

Operating manual

FORCED ACTION MIXER PFT MULTIMIX **Overview – Operation – Spare Parts Lists**



Item number of operating manual: 00 62 78 04

MULTIMIX, 400 V, 3 Ph, 50 Hz

MULTIMIX, 230 V, 1 Ph, 50 Hz, 2.2 kW

Item number of the machine: 00 25 16 36

Item number of the machine: 00 54 42 38



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: MULTIMIX

Device type: Forced action 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/EU).

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 undersigned



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 mixing pumps/conveying pumps

Item number: 00 14 63 78

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

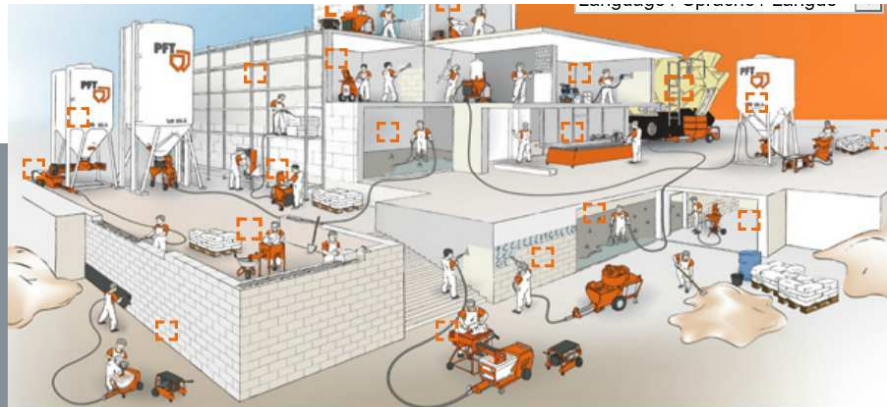
Both parts must be read and adhered to in order to ensure safe operation of the equipment. Together, they are valid as one operating manual.

Spare part lists

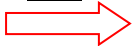


4 Spare part lists

You can find spare part lists for the machine in the Internet under www.pft.eu.
Access for dealers with username and password.



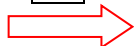
1



Home

News
About Knauf PFT
Products
Applications
Information service
Contact PFT worldwide
Business Login
Spare parts service

2



PFT - THE FLOW OF PRODUCTIVITY

Technique and knowledge have changed all fields of our life. Our strength is to convert the knowledge of science and research into our high quality machine manufacturing...

Product programme

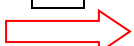
PNEUMATIC CONVEYING EQUIPMENT
MIXING PUMPS

Applications

PLASTERING
COATING

Access

3



Home

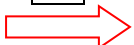
Business Login

Forms
PFT Catalogue
Newsletter
Brochures

Operating instructions

Safety instructions
Pneumatic conveying equipment
Mixing pumps
Horizontal continuous mixers, batch mixers
Conveying pumps
Building machines as motorcar trailers
Cutting table
Equipment, tools, accessories
Special machines
Module programme
Price list
Image library
My data
Logout

4



4.1 Accessories

For recommended accessories/equipment, see PFT Machine and Equipment Catalogue or www.pft.eu.





5 Technical data

5.1 General specifications

5.2 Connection values 400 V

Specification	Value	Unit
Weight	148	kg
Length	980	mm
Width	1060	mm
mixing hopper max.	140	litres
Capacity: Ready-mixed product approx.	80	litres
Maximum grain size	6	mm
Height / Feet adjustable	1120 - 1380	mm
Specification	Value	Unit
Tensioning 3Ph./ 50 Hz	400	V
Energy consumption (approx.)	5.2	A
Power consumption	2.2	kW
Connection	16	A
Power unit minimum	7.5	KVA

Electrical

5.3 Connection values 230 V

Electrical

Specification	Value	Unit
Tensioning 3Ph./ 50 Hz	230	V
Energy consumption (approx.)	9	A
Power consumption	2.2	kW
Connection	16	A
Speed range	24 - 49	rpm

Sound power level



5.4 Operating requirements

Ambient conditions

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

6 Sound power level

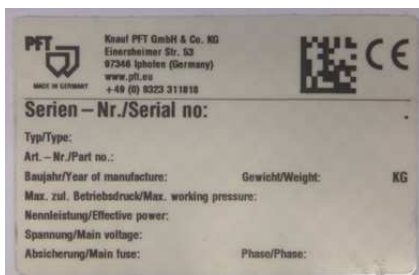
Guaranteed sound power level LWA

78 dB (A)

7 Vibrations

Weighted effective acceleration value to which the upper limbs are exposed = < 2.5 m/s²

8 Type plate



The type plate is found on the chassis and contains the following details:

- Manufacturer
- Type
- Year built
- Machine number

Fig. 1: Type plate

9 Quality control sticker



The quality control sticker contains the following information:

- CE confirmed in compliance with EU directives
- Serial number
- Controlled by / signature
- Date of control

Fig. 2: Quality control sticker

10 Water connection



Fig. 3: Water connection

Specification	Value	Unit
Connection	1/2	inches



11 Overview

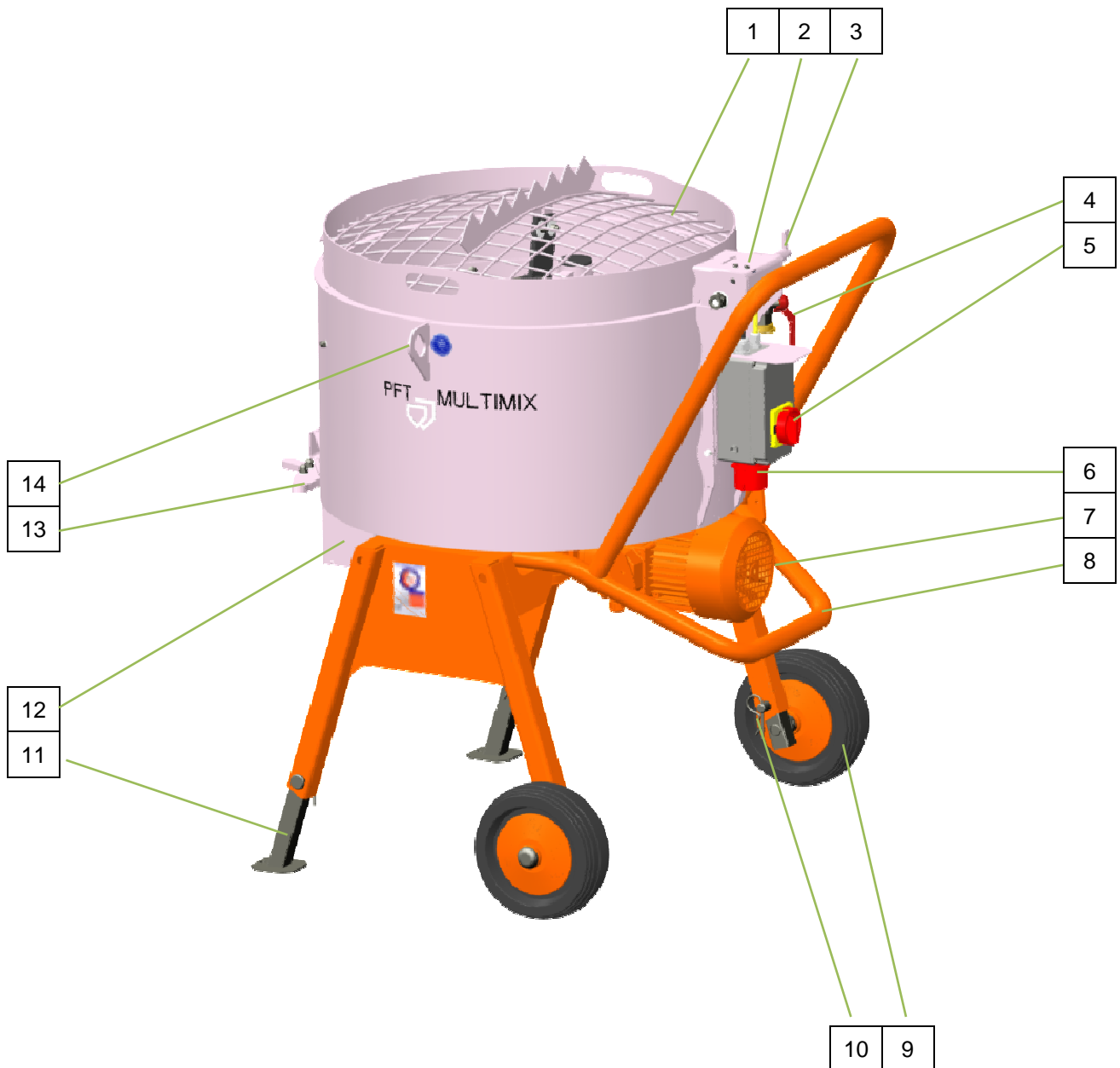


Fig. 4 Overview

- | | |
|--|--|
| 1. Protective grille with bag opener | 2. Protective grille limit switch |
| 3. Rotary bolt for protective grille | 4. Shut-off valve for water inlet |
| 5. Main switch ON / OFF | 6. Mains connection, 16A |
| 7. Gear motor | 8. Protection and retaining bar with bracket |
| 9. Spare wheel | 10. Spring plug |
| 11. Foot height adjustable | 12. Material outlet |
| 13. Material outlet swivel arm CLOSED / OPEN | 14. Crane eyelet |

12 Function

12.1 Description

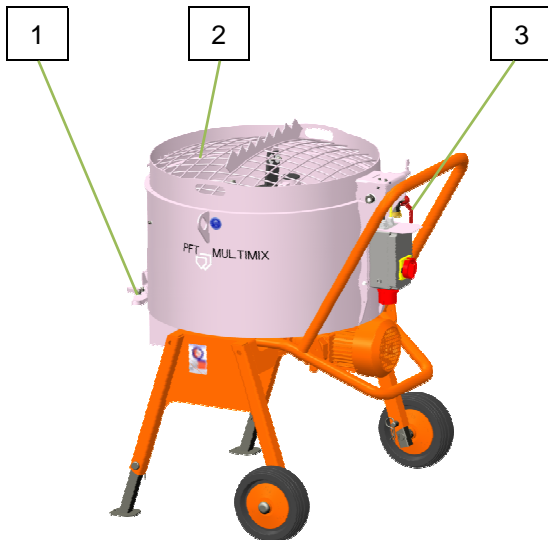


Fig. 5: Description

The PFT MULTIMIX is a powerful batch mixer that is particularly suitable for special mixtures comprising different components.

The mixed material can be added straight into the hopper (2) and be prepared via the water inlet (3) using the specified quantity of liquid.

Powerful mixing arms save time while producing homogeneous mortar mixtures.

The mixed material is quickly and cleanly drained using a flat slide valve (1) on the hopper base.

12.2 Areas of application



Fig. 6: Use

Areas of application:

- Concrete refurbishment
- PCC and SPCC mortars
- Fine concrete
- Screeds
- Furnace construction
- Flue construction
- Powder adhesive
- Mineral plasters
- Acoustic plasters*
- Synthetic resin plasters
- Epoxy resins
- Granulates

* The TURBO mixing unit might have to be screwed on for sensitive mortars, e.g. acoustic plasters. The corresponding guidelines of the mortar manufacturer have ultimate priority.



12.3 Advantages at a glance



Fig. 7: SWING under MULTIMIX



Fig. 8: ZP 3 under MULTIMIX

THE MULTI-COMPONENT MIXER FOR PROFESSIONALS

What the PFT MULTIMIX transfers well mixed and capable of being pumped to a PFT delivery pump, “transports” this to the location of use. The sophisticated design enables diverse applications.

- Exact mixing ratio of the individual components.
- Adding binders.
- Intensive and homogeneous material preparation.
- Rapid mixing by contra-rotating mixing arms.
- Height adjustable.
- Can be combined with the PFT delivery pumps Swing and ZP 3.
- Easy handling.
- Fast and clean emptying.
- Compact and stable design.
- Easy to maintain.

The PFT MULTIMIX fits via the PFT Swing and PFT ZP 3.

13 Accessories



Fig. 9: Power cable

Item number 20 42 33 50 Power cable 5 x 2.5 50 m with CEE plug and coupling 16 A 6 h red.

Item number 20 42 33 60 Power cable 5 x 2.5 25 m with CEE plug and coupling 16 A 6 h red.



Fig. 10: Power cable

Power cable 3x2.5 mm², 25m safety socket CEE 16 A Item no. 20423420.



Fig. 11: Water/air hose

Item number 20212010
Water/air hose 1/2",
20 m with Geka
couplings.



Fig. 12: Support foot
with castor

Item number 00289007
Support foot with castor
MULTIMIX Mod2012

You can find further accessories on the internet under www.pft.de or at your PFT building machinery dealer's.

14 Transport, packaging and storage

14.1 Safety instructions for transport

Improper transport

**CAUTION!****Damage can be caused by improper transport!**

Significant damage may occur if the equipment is transported incorrectly.

Therefore:

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

Therefore:

- Never step underneath suspended loads.
- Follow instructions regarding the provided suspension points.
- 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.



14.2 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.
- Submit the appropriate claim.



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 Transport by crane

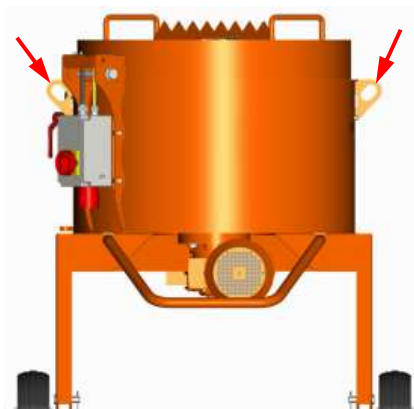


Fig. 13: Attachment points

Attachment points

To transport using a crane, attach a rope to the attachment eyelets (1)

Observe the following requirements:

- The crane and lifting equipment must be suitable for the package weight.
- The operator must be authorised to operate the crane.

Fastening the lifting gear:

Attach ropes or belts as appropriate.

1. Ensure that the package is suspended so it is level.
Adjust for off-centre balancing points if necessary.

16 Transport in individual parts

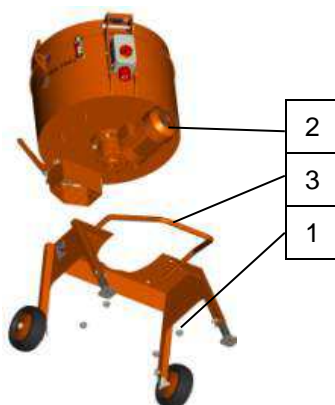


Fig. 14: Individual parts

The mixing unit and the material hopper of the PFT MULTIMIX can be removed from the frame with the motor for the transport and maintenance:

1. Undo screws (1) of the mixing unit and lift the den material hopper off the frame.
2. Make sure that the motor (2) points towards the sliding bar (3) during assembly.

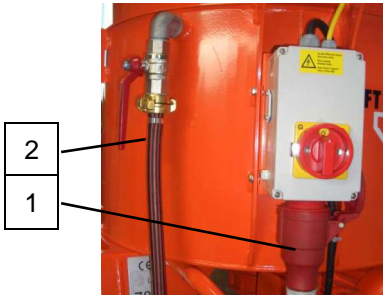
Transportation of operational machines 400 V**17 Transportation of operational machines 400 V**

Fig. 15: Removing the connections

**DANGER!****Danger of injury due to escaping dry material!**

Injury to the face and eyes can occur.

Carry out the following steps before transporting:

1. Remove main power cable (1).
2. Remove water supply line (2).
3. Begin transport.

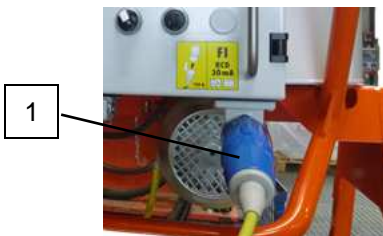
18 Transportation of operational machines 230 V

Fig. 16: Removing the connections

**DANGER!****Danger of injury due to escaping dry material!**

Injury to the face and eyes can occur.

Carry out the following steps before transporting:

1. Remove main power cable (1).
2. Remove the water supply lines.
3. Begin transport.

19 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.

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.



Handling the packaging materials



CAUTION!

Environmental damage can result from improper disposal of materials!

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

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

20 Operation

20.1 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.

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.

Machine preparations



21 Machine preparations

21.1 Risk of injury due to rotating mixing arms



1

Fig. 17: Protective grille



2

Fig. 18: Mortar outlet

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


DANGER!
Rotating mixing arms!

Risk of injury if reaching close to rotating mixing arms.

- The protective grille (1) and mortar outlet (2) should not be removed while preparing or operating the machine.
- Never reach into the machine while it is running.



Fig. 19: Setting up the machine

Install the machine on stable and even ground and secure it against accidental movements:

- Do not tilt or roll the machine away.
- Place the machine where it cannot be hit by any falling objects.
- The operating element must be freely accessible.
- Keep a free space of approx. 1.5 metres around the machine.

22 Connection to the 400 V power supply



Fig. 20: Connecting the power

Only connect the machine 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".



Connection to the 230V power supply



Fig. 21: Power supply



WARNING!

Danger of death due to rotating parts!

Improper operation can lead to serious injuries or equipment damage.

- The relevant drive (motor) may only be operated via the associated control box of the machine (undervoltage release).

23 Connection to the 230V power supply

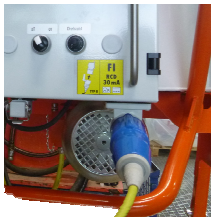


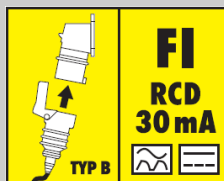
Fig. 22: 230V connection

1. 230V connection to the machine.



Fig. 23: 230V power supply

2. Only connect to power distributors that conform to regulations.



DANGER!

Danger of death due to electric current!

The electrical connection must be fused correctly:

For the operation of frequency converters, only connect the machine to a power source with an approved FI circuit breaker (30mA RCD – residual current device) of type “B” that is sensitive to all currents.



WARNING!

Danger of death due to rotating parts!

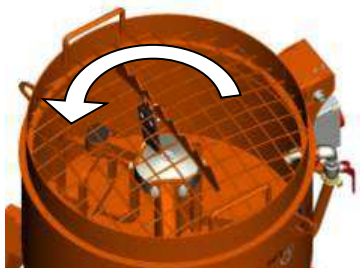
Improper operation can lead to serious injuries or equipment damage.

- The motor may only be operated via the associated control box of the machine.

Checking the direction of rotation 400 V



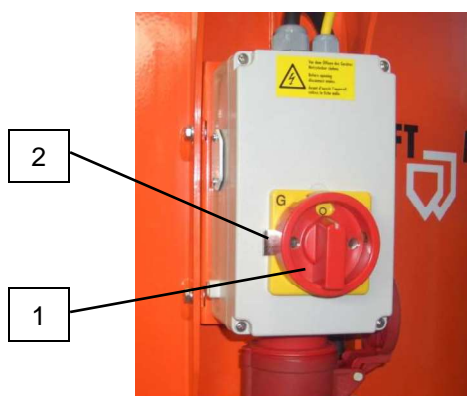
24 Checking the direction of rotation 400 V



1. Check the direction of rotation of the mixing arms.
2. The mixing unit runs anticlockwise.

Fig. 24: Checking the direction of rotation

24.1 Changing the direction of rotation 400 V



1. Switch on the machine using the main reversing switch (1).
2. If the direction of rotation is incorrect, change the direction of rotation using the main reversing switch.



NOTE!

If the direction of rotation is incorrect:

The main reversing switch is locked in the zero position by pushing the selector switch (2) to the left or right. This defines the direction of rotation.

If the switch is set to the left, the switch can be reset to zero but is blocked for the right-side position.

Fig. 25: Changing the direction of rotation

25 Water supply connection



1. Connect the water hose to the water inlet.

Fig. 26: Water connection



Switching on putting into service 400 V

25.1 Water from water barrel connection

Booster pump AV3000

00 13 02 05

Float switch for AV3000

00 13 09 32

NOTE!



*When working with water from the barrel, the inlet strainer must be fitted with a filter screen
Item number 00 13 66 19.
(Bleed the booster pump).*



Fig. 27: Booster pump



Fig. 28: Filter screen

26 Switching on putting into service 400 V

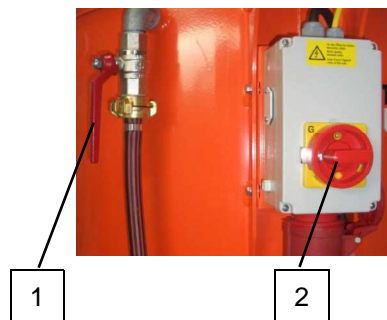


Fig. 29: Switching on 400 V

1. Open the tap (1) and allow the required quantity of water to flow into the material hopper.
2. Close the tap again.
3. Turn the main switch (2) to the "I" position.

27 Switching on putting into service 230 V

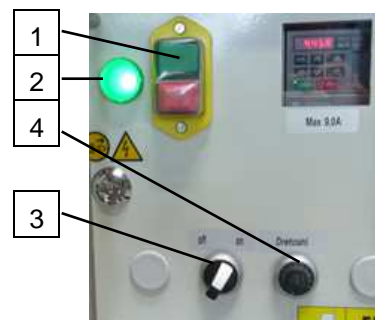


Fig. 30: Switching on 230V

1. Press the green Operation "ON" button (1).
2. The green pilot light (2) lights up.
3. Turn selector switch (3) to the "ON" position.
4. The mixer motor starts up if the protective grille is closed.
5. The mixing speed can be set at the potentiometer (4) for motor speed.

Switching on putting into service 230 V



27.1 Hazardous dust



Fig. 31: Dust mask

**WARNING!**

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).

27.2 Filling the MULTIMIX with bagged material

Filling with bagged material:



Fig. 32: Bagged material

**DANGER!****Risk of injury from bag opener!**

Sharp edges of the bag opener pose a risk of injury.
- Wear safety gloves.

Do not switch off the mixer when the mixing drum is full or during the mixing procedure.

**NOTE!**

Granulate larger than 6 mm should not be put in the material hopper!

This could cause the machine to block.

27.3 Opening the protective grille

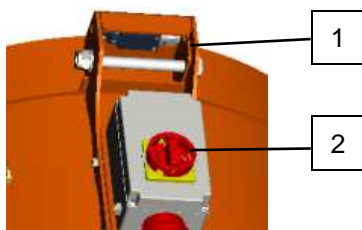


Fig. 33: Safety limit switch

**NOTE!**

The PFT MULTIMIX is fitted with a safety limit switch (1).

If the protective grille is opened, the machine switches off immediately. After closing the protective grille, the machine must be switched on again at the main reversing switch (2).



Emptying the machine



3

Undo the screw (3) and open the protective grille.

Fig. 34: Opening the protective grille

27.4 Danger of crushing by protective grille



Fig. 35: Danger of crushing

Danger of crushing by protective grille!



There is a danger of crush injuries when closing the protective grill.

- Never reach into the closing range of the protective grille.

28 Emptying the machine

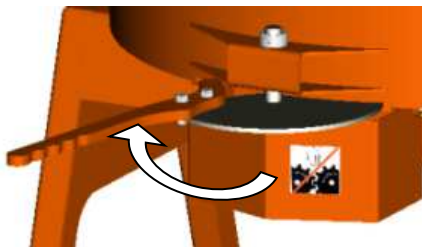


Fig. 36: Emptying the machine

1. The material hopper is emptied via the segment slide on the base of the container directly into a conveying pump below or into a wheelbarrow or container.
2. Empty the hopper when the mixing unit is running. The slide must be opened only as far as is necessary for emptying.

29 Switching off 400 V



Fig. 37: Switching off

1. Switch off the machine at the main reversing switch.

Switching off 230 V



30 Switching off 230 V



2

1

Fig. 38: Switching off

1. Turn selector switch (1) to the "OFF" position.
2. Switch off the machine at the red push button (2)
Operation "OFF".

31 Interruption of work

**NOTE!**

Generally, the setting times of the materials to be processed must be observed. (Pay attention to outside temperature when doing so).

Observe the guidelines of the material manufacturer regarding interruptions.

32 Measures to be taken in the event of a power failure

**NOTE!**

The PFT MULTIMIX is fitted with an overload and undervoltage release

If a fault occurs, the main reversing switch switches to the zero position.

Then switch the machine back on.

**NOTE!**

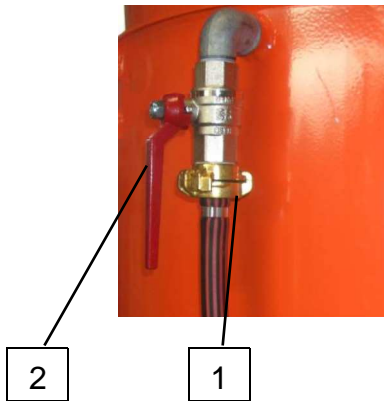
Generally, the setting times of the materials to be processed must be observed. (Pay attention to outside temperature when doing so).

Observe the guidelines of the material manufacturer regarding interruptions.

**Measures to be taken if there is a risk of frost****33 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.



1. Remove the hose (1) from the water inlet.
2. Open the tap (2).

Fig. 39: Disconnecting the water supply

34 Switching off in an emergency

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

Switching off in an emergency

Proceed as follows in the event of an emergency:

1. Turn off the main switch immediately.
2. Secure the main switch against being switched back on.
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.



35 Cleaning

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.



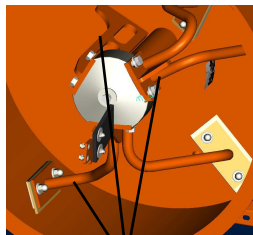
CAUTION!

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 and control boxes).
- Remove all coverings completely after cleaning.



1



2

Fig. 40: Cleaning

The machine must be cleaned daily after work and before prolonged pauses:

1. Spray out the inside of the mixing hopper with a water jet.
2. The slide guide (1) must be completely clean at all times and lubricated slightly to ensure that it can open and close smoothly.
3. Clean the mixing unit (2) thoroughly, ensuring it is free of hardened and encrusted material.
4. The arms of the turbo mixing unit must be easy to turn.



NOTE!

Do not aim the water jet directly at electrical components, such as the gear motor or control box.

36 Dealing with malfunctions

Dealing with malfunctions

The following applies as a general rule:

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.

36.1 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.

36.2 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

36.3 Table of malfunctions

Malfunction	Possible cause	Solution	Performed by
Machine does not start	Power cable is defective	Repair the power cable	Service technician
	Main switch not activated	Turn on the main switch	Operator
	Circuit breaker triggered	Reset the FI circuit breaker	Service technician
	Safety shut-down triggered	Close the protective grille, check safety switch	Operator
Machine does not respond	Safety shut-down responds	Close grille, check switch	Operator
	Material hopper too full	Disconnect and clean slide	Operator
	Mixing unit has jammed (stones too large)	Eliminate the cause of the jam and start up again	Operator
	Not enough water	Increase the quantity of water	Operator
	Motor protection switch triggered – too full or mixing unit jammed	Open slide and empty, then start up again	Operator

37 Maintenance**37.1 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.

Maintenance



Basic information



WARNING!

Danger of injury due to improperly performed maintenance work!

Improper maintenance can lead to serious injuries or equipment damage.

- 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.

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.

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

37.2 Maintenance tasks

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).

37.3 Setting the mixing arm

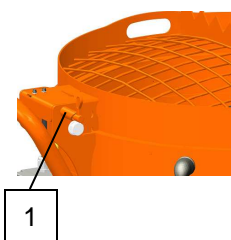


Fig. 41: Fold up protective grille



WARNING!

Danger from the protective grille falling!

- Secure protective grille with rotary bolt (1).

1. Check rotary bolt regularly and grease lightly.
2. Check function.

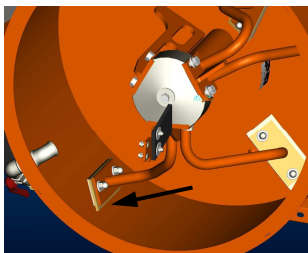


Fig. 42: Setting the mixing arm

The interval between the scraper and the material hopper should total 1.5 times the granulate size.

37.4 Motor and gearbox maintenance



Fig. 43: Maintenance

No other maintenance tasks need to be performed on the motor and gearbox.

37.5 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.

38 Environmental protection

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.

39 Disassembly

The machine must be disassembled and disposed of correctly after reaching its end of use.

39.1 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 your dealer 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.

39.2 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.

40 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!

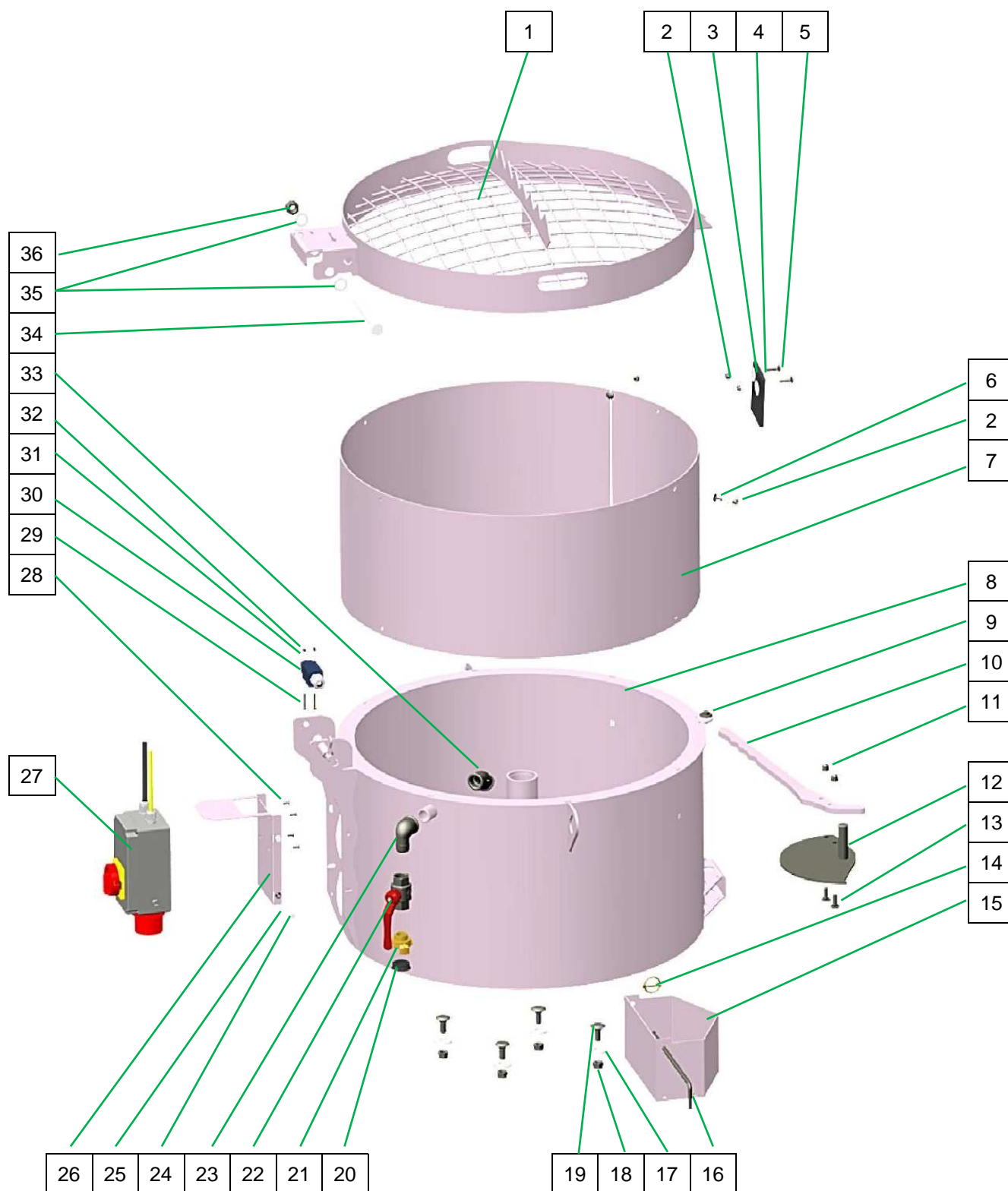
Local authorities and waste disposal specialists can provide more details on the correct disposal of materials.

Spare parts drawing, spare parts list



41 Spare parts drawing, spare parts list

41.1 MULTIMIX material hopper





Spare parts drawing, spare parts list

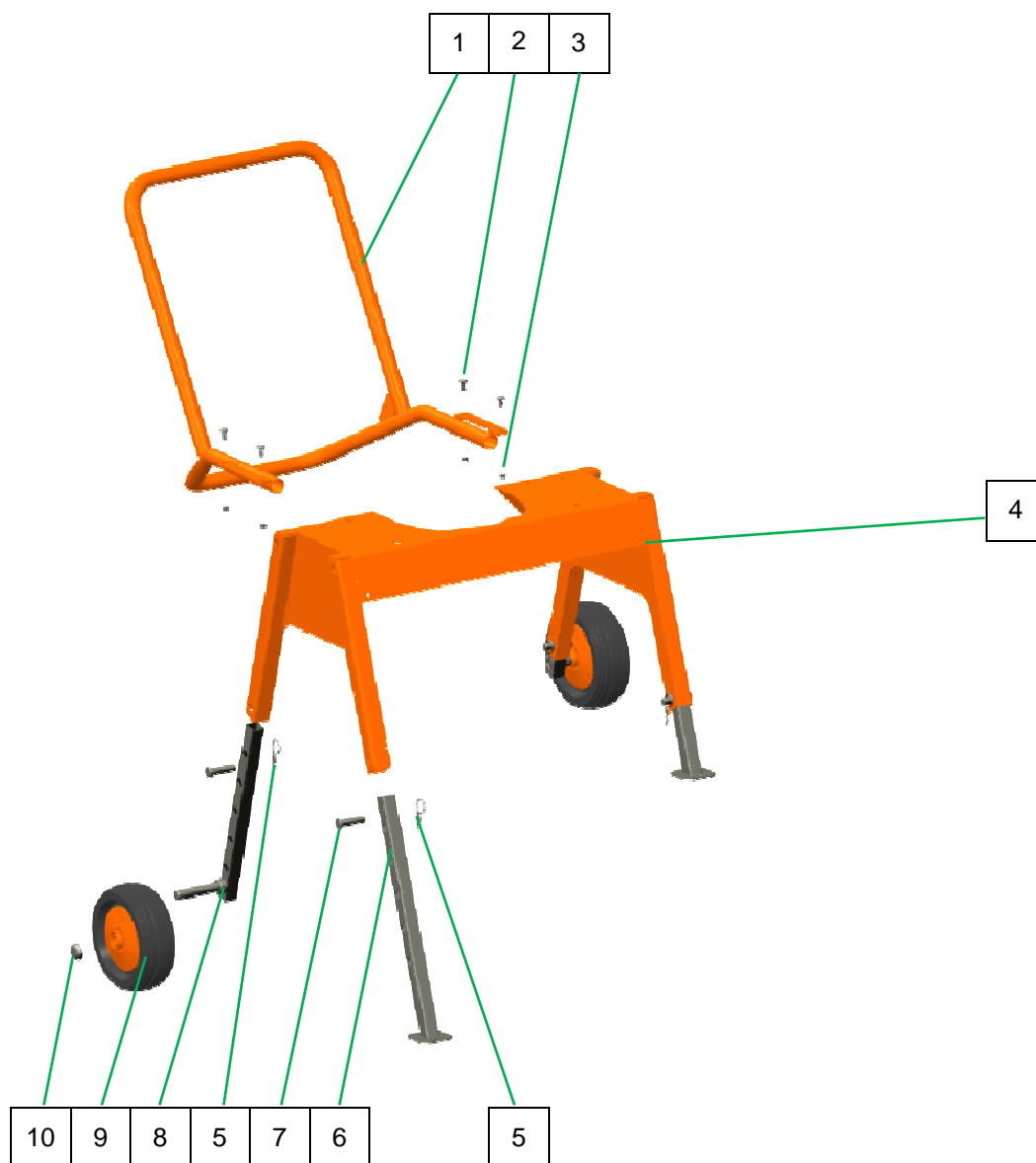
41.2 Spare parts list MULTIMIX material hopper

Pos.	Qty.	Item no.	Item description
1	1	00 25 15 73	Protective grille MULTIMIX model 2012 RAL9002
2	2	20 20 62 00	Lock nut M6, zinc-plated
3	2	20 20 93 11	Washer, 6.4 x 30 x 1.5, zinc-plated
4	1	00 25 17 92	Mixing arm scraper MULTIMIX model 2012
5	2	00 02 26 01	Round head screw M6 x 20, zinc-plated
6	2	20 20 63 04	Round head screw M6 x 16, zinc-plated
7	1	00 25 15 21	Armour plate MULTIMIX model 2012 screwed RAL9002
8	1	00 25 16 44	Material hopper MULTIMIX model 2012 RAL9002
9	1	00 21 45 19	Retaining washer and hex screw M8x25 with recess, complete
10	1	00 25 15 28	Handle for slide MULTIMIX model 2012 RAL9002
11	2	20 20 66 03	Locking cap nut M8, zinc-plated
12	1	00 25 15 98	Slide MULTIMIX model 2012, zinc-plated
13	2	20 20 63 24	Round head screw M8 x 30, zinc-plated
14	1	20 10 10 10	Splint, D 4.5 with ring
15	1	00 25 15 32	Mortar delivery flange MULTIMIX model 2012 RAL9002
16	1	00 00 79 86	Pin, MULTIMIX outlet, zinc-plated
17	4	20 20 93 19	Washer, 13 x 37 x 3.0, zinc-plated
18	4	20 20 89 00	Lock nut M12, zinc-plated (pack of 10)
19	4	00 42 04 07	Round head screw M12 x 30, turned
20	1	20 20 17 00	Seal Geka coupling
21	1	20 20 09 10	Geka coupling 3/4" external thread
22	1	00 05 79 59	Tap 3/4"
23	1	20 20 36 01	Elbow, 3/4" female/male thread, zinc-plated
24	4	20 20 71 03	Hex screw M6 x 20, zinc-plated
25	4	20 20 93 00	Washer B 6.4, zinc-plated
26	1	00 25 15 94	Assembly plate switch MULTIMIX model 2012 RAL9002
27	1	00 25 39 04	On/off switch MULTIMIX 400V 3Ph model 2012
28	4	20 20 64 07	Cylindrical screw M5 x 10, zinc-plated
29	2	00 03 56 94	Hex screw M 4x 30, zinc-plated
30	1	00 00 73 81	MULTIMIX limit switch
31	2	00 03 59 60	Washer 4.3, zinc-plated
32	2	20 20 62 03	Lock nut M4, zinc-plated (pack of 10)
33	1	00 03 60 44	Elbow, 3/4" 45° female/female thread, zinc-plated
34	1	20 20 81 04	Hex screw M16 x 150, zinc-plated
35	2	20 20 67 00	Washer B 17, zinc-plated
36	1	20 20 73 00	Lock nut M16, zinc-plated (pack of 10)

Spare parts drawing, spare parts list



41.3 MULTIMIX frame





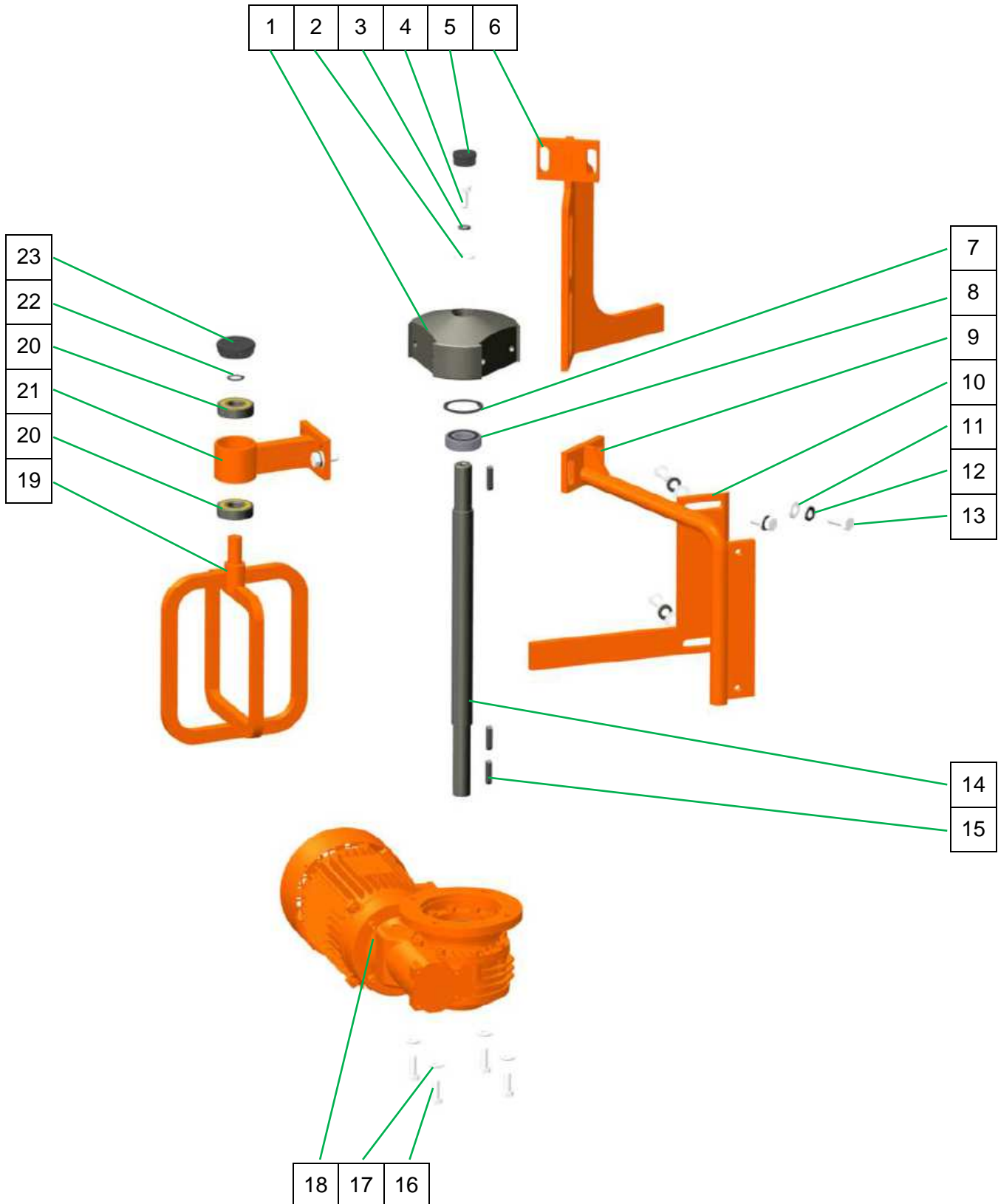
41.4 Spare parts list: MULTIMIX chassis

Pos.	Quantity	Item no.	Description
1	1	00 51 14 56	Protection and retaining bar with bracket RAL2004
2	4	20 20 63 22	Round head screw M8 x 20, zinc-plated
3	4	20 20 72 00	Lock nut M8, zinc-plated (pack of 10)
4	1	00 25 14 56	Chassis Multimix model 2012 RAL2004
5	4	20 60 68 05	Spring plug 3mm
6	2	00 25 14 59	Supporting foot with plate Multimix, zinc-plated
7	4	00 00 79 92	Bolt B16 H11 x 60, zinc-plated
8	2	00 25 14 63	Supporting foot with wheel axle Multimix, zinc-plated
9	2	00 00 82 54	Spare wheel 230x85 cover RAL2004
10	2	20 20 86 03	Quick fastener with cap, 20s x N27

Spare parts drawing, spare parts list



41.5 Mixing unit with gear motor





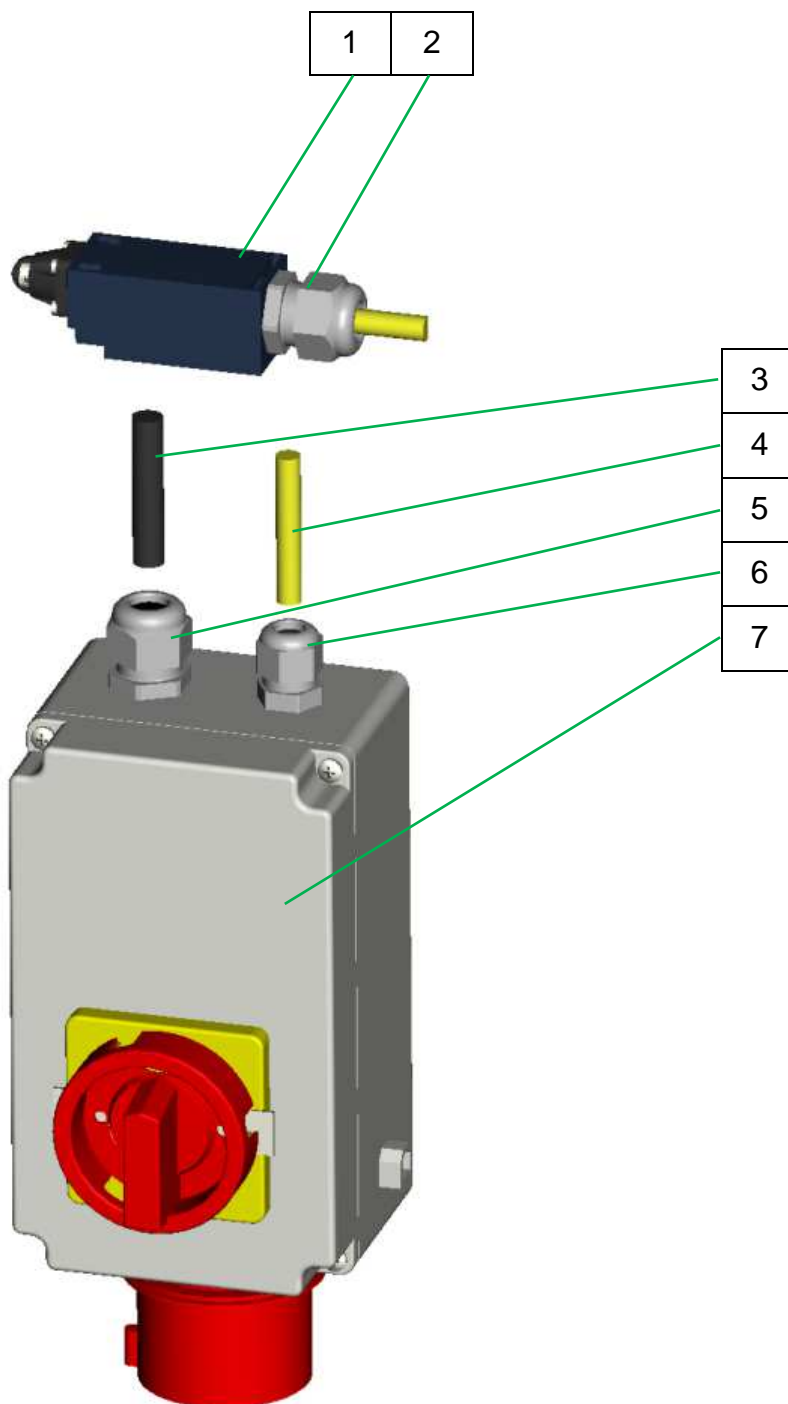
41.6 Spare parts list: Mixing unit with gear motor

Pos.	Qty.	Item no.	Item description
1	1	00 25 15 71	Body holder for mixing arm MULTIMIX model 2012, zinc-plated
2	1	20 20 93 26	Washer 10.5 x 30 x 2.5
3	1	20 20 91 11	Spring washer B 10, zinc-plated
4	1	20 20 99 31	Hex screw M10 x 25, zinc-plated
5	1	00 12 62 99	Lamellar plugs D 34 x 14.5 x 1 mm
6	1	00 25 17 46	Mixing arm, centre Multimix model 2012 RAL9002
7	1	20 13 65 15	Circlip D52 x 2
8	1	20 12 16 14	Grooved ball bearing
9	1	00 22 68 45	Mixing arm, outer short Multimix RAL9002
10	1	00 00 81 15	Multimix mixing arm scraper, outer
11	6	20 20 90 00	Washer B 13, zinc-plated
12	6	20 20 91 10	Spring washer B 12, zinc-plated
13	6	20 20 68 01	Screw M12 x 30, zinc-plated
14	1	00 00 79 93	MULTIMIX drive shaft
15	3	20 13 65 03	Key A 8 x 7 x 36
16	4	20 20 99 31	Hex screw M10 x 25, zinc-plated
17	4	20 20 90 10	Washer B 10.5, zinc-plated
18	1	00 47 65 97	Gear motor 2.2kW 230/400V Multimix
19	1	00 25 50 71	Turbo mixing arm Multimix model 2012 RAL9002
20	2	00 00 81 22	Grooved ball bearing
21	1	00 00 81 47	Bearing arm Multimix RAL9002
22	1	00 00 81 23	Circlip D 20 x 1.2
23	1	00 01 05 32	Lamellar plugs for round pipes 55 x 1-3

Spare parts drawing, spare parts list



41.7 Limit switch – On / Off switch





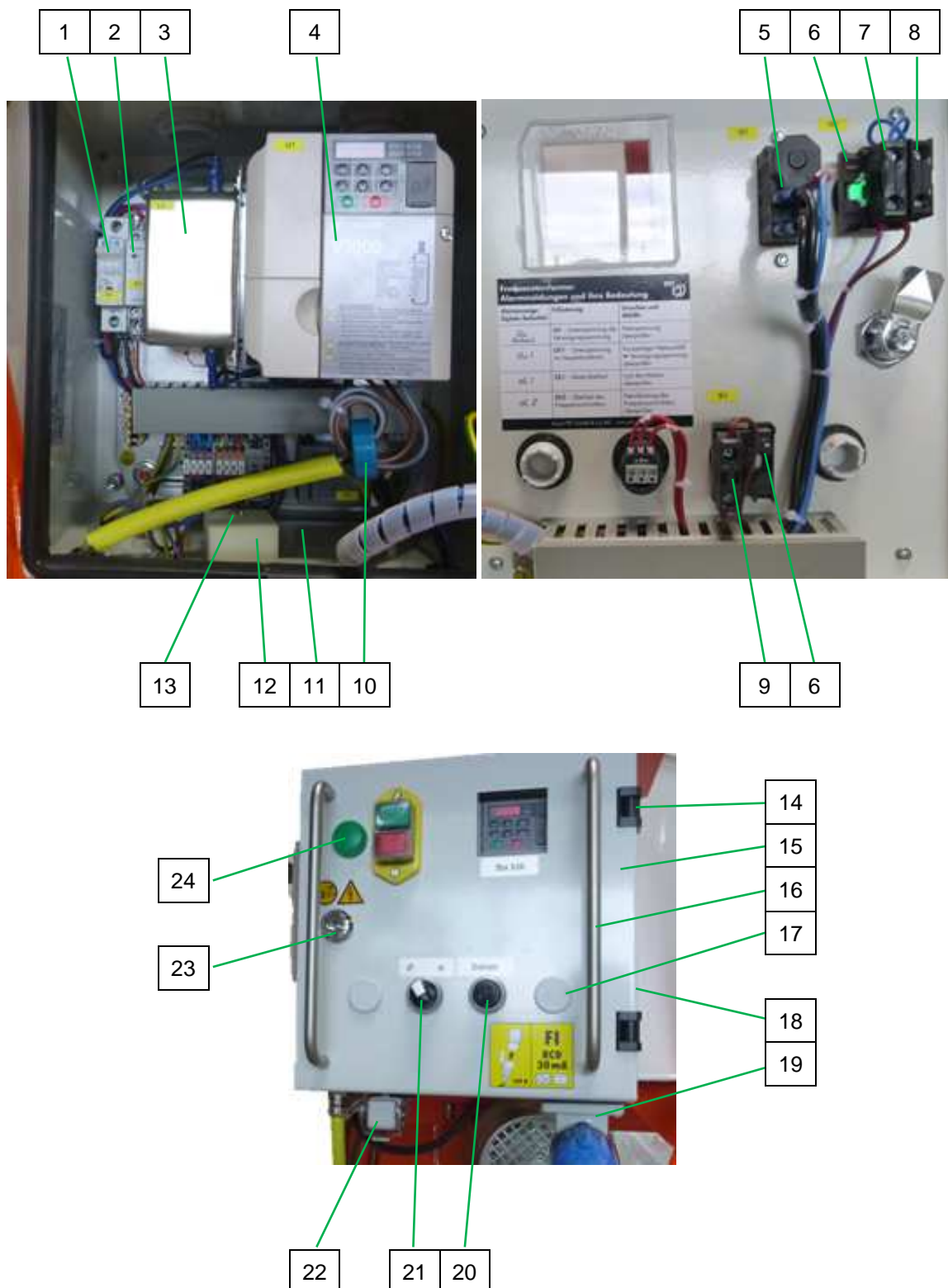
41.8 Spare parts list: Limit switch – On / Off switch

Pos.	Quantity	Item no.	Description
1	1	00 00 73 81	MULTIMIX limit switch
2	1	20 43 05 00	Connector skintop PG 11
3	1	00 02 19 12	Cable, HO7 RNF 4 x 1.5
4	1	00 02 19 50	Cable, HO7 RNF 3 x 1
5	1	00 04 11 27	Skintop connection, M 20 x 1.5
6	1	20 43 05 00	Connector skintop PG 11
7	1	00 25 39 04	On / Off switch MULTIMIX 400V 3Ph model 2012

Spare parts drawing, spare parts list



41.9 Control box MULTIMIX 230V FU Item no. 00545071



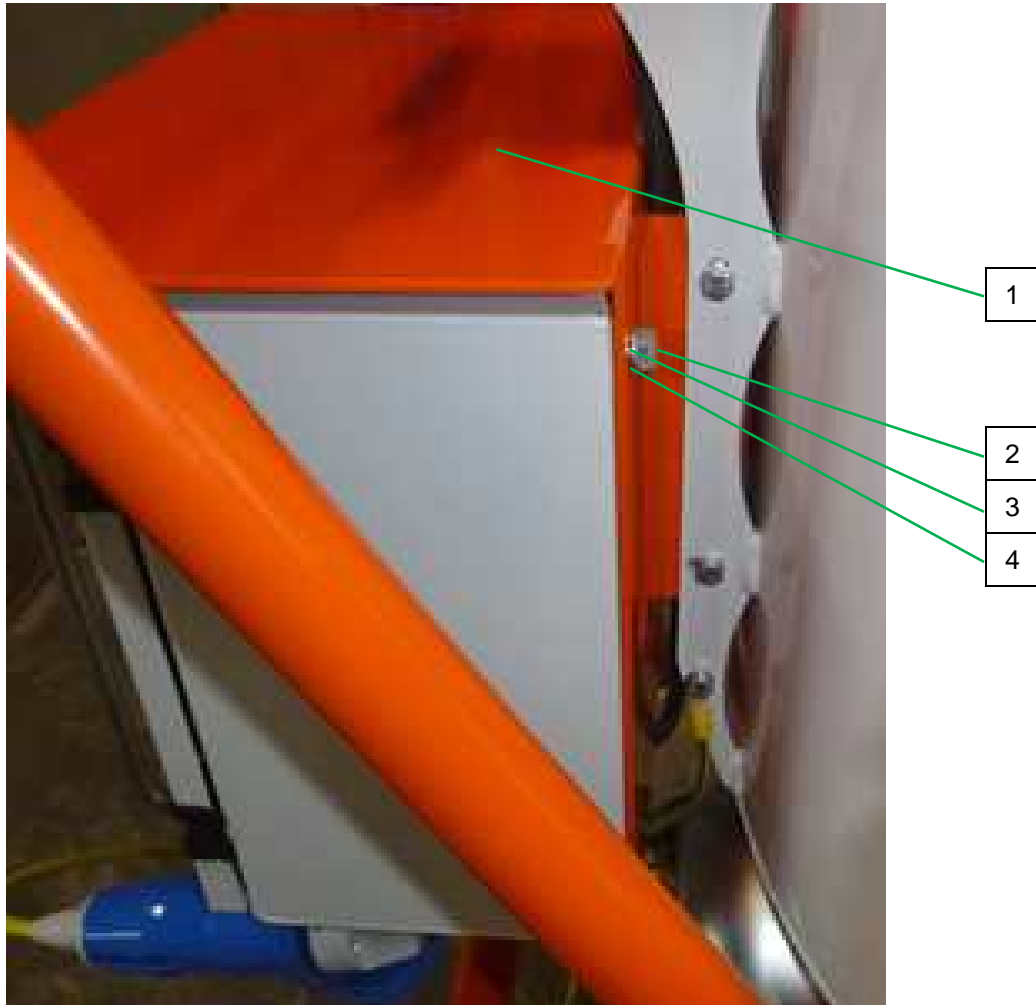
**41.10 Spare parts list: Control box MULTIMIX 230V FU Item no. 00545071**

Pos.	Quantity	Item no.	Description
1	1	00 04 63 79	Automatic protection, C 0.5A, 1-pin
2	1	20 44 81 20	Switching relay 42 V
3	1	00 07 02 43	EMC filter for frequency converter 4 kW, 230 V, 16 A
4	1	00 24 86 23	Frequency converter 230 V, programmed SWING M
5	1	00 05 95 93	Built-in switch, 230 V / 50 Hz undervoltage release
6	2	00 05 38 34	Fixation adapter M22
7	1	00 05 38 80	Illuminated element, green 12-30 V
8	1	00 05 38 86	LED resistor series element for 42 V
9	1	00 05 38 35	Contact element 1 closer M22
10	1	00 06 69 94	Ferrite toroidal core D=35.5 mm
11	1	00 03 63 44	Control transformer 230 V, 42 V EV10 0.07A
12	1	00 02 22 25	Foamed rubber fuse block
13	1	20 41 90 10	Microfuse 5 x 20, 0.315A (VPE 10)
14	2	00 05 37 67	Hinge 180°
15	1	00 06 53 15	Door RAL9002
16	2	00 10 43 81	Stainless steel handle 224 mm for control box
17	2	00 05 80 97	Push button blanking plug
18	1	00 15 89 00	Empty housing RAL9002
19	1	00 01 25 77	CEE plug 3 x 16A 6h, blue
20	1	00 05 07 83	Potentiometer 4.7 k-Ohm with drive
21	1	00 05 38 76	Selector switch zero / 2 x latching M22
22	1	00 00 22 98	Housing, 4/5-pin 3A, angled
	1	20 42 86 07	Female insert, 4-pin
	1	00 10 45 68	Dummy plug, 4-pin, 10A plastic
23	1	00 03 62 49	Double-bit key lock
24	1	00 05 38 73	Indicator lamp attachment for illuminated button, green

Spare parts drawing, spare parts list



41.11 Control box holder MULTIMIX



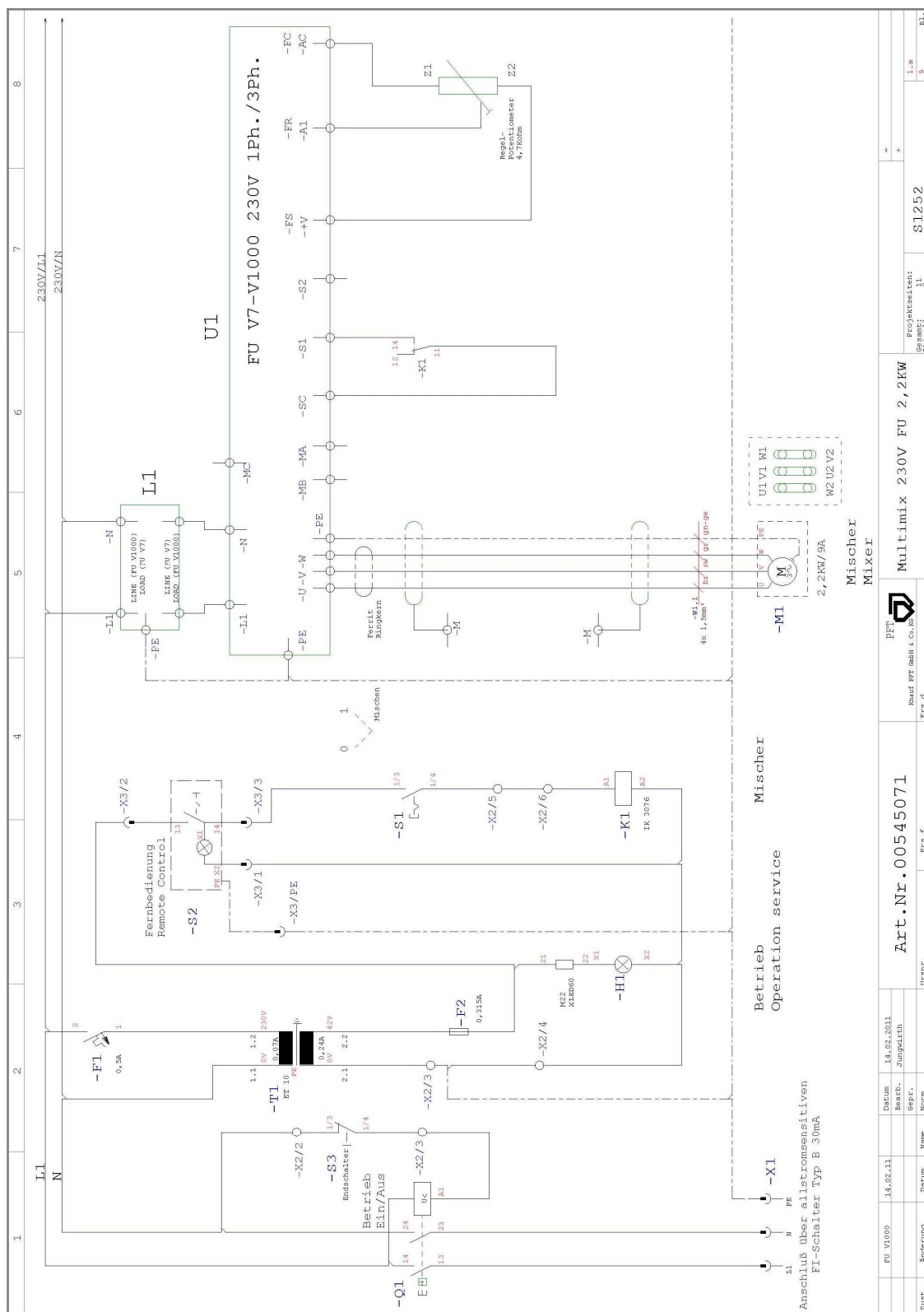
41.12 Spare parts list: Control box holder MULTIMIX

Pos.	Quantity	Item no.	Description
1	1	00 54 50 76	Control box holder MULTIMIX 230 FU RAL2004
2	4	20 20 61 00	Hex screw M 8 x 20, zinc-plated
3	4	20 20 93 13	Washer B 8.4, zinc-plated
4	4	20 20 93 14	Washer B 8.4, zinc-plated



Circuit diagram

42 Circuit diagram



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THE FLOW OF PRODUCTIVITY



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