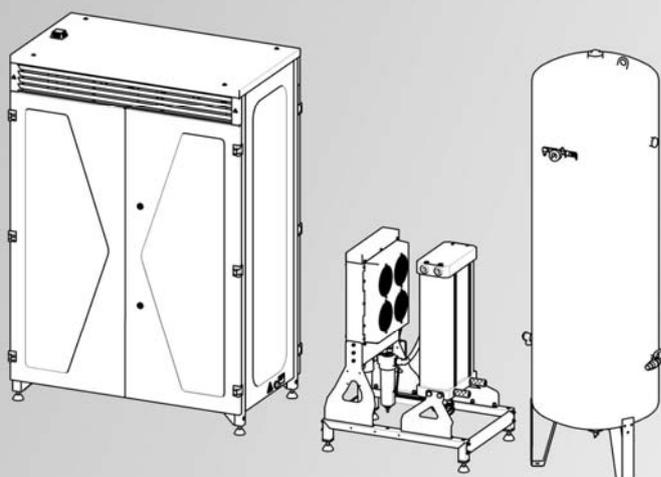


OIL-FREE

AIR FOR LIFE

DK50 6X4VRT/M
DK50 6X4VRTS/M



INSTALLATION, OPERATION AND MAINTENANCE MANUAL

EN

ekom[®]

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IMPORTANT INFORMATIONS

1. CE MARKING

Products labeled with the CE mark of compliance meet the safety guidelines (93/42/EEC) of the European Union.

2. WARNINGS

2.1. General warnings

- The installation, operation and maintenance manual is an integral part of the appliance. It is necessary to always keep this document close to the appliance. Strict observance of this manual is a prerequisite for the correct operation of the appliance.
- The safety of operating personnel and failure-free operation of the appliance are ensured only when using the original components of the appliance. Only accessories specified in the technical documentation or approved by the manufacturer must be used.
- When used with non-authorized accessories or consumable material, the manufacturer cannot assume responsibility for the safe operation and functionality of the device.
- The Guarantee does not cover damages that originate due to the use of non authorized accessories or consumable material other than those recommended by the manufacturer.

The manufacturer assumes responsibility regarding safety, reliability and function only if

- The installation, calibration, amendments, extensions and repairs are made by the manufacturer or his representative or a service organization authorized by the manufacturer,

- The appliance is used in accordance with the installation, operation and maintenance manual.

2.2. General safety warnings

- The manufacturer developed and constructed the appliance so that damage would not occur when the appliance is used for its intended purpose. The manufacturer considers it his obligation to describe the following safety measures in order to avoid further damages.
- When operating the appliance, it is necessary to observe laws and regional regulations valid in the place of usage. In order to ensure safe course of works, the operator and user are responsible for the observation of regulations.
- The original packaging should be kept for the possible return of the unit. Only original packaging guarantees an optimal protection of the appliance during transportation. If it would be necessary to return the appliance during warranty period, the manufacturer is not responsible for damages caused by incorrect packing.
- It is necessary that the user ensures the appliance is safe to use prior to usage.
- The user must familiarize himself with the correct operation of appliance.
- If an undesirable event occurs in the operation of appliance, the user is obliged to immediately inform his supplier to this event.
- This product is not intended for use in areas with the risk of explosion.

2.3. Safety warnings regarding the protection against electric current

- The appliance must only be connected to an appropriate power source that has correct grounding.
- Prior the connecting the compressor, verify whether the mains voltage and frequency specified on the apparatus are in accordance with the local supply.
- Prior to putting into operation, check for possible damages on the appliance and the air connectors. Damaged cables and sockets/plugs must be replaced immediately.
- In the case of a dangerous situation or a technical failure, immediately disconnect the appliance from mains supply.

- During all repairs and maintenance:
 - ensure that the mains plug is removed from the power socket
 - pressure pipes must be air vented
 - Pressure must be released from pressure tank.
- This appliance can only be installed only by a qualified expert.

3. ALERT NOTICES AND SYMBOLS

In the Installation, Operation and Maintenance Manual and on packaging and product, the following labels or symbols are used for important information:

	Information, instructions and cautions for the prevention of damage to health or materials
	Caution! Dangerous electrical voltage
	Read the user manual!
	CE mark of compliance
	Compressor is remote-controlled and may start without warning
	Caution! Hot surface
	Earth (ground) connection
	Terminal for ground connection
	Fuse
	Alternating current
	Handling mark on package – FRAGILE
	Handling mark on package – THIS SIDE UP
	Handling mark on package – KEEP DRY
	Handling mark on package – TEMPERATURE LIMITATIONS
	Handling mark on package – LIMITED STACKING
	Mark on package – RECYCLABLE MATERIAL

4. STORAGE AND TRANSPORT

The compressor is shipped in cardboard that protects the appliance from damage during transport.



Caution! For transport, always use the original packaging and secure the compressor in the upright position.



Protect the compressor from humidity and extreme temperatures during transport and storage. A compressor in its original packaging can be stored in a warm, dry and dust-free area. Do not store near any chemical substances.



Keep packaging material if possible. If not, please dispose of the packaging material in an environmentally friendly way and recycle if possible.



Caution! Before moving or transporting the compressor, release all the air pressure from the tank and hoses and drain the condensed water.

5. TECHNICAL DATA

The compressors are designed for indoor environments with the following conditions:

- Ambient temperature: +5°C to +40°C,
- Relative air humidity ≤ 70%,
- Absolute air humidity ≤ 15 g/m³.

Tab.1

Compressor - type		DK50 6x4VRT/M	DK50 6x4VRTS/M
Compressor set efficiency at over-pressure 6bar	l/min	1180	1180
Nominal voltage / frequency	V / Hz	3 x 400V / 50Hz	3 x 400V / 50Hz
Nominal power input	A	28	28
Air tank volume	l	500	500
Working pressure	bar	6 ÷ 8	6 ÷ 8
Safety valve – pressure	bar	10	10
Sound level	dB	83	72
Compressor set weight	kg	540	693
Weight of compressor assembly	kg	350	483
Weight of cooler with dryer	kg	83	83
Air tank weight	kg	127	127
Compressor assembly dimensions (W x L x H)	mm	3000x2100x705	3000x2100x705
Aggregate unit dimensions (W x L x H)	mm	1240x1750x630	1250x1790x705
Dimensions of cooler with dryer (W x L x H)	mm	760x1015x550	760x1015x550
Air tank dimensions (W x L x H)	mm	770x2100x705	770x2100x705
Dryer type	(V/Ph/Hz)	NDM-090	NDM-090
Mode of the operation		S1	S1
Degree of drying PDP at 7bar		- 40 °C	- 40 °C
Advised capacity for exchange of cooling air	m ³ /hod	3000	3000
Implementation according		class I.	class I.

5.1. FAD efficiency correction for differences in elevation

FAD correction table

Elevation [mamsl]	0 - 1500	1501 - 2500	2501 - 3500	3501 - 4500
FAD [l/min]	FAD x 1	FAD x 0.8	FAD x 0.71	FAD x 0.60

FAD efficiency refers to conditions at an elevation of 0 mamsl: Temperature: 20°C

Atmospheric pressure: 101325 Pa

Relative humidity: 0%

6. PRODUCT DESCRIPTION

6.1. Model variations and their uses

Compressor set is used as a source of clean, oil - less pressure air for central distribution to the pneumatic devices and equipments used in big dental clinics and laboratories, hospital departments, etc., where they are suitable based on their features and parameters

The DK50 6x4VRTS/M compressor set is comprised of an aggregate unit with 6 individual aggregates and a cooler module with a dryer NDM-090 and a common air tank.

6.2. Function

1. Aggregate assembly
2. Air tank
3. Switchboard
4. Safety valve
5. Pressure sensor
6. Pressure gaug
7. Ball valve (air outlet)
8. Cooler
9. NDM dryer
10. Water separator
11. Compressor aggregate
12. Air tank drain valve

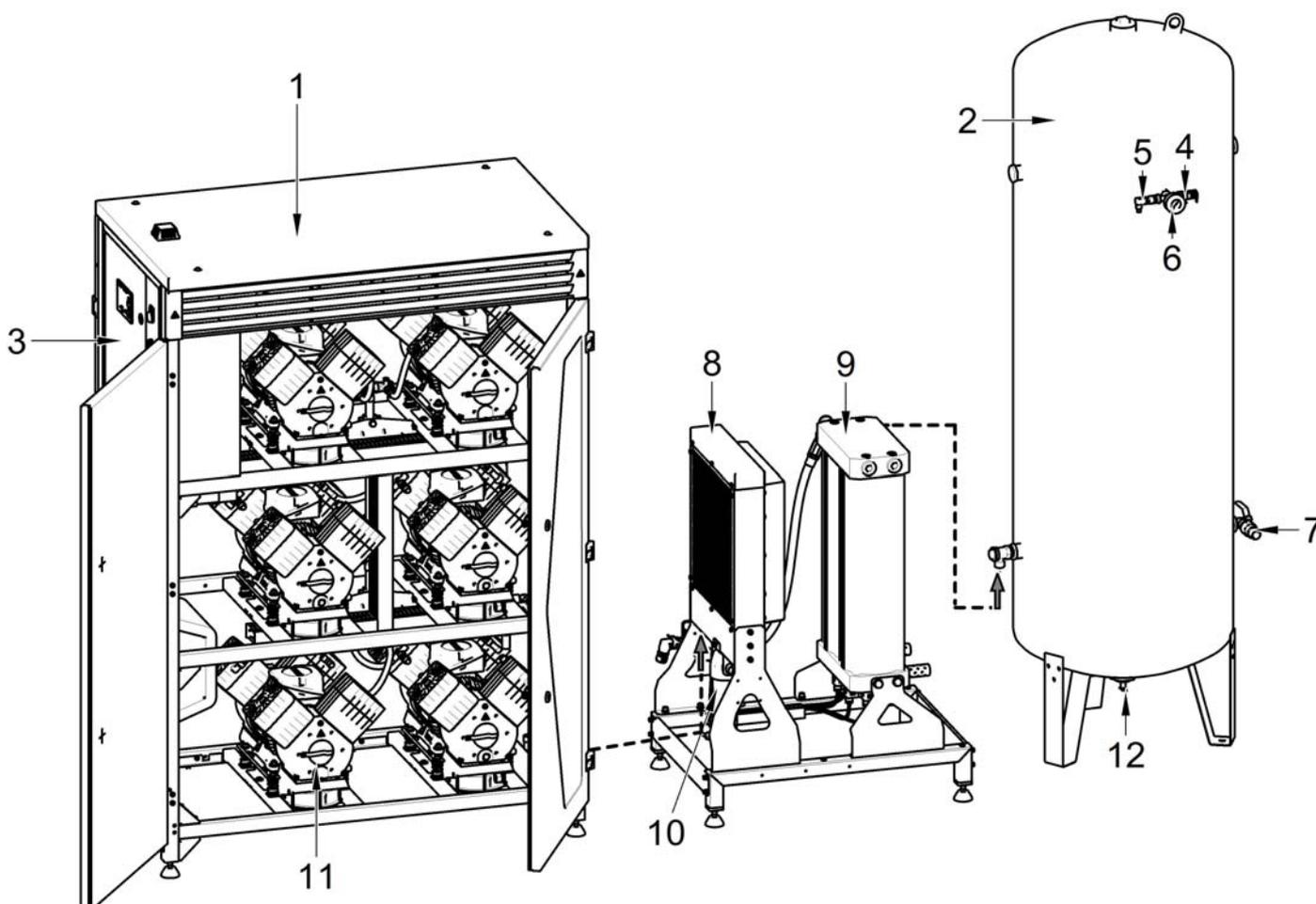


Fig.1 DK50 6x4VRTS/M

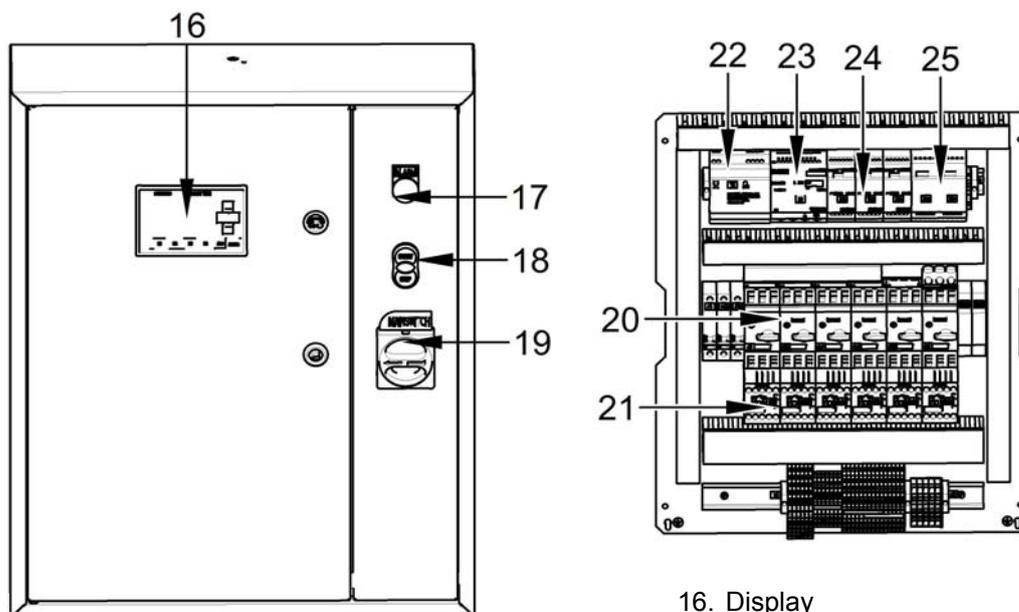


Fig.2 Electrical box / Switchboard

- 16. Display
- 17. Alarm
- 18. Stop/start button
- 19. Main switch
- 20. Circuit breaker
- 21. Contactor
- 22. LOGO! 0BA8 control electronics
- 23. LOGO 12/24 RCE0 module
- 24. LOGO DM8 24R module
- 25. LOGO AM2 RTD module

Aggregate assembly (unenclosed) (schematic in chapter 19 and 21) is comprised of 6 aggregates respectively, which are connected to a common compressed air line and the electrical switchboard (3) (Fig. 1)

Enclosed aggregate assembly – labelled with the S code, i.e. DK50 6x4VRTS/M, delivers up to 11 dB in noise reduction over unenclosed equipment, which permits their use in areas where noise must be kept to an acceptable level.

The enclosed aggregate assembly is comprised of 6 aggregates that are connected by the compressed air and electrical systems - schematics are shown in Chapters 19 and 21

The enclosure itself is composed of a set of parts including the rigid side panels and the front and rear double-wing doors that open to a full 180°. The upper section is covered by a panel with high performance radial cooling fans and fins along the sides. All of the enclosure parts are covered with sound insulation to prevent undesirable noise from being emitted into the nearby area. The perforated portion of the side of the enclosure supplies air to the central filter. (Fig.1)

Dryer assembly

Compressed air from the compressor aggregates is cooled in a fin cooler, condensed water is separated by the water separator and the air is dried in a four-chamber adsorption dryer in two cycles. Air filtration and drying occurs in the 1st chamber while regeneration of the drying media occurs in the 2nd chamber with removal of condensed water into the condensate tank. Regeneration uses a portion of the dry air from the 1st chamber. The order of activities in the chambers is reversed in the next cycle.

Air tank assembly

This assembly is used to store dry compressed air. The dry compressed air from the dryer is supplied into the air tank via a check valve. A drain valve is installed in the lower part of the air tank. A pressure gauge, safety valve and pressure sensor are all installed in the upper part of the tank. A ball valve is installed at the compressed air outlet.

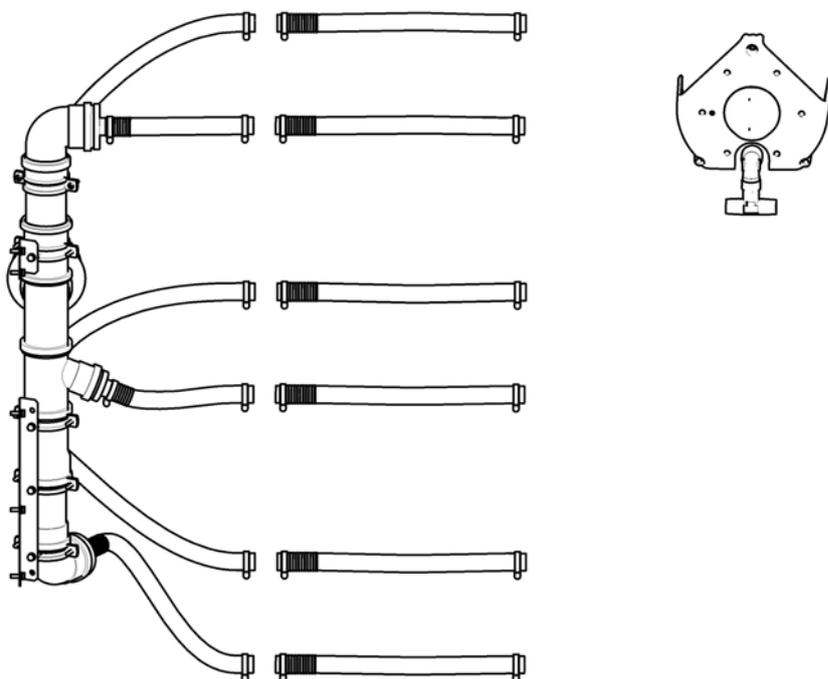
Accessories

Compressor assemblies may be equipped with the accessories identified below when ordered.

Accessories that are not included in the standard order must be ordered separately.

- **Central air intake** – 604031708-000
For the compressor aggregates - such a configuration involves a properly sized central filter located beneath the perforated section on the side of the enclosure, from which intake air is drawn through flexible plastic ducts to the individual compressors - aggregates. This delivers longer central filter replacement cycles compared to the filter replacement cycles for the individual aggregates.

Remove the lower part of the mask before installing!



- **Set of compressed air outlet filters**

The compressor assembly may be equipped with a set of filters with the following filtration performance:

	Pressure regulator	Level of filtration	Article
SET OF FILTERS	yes	3µm	603031724-000
	yes	3µm - 0,3µm	603031641-000
	yes	3µm - 0,01µm	603031641-002
	yes	1µm - AC/HC	603022118-000
	no	3µm	603031724-001
	no	3µm - 0,3µm	603031641-001
	no	3µm - 0,01µm	603031641-003
	no	1µm - AC/HC	603022118-001



If requested, a higher level of air filtration must be specified in the order.

INSTALATION

7. USE

- The compressor unit can only be installed and operated only in dry, well-vented and dust-free area.
- The compressor unit must be installed so that it could be easily accessible for operation and maintenance.
- The compressor unit must stand on a flat, sufficiently stabile base (note the weight of compressor, see Technical data)
- The aggregate assembly must be positioned to permit maintenance and service work to be performed on the aggregates. Spacing of at least 200 mm from walls is needed to ensure proper cooling air flow.

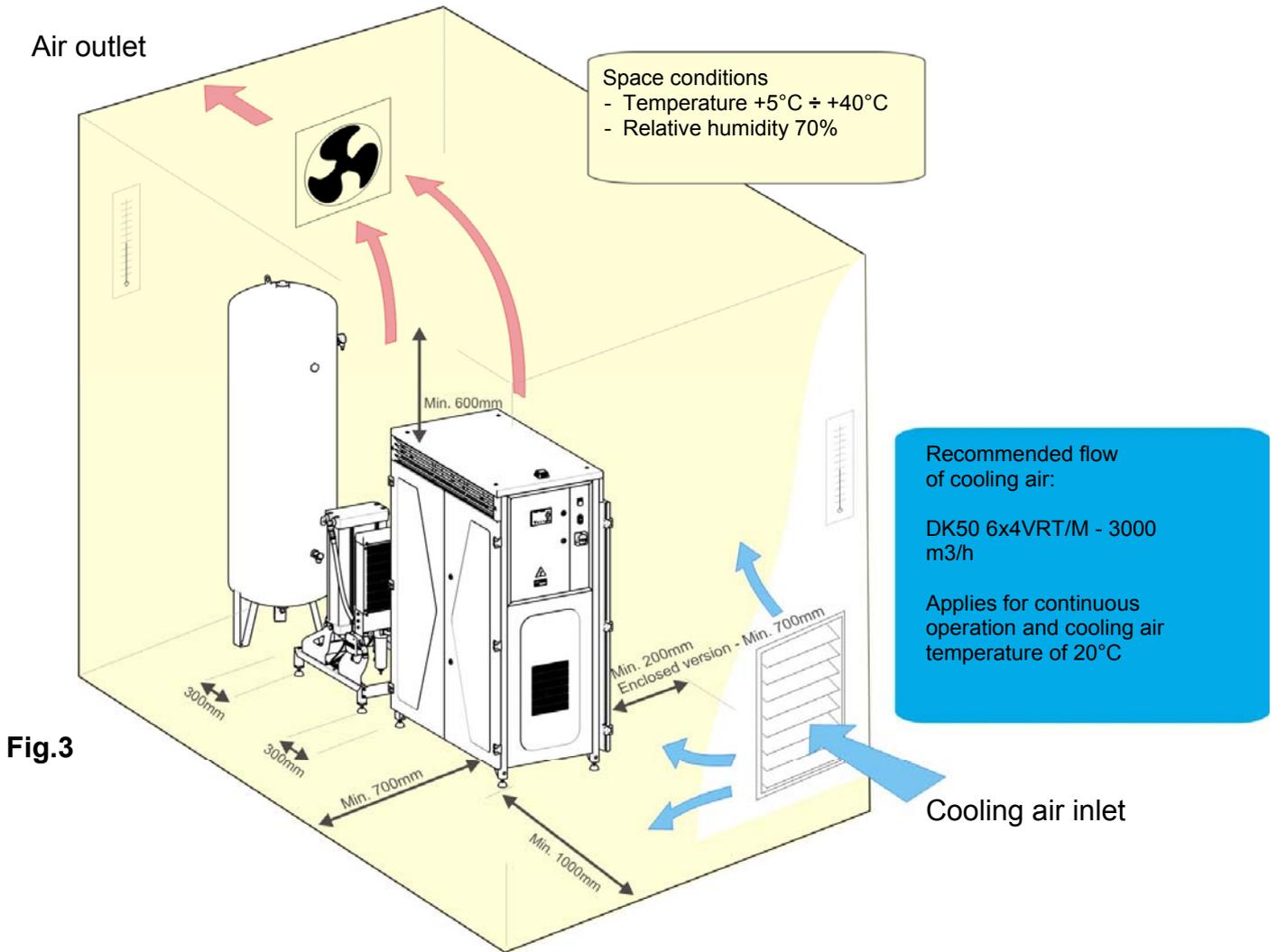


The power cord for the connection to the mains supply and the tubing of the air hoses must not be broken. The power cord must not be stressed or have any tension exerted upon it, and must always be free.

- The temperature in the room where the compressor is located, relative and absolute humidity shall be within the scope declared by the manufacturer (see technical data), otherwise the failure free compressor operation is not guaranteed.
- Approximately 70% of the energy consumed by the pumps of the compressor unit is changed to heat and it is delivered to the environment, therefore, in the room where the compressor unit is installed, the ventilation shall be solved in order to provide sufficient coolant air exchange for removal of aggregate thermal energy emission.



During the operation of compressor, parts of the aggregate can be heated to temperatures dangerous for contact with operating staff or material. Danger of fire! Caution, hot air!



The conditions under which reach the required pressure dew point -40°C			
Inlet air temperature	°C	45	(max.50)
Ambient temperature	°C	35	(max.40)
Working pressure	bar	7	
Pressure dew point	°C	-40	

8. PLACEMENT OF THE COMPRESSOR



Only a qualified electrician can perform the installation!

Unpack the compressor assembly (aggregate unit, cooler with dryer and air tank) from its packaging, release the transport anchors.

- Position the assembly at the site of installation. (Fig.4)

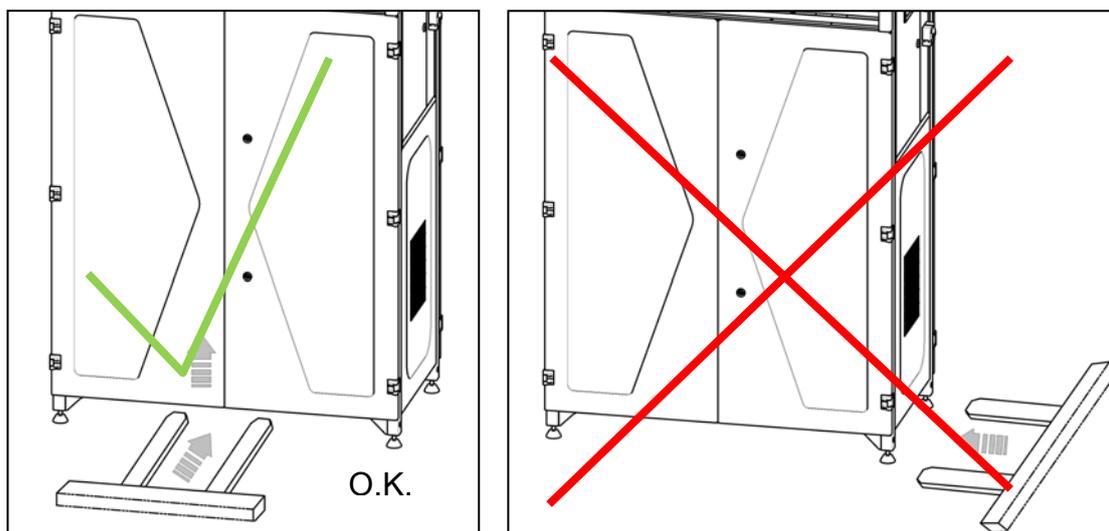


Fig.4

Manipulation

- Balance the compressor assembly. (Fig.5)

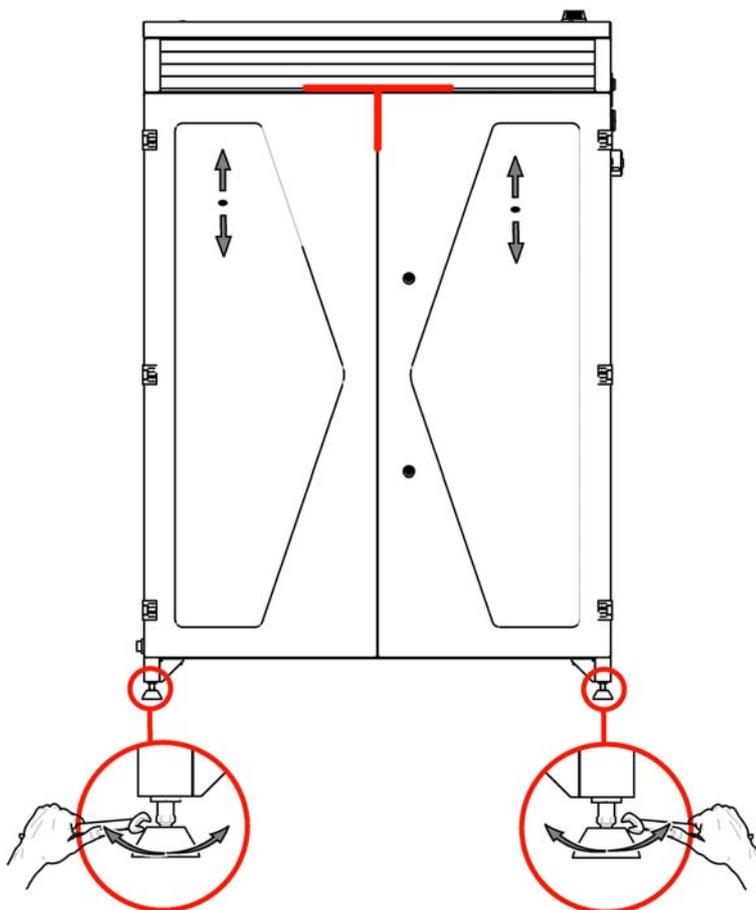
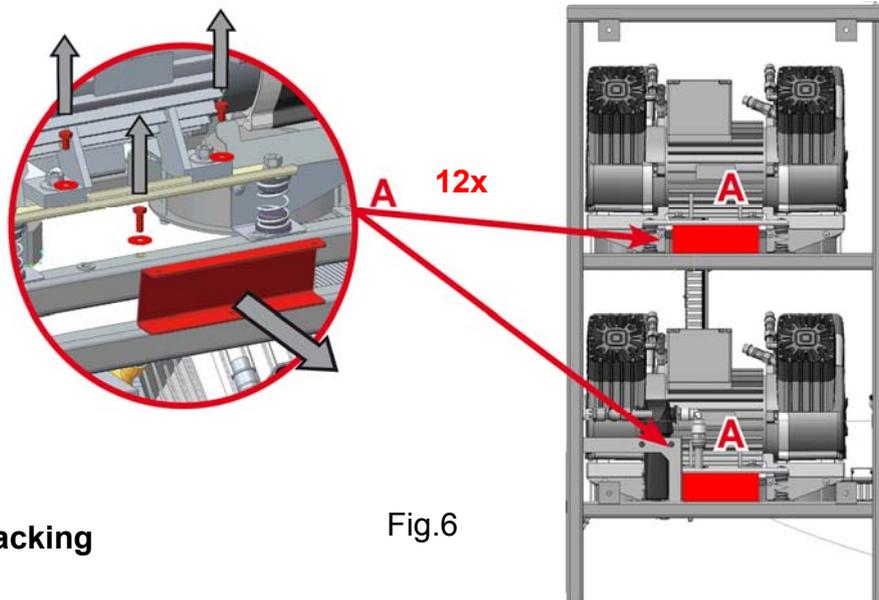


Fig.5

- Remove the transport stabilisers from the aggregates. (Fig.6)



Remove all devices used to secure the compressors once the compressor set has been installed and mounted at the site of final installation!



Unpacking

Fig.6

- Position the air tank at the site of installation and anchor it to the floor! (Fig.7)

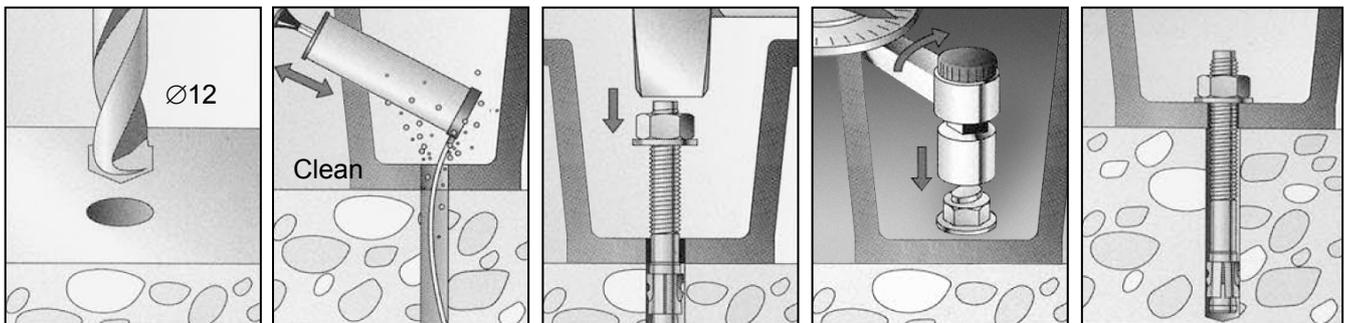
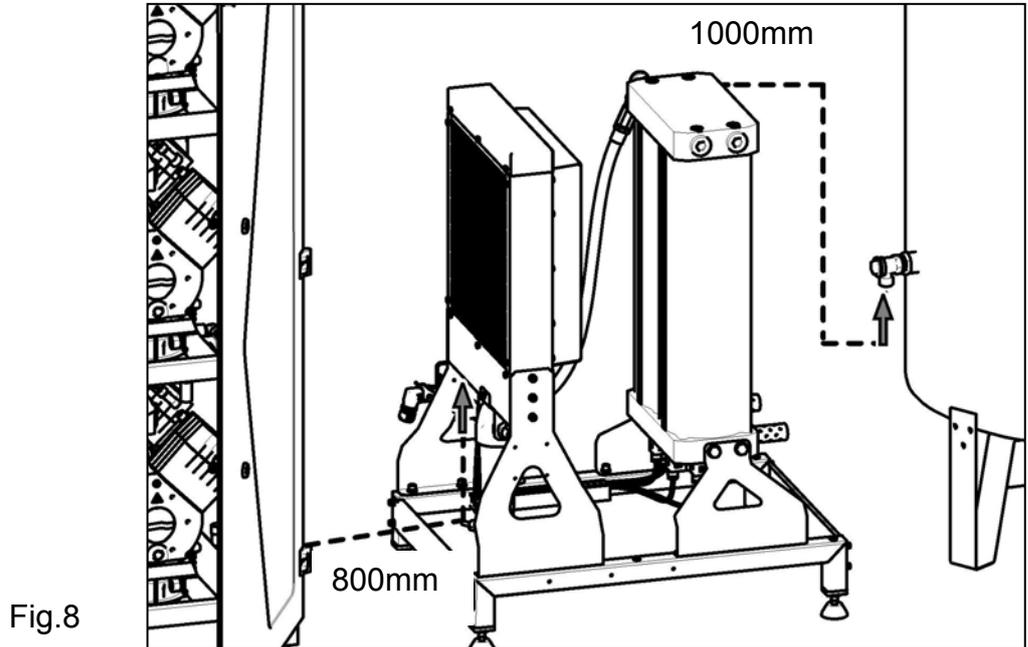


Fig.7

9. COMPRESSED AIR CONNECTIONS

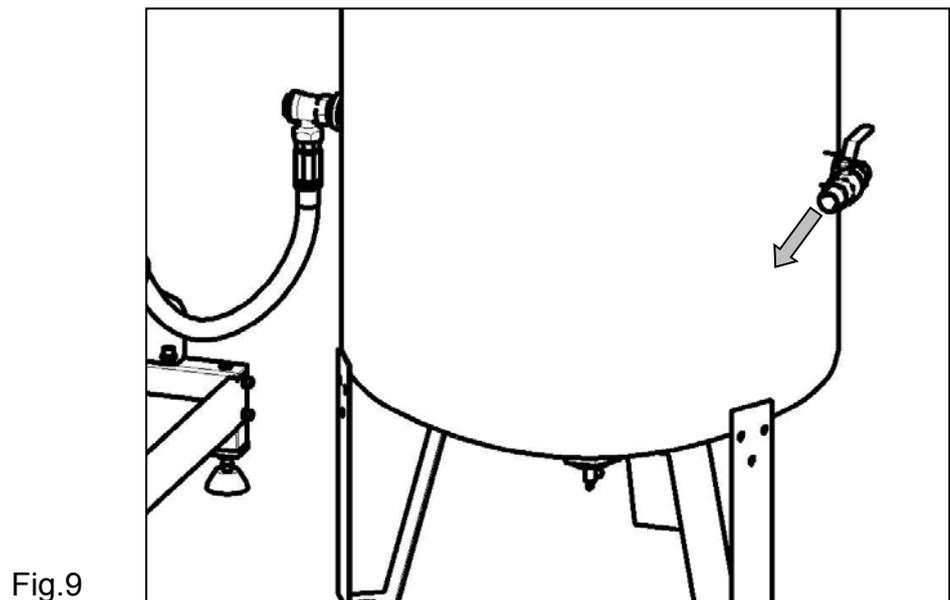
- Connect the compressor assembly with hoses. (Fig.8)



- Connect the hoses from the water separator and the condensate drain from the dryer to the pair of angle fittings at the canister valves



- A G3/4" ball valve is installed on the compressed air outlet from the air tank. (Fig.9)



- Connect the set of filters (If it is part of the product - accessory item)

- Attach the filtration set to the legs of the air tank using the 4 bolts and 4 nuts provided. (Fig.10)

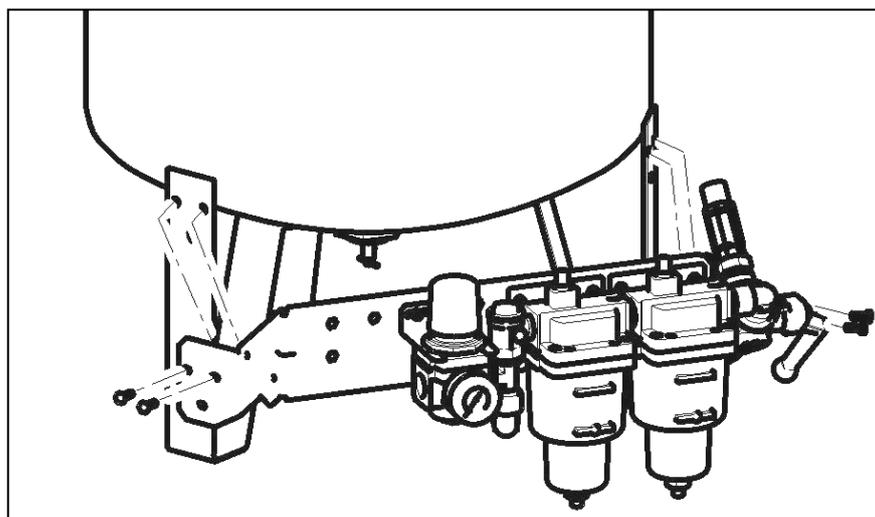


Fig.10

- Connect the hose from the air tank outlet to the set of filters. The 3-way valve facilitates the continuous delivery of compressed air to the compressed air circuit. Changing the position of the lever on the 3-way valve redirects the flow of air (through the filters or directly into the circuit without filtration) to facilitate simpler filter maintenance and filter element replacement. (Fig.11)

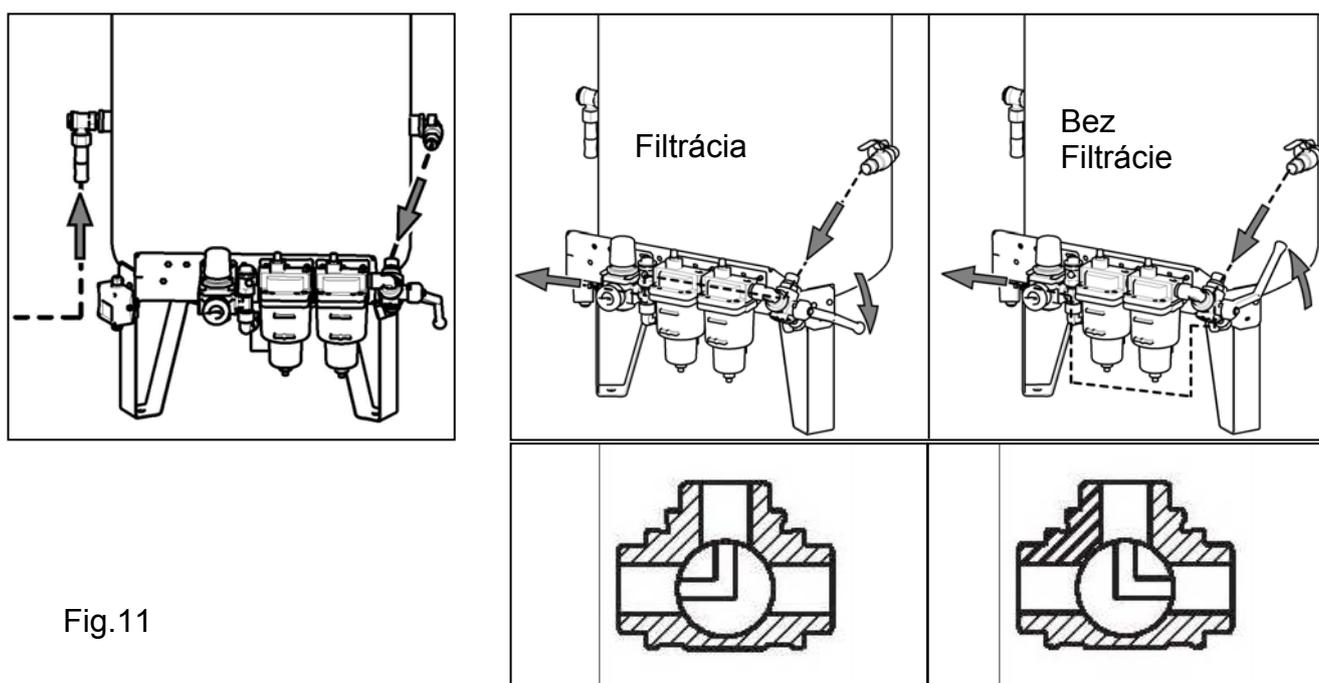


Fig.11

10. ELECTRICAL CONNECTIONS



The customer must supply a circuit breaker block or fused connection compliant with applicable requirements.

- Connector the compressor section to the dryer bracket using cable W22. The cable is connected to the primary switchboard and is terminated in socket X17 (5-pin WINSTA). Insert the plug into the pins in connecting box X5. Connect the motor assembly in the compressor with sensor B1 located on the air tank using the W23 shielded cable, which is terminated with a valve connector. (Fig.12-13)

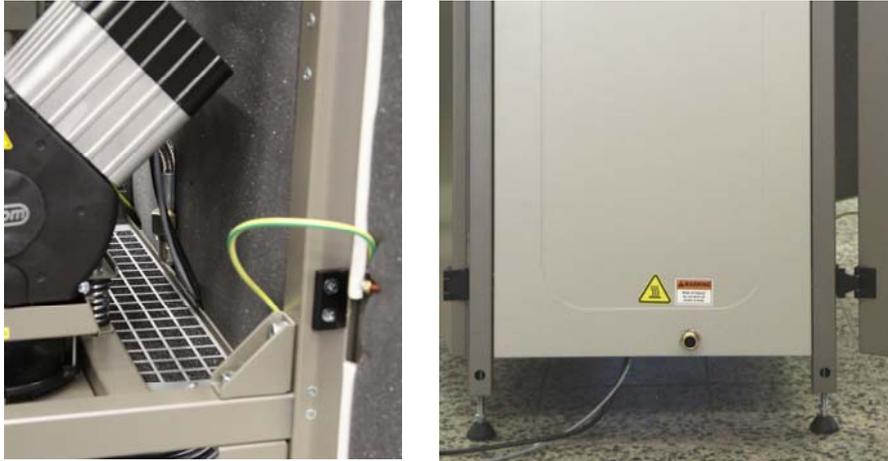


Fig.12

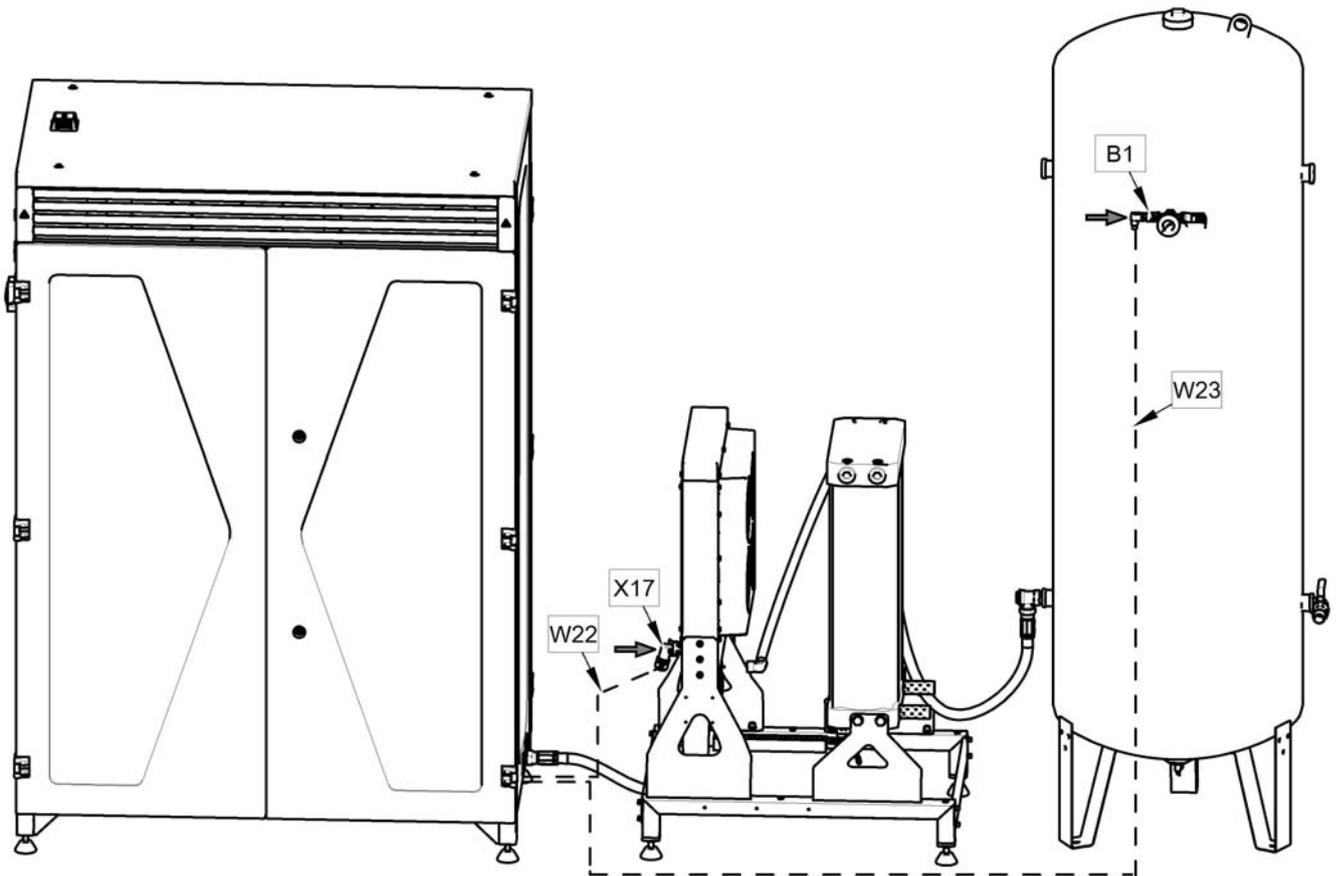


Fig.13

- Route the power cord out of the enclosure as illustrated. (Fig.14)

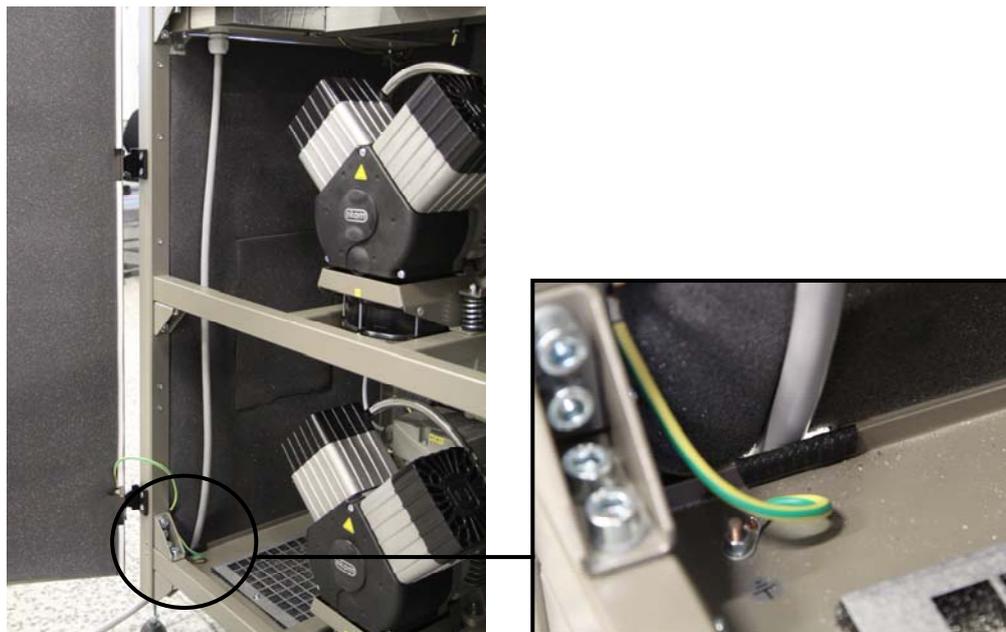


Fig.14

OPERATION



In case of emergency, disconnect the compressor from the mains (pull out the mains plug).



**The compressor has hot surfaces.
Burns or fire may result if contact is made.**



During prolonged operation of the compressor, the temperature in the box may increase to over 40°C. At this point the cooling fan automatically switches on. After cooling the space to under 32°C, the ventilator switches off.



Automatic start: when pressure in the tank drops to the pressure switch's lower limit level, the compressor automatically switches on. The compressor automatically switches off after reaching the pressure switch's upper limit level.

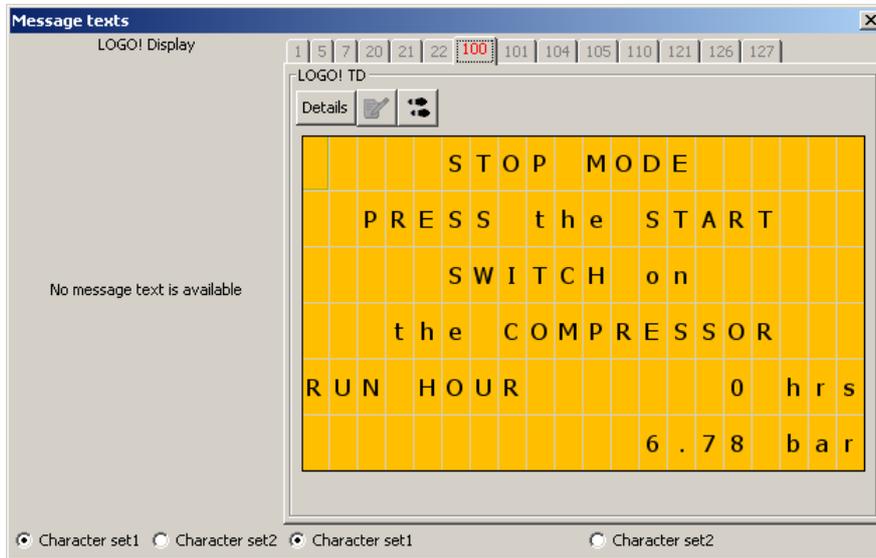
11. FIRST OPERATION

- Make sure that all stabilizers used during transport were removed.
- Check that all pressurized air line connections are secure.
- Connect to the mains.
- Switch on the compressor using the main switch Q10. and then press the START button.

12. SWITCHING THE COMPRESSOR ON

(Fig.1 - 2)

Switch on the main switch, Q10, to supply the compressor with mains voltage. The compressor is in STOP mode, meaning all aggregates are blocked. The external display on the switchboard door displays the start-up screen:



Press the START button on the compressor switchboard panel to switch on the compressor (Fig. 2). Pressing the button sequentially switches on the compressor motors, and white indicator P1 is on. Press STOP to switch off the compressor (block the motors) and indicator P1 turns off.

The compressor aggregates switch on (at ≤ 6 bar) and off (at ≥ 8 bar) automatically and are controlled by the LOGO! controller and the B1 pressure sensor based on compressed air consumption.

If motor surface temperature exceeds 40°C , temperature switch B2 automatically turns on the aggregate cooling fans and the central exhaust fans. The cooling fans may be on in STANDBY or STOP mode when the aggregate motors are off. The cooling process is deactivated when motor surface temperature drops below 32°C .



Adjusting the pressure setting of the safety valve is expressly prohibited!

Pressure relief valve (PRV)

The pressure relief valve automatically vents air from the system if the pressure in the compressed air circuit exceeds a pre-set value. The pressure relief valve then closes as the pressure drops. (Fig.15)



The pressure increase in the pressure circuit can only occur due to the increase of flow resistances of the pneumatic distributions or in case of the drier failure (e.g. non-functional solenoid valves) and therefore if a repeated opening of the safety valve occurs, it is unavoidable to check the drier function, possibly to repair it!



It is forbidden to deliberately reset the opening pressure on the safety valve; the resetting should always be agreed on with the manufacturer!
The outlets on the safety valve may neither be closed, nor the pressure air exit there through limited.

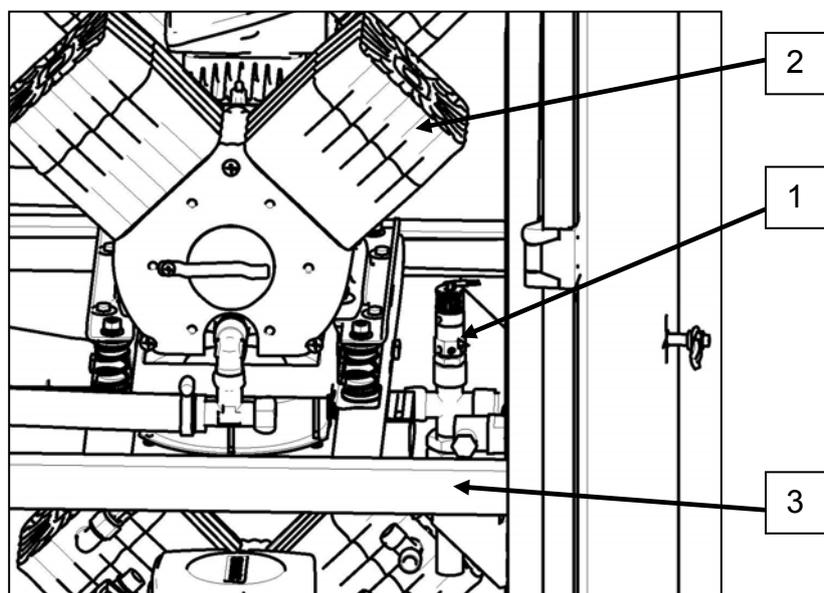


Fig. 15

1. Pressure relief valve
2. Compressor aggregate
3. Aggregate frame

12.1. LOGO! controller 0BA8

LOGO! controller 0BA8 is used to control the compressor aggregates. The control program assesses digital and analogue inputs and uses program logic to activate relay outputs and to signal and display alarms, operating values, pressure in the air tank, external and internal temperatures, remaining time to maintenance and more.

It is comprised of a base module, expansion modules, analogue modules, TDE text display and a 24 VDC power supply. The TDE text display is installed in the switchboard door and has: cursor buttons ▲, ▼, ►, ◀, OK and ESC buttons and four functional keys F1 to F4.

The parameters of the base unit and the TDE display do not require configuration or set up under normal circumstances. The compressor manufacturer pre-sets all the required parameters.

Switch on the compressor assembly by turning the main switch Q10 to position "I" and pressing the START button on the switchboard door; then check the control program details displayed on the TDE display.

12.1.1 Alarms and alarm signalling

The equipment automatically checks the functionality of specific parts of the equipment and indicates when maintenance service is needed. The controller determines an alarm as any situation in which equipment functionality does not match standard conditions.

Individual alarms are indicated by the alarm signal, the red P2 indicator labelled ALARM on the switchboard (Fig. 2) and an alarm message on the TDE display.

Alarms are classified by priority:

- **Low priority alarms** / service interval/ – signal a maintenance interval $I = n \times 2000$ hours ($n = 1, 2, 3, \dots$) and the equipment **supplies** air to the central compressed air circuit using all aggregates; this status is indicated by a blinking P2 alarm beacon and a message on the display flashing orange
- **low priority alarm state** – the control unit monitors the ambient temperature with the sensor B3 and the internal temperature with the sensor B4. If the ambient temperature exceeds 40°C or if the internal temperature exceeds 70°C, then a warning on the TDE display lights up, signalling that one of the temperatures was exceeded. The display flashes orange and the red indicator P2 flashes
- **Medium priority alarms** – caused by a malfunction in one or more aggregates and the equipment supplies air to the central compressed air circuit using only functional aggregates; this status is indicated by a lit P2 alarm beacon and a message on the display back lit in red.



The equipment is equipped with an intelligent alarm system that generates alarm signals based on defined priorities. The display always shows the highest priority alarm first.

12.1.2 Low priority alarm conditions

The equipment is equipped to monitor and signal maintenance intervals. Maintenance intervals are whole number multiples of 2000 operating hours $I = n \times 2000$ hours ($n = 1, 2, 3, \dots$). Maintenance of specific components pursuant to the attached Table 2 must be performed once a maintenance interval is passed. This condition is signalled by a flashing beacon, P2, and a message on the display.



Maintenance intervals are counted from the moment the equipment is first started up.

This table must be inserted into the compressor maintenance log along with Table 3 in which maintenance work, inspections of the equipment during each maintenance interval and other records regarding the equipment will be recorded.



Once maintenance indicated by a maintenance interval signal is complete, the alarm must be cancelled on the controller; press and hold the F4 button for 5 seconds. Cancelling this signal also resets the maintenance interval to a new value of 2000 hours

The device automatically measures the internal and ambient temperature and signals exceeding of their critical values on the display.

12.1.3 Medium priority alarm conditions

The equipment is equipped to monitor and signal compressor malfunctions. Such a situation may occur for mechanical or electrical reasons in any of the compressors. This is frequently accompanied by an increase in current draw. Such an event opens motor circuit breakers Q1-Q6 or the thermal contact in the stator windings of motors M1-M6. Detailed information is displayed on the control system text display.

This alarm is signalled by the “ALARM” indicator flashing and one of the alarm messages is displayed on the display /

No alarms will be displayed if the aggregate fault is resolved and the P2 indicator is off. All alarms are automatically recorded on an SD card.

 **Alarm signals have priority over maintenance interval signals. As such, the light will indicate an alarm from any of the aggregates.**

Web server

The LOGO! 0BA8 module integrates a web server function using an Ethernet interface (connector on the door of the compressor switchboard) to connect to a standard PC or mobile device to support remote compressor monitoring. An IP address, subnet mask and gateway for the base module and the TDE display for the specific Ethernet network must be configured to use the web server function (contact your network administrator). See Chapter 3.8.1 “Configuring network settings” in the LOGO! SIEMENS manual.

Logging into the web server:

- Open your web browser
- Enter the IP address of your LOGO! base module into the window for IP address. For instance:



- The pre-defined password used to access the web server is “LOGO”
- Then continue following the intuitive navigation through the program

TDE text display



The TD is located on the door of the switchboard. It displays alarms and pressure, temperature and operating values. It has four cursor buttons ▲, ▼, ►, ◀ and the ESC and OK buttons. It also has four functional buttons, F1-F4, to control specific functions:

- F1 – turns on the back light for the display (10 seconds lights)
- F2 – information on operating hours and maintenance intervals (10 seconds lights)
- F3 – statistics of failures /motor starter and overtemperature stator winding/ (10 seconds lights)
- F4 - RESET (hold for 5 seconds) the maintenance interval and set a new interval

- ESC + ▲ – Information on the number of motor and fan switching cycles. Hold for 10 seconds to zero out the number of switching cycles
- ESC + ▼ – Information on recorded maximum temperatures (In and Out). Hold for 10 seconds to zero out the maximum temperature values
- ESC + ◀ – Information on the number of times system pressure drops below 4.9 bar
- ESC + ► – Information on the timing of inputs and regeneration chambers and the NDM dryer

List of screens shown on the TDE display during normal compressor operation:

▪ **STARTING THE COMPRESSOR**

			P	R	E	S	S		S	T	A	R	T					
		o	n		t	h	e		C	O	M	P	R	E	S	S	O	R
R	U	N		H	O	U	R					0		h				
P	R	E	S	S	U	R	E				5	.	6	5		b	a	r
T	E	M	P	_	I	N					-	4	.	2		°	C	
T	E	M	P	_	O	U	T				2	0	.	0		°	C	

Use the START button to activate the compressor; white indicator P1 (between the Start-Stop buttons) will turn on.
 Once the START button is pressed, the control program in the LOGO! module controls the aggregates, valves and solenoids based on input values (pressure and temperature).

▪ **NORMAL COMPRESSOR OPERATION**

P	R	E	S	S	U	R	E				5	.	8		b	a	r		
T	E	M	P	_	O	u	t				3	0	.	5		°	C		
T	E	M	P	_	I	n					4	6	.	8		°	C		
H	O	U	R		R	U	N					0		h					
G	O		T	O		S	E	R	V	I	C	E			2	0	0	0	h

COMPRESSORS OFF											
STANDBY MODE											
8 . 2 8 b a r											
RUN HOUR 0 h 0 m											

PRESSURE LOW											
DRYER											
NOT CYCLING											
4 . 2 5 b a r											

Information based on system pressure is displayed on the display in Start mode:

- working pressure (graphical and digital format), indoor and outdoor temperature, operating values and remaining time to the next maintenance interval. Motors are on
- Standby mode - the system has reached the upper pressure limit (8 bar) and all motors are disconnected
- Low pressure in the system, the dryer is not regenerating and motors are off. This condition may occur when the compressor is first started.

▪ MAINTENANCE INTERVALS

REVIEW MAINTENANCE											
HOUR METER 0 h 0 m											
GO TO SERVICE 2 0 0 0 h											
OVERALL TIME 0 h											
COUNTER MAINTENANCE :											
0 x											

Press F2 to activate the screen showing:

- current operating hours
- time to expiry of the maintenance interval
- total time the compressor has been energised
- confirmed number of completed 2000 hour maintenance checks

INTERVAL OF											
MAINTENANCE											
ACCORDING TO TAB. 2											
HOUR METER 0 h											
SETUP NEW INTERVAL :											
PRESS F4 least 5 sec .											

The screen is activated automatically after the completion of the pre-defined maintenance interval (2000 hours). The display flashes orange (low priority alarm) and informs the operator that maintenance must be performed per Tab. 3 and a new maintenance interval must be set by pressing the F4 key on the TD display for at least 5 seconds to reset the maintenance interval. The screen is deactivated once the correct reset is performed.

▪ **ALARM CONDITIONS**

MOTOR 1 ERROR											
ERROR!											
MOTOR 2											
OVERTEMPERATURE											
MOTOR 3											
STATOR WINDING											
MOTOR 4											
CALL SERVICE!											
MOTOR 5											
5.8 bar											
MOTOR 6											

High priority alarm. Indicator P2 (Alarm) flashes and the display flashes red and informs the operator of the aggregate on which the stator winding has tripped due to high temperature (open thermal contact). The aggregate is disconnected during the alarm until the fault is resolved. After the aggregate cools down, or the given part is repaired or replaced, the thermostat engages and the alarm screen deactivates.

MOTOR 1 ERROR											
ALARM											
MOTOR 2											
OVERLOAD											
MOTOR 3											
CALL											
MOTOR 4											
SERVICE!											
MOTOR 5											
5.8 bar											
MOTOR 6											

High priority alarm. The screen is backlit red and flashes, indicator P2 (red - ALARM) flashes and the operator is informed of the specific motor circuit breaker that has tripped due to high current. The aggregate is disconnected during the alarm until the fault is resolved. Once resolved, manually switch on the tripped motor circuit breaker (turn the lever to “On” position). The alarm screen automatically deactivates.

Note: If the compressor is connected to an Ethernet network, the base module and the TDE display must have the correct IP addresses, which must be requested from the network administrator.

13. SWITCHING THE COMPRESSOR OFF

Use the main switch, Q10, to switch off the compressor for maintenance or other reasons; the switch also functions as a central stop button. The compressor is disconnected from the mains with the exception of the mains terminal block X0.

Vent the air tank by disconnecting from the central compressed air circuit and opening the outlet valve (Fig. 1) or the drain valve.

PRODUCT MAINTENANCE

Notice!

The operating entity is obliged to ensure that all tests of the equipment are carried out repeatedly at least once within every 24 months (EN 62353) or in intervals as specified by the applicable national legal regulations. A report must be prepared on the results of the tests (e.g.: according to EN 62353, Annex G), including the measurement methods used.

The equipment is constructed and produced in order to require minimum maintenance. In order to provide due and reliable activity of compression unit it is necessary to perform works based on the following description.



Before works commencement relating to compressor maintenance it is necessary to check if it is possible to disconnect compressor from the appliance, in order to avoid possible creation of health harm or threat of life of the person using my appliance, possibly other harmful material!



During the compressor operation or immediately after its finishing, the parts of compressor aggregate (head, cylinder, and compressive hose have a high temperature – do not touch the mentioned parts!

Only trained employee can perform the mentioned works in the following way:



BEFORE BEGINNING ANY OF THE FOLLOWING MAINTENANCE WORK, SWITCH OFF THE MAIN SWITCH ON THE SIDE OF THE SWITCHBOARD TO POSITION "0".

14. INTERVALS OF MAINTENANCE

14.1. Intervals of maintenance



The given service intervals are valid only for the device with max. operation pressure of 8 bar !

Tab 2. Intervals of maintenance

Time interval [hours]	Activity mark	Servicing activity	Service kits Tab.4 a 5	Figure
2000	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1
	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15, Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7
	S	Inspect hoses, compressed air connections and the dryer		See the chap. LIST OF SPARE PARTS and the dryer manual
4000	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1
	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15, Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	H	Check of safety valve		Fig. 17

INSTALLATION - OPERATION - MAINTENANCE

4000	I	Check of solenoid valves		Annex A – pos.25
	J	Replacing the compressor intake filter and pre-filter	2, 3	Fig. 16
	K	Replacement of the buoy in the water separator	1	Fig. 20
	M	Replacing membranes, membrane screws and gaskets	10,13,7	Annex A-5
	R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7
6000	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1
	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15 , Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	N	Replacement of piston group, bearing 6304	9,11	Annex A-5
R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7	
8000	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1
	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15 , Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	H	Check of safety valve		Fig. 17
	I	Check of solenoid valves		Annex A – pos.25
	J	Replacing the compressor intake filter and pre-filter	2, 3	Fig. 16
	K	Replacement of the buoy in the water separator	1	Fig. 20
	M	Replacing membranes, membrane screws and gaskets	10,13,7	Annex A-5
	R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7
	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1

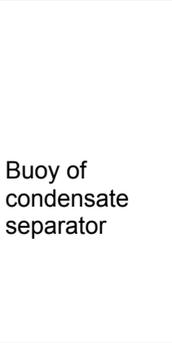
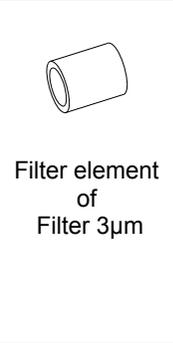
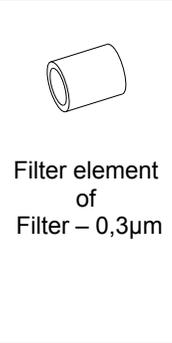
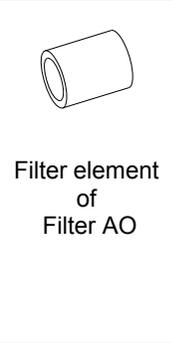
INSTALLATION - OPERATION - MAINTENANCE

10000	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15, Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7
12000	A	Check the joints and connections for leaks and inspect the equipment		Fig. 1- Chap. 14.1
	B	Check for connection leakage		Fig. 1
	C	Check of operation of check valves		Annex A/6 - pos.1 Annex B - pos.13 Annex C - pos.18, 22
	D	Inspecting the switching pressure setting of the pressure sensor		Fig. 1, Annex B -pos.14
	E	Check of overpressure valve		Fig. 15, Annex A -pos.18
	F	Check of cooling ventilators		Annex A -pos.9 Annex A3 -pos.3 Annex A9 -pos.2 Annex C1 -pos.4
	G	Replacing a filter element in the set of filters	5	Fig.18 a 11
	I	Kontrola solenoidného ventilu		Annex A – pos.25
	N	Replacement of piston group, bearing 6304	9,11	Annex A-5
	M	Replacing membranes, membrane screws and gaskets	10,13,7	Annex A-5
	O	Replacement of valve board	8	Annex A-5
P	Replacing a cylinder head	12	Annex A-5	
R	Clean the cabinet filters		Annex A3/7 -pos.2,6,7	
T	Replacement of dryer maintenance kit A – Replacement of drying media - (cartridges) NDK 090 and all dryer seals	6	See the dryer manual	
24000	U	Replacement of dryer maintenance kit B – Replacement of valves	6	See the dryer manual

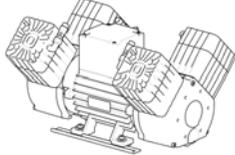
For the following intervals of 12000, 14000, .. etc. proceed in a similar way according to the above table (e.g. 12000 hours – the same as for 4000 hours , 14000 hours – the same as for 2000 hours , 20000 hours – the same as for 10000 hours).

14.2. Service kits

Tab. 4. Service kits

										
	1	2	3	5				6		
Typ	EF1 do WS010 BBFX		05	AFF-EL 11B	AMH-EL 450	025AO	025AA	025AC	NDK 090	NVK090
Číslo	025200146-000	025200150-000	025200139-000	025200057-000	025200018-000				024002622-000	024002620-000
DK50 6x4VRT/M	1	6	6	1	1	1	1		1	1

Tab. 5. Service kits

								
	O-Ring	Valve plate	Piston with piston rod	Membrane	Bearing	Cylinder head	Membrane screw	Aggregate – air pump
	7	8	9	10	11	12	13	14
Type	d50x2	4CA-023	4CA-451	4KA-031	6304	4KB-833	4KA-016	
Number	073000109-000	604021023-000	604021451-000	024000008-000	024000882-000	050000035-000	024000007-000	602013061-001
DK50 6x4VRT/M	48	24	24	24	24	24	24	6

15. MAINTENANCE

15.1. Check the joints and connections for leaks and inspect the equipment

Leak test:

- Perform the leak test when the compressor is running and under pressure (not during regeneration venting).
- Use a leak analyser or soapy water to check all joints and connections for leaks. If a leak is noted, tighten or reseal the connection to resolve the issue.

Inspecting the equipment:

- Check the condition of the compressor aggregate for normal operation and noise levels.
- Check the operation of fans.
- Check the condition of filters.
- Check the condition of the aggregate itself:
 - contamination in the crankcase and play in the crankshaft
- Replace any parts as needed.

Inspection of electrical connections:

- Check the mechanical function of the main switch Q10 and the START-STOP buttons, S1 and S2.
- Inspect the condition of compressor power cord, the connection of individual wires to the main terminal X1 as well as to the compressor main switch. **Conduct the electrical inspection only if the compressor main switch is off and compressor power cord is unplugged!** Inspect to ensure the connection terminals are properly supported to relieve tension
- Manually inspect screw connections to ensure conductors are not loose, in particular at motor circuit breakers Q1 to Q6, mains circuit breakers F1 to F3 and contactors Q11 to Q16 and Q20 to Q21, tightening any loose connections that are found.
- Visually inspect the connection of individual cables to the terminal strip X1 (spring clips) and the LOGO! control system (screw terminals).
- Inspect all screw terminals for the protective green and yellow PE grounding conductors in the switchboard, the motor section, the cooling unit and the pressure vessel. Tighten any loose connections that are found
- Inspect the connector X50 (dryer and cooler) and the pressure sensor (B1) (located in the pressure vessel)

15.2. Replacement of the input filter and prefilter

(Fig.16)



At regular equipment operation it is necessary to exchange filters placed in the cover of compressor aggregate box.

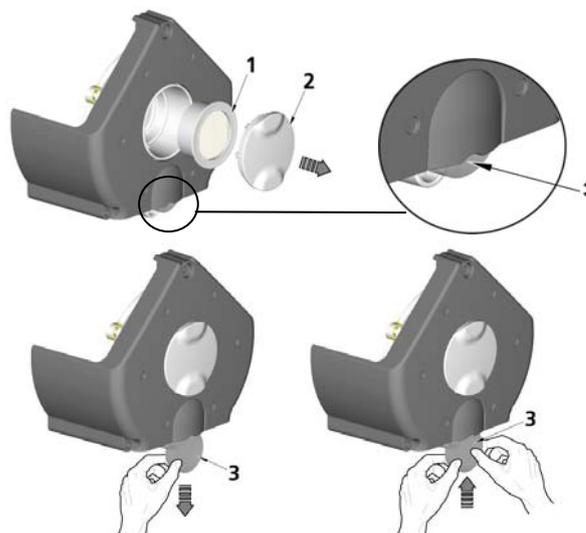
At the lid of the compressors crankcase is an input filter (1) and prefilter (3).

Replacing of the input filter:

- Hand pulls the rubber stopper (2).
- Remove used and dirty filter.
- Input new filter and set rubber stopper.

Replacing of the prefilter:

- Hand pull prefilter (3).
- Replace old prefilter with new.



15.3. Check of safety valve

(Fig. 17)



The safety valve must never be used for depressurizing the air tank. It could damage the safety valve. The valve is set to the maximum permitted pressure by the manufacturer. Adjustments are not permitted.



Warning! Compressed air can be dangerous. Wear eye protection when blowing air out.

- Turn the screw of the safety valve several rotations to left until safety valve puffs.
- Let safety valve freely puff only for a short period of time.
- Turn screw to the right until the limit is reached; the valve must be now closed.

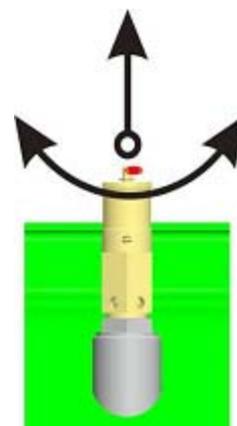


Fig.17

15.4. Filter element replacement (accessory item)

(Fig. 18)



Before proceeding, vent the air tank to zero pressure and disconnect the equipment from the electrical mains.

- Remove the 4 screws (1) using a spanner/wrench and remove the tank (2) from the separator.
- Remove the filter element (3) and replace with a new element.
- The gasket (5) on the filter element and sealing O-ring (4) must also be replaced.
- Carefully install the separator tank back into the flange on the bracket and secure with the 4 screws.



Fig.18

15.5. Regulation output pressure air regulator (accessory item)

(Fig. 19)



Adjustments must be made when the air tank is full and the compressors are shut down (e.g. immediately after the pressure switch has switched off the compressors).

- Lift the control button of the regulator and rotate. Set the pressure of the output pressure by 0, 2 bar more than the demand (following the construction of regulator) for a running compressor and to check it on a manometer.
- After setting the pressure, lock the control button of the regulator turning and pushing.

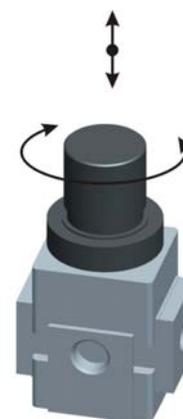


Fig.19

15.6. Replacement of the buoy in the water separator

(Fig. 20)



BEFORE PROCEEDING, VENT THE AIR TANK TO ZERO PRESSURE AND DISCONNECT THE EQUIPMENT FROM THE ELECTRICAL MAINS.

During regular operation of drier is necessary to change the buoy in the water separator.

- A) Check to ensure that all pressure has been vented from the segment with the water separator.
- B) Dismount separator container.
- C) Pull out condenser separator
- D) Release nut of the buoy placed in the bottom part of the container.
- E) Pull out worn buoy of the separator and replace it for the new one.
- F) Secure the buoy with the nut in bottom part of the container.
- G) Place the condenser separator back as shown in the picture.
- H) Container of the separator insert back and screw in.
- I) The container is definitely secured in the point of the symbol.

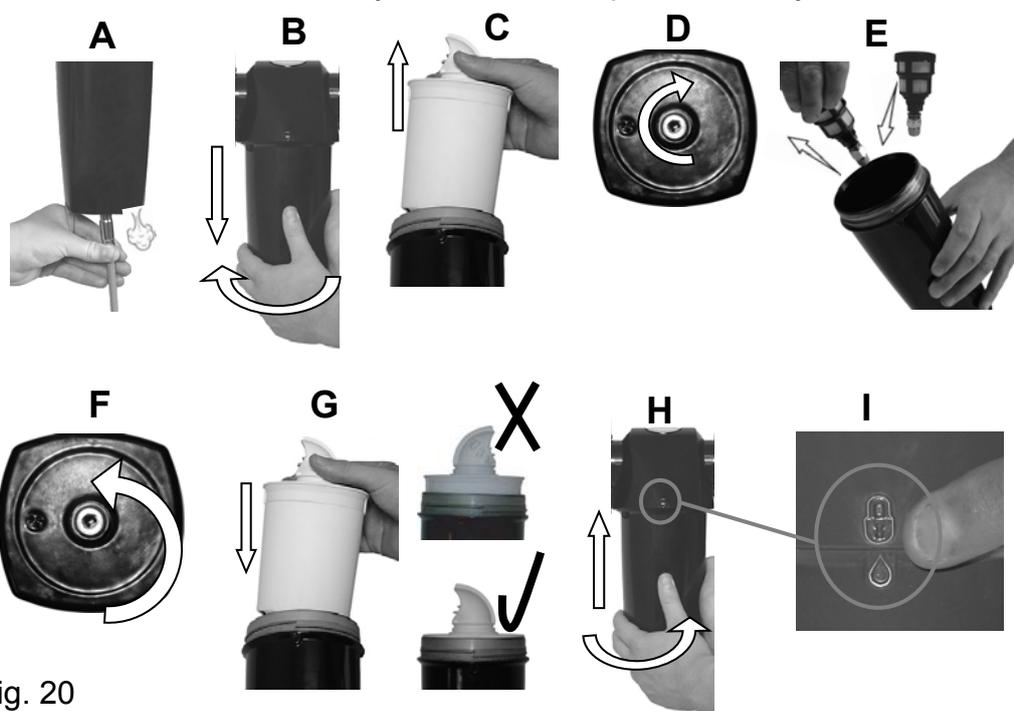


Fig. 20

15.7. Cleaning cabinet intake filters

Filters are installed in the lower part of the aggregate unit and must be washed clean at regular intervals.

- Remove the 2 nuts and filters from beneath the aggregates.
- Remove the 3 bolts and filters from the lower part of the cabinet

15.8. Replacement of the AO, AC and HC filter elements



See the attached filter user manuals for more detailed information!

Article 603022118-000 contains the assembly for the illustration

A - AO filter - AO 025 DGFX - 025200228-000

1 - AO part

- Rotate the filter housing (1) to the left and remove it.
- Replace the filter element.
- Replace the filter housing and rotate to the left until it reaches the stop.

Filter element (spare part)

AC – filter 1 µm

Type: 025AO



replacement interval: once a year 1

Article: 025200300-000

2 - part

This part is rigidly attached (does not rotate)

- AC filter - AC-025 DGMI - 025200227-000

1 - AC part

- Rotate the filter housing (1) to the right and remove it.
- Replace the filter element.
- Replace the filter housing and rotate to the left until it reaches the stop.

Filter element (spare part)

Sub-micro filter 0.01 µm

Type: 025AA

replacement interval: once a year 1

Article: 025200301-000

2 - AC part

- Rotate the filter housing (2) to the left and remove it.
- Slightly rotate the filter to the left and remove the filter.
- Replace the filter element. Rotate to the right to lock the filter in the bracket.
- Replace the filter housing and rotate to the right until it reaches the stop.

Filter element (spare part)

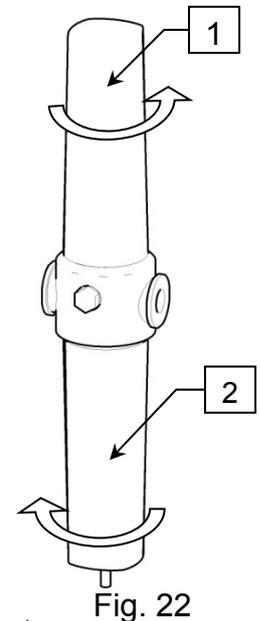
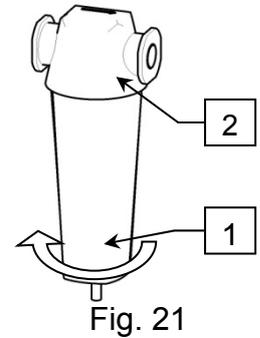
AC – filter



Type: 025AC

replacement interval: once a year 1

Article: 025200302-000



C - in the HC filter – HC-0040G filter – 025200183-000

1 - HC part

- Rotate the filter housing (1) to the right and remove it.
- Replace the HC filter element.
- Replace the filter housing and rotate to the left until it reaches the stop.

Filter element (spare part)

HC – filter

Type: K040HC



replacement interval: 3000 hours 1
- Or when pressure drops

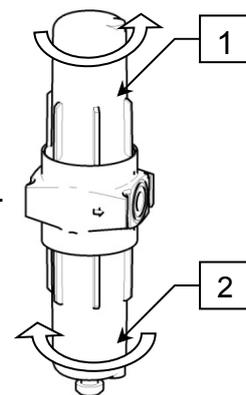


Fig. 23

Article:

2 - AO part

- Rotate the filter housing (2) to the left and remove it.
- Slightly rotate the AO filter to the left and remove the filter.
- Replace the filter element. Rotate to the right to lock the filter in the bracket.
- Replace the filter housing and rotate to the right until it reaches the stop.

Filter element (spare part)

Particulate filter 1 µm

Type:



replacement interval: once a year 1
- Or when pressure drops

Article:

TROUBLESHOOTING

16. SOLVING COMMON PROBLEMS

 **Prior to repairing the appliance it is necessary to reduce the pressure of the air in the air chamber to zero and disconnect the appliance from the mains supply.**

Trained service personnel can only perform the activities connected to the troubleshooting guide.

Tab.6

TROUBLE	POSSIBLE CAUSE	WAY OF TROUBLE REMOVAL
No compressor aggregate starts running	Network voltage is missing	The main circuit breaker in the distribution is turned off
	Disconnected electric energy supply	Check the voltage in network
		Check the main electric supply – change the damaged one
Damaged pressure sensor	Check the functionality of the pressure sensor or the analogue converter and replace if damaged	
Some of the aggregates do not start running (the signal light is on)	Discontinued electric energy supply to the engine	Check the network voltage
		Check function of contactor and motor starter - replace if damaged
		Released terminal on terminal board of the engine- fasten the terminal, change damaged or broken ones
	Discontinues engine winding, damaged thermal protection	Change the motor
	Seized piston or other moveable part (mechanic damage of movable parts)	Change the damaged parts
Control unit failure	Check for the operability of the unit, presence of software – replace the damaged one or load the program	
LED indication RUN / STOP does not shine in green	Interrupted interconnection between control unit and extending module	Check the interconnection – replace the damaged one
	Interrupted supply of electricity	Check of voltage in mains
		Released terminal in switch board – tighten it
		Check of main el. branch – replace the damaged one
	Missing mains voltage	Switched off main circuit breaker in distribution
Control unit or extending module failure	Replace the non-functioning unit or module	
Compressor aggregates are switched often also without air consumption	Air leakage from pneumatic distribution	Check the pneumatic distribution – tighten the released bond
	Untightness of reverse valves	Check and clean the reverse valves-change the damaged one
	After finished regeneration leakage through solenoid valves	Clean or change the damaged one
	Leak at safety valve pressure sensor	Check functioning and clean them–change the damaged ones
Performance of some compressor aggregates is	Untightness on compressor aggregate	Check the aggregate bond tightness – tighten released bond
	Worn piston ring	Change the worn piston rings

lowered, cycle of operation is prolonged	Damaged sealing material between head of cylinder and valve board	Change the seal , - tighten
	Dirty entry lining	Wash the dirty lining and exchange for new ones
Some of compressor aggregates is noisy (rattling, metal noises)	Damaged piston pin bearing, small end, motor bearing	Exchange the damaged matrix
	Released (cracked) rubber suspension spring	Exchange the damaged spring by a new one
High outdoor air quality compressor disconnection in rows on top of another (overheating)	Insufficient aeration of the room with compressor	Provide suitable surrounding conditions
	The cooling fan of compressor aggregates or cooler do not work	False fans - exchange
		Defective temperature switch or Pt100 sensor - replace Defective contactor Q20-21
	Dryer NDM-090	See the dryer manual

After troubleshooting and re-assembly of the dryer, it is necessary to release received condensate from air tank, dry the air tanks and perform dryer regeneration, the best option is a continuous compressor operation at pressure of around 0,7 MPa for at least 1 hour and perform air drying control.

The manufacturer reserves the right to modify the appliance in a way that will not impact substantially on the operation of the appliance.

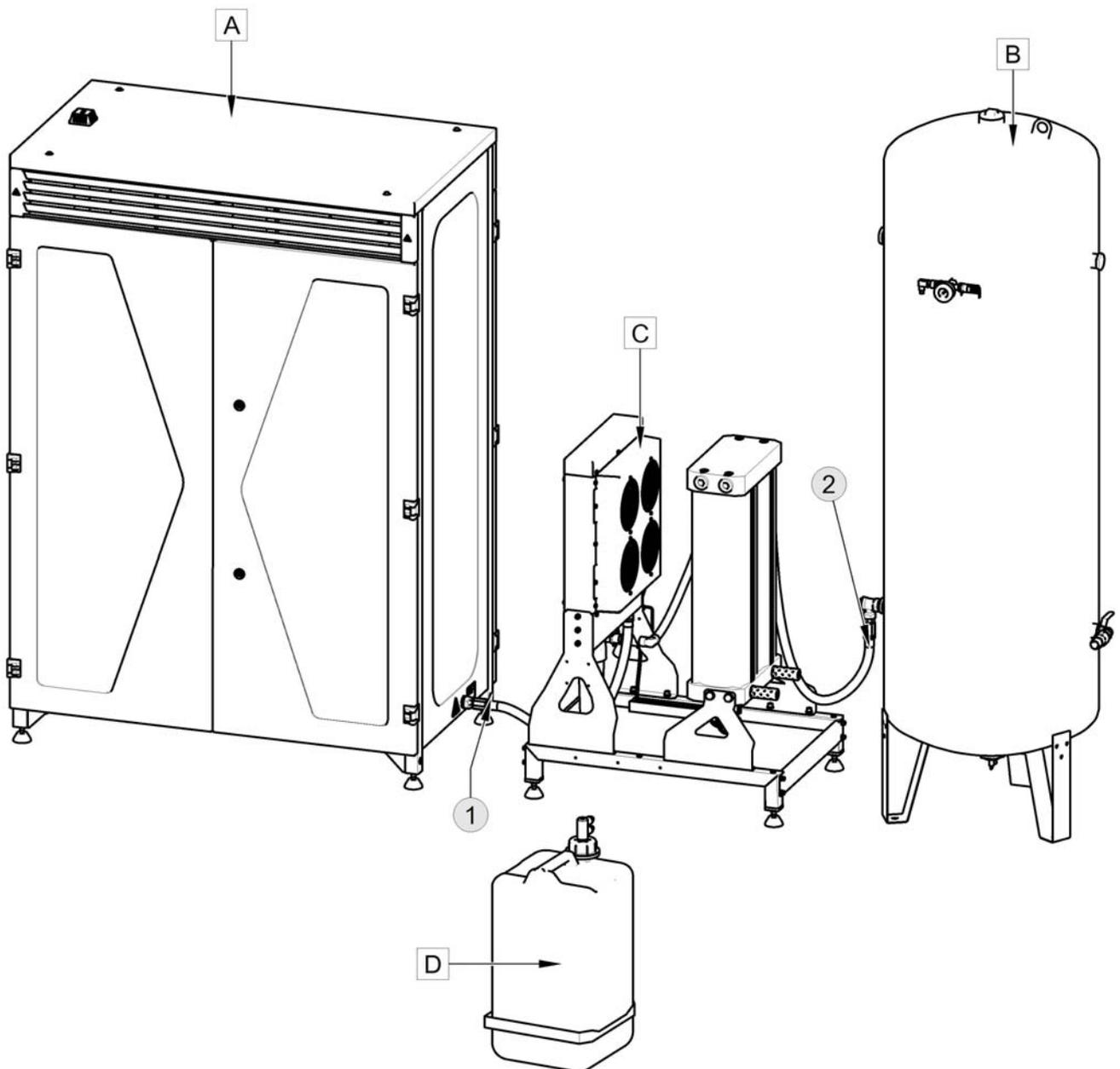
17. INFORMATION ON REPAIR SERVICE

The guarantee and extended guarantee repairs are to be completed by the manufacturer, or an organization authorized by the manufacturer.

LIST OF ENCLOSURES

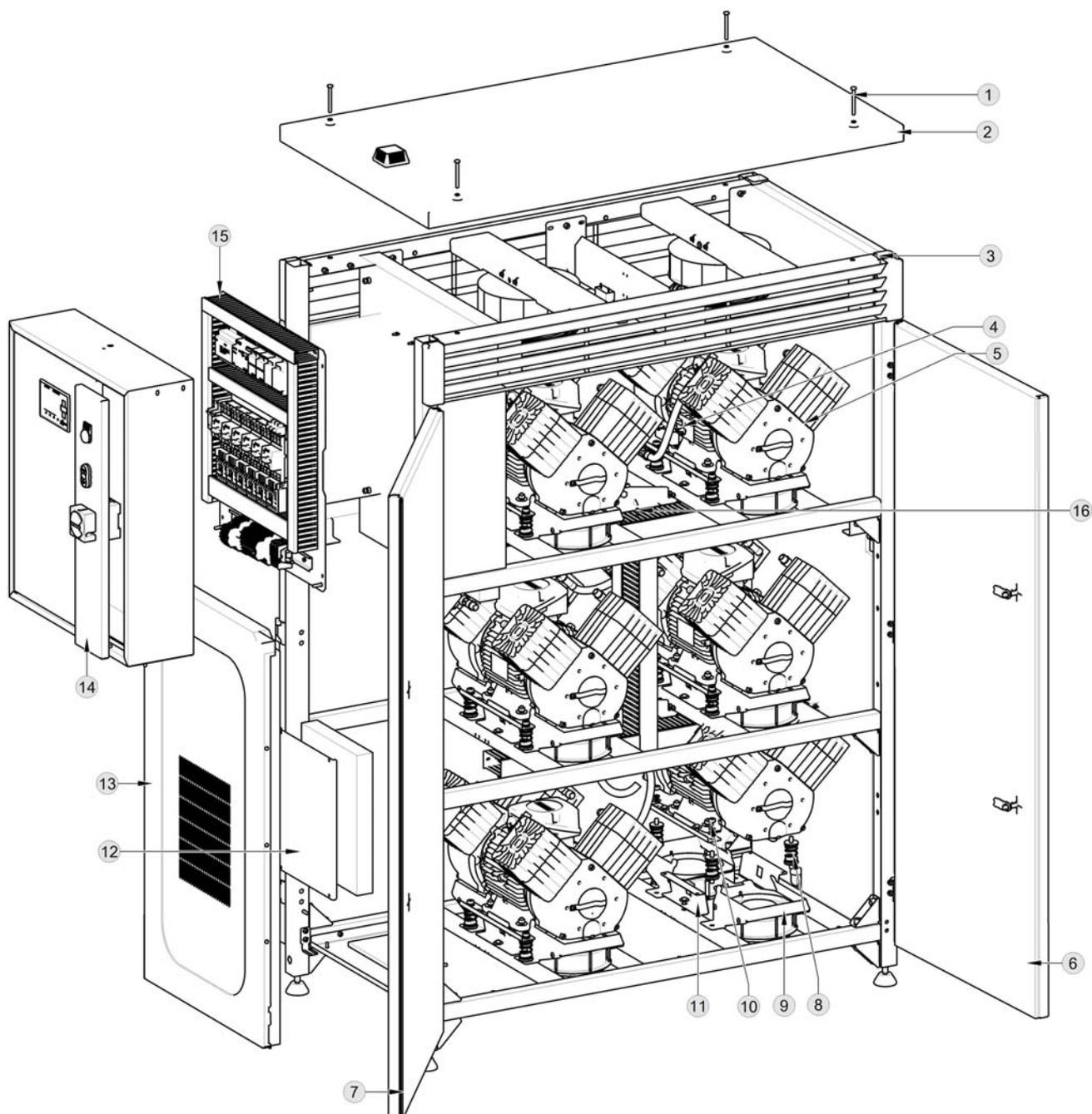
18. LIST OF SPARE PARTS

Compressor DK50 6x4VRTS/M		4057521B0-000				
A	Aggregate unit	602012768-003	1	Hose	800	072000188-000
B	Air tank	603031642-000	2	Hose	1000	072000189-000
C	Cooler with dryer	602022148-000				
D	Set for discharge of condensate	604022152-000				



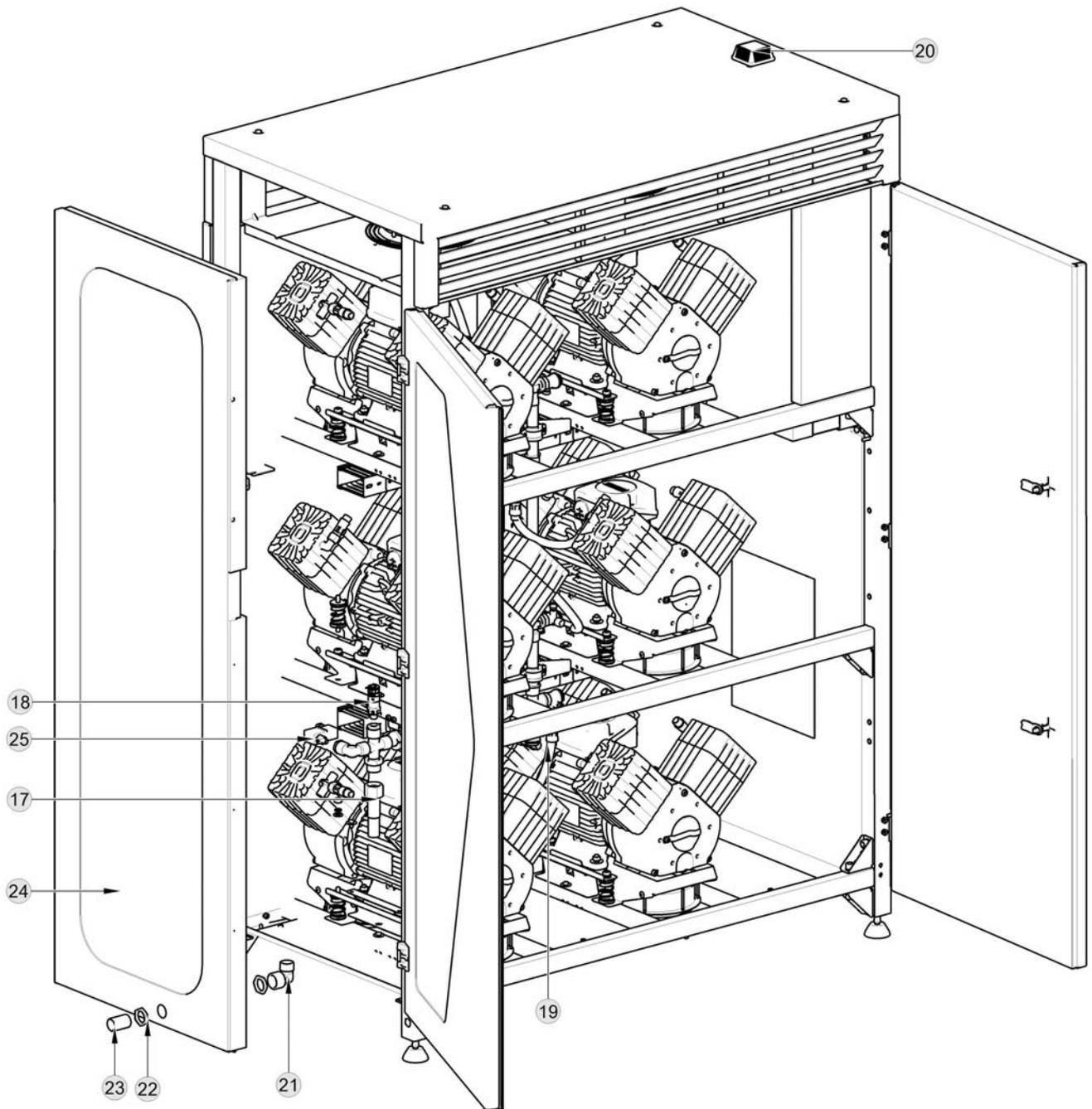
INSTALLATION - OPERATION - MAINTENANCE

A Aggregate unit DK50 6x4VRTS/M 602012768-001						
1	Screw		041000503-000	12	Cover with foam rubber	604031684-000
2	Cover		604021923-000	13	Side 1	604021921-000
3	Frame complete		603021933-000	14	Control lights panel	604021916-000
4	Temperature switch		033510012-000	15	Electrical box	602012745-000
5	Air pump		602013061-001	16	Temperature sensor	037900033-000
6	Door, left		603021924-000			
7	Door, right		603021925-000			
8	Damping element		604021216-000			
9	Fan with holder		604021918-000			
10	Nut		042000006-000			
11	Fixation		023002192-000			



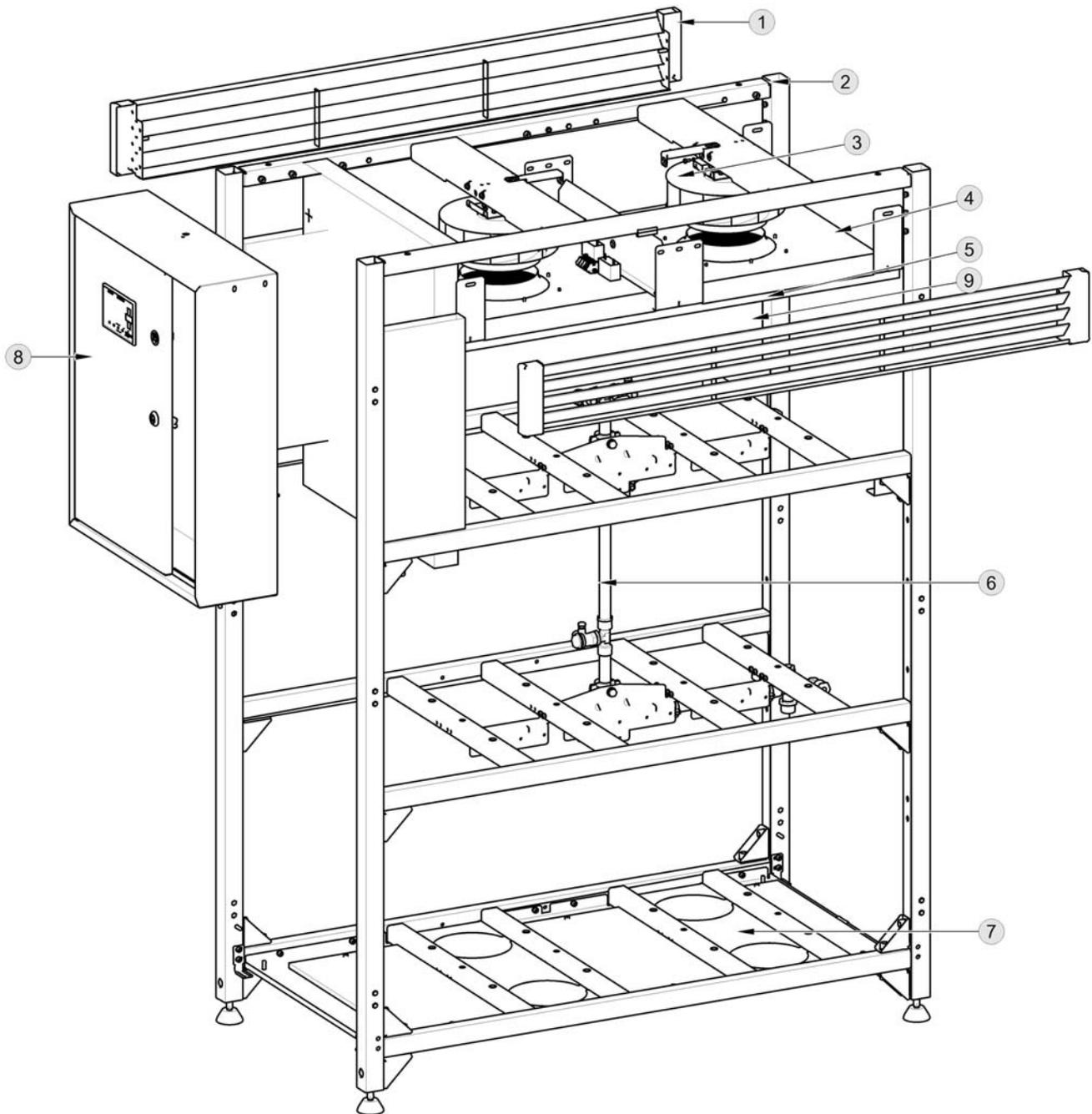
A Aggregate unit DK50 6x4VRTS/M 602012768-003

17	Hose	072000173-000	21	Elbow	025400071-000
18	Safety valve	604012333-000	22	Nut	024000052-000
19	Hose	072000178-000	23	Nipple	025400304-000
20	Temperature sensor	037900038-000	24	Side 2	604021922-000
			25	Solenoid valve	036100063-000



INSTALLATION - OPERATION - MAINTENANCE

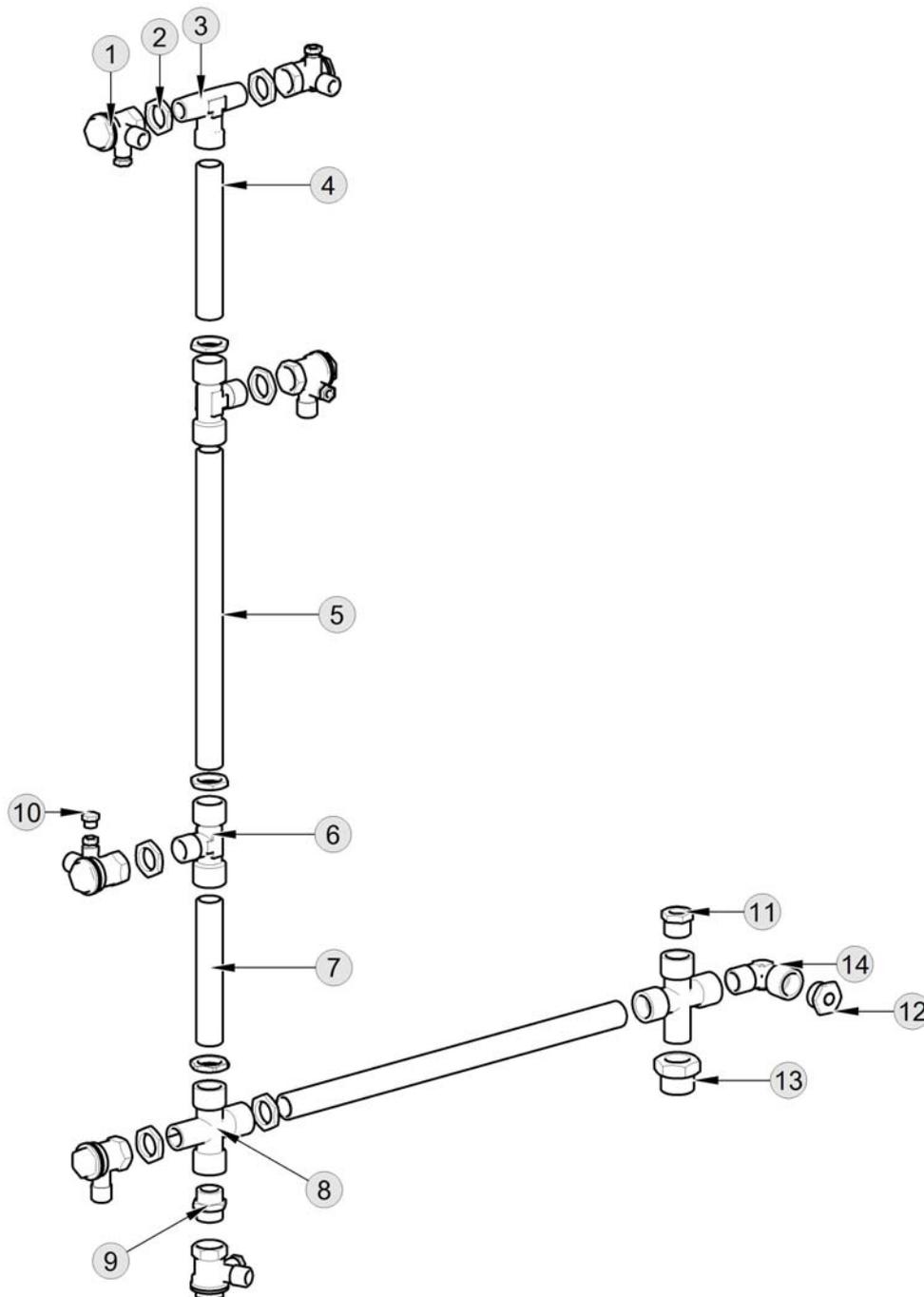
A3		Frame complete	603021933-000			
1	Ventilation panel		603031609-000	6	Pneumatic distribution	603021915-000
2	Frame		603021914-000	7	Cover complete	603021926-000
3	Fan with holder		604031616-000	8	Box	603021939-000
4	Ventilation panel		603021930-000	9	Grating of the fan	024002269-000
5	Ring		025400268-000			



INSTALLATION - OPERATION - MAINTENANCE

A3/6	Pneumatic distribution	603021915-000
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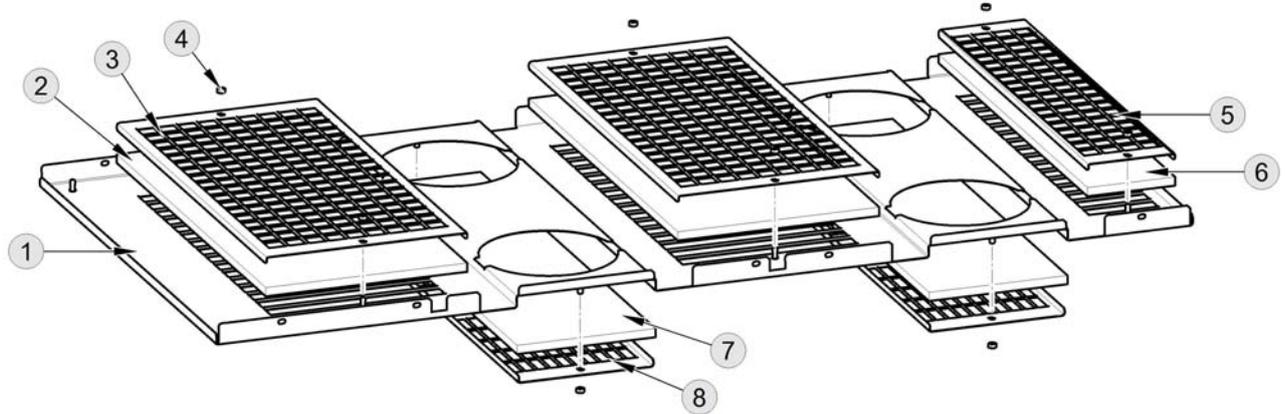
1	Return valve	024000288-000	9	Nipple	025500139-000
2	Nut	024000523-000	10	Plug	025400029-000
3	Coupling	025400282-000	11	Reduction	024000314-000
4	Connect. Pipe	024002225-000	12	Reduction	025400181-000
5	Connect. Pipe	024002227-000	13	Reduction	025400117-000
6	Coupling T	025400073-000	14	Elbow	025400115-000
7	Connect. Pipe	024002541-000			
8	Cross piece	025400147-000			



INSTALLATION - OPERATION - MAINTENANCE

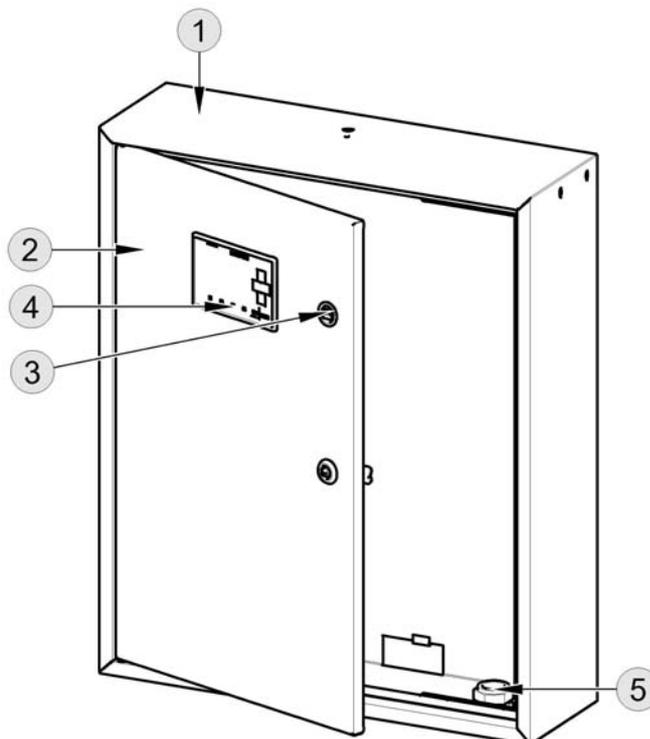
A3/7	Cover complete	603021926-000
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1	Filters holder	023002210-000	5	Filter cover	023002225-000
2	Filter	025000022-000	6	Filter	025000021-000
3	Filter cover	023002224-000	7	Filter	025000023-000
4	Nut	042000004-000	8	Filter cover	023002226-000



A3/8	Box	603021939-000
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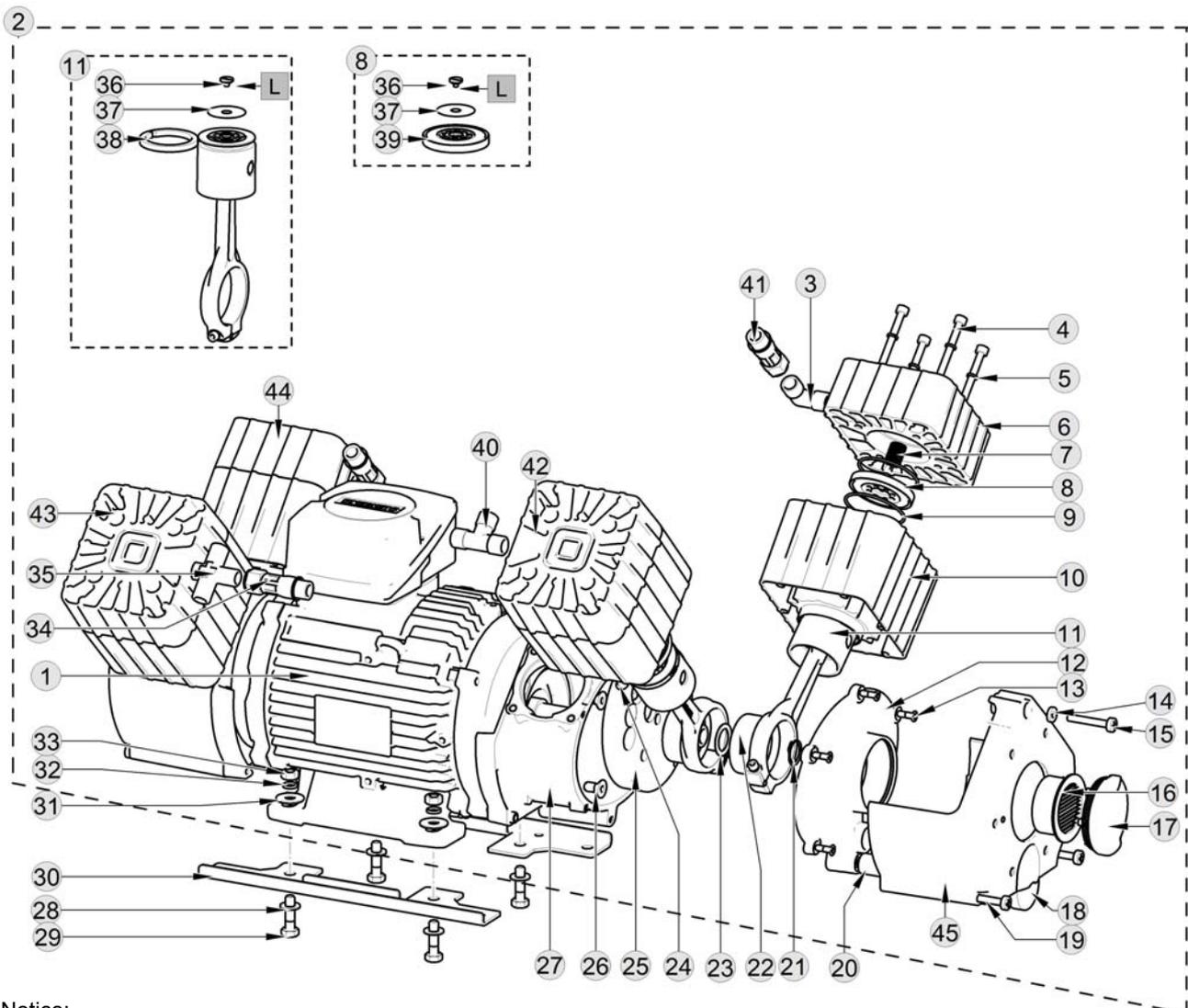
1	Box	023002198-000	5	Grommet	073000280-000
2	Door complete	603031680-000			
3	Connector	036900082-000			
4	Display	032900030-000			



INSTALLATION - OPERATION - MAINTENANCE

A5	Air pump	602013061-001	
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1	Motor	035120028-000	24	Screw	M6x25	041000115-000
2	Air pump	602022072-001	25	Crank		604031469-000
3	Elbow	G3/8MM	26	Screw	M8x16	041000051-000
4	Screw	M6x105	27	Crank case		024001284-000
5	Washer	6	28	Screw	M8x30	041000058-000
6	Cylinder head		29	Washer	8.4	043000009-000
7	Spring		30	Motor holder		023002578-000
8	O-Ring	d50x2	31	Washer		043000008-000
9	Valve plate	4CA-023	32	Washer		043000017-000
10	Cylinder	4KB-832	33	Nut	M8	042000006-000
11	Piston with piston rod	604021451-000	34	Hose		072000118-000
12	Veko	3KC-430	35	Cross piece		025400099-000
13	Screw	M5x16	36	Membrane screw	4KA-016.1	024000007-000
14	Vibration absorber	4KB-198	37	Membrane	4KA-031.1	024000008-000
15	Screw	M6x40	38	Piston ring el.		069000123-000
16	Filter element	05	39	Membrane seat	3KA-015	024000006-000
17	Suction plug	3KB-893	40	T-piece		025400013-000
18	Pre-filter	4KC-593	41	Hose	D8-260	072000110-000
19	Screw	M6x100	42	Cylinder head		604022071-000
20	Plug	4KC-626	43	Cylinder head		604022070-000
21	Lock ring		44	Cylinder head		604021335-000
22	Bearing	6304	45	Mask	4KC-441	062000506-000
23	Spacing washer	4KA-409				



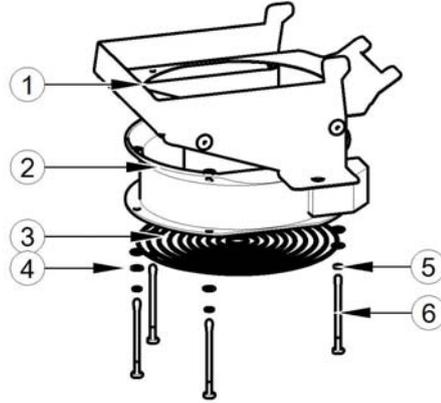
Notice:

L - bonded joints – adhesive LOCTITE 620

INSTALLATION - OPERATION - MAINTENANCE

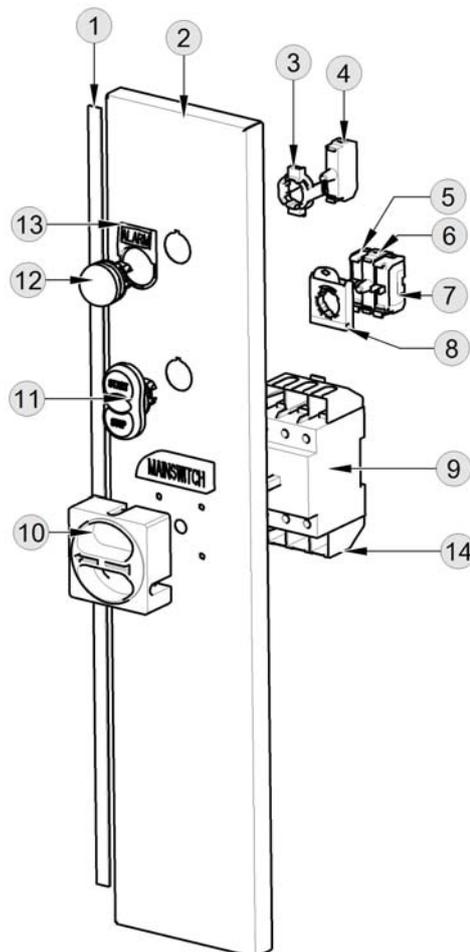
A9	Fan with holder	604021918-000
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1	Holder		4	Washer	043000019-000
2	Fan	035300016-000	5	Washer	043000003-000
3	Grating of the fan	024000463-000	6	Screw	041000077-000



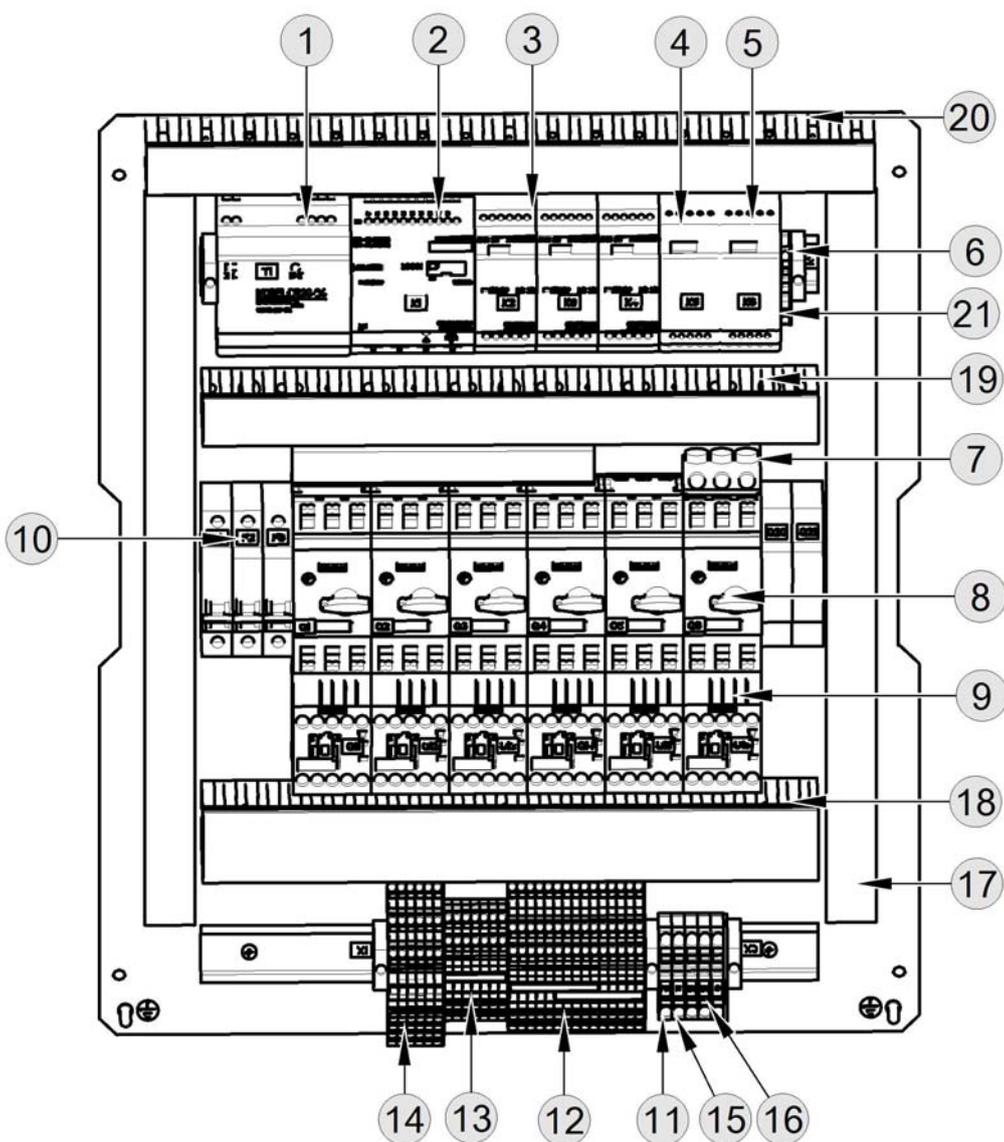
A14	Control lights panel	604021916-000
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1	Sealing strip	062000921-000	8	Holder	033500060-000
2	Control lights panel	023002188-000	9	Switch	033500055-000
3	Holder	033500063-000	10	Lever	033500056-000
4	Switching unit	033500062-000	11	2-pole switch	033500057-000
5	Switching unit	033500059-000	12	Red indicator	033500061-000
6	Switching unit	033500058-000	13	Holder	033500064-000
7	Switching unit	033500059-000	14	Cover	062001127-000



A15	Switchboard	602013192-000			
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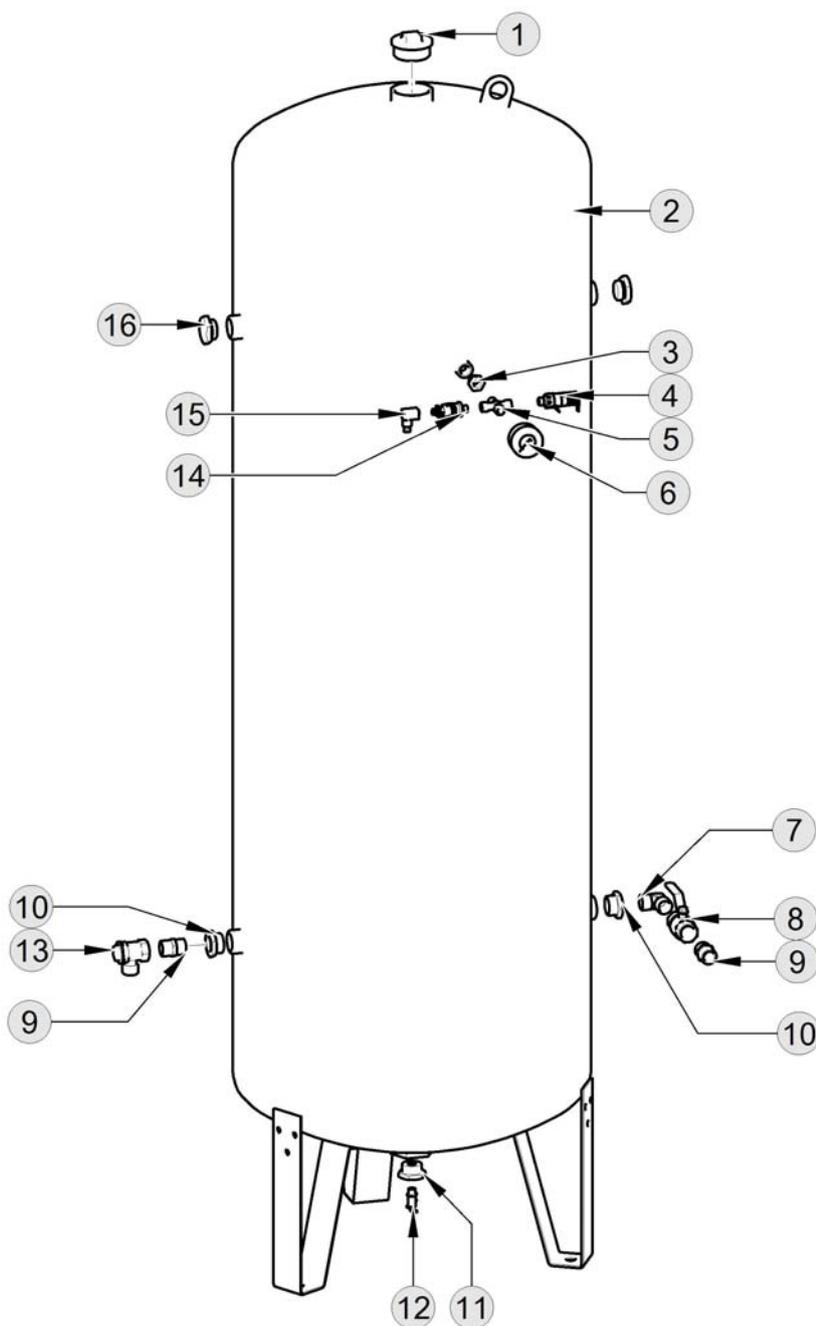
1	Power supply		031500025-000	12	Terminal board		033190181-000
2	Logo		032900031-000	13	Terminal board		033190166-000
3	Logo	DM8	032900028-000	14	Terminal board		033190179-000
4	Logo	AM2	032900022-000	15	Terminal board		033190163-000
5	Logo	AM2	032900020-000	16	Terminal board		033190162-000
6	Back clip		033190007-000	17	Culvert		034800755-000
7	Supply terminals		033190160-000	18	Culvert		034800801-000
8	Breaker		038230021-000	19	Culvert		034800800-000
9	Contactors		037400022-000	20	Culvert		034800754-000
10	Breaker		038220007-000	21	Terminal board		033190108-000
11	Terminal board		033190164-000	22			



INSTALLATION - OPERATION - MAINTENANCE

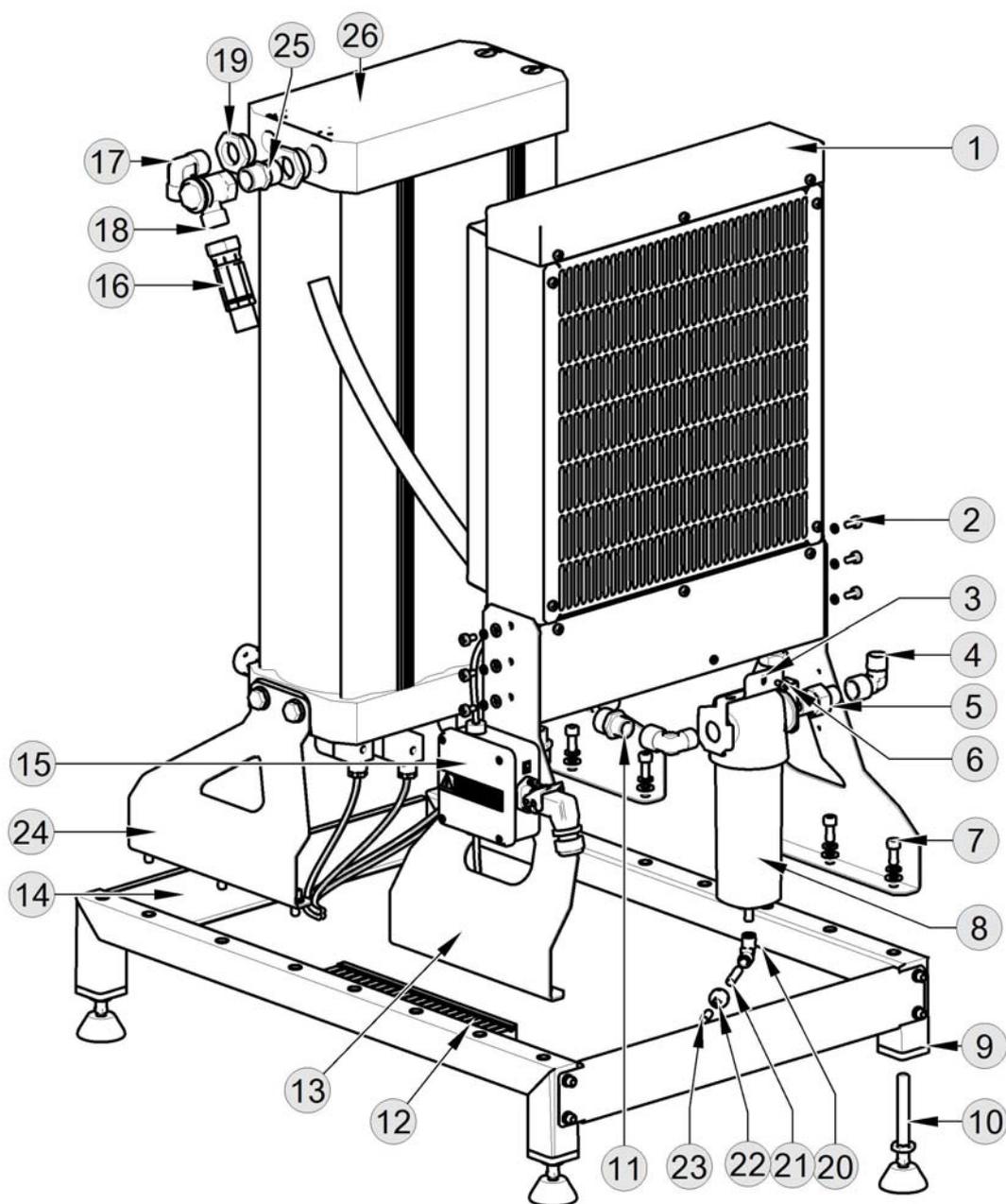
B	Air tank	603031642-000
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1	Plug	024002588-000	11	Reduction	025400292-000
2	Air tank	026000043-000	12	Drain valve	025300027-000
3	Reduction	025500252-000	13	Return valve	024002357-000
4	Safety valve	604011856-000	14	Pressure sensor	033520040-000
5	Cross piece	025400293-000	15	Connector	036900083-000
6	Manometer	025400180-000	16	Reduction	025400216-000
7	Elbow	025400161-000			
8	Ball Valve	025300010-000			
9	Nipple	025400113-000			
10	Reduction	025400252-000			



C	Cooler with dryer	602022148-000	
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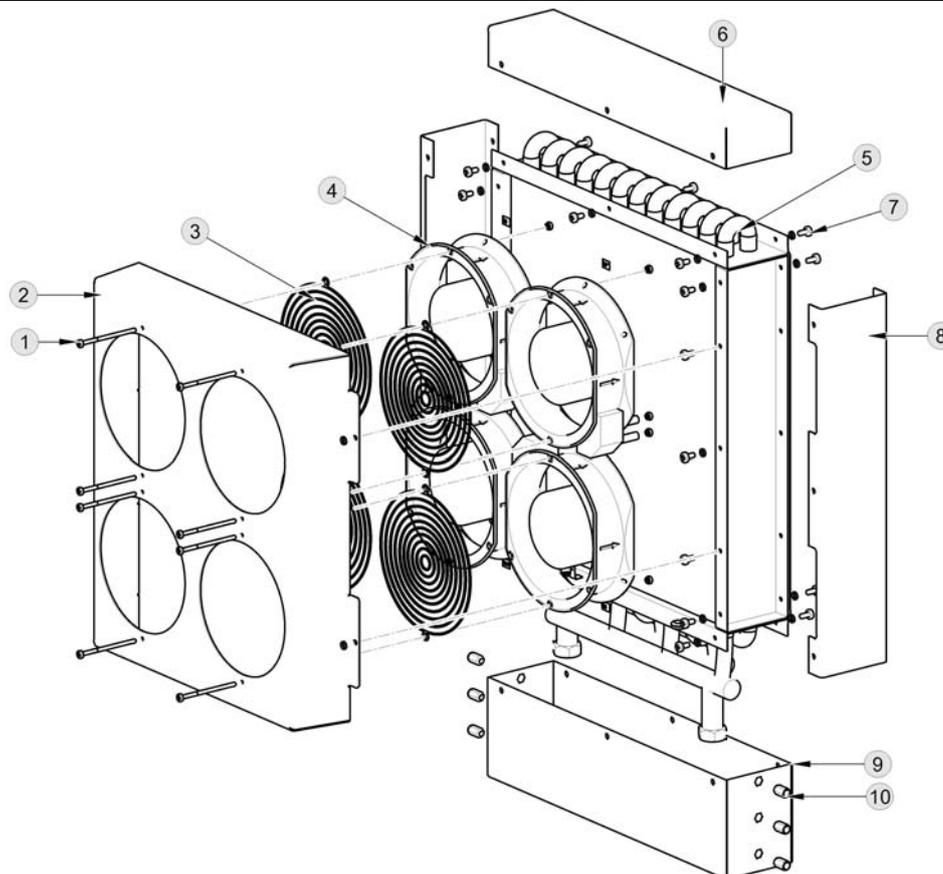
1	Cooler	603012782-000	14	Rail	023002661-000
2	Screw	041000138-000	15	Elektropanel	603022149-000
3	Holder	023001215-001	16	Hose	072000188-000
4	Elbow	025400115-000	17	Elbow	025400161-000
5	Coupling	025500230-000	18	Return valve	024002357-000
6	Screw	041000756-000	19	Reduction	025400252-000
7	Screw	041000685-000	20	Coupling	025400219-000
8	Condensate separator	025200162-000	21	Hose	062000792-000
9	Carrier, complete assembly	603031683-000	22	Return valve	025300086-000
10	Noha	029000012-000	23	Hose	062000702-000
11	Nipple	025500140-000	24	Cooler dryer	023002684-000
12	Culvert	034800789-000	25	Vsuvka	025500282-000
13	Cooler holder	023002627-000	26	Sušič	035900136-001



INSTALLATION - OPERATION - MAINTENANCE

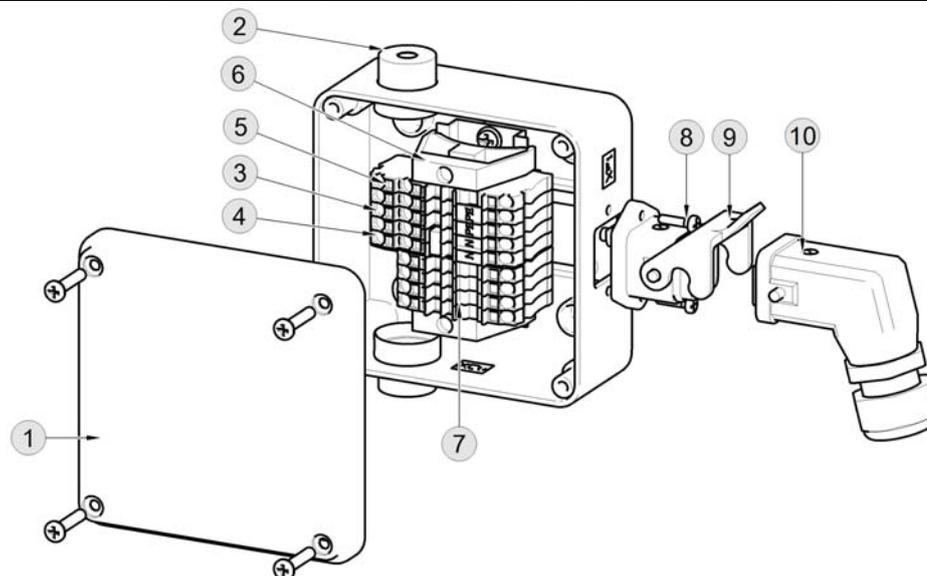
C1	Cooler	603012782-000
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1	Screw	041000559-000	6	Cover	023000336-001
2	Cover	023002292-000	7	Screw	041000756-000
3	Grating of the fan	024000463-000	8	Cover	023002291-000
4	Fan	035300016-000	9	Cover	023002628-000
5	Cooler	603021944-000	10		



C15	Electropanel	603022149-000
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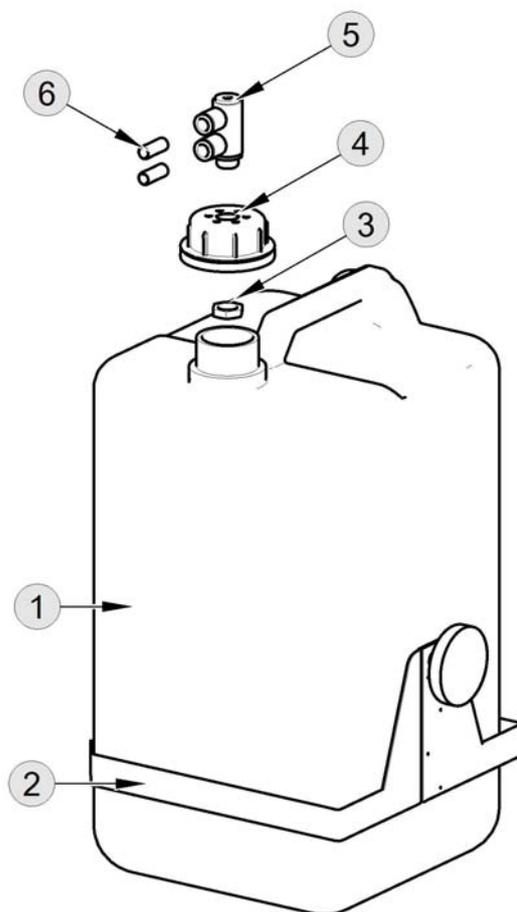
1	Box	034400017-000	6	Back clip	033190007-000
2	Grommet	073000017-000	7	Terminal board	033190108-000
3	Terminal board	033190113-000	8	Screw	041000785-000
4	Terminal board	033190114-000	9	Connector	604022160-000
5	Terminal board	033190121-000	10	Connector	604022161-000



INSTALLATION - OPERATION - MAINTENANCE

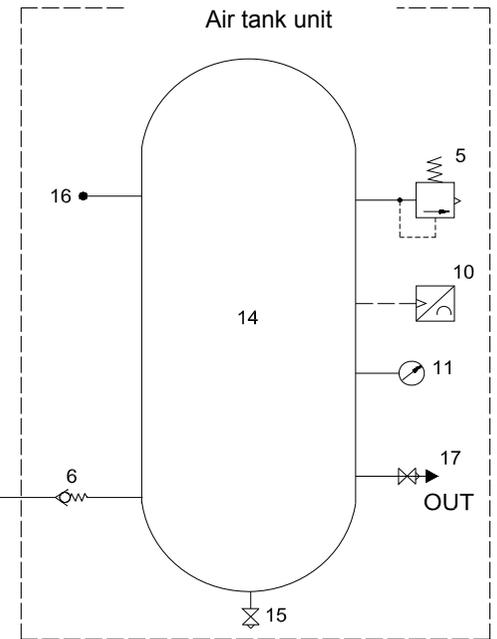
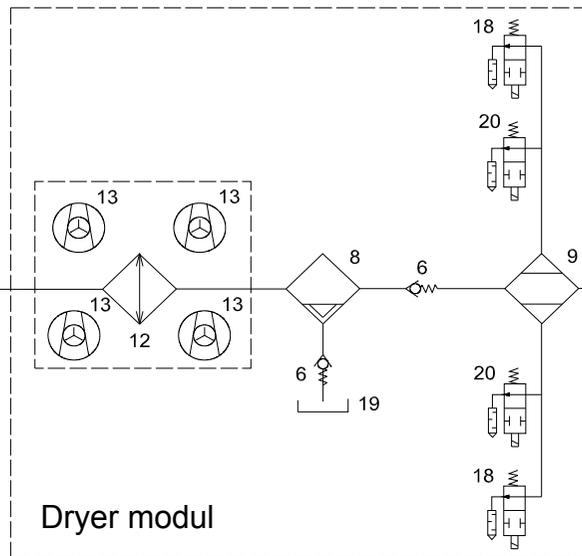
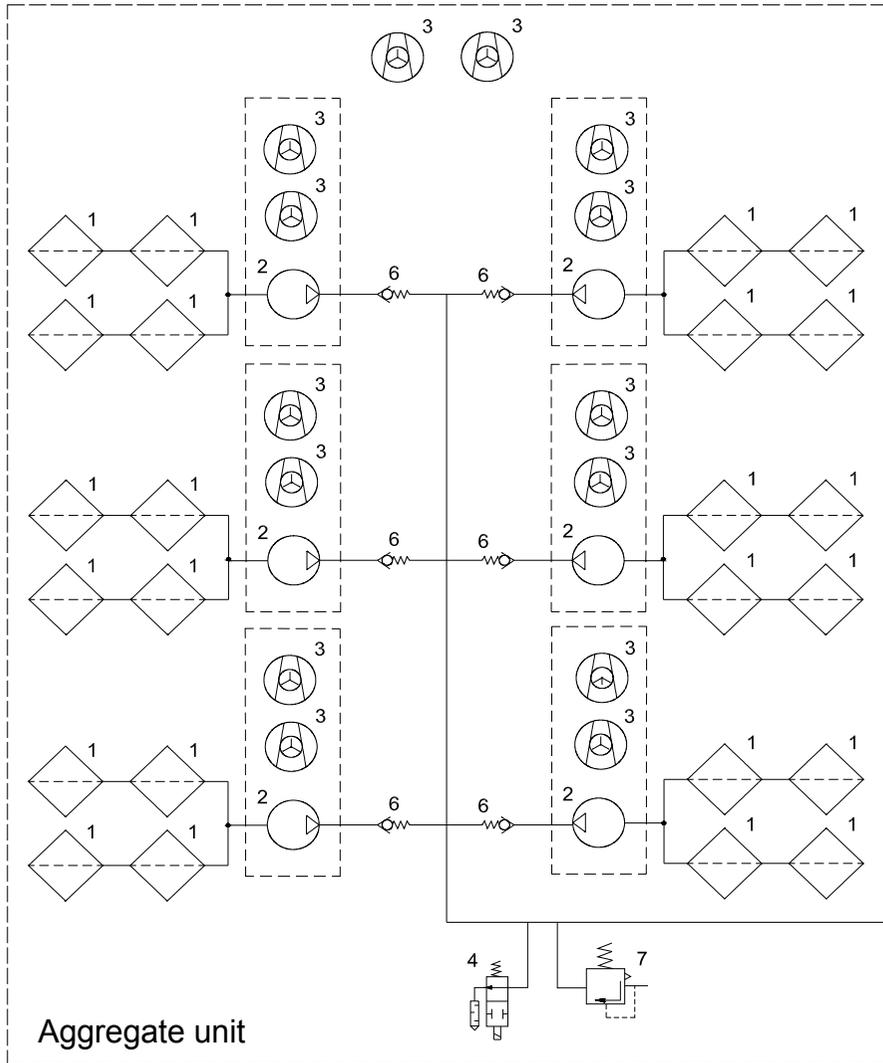
D	Set for discharge of condensate	604022152-000
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1	Vessel		063000066-000	5	Screwing		025400262-000
2	Magnetic holder		604031706-000	6	Hose		062000719-000
3	Nut		024000477-000				
4	Stopper		062001105-000				



19. PNEUMATIC SCHEMA

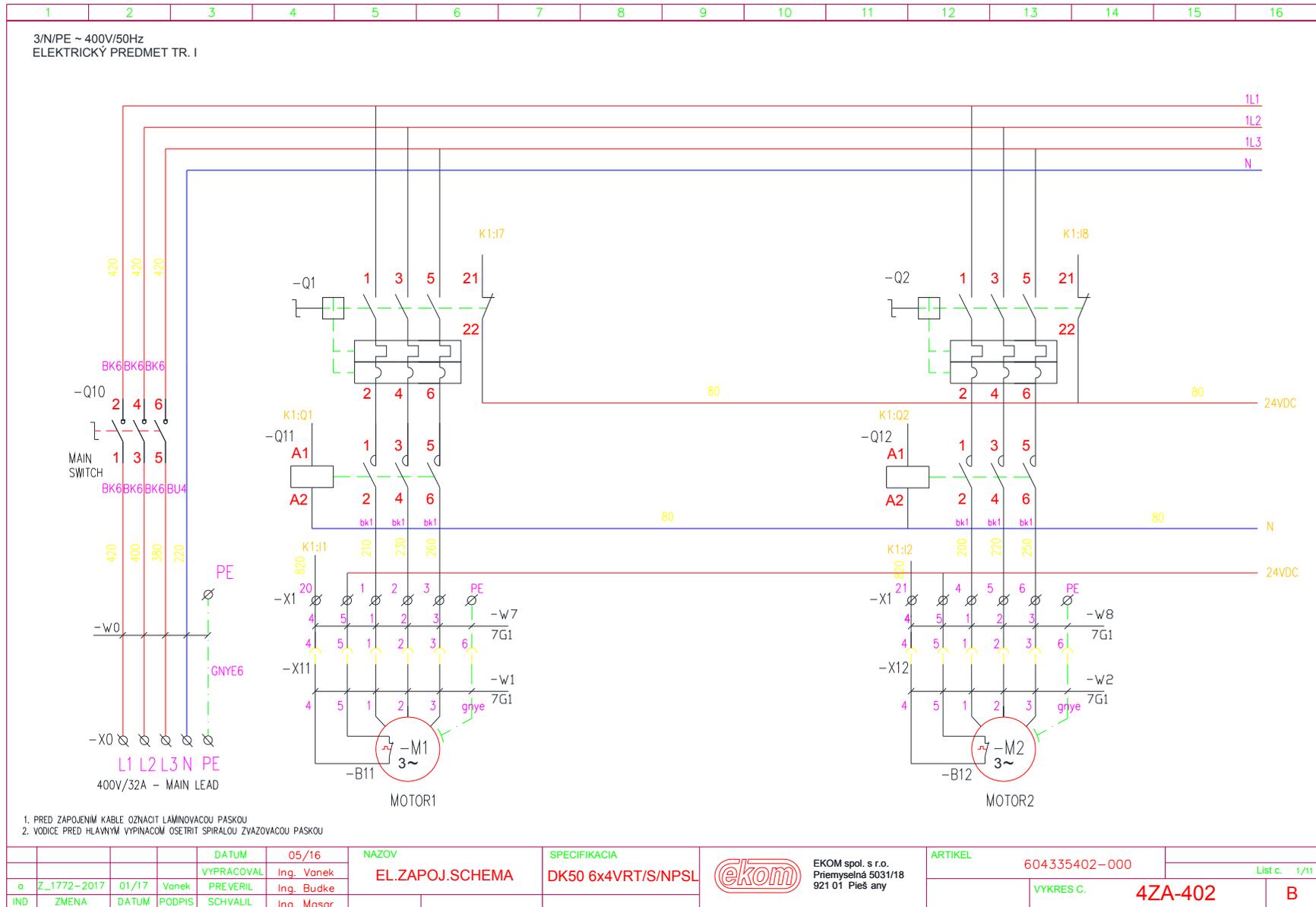
- 1 Inlet filter
- 2 Compressor aggregate
- 3 Fan
- 4 Solenoid valve
- 5 Safety valve
- 6 Return valve
- 7 Relief valve
- 8 Condensate separator
- 9 Dryer
- 10 Pressure sensor
- 11 Manometer
- 12 Cooler
- 13 Cooler fan
- 14 Air tank
- 15 Condensate drain valve
- 16 Temperature and humidity sensor (accessories)
- 17 Outlet valve
- 18 Solenoid valve of dryer - OUT
- 19 Vessel
- 20 Solenoid valve of dryer - IN



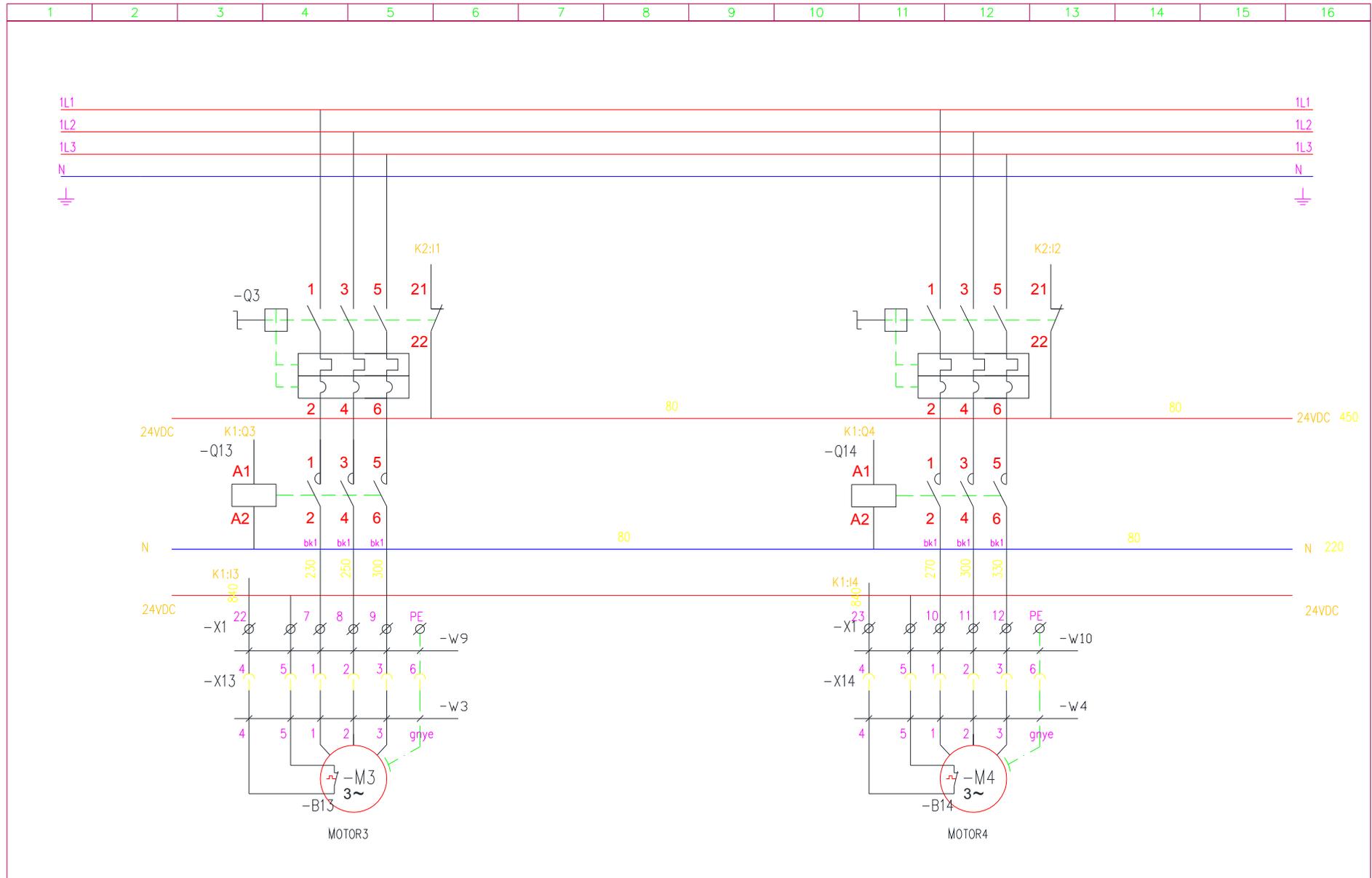
20. LIST OF COMPONENTS

Designation	Name	Type	pcs
E-Box	Primary switchboard	Ekom	1
Q10	Main switch	BACO 50A/3	1
Q1-Q6	Motor circuit breaker	Siemens 3RV2011-1GA15	6
Q11-16	Contactora	Siemens 3RT2015-1AP01	6
F1-3	Circuit breaker	OEZ LPN 6B/1	3
T1	24VDC/1,5A power supply	Mean Well DR-30-24	1
K1	LOGO! 12/24RCEo	6ED1052-2MD00-0BA8	1
K2-4	LOGO! DM8 24R	6ED1055-1HB00-0BA2	3
K10	LOGO! AM2 RTD	6ED1055-1MD00-0BA2	1
K11	LOGO! AM2	6ED1055-1MA00-0BA2	1
X0	Inlet terminal box	Wago svorky 2006-XXXX	1
X1,2	Terminals in E-box	Wago svorky 2002-XXXX	
X3,7	Auxiliary terminal block	Wago 261-XXX	
X4	Ethernet connector	RJ-45	
X5	Auxiliary terminal block	Wago 2002-XXXX	
X11-16	Connector	Molex	9
X17,18	Connector	Winsta 890-XXX	
X23	Valve connector	GDSN 307	
B1	Pressure sensor 10bar	HONEYWell PX2 series	
B2	Thermal switch	HoneyWell 2455R	1
B3	Temperature sensor Pt100	PTS100	1
B4	Temperature sensor Pt100	PT36	1
B11-B16	Thermal switch	Sucast motora	6
M1-6	Motor 2,2KW	Siemens	6
M10	Relief solenoid	EV210A, NC	1
S1,2	Start-Stop button	BACO	2
E1-E12	Motor cooling	A2175	12
E13-16	Dryer cooling	4715MS	4
E17,18	Central suction	Fulltech	2
Q20-Q21	Auxiliary contactora	OEZ RSI-20-20-A230	2
P1,P2	Indicators	BACO	2
P3	LOGO! TD TEXTDISPLAY	6ED1055-4MH00-0BA1	1
W1-W32, W54	Cables		32
E23	Dryer	NDM-090	1
M20-M21	Inlet solenoids	NPSL	2
M22-M23	Regeneration solenoids	NPSL	2

21. WIRING DIAGRAMS

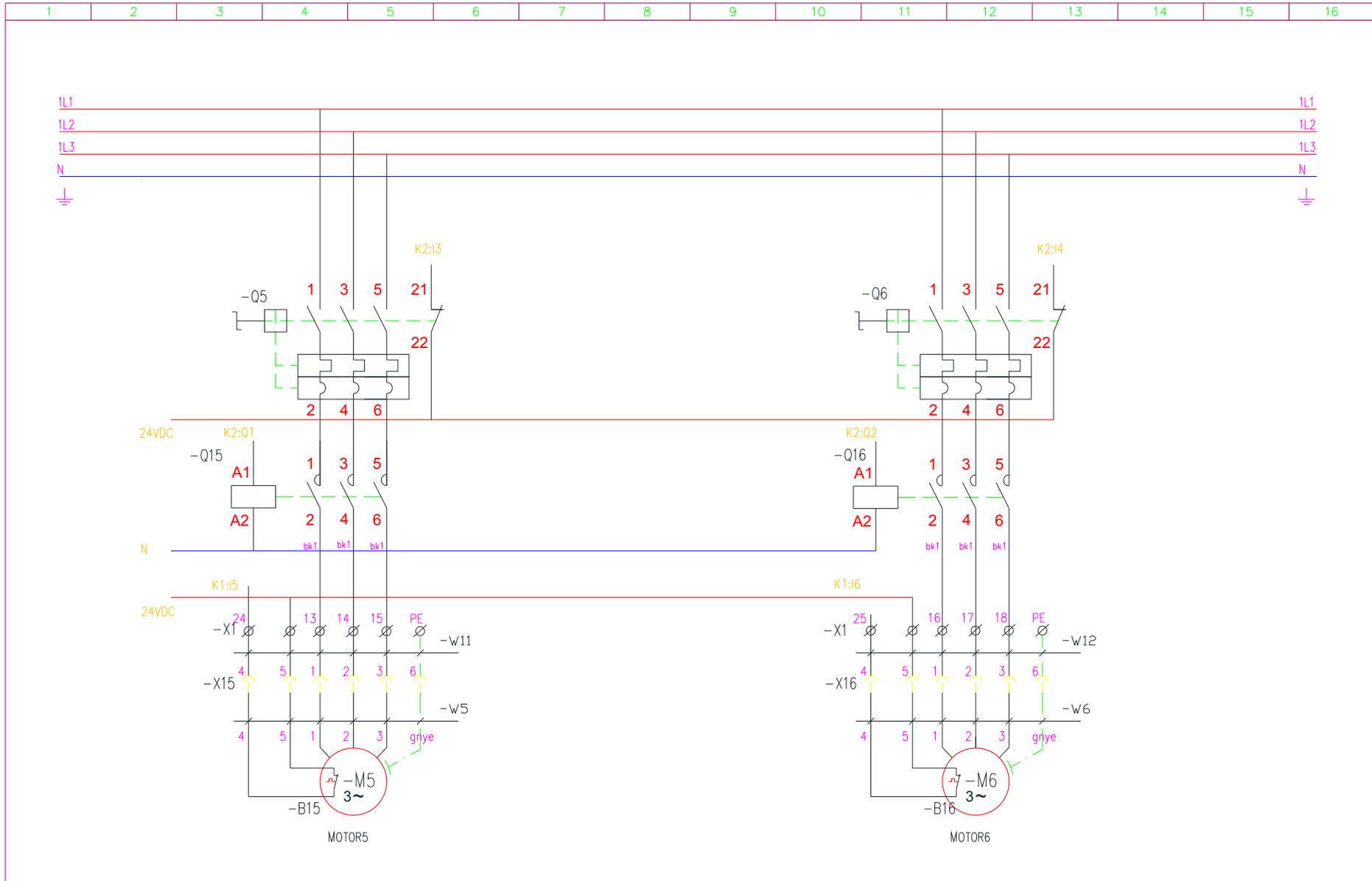


INSTALLATION - OPERATION - MAINTENANCE



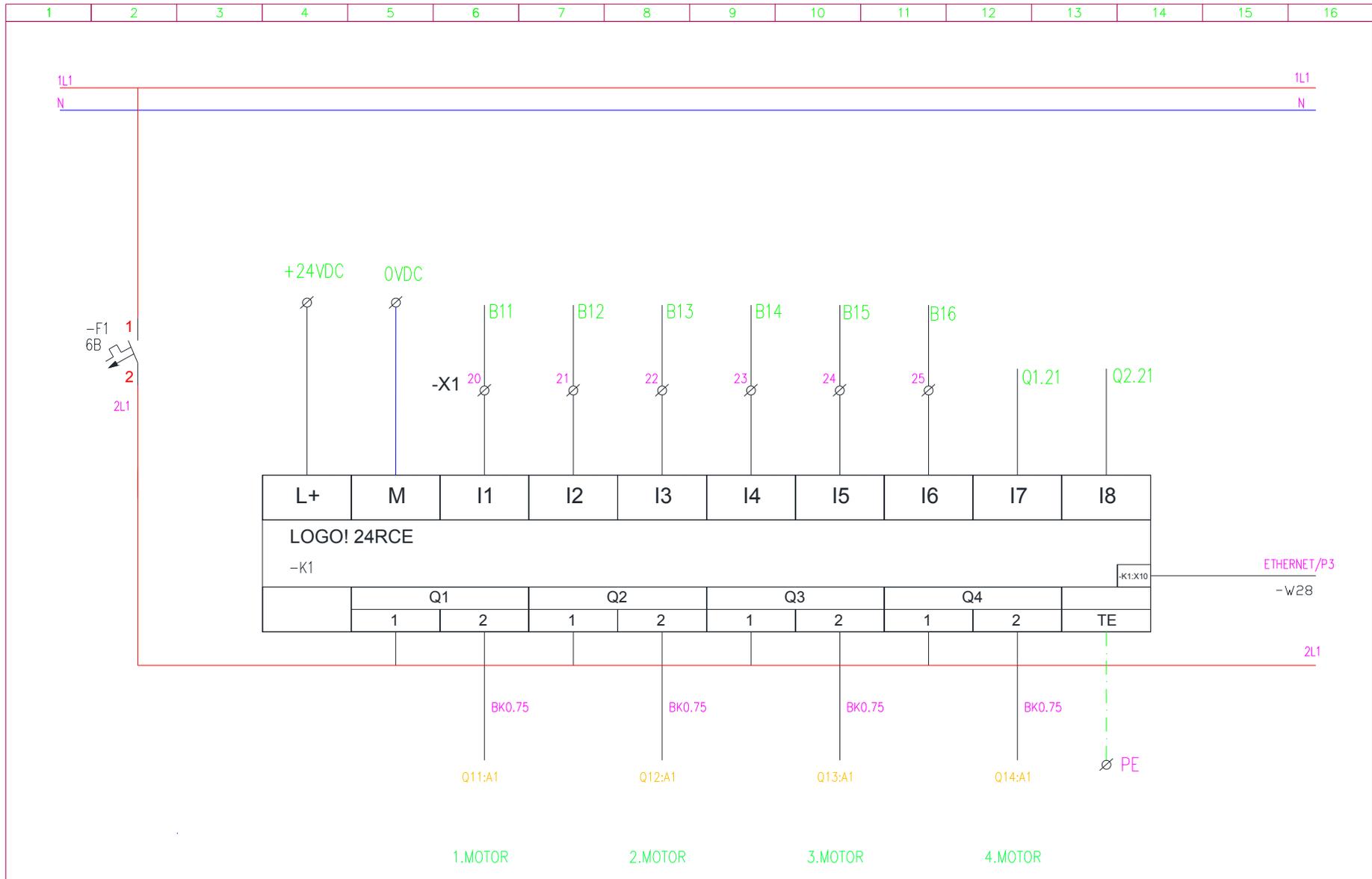
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			VYPRACOVAL	Ing. Vonek	EL.ZAPOJ.SCHEMA	DK50 6x4VRT/S/NPSL	EKOM spol. s r.o. Priemyselná 5031/18 921 01 Piešťany	VYKRES C.	4ZA-402	List c. 2/11
o	Z_1772-2017	01/17	Vonek	PREVERIL						Ing. Budke
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Masar					

INSTALLATION - OPERATION - MAINTENANCE



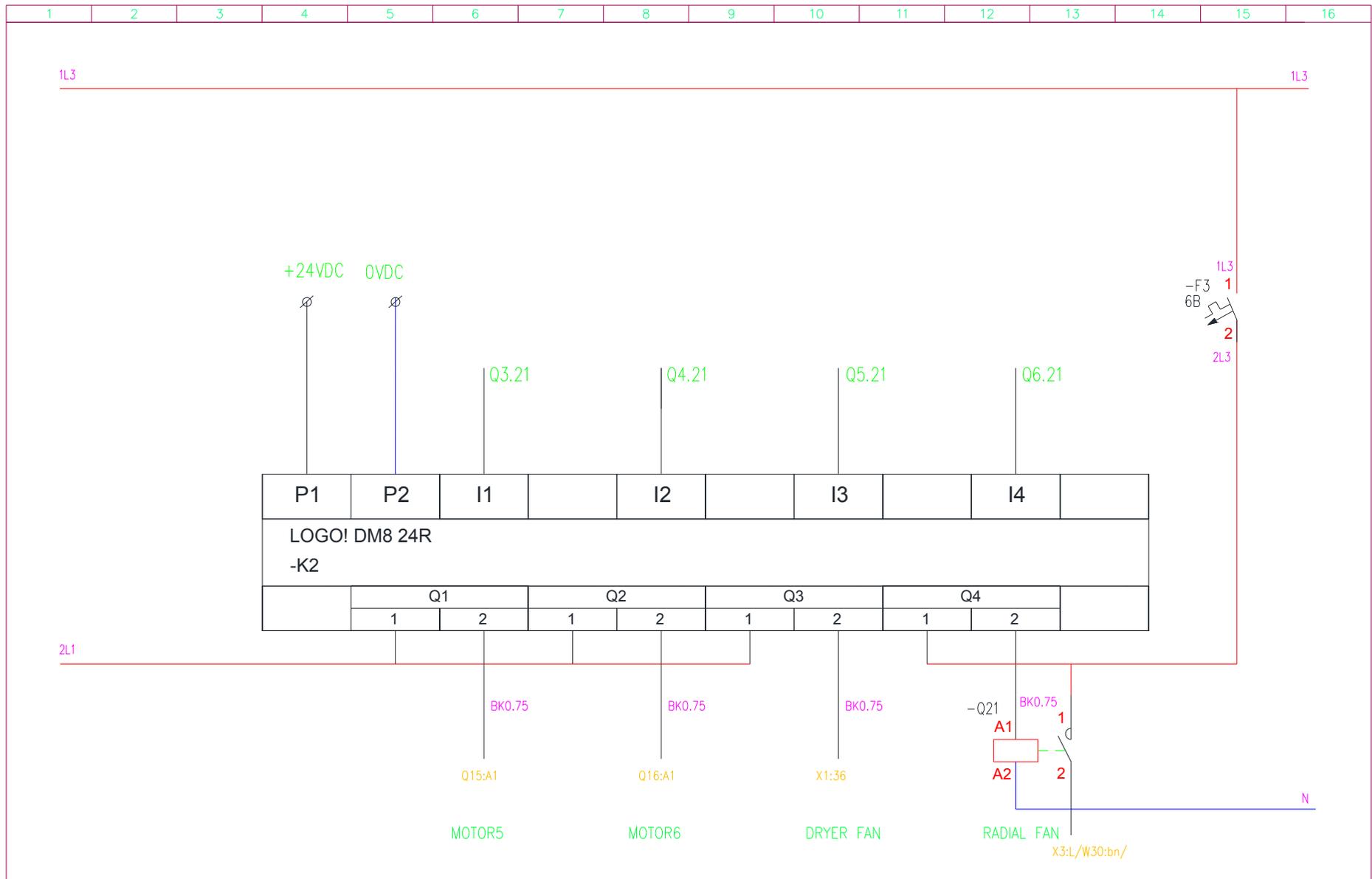
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o	Z_1772-2017	01/17	Vanek	VYPRACOVAL	Ing. Vanek	DK50 6x4VRT/S/NPSL	DK50 6x4VRTS/NPSL				VYKRES C.	4ZA-402	B
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Budke								

INSTALLATION - OPERATION - MAINTENANCE



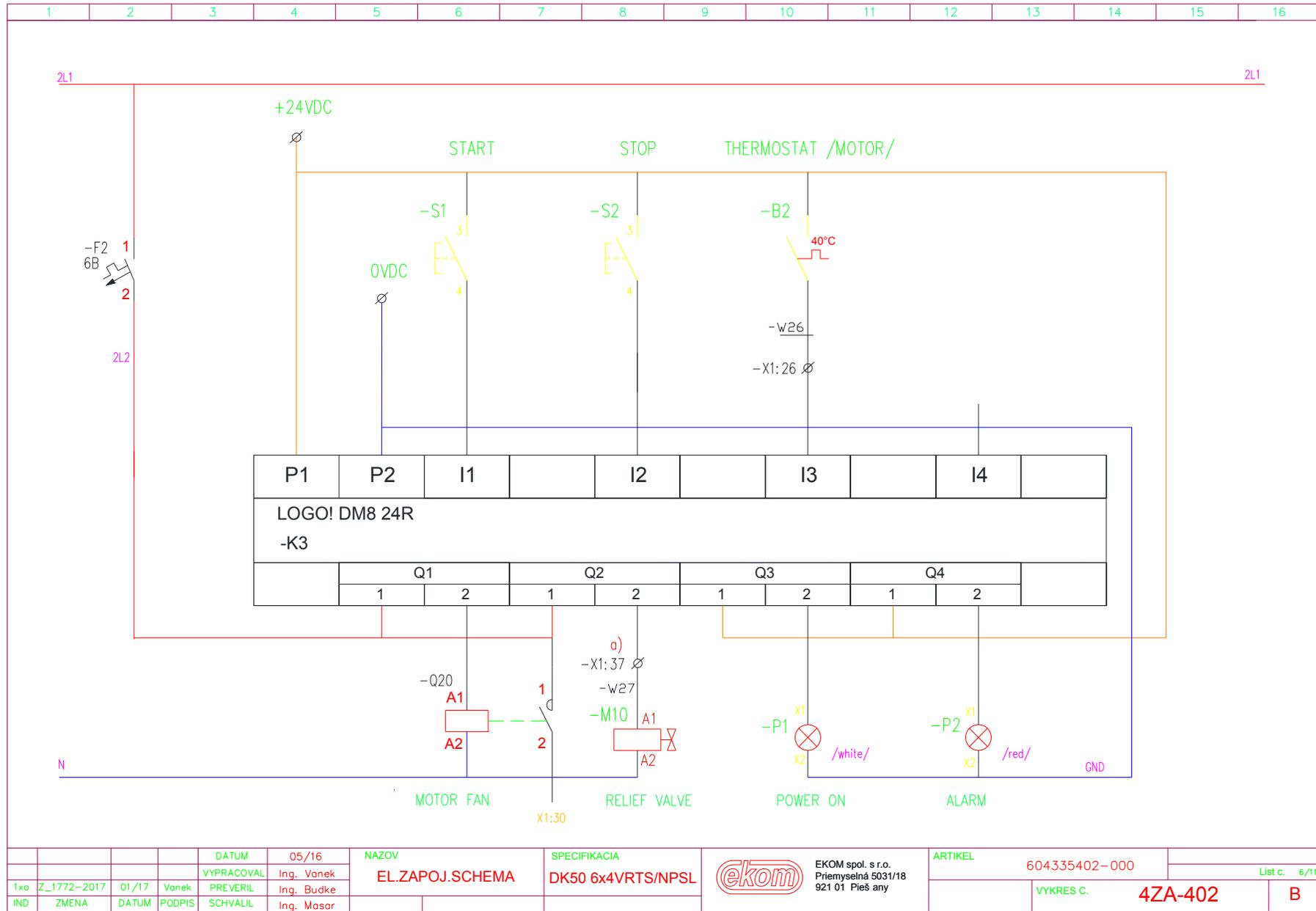
				DATUM	05/16	NAZOV	SPECIFIKACIA		ARTIKEL	604335402-000	
				VYPRACOVAL	Ing. Vonek	EL.ZAPOJ.SCHEMA	DK50 6x4VRTS/NPSL	EKOM spol. s r.o. Priemyselná 5031/18 921 01 Piešťany			List č. 4/11
o	Z_1772-2017	01/17	Vonek	PREVERIL	Ing. Budke						VYKRES C.
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Mosar						

INSTALLATION - OPERATION - MAINTENANCE

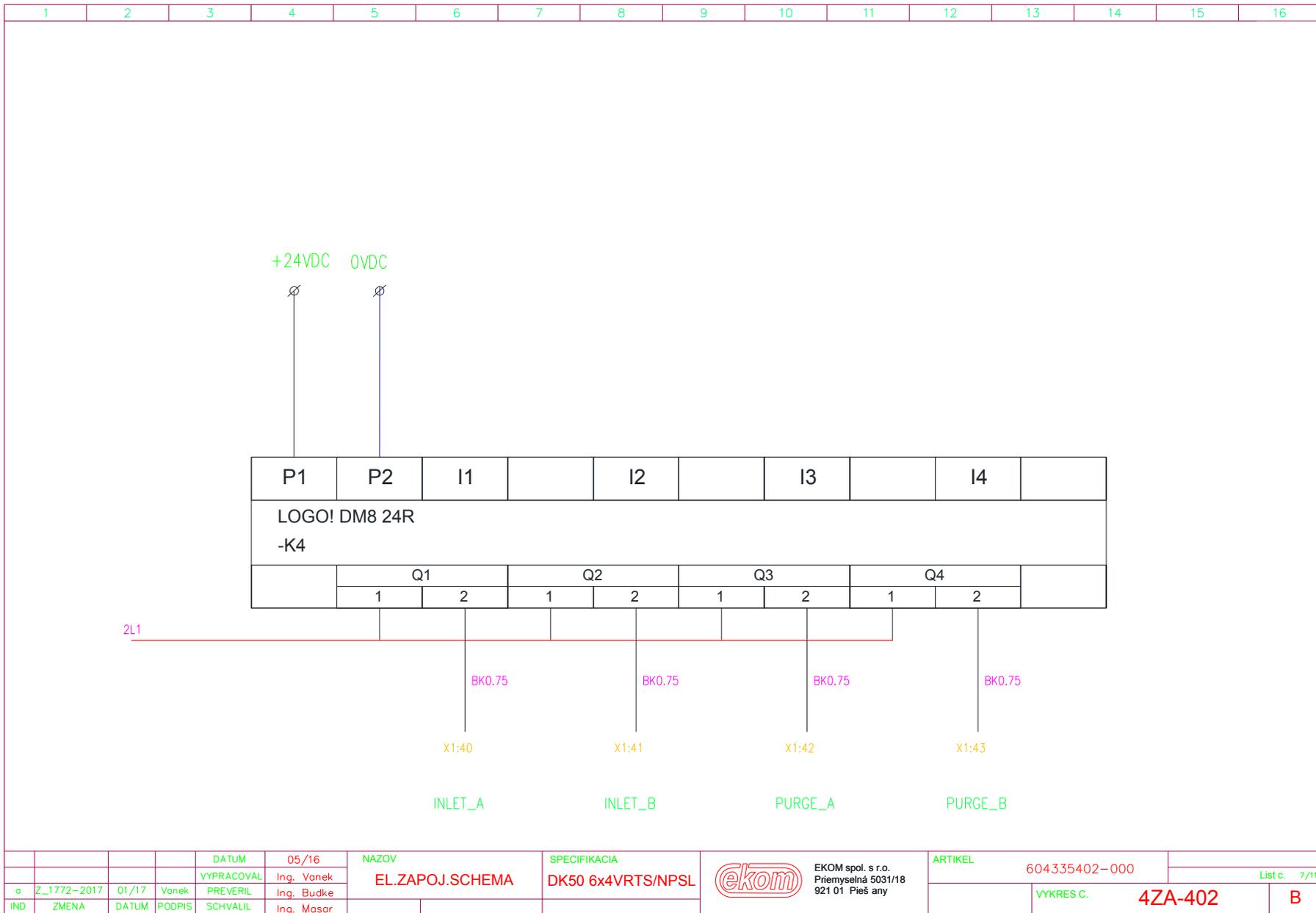


			DATUM	05/16	NAZOV	SPECIFIKACIA		ARTIKEL	604.335402-000			
			VYPRACOVAL	Ing. Vaneck	EL.ZAPOJ.SCHEMA	DK50 6x4VRTS/NPSL	EKOM spol. s r.o. Priemyselna 5031/18 921 01 Piešťany			List c. 5/11		
o	Z_1772-2017	01/17	Vaneck	PREVERIL				Ing. Budke				
IND	ZMENA	DATUM	PODPIS	SCHVALIL				Ing. Masar			VYKRES C.	4ZA-402

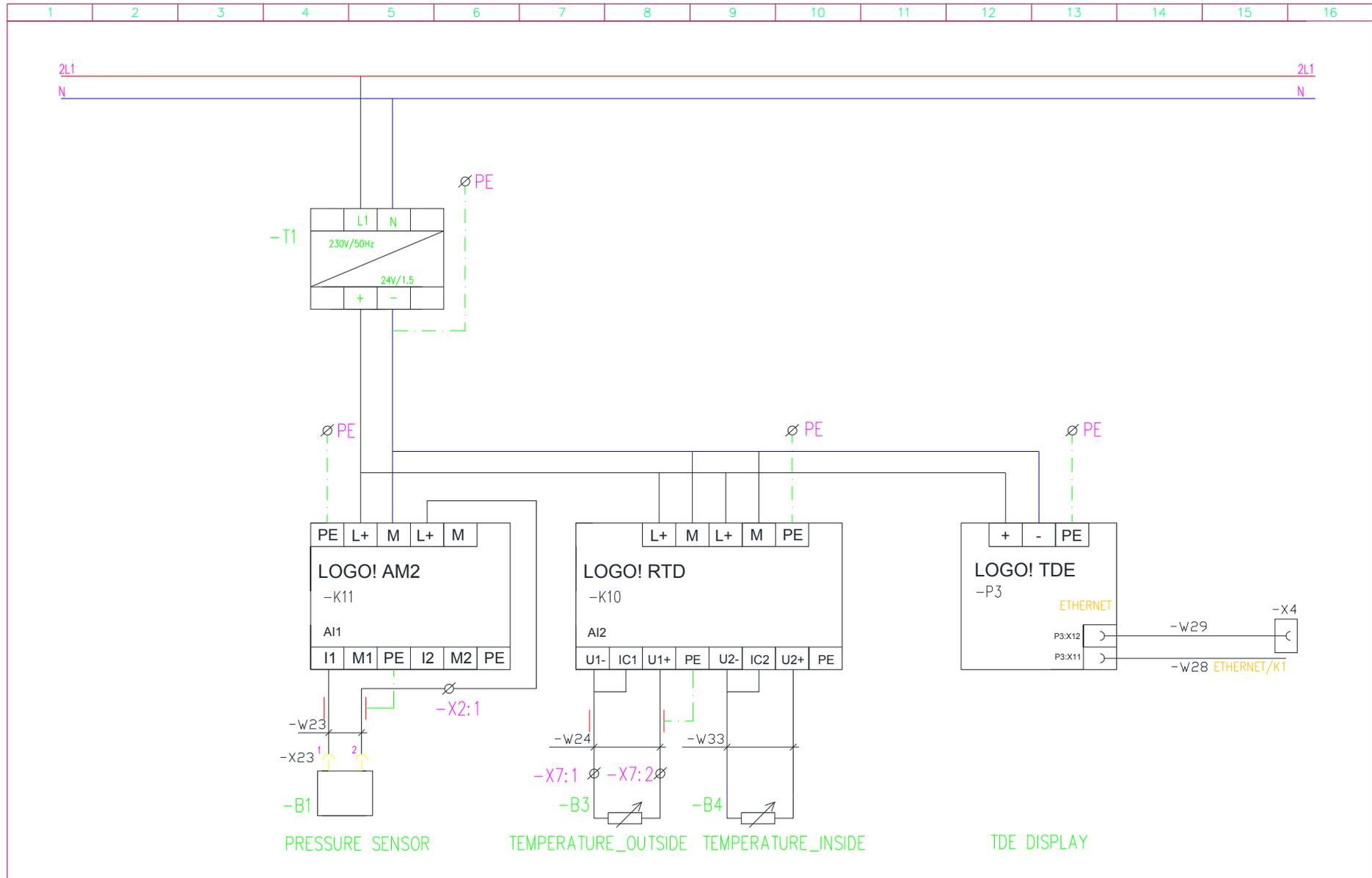
INSTALLATION - OPERATION - MAINTENANCE



INSTALLATION - OPERATION - MAINTENANCE

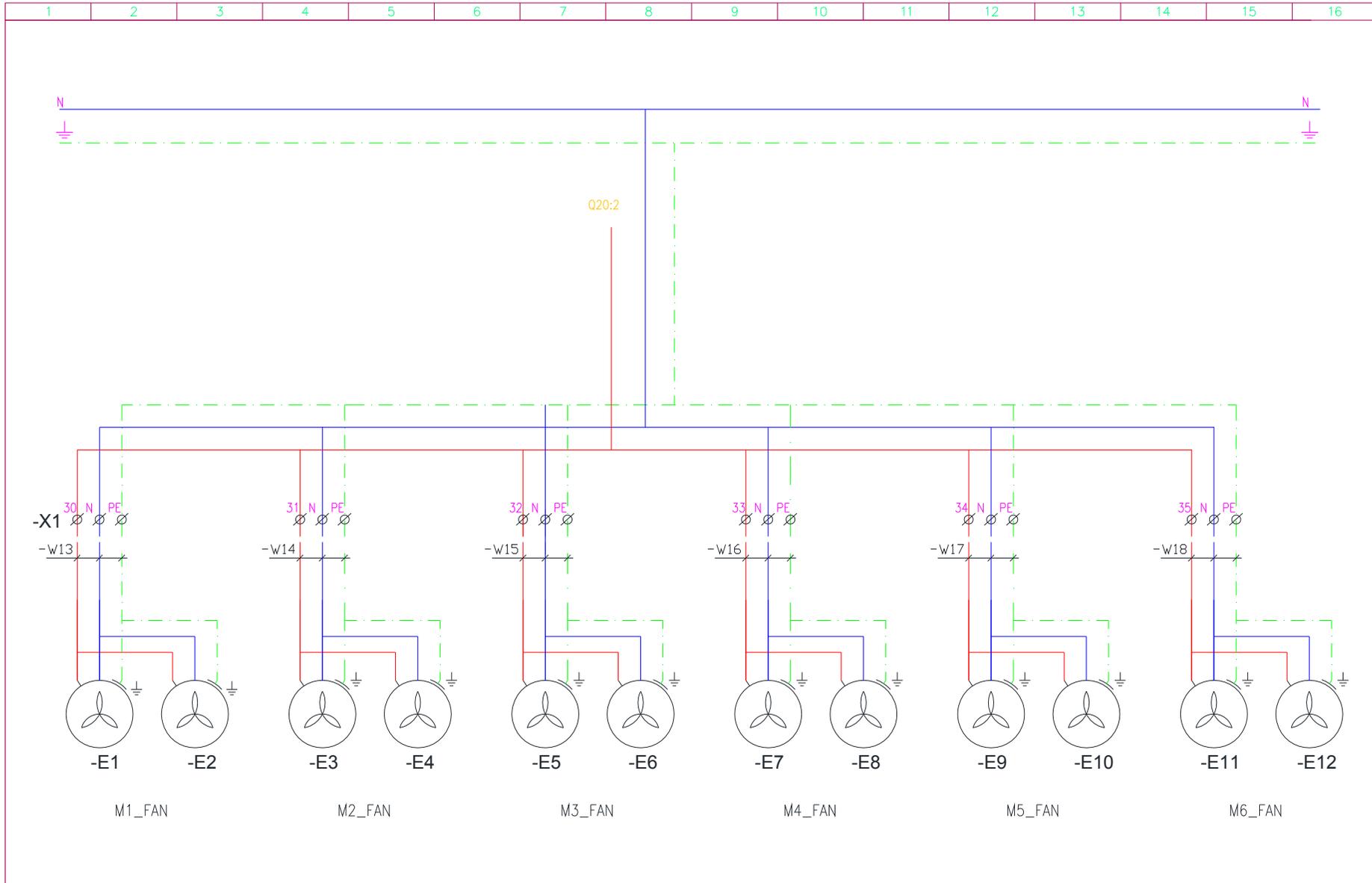


INSTALLATION - OPERATION - MAINTENANCE



				DATUM	05/16	NAZOV	SPECIFIKACIA		ARTIKEL	604335402-000	List c. 8/11
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IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Masar						

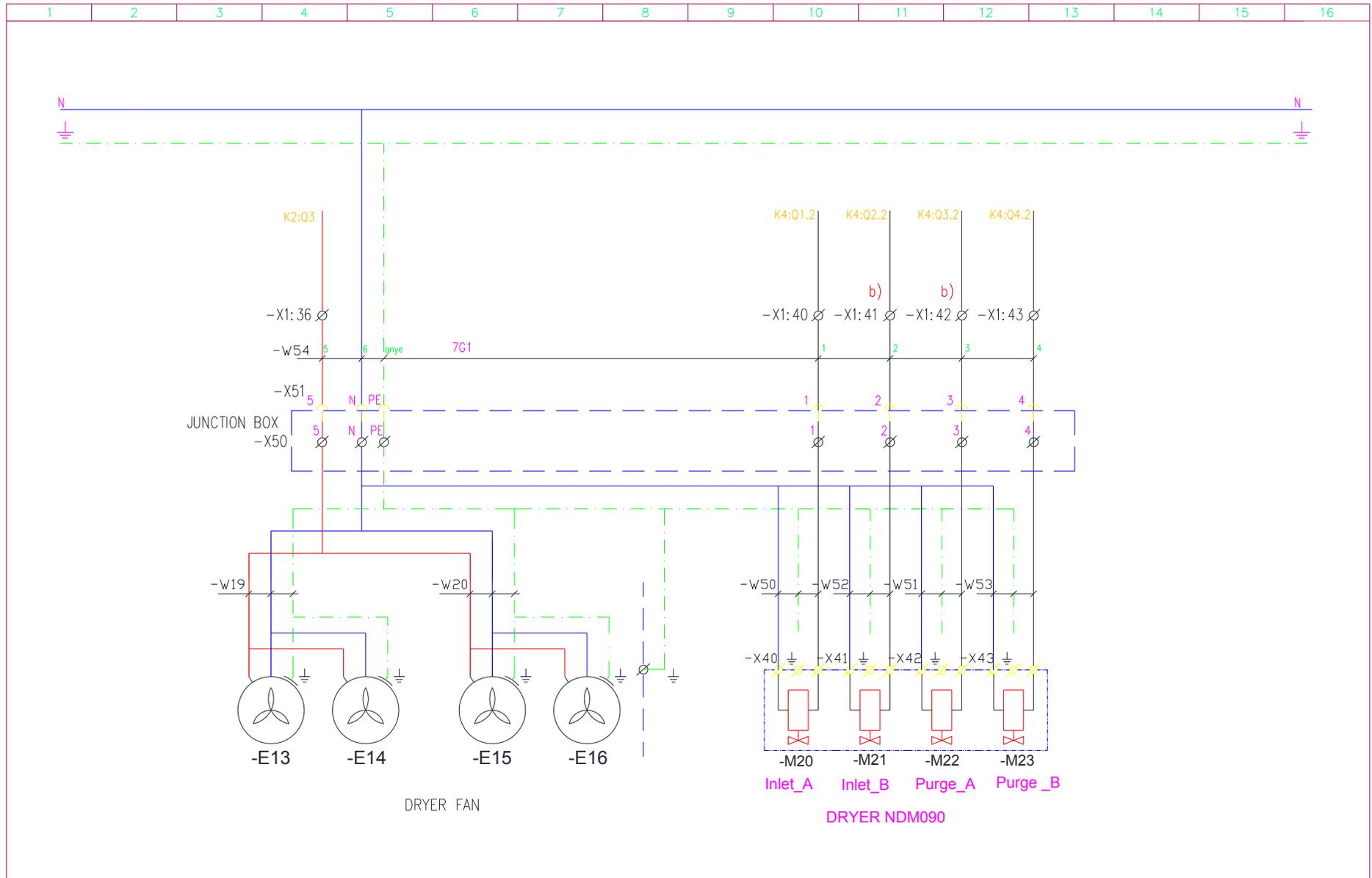
INSTALLATION - OPERATION - MAINTENANCE



				DATUM	05/16	NAZOV	SPECIFIKACIA		ARTIKEL	604335402-000	
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o	Z_1772-2017	01/17	Vanek	PREVERIL	Ing. Budke						VYKRES C.
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Masar						

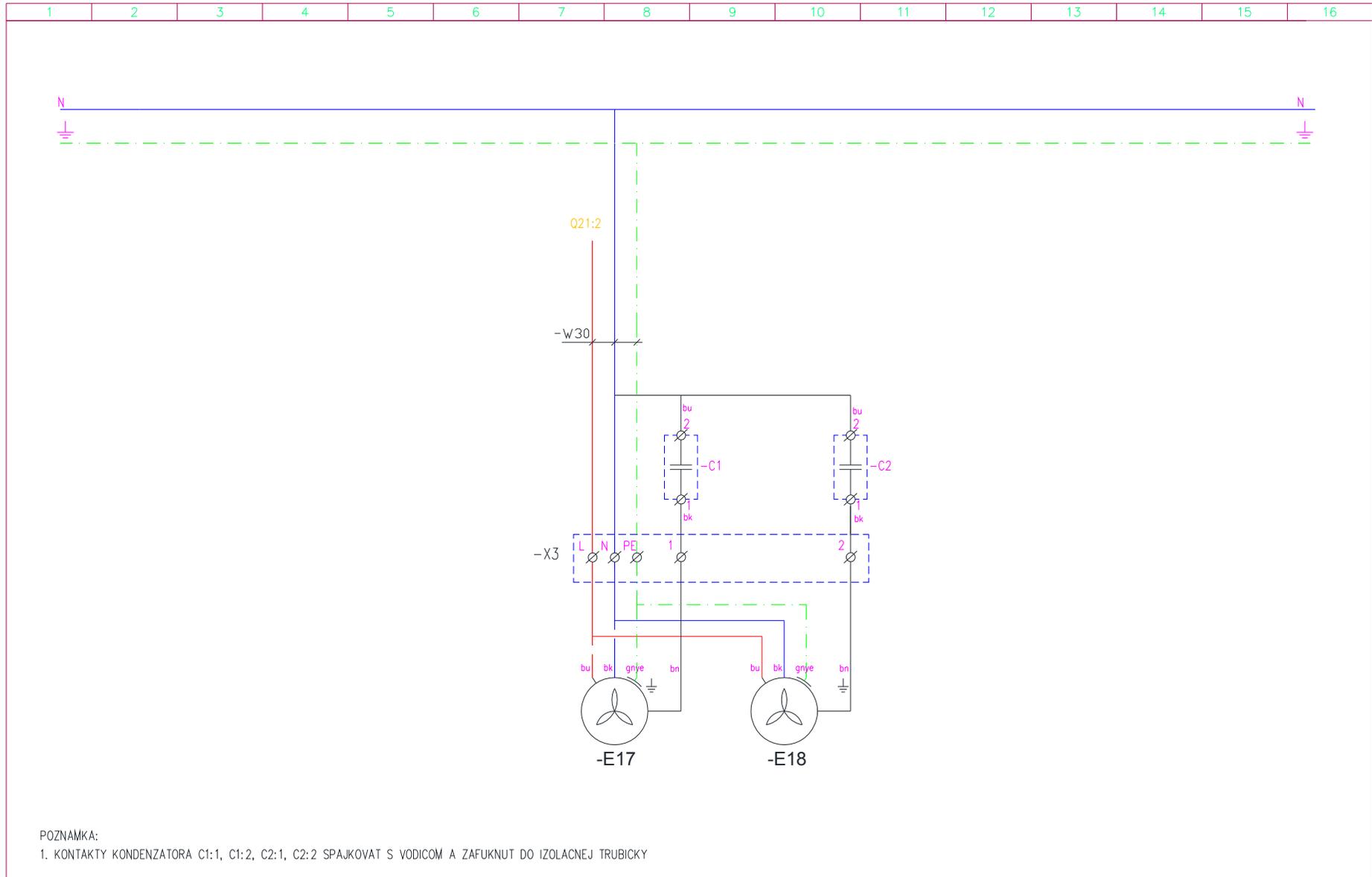
/12 x A2175, 12 x 25= 300W/

INSTALLATION - OPERATION - MAINTENANCE



				DATUM	05/16	NAZOV	SPECIFIKACIA		ARTIKEL	604335402-000	
				VYPRACOVAL	Ing. Vanek	EL.ZAPOJ.SCHEMA	DK50 6x4VRTS/NPSL	EKOM spol. s r.o. Priemyselna 5031/18 921 01 Piešťany			List č. 10/11
4x	Z_1772-2017	01/17	Vanek	PREVERIL	Ing. Budke					VYKRES C.	4ZA-402
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Masar						

INSTALLATION - OPERATION - MAINTENANCE



POZNÁMKA:

1. KONTAKTY KONDENZÁTORA C1:1, C1:2, C2:1, C2:2 SPAJKOVAT S VODICOM A ZAFUKNUT DO IZOLACNEJ TRUBICKY

				DATUM	05/16	NAZOV	SPECIFIKACIA	 EKOM spol. s r.o. Priemysel'ná 5031/18 921 01 Pieš any	ARTIKEL	604335402-000	List c.	11/11
a	Z_1772-2017	01/17	Vanek	VYPRACOVAL	Ing. Vanek	EL.ZAPOJ.SCHEMA	DK50 6x4VRTS/NPSL		VYKRES C.	4ZA-402	B	
IND	ZMENA	DATUM	PODPIS	SCHVALIL	Ing. Masar							

INSTALLATION - OPERATION - MAINTENANCE



Tab. 3 Service Document

Number of operation hours	Date of service	Service carried out by Signature	Servicing activity	Carried out		Notes Service records
				Yes	Yes	
			A	<input type="checkbox"/>	<input type="checkbox"/>	
			B	<input type="checkbox"/>	<input type="checkbox"/>	
			C	<input type="checkbox"/>	<input type="checkbox"/>	
			D	<input type="checkbox"/>	<input type="checkbox"/>	
			E	<input type="checkbox"/>	<input type="checkbox"/>	
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			T	<input type="checkbox"/>	<input type="checkbox"/>	
			U	<input type="checkbox"/>	<input type="checkbox"/>	

INSTALLATION - OPERATION - MAINTENANCE



Tab. 3 Service Document

Number of operation hours	Date of service	Service carried out by Signature	Servicing activity	Carried out		Notes Service records
				Yes	Yes	
			A	<input type="checkbox"/>	<input type="checkbox"/>	
			B	<input type="checkbox"/>	<input type="checkbox"/>	
			C	<input type="checkbox"/>	<input type="checkbox"/>	
			D	<input type="checkbox"/>	<input type="checkbox"/>	
			E	<input type="checkbox"/>	<input type="checkbox"/>	
			F	<input type="checkbox"/>	<input type="checkbox"/>	
			G	<input type="checkbox"/>	<input type="checkbox"/>	
			H	<input type="checkbox"/>	<input type="checkbox"/>	
			I	<input type="checkbox"/>	<input type="checkbox"/>	
			J	<input type="checkbox"/>	<input type="checkbox"/>	
			K	<input type="checkbox"/>	<input type="checkbox"/>	
			L	<input type="checkbox"/>	<input type="checkbox"/>	
			M	<input type="checkbox"/>	<input type="checkbox"/>	
			N	<input type="checkbox"/>	<input type="checkbox"/>	
			O	<input type="checkbox"/>	<input type="checkbox"/>	
			P	<input type="checkbox"/>	<input type="checkbox"/>	
			R	<input type="checkbox"/>	<input type="checkbox"/>	
			S	<input type="checkbox"/>	<input type="checkbox"/>	
			T	<input type="checkbox"/>	<input type="checkbox"/>	
			U	<input type="checkbox"/>	<input type="checkbox"/>	