USER MANUAL

MISTRAL CLASSIC

M6-ET

M8-ET

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PARAMINA Mistral Compressor

USER MANUAL

1. General Instructions

CAUTION: High pressure pneumatic device

The **PARAMINA *Mistral*** compressor is a high pressure air-compressor offering high quality breathing air. It is made according to EU directive 2006/42/EC for the safety of machinery. Noise complies with 2005/88/EC directive.
The compressor must be used **ONLY** for producing compressed air as described in this manual.
Any other use is not allowed whatsoever!
Strictly observe all instructions pertaining to the operation and maintenance of this product. Fail to observe these instructions may lead to serious injury or even death.

The manufacturer accepts no liability for damage or injury due to non-compliance to all instructions of this manual.

FOR YOUR SAFETY

Thoroughly observe the following:

1. Timely replacement of filter elements and activated carbon - molecular sieve filter.

2. Make sure that the air compressor is installed in a place that guarantees plenty of fresh air, without any engine's exhaust gas.

3. Proper cylinder maintenance

4. Proper compressor maintenance

5. Only trained and experienced technicians are allowed to overhaul this compressor.

6. **NEVER INTERFERE WITH THE SAFETY DEVICES**

7. In case you become aware of any change in the compressor's operation, call us in order to help you and provide you with repair instructions.

8. **NEVER USE THE COMPRESSOR FOR ANY OTHER GAS APART FROM ATMOSPHERIC AIR.**

The instructions concerning safety are marked with this symbol.

2. Technical Data

High pressure breathing air compressor, 3 cylinders, 3 stages, air-cooled.

Model:		M6	M8
Maximum pressure:		330 bar (4700 psi)	330 bar (4700 psi)
Minimum pressure:		40 bar (580 psi)	40 bar (580 psi)
Capacity:		6,2 m3/h - 103 lit/min	8,4 m3/h - 140 lit/min
Ambient temperature:		+5ºC to +45ºC	+5ºC to +45ºC
Oil capacity:		400 ml.	500 ml.
Speed Rotation:		1200 rpm	1750 rpm
Piston stroke:		40 mm	40 mm
Cylinder bore:		1st stage 60 mm	1st stage 60 mm
		2nd stage 36 mm	2nd stage 36 mm
		3rd stage 14 mm	3rd stage 14 mm
Working Pressure:	**1st stage**	3,5 bar 3,5 bar	3,5 bar 3,5 bar
	2nd stage	27,0 bar 30,0 bar	28,0 bar 30,0 bar
	3rd stage	225,0 bar 330,0 bar	225,0 bar 330,0 bar
Motor:	**ET**	2,2kW-3,0Hp/400-440V/50-60Hz	3,0kW-4,0Hp/400-440V/50-60Hz
	EM	2,2kW-3,0Hp/220V/50-60Hz	3,0kW-4,0Hp/220V/50Hz (60Hz option)
	BZ	3,6 kW - 4,8 Hp Petrol Engine	4,1 kW – 5,5 Hp Petrol Engine
Dimensions LxWxH	**ET**	78x41x49 cm	78x41x49 cm
	EM	78x41x49 cm	78x41x49 cm
	BZ	88x41x51 cm	88x41x51 cm
Weight:	**ET**	53 - 73 Kg	67 - 83 Kg
	EM	54 – 69 Kg	68 - 85 Kg
	BZ	55 - 65Kg	65 - 73 Kg

PARAMINA HIGH PRESSURE COMPRESSORS MOTORS*, FUSES & CABLES

STANDARD PLUGS, OTHER PLUGS ON REQUEST

MODEL	MOTOR			FUSE BOX (curve D or K)	PLUG (PGE)			CABLE	
	KW	AMPS	P. F.	AMPS	AMPS	PHOTOS		DIMENSIONS ($mm^{2)}$	LENGTH (m)
M6 - EM	2,2/220V/50-60Hz	13,5	0,95	16-20A	CEE 7/4 or 7/7		standard	3 x 2,5	max. 5m
M8 - EM	3,0/220V/50-60Hz	18	0,97	25-32A	Wander plug 32A 2P+PE IP44		option	3 x 4	max. 5m
M6 - ET	2,2/400V/50-60Hz	5,3	0,87	16A	Wander plug 16A 3P+N+PE IP44		option	5 x 2,5	max. 5m
M6-ET CL	2,2/400V/50-60Hz	5,3	0,87	16A	Wander plug 16A 3P+PE IP44		option	4 x 2,5	max. 5m
M8 - ET	3,0/400V/50-60Hz	6,3	0,87	16-20A	Wander plug 16A 3P+N+PE IP44		option	5 x 2,5	max. 5m
M8-ET CL	3,0/400V/50-60Hz	6,3	0,87	16-20A	Wander plug 16A 3P+PE IP44		option	4 x 2,5	max. 5m

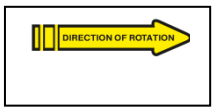
3. User Instructions

Safety Measures - Warning Signs

HOT SURFACES
Do not touch.
Risk of burns if you touch cylinders, aftercoolers, cylinder heads

DANGER
This sign is placed whenever there is danger of damage caused to the unit or its components

HIGH VOLTAGE
Risk of electric shock.
Maintenance work to be carried out **only** by a trained electrician



DIRECTION OF ROTATION
Make sure for the proper direction of rotation

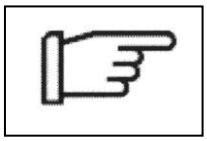
USER INSTRUCTIONS
Users must read and fully comprehend operation instructions for using and maintaining the compressor

This sign refers to
timely user instructions for operating and maintaining the compressor

AUTOMATIC OPERATION
Caution, the unit may start its operation without any prior notice. Before any work, turn off mains supply

OBLIGATORY
During control and operation of this unit you must wear earplugs

RISK of rotating parts



TECHNICAL REQUIREMENTS
the operator must take into account

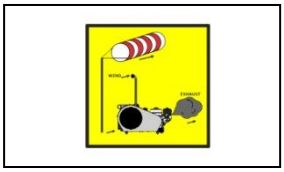
Basic safety recommendations

- The compressor is manufactured following current EU safety regulations.
- The compressor is intended **ONLY** for compressing atmospheric air with a content of oxygen (21±1)%. Use of any other gas type is not allowed. The manufacturer is not liable for damages caused by using the unit any other way than the intended.
- Use the compressor after making sure it is in perfect working condition. Any malfunction or failure must be repaired immediately. Strictly follow the operation and maintenance instructions described in this manual.
- Read carefully the instructions in this manual and follow them. Make sure users of the compressor are familiar with the user instructions of the unit and its proper operation. Make sure they are authorized, trained and trustworthy individuals. Make sure you are aware of and implement the current legal and all other regulations pertaining to avoiding accidents and protecting the environment.
- During first start or after maintenance, check motor's direction of rotation (electric motor version). There is an arrow indicating proper rotation. If the direction is reversed, interchange two of the three phase leads in the mains (3 phase motors). **Never** change leads at the **motor** terminal board.
- Before starting any work pertaining to maintenance of the compressor, turn off the supply from the mains and press the Emergency Stop.
- Only an authorized trained electrician may do electrical works.

- If regulations dictate it, use means of individual protection.
- Pay attention to labels indicating safety and risk for the unit. Strictly follow them and do not destroy them.
- For any change in the operation of the unit, contact immediately the manufacturer.
- Any alteration – conversion of the unit without the manufacturer's prior written consent is not allowed.
- Spare parts MUST be genuine – approved by PARAMINA.
- Get accustomed to the position and use of fire extinguishing equipment that must be near the compressors.

Instructions for safe operation - risks

- Check the unit on the inside and outside on a daily basis in order to make sure it is in good working condition.
- Do not start the operation of the unit if you do not ensure your own safety.
- Before you operate the compressor, make sure that requirements are met for the safe and smooth operation of the unit.
- Floor must be even. Adjust the anti vibration pads, so as the unit is in horizontal position and shocks are minimized.
- Place the compressor in a well-ventilated area. Make sure that the intake air for the compressor is clean and cool. **Prevent the hot cooling air from recirculating to the cooling air intake.** Make sure that foreign objects cannot get into the compressor with the intake air. Make sure that the intake air does not contain any smells, fuel or fumes, explosive or inflammable gases or harmful substances.
- Units with petrol engine or diesel engine should not be used indoors.
- Assign the unit (if it uses petrol engine or diesel engine) towards the direction of the wind, so as fumes are getting away. In this case, use the input hose of the inlet air filter in such a way, that fumes are avoided to enter the compressor.



- Keep the compressor away from flammable material. Do not smoke when opening the fuel tank.
- If any malfunction of the unit occurs, stop immediately its operation and check – fix the problem.
- Before any maintenance or repair works, inform the users.
- When replacing heavy-weight components, strap them carefully on the proper lift truck. Never walk under such components when they are lifted.
- Before any maintenance works, clean the area from out-of-use material, oils, fuel or other liquids from the unit. Do not use corrosive materials. If you clean the unit by water or steam, make sure that neither water nor steam comes close to the electric motor or the electric system and ensure that they will not enter open hoses. For cleaning, use lint-free cloth.
- After cleaning or repairing the unit, check all hoses for leaks, loose connections, wear or damages. Tight again all connections and recheck every maintained safety device.
- Ensure safe and environmental friendly disposal of consumable materials and old spare parts.

Special attention

- **Do not use the compressor in explosive environment.**
- Connect the compressor only to electrical systems that are compatible with its electrical characteristics and that are within its rated capacity
- Comply with the local mains supply company regulations.
- Use only the recommended fuses.
- A trained electrician may only execute maintenance in the electrical system.
- During any maintenance work in the unit, turn off the power from the mains. It is also recommended posting a notice warning about maintenance works on the compressor.
- In case of having to execute maintenance works on an operating unit, a second person beside the electrician must be present to handle the main safety switch. Tools to be used must be isolated.
- Regularly check hoses, couplings and fittings for leaks and loose connections.
- Regularly check tightening of the electrical connections.
- If you replace mains cable, you must use the same type.
- Decompress all hoses, filters, pressure tanks and, basically, the entire unit, before you carry out any work.
- Never exceed the allowed operating pressure of the cylinders.
- Immediately replace cylinders with any kind of damage.

- Do not heat the cylinders or any of their parts, because pressure will rise.
- For loading – lifting of the unit or heavy parts of it, lift from the handle on the one side and form the base of the compressor on the other side or use the proper lift truck that is handled by trained stuff. **Never lift from the base of the motor or the motor itself.**
- Make sure you have properly secured the unit during its elevation or transport.
- The unit must be unplugged from mains supply even during small movements. After you move it, plug it again according to regulations and turn it on, following the directions described in this manual.
- The compressor is not made for use by the sea. In such a case, spray the unit with anticorrosive material. It (if used on a boat/ship) must be stored under the deck after use.

Safety Regulations

The **PARAMINA** ***Mistral*** compressor is a high pressure air-compressor and it is made according to EU directive 2006/42/EC for the safety of machinery. Noise complies with 2005/88/EC directive.

The manufacturer follows all regulations above and declares that the unit is manufactured accordingly.

Following the safety regulations, an authorized professional in site must supervise compressors that will be used as filling stations before starting their operation.

4. Installation - Operation

General Specifications 🕮

High pressure compressors are complete units for filling cylinders with compressed air at 225 bar (3200 psi) and 330 bar (4700 psi). They are mostly used for compressing breathing air for divers, fire brigades, military, paint ball applications, etc.

Mistral is a 3 staged, piston, air cooled compressor with 3 cylinders, 2 intercoolers and 1 final aftercooler, condensate separator after the second stage aftercooler, accompanied with automatic and manual drain, pressure control in all stages of compression, with pressostat and mechanical safety valve as well as one filtering stage at the final pressure (after the third stage):
The Final Filter (dehumidification) contains Molecular Sieve and air purification with Activated Carbon.

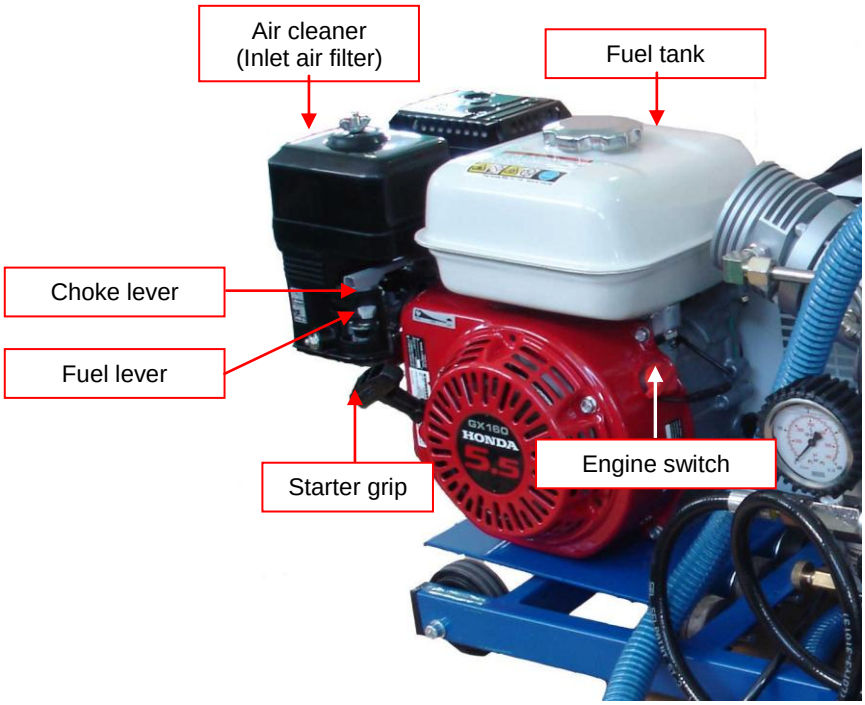
Installation - First start of the compressor 🕮

All compressors are tested and pre-adjusted by the manufacturer before they are shipped to the buyer.
They can start their operation immediately on the following conditions that are considered necessary, for safety and ease.
Anyone who will be handling the unit must read carefully all contents of this manual so as to have full knowledge of the product.

1. Choose carefully the installation place of the compressor. The place must not be burdened by unfavorable environmental conditions (toxic substances – explosives – fumes – dirt – debris etc.
2. Place the compressor in a well-ventilated area. Make sure that the intake air for the compressor is clean and cool. **Prevent the hot cooling air from recirculating to the cooling air intake.** Make sure that foreign objects cannot get into the compressor with the intake air. Make sure that the intake air does not contain any smells, fuel or fumes, explosive or inflammable gases or harmful substances.
3. Turn the compressor using the fly-pulley and make sure it turns freely. Do the same after overhaul of the unit or a long-term out of service period.
4. Check the rotation direction (follow the arrow) by pressing instantly the start-stop button. The same check should be carried out after any service or reconnection of electrical supply.
5. Before any start of the compressor, check oil level. It should be between the minimum and maximum limit.
6. The compressor should be placed in a completely horizontal position. If during operation there are vibrations, adjust the anti-vibration pads of the stand until vibrations are minimized.
7. Start the compressor by pressing the start button on the electrical box.
8. **When Main Switch is installed: After turning on the main switch, user must first press the reset button and then the start button in order to start the compressor.**
9. Stop the compressor by pressing the stop button on the electrical box when the pressure reaches the maximum or when the final stage safety valve opens. In auto-stop version the compressor stops automatically at the pre-adjusted final pressure.
10. After stopping the compressor open the manual drains (one under the separator and one under the final filter) so as to remove condensate.
11. **During every start of the compressor (in versions without auto drains), open only the drain valve of the 2nd stage. Then during the regular operation of the compressor open both 2nd and 3rd stage drain valves every 15 minutes.**

ATTENTION:
Larger oil quantity may increase pressures inside the block, cause leaks of larger oil quantity in the pneumatic air resulting in the creation of chars in the valves, burden the filters and affect their life duration, as well as the quality of breathing air.
Smaller amount of oil means inadequate lubrication affecting the life duration of the compressor.

Petrol version



Before starting…

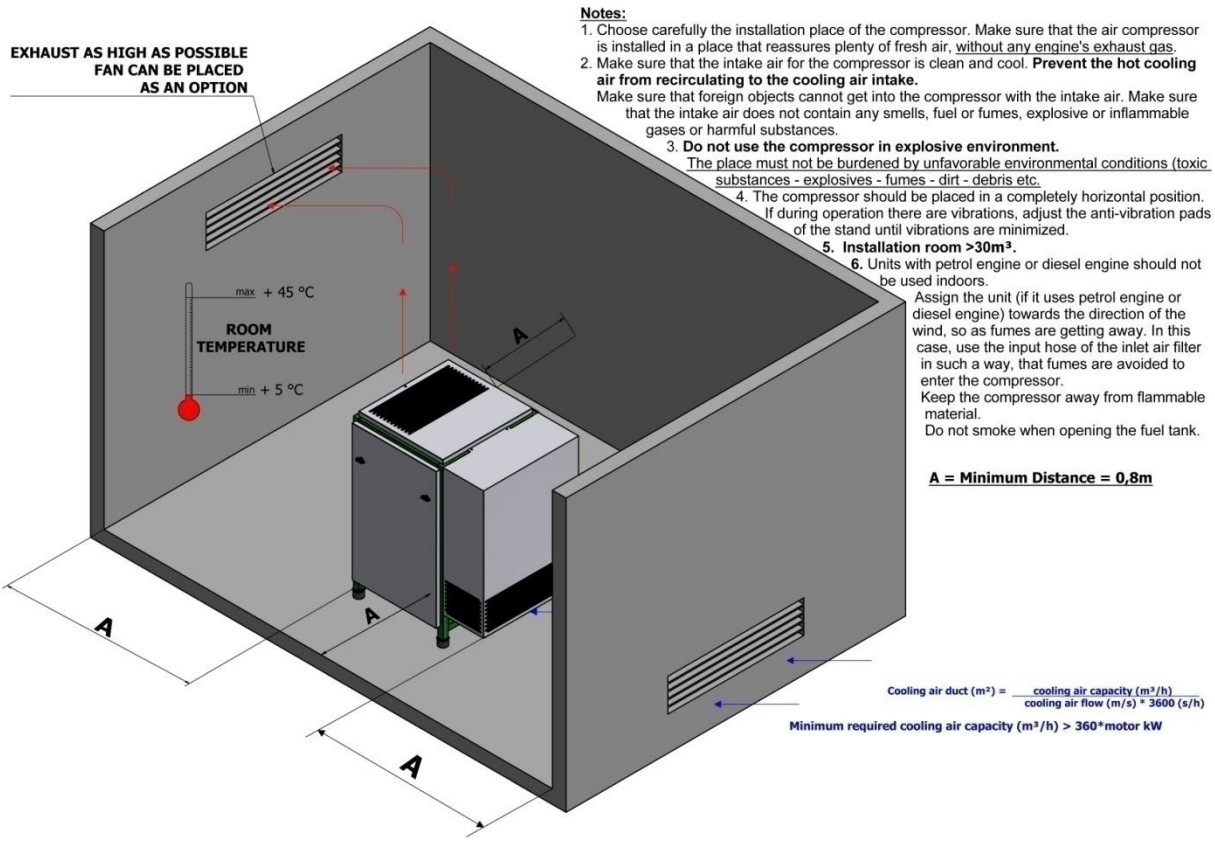
- Check the fuel level and fill if necessary.
- Check motor oil according to manufacturer's directions.
- Read engine's operating instructions manual.

So as to start…

1. Turn the engine switch to position I.
2. Open the fuel lever
3. Open the choke lever.
4. Pull the starter grip so as to start the engine.
5. After you start the engine close the choke lever.
6. Stop the compressor by turning the engine switch to position O.
7. After stopping the compressor open the manual drains (one under the separator and one under the final filter) so as to remove condensate.
8. During every start of the compressor open 2nd and 3rd stage drain valves for a less than a minute and then close them. During regular operation of the compressor open the drain valves every 15 minutes.

Ventilation 🕮

- ✓ Natural ventilation
- ✓ Forced ventilation (fan)



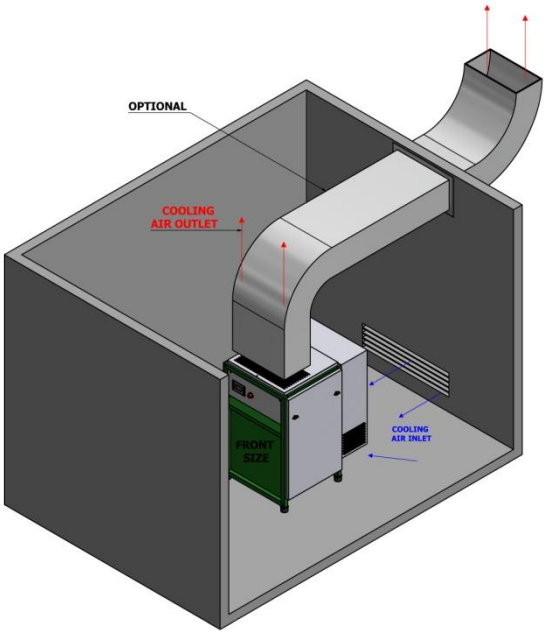
Notes:

1. Choose carefully the installation place of the compressor. Make sure that the air compressor is installed in a place that reassures plenty of fresh air, without any engine's exhaust gas.
2. Make sure that the intake air for the compressor is clean and cool. **Prevent the hot cooling air from recirculating to the cooling air intake.**
   Make sure that foreign objects cannot get into the compressor with the intake air. Make sure that the intake air does not contain any smells, fuel or fumes, explosive or inflammable gases or harmful substances.
3. **Do not use the compressor in explosive environment.**
   The place must not be burdened by unfavorable environmental conditions (toxic substances - explosives - fumes - dirt - debris etc.
4. The compressor should be placed in a completely horizontal position. If during operation there are vibrations, adjust the anti-vibration pads of the stand until vibrations are minimized.
5. **Installation room >30m³.**
6. Units with petrol engine or diesel engine should not be used indoors.
   Assign the unit (if it uses petrol engine or diesel engine) towards the direction of the wind, so as fumes are getting away. In this case, use the input hose of the inlet air filter in such a way, that fumes are avoided to enter the compressor.
   Keep the compressor away from flammable material.
   Do not smoke when opening the fuel tank.

A = Minimum Distance = 0,8m

$$\text{Cooling air duct (m²)} = \frac{\text{cooling air capacity (m³/h)}}{\text{cooling air flow (m/s) * 3600 (s/h)}}$$

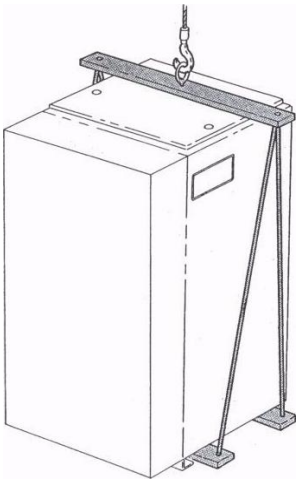
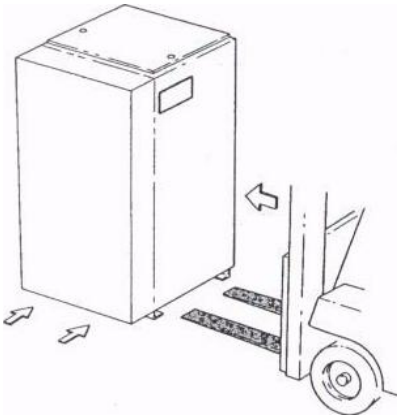
Minimum required cooling air capacity (m³/h) > 360*motor kW



Transport and Lifting ⚠

Check compressor's center of gravity.

Do not step under the load

Transport with Lifting 1. Spreader beam between lifting ropes 2. Two support beams underneath 3. **The lifting ropes must not squeeze the compressor casing!** 	**Transport with forklift truck** Exercise great caution when lifting and transporting the compressor. 

Cylinder filling procedure 🕮

Make sure that filling hoses as well as threads are in perfect condition without cracks or breaks.
Filling hose connectors should be connected on the cylinder without the use of tools. Sealing is achieved with o-ring and internal pressure.

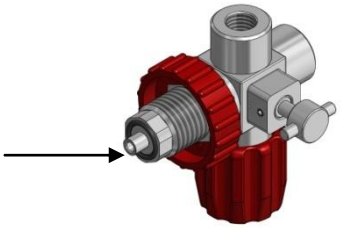
A. Filling hose connectors used for filling cylinders up to 232 bar are divided in two categories:
   - Filling Connector according to DIN 200
   - INTERNATIONAL / ''A'' Clamp Adaptor

INTERNATIONAL / ''A'' Clamp Adaptor (Only up to 232 bar)

DIN 200 filling connector (Only up to 232 bar)

B. For cylinders filling at 330 bar, only the use of filling connectors according to DIN 300 (different adaptor than the one at DIN 200 bar) is allowed.

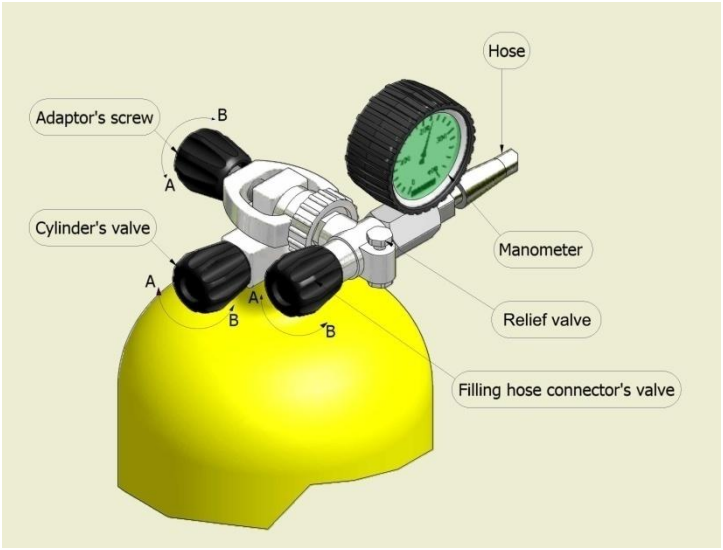
DIN 300 filling connector (ATTENTION: longer adaptor) (Up to 330 bar)



Use cylinders that correspond to the pressures produced by the compressor

Check the cylinder safety pressure (232 or 330 bar for example) so as to correspond to the preset final pressure of the compressor.

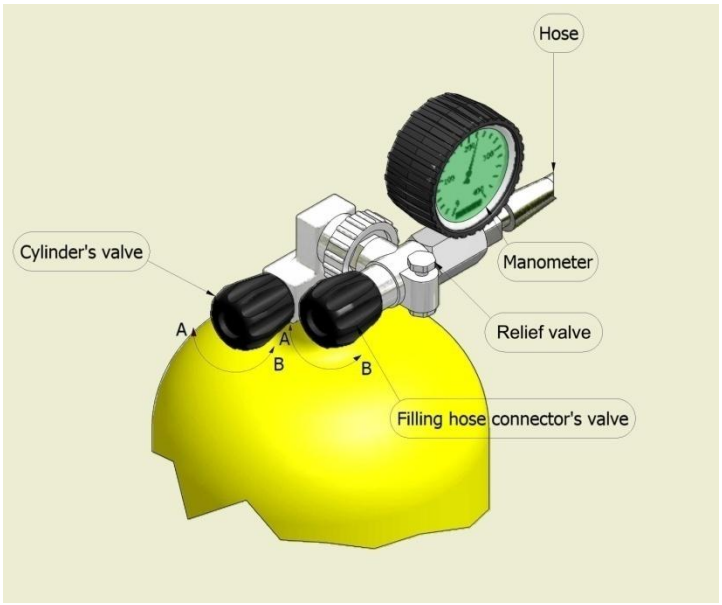
Connect the cylinder, having the filling hose connector's valve and the cylinder's valve turned off, and start the compressor by pressing the Start button.
Then, first turn on the filling hose connector's valve and then the one of the cylinder.



200bar Filling

⚠ ***All the using filling cylinders must be in accordance with international standards and directives.***
They must have the corresponding mark (symbol and technical data) at its neck and a valid hydraulic overpressure certificate test.
Cylinder valve has to be DIN200 (according to EN 144-2).

When filling is complete, first turn off the cylinder's valve and then the filling hose connector's valve and proceed to air venting using the relief valve on the connector. Finally, safely disconnect the cylinder.



300bar Filling

⚠ ***All the using filling cylinders must be in accordance with international standards and directives. They must have the corresponding mark (symbol and technical data) at its neck and a valid hydraulic overpressure certificate test. Cylinder valve has to be DIN300 (according to EN 144-2).***

During the filling procedure, cylinder's temperature will rise. Let it cool down. Pressure will slightly drop. If you wish, re-connect the cylinder with the filling hose (following the same procedure) and fill until the maximum filling pressure.

⚠ **Never open the filling hose connector valve, unless the cylinder is connected to the filling hose. Hose whipping due to pressurized air can cause serious injury!**

Condensate drainage

Each time you stop the compressor open the manual drain valves (one under the separator and one under the final filter) so as to remove condensate. **During every start of the compressor, open only the drain valve of the 2nd stage.** Then during the regular operation of the compressor open both 2nd and 3rd stage drain valves every 15 (2nd stage) & 20 (3rd – final stage) minutes.

Condensate color is milky-white. If condensate suddenly changes color or start smelling, this is indication of oil presence. Immediately check:

1. oil quality
2. oil level
3. filters' condition and especially the condition of activated carbon filter
4. air inlet filter's condition
5. piston rings and cylinders condition

Automatic drain system

✓ Optional equipment.

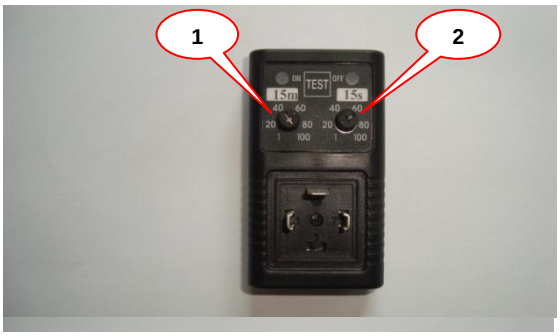
The system consists of two timer controlled condensate drains, one after the 2nd, and one after the final stage and the BA filter. The drains are controlled electronically and open automatically.

In case of emergency (damaged auto drain system), the user may use the two manual drains. During routine operation open both drain valves every 20 minutes.

Max. operating pressure:

- 2nd stage drain valve: 80 bar
- 3rd stage drain valve: 250 or 350 bar

2nd Stage



The user can adjust the interval time (2) from 0,15 - 15 sec (**proposed time 1,5sec**), and the discharge time (1) from 0,15 - 15 min (**proposed time 15 min**),

Note for 2nd Stage drain only: The numerous at internal time (2) are at a percentage of 15sec. So at internal time (2) 1,5 sec = 10(%). Respectively the numerous at discharge time (1) are at a percentage of 15min, so 15min = 100(%)

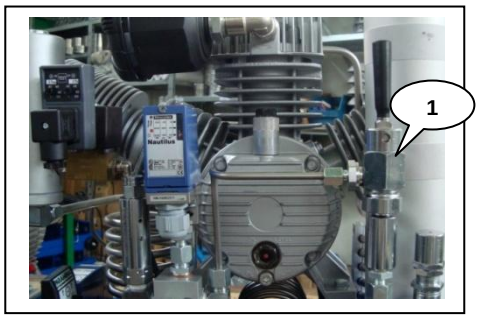
3rd Stage

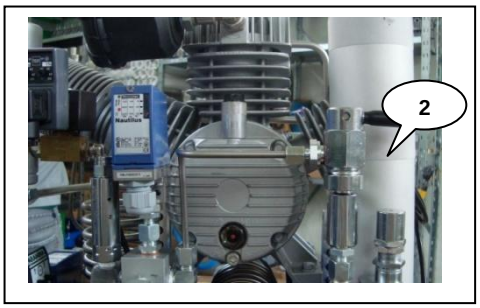
The user can adjust the interval time (2) from 0,5 - 45 min (**proposed time 20min**), and the discharge time (1) from 0,5 - 10 sec (**proposed time 2-3 sec**).

Dual pressure filling module

✓ Optional equipment.

It gives the possibility to the user to fill 200 and 300 bar cylinders alternatively. In this application, 2 filling hoses are used, one for the 200 bar filling and one for the 300 bar filling. By turning the lever valve in vertical position (1), we fill at 225 bar max. pressure and by turning the lever valve in horizontal position (2), we fill at 330 bar max. pressure.

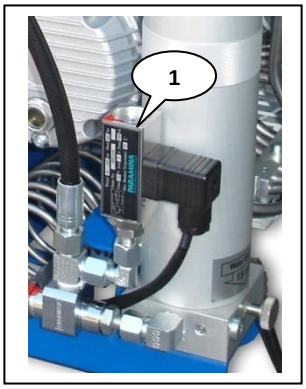




Automatic stop system

✓ Optional equipment.

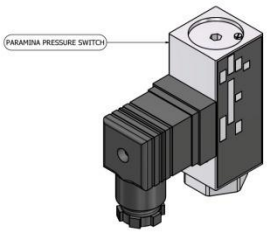
When the pressure reaches the pre-adjusted final level the compressor stops automatically through the pressure switch (1). The restart of the compressor must be done manually.
Max. operating pressure 330 bar.



Pressure switches adjustment:

Auto Stop = Pressure switch 40-400 bar

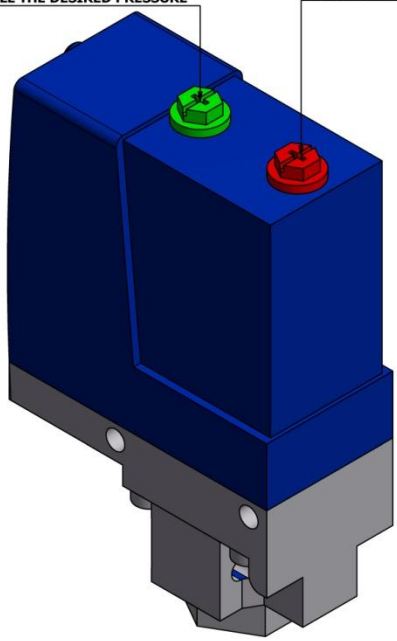
SCREW CLOCKWISE = ADJUSTABLE PRESSURE INCREASES
SCREW COUNTERCLOCKWISE = ADJUSTABLE PRESSURE DECREASES



Auto Start / Stop = Pressure switch 30-500b dual

AUTOMATIC RESTART ADJUSTMENT
1st: ADJUST THE AUTOMATIC STOP AT THE DESIRABLE PRESSURE WITH THE RED SCREW
2nd: ENTIRELY UNSCREWED THE GREEN SCREW (COUNTERCLOCKWISE = PRESSURE DECREASES)
3rd: START SCREWING (CLOCKWISE PRESSURE INCREASES) THE GREEN SCREW TILL THE DESIRED PRESSURE

AUTOMATIC STOP ADJUSTMENT
SCREW CLOCKWISE = ADJUSTABLE PRESSURE INCREASES
SCREW COUNTERCLOCKWISE = ADJUSTABLE PRESSURE DECREASES



5. Maintenance 🕮

Compressor's long period storage

In case the compressor is intended to stay out of operation for more than three months, special procedure should be followed for the storage as well as for its re-operation:

- ✓ Make sure it is stored in a closed, dry, dust-free place.
- ✓ Run the compressor at normal pressure for 10-15 minutes.
- ✓ Check filters, hose connections and safety valves for leaks.
- ✓ Tighten all connections, if necessary.
- ✓ Open manual drain valves and run the compressor without pressure for 5 minutes.
- ✓ Stop the compressor, drain well and shut all valves.
- ✓ Open filters and put special grease used in the food industry or vaseline on all threads. Filter elements should normally be in their place.
- ✓ Let the compressor cool down.
- ✓ Start the compressor and spray some compressor oil (5-6 c.c.) in the suction while in operation.
- ✓ Do not let the compressor heat up, stop its operation.
- ✓ Close all valves.
- ✓ Wrap the inlet air filter with nylon.
- ✓ Cover the compressor with a plastic cover to keep the dust out.

⚠

- Units and motors should always be stored in a dry, vibration - free and dust - free environment.
- Unprotected machined surfaces (shaft – ends and flanges) should be treated with an anti – corrosive.
- It is recommended that units and motors shafts are periodically rotated by hand to prevent grease migration.
- Anti – condensation heaters are recommended to avoid water condensation in the motor and should preferably be energized.

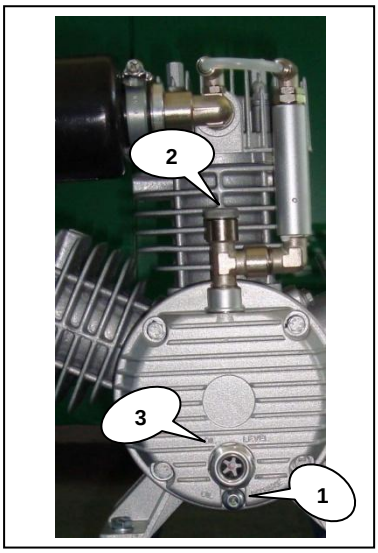
Re-Operation of the compressor after a long period of storage

- ✓ Remove the nylon and place a new inlet air filter.
- ✓ Follow the procedure related to the first start of the unit.
- ✓ Run the compressor functioning at normal pressure for 5-10 minutes.
- ✓ Change the oil.
- ✓ Place new coalescing filter cartridge, Active Carbon-Molecular Sieve cartridge.

Oil change

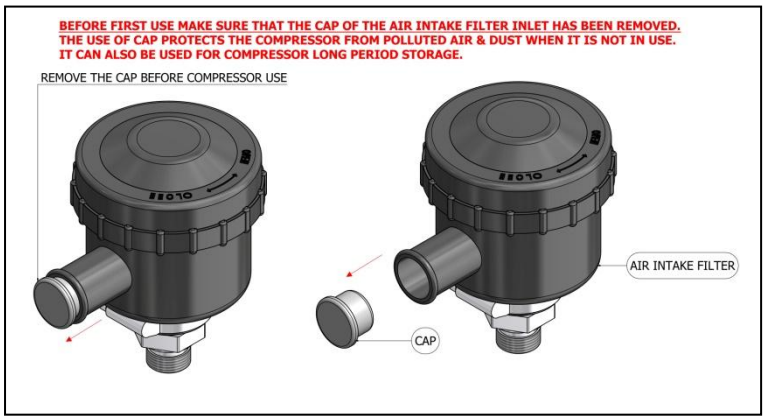
Change the oil after the first 20 operating hours and then every 500 hours. **Always check the oil level through the oil sight glass (3) before every start of the compressor. The level should always be at the top of the sight glass. While the compressor is operating the level should be between the minimum and the maximum of the sight glass (red mark).**

Oil change procedure: Unscrew the drain valve (1) with an allen key nr. 5 and then empty the oil vessel. Screw the drain valve again. Unscrew (may need allen key nr. 8) the plug (2) and pour new oil **(400ml for M6 models - 500ml for M8 models)** inside the compressor block till the upper part of the oil sight glass. Screw the plug again and start the compressor.

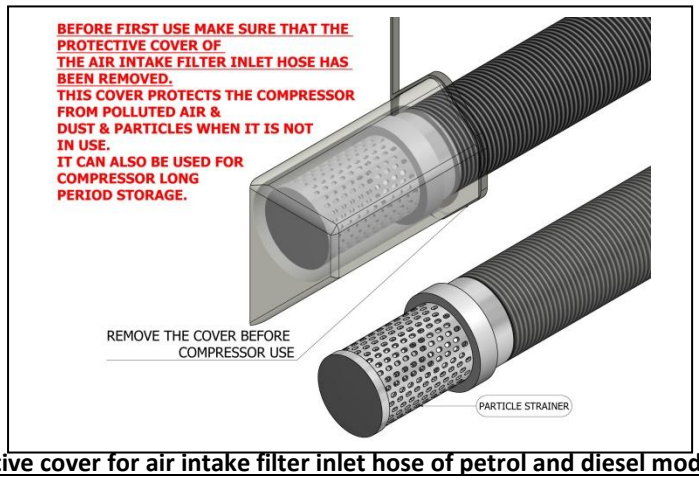


Intake air filter

Replace the intake air filter cartridge every 200 hours or once per year. According to the environment it is recommended to change the air filter element at the end of season.
Air intake cartridge – p.n.: 109460302

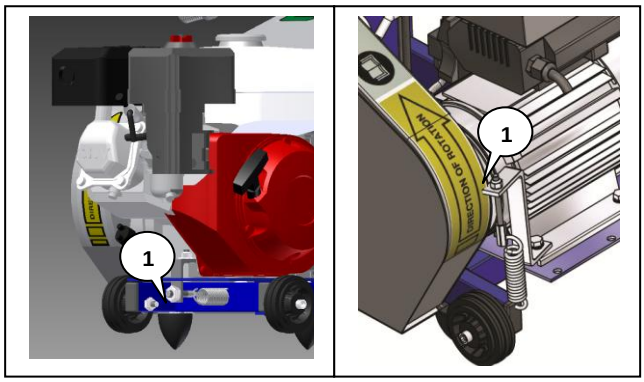


Protective cap for air intake filter of electric models.

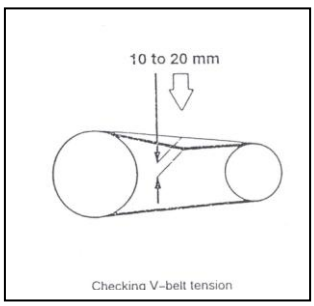


Protective cover for air intake filter inlet hose of petrol and diesel models.

Belt adjustment



1. Check tension of belts after the first 20 hours of operation and then every 100 hours. Pressing in the center of the belt's length applying 5 Kg of force, it should not give way more than 20 mm.
2. In order to adjust the belts: Screw the bolt (1) so as to adjust the spring until the belt reaches proper tension as per drawing above.



OR

Automatic belt tensioning system

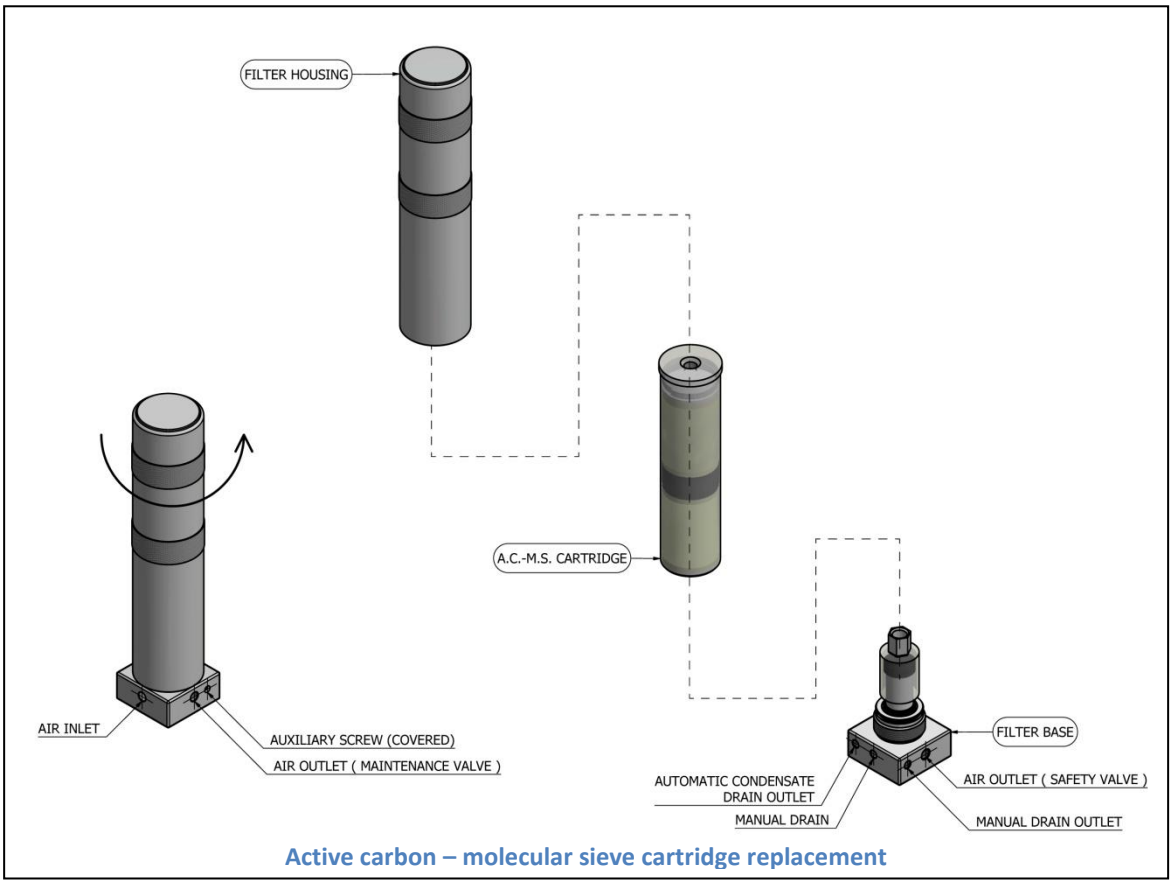
Replacement of active carbon - molecular sieve cartridge / coalescing cartridge

PARAMINA compressors operate at environmental temperatures from -5 ^{0}C to +45 ^{0}C. Higher temperatures could cause changes in the quality of breathing air; lower temperatures may cause a malfunction.

CAUTION: Before any interference in the filter's housing, make sure there is not inside air under pressure.
Maintenance work on the compressor must always be done with the compressor stopped and disconnected from the mains supply.

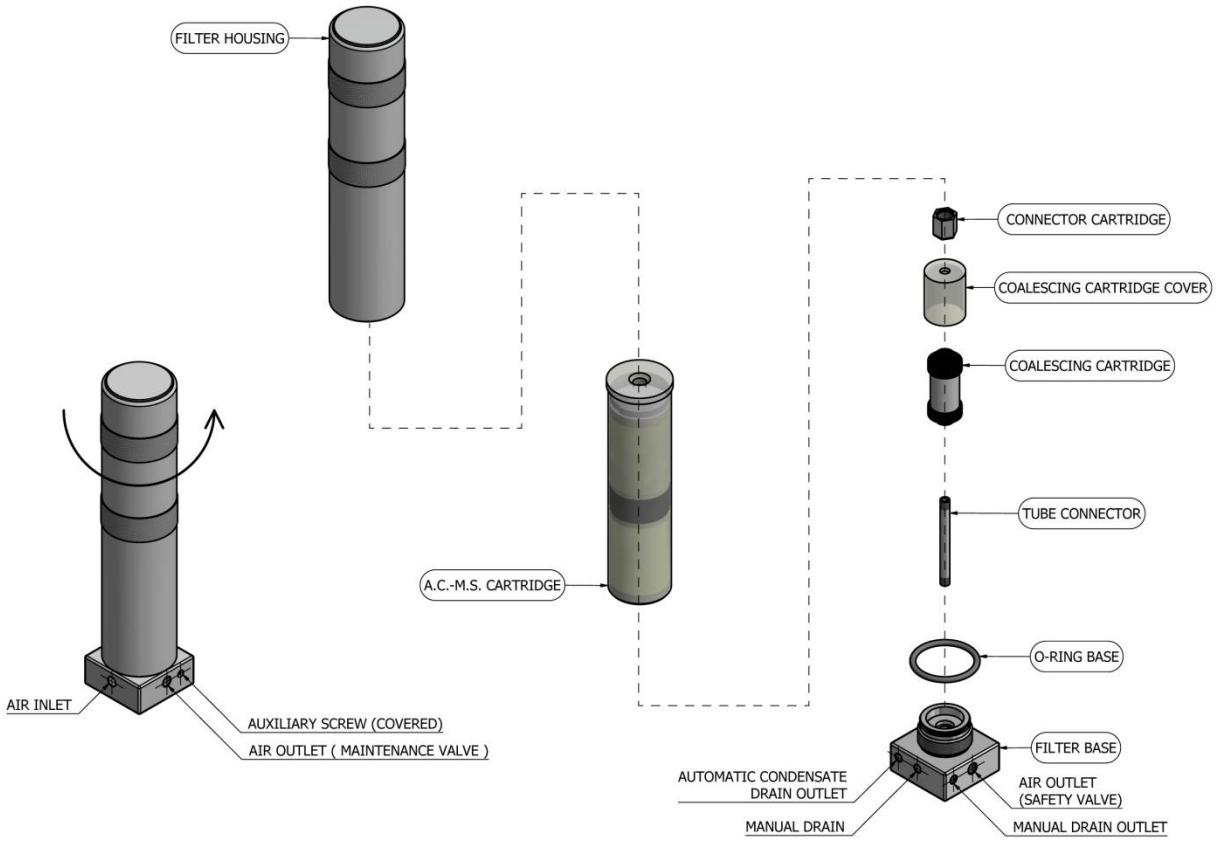
Filter's housing lifetime is 20 years. Hydraulic Overpressure test, every 5 years.

Option 1 (standard equipment till s.n.1882866 - Ø80x345 BA Filter):



Active carbon – molecular sieve cartridge replacement

1. Unscrew the filter housing by hand and remove it from its base.
2. Unscrew the A.C.-M.S. cartridge from the cartridge connector. **Place and hold a wrench on the cartridge connector while unscrewing the cartridge.**
3. Lay a small amount of silicone grease on the o-ring of the filter's base. If there is a trace of damage on the o-ring, replace.
4. Remove the new A.C.-M.S. cartridge from its protective case. If the packaging is damaged or punctured do not use it.
5. Lay a small amount of silicone grease on the o-ring of the new A.C.-M.S. cartridge.
6. Screw the new cartridge on the cartridge connector.
7. Clean the inside of the filter housing with a clean cloth.
8. Screw the filter housing carefully until securely fastened onto the base.



Active carbon – molecular sieve & coalescing cartridge replacement

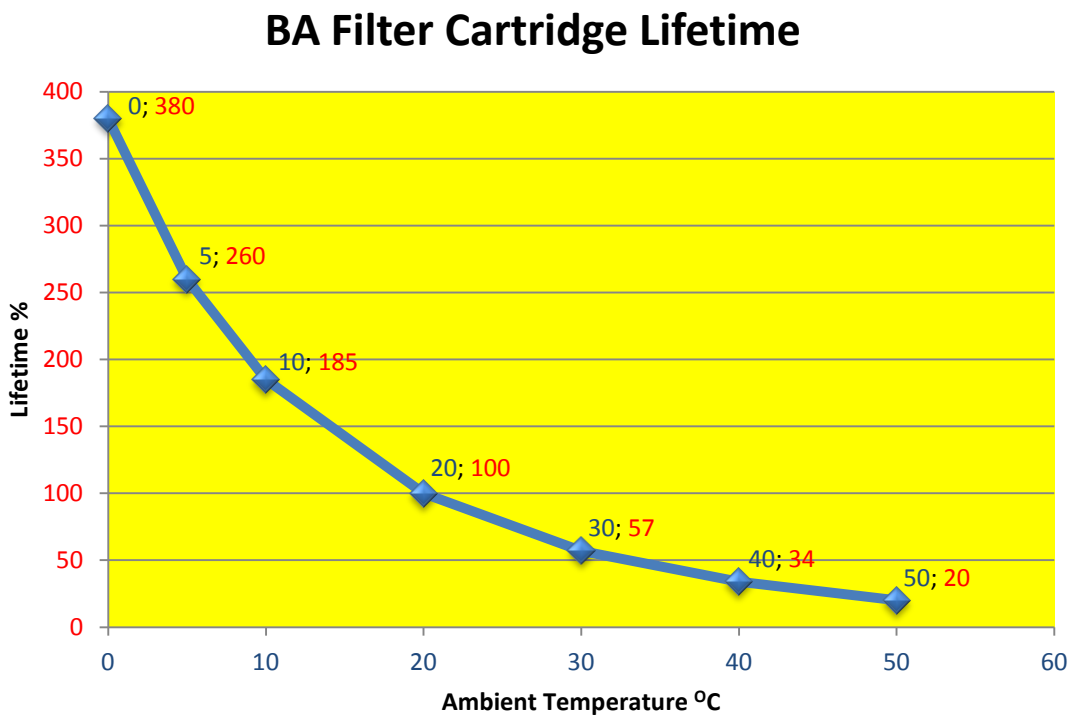
1. Unscrew the filter housing by hand and remove it from its base.
2. Unscrew the A.C.-M.S. cartridge along with its connector (cartridge connector) from the tube connector.
3. Remove the coalescing cartridge & cover from the filter's base by pulling upwards.
4. Lay a small amount of silicone grease on the o-ring of the filter's base. If there is a trace of damage on the o-ring, replace.
5. Install the new coalescing cartridge & cover on filter's base by fastening it down with your hand.
6. Wrap a small amount of Teflon around the thread of the tube connector.
7. Screw the cartridge connector on the tube connector (on top of the coalescing cartridge).
9. Remove the new A.C.-M.S. cartridge from its protective case. If the packaging is damaged or punctured do not use it.
8. Lay a small amount of silicone grease on the o-ring of the new A.C.-M.S. cartridge.
9. Screw the new cartridge on the cartridge connector.
10. Clean the inside of the filter housing with a clean cloth.
11. Screw the filter housing carefully until securely fastened onto the base.

⚠ **Do not screw really tight, while screwing cartridges or connectors inside filter's housing.**

BA Filter's part numbers

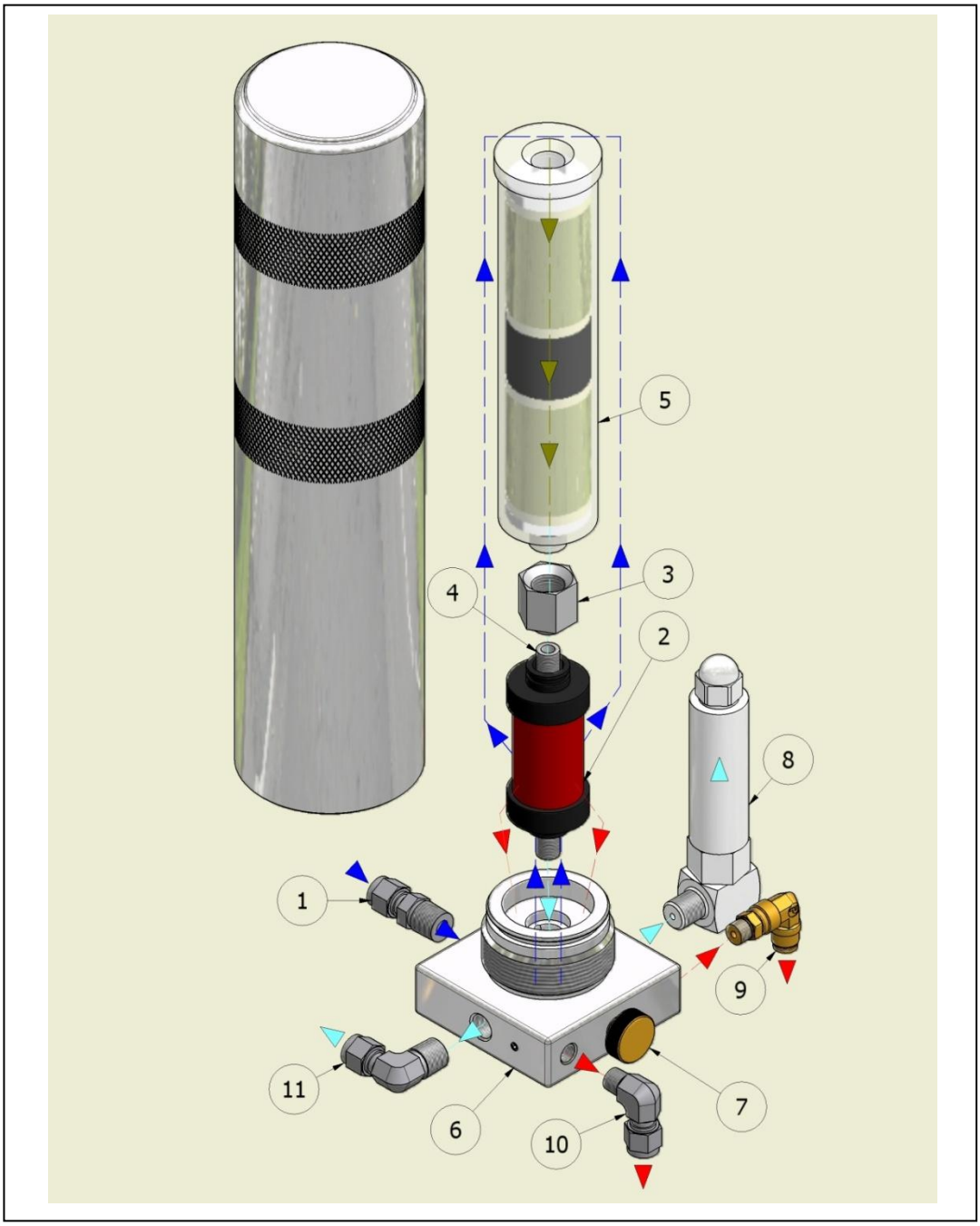
Part Nr.	Description	Qty
208000012	Filter housing	1
208000002	Filter base	1
208000032	Connector cartridge	1
137000040 137000090	AC/MS cartridge (active carbon/molecular sieve) AC/MS/HP cartridge (active carbon/molecular sieve/hopcalite)	1
306049631	Coalescing cartridge	1
137800000	Coalescing cartridge Cover	1
208000072	Tube connector	1
127126942	O-ring base	1
190000080	Manual drain complete with seat	1
190008112	Manual drain's seat	1

BA Cartridge lifetime



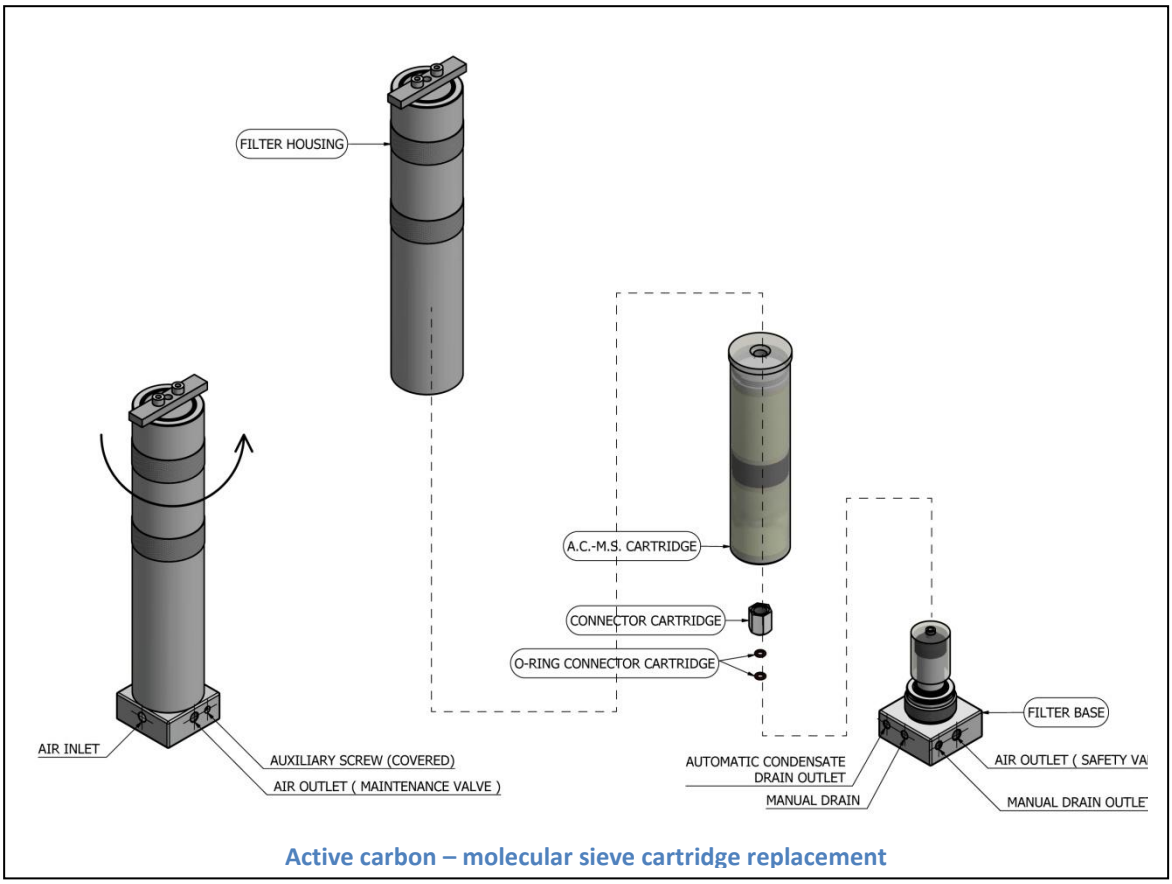
BA cartridge lifetime may change as humidity & temperature levels change. In summer a reduction in service hours is recommended, see above chart for examples relative to temperature.

Air Flow Diagram



Item	Description
1	Air inlet
2	Coalescing cartridge
3	Connector
4	Tube connector
5	Purifier 1 Φ42x180 (AC/MS) or Purifier 4 Φ42x180 (AC/MS/HP)
6	Filter base
7	Manual drain
8	Safety valve
9	Manual drain outlet
10	Auto drain outlet
11	Air outlet

Option 2 (standard equipment from s.n.1882867 – Ø78x375 BA Filter):

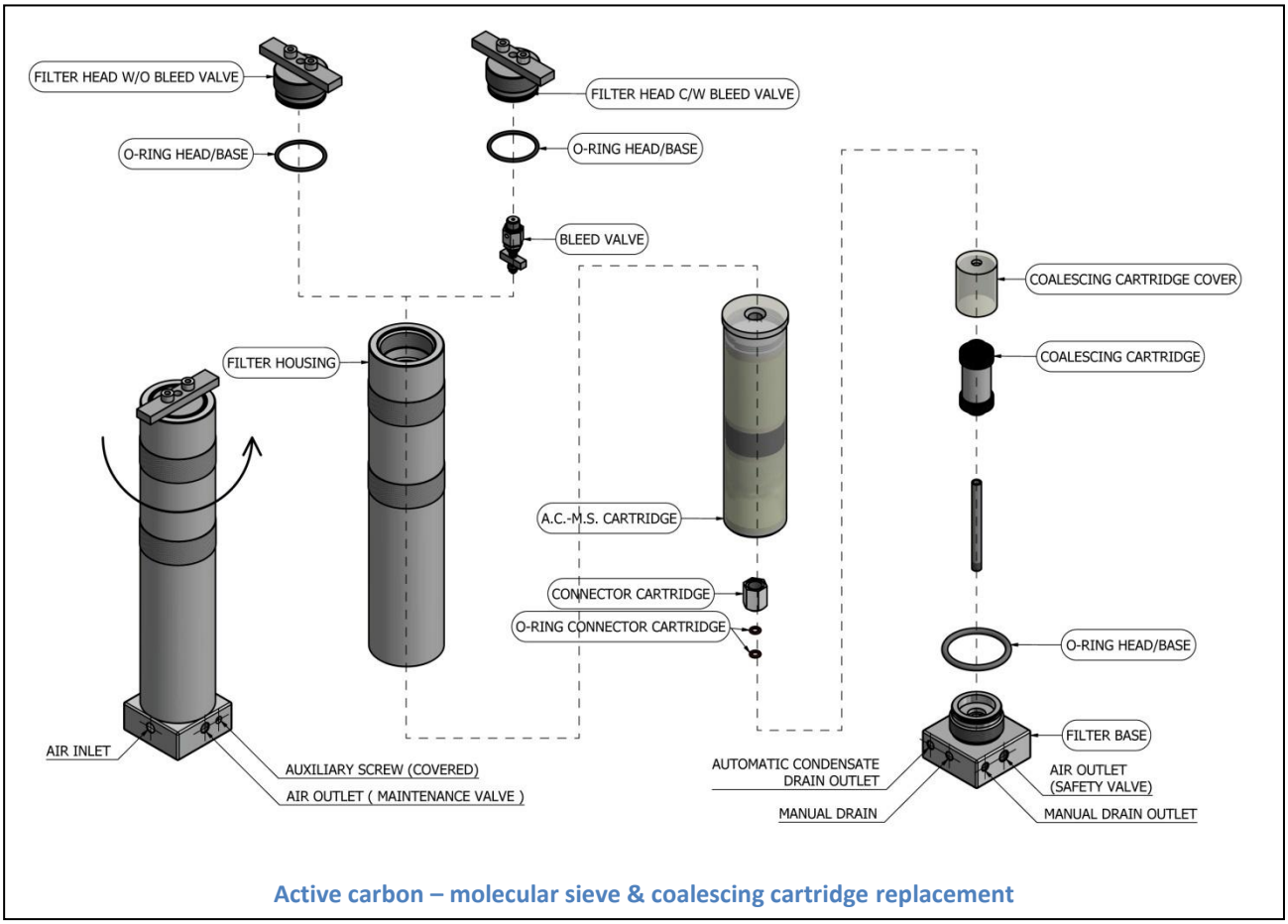


Active carbon – molecular sieve cartridge replacement

1. Unscrew filter's housing together with head counter clockwise.
2. Remove the filter's housing together with head.
3. Remove the A.C.-M.S. cartridge**.** Before throwing away the used cartridge, do not forget to remove the cartridge connector.
4. Clean the inside of the filter housing with a clean cloth.
5. Remove the new A.C.-M.S. cartridge from their protective case. Be sure that packaging is not punctured. If it is damaged do not use it.
6. Lay a small amount of silicone grease on the o-ring of the new A.C.-M.S. cartridge.
7. Replace the two o-rings of the cartridge connector, lay a small amount of silicone grease on the new o-rings and then screw the connector on the new A.C.-M.S. cartridge.
8. Place the new A.C.-M.S. cartridge in the filter housing and fasten it down by hand on the coalescing connector.
9. Screw the filter housing carefully by hand with light pressure until it fits evenly to the filter housing.

⚠ **Do not screw really tight, while screwing cartridges or connectors inside filter's housing.**

⚠ **FILTER HEAD & FILTER HOUSING SHOULD BE ADJOINED ON TOP WHEN REINSTALLING.**



Active carbon – molecular sieve & coalescing cartridge replacement

1. Unscrew the filter head together with the filter housing counter clockwise.
2. Remove the filter head together with the filter housing from filter's base.
3. Remove the A.C.-M.S. cartridge by pulling upwards**.** Before throwing away the used cartridge, do not forget to remove the cartridge connector.
4. Remove the coalescing cartridge & cover by pulling upwards.
5. Lay a small amount of silicone grease on the o-rings of filter's base. If there is a trace of damage on the o-rings, replace.
6. Install the new coalescing cartridge & cover on filter's base by fastening it down with your hand.
7. Wrap a small amount of Teflon around the thread of the tube connector.
8. Clean the inside of the filter housing with a clean cloth.
9. Remove the new A.C.-M.S. cartridge from their protective case. Be sure that packaging is not punctured. If it is damaged do not use it.
10. Lay a small amount of silicone grease on the o-ring of the new A.C.-M.S. cartridge.
11. Replace the two o-rings of the cartridge connector, lay a small amount of silicone grease on the new o-rings and then screw the connector on the new A.C.-M.S. cartridge.
12. Place the new A.C.-M.S. cartridge in the filter housing and fasten it down by hand on the tube connector (see also drawing nr. B).
13. Lay a small amount of silicone grease on the o-rings of the filter head. If there is a trace of damage on the o-rings, replace.
14. Screw the filter housing together with the head carefully by hand with light pressure back on its base.

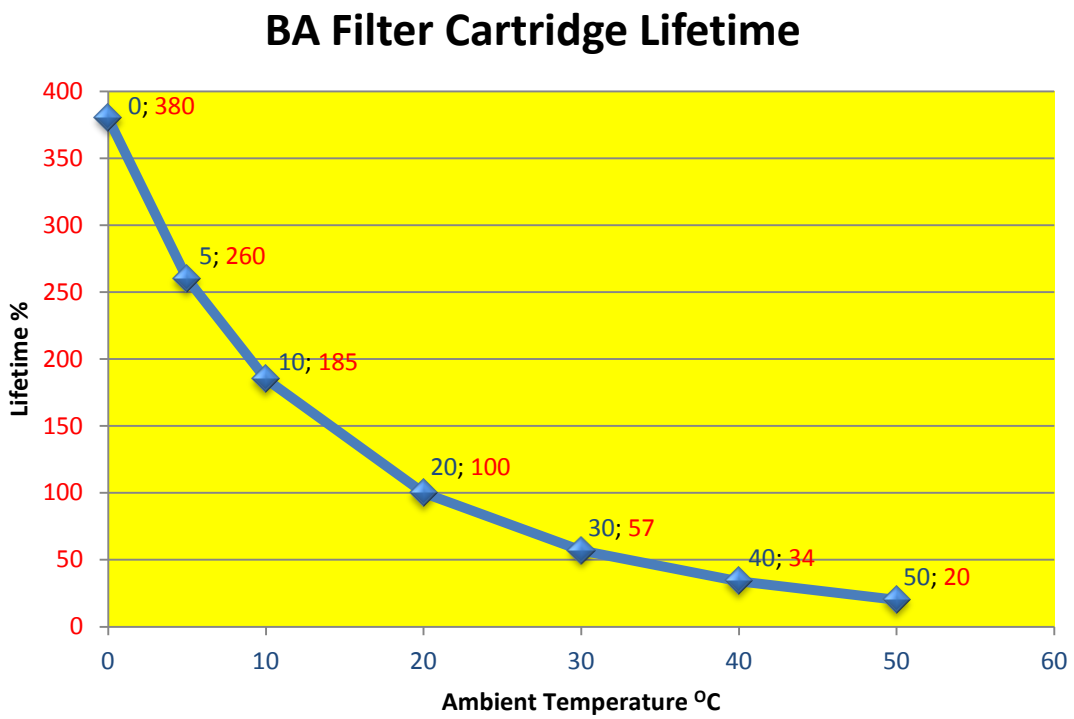
⚠ **Do not screw really tight, while screwing cartridges or connectors inside filter's housing.**

⚠ **FILTER HEAD & FILTER HOUSING SHOULD BE ADJOINED ON TOP WHEN REINSTALLING.**

BA Filter's part numbers

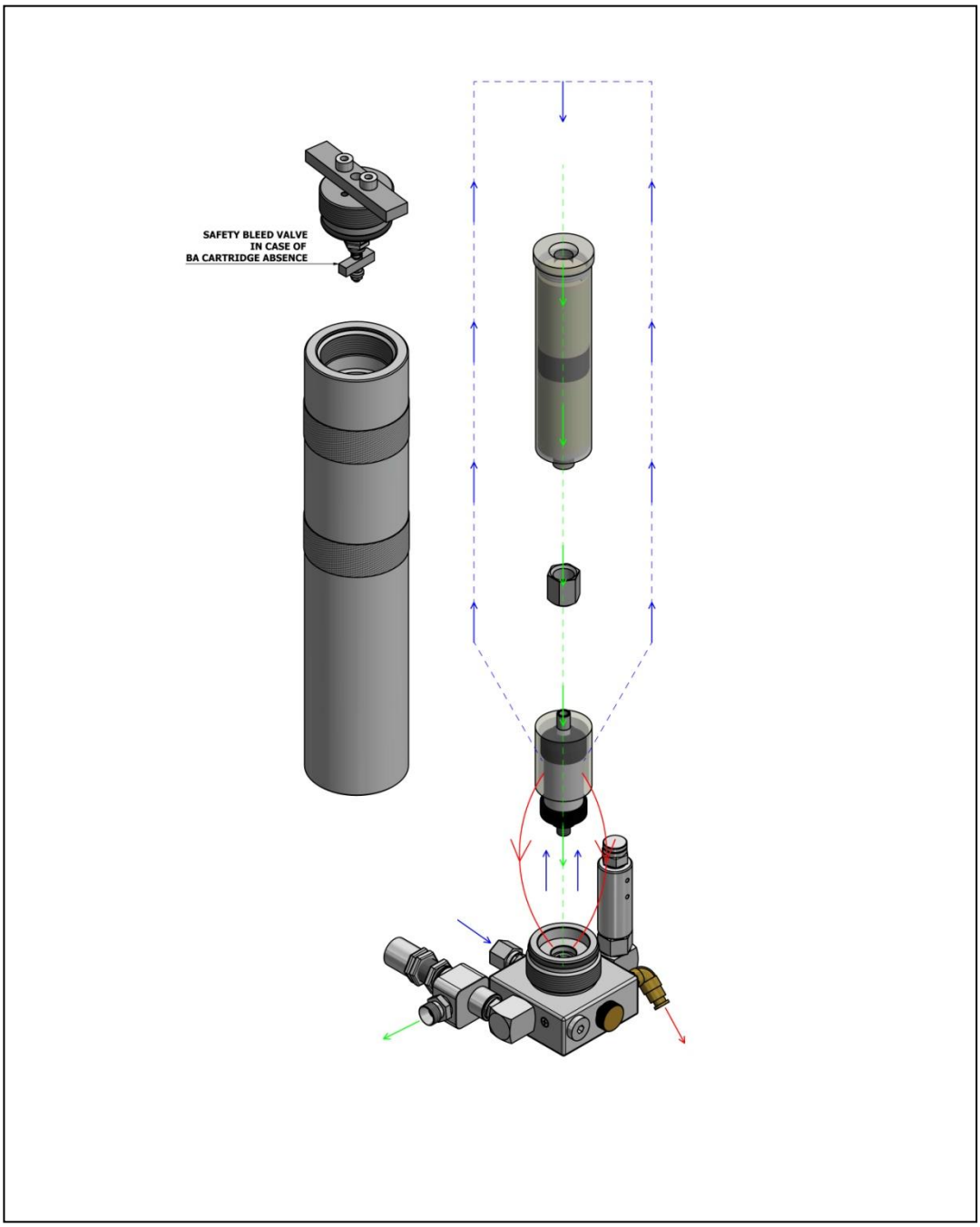
Part Nr.	Description	Qty
208000013	Filter housing	1
208000003	Filter head	1
208000004	Filter head c/w bleed valve	
208000082	Bleed valve	1
208000002	Filter base	1
208000033	Connector cartridge	1
127505802	O-ring Connector cartridge	2
133000092	Handle	1
137000040	AC/MS cartridge (active carbon/molecular sieve)	1
137000090	AC/MS/HP cartridge (active carbon/molecular sieve/hopcalite)	
306049631	Coalescing cartridge	1
137800000	Coalescing cartridge Cover	1
208000071	Tube connector	1
127126942	O-ring head & base	2
190000080	Manual drain complete with seat	1
190008112	Manual drain's seat	1

BA Cartridge lifetime



BA cartridge lifetime may change as humidity & temperature levels change. In summer a reduction in service hours is recommended, see above chart for examples relative to temperature.

Air Flow Diagram



General Service Instructions 🕮

- **CAUTION: Before any maintenance on the compressor, make sure there is not air inside, under pressure. Every time you stop the compressor, ALWAYS open the manual drains so as to remove condensate.**
- **Maintenance must always be done with the compressor stopped and disconnected from the mains supply.**

Maintenance

	Operating hours							
	Every 20 hrs	**Every 100 hrs**	**Every 200 hrs**	**Every 500 hrs**	**Every 1000 hrs**	**Every 2000 hrs**	**Every 6 mths**	**Every 12 mths**
Check V - Belt tension	1st	X						
Check oil level [1] & Condensate drain system	Daily							
Change of oil [2]	1st			X			X	
Replace air intake cartridge [3]			X					X
Replace the BA filter cartridge [2]	X [4]						X	
Replace coalescing cartridge [3]			X					X
Replace the Sintered Filter Sponge -Oil Vapour Exhaust →item 70a of page 40-41					X			
Check Valves				X				
Replace Valves					X			
Replace pistons and piston rings					X			
Sintered Filter (Interstage & Final stage Separator – see drawing at page 48) [6]				X clean	X replace			
Service Kit 1000hrs [5] **(p.n.190960000)**					X			
Service Kit 2000hrs [5] **(p.n.190960100)**						X		
Replace filling hoses						X		Once per 5 years

ATTENTION

1. Check every day the oil level and the general condition of the compressor. Check all connections for leakage.

2. After 6 months, you have to replace the oil & BA filter cartridge, whether they have completed the required operating hours or not. If the compressor is out of operation, you must also replace the oil before the winter season begins.

- ✓ The proper quantity of oil, when you replace it, is **400ml for M6 models and 500 ml for M8 models. Be careful to empty the total quantity of used oil, otherwise the maximum oil indicator would be exceeded.**
- ✓ Never mix different types of oil.
- ✓ The compressor unit is delivered filled with **PARAMINA HPS OIL p.n.112001000** (Synthetic oil).

3. After 12 months, you have to replace coalescing cartridge and the air intake cartridge whether it has completed the required operating hours or not.

4. Measured @ 20°C ambient temperature.

5. Service Kits, o-rings & Teflon may need to be replaced at undefined periods according to several factors.

6. **Concerns only compressors equipped with separators part numbers 208501600, 208501610, 208501620 & 208704200.**

Tightening Torque Values

The tables' shows torques values for screw, bolts and fitting in general, please observe the PARAMINA 'Assembly Methodology' for the parts with the specific tightening torque, the parts with special tightening torque is marked with the proper value in PARAMINA 'Assembly Methodology'.
Damaged or dirty male or female treads can be destroy or cracking the parts.

Screw and bolts tightening torque values.

Tread	Maximum torque Nm
M6	10
M8	25
M10	46
M12	77
M14	113

BSPP fittings torque values.

Tread	Maximum torque Nm
1/8	9
1/4	35
3/8	45
1/2	65

Tapered Thread Port Assembly

The proper method of assembling tapered threaded connectors is to assemble them fingered tight and then wrench tighten further to the specified number of turns from fingered tight (T.F.F.T.) given in Table.
Apply sealant/lubricant to male pipe threads, If PTFE tape is used it should be wrapped 1-1/2 to 2 turns in clockwise direction when viewed from the pipe thread end.
Caution: big amount of tape may cause distortion or cracking of the port.
The total number of tapered threads engaged should be between 3-1/2 and 6.

BSPT	NPTF	**T.F.F.T.**
1/8-28	1/8-27	2 - 3
1/4-19	1/4-18	2 - 3
3/8-19	3/8-18	2 - 3
1/2-14	1/2-14	2 - 3

Pipe connections (swivel nuts) should be fingered tight (T.F.F.T.) plus an additional ½-1 turn.
Note: A second wrench may be required to prevent the fitting from moving during assembly.

General:

- *Always use new sealing ring – washer in reassembling works.*
- *Dirty male or female treads can destroy or crack the parts.*
- *Sealant/Lubricants assist in sealing and provide lubrication during assembly, reducing the potential for galling. Pipe thread sealants are available in various forms such as dry pre-applied, tape, paste and anaerobic liquid.*
- *We recommend observing the instructions for each block 'Assembly Methodology'.*

Trouble Shooting 🕮

CAUTION

Before any maintenance work on the compressor, make sure there is not air inside, under pressure.

Every time you stop the compressor, ALWAYS open the manual drains so as to remove condensate.

Maintenance work on the compressor must always be done with the compressor stopped and disconnected from the mains supply. Never forget to open the manual drains, after stopping the compressor.

Especially when you are planning to clean the solenoid valves (auto drains version), always turn off the main electrical supply.

You must always have in mind, if you disconnect the coil of the solenoid valves, without turning off the electrical supply, it will be destroyed immediately!!!

Trouble	Cause	*Remedy*
Motor does not start	Electric circuitry faulty	Check power supply fuses or/and compressor fuses, terminal connections, wire leads.
	Thermal switch enabled	
Decreased performance of the compressor	**1**.Blocked air intake filter	**1**.Clean - Replace
	2.1st stage, 2nd stage or 3rd stage valves, are not properly closed	**2**.Check the intermediate pressures
	3.1st stage, 2nd stage or 3rd stage Piston rings worn	**3**.Replace
	4.Worn cylinders	**4**.Replace
	5.Pipes leaking	**5**.Tighten and reseal
	6.Solenoid valves stuck open	**6.**Clean - Replace
	7.Unstable power supply - voltage	**7.** Check power supply fuse box
	8.Wrong cable diameter or long cable	**8.**Check - Replace
	9.Interstage safety valves leaking	**9.**Check - Replace
Compressor does not attain final pressure	**1**.Condensate drain Valve and / or fittings leaking	**1**.Tighten and reseal
	2.Premature opening of final safety valve	**2**.Clean final safety valve and readjust
	3. Excessive piston clearance	**3**. Replace and regulate again
	4. Final Safety valve's safety lock opens prematurely	**4**. Check the intermediate pressures, regulate or replace valves
	5.Interstage safety valves leaking	**5.**Check - Replace
	6.Final stage piston rings worn	**9.**Check - Replace
Interstage Safety valves releasing	**1**.If the 1st stage safety valve is released, the 2nd stage valves do not close properly	**1**.Check – replace valves

pressure	**2**.If the 2nd stage safety valve is released, the 3rd stage valves do not close properly	**2**.Check – replace valves
	3. 2nd or 3rd stage piston stuck	**3**.Replace
	4. Blocked Sintered Filter of 2nd stage separator (when 1st stage safety valve opens)*	**4.**Clean or Replace
	5. Blocked Sintered Filter of 3rd – final stage separator (when 2nd stage safety valve opens)*	**5.**Clean or Replace
Compressor runs too hot	**1**.Insufficient supply of fresh cooling air	**1**. Check location. Max Ambient temperature under 40 ºC
	2.Intake or outlet valves are not closing properly	**2**.Check and clean valves, Replace if necessary
	3.Wrong direction of rotation	**3**.See arrow on the compressor and remedy accordingly
	4.Low oil level	**4**.Check oil level
Oil residue/Oil smell in delivered air	**1**.Improper maintenance of final filter	**1**.Service filter - Renew BA cartridge
	2.Wrong type of oil	**2**.Use right type of oil
	3.Activated carbon saturated	**3**.Renew BA cartridge
	4.1st, 2nd, or 3rd stage piston rings worn	**4**. Check - Replace
	5. Worn Cylinders	**5**. Check - Replace

*** Concerns only compressors equipped with separators part numbers 208501600, 208501610, 208501620 & 208704200.**

Maintenance Calendar 🕮

Operating Hours									
	Check V - Belt tension								
		Change oil							
			Change Air Filter						
				Change Coalescing pre-filter					
					Change BA filter				
						Check Valves			
							Pistons and piston rings		
								Date	
									Sign

Every Day Check: the general condition of the compressor**,** Oil Level, all connections for leakage, for unconventional operation, the auto drains and the color of condensates

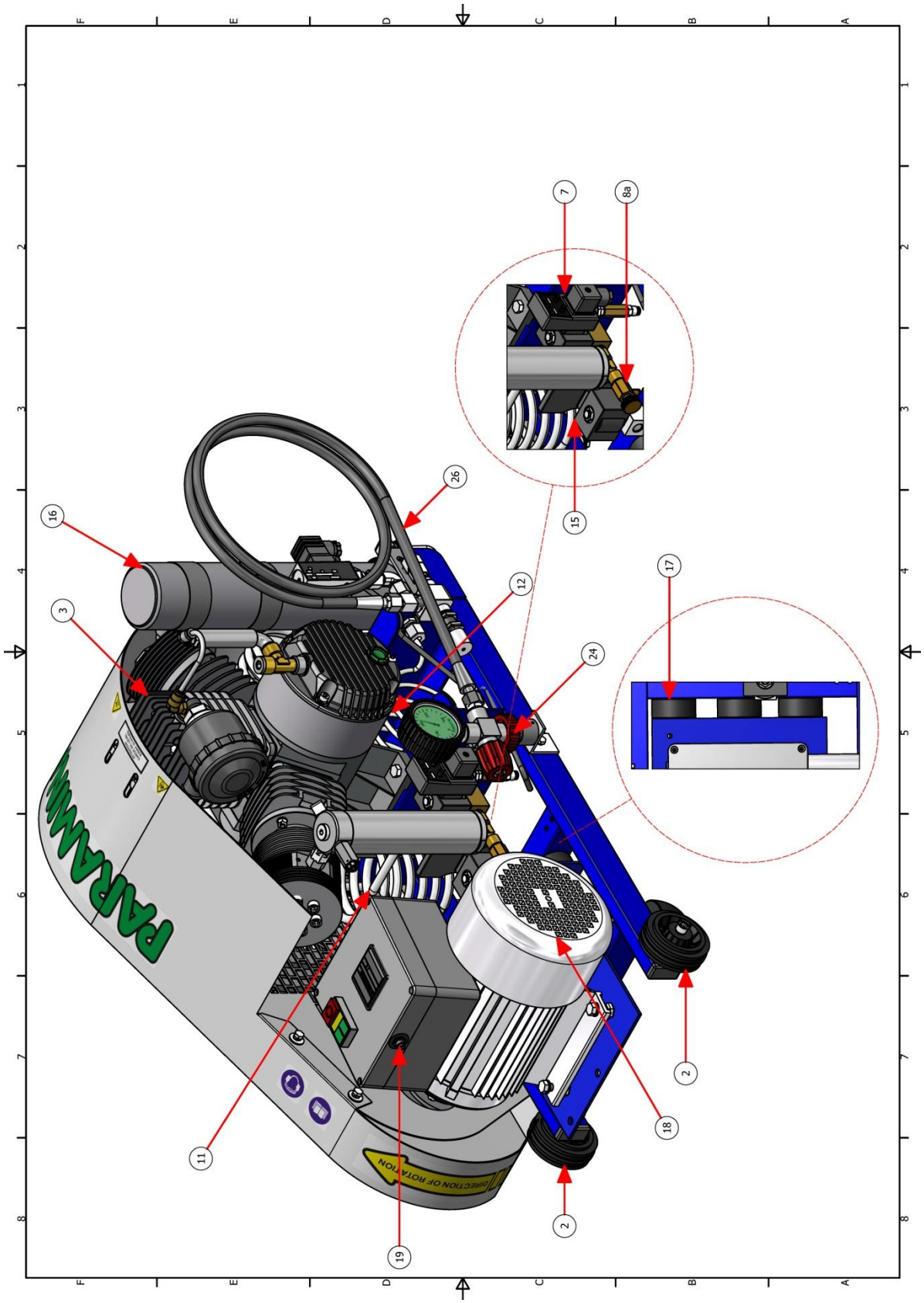
1. **We recommend you to calibrate compressors manometers each year or according to:**
   a. **Compressor's yearly operation hours.**
   b. **The application in which compressor operates.**

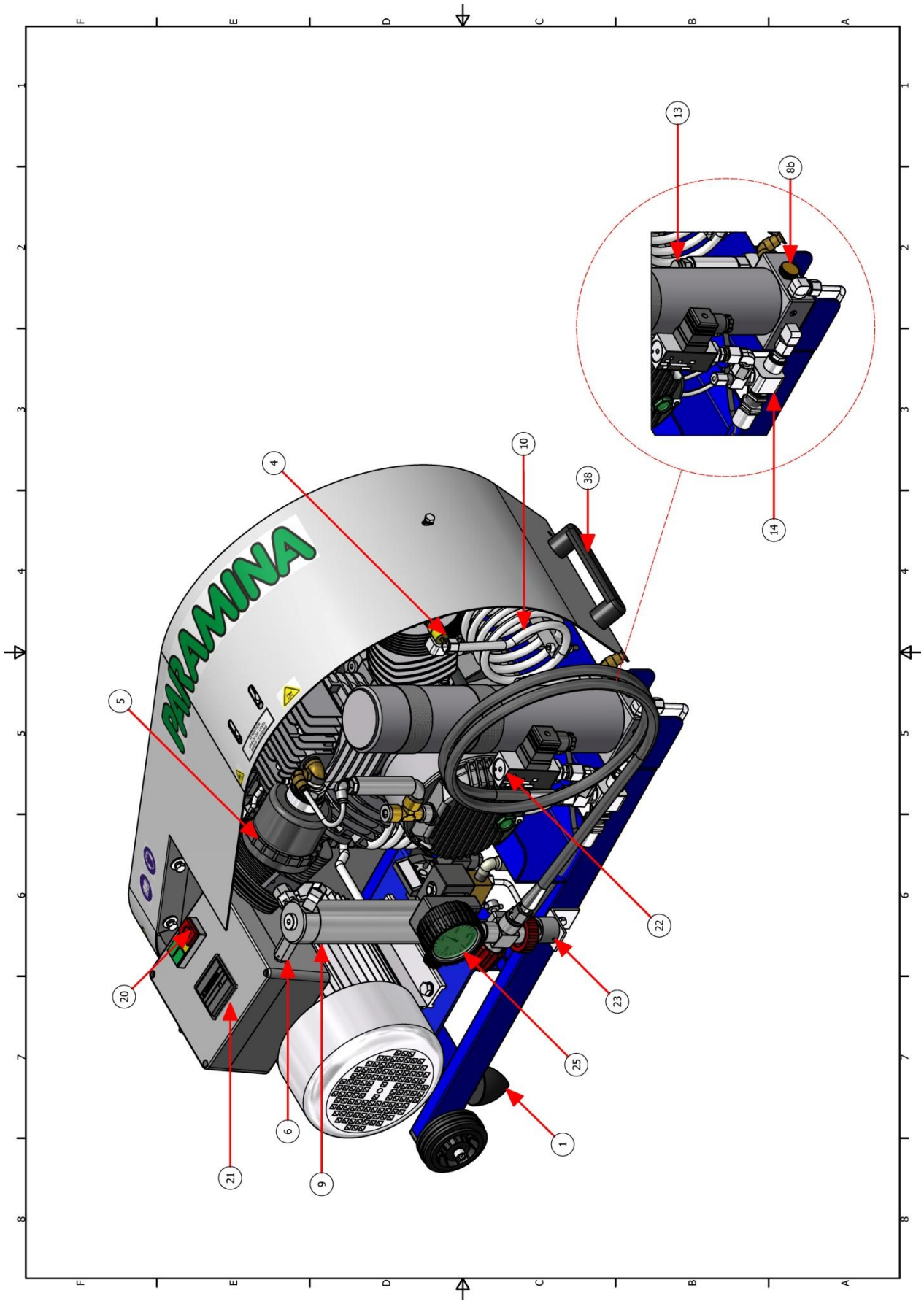
2. **<u>Interstage & Final stage condensate separator lifetime is 20 years. Hydraulic Overpressure test, every 5 years.</u>**

3. **<u>BA Filter's housing lifetime is 20 years. Hydraulic Overpressure test, every 5 years.</u>**

6. Spare parts catalog

M6 & M8 electric

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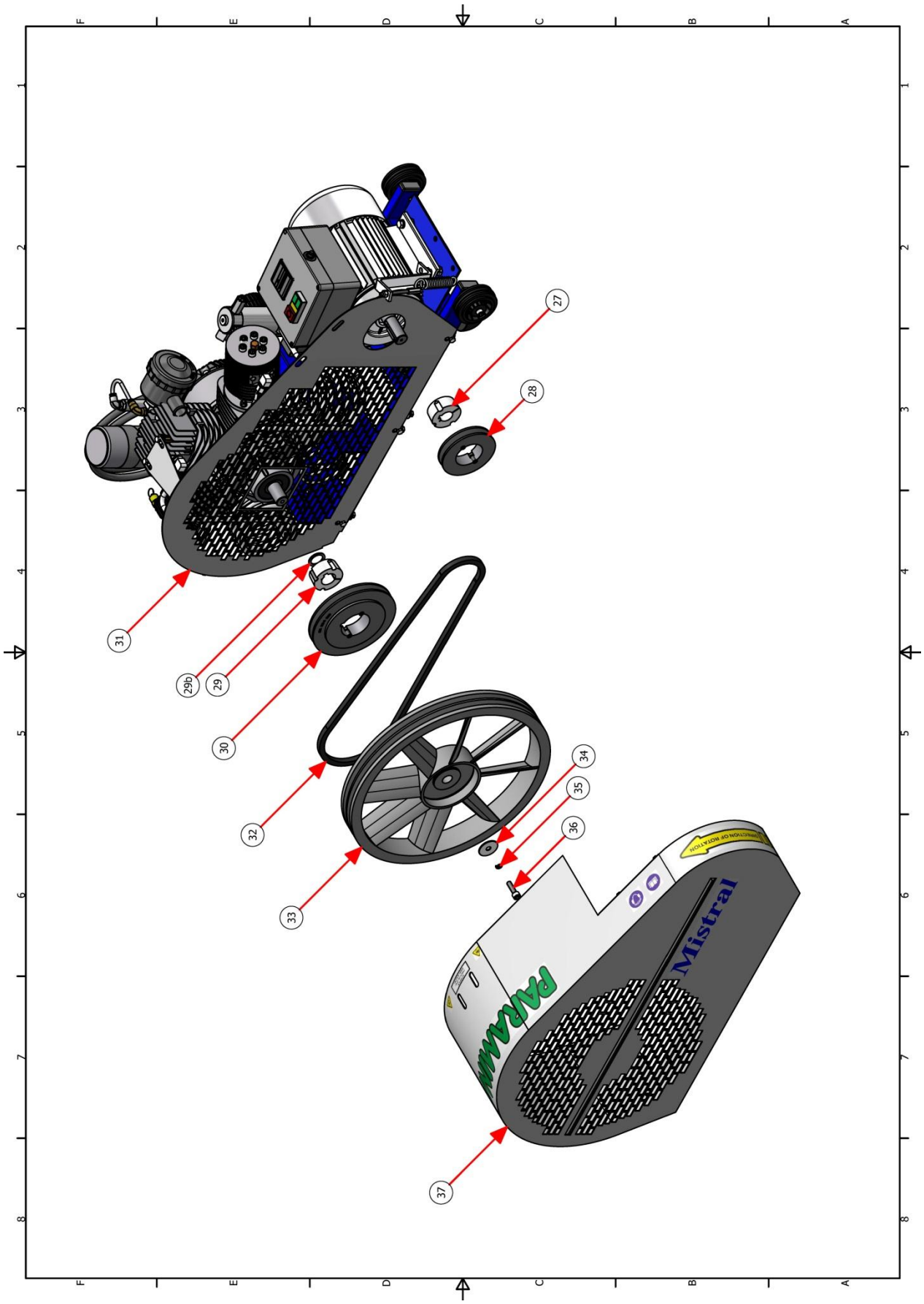
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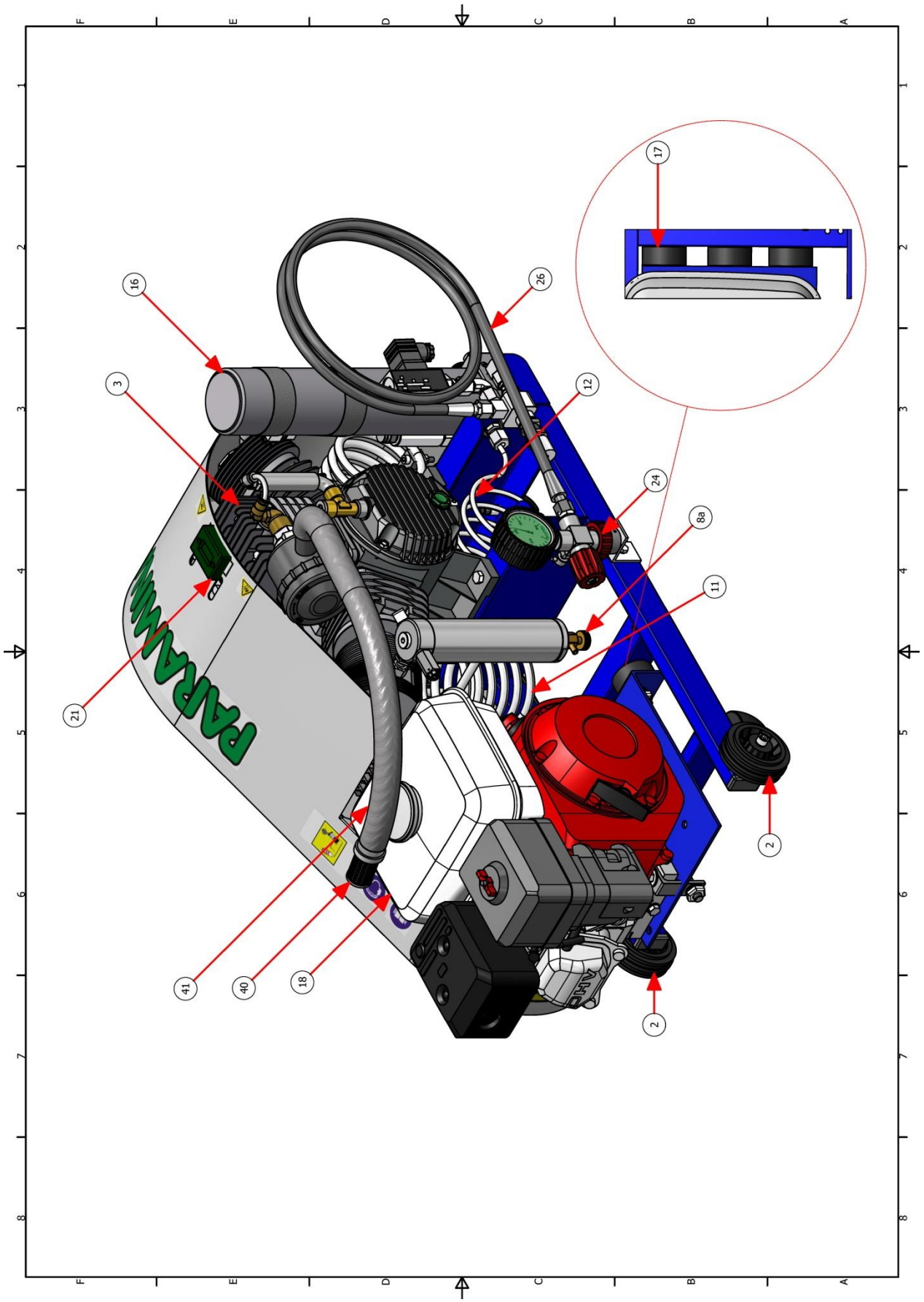
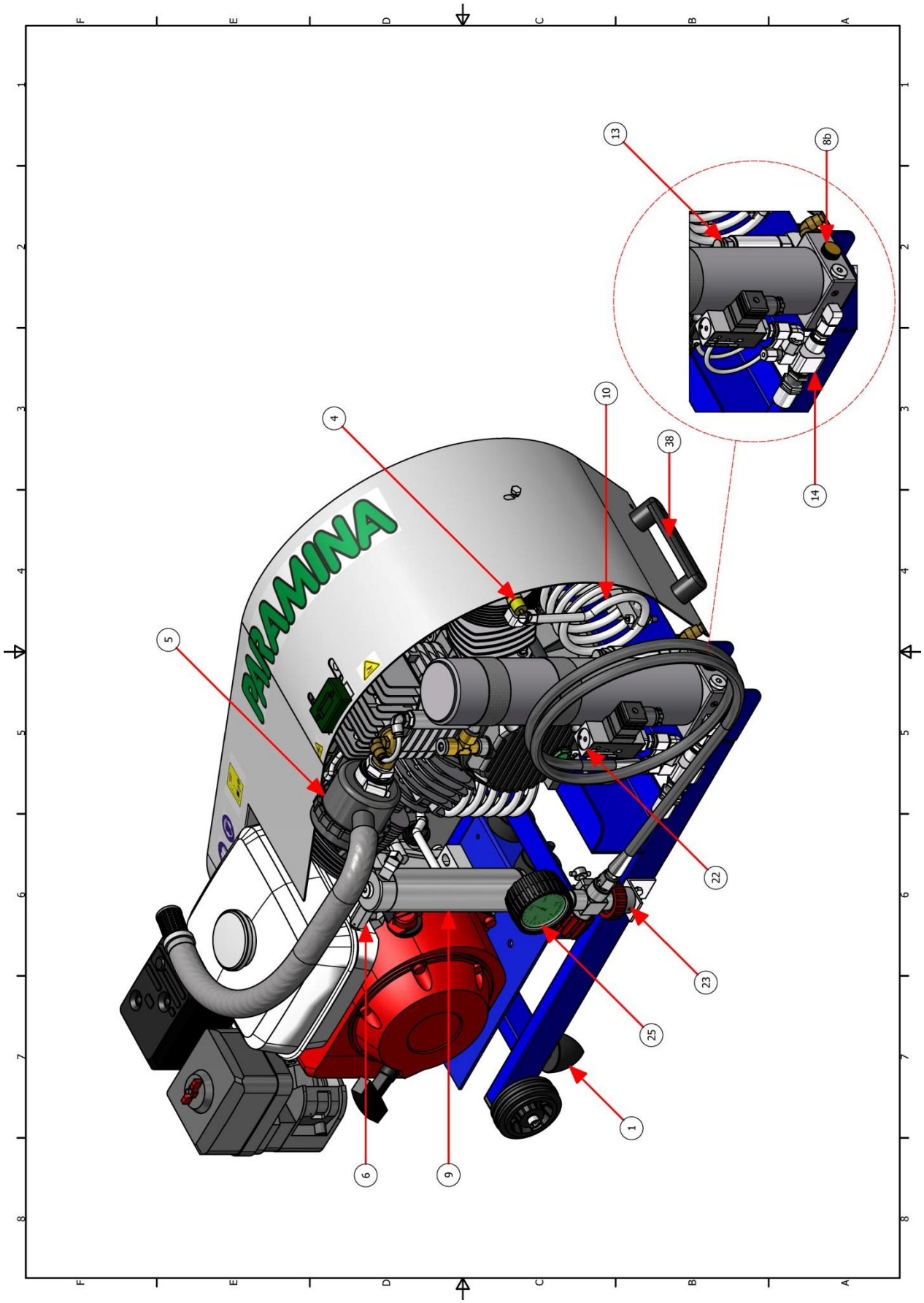
M6 & M8 petrol

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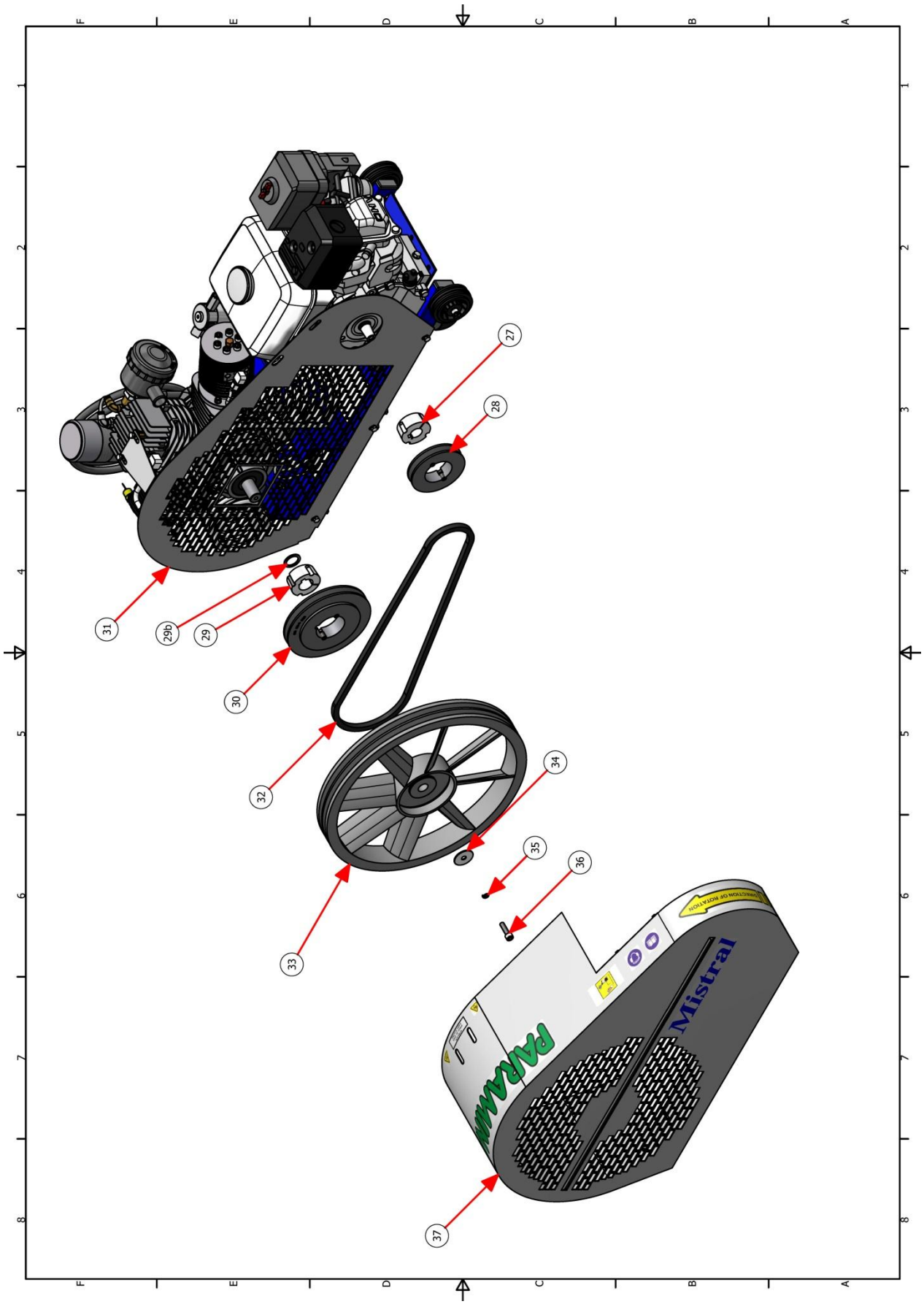
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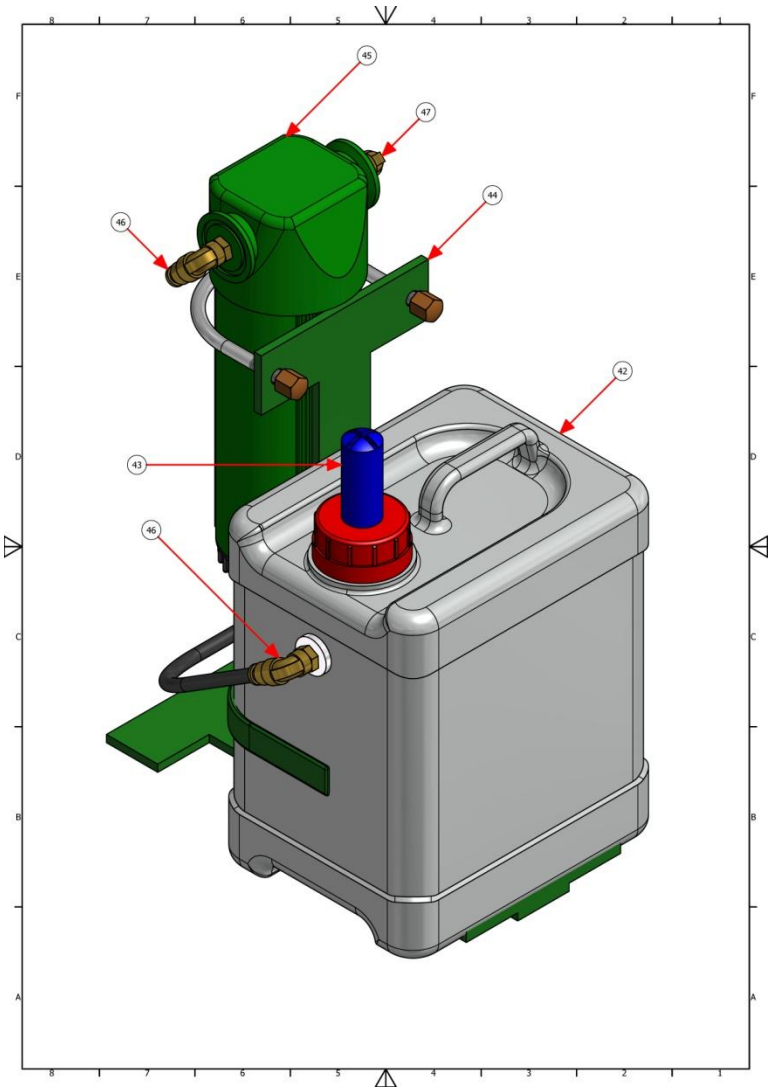
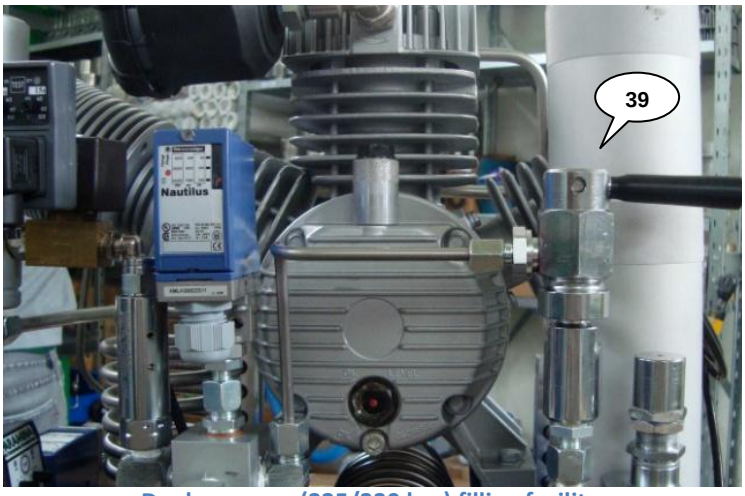
Optional Equipment M6 & M8



External condensate collecting tank with level indication, separator & silencer

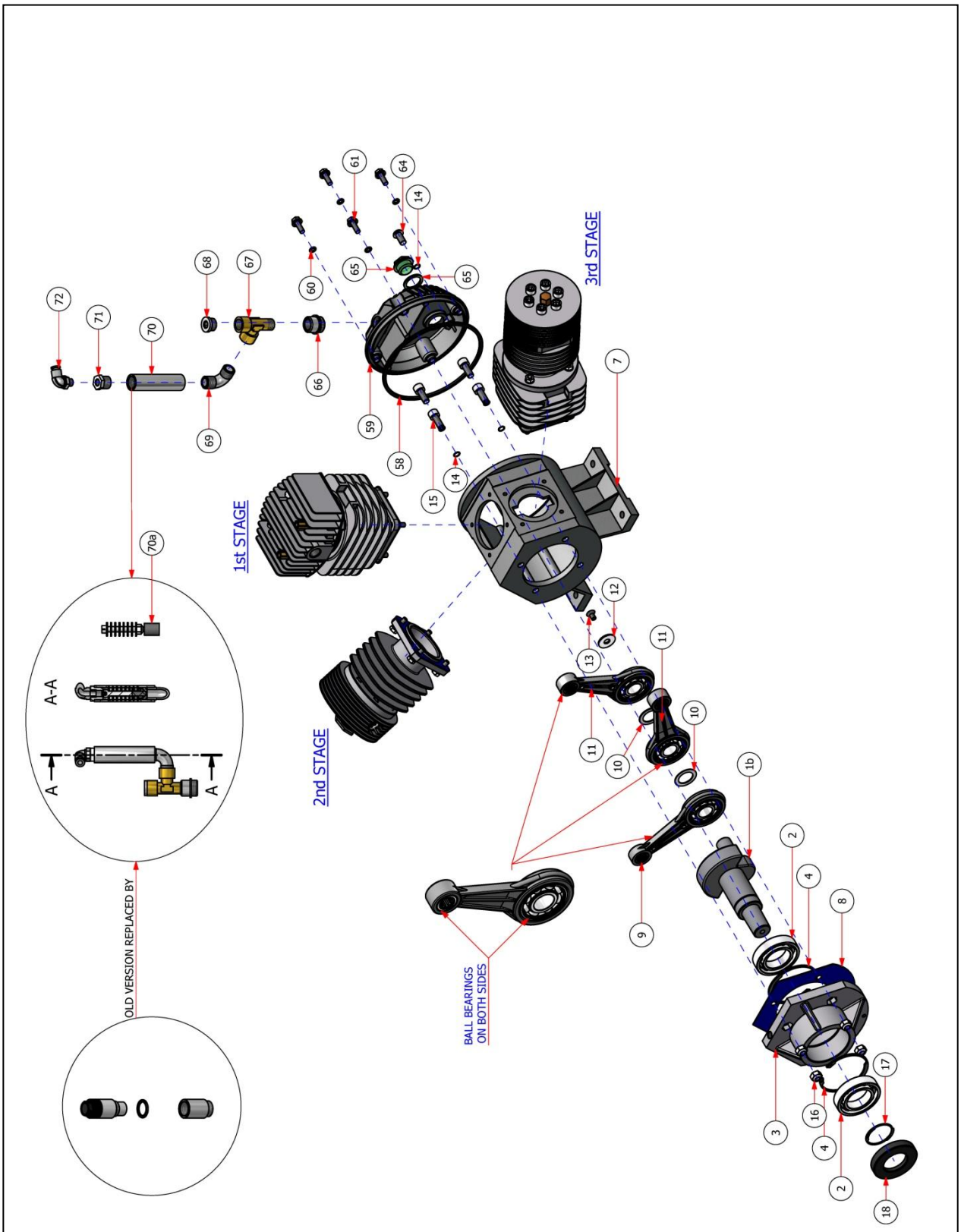


Dual pressure (225/330 bar) filling facility

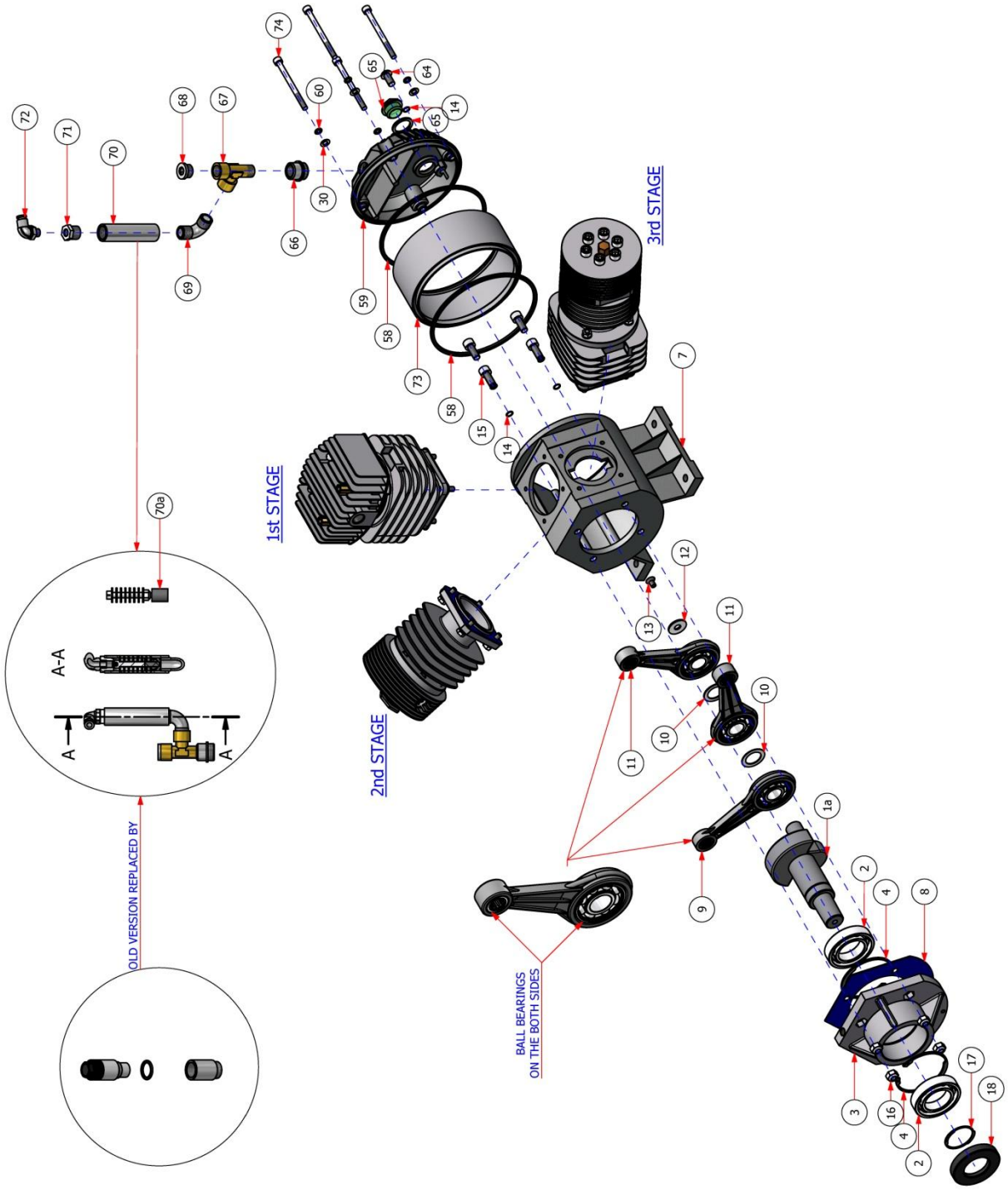
ITEM	QTY	PART NR.	DESCRIPTION
1	1	128503502	Anti-vibration pads for M6 series Electric compressor
	3		Anti-vibration pads for M8 series Electric and M6 & M8 Petrol compressor
2	2	150080252	Wheel
3	1	100006001	Compressor Block M6
		100006000	Compressor Block M8
4	1	190500600	Safety valve 1st stage (5bar)
5	1	109000000	Intake air filter housing
	1	109460302	Intake air filter cartridge
6	1	219000022	Safety valve 2nd - 100bar series @40bar
7	1	154122351	Automatic drain 2nd stage (80bar 230VAC N.O.)
8a	1	190000000	Manual drain valve c/w seat & connector 2nd stage w.s.
8b	1	190000080	Manual drain valve complete with seat
	2	190008112	Manual drain valve's seat
9	1	208501610	Condensate separator 2nd stage (see drawing at page 48)
10	1	190000890	Intercooler 1st stage horizontal
11	1	190000850	Intercooler 2nd stage
12	1	190000230	After cooler 3rd stage (M6 series)
		190000232	After cooler 3rd stage (M8 series)
13	1	219004522	Safety valve 3rd stage (300 bar) ***
	1	219004552	Safety valve 3rd stage (200 bar) ***
		219004520	Service Kit for safety valves p.n. 219004522 & 219004552 ***
14	1	219004572	Pressure maintaining valve ****
15	1	154122200	Automatic drain 3rd stage (250bar 230VAC N.C.)
		154122271	Automatic drain 3rd stage (350bar 230VAC N.C.)
16*	1	208903700	BA Filter Ø80x345 complete
		208903710	BA Filter Ø78x375 complete w/o bleed valve
		208905720	BA Filter Ø78x375 complete c/w bleed valve
17	3	128501502	Anti-vibration pads motor/engine (replace p.n. 128502312)
18	1	103030030	Electric motor 2,2 kW/220V/50-60Hz
		103030010	Electric motor 2,2 kW/400V/50-60Hz
		103030044	Electric motor 3 kW/220V/50-60Hz
		103030042	Electric motor 3 kW/400V/50-60Hz
		104160552	Petrol Engine 5,5 Hp (Honda) (M6-BZ series)
		104202052	Petrol Engine 6,5 Hp (Honda) (M8-BZ series)
		104001702	Petrol Engine 5,7 Hp (Subaru) (M6-BZS series)
		133000522	Petrol Engine Support Spring + bolt set
19	1	181021052	Thermal switch for M6-EM simple
		181800822	Thermal switch for M6-EM with automatic drains
		181800822	Thermal switch for M8-EM simple
		181800832	Thermal switch for M8-EM with automatic drains
		157000022	Thermal switch for M6-ET
		157000042	Thermal switch for M8-ET
20	1	177742242	Start / Stop Button
21	1	163000102	Electric Hourmeter for electric models
		163000702	Vibration Hourmeter for Petrol models
22	1	164305121	Pressure switch 40-400 bar

		164305012	Pressure switch 30-500b dual for Auto Start / Stop
23	1	190017412	DIN connector base
24	1-2	DIN 300 (RED) 8S P.N.:189900001 10L P.N.:189900300  DIN 200 (BLACK) 8S P.N.:189900000 10L P.N.:189900310  **SERVICE KIT PART NUMBER: 189900200, O-RING PART NUMBER = 127052702**	
25	1	122063402	Final stage manometer
	1	122063012	Manometer rubber cover
26	1-2	140000080	Filling hose 1,2m 10L
		140000921	Kevlar Filling hose 1,2m 8S (option)
27	1	**	Taper bush
28	1	**	Pulley motor
29	1	135161242	Taper bush com. block (M8 series only)
29b	1	190001240	Washer flywheel/crankshaft M8
30	1	136017012	Pulley com. Block (M8 series only)
31	1	105000982	Inside guard
32	1	**	V-Belt
33	1	136401002	Flywheel for M6 series compressor
		136401000	Flywheel for M8 series compressor
34	2	192200822	Flywheel washer Ø8
35	1	198000802	Flywheel lock screw Ø8
36	1	193108302	Flywheel screw M8x30
37	1	105000992	Outside guard
38	1	401011702	Handle
39	1	189500004	Dual pressure (225/330 bar) selection valve
		189401001	Selection Valve Service Kit
40	1	109000082	Particle Strainer Intake Filter
41	1	186025102	Spiral air intake hose
42	1	401001082	Condensate collecting tank 6ltr
43	1	142111201	Sintered Filter Plastic 1/2''
44	1	190039990	Base - Condensate Collecting Tank
45	1	207101001	Expansion vessel
46	3	115101702	Quick Elbow 8-1/4''
47	1	116300122	Male plug tapered 1/2''

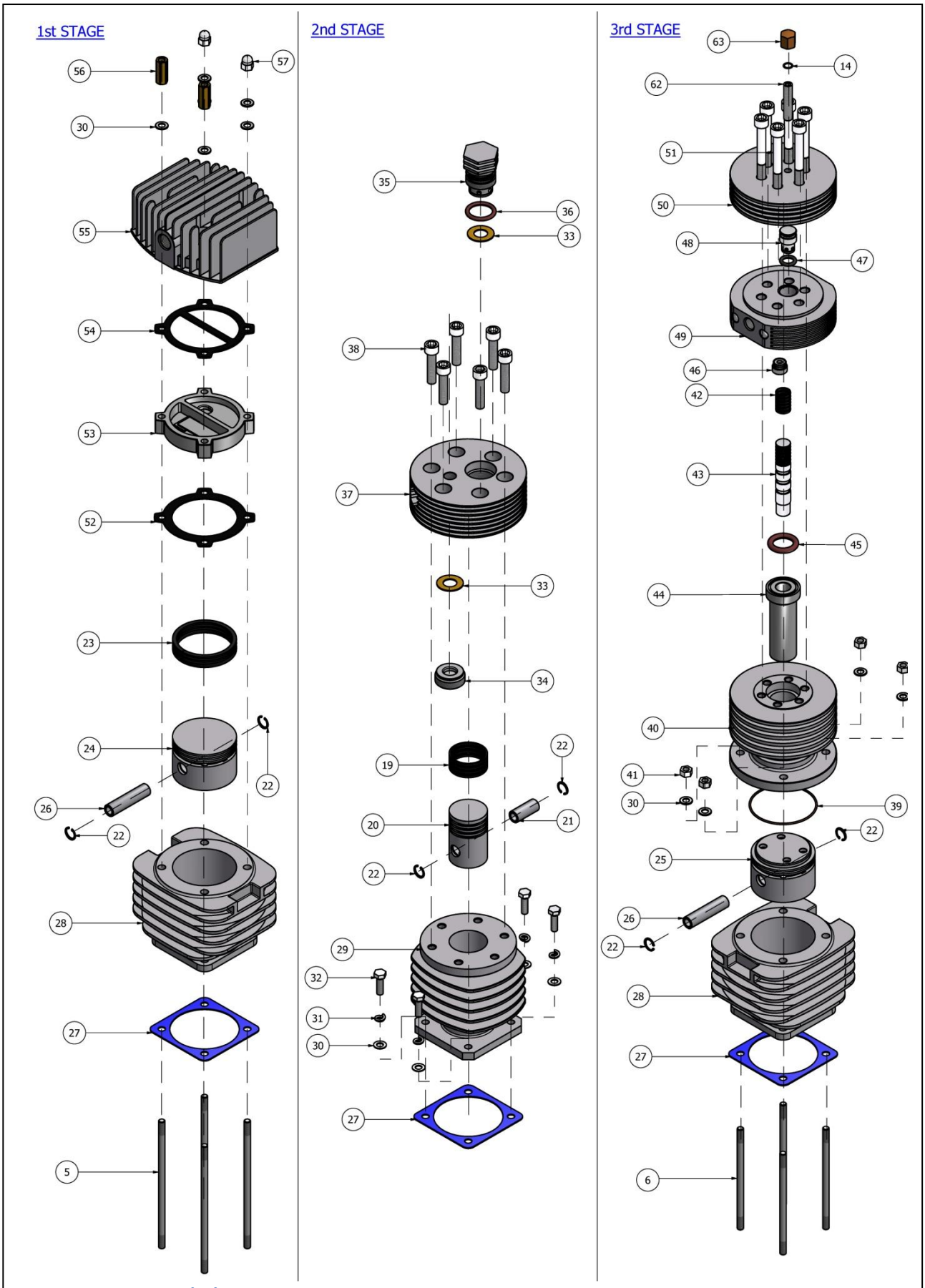
*** See all BA filter's parts and codes in page 20.**
**** According to compressor's serial number.**
***** Go to page 46 for service kit installation instructions.**
****** Go to page 47 for service kit installation instructions.**



M6 Compressor block



M8 Compressor block

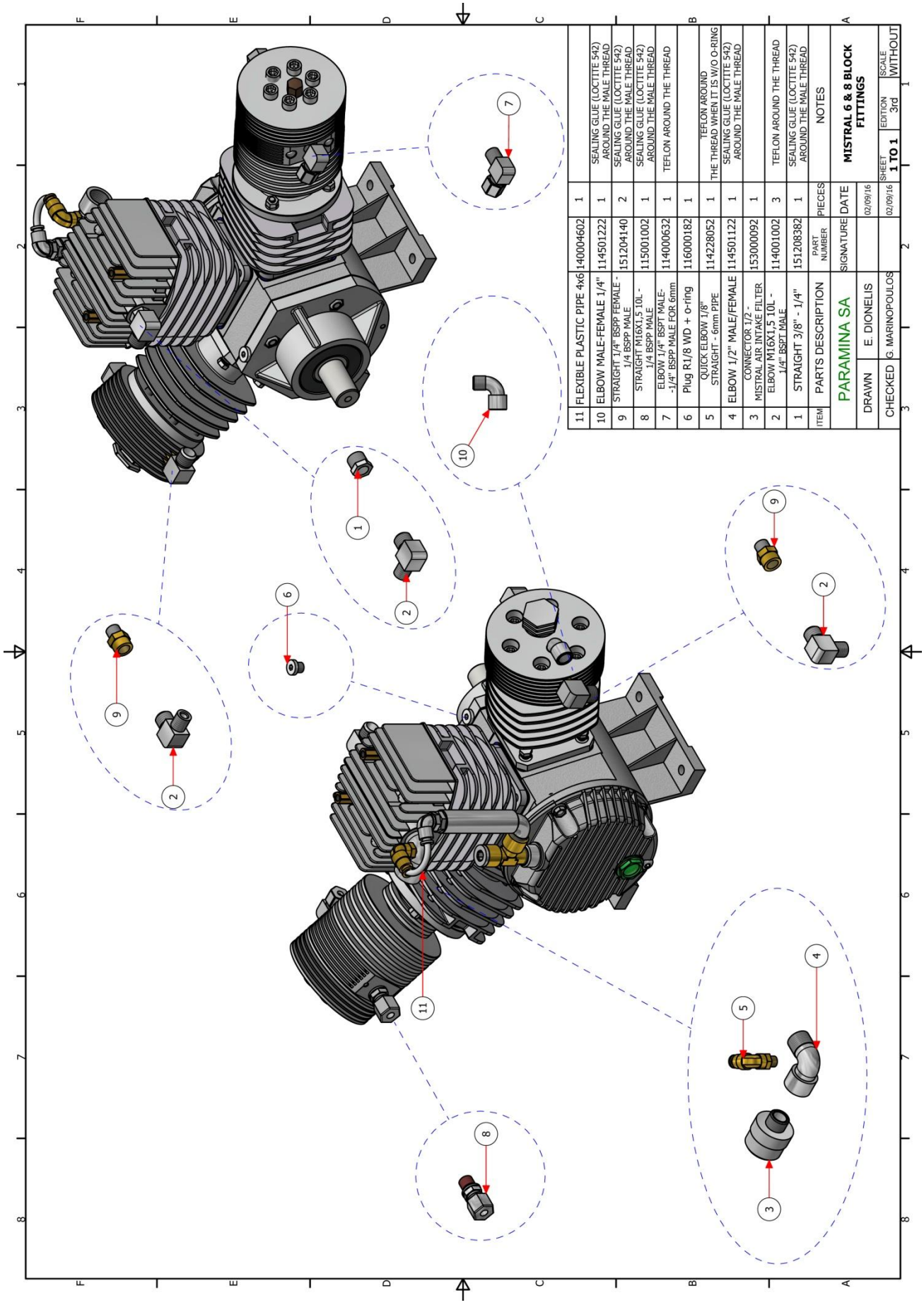


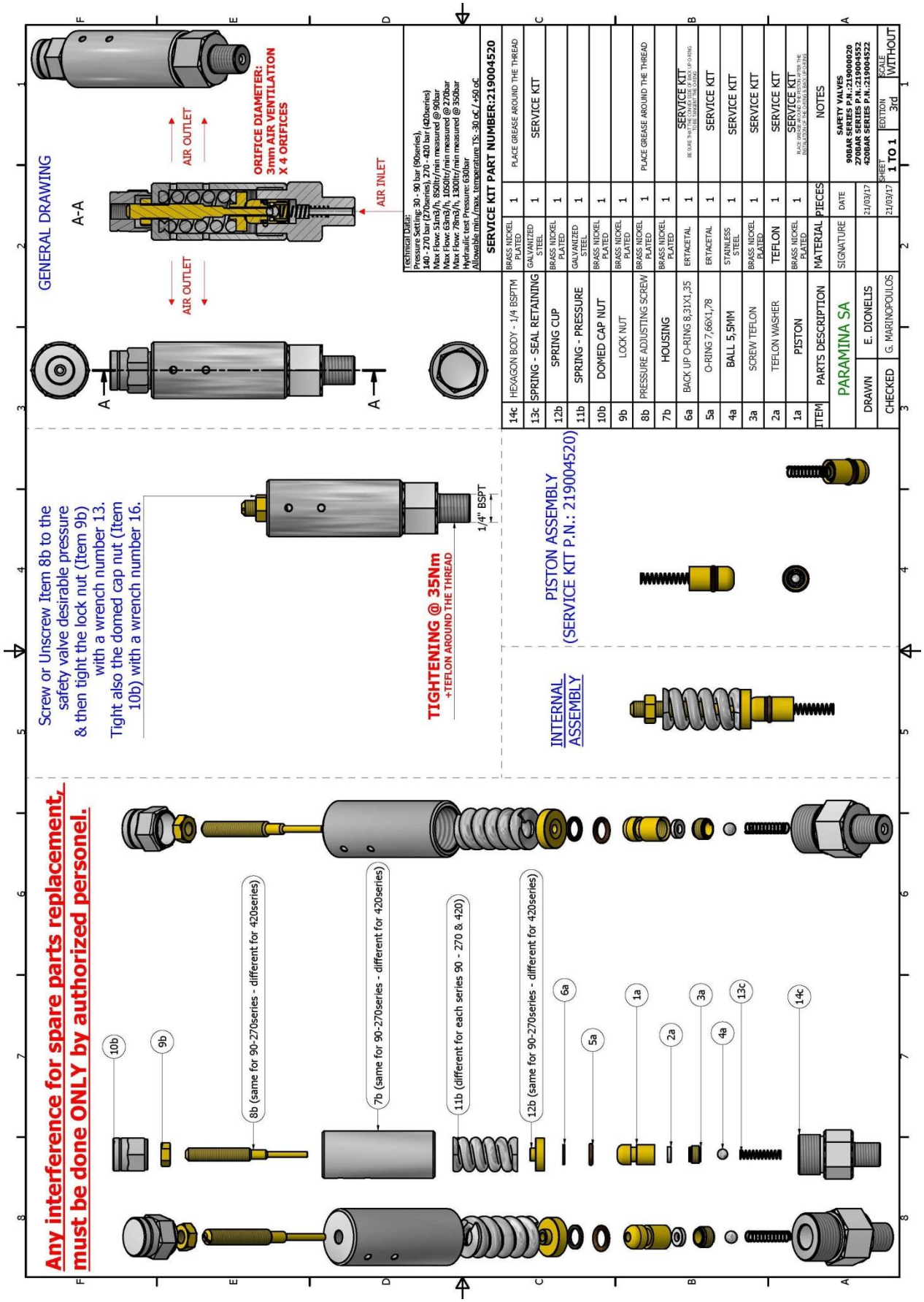
M6-M8 Compressor Block Stages

ITEM	QTY	PART NR.	DESCRIPTION
1a	1	190001760	Crankshaft M8
1b	1	190001761	Crankshaft M6
2	2	110060072	Shaft Ball Bearing
3	1	190001721	Bearing Seat (crankcase front)
4	2	190001701	Hole Lock Ring
5	4	190001281	Tie Rod
6	4	190001291	Tube PL
7	1	190002691	Crankcase
8	1	190001082	Bearing Seat Gasket
9	1	190012701	Con Rod 2nd Stage
10	2	192321301	Washer Con Rod
11	2	190012801	Con Rod 1st & 3rd Stage
12	1	192200822	Washer Crankshaft 8x24
13	1	193106102	Crankshaft Allen Screw M6x10
14	6	192081212	Copper Washer Ø8
15	4	193108202	Allen Screw M8x20
16	4	194200802	Hex Nut M8
17	1	190001691	Shaft Lock Ring
18	1	126356212	Oil Seal
19	1	133365361	Piston Rings Set 2nd Stage
20	1	141365361	Piston 2nd Stage
21	1	190001111	Piston Pin 2nd Stage
22	6	190001271	Lock Ring Piston Pin
23	1	133001521	Piston Rings Set 1st Stage
24	1	141001311	Piston 1st Stage
25	1	141001312	Crosshead Piston 3rd Stage
26	2	190001521	Piston Pin 1st & 3rd Stage
27	3	190001322	Cylinder Gasket Ø60
28	2	190001351	Cylinder 1st &3rd Stage
29	1	190000432	Cylinder 2nd Stage
30	17	192200602	Washer Ø6
31	4	198000602	Lock Washer Ø6
32	4	197006202	Hex Head Screw M6x20
33	2	192000122	Copper washer 2nd Stage Valves Head
34	1	154000430	Inlet Valve 2nd Stage
35	1	154000440	Discharge Valve 2nd Stage
36	1	127056412	O-Ring Discharge Valve 2nd Stage
37	1	190000462	Valve Head 2nd Stage
38	6	193108352	Allen Screw M8x35
39	1	127130132	O-Ring Cylinder Guide 3rd Stage
40	1	190000172	Cylinder Guide 3rd Stage
41	4	194300602	Lock Hex Nut M6
42*	1	*	Piston Rings Set 3rd Stage
43*	1	*	Piston 3rd Stage
44*	1	*	Piston Sleeve 3rd Stage
45*	1	127057122*	O-Ring Piston Sleeve 3rd Stage
46	1	154000200	Inlet Valve 3rd Stage

47	1	127054362	O-Ring Discharge Valve 3rd Stage
48	1	154000280	Discharge Valve 3rd Stage
49	1	190000272	Valve Head 3rd Stage
50	1	190000302	Top Cover 3rd Stage
51	6	193108702	Allen Screw M8x70
52	1	190001381	Gasket down Reed Valve
53	1	154001391	Reed Valve Set 1st Stage
54	1	190001401	Gasket up Reed Valve
55	1	190001411	Top Cover 1st Stage
56	3	190010252	Socket Top Cover 1st Stage
57	1	194000601	Acorn Nut Top Cover 1st Stage
58	2	127075742	O-Ring Crankcase
59	1	190001151	Back Cover Crankcase
60	4	127045371	O-Ring Screw Back Cover Crankcase
61	4	197006162	Allen Screw M6x16
62	1	193082502	Set Screw
63	1	194000802	Plug (Allen Screw)
64	1	190001171	Oil Draining Plug
65	1	190001181	Oil sight glass + gasket
66	1	144000072	Coupling D25 G1/2-R1/4 **+ sealing glue @ the male thread**
67	1	120405052	Tee female-female-male 3/8'' **+ sealing glue @ the male thread**
68	1	116300192	Oil Filling Plug male allen 3/8'' + o-ring
69	1	114501202	Elbow male-male 3/8'' **+ Teflon @ the up thread and sealing glue @ the down thread**
70	1	190017402	Oil Vapour Exhaust Pipe D21xL80mm 3/8''-3/8''female (M/T)
70a	1	109000110	Sintered Filter Sponge -Oil Vapour Exhaust Mistral/Typhoon-
71	1	151203812	Fitting 3/8 BSPT MALE - 1/8 BSPP FEMALE **+ sealing glue @ the male thread**
72	1	114228052	Quick elbow 1/8'' straight - 6mm pipe
73	1	190001152	Mid crankcase Mistral 8
74	4	193106752	Allen Screw M6x75 Mistral 8

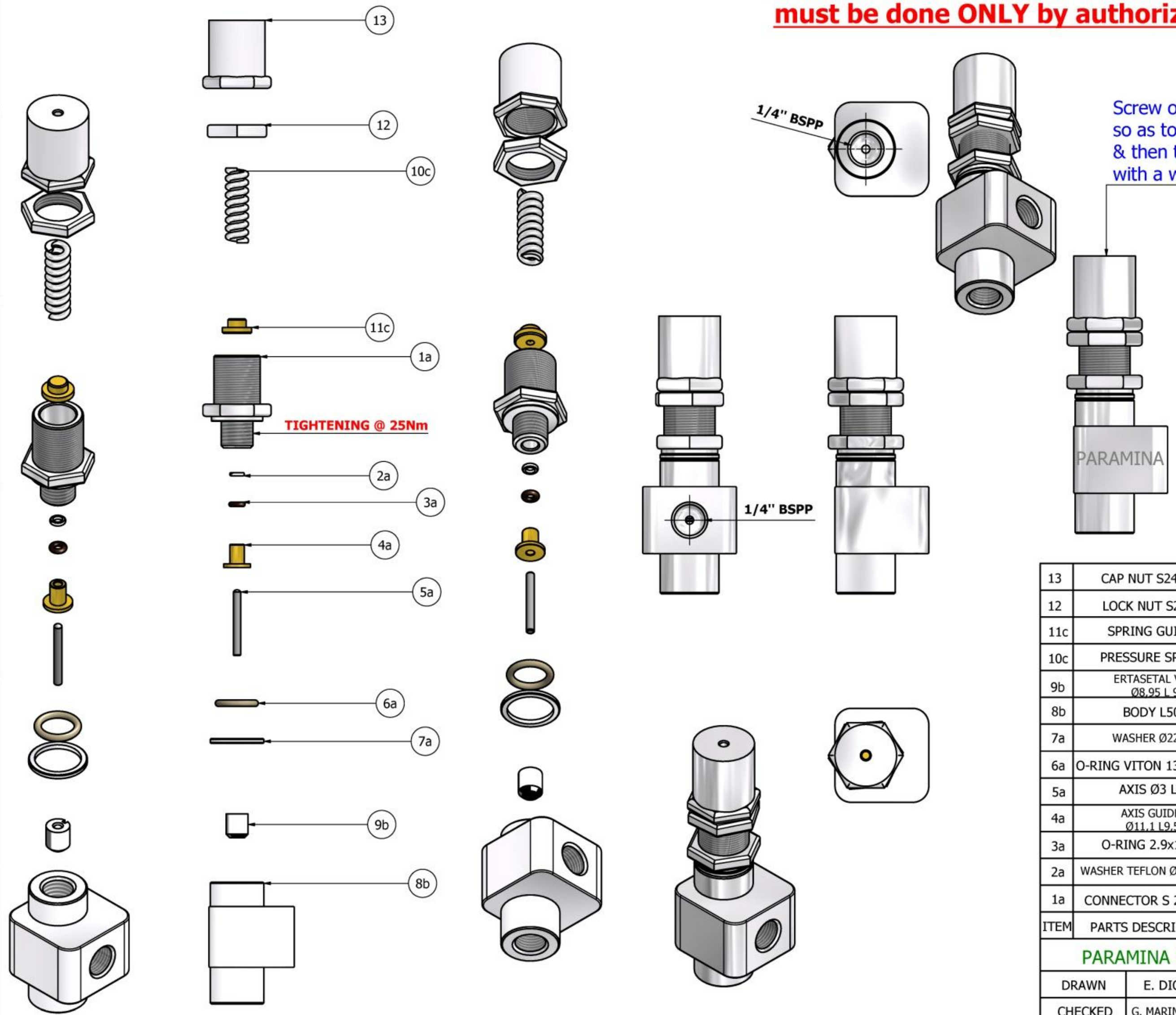
*** Supply / Order only as assembly – 3rd stage piston complete = 141000001 (replaced 141000000)**


11 FLEXIBLE PLASTIC PIPE 4x6 140004602 1
10 ELBOW MALE-FEMALE 1/4" 1145012222 1 SEALING GLUE (LOCTITE 542) AROUND THE MALE THREAD
9 STRAIGHT 1/4" BSPP FEMALE - 1/4 BSPP MALE 1512041140 2 SEALING GLUE (LOCTITE 542) AROUND THE MALE THREAD
8 STRAIGHT M16X1,5 10L - 1/4 BSPP MALE 1150010022 1 SEALING GLUE (LOCTITE 542) AROUND THE MALE THREAD
7 ELBOW 1/4" BSPT MALE- -1/4" BSPP MALE FOR 6mm 1140006322 1 TEFLON AROUND THE THREAD
6 Plug R1/8 WD + o-ring 1160001822 1
5 QUICK ELBOW 1/8" STRAIGHT - 6mm PIPE 1142280522 1 TEFLON AROUND THE THREAD WHEN IT IS W/O O-RING
4 ELBOW 1/2" MALE/FEMALE 1145011222 1 SEALING GLUE (LOCTITE 542) AROUND THE MALE THREAD
3 CONNECTOR 1/2 - MISTRAL AIR INTAKE FILTER 1530000922 1
2 ELBOW M16X1,5 10L - 1/4" BSPT MALE 1140010022 3 TEFLON AROUND THE THREAD
1 STRAIGHT 3/8" - 1/4" 1512083822 1 SEALING GLUE (LOCTITE 542) AROUND THE MALE THREAD
ITEM PARTS DESCRIPTION PART NUMBER PIECES NOTES
PARAMINA SA SIGNATURE DATE
DRAWN E. DIONELIS 02/09/16
CHECKED G. MARINOPOULOS 02/09/16
MISTRAL 6 & 8 BLOCK FITTINGS
SHEET 1 TO 1
EDITION 3rd
SCALE WITHOUT


GENERAL DRAWING
A-A
AIR OUTLET
AIR OUTLET
AIR INLET
ORIFICE DIAMETER:
3mm AIR VENTILATION
X 4 ORIFICES
Technical Data:
Pressure Setting: 30 - 90 bar (90series).
140 - 270 bar (270series), 270 - 420 bar (420series)
Max Flow: 51m3/h, 850ltr/min measured @ 90bar
Max Flow: 63m3/h, 1050ltr/min measured @ 270bar
Max Flow: 78m3/h, 1300ltr/min measured @ 350bar
Hydraulic test Pressure: 630bar
Allowable min./max. temperature TS: -30 oC / +50 oC
SERVICE KIT PART NUMBER:219004520
14c HEXAGON BODY - 1/4 BSPTM BRASS NICKEL PLATED 1 PLACE GREASE AROUND THE THREAD
13c SPRING - SEAL RETAINING GALVANIZED STEEL 1 SERVICE KIT
12b SPRING CUP BRASS NICKEL PLATED 1
11b SPRING - PRESSURE GALVANIZED STEEL 1
10b DOMED CAP NUT BRASS NICKEL PLATED 1
9b LOCK NUT BRASS NICKEL PLATED 1
8b PRESSURE ADJUSTING SCREW BRASS NICKEL PLATED 1 PLACE GREASE AROUND THE THREAD
7b HOUSING BRASS NICKEL PLATED 1
6a BACK UP O-RING 8,31X1,35 ERTACETAL 1 SERVICE KIT
5a O-RING 7,66X1,78 ERTACETAL 1 SERVICE KIT
4a BALL 5,5MM STAINLESS STEEL 1 SERVICE KIT
3a SCREW TEFLON BRASS NICKEL PLATED 1 SERVICE KIT
2a TEFLON WASHER TEFLON 1 SERVICE KIT
1a PISTON BRASS NICKEL PLATED 1 SERVICE KIT
ITEM PARTS DESCRIPTION MATERIAL PIECES NOTES
PARAMINA SA
DRAWN E. DIONELIS
CHECKED G. MARINOPOULOS
SIGNATURE
DATE 21/03/17 21/03/17
SAFETY VALVES
90BAR SERIES P.N.:219000520
270BAR SERIES P.N.:219004552
420BAR SERIES P.N.:219004522
SHEET 1 TO 1
EDITION 3rd
SCALE WITHOUT
Screw or Unscrew Item 8b to the safety valve desirable pressure & then tight the lock nut (Item 9b) with a wrench number 13. Tight also the domed cap nut (Item 10b) with a wrench number 16.
TIGHTENING @ 35Nm
+TEFLON AROUND THE THREAD
1/4" BSPT
PISTON ASSEMBLY
(SERVICE KIT P.N.: 219004520)
INTERNAL ASSEMBLY
Any interference for spare parts replacement, must be done ONLY by authorized personel.
10b
9b
8b (same for 90-270series - different for 420series)
7b (same for 90-270series - different for 420series)
11b (different for each series 90 - 270 & 420)
12b (same for 90-270series - different for 420series)
6a
5a
1a
2a
3a
4a
13c
14c

Any interference for spare parts replacement, must be done ONLY by authorized personel.

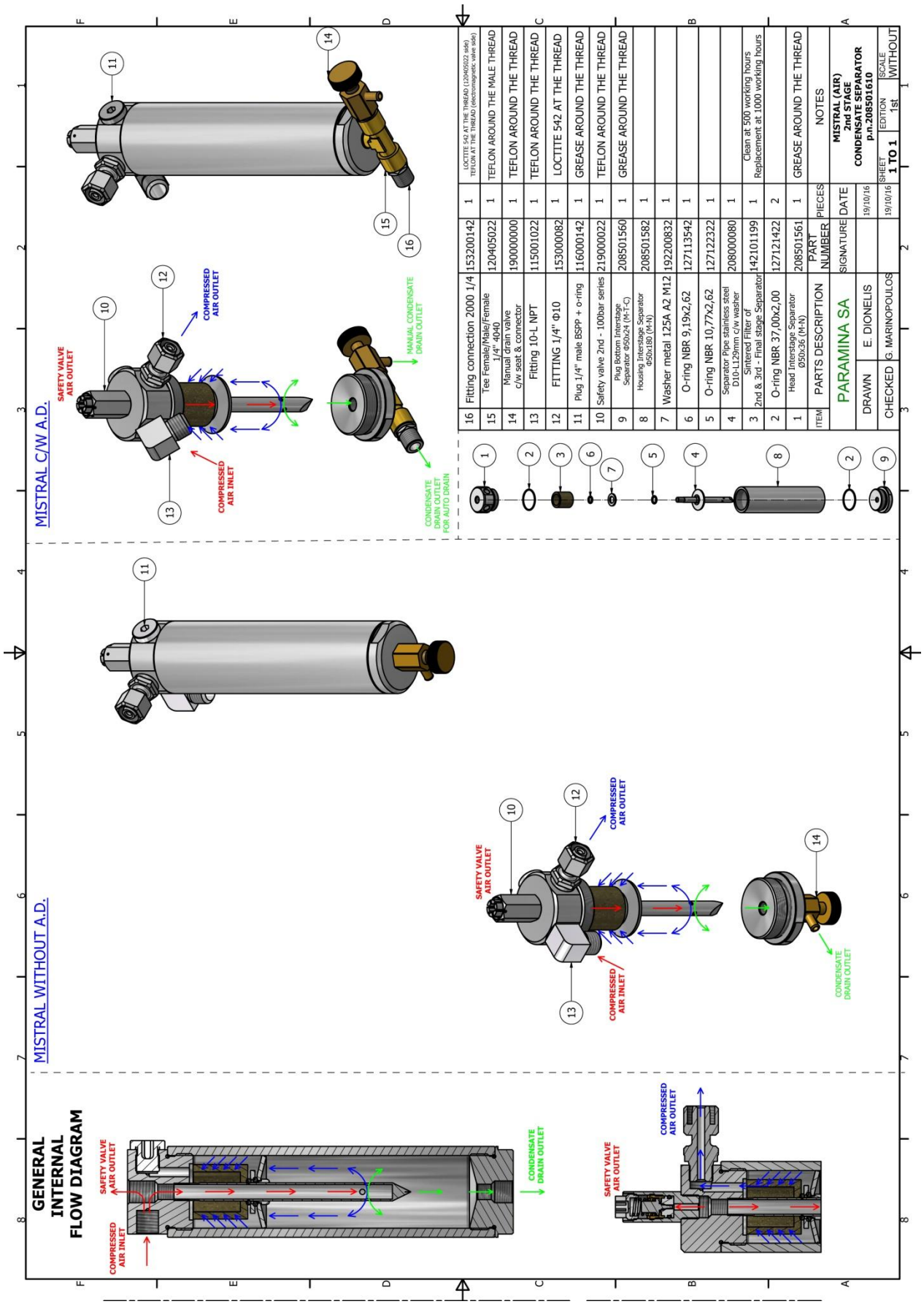
Screw or Unscrew the cap nut (Item 13) so as to regulate the desirable pressure & then tight the lock nut (Item 12) with a wrench number 17.



Technical Data:
Pressure Setting: 80 - 160 bar
Max Capacity: 48m3/h, 800ltr/min

ITEM	PARTS DESCRIPTION	MATERIAL	PIECES	NOTES
		SERVICE KIT PART NUMBER:219004582		
13	CAP NUT S24 L28	MS58	1	
12	LOCK NUT S24 L5	MS58	1	
11c	SPRING GUIDE		1	
10c	PRESSURE SPRING	MS58	1	
9b	ERTASETAL VALVE Ø8,95 L 9,8	MS58	1	SERVICE KIT
8b	BODY L50	TEFLON	1	
7a	WASHER Ø22 L1,8		1	
6a	O-RING VITON 13,30x2,40	MS58	1	SERVICE KIT HAS REPLACED O-RING 12,37x2,62
5a	AXIS Ø3 L27	INOX 303	1	SERVICE KIT PLACE GREASE ON THE HOLLOW TIP. BE SURE THAT THE VERTICAL EDGE IS IN LINE WITH THE LARGE DIMENSION OF AXIS
4a	AXIS GUIDE Ø11,1 L9,5	STEEL	1	
3a	O-RING 2.9x1.78		1	SERVICE KIT
2a	WASHER TEFLON Ø5,95 L1.5	ERTACETAL	1	SERVICE KIT
1a	CONNECTOR S 24 L 38.2	MS58	1	PLACE GREASE IN THE HOLE WHERE THE TEFLON & THE O-RING ENTER+ AROUND THE THREAD - TIGHTENING @ 25Nm

PARAMINA SA		SIGNATURE	DATE	PRESSURE MAINTAINING VALVE p.n.:219004572
DRAWN	E. DIONELIS		18/12/15	
CHECKED	G. MARINOPOULOS		18/12/15	SHEET 1 TO 1 / EDITION 4th / SCALE WITHOUT



ITEM	PARTS DESCRIPTION	PART NUMBER	PIECES	NOTES
16	Fitting connection 2000 1/4	1532001420	1	LOCTITE 542 AT THE THREAD (120405022 side) TEFLON AT THE THREAD (electromagnetic valve side)
15	Tee Female/Male/Female 1/4" 4040	120405022	1	TEFLON AROUND THE MALE THREAD
14	Manual drain valve c/w seat & connector	190000000	1	TEFLON AROUND THE THREAD
13	Fitting 10-L NPT	115001022	1	TEFLON AROUND THE THREAD
12	FITTING 1/4" Φ10	153000082	1	LOCTITE 542 AT THE THREAD
11	Plug 1/4" male BSPP + o-ring	116000142	1	GREASE AROUND THE THREAD
10	Safety valve 2nd - 100bar series	219000022	1	TEFLON AROUND THE THREAD
9	Plug Bottom Interstage Separator Φ50x24 (M-T-C)	208501560	1	GREASE AROUND THE THREAD
8	Housing Interstage Separator Φ50x180 (M-N)	208501582	1	
7	Washer metal 125A A2 M12	192200832	1	
6	O-ring NBR 9,19x2,62	127113542	1	
5	O-ring NBR 10,77x2,62	127122322	1	
4	Separator Pipe stainless steel D10-L129mm c/w washer	208000080	1	Clean at 500 working hours
3	Sintered Filter of 2nd & 3rd - Final stage Separator	142101199	1	Replacement at 1000 working hours
2	O-ring NBR 37,00x2,00	127121422	2	
1	Head Interstage Separator Φ50x36 (M-N)	208501561	1	GREASE AROUND THE THREAD

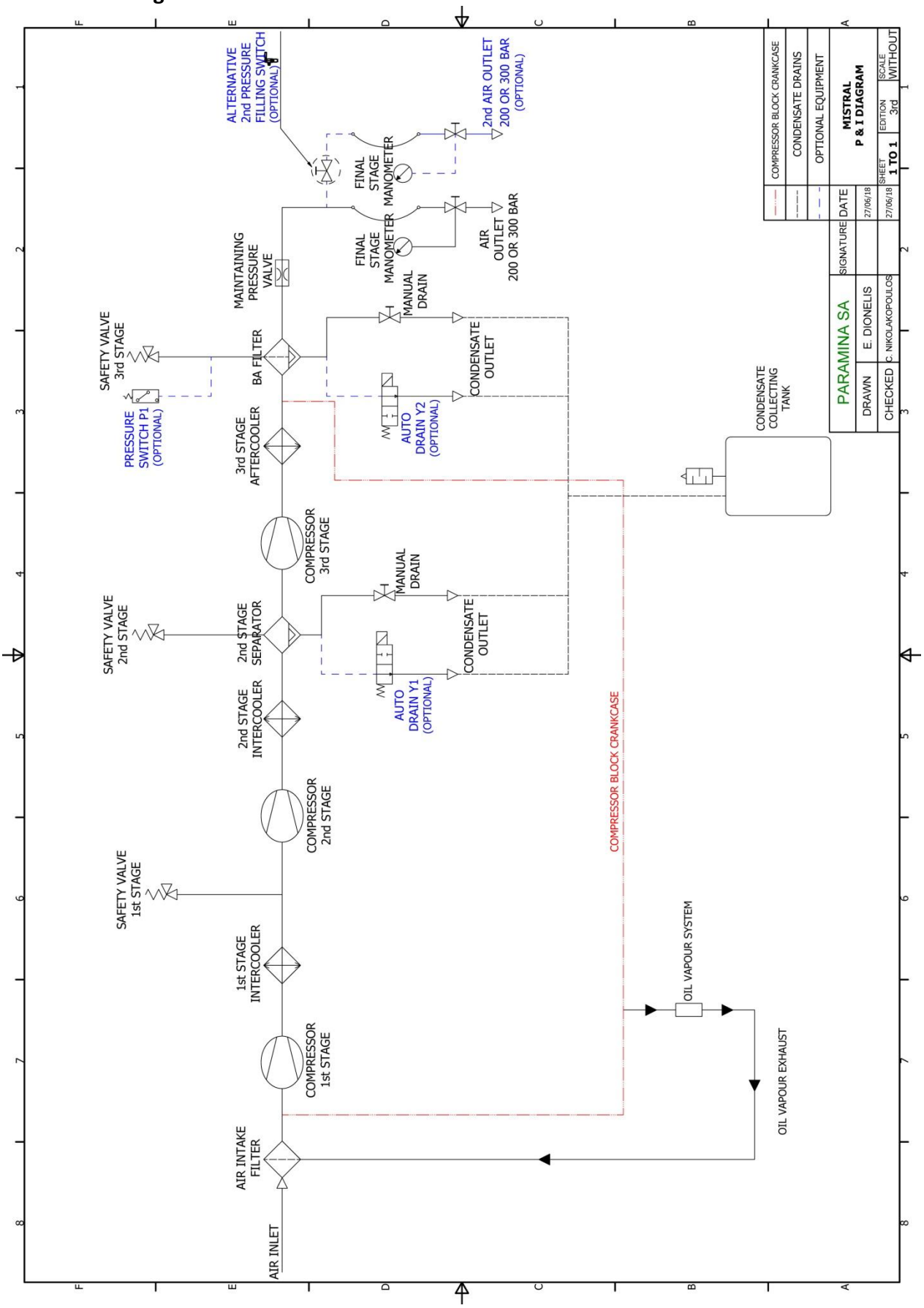
PARAMINA SA

		SIGNATURE	DATE
DRAWN	E. DIONELIS		19/10/16
CHECKED	G. MARINOPOULOS		19/10/16

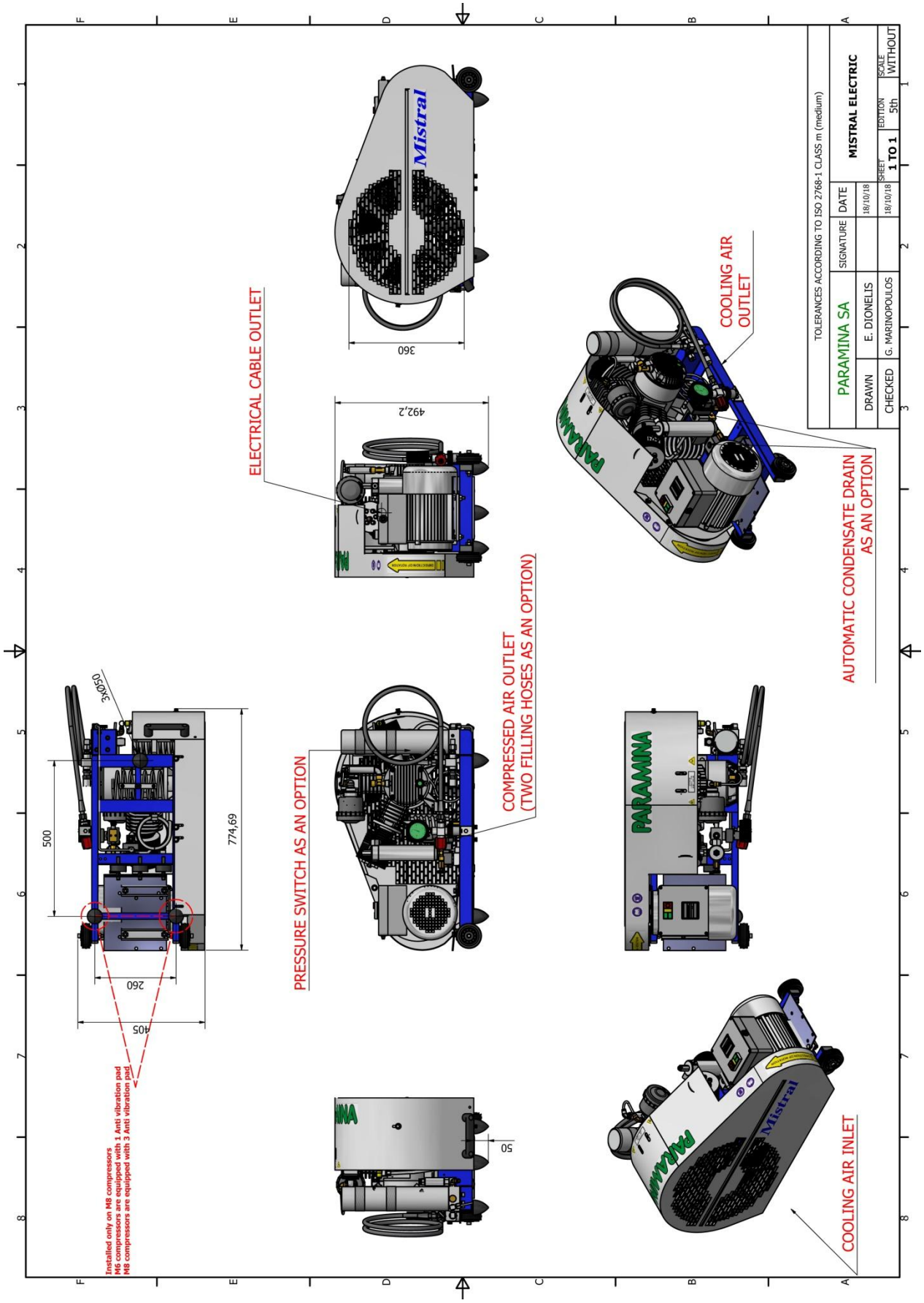
MISTRAL (AIR)
2nd STAGE
CONDENSATE SEPARATOR
p.n.208501610

SHEET **1 TO 1** | EDITION 1st | SCALE WITHOUT

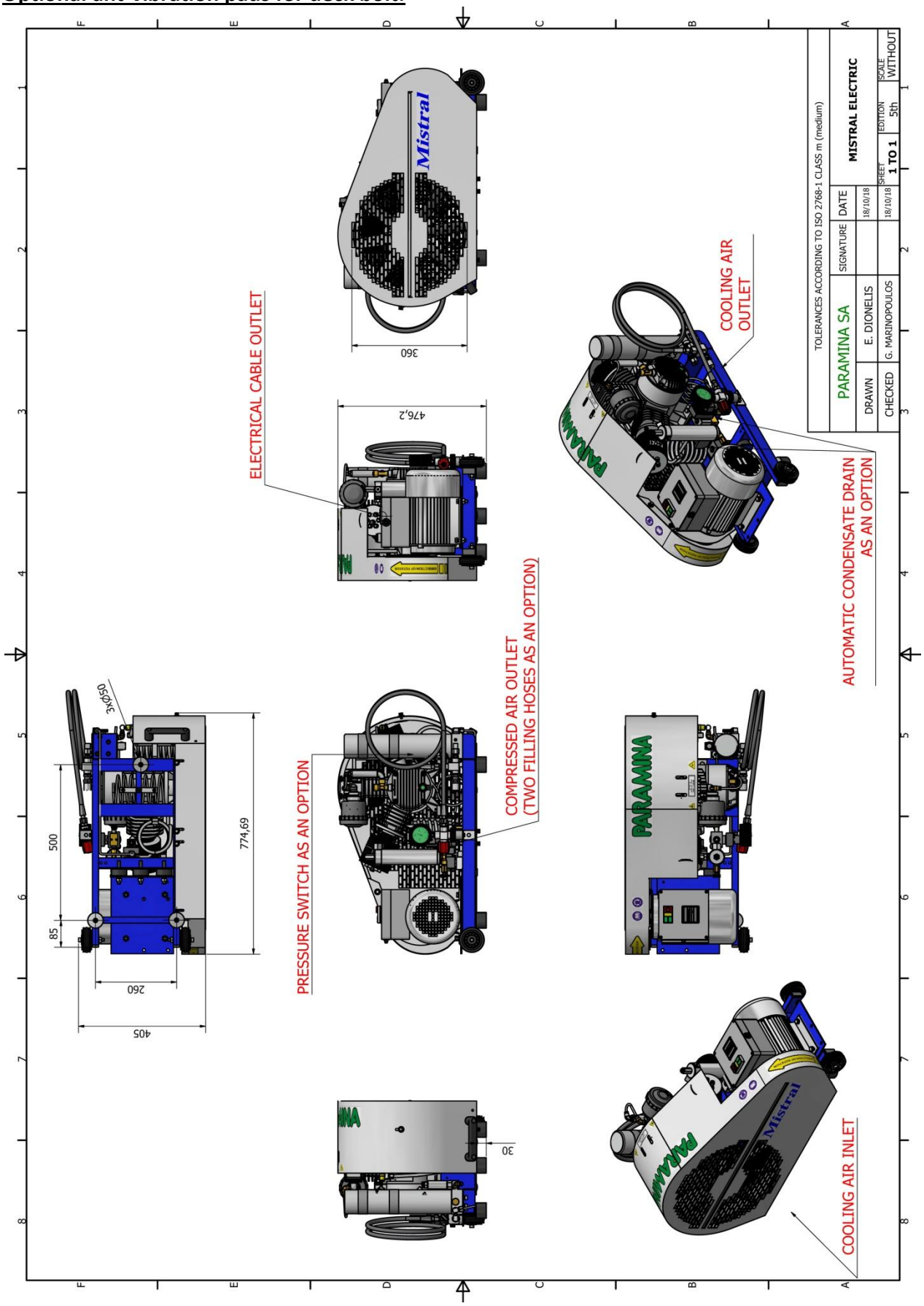
7. P & I Diagram

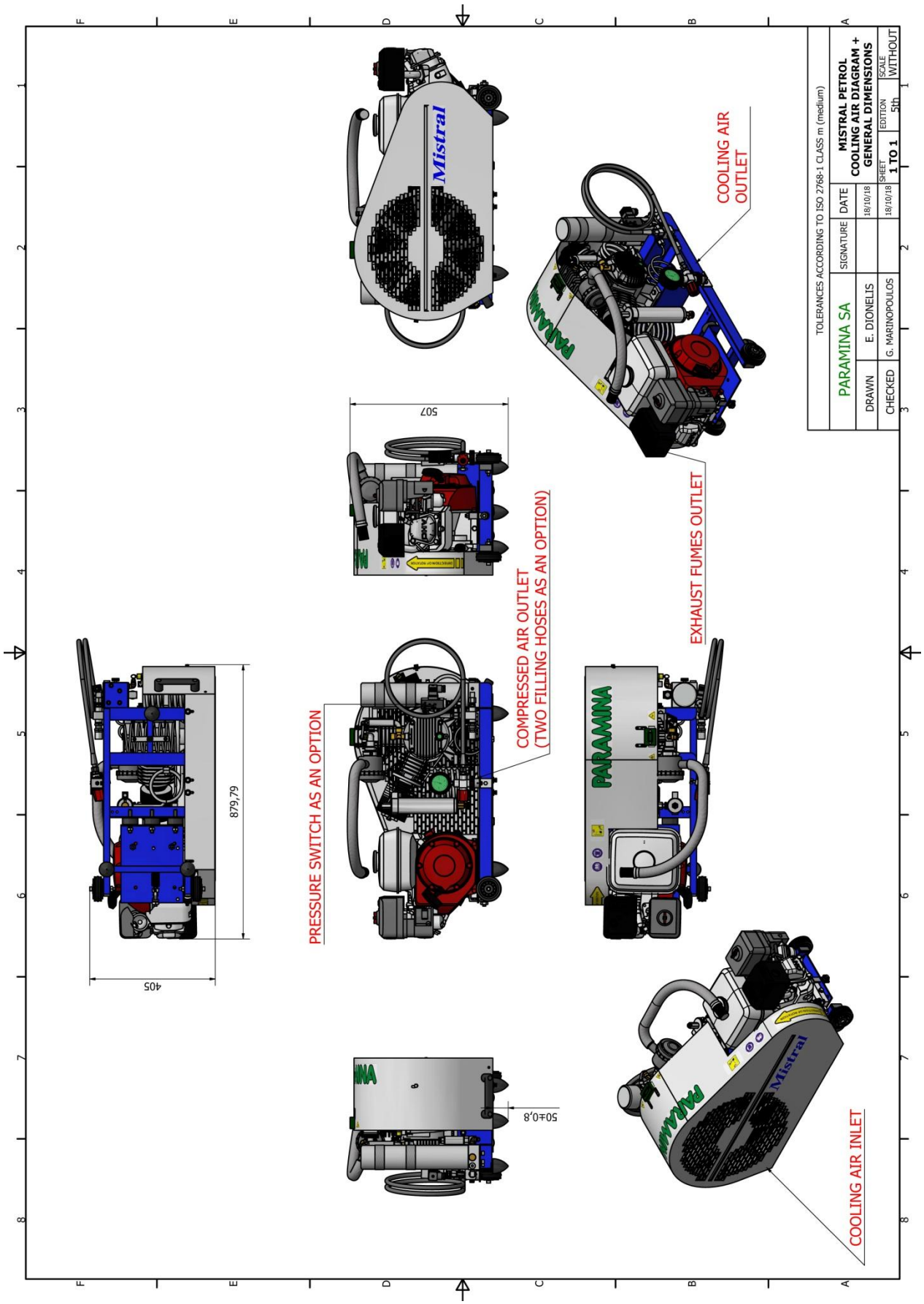

ALTERNATIVE 2nd PRESSURE FILLING SWITCH (OPTIONAL)
2nd AIR OUTLET 200 OR 300 BAR (OPTIONAL)
FINAL STAGE MANOMETER
AIR OUTLET 200 OR 300 BAR
MAINTAINING PRESSURE VALVE
MANUAL DRAIN
SAFETY VALVE 3rd STAGE
BA FILTER
CONDENSATE OUTLET
PRESSURE SWITCH P1 (OPTIONAL)
3rd STAGE AFTERCOOLER
AUTO DRAIN Y2 (OPTIONAL)
CONDENSATE COLLECTING TANK
COMPRESSOR 3rd STAGE
MANUAL DRAIN
SAFETY VALVE 2nd STAGE
2nd STAGE SEPARATOR
CONDENSATE OUTLET
AUTO DRAIN Y1 (OPTIONAL)
2nd STAGE INTERCOOLER
COMPRESSOR 2nd STAGE
COMPRESSOR BLOCK CRANKCASE
SAFETY VALVE 1st STAGE
OIL VAPOUR SYSTEM
1st STAGE INTERCOOLER
COMPRESSOR 1st STAGE
OIL VAPOUR EXHAUST
AIR INTAKE FILTER
AIR INLET
COMPRESSOR BLOCK CRANKCASE
CONDENSATE DRAINS
OPTIONAL EQUIPMENT
MISTRAL P & I DIAGRAM
SCALE WITHOUT
EDITION 3rd
SHEET 1 TO 1
PARAMINA SA
DRAWN E. DIONELIS 27/06/18
CHECKED C. NIKOLAKOPOULOS 27/06/18
SIGNATURE
DATE

8. Cooling air – Dimensional Drawings



Optional ant-vibration pads for deck bolt:




Mistral
COOLING AIR OUTLET
507
EXHAUST FUMES OUTLET
COMPRESSED AIR OUTLET
(TWO FILLING HOSES AS AN OPTION)
PRESSURE SWITCH AS AN OPTION
879,79
405
50±0,8
COOLING AIR INLET
TOLERANCES ACCORDING TO ISO 2768-1 CLASS m (medium)
PARAMINA SA
SIGNATURE
DATE
MISTRAL PETROL
COOLING AIR DIAGRAM +
GENERAL DIMENSIONS
DRAWN
E. DIONELIS
18/10/18
CHECKED
G. MARINOPOULOS
18/10/18
SHEET
1 TO 1
EDITION
5th
SCALE
WITHOUT

9. Certificates

MIRTEC
ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΒΙΟΜΗΧΑΝΙΚΗΣ ΕΡΕΥΝΑΣ, ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΝΑΠΤΥΞΗΣ & ΕΡΓΑΣΤΗΡΙΑΚΩΝ ΔΟΚΙΜΩΝ, ΠΙΣΤΟΠΟΙΗΣΗΣ ΚΑΙ ΠΟΙΟΤΗΤΑΣ
MATERIALS INDUSTRIAL RESEARCH & TECHNOLOGY CENTER S.A.

MBETAM

CERTIFICATE OF CONFORMITY

(MANUFACTURER INTERNAL CONTROL APPLICATION, According Art.12.2, 2006/42/EC)
Certificate No: **MCH/A-C- 0190/17**

Applicant/Certificate holder: Manufacturer Address:	PARAMINA S.A. By way Evaggelistrias str. 19300 ASPROPYRGOS, GREECE
Submission date of the application:	**Initial**: 05/12/2006 / **Reissue**: 4/12/2018
Description / Machine type:	**Mistral Compressor** **Mistral M6-EM, M6-ET, M6-BZ** **Mistral M8-EM, M8-ET, M8-BZ** (max working pressure 350bar)
Medium use:	Air / Nitrogen (N_2)
EC-Directive:	2006/42/EK, Annex I., Annex VII.A & Annex VIII
Applicable Standards:	EN ISO 1012-1:2010
Test Laboratory:	Factory PARAMINA S.A. and component Suppliers test Laboratories
Date of Report:	8.02.2018, Manufacturer's Internal Control
Documents Annexed to this Certification:	Technical documentation, operation installation and maintenance manual, Declaration of Conformity, Internal Inspection Report

The assessment machinery department of M.I.R.T.E.C. S.A. certifies that the above manufacturer has completed a technical file according to requirements of Annex VII.A, 2006/42/EC, which file has been initially deposited on December 2006 and final additional documentation on December 2017, for examination of implementation of the manufacturers' internal control, according Annex VIII, 2006/42/EC.

The Manufacturer performs for every product incoming, assembly and functional inspection and tests according §3.3 IEC 60364-6, issues a declaration of conformity according to the relative directives and applied standards and places the CE marking with his own responsibility. The product must be accompanied by operation and maintenance instructions and Declaration of Conformity.

Any changes in design and manufacture shall be notified to M.I.R.T.E.C. S.A.

Validity until December 2021

Place / Date of issue: **ATHENS / 4.12.2018**

Department of Certification

I.DIMITRIADIS
Director of Athens Office

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EBETAM A.E.
CERT - mach / EN08E (5.1/1.2.2016)
AET: 31629

Page 1 of 1

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MIRTEC ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΒΙΟΜΗΧΑΝΙΚΗΣ ΕΡΕΥΝΑΣ, ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΝΑΠΤΥΞΗΣ & ΕΡΓΑΣΤΗΡΙΑΚΩΝ ΔΟΚΙΜΩΝ, ΠΙΣΤΟΠΟΙΗΣΗΣ ΚΑΙ ΠΟΙΟΤΗΤΑΣ
MATERIALS INDUSTRIAL RESEARCH & TECHNOLOGY CENTER S.A.

BETAM

ΕΚΘΕΣΗ ΕΠΙΘΕΩΡΗΣΗΣ / *INSPECTION REPORT*

ΚΩΔ. ΕΡΓΟΥ : 5202 **A/A : 6646-R-13**
Project Code No

1. ΠΕΛΑΤΗΣ - ΚΥΡΙΟΣ ΤΟΥ ΕΡΓΟΥ / *CUSTOMER - OWNER*

Επωνυμία *Name*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*
Διεύθυνση Address	Πάροδος Ευαγγελίστριας, 19300 Ασπρόπυργος Αττικής/ Byway Evagelistrias Str 19300 Aspropyrgos Athens Greece

2. ΣΤΟΙΧΕΙΑ ΤΟΥ ΕΡΓΟΥ / *PROJECT INFORMATION*

Έργο *Project*	ΔΟΚΙΜΗ ΠΙΕΣΗΣ ΦΙΛΤΡΩΝ ΑΛΟΥΜΙΝΙΟΥ ΥΨΗΛΗΣ ΠΙΕΣΗΣ *HYDRAULIC PRESSURE TEST OF HIGH PRESSURE ALUMINIUM FILTERS*
Κατασκευαστής του Έργου *Manufacturer*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*
Μελετητής του Έργου *Project Engineer*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*

3. ΣΤΟΙΧΕΙΑ ΕΠΙΘΕΩΡΗΣΗΣ / *INSPECTION ELEMENTS*

Ημερομηνία Επιθεώρησης *Date of Inspection*	2.8.2013
Υλικά για Επιθεώρηση *Material for Inspection*	Φίλτρα Αλουμινίου Υψηλής Πίεσης / *High Pressure Aluminium Filters* Ø80x345 mm P. No. 208903700 Ø80x535 mm P. No. 208905700
Σκοπός Επιθεώρησης *Subject of Inspection*	Δοκιμή πίεσης φίλτρων αλουμινίου υψηλής πίεσης *Hydraulic burst test of high pressure aluminium filters*
Έλεγχοι κατά την Επιθεώρηση *Inspection Activities*	Δοκιμή αντοχής σε πίεσης / *Hydraulic pressure test*
Απαιτήσεις / Προδιαγραφές *Specifications / Requirements*	Απαιτήσεις πελάτη / *Client's requirements* Οδηγία 97/23/ΕΚ, *97/23/EC directive*
Εξοπλισμός που Χρησιμοποιήθηκε *Equipment Used*	Εξοπλισμός υδραυλικής δοκιμής και διακριβωμένο μανόμετρο / *Hydraulic pump and calibrated manometer WIKA 232.50* 1000 bar Cert. No 1010711/23.5.2013 DEKA SA
Τοποθεσία Επιθεώρησης *Place of Inspection*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε., Ασπρόπυργος / *PARAMINA S.A. Aspropyrgos*

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ΚΩΔ. ΕΡΓΟΥ : 5202 **A/A : 6646-R-13**
Project Code No

4. ΑΝΤΙΚΕΙΜΕΝΟ ΕΠΙΘΕΩΡΗΣΗΣ / *ITEMS INSPECTED*

Φίλτρα Αλουμινίου Υψηλής Πίεσης / *High Pressure Aluminium Filters*
Ø80x345 mm P. No. 208903700
Ø80x535 mm P. No. 208905700
Μέγιστη πίεση λειτουργίας / Maximum allowable pressure 350 bar

5. ΕΠΙΣΥΝΑΠΤΟΜΕΝΑ / *ATTACHMENTS*

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6. ΠΑΡΑΤΗΡΗΣΕΙΣ - ΣΥΜΠΕΡΑΣΜΑΤΑ / *REMARKS - CONCLUSIONS*

Πραγματοποιήθηκε υδραυλική δοκιμή πίεσης σε δύο φίλτρα όπως περιγράφονται παραπάνω σε πίεση 600 bar για χρονικό διάστημα 20 min. Δεν παρατηρήθηκαν διαρροές ή μόνιμες παραμορφώσεις.

Hydraulic pressure test was conducted on two filters as described above at a pressure of 600 bar and a time period of 20 min. No leakage or permanent deformation was observed.

7. ΟΡΟΙ ΧΟΡΗΓΗΣΗΣ ΤΗΣ ΕΚΘΕΣΗΣ / *TERMS OF ISSUE*

1. Η παρούσα Έκθεση δεν επιτρέπεται να χρησιμοποιηθεί για σκοπούς προβολή ή διαφήμισης, η ΕΒΕΤΑΜ ΑΕ κρίνει ότι αυτού του είδους η χρήση είναι παραπλανητική.
2. Η παρούσα έκθεση δεν επιτρέπεται να αναπαραχθεί ή μη μόνον στο σύνολό της και κατόπιν εγκρίσεως της ΑΕ ΕΒΕΤΑΜ.

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The Inspector

Κ. Διαμαντή
Δρ. Διπλ. Μηχ. Μηχ/κός

Για το τμήμα Βιομηχανικών Ελέγχων /
For the Industrial Inspection Dept.

Α. Στάμου
Διευθυντής

Ημερομηνία/Date: 5.8.2013

2/2

MIRTEC ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΒΙΟΜΗΧΑΝΙΚΗΣ ΕΡΕΥΝΑΣ, ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΝΑΠΤΥΞΗΣ & ΕΡΓΑΣΤΗΡΙΑΚΩΝ ΔΟΚΙΜΩΝ, ΠΙΣΤΟΠΟΙΗΣΗΣ ΚΑΙ ΠΟΙΟΤΗΤΑΣ
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ΕΚΘΕΣΗ ΕΠΙΘΕΩΡΗΣΗΣ / *INSPECTION REPORT*

ΚΩΔ. ΕΡΓΟΥ : 09065 **Α/Α : 7958-R-18**
Project Code No

1. ΠΕΛΑΤΗΣ - ΚΥΡΙΟΣ ΤΟΥ ΕΡΓΟΥ / *CUSTOMER - OWNER*

Επωνυμία *Name*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*
Διεύθυνση Address	Πάροδος Ευαγγελίστριας, 19300 Ασπρόπυργος Αττικής/ Byway Evagelistrias Str 19300 Aspropyrgos Athens Greece

2. ΣΤΟΙΧΕΙΑ ΤΟΥ ΕΡΓΟΥ / *PROJECT INFORMATION*

Έργο *Project*	ΔΟΚΙΜΗ ΠΙΕΣΗΣ ΦΙΛΤΡΩΝ ΑΛΟΥΜΙΝΙΟΥ ΥΨΗΛΗΣ ΠΙΕΣΗΣ *HYDRAULIC PRESSURE TEST OF HIGH PRESSURE ALUMINIUM FILTERS*
Κατασκευαστής του Έργου *Manufacturer*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*
Μελετητής του Έργου *Project Engineer*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε. / *PARAMINA S.A*

3. ΣΤΟΙΧΕΙΑ ΕΠΙΘΕΩΡΗΣΗΣ / *INSPECTION ELEMENTS*

Ημερομηνία Επιθεώρησης *Date of Inspection*	27.7.2018
Υλικά για Επιθεώρηση *Material for Inspection*	Φίλτρα Αλουμινίου Υψηλής Πίεσης / *High Pressure Aluminium Filters* Ø78x345 mm P.No. 208903710 without bleed valve P.No. 208903720 with bleed valve
Σκοπός Επιθεώρησης *Subject of Inspection*	Δοκιμή πίεσης φίλτρων αλουμινίου υψηλής πίεσης *Hydraulic burst test of high pressure aluminium filters*
Έλεγχοι κατά την Επιθεώρηση *Inspection Activities*	Δοκιμή αντοχής σε πίεσης / *Hydraulic pressure test* *Λειτουργικός έλεγχος / Functional test*
Απαιτήσεις / Προδιαγραφές *Specifications / Requirements*	Απαιτήσεις πελάτη / *Client's requirements* Οδηγία 2014/68/ΕΕ, *2014/68/EU directive*
Εξοπλισμός που Χρησιμοποιήθηκε *Equipment Used*	Εξοπλισμός υδραυλικής δοκιμής και διακριβωμένο μανόμετρο / *Hydraulic pump and calibrated manometer WIKA* 1000 bar at3474 1105537646 Cert. No 1016119 DEKA SA
Τοποθεσία Επιθεώρησης *Place of Inspection*	ΠΑΡΑΜΙΝΑ Α.Ε.Β.Ε., Ασπρόπυργος / *PARAMINA S.A. Aspropyrgos*

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ΚΩΔ. ΕΡΓΟΥ : 09065 **A/A : 7958-R-18**
Project Code No

4. ΑΝΤΙΚΕΙΜΕΝΟ ΕΠΙΘΕΩΡΗΣΗΣ / *ITEMS INSPECTED*

Φίλτρα Αλουμινίου Υψηλής Πίεσης / *High Pressure Aluminium Filters* Ø78x345 mm
P. No. 208903710 without bleed valve
P. No. 208903720 with bleed valve
Μέγιστη πίεση λειτουργίας / Maximum allowable pressure 350 bar

5. ΕΠΙΣΥΝΑΠΤΟΜΕΝΑ / *ATTACHMENTS*

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6. ΠΑΡΑΤΗΡΗΣΕΙΣ - ΣΥΜΠΕΡΑΣΜΑΤΑ / *REMARKS - CONCLUSIONS*

Πραγματοποιήθηκε υδραυλική δοκιμή πίεσης στο φίλτρο σε πίεση 600 bar για χρονικό διάστημα 20 min. Δεν παρατηρήθηκαν διαρροές ή μόνιμες παραμορφώσεις.
Hydraulic pressure test was conducted on the filter at a pressure of 600 bar and a time period of 20 min. No leakage or permanent deformation was observed.

Πραγματοποιήθηκε λειτουργικός έλεγχος της βαλβίδας. Όταν τα εξαρτήματα βρίσκονταν εντός του φίλτρου δεν υπήρχε διαρροή από τη βαλβίδα κατά την χρήση. Όταν το φίλτρο λειτούργησε χωρίς τα εξαρτήματα, η βαλβίδα ενεργοποιήθηκε απελευθερώνοντας τον αέρα και δεν αναπτύχθηκε πίεση εντός τους φίλτρου.
Functional check of the filter with bleed valve accessory was carried out. When the cartridge was inside the filter, no leakage was observed from the top head at normal operation. When there was no cartridge inside the filter, air was released through the bleed valve that did not permit the pressure to increase.

7. ΟΡΟΙ ΧΟΡΗΓΗΣΗΣ ΤΗΣ ΕΚΘΕΣΗΣ / *TERMS OF ISSUE*

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Ο Ελεγκτής /
The Inspector

Κ. Διαμαντή
Δρ. Διπλ. Μηχ/ Μηχ/κός

Για το τμήμα Βιομηχανικών Ελέγχων /
For the Industrial Inspection Dept.

Α. Στάμου
Διευθυντής Πιστοποίησης

Ημερομηνία/Date: 27.7.2018

MIRTEC
ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΒΙΟΜΗΧΑΝΙΚΗΣ ΕΡΕΥΝΑΣ, ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΝΑΠΤΥΞΗΣ & ΕΡΓΑΣΤΗΡΙΑΚΩΝ ΔΟΚΙΜΩΝ, ΠΙΣΤΟΠΟΙΗΣΗΣ ΚΑΙ ΠΟΙΟΤΗΤΑΣ
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ΠΙΣΤΟΠΟΙΗΤΙΚΟ
CERTIFICATE

ΣΥΜΜΟΡΦΩΣΗΣ ΠΡΟΣ ΤΗΝ ΕΝΟΤΗΤΑ Α2 (Εποπτεία κατά τυχαία διαστήματα) ΣΥΜΦΩΝΑ ΜΕ ΤΗΝ ΟΔΗΓΙΑ 2014/68/ΕΕ
CONFORMITY TO MODULE A2 (Supervised checks at random intervals) ACCORDING TO DIRECTIVE 2014/68/EU

Αριθμός Πιστοποιητικού : **PE-C-2171/17**
Certificate No :

Αριθμός Κοινοποίησης του Φορέα Πιστοποίησης : **0437**
Notification No of the Certification Body:

Ημερομηνία Έκδοσης: 18.7.2017
Date of Issue:

Αριθμός Έκθεσης : PE-R-2171/17
Test Report No:

Όνομα και Διεύθυνση Κατασκευαστή : PARAMINA S.A.
Name and Address of the Manufacturer: Byway Evagelistrias Str., 19300 Aspropyrgos, Greece

Τύπος Προϊόντος:
Product Type:
Safety valves for air compressors
Series 90 (1/4") – P. No. 219000020
Series 270 (1/4") – P.No. 219004552
Series 420 (1/4") – P.No. 219004522
Series 100 (1/4") – P.No. 219000022

Μέγιστη Επιτρεπόμενη Πίεση Λειτουργίας :
Maximum Allowable Working Pressure:
Series 90 – 90 bar,
Series 270 – 270 bar
Series 420 – 420 bar
Series 100 – 100 bar

Ημερομηνία Λήξης Πιστοποιητικού : 17.7.2020
Expiry Date of the Certificate:

ΔΗΛΩΣΗ- *Declaration*
Ο Κατασκευαστής ή ο διαθέτης εξουσιοδοτείται –μετά την εξέταση των προαπαιτήσεων- να τοποθετεί στον εξοπλισμό υπό πίεση που κατασκευάζεται σύμφωνα με το αντικείμενο του παρόντος ελέγχου τον αριθμό αναγνώρισης μας δίπλα από την σήμανση CE , ως κατωτέρω :
The manufacturer or the agent is –after examination of the prerequisites- authorized to provide the pressure equipment manufactured within the scope of the examination, with our identification number next to the CE -mark as illustrated:

CE 0437

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This certificate remains valid provided that the Manufacturer's Internal Production Control is subjected to surveillance by the Notified Body.

Για την EBETAM A.E.
For MIRTEC S.A.
A. Stamou
Certification Manager

Για το Τμήμα Αξιολόγησης
For the Evaluation Dpt.
K. Diamanti
Dr. Dipl. Mech. Engineer

ΕΣΥΔ
Certification of Products Cert. No 27

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CERTIFICATE | ZERTIFICAT | ΠΙΣΤΟΠΟΙΗΤΙΚΟ | SERTIFICA | شـــــهادة | 证书 | CERTIFICAT

TÜV AUSTRIA

CERTIFICATE

Management System as per
EN ISO 9001 : 2015

In accordance with TÜV AUSTRIA procedures, it is hereby certified that

PARAMINA
Air Compressors Manufacturers

PARAMINA S.A.
By Way Evagelistrias Str.
GR-193 00 ASPROPYRGOS, GREECE

Applies a Quality Management System in line with the above Standard for the following Scope

DEVELOPMENT, MANUFACTURING, SALES AND AFTER SALES SERVICE OF AIR COMPRESSORS AND AIR PROCESSING EQUIPMENT.

Certificate Registration No.: **01013354**

Valid until: 2021-07-15
Initial certification: 2010-07-02

Haralabos Ageloudis
Head of Management Systems & Products Certification Division
Certification Body
at TÜV AUSTRIA

Athens, 2018-07-16

This certification was conducted in accordance with TÜV AUSTRIA auditing and certification procedures and is subject to regular surveillance audits.

TÜV AUSTRIA HELLAS
429, Mesogeion Ave.
GR-153 43 Athens, Greece
www.tuvaustriahellas.gr

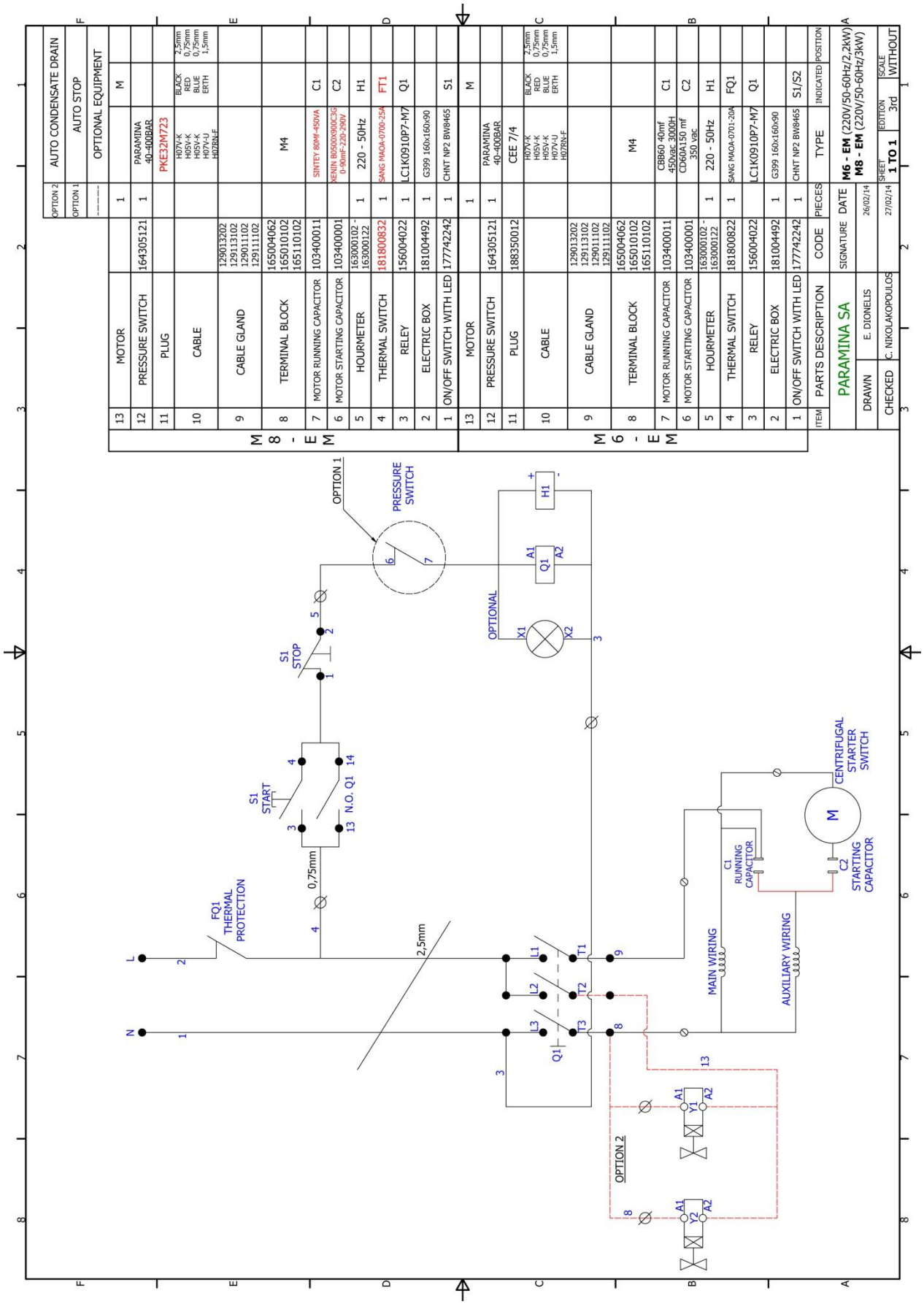
IAF ESYD
MS Certification
No. of Certificate 236

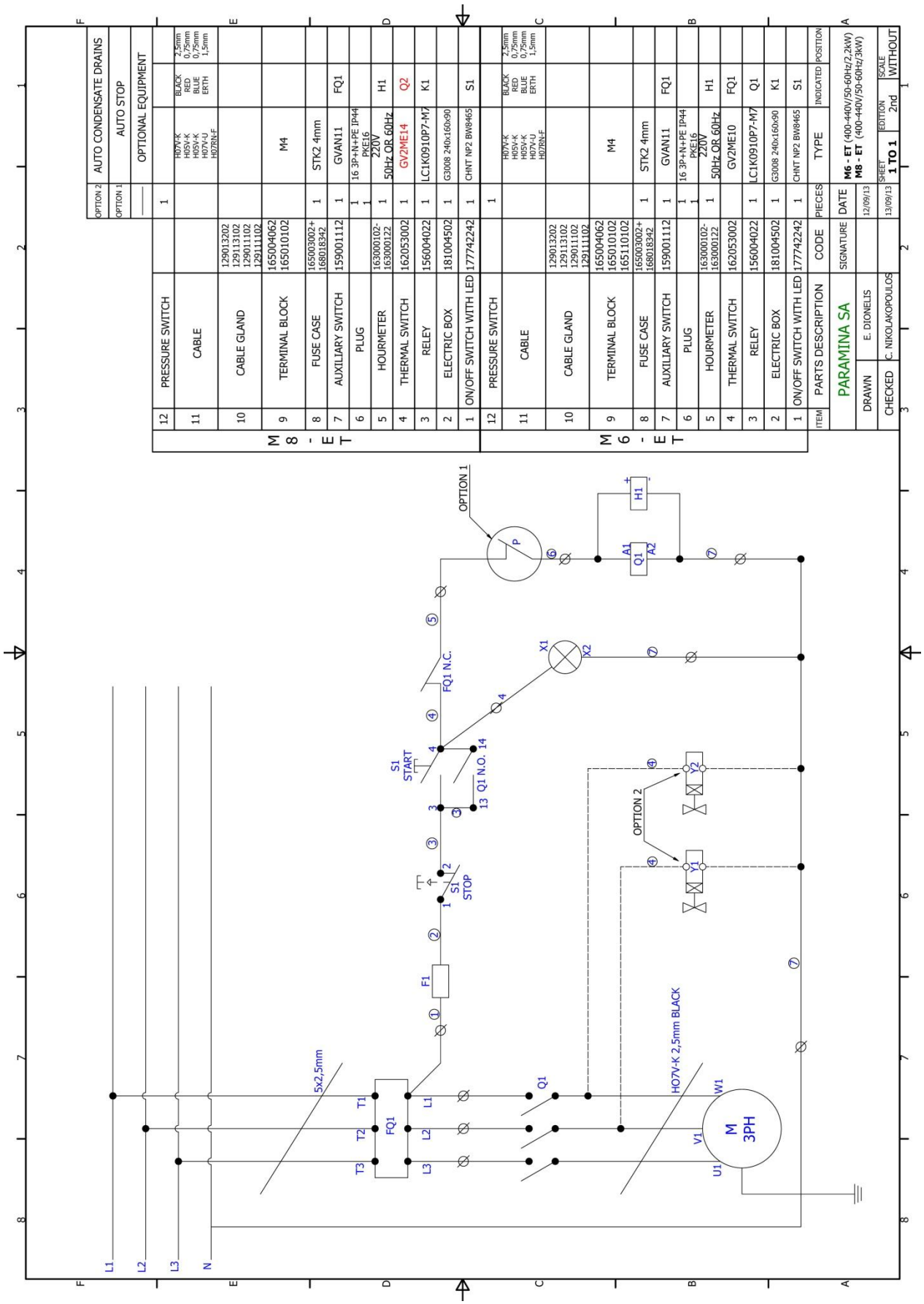
CePRK478_ A1e

Headquarters in Athens bear the responsibility of the Certification decision

TÜV AUSTRIA GROUP

10. Electrical Drawings




OPTION 2 AUTO CONDENSATE DRAINS
OPTION 1 AUTO STOP
OPTIONAL EQUIPMENT
M8 - ET
M6 - ET
ITEM PARTS DESCRIPTION CODE SIGNATURE DATE PIECES TYPE INDICATED POSITION
PARAMINA SA
DRAWN E. DIONELIS 12/09/13
CHECKED C. NIKOLAKOPOULOS 13/09/13
M6 - ET (400-440V/50-60Hz/2,2kW)
M8 - ET (400-440V/50-60Hz/3kW)
SHEET 1 TO 1
EDITION 2nd
SCALE WITHOUT
OPTION 1
OPTION 2
P
H1
A1 Q1 A2
X1 X2
FQ1 N.C.
S1 START
13 Q1 N.O. 14
S1 STOP
F1
Y1 Y2
Q1
FQ1
T1 T2 T3
L1 L2 L3
5x2,5mm
HO7V-K 2,5mm BLACK
W1 V1 U1
M 3PH
L1 L2 L3 N

11. Appendix – Mistral M6-ET/M8-ET Classic

Condensate drainage

Automatic drain system

✓ Optional equipment.

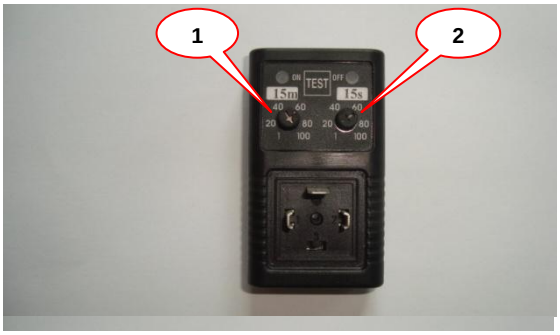
Max. operating pressure:

- 2nd stage drain valve: 80 bar
- 3rd stage drain valve: 250 or 350 bar

A. Option Two timers – Old Version:

The system consists of two timer controlled condensate drains, one after the 2nd, and one after the final stage and the BA filter. The drains are controlled electronically and open automatically.
In case of emergency (damaged auto drain system), the user may use the two manual drains. During routine operation open both drain valves every 15 (2nd stage) & 20 (3rd – final stage) minutes.

2nd Stage



The user can adjust the interval time (2) from 0,15 - 15 sec (**proposed time 1,5sec**), and the discharge time (1) from 0,15 - 15 min (**proposed time 15 min**),
Note for 2nd Stage drain only: The numerous at internal time (2) are at a percentage of 15sec. So at internal time (2) 1,5 sec = 10(%). Respectively the numerous at discharge time (1) are at a percentage of 15min, so 15min = 100(%)

3rd Stage

The user can adjust the interval time (2) from 0,5 - 45 min (**proposed time 20min**), and the discharge time (1) from 0,5 - 10 sec (**proposed time 2-3 sec**).

B. Option One timer – New Versions:

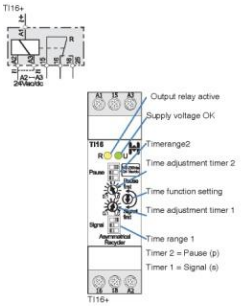
The system consists of one timer, located inside compressor's electrical box. It controls electornically both 2nd & 3rd stage condensate drains, which open automatically.
In case of emergency (damaged auto drain system), the user may use the two manual drains. During routine operation open both drain valves every 20 minutes.

Pause Time = 20 min

Signal Time = 2 – 3 seconds – set signal time first

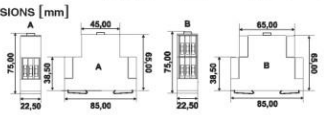
Important Note: Do not change manufacturer adjustments.

CONNECTION BLOCK DIAGRAM



TYPE APPROVAL INFORMATION

DIMENSIONS [mm]

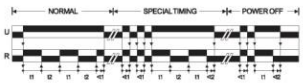


MOUNTING

Lever opens the spring clip on the base to mount device on a mounting rail according to EN60715. The devices are suitable for mounting side by side without an air gap with an ambient temperature range from -20 to + 60°C and max. Ie of 2,5A.

Pause first / Signal first

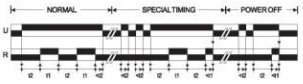
Asymmetrical recycler pulse first:



NORMAL: By turning on the supply voltage (U) the output relay (R) is pulled in and the on-time (t1) starts. After expiration of the on-time (t1) the output relay (R) drops out and the off-time (t2) starts. After expiration of the off-time (t2) the output relay (R1) pulls in and the on-time (s) starts again. This procedure repeats until the power supply (U) is removed.
SPECIAL TIMING: If the supply voltage (U) is applied a shorter time than the preset time period (t1), the output relay (R) never turns on for the hole on-time(t1). The on-time starts always new.
POWER OFF: The output relay (R) always drops out if the supply voltage (U) is removed.

Pause first / Signal first

Asymmetrical recycler pause first:



NORMAL: By turning on the supply voltage (U) the off-time (t2) starts. After expiration of the off-time (t2) the output relay (R) pulls in and the on-time (t1) starts. After expiration of the on-time (t1) the output relay (R) drops out and the off-time (t2) starts again. This procedure repeats until the power supply (U) is removed.
SPECIAL TIMING: If the supply voltage (U) is applied a shorter time than the preset time period (t1), the output relay (R) never turned on.
POWER OFF: The output relay (R) always drops out if the supply voltage (U) is removed.

TIME FUNCTIONS
The recycler starts with pause or signal depending on the selected function.

LED STATUS INDICATION

U	green	ON	Supply voltage present.
R	yellow	ON	Output relay is active.

CONTROLS

DIP_{upper}	DIP-Switch to select the time range for p (Pause):
POT_{upper}	Potentiometer to adjust the time p (Pause) due to the selected time range(setting range: 0,1..1,0 = 10..100% p).
POT_{right}	Potentiometer to select the function „Pause first" or „Signal first"
POT_{lower}	Potentiometer to adjust the time s (Signal) due to the selected time range (setting range: 0,1..1,0 = 10..100% s).
DIP_{lower}	DIP-Switch to select the time range for s (Signal):

Time ranges:

Legend:

U	Supply voltage (U_{A1-A2})
p	Function time Pause
s	Function time Signal
R	Output relay state

Note: **It is not necessary to remove the supply voltage before making any changes in the setting of the controls. The new time settings are immediately active. The function change is active by turning on the power supply in the next time.**

OUTPUT RELAY

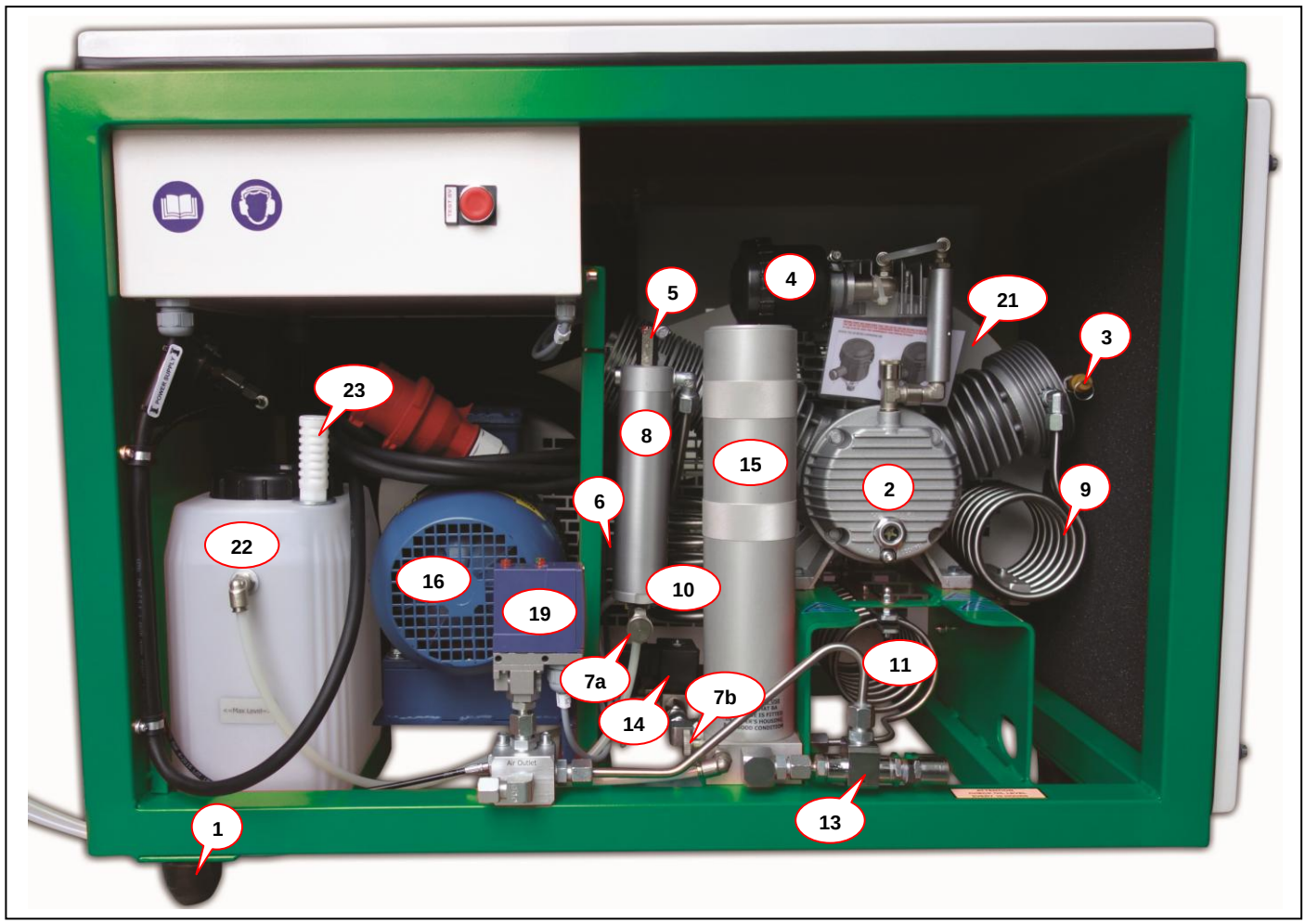
Active	Condition depends on the function.
Inactive	Condition depends on the function or the device has an internal fault

Note: **The contact of the output relay is galvanically isolated from the power supply terminals!**

Waste removal:

This symbol indicates separate collection of waste electrical and electronic equipment in the EU countries. Please do not throw the equipment into the domestic refuse. Please use the return and collection systems available in your country for the disposal of this product.

Spare Parts Catalog


1
2
3
4
5
6
7a
7b
8
9
10
11
13
14
15
16
19
21
22
23

ITEM	QTY	PART NR.	DESCRIPTION
1	3	128503502	Anti-vibration pad
2	1	100006001	Compressor Block M6*****
		100006000	Compressor Block M8*****
3	1	190500600	Safety valve 1st stage (5bar)
4	1	109000000	Intake air filter housing
	1	109460302	Intake air filter cartridge
5	1	219000022	Safety valve 2nd - 100bar series @40bar
6	1	154122351	Automatic drain 2nd stage (80bar 230VAC N.O.)
7a	1	190000000	Manual drain valve c/w seat & connector 2nd stage w.s.
7b	1	190000080	Manual drain valve complete with seat
	2	190008112	Manual drain valve's seat
8	1	208501610	Condensate separator 2nd stage (see drawing at page 48)
9	1	190000890	Intercooler 1st stage horizontal
10	1	190000850	Intercooler 2nd stage
11	1	190000230	After cooler 3rd stage (M6 series)
		190000232	After cooler 3rd stage (M8 series)
12	1	219004522	Safety valve 3rd stage (300 bar) ***
	1	219004552	Safety valve 3rd stage (200 bar) ***
		219004520	Service Kit for safety valves p.n. 219004522 & 219004552 ***
13	1	219004572	Pressure maintaining valve ****
14	1	154122200	Automatic drain 3rd stage (250bar 230VAC N.C.)
		154122271	Automatic drain 3rd stage (350bar 230VAC N.C.)
15	1	208903700	BA Filter Ø80x345 complete
		208903710	BA Filter Ø78x375 complete w/o bleed valve
		208905720	BA Filter Ø78x375 complete c/w bleed valve
16	1	103030010	Electric motor 2,2 kW/400V/50-60Hz
		103030042	Electric motor 3 kW/400V/50-60Hz
17	1	177742242	Start / Stop Button
18	1	163000102	Electric Hourmeter
19	1	164305121	Pressure switch 40-400 bar
		164305012	Pressure switch 30-500b dual for Auto Start / Stop
20	1	122063422	Final stage manometer
21	1	**	Taper bush
	1	**	Pulley motor
	1	135161242	Taper bush com. block (M8 series only)
	1	190001240	Washer flywheel/crankshaft M8
	1	136017012	Pulley com. Block (M8 series only)
	1	105000982	Inside guard
	1	**	V-Belt
	1	136401002	Flywheel for M6 series compressor
		136401000	Flywheel for M8 series compressor
	2	192200822	Flywheel washer Ø8
	1	198000802	Flywheel lock screw Ø8
	1	193108302	Flywheel screw M8x30
22	1	401001082	Condensate collecting tank 6ltr

23	1	142111201	Sintered Filter Plastic 1/2''
24	1	160140052 160140062	Reset Button
25	1	162034002	Main Switch
26	1	181000000	Emergency Stop Button
27	1	177747072	Thermal Switch Enabled
28	1	177747072	High Temperature Led
29	1	160140052 160140002	Safety Valve Test Button (optional)

*** See all BA filter's parts and codes in page 20.**
**** According to compressor's serial number.**
***** Go to page 46 for service kit installation instructions.**
****** Go to page 47 for service kit installation instructions.**
*******Go to pages 40-45 for compressor block parts.**

12. Mistral Classic Cooling air – Dimensional Drawings