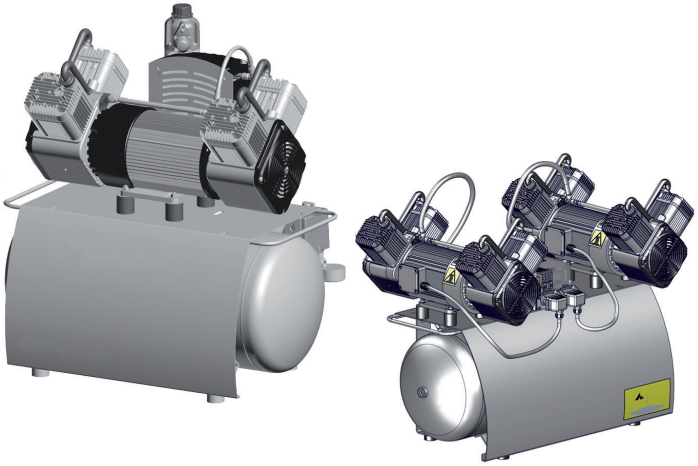
Oil-free Marathon stations with/ without membrane-drying unit

EN



Installation and operating instructions

CE

1036100102L02

DÜRR TECHNIK

1904V002

Contents

EN

Important information

Product description

Assembly

Usage

Troubleshooting

Contact

EN

1 About this document

These installation and operating instructions represent a part of the unit. They correspond to the relevant version of the unit and the status of technology valid at the time of its market launch.

In the event that the instructions and notes in these installation and operating instructions for are not observed, Dürr Technik accepts no warranty or liability of any kind for the safe operation and reliable function of the units.

This translation was prepared to the best of our knowledge. The original German language version of the manual is the definitive version. Dürr Technik is not liable for translation errors.

1.1 Warnings and symbols

Warnings

The warnings in this document are intended to draw your attention to possible injury to persons or damage to machinery.

The following warning symbols are used:


General warning symbol


Warning – dangerous high voltage


Warning – hot surfaces


Warning - automatic start-up of the unit

The warnings are structured as follows:

Description of the type and source of danger

Here you will find the possible consequences of ignoring the warning

› Follow these measures to avoid the danger.

The signal word differentiates between four levels of danger:

– **DANGER**
  Immediate danger of severe injury or death
– **WARNING**
  Possible danger of severe injury or death
– **CAUTION**
  Risk of minor injuries
– **NOTICE**
  Risk of extensive material/property damage

Other symbols

These symbols are used in the document and on or in the unit:

Note, e.g. specific instructions regarding efficient and cost-effective use of the unit.


Refer to Operating Instructions.


CE labelling


Date of manufacture

Order number

Serial number


Dispose of the unit properly and in accordance with applicable national, regional and local laws.


Air


Switch off and de-energise the unit (e.g. unplug from mains).

1.2 Copyright information

All names of circuits, processes, names, software programs and units used in this document are protected by copyright.

The reprinting of the installation and operating instructions, even in extracts, is only permitted with the written permission of Dürr Technik.

EN

2 Safety

Dürr Technik has developed and constructed the units in such a way that danger is to a large extent excluded if the units are used as intended. Nevertheless, residual risks can remain. You should therefore observe the following notes.

2.1 Intended use

The unit is intended for the compression of atmospheric air.
The unit has been designed for operation in dry, ventilated rooms. The unit must not be operated in a damp or wet environment. Its use in the vicinity of gases or flammable liquids is prohibited. Only operate the mobile units in an upright position.

2.2 Improper use

Any other usage or usage beyond this scope is deemed to be improper. The manufacturer accepts no liability for damage resulting from such use. In such cases, the user/operator will bear the sole risk.

WARNING
Serious injury and material damage due to improper usage
› Conveying explosive mixtures in any way other than that specified is not permitted.

2.3 General safety information

› When operating this unit, always observe all directives, laws, and other rules and regulations applicable at the site of operation.
› Check the function and state of the unit prior to each use.

› Do not convert or modify the unit.

› Comply with the specifications of the Installation and Operating Instructions.
› Ensure that the unit operator has access to the Installation and Operating Instructions at all times.

2.4 Specialist personnel

Operation

Unit operators must ensure safe and correct handling based on their training and knowledge.
› Instruct or have every operator instructed in the handling of the unit.

Installation and repairs

› Always arrange for any assembly work, readjustments, alterations, extensions, and repairs to be performed by Dürr Technik or by personnel authorised and trained by Dürr Technik. Qualified personnel are defined as those trained by Dürr Technik; who are familiar with the unit technology; and are aware of the dangers presented by the unit.

2.5 Electrical safety

› Observe and comply with all the relevant electrical safety regulations when working on the unit.
› Replace any damaged cables or plugs immediately.

2.6 Only use original parts

› Only use accessories and special accessories that are specified or approved by Dürr Technik.
› Only use original working and spare parts.

Dürr Technik accepts no liability for damage resulting from the use of non-approved accessories, special accessories or any working parts or spare parts other than original parts.

2.7 Transportation and storage

The original packaging provides optimum protection for the unit during transport.

Dürr Technik will not accept any responsibility or liability for damage occurring during transport due to the use of incorrect packaging, even where the unit is still under guarantee.

– Only transport the unit in its original packaging.

– Keep the packing materials out of the reach of children.

WARNING
Risk of explosion of the pressure vessel and pressure hoses

- The pressure vessel and the pressure hoses must be vented before they are stored or transported.
- Protect the unit from moisture during transportation.
- Always transport the unit in an upright position.
- Only transport the unit using the transport handles provided.
- Do not transport the unit by the air intake filter.

The unit may be stored in its original packaging

– in warm, dry and dust-free rooms;
– protected from contaminants.

If possible, retain the packaging material.

2.8 Disposal

Unit

Dispose of the unit properly and in accordance with applicable national, regional and local laws.

Packaging

Dispose of the packaging material in an environmentally responsible manner.

– Note current disposal routes.
– Keep the packing materials out of the reach of children.

EN

3 Overview

3.1 Scope of delivery

The following items are included in the scope of delivery (possible variations due to country-specific requirements and/or import regulations):

Product name . . . . . Article number

P2B-304, 400 V, with condensate drain 1036100100
HB-304M, 400 V, with membrane-drying unit 1036100600
H2A-160M, 230 V, 1~, with membrane-drying unit. 1036100620
P2B-304M, 230 V, 3~, with membrane-drying unit. 1036100630

– Pressure vessel
– Compressor unit
– Fabric reinforced hose
– Hose nozzle
– Installation and Operating Instructions
– Collector tray

3.2 Optional accessories

The following optional items can be used with the device:

Pressure reducer. 1013100027

3.3 Wear parts and replacement parts

The following working parts need to be changed at regular intervals (refer to the "Maintenance" section):

Product name . . . . . Article number

Air intake filter cartridge, long 0714200050
Fine filter cartridge 0.01 µm. . 9000-416-0035ET
Fine filter cartridge 3 µm 1610-121-00
Sintered filter. 1650-101-00
Vibration damper set. 1035100410

Any repairs exceeding routine maintenance may only be carried out by qualified personnel or our service.

If the mains cable of this unit is damaged it must only be replaced by an original mains cable from the manufacturer.

4 Technical data

4.1 P2B-304, article 1036100100

Electrical data		1036100100	
Voltage	V	400 / 3~	
Electrical frequency	Hz	50	60
Rated power	kW	4.4	6.0
Nominal current at 8 bar (0.8 MPa)	A	8.8	9.6
Motor protection switch, recommended setting	A	4.4	5.0
Speed	min^{-1}	1440	1700
Type of protection		IP X4	
Mains fusing	A	10 **	
Mains connection	CEE 16 A	3L + N + PE, PVC hose connection 5 x 1.5 mm^2; length: 2.5 m;	

** Circuit breaker fuse characteristics B, C or D in accordance with DIN EN 60898

General technical data			
Pressure vessel volume	L	90	
Delivery at 5 bar (0.5 MPa)	l/min	430	480
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) approx.	s	90	80
Duty cycle	%	100	
Initial pressure/Cut off pressure	bar (MPa)	6.5 / 8.5 (0.65 / 0.85)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point (at 7 bar / 0.7 MPa)	°C	≤ +5	
Dimensions (W x H x D)	cm	102 x 76 x 62	
Weight	kg	143	
Noise level	dB(A)	74	77

Ambient conditions during storage and transport		
Temperature	°C	-10 to +55
Relative humidity	%	max. 95

Ambient conditions during operation		
temperature	°C	+5 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	Max. 95

4.2 HB-304M, article 1036100600

EN

Electrical data		1036100600	
Nominal voltage	V	400 / 3~	
Electrical frequency	Hz	50	60
Nominal current at 8 bar (0.8 MPa)	A	4.4	4.8
Motor protection switch, recommended setting	A	5.0	5.0
Speed	min^{-1}	1440	1700
Type of protection		IP 24	
Mains fusing *	A	10	
Max. permissible mains impedance in acc. with EN 61000-3-11 **	Ω	≤ 0.24	

* Circuit breaker fuse characteristics B, C or D in acc. with EN 60898-1

** Mains impedance at 6 switching cycles per hour. If the number of switching cycles per hour is higher, a lower mains impedance is required.

General technical data			
Pressure tank volume	l	50	
Suction power, approx.	l/min	420	505
Delivery at 5 bar (0.5 MPa)	l/min	215	240
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) c.	s	105	95
Duty cycle	%	100	
Start-up pressure	bar (MPa)	6 (0.6)	
Cut-off pressure	bar (MPa)	7.8 (0.78)	
Cut-off pressure, max. adjustable	bar (MPa)	9.5 (0.95)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point at 7 bar (0.7 MPa) *	°C	≤ +5	
Dimensions (H x W x D) **	cm	76 x 74 x 52	
Weight	kg	82	
Noise level ***			
without sound insulation	dB(A)	70	75
with sound insulation	dB(A)	54	55

* Value determined at an ambient temperature of +40 °C

** Values without accessories and add-on parts

*** Noise level in accordance with EN ISO 1680 "Airborne noise emissions"; measured in a room with sound damping. The levels are average values with a tolerance of ± 1.5 dB(A). Higher values may be obtained in rooms with reverberating sound characteristics.

Filter mesh size		
Compressor air intake filter	µm	3
Fine filter cartridge 3 µm for membrane-drying unit	µm	3
Fine filter cartridge 0.01 µm for membrane-drying unit	µm	0.01
Sintered filter for membrane drying unit	µm	35

Ambient conditions during storage and transport		
Temperature	°C	-10 to +55
Relative humidity	%	max. 95

Ambient conditions during operation		
Temperature	°C	+10 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	max. 95

4.3 H2A-160M, article 1036100620

EN

Electrical data		1036100620	
Nominal voltage	V	230 / 1~	
Electrical frequency	Hz	50	60
Nominal current at 8 bar (0.8 MPa)	A	12.2	14.3
Motor protection switch, recommended setting	A	6.5	7.6
Speed	min^{-1}	1410	1690
Type of protection		IP 24	
Mains fusing *	A	20	

* Circuit breaker fuse characteristics B, C or D in acc. with EN 60898-1

General technical data			
Pressure vessel volume	L	50	
Suction power, approx.	l/min	420	505
Delivery at 5 bar (0.5 MPa)	l/min	230	260
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) approx.	s	115	100
Duty cycle	%	100	
Switch-on pressure	bar (MPa)	6 (0.6)	
Cut off pressure	bar (MPa)	7.8 (0.78)	
Cut off pressure, max. adjustable	bar (MPa)	9.5 (0.95)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point at 7 bar (0.7 MPa) *	°C	≤ +5	
Dimensions (H x W x T) ***	cm	76 x 79 x 52	
Weight	kg	90	
Noise level ****			
without sound insulation	dB(A)	69	74
with sound insulation	dB(A)	55	56

* Value determined at an ambient temperature of +40 °C

** With ORANGE rinsing nozzle

*** Values without accessories and add-on parts

**** Noise level in accordance with EN ISO 1680 "Airborne noise emissions"; measured in a room with sound damping. The levels are average values with a tolerance of ± 1.5 dB(A). Higher values may be obtained in rooms with reverberating sound characteristics.

Filter mesh size		
Compressor air intake filter	µm	3
Fine filter cartridge 3 µm for membrane-drying unit	µm	3
Fine filter cartridge 0.01 µm for membrane-drying unit	µm	0.01
Sintered filter for membrane drying unit	µm	35

Ambient conditions during storage and transport		
Temperature	°C	-10 to +55
Relative humidity	%	max. 95

Ambient conditions during operation		
Temperature	°C	+10 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	max. 95

4.4 P2B-304M, article 1036100630

Electrical data		1036100630	
Nominal voltage	V	230 / 3~	
Electrical frequency	Hz	50	60
Nominal current at 8 bar (0.8 MPa)	A	15.2	16.6
Motor protection switch, recommended setting	A	9	9
Speed	min^{-1}	1440	1700
Type of protection		IP 24	
Mains fusing *	A	20	
Max. permissible mains impedance in acc. with EN 61000-3-11 **	Ω	≤ 0.445	

* Circuit breaker fuse characteristics B, C or D in acc. with EN 60898-1

** Mains impedance at 6 switching cycles per hour. If the number of switching cycles per hour is higher, a lower mains impedance is required.

General technical data			
Pressure vessel volume	L	90	
Suction power, approx.	l/min	845	1010
Delivery at 5 bar (0.5 MPa)	l/min	430	480
Pressure build-up phase 0 - 7.5 bar (0 - 0.75 MPa) approx.	s	90	80
Duty cycle	%	100	
Switch-on pressure	bar (MPa)	6.5 (0.65)	
Cut off pressure	bar (MPa)	8.5 (0.85)	
Cut off pressure, max. adjustable	bar (MPa)	9.5 (0.95)	
Safety valve, maximum permissible operating pressure	bar (MPa)	10 (1)	
Pressure dew point at 7 bar (0.7 MPa) *	°C	≤ +5	
Dimensions (H x W x T) **	cm	76 x 102 x 62	
Weight	kg	143	
Noise level ***	dB(A)	69	74

* Value determined at an ambient temperature of +40 °C

** Values without accessories and add-on parts

*** Noise level in accordance with EN ISO 1680 "Airborne noise emissions"; measured in a room with sound damping. The levels are average values with a tolerance of ± 1.5 dB(A). Higher values may be obtained in rooms with reverberating sound characteristics.

Filter mesh size		
Compressor air intake filter	µm	3
Fine filter cartridge 3 µm for membrane-drying unit	µm	3
Fine filter cartridge 0.01 µm for membrane-drying unit	µm	0.01
Sintered filter for membrane drying unit	µm	35

Ambient conditions during storage and transport		
Temperature	°C	-10 to +55
Relative humidity	%	max. 95

Ambient conditions during operation		
Temperature	°C	+10 to +40
Ideal temperature	°C	+10 to +25
Relative humidity	%	max. 95

4.5 Declaration of conformity for machines in accordance with the 2006/42/EC Directive

EN

We hereby declare that the unit described below conforms to all requirements of the machine directive 2006/42/EC.

The unit named below fulfills the requirements of the following directives:

– Electromagnetic Compatibility (EMC) Directive 2014/30/EU
– Simple pressure vessel directive 2014/29/EU
– The assembly contains a pressure units covered by directive 2014/68/EC in its current version.
– RoHS directive 2011/65/EU

Manufacturer's name:	Dürr Technik GmbH & Co. KG
Manufacturer's address:	Pleidelsheimer Straße 30 D-74321 Bietigheim-Bissingen

Reference number:	1036
Article designation:	Oil-free Marathon stations
From the serial number:	L400000

We hereby declare that the unit may only be commissioned once it has been established that the machine into which this unit is to be installed complies with the provisions as set out in Machinery Directive 2006/42/EC.

Bietigheim-Bissingen, 7 January 2019

Andreas Ripsam
Executive Board of Dürr Technik

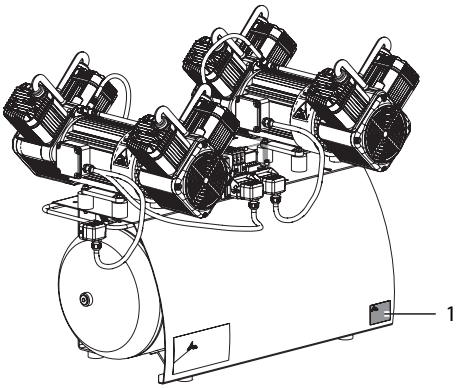
Proof of signature in the
Original document held by Dürr Technik

4.6 Type plate

Unit without membrane-drying unit

Complete system

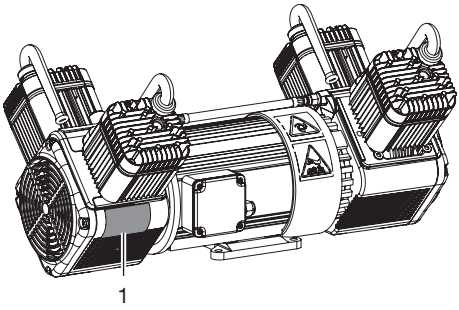
The type plate for the complete system is located on the pressure vessel of the unit.



1 Type plate for the complete system

Compressor unit

The type plate of the compressor unit is located on the crankcase below the cylinder.

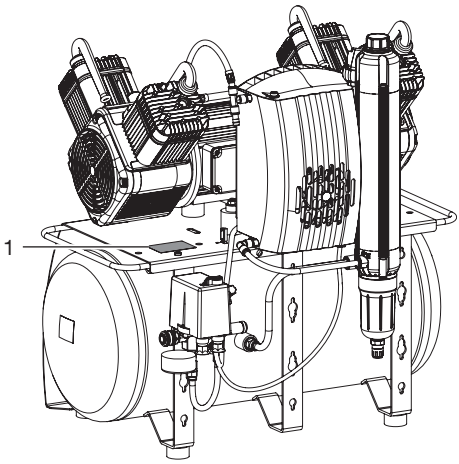


1 Compressor unit type plate

Unit with membrane drying unit

Complete system

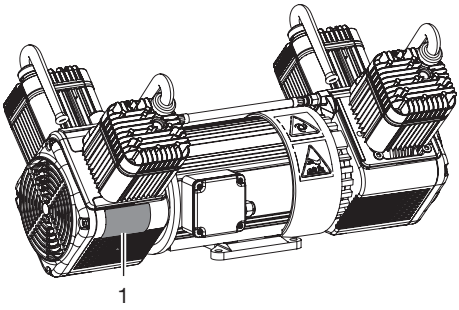
The type plate of the overall system is located on the mounting plate for the compressor unit.



1 Type plate for the complete system

Compressor unit

The type plate of the compressor unit is located on the crankcase below the cylinder.

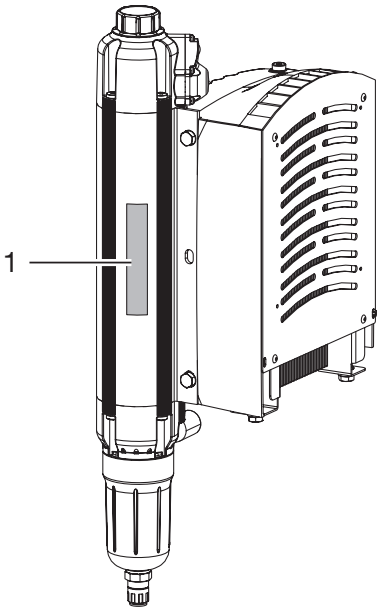


1 Compressor unit type plate

EN

Membrane drying unit

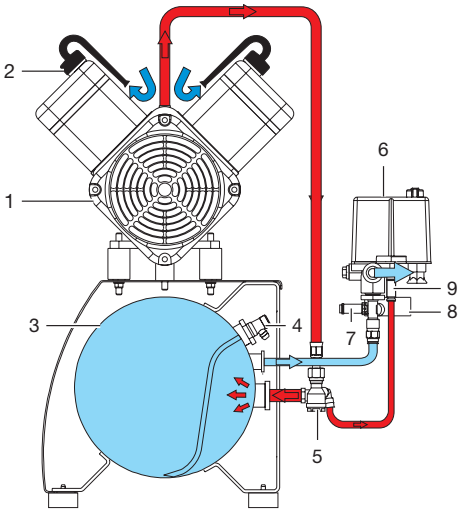
The type plate of the membrane drying unit is located on the side of the membrane drying unit.



1 Membrane drying unit type plate

5 Operation

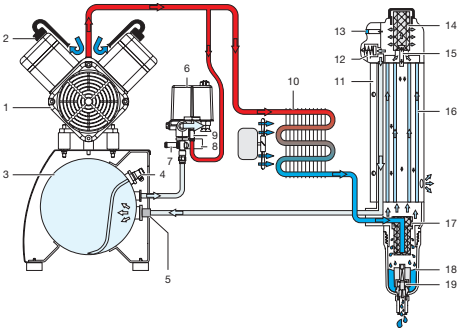
5.1 Unit without membrane-drying unit



1 Compressor unit
2 Air intake filter
3 Pressure vessel
4 Condensate drain valve
5 Check Valve
6 Pressure switch
7 Safety Valve
8 Pressure gauge / display
9 Pressure relief valve

The compressor unit draws in atmospheric air and compresses it without oil. The oil-free compressed air is then transported directly to the pressure tank. The oil-free and hygienic air is made available to the consumers in the pressure tank.

5.2 Unit with membrane drying unit



1 Compressor unit
2 Air intake filter
3 Pressure tank
4 Condensate drain valve
5 Non-return valve
6 Pressure switch
7 Safety valve
8 Pressure gauge/display
9 Pressure relief valve
10 Cooler with ventilating fan
11 Membrane drying unit
12 Pressure limiting valve
13 Humidity display
14 Fine or sterile filter
15 Rinsing nozzle
16 Membrane fibre
17 Sinter filter
18 Water collection chamber
19 Water outlet valve

The compressor unit draws in atmospheric air and compresses it without oil. It then transports the oil-free compressed air to the membrane drying unit. The cooler and the membrane dryer extract moisture from the compressed air. The oil-free, hygienic and dry air is stored in the pressure tank ready for use in connected devices.

EN

6 Requirements

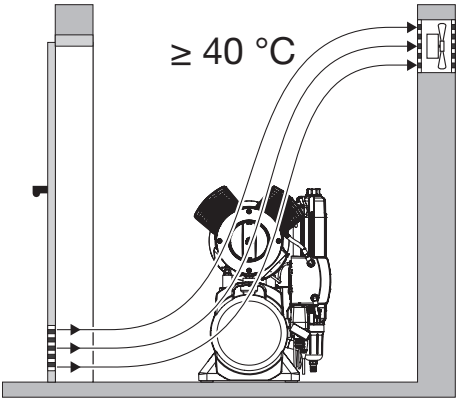
6.1 Installation/setup room

The room chosen for set up must fulfil the following requirements:

– Closed, dry, well-ventilated room
– Should not be a room made for another purpose (e. g. boiler room or wet cell)

NOTICE
Risk of overheating due to insufficient ventilation
The units generates heat. Possibility of heat damage and/or reduced service life of the unit.

› Do not cover the unit.
› Install a fan for auxiliary ventilation in rooms where ambient temperatures exceed ≥40 °C while the unit is in operation.



6.2 Setup

The following conditions must be taken into account for installation:

The air is filtered when it is sucked in. This does not alter the composition of the air. For this reason it is important to keep the sucked-in air free of harmful substances (e.g. do not suck in exhaust gases or contaminated exhaust air).

– Clean, level and sufficiently stable subsurface (note the weight of the unit).
– Type plate easy to read.
– Unit easy to access for operation and maintenance.
– Easy-to-access power outlet to which the unit is connected.
– Maintain sufficient distance to the wall (at least 20 cm).
– The compressed air pipe should be routed as closely as possible to the place of installation (note the length of the hose supplied).

6.3 Information about electrical connections

› Ensure that the connection to the mains power supply is established in accordance with current valid national and local regulations and standards governing the installation of low voltage units.
› Observe the current consumption of the unit to be connected.

7 Transport

WARNING
Risk of explosion of the pressure tank and pressure hoses
› The pressure tank and the pressure hoses must be vented before they are stored or transported.

› Protect the unit against moisture, dirt and extreme temperatures during transport ("4 Technical data").
› Always make sure that the condensate collector chamber is empty before transporting the unit ("8.5 Draining the condensation water").

› Always transport the unit in an upright position.
› Only transport the unit using the transport handles provided.
› Check the unit for transport damage.

8 Installation

8.1 Remove the transport locks

The unit is securely protected with two foam blocks and a retaining strap for safe transport.
› Cut and remove the retaining strap.
› Remove the foam blocks.
› Check the unit for damage in transit.

8.2 Establishing the compressed air connection

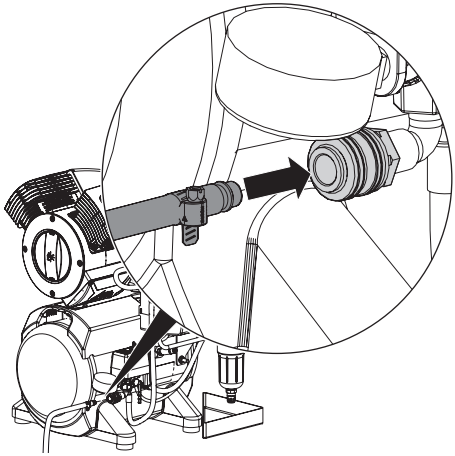
The devices are designed as standard for a nominal pressure of 7 bar. Exceeding the nominal pressure on a regular basis will reduce the service life of the device.

The unit is equipped as standard with a control gear, which consists of a pressure switch, pressure gauge, safety valve, non-return valve and condensate drain.

In order to avoid the transfer of vibrations, we recommend installing a flexible pressure hose between the pressure hose and the pressure switch. A pressure reducer can also be connected.

› The compressed-air supply is connected to the quick-release coupling (incl. hose adapter piece) or to the pressure switch by means of a G 1/4" internal thread.
› Secure the pressure hose to the hose adapter piece using a hose clip.

› Connect the hose adapter piece to the quick-release coupling.

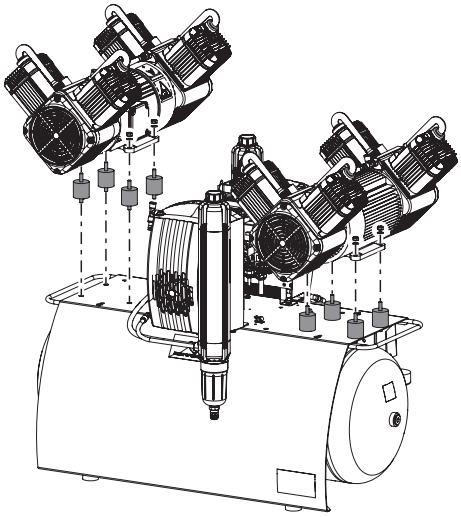


EN

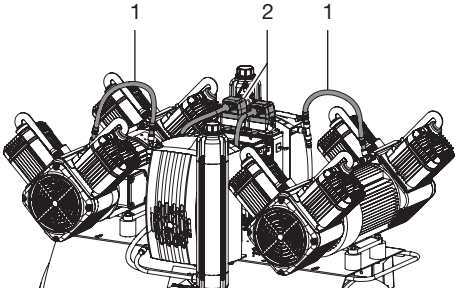
8.3 Installing the unit with the membrane-drying unit

For weight reasons the unit is not supplied fully assembled. Instead, the compressor units are installed at the site of use.

› Set up the tank at the planned installation site.
› Screw in the vibration dampers into the motor mounting.
› Place the compressors on the vibration dampers.
› Attach the compressor units with the lock washers and nuts.



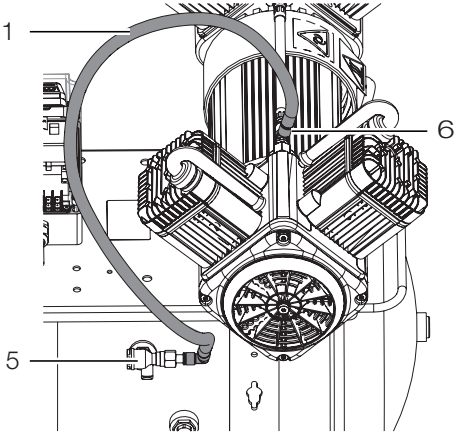
› Insert the compressed air connections from the compressor unit into the cooler.
› Plug in the electrical connections of the compressor units at the control box. Connect the left-hand unit to the left-hand plug connector and the right-hand unit to the right-hand plug connector.



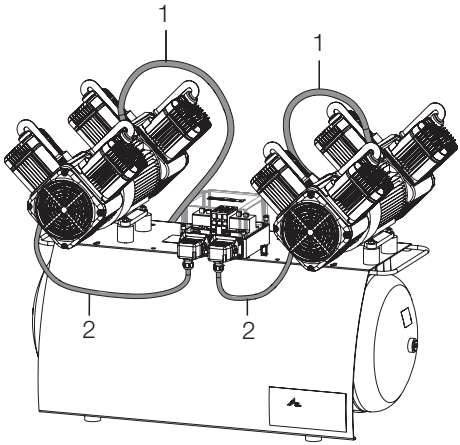
1 Compressed air connection
2 Electrical connection

Installing the unit without the membrane-drying unit

› Insert the compressed air connections from the pressure vessel to the compressor.



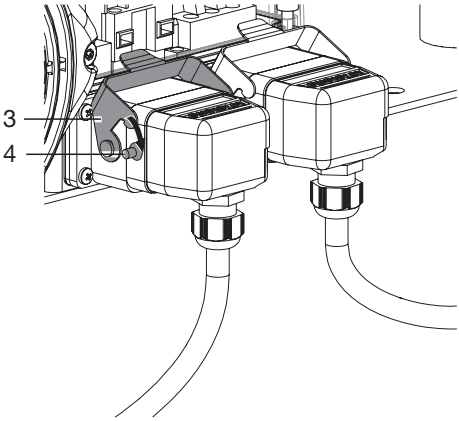
1 Compressed air hose
5 Compressed air connection on the vessel
6 Compressor compressed air connection



1 Compressed air hose
2 Electrical connection

› Plug in the electrical connections of the compressor units at the control box. Connect the left-hand unit to the left-hand plug connector and the right-hand unit to the right-hand plug

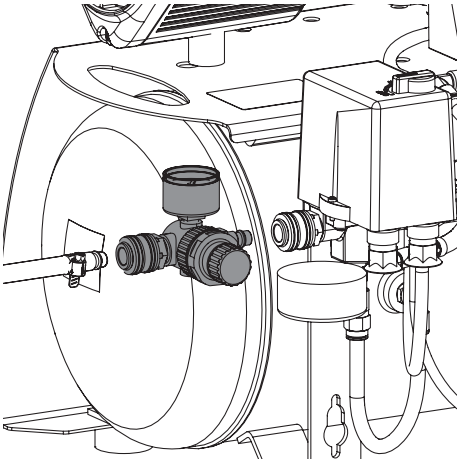
connector. Close the lock on the connector housing.



3 Lock
4 Pin connector housing

8.4 Pressure reducer (optional)

› Insert the pressure reducer into the quick release coupling.
› Insert the pressure hose into the quick release coupling on the pressure reducer.

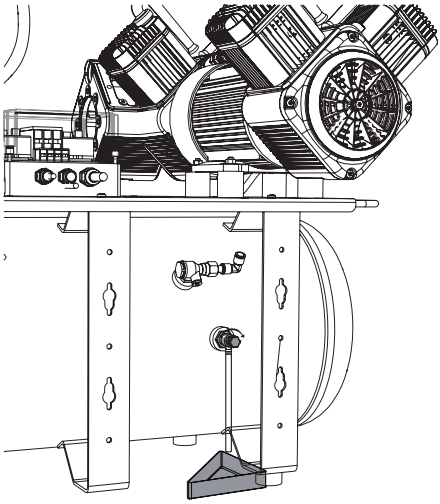


8.5 Draining the condensation water

Units without a membrane-drying unit

When air from the surrounding atmosphere is compressed, different amounts of condensate will accumulate in the pressure vessel depending on the humidity and temperature of the air. The condensate must be let off in regular intervals:

› Place a collector tray under the condensate drain.
› Open the condensate drain valve at maximum tank pressure.
› Close the condensate drain valve as soon as all of the condensate has been blown out.



EN

Unit with membrane drying unit

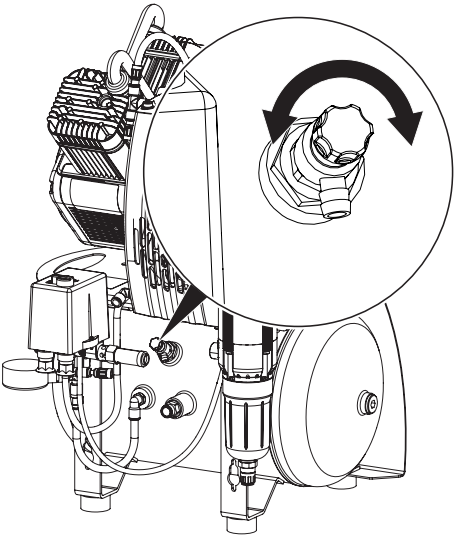
Temperature changes during transport may cause condensation water to accumulate in the pressure tank. The condensation water can only be drained from the pressurised pressure tank.

› Switch on the unit at the pressure switch and wait until the cut-off pressure is reached.

Pressure tank

› At maximum tank pressure, open the condensate drain valve.

› Close the condensate drain valve as soon as all of the accumulated condensation water has been blown out.

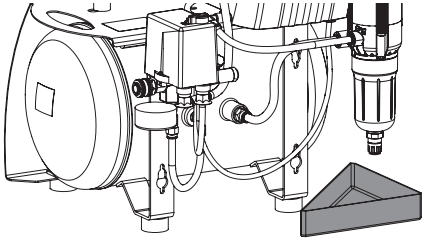


Place a collector tray underneath

During operation, condensation water on the unit is continuously separated and automatically drained. In order to prevent water damage due to drained condensation, it is collected in the collector tray.

As an option, the condensation can also be drained through a hose into the waste water system. Always comply with applicable national regulations for waste water systems.

› Place a collector tray under the condensate separator or the membrane drying unit (depending on type).



8.6 Electrical connections

Safety when making electrical connections

The unit has no main power switch. For this reason it is important that the unit is be set up in such a way that the plug can be easily accessed and unplugged if required.

› The unit must only be connected to a correctly installed power outlet.

› Make sure that none of the electrical cables leading to the unit are under any mechanical tension.

› Before initial start-up check that the mains supply voltage and the voltage stated on the type plate match (see also "4. Technical data").

Establishing the electrical connections

DANGER
Risk of electric shock due to defective mains cable

› Mains cables must not be allowed to come into contact with any hot surfaces on the unit.

› Connect the mains plug to an earthed socket outlet.

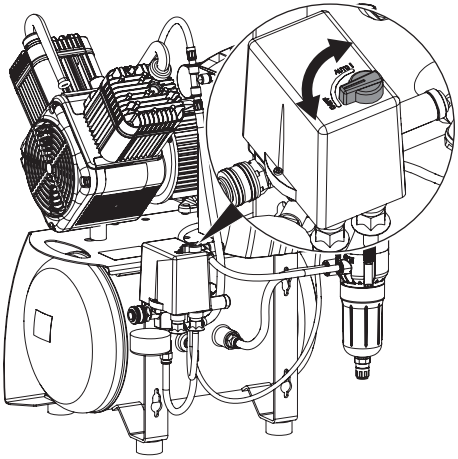
The unit will start immediately after connection of the mains plug.

9 Commissioning

9.1 Check the motor protection switch

After installation of the compressor the motor protection switch needs to be checked and adjusted if it is not set up correctly. It was set to the recommended setting in the factory (see "4 Technical data").

› Switch on the unit at the pressure switch by rotating the switch to the "I" position.



› Measure the maximum current consumption (this is the value just before the cut-off pressure is reached).

If the reading deviates from the recommended setting then the motor protection switch needs to be adjusted (see "Adjusting the motor protection switch").

9.2 Checking the switch-on/cut-off pressure

The switch-on/cut-off pressure is preset at the factory. Check the setting during first start-up.

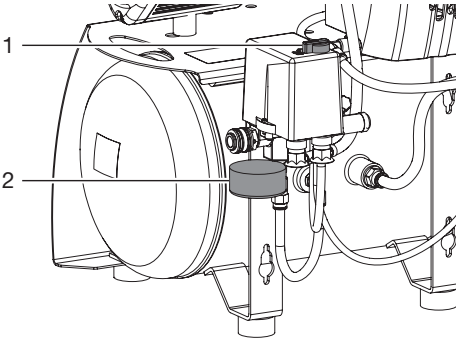
› Switch on the unit at the pressure switch by rotating it to the position "I AUTO".

› Read off the cut-off pressure from the pressure gauge.

› Drain the air from the pressure tank (e.g. via the condensate drain valve) until the unit starts and then close it again.

› Read off the pressure when the unit switches on.

If the readings deviate from the values preset at the factory, adjust the pressure switch to the factory settings.



1 On/off switch
2 Pressure gauge

EN

9.3 Checking the safety valve

Check for the correct operation of the safety valve upon commissioning the device and then at regular intervals.

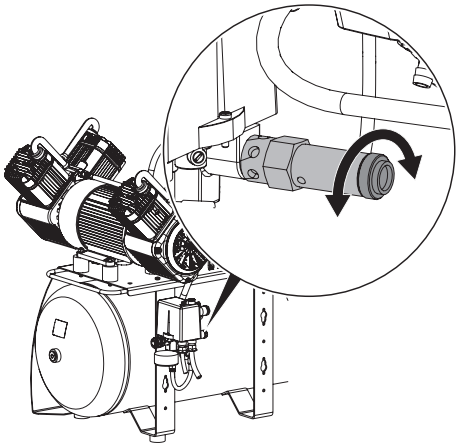
The safety valve is factory set to 10 bar (1 hPa) and has been checked and stamped.

DANGER
Risk of explosion of the pressure vessel and pressure hoses
› Do not change the safety valve settings.

› Switch on the unit at the pressure switch and fill the pressure vessel to the cut-off pressure.

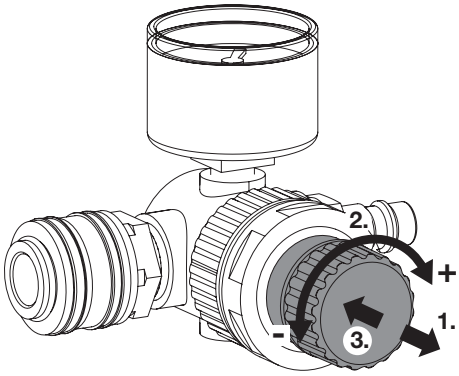
WARNING
Risk of damage to the safety valve
Risk of explosion of the pressure vessel and pressure hoses due to a defective safety valve
› Do not use the safety valve to vent the pressure vessel.

› To open, rotate the safety valve screw anti-clockwise until the valve begins to blow off. Only allow the safety valve to blow for a short period.
› Then turn the screw clockwise as far as it will go to close the valve. The valve must now be closed again.



9.4 Adjusting the rate of flow at the pressure reducer

The pressure reducer regulates the rate of flow in the system and adjusts it to the required operating pressure. In order to adjust the rate of flow air needs to be extracted via a consumer.
› Activate the air consumer unit.
› Lift the rotary knob at the pressure reducer.
› Adjust the rate of flow via the rotary knob.
Turn the knob in the "+" direction to increase the rate of flow.
Turn the knob in the "-" direction to reduce the rate of flow.
› Press in the rotary knob until it engages and cannot be adjusted.



› To optimise pressure regulation, operate the pressure reducer at least 1 bar below the switch-on pressure of the station

9.5 Adjustment options

Adjusting the pressure switch

WARNING
Risk of explosion of the pressure vessel

The pressure vessels used in the compressors are designed to withstand continuous pressure changes of 2 bar and can be used continuously under these pressure changes.

› For load changes > 2 bar (max. permissible: 3 bar), comply with the maximum load change cycles specified in the operating instructions of the pressure vessel.

DANGER
Exposed live parts

Risk of electric shock due to live parts

› Disconnect all power from the device.
› Use insulated tools.
› Do not touch live parts.

The cut-off pressure must be at least 0.5 bar (0.05 hPa) below the maximum pressure of 10 bar (1 hPa) of the safety valve. Otherwise the safety valve can open too early, which will prevent the compressor unit from attaining the cut-off pressure, as a result of which it will run continuously. The maximum permitted pressure is marked by a red line on the attached pressure gauge.

If the read-off values differ from the factory settings or if other settings are required, the cut-off pressure of the compressor can be adjusted at the adjusting screw on the pressure switch. The start-up pressure can then be adjusted using the pressure difference Δp.

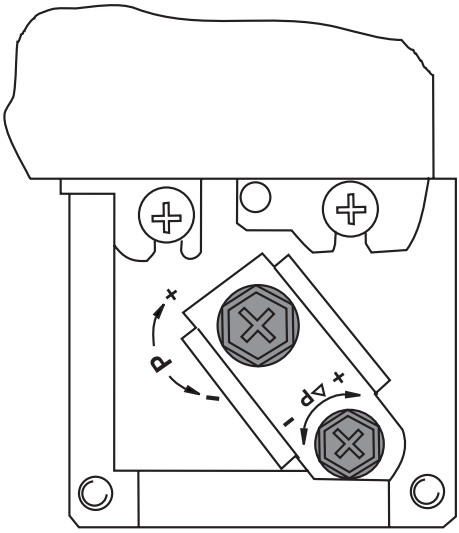
› Take off the pressure switch cover.
› Adjust the cut-off pressure P at the adjustment screw.

  The cut-off pressure increases in the "+" arrow direction and decreases in the "-" arrow direction. The pressure difference Δp is also influenced by this adjustment.

› Adjust the start-up pressure via the pressure difference Δp at the adjustment screw.

  The pressure difference increases in the "+" arrow direction and decreases in the "-" arrow direction.

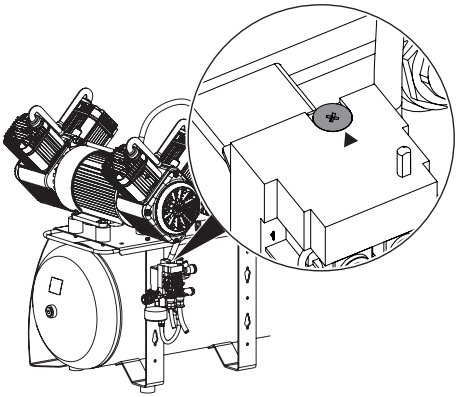
The maximum permissible pressure difference must not be set to more than 3 bar.



Adjusting the motor protection switch

Pressure switch

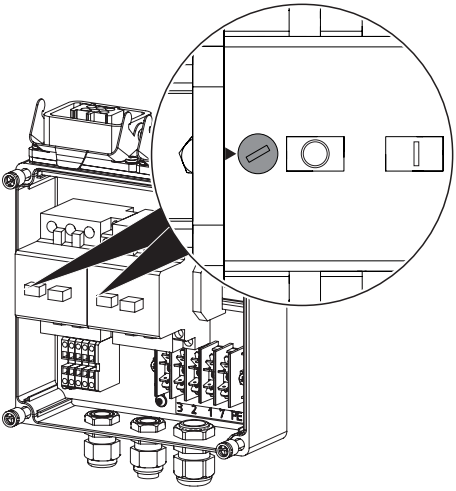
› Take off the pressure switch cover.
› Adjust the motor protection switch to the measured value using the setting screw (observe the range between the min. and max. permissible settings of the motor protection switch, see "4 Technical data").



Controller

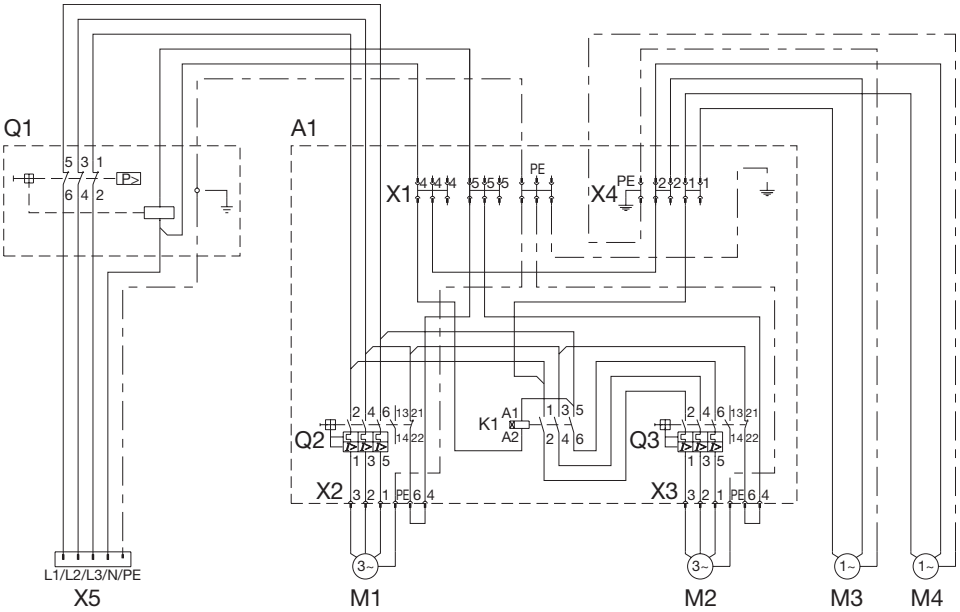
› Remove the cover from the controller.

› Adjust the motor protection switch with the adjustment screw to the measured value (observe the range between the MIN permissible setting and the MAX permissible setting of the motor protection switch, see "4 Technical data").



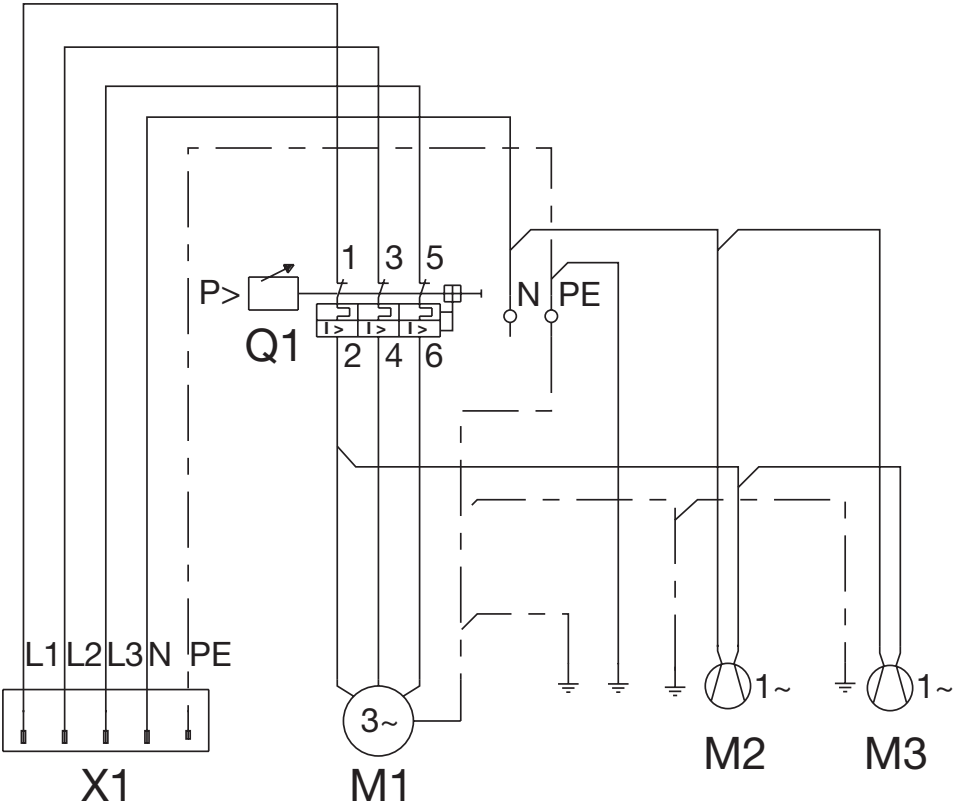
10 Circuit diagrams

10.1 Unit 1036100100



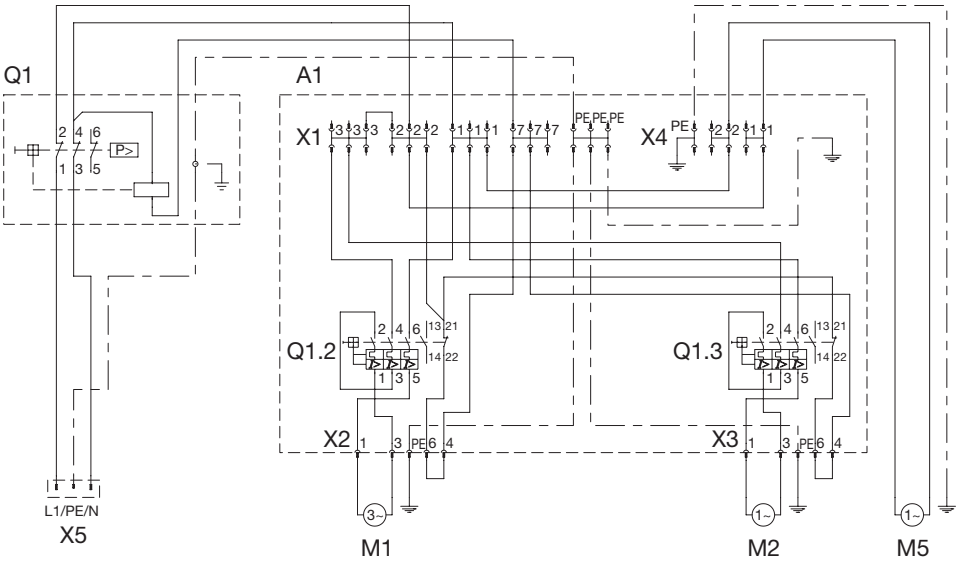
X5 Mains connection 3/N/PE AC 230 V
Q1 Pressure switch
A1 Control box
X1 Distributor rail
X2 Compressor plug connection
X3 Compressor plug connection
X4 Distributor rail
Q2 Motor protection switch
Q3 Motor protection switch
K1 Time-lag relay
M1 Compressor unit
M2 Compressor unit
M3 Fan motor, membrane drying unit (optional)
M4 Fan motor, membrane drying unit (optional)

10.2 Unit 1036100600



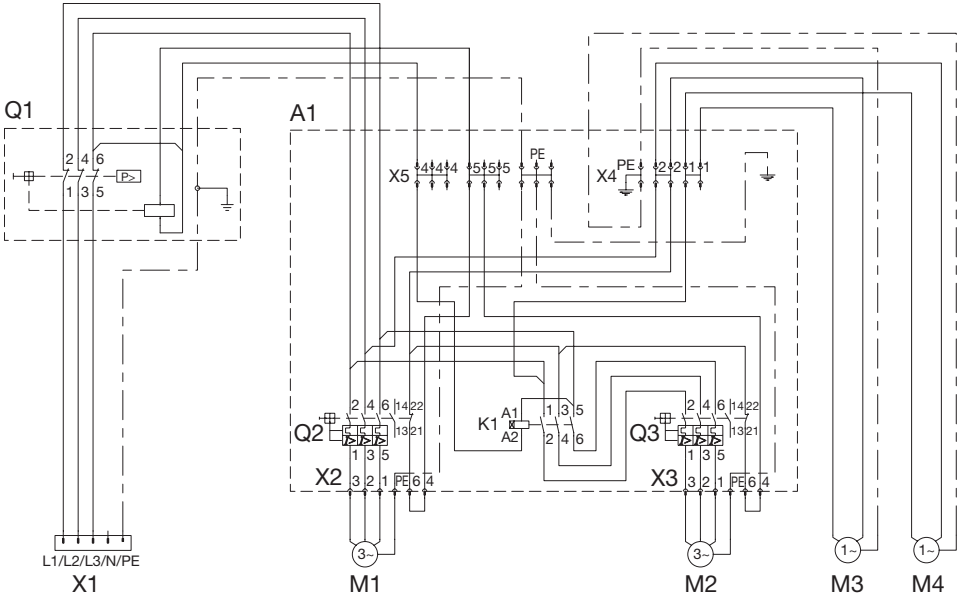
X1 Mains connection 3/N/PE AC 400 V
Q1 Pressure switch
M1 Compressor unit
M2 Fan motor, membrane drying unit
M3 Fan motor, noise insulation (if required)

10.3 Unit 1036100620



X5 Mains connection L/N/PE AC 230 V
Q1 Pressure switch
A1 Controller
X1 Distributor rail
X2 Plug connection of compressor unit
X3 Plug connection of compressor unit
X4 Distributor rail
Q1.2 Motor protection switch
Q1.3 Motor protection switch
M1 Compressor unit
M2 Compressor unit
M5 Fan motor, membrane drying unit

10.4 Unit 1036100630



X1 Mains connection 3/N/PE AC 230 V
Q1 Pressure switch
A1 Control box
X2 Plug connection of compressor unit
X3 Plug connection of compressor unit
X4 Distributor rail
X5 Distributor rail
Q2 Motor protection switch
Q3 Motor protection switch
K1 Time-lag relay
M1 Compressor unit
M2 Compressor unit
M3 Fan motor, membrane drying unit
M4 Fan motor, membrane drying unit

11 Operation

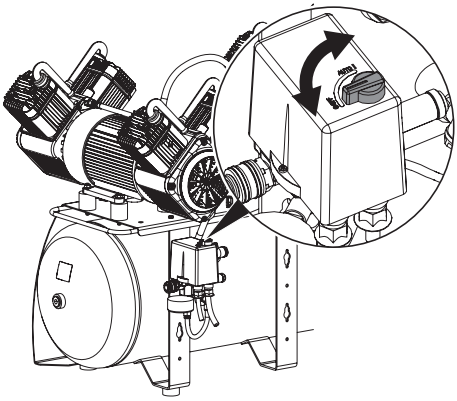
De-energise the unit prior to working on it or in the event of potential danger (e. g. pull the mains plug) and prevent it from being switched back on again.

11.1 Switching the unit on/off

› Switch on the device at the pressure switch by rotating it to the "I AUTO" position.

The compressor unit will start up automatically and fill the pressure vessel. When the cut-off pressure is reached, the compressor unit switches itself off automatically.

› The device can be switched off as required by turning the pressure switch to the "0 OFF" position.



12 Maintenance

12.1 Maintenance schedule

Prior to working on the unit or in case of danger, disconnect it from the mains.

EN

Unit without membrane-drying unit

NOTICE
Risk of damage to the unit due to blocked filters
Continuous running due to reduced delivery. Damage to the unit due to burst filters.
› Replace filters in accordance with the maintenance schedule.

Maintenance interval	Maintenance work
At regular intervals	› Drain the condensate from the pressure vessel by opening the condensate drain valve (the interval can vary depending on the ambient conditions and method of working; empty it daily with high air humidity).
Annually	› Replace the air intake filter - every six months given a high concentration of dust.
Every 4 years	› Replace the vibration dampers.
In accordance with national directives	› Check the safety valve. › Carry out repeat safety tests (e.g. pressure vessel test, electrical safety test) in accordance with the national directives.

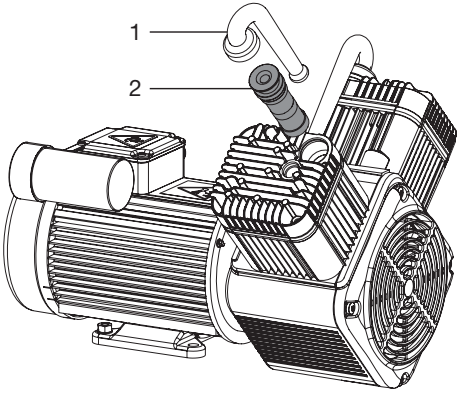
Unit with membrane-drying unit

NOTICE
Risk of damage to the unit due to blocked filters
Continuous running due to reduced delivery. Damage to the unit due to burst filters.
› Replace filters in accordance with the maintenance schedule.

Maintenance interval	Maintenance work
At regular intervals	› Empty the collector tray under the membrane drying unit / condensate drain (the interval may vary depending on the ambient conditions and method of working; empty it daily if the humidity is high).
Annually	› Replace the air intake filter - every six months given a high concentration of dust. › Change the 3 µm / 0.01 µm fine filter cartridge. › Replace the sintered filter.
Every 4 years	› Replace the vibration dampers.
In accordance with national directives	› Check the safety valve. › Carry out repeat safety tests (e.g. pressure vessel test, electrical safety test) in accordance with the national directives.

12.2 Replacing the air intake filter

› Switch off the compressor at the pressure switch.
› Pull off the noise reducer from the air intake filter.
› Remove the air intake filter.
› Insert a new air intake filter.
› Push on the noise reducer onto the air intake filter.

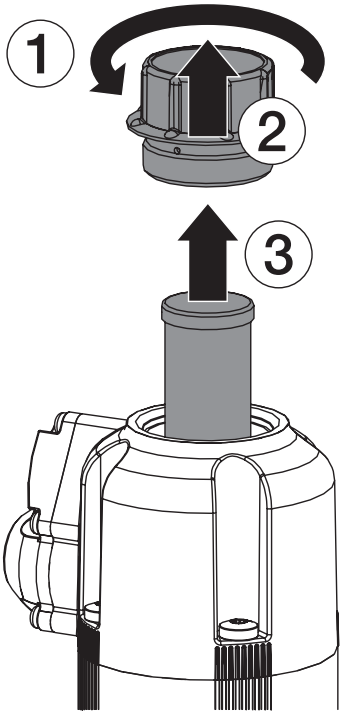


1 Noise reducer
2 Air intake filter

12.3 Replacing the filter of the membrane drying unit

Change the fine filter cartridge 3 µm / 0.01 µm of the membrane-drying unit

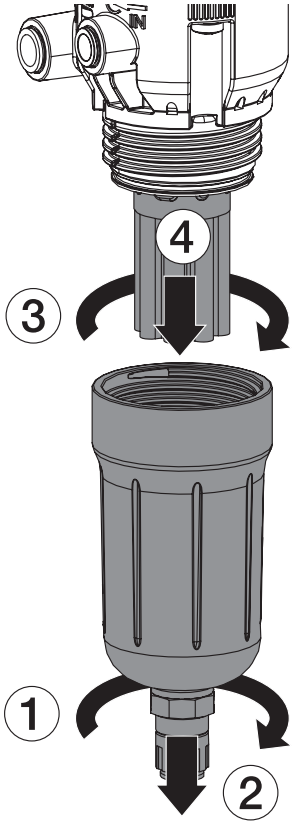
› Check that the unit has been disconnected from the power supply and is depressurised.
› Unscrew and remove the filter cover.
› Remove the fine filter 3 µm / Fine filter 0.01 µm.
› Fit a new 3 µm fine filter / 0.01 µm fine filter.
› Replace the filter cover and close.



EN

Sintered filter

› Unscrew and remove the filter housing.
› Remove the sintered filter.
› Insert a new sintered filter.
› Replace the filter housing and close.



12.4 Taking out of use

If the unit is not to be used for a prolonged period of time, we recommend that it is properly shut down and taken out of use.

To do this, the accumulated condensation water from the unit must be drained.

› Switch on the unit and wait until the cut-off pressure is reached.

Pressure tank

› Switch off the unit.
› Disconnect the mains plug.
› Relieve the full pressure from the compressed air vessel (e.g. using a blow-off gun connected to the quick-release coupling or via the condensate drain valve (if present)).
› Disconnect the compressed air connection on the quick release coupling.

Storage of the unit

WARNING
Risk of explosion of the pressure tank and pressure hoses
› The pressure tank and the pressure hoses must be vented before they are stored or transported.

› Protect the unit against moisture, dirt and extreme temperatures during transport (refer to the section on "Ambient conditions").
› Only store the unit when it has been completely emptied.

13 Tips for operators and service technicians

Any repairs exceeding routine maintenance may only be carried out by qualified personnel or our service.

De-energise the unit prior to working on it or in the event of potential danger (e. g. pull the mains plug) and prevent it from being switched back on again.

Fault	Probable cause	Solution
Compressor will not start	No mains voltage	› Check the mains fuse; if necessary, switch the circuit breaker back on. If the fuse is defective, replace it.
	Undervoltage or overvoltage	› Measure the mains voltage; call an electrician if necessary.
	Pressure switch not switched on	› Switch on the pressure switch. › Inform a service technician.
	Motor winding overheating protector tripped (overheating)	› Allow the unit to cool down.
Humming noise from motor	Motor capacitor is defective	› Replace the capacitor.
The compressor does not switch off	The compressor is too small, air intake too high	› Calculate the amount of air required and install a larger compressor if necessary.
	Leakage in the compressed air system	› Locate and seal the leakage. › Inform a service technician.
Compressor switches on from time to time even though no air is being taken for a consumer unit	Leak in the compressed air system	› Locate and seal the leak. › Inform a service technician.
Knocking or loud noises on the compressor	Compressor unit defective	› Disconnect all power from the device and inform a service technician.
Reduced delivery. The compressor requires longer to charge the pressure vessel, see charging times in "4 Technical data"	Air intake filter soiled	› Replace the air intake filter at least 1x per year. The air intake filter must never be cleaned.
Water dripping from air consumers	Maintenance work not carried out regularly (without membrane drying unit)	› Regularly drain the condensation water from the pressure tank, see "8.5 Draining the condensation water"
	Defective membrane drying unit	› Inform a service technician.

14 Tips for service technicians

The following information about troubleshooting is intended solely for service technicians. Repairs must only be carried out by service technicians.

De-energise the unit prior to working on it or in the event of potential danger (e. g. pull the mains plug) and prevent it from being switched back on again.

EN

Fault	Probable cause	Solution
Compressor will not start	No mains voltage. On three-phase units: one phase is missing or not connected (generation of a humming sound)	› Check the mains fuse; if necessary, switch the circuit breaker back on. If the fuse is defective, replace it. Check the mains supply voltage.
	Undervoltage or overvoltage	› Measure the supply voltage; call an electrician if necessary.
	Relief valve defective, unit starts against pressure	› Check that the relief valve discharges after switching off the unit. Free up the movement of the relief valve operable or replace it.
	Mechanical sluggishness of a unit (piston is stuck); motor protection has tripped	› Switch the unit off and disconnect it from the power supply, remove the fan hood from the blocked compressor and turn the fan wheel. If this is not possible, replace the piston and cylinder or the complete unit.
Humming noise from motor	Motor capacitor is defective	› Replace the capacitor.

15 Addresses

15.1 Returns / Repairs

Dürr Technik GmbH & Co. KG
Pleidelsheimer Straße 30
74321 Bietigheim-Bissingen
-Germany-

WARNING
Risk of explosion of the pressure tank and pressure hoses

› The pressure tank and the pressure hoses must be vented before they are stored or transported.

Use the original packaging when returning units, if possible. Always pack the units in a plastic bag. Use recyclable packing material.

15.2 To order spare parts

Tel. +49 (0) 71 42 / 9022 - 0
Fax +49 (0) 71 42 / 9022 - 99
E-mail: office@duerr-technik.de

The following information is required when ordering spare parts:

– Type designation and item number
– Order number as appears on the spare parts list
– Quantity required
– Exact shipping address
– Shipping information

15.3 Service

Tel. +49 (0) 71 42 / 90 22 - 20
Fax +49 (0) 71 42 / 90 22 – 99
E-mail: service@duerr-technik.de

15.4 Addresses worldwide

www.duerr-technik.eu

Dürr Technik GmbH & Co. KG
Pleidelsheimer Strasse 30
74321 Bietigheim-Bissingen
Germany
Fon: +49 7142-90 22 -0
www.duerr-technik.com
office@duerr-technik.de

DÜRR TECHNIK