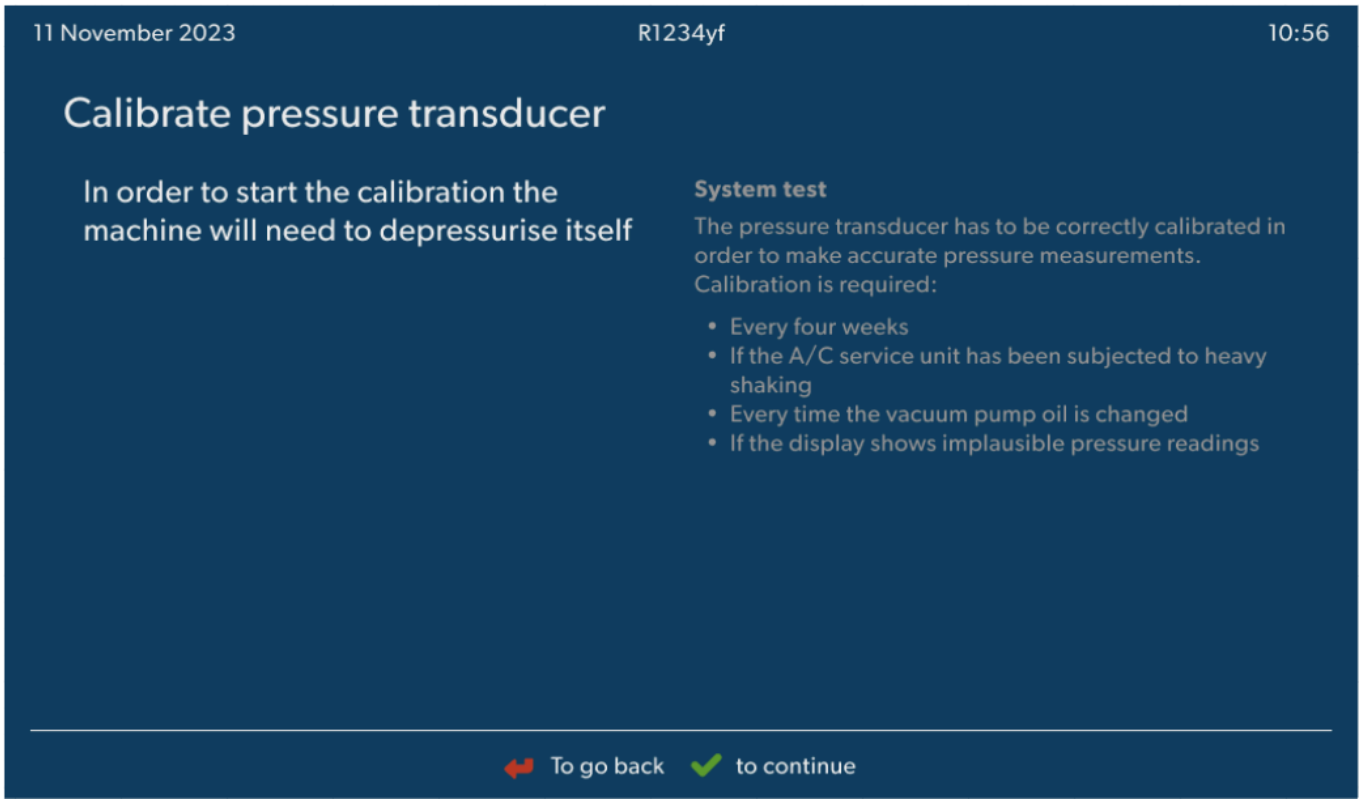


8. Insert the new dryer and tighten the screw to max. 15 Nm.
9. Reconnect the power plug.
10. Switch on the A/C service unit.
   ⌄ The inverter performs a self-test.
11. Reset the `Refrigerant extracted from system` counter (Resetting the counters on page 27).
12. Perform a leak test (Leak test on page 27).

16.5 Calibrating the pressure transducer

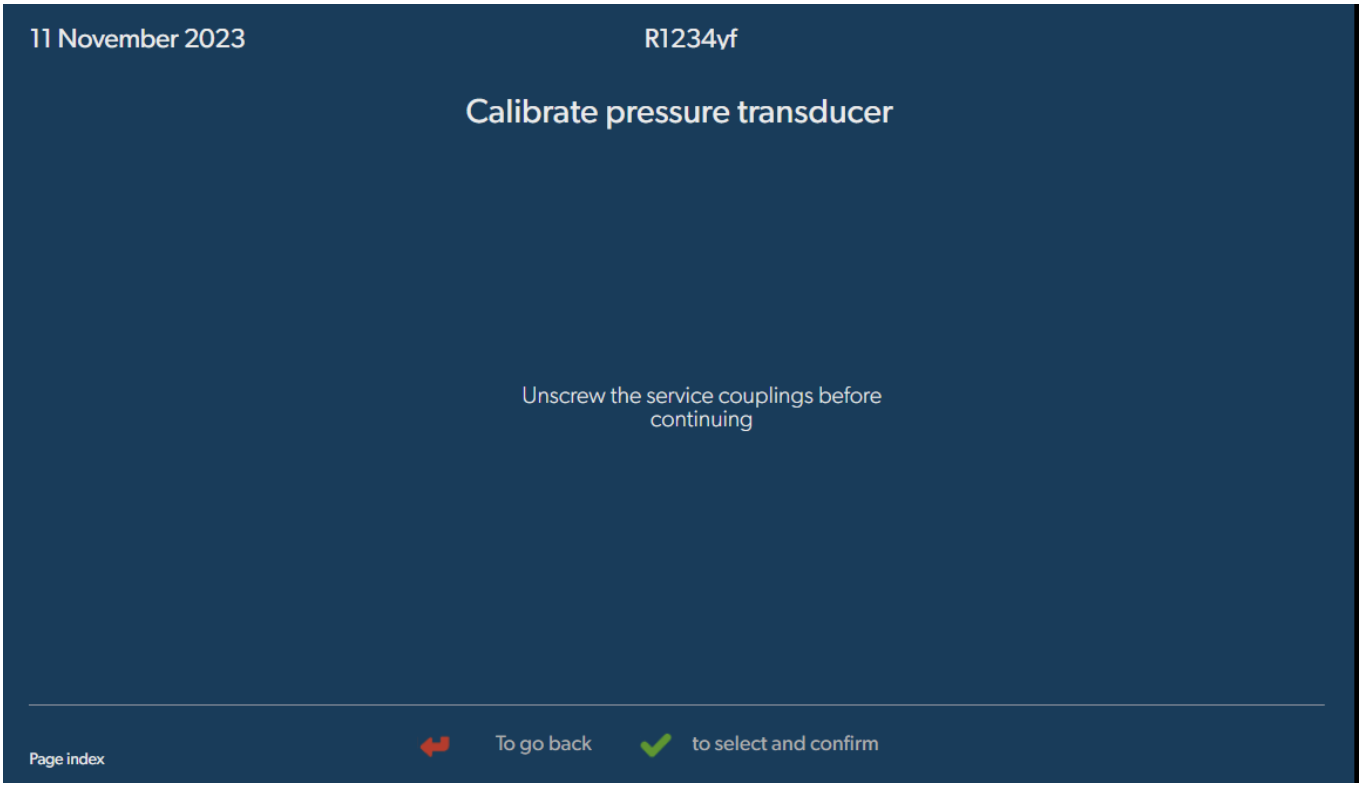
The pressure transducer has to be correctly calibrated in order to make accurate pressure measurements. Calibration is required:
- Every four weeks
- If the A/C service unit has been subjected to heavy shaking
- Every time the vacuum pump oil is changed
- If the display shows implausible pressure readings

1. In the basic menu select `Service Tasks`.
2. In the `Service Tasks` menu select `Calibrate pressure transducer`.



3. Press ✓ to select and continue.
   ⌄ The services hoses are automatically evacuated.

4. Follow the instructions on the display.

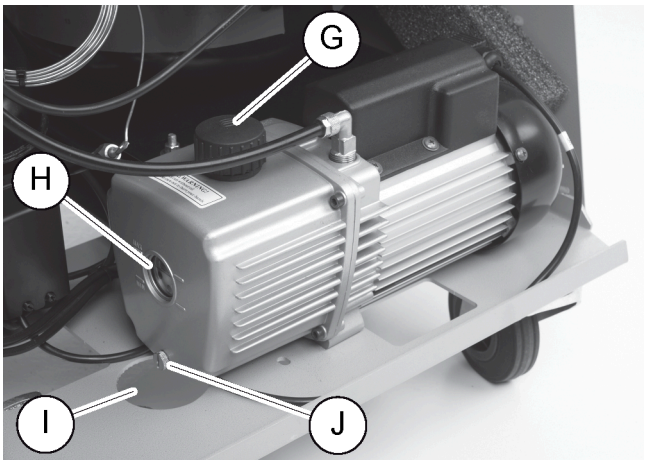


16.6 Changing the vacuum pump oil

WARNING! Electrocution hazard
Touching uninsulated parts may result in serious injury. Switch off the A/C service unit and unplug it from the power supply before opening the housing. the A/C service unit may only be repaired by personnel authorized by Dometic.

1. Before changing the oil, let the vacuum pump run for about 10 min .
2. Take off the front panel: Undo the screws (D) on the control panel and lift it up. Then undo the screws (E) on the bottom of the front panel and take it off.

3. Place a receptacle with a capacity of at least ½ liter under the A/C service unit. The oil from the vacuum pump flows through the opening (I) in the base of the A/C service unit.



4. Unscrew the oil filling plug (G).
5. To drain the oil, unscrew the oil drain plug (J).
6. Once the oil has been completely drained from the pump housing, screw the oil drain plug (J) back in.
7. Top up with new vacuum pump oil to the middle of the sight glass (H) and screw the oil filling plug (G) back in.
8. Put the front panel and control panel back.
9. Reconnect the power supply plug.
10. Reset the `Time in vacuum` counter (Resetting the counters on page 27).

16.7 Updating the software via USB flash drive

The software is updated using a USB flash drive. The USB flash drive must be formatted with the FAT32 file system.

When updating the software, the following data is stored in the internal memory of the A/C service unit:

- The current software of the A/C service unit
- The current database with all the common vehicle types and corresponding filling quantities

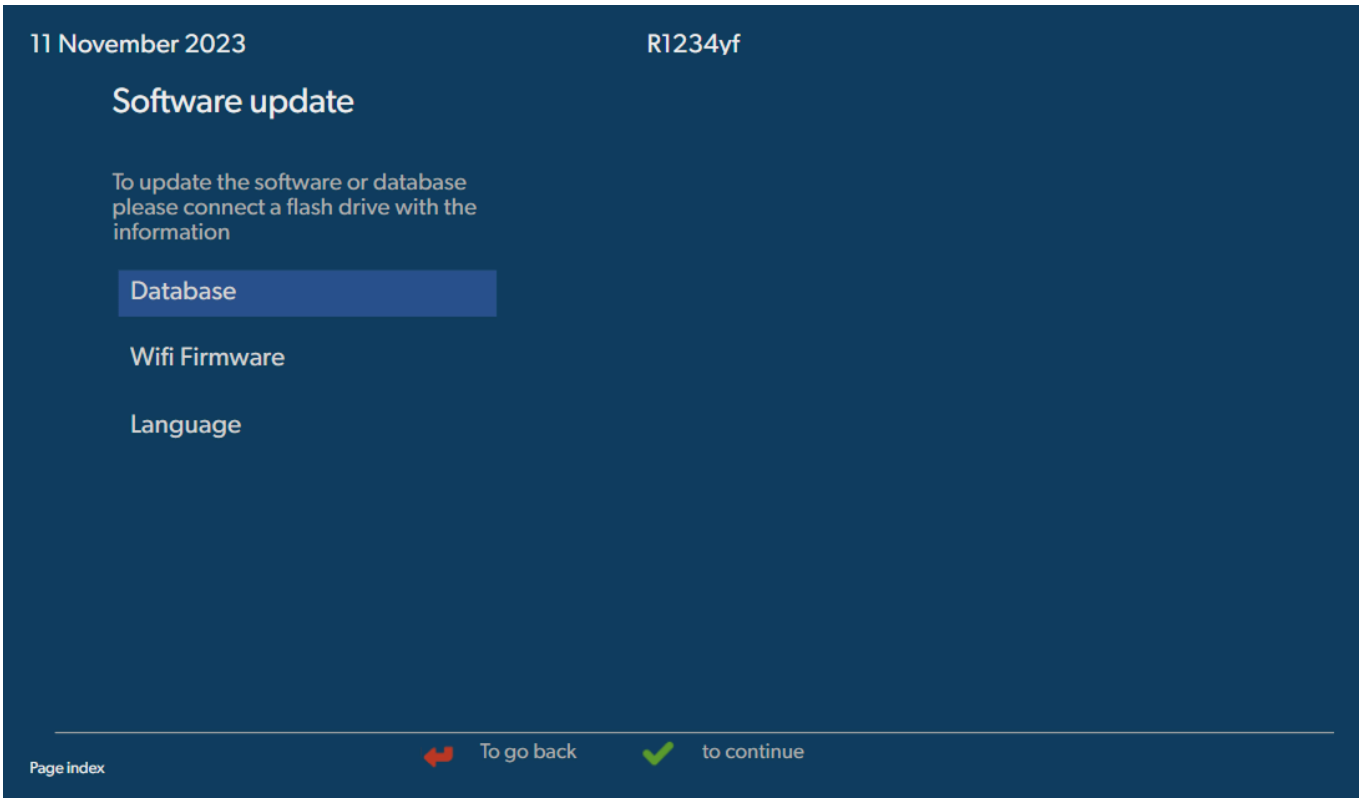
You can update the software and the database separately.

1. Copy the current software to the USB flash drive.
2. Insert the USB flash drive into the USB port.

3. Switch on the device.

v The A/C service unit scans the USB flash drive for a later version. If the software on the USB flash drive is more up-to-date, the software of the A/C service unit is updated.

4. To update the database, the WiFi firmware or the language files select `Settings` in the basic menu.
5. In the `Settings` menu select `Software update`.



6. Press to update the software or database.
˅ The A/C service unit shows the progress of the update.

   After the update the A/C service unit sets the default settings.

   The A/C service unit then restarts and the standby menu appears.

7. Remove the USB flash drive.
˅ The A/C service unit is ready for operation.

16.8 Cleaning and inspection

› Clean the exterior of the A/C service unit with a damp cloth as required. If necessary, use a small amount of dishwashing detergent. Do not use solvents or scouring agents.
› Check the service hoses and the service couplings for damage regularly. Do not start up the A/C service unit if it is damaged.

16.9 Maintenance

The following table shows the maintenance work that the operator has to perform.

To do	Daily	Monthly
Check the vacuum pump oil		x
Check the Filter Gasanalyzer (if installed) and replace if necessary		x
Calibrate the pressure transducer		x
Exchange Low Emission waste oil bottle	x	
Check the service coupler function	x	
Check the service hose	x	
Check the power cable		x

The following table shows the maintenance work that a professonial service has to perform.

To do	After 12 months or **40 h**	After **150 kg** or 24 months	After 60 months
Check the vacuum pump oil	x		
Check the refrigerant filter and replace if necessary	x	x	

To do	After 12 months or **40 h**	After **150 kg** or 24 months	After 60 months
Check the Filter Gasanalyzer (if installed) and replace if necessary	x	x	
Calibrate the pressure transducer	x		
Check the digital manometers via reference	x		
Exchange the coarse filter			x
Exchange Low Emission waste oil bottle	x		
Check the service coupler function	x		
Check the service hose	x		x

17 Troubleshooting

Problem	Possible cause	Suggested remedy
The display shows `Warning! Internal vessel overpressure!`.	Normal message that appears during the recycling process.	To continue, press ENTER for three seconds. If this message appears repeatedly, notify customer services.
The display shows `Warning! Internal vessel filled.`	The internal refrigerant container is too full to hold the quantity to be extracted.	Drain the internal refrigerant container in the proper manner.
The display shows `Warning! Pressure inside the A/C system. Recovery start!`	Normal message that appears at the start of the vacuum process. There is still pressure present in the air conditioning system.	No action is required. The process continues automatically.
The display shows `Warning! Pressure inside the A/C system!`	Message during the vacuum process. There is pressure in the air conditioning system.	No action is required. The process continues automatically.
The display shows `Not enough vacuum! Carry on?`	Message that appears during the vacuum process if the pressure in the air conditioning system after 8 min is still more than 50 mbar .	Check the air conditioning system or the connections between it and the A/C service unit for leaks.
The display shows `A/C system leakage! Carry on?`	Message at the end of the vacuum process. The air conditioning system shows a vacuum loss of more than 120 mbar during the checking time.	Check the air conditioning system or the connections between it and the A/C service unit for leaks.
The display shows `Drained oil glas emptying!`	This message appears during the extraction or recycling process if there is more than 150 mL of used oil in the container.	Dispose of the content of the used oil container in an environmentally responsible manner.
The display shows `Warning! Not enough vacuum for injection!`	Message that appears during the filling phase if the vacuum in the air conditioning system is insufficient to end the process.	Check the air conditioning system or the connections between it and the A/C service unit for leaks.
The display shows `Quantity too large. Fill internal vessel!`	Message that appears during the process input if there is not enough refrigerant in the internal container to complete the process.	Fill the refrigerant container.
The display shows `Not enough UV. Add!`	This message appears during the filling process if there is not enough UV additive in the container to finish the process.	Fill the UV additive container.
The display shows `Not enough oil. Add!`	Message that appears during the filling process if there is not enough fresh oil in the container to finish the process.	Top up the fresh oil container with a suitable oil type.
The display shows `Max. filling time exceeded! Carry on?`	Message that appears during the filling process if the set amount of refrigerant cannot be filled.	Check that A/C service unit's connections are not blocked.
The display shows `External tank empty or closed valve. Check!`	Message that appears at the start or during the filling of the internal refrigerant container if the set refrigerant quantity cannot be attained.	Check if the external refrigerant container still contains enough refrigerant or if the valves of the external refrigerant container are open.
The display shows `Change the equipment dryer filter! Go on?`	This message appears when you switch on the A/C service unit.	Change the internal filter as soon as possible (Changing the dryer filter on page 28). To skip this, press ✓ for 3 seconds.
The display shows `Change the vacuum pump oil! Go on?`	This message appears when you switch on the A/C service unit.	Change the vacuum pump oil as soon as possible (Changing the vacuum pump oil on page 31). To skip this, press ✓ for 3 seconds.

Problem	Possible cause	Suggested remedy
The display shows `Printer not in line! Carry on?`	Message indicates a printer fault.	> Check if there is paper in the printer. > Check if the printer is switched on (yellow LED must be lit constantly). > Check that the cover is closed properly.
The display shows `Error 01`	Refrigerant was added before draining was completed.	Repeat the draining procedure; do not interrupt it this time.
The display shows `Error 02`	The air conditioning system is leaking. There is still refrigerant in the air conditioning system.	Fix the leak.
The display shows `Error 03`	No data is coming from the refrigerant scale.	Check the scale.
The display shows `Error 04`	It is not possible to lower the pressure when flushing takes place.	> Check air conditioner and connections for leaks, constrictions and ice build-up. > Check pressure transducer calibration.
The display shows `Error 09`	Low pressure connector not connected to the flush container during flushing.	Connect low pressure hose to the flush box and open valve.
The display shows `Error 10`	It was not possible to reduce the pressure sufficiently during the Software test.	> Residual pressure on the pressure gauges? > Check pressure transducer calibration. > Check internal bottle pressure. > Check the compressor and the corresponding solenoid valves.
The display shows `Error 12`	It was not possible to remove any refrigerant from the internal vessel during the Software test.	> Check pressure transducer calibration. > Check if the valve on the internal vessel is open. > Check the RE valve.
The display shows `Error 52`	No USB flash drive was found/recognised.	> Insert the USB flash drive. > Ensure that the USB flash flash drive has been formatted with the FAT32 file system.
The display shows `Error 60`	During the hybrid service (flushing the service hoses with hybrid oil), a vacuum could not be achieved.	> Are the service hoses connected to the hybrid flush container? > Is the hybrid flush container fitted the right way round? > Check the connections for leaks.
The display shows `Error 61`	Pressure increase during the hybrid service (flushing the service hoses with hybrid oil).	> Are the service hoses connected to the hybrid flush container? > Is the hybrid flush container fitted the right way round? > Are the service couplings open?
The display shows `Error G1`	A connection to the analysis module could not be made.	> Check the connections. > Are the LEDs on the module activated?
The display shows `Error 00001`	The readings are unstable.	> Keep possible electrical sources of interference, such as mobile phones or welding equipment, away from the device.
The display shows `Error 00002`	The readings are excessively high.	> Keep possible electrical sources of interference, such as mobile phones or welding equipment, away from the device.
The display shows `Error 00003`	Calibration with the ambient air failed.	> Ensure the device is adequately ventilated. > Leave any leaking refrigerant to drain off.
The display shows `Error 00004`	The device is operating outside the recommended temperature range.	> Only use the device in temperature-controlled rooms (10 °C – 45 °C). > Ensure sufficient ventilation.
The display shows `Error 00001`	The refrigerant sample has a very high content of air or the amount of refrigerant was too low for testing.	> Ensure that there is enough refrigerant pressure. > Ensure that all the hoses are connected, not kinked and free of oil.

18 Disposal

NOTICE! Protect the environment
All operating fluids and components may only be disposed of by qualified personnel in accordance with national regulations.

Disposing of used fluids

- Used oil is hazardous waste.
- Do not mix used oil with other fluids.
- Prior to disposal keep used oil in suitable containers.

Disposing of packaging material

- Dispose of the cardboard packaging material with other waste paper.
- Dispose of plastic packaging material with other recyclable waste.

Disposal of the old A/C service unit

- If you wish to dispose of the A/C service unit, first completely drain it of all liquids and dispose of them according to national regulations.
- Have the old A/C service unit disposed of by qualified personnel in accordance with national regulations or contact the customer service.

19 Technical Data

	ASC 7.3
Ref. no.	9103303116
Dimensions (width x height x depth)	560 mm × 1300 mm × 650 mm
Weight	110 kg
Power supply	230 V / 240 V , 50 Hz / 60 Hz An inverter or similar device may be required to provide the correct voltage.
Maximum allowed impedance Zmax for power supply	0.43 Ω
Refrigerant extraction rate	30 kg/h
Vacuum pump output	5 cars per hour
Refrigerant recovery ratio	≥ 95 %
Hermetic compressor output	0.32 kW
Dryer filter output	150 kg
Vacuum pump oil service life	60 h
Filling cylinder accumulator capacity	16 kg
Noise emission*	62 dB(A)
Accuracy of the electronic scale for refrigerant	± 15 g
Accuracy of the electronic scale for old/new oil	± 1 g
Accuracy of the electronic scale for UV additive	± 1 g
Maximum permissible pressure	– 1 bar … 20 bar
Refrigerant	R134a, R1234yf, R456A, R513A
Oil	Only oil approved by manufacturer
Maximum permissible operating temperature	5°C … 45°C
Storage temperature range	– 25°C … 50°C

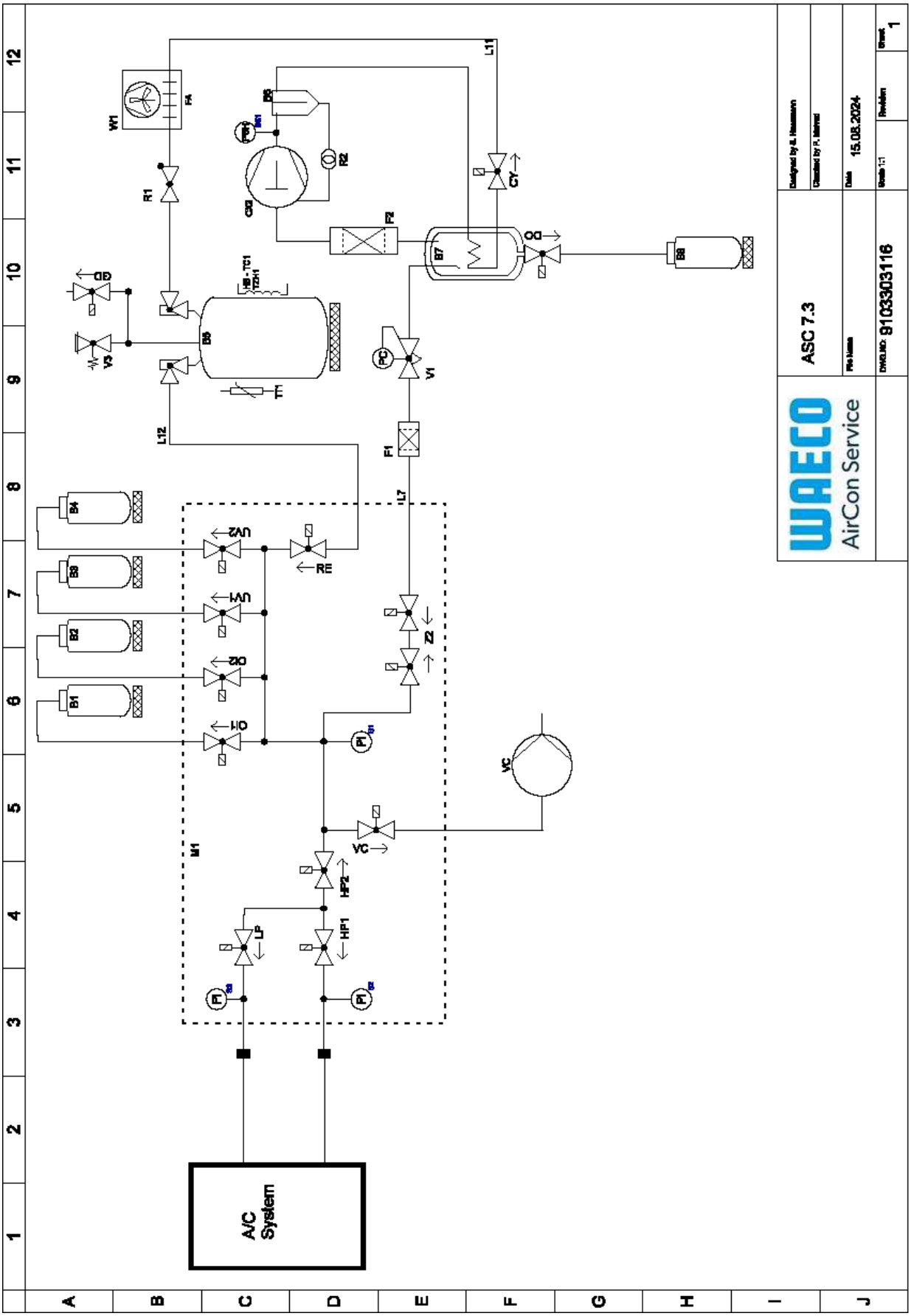
	ASC 7.4
Ref. no.	9103303117
Dimensions (width x height x depth)	560 mm × 1300 mm × 650 mm
Weight	120 kg
Power supply	230 V / 240 V , 50 Hz / 60 Hz An inverter or similar device may be required to provide the correct voltage.
Maximum allowed impedance Zmax for power supply	0.43 Ω
Refrigerant extraction rate	30 kg/h
Vacuum pump output	192 L/h
Refrigerant recovery ratio	≥ 95 %

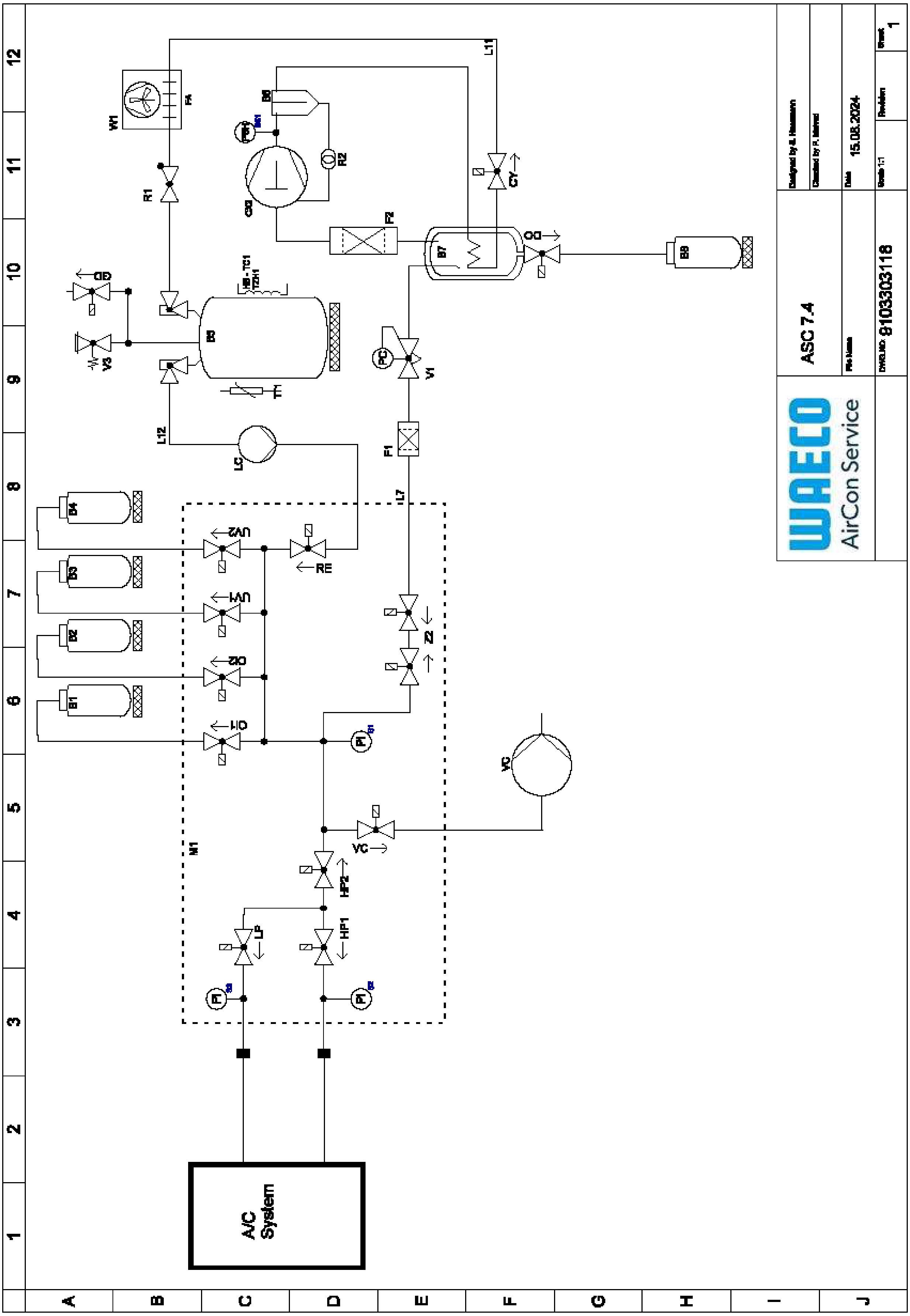
	ASC 7.4
Hermetic compressor output	0.32 kW
Dryer filter output	150 kg
Vacuum pump oil service life	60 h
Filling cylinder accumulator capacity	28 kg
Noise emission*	62 dB(A)
Accuracy of the electronic scale for refrigerant	± 15 g
Accuracy of the electronic scale for old/new oil	± 1 g
Accuracy of the electronic scale for UV additive	± 1 g
Maximum permissible pressure	– 1 bar ... 20 bar
Refrigerant	R134a, R1234yf, R456A, R513A
Oil	Only oil approved by manufacturer
Maximum permissible operating temperature	5°C ... 45°C
Storage temperature range	– 25°C ... 50°C

*) In accordance with DIN EN ISO 3746, the workplace-related emission value LpA of an A/C service unit was determined in various operating conditions. Both the average dB(A) values and the maximum dB(C) peak values are well below the maximum permissible exposure values.

Measurements: 62 dB(A) , 74 dB(C)

19.1 Flowchart ASC 7.3/ASC 7.4



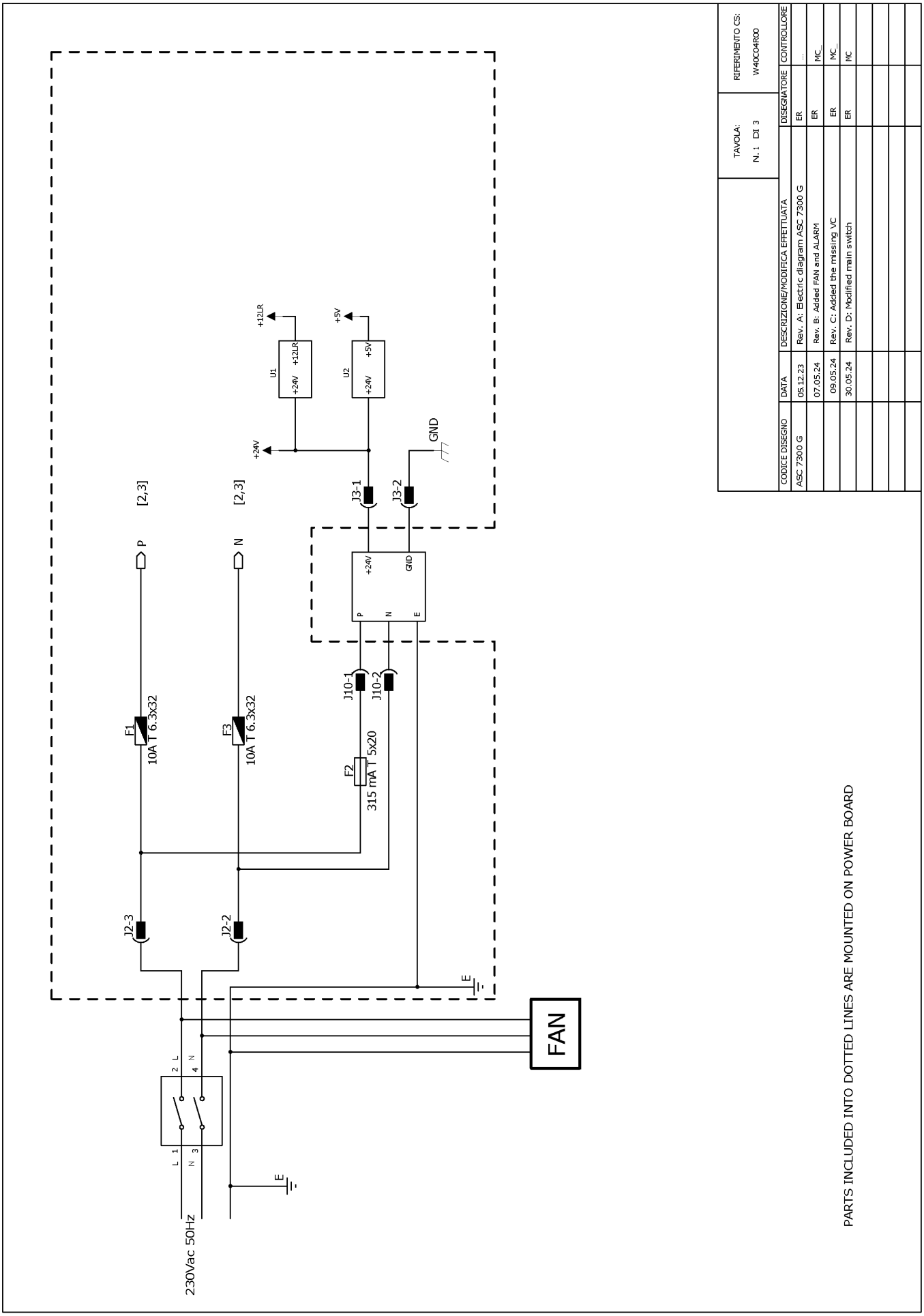


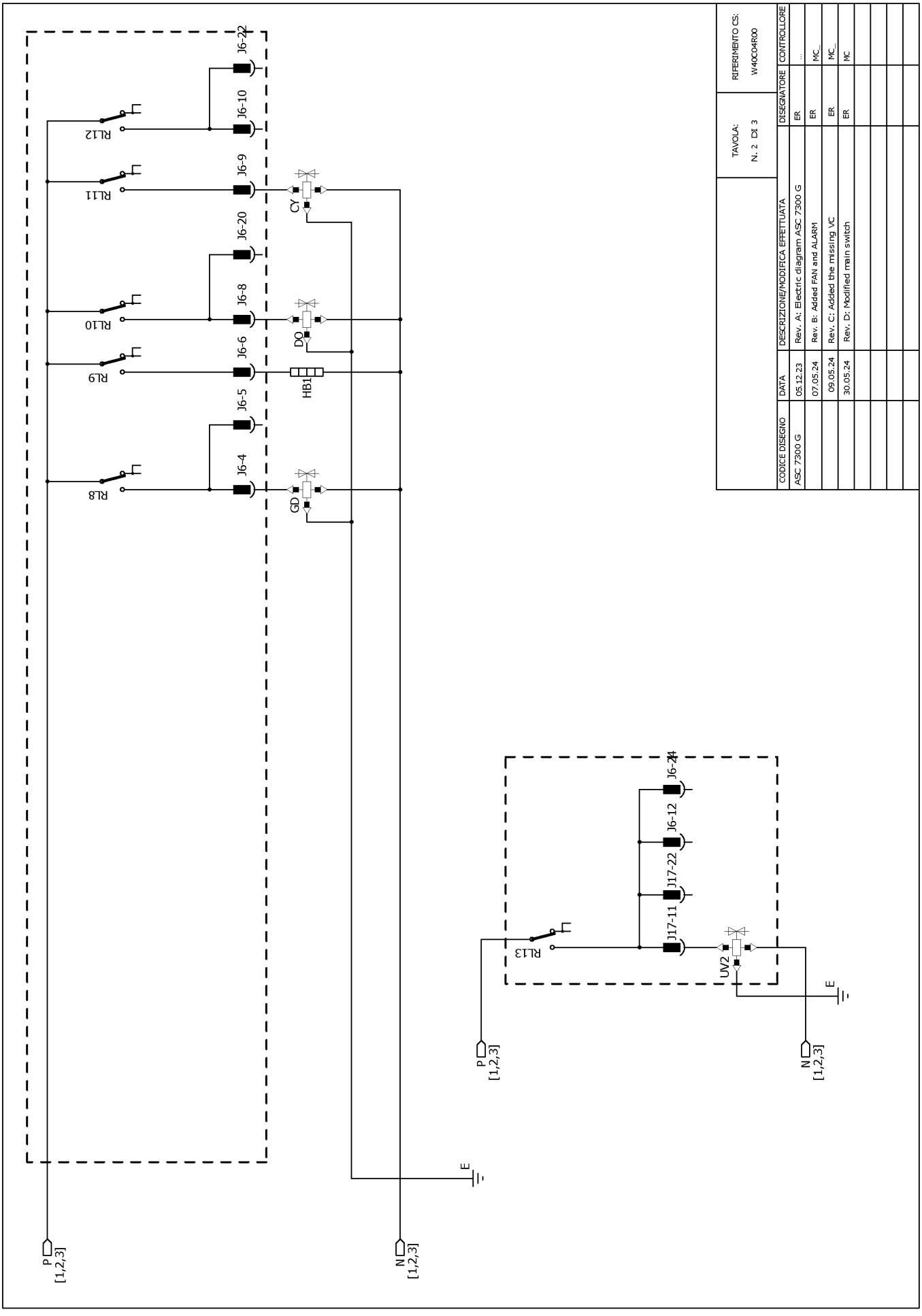
Legend

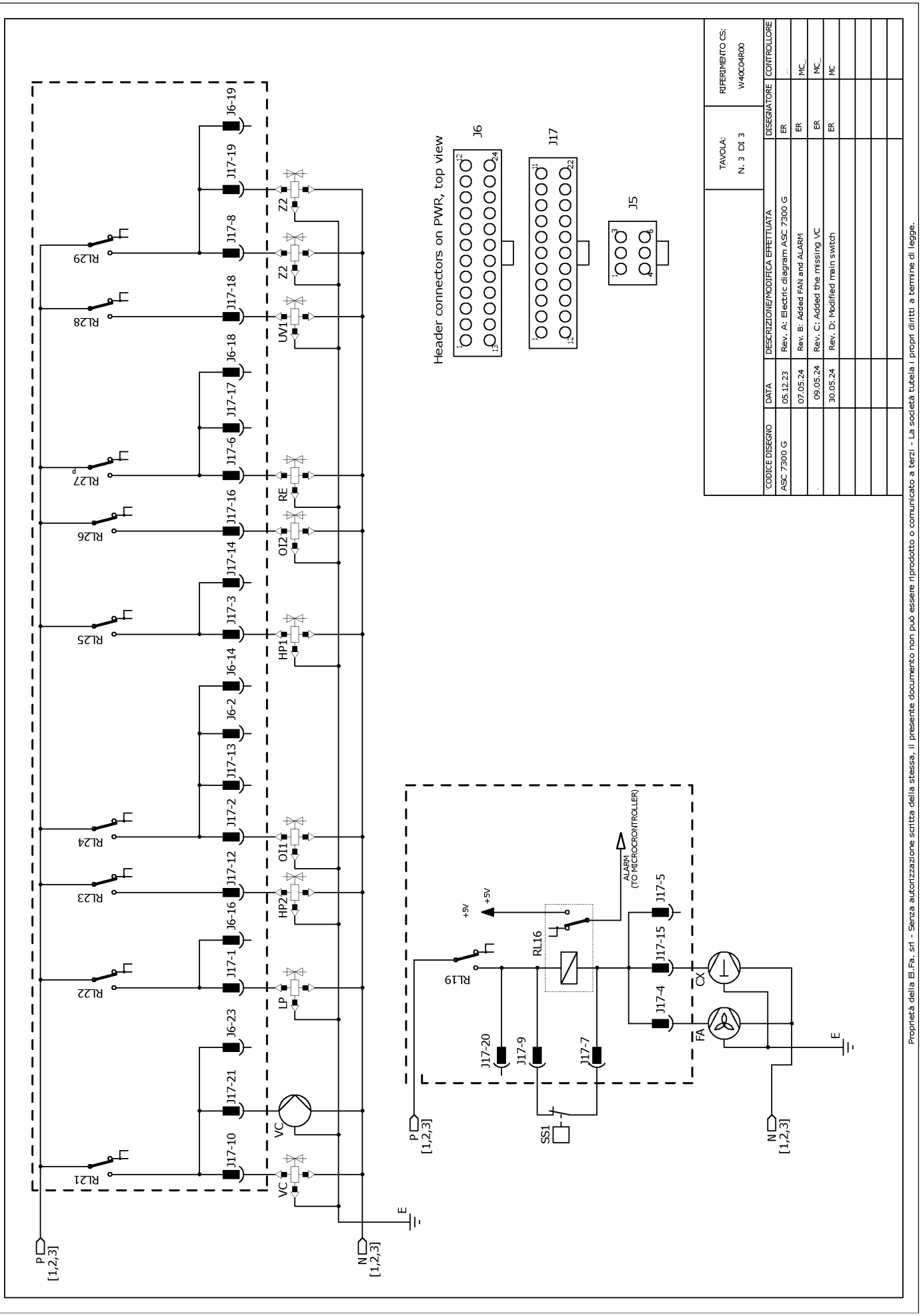
Item	Description
B1	Oil bottle
B2	Oil bottle
B3	UV-dye bottle
B4	UV-dye bottle
B5	Refrigerant tank
B6	Oil separator compressor
B7	Main Destiller
B8	Used-oil bottle
CX2	Compressor
F1	Coarse filter
F2	Dryer filter
M1	Main valve manifold
M2	LE valve manifold
M3	N2 valve manifold
VS	Vacuum pump
SS1	High pressure safety switch
S2	Pressure sensor HP
S3	Pressure sensor LP
R1	Check valve refrigerant tank
R2	Capillary tube
TT1	Temperature probe
TZH1	Thermal fuse
HB -TC1	Heatingbelt incl. Klixon
V1	Expansion valve
V3	Tank overpressure safety valve 20bar
V5	Overpressure safety valve 6bar
GD	NCG discharge valve
W1	Condenser
VC	Solenoid valve VC
LC	Liquid Pump
CY	Solenoid valve CY
LP	Solenoid valve LP
DO	Solenoid valve DO
UV1	Solenoid valve UV
UV2	Solenoid valve UV
OI1	Solenoid valve oil
OI2	Solenoid valve oil
Z2	Solenoid valve Z2
Z2	Solenoid valve Z2
HP1	Solenoid valve HP
HP2	Solenoid valve HP
Z1	Solenoid valve Z1
VO	Solenoid valve VO

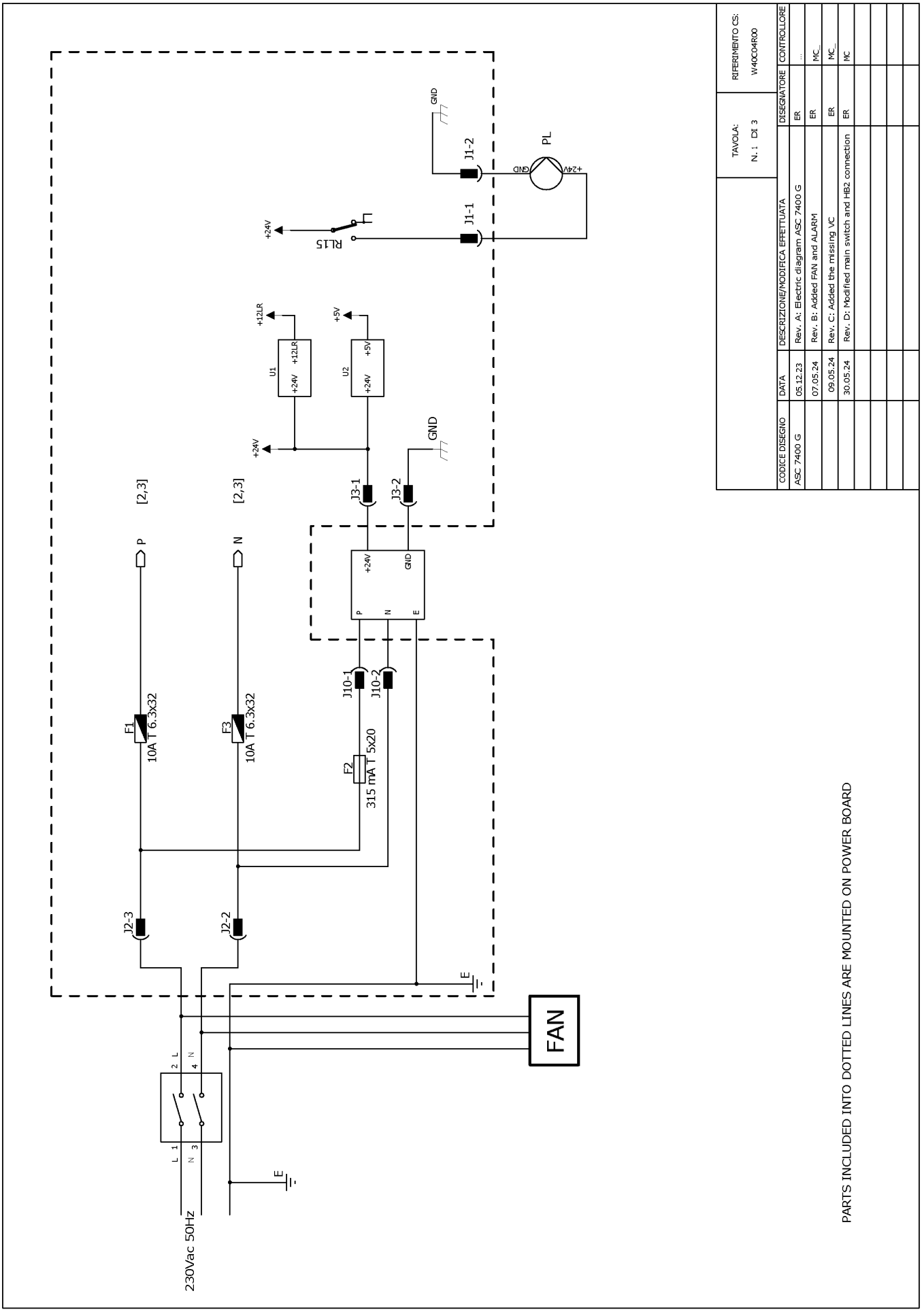
Item	Description
AU	Solenoid valve AU
L7/12	Refrigerant hose
L11	Refrigerant hose
RE	Solenoid valve RE

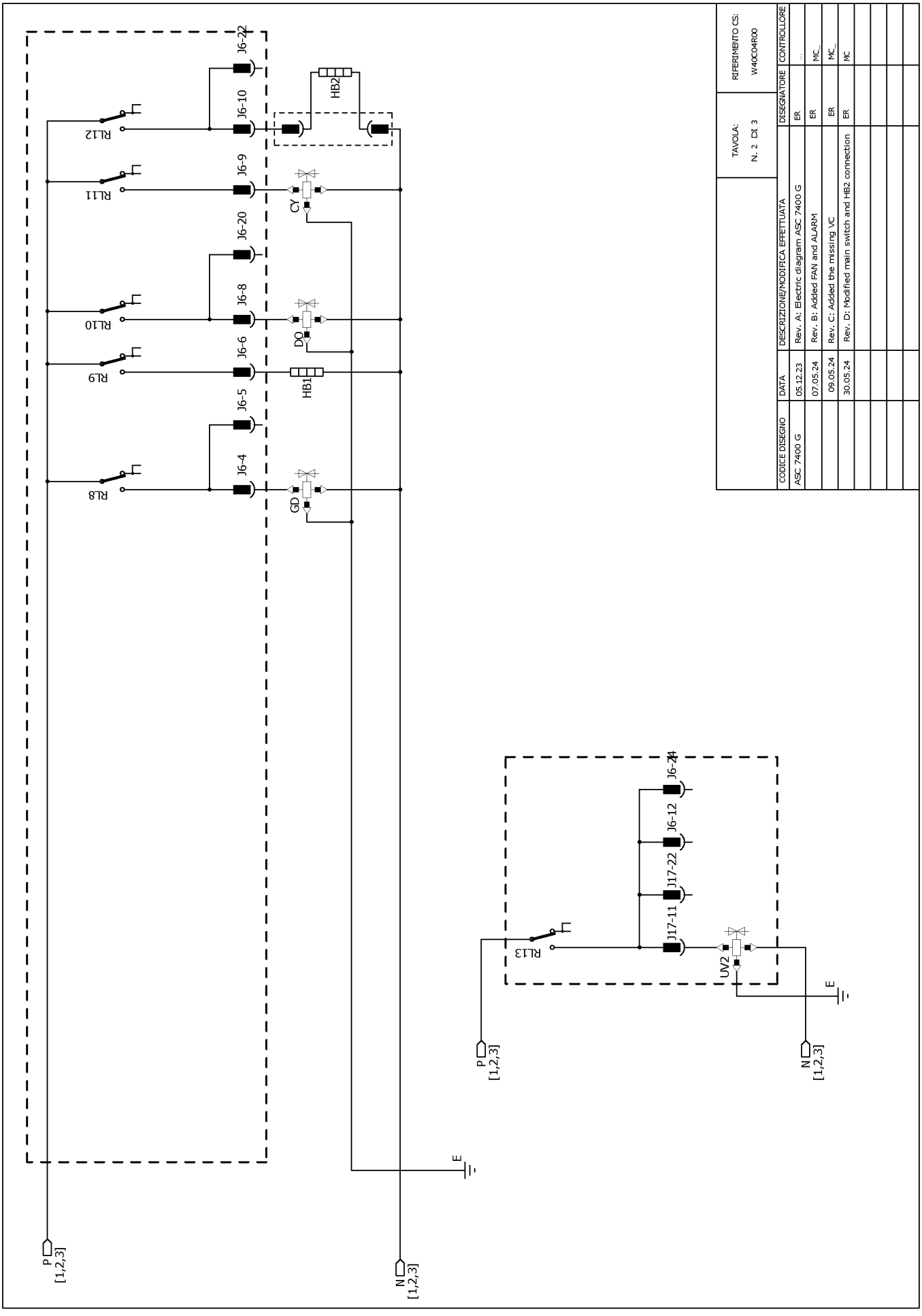
19.2 Circuit diagram



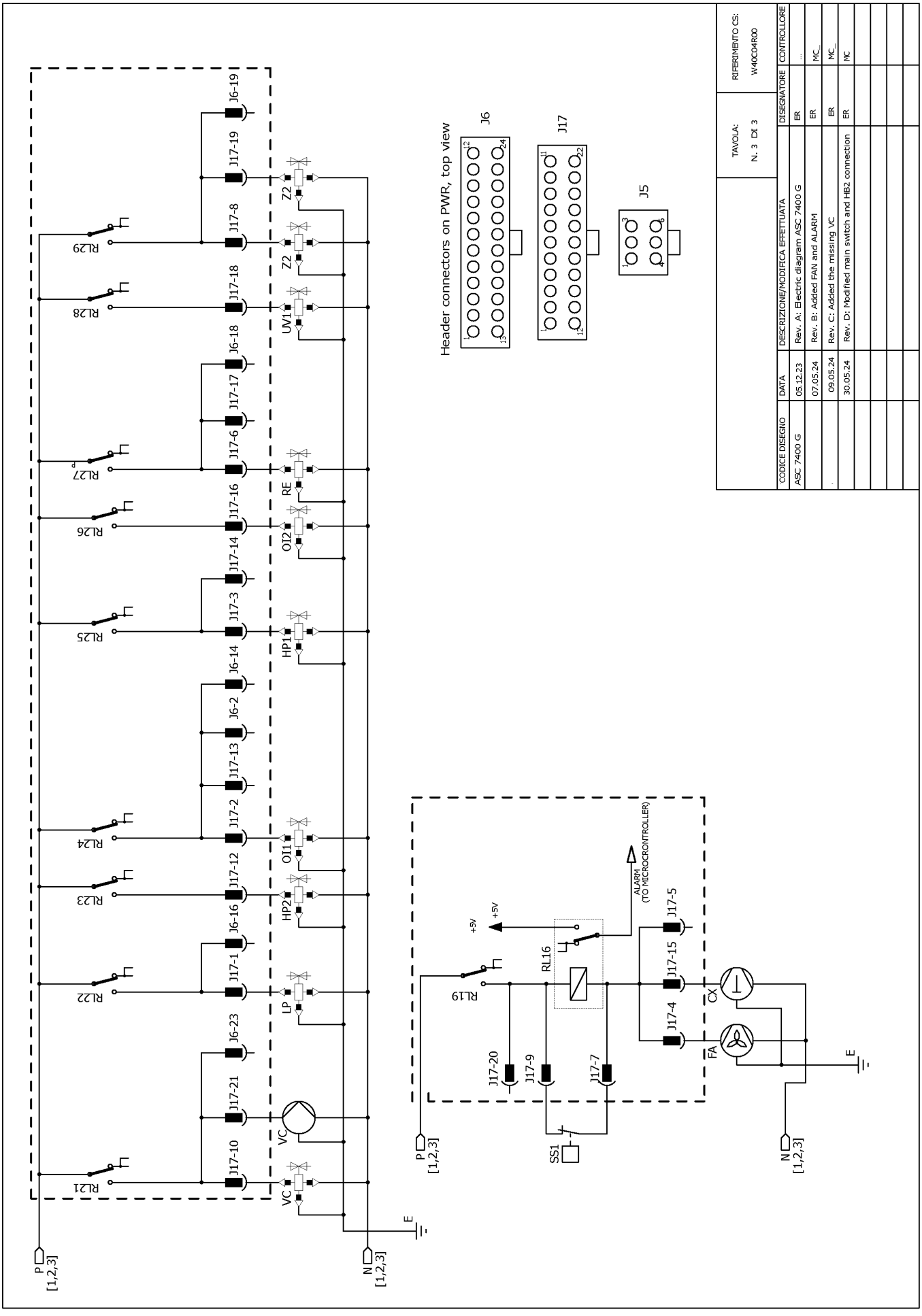








CODICE DISEGNO	DATA	DESCRIZIONE/MODIFICA EFFETTUATA	DISEGNATORE	CONTROLLORE
ASC 7400 G	05.12.23	Rev. A: Electric diagram ASC 7400 G	ER	...
	07.05.24	Rev. B: Added FAN and ALARM	ER	MC_
	09.05.24	Rev. C: Added the missing VC	ER	MC_
	30.05.24	Rev. D: Modified main switch and HB2 connection	ER	MC


Header connectors on PWR, top view
J6
J17
J5
TAVOLA: N. 3 DI 3
RIFERIMENTO CS: W440C04R00
CODICE DISEGNO | DATA | DESCRIZIONE/MODIFICA EFFETTUATA | DISEGNATORE | CONTROLLORE
ASC 7400 G | 05.12.23 | Rev. A: Electric diagram ASC 7400 G | ER | ...
07.05.24 | Rev. B: Added FAN and ALARM | ER | MC_
09.05.24 | Rev. C: Added the missing VC | ER | MC_
30.05.24 | Rev. D: Modified main switch and HB2 connection | ER | MC
P [1,2,3]
N [1,2,3]
E
VC
LP
HP1
HP2
OI1
OI2
RE
UV1
Z2
CX
FA
SS1
RL16
RL19
+5V
ALARM (TO MICROCRONTROLLER)
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