

OPERATING INSTRUCTIONS
(item number of the operating instructions 00 09 93 39)
(item number of the machine 00 09 90 64)

MIXER PUMP

PFT RITMO powercoat 110V



WE KEEP THINGS FLOWING



Contents

Contents	4
Please note !	6
Inspection confirmation / type plate	7
Basic safety instructions	8
Basic safety instructions	9
Operating principle	10
General view of the RITMO powercoat: View from behind	11
General view of the RITMO powercoat: View from the front	12
Overview of the RITMO powercoat 110V control box, item number 00097590	13
Overview of the RITMO powercoat water manifold, item number 00097921	14
Setting values	15
Technical specifications	15
Assembly – rotor/stator/mortar pressure gauge	16
Mortar pump	17
Operation as pump (for pastes)	18
Operation as mixing pump (for filler in powder form)	19
Interruption of work	21
Measures to be taken when work is finished or interrupted	22
Clearing hose blockages	23
Measures to be taken in the event of a power failure	23
Measures to be taken in the event of a water supply failure	23
Measures to be taken if there is a risk of frost	24
Transport	24
Maintenance	25
Fault – Cause – Remedy	26
Accessories	28
Accessories	29
Spare parts drawing for motor and protection grille, RITMO powercoat	30
Spare parts list for motor and protection grille, RITMO powercoat	31
Spare parts drawing for material hopper, RITMO powercoat	32
Spare parts list for material hopper, RITMO powercoat	33
Spare parts drawing for pump unit, RITMO powercoat	34
Spare parts list for pump unit, RITMO powercoat	35
Spare parts drawing for frame, RITMO powercoat	36
Spare parts list for frame, RITMO powercoat	37
Spare parts drawing for control box, RITMO item number 00 09 75 90	38
Spare parts listfor control box, RITMO item number 00 09 75 90	39
Spare parts drawingfor water manifold, RITMO powercoat	40
Spare parts listfor water manifold, RITMO powercoat	41
Circuit diagram	42
Circuit diagram	43
Program Group Parameters Frequency Power Flex RITMO 110V 1Phase	44
Check list for annual inspection by specialist (master copy)	47

Congratulations on your purchase! You have made a wise choice as you clearly value the quality that comes with a brand name product from a reputable company.

The PFT RITMO powercoat mixing pump uses state-of-the-art technology. It has been designed in such a functional manner as to be a reliable aid in rough construction site conditions.

These operating instructions should always be kept at the site of the machine so that they are always readily available. They contain information on the various functions of the machine. Study the operating instructions thoroughly before putting the machine into service, since we assume no liability for accidents or damage caused by incorrect operation.

The PFT RITMO powercoat mixing pump will be a trustworthy aid, if it is operated correctly and handled with care.

It is prohibited to forward this document, even excerpts, without our written authorisation. All technical specifications, diagrams etc. are subject to copyright law. All rights, errors and modifications are reserved.

Initial inspection after delivery

An important task of all technicians delivering the PFT RITMO powercoat mixing pump is the inspection of the machine settings at the end of the first working operation. The factory settings may change during the initial cycle. If these changes are not corrected in time – immediately after start-up – malfunctions may well be the result.

Please note !



WARNING!

If additional parts that are not specified in these operating instructions are installed for special procedures, it is necessary to keep to the utilisation, safety and maintenance regulations.



WARNING!

It is forbidden to use the machine for purposes other than those for which it is intended.



WARNING!

It is forbidden to use the machine in explosive environments.



WARNING!

The machine must always be used in a perfect condition and in accordance with these instructions, while observing the safety instructions and danger warnings. Any damage that could impair operational reliability must be repaired immediately.



WARNING!

The user must be aware of the risk of getting one's clothes or long hair caught in moving parts.
Chains, bracelets and rings can also pose a risk.



WARNING!

The workplace of the user must be clean, tidy and free from objects that could restrict one's freedom of movement.



WARNING!

The workplace must be lit appropriately for the particular work you are doing.

Inspection confirmation / type plate



Sticker above the control box.
Confirmed according to EU directives.

Serial number.
Inspection date.
Inspection / signature.



Sticker above the control box.
PFT type plate.

Basic safety instructions

1. The safety instructions and danger warnings on the machine must be observed and kept in a legible condition.
2. All procedures for switching the machine on and off and control indicators and signal lamps should be in compliance with the operating instructions.
3. Install the machine on stable and even ground and secure it against accidental movements. It may neither tilt nor roll away. The machine must be installed in such a way that it cannot be hit by any falling objects. The controls must be freely accessible.
4. Inspect the machine for visible damage and defects at least once every shift. When doing so, pay special attention to electrical power cables, couplings, plugs and air, water and conveying lines. Any visible defects must be eliminated immediately.
5. Spare parts must comply with the technical requirements of the manufacturer. This is guaranteed for all original PFT parts.
6. The machine may only be connected to a worksite switchgear assembly with an earth-leakage circuit breaker (30 mA). If the control system of the machine has a 3-phase frequency converter, the 30 mA earth-leakage circuit breaker of the worksite switchgear assembly must be sensitive to all currents.
7. The machine may only be put into service by trained or instructed personnel. Clearly define the responsibilities of the personnel for operation, setup, maintenance and repairs.
8. Personnel undergoing training should only be allowed to operate the machine under the supervision of experienced personnel.
9. Work on the electrical equipment of the machine may only be carried out by qualified electricians or by trained personnel under the supervision of a qualified electrician in accordance with electro-technical regulations.
10. The machine must be completely switched off for maintenance and repairs and secured against being accidentally switched back on again (lock the main switch and pull the key, for example, or attach a warning sign to the main switch).
11. If work has to be carried out on live components, a second person should be present to disconnect the power in the event of an emergency.
12. Depressurise all conveying systems before opening conveying lines.
13. Before cleaning the machine with a water jet, seal all openings through which water could enter and impair the safety and functions of the machine (e.g.: electric motors and control boxes). Remove all covers after cleaning.
14. Only use original fuses of the prescribed amperage.
15. Disconnect the machine from any external power supply before relocating it, even it is only to be moved a short distance. The machine should be connected properly to the mains before being put back in operation.
16. The machine may only be moved by a crane if it is firmly strapped to a Euro pallet. All removable parts must be removed first. Make sure nobody enters the danger area of the crane. All precautions must be taken to prevent parts from falling down.
17. Safety devices such as inclination switches, protection grilles etc. may not be manipulated. The safety devices should be checked separately before beginning with work.
18. Longer work breaks can cause the mortar to set, resulting in malfunctions during operation. This is why the machine should always be emptied and cleaned (incl. spray gun and conveying hoses) during long breaks.
19. Never put any objects in the dry material hopper or pump container.
20. Appropriate noise insulation devices must be provided if the permanent noise level exceeds 85 dB (A).

21. The machine must be inspected by a specialist once a year. This inspection must be documented and include: a visual inspection for damage, a functional check, an inspection of the safety devices and a high-voltage check of the control box.
22. Safety-relevant components may be damaged by frost. Drain the machine whenever there is a danger of frost.
23. The machine's lubrication and maintenance schedule must be complied with, since otherwise the warranty will lose its validity.
24. Changes to the machine are not permitted. Knauf PFT GmbH & Co. KG will not accept any liability for claims if changes are made.
25. The following safety instructions must also be observed for pumps and mixer pumps: Wear appropriate protective clothing during spraying work: safety goggles, safety shoes, safety clothing, gloves, protective skin cream and respirator mask.
When removing blockages, the person undertaking the task must stand in such a way that he/she cannot be hit by discharged mortar. In addition, safety goggles should be worn. No other persons may be within the immediate vicinity of the machine while this job is being done. Only conveying hoses with a permissible operating pressure of at least 40 bar may be used. The burst pressure of the conveying hose must be at least 2.5 times the operating pressure. The machine may not be operated without a mortar pressure gauge.
Depressurise all conveying systems before opening any mortar pressure hoses. The machine can be switched on and off at any time without anyone working directly at the machine if it is remote-controlled by means of a spray gun or remote control.

Basic safety instructions

The following terms and symbols are used in these operating instructions for particularly important information:

NOTE:

Special information for running the machine efficiently.

WARNING!

Special information, regulations and restrictions for the prevention of damage.



WARNING!

The machine should only be used if it is in technically perfect condition and in compliance with the regulations. Pay attention to safety and the operating instructions. It is especially important to immediately correct any faults that could impair safety.

In order to make the operation of our machines as easy as possible for you, we would like to briefly inform you of the most important safety regulations. If you comply with these regulations, you will be able to use our machine in a safe and quality-assuring manner for a long time to come.

Proper use of the machine

The PFT RITMO powercoat is a continuously operating mixing pump for pre-mixed machineable filler in the form of powder.

The machine was designed for a permanent operating pressure of max. 20 bar.

Observe all processing guidelines from the material manufacturer.

The PFT RITMO powercoat may only be used for filler and pastes without granulation.

If material with granulation is used, PFT assumes no guarantee for the pump system with agitator.

Operating principle

The PFT RITMO powercoat is designed for being filled with material from bags. The mixing shaft and the pump are driven by a gear motor.

The rotary speed of the pump motor is continuously adjustable within the range of 140-575 rpm.

However, the machine should always be started at maximum speed.

Water is added to the dry material in the mixing area where it is then mixed. The water flow rate needs to be set manually at the needle valve.

The water flow rate may be checked using the water flow meter.

A water safety switch monitors the water flow pressure. If it falls below 1.6 bar, the machine shuts down automatically. This problem is prevented by installing a high pressure pump upstream (accessory).

The mixed putty coat is pumped away by a screw pump with agitator installed behind the mixing shaft.

The agitator is for grinding and crushing lumps that have passed the pump system.

The powercoat 1500lg spray gun or the powercoat spray gun are mounted offset at the end of the conveying hose. The compressed air required for spraying must be supplied by a compressor.

The RITMO can also be used for pumping pastes. A water connection is not required. The water safety switch is then bypassed by an electrical control.

Applications:

Filling of large surfaces on dry walls

Filling of primed raw ceilings

Finish filling of walls

Filling as preparation for high-quality painting

The machine consists of portable individual components of small, handy dimensions and light weight that allow fast, convenient transport.

The following points should be observed during operation:

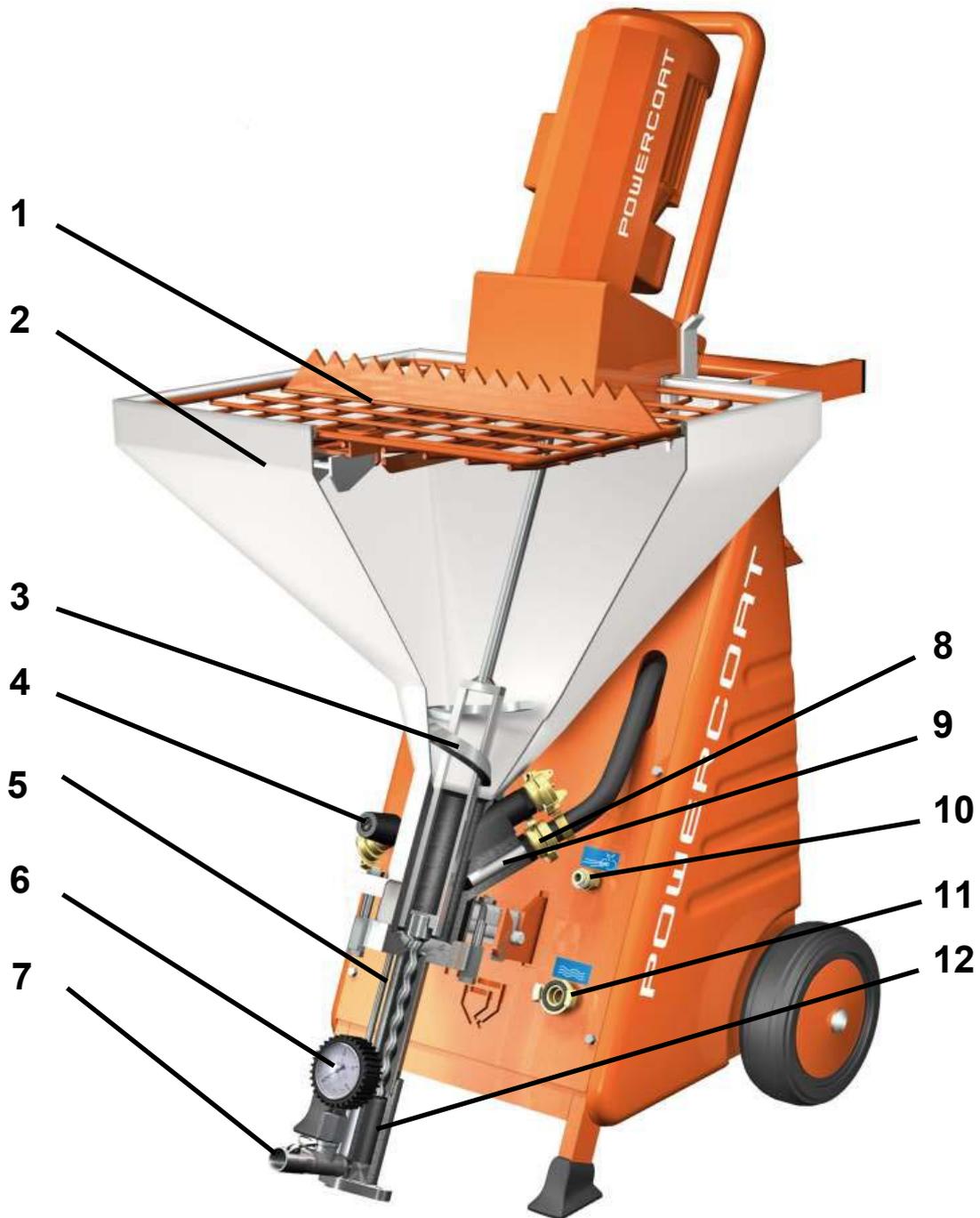
- ✓ Connection mains – control box
- ✓ Connection control box – motor
- ✓ Connection water supply – water manifold
- ✓ Connection water manifold – rubber mixing zone
- ✓ Connection pressure gauge – material hose
- ✓ Connection material hose – spray gun
- ✓ Connection compressor – spray gun
- ✓ Connection control box – spray gun

General view of the RITMO powercoat: View from behind



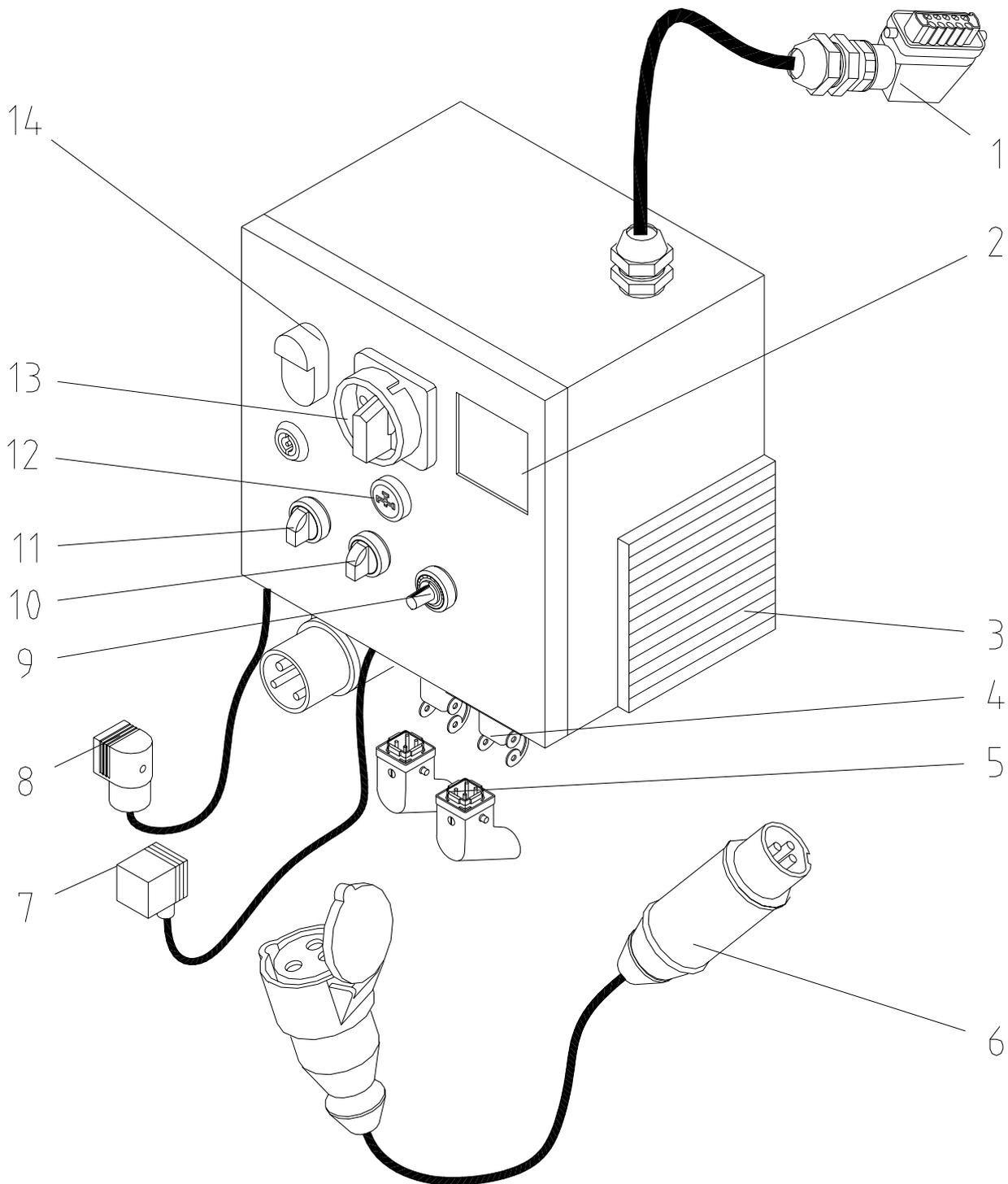
1. Gear motor, 1.5 KW	2. Gear motor power supply
3. Control box	4. Water manifold
5. Water manifold – needle valve	6. Main power supply

General view of the RITMO powercoat: View from the front



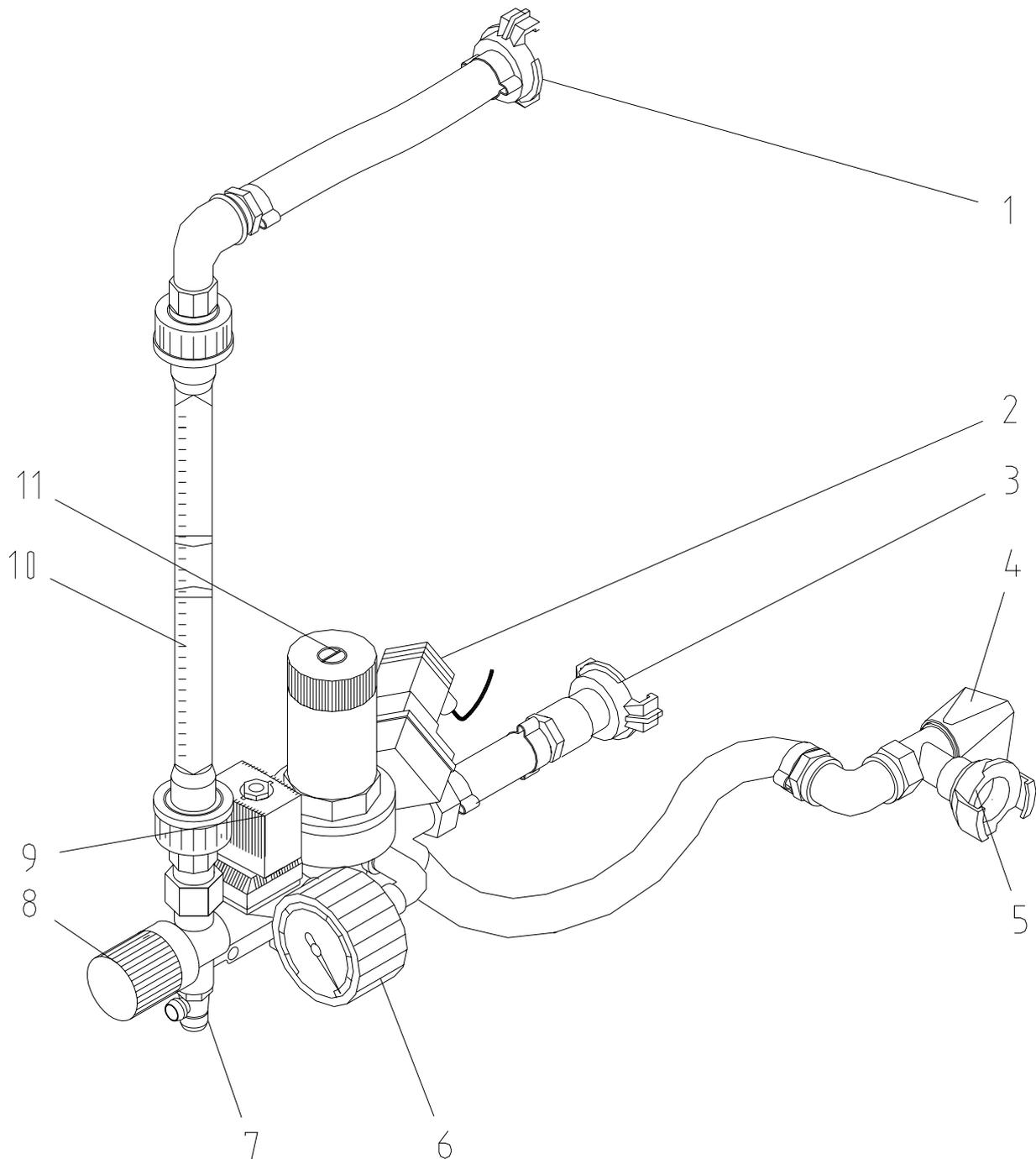
1. Protection grille with bag opener	2. Material hopper
3. RITMO powercoat mixing shaft	4. Water outlet valve
5. Pump, A2 – 2.5 L (rotor / stator)	6. Pressure gauge, 0 – 40 bar 1/2"
7. Coupling, 13M part 1/2" male thread	8. Water supply, rubber mixing zone
9. Nozzle	10. Air supply for spray gun
11. Water supply	12. Powercoat agitator

Overview of the RITMO powercoat 110V control box, item number 00097590



1.	Motor connection cable	2.	Inspection window for FU
3.	Outlet filter for control box	4.	Remote control connection
5.	Blind plug	6.	Main power cable
7.	Plug for water safety switch	8.	Plug for solenoid valve
9.	Speed control / material quantity	10.	Motor rotation direction LEFT/RIGHT
11.	Operation as pump or mixing pump	12.	Water flow button
13.	Main switch	14.	Machine ON / OFF operating switch

Overview of the RITMO powercoat water manifold, item number 00097921



1. Water to mixing tube	2. Water pressure switch
3. Connection to water supply	4. Water outlet Open – Closed
5. Water supply for cleaning the mortar pressure hose	6. Primary water pressure gauge
7. Antifreeze outlet tap	8. Needle valve water quantity
9. Solenoid valve	10. Water flow meter 31.5 – 315 l/h
11. Pressure reducer	

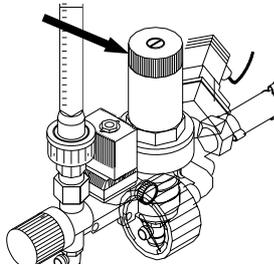
Setting values

Water pressure release:

Machine starts at 1.9 bar

Machine stops at 1.6 bar

The values are permanent and may not be adjusted.



Pressure reducing valve:

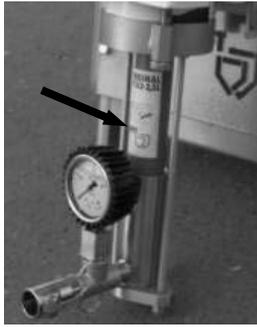
1.5 bar at maximum flow rate

Technical specifications

Drive	Three phase motor 1.5 kW
Speed range	140 – 575 rpm, continuously adjustable
Control box power supply	110 V alternating current, 50 Hz
Max. power consumption	5.8 A gear motor
Fuse protection	16 A
Power unit	Min. 6 kVA
Water supply	1/2 inch, min. 2.5 bar when the machine is running
Pump output	Approx. 0.8 – 3 l/min, continuously adjustable
Pumping distance*	Up to 15 m, mineral fillers
Operating pressure	Max. 20 bar
Material hopper filling height	900 mm
Material hopper capacity	45 litres
Overall length	750 mm
Overall width	600 mm
Overall height	1,350 mm
Weight of hopper unit	19 kg
Weight of drive with protection grille	25 kg
Weight of frame with control box	40 kg
Weight of mixing shaft	2 kg
Total weight	86 kg
Permanent noise pressure level	77±1 dB(A)
EMC inspection	The machine has been EMC-inspected and complies with the strict requirements of protection class B. The control box is equipped with a line filter.

* Approximate value depending on conveying height, material quality, composition and consistency, pump version and condition.

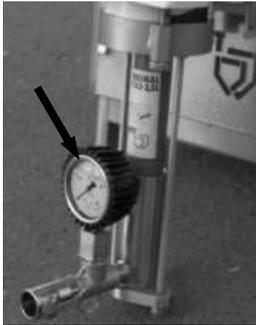
Assembly – rotor/stator/mortar pressure gauge



Rotor/stator

The PFT RITMO powercoat mixing pump is standard-equipped with the A2 2.5 L pump system with agitator.

The rotor and stator are subject to wear and must be checked regularly. New pump components with a conveying hose of 15 m should achieve a pressure of approx. 15 bar (approx. 20 bar if water is the conveying medium, approx. 15 bar for mortar) before and after initial spraying.



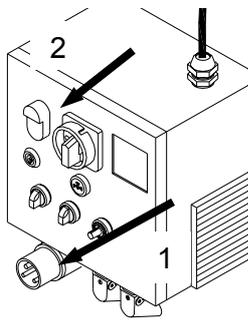
Pressure gauge

The PFT pressure gauge may be used to monitor the consistency quickly and easily.

The pressure gauge is part of the scope of delivery.

Some benefits of the mortar pressure gauge:

- Constant monitoring of the correct conveying pressure
- Early detection of clogging or overloading of the pump motor
- Establishment of zero pressure
- Significant contribution to the safety of the operating personnel
- Durability of the pump components



WARNING!

Before installing/removing the mortar pump, make sure that the machine has been disconnected from the power supply (1).

None of the control lamps on the control box may be on (2).



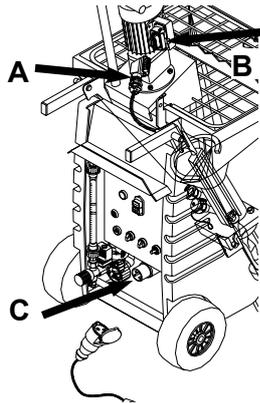
Mortar pump

Furthermore, observe that:

- A new rotor and new stator need to be run in; actual pressure values can only be determined after the first spraying cycle.
- Pump components that do not achieve the specified operating pressure (15 bar) are worn out and must be replaced.
- An operating pressure of 20 bar should not be exceeded.
- The minimum conveying distance depends mainly on how the material flows. It is recommended to check and possibly change the consistency of the material if you exceed an operating pressure of 20 bar.
- To avoid machine breakdowns and excessive wear to pump motor, mixing shaft and pump, always use original PFT parts, such as e.g.
 - PFT rotors with agitator
 - PFT stators
 - PFT mixing shaft
 - PFT pressure hoses.

These wearing components are compatible with one another and form a single construction unit together with the machine.

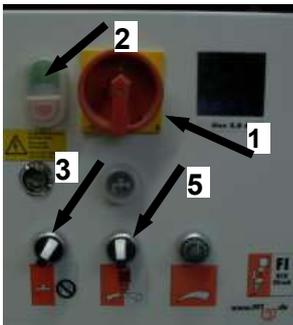
Operation as pump (for pastes)



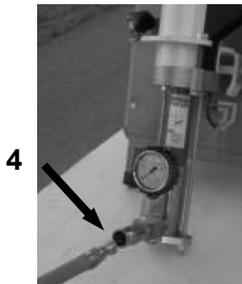
Turn all switches to “0”

Electrical connection:

Plug the 10-pin motor connecting cable (A) into the designated socket (B) on the motor.
 Connect the control box (C) to a distributor box with approved FI safety switch (30 mA).
 The 10 m 3-pin connection cable with CEE plug is part of the scope of delivery.



Turn the main switch (1) to ON.
 Set the operation switch (2) to ON. The operation switch lights up.
 Turn the “Operate with water flow / without water flow” selection switch (3) to the right, to **without water**.
 Disconnect the water hose from the mixing tube and close both water inlets with a Geka blind cover.
 The paste can now be filled into the material hopper.
 The machine is now ready for operation.



Pre-lubricate the material hose with wallpaper paste and then connect it to the pump unit (4).



Connect the material hose to the airless spray gun (6).
 Connect the remote control cable to the remote control box and to the airless spray gun (7).
 Switch on the machine (1).
 Turn the selection switch to the right (forwards) (5).
 Press the spray gun switch, the machine runs.

Warning:

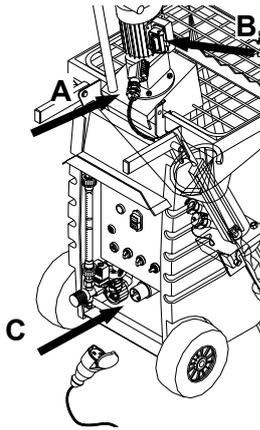
If the spraying process is interrupted, press the button (8) to prevent any unintentional operation of the switch.

WARNING!



The protection grille may not be removed while preparing or operating the machine.
 Always wear safety goggles during operation.

Operation as mixing pump (for filler in powder form)



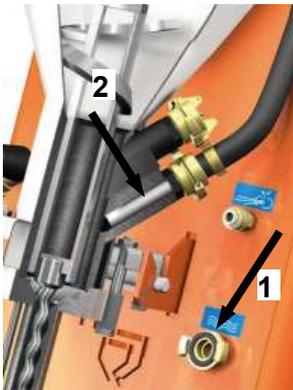
Turn all switches to “0”

Electrical connection:

Plug the 10-pin motor connecting cable (A) into the designated socket (B) on the motor.

Connect the control box (C) to a distributor box with approved FI safety switch (30 mA).

The 10 m 3-pin connection cable with CEE plug is part of the scope of delivery.



Water supply

Connect a ½" water hose to the water supply. Open the supply valve and flush the water hose with water to remove any dirt. After bleeding the hose, the supply valve can be closed again.

Then connect the water hose to the machine's water manifold (1). Then connect the water hose to the water manifold at the mixing tube's lower water inlet.

Make sure that the nozzle (2) is in the water connection of the rubber mixing zone.

If the water's flow pressure is below 1.9 bar, then a high-pressure pump needs to be connected upstream.



WARNING!

The RITMO can also be supplied with water from a water barrel. If this is done, observe that a suction inlet with filter (item no. 00 00 69 06) and a high-pressure pump need to be connected upstream.



Watering the mixing area

Turn the “Operate with water flow / without water flow” selection switch (3) to the left, to **with water**.

Set the operation switch (2) to ON, then press the water flow button (1) until there is a maximum of 1 cm of water in the mixing zone (pay attention to any loss of water; the screw pump might be defective or the position of the screw pump needs to be changed).

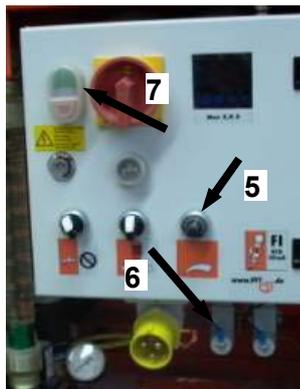
Make sure that the upper mixing zone is dry in the material hopper.



Setting the water factor

Set the expected water volume (approx. 90 litres) at the needle valve (4). To do this, press the water flow button (1) and keep it pressed. Observe the specifications of the material manufacturer. The material can now be filled into the material hopper. (fill slowly)

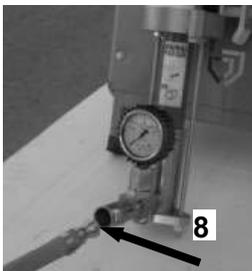
During operation: Every interruption of the spraying procedure results in minor irregularities of the material consistency. This normalises, however, automatically as soon as the machine has been working for a while. Therefore do not change the water quantity each time you detect irregularities, but instead wait until the consistency of the material emerging at the spray gun has self-adjusted.



Settings

Adjust the rotary speed (5) (left position = min. rotary speed, right position = max. rotary speed). Maximum speed for putty coat. Insert the remote control blind plug (6). The machine is ready for operation. Switch on the machine (7). The mortar consistency can now be checked at the outlet of the pressure gauge. If required, change the setting of the needle valve.

If you change the machine's rotary speed, you must adjust the needle valve's setting accordingly. A higher rotary speed means more water, a lower rotary speed means less water. When the correct mortar consistency is set, the mortar hose can be connected.



Connecting the mortar hose

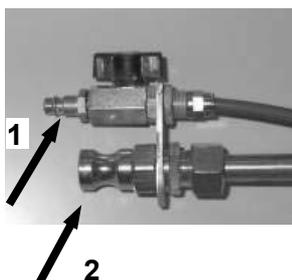
Pre-lubricate the mortar hoses with wallpaper paste and then connect them to the pump unit (8).



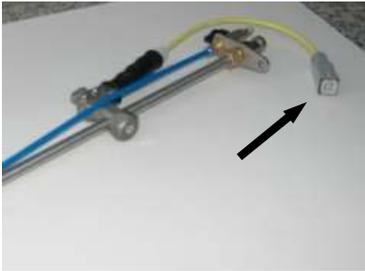
Connect the air compressor to the external power supply.

Warning:

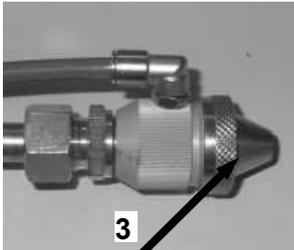
The air compressor may not be connected to the Ritmo powercoat control box.



Connect the air hose from the compressor to the spray gun (1). Connect the material hose (2) to the spray gun.



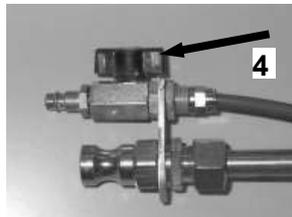
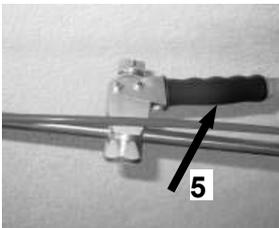
Connect the remote control cable to the remote control box and to the spray gun.



Before the first spraying operation, it is recommended to run the machine briefly without spray nozzle, VA 6.5 mm (3), until material emerges at the spray head.

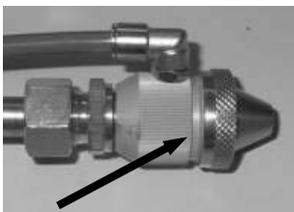
Then screw the nozzle back on to the spray head.

The conveying pressure may temporarily rise to 30 bar. After running for a short while, it then falls back to a working pressure of 12 – 15 bar.



Open the air tap (4) and operate the handle (5) on the spray gun to spray the material on to the surface.

Interruption of work



Place the spray head of the spray gun in a bucket with water. The air supply on the spray gun must be closed.



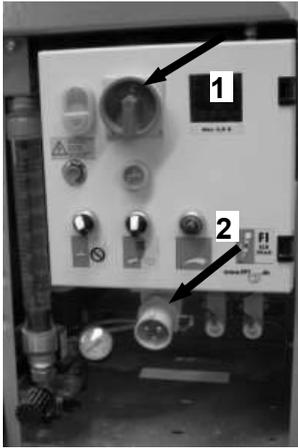
Follow all instructions from the material manufacturer when interrupting spraying work for a break, in particular concerning the length of breaks. It is recommended to clean the pump, mixing shaft, mixing area, pressure gauge, hose and spray gun prior to long interruptions.



WARNING!

The machine must be switched off before being dismantled. Under all circumstances check that pump and hoses are depressurised (observe pressure gauge display (7)).

Measures to be taken when work is finished or interrupted



Continue to run the machine to empty the material hopper and the mixing tube until there is no more material in the machine. Switch off the machine.

WARNING!

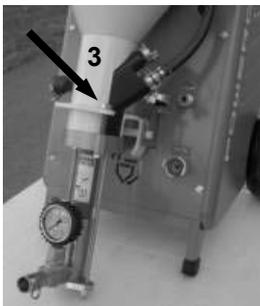
Check if the mortar hose is depressurised. It can be disconnected if this is the case.

Let the machine run again with water until no more material comes out of the end of the pressure gauge.

Then switch off the machine at the main switch (1).

Disconnect the power cable from the control box (2).

Use the cleaner coupling (in the tool bag) to connect the hoses to the water supply and flush with a water-soaked sponge ball. Repeat this procedure at least twice. Use a water jet to clean the spray gun and the mortar pressure gauge.



Cleaning the rubber mixing zone, rotor and stator

Release the water hose from the rubber mixing zone.

Undo the two nuts on the material hopper (3).

The pump system may be removed.

Pull the rubber mixing zone out of the material hopper and clean it.



Undo the two nuts on the pressure flange (4).

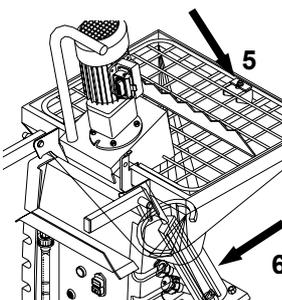


The pump unit with agitator and the housing for the agitator may now be cleaned.

Clean the O-rings.

Clean the pressure flange.

After cleaning, reassemble the pump and prepare it for use.



Disconnect the protection grille (5) and tip it over.

Remove the mixing shaft (6) and clean it.

Clean the inside and outside of the material hopper.

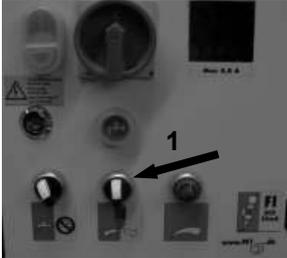
Reassemble the machine.

Clearing hose blockages



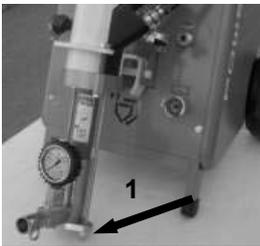
WARNING!

According to the accident prevention regulations of the Builders' Guild, for safety reasons, all personnel assigned with clearing hose blockages should wear safety goggles and position themselves in such a way as to avoid injury by discharged mortar. No other persons should be present in the danger zone.



Run the machine in reverse.

In doing so, turn the selection switch (1) to the left and hold it until the pressure at the mortar pressure gauge has fallen to 0 bar.



Loosen the two nuts on the pressure flange lightly so that entire residual pressure is released.

Undo the hose coupling and clean the hose.

Measures to be taken in the event of a power failure

If duration or cause of the power failure are not known, it is recommended to thoroughly clean the machine, hoses and spray gun. Otherwise hardened material can cause considerable damage to the machine. See "Measures to be taken when work is finished or interrupted" for the further procedure.



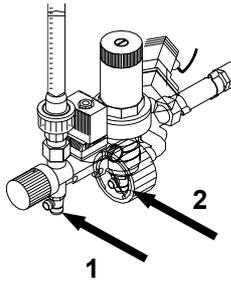
WARNING!

Make sure all hoses are depressurised before opening the couplings (observe the mortar pressure gauge display).

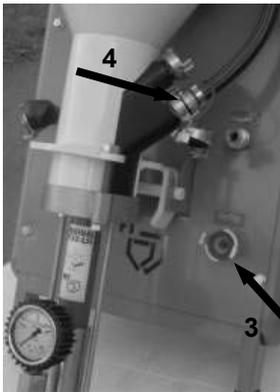
Measures to be taken in the event of a water supply failure

Use suction inlet (item no.: 00 00 69 06) and high pressure pump to supply the machine with clean water from a container.

Measures to be taken if there is a risk of frost



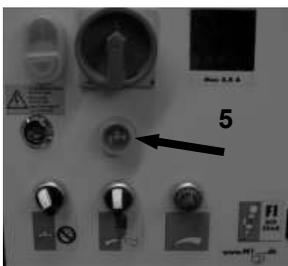
After cleaning the machine, interrupt the water supply and open the needle valve (1) completely in anticlockwise direction. Open the outlet tap (2) on the water manifold.



The best way to protect the machine from frost damage is to blow out the water that is still in the water manifold with a compressor.

Procedure:

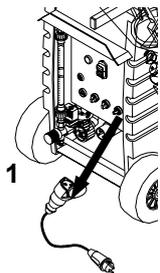
Connect the air hose from the compressor to the water inlet (3). Connect the water manifold to the water inlet on the mixing tube (4). Switch on the compressor.



Press the water flow button (5).

The water is now blown out of the manifold and hoses with compressed air! (at 1.5 bar for approx. 1 minute). The machine is now completely empty with the exception of a small residue in the screw pump. The machine must still be started carefully the next day however.

Transport

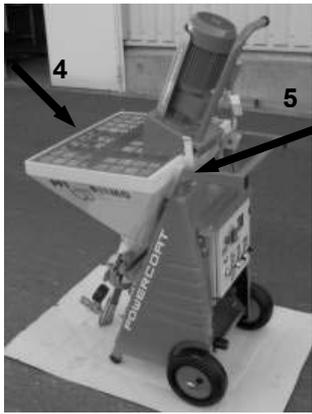


Disconnect the main power supply cable (1), then all other cable connections.

Disconnect all cables and hoses from the machine.

WARNING!

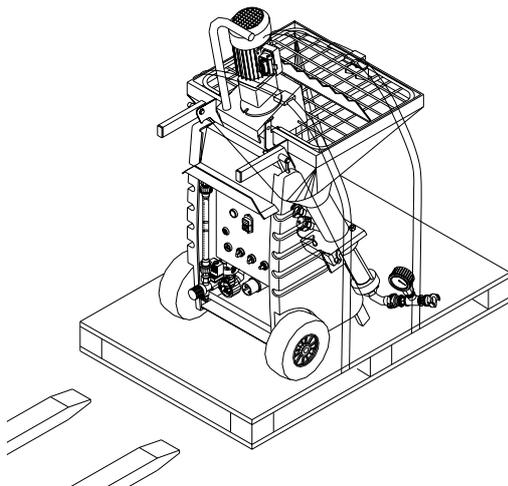
Make sure all hoses are depressurised before opening the couplings (observe the mortar pressure gauge display).



The RITMO powercoat consists of several units (mixing tube / material hopper, protection grille, frame) that may be transported separately.

Loosen the screw (4), remove the protection grille along with the gear motor.

Open the rotary bolt (5) at the side, tilt material hopper forwards and remove it. Disconnect the water hose from the mixing tube first. Pack all parts firmly on a Euro pallet and transport by crane.

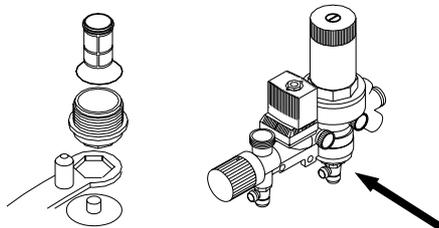


Maintenance



WARNING!

Safe transport by crane is only ensured using a Euro pallet. No-one should be present in the danger zone.

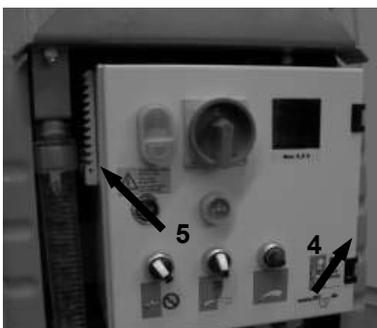


The water inlet filter in the pressure reducer should be removed and cleaned at least every two weeks, replace if required.

Check the filter in the water inlet on a daily basis.

The rotary bolts for fastening the material hopper to the frame must be lubricated at least every 4 weeks.

Every gasket must be inspected every 6 months and replaced if necessary.



Clean the outlet filter (4) and filter fan (5) with compressed air from the outside after approx. 50 operating hours.

Fault – Cause – Remedy

Fault	Cause	Remedy
Machine does not start.	No water.	Check the water supply.
Machine does not start in spraying mode.	Selection switch is at operation without water.	Set selection switch to operation with water switch.
Machine does not start.	Water pressure too low / gauge displays pressure below 1.9 bar.	Clean water inlet filter and install high pressure pump. Supply machine with water from water barrel. Enlarge hose diameter, min. $\frac{3}{4}$ inch.
Machine stops after a short while.	Water inlet filter soiled. Water level has risen in the material hopper.	Clean or replace filter.
Machine stops or does not start.	Water pressure safety switch misadjusted or defective.	Reset to factory setting or replace.
No display at flow meter, although water supply is okay.	Solenoid valve does not open. Check the water selection switch.	Check if the hole in the solenoid valve diaphragm is blocked. Check if the solenoid valve coil is defective. If required, replace diaphragm or entire solenoid valve. Check cable to solenoid valve.
No display at flow meter, although water supply is okay.	Needle valve closed completely.	Open needle valve in anticlockwise direction.
No display at flow meter, although water supply is okay.	Water supply blocked in mixing area.	Clean inlet with round file.
Machine does not start.	Machine is without power.	Have fault rectified by a qualified electrician. Check distributor boxes, fuses and power supply cable.
Machine stops or does not start.	FI safety switch has triggered.	Have grounding wire / insulation inspected by a qualified electrician.
Machine does not start.	Main switch defective.	Have the main switch replaced by a qualified electrician.
Machine stops or does not start.	Fuses defective.	Have fuses checked by a qualified electrician. Replace if necessary.

Fault	Cause	Remedy
Machine does not start via wireless remote control.	Insufficient pressure gradient in remote control due to blocked air pipe or air nozzle tube.	Check if air pipe is blocked. Clean air nozzle tube.
Machine does not start.	Too much hardened material in hopper or mixing area.	WARNING! Turn off main switch and pull out plug first. Half-empty hopper and restart or clean entire hopper and mixing area.
Machine does not start.	Hardened material is blocking the rotor/stator pump unit.	WARNING! Turn off main switch and pull out plug first. Remove pump and install new pump.
No material flow.	Bad mixture in mixing tube.	Add more water.
Deviations in filler consistency (material flow "thin-thick").	Material clogs, narrowing the mixing tube inlet. The mixing shaft or pump might be worn out.	Clean mixing shaft, mixing area and pressure flange. Inspect mixing shaft and pump components. Replace if necessary.
Deviations in filler consistency (mortar flow "thin-thick").	Pressure reducing valve misadjusted or defective.	Increase water supply by 10 % for approx. ½ minute and then turn back slowly. Reset pressure reducing valve to factory setting.
Water level rises in mixing tube during operation.	Backpressure in material hose higher than pump pressure.	Check spray gun or material hose for blockages and clean. Warning! Wear protective clothing, goggles etc.

Accessories



00087354 **Material hose, 1/2" 15 m 13 MV powercoat (scope of delivery)**



0008521 **PVC woven hose, NW 9x3 mm 15 m with EWO couplings, V and M parts (scope of delivery)**



00088049 **Extension cable 15 m for remote control (scope of delivery)**

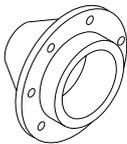
Accessories



- 00094898** powercoat spray gun, 1500 lg
- 00098703** Strap for powercoat spray gun



- 00098071** powercoat spray gun, offset 750 lg



- 000008597** Nozzle, VA 4.5 mm SWING air hole 2 mm
- 000008596** Nozzle, VA 6.5 mm SWING air hole 2 mm



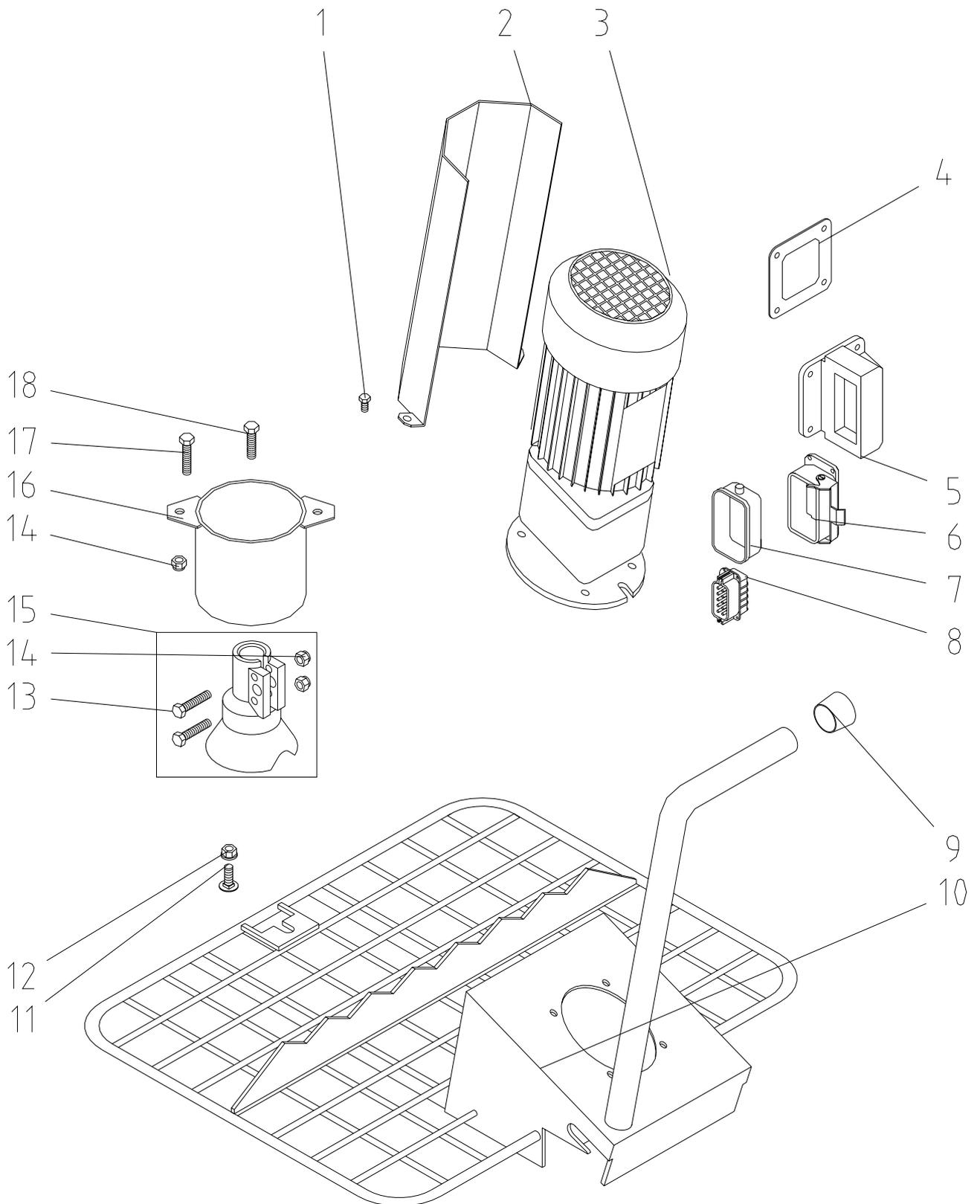
- 20215700** Spray nozzle, 3/4" with Geka coupling



- 20211100** Water/air hose, 1/2", 5 m with Geka couplings
- 20211000** Water/air hose, 1/2", 11 m with Geka couplings

- 00098808** Tool bag, RITMO powercoat mixing pump (scope of delivery)
- 00010411** Sponge ball, 17 mm diameter for 10 mm hose

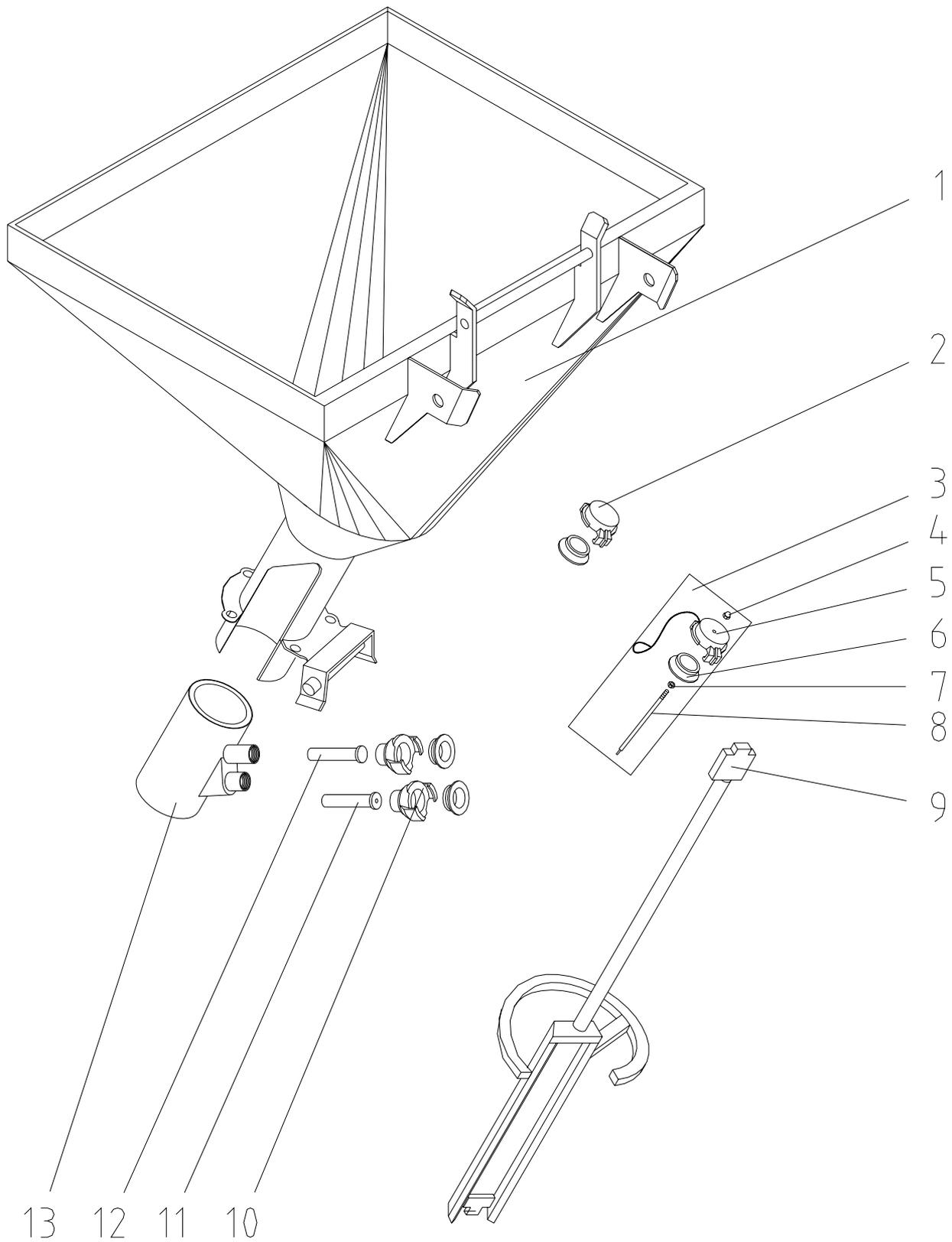
Spare parts drawing for motor and protection grille, RITMO powercoat



Spare parts list for motor and protection grille, RITMO powercoat

Item	Qty	Item no.	Description
1	2	20 20 71 02	Hex screw M6 x 10 DIN 933 zinc-plated
2	1	00 06 63 37	Motor protection plate RITMO RAL2004
3	1	00 07 11 33	Gear motor 1.5 KW 331U 230/400 RAL2004
4	1	00 06 91 68	Terminal box seal G80/4D80e-2 F ABM
5	1	00 06 91 66	Terminal box seal for gear motor 1.3 KW G80/4D80e-2 F ABM
6	1	00 07 02 40	Housing 10-pin 16 A
7	1	00 06 87 94	Protective cover for housing 10-pin 16 A
8	1	20 42 98 22	Male insert, narrow 10-pin HAN 10 A
9	1	20 10 80 39	Cap PVC 3/4" (round, black)
10	1	00 06 52 17	Protection grille with motor flange RITMO RAL2004
11	1	20 20 63 23	Flat screw M8 x 25 DIN 603 zinc-plated
12	1	00 06 59 79	Nut M8 DIN 6331 zinc-plated
13	2	00 02 32 71	Hex. screw M8 x 40 DIN 931 zinc-plated
14	4	20 20 72 00	Nut M8 DIN 985 zinc-plated
15	1	00 06 18 58	Cast hauling bracket G4 with round escape hopper
16	1	20 10 29 01	Protection tube for hauling bracket G4
17	2	20 20 78 10	Hex. screw M8 x 25 DIN 933 zinc-plated
18	1	20 20 78 00	Hex. screw M8 x 30 DIN 933 zinc-plated

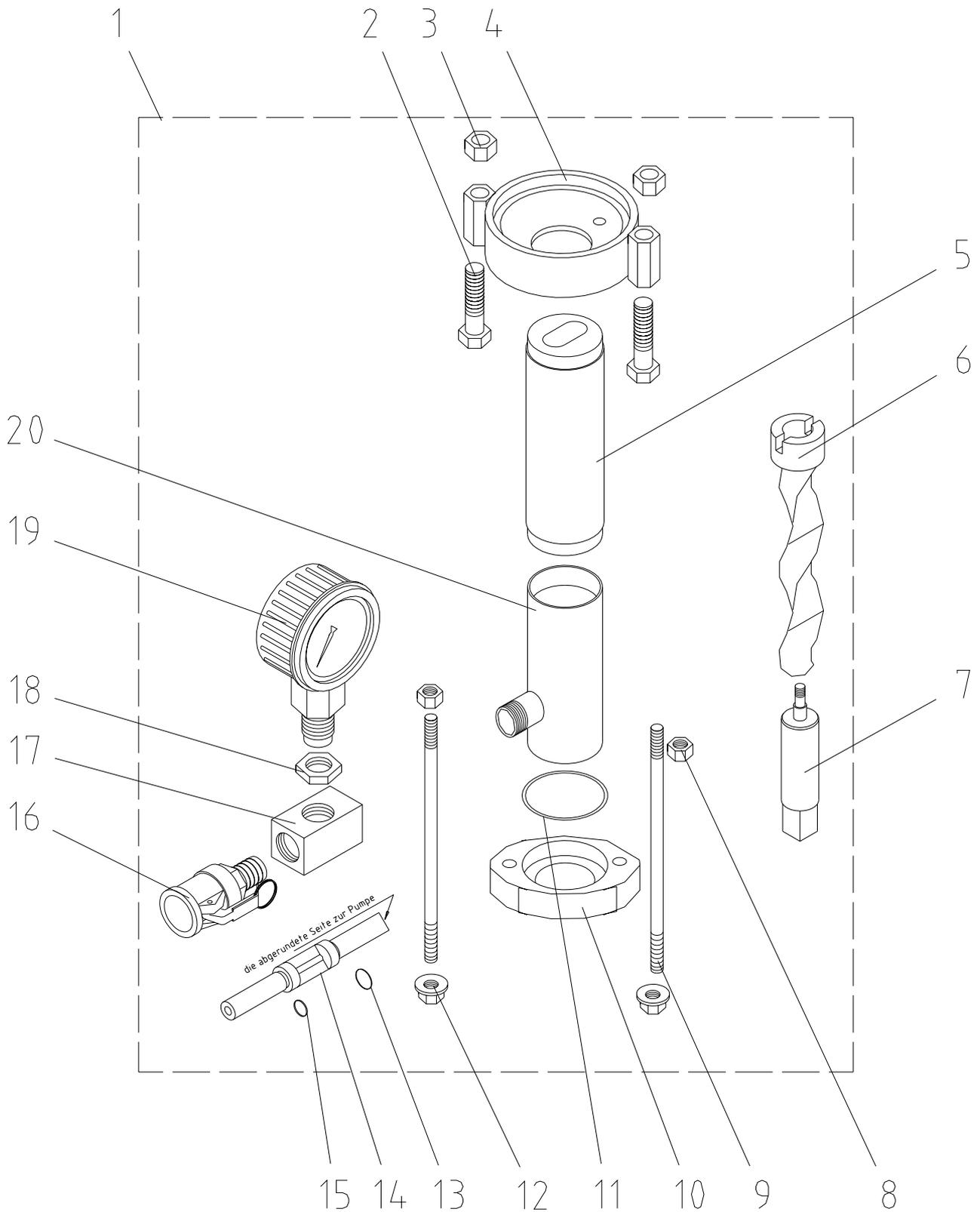
Spare parts drawing for material hopper, RITMO powercoat



Spare parts list for material hopper, RITMO powercoat

Item	Qty	Item no.	Description
1	1	00 08 75 98	Material hopper RITMO rubber zone RAL9002
2	1	20 20 16 50	Geka coupling blind plug
3	1	00 09 48 79	Geka blind cap round file 2.5 mm RITMO cpl.
4	1	00 01 99 00	Nut M4 DIN 986 zinc-plated
5	1	00 05 80 47	Geka blind cap with bore
6	5	20 20 17 00	Geka coupling gasket (pack of 50 pieces)
7	1	20 20 82 00	Hex nut M4 DIN 934 zinc-plated
8	1	00 09 80 29	Round file blind cap GEKA 2.5 mm
9	1	00 09 63 52	Mixing shaft RITMO POWERCOAT zinc-plated
10	1	20 20 13 00	Geka coupling 1/2" female thread
11	1	00 08 12 63	Plastic nozzle D15x67.5x2.5 powercoat
12	1	00 09 66 27	Plastic stopper D15x49.5 powercoat
13	1	00 08 75 99	Rubber mixing zone RITMO powercoat

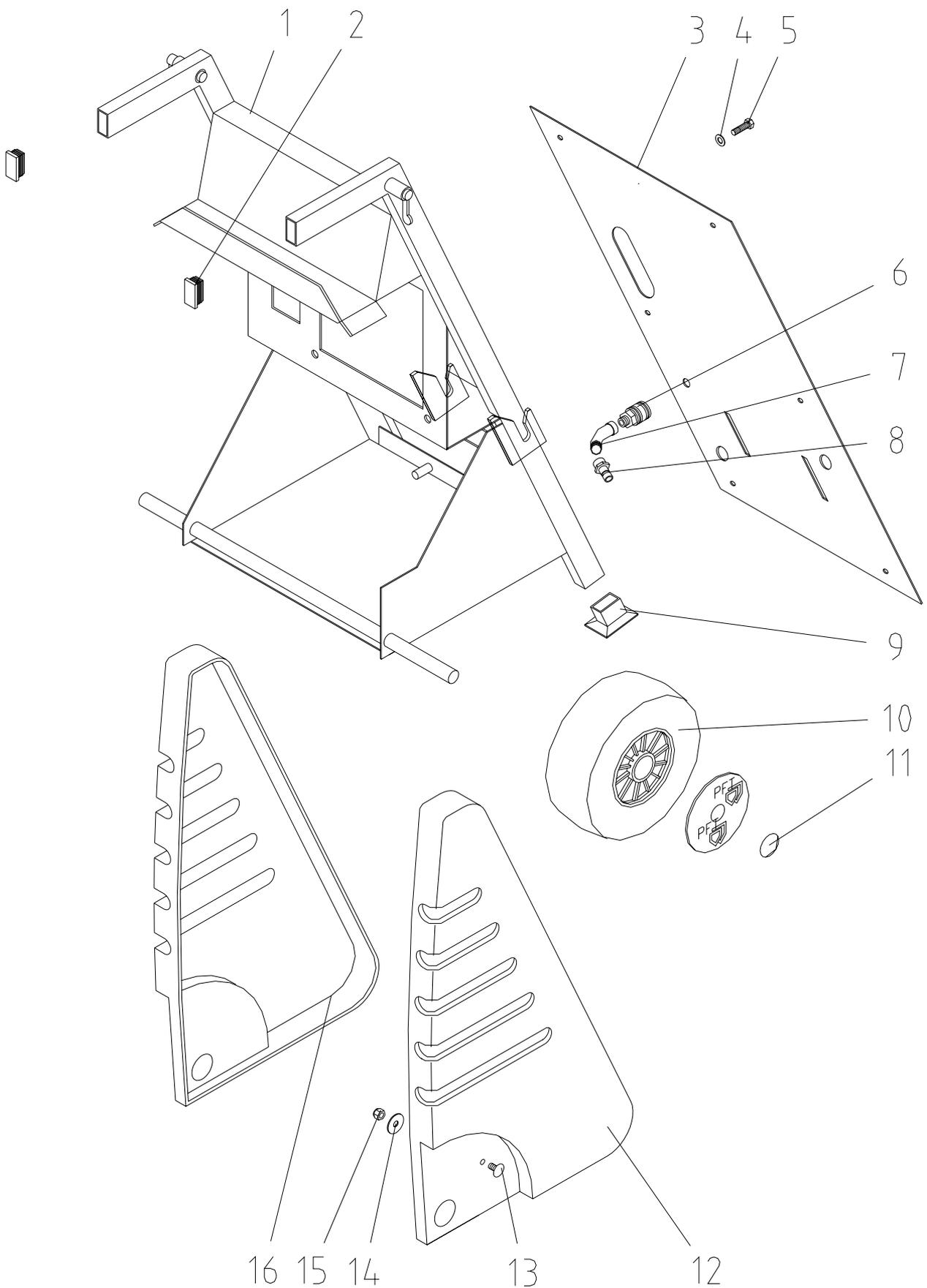
Spare parts drawing for pump unit, RITMO powercoat



Spare parts list for pump unit, RITMO powercoat

Item	Qty	Item no.	Description
1	1	00 08 80 50	Pump unit powercoat cpl.
2	2	00 09 63 48	Hex screw M12 x 90 DIN 933 VA
3	2	00 09 63 49	Hex nut M12 DIN 934 VA
4	1	00 08 75 91	Suction flange A3-2 L RITMO rubber zone VA
5	1	00 07 16 16	Stator A2-2.5 L
6	1	00 08 12 12	Rotor A2-2.5 L powercoat
7	1	00 08 12 27	Rotor rubber insert agitator powercoat
8	2	20 20 64 00	Hex nut M8 DIN 934 zinc-plated
9	2	00 09 81 76	Tie rods M8 x 300 mm (1 set=2 pieces)
10	1	00 08 12 14	Pressure flange powercoat VA
11	1	00 08 12 47	O-ring 39 x 5 DIN 3770-NBR 70
12	2	00 06 59 79	Nut M8 DIN 6331 zinc-plated
13	1	00 00 23 18	O-ring 12.42 x 1.78 DIN 3771-NBR 70
14	1	00 09 63 60	INLINER gauge RITMO POWERCOAT
15	1	00 09 79 31	O-ring 10 x 2.0 DIN 3771-NBR 70
16	1	00 08 60 18	Coupling 13 M component 1/2" male thread
17	1	00 09 79 26	T-piece RITMO POWERCOAT 1/2" VA
18	1	00 00 28 11	Tube nut 1/2" thread DIN431
19	1	00 09 63 47	Gauge 0-40 bar 1/2" pressure mediator VA
20	1	00 08 12 13	Housing agitator powercoat VA

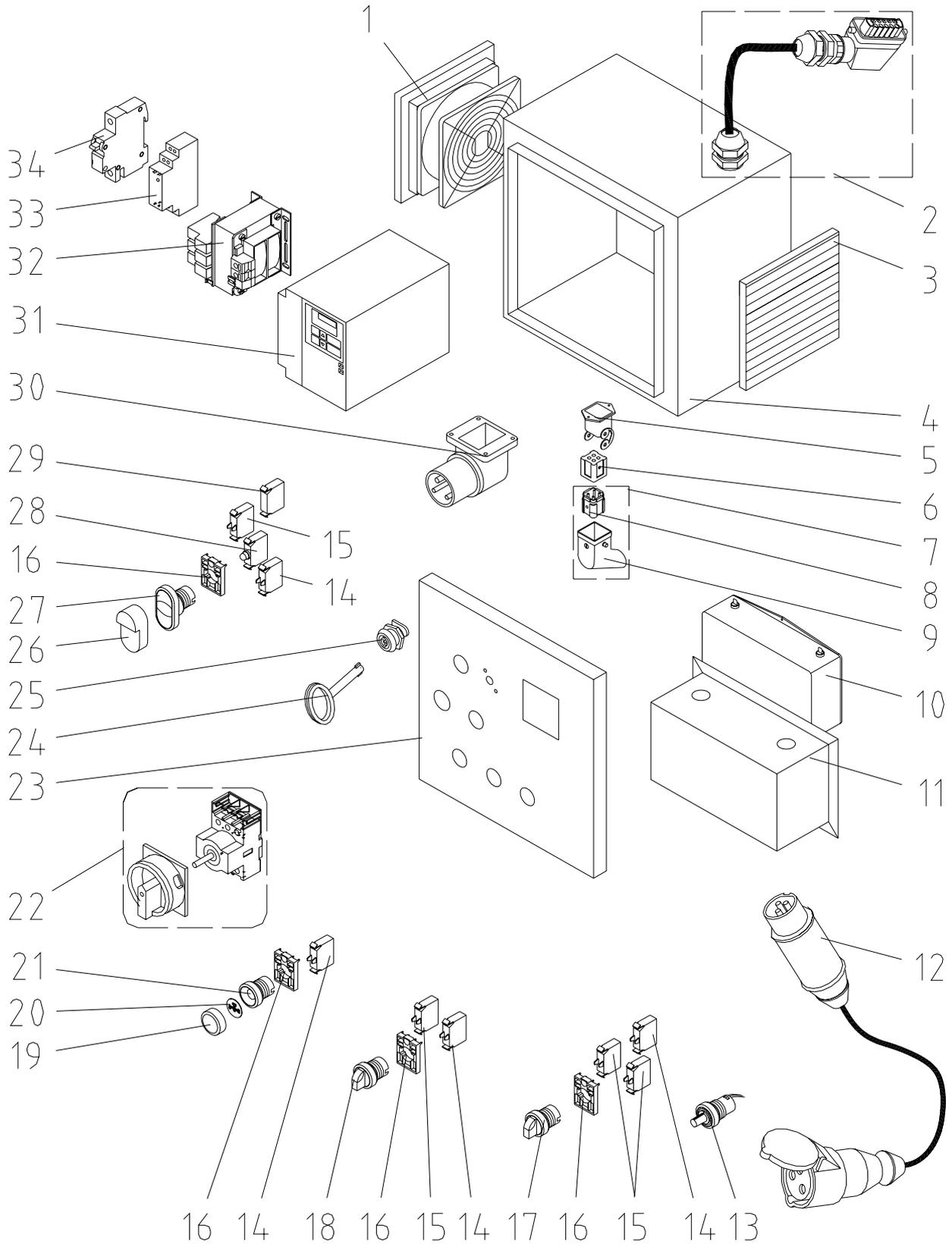
Spare parts drawing for frame, RITMO powercoat



Spare parts list for frame, RITMO powercoat

Item	Qty	Item no.	Description
1	1	00 06 50 50	Frame RITMO RAL2004
2	2	20 44 47 02	Cap (PVC) 20 x 40
3	1	00 06 50 83	Frame cover RITMO RAL2004
4	6	20 20 93 13	Washer B 8.4 DIN 125 zinc-plated
5	6	20 20 61 00	Hex. screw M8 x 20 DIN 933 zinc-plated
6	1	20 20 20 00	EWO coupling M component 1/4" male thread
7	1	00 02 36 29	Curved section 1/4" 45° female/male thread no. 40 zinc-plated
8	1	00 05 80 53	EWO coupling V component 1/4" female thread
9	2	00 06 60 22	Plastic base 20° 40x20 RITMO
10	2	00 00 82 54	Spare wheel 230x85 cover RAL2004
11	2	20 20 86 03	Fast catch with cap 20s x N 2 7
12	1	00 06 49 63	Plastic cover right RITMO RAL2004
13	2	20 20 63 14	Flat screw M8 x 16 DIN 603 zinc-plated
14	2	20 20 93 13	Washer B 8.4 DIN 125 zinc-plated
15	2	20 20 66 03	Nut M8 DIN 986 zinc-plated
16	1	00 06 49 62	Plastic cover left RITMO RAL2004

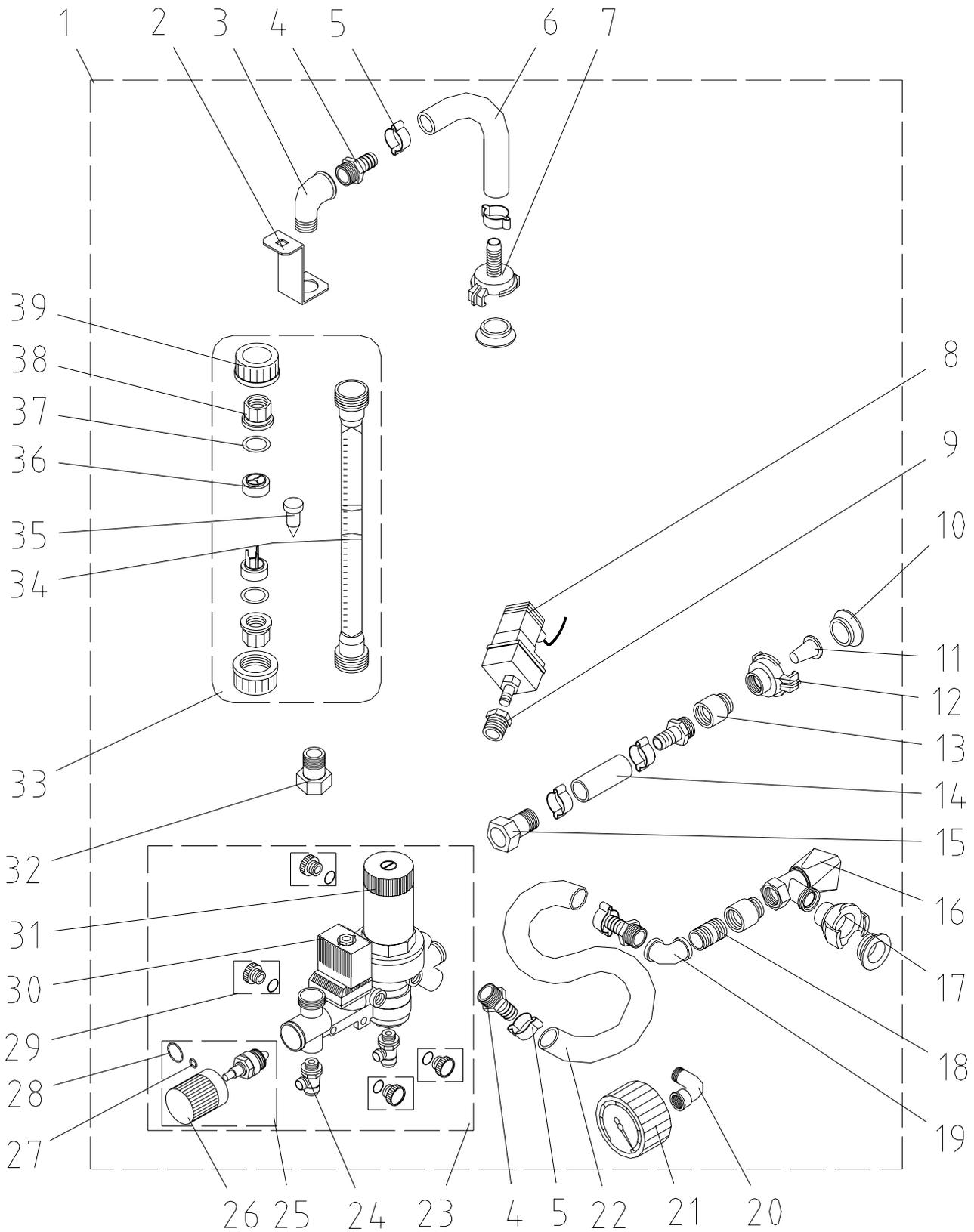
Spare parts drawing for control box, RITMO item number 00 09 75 90



Spare parts listfor control box, RITMO item number 00 09 75 90

Item	Qty	Item no.	Description
1	1	00 09 84 87	Filter fan 115 V AC 50/60 Hz for control box
2	1	00 07 88 12	Motor connection cable 0.98 m 16A 10P Ritmo
3	1	00 09 84 88	Outlet filter for control box 116.5 x 116.5 mm
4	1	00 08 26 19	Empty housing RITMO 110 V RAL9002
5	2	20 42 86 04	Housing 4/5-pin, HAN 3A/HA 4
6	2	20 42 86 07	Female insert 4-pin, HAN 3A
7	2	20 42 85 01	Blind plug 4-pin, HAN 3A
8	1	20 42 86 06	Male insert, 4-pin HAN 3A
9	1	20 42 86 05	Socket box 4-pin + 5-pin angled
10	1	00 08 15 16	EMC filter for frequency converter 4.0 KW 230 V 32 A
11	1	00 09 61 43	Cover EMC filter RITMO 110 V RAL2004
12	1	00 07 34 75	Extension cable 3x16 A 10 m 110 V with CEE coupling and plug
13	1	00 05 07 83	Potentiometer 4.7 KOHM with drive screwed connection
14	4	00 05 38 35	Contact-element 1 closing unit M22
15	4	00 05 38 36	Contact-element 1 opener M22
16	4	00 05 38 34	Fixation adapter for switch elements
17	1	00 05 38 78	Selection switch toggle / sensing 0 latching M22
18	1	00 06 59 78	Selection switch toggle. V position latching M22
19	1	00 05 38 30	Membrane round for button IP 67
20	1	00 05 38 42	Sensor plate black / liquid M22
21	1	00 05 38 39	Button without sensor plate M22
22	1	00 09 75 94	Main switch 20 A 2-pin
23	1	00 09 61 76	Door RITMO 110 V RAL9002
24	1	20 44 45 00	Key for control box
25	1	00 03 62 49	Lock control box (two-way key bit)
26	1	00 05 38 31	Membrane rectangular for twin button IP 67
27	1	00 05 38 32	Light switch On/Off double press
28	1	00 05 38 81	Light element white 12-30 V
29	1	00 05 38 86	LED – resistor series element for 42 V
30	1	00 07 26 94	CEE device plug 3 x 16 A 4 h yellow T:260 110 V 50 Hz
31	1	00 09 75 93	Frequency convertor 110 V 1 Ph 1.1 KW (P)
32	1	00 09 75 92	Transformer unit 110 V-42 V 40 VA
33	1	20 44 81 20	Switching relay 42 V 2 changer
34	1	00 08 42 25	Automatic plumb level DIL M17-10 42 V, 50 Hz 48 V, 60 Hz 7.5 kW size II

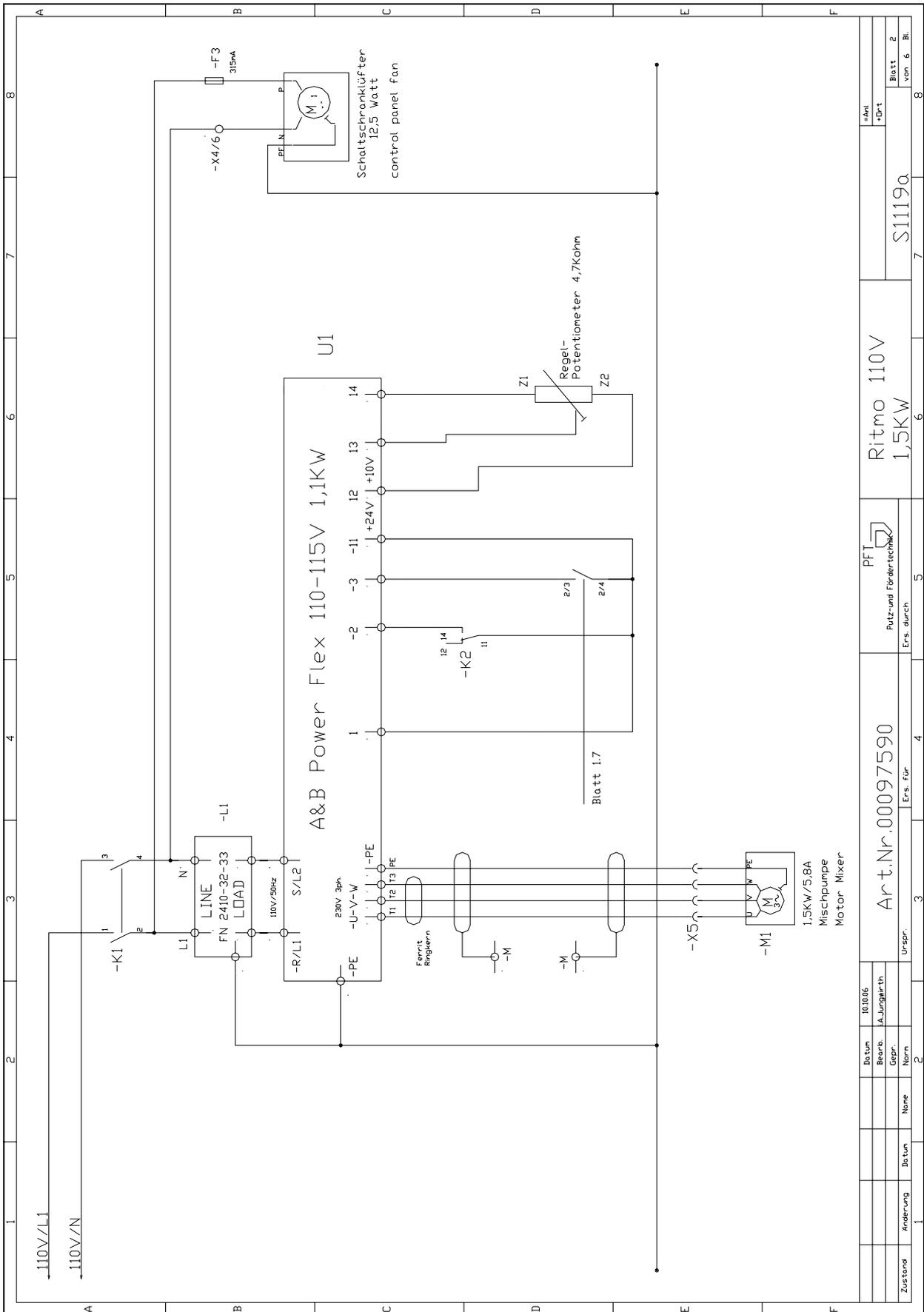
Spare parts drawing for water manifold, RITMO powercoat



Spare parts list for water manifold, RITMO powercoat

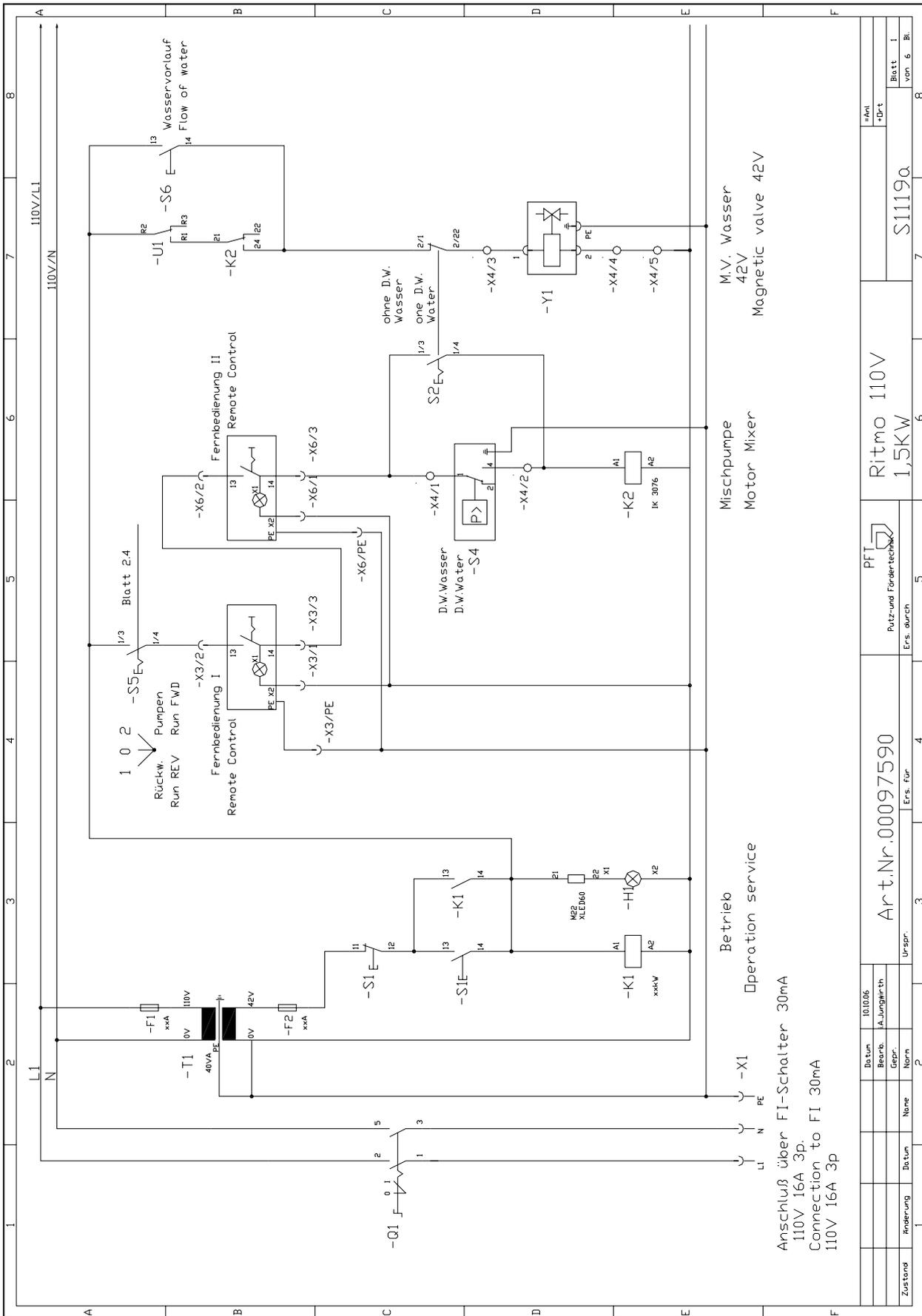
Item	Qty	Item no.	Description
1	1	00 09 79 21	Water manifold RITMO powercoat 230 V cpl.
2	1	00 06 62 55	Holder flow meter RITMO RAL2004
3	1	20 20 36 10	Curved section 1/2" female/male thread, no. 92, zinc-plated
4	4	20 19 04 10	Hose screw joint 1/2" male thread 1/2" socket
5	6	20 20 25 01	Hose clip 20-23 (P)
6	1	20 21 36 02	Water/air hose 1/2" x 420 mm
7	1	20 20 15 00	Geka coupling 1/2" socket
8	1	00 08 15 47	Safety switch PS3/AJR 1/4" 1.4/1.7 bar (P)
9	1	20 20 51 12	Reduction nipple 3/8" male thread 1/4" female thread no.241
10	2	20 20 17 00	Geka coupling gasket
11	1	20 15 20 03	Geka coupling water inlet filter
12	1	20 20 13 00	Geka coupling, 1/2" female thread
13	2	20 20 34 20	Lever for cleaning hole 1/2" x 20 brass DIN3523
14	1	20 21 35 03	Water/air hose, 1/2" x 160 mm
15	2	20 20 31 05	Nipple 1/2" male thread conical with reducer nut 3/4" female thread item no. 20 15 77 00
16	1	00 01 97 86	Needle valve 1/2" type 6701 SYR (P)
17	1	20 20 12 00	Geka coupling 3/4" female thread
18	1	20 20 33 10	Double nipple 1/2" x 25 mm no. 22 zinc-plated
19	1	20 20 36 11	Curved section 1/2" female thread no. 90 zinc-plated
20	1	00 02 01 80	Curved section 1/4" 90° female thread/male thread no. 1 zinc-pl.
21	1	00 01 99 13	Gauge 0-16 bar 1/4" rear, D = 50 mm
22	1	20 21 35 00	Water/air hose 1/2" x 580 mm
23	1	00 03 92 86	Manifold block red brass DK06FN-1/2"E 42 V
24	2	00 04 04 28	Bleed valve manifold block red brass
25	1	00 04 04 26	Standard valve seat insert cpl. for manifold block red brass
26	1	00 04 05 80	Handle for control valve for manifold block red brass
27	1		O-ring 6 x 1.5 DIN 3771-NBR 70
28	1		O-ring 18 x 2.5 DIN 3771-NBR 70
29	5	20 15 61 00	Sealing plug with O-ring R 1/4" for pressure reducer
30	1	00 01 96 06	Solenoid valve manifold block G 5
31	1	00 01 96 07	Pressure reducing valve manifold block red brass G 5
32	1	20 20 31 05	Nipple 1/2" male thread conical with reducer nut 3/4" female thread for item no. 20 15 77 00
33	1	20 18 60 00	Water flow meter 31.5-315 l/h, cpl.
34	1	20 18 60 10	Plastic tube 31.5-315 l/h
35	1	20 18 60 20	Cone (WDFM type 315)
36	2	20 18 60 21	Stop for 20 18 60 20
37	2	20 13 42 00	O-ring 20 x 3.5 DIN 3771-NBR 70
38	2	20 18 60 50	Insert 1/2" (20186000)
39	2	20 18 60 40	Reducer nut 1/2" for 20 18 60 00

Circuit diagram



Zustand		Änderung		Datum		None		Datum		Urspr.		Art.Nr.00097590		Ers. für		4		Ers. durch		5		PFT Putz- und Fördertechnik		Ritmo 110V 1,5KW		S1119a		Blatt 2 von 6 Bl.	
Da tun		10.10.06		Bearb.		A. Jungbluth						Art.Nr.		+Ort															

Circuit diagram



Zustand	Änderung	Datum	Name	Ers. für		Ers. durch		PFT Putz- und Fördertechnik	Ritmo 110V 1,5KW	S1119a	Blatt von 6 Bl.
		10.10.06	A. Jungwirth	2	3	4	5				

Program Group Parameters Frequency Power Flex RITMO 110V 1Phase

Parameter		Display	
P031	Motor NP Volts	230 V	Set to the motor Nameplate rated volts
P032	Motor NP Hertz	50 Hz	Set to the motor Nameplate rated frequency
P033	Motor OL Current	5.8 A	Set to the maximum allowable motor current
P034	Minimum Freq	20 Hz	Sets the lowest frequency the drive will output continuously
P035	Maximum Freq	87 Hz	Sets the highest frequency the drive will output
P036	Start Source 2 = 2-Wire	2	Sets the control scheme used to start the drive
P038	Speed Reference	2	Sets the source of the speed reference to the drive
P039	Accel Time 1	1.5 sec	Sets the rate of accel for all speed increases
P040	Decel Time 1	1.5 sec	Sets the rate of decel for all speed decreases
P041	Reset To Defaults 0= Idle State 1= Reset Defaults	0	Resets all parameter values to factory defaults
A055	Relay Out Sel	2	Motor Running

General Precautions



ATTENTION: The drive contains high voltage capacitors which take time to discharge after removal of mains supply. Before working on drive, ensure isolation of mains supply from line inputs [R, S, T (L1, L2, L3)]. Wait three minutes for capacitors to discharge to safe voltage levels. Failure to do so may result in personal injury or death.

Darkened display LEDs is not an indication that capacitors have discharged to safe voltage levels.



ATTENTION: Equipment damage and/or personal injury may result if parameter A092 [Auto Rstrt Tries] or A094 [Start At PowerUp] is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations or industry guidelines.



ATTENTION: Only qualified personnel familiar with adjustable frequency AC drives and associated machinery should plan or implement the installation, start-up and subsequent maintenance of the system. Failure to comply may result in personal injury and/or equipment damage.



ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference A-B publication 8000-4.5.2, “Guarding Against Electrostatic Damage” or any other applicable ESD protection handbook.



ATTENTION: An incorrectly applied or installed drive can result in component damage or a reduction in product life. Wiring or application errors, such as, undersizing the motor, incorrect or inadequate AC supply, or excessive ambient temperatures may result in malfunction of the system.

Fault Codes

To clear a fault, press the Stop key, cycle power or set A100 [Fault Clear] to 1 or 2.

No.	Fault	Description
F2	Auxiliary Input ⁽¹⁾	Check remote wiring.
F3	Power Loss	Monitor the incoming AC line for low voltage or line power interruption.
F4	UnderVoltage ⁽¹⁾	Monitor the incoming AC line for low voltage or line power interruption.
F5	OverVoltage ⁽¹⁾	Monitor the AC line for high line voltage or transient conditions. Bus overvoltage can also be caused by motor regeneration. Extend the decel time or install dynamic brake option.
F6	Motor Stalled ⁽¹⁾	Increase [Accel Time x] or reduce load so drive output current does not exceed the current set by parameter A089 [Current Limit].
F7	Motor Overload ⁽¹⁾	An excessive motor load exists. Reduce load so drive output current does not exceed the current set by parameter P033 [Motor OL Current].
F8	Heatsink OvrTmp ⁽¹⁾	Check for blocked or dirty heat sink fins. Verify that ambient temperature has not exceeded 40°C (104°F) for IP 30/NEMA 1/UL Type 1 installations or 50°C (122°F) for Open type installations. Check fan.
F12	HW OverCurrent ⁽¹⁾	Check programming. Check for excess load, improper DC boost setting, DC brake volts set too high or other causes of excess current.
F13	Ground Fault	Check the motor and external wiring to the drive output terminals for a grounded condition.
F33	Auto Rstrt Tries	Correct the cause of the fault and manually clear.
F38	Phase U to Gnd	Check the wiring between the drive and motor. Check motor for grounded phase. Replace drive if fault cannot be cleared.
F39	Phase V to Gnd	
F40	Phase W to Gnd	
F41	Phase UV Short	Check the motor and drive output terminal wiring for a shorted condition. Replace drive if fault cannot be cleared.
F42	Phase UW Short	
F43	Phase VW Short	
F48	Params Defaulted	The drive was commanded to write default values to EEPROM. Clear the fault or cycle power to the drive. Program the drive parameters as needed.
F63	SW OverCurrent ⁽¹⁾	Check load requirements and A098 [SW Current Trip] setting.
F64	Drive Overload	Reduce load or extend Accel Time.
F70	Power Unit	Cycle power. Replace drive if fault cannot be cleared.
F71	Net Loss	The communication network has faulted.
F81	Comm Loss	If adapter was not intentionally disconnected, check wiring to the port. Replace wiring, port expander, adapters or complete drive as required. Check connection. An adapter was intentionally disconnected. Turn off using A105 [Comm Loss Action].
F100	Parameter Checksum	Restore factory defaults.
F122	I/O Board Fail	Cycle power. Replace drive if fault cannot be cleared.

⁽¹⁾ Auto-Reset/Run type fault. Configure with parameters A092 and A093.

Check list for annual inspection by specialist (master copy)

This inspection must be carried out once a year by a specialist in accordance with ZH1/575.
The machine and control box are awarded an inspection label as verification of this inspection.
The inspection protocol is to be presented on demand.

Date of inspection:	Inspector:	Signed:	Machine number:

Component	Inspection feature	OK	Rework/ Replace
Material hopper	Check all welded seams for cracks!		
Material hopper	Destroyed by corrosion or deformation?		
Mixing area	Check wall of tube for wear (minimum wall thickness of 1.5 mm)		
Mixing shaft	Check mixing area for wear!		
Mixing shaft	Check pump coupling for wear		
Protection grille	Is protection grille still even?		
Frame	Check all welded seams for cracks!		
Frame	Check whether all screwed joints fit firmly!		
Frame	Check for distortions. Stability must be ensured		
Frame	Plastic base okay?		
Rollers	Do the rollers turn with ease?		
Water flow meter	Is the inspection glass still clearly transparent and sealed?		
Solenoid valve	Functional check		
Pressure reducing valve	Functional check (check 1.5 bar setting)		
Control box	Visual inspection for defects		
Control box	Functional check		
Control box	Are all labels in a good readable condition?		
Control box	High voltage check with 1000 V		
Control box	Functional check of all safety switches		
Control box	Functional check of all control lamps		
Control box	Check whether all cable connections fit firmly		
Type plate	Available and legible		
Operating instructions	Available		
Mortar pressure gauge	Functional check		

WE KEEP THINGS FLOWING



Knauf PFT GmbH & Co. KG
PO Box 60 97343 Iphofen / Germany
Einersheimer Strasse 53 97346 Iphofen / Germany

Telephone: +49 (0)93 23/31-1818
Fax: +49 (0)93 23/31-770
Email info@pft-iphofen.de
Internet www.pft.eu