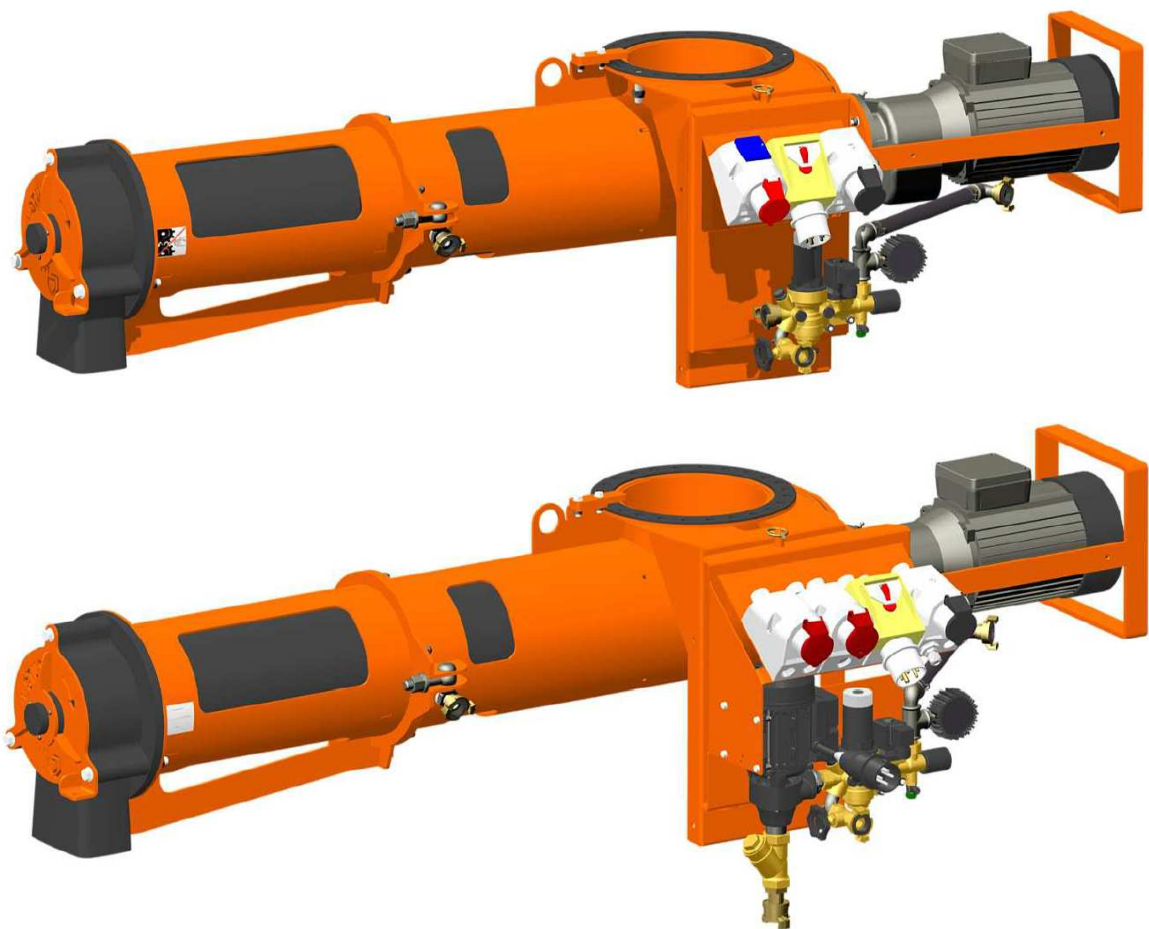


Operating manual

PFT LOTUS XL light 400 V

Overview – Operation – Spare Parts Lists



Item number of operating manual: 00 49 48 20

LOTUS XL silo light, 400V, 3 Ph, 50 Hz, 45L RAL2004 item number 00103495

LOTUS XL silo light, 400V, 3 Ph, 50 Hz, 90L RAL2004 item number 00106142

LOTUS XL silo light, 400V, 3 Ph, 50 Hz, 60L RAL5010 item number 00491262

LOTUS XL silo light, 400V, 3 Ph, 50 Hz, 60L RAL3604050 item number 00494491

LOTUS XL silo light, 400V, 60Hz, 45L RAL5021 Artikelnummer 00500464



Read the operating manual prior to beginning any work!

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1 EC Declaration of Conformity

Company: Knauf PFT GmbH & Co. KG
 Einersheimer Straße 53
 97346 Iphofen
 Germany

declares, with exclusive responsibility, that the machine

Machine model: LOTUS XL
Device type: Horizontal screw mixer
Serial number:
Guaranteed sound power level: 78 dB

conforms to the following CE regulations:

- Outdoor Noise Directive (2000/14/EC),
- Machine Directive (2006/42/EC),
- Directive on Electromagnetic Compatibility (2014/30/EC).

Applied conformity assessment procedure according to Outdoor Noise Directive 2000/14/EC:
 Internal manufacturing inspection as per Article 14, Section 2 in conjunction with Appendix V.

This declaration applies only to the machine in the condition it was in when sold. Components attached or modifications undertaken by the end customer after purchase remain unconsidered. This declaration becomes invalid if the product is converted or altered without approval.

Agent responsible for putting together the relevant technical documentation:

Dipl.-Wirtsch.-Ing. Michael Duelli, Einersheimer Straße 53, 97346 Iphofen, Germany.

The technical documentation is held at:

Knauf PFT GmbH & Co.KG, Technische Abteilung, Einersheimer Straße 53, 97346 Iphofen, Germany.

Iphofen, Germany

Place and date of issue

Name and signature

Dr. York Falkenberg

General Manager
 Information on signatory

2 Testing

2.1 Testing by machine operator

- Before the start of each work shift, the machine operator must test the effectiveness of the control and safety devices as well as check the proper attachment of all protective devices.
- During operation, construction machines must be tested by the machine operator for their operational safety.
- If defects are found in the safety devices or any other area that could impair safe operation, the supervisor must be notified immediately.
- For defects posing a hazard to persons, the operation of the construction machine must be halted until the defect is eliminated.

2.2 Periodic inspection

- Construction machines must be tested for safe operation by a specialist as the usage conditions and operating circumstances require, but at least once a year.
- Pressure vessels must undergo the prescribed inspections by authorised experts.
- The inspection results are to be documented and must be stored at least until the next inspection.



3 General information

3.1 Information regarding the operating manual

This manual provides important information and instructions on the correct use of the equipment. Adherence to all defined safety and handling instructions is a prerequisite for a safe working environment.

Additionally, the on-site accident prevention regulations and general safety guidelines for the equipment must be followed at all times.

Read the manual carefully before starting any work! It is an integral part of the product and must be kept near the machine and accessible to operators at all times.

Always include the operating manual when transferring the machine to third parties.

The diagrams and illustrations shown in the manual are intended for better understanding of tasks and descriptions. They are not necessarily shown to the correct scale and may vary slightly from the actual equipment used.

3.2 Keep the manual for later use

The operating manual must be available during the entire service life of the product.

3.3 Layout

The operating manual is comprised of two booklets:

- **Part 1: Safety**

General safety instructions for HSM

Item number: 00 14 63 78

- **Part 2: Overview, operation, servicing and spare part lists (this booklet).**

Both parts must be read and adhered to in order to ensure safe operation of the equipment. Together, they are valid as one operating manual.

3.4 Spare part lists

You can find spare part lists for the machine in the Internet under www.pft.eu.

Technical data

4 Technical data

4.1 General specifications

Item number	Specification	Value	Unit
00103495	Weight	145,00	kg
00106142	Weight	141,00	kg
00491262	Weight	151.30	kg
00494491	Weight	151.30	kg
00500464	Weight	157,00	kg
	Length	2,050	mm
	Width	680 / 760	mm
	Height	500 / 660	mm

4.2 Connected load

	Output	Setting value
Mixer motor	5.5 kW	11 A
Vibrator	0.25 kW	0.25 A
Water pump	0.5 kW	1.1 A

Electrical, 400 V

Specification	Value	Unit
Voltage, AC current 50 Hz	400	V
Voltage, AC current 60 Hz	400	V
Max. current consumption	11	A
Max. power consumption	5.5	kW
Fuse	16	A
Mixer motor speed	280	rpm



4.3 Connection values for water

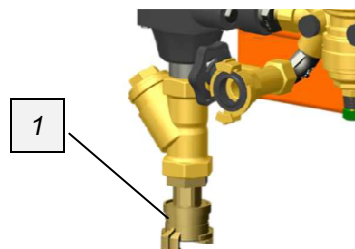


Fig. 1: Water connection

Specification	Value	Unit
Operating pressure, min.	2.5	bar
Connection	1/2	inches

4.4 Operating requirements

Ambient conditions

Specification	Value	Unit
Temperature range	2–45	°C
Relative humidity (maximum)	80	%

Operating period

Specification	Value	Unit
Maximum continuous operating period	8	hours

4.5 Sound power level

Guaranteed sound power level LWA	78 dB (A)
----------------------------------	-----------

4.6 Vibrations

Weighted effective acceleration value to which the upper limbs are exposed = < 2.5 m/s ²

Dimension sheet for Lotus XL



5 Dimension sheet for Lotus XL

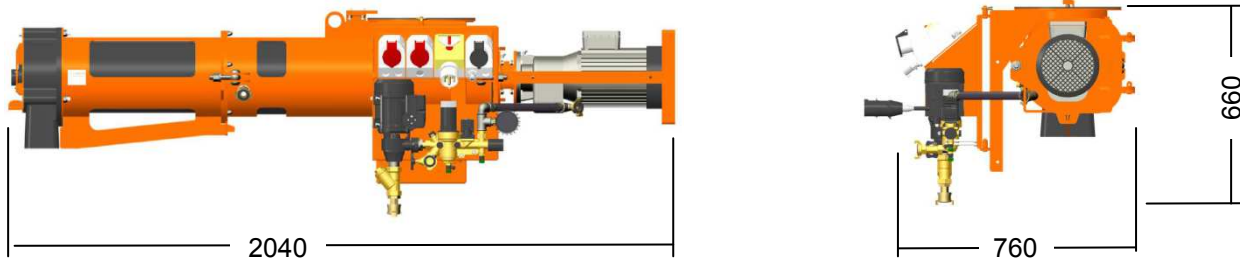
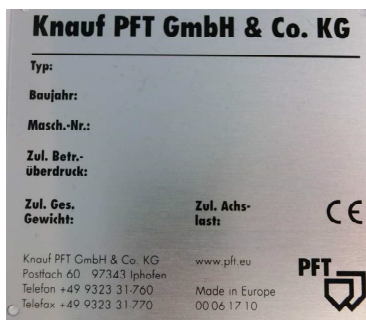


Fig. 2: Dimensions

5.1 Type plate



The type plate contains the following information:

- Manufacturer
- Type
- Year built
- Machine number

Fig. 3: Type plate

6 Quality control sticker



The quality control sticker contains the following information:

- CE confirmed in compliance with EU directives
- Serial no. / serial number
- Controlled by / signature
- Date of control

Fig. 4: Quality control sticker



7 Design of LOTUS XL

7.1 Overview of LOTUS XL silo light 400 V

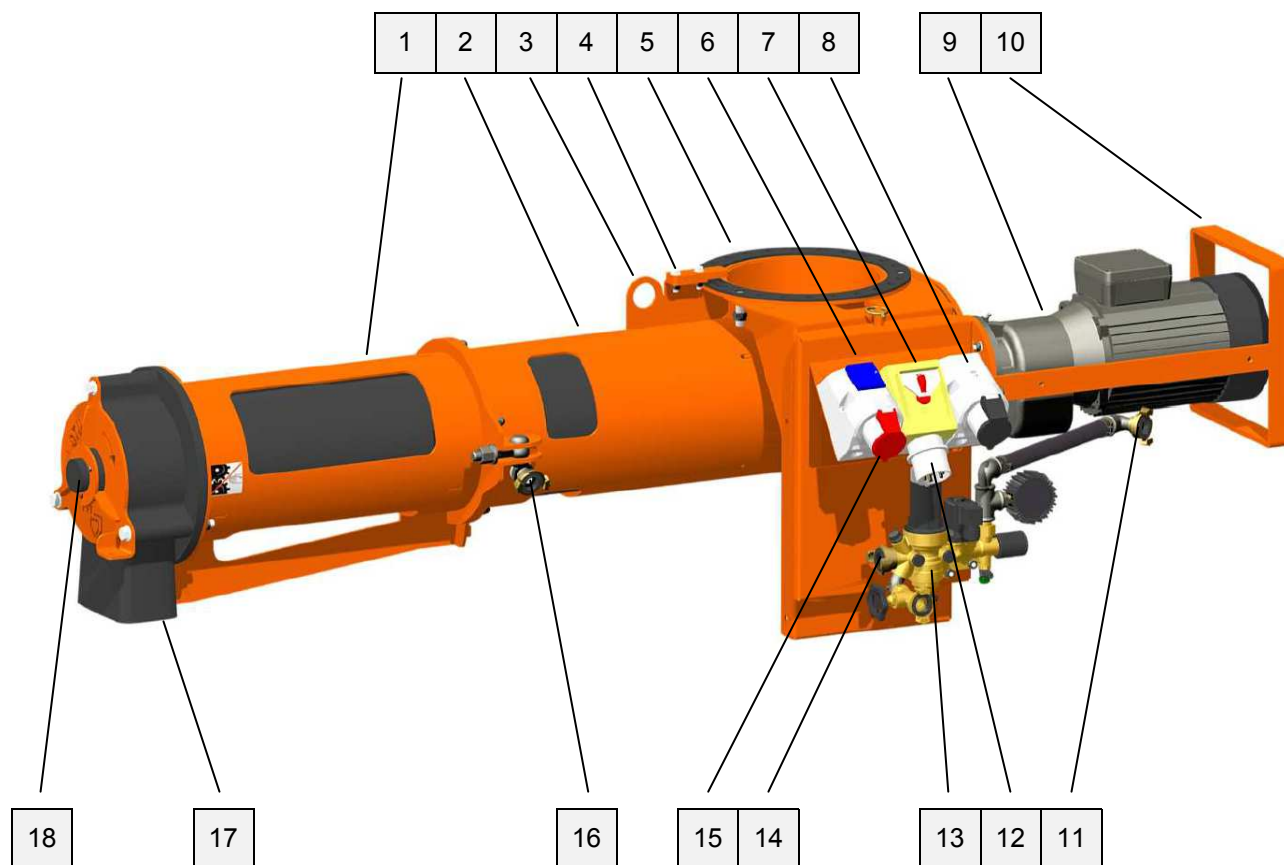


Fig. 5: Overview of LOTUS XL silo light 400V

- | | |
|--------------------------------------|---|
| 1. Mixing tube | 10. Motor swivel flange |
| 2. Middle body | 11. Water connection on middle body (16) |
| 3. Crane eyelet for crane transport | 12. Mains connection (400 V) |
| 4. Assembly aid for silo attachment | 13. Water manifold |
| 5. Silo connection flange | 14. Water inlet, water connection from water supply |
| 6. 230 V socket, continuous current | 15. Vibrator connection (400 V) |
| 7. On/Off switch with phase inverter | 16. Water connection to water manifold (11) |
| 8. Mixer motor connection (400 V) | 17. Mortar outlet |
| 9. Mixer motor | 18. Front bearing |

Design of LOTUS XL



7.2 Overview of LOTUS XL silo light 400 V with water pump

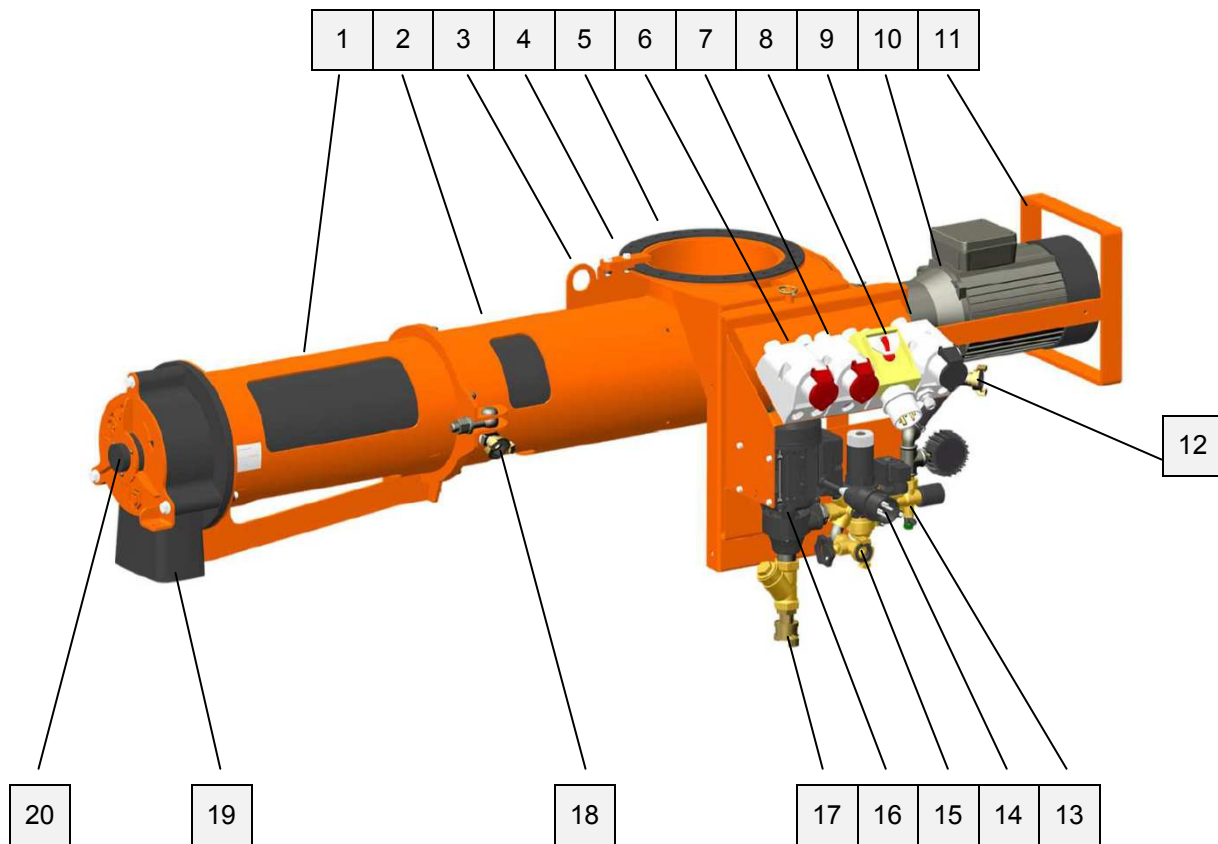


Fig. 6: Overview of LOTUS XL silo light 400V with water pump

- | | |
|--------------------------------------|---|
| 1. Mixing tube | 11. Motor swivel flange |
| 2. Middle body | 12. Water connection on middle body (18) |
| 3. Crane eyelet for crane transport | 13. Water manifold |
| 4. Assembly aid for silo attachment | 14. Motor connection cable for water pump |
| 5. Silo connection flange | 15. Water outlet |
| 6. Water pump connection (400 V) | 16. Water pump |
| 7. Vibrator connection (400 V) | 17. Water inlet, water connection from water supply |
| 8. On/Off switch with phase inverter | 18. Water connection to water manifold (12) |
| 9. Mixer motor connection (400 V) | 19. Mortar outlet |
| 10. Mixer motor | 20. Front bearing |



8 Subassemblies

8.1 Gear motor



Fig. 7: Gear motor subassembly

The horizontal screw mixer PFT LOTUS XL is comprised of the following components:

- Gear motor with motor swivel flange.

8.2 Middle body



Fig. 8: Middle body

- Middle body with dosing zone.

8.3 Mixing shaft / dosing shaft



Fig. 9: Mixing shaft

- Mixing shaft / dosing shaft with coupling.

8.4 Mixing tube with outlet



Fig. 10: Mixing tube with outlet

- Mixing tube with outlet.

Description of subassemblies

9 Description of subassemblies

9.1 Overview of control unit without water pump

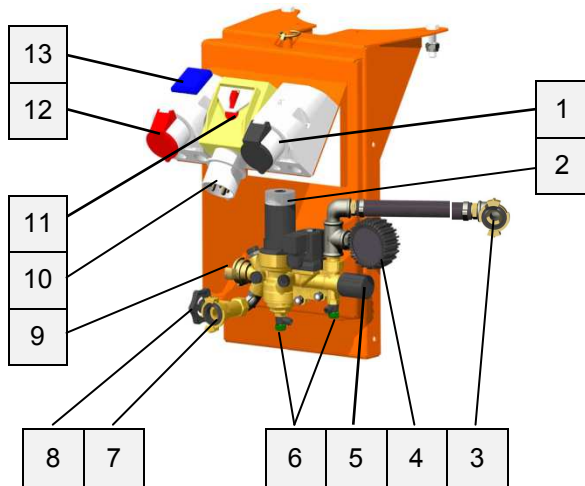


Fig. 11: Control unit of LOTUS XL

1. Mixer motor connection (400 V)
2. Pressure reducer
3. Water connection on middle body
4. Gauge for water pressure
5. Needle valve for setting water quantity
6. Water drain cock for freezing conditions
7. Water outlet
8. Stop cock
9. Connection to water supply network
10. Mains connection (400 V)
11. Main switch
12. Vibrator connection (400 V)
13. Socket (230 V), continuous current

9.2 Overview of control unit with water pump

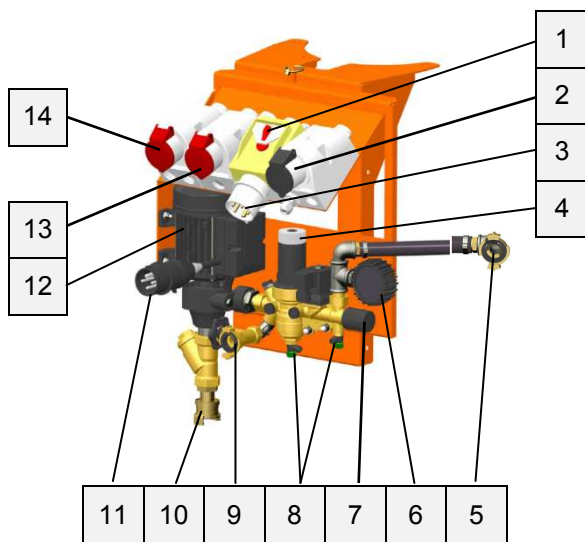


Fig. 12: Control unit of LOTUS XL with water pump

1. Main switch
2. Mixer motor connection (400 V)
3. Mains connection (400 V)
4. Pressure reducer
5. Water connection on middle body
6. Gauge for water pressure
7. Needle valve for setting water quantity
8. Water drain cock for freezing conditions
9. Water outlet
10. Connection to water supply network
11. Motor connection cable for water pump
12. Water pump
13. Vibrator connection (400 V)
14. Water pump connection



10 Connections

10.1 Electrical connection



Fig. 13: Electrical connection

1. Three-phase current connection (1), 400 V

10.2 Water connection

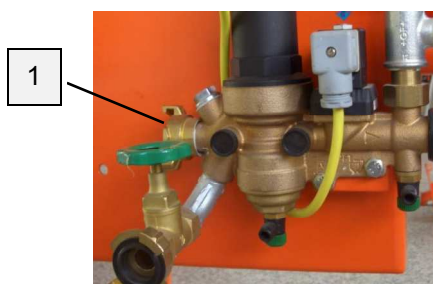


Fig. 14: Water connection without a booster pump

1. Water connection (1) from water supply network or water barrel, without booster pump

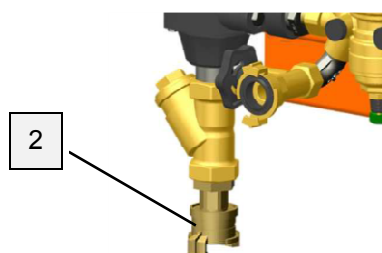


Fig. 15: Water connection with a booster pump

2. Water connection (2) from water supply network with booster pump

11 Accessories

11.1 Necessary accessories



Fig. 16: Power cable, 5 x 2.5, 25 m with CEE plug and coupling 16 A, 6h red, item number 20423360

Power cable, 5 x 2.5, 50 m with CEE plug and coupling 16 A, 6h red, item number 20423350



Fig. 17: Water/air hose, 3/4" x 40 m, item no. 20212100

11.2 Recommended accessories



Fig. 18: Booster pump AV3000 with handle 230 V / 50 Hz cpl., item no. 00130205



Fig. 19: Inlet strainer with filter screen, stainless steel, cpl., item no. 00136619



Fig. 20: Spraying jet 3/4" with Geka coupling, item no. 20215700



12 Brief description

Screw mixer

PFT LOTUS XL

The revolutionary mixing technique with decisive advantages.

With its significant advantages the new horizontal screw mixer PFT LOTUS XL revolutionises mixing technology.

The sturdy rubber mixing tube has already proved itself in easy and quick cleaning of the PFT mixer. Unique is the new, revolutionary dosing and mixing shaft, manufactured as a single unit without a middle axle.

This type of construction is pointing the way: No more deposits adhering, and the cleaning is easier and faster than ever before.

The PFT LOTUS XL has been developed for the use of silo and container material: it mixes continuously and fully automatically all premixed dry lime/cement based mortars up to a grain size of 8 mm.



An additional important advantage is the turnable dosing segment. If replacement becomes necessary due to wear, the segment can be turned 180° for double use.

13 Material

13.1 Areas of application

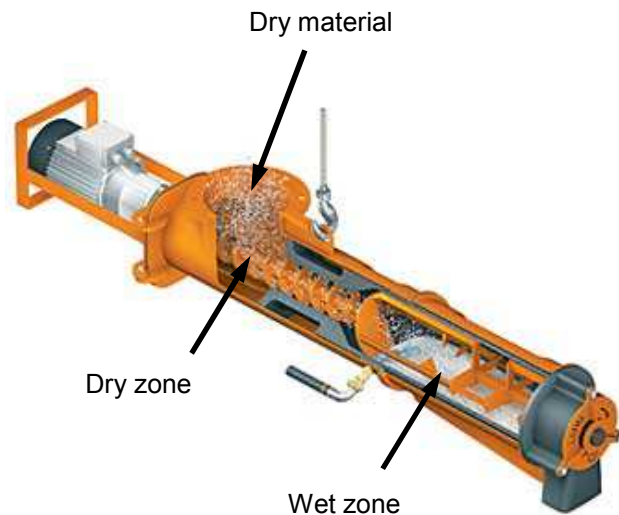
SCREW MIXER PFT LOTUS XL.

The revolutionary mixing technique with decisive advantages.

AREAS OF APPLICATION: The PFT LOTUS XL mixes continuously and fully automatically all premixed dry lime/cement based mortars up to a grain size of 8 mm.

- Bonding/reinforcing mortars
- Masonry mortar
- Jointing mortar
- Plastering mortar
- Screed mortar
- Levelling compounds

and many more





14 Safety regulations



Important!

When performing any work, observe the locally applicable safety regulations for mortar conveying and spraying machines!

15 Transport, packaging and storage

15.1 Safety instructions for transport

Improper transport



CAUTION!

Damage can be caused by improper transport!

Significant damage may occur if the equipment is transported incorrectly.

- Proceed with care when unloading packages and transporting goods on site. Always observe the symbols and instructions on the packaging.
- Only use the suspension points provided.
- Only remove packaging shortly before assembly.

Suspended loads



WARNING!

Danger of death due to suspended loads!

Falling or swinging parts can pose a fatal hazard when heavy loads are lifted.

- Never step underneath suspended loads.
- Follow instructions regarding the suspension points provided.
- Do not attach lifting tackle to protruding machine parts or to eyelets of add-on components. Ensure the lifting gear is fastened securely.
- Only use approved lifting gear and accessories with a sufficient load-bearing capacity.
- Do not use torn or frayed ropes and belts.
- Do not attach ropes and belts to sharp edges and corners. Do not knot or twist the ropes.

Transport, packaging and storage



15.2 Transport checklist

Inspect the goods for damage and missing parts immediately after delivery.

If external transportation damage can be seen, proceed as follows:

- Do not accept the delivery, or accept it only under reservations.
- Note the damage on the transportation documents or the delivery note of the carrier.



NOTE!

Always submit a claim for the defects as soon as they are detected. Damage claims can only be accepted within the applicable deadlines for submission.

15.3 Transport in individual parts



To make transport easier, disassemble the machine into its individual components:

1. Gear motor with motor swivel flange
2. Middle body with dosing zone
3. Mixing shaft / dosing shaft with coupling
4. Mixing tube with outlet

Fig. 21: Transport

15.4 Transportation of machines already operating

Carry out the following steps before transporting:

1. First unplug the main power cable.
2. Remove the water supply lines.
3. Begin transport.



16 Packaging

Packaging information

Individual packages are packed according to the applicable transportation requirements. Only environmentally-friendly materials were used for the packaging.

The packaging is intended to protect individual components from harm during transportation, corrosion and other damage up to the point of assembly. Do not destroy the packaging and only remove it shortly before assembly.

Handling the packaging materials

Provided no agreements for the return of the packaging have been made, separate the materials according to type and size and reuse or recycle them accordingly.



CAUTION!

Environmental damage can result from improper disposal of materials!

Packaging materials are valuable resources and can often be reused or recycled.

Therefore:

- Dispose of packaging materials in an environmentally sound manner.
- Observe locally applicable waste disposal guidelines. If necessary, contract a specialist waste disposal company.

17 Operation

17.1 Safety

Personal protective equipment

All machine operators must wear the following protective equipment:

- Protective work clothing
- Safety goggles
- Safety gloves
- Safety shoes
- Ear protection



NOTE!

The warning signs illustrated in this chapter relate to additional protective equipment that must be worn for particular working conditions.

Preparation of the machine

Basic information



WARNING!

Danger of injury due to improper operation!

Improper operation can lead to serious injuries or equipment damage.

Therefore:

- Carry out all operating steps as described in this operating manual.
- Before starting any work, ensure that all covers and protective devices are installed and functioning properly.
- Never disable protective devices during operation.
- Keep the operating area clean and tidy. Components and tools that are stacked on one another or left lying around can cause accidents.
- An increased noise level can cause permanent hearing loss. Operation can result in noise that exceeds 78 dB (A) in close proximity to the machine. Close proximity is defined as the area within 5 metres of the machine.

18 Preparation of the machine

Before operating the machine, carry out the following work steps as preparation:



Fig. 22: Mortar outlet



DANGER!

Rotating dosing shaft

Reaching into the mortar outlet poses a risk of injury.

- The mortar outlet (1) should not be removed while preparing or operating the machine.
- Never reach into the machine while it is running.

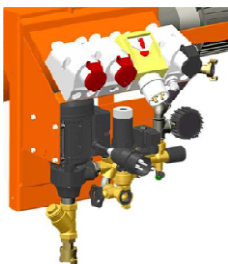


Fig. 23: Set-up

- The controls must be freely accessible.
- Place the machine where it cannot be hit by any falling objects.



Preparation of the machine

18.1 Fastening the LOTUS XL to the silo



Fig. 24: Connection

1. Fasten the LOTUS XL to the silo/container with the assembly aid.



NOTE!

When assembling, ensure that the rubber gasket is not damaged.

18.2 Connection to the 400 V power supply

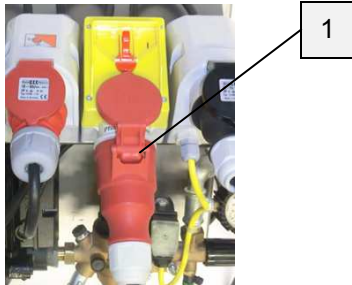
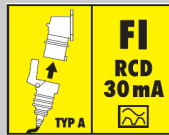


Fig. 25: Electrical connection 400 V

1. Only connect the machine (1) to three-phase current with 400 V.



DANGER!

Danger of death due to electric current!

The electrical connection must be fused correctly:

Only connect the machine to a power source with an approved FI circuit breaker (30 mA) RCD (residual current device) of type "A".

18.3 Checking the individual connector plugs

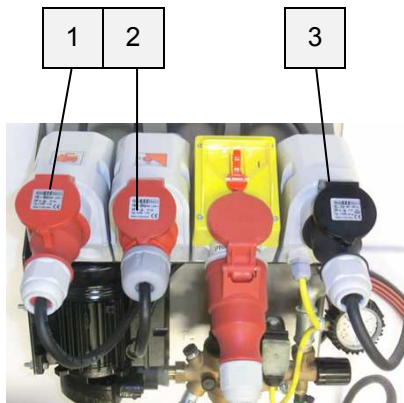


Fig. 26: Electrical connections

- Connect the water pump (1).



NOTE!

The booster pump is necessary if the water pressure falls below 2.5 bar during running operation of the machine.

- Check the connection of the vibrator (2).
- Check the connection of the mixer motor (3).



WARNING!

Danger of death due to rotating parts!

Improper operation can lead to serious injuries or equipment damage.

- The respective drives (motors) may only be operated through the corresponding control unit of the machine.

Preparation of the machine

18.4 Water supply connection

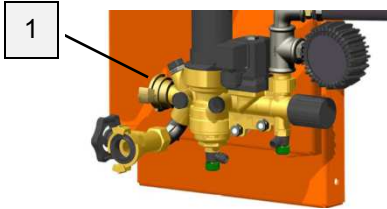


Fig. 27: Water connection without a booster pump

Water connection to water supply network without booster pump:

1. Check whether the dirt trap sieve in the water inlet (1) is clean.
2. Dirt trap sieve for Geka coupling:
Dirt trap sieve for Geka coupling:
Item number 20152000

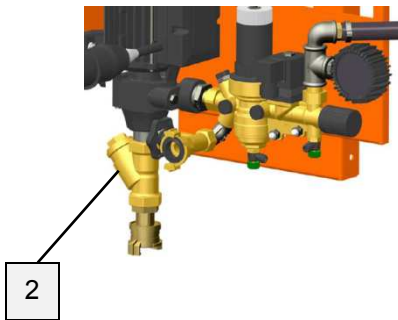


Fig. 28: Water connection with a booster pump

Water connection to water supply network with booster pump

3. Check whether the sieve insert in the dirt trap (2) is clean.
4. If necessary, remove the sieve insert from the dirt trap and clean it.
Sieve insert ES 30-1" A:
Item number 20152011
5. Clean and bleed the water hose for the water mains supply.

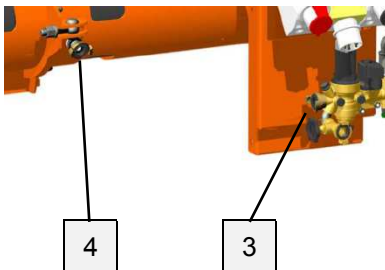


Fig. 29: Water connection

6. Connect the water hose to the water inlet (3) or booster pump.
7. Check whether the water hose (4) is connected to the middle body water inlet.



NOTE!

Only use clean water that is free of particulates.
The minimum pressure is 2.5 bar when the machine is running.



Setting the water factor

18.5 Water from a water barrel



Fig. 30: Booster pump

Booster pump AV3000 (1) item number 00130205

The booster pump which is connected ensures the required water pressure of minimum 2.5 bar.



Fig. 31: Inlet strainer with filter screen, cpl.



NOTE!

When working with water from the barrel, the inlet strainer must be fitted with a filter strainer (item no. 00136619) (bleed booster pump).

19 Setting the water factor

19.1 Presetting the water flow rate

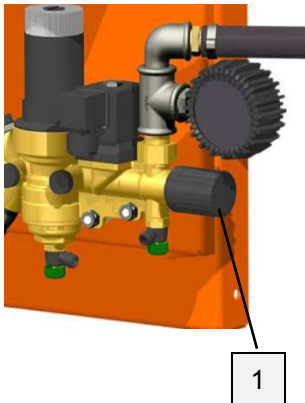


Fig. 32: Needle valve

To adjust the expected water volume at the needle valve (1):

1. Close the needle valve.
2. Then open the needle valve by two rotations.
3. The water flow rate totals approx. 200 l/h in this position.
4. The consistency of the material can be adjusted using the needle valve.



NOTE!

Turning the needle valve clockwise reduces the water flow rate, while turning it anti-clockwise increases the water flow rate, making the material more viscous or more fluid.

Observe the specifications of the material manufacturer.



NOTE!

Every interruption to the mixing process causes a slight irregularity in the consistency of the material. This irregularity will normalise itself as soon as the machine has been operating for a short period.

It is therefore unnecessary to change the water flow rate with each irregularity. Wait until the consistency of the material has returned to normal.

Putting the machine into operation



20 Putting the machine into operation

20.1 Hazardous dust



Fig. 33: Dust mask



WARNING!

Danger of health problems due to dust!

Inhaled dust can lead to long-term lung damage or other health problems.



NOTE!

The machine operator or the person working in the dusty area must always wear a dust mask when filling the machine.

The decisions of the Committee for Hazardous Materials (AGS) can be read in the Technical Rules for Hazardous Substances (TRGS 559).

20.2 Switching on the machine



Fig. 34: Opening the silo outlet flap

1. Open the silo outlet flap (1).

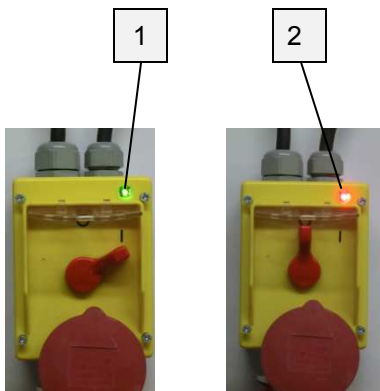


Fig. 35: Switching on

2. Turn the main switch to the "I" position.



NOTE!

The main switch is equipped with a phase sequence indicator.

If the rotational direction is correct, the LED (1) lights up green.

If the rotational direction is incorrect, the LED (2) lights up red.

If a phase is missing, the LED (2) flashes red.

Change the direction of rotation at the main switch.



Putting the machine into operation

20.3 Changing the direction of rotation at the main switch

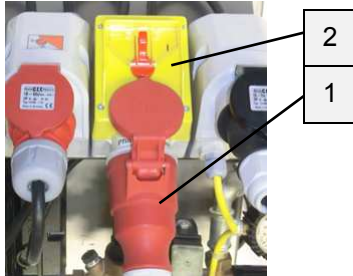


Fig. 36: Changing the direction of rotation



DANGER!

Danger of death due to unauthorised restarting!

When working on the machine, there is a danger of unauthorised switching on of the electrical supply. This puts those in the danger area at extreme risk.

- Before starting work, switch off all electrical power supplies.

1. Remove the power cord (1) from the main switch (2).

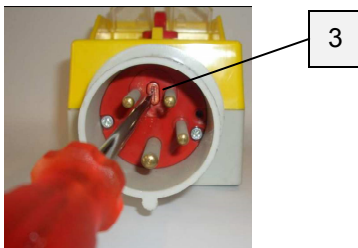


Fig. 37: Turning the contacts

2. Turn the phase inverter (3) in the plug by pressing with a screwdriver.
3. Turn the contacts with the screwdriver.
4. Reconnect the power supply.
5. Turn the main switch to the “I” position.



Fig. 38: Material consistency

6. Check the material consistency at the mortar outlet.

Applying mortar

21 Applying mortar



DANGER!

Danger of injury due to leaking mortar!

Escaping mortar can lead to injuries to the eyes and face.

- Always wear protective goggles.
- Always position the machine so that you cannot be hit should mortar escape.

22 Interruption of work



NOTE!

Generally, the setting times of the materials to be processed must be observed:

Clean the mixing tube as appropriate for the setting time of the material and the length of the interruption (take outdoor temperature into account).

Observe the guidelines of the material manufacturer regarding interruptions.

23 Cleaning

23.1 Securing against restarting



DANGER!

Danger of death due to unauthorised restarting!

When working on the machine, there is a danger of unauthorised switching on of the electrical supply. This puts those in the danger area at extreme risk.

- Before starting work, switch off all electrical power supplies and secure them against being switched back on again.



NOTE!

When everyday operation is regular, the machine is only cleaned when work has finished.



23.2 End of shift / Cleaning



Fig. 39: Closing the silo outlet flap

1. Shortly before the end of work, close the silo outlet flap (1) and run the machine empty until extremely diluted mortar emerges.

23.3 Switching off the machine

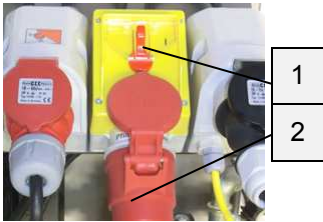


Fig. 40: Switching off the machine

1. Turn the main switch (1) to the position "0".
2. Remove the power cord (2) from the main switch.

23.4 Removing the mixing tube

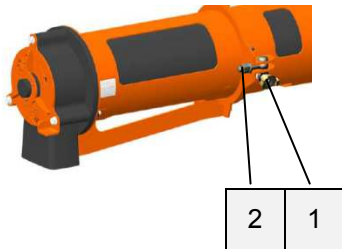


Fig. 41: Removing the mixing tube

1. Disconnect the water supply from the middle body (1).
2. Release the flanged nuts (2) on both sides and take off the mixing tube.



Fig. 42: Cleaning



DANGER!
Danger of death due to unauthorised restarting!
 When cleaning the machine, allow no water to penetrate into the electrical components.

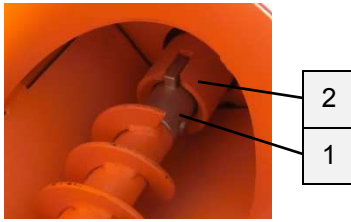


NOTE!
 When assembling the components, make certain they are clean and dry.
 Always keep eyebolts and gaskets in clean condition.
 Grease bearing journals and connection points of the mixing shaft.

Measures to be taken if there is a risk of frost



23.5 Inserting the mixing shaft



1. When inserting the mixing shaft, make certain that the coupling (1) properly engages with the coupling claw (2).

Fig. 43: Inserting the mixing shaft

24 Measures to be taken if there is a risk of frost



CAUTION! Damage due to frost!

Water that expands on freezing inside the machine can cause serious damage.

- Carry out the following steps when the pump is not operating and there is a danger of frost.

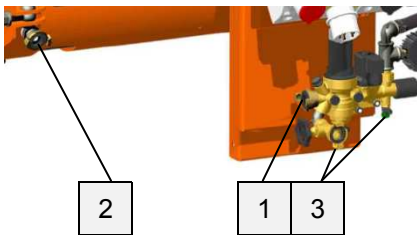


Fig. 44: Disconnecting the water supply

1. Remove the water hose from the water inlet (1).
2. Remove the hose from the water inlet on the middle body (2).
3. Open the water drain cock (3).
4. Connect an air compressor with an air hose to the water inlet (1) and use low pressure to blow out the water manifold.

25 Switching off in an emergency

Machine movements and the energy supply must be disabled as quickly as possible in dangerous situations.

Proceed as follows in the event of an emergency:

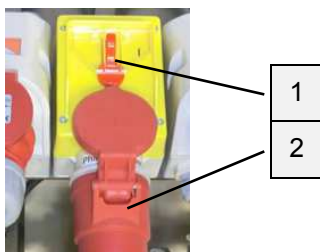


Fig. 45: Switching off

1. Immediately turn the main switch (1) to the position "0".
2. Disconnect the power supply (2).
3. Inform supervisors at the site.
4. If necessary, call emergency services.
5. Remove persons from the danger zone and carry out first-aid measures.
6. Keep access roads free for emergency service vehicles.
7. If the seriousness of the emergency warrants this, inform the responsible authorities.
8. Assign specialist personnel to begin rectifying the fault.



After the emergency response



WARNING! **Danger of death due to premature restarting!**

All persons in the danger zone are at extreme risk when the machine is switched back on.

- Ensure that the danger zone is clear before switching the machine back on.



NOTE!

Check the equipment before switching it back on and ensure that all safety devices are in place and functioning properly.

26 Troubleshooting

26.1 Dealing with malfunctions

Dealing with malfunctions

Generally, the following applies:

1. For all malfunctions which present a risk of material damage or personal injury, perform an emergency stop immediately.
2. Determine the cause of the malfunction.
3. If troubleshooting requires working in the danger zone, switch off the machine and secure it against being switched back on again.
4. Immediately inform supervisors at the site regarding the malfunction.
5. Depending on the malfunction, either rectify it yourself or have authorised specialists do so.



NOTE!

A table below lists particular malfunctions and who is authorised to handle them.



26.2 Malfunctions

The following chapter details the possible causes of malfunctions and how to solve them.

Shorten maintenance intervals according to the actual load if malfunctions keep reoccurring.

Contact your dealer if malfunctions occur that cannot be solved using this manual.

26.3 Safety

Personnel

- Unless otherwise stated, the troubleshooting methods detailed here can be carried out by the machine operator.
- Some tasks may only be carried out by specialist personnel or the manufacturer. These are specially indicated in the description of the individual malfunctions.
- Work on electrical systems must always only be carried out by qualified electricians.

Personal protective equipment

Wear the following protective equipment for all maintenance work:

- Protective work clothing
- Safety goggles
- Safety gloves
- Safety shoes



26.4 Table of malfunctions

Malfunction	Possible cause	Solution	Performed by
Machine does not start Water	Water pressure too low	Check the water supply, clean the dirt trap sieves	Operator
	The water pressure is too low	Install booster pump	Operator
Machine does not start Power	Power cable is defective	Repair the power cable	Service technician
	Main switch not activated	Turn on the main switch	Operator
	FI circuit breaker triggered	Reset the FI circuit breaker	Service technician
Machine does not start Material	Too much thickened material in the mixing tube	Drain the mixing tube and restart machine	Operator
	Material in mixing tube too dry	Drain the mixing tube and restart machine	Operator
Water is not flowing	Solenoid valve (bore hole in membrane blocked)	Clean the solenoid valve	Service technician
	Solenoid coil defective	Replace the solenoid coil	Service technician
	Water inlet on middle body blocked	Clean the water inlet on middle body	Operator
	Needle valve closed	Open the needle valve	Operator
	Cable to solenoid valve defective	Replace the cable to solenoid valve	Service technician
Mixer motor will not start	Mixer motor defective	Replace the mixer motor	Service technician
	Defective connection cable	Replace the connection cable	Service technician
Machine stops after a short period	Water inlet screen dirty	Clean or replace the screen	Operator
	Hose connection or water line too small	Enlarge the hose connection or water line	Operator
	Water intake line too long or intake pressure too weak	Connect an additional booster pump, if necessary	Service technician

Troubleshooting



Malfunction	Possible cause	Solution	Performed by
No mortar flow	Poor mixing in mixing tube	Add more water	Operator
	Material clogs and narrows the water inlet	Remove the material and clean the water inlet	Operator
	Material in the material hopper has become wet	Remove the wet material and dry the material hopper	Operator
	Mixing shaft worn out	Replace mixing shaft	Operator
"Thick-thin" mortar flow	Not enough water	Increase water supply by 10% for approx. ½ minute and then reduce it slowly	Operator
	Mixing shaft defective; not an original PFT mixing shaft	Replace mixing shaft with an original PFT mixing shaft	Operator
	Dosing segment defective; not an original PFT dosing segment	Replace dosing segment with an original PFT dosing segment	Operator
	Pressure reducer incorrectly set or defective	Set the pressure reducer correctly, or replace it	Service technician



27 Dealing with a power failure

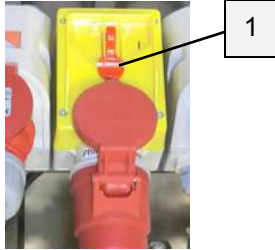


Fig. 46: Power failure

Following a power failure, the machine can be started up again by pressing the main switch (1).



NOTE!

Generally, the setting times of the materials to be processed must be observed:

Clean the mixing tube as appropriate for the setting time of the material and the length of the interruption (take outdoor temperature into account).

28 Dealing with a water supply failure



NOTE!

The machine can be supplied with clean water from a container using an inlet strainer (item number 00136619) (see page 25, fig. 30 & 31).

29 Maintenance

29.1 Safety

Personnel

- Unless otherwise stated, the maintenance work detailed here can be carried out by the machine operator.
- Some tasks may only be carried out by specially trained personnel or only by the manufacturer.
- Work on electrical systems must always only be carried out by qualified electricians.

Basic information



WARNING!

Danger of injury due to improperly performed maintenance work!

Improper maintenance can lead to serious injuries or equipment damage.

Therefore:

- Ensure there is sufficient space to carry out the work before beginning.
- Keep the work area clean and tidy. Unattached components or tools left lying around or stacked on one another can cause accidents.
- If components have been previously removed, ensure that they are mounted again correctly, reattach all fastening elements and adhere to the specified screw tightening torques.

Maintenance



Electrical system



DANGER!

Danger of death due to electric current!

Contact with live components can lead to death or serious injury. Live electrical components can move uncontrollably and cause serious injury.

Therefore:

- Before starting work, switch off the electrical power supply and secure it against being switched back on again.

Environmental protection

Observe the following environmental protection guidelines when carrying out maintenance work:

- Remove used, leaking or excess grease from all manual lubrication points and dispose of it correctly according to the applicable local regulations.
- Collect used oil in suitable containers and dispose of it according to the applicable local regulations.

29.2 Cleaning

- The material hopper can be cleaned using a water hose once all material has been removed.



CAUTION!

Water can enter sensitive machine parts!

- Before cleaning the machine, seal all openings where water could enter and impair the safety and functions of the machine (e.g. electric motors).
- Remove all coverings completely after cleaning.

29.3 Maintenance plan

The next sections describe the maintenance tasks required for optimal, problem-free operation.

Provided no increase wear can be identified during regular inspections, reduce the required maintenance intervals as appropriate for the actual signs of wear.

For questions regarding maintenance tasks and intervals, contact the manufacturer (see service address on page 2).

Interval	Maintenance task	To be performed by
Daily	Clean/replace the dirt trap sieve in the water inlet	Operator
Weekly	Clean/replace the sieve insert in the water inlet	Operator



30 Maintenance tasks

30.1 Dirt trap sieve

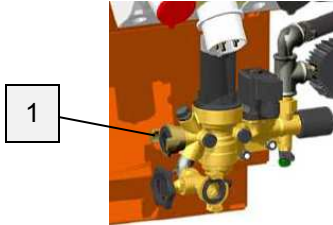


Fig. 47: Dirt trap sieve in the water inlet

Check the dirt trap sieve in the water inlet on a daily basis:

1. Remove the dirt trap sieve from the Geka coupling.
2. Clean the dirt trap sieve.
3. Replace the sieve if dirt is severe.
4. Replace the dirt trap sieve.

Dirt trap sieve for Geka coupling:

Item number 20152000

- Performed by operator.

30.2 Sieve insert

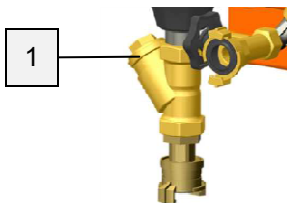


Fig. 48: Checking the sieve insert

Checking the sieve insert in the dirt trap weekly:

1. Unscrew the dirt trap and take out the sieve insert.
2. Clean the sieve insert.
3. Replace the sieve insert if dirt is severe.
4. Replace the dirt trap sieve.

Sieve insert for dirt trap:

Item number 20152011

- Performed by operator.

30.3 After performing maintenance

After maintenance has been completed, carry out the following steps before switching on.

1. Check that all previously loosened screw connections have a tight fit.
2. Check that all previously removed protective devices and covers have been properly reattached.
3. Ensure that all tools, materials and other equipment have been removed from the work area.
4. Clean the work area and remove any traces of escaped material (e.g. liquids, processing material etc.).
5. Ensure that all safety devices are functioning properly.

Disassembly



31 Disassembly

The machine must be disassembled and disposed of in an environmentally sound manner after reaching the end of its useful life.

31.1 Safety

Personnel

- Disassembly may only be performed by specially trained personnel.
- Work on electrical systems may only be carried out by qualified electricians.

Basic information



WARNING!

Danger of injury due to improper disassembly!

Residual energy, sharp-edged components and corners on and around the device or on the tools required can cause injuries.

Therefore:

- Ensure there is adequate space before starting any work.
- Exercise caution when working with open, sharp-edged components.
- Keep the work area clean and tidy. Components and tools that are stacked on one another or left lying around can cause accidents.
- Disassemble components properly. Bear in mind that individual components can be heavy. Use lifting equipment if necessary.
- Secure components so they do not fall or tip over.
- Consult the manufacturer if questions arise.

Electrical system



DANGER!

Danger of death due to electric current!

Contact with live components can lead to death or serious injury. Live electrical components can move uncontrollably and cause serious injury.

Therefore:

- Switch off and completely disconnect the power supply before starting disassembly.



31.2 Disassembly

When decommissioning, clean the device and dismantle it according to the applicable work safety and environmental protection regulations.

Before beginning with disassembly:

- Switch off the machine and secure it against being switched on again.
- Disconnect the entire energy supply from the machine and discharge the residual energy.
- Remove operating and auxiliary materials as well as residual processing materials and dispose of them in an environmentally sound manner.

31.3 Disposal

Provided no return or disposal agreements have been made, recycle the disassembled parts:

- Metallic parts are scrapped.
- Plastic elements are recycled.
- Remaining components are disposed of sorted by individual material.



CAUTION!

Environmental damage can result from improper disposal of materials!

Electrical scrap and components, lubricants and other process materials are subject to special guidelines and may only be disposed of by approved waste disposal specialists!

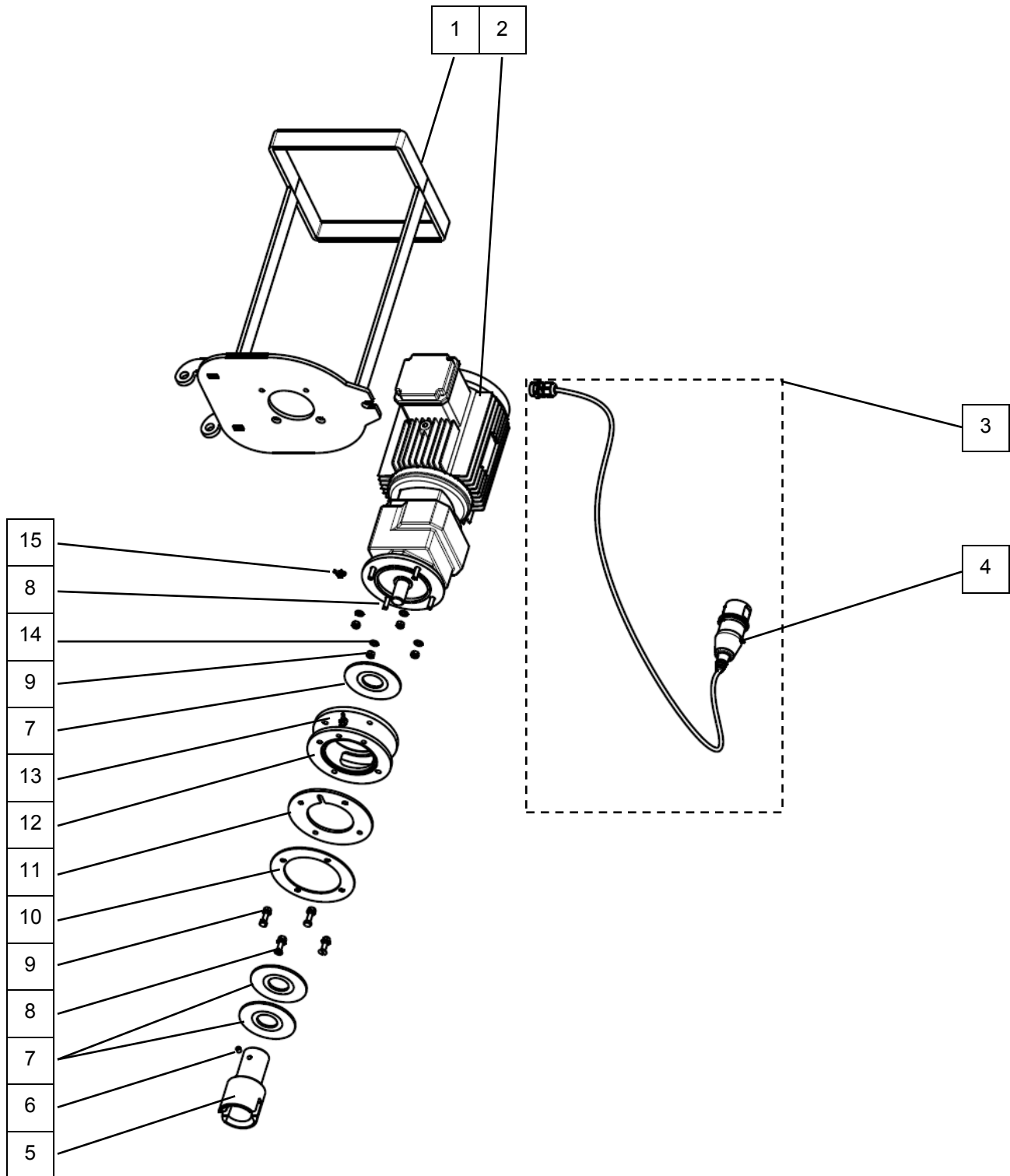
Local authorities and waste disposal specialists can provide more details on the correct disposal of materials.

Spare part drawing / spare part list, LOTUS XL



32 Spare part drawing / spare part list, LOTUS XL

32.1 Spare part drawing of drive of LOTUS XL





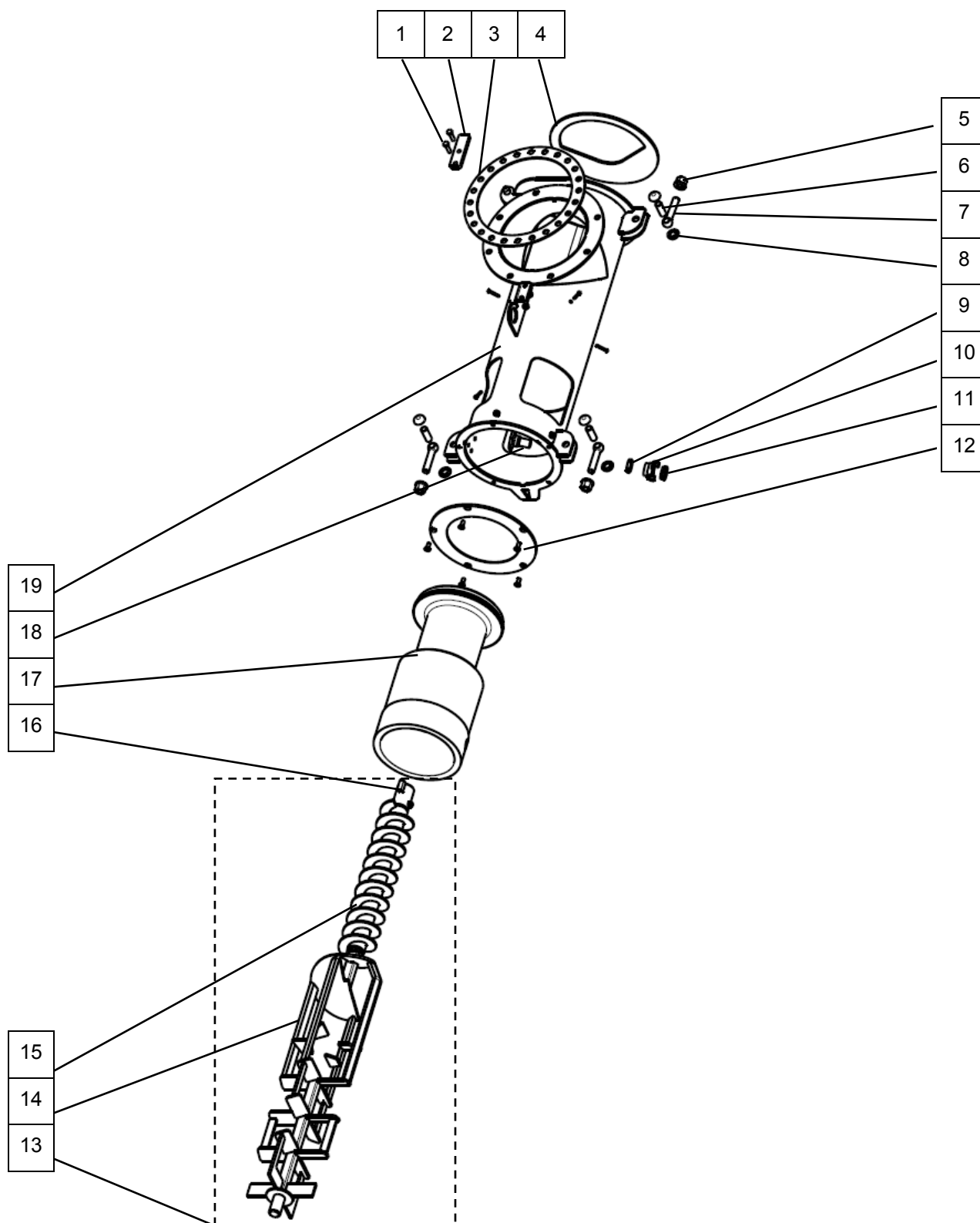
32.2 Spare part list for drive of LOTUS XL

Pos.	Quantity	Item no.	Description
1	1	00 08 95 93	Motor swivel flange, LOTUS XL RAL2004
2	1	00 43 19 54	Gear motor ZF21, 5.5 kW, 280 rpm RAL2004
3	1	00 10 14 38	Motor connection cable, 2.0 m, CEE plug 4 x 16 A b/w
4	1	20 42 87 00	CEE plug 4 x 16 A, 7h black
5	1	00 09 43 42	Coupling claw LOTUS XL, zinc-plated
6	1	20 20 99 93	Threaded pin M8 x 10
7	3	00 09 43 47	Rubber gasket D110 x d40 x 4 mm
8	8	20 20 78 01	Hex screw M8 x 35, zinc-plated
9	8	20 20 72 00	Lock nut M8, zinc-plated
10	1	00 09 37 54	Spacer flange for rubber gasket
11	1	00 09 37 53	Spacer flange, middle
12	1	00 09 13 80	Housing for motor seal, LOTUS XL
13	1	00 03 55 73	Lubricating nipple M8 (45 degrees)
14	8	20 20 93 13	Washer B 8.4, zinc-plated
15	1	00 03 55 72	Lubricating nipple M6 (45 degrees)

Spare part drawing / spare part list, LOTUS XL



32.3 Spare part drawing of middle body of LOTUS XL

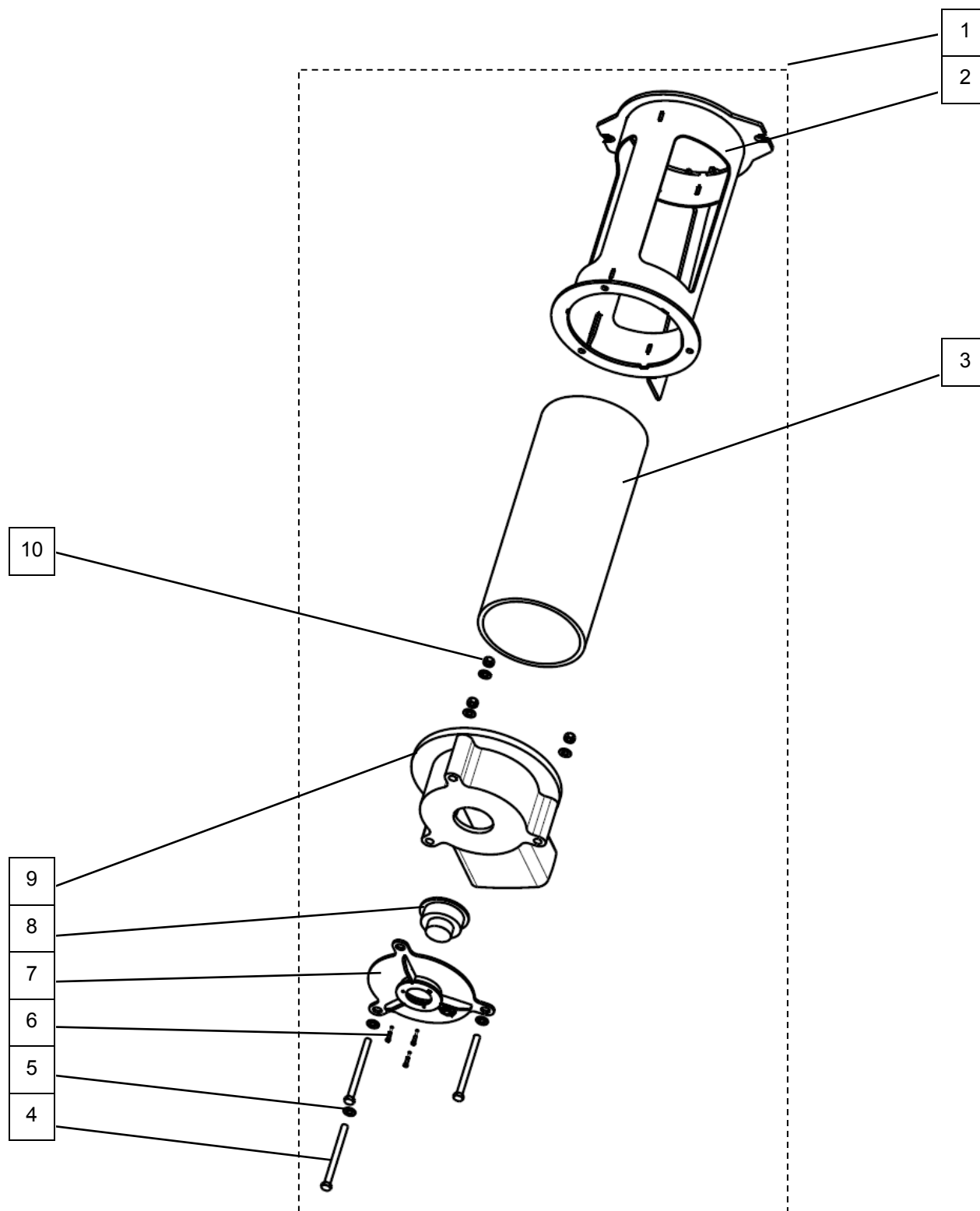




32.4 Spare part list for middle body of LOTUS XL

Pos.	Quantity	Item no.	Description
1	2	20 20 78 00	Hex screw M 8 x 30, zinc-plated
2	1	00 09 82 19	Plate for assembly aid, LOTUS XL RAL2004
3	1	20 70 62 02	Rubber gasket D 330x260x4 with 24 holes
4	1	00 09 41 60	Rubber gasket of motor swivel flange, LOTUS XL
5	3	20 20 99 21	Flanged nut M16, zinc-plated
6	3	20 70 58 02	Bolt A16 H11 x 50 St zinc-plated 1.5 x 30°
7	3	20 20 85 00	Eyebolt M16 x 80, zinc-plated
8	6	20 20 86 04	Quick-release fastener with cap 16s x N 2 7
9	1	00 00 28 11	Tube nut, G 1/2"
10	1	20 20 13 00	Geka coupling, 1/2" female thread (pack of 10)
11	1	20 20 17 00	Geka coupling gasket (pack of 50)
12	1	00 09 81 58	Clamping flange of rubber dosing zone, LOTUS XL RAL2004
13	1	00 10 06 40	Mixing shaft dosing segment, 60L LOTUS XL cpl. RAL2004
	1	00 09 62 05	Mixing shaft dosing segment, 45L LOTUS XL cpl. RAL2004
	1	00 10 61 43	Mixing shaft dosing segment, 90L LOTUS XL cpl. RAL2004
14	1	00 09 43 43	Mixing shaft LOTUS XL RAL2004
15	1	00 10 04 44	Dosing segment, 60 L LOTUS XL, shortened, RAL2004
		00 09 42 98	Dosing segment, 45 L LOTUS XL, shortened, RAL2004
		00 10 63 97	Dosing segment, 90 L LOTUS XL, shortened, RAL2004
16	1	00 08 73 46	Coupling for mixing shaft LOTUS XL, zinc-plated
	1	00 02 31 98	Hex screw M8 x 55, zinc-plated
	1	20 20 72 00	Lock nut M8, zinc-plated
17	1	00 08 73 43	Dosing zone, rubber, LOTUS XL
18	1	00 09 12 81	Water nozzle, LOTUS XL
19	1	00 08 95 02	Middle body of LOTUS XL RAL 2004

32.5 Spare part drawing of mixing tube of LOTUS XL





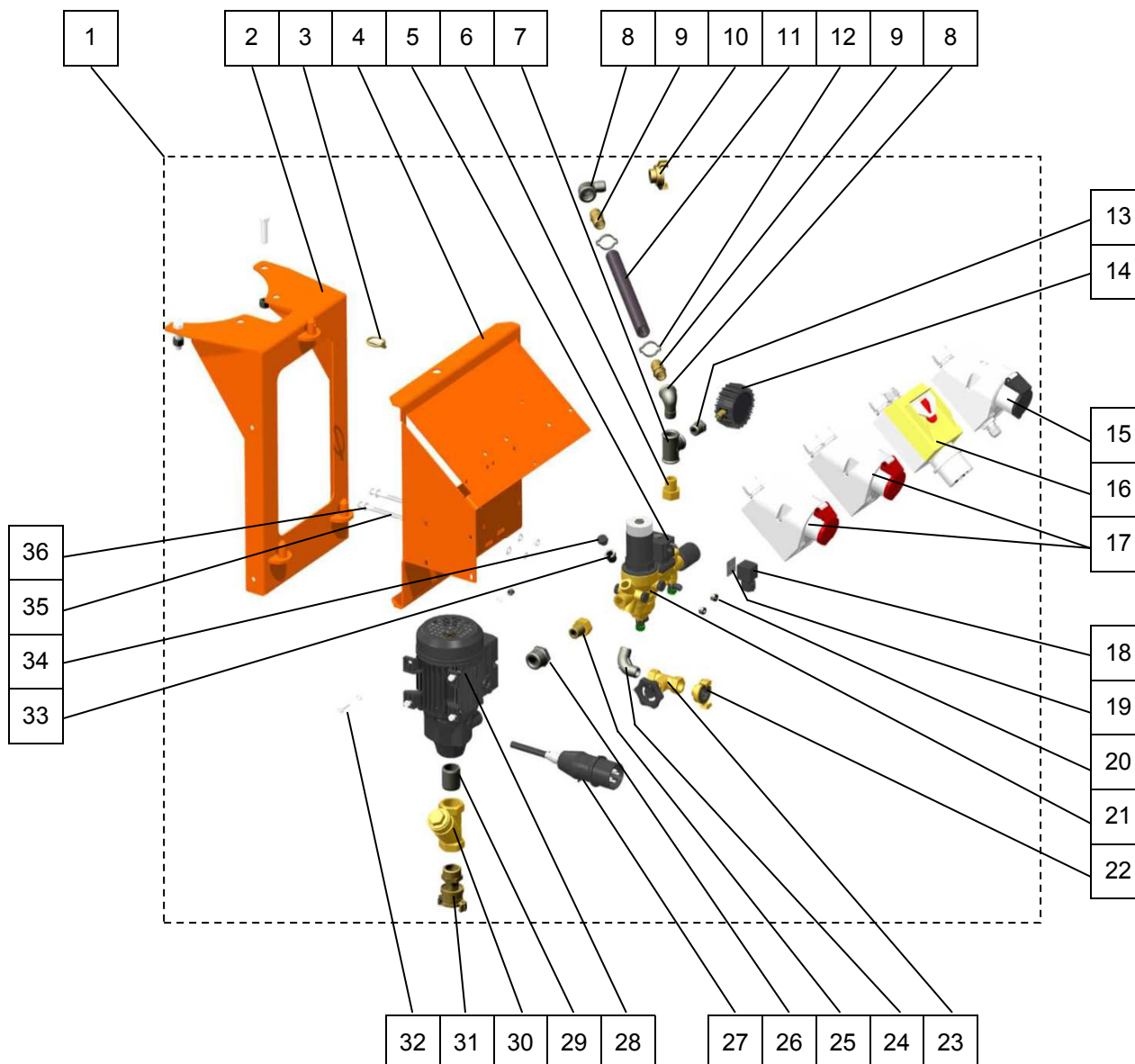
32.6 Spare part list for mixing tube of LOTUS XL

Pos.	Quantity	Item no.	Description
1	1	00 14 04 79	Mixing tube, LOTUS XL RAL 2004, cpl.
2	1	00 08 95 29	Mixing tube, LOTUS XL RAL 2004
3	1	00 09 43 41	Rubber mixing tube, LOTUS XL, DN 200x10x517
4	3	00 03 58 15	Hex screw M12 x 150
5	6	20 20 90 00	Washer B 13, zinc-plated
6	3	00 02 33 09	Self-tapping screw, 3.9 x 19, zinc-plated
7	1	00 10 88 33	Front bearing of mortar outlet, KPS1 LOTUS XL RAL2004
8	1	00 05 27 41	Rubber outer bearing, LOTUS XL
9	1	00 08 71 45	Mortar outlet flange, LOTUS XL
10	3	20 20 89 00	Lock nut M12, zinc-plated

Spare part drawing / spare part list, LOTUS XL



32.7 Control unit of LOTUS XL 50Hz, item no. 00494837





Spare part drawing / spare part list, LOTUS XL

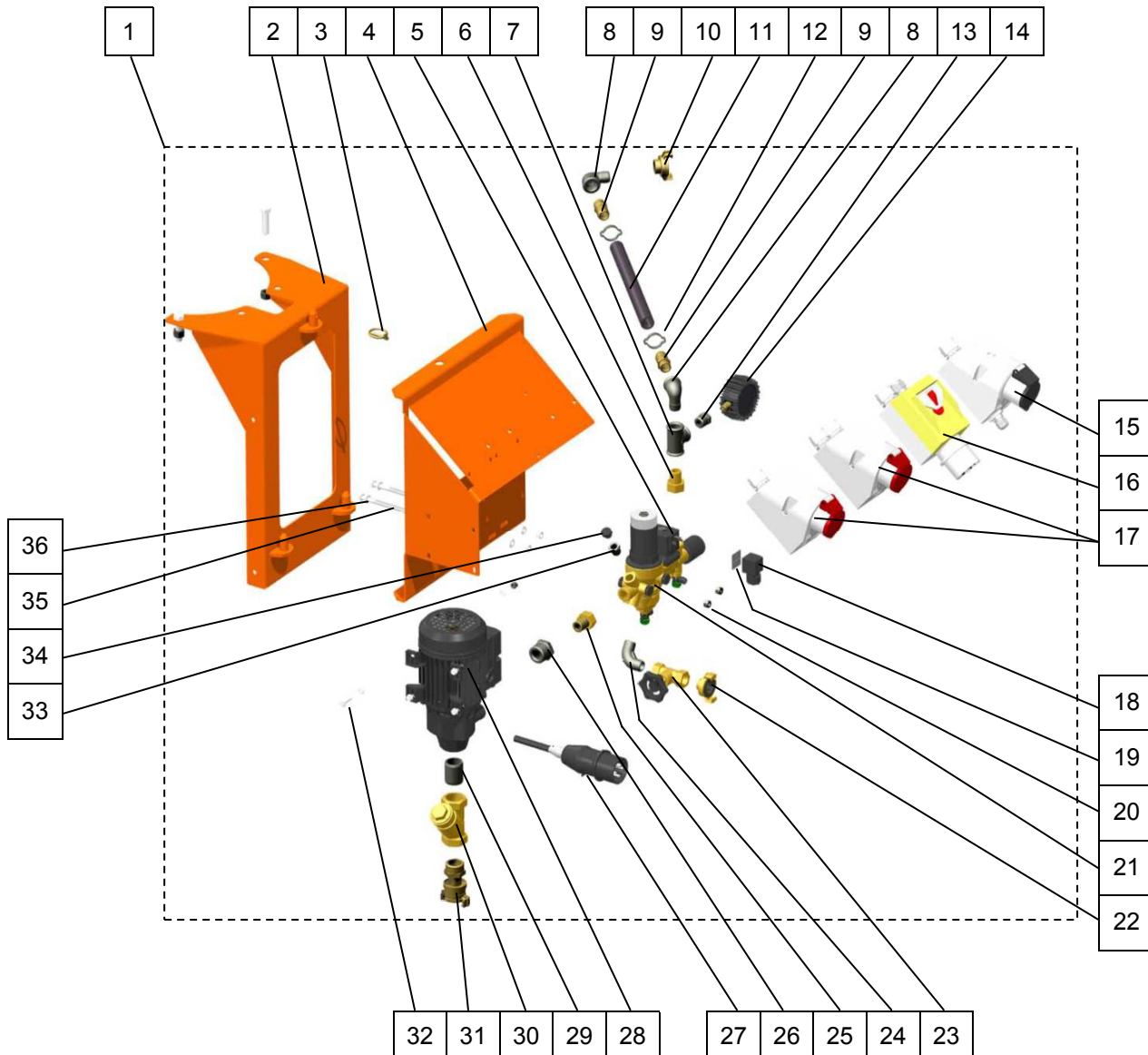
32.8 Control unit of LOTUS XL 50Hz item no. 00494837

Pos.	Qty.	Item no.	Description
1	1	00 49 48 37	Control unit of LOTUS XL, 400 V, 50 Hz, booster pump, cpl. RAL2004
2	1	00 09 37 55	Bracket on silo flange, LOTUS XL RAL2004
3	1	20 10 10 10	Splint, D 4.5 with ring
4	1	00 49 48 32	Mounting plate for booster pump, LOTUS XL RAL2004
5	1	20 15 07 03	Solenoid coil 400 V, type 6213 A
6	1	20 20 31 05	Nipple with 1/2" male thread, conical with 3/4" reducer nut
7	1	00 12 42 61	T-piece 1/2", 1/2", 1/2", female thread
8	2	20 20 36 10	Elbow, 1/2" female/male thread, zinc-plated
9	2	20 19 04 42	Hose screw connection, 1/2" male thread, 3/4" socket
10	1	20 20 13 00	Geka coupling, 1/2" female thread (pack of 10)
11	1	00 03 99 40	Water/air hose, 3/4" x 1000 mm
12	2	20 20 29 00	Hose clip 28-31
13	1	20 20 52 00	Reduction nipple, 1/2" male thread, 1/4" female thread
14	1	20 21 62 00	Gauge 0-2.5 bar, 1/4" bottom, D = 63mm
15	1	00 02 20 79	CEE mounted socket, 4 x 16 A, 7h b/w
16	1	00 00 12 27	On/Off switch with phase inverter, 10-16 A
17	2	00 02 20 73	CEE panel mounted socket, 4 x 16 A, 6h red
18	1	00 45 64 61	Plug for solenoid valve, 400 V, 50/60Hz
19	1	20 15 26 12	Gasket for solenoid valve head, type 280
20	2	20 20 72 00	Lock nut M8, zinc-plated
21	1	00 04 56 13	Manifold block, brass, DK06FN-1/2"C, 400 V
22	1	20 20 09 00	Geka coupling, 1/2" male thread (pack of 10)
23	1	20 21 52 00	Stop cock 1/2" without drainage
24	1	20 20 36 12	Elbow, 1/2" male thread, zinc-plated
25	1	20 20 31 07	Nipple 1/2" male thread, flat with 3/4" reducer nut
26	1	20 20 54 00	Reduction nipple, 1" male thread, 1/2" female thread
27	1	00 03 89 98	Motor connection cable, 0.6 m, CEE plug 4 x 16 A
28	1	00 11 13 19	Booster pump SL Ondina, 0.37 KW, 400 V
29	1	20 20 32 56	Double nipple, 1" x 40, zinc-plated
30	1	20 15 20 10	Dirt trap Fy 30-1" A with sieve
	1	20 15 20 11	Sieve insert ES 30-1" A
31	1	20 20 16 91	High pressure suction coupling 1" male thread with gasket
32	4	20 20 71 05	Hex screw M6 x 25, zinc-plated
33	1	20 20 51 12	Reduction nipple, 3/8" male thread, 1/4" female thread
34	1	20 15 61 00	Sealing plug with O-ring, R 1/4" for pressure reducer
35	2	00 49 44 22	Hex screw M8 x 100, zinc-plated
36	2	20 20 93 13	Washer B 8.4, zinc-plated

Spare part drawing / spare part list, LOTUS XL



32.9 Control unit of LOTUS XL 60Hz, item no. 00500432





Spare part drawing / spare part list, LOTUS XL

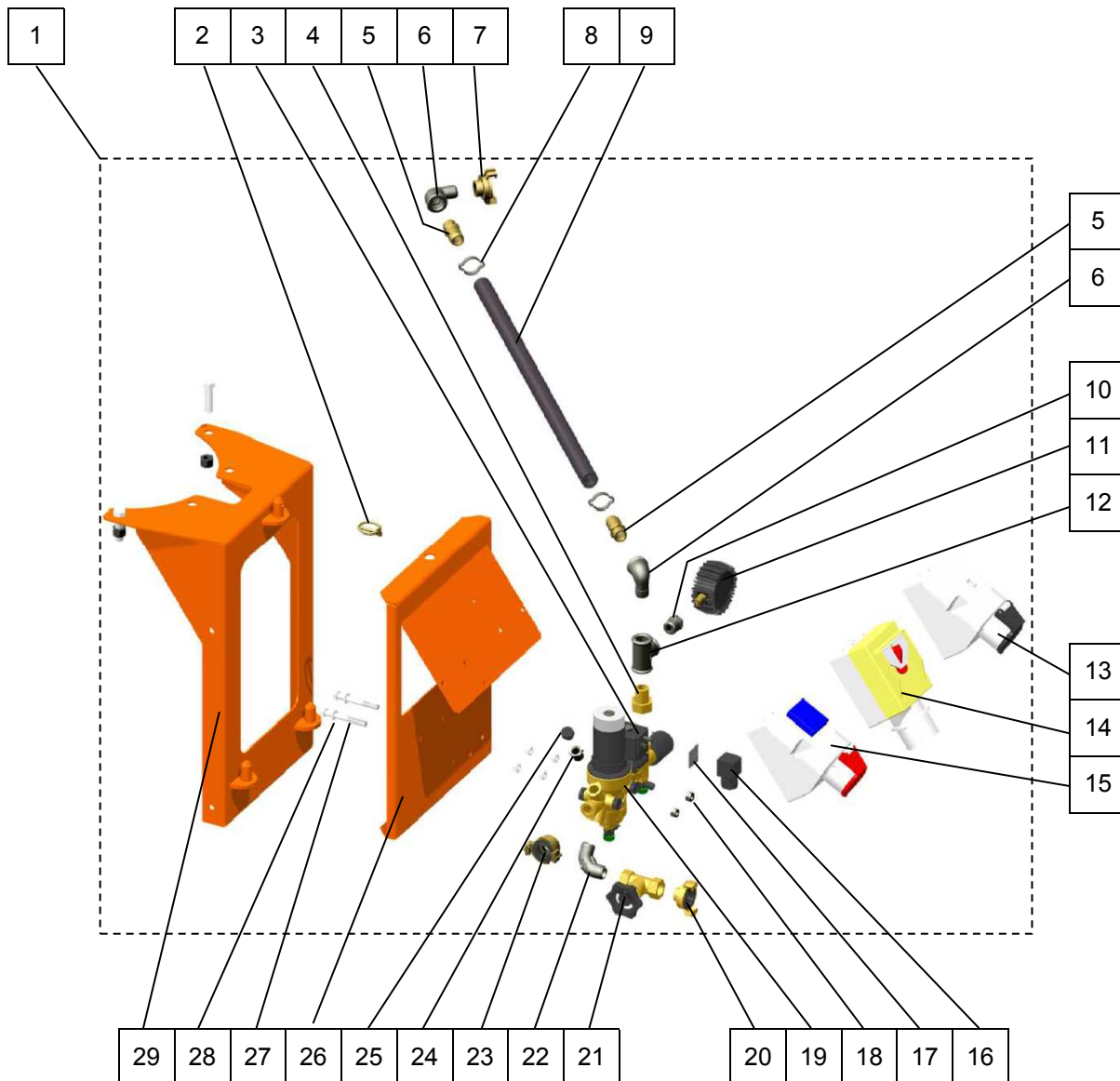
32.10 Control unit of LOTUS XL 60Hz item no. 00500432

Pos.	Qty.	Item no.	Description
1	1	00 50 04 32	Control unit of LOTUS XL, 400 V, 60 Hz, booster pump, cpl.
2	1	00 09 37 55	Bracket on silo flange, LOTUS XL RAL2004
3	1	20 10 10 10	Splint, D 4.5 with ring
4	1	00 49 48 32	Mounting plate for booster pump, LOTUS XL RAL2004
5	1	00 45 64 54	Solenoid coil 400 V, 50/60Hz
6	1	20 20 31 05	Nipple with 1/2" male thread, conical with 3/4" reducer nut
7	1	00 12 42 61	T-piece 1/2", 1/2", 1/2", female thread
8	2	20 20 36 10	Elbow, 1/2" female/male thread, zinc-plated
9	2	20 19 04 42	Hose screw connection, 1/2" male thread, 3/4" socket
10	1	20 20 13 00	Geka coupling, 1/2" female thread (pack of 10)
11	1	00 03 99 40	Water/air hose, 3/4" x 1000 mm
12	2	20 20 29 00	Hose clip 28-31
13	1	20 20 52 00	Reduction nipple, 1/2" male thread, 1/4" female thread
14	1	20 21 62 00	Gauge 0-2.5 bar, 1/4" bottom, D = 63mm
15	1	00 02 20 79	CEE mounted socket, 4 x 16 A, 7h b/w
16	1	00 50 44 54	On/Off switch with phase inverter, 10-16 A, 60Hz
17	2	00 02 20 73	CEE panel mounted socket, 4 x 16 A, 6h red
18	1	00 45 64 61	Plug for solenoid valve, 400 V, 50/60Hz
19	1	20 15 26 12	Gasket for solenoid valve head, type 280
20	2	20 20 72 00	Lock nut M8, zinc-plated
21	1	00 04 56 13	Manifold block, brass, DK06FN-1/2"C, 400 V
22	1	20 20 09 00	Geka coupling, 1/2" male thread (pack of 10)
23	1	20 21 52 00	Stop cock 1/2" without drainage
24	1	20 20 36 12	Elbow, 1/2" male thread, zinc-plated
25	1	20 20 31 07	Nipple 1/2" male thread, flat with 3/4" reducer nut
26	1	20 20 54 00	Reduction nipple, 1" male thread, 1/2" female thread
27	1	00 09 86 55	Motor connection cable for water pump LOTUS 400 V - 0.85 m
28	1	00 42 78 77	Water pump for pressure boosting AV 3, 400 V, 60 Hz , 0.5 kW
29	1	20 20 32 56	Double nipple, 1" x 40, zinc-plated
30	1	20 15 20 10	Dirt trap Fy 30-1" A with sieve
	1	20 15 20 11	Sieve insert ES 30-1" A
31	1	20 20 16 91	High pressure suction coupling 1" male thread with gasket
32	4	20 20 71 05	Hex screw M6 x 25, zinc-plated
33	1	20 20 51 12	Reduction nipple, 3/8" male thread, 1/4" female thread
34	1	20 15 61 00	Sealing plug with O-ring, R 1/4" for pressure reducer
35	2	00 49 44 22	Hex screw M8 x 100, zinc-plated
36	2	20 20 93 13	Washer B 8.4, zinc-plated

Spare part drawing / spare part list, LOTUS XL



32.11 Control unit of LOTUS XL, item no. 00101848



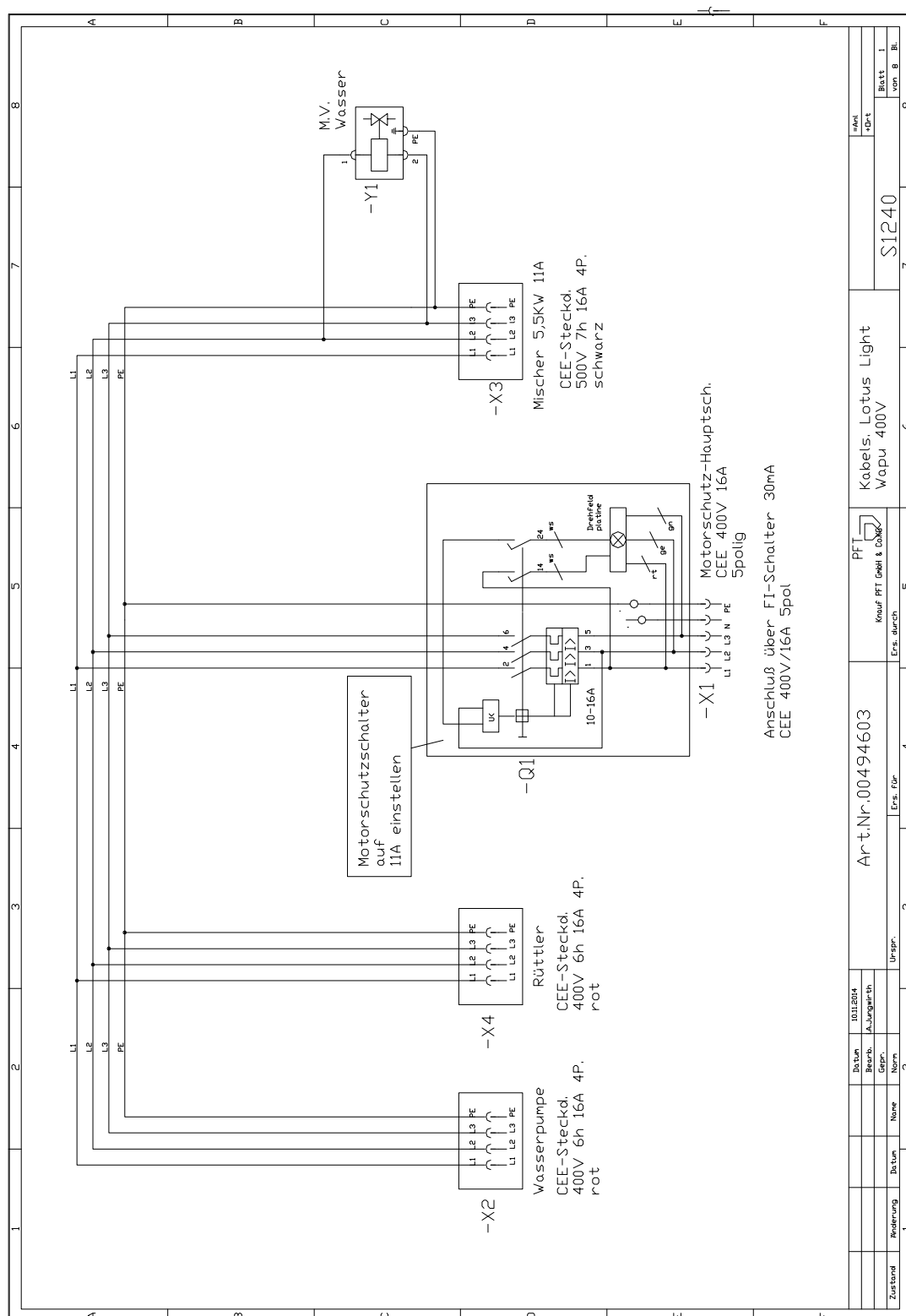


Spare part drawing / spare part list, LOTUS XL

32.12 Control unit of LOTUS XS, item no. 00101848

Pos.	Qty.	Item no.	Description
1	1	00 10 18 48	Control unit of LOTUS XL, 400 V, cpl. RAL2004
2	1	20 10 10 10	Splint, D 4.5 with ring
3	1	20 15 07 03	Solenoid coil 400 V, type 6213 A
4	1	20 20 31 05	Nipple with 1/2" male thread, conical with 3/4" reducer nut
5	2	20 19 04 42	Hose screw connection, 1/2" male thread, 3/4" socket
6	2	20 20 36 10	Elbow, 1/2" female/male thread, zinc-plated
7	1	20 20 13 00	Geka coupling, 1/2" female thread (pack of 10)
8	2	20 20 29 00	Hose clip 28-31
9	1	00 03 99 40	Water/air hose, 3/4" x 1000 mm
10	1	20 20 52 00	Reduction nipple, 1/2" male thread, 1/4" female thread
11	1	20 21 62 00	Gauge 0-2.5 bar, 1/4" bottom, D = 63 mm
12	1	00 12 42 61	T-piece 1/2", 1/2", 1/2", female thread
13	1	00 02 20 79	CEE mounted socket, 4 x 16 A, 7h b/w
14	1	00 00 12 27	On/Off switch with phase inverter, 10-16 A
15	1	00 00 74 12	CEE mounted socket 4 x 16 A, 6h red with earthing socket 230 V
16	1	00 45 64 61	Plug for solenoid valve, 400 V, 50/60Hz
17	1	20 15 26 12	Gasket for solenoid valve head, type 280
18	2	20 20 72 00	Lock nut M8, zinc-plated
19	1	00 04 56 13	Manifold block, brass, DK06FN-1/2"C, 400 V
20	1	20 20 09 00	Geka coupling, 1/2" male thread (pack of 10)
21	1	20 21 52 00	Stop cock 1/2" without drainage
22	1	20 20 36 12	Elbow, 1/2" male thread, zinc-plated
23	1	20 20 12 00	Geka coupling, 3/4" female thread (pack of 10)
	1	20 15 20 01	Dirt trap for 1" Geka coupling
	1	20 20 17 00	Geka coupling gasket (pack of 50)
24	1	20 20 51 12	Reduction nipple, 3/8" male thread, 1/4" female thread
25	1	20 15 61 00	Sealing plug with O-ring, R 1/4" for pressure reducer
26	1	00 10 14 17	Mounting plate for control unit, LOTUS XL light RAL2004
27	2	20 20 77 10	Hex screw M8 x 70, zinc-plated
28	2	20 20 93 13	Washer B 8.4, zinc-plated
29	1	00 09 37 55	Bracket on silo flange, LOTUS XL RAL2004

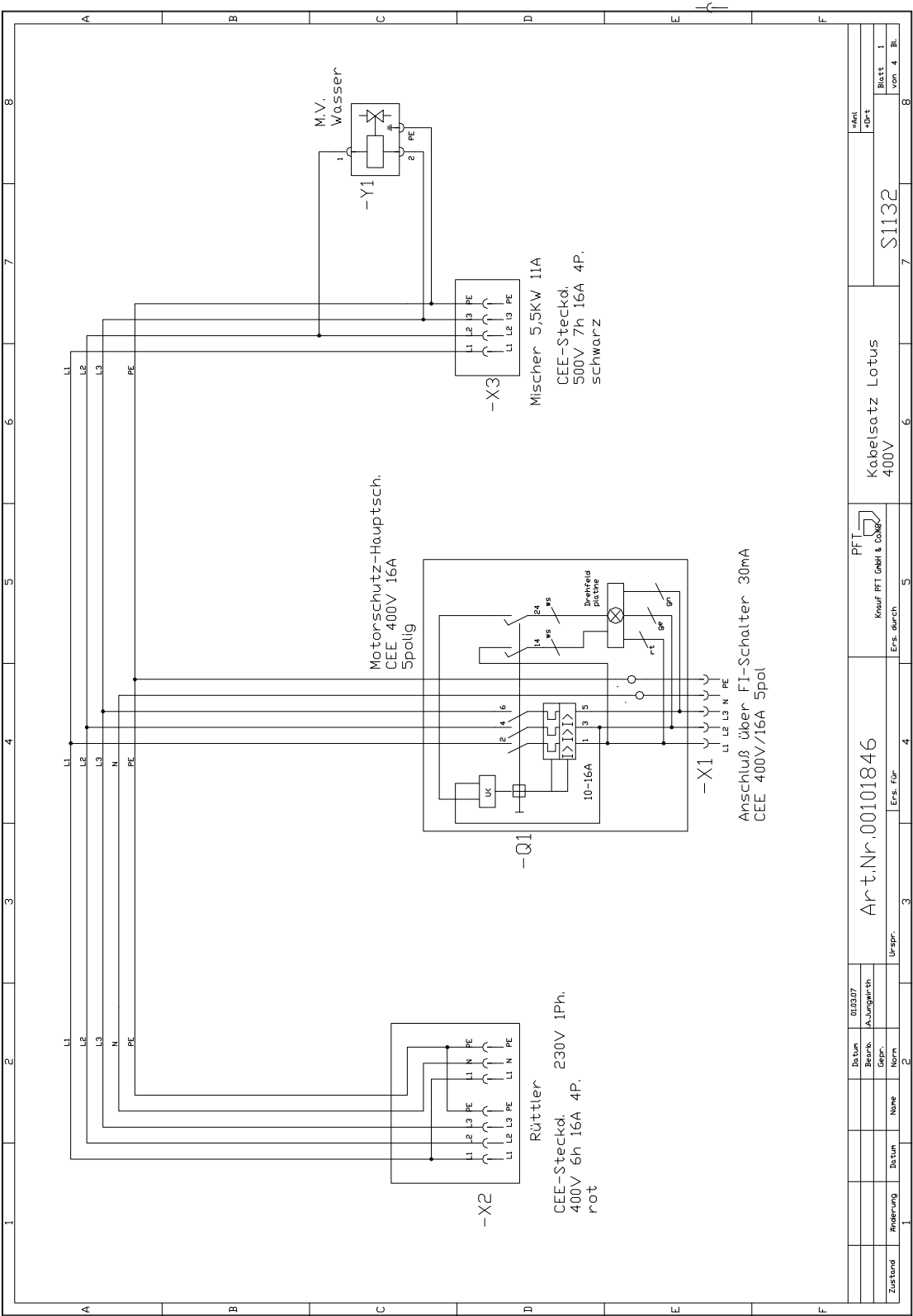
33 Cable set, Lotus XL light booster pump 400 V / 50 Hz



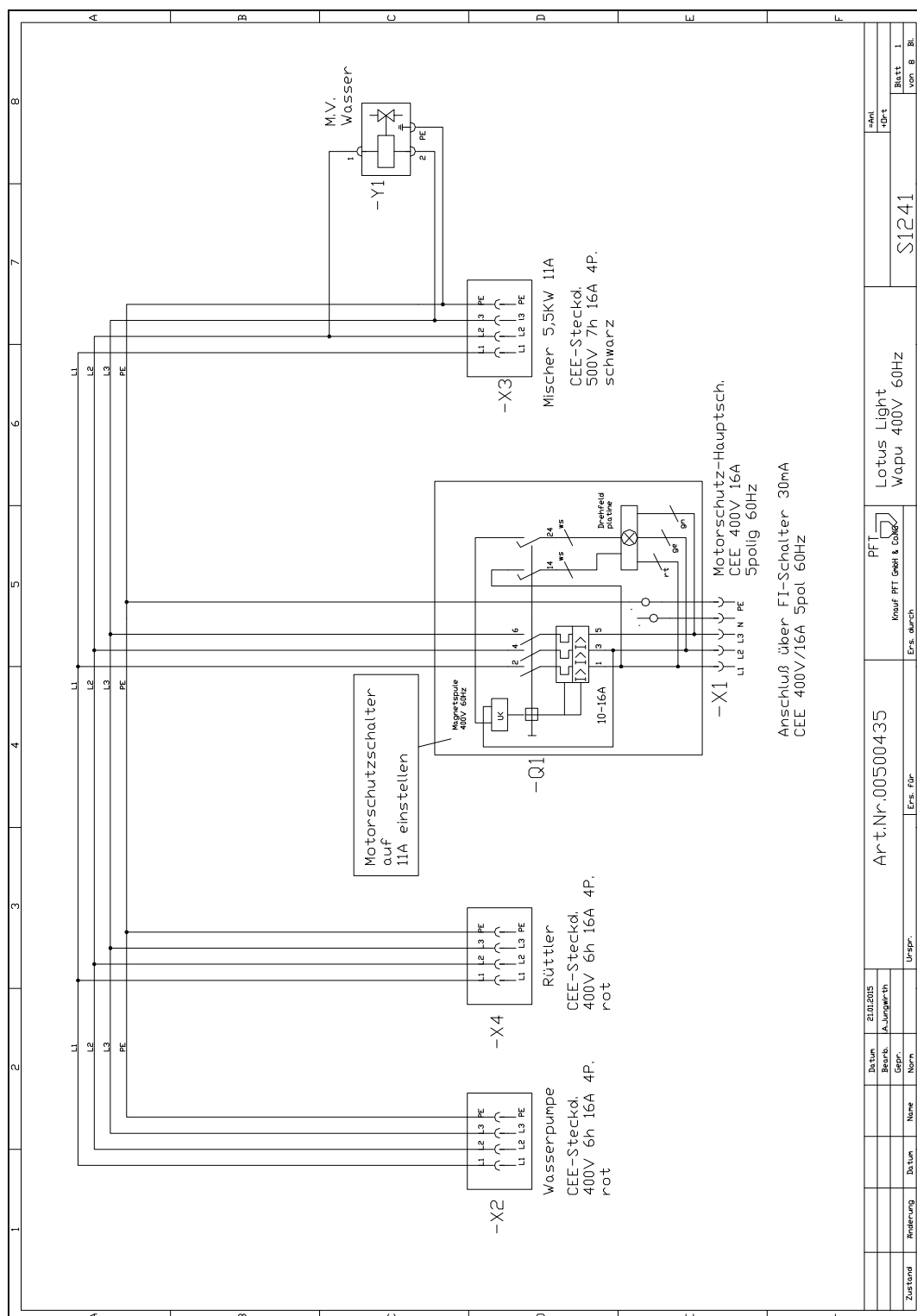


Cable set, Lotus XL light 400 V / 50 Hz

34 Cable set, Lotus XL light 400 V / 50 Hz



35 Cable set, Lotus XL light booster pump 400 V / 60 Hz





Check list for annual inspection by specialist (master copy)

36 Check list for annual inspection by specialist (master copy)

This inspection must be carried out once a year by a specialist in accordance with BGR 183 (German Association for Health and Safety at Work). The machine and control box receive 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 criterion	OK	Rework / replace
Motor swivel flange	Check for deformation		
Gear motor	Check motor connection cable		
	Check sealing rings		
	Inspect coupling claw		
Middle body	Gaskets OK?		
	Bolts and eyebolts OK?		
	Dosing zone rubber inspected for wear?		
Mixing tube			
Dosing shaft	Check for wear		
Mixing shaft	Check for wear		
Coupling for mixing shaft	Check for wear		
Coupling claw	Check for wear		
Mortar outlet	Check for wear		
Cable set	Check whether all cable connections are firmly seated.		
Cable set	Visual inspection for defects		
Cable set	Insulation measurement		
Cable set	Functional test		
Solenoid valve	Functional test		
Pressure reducing valve	Functional test		
Type plate	Present and legible		
Operating manual	Present		



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