BOSCH

Climate 5000 L • Climate 5000i U/L

CL5000L 35 E • CL5000iU D 35 E | CL5000L 53 E • CL5000iU D 53 E | CL5000L 70 E • CL5000iU D 70 E | CL5000L 88 E • CL5000iL D 88 E | CL5000L 105 E • CL5000iL D 105 E | CL5000L 105 E-3 • CL5000iL D 105 E | CL5000L 125 E • CL5000iL D 125 E | CL5000L 140 E-3 • CL5000iL D 140 E | CL5000L 160 E-3 • CL5000iL D 160 E

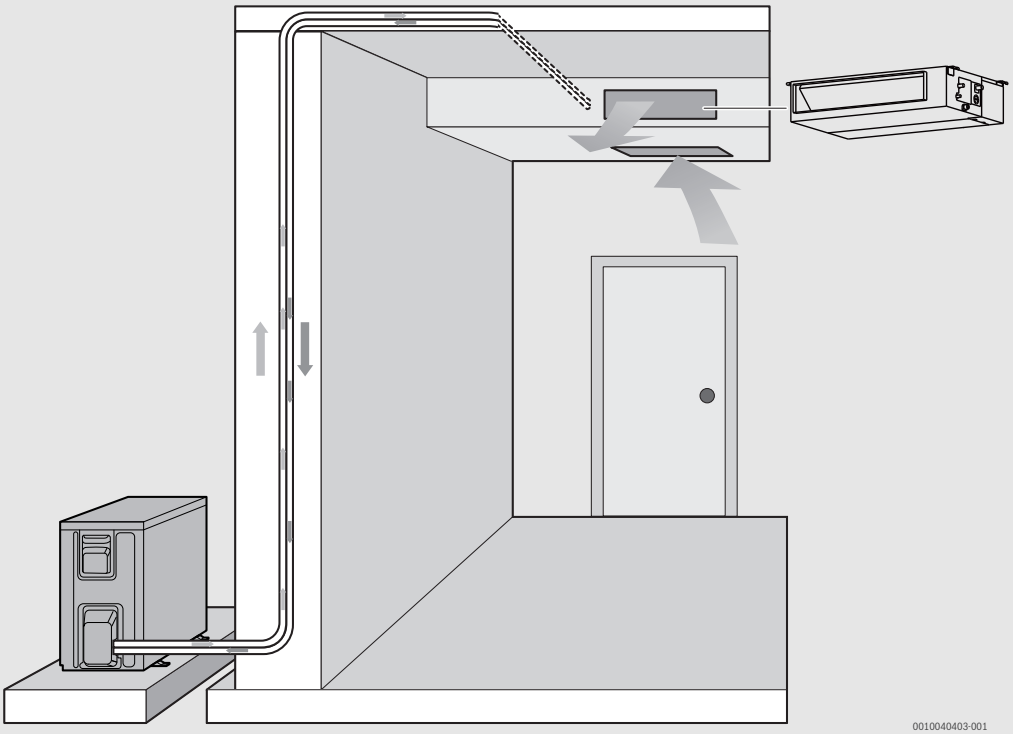

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Table of contents

1 Explanation of symbols and safety instructions

1.1 Explanation of symbols

Warnings

In warnings, signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing danger are not taken.

The following signal words are defined and can be used in this document:

DANGER

DANGER indicates that severe or life-threatening personal injury will occur.

WARNING

WARNING indicates that severe to life-threatening personal injury may occur.

CAUTION

CAUTION indicates that minor to medium personal injury may occur.

NOTICE

NOTICE indicates that material damage may occur.

Important information

The info symbol indicates important information where there is no risk to people or property.

Symbol	Meaning
	Warning regarding flammable substances: the refrigerant R32 used in this product is a gas with low combustibility and low toxicity (A2L or A2).
	Wear protective gloves during installation and maintenance work.
	Maintenance by a qualified person should be done while following the instructions of the service manual.
	For operation follow the instructions of the user manual.

Table 1

1.2 General safety instructions

⚠ Notices for the target group

These installation instructions are intended for qualified persons who are skilled in dealing with refrigeration engineering and HVAC technology and also electrical systems. All system-relevant instructions must be observed. Failure to comply with instructions may result in material damage and personal injury, including danger to life.

- ▶ Before carrying out the installation, read the installation instructions of all system components.
- ▶ Observe the safety instructions and warnings.
- ▶ Follow national and regional regulations, technical regulations and guidelines.
- ▶ Record all work carried out.

⚠ General dangers posed by the refrigerant

- ▶ This appliance is filled with refrigerant R32. If the refrigerant gas gets into contact with fire, it may generate toxic gas.
- ▶ Thoroughly ventilate the room if refrigerant leaks during the installation.
- ▶ Check the tightness of the system following the installation.
- ▶ Do not to let any other substance than the specified refrigerant (R32) into the refrigerant cycle.

⚠ Safety of electrical devices for domestic use and similar purposes

The following requirements apply in accordance with EN 60335-1 in order to prevent hazards from occurring when using electrical appliances:

"This appliance can be used by children of 8 years and older, as well as by people with reduced physical, sensory or mental capabilities or lacking in experience and knowledge, if they are supervised and have been given instruction in the safe use of the appliance and understand the resulting dangers. Children shall not play with the appliance. Cleaning and user maintenance must not be performed by children without supervision."

"If the power cable is damaged, it must be replaced by the manufacturer, its customer service department or a similarly qualified person, so that risks are avoided."

⚠ Handover to the user

When handing over the air conditioning system, explain the operation and operating conditions to the user.

- ▶ Explain operation – with particular emphasis on all safety-related actions.
- ▶ Highlight the following points in particular:
  - Point out that modifications or repairs may be carried out only by an approved contractor.
  - To ensure safe and environmentally compatible operation, an annual inspection, and also cleaning and maintenance if required, must be carried out.
- ▶ Point out the possible consequences (personal injury and possible danger to life or material damage) of not carrying out inspection, cleaning and maintenance correctly, or omitting it altogether.
- ▶ Hand over the installation and operating instructions to the user for safekeeping.

1.3 Notices regarding these instructions

The figures are shown together at the end of these instructions. The text contains references to the figures.

Depending on the model, the products may be different to those shown in these instructions.

2 Product Information

2.1 Declaration of conformity

The design and operating characteristics of this product comply with the European and national requirements.

CE The CE marking declares that the product complies with all the applicable EU legislation, which is stipulated by attaching this marking.

The complete text of the Declaration of Conformity is available on the Internet: www.bosch-climate.en.

2.2 Scope of delivery

The appliances are shown as an example and deviations are possible. The scope of delivery of the possible appliances is shown in Fig. 1 and Fig. 2.

[1] Outdoor unit (filled with refrigerant)
[2] Indoor unit (filled with nitrogen)
[3] Display unit
[4] Wired room controller with fixing materials
[5] Button battery
[6] 2 plastic hoses and 4 cable ties for insulation
[7] Drainage elbow with gasket
[8] Magnetic ring (number depends on appliance type)
[9] Insulation piping
[10] Copper nut (2x)
[11] Set of printed documents for product documentation
[12] Extension cable for wired room controller (6 m)
[13] Extension cable for display unit (2 m)
[14] 4 anti-vibration couplings for the outdoor unit
[15] Remote controller

2.3 Twin combination

The appliances can be installed as so-called twin combination. In doing so, an outdoor unit is combined with two indoor units of the same type. The indoor units must be installed at the same height.

- ▶ Observe the possible combinations in table 2.
- ▶ Observe the dimensions in Fig. 29.
- ▶ Arrange the branch joints horizontally.

Outdoor unit	Indoor Unit
CL5000L 70 E	2 × CL5000iU D 35 E
CL5000L 105 E/ CL5000L 105 E-3	2 × CL5000iU D 53 E
CL5000L 140 E-3	2 × CL5000iU D 70 E
CL5000L 160 E-3	2 × CL5000iL D 88 E

Table 2 Possible twin combinations

2.4 Product dimensions and minimum clearances

2.4.1 Indoor unit and outdoor unit

Indoor Unit

Figs. 5 to 4.

[1] Connection for outside air duct
[2] Air inlet
[3] Air filter/air outlet
[4] Air filter/air outlet (following modification)
[5] Electric control box

Outdoor Unit

Fig. 6 to 7.

wired controller

→ Fig. 23

2.4.2 Refrigerant lines

Key to figure 8:

[1] Pipe on gas side
[2] Pipe on liquid side
[3] Siphon-shaped elbow as oil separator

If the indoor units are positioned lower than the outdoor unit, install a siphon-shaped elbow on the gas side after no more than 6 m and every 6 m thereafter (→ figure 8, [1]).

- ▶ Observe maximum pipe length and maximum difference in height between indoor unit and outdoor unit.

Appliance type	Maximum pipe length [m]	Maximum height difference [m]
CL5000L 35 E	≤ 25	≤ 10
CL5000L 53 E	≤ 30	≤ 20
CL5000L 70 E	≤ 50	≤ 25
CL5000L 88 E		
CL5000L 105 E	≤ 75	≤ 30
CL5000L 105 E-3		
CL5000L 125 E		
CL5000L 140 E-3		
CL5000L 160 E-3		

Table 3 Piping lengths

- ▶ Observe pipe diameter and further specifications.

Pipe diameter [mm]	Alternative pipe diameter [mm]
6.35 (1/4")	6
9.53 (3/8")	10
12.7 (1/2")	12
15.9 (5/8")	16

Table 4 Alternative pipe diameter

Specification of the pipes	
Min. piping length	3 m
Additional refrigerant to be added if the pipe length exceeds 5 m (liquid side)	With Ø 6.35 mm (1/4"): 12 g/m With Ø 9.53 mm (3/8"): 24 g/m
Pipe thickness with pipe diameter from Ø 6.35 mm to 12.7 mm	≥ 0.8 mm
Pipe thickness with 15.9 mm pipe diameter	≥ 1.0 mm
Thickness of insulation against heat	≥ 6 mm
Material of insulation against heat	Polyethylene foam

Table 5

2.5 Information on refrigerant

This device contains **fluorinated greenhouse gases** as refrigerant. The device is hermetically sealed. You will find the information on the refrigerant according to the Regulation (EU) No 517/2014 on fluorinated greenhouse gases in the operating instructions of the device.

Information for the installer: If you refill refrigerant, enter the additional charge size and the total charge size of the refrigerant in the table “information on refrigerant” of the operating instructions.

3 Installation

3.1 Before installation

CAUTION

Risk of injury from sharp edges!

- ▶ Wear protective gloves during installation.

CAUTION

Danger of burns!

During operation the pipes become hot.

- ▶ Make sure, that the pipes cooled down before touching them.

- ▶ Check the scope of delivery for damage.
- ▶ Check whether a hissing sound due to negative pressure can be detected when opening the pipes of the indoor unit.

3.2 Requirements for installation site

- ▶ Observe minimum clearances (→ Chapter 2.4 on page 55).
- ▶ Observe minimum room area.

Appliance type	Installation height [m]	Minimum room area [m^2]
CL5000iU D 35 E	≥ 2.3	≥ 4
CL5000iU D 53 E	≥ 2.3	≥ 4
CL5000iU D 70 E	≥ 2.3	≥ 6
CL5000iL D 88 E	≥ 2.3	≥ 7
CL5000iL D 105 E	≥ 2.3	≥ 10
CL5000iL D 125 E	≥ 2.3	≥ 12
CL5000iL D 140 E	≥ 2.3	≥ 12
CL5000iL D 160 E	≥ 2.3	≥ 13

Table 6 Minimum room area

Notices regarding the indoor unit

- ▶ Do not install the indoor unit in a room in which open ignition sources (for example: open flames, an operating wall mounted gas boiler or an operating electric heating system) are in operation.
- ▶ The installation location must not be higher than 2000 m above sea level.
- ▶ Keep the air inlet and air outlet clear of any obstacles to allow the air to circulate freely. Otherwise poor performance and higher noise levels may occur.
- ▶ Keep TV, radio and similar appliances at least 1 m away from the indoor unit.
- ▶ Do not install the indoor unit in rooms with a high humidity (e.g. bathrooms or utility rooms).
- ▶ Indoor units with a cooling capacity of 2.0 to 5.3 kW are designed for a single room.
- ▶ The ceiling construction and suspension system (on site) must be able to support the weight of the appliance.

Notices regarding the outdoor unit

- ▶ The outdoor unit must not be exposed to machine oil vapour, hot spring vapour, sulphur gas, etc.
- ▶ Do not install the outdoor unit directly next to water or where it is exposed to sea air.
- ▶ The outdoor unit must always be kept free of snow.
- ▶ There must be no disruption caused by extract air or operating noise.
- ▶ Air should be able to circulate freely around the outdoor unit, but the appliance must not be exposed to strong wind.
- ▶ Condensate that forms during operation must be able to drain off easily. Lay a drain hose if required. In cold regions, installation of the drain pipe is not advisable as freezing could result.
- ▶ Place the outdoor unit on a stable base.

Notes on the wired room controller

- ▶ The ambient temperature at the installation location should be in the following range: −5...43 °C.
- ▶ The relative humidity at the installation location should be in the following range: 40. 90 %.

3.3 Unit installation

NOTICE

Incorrect assembly can cause material damage.

If the appliance is mounted incorrectly, it may drop off the ceiling

- ▶ Only mount the appliance on a solid flat ceiling. The ceiling must be able to carry the weight of the appliance.
- ▶ Only use screws and wall plugs that are suitable for the ceiling type and appliance weight.

3.3.1 Installing the indoor unit

We recommend preparing the pipes before hanging the indoor unit so that only the pipes need to be connected.

- ▶ Open the box at the top and lift the indoor unit out and up.
- ▶ Determine the installation location, taking the minimum clearances and orientation of the pipes into consideration (→Fig. 5 to 4).

Make sure that the appliance fits between the structural ceiling and suspended ceiling.

- ▶ The clearance between the built-in ducted indoor unit and drop suspended ceiling must be at least 24 mm.

- ▶ Define and mark the position of the suspension bolts on the ceiling.

DANGER

Risk of injury!

The ceiling attachment must be suitable for carrying the weight of the indoor unit. We recommend using threaded rods in order to be able to adjust the height precisely.

DANGER

Risk of injury!

At least two persons are required to hang the appliance and fasten it securely.

- ▶ Do not install the appliance on your own.

- ▶ Hang the appliance on the suspension bolts with the washers and nuts.
- ▶ Position the indoor unit at the correct height and align horizontally by turning the nuts on the threaded rods.

NOTICE

If the appliance is not level condensate may leak out.

- ▶ Use a spirit level to align the appliance horizontally.

- ▶ Secure the appliance at the correct installation position with lock nuts.
- ▶ Establish pipe connections as described in chapter 3.5.1.

3.3.2 Installing the outdoor unit

- ▶ Place the box so it is facing upwards.
- ▶ Cut and remove the packing straps.
- ▶ Pull the box up and off and remove the packaging.
- ▶ Prepare and install a floor or wall mounting bracket, depending on the type of installation.
- ▶ Set up or hang the outdoor unit.
- ▶ When installing on the floor or wall mounting bracket, attach the supplied drainage elbow and gasket (→ Fig. 9).
- ▶ Remove the cover for the pipe connections (→ Fig. 13 and 14).
- ▶ Establish pipe connections as described in chapter 3.5.1.

3.4 Air duct Installation

3.4.1 Installation of pipe and accessories

The appliance must be hung in order to install the pipes, etc.

If an air filter is not used, dust particles may accumulate in the heat exchanger and cause malfunctions and leaks.

- ▶ To prevent the air discharged by the air conditioner from being drawn back in directly: plan the air outlet and air inlet so that they are not too close to one another.
- ▶ Before installing the air duct, make sure the static pressure of the air duct is within the permitted range (→ Tables 7 and figures 32 to 55).

Legend for the figures 32 to 55:

1 limit
2 Gauge point
H High
M Middle
L Low

Model	Static pressure (Pa)				
	Pressure range	SP1	SP2	SP3	SP4
CL5000iU D 35 E	0-50	15	25	35	50
CL5000iU D 53 E	0-75	25	50	60	75
CL5000iU D 70 E	0-120	30	50	75	120
CL5000iL D 88 E	0-120	20	35	65	120
CL5000iL D 105 E					
CL5000iL D 125 E	0-160	27	65	105	160
CL5000iL D 140 E					
CL5000iL D 160 E	0-150	45	80	110	150

Table 7 External static pressure

The external static pressure (SP1...4) can be set via the configuration menu of the wired controller.

- ▶ Always incorporate isolators when connecting the air conduits to the appliance in order to prevent the noise from the indoor unit being transmitted to the ventilation pipes.
- ▶ Attach the air duct as shown in Fig. 4.

Key to figure 4:

[1] Thermal insulation
[2] Isolator
[3] Air inlet grille
[4] Test orifice
[5] Built-in ducted indoor unit
[6] Air Outlet

- ▶ Also insulate the pipes to prevent condensation.

3.4.2 Adjusting air inlet direction (from the rear to the underside)

Carry out modification as shown in Fig. 19:

- ▶ Remove filter grille [3].
- ▶ Remove fan plate [1] and air inlet flange [2].
- ▶ Bend fan plate on the rear through 90°.
- ▶ Reinstall the fan plate in the position previously occupied by the air inlet flange and vice-versa.
- ▶ Guide the filter grille [3] into the air inlet flange.

3.4.3 Installing the outside air duct

There is an outside air intake opening on the built-in ducted indoor unit side which can be used if required (→ Fig. 5, [2]).

No more than 5% of the air volumetric flow rate can be introduced via the outside air intake opening.

3.5 Pipework connection

3.5.1 Connecting refrigerant lines to the indoor and outdoor unit

CAUTION

Discharge of refrigerant due to leaky connections

Refrigerant may be discharged if pipe connections are incorrectly installed. Reusable mechanical connections and flared connections are not permitted indoors.

- ▶ Tighten flared connections only once.
- ▶ After releasing, always fabricate the flared connection again.

Copper pipes are available in metric and imperial sizes, the flare nut thread is however the same. The flared fittings on the indoor and outdoor unit are intended for imperial sizes.

- ▶ When using metric copper pipes, replace the flare nuts with nuts of a suitable diameter (→ Tab. 8).

- ▶ Determine pipe diameter and length (→ Page 55).
- ▶ Cut the pipe to length using a pipe cutter (→ Fig. 10).
- ▶ Deburr the inside of the pipe at both ends and tap to remove swarf.
- ▶ Insert the nut onto the pipe.
- ▶ Widen the pipe using a flaring tool to the size indicated in the tab. 8. It must be possible to slide the nut up to the edge but not beyond it.
- ▶ Connect the pipe and tighten the screw fitting to the torque specified in the tab. 8.
- ▶ Repeat the above steps for the other pipes.

NOTICE

Reduced efficiency due to heat transfer between refrigerant pipes

- ▶ Thermally insulate the refrigerant lines separately.

- ▶ Fit the insulation on the pipes and secure.

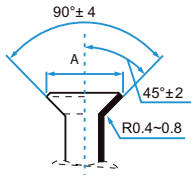
External diameter of pipe Ø [mm]	Tightening torque [Nm]	Flared opening diameter (A) [mm]	Flared pipe end	Pre-assembled flare nut thread
6.35 (1/4")	18-20	8.4-8.7		3/8"
9.53 (3/8")	32-39	13.2-13.5		3/8"
12.7 (1/2")	49-59	16.2-16.5		5/8"
15.9 (5/8")	57-71	19.2-19.7		3/4"

Table 8 Key data of pipe connections

3.5.2 Connecting condensate pipe to the indoor unit

Depending on the type of installation, the condensate pipe must either be connected to the integrated condensate pump or the condensation catch pan.

- ▶ Use PVCpipes with 32 mm inside diameter and 5-7 mm wall thickness.
- ▶ Insulate drain pipe to prevent condensate formation.
- ▶ Connect drain pipe to indoor unit and secure connection with a hose clip.
- ▶ Install drain pipe on slope (→ Fig. 20). With a condensate pump installed, the outlet of the drain pipe may be higher than the indoor unit if the dimensions and wiring diagram are observed.

NOTICE

Danger due to water damage!

If the pipes are routed incorrectly, water may be discharged, or may flow back into the indoor unit and cause the water level switch to malfunction.

- ▶ To prevent the pipes from sagging, install a support every 1–1.5 m.
- ▶ Route a drain pipe to the sewer via a siphon.

Testing the condensate pipe ensures that all connections are tight.

- ▶ Test the condensate pipe before closing the cover.

3.5.3 Testing the condensate pipe

if the condensate pump can only be tested once the electrical connection has been established.

- ▶ Fill the condensation catch pan or water injection pipe with roughly 2 l of water.
- ▶ Switch on cooling mode. The drainage pump can be heard.
- ▶ Make sure that the condensate drains away properly.
- ▶ Check tightness of all connections.

3.5.4 Checking tightness and filling the system

Checking tightness

Observe the national and local regulations when carrying out the tightness test.

- ▶ Remove the caps of the valves of a connection pair (→ Fig. 15 and 16, [1], [2] and [3]).
- ▶ Connect the Schrader opener [6] and pressure gauge [4] to the service socket [1].
- ▶ Open Schrader valve [1].
- ▶ Leave valves [2] and [3] closed and fill the pipes with nitrogen until the pressure is 10% above the maximum operating pressure (→ Page 66).
- ▶ Check whether the pressure is still the same after 10 minutes.
- ▶ Discharge the nitrogen until the maximum operating pressure is reached.
- ▶ Check whether the pressure is still the same after at least 1 hour.
- ▶ Discharge nitrogen.

Filling the system

NOTICE

Malfunction due to incorrect refrigerant

The outdoor unit is filled with refrigerant R32 at the factory.

- ▶ If refrigerant needs to be topped up, only use the same refrigerant. Do not mix refrigerant types.

- ▶ Evacuate and dry the pipes with a vacuum pump (→ Fig. 15 and 16, [5]) for at least 30 minutes at roughly −1 bar (approx. 500 microns).
- ▶ Open valve [3] on liquid side.
- ▶ Use a pressure gauge to [4] check whether the flow is unobstructed.
- ▶ Open valve [2] on gas side.
  The refrigerant is distributed round the connected pipes.
- ▶ Afterwards, check the pressure ratios.
- ▶ Unscrew the Schrader opener [6] and close the Schrader valve [1].
- ▶ Remove the vacuum pump, pressure gauge and Schrader opener.
- ▶ Reattach the valve caps.
- ▶ Reattach the cover for pipe connections to the outdoor unit.

3.6 Mount the wired room controller

NOTICE

Damage to the wired room controller

Opening the wired room controller in the wrong way or tightening the screws too tightly can damage it.

- ▶ Do no exert too much pressure on the wired room controller.

- ▶ Remove the wall plinth of the wired room controller (→ Fig. 24).
  - Insert the tip of a screwdriver at the bending point [1] on the rear of the wired room controller.
  - Lift up the screwdriver to lever open the wall plinth [2].
- ▶ If necessary, prepare the wall and communication wire (→ Fig. 25).
  - [1] Realise putty or insulating material.
  - [2] Make an elbow in the cable.
- ▶ Attach the wall plinth to the wall (→ Fig. 26, [1]).
- ▶ Fix the wired room controller to the wall plinth (→ Fig. 28).

3.7 Electrical connection

3.7.1 General notes

WARNING

Risk to life from electric shock!

Touching live electrical parts can cause an electric shock.

- ▶ Before working on electrical parts, disconnect all phases of the power supply (fuse/circuit breaker) and lock the isolator switch to prevent unintentional reconnection.

- ▶ Work on the electrical system must only be carried out by an authorised electrician.
- ▶ An authorised electrician must determine the correct conductor cross-section and circuit breaker. The maximum current consumption of the technical data (→ see chapter 10, page 66) is decisive for this purpose.
- ▶ Observe safety measures according to national and international regulations.
- ▶ If you identify a safety risk in the mains voltage, or if a short circuit occurs during installation, inform the operator in writing and do not install the appliances, until the problem has been resolved.
- ▶ All electrical connections must be made in accordance with the electrical connection diagram.
- ▶ Only use a special tool to cut cable insulation.
- ▶ Connect the cable to the existing mounting clips / cable glands using suitable cable ties (scope of delivery).
- ▶ Do not connect any additional consumers to the mains power supply of the device.
- ▶ Do not mix up live and PEN conductor. This can lead to malfunctions.
- ▶ If the mains power supply is fixed, install an overvoltage protector and isolator which is designed for 1.5 times the maximum power input of the appliance.
- ▶ For devices with a fixed mains power supply in which the leakage current is potentially higher than 10 mA, we recommend installing a residual current device (RCD) with a maximum rated residual operating current of 30 mA.

3.7.2 Connecting the indoor unit

The indoor unit is connected via a 4-wire communication cable. Use cables of the type H07RN-F with sufficient conductor cross-section.

NOTICE

Material damage can be caused by connecting the indoor unit incorrectly

Voltage is supplied to the indoor unit via the outdoor unit.

- ▶ Only connect the indoor unit to the outdoor unit.

Connecting the communication cable

- ▶ Remove the cover of the indoor unit electronics.
- ▶ Secure cable to the strain relief and connect to the terminals L, N, S and ⏚.
- ▶ Note assignment of wires to the terminals.
- ▶ Reattach the covers.
- ▶ Route the cable to the outdoor unit.

3.7.3 Installation of display unit

- ▶ Put the buckles of the display board → Fig. 22 into the grooves of electric control box and push the display board down.
- ▶ Route the wire of the display unit through the cable clamp on the electronic control unit and connect to the control board.

3.7.4 Connect the the wired room controller

NOTICE

Damage to the wired room controller or wiring

- ▶ Do not jam wires during installation.
- ▶ To avoid water entering the wired room controller when attaching the cabling (→ Fig. 25), use trap [2] and putty [1] to seal the plug-in connector.
- ▶ Cables must be securely attached and must not be under tension.

NOTICE

Damage due to overvoltage

The wired room controller is designed for low voltage.

- ▶ Never bring the communication cable into contact with high voltages.

Use the cable provided.

- ▶ If necessary, route an extension cable between the indoor unit and installation location of the wired room controller.
- ▶ Connect the communication cable to the indoor unit.
- ▶ Where applicable, connect the communication cable with the wired room controller via an extension cable. In doing so, insulate each push fit connection with plastic hose and cable ties (→ Fig. 27).
- ▶ Fit the magnet ring.
- ▶ Connect the earthing terminal lug.
- ▶ Insert the button battery into the holder [1].

3.7.5 Connecting the outdoor unit

A power supply cable (3-wire) and the communication cable of the indoor unit (4-wire) are connected to the outdoor unit. Use cables of the type H07RN-F with sufficient conductor cross-section and protect the mains power supply with a fuse.

- ▶ Secure the communication cable to the strain relief and connect to the terminals 1(L), 2(N), S and ⏚ (assignment of wires to terminals same as indoor unit) (→ Fig. 17 und 18).
- ▶ Attach 1 magnetic ring to the communication cable, as close as possible to the outdoor unit.
- ▶ Secure power cable to the strain relief and connect.
  - CL5000L ... E: terminals L, N and ⏚
  - CL5000L ... E-3: terminals L1, L2, L3, N and ⏚
- ▶ Fasten cover for connections.

3.7.6 Connection as twin combination

With the twin combination, two indoor units are connected in series. With the slave unit, terminal S is omitted. Instead of that, communication takes place between he indoor units via terminals X, Y and E.

Key to Fig. 30 and 31:

IDU-M Master unit (indoor unit 1)
IDU-S Slave unit (indoor unit 2)

- ▶ Connect master unit as described in chapter 3.7.2.
- ▶ Connect save unit to the master unit via terminals L, N and ⏚[1)].
- ▶ Connect master unit and slave unit additionally to terminals X, Y and E via a communication cable. In doing so, earth the shield.

The central controller and twin combination both use the X/Y/E terminal. For this reason, a decision must be made in advance if a twin combination or central controller is installed.

3.7.7 Connecting external accessories

External accessories can be connected to the terminals listed below.

Connection	Description / special features
CN23	On / Off contact switch • Volt free terminal • When using jumper connector, remove J6 next to the connection. • Open contact: – Indoor unit off – Remote control / room controller inactive (**CP** in the display) • Closed contact: – Indoor unit on – Remote control / room controller active
CN33	Alarm signal output • Volt free terminal • Connection, maximum 24 V DC, 500 mA • Open contact: Alarm off • Closed contact: Alarm on
CN40	Connection for room controller
CN43	External fan for supply of fresh air • Integrated power supply for maximum 200 W or 1 A (relay recommended). • External fan switches on / off simultaneously with the fan of the indoor unit. • In test mode or manual operation, the external fan remains off.

Table 9

To connect a gateway, observe the technical documentation of the gateway and the connection accessories.

1) L=1(L) and N=2(N).

4 On-site configuration

4.1 DIP switch setting

WARNING

Risk to life from electric shock!

Touching live electrical parts can cause an electric shock.

- ▶ Before working on electrical parts, disconnect all phases of the power supply (fuse/circuit breaker) and lock the isolator switch to prevent unintentional reconnection.

All DIP switches have been configured before delivery. The default setting is highlighted bold.

- ▶ Only professional maintenance personnel should change these settings.
- ▶ Improper DIP switch settings may cause condensation, noise, or unexpected system malfunction.

Definition of DIP switch 0/1:	
	Definition 0
	Definition 1

Table 10 Switch positions

ENC1	Code	Capacity setting[1)]
	0	20
	1	26
	2	32 - 35
	4	36 - 53
	5	54 - 71
	7	72 - 90
	8	91 - 105
	9	109 - 140
	A	141 - 160
	B	161 - 200

1) Default depending on the model

Table 11 Set the output

S1	S1 Setting	S2	Network address
	0 - F		0 - 15[1]
	0 - F		16 - 31
	0 - F		32 - 47
	0 - F		48 - 63

1) Default

Table 12 Set the network address

DIP switch	Definition of DIP Switches[1]
Fan OFF temperature when heating (anti-cold air function)	
SW1 	• [00]: 24° • [01]: 15 °C • [10]: 8 °C • [11]: Reserved
Behaviour of the fan once the room target temperature has been reached	
SW2 	• **[0]: Fan off** • [1]: Fan on (anti-cold air function deactivated)
Auto restart	
SW3 	• **[0]: Automatic restart on** • [1]: Automatic restart off
Set master and slave unit	
SW5 	• **[00]: Master unit only, no slave unit** • [01]: Master unit (heating) • [10]: Master unit (cooling) • [11]: Slave unit
Temperature compensation (heating)	
SW6 	• **[00]: 6 °C** • [01]: 2°C • [10]: 4°C • [11]: Reserved

1) Default highlighted in bold

Table 13 Definition of DIP Switches

5 Configuration to the wired room controller

Call up the configuration menu and make the settings:

- ▶ Switch off the air conditioning system.
- ▶ Keep the**COPY** key pressed until a parameter appears in the display.

If several indoor units are detected, the address (e.g. **00**) appears initially.

- ▶ With the ∨ or ∧ key, select an indoor unit (**00**... **16**) and confirm with the ☑ key.

- ▶ Select a parameter with the ∨ or ∧ key and confirm with the ☑ key.
- ▶ Press the ∨ or ∧ key to set the parameter and confirm it with the ☑ key, or press the ⮌ key to cancel the setting.

To exit the configuration menu:

- ▶ Press the ⮌ key or wait for 15 seconds.

Make the settings in the configuration menu:

- ▶ Call up the configuration menu.
- ▶ Select a parameter with the ∨ or ∧ key and confirm with the ☑ key.

The factory settings are highlighted in **bold** in the following table.

Parameters	Description
Tn (n=1,2, ...)	Check the temperature at the indoor unit.
CF	Check the status of the fan.
SP	Set the statistic pressure for the channel wall unit. • SP1: low • SP2: middle 1 • SP3: middle 2 • SP4: high
AF	Function test for three to six minutes.
tF	Offset temperature for the Follow me function. • −5...**0**...5 °C
tyPE	Restrict the control to specific operating modes: • **CH**: do not restrict available operating modes. • CC: no heating and automatic mode • HH: only heating and Fan Mode • NA: no automatic mode
tHI	Maximum value of adjustable temperature • 25...**30** °C
tLo	Minimum value of adjustable temperature • **17**...24 °C
rEC	Switch the control on/off via the remote control. • **ON**: on • OF: off
Addr	Set the addresses of the wired room controller. If there are two wired room controllers in the system, each wired room controller must have a different address. • **--**: only one wired room controller in the system • A: primary wired room controller with the address 0. • B: secondary wired room controller with the address 1.
Init	ON: restore factory settings.

Table 14

6 Commissioning

6.1 Commissioning checklist

1	Outdoor unit and indoor units are correctly installed.	
2	Pipes are correctly • connected, • thermally insulated, • and checked for tightness.	
3	Electrical connection has been correctly established. • Power supply is in the normal range. • Protective conductor is properly attached. • Connection cable is securely attached to the terminal strip. • Optional external accessories properly connected and DIP switch correctly set. • WLAN-Gateway (optional accessories) Connection is correct and established according to the Gateway installation instructions.	
4	Condensate pump and condensate pipe is properly installed and tested.	
5	All covers are fitted and secured.	

Table 15

6.2 Functional test of device

The system can be tested once the installation including tightness test has been carried out and the electrical connection has been established:

- ▶ Connect the power supply.
- ▶ Switch on the indoor unit with the wired room controller.
- ▶ Switch on cooling mode and set the lowest temperature.
- ▶ Test cooling mode for 5 minutes.
- ▶ Switch on heating mode and set the highest temperature.
- ▶ Test heating mode for 5 minutes.
- ▶ Ensure the function of the display unit and the wired room controller.

Observe the operating instructions provided for operation of the indoor units.

If the room temperature is less than 16 °C, the cooling mode must be switched on manually. This manual operation is only envisaged for testing and emergency situations.

- ▶ Normally always use the wired room controller.

Activate manual operation:

- ▶ Press the key for manual operation (→ Fig. 28, [1]) one to three times to step through the following operating modes:
  - – Automatic mode
  - – Manual cooling mode
  - – Off

6.3 Handover to the user

- ▶ When the system has been set up, hand over the installation manual to the customer.
- ▶ Explain to the customer how to use the system, referring to the operation manual.
- ▶ Advise the customer to carefully read the operation manual.

7 Troubleshooting

7.1 Faults with indication (Self diagnosis function)

WARNING

Risk to life from electric shock!

Touching live electrical parts can cause an electric shock.

- ▶ Before working on electrical parts, disconnect all phases of the power supply (fuse/circuit breaker) and lock the isolator switch to prevent unintentional reconnection.

If a fault occurs during operation, the LEDs flash for an extended period or an error code is displayed (e.g. EH 02).

If a fault is present for more than 10 minutes:

- ▶ Briefly interrupt the power supply and switch the indoor unit back on.

If a fault persists:

- ▶ Call customer service and provide the fault code and details of the appliance.

Indoor Unit

Fault code	Content
EH 00/EH 0A	Indoor unit EEPROM fault
EL 01	Communication fault between outdoor and indoor unit
EH 03	Indoor unit fan outside the normal range (with some units)
EH 60	Temperature sensor T1 (room temperature sensor) switched off or short-circuited
EH 61	Temperature sensor T2 (pipe temperature sensor) switched off or short-circuited
EL 0C	Refrigerant leakage detector (with some units)
EH 0b	Communication fault of the indoor unit main board
EH 0E	Malfunction of the water level alarm
EC 53	Temperature sensor T4 (outside temperature) switched off or short-circuited
EC 52	Temperature sensor T3 (pipe temperature sensor) switched off or short-circuited
EC 54	Temperature sensor TP (compressor discharge temperature protection) switched off or short-circuited
EC 56	Temperature sensor T2B (pipe temperature) switched off or short-circuited
EC 51	Outdoor unit EEPROM fault
EC 07	Outdoor unit fan outside the normal range (with some units)
PC 00	IPM malfunction or IGBT overvoltage protector
PC 01	Overvoltage or low-voltage protection
PC 02	Maximum temperature protection of compressor or high temperature protection of IPM module
PC 04	Compressor control system failure of inverter
PC 03	High or low-pressure protection (with some units)
EC 0d	Malfunction of outdoor unit

Table 16 Fault codes of indoor unit

Outdoor Unit

Fault code	Content
EC 51	Outdoor unit EEPROM fault
EL 01	Communication fault between outdoor and indoor unit
PC 40	Communication fault between PCI and printed circuit board of outdoor unit
PC 08	Overcurrent protection of outdoor unit
PC 10	Low-voltage protection of outdoor unit AC voltage
PC 11	Overvoltage protector of DC-bus for outdoor unit PCB
PC 12	Overvoltage protector of DC-bus for outdoor unit PCB/341/MCE fault
PC 00	IPM module protection
PC 0F	PFC module protection
EC 71	Overvoltage defect in fan motor (DC current) of outdoor unit
EC 72	Missing phase detection of outdoor unit fan motor (direct current)
EC 07	Fan speed of outdoor unit out of control
PC 43	Phase detection protection of outdoor unit compressor
PC 44	Zero speed protection of outdoor unit
PC 45	IR control failure (outdoor unit)
PC 46	Compressor speed out of control
PC 49	Overvoltage defect in compressor
PC 30	High-pressure protection
PC 31	Low-pressure protection

Fault code	Content
PC 0A	Condenser high-temperature protection
PC 06	Compressor discharge temperature protection
PC 02	Maximum temperature protection of compressor
EC 52	Temperature sensor T3 (pipe temperature sensor) switched off or short-circuited
EC 53	Temperature sensor T4 (outside temperature) switched off or short-circuited
EC 54	Temperature sensor TP (compressor discharge temperature protection) switched off or short-circuited

Table 17 Outdoor unit fault codes

wired controller

The wired room controller may display a different fault code to the indoor unit, although it is referring to the same fault.

Fault code	Possible cause
EH b3	Communication fault between wired room controller and indoor unit. Check communication cable.

Table 18

7.2 Faults not indicated

Fault	Possible cause	Remedy
The output of the indoor unit is too low.	Heat exchanger of the outdoor or indoor unit contaminated or partially blocked.	▶ Clean heat exchanger of outdoor or indoor unit.
	Shortage of refrigerant	▶ Check tightness of pipes, reseal if required. ▶ Refill refrigerant.
Outdoor unit or indoor unit is not working.	No current	▶ Check power connection. ▶ Power on the IDU.
	Leakage protector or fuse installed in the device[1] has blown.	▶ Check power connection. ▶ Check the leckage protection and fuse.
Outdoor unit or indoor unit starts and stops continuously.	Insufficient refrigerant in the system.	▶ Check tightness of pipes, reseal if required. ▶ Refill refrigerant.
	Too much refrigerant in the system.	Remove refrigerant with refrigerant recovery unit.
	Moisture or impurities in the refrigerant circuit.	▶ Evacuate refrigerant circuit. ▶ Fill with new refrigerant.
	Voltage fluctuations too high.	▶ Install voltage regulator.
	Defective compressor.	▶ Replace compressor.

1) A fuse for the overcurrent protection is located on the main PCB. The specification is printed on the main PCB and can also be found in the technical data on page 66. Use only ex-protected ceramic fuses.

Table 19

8 Environmental protection and disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.
The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.
We use the best possible technology and materials for protecting the environment taking account of economic considerations.

Packaging

Where packaging is concerned, we participate in country-specific recycling processes that ensure optimum recycling.
All of our packaging materials are environmentally compatible and can be recycled.

Used appliances

Used appliances contain valuable materials that can be recycled.
The various assemblies can be easily dismantled. Synthetic materials are marked accordingly. Assemblies can therefore be sorted by composition and passed on for recycling or disposal.

Old electrical and electronic appliances

This symbol means that the product must not be disposed of with other waste, and instead must be taken to the waste collection points for treatment, collection, recycling and disposal.

The symbol is valid in countries where waste electrical and electronic equipment regulations apply, e.g. "European Directive 2012/19/EC on old electronic and electrical appliances". These regulations define the framework for the return and recycling of old electronic appliances that apply in each country.

As electronic devices may contain hazardous substances, it needs to be recycled responsibly in order to minimize any potential harm to the environment and human health. Furthermore, recycling of electronic scrap helps preserve natural resources.

For additional information on the environmentally compatible disposal of old electrical and electronic appliances, please contact the relevant local authorities, your household waste disposal service or the retailer where you purchased the product.

You can find more information here:
www.weee.bosch-thermotechnology.com/

Batteries

Batteries must not be disposed together with your household waste.
Used batteries must be disposed of in local collection systems.

Refrigerant R32

The appliance contains fluorinated gas R32 (global warming potential 675[1)]) mild combustibility and low toxicity (A2L or A2).

Contained quantity is indicated on the equipment outdoor unit name label.

Refrigerant is hazardous to the environment and must be collected and disposed of separately.

9 Data Protection Notice

We, **Bosch Thermotechnology Ltd., Cotswold Way, Warndon, Worcester WR4 9SW, United Kingdom** process product and installation information, technical and connection data, communication data, product registration and client history data to provide product functionality (art. 6 (1) sentence 1 (b) GDPR), to fulfil our duty of product surveillance and for product safety and security reasons (art. 6 (1) sentence 1 (f) GDPR), to safeguard our rights in connection with warranty and product registration questions (art. 6 (1) sentence 1 (f) GDPR) and to analyze the distribution of our products and to provide individualized information and offers related to the product (art. 6 (1) sentence 1 (f) GDPR). To provide services such as sales and marketing services, contract management, payment handling, programming, data hosting and hotline services we can commission and transfer data to external service providers and/or Bosch affiliated enterprises. In some cases, but only if appropriate data protection is ensured, personal data might be transferred to recipients located outside of the European Economic Area. Further information are provided on request. You can contact our Data Protection Officer under: Data Protection Officer, Information Security and Privacy (C/ISP), Robert Bosch GmbH, Postfach 30 02 20, 70442 Stuttgart, GERMANY.

You have the right to object, on grounds relating to your particular situation or where personal data are processed for direct marketing purposes, at any time to processing of your personal data which is based on art. 6 (1) sentence 1 (f) GDPR. To exercise your rights, please contact us via **privacy.ttgb@bosch.com** To find further information, please follow the QR-Code.

1) Based on ANNEX I of REGULATION (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014.

10 Technical data

Set Indoor Unit Outdoor Unit		CL5000iL-Set 35 DE CL5000iU D 35 E CL5000L 35 E	CL5000iL-Set 53 DE CL5000iU D 53 E CL5000L 53 E	CL5000iL-Set 70 DE CL5000iU D 70 E CL5000L 70 E
General				
Refrigerant	–	R32	R32	R32
Design pressure (max./min.)	MPa	4.3/1.7	4.3/1.7	4.3/1.7
Cooling				
Rated output	kW	3.52	5.28	7.03
Rated output	kBtu/h	12	18	24
Power input at rated output	W	1053	1530	2190
Cooling load (Pdesignc)	kW	3.5	5.4	7.1
Output (min. - max.)	kW	0.53-3.99	2.55-5.86	3.28-8.16
Power input (min. - max.)	W	155-1373	710-2150	750-2960
Max. current consumption	A	4.75	7.1	10.2
Energy efficiency class	–	A++	A++	A++
Coefficient of Performance in cooling mode (SEER)	W/W	6.3	6.5	6.2
Heating				
Rated output	kW	3.81	5.57	7.62
Rated output	kBtu/h	13	19	26
Power input at rated output	W	1038	1510	1900
Heating load (Pdesignh)	kW	2.7	4.3	5.4
Output (min. - max.)	kW	1.00-4.39	2.20-6.15	2.81-8.49
Power input (min. - max.)	W	302-1390	740-1760	640-2580
Max. current consumption	A	4.52	6.8	9.2
Energy efficiency class	–	A+	A+	A+
Coefficient of Performance in heating mode (SCOP)	W/W	4.0	4.0	4.0
Indoor unit				
Ex-protected ceramic fuse on main board	–	T 20A/250V	T 20A/250V	T 20A/250V
Power infeed	V/Hz	220-240 / 50 single phase	220-240 / 50 single phase	220-240 / 50 single phase
Volumetric flow rate (high/medium/low)	m^3/h	600/480/300	911/706/515	1229/1035/825.1
Sound pressure level (high/medium/low/noise reduction)	dB(A)	34.5/32/30/28	42/39/35/29	49/46/41/33
Sound power level (high)	dB(A)	58	58	62
Permissible ambient temperature (cooling/heating)	°C	16...32/0...30	16...32/0...30	16...32/0...30
Net weight	kg	17.8	24.4	32.3
Outdoor unit				
Maximum power consumption	W	1850	2950	3700
Maximum power consumption	A	9	13.5	19
Ex-protected ceramic fuse on main board	–	T 20A/250V	T 20A/250V	T 20A/250V
Power infeed	V/Hz	220-240 / 50 single phase	220-240 / 50 single phase	220-240 / 50 single phase
Vol. flow rate	m^3/h	2200	2100	3500
Sound pressure level	dB(A)	53.6	56	60
Sound power level	dB(A)	62	65	69
Permissible ambient temperature (cooling/heating)	°C	-15...50/-15...24	-15...50/-15...24	-15...50/-15...24
Net weight	kg	26.6	32.5	43.9

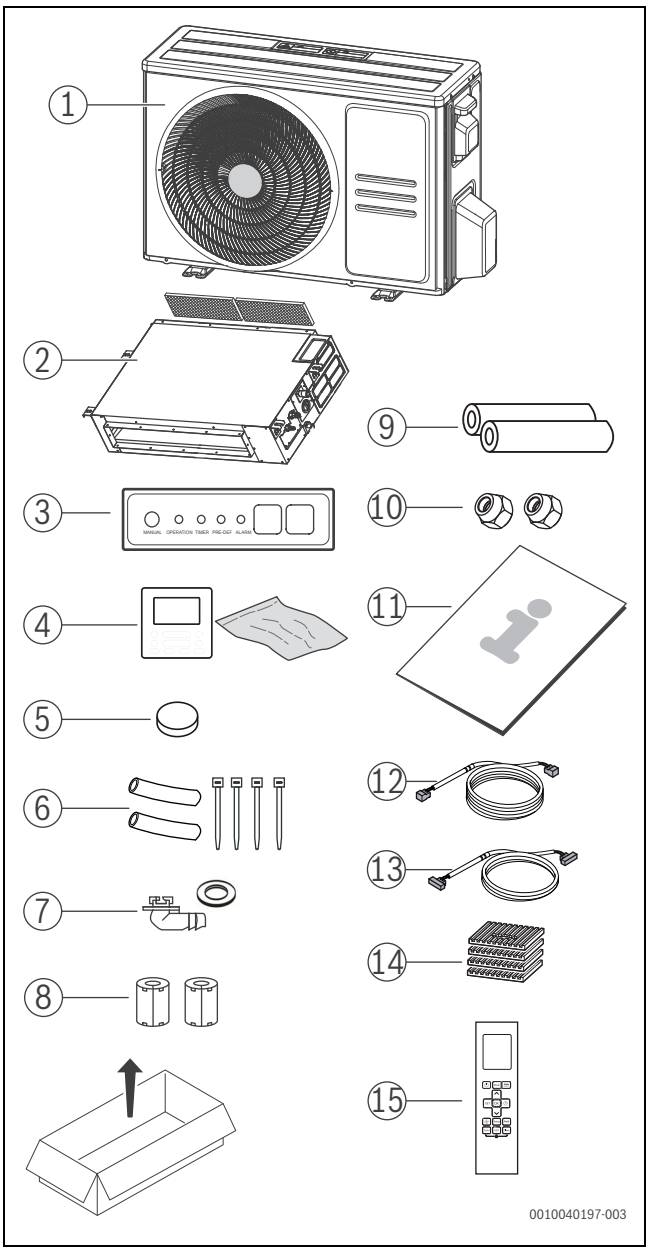
Table 20

Set Indoor Unit Outdoor Unit		CL5000iL-Set 88 DE CL5000iL D 88 E CL5000L 88 E	CL5000iL-Set 105 DE CL5000iL D 105 E CL5000L 105 E	CL5000iL-Set 105 DE-3 CL5000iL D 105 E CL5000L 105 E-3
General				
Refrigerant	–	R32	R32	R32
Design pressure (max./min.)	MPa	4.3/1.7	4.3/1.7	4.3/1.7
Cooling				
Rated output	kW	8.79	10.55	10.55
Rated output	kBtu/h	30	36	36
Power input at rated output	W	2500	3950	4000
Cooling load (Pdesignc)	kW	8.8	10.5	10.6
Output (min. - max.)	kW	2.23-9.85	2.75-11.14	2.73-11.78
Power input (min. - max.)	W	190-3050	900-4150	890-4200
Max. current consumption	A	11.0	17.5	6.5
Energy efficiency class	–	A++	A++	A++
Coefficient of Performance in cooling mode (SEER)	W/W	6.5	6.2	6.1
Heating				
Rated output	kW	9.38	11.72	11.72
Rated output	kBtu/h	32	40	40
Power input at rated output	W	2250	3250	3250
Heating load (Pdesignh)	kW	8.0	8.4	8.8
Output (min. - max.)	kW	2.70-10.02	2.78-12.78	2.78-12.84
Power input (min. - max.)	W	430-2450	800-3950	780-4000
Max. current consumption	A	10.0	14.5	5.3
Energy efficiency class	–	A+	A+	A+
Coefficient of Performance in heating mode (SCOP)	W/W	4.0	4.0	4.0
Indoor unit				
Ex-protected ceramic fuse on main board	–	T 30A/250V	T 30A/250V	T 30A/250V
Power infeed	V / Hz	220-240 / 50 single phase	220-240 / 50 single phase	220-240 / 50 single phase
Volumetric flow rate (high/medium/low)	m^3/h	2100/1800/1500	2100/1800/1500	2100/1800/1500
Sound pressure level (high/medium/low/noise reduction)	dB(A)	50.5/48/46/41	50/48/46//42	50.5/49/47/43
Sound power level (high)	dB(A)	64	61	61
Permissible ambient temperature (cooling/heating)	°C	16...32/0...30	16...32/0...30	16...32/0...30
Net weight	kg	40.5	40.5	40.5
Outdoor unit				
Maximum power consumption	W	4500	5000	5000
Maximum power consumption	A	20	22.5	10
Ex-protected ceramic fuse on main board	–	T 30A/250V	T 30A/250V	T 30A/250V
Power infeed	V / Hz	220-240 / 50 single phase	220-240 / 50 single phase	380-415 / 50 three phase
Vol. flow rate	m^3/h	3800	4000	4000
Sound pressure level	dB(A)	62	63	63
Sound power level	dB(A)	70	70	70
Permissible ambient temperature (cooling/heating)	°C	-15...50/-15...24	-15...50/-15...24	-15...50/-15...24
Net weight	kg	52.8	66.9	80.5

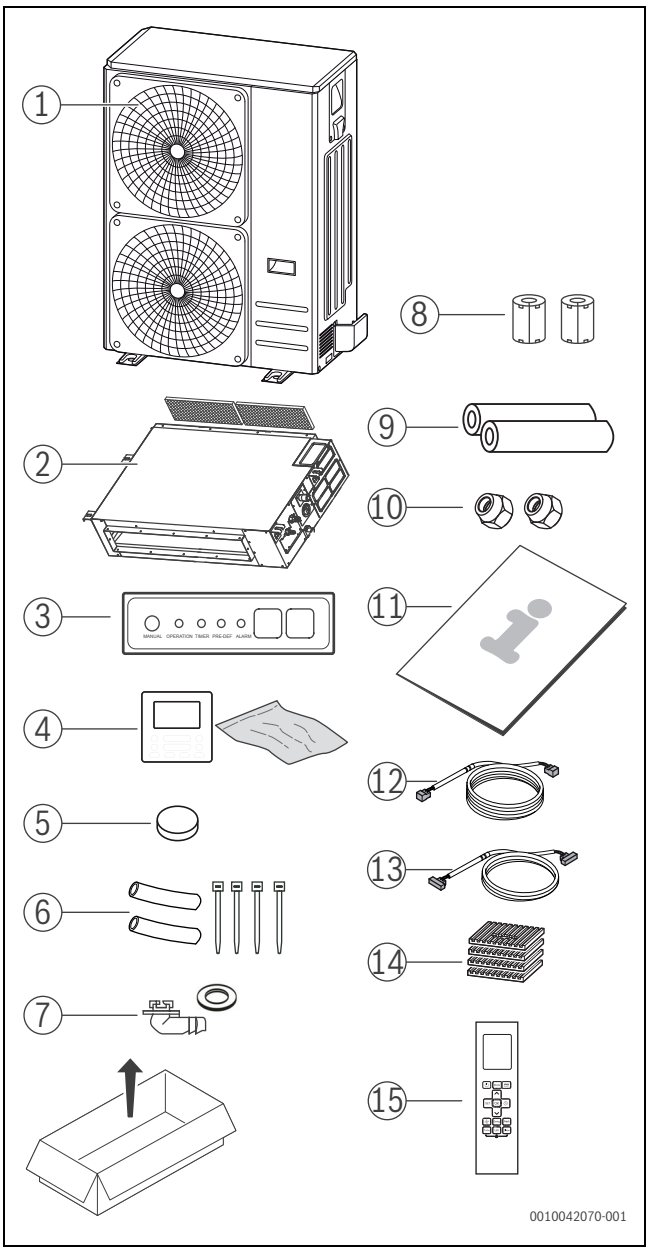
Table 21

Set Indoor Unit Outdoor Unit		CL5000iL-Set 125 DE CL5000iL D 125 E CL5000L 125 E	CL5000iL-Set 140 DE-3 CL5000iL D 140 E CL5000L 140 E-3	CL5000iL-Set 160 DE-3 CL5000iL D 160 E CL5000L 160 E-3
General				
Refrigerant	–	R32	R32	R32
Design pressure (max./min.)	MPa	4.3/1.7	4.3/1.7	4.3/1.7
Cooling				
Rated output	kW	12.02	14.07	15.24
Rated output	kBtu/h	41	48	52
Power input at rated output	W	4200	4800	5250
Cooling load (Pdesignc)	kW	12.1	14.0	15.3
Output (min. - max.)	kW	2.93-12.31	3.52-15.53	4.10-17.29
Power input (min. - max.)	W	680-4500	880-6000	1030-6650
Max. current consumption	A	18.8	8.4	9.6
Energy efficiency class	–	A++	A++	A++
Coefficient of Performance in cooling mode (SEER)	W/W	6.1	6.1	6.1
Heating				
Rated output	kW	13.48	16.12	18.17
Rated output	kBtu/h	46	55	62
Power input at rated output	W	3450	4500	5150
Heating load (Pdesignh)	kW	9.5	11.5	12.5
Output (min. - max.)	kW	3.37-14.07	4.10-18.17	4.40-20.52
Power input (min. - max.)	W	750-4100	950-5700	950-6600
Max. current consumption	A	15.5	8.0	9.5
Energy efficiency class	–	A+	A	A+
Coefficient of Performance in heating mode (SCOP)	W/W	4.0	3.8	4.0
Indoor unit				
Ex-protected ceramic fuse on main board	–	T 30A/250V	T 30A/250V	T 30A/250V
Power infeed	V / Hz	220-240 / 50 single phase	220-240 / 50 single phase	220-240 / 50 single phase
Volumetric flow rate (high/medium/low)	m^3/h	2400/2040/1680	2400/2040/1680	2600/2210/1820
Sound pressure level (high/medium/low/noise reduction)	dB(A)	51.5/49/48/44	51.5/49/47/41	52.5/49/47/40
Sound power level (high)	dB(A)	67	66	66
Permissible ambient temperature (cooling/heating)	°C	16...32/0...30	16...32/0...30	16...32/0...30
Net weight	kg	47.6	47.6	47.4
Outdoor unit				
Maximum power consumption	W	5000	6900	7500
Maximum power consumption	A	22.5	13	14
Ex-protected ceramic fuse on main board	–	T 30A/250V	T 30A/250V	T 30A/250V
Power infeed	V / Hz	220-240 / 50 single phase	380-415 / 50 three phase	380-415 / 50 three phase
Vol. flow rate	m^3/h	4000	7500	7500
Sound pressure level	dB(A)	63	63.5	64
Sound power level	dB(A)	72	74	75
Permissible ambient temperature (cooling/heating)	°C	-15...50/-15...24	-15...50/-15...24	-15...50/-15...24
Net weight	kg	71	103.7	107

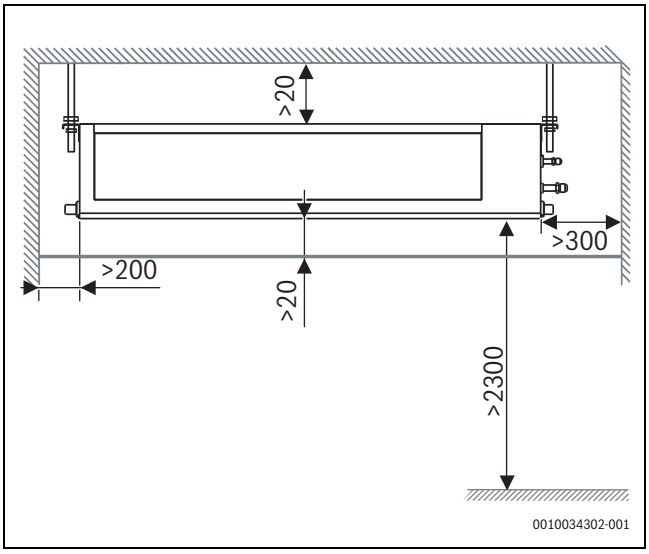
Table 22



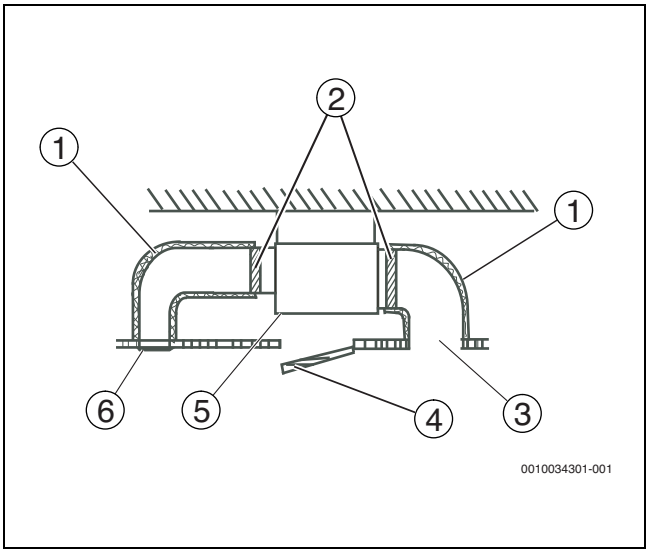
1 CL5000L 35~125...



2 CL5000L 140~160...



3 [mm]



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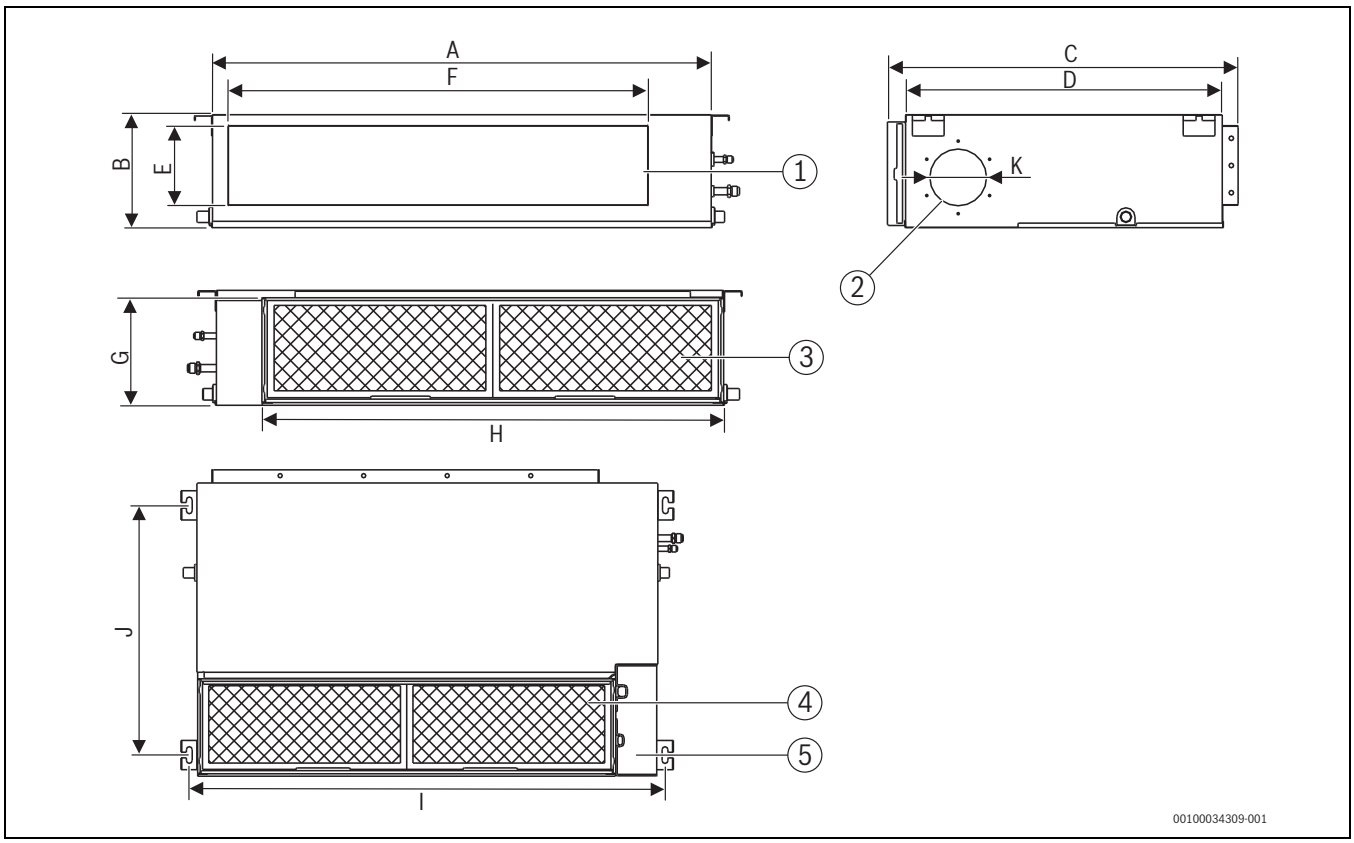
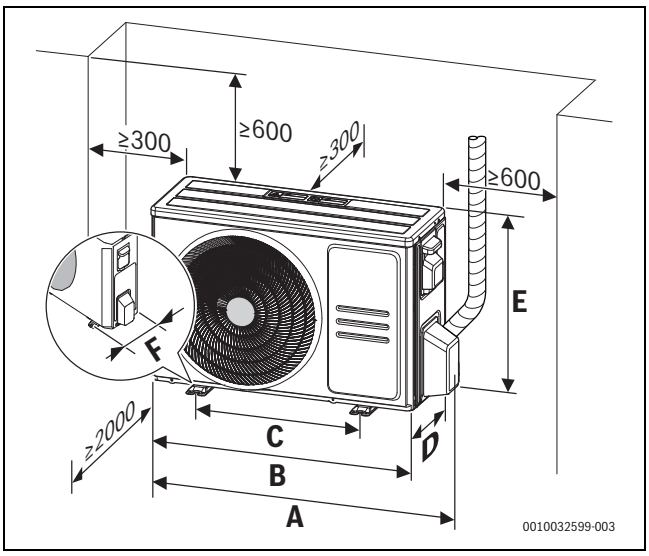


5

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	J [mm]	K [mm]
CL5000iU D 35 E	700	200	506	450	152	537	186	599	741	360	Ø 92/113
CL5000iU D 53 E	880	210	674	600	136	706	190	782	920	508	Ø 125/160
CL5000iU D 70 E	1100	249	774	700	175	926	228	1001	1140	598	Ø 125/160
CL5000iL D 88 E	1360	249	774	700	175	1186	228	1261	1400	598	Ø 125/160
CL5000iL D 105 E	1360	249	774	700	175	1186	228	1261	1400	598	Ø 125/160
CL5000iL D 125 E	1200	300	874	800	227	1044	280	1101	1240	697	Ø 125/160
CL5000iL D 140 E	1200	300	874	800	227	1044	280	1101	1240	697	Ø 125/160
CL5000iL D 160 E	1200	300	874	800	227	1044	280	1101	1240	697	Ø 125/160

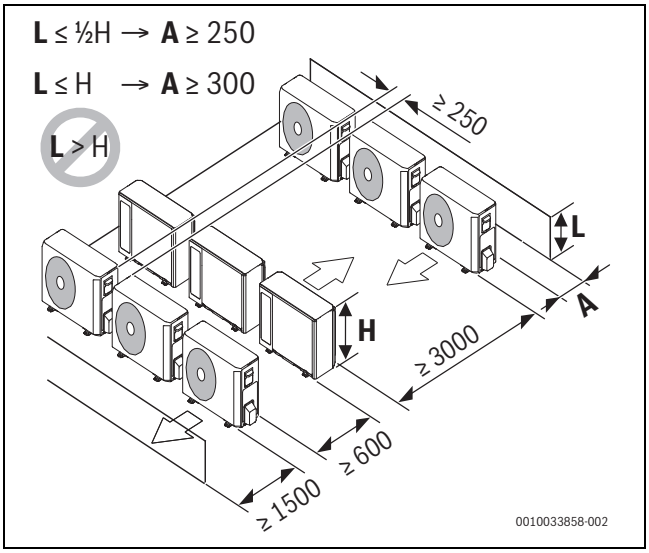
23



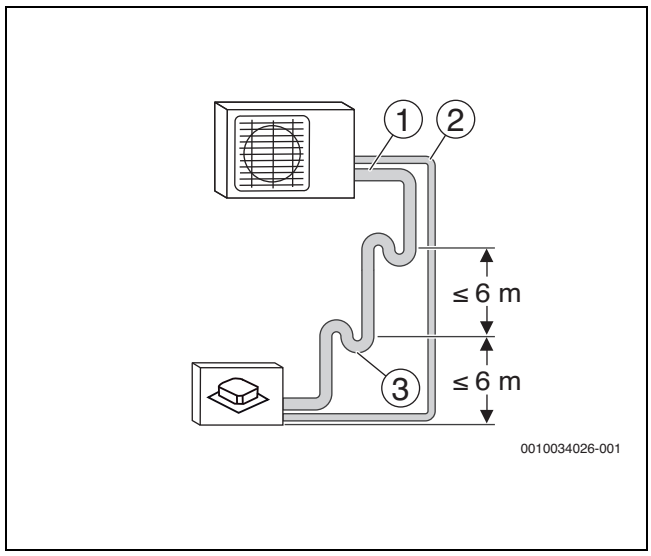
6 [mm]

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
CL5000L 35 E	835	765	452	303	555	286
CL5000L 53 E	874	805	511	330	554	317
CL5000L 70 E	955	890	663	342	673	354
CL5000L 88 E	1030	946	673	410	810	403
CL5000L 105 E	1030	946	673	410	810	403
CL5000L 105 E-3	1030	946	673	410	810	403
CL5000L 125 E	1030	946	673	410	810	403
CL5000L 140 E-3	1045	952	634	415	1333	404
CL5000L 160 E-3	1045	952	634	415	1333	404

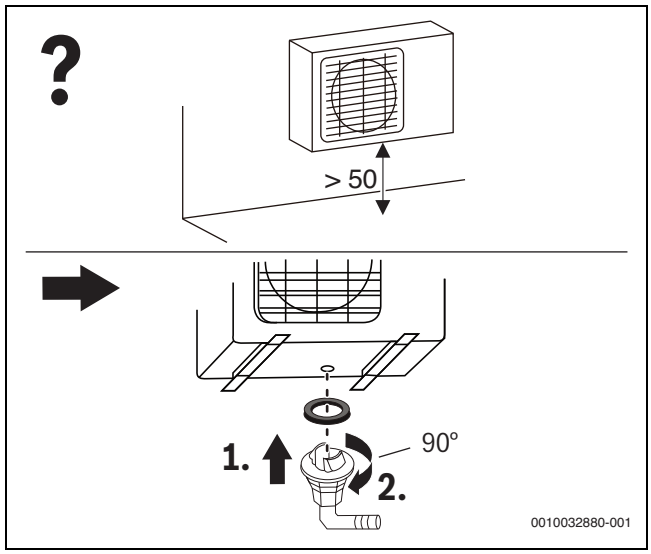
24



7 [mm]



8



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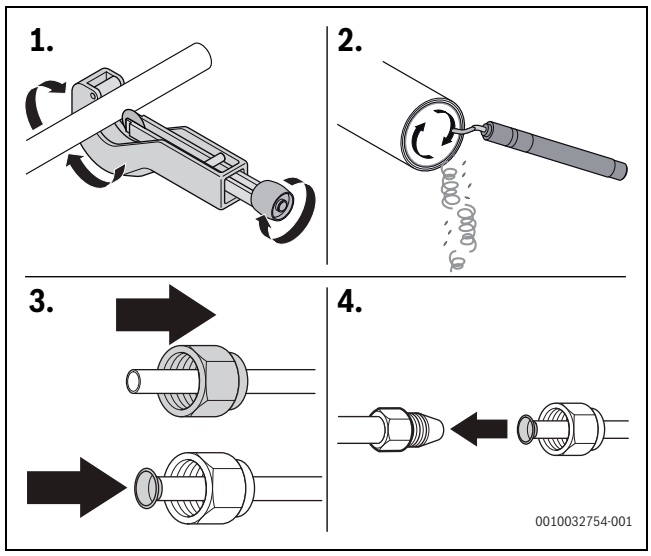

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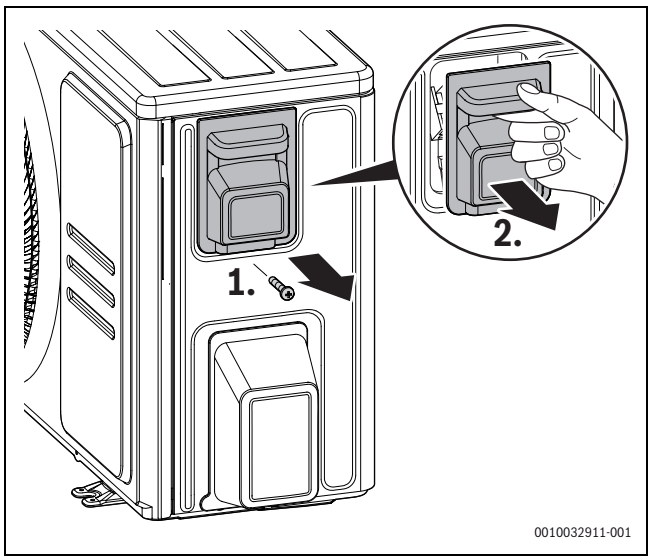
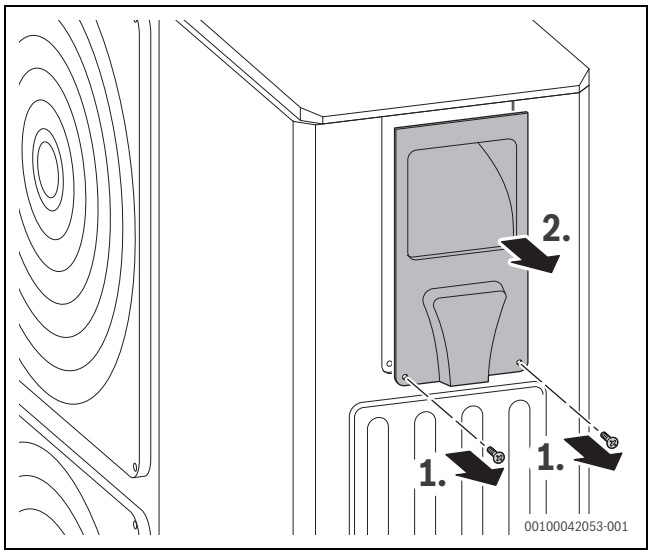
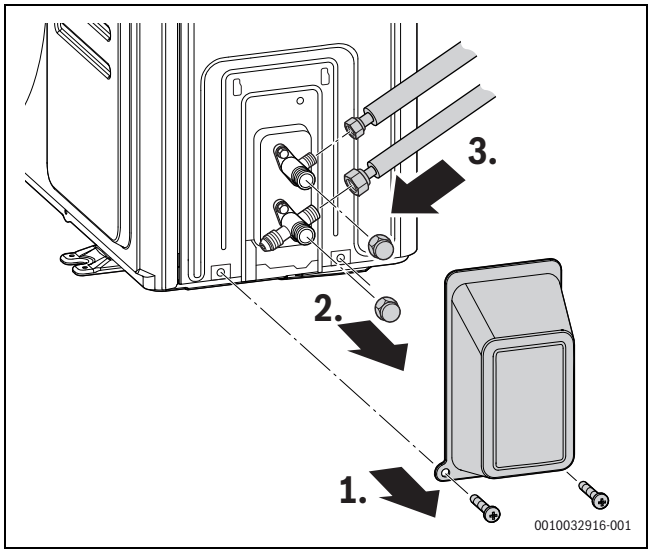


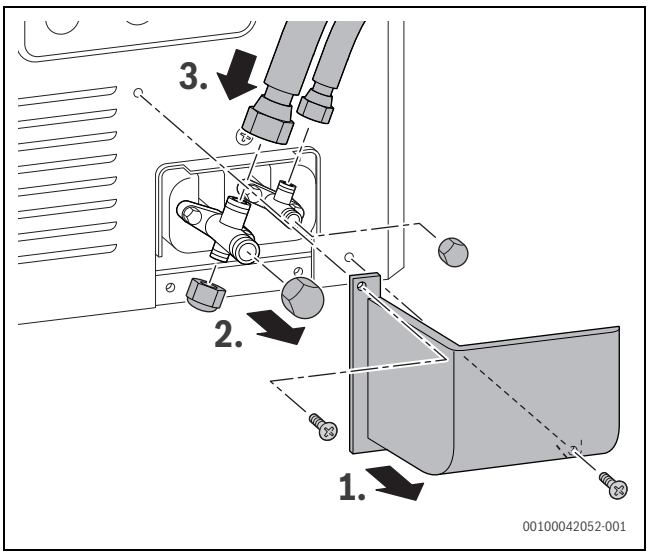
11 CL5000L 35~125...



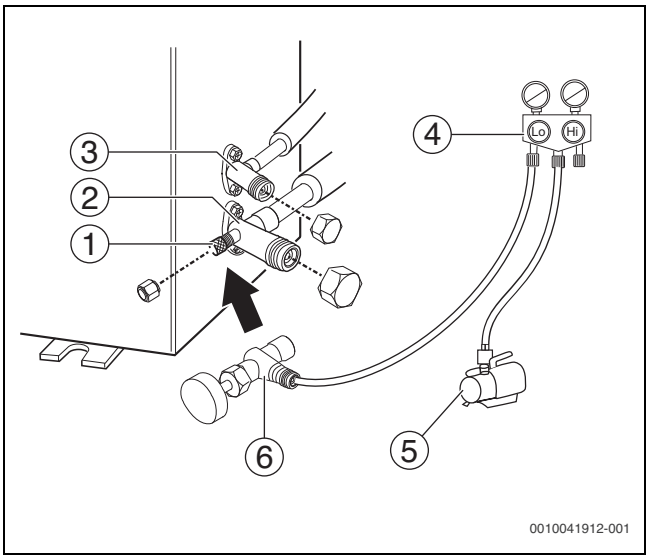
12 CL5000L 140~160...



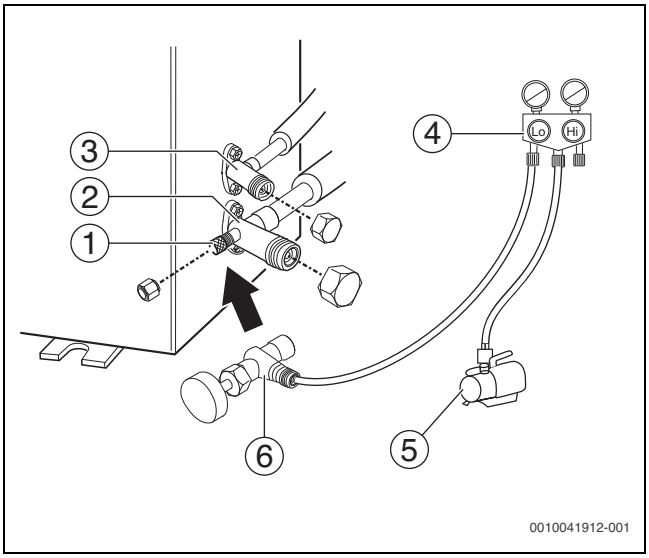
13 CL5000L 35~125...



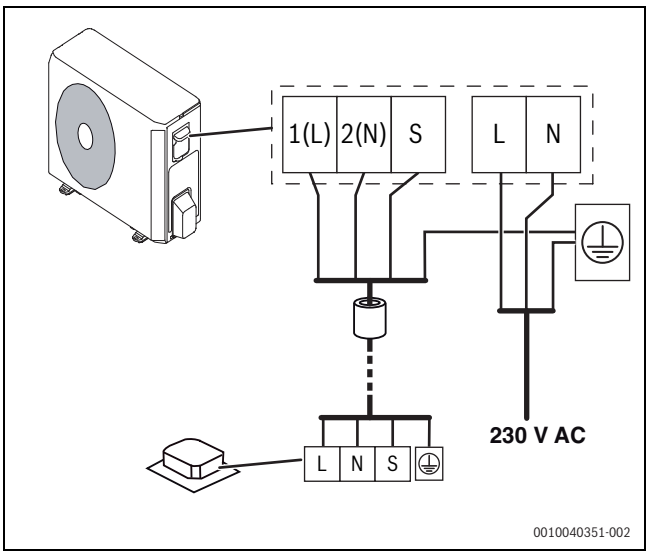
14 CL5000L 140~160...



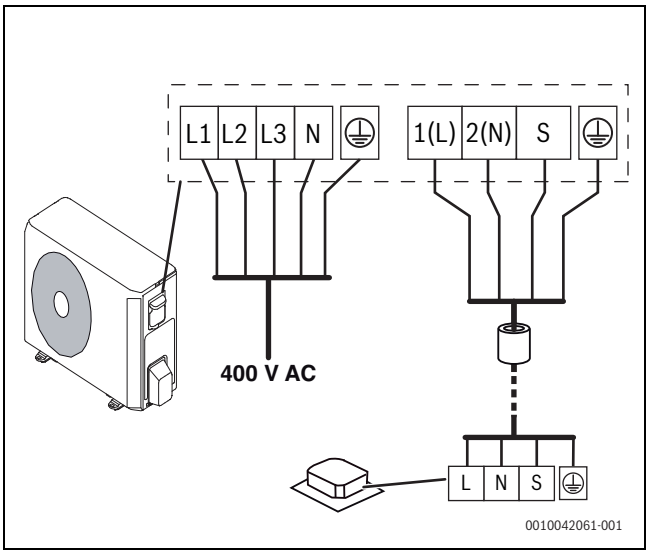
15 CL5000L 35~125...



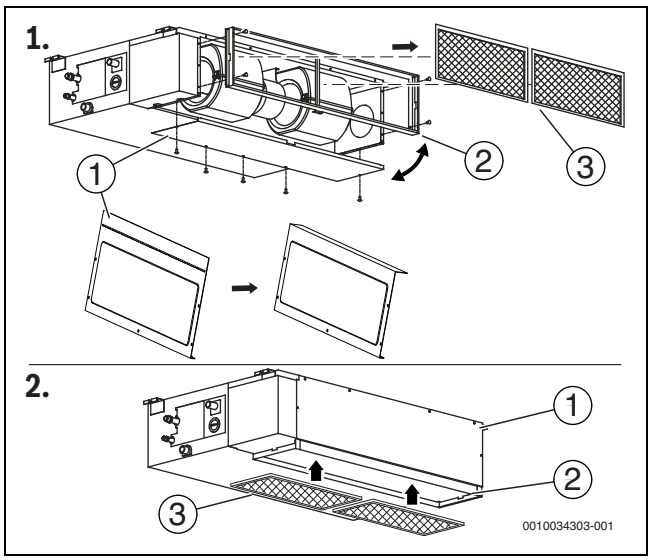
16 CL5000L 140~160...



17 CL5000L ... E



18 CL5000L ... E-3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1
2
3
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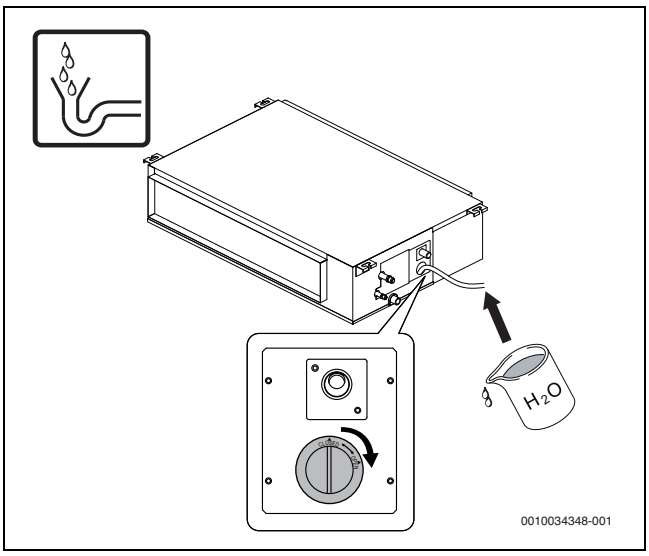
19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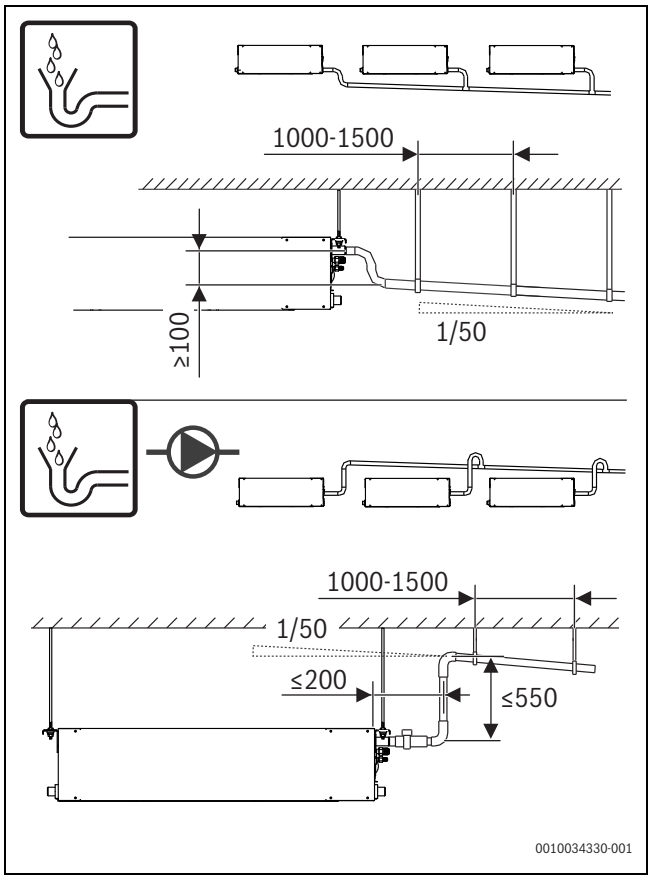
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1/50
1000-1500
1/50
≤200
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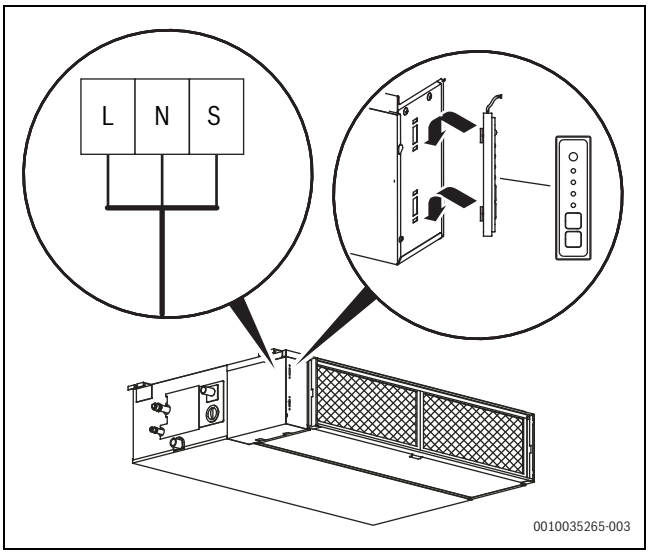
20 [mm]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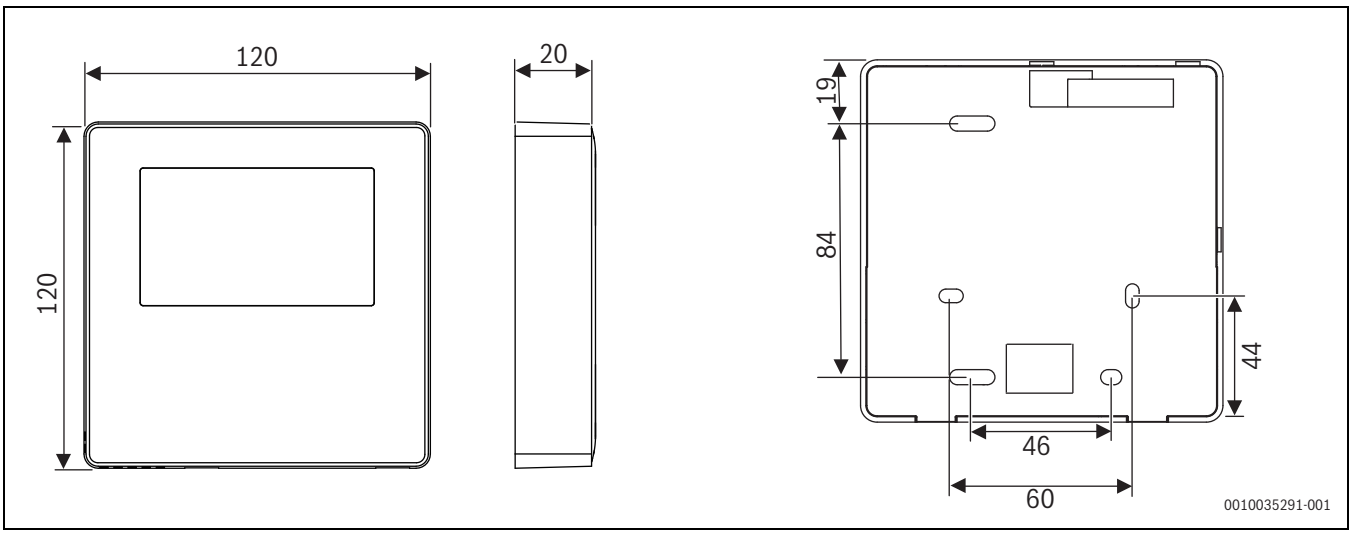
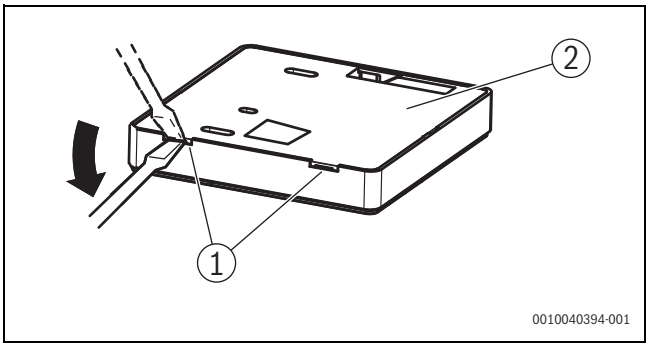
22



23 [mm]



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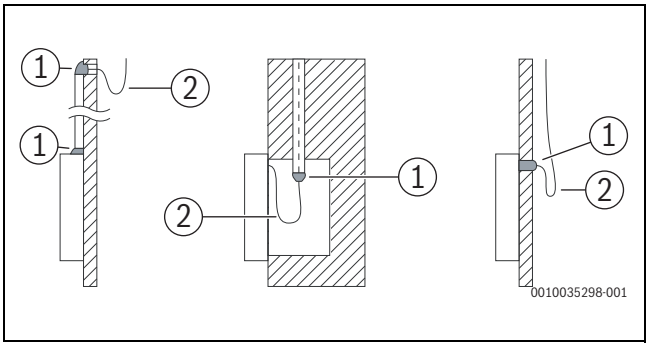

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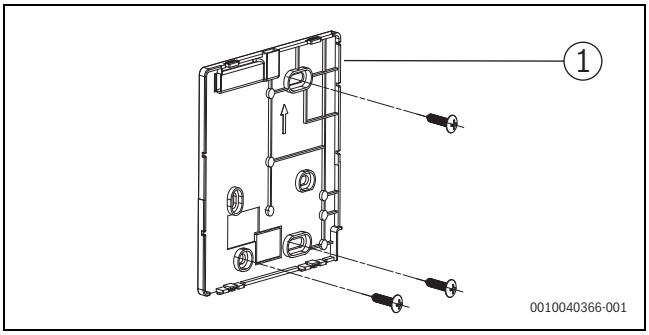

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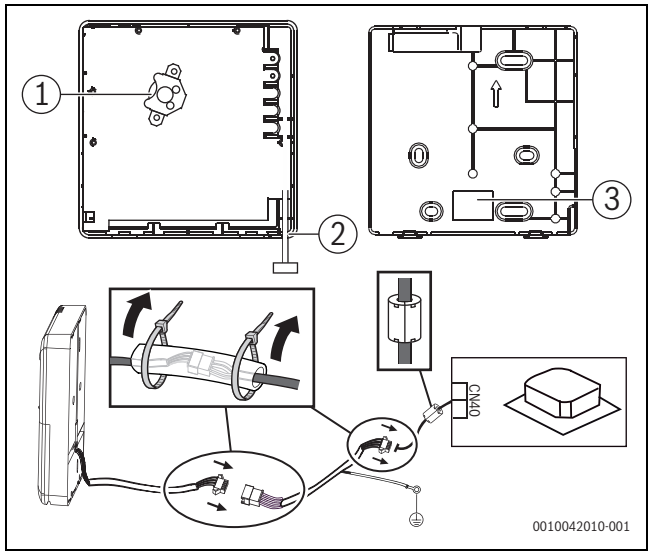

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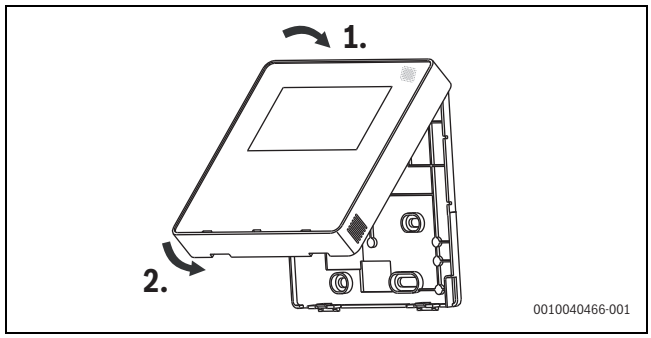

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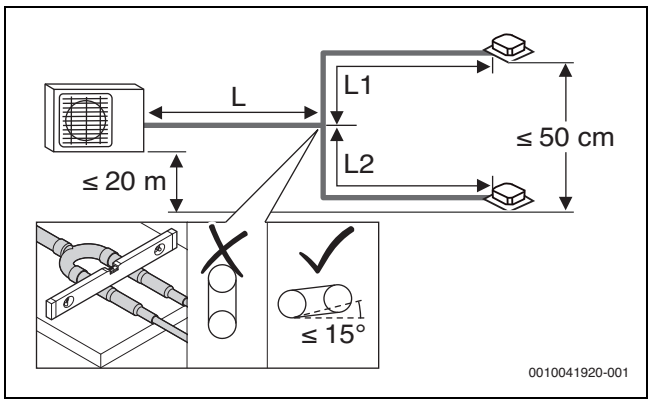
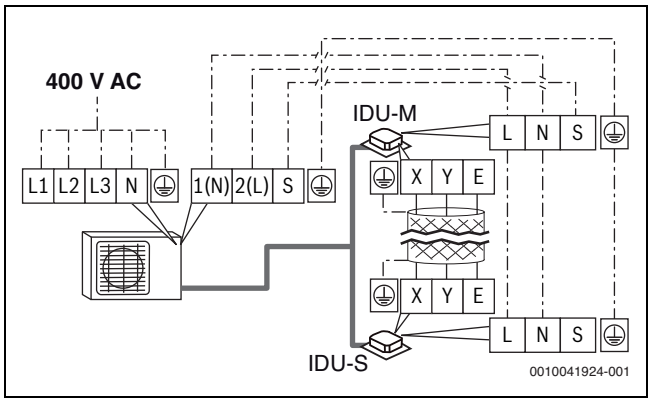


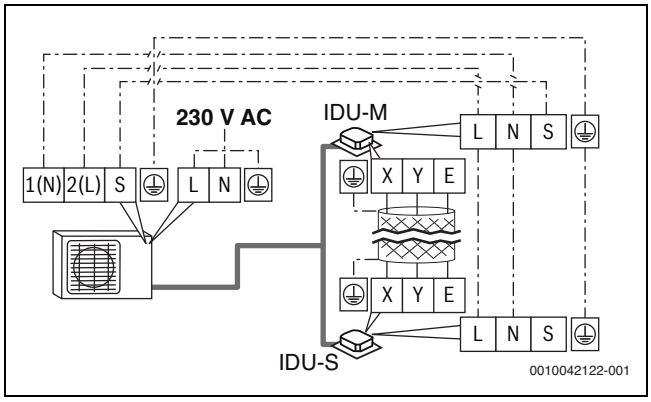
29

	L + L1 L + L2 [m]	L1 L2 [m]	L1 – L2 L2 – L1 [m]
2 × CL5000iU D 35 E	≤ 50	≤ 15	≤ 10
2 × CL5000iU D 53 E	≤ 50	≤ 15	≤ 10
2 × CL5000iU D 70 E	≤ 65	≤ 15	≤ 10
2 × CL5000iL D 88 E	≤ 65	≤ 15	≤ 10

25

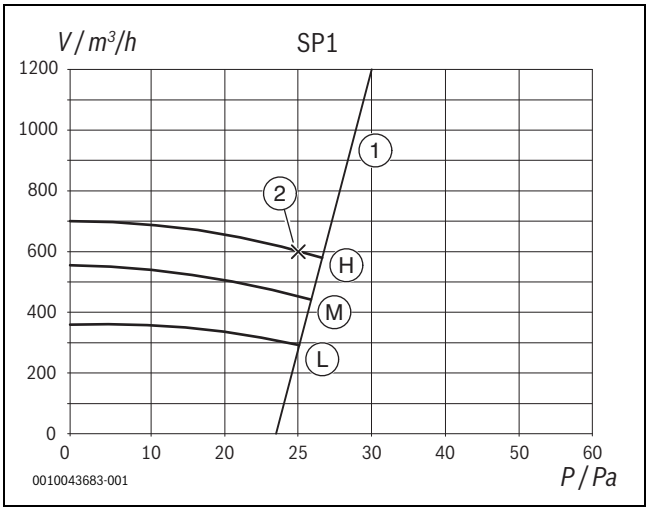


30 CL5000L ... E-3

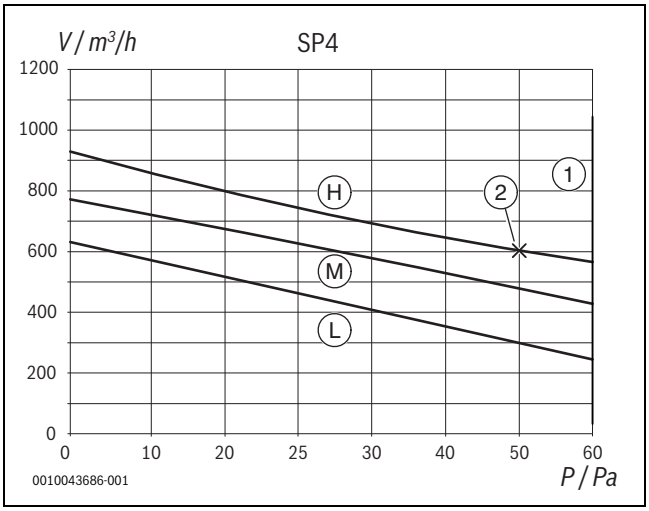


31 CL5000L ... E

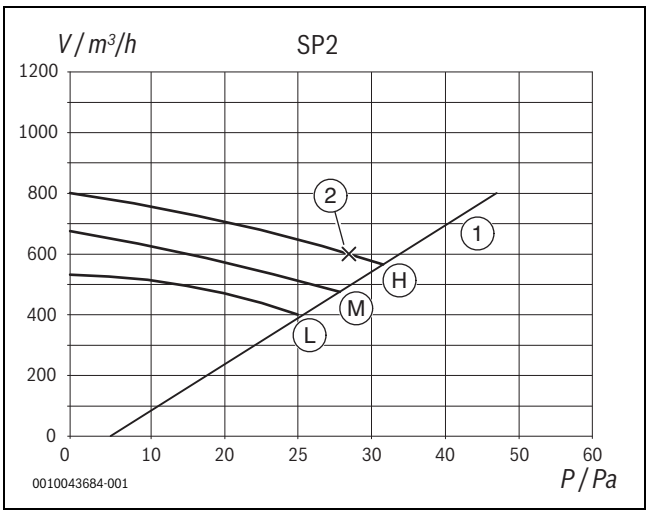
Diagramme externer statischer Druck



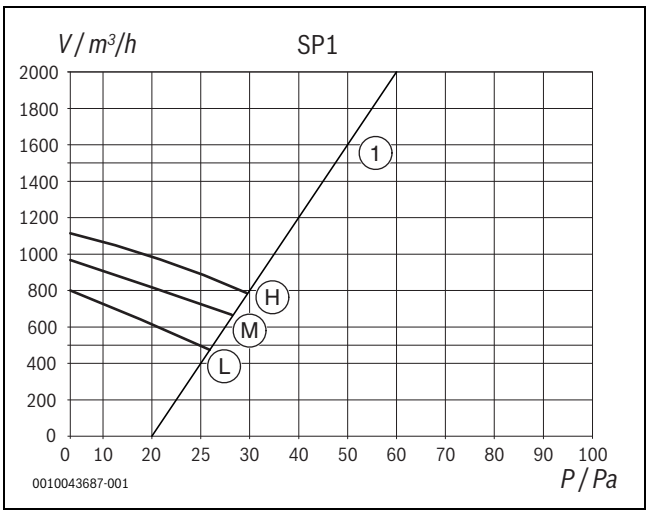
32 *ESP CL5000iU D 35 E - SP1*



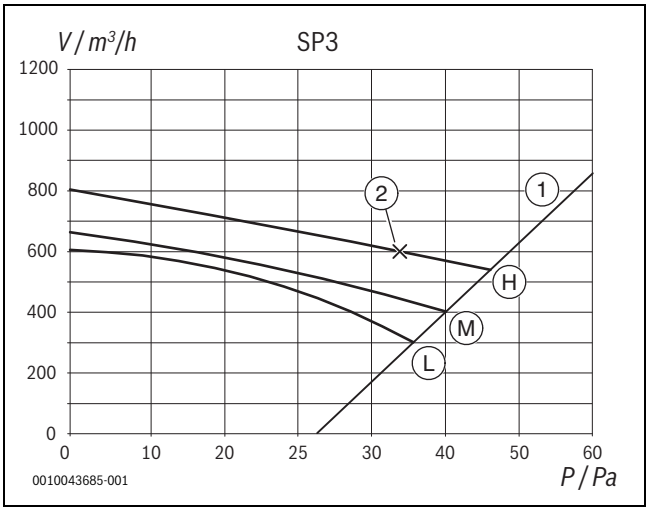
35 *ESP CL5000iU D 35 E - SP3*



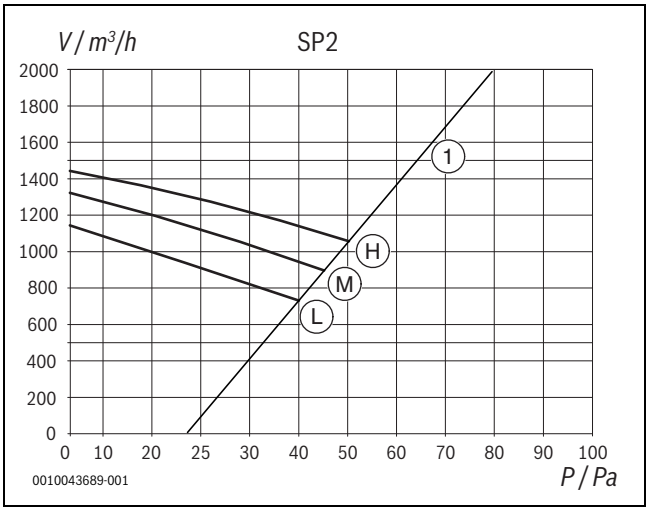
33 *ESP CL5000iU D 35 E - SP2*



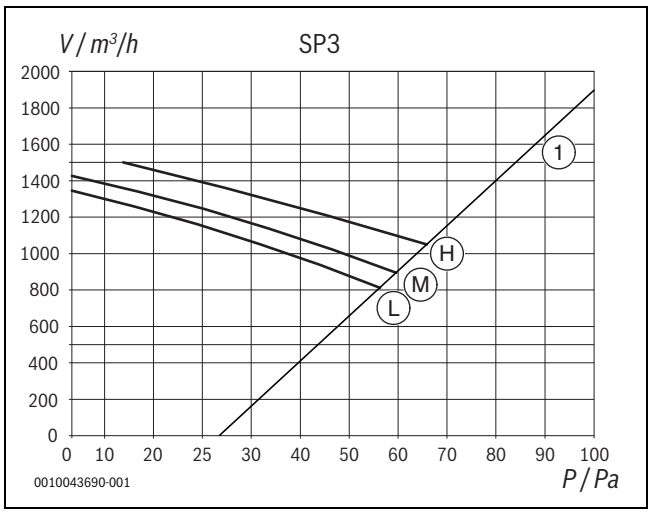
36 *ESP CL5000iU D 53 E - SP1*



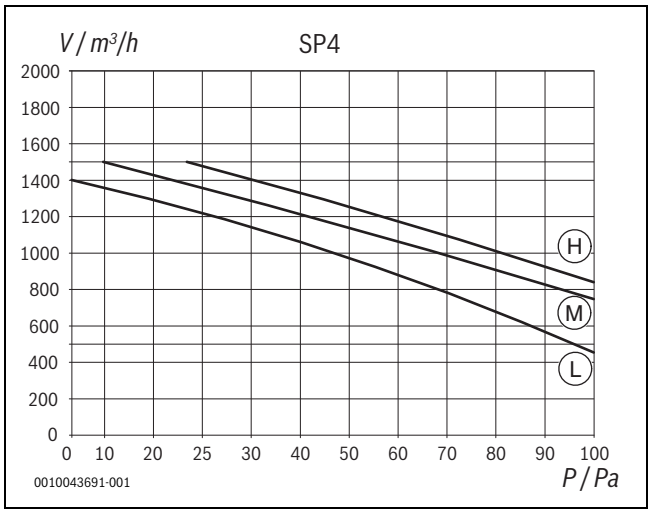
34 *ESP CL5000iU D 35 E - SP3*



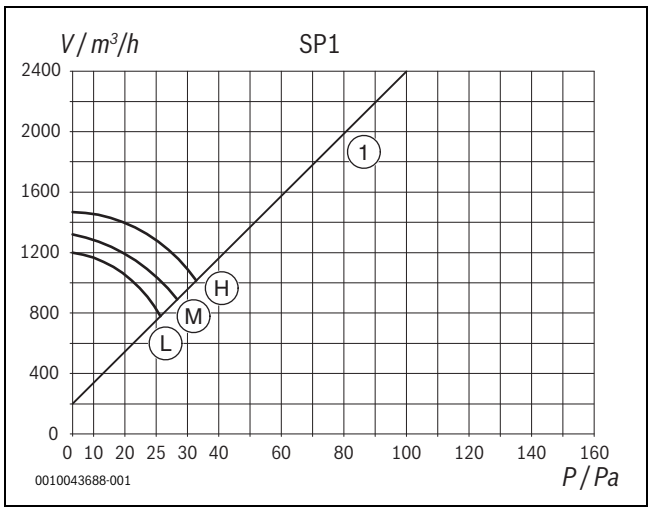
37 *ESP CL5000iU D 53 E - SP2*



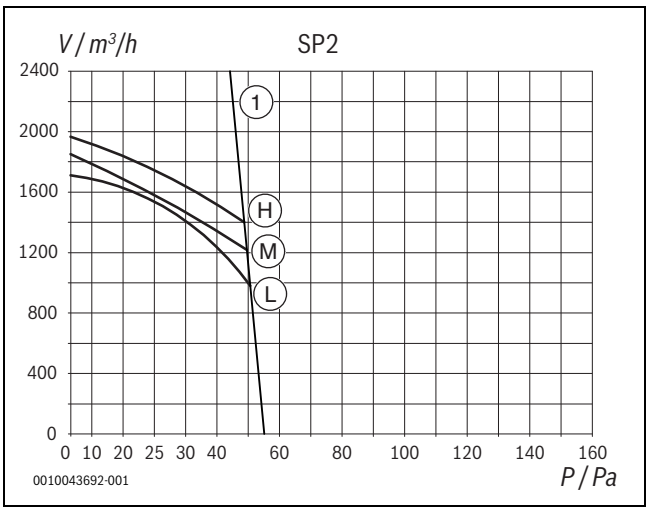
38 ESP CL5000iU D 53 E - SP3



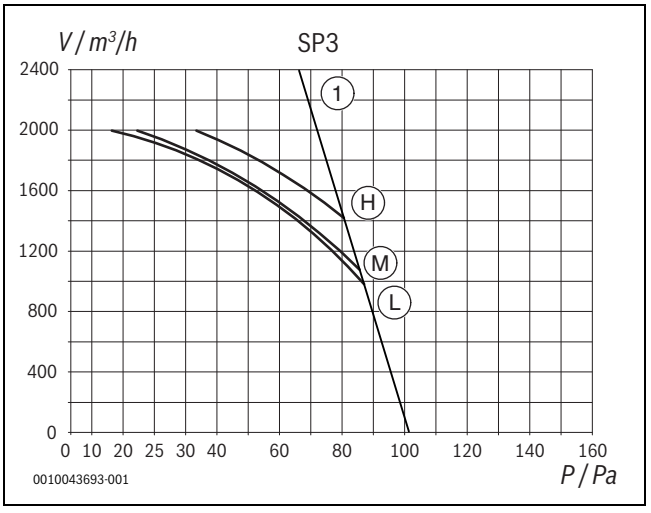
39 ESP CL5000iU D 53 E - SP4



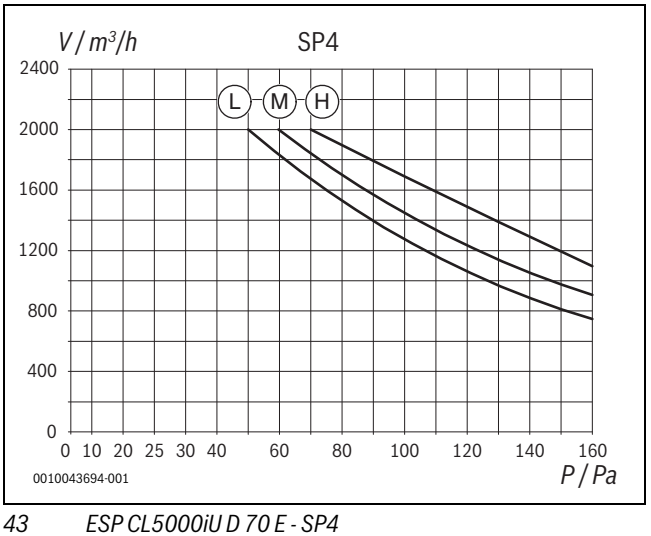
40 ESP CL5000iU D 70 E - SP1



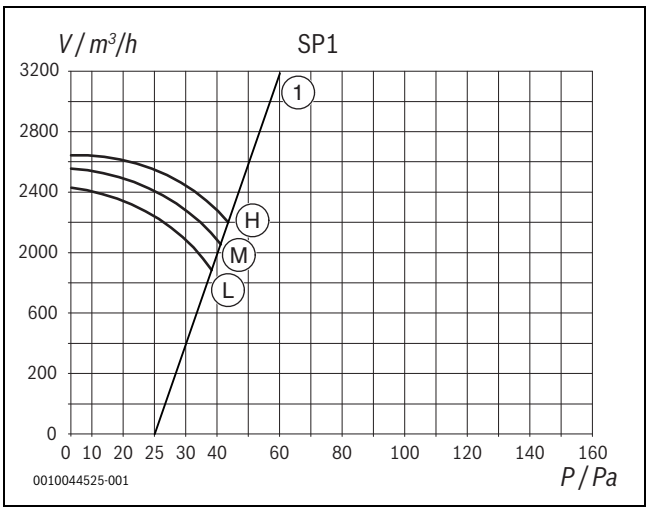
41 ESP CL5000iU D 70 E - SP2



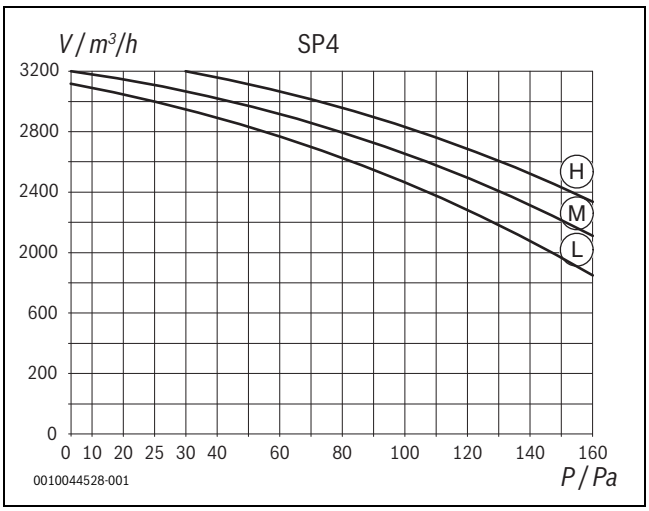
42 ESP CL5000iU D 70 E - SP3



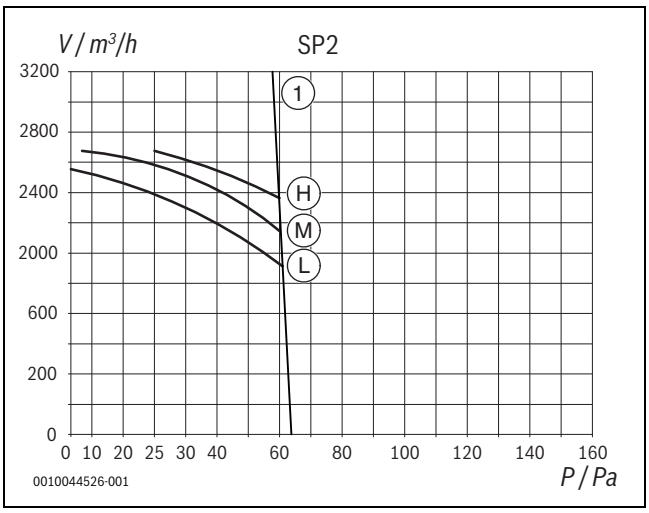
43 ESP CL5000iU D 70 E - SP4



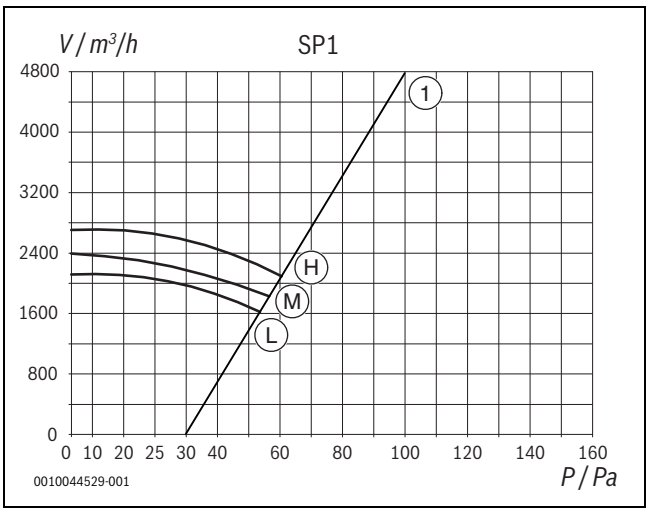
44 ESP CL5000iL D 88 E/CL5000iL D 105 E - SP1



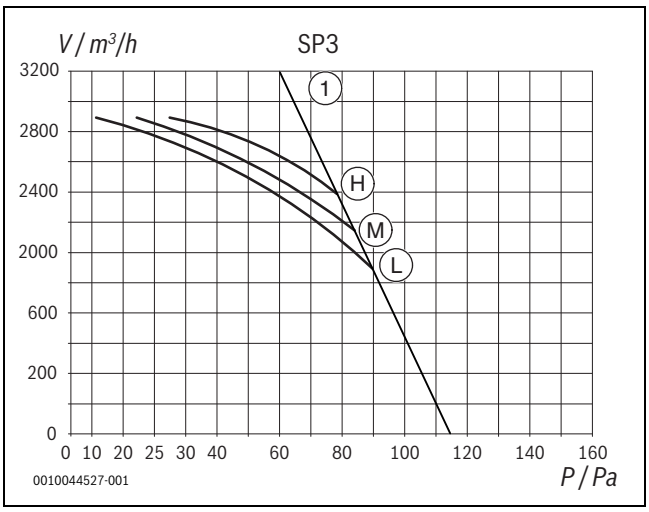
47 ESP CL5000iL D 88 E/CL5000iL D 105 E - SP4



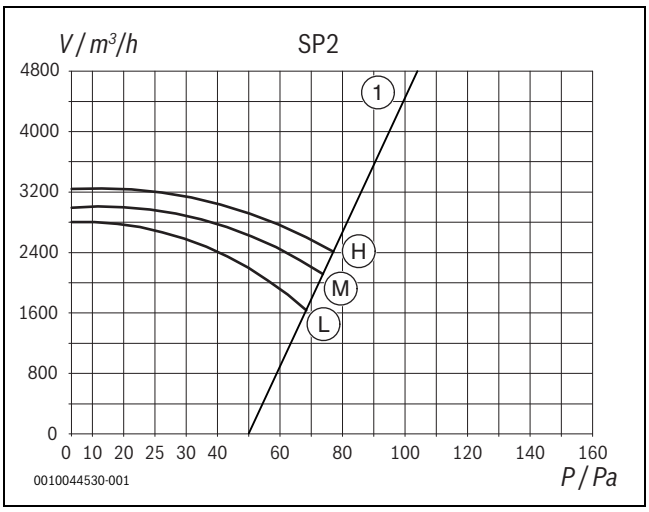
45 ESP CL5000iL D 88 E/CL5000iL D 105 E - SP2



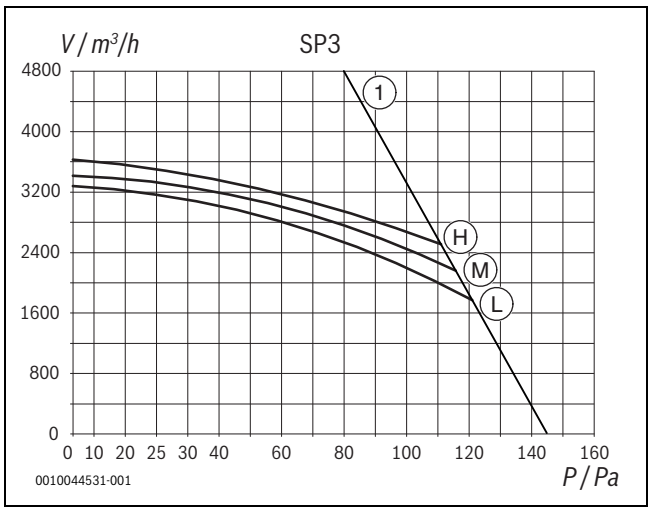
48 ESP CL5000iL D 125 E/CL5000iL D 140 E - SP1



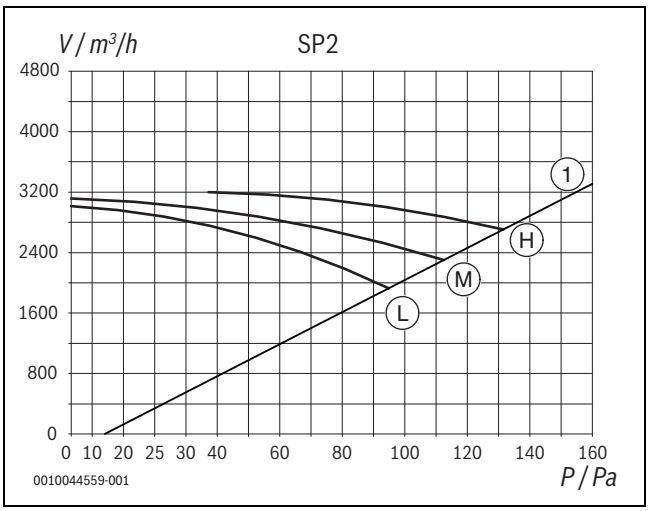
46 ESP CL5000iL D 88 E/CL5000iL D 105 E - SP3



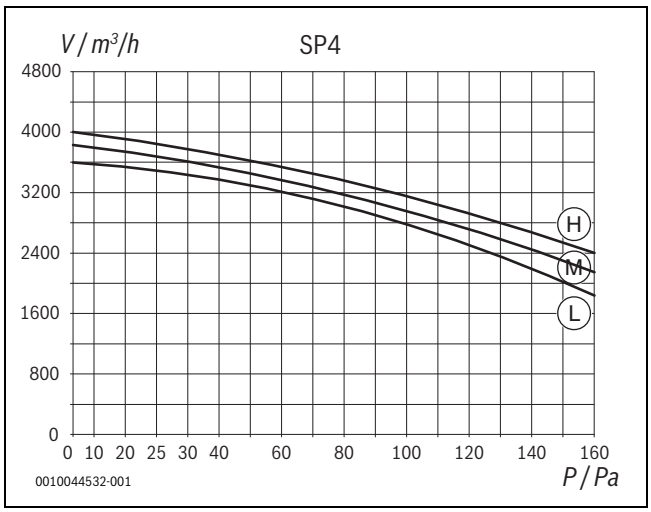
49 ESP CL5000iL D 125 E/CL5000iL D 140 E - SP2



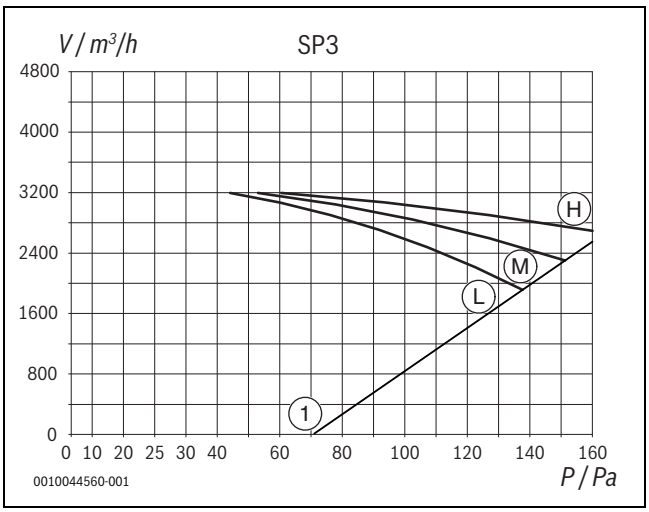
50 ESP CL5000iL D 125 E/CL5000iL D 140 E - SP3



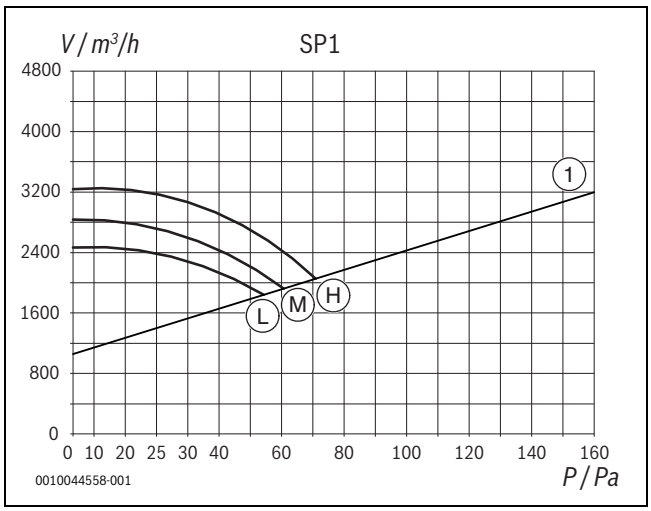
53 ESP CL5000iL D 160 E - SP2



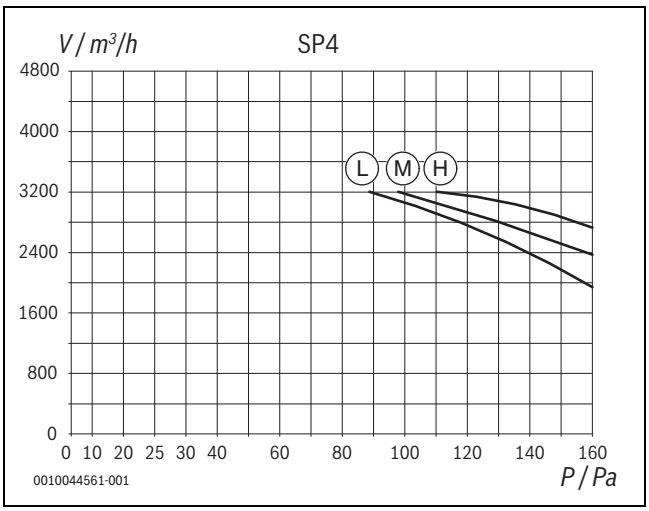
51 ESP CL5000iL D 125 E/CL5000iL D 140 E - SP4



54 ESP CL5000iL D 160 E - SP3



52 ESP CL5000iL D 160 E - SP1



55 ESP CL5000iL D 160 E - SP4

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