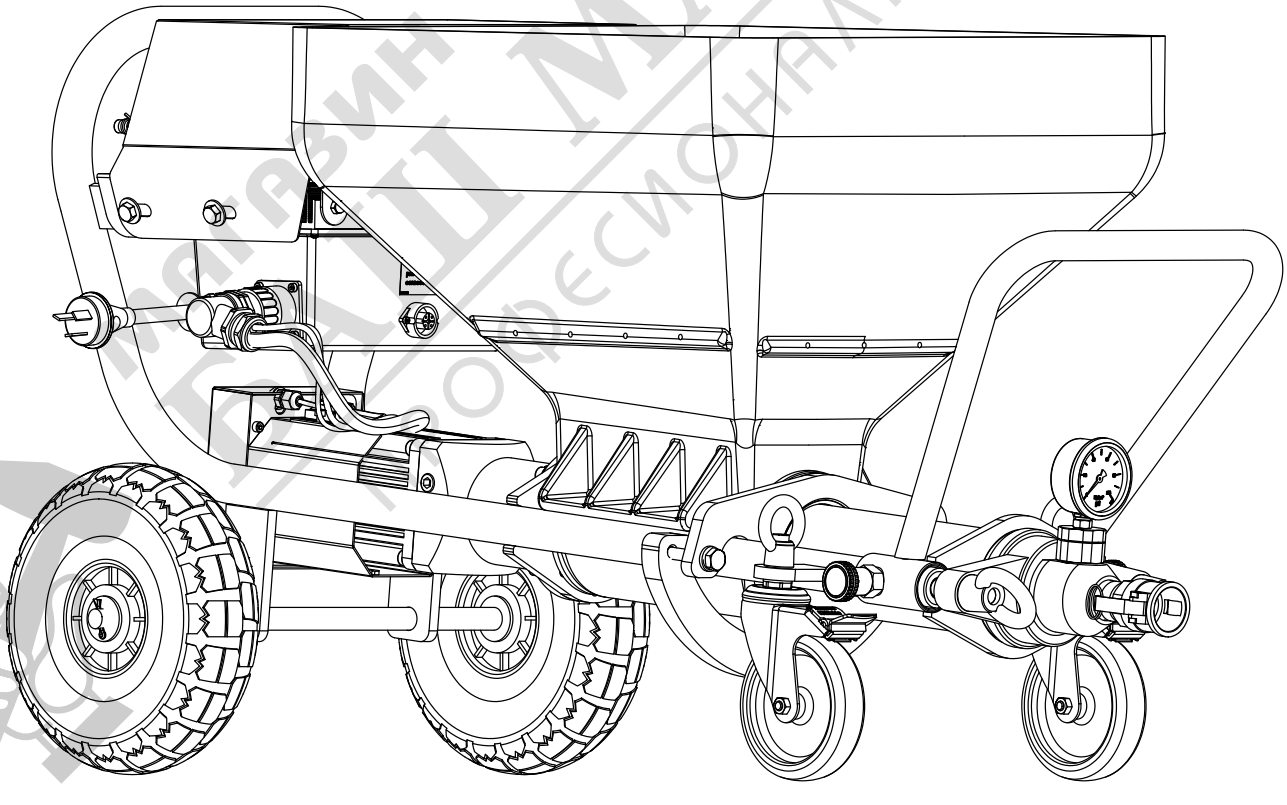
TITAN®

OPERATING MANUAL

POWRMAX 420



0623 • Form No. 2454529 A

Translation of the original operating instructions

Warning!

Mortar spraying machines develop high spraying pressures.

⚠	**Attention – Danger of injury!**
1	**Never reach into the spray jet with your fingers or hand!** **Never point the spray lance at yourself or other persons!** **Coating materials are caustic or irritating!** **Protect your skin and eyes!**
2	**The following points are to be observed in accordance with the operating manual before every start-up:** 1. Observe the permissible pressures. 2. Check all the connecting parts for leaks.
3	**Instructions for regular cleaning and maintenance of the machine are to be observed strictly.** **Observe the following point before any work on the machine and at every working break:** 1. Observe the curing time of the coating material. 2. Depressurize the spray lance and mortar hose. 3. Switch off the suction pump.

Ensure safety!

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1 SAFETY REGULATIONS

The following sources are just a sample of those containing safety requirements for mortar conveyors:

a) EN 12001, Conveying, spraying and placing machines for concrete and mortar - Safety requirements

All local safety regulations in force must be observed.

The following specifications are to be observed in particular to handle mortar spraying machines safely:

Usage of the mortar spraying machine

The mortar spraying machine PowrMax 420 may only be used to process the coating materials described on page 29. **Any other usage is not allowed.**
Proper usage also includes the observance of the operating manual and the observance of the inspection and maintenance conditions. Always keep the operating manual on hand at the point of use of the mortar spraying machine.
The mortar spraying machine PowrMax 420 may only be operated with a manometer. Only the mortar hose specified by the manufacturer may be used.
Use only marked mortar hoses with at least 40 bars operating pressure.
The mortar spraying machine is intended exclusively for commercial use by professionals.

Protection of persons

In order to protect eyes, skin and the respiratory organs: **Wear safety goggles, protective clothing, gloves, possibly use protective skin cream and respiratory equipment**. Do not decouple the mortar hose as long as it is under pressure. Watch the manometer! Wear safety goggles! Do not point the spray lance at persons!
In order to protect your ears **wear ear protection.**
Wear safety shoes when transporting the machine or working with it.
People not needed to assist with machine installation, assembly or operation, must keep away from the machine.
The PowrMax 420 is equipped with an EMERGENCY STOP switch for emergencies.

Breathing masks

Make a breathing mask available to the processor in order to protect against mineral dust.

Connection to the mains network only via a special feeding point, for example via a distribution board for construction sites, with residual current protective device with INF ≤ 30 mA.

Avoid soiling of the socket for the remote control at the control unit.

	**Risk of injury from escaping material. Before switching on, always check that the material tap on the spray lance is closed. Close material tap whenever stopping work.**

	**Never operate the mortar spraying machine if the rotor is exposed or if the container has been removed. Do not reach into the rotor when it is moving. Risk of crushing. Caution if you have long hair. Only wear close-fitting clothes at work. Do not insert objects or body parts through the protective grid. Risk of crushing when folding in the handles, assembling the pump unit and connecting the mortar hose.**

Cleaning and maintenance

Never decouple mortar hose or disassemble machine when under pressure. Note pressure reading on pressure gauge.
When performing maintenance work, always switch off mortar spraying machine, disconnect mains plug and ensure it cannot be plugged back in by mistake.
Do not spray down the motor and control unit of the mortar spraying machine with a water-jet, high-pressure cleaner or high-pressure steam cleaner. Danger of short-circuits caused by water ingressing.

Electrical equipment

Work on the machine's electrical equipment may be carried out only by a qualified electrician. The electrical equipment is to be checked regularly. Eliminate faults such as loose connections or scorched cables.

Keep the label on the mortar spraying machine clean and legible.

	**Whenever the machine is automatically brought to a standstill or during power failure, immediately move the selector switch to "A" to prevent the machine starting back up again unintentionally. There is a danger of injury.**

Mortar hose

⚠	**Danger of injury through leaking high-pressure hose. Wear and tear and links as well as usage that is not appropriate to the purpose of the device can cause leakages to form in the mortar hose. Liquid can be injected into the skin through a leakage.**

Mortar hoses must be checked thoroughly before they are used.
Replace any damaged mortar hose immediately.
Never repair defective mortar hoses yourself!
Avoid sharp bends and folds: the smallest bending radius is about 80 cm.
Do not drive over the mortar hose. Protect against sharp objects and edges.
Never pull on the mortar hose to move the device.
Do not twist the mortar hose.
Lay the mortar hose in such a way as to ensure that it cannot be tripped over.

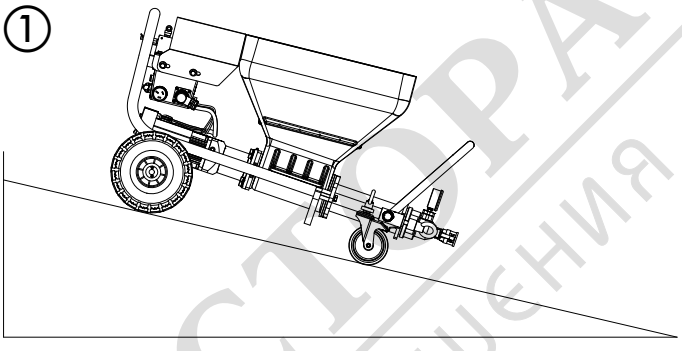
i	Only use Titan original-mortar hoses in order to ensure functionality, safety and durability.

i	The risk of damage rises with the age of the mortar hose. Titan recommends replacing mortar hoses after 6 years.

Setup on an uneven surface

The mortar spraying machine must be installed as shown in the diagram below to prevent it slipping. Block front wheels with brakes.

①



2 INTRODUCTION TO WORKING WITH THE MORTAR SPRAYING MACHINE POWRMAX 420

The suction pump PowrMax 420 is conceived for using and processing ready mixed mineral coating materials.
The machine is not designed for use as a cleaning device.

2.1 FUNCTION OF THE MORTAR SPRAYING MACHINE POWRMAX 420

The coating material is supplied by means of the container. The spiral conveyor feeds the coating material to the eccentric screw pump. The suction effect causes the coating material to enter the eccentric screw pump. This pump builds up the pressure required for transportation through the mortar hose. The compressed air required for atomisation is supplied at the spray lance. The mortar spraying machine can be switched on and off using the electric control. This can also be used to control the delivery volume.
A soft even spray pattern can be achieved by means of the smoothly regulated convey capacity of the coating material.

2.2 PROCESSIBLE COATING MATERIALS

- Thermal insulation composite system bonding agent (mineral and artificial resin systems)
- Artificial resin plasters up to 6 mm granular size
- Silicate plasters up to 6 mm granular size
- Silicone resin plasters up to 6 mm granular size
- Mineral final coats up to 6 mm granular size
- Lightweight plaster systems up to 6 mm granular size
- Scraped stucco up to 6 mm granular size
- Thermal insulation plasters
- Restoration plaster
- Porous concrete coating
- Quartz plastic
- Roof coatings
- Fire protection coatings
- Mineral sealing sludges
- Bitumen emulsions
- Armoring filler
- Liquid wood-chip wall paper
- Casement grouting mortar
- Artificial resin rendering base
- Wash primer
- Filling paint, also fibrous
- Elastic coating
- Acoustic plaster, artificial resin bonded
- Fillers, artificial resin bonded

All the coating materials must be suitable for machine processing. Refer to the product data sheet of the coating material to be processed.
Use other coating materials only after agreement with the manufacturer or the Titan application technology service.

3 TECHNICAL DATA

	PowrMax 420
Voltage:	230 V~, 50/60 Hz
Fusing:	16 A time-lag
Device supply cable:	5 m long, 3 x 2.5 mm^2
Motor output P_1:	2.3 kW
Max. convey capacity (water):	10, 15, 20 l/min (depending on the rotor/ stator)
Max. operating pressure:	40 bar
Max. granular size:	K6 mm
Dimensions L x W x H:	1150 x 520 x 610 mm
Container capacity:	50 l
Weight (PowrMax 420):	59 kg
Weight (Spray lance):	1.0 kg
Max. tyre pressure:	2.0 bar
Degree of protection:	IP 54
Max. sound pressure level:	70 dB (A)*
Atomizing air connection:	Rapid action coupling DN 7.2 mm
Max. atomizing air pressure:	10 bar
Minimum required compressed air volume:	320 l/min
Max. mortar hose length:	40 m (and 2.5 m hose whip)
Max. delivery height:	20 m

* Place of measurement: 1 m distance from unit and 1.60 m above reverberant floor.

4 EXPLANATORY DIAGRAM FOR POWRMAX 420

1 Connection for the spraying lance's air hose

2 Connection for compressed air supply (compressor)

3 Control unit

4 Control panel with selector switch for operating mode and delivery volume controller

5 Indicator light red (indicates the presence of a malfunction)

6 Operating light green (indicates that mains voltage is present)

7 EMERGENCY STOP switch

8 Container

9 Pressure gauge

10 Outlet unit with inside screw pump

11 Connecting coupling for mortar hose

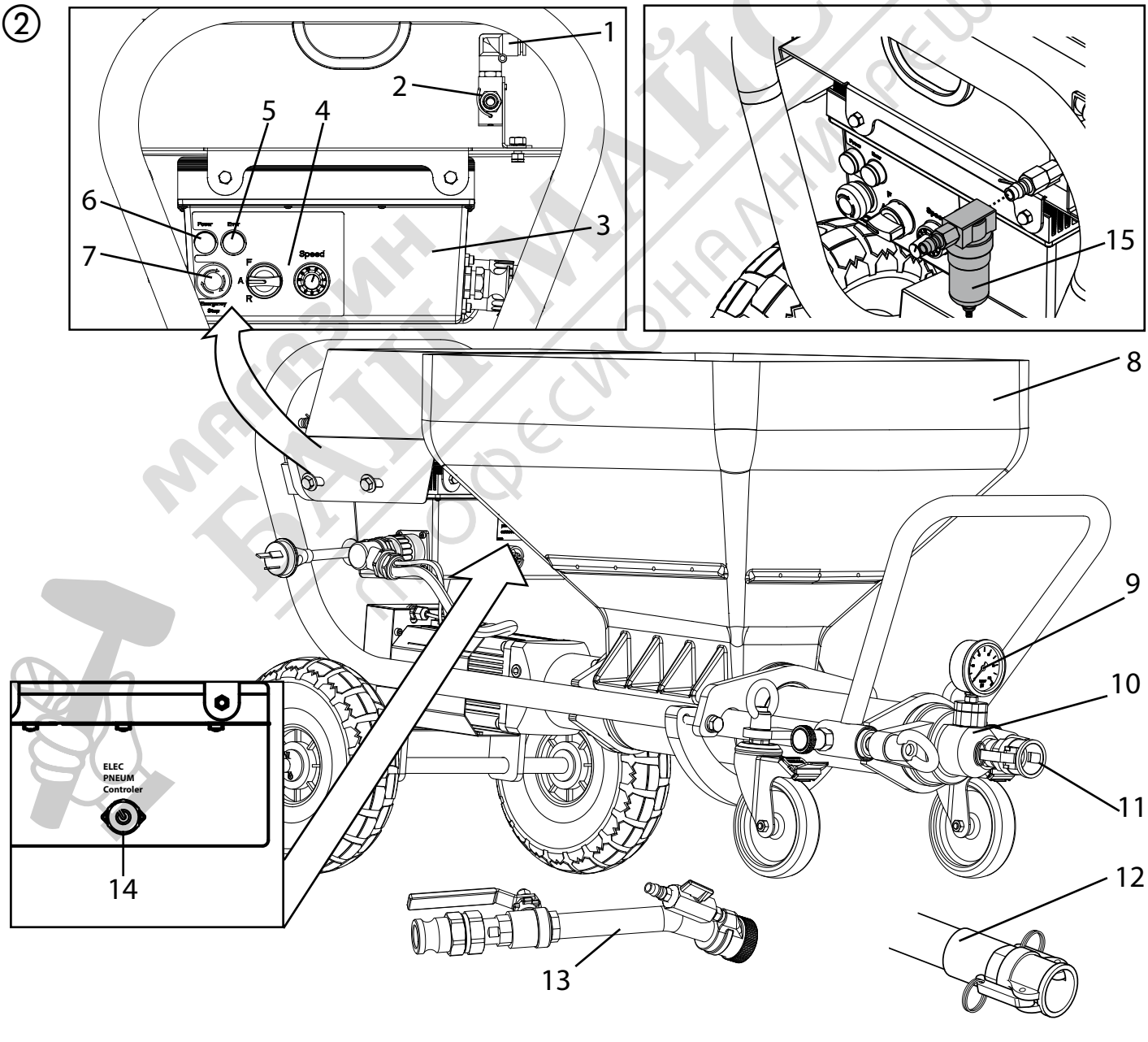
12 Mortar hose with air hose complete

13 Spray lance

14 Flow switch connection

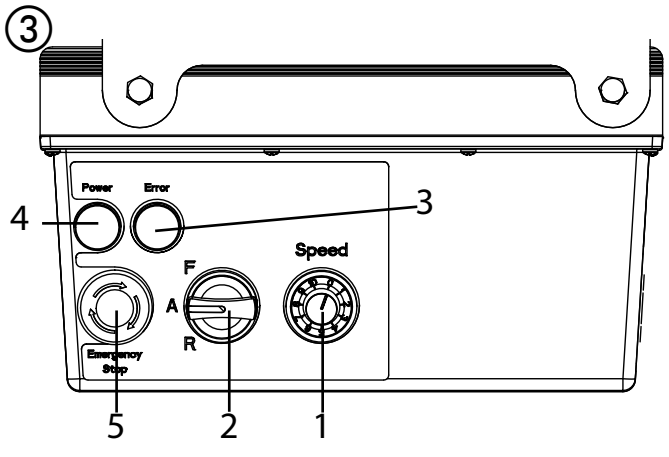
15 Air filter (accessory)

②



4.1 OPERATING ELEMENTS AND DISPLAYS ON DEVICE

1 Delivery volume controller 0-10
2 Selector switch for operating mode
3 Indicator light (Error)
4 Operating light (Power)
5 EMERGENCY STOP switch



The delivery volume controller (Fig. 3, 1) is used to regulate the convey capacity from 0-10 smoothly.

The selector switch (Fig. 3, 2) offers the following modes:

F A R	"A" position = automatic Basic setting for control with an automatic spray lance
F A R	"F" position = manual activation Switches on the mortar spraying machine. This setting is required for: • disassemble stator • pre-rinsing the mortar hose to improve the material's ability to slide • cleaning
F A R	"R" position = reverse gear This setting is required for: • assemble stator • pressure relief manually

Detailed explanation of selector switch use:
If the selector switch is in the "A" position, the PowrMax 420 can be switched on and off with the air flow regulator on the spray lance.
If there is no spray lance fitted (e.g.: assembly/disassembly the pump unit), the machine is switched on using the "F" switch position and off using the "A" position.

⚠	Important: control via the selector switch and material shut-off are treated equally. The machine can be switched from the "A" position (control using material shut-off) to "F" at any time. We would therefore recommend that only one person operate the machine.

The operating light (green, Fig. 3, 4) indicates that the machine is energised and ready.
When the mains plug is connected the PowrMax 420 carries out a function check. While this is going on the indicator light (red, fig. 3.3) flashes. If everything is in working order, the flashing stops after about 30 seconds. If the indicator light lights up during operation, this indicates that there is a malfunction. For detailed information about this kind of fault, refer to the „Rectification of faults" section on page 41.

i	If the selector switch is in the "F" position when the mains plug is plugged in, the machine will not switch on. Briefly move selector switch to "A" and then back to "F" to switch on the machine.

EMERGENCY STOP switch
When the EMERGENCY STOP switch is pressed, the PowrMax 420 is switched off immediately.
Turn the EMERGENCY STOP switch in order to release it again. The machine remains switched off after release. To switch it on again, the selector switch must be briefly set to "A" and then to "F".

4.2 DRIVE

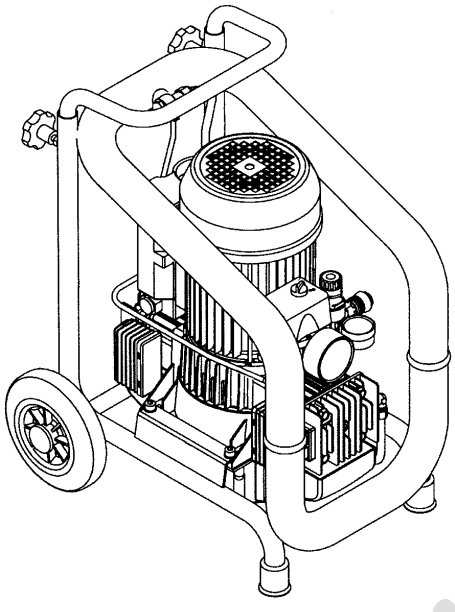
When an overload occurs, the mortar spraying machine switches off automatically (red indicator light lights up).
Move selector switch (Fig. 3, 2) to "A" and disconnect mains plug. Set delivery volume controller (Fig. 3, 1) to „0".
Wait around 5 minutes, then plug the mortar spraying machine back in and switch on. Set the delivery volume required.

i	The drive unit heats up during operation. This is normal and not a sign of malfunction.

4.3 COMPRESSOR (ACCESSORY)

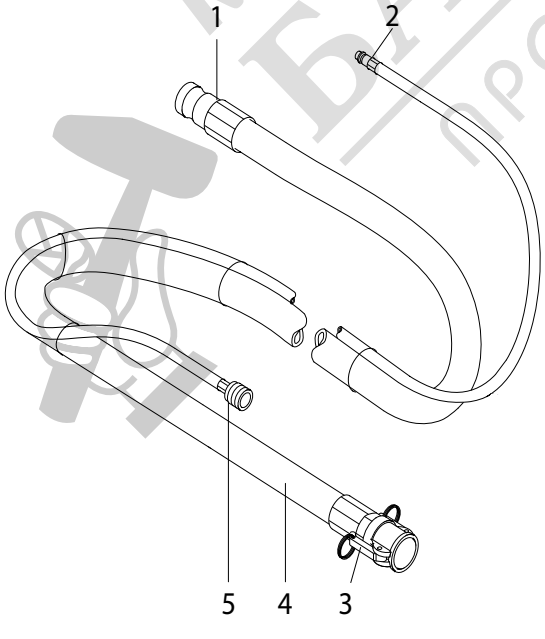
C330 intake volume 330 l/min

Note:
Only operate the compressor in accordance with the enclosed operating manual.



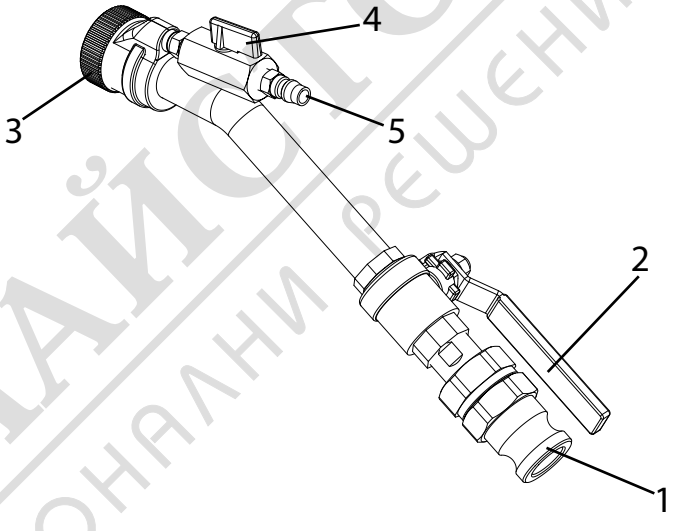
4.4 MORTAR HOSE

1 Material connection mortar spraying machine
2 Atomizing air connection compressed air supply
3 Material connection spray lance
4 Mortar hose
5 Atomizing air connection spray lance



4.5 SPRAY LANCE

1 Material connection
2 Material tap:
Open: material tap points backwards
Closed: material tap at 90° to spray lance
3 Texture tip:
Various texture tips can be used in the spray lance. The tip size depends on the granular size of the coating material and the desired spray pattern.
4 Air flow regulator
5 Atomization air connection



5 TRANSPORTATION

5.1 MOVING

Wind power cable around handle and remove the hose.
Push or pull the PowrMax 420 by the handle.

⚠	**Make sure that 2 people are available to carry the device on stairs.**

5.2 TRANSPORT USING A CRANE (FIG. 4)

For attaching points for the straps or rope (not wire cable) see figure.

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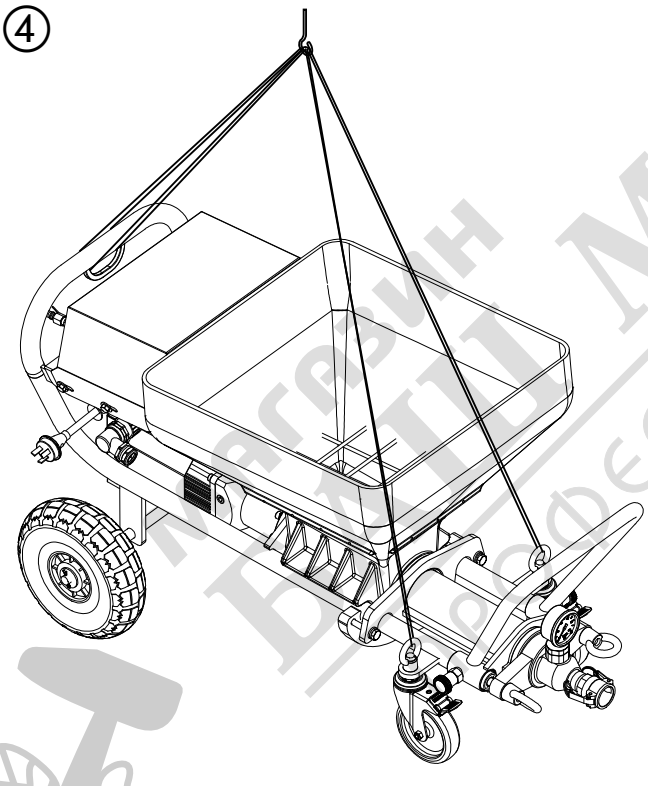


5.3 TRANSPORTATION IN VEHICLE

Secure the unit in the vehicle by means of suitable fasteners.

i	To avoid material residues leaking from the machine, clean the device in advance or lock the mortar connection.

6 COMMISSIONING

6.1 INSTALLATION LOCATION

Position mortar spraying machine in a level position to prevent it from sliding away.

6.1.1 CONNECTION TO MAINS POWER SUPPLY/ EXTENSION CABLE

Connection to the mains network only via a special feeding point, for example via a distribution board for construction sites, with residual current protective device with INF ≤ 30 mA.

⚠	Lay the device supply cable so that there is no danger of stumbling. Protect against damage, for example against being driven over.

⚠	Min. wire cross-section 3 x 2.5 mm^2. Unroll the extension cable completely. Ensure that the coupling pieces and plugs are free of damage.

- Before connecting the unit to the mains supply, ensure that the line voltage matches that specified on the rating plate.

6.2 INITIAL STARTING-UP

6.2.1 SCOPE OF SUPPLY

The machine is supplied by the manufacturer in the following individual components:

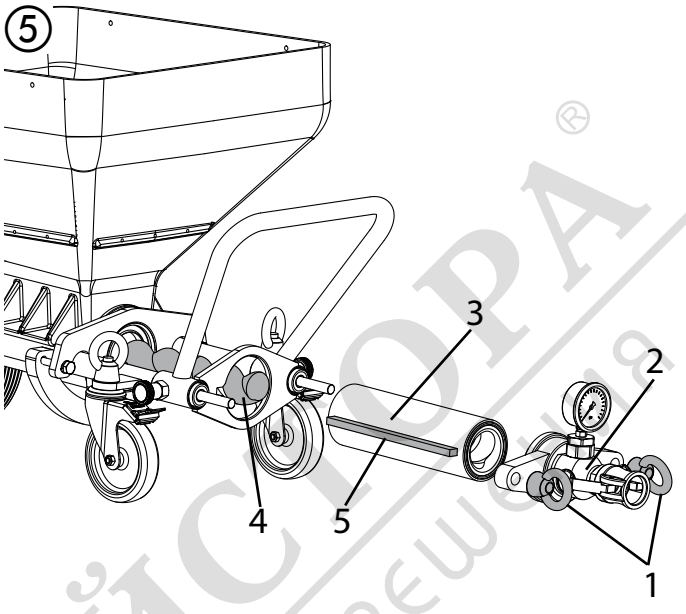
- Complete basic machine comprising drive unit, control unit, receptacle and transport frame with wheels
- Rotor and stator
- Hose package
- Spray lance
- Nozzles, nozzle cleaner and cleaning ball (2 pcs)

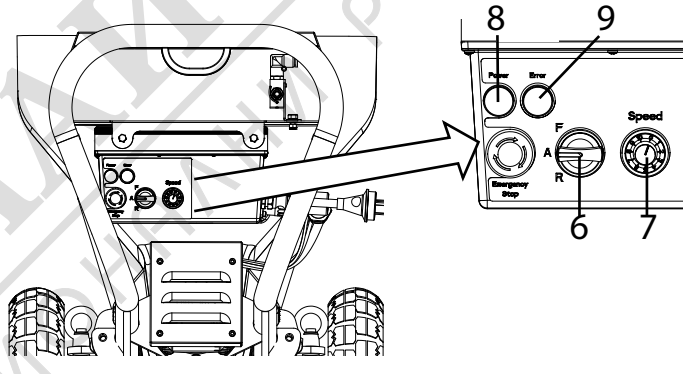
6.2.2 ASSEMBLY (FIG. 5)

⚠	**Disconnect external controls. Assembly may only be carried out by the person who controls the machine.** **Never operate mortar spraying machine with an exposed rotor.** **Do not reach into the rotor when it is moving. Risk of crushing.** **Caution if you have long hair. Only wear close-fitting clothes at work.**

Loosen the star screws (1) and remove the outlet unit (2).
Spray the stator (3) and rotor (4) with a suitable pump lubricant (order no. 9992 824).
Move selector switch (6) to "A" and set delivery volume controller (7) to „0".
Connect mains plug to mains power supply.
The operation light (8) shows operational readiness.
The red indicator light (9) flashes during the function check for about 30 seconds.
Set delivery volume controller (7) to 1 or 2.
Push the stator (3) over the tip of the rotor (4) (guide rail (5)).
Set the selector switch (6) to „R" to push the stator automatically on to the rotor.
As soon as the stator is in end position, set the selector switch (6) to „A".
Re-assemble the outlet unit (2) and tighten the star screws (1).

⑤

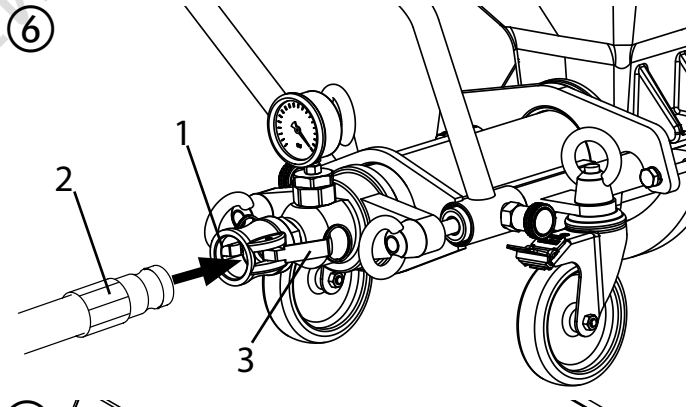




6.3 CONNECTING THE MORTAR HOSE

- Check that the pump unit is seated firmly.
- Check the seal (Fig. 6, 1) in the outlet unit.
- Connect the mortar hose (Fig. 6, 2) and secure it with the clamping levers (3).
- Connect the atomizing air connection on the mortar hose to the front connection of the flow switch (Fig. 7, 1) and the air hose of the compressor (accessory) to the rear connection of the flow switch (Fig. 7, 2).

⑥



6.4 COMPRESSOR (ACCESSORY)

Place the compressor at a secure location next to the mortar spraying machine and connect it to the mains network.
Note:
Only operate the compressor in accordance with the enclosed operating manual.

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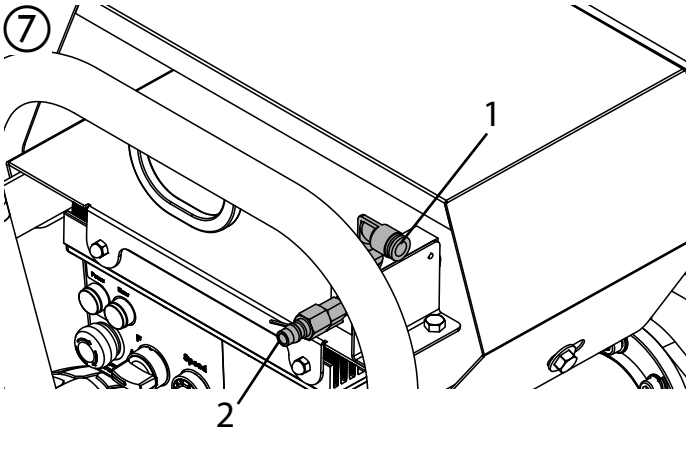


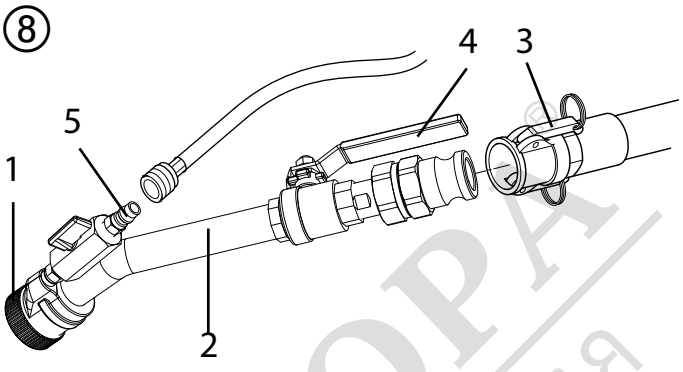
6.5 CONNECTING THE SPRAY LANCE (FIG. 8)

- Select a spray tip suitable for the material:

The tip size should amount to at least three times the granular size, e.g.
granular size artificial resin plasters –> 3 mm
Tip size –> 10 mm

- Mount the texture tip (1) in the spray lance with the cone pointing towards the spray head.
- Connect the spray lance (2) to the material hose and secure by applying the levers (3).
- Close the material tap (4) (material tap at 90° to spray lance).
- Connect atomization air connection (5) to the air hose of the mortar hose.
- Set selector switch to "A".

⑧



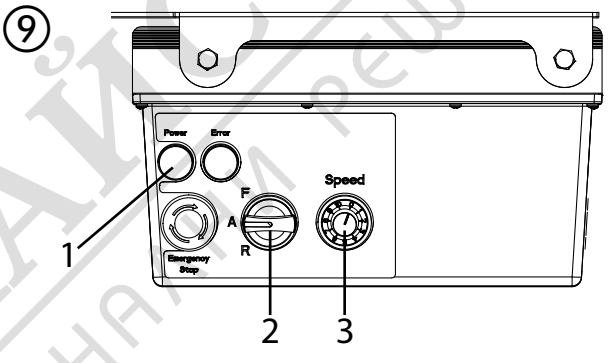
6.6 PREPARING THE MORTAR SPRAYING MACHINE (FIG. 9)

Recommended sliding means for the mortar hose

⚠	Water is not sufficient as a sliding means. Danger of clogging! Use cellulose paste (e.g. Metylan wallpaper paste, art no. 2312136)

- Fill 2–3 l cellulose paste into the container.
- Connect the mortar spraying machine to the mains supply. The operation light (1) shows operational readiness.

⑨



⚠	**Risk of injury from escaping material.** **Before switching on, always check that the air flow regulator and the material tap on the spray lance are closed (material tap at 90° to spray lance).** **Close air flow regulator and material tap whenever stopping work.**

- Set selector switch (2) to "F".
- Set delivery volume controller (3) to „3".

⚠	**Do not bend the mortar hose!** **Protect it against damage, for example against being driven over as well as against sharp objects and edges.**

- Hold spray lance over an empty bucket.
- Open material tap (Fig. 10, 1) on spray lance (material tap points backwards), the mortar spraying machine is switched on.
- If cellulose paste comes out of the tip, close the material tap (fig. 10, 1) (material tap at 90° to spray lance).
- Fill coating material into the receptacle.

ℹ	With mineral coating materials only fill the receptacle to half full.

- Position the spray lance over the bucket again.

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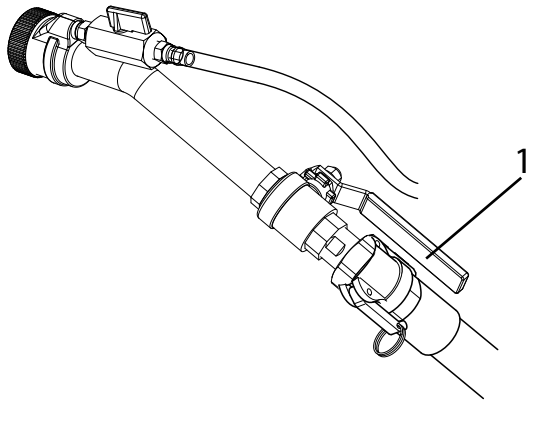

- Hold spray lance above container with cellulose paste.
- Open material tap (Fig. 10, 1) on spray lance.
- As soon as coating material exits from spray lance, close material tap (Fig. 10, 1).
- Set selector switch (Fig. 9, 2) to "A".
  The mortar spraying machine is now full and ready.

6.7 BEGINNING OF THE SPRAYING PROCESS

- Open the air flow regulator (fig. 11, 3) and the material tap (11, 1) at the spray lance.
- Adjust the flow of material with the delivery volume controller (fig. 11, 2) on the control unit and set the air quantity by adjusting the air flow regulator (fig. 11, 3) to attain the desired spray pattern.

i	**Important: Do not let the mortar spraying machine run dry. Switch the device off immediately if no more material comes out of the tip or if the spray line becomes irregular. Possible reasons for the problem and how to correct it can be found in the chapter called „Eliminating faults".**

i	**Increased material tap wear. Do not use the material tap to set the material volume. The delivery volume controller should be used for this purpose.**

6.8 END OF THE SPRAYING PROCESS

- Close the material tap (Fig. 11, 1).
- Close the air flow regulator (fig. 11, 3).

⚠	**Always close material tap at end of the spray process.**

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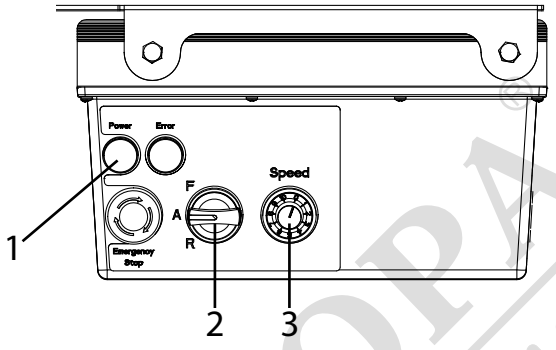

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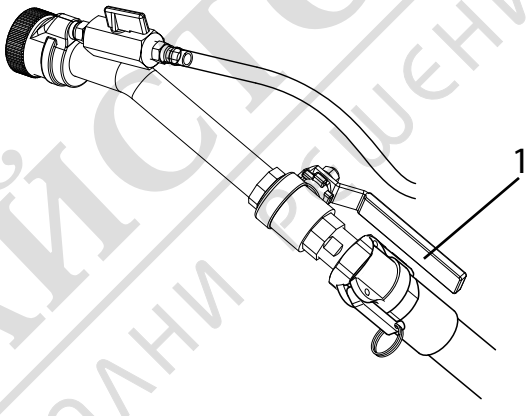

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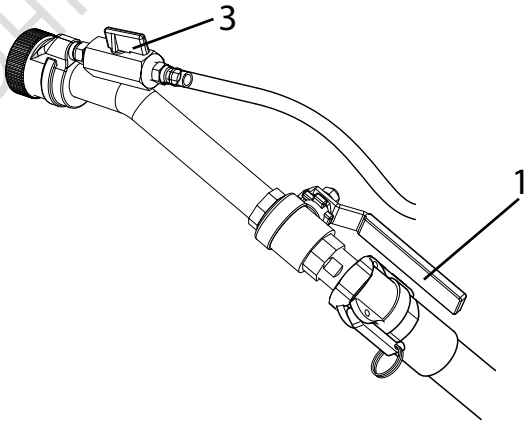
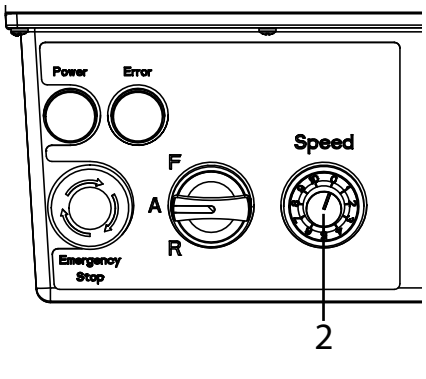




7 GENERAL INFORMATION ABOUT THE APPLICATION TECHNIQUE

7.1 SPRAYING TECHNIQUE

While spraying hold the spray lance at a uniform distance of 30 – 60 cm from the object. Otherwise the spray pattern will be uneven.
The spray pattern depends on the coating material, viscosity, tip size, convey capacity and amount of atomizing air.

Examples:
Fine texture –> large amount of atomizing air
Rough texture –> small amount of atomizing air
Higher convey capacity –> larger amount of atomizing air

Test the desired texture on a test surface.
The lateral limit of the spray jet should not be too sharp. The distance between the spray lance and the object should therefore be selected correspondingly.
The spray edge should be gradual in order to facilitate overlapping of the next coat.
If the spray lance is moved parallel and at an angle of 90° to the surface to be coated, the paint mist is minimized.
Note:
Grains and pigments with a sharp edge result in a high rate of wear of the pump, mortar hose, material tap and tip.

	When using the mortar hose while working on scaffolding, it is best to always guide the hose along the **outside** of the scaffolding.

8 SHUTTING DOWN AND CLEANING

	**Do not clean the motor and control unit of the mortar spraying machine moistly. And certainly do not spray down the unit with high-pressure cleaners or high-pressure steam cleaners. Danger of short-circuits caused by water ingressing.**

8.1 CLEANING THE MORTAR HOSE

- Pump until receptacle is empty.

	**Important: Do not let the mortar spraying machine run dry. Switch the device off immediately if no more material comes out of the tip or if the spray line becomes irregular. Possible reasons for the problem and how to correct it can be found in the chapter called „Eliminating faults“.**

- Switch off mortar spraying machine and compressor.
- Close material tap on spray lance.
- Remove the texture tip from the spray lance and clean it.
- Put water in the container and hold the spray lance over an empty bucket.

Important: Do not let the mortar spraying machine run dry. During the cleaning process, ensure that there is always enough water in the container.
- Set delivery volume controller to „5“.
- Open material tap on spray lance.
- Pump material out of hose into container until the material exiting the hose is just a thin liquid.
- Close material tap on spray lance.

	**The mortar hose must be pressureless. If necessary, set the selector switch briefly to “R” (reverse). Watch the manometer ––> 0 bar. Wear safety goggles.**

- Decouple mortar hose from pump unit.
- Decouple spray lance from mortar hose.
- Insert cleaning ball into mortar hose and reconnect mortar hose
- Set selector switch to “F”.
- After a few seconds the cleaning ball is emitted from the spray lance.
- Depending on the processed coating material, repeat the cleaning process 3 – 4 times.

	**The mortar hose must be pressureless. If necessary, set the selector switch briefly to “R” (reverse). Watch the manometer ––> 0 bar. Wear safety goggles.**

- Set selector switch to “A”.
- Decouple mortar hose from pump unit.

	A further cleaning option is to use the cleaning adapter (accessory). This cleaning adapter can be connected to a water hose or a tap by means of the claw coupling. Insert cleaning ball into the mortar hose. Couple the mortar hose to the cleaning adapter and rinse through with water.

8.2 CLEANING THE DEVICE AND REPLACING THE STATOR

- Clean mortar spraying machine.
  To do so, pump a suitable pump lubricant or water mixed with washing-up liquid through the pump.

Dismantling

⚠	**Mortar spraying machine must be depressurised.** **If necessary, set the selector switch briefly to "R" (reverse).** **Watch the manometer –-> 0 bar.** **Wear safety goggles.**

⚠	**Disconnect external controls. Disassembly may only be carried out by the person who controls the machine. Never operate mortar spraying machine with an exposed rotor. Do not reach into the rotor when it is moving. Risk of crushing. Caution if you have long hair. Only wear close-fitting clothes at work.**

- Move selector switch (fig. 12, 1) to "A" and set delivery volume controller (2) to „0".
- **Disconnect mains plug.**
- Loosen the ring bolts (3) and remove the outlet unit (4).
- Set delivery volume controller (2) to 1 or 2.
- **Connect mains plug to mains power supply.**
- Move the selector switch (1) to position „F". As soon as the stator (5) is released from the rotor (6), set the selector switch to „A".
- Remove the stator (5) completely.
- **Disconnect mains plug.**

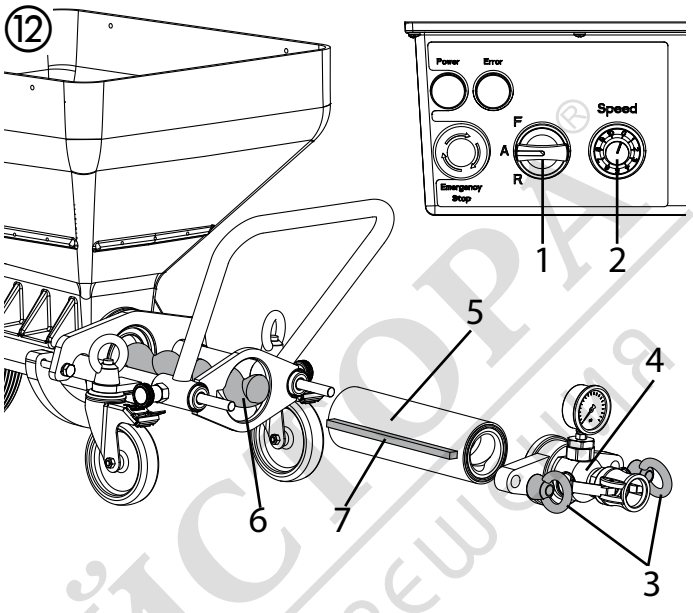
Clean the outlet unit

Clean the outlet unit (4) with a jet of water and a suitable bottle brush.
Clean the container (7) with a jet of water and a suitable brush.
Clean the protective grid with a radiator brush.
Also clean the rotor (6) and stator (5) thoroughly with water and, if necessary, using a brush.
Then spray rotor (6) and stator (5) and with a suitable pump lubricant.
Keep the thread of the pump housing and the pump tube clean so that leaking after the assembly is avoided.

Mounting

ℹ	If the machine is down for a longer period of time, the stator can become set at the rotor. Therefore, if the stator has been in storage for a longer period of time, do not mount it until you are about to begin work.

Assembly, see chapter 6.2.2



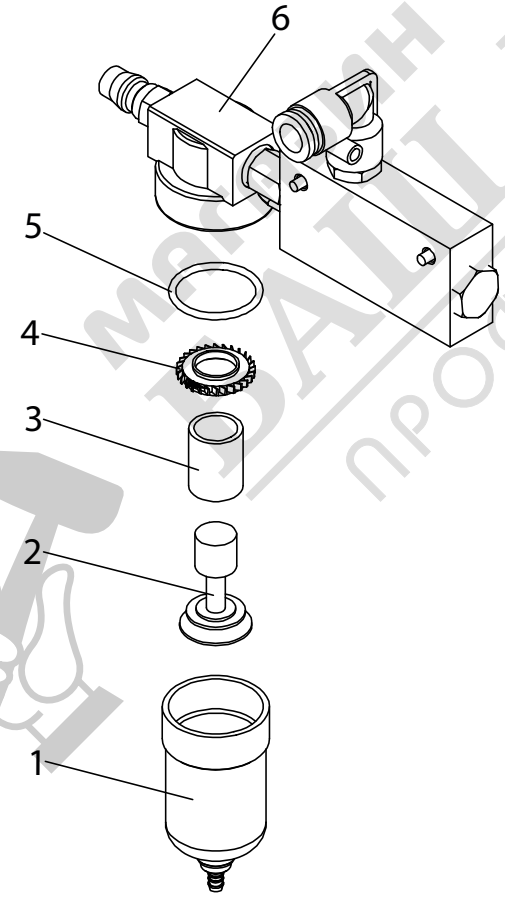
8.3 CLEANING THE SPRAY LANCE

- Clean the texture tip.
- Use cleaning needles to clean the air holes in the texture tip.
- Clean the spray lance and material tube on the inside using a bottle brush (0342 329).
- Clean all threads thoroughly.
- Rinse the spray lance with clear water. Open and close the material tap three times as you are doing this.

8.4 AIR FILTER (ACCESSORY)

- Remove the air hose.
- Unscrew the filter cover (1) from the filter housing (6) (take care to ensure that none of the components 2 - 5 are lost).
- Check the filter (3) and if necessary clean with warm soapy water or replace.
- Turn the filter housing (6) around by 180°.
- Reinsert all of the components and screw the filter cover (1) back into the filter housing.
- Turn the filter housing back to the starting position.

⑬



9 MAINTENANCE

⚠	ATTENTION! It is imperative that the machine be deenergized by unplugging the plug before all work and maintenance work. Otherwise there is a danger of short-circuiting! Repairs may only be carried out by qualified personnel who dispose the corresponding training and experience. The device must be tested by a skilled electrician after every repair.

The mortar spraying machine is designed so that a minimum of care and maintenance is required. However, the following work has to be carried out and components checked regularly:

9.1 MECHANICAL MAINTENANCE

- Keep the thread at the pump tube and pump housing clean and, if appropriate, seal.
- Check the seals at all the couplings and connecting pieces for leaks. If appropriate, replace worn seals.
- Check the following for damage before every usage:
  - Mortar hose
  - Power cable
  - Control unit

9.2 ELECTRICAL MAINTENANCE

- The electrical drive and its ventilation slots must always be kept clean and may not be cleaned with water. **Danger of short-circuits.**

9.3 LONG PERIODS OF NON-USAGE

If the mortar spraying machine is not used for a longer period, it has to be cleaned thoroughly and protected against corrosion.

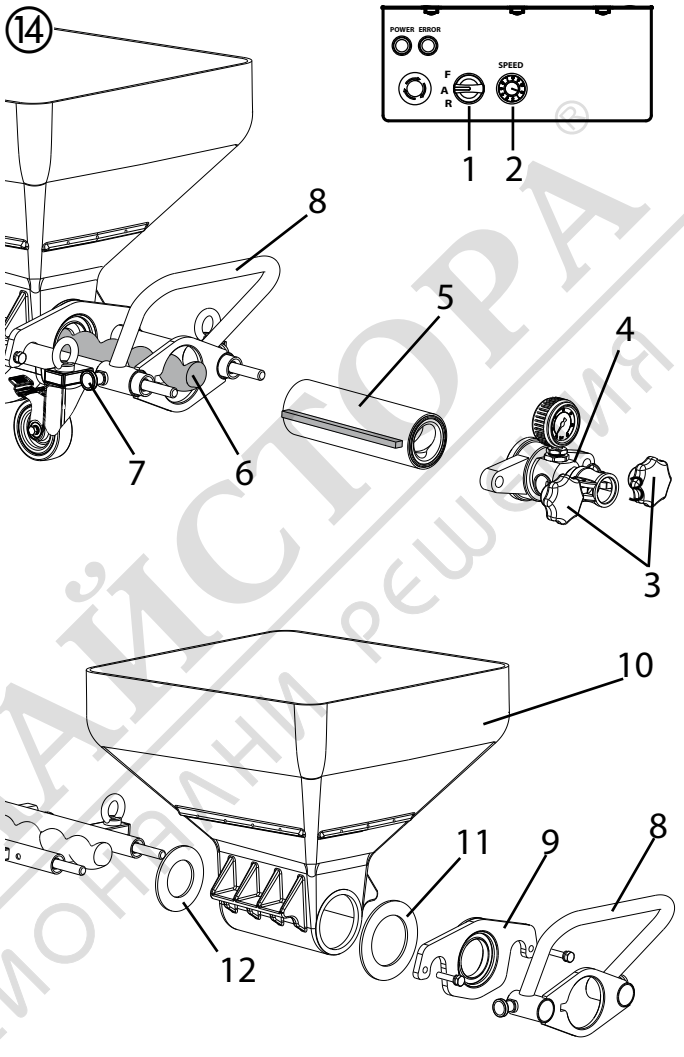
i	Take the stator out of the pump unit so that it cannot get stuck to the rotor.

9.4 SHAFT SEAL

i	Check the seals on the PowrMax 420 every month.

- Move selector switch (fig. 14, 1) to "A" and set delivery volume controller (2) to „0".
- **Disconnect mains plug.**
- Loosen the ring bolts (3) and remove the outlet unit (4).
- Set delivery volume controller (2) to 1 or 2.
- **Connect mains plug to mains power supply.**
- Move the selector switch (1) to position „F". As soon as the stator (5) is released from the rotor (6), set the selector switch to „A".
- Remove the stator (5) completely.
- **Disconnect mains plug.**
- Pull out the two locking pins (7) and remove the anti-twist lock (8).
- Remove the flange (9) with a 17-wrench.
- Remove the container (10).
- Check the seal (11) and replace if necessary.
- Clean the shaft seal (12).
- Check the rotor (6) and replace if necessary (see chapter 9.5).

⑭

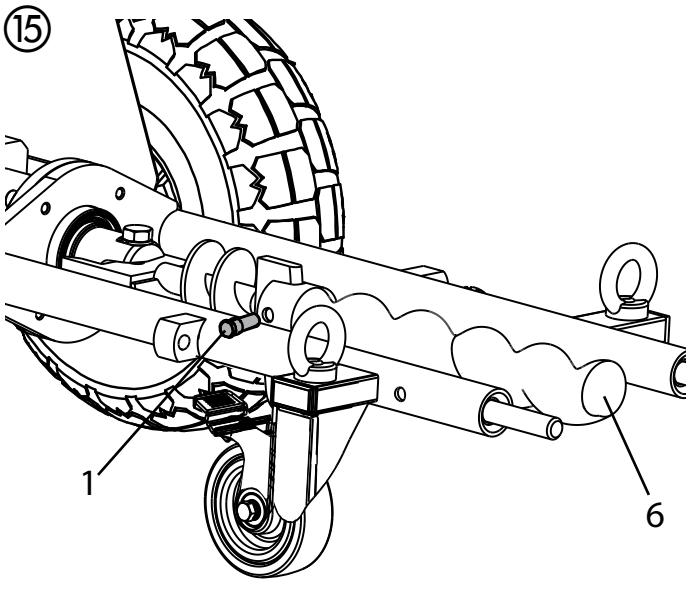


9.5 ROTOR REPLACEMENT (FIG. 15)

- Loosen fixing screw (1) and remove old rotor (6).
- Fit new rotor with new fixing screw.
- Glue fixing screw with Loctite 243.

⚠	Note: use Loctite 243 only.

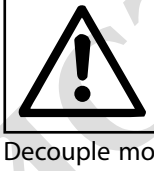
⑮



10 ELIMINATING FAULTS

MALFUNCTION	POSSIBLE CAUSE	ELIMINATION
Mortar spraying machine not running. Green operating light lights up	Delivery volume controller is set to „0“ Compressed air hose not connected or inadequate compressed air supply Air filter dirty (if fitted)	Increase delivery volume Check the compressed air hose and compressed air supply Clean the air filter
Mortar spraying machine not running. Green operating light not does not light up	Power supply missing.	- Plug in the power plug. - Check the power cable for damage and replace, if necessary. - Check the power supply.
Mortar spraying machine not running. Red indicator light lights up (the number of flashes represents an error code)	Flash 3 times: Overcurrent Flash 4 times: Over voltage Flash 5 times: Under voltage Flash 6 times: Communication interruption Flash 7 times: Overheated Flash 8 times: Locked Continuous Flash with no stop: Communication interruption	- Check if the rotor/stator, gearbox or feeder shaft are stuck - Check power supply voltage - Check power supply voltage - Unlock the emergency stop switch and restart the machine. If the problem is not solved after performing it three times, please contact your Titan dealer. - Shutdown the machine and check if the motor fan is faulty. If the fan is normal, wait until the controller has cooled down. Try to start the machine again. - If after switching on the machine three times it is still locked, please contact your Titan dealer. - Please contact your Titan dealer..
Mortar spraying machine cannot rotate the rotor	Rotor stuck in stator. Pump was not lubricated with pump sliding means.	Set the selector switch alternatively briefly to “F” (forwards) – “R” (reverse). Please contact your Titan dealer. if the problem cannot be resolved.
Mortar spraying machine builds up pressure in the mortar hose. However, coating material does not arrive at the spray lance.	Coating material "plug" in the mortar hose. Mortar hose not prerinsed with cellulose paste.	Depressurize the mortar hose – set the selector switch to “R” (reverse). Pump the coating material back into the container. **The mortar hose must be pressureless.** **Watch the manometer –-> 0 bar.** **Wear safety goggles.** Decouple mortar hose and rinse with water hose. When the plug has been removed, fill cellulose paste in the mortar hose. Couple the mortar hose back on.

ELIMINATING FAULTS

MALFUNCTION	POSSIBLE CAUSE	ELIMINATION
Coating material is suddenly not emitted during spraying.	Texture tip is clogged because of impurity in the coating material or because the granular size is too large.	Switch the mortar spraying machine off. Close the material cock at the spray lance. Remove the texture tip and clean it.
	Texture tip too small.	Select a larger texture tip. Rule of thumb: Granular size x 3 –> Tip size
	Coating material "plug" in the mortar hose. Mortar hose not prerinsed with cellulose paste.	Depressurize the mortar hose – set the selector switch to "R" (reverse). Pump the coating material back into the container.  **The mortar hose must be pressureless.** **Watch the manometer –> 0 bar.** **Wear safety goggles.** Decouple mortar hose and rinse with water hose. When the plug has been removed, fill cellulose paste in the mortar hose. Couple the mortar hose back on.
	No coating material in the container. Pump has sucked in air.	Refill the container with coating material and pump it around until the coating material emerges without any bubbles. **Attention:** **Always top up with sufficient coating material. Do not let the pump run dry. Pump overheats, resulting in a danger of „plugs".**
Spray pattern is not clean and even.	Air ducts in the texture tip are partially closed with coating material.	Switch the mortar spraying machine off. Close the material tap at the spray lance. Remove the texture tip. Clean the air ducts of the texture tip.
	Air volume incorrectly set.	Change air volume setting.
	Poor mortar spraying machine cleaning	Thoroughly clean mortar spraying machine
	No coating material in the container. Pump has sucked in air.	Refill the container with coating material and pump it around until the coating material emerges without any bubbles. **Attention:** **Always top up with sufficient coating material. Do not let the pump run dry. Pump overheats, resulting in a danger of „plugs".**

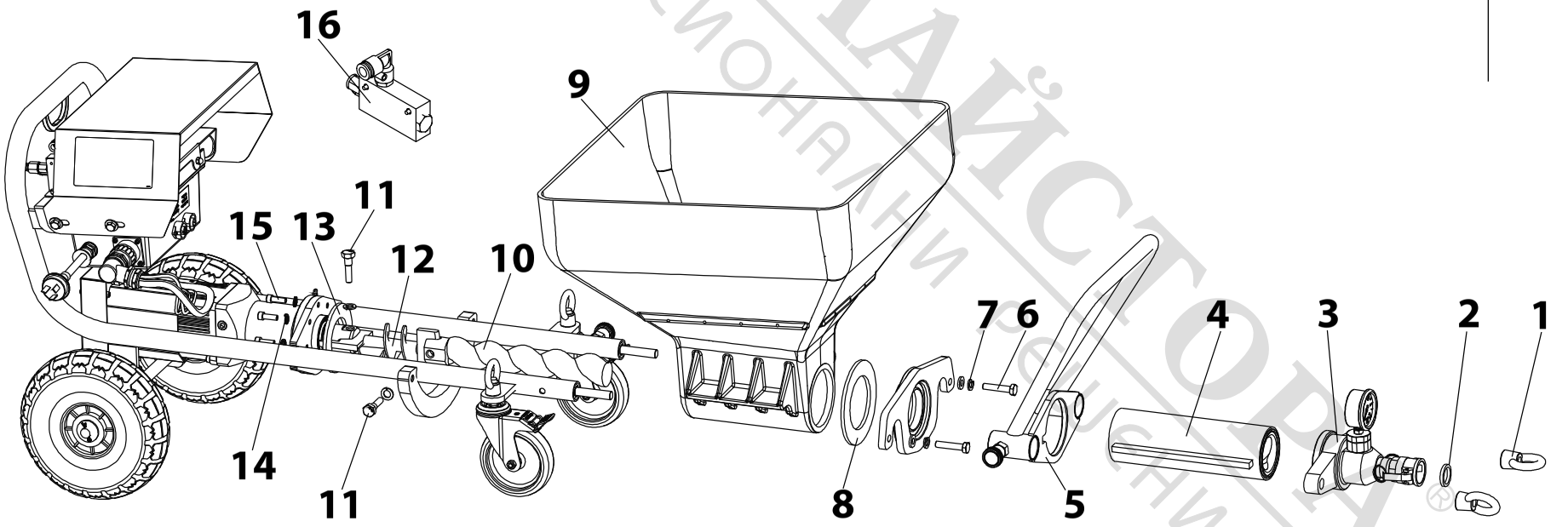
MALFUNCTION	POSSIBLE CAUSE	ELIMINATION
Pressure at the manometer rises to more than 40 bars.	Viscosity of the coating material too high. Mortar hose diameter too small. Mortar hose is too long. Coating material "plug" in the mortar hose. Mortar hose not prerinsed with cellulose paste.	Dilute the coating material. Use a mortar hose with a larger diameter. Use a shorter mortar hose. Depressurize the mortar hose – set the selector switch to "R" (reverse). Pump the coating material back into the container. **The mortar hose must be pressureless.** **Watch the manometer –-> 0 bar.** **Wear safety goggles.** Decouple mortar hose and rinse with water hose. When the plug has been removed, fill cellulose paste in the mortar hose. Couple the mortar hose back on.
Mortar spraying machine does not pump enough coating material.	Convey capacity selected too low. Mortar hose diameter too small. Stator worn. Texture tip too small.	Set the volume regulator higher. Use a mortar hose with a larger diameter. Mount a new stator, if necessary, also a new rotor. **Attention:** Spray on pump sliding means. Select a larger texture tip. Rule of thumb: Granular size x 3 –-> Tip size

If the defect is not caused by one of the above-mentioned faults, have the defect eliminated by the Titan customer service.

11 SPARE PARTS LIST

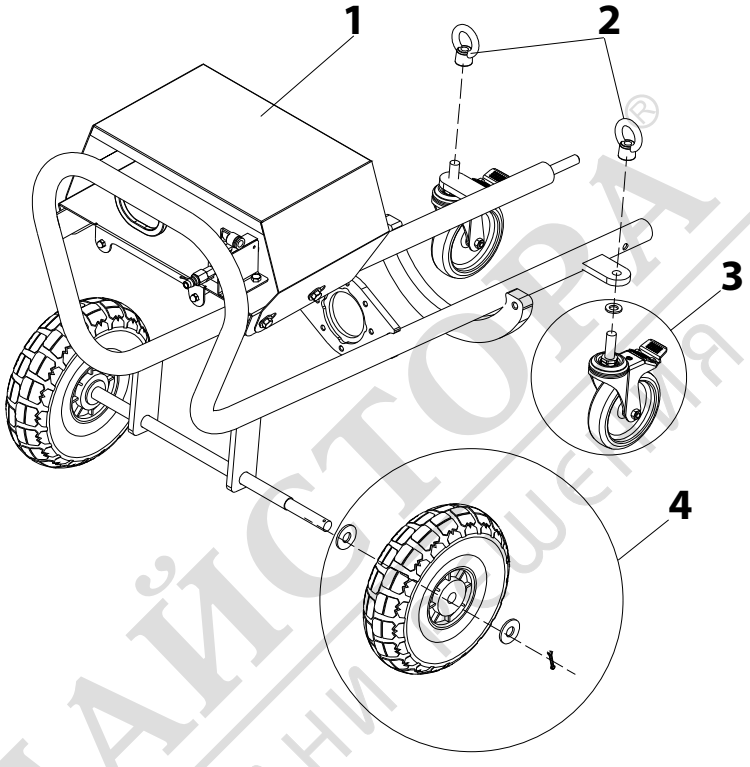
ITEM	ORDER NO.	DESIGNATION
1	3142039	Ring nut
2	2416820	Sealing, plaster coupling
3	2439516	Outlet unit cpl.
4	348315	Stator
	2416627	Rotor / Stator Kit (pos. 4,10,11)
5	2416813	Anti-twist lock for stator
6	9900247	Hexagon head screw
7	9921507	Spring washer
8	2416633	Rubber seal, flange

ITEM	ORDER NO.	DESIGNATION
9	2436478	Receptacle
10	348316	Rotor
11	2416814	Screw
12	2416628	Feeder shaft
13	2416632	Rubber seal, motor
14	9921501	Spring washer
15	9900313	Cylinder head screw
16	2416634	Pneumatic Controller, Set



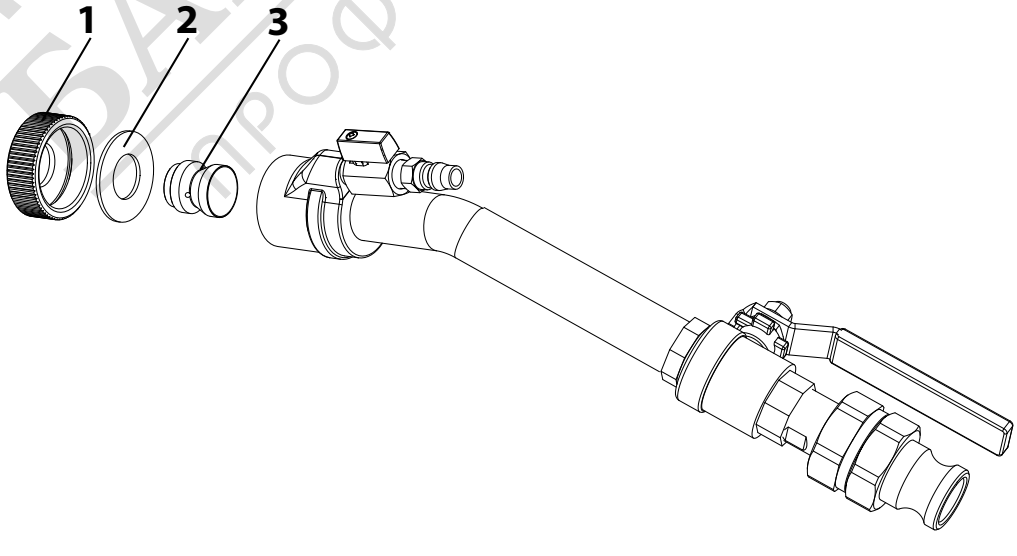
11.1 SPARE PARTS LIST FRAME

ITEM	ORDER NO.	DESIGNATION
1	2416991	Carriage
2	3142039	Ring nut M12
3	2416816	Guide pulley
4	2416631	Wheel



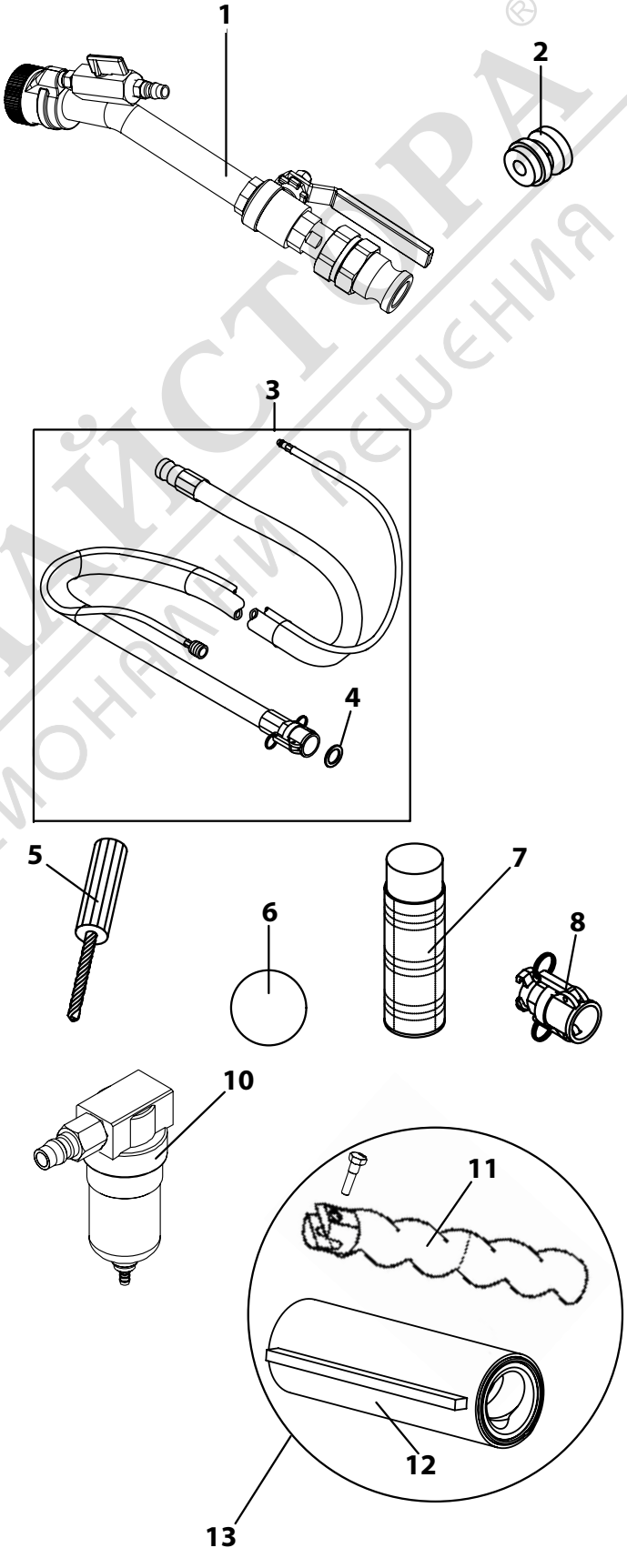
12 SPARE PARTS LIST – SPRAY LANCE

ITEM	PART NO.	DESIGNATION
	2438 213	Spray lance
1	2416 818	Union nut
2	2416 819	Sealing washer
3	2416 609	Texture tip 6 (standard)



13 ACCESSORIES

ITEM	PART NO.	DESIGNATION
1	2438 213	Spray lance (incl. texture tip 6)
2	Texture tips for automatic spray lance and ceiling spray lance:	
	2418 450	Texture tip 4
	2416 609	Texture tip 6 (standard)
	2416 610	Texture tip 8
	2416 611	Texture tip 10
	2416 612	Texture tip 12
3	2416 809	Mortar hose DN 19 – 6 m (standard)
	2396 956	Mortar hose DN 25 – 10 m
4	2416 820	Fix coupling seal M 27
5	0342 916	Cleaning needle
6	0342 330	Cleaning ball for DN 19
	0342 331	Cleaning ball for DN 27
7	9992 824	Pump sliding means 500 ml
8	0342 241	Cleaning adapter M 27 – GK
	0348 948	Cleaning adapter M 35 – GK
9	2312 136	Lubricant for mortar hose (Metylan wallpaper paste) 125g (no picture)
10	2417014	Air filter
11	348316	Rotor (10 litre)
	34892	Rotor (15 litre)
	2385520	Rotor (20 litre)
12	348315	Stator (10 litre)
	348925	Stator (15 litre)
	2385532	Stator (20 litre)
13	2416627	Rotor / Stator Kit (10 litre)



TESTING OF THE MORTAR SPRAYING MACHINE

For safety reasons, we would recommend having the device checked by an expert as required but at least every 12 months to ensure that it can continue to operate safely.
In the case of unused devices, the check can be postponed until they are next started up.
All (potentially deviating) national inspection and maintenance regulations must also be observed.
If you have any questions, please contact your Titan dealer.

NOTE ON DISPOSAL

In accordance with European Directive 2012/19/EU on the disposal of waste electrical equipment and its implementation in national law, this product may not be disposed of with the household refuse, but must rather be recycled in an environmentally correct manner.

Your waste device will be taken back by us or our representatives and disposed of environmentally correctly. If you have any questions, please contact your Titan dealer.

IMPORTANT INFORMATION ON PRODUCT LIABILITY

According to an EU directive, the manufacturer is only liable without limitation for faults in the product if all parts come from the manufacturer or have been approved by the manufacturer and have been mounted to the device and are operated properly. If third-party accessories or spare parts are used, the manufacturer is exonerated wholly or partly from his/her liability if use of the third-party accessories or spare parts have caused a defect in the product. In extreme cases, the relevant authorities can completely prohibit using the entire device.

With original Titan accessories and spare parts, compliance with all safety regulations is guaranteed.

3 + 2 YEAR GUARANTEE ON THIS TITAN PRODUCT

(Status 03.03.2022)

TITAN exclusively provides the commercial buyer who has purchased the product from an authorised specialist dealer (hereinafter referred to as the „Customer“) with a guarantee for the products listed on the Internet at https://go.titantool-international.com/warranty in addition to the statutory warranty regulations, unless there is a guarantee exclusion.
The warranty period for TITAN products (devices) is 36 months and begins with the date of purchase of the initial purchase. This guarantee period is extended by a further 24 months if the product is registered within 28 days of purchase on the Internet at https://go.titantool-international.com/registration.
In cases of commercial rental, industrial use (e.g. use in shift operation) or equivalent use, the guarantee period is 12 months due to the significantly higher load. We reserve the right to carry out a check in individual cases and refuse the guarantee where necessary.
If any material, machining or performance defects are identified in the device within the guarantee period, then the guarantee claims must be made immediately and within a period of no more than 2 weeks following discovery of the defect.
The detailed guarantee conditions can be obtained on request from our authorised TITAN partners (see website or operating instructions) or in text form on our website:

https://go.titantool-international.com/warranty-conditions

Subject to modifications

EU Declaration of conformity

We declare under sole responsibility that this product conforms to the following relevant stipulations:
2006/42/EC, 2014/30/EU, 2011/65/EU, 2012/19/EU
Applied harmonised norms:
EN ISO 12100, EN 12001, EN 60204-1, EN IEC 61000-3-2, EN 61000-3-3, EN IEC 61000-6-2, EN 61000-6-4