

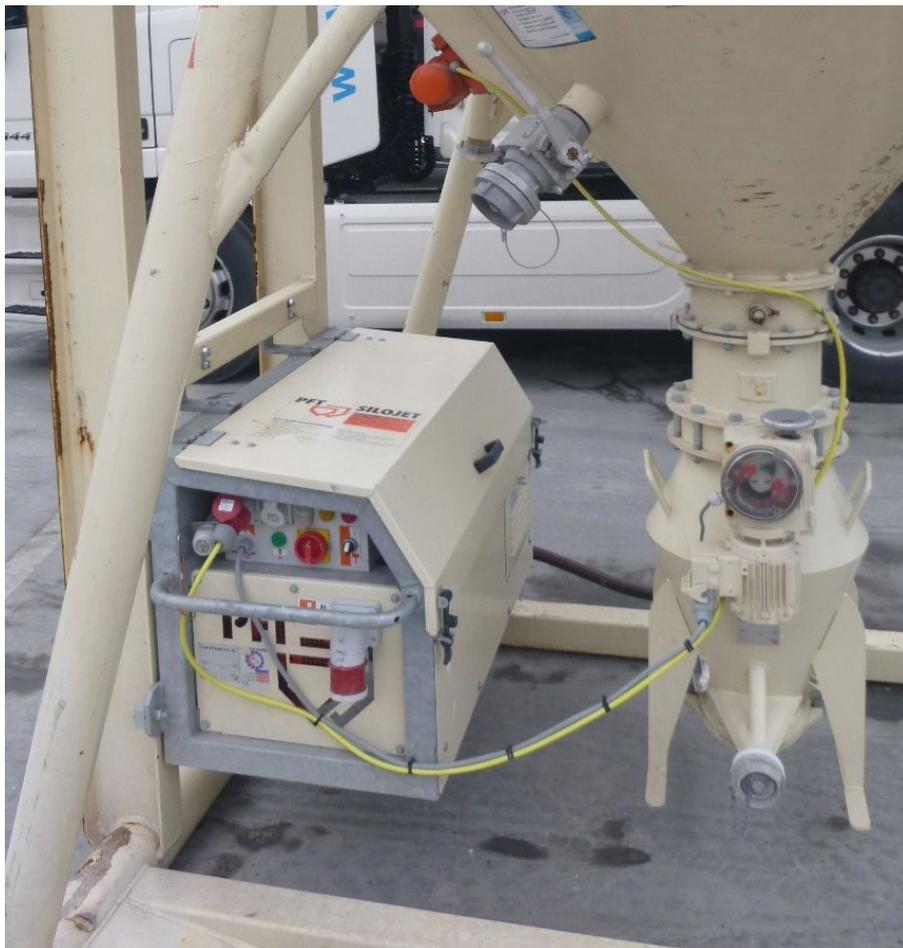


Operating Manual

PFT CONVEYING SYSTEM

PFT SILOJET III T

Part 2 Overview – Operation



Item number of operating manual: 00727112

Item number of the machine parts list: 00045837 RAL9010

Item number of the machine parts list: 00106521 RAL1015

Item number of the machine parts list: 00105407 RAL2004



Read the operating manual prior to beginning any work!

© Knauf PFT GmbH & Co. KG
Postfach 60 97343 Iphofen
Einersheimer Straße 53 97346 Iphofen
Germany

Tel.: +49 9323 31 -760
Fax: +49 9323 31 -770
Technical hotline: +49 9323 31-1818

info@pft.net
www.pft.net



1 Contents

1	Contents	3	18.1	SILOJET III T RAL9010 item number 00045837	17
2	EC Declaration of Conformity	5	18.2	SILOJET III T RAL1015 with silo ventilation item number 00106521	17
3	Testing	6	19	SILOJET III plus control box operating modes from 02.2021	18
3.1	Testing by machine operator	6	19.1	SILOJET III plus control box item number 00681407 with potentiometer for time-delay relay	18
3.2	Periodic inspection	6	20	Function	18
4	General information	7	20.1	Function description and operating sequence	18
4.1	Information regarding the operating manual	7	20.2	Brief description	19
4.2	Keep the manual for later use	7	21	Safety regulations	19
4.3	Layout	7	22	Intended use of rotary compressor	19
5	Spare part lists	8	22.1	Purpose of rotary compressor	19
6	QR code from 02.2021	8	22.2	Safety devices of rotary compressor .	20
7	Equipment or accessories	9	22.3	General set-up of the rotary compressor	20
8	Technical data	10	22.4	Hot surfaces on the rotary compressor	20
8.1	General specifications	10	23	Transport, packaging and storage	21
8.2	Connected load	10	23.1	Safety instructions for transport	21
8.3	Operating requirements	11	23.2	Transport checklist	22
8.4	Output values	11	23.3	Transport by car or truck	22
9	Sound power level	11	24	Set up silo with SILOJET	23
10	Vibrations	11	24.1	Packaging	23
11	Design and function	12	25	Operation	24
11.1	Overview of the assemblies	12	25.1	Safety	24
12	Quality control sticker	12	26	Preparing the machine	25
13	Type plate	13	27	Mains voltage connection	26
14	Rotary compressor / pressure control	13	28	Preparing conveying vessel	26
15	Control box item no. 00046174	14	28.1	Connecting conveying vessel to the silo	26
16	Control box SILOJET III plus item no. 00681407	15	28.2	Connecting conveying hoses	26
17	SILOJET III T conveying vessel	16	28.3	Laying conveying lines	27
18	Operating modes	17	29	Connections	28

Contents

30	Opening the silo outlet flap.....	29	39.2	Closing the silo outlet flap	39
31	Hazardous dust	29	39.3	Checking / cleaning emulsifying rubber.....	41
32	Switching on.....	29	40	Maintenance.....	41
	32.1 Main switch	29	40.1	Safety.....	41
	32.2 Conveying procedure.....	30	40.2	Maintenance plan.....	43
33	SILOJET III plus control box conveying procedure from 02.2021.....	30	40.3	Lubricating KDT3.140	43
	33.1 Empty reading of level sensor	31	40.4	Lubricating KDT3.145	44
	33.2 Problematic materials for conveying..	32	41	Maintenance tasks	44
	33.3 Switching off.....	32	42	Clean the filter	45
34	Switching off in an emergency	33	42.1	Loosen filter cover.....	45
35	Dealing with a power failure	33	42.2	Checking slider width KDT3.140.....	46
	35.1 De-energising the system	33	42.3	Checking slider width KDT3.145.....	46
36	Troubleshooting.....	34	42.4	Slider width KDT3.140	47
	36.1 Dealing with malfunctions	34	42.5	Slider width KDT3.145	47
	36.2 Fault displays	35	42.6	Cleaning cooler	47
	36.3 Malfunctions.....	35	42.7	When working on and in the control box	48
	36.4 Safety.....	35	43	Checking the pressure control	50
	36.5 Table of malfunctions.....	36	43.1	Manual - "0" - Automatic switch	50
37	Troubleshooting.....	37	44	After performing maintenance.....	50
	37.1 Clearing hose blockages	37	45	Disassembly	51
38	End of work.....	38	45.1	Safety.....	51
	38.1 End of work or interruption.....	38	45.2	Disassembly.....	52
	38.2 Removing conveying vessel	39	45.3	Disposal	52
39	Cleaning conveying system.....	39	46	Index.....	53
	39.1 Cleaning.....	39			



2 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: SILOJET
Device type: Pneumatic conveying system
Serial number:
Guaranteed sound power level: 101 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, Technical department, Einersheimer Straße 53, 97346 Iphofen, Germany.

Iphofen, Germany

Dr York Falkenberg
 General Manager
 Information on signatory

Place and date of issue

Name and signature

3 Testing

3.1 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.

3.2 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.

This heading contains test suggestions for the annual inspection by a specialist according to BGR 183 for the SILOJET.

https://www.pft.net/de/mischen-foerdern/foerderanlagen/silotechnik/silojet.html#showtab-tab3435639_4

Highlights	Beschreibung	Einsatzgebiete	Downloads
Downloads			
Bezeichnung ↕	Ausgabe ↕	Dokumententyp ↕	
SP24 SILOJET III T	Feb. 2020	Sachkundigenprüfung	 PDF 

4 General information

4.1 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.

4.2 Keep the manual for later use

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



4.3 Layout

The operating manual is comprised of 2 booklets:

- Part 1: Safety
 - General safety instructions for item number 00132670
- Part 2: Overview, operation, servicing (this booklet).

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

5 Spare part lists

<https://www.pft.net/de/service/downloads/index.php?t=0&p=2-6-3&s=0&q=>

DOKUMENTEN CENTER

<p>Finden Sie mit Hilfe unseres Assistenten gezielt Downloads</p> <p>Bedienungsanleitung </p> <p>Förderanlagen </p> <p>SILOJET </p>	<p>Wählen Sie Ihre bevorzugte Sprache für Downloads aus</p> <p>Alle Sprachen </p>	<p>Suche nach Downloads</p> <p>Suche </p>
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SUCHERGEBNIS

Sortieren nach 

Es wurden 3 Dokumente gefunden

Bezeichnung ▲	Stand ◆	Dokumententyp ◆
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BAL04_de PFT SILOJET III T

Dez. 2020

Bedienungsanleitung



6 QR code from 02.2021



NOTE!

You are directly forwarded to the document centre via the QR code on the switch cabinet door. You are able to download the appropriate operating instructions there.



7 Equipment or accessories

You can find equipment or accessories for the machine in the Internet at

<https://www.pft.net/de/mischen-foerdern/foerderanlagen/silotechnik/silojet.html>

or at your PFT building machinery dealer'

AUSSTATTUNG / ZUBEHÖR

Ausstattung



SILOJET 145
 400 V, 3 Ph, 50 Hz

Art.-Nr.:
00105407

Grundausrüstung:

Fördergefäß – tragbar

- Geeignet für Container/Siloauslaufflansch
Ø 250 mm
- Fassungsvermögen: 55 Liter / Gewicht: 86 kg /
Höhe: 980 mm

▼ mehr anzeigen

Notwendiges Zubehör zur Inbetriebnahme

Nützliche Extras

<https://pft-iphofen.1kcloud.com/ep1Dz6fF/#0>



**MASCHINEN- UND
GERÄTEKATALOG**

Inhaltsverzeichnis

-  Pneumatische Förderanlagen
Seite 5
-  Übersicht Technische Daten
Seite 6
-  SILOMAT trailer
Seite 14
-  SILOMAT trans plus 100/140
Seite 15
-  SILOMAT trans plus bag 140
Seite 16
-  SILOMAT trans plus DF Q 100/140
Seite 17
-  SILOJET | SILOJET XXL
Seite 18
-  SILOMAT XXL-D
Seite 19
-  Zubehör Inbetriebnahme | Extras
Seite 20

8 Technical data

8.1 General specifications

SILOJET III T, 400 V, 3 Ph, 50 Hz, 8,1 kW RAL9010	00045837	
SILOJET III T, 400 V, 3 Ph, 50 Hz with automatic ventilation RAL1015	00106521	
SILOJET 140, 400 V, 3 Ph, 50 Hz, 8,1 kW RAL2004	00105407	
Specification	Value	Unit
Weight	329	kg
Length	1280	mm
Width	570	mm
Height	650	mm
Conveying vessel	86	kg
Compressor KDT3.140 / KDT3.145	130	kg
Frame cpl.	78.5	kg
Control box	18.2	kg

8.2 Connected load

Electrical

Specification	Value	Unit
Tensioning 3Ph./ 50 Hz	400	V
Energy consumption (approx.)	19 / 17	A
Power consumption	8.3 / 7.7	kW
CEE 5-pin connection	32	A
Fuse (minimum)	32 A type C	



Fig. 1: Control box motor protection switch item no. 00046174

	Service	Setting value	Designation
Compressor motor KDT3.140	8.1 kW	18 A	Q2
Drive	0.18 kW	0.65 A	Q3



Sound power level



Fig. 2: Control box motor protection switch item no. 00681407

	Service	Setting value	Designation
Compressor motor KDT3.145	7.5 kW	16.2 A	Q2
Drive	0.18 kW	0.65 A	Q3
Control transformer		0.63 A	Q4

8.3 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

8.4 Output values

Specification	Value	Unit
Conveying capacity at 140 m (approx.)	20	kg/min
Conveying distance in m*	140	Metres
Max. operating pressure	2.5	bar
Air capacity of compressor	122	Nm ³ /h

* Approximate value according to material quality, material weight and conveying height

9 Sound power level

Guaranteed sound power level LWA

101 dB(A)

10 Vibrations

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

11 Design and function

11.1 Overview of the assemblies

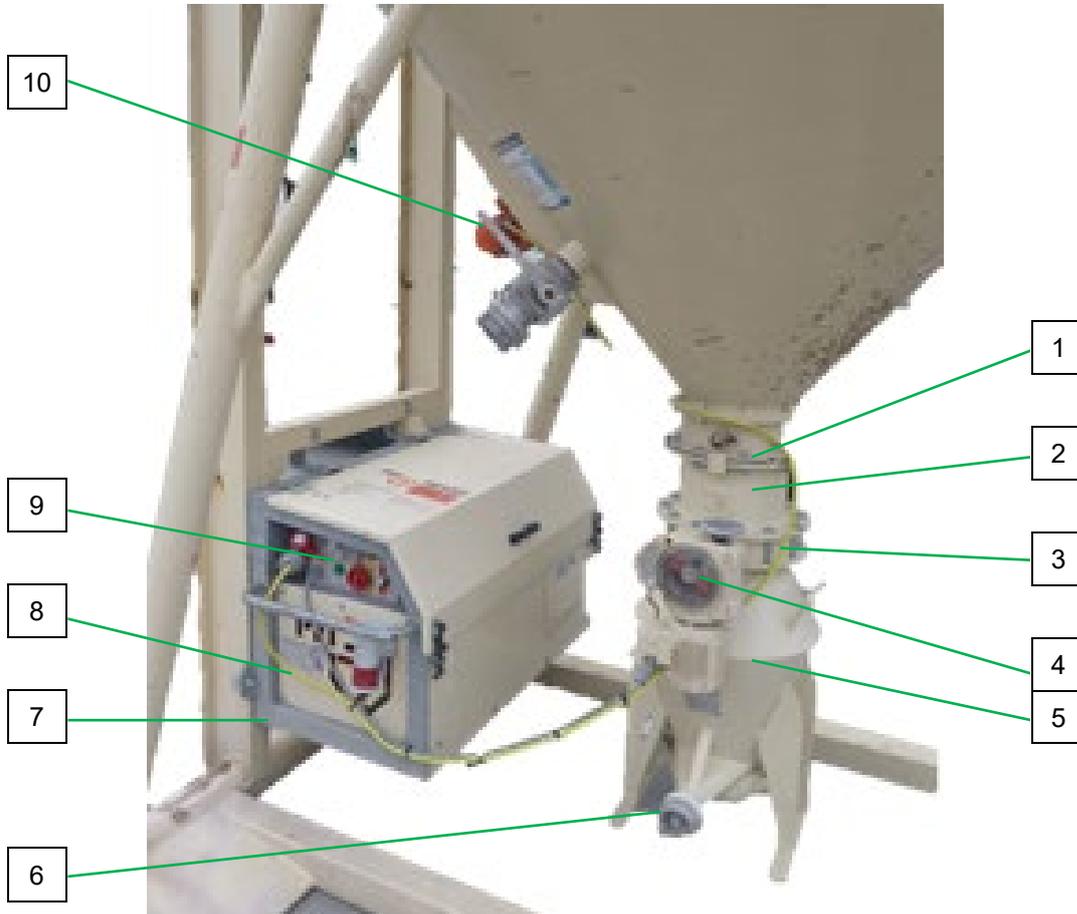


Fig. 3: Overview of the assemblies

- | | |
|---------------------------|---|
| 1. Silo flap | 6. Material hose connection to plastering machine |
| 2. Intermediate piece | 7. SILOJET frame |
| 3. Block flap | 8. Rotary compressor KDT 3.140 / 3.145 in the frame |
| 4. Motor and drive type 6 | 9. Control box in the frame |
| 5. Conveying vessel | 10. Vibrator |

12 Quality control sticker

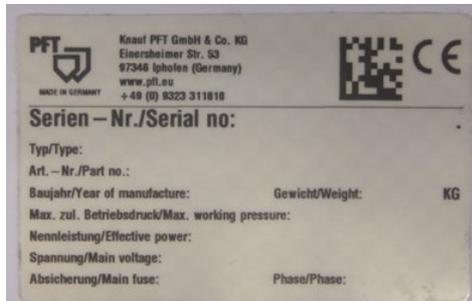


Fig. 4: Quality control sticker

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

13 Type plate



The type plate can be found in the control box and contains the following details:

- Manufacturer
- Type
- Year built
- Machine number

Fig. 5: Type plate

14 Rotary compressor / pressure control

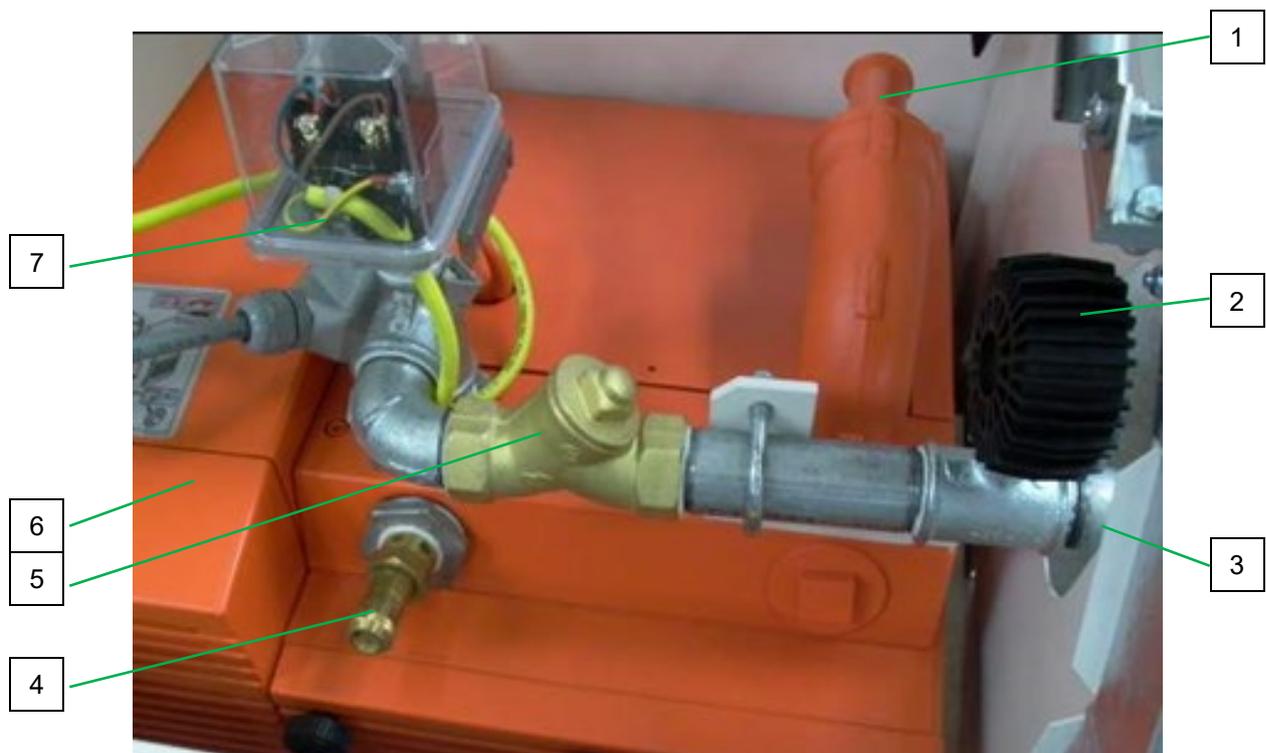


Fig. 6: Overview of rotary compressor / pressure control

- | | |
|---|--|
| 1. Sound absorber | 5. Counterflow valve 1" Y-piece |
| 2. Gauge (0-4 bar) | 6. Rotary compressor KDT 3.140 / 3.145 |
| 3. Conveying air connection to conveying vessel | 7. Pressure switch (0.22-4 bar) |
| 4. Safety valve R 1/2" 2.5 bar | |

15 Control box item no. 00046174

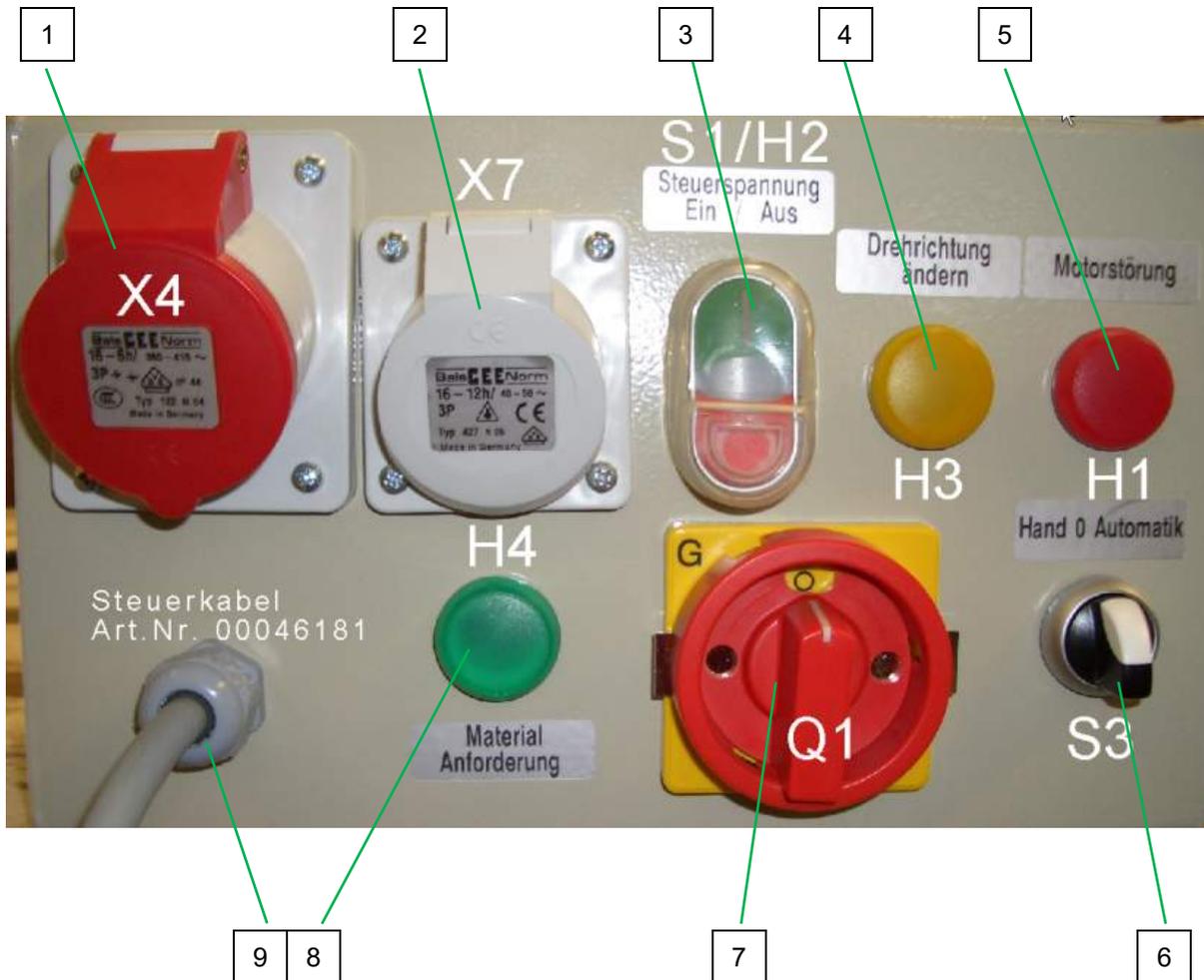


Fig. 7: Overview of control box and connections

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Vibrator connection socket 2. Level sensor connection socket 3. Control voltage “ON-OFF” pushbutton 4. Yellow change direction of rotation indicator lamp 5. Red motor protection switch activated control lamp | <ol style="list-style-type: none"> 6. Program switch manual - “0” - automatic 7. Main reversing switch 8. Material request 9. Drive control cable |
|--|---|

16 Control box SILOJET III plus item no. 00681407

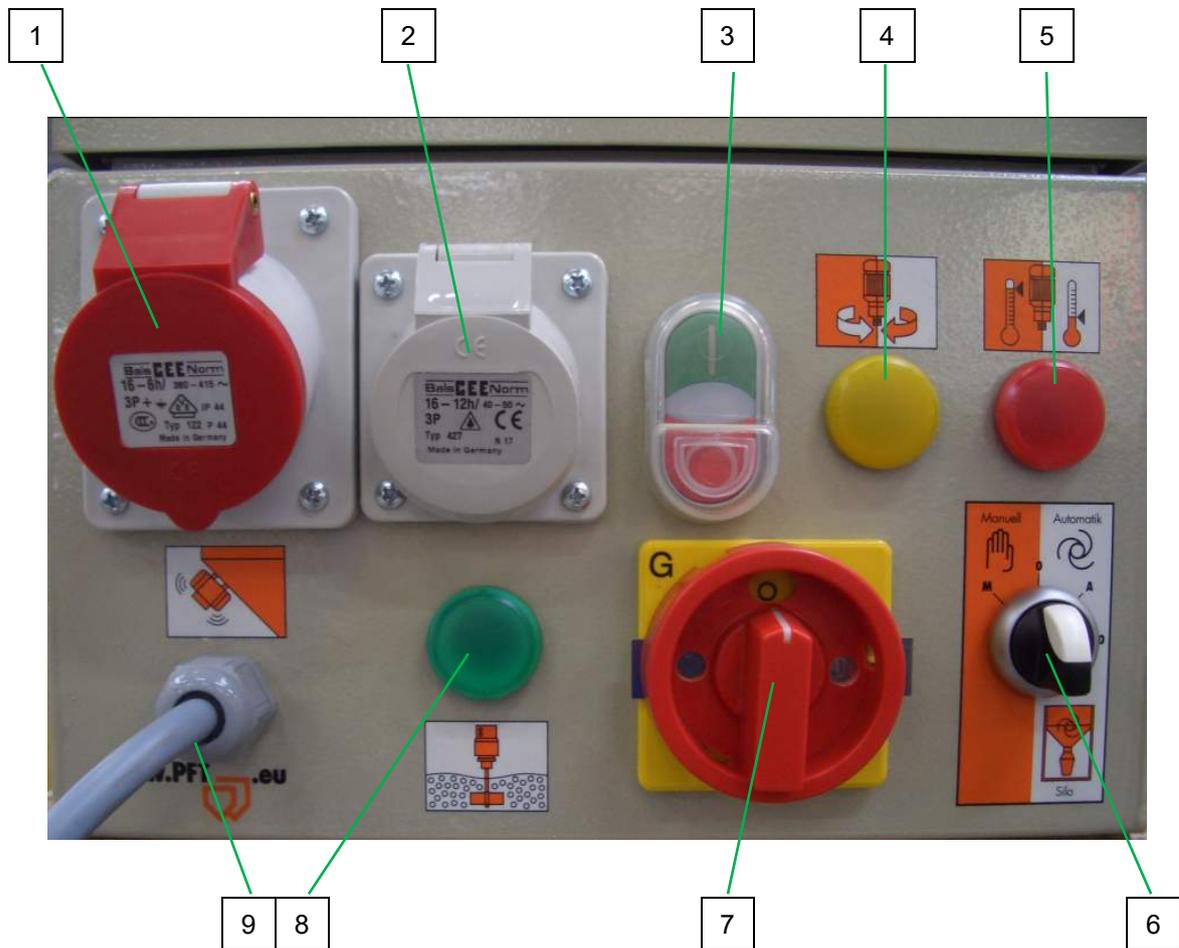


Fig. 8: Overview of control box and connections

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Vibrator connection socket 2. Level sensor connection socket 3. Control voltage “ON-OFF” pushbutton 4. Yellow change direction of rotation indicator lamp 5. Red motor protection switch activated control lamp | <ol style="list-style-type: none"> 6. Reversal switch Manual - “0” - Automatic – ventilating the silo 7. Main reversing switch 8. Material request 9. Drive control cable |
|--|---|

17 SILOJET III T conveying vessel

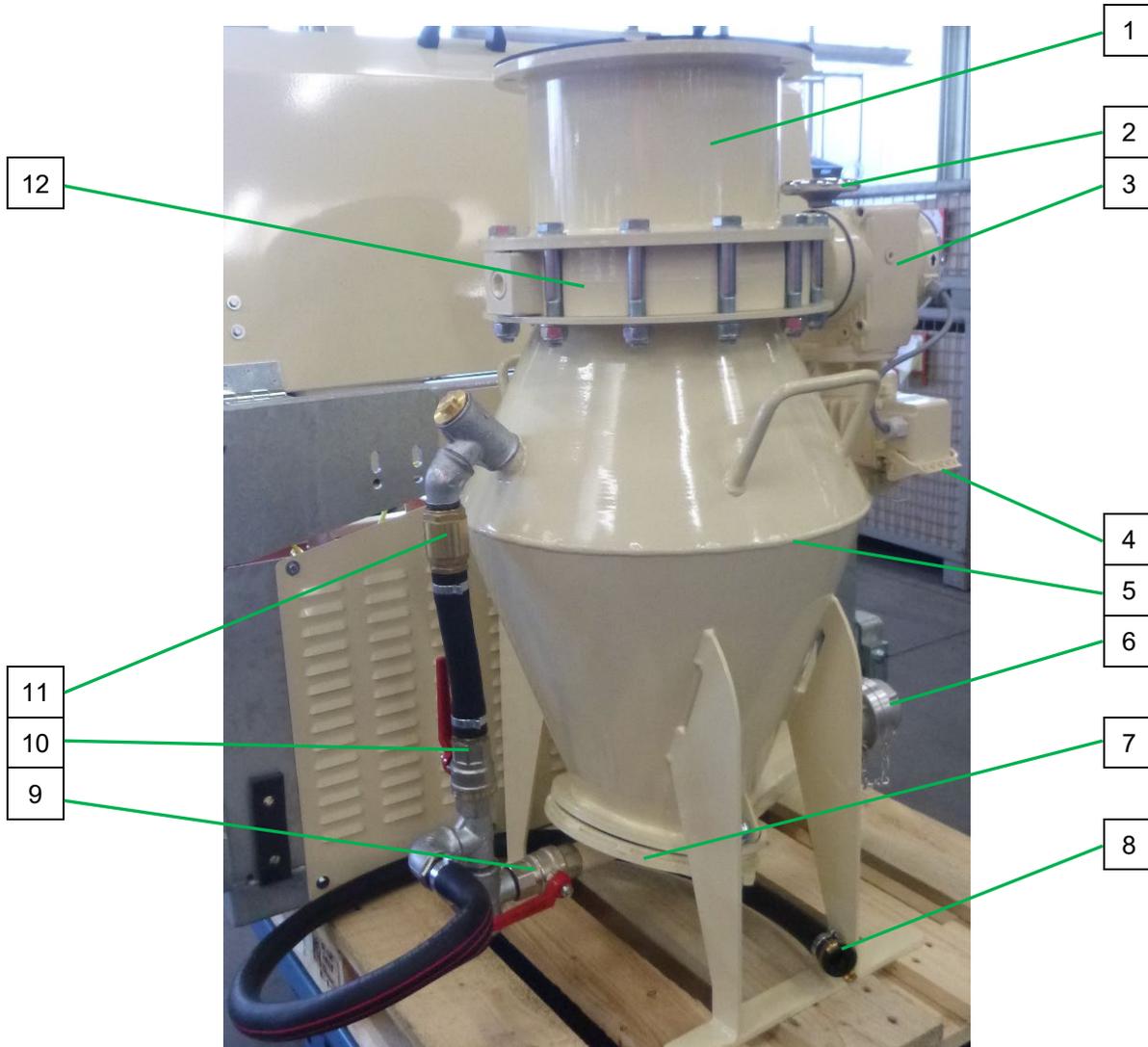


Fig. 9: Overview of SILOJET III T conveying vessel

- | | |
|--|---|
| 1. Intermediate piece for conveying vessel | 7. Connection of air from rotary compressor |
| 2. Handwheel for shut-off valve
"Open – Closed" | 8. Bottom of conveying vessel |
| 3. Motor and drive type 6 | 9. Conveying air "Open – Closed" |
| 4. Control cable connection | 10. Conveying air bypass "Open – Closed" |
| 5. Conveying vessel | 11. Counterflow valve |
| 6. Material hose connection to
cleaning machine | 12. Shut-off unit NW 250 |

18 Operating modes

18.1 SILOJET III T RAL9010 item number 00045837



Fig. 10: Operating modes of rotary compressor

The rotary compressor can be operated in three different modes:

Switch position “0”

Rotary compressor is deactivated.

Switch position “AUTOMATIC” (to the right)

Rotary compressor runs when the rotary wing sensor requests material.

Switch position “MANUAL” (to the left)

The rotary compressor runs continuously in “Manual” mode.

18.2 SILOJET III T RAL1015 with silo ventilation item number 00106521



Fig. 11: Operating modes of rotary compressor

The rotary compressor can be operated in four different modes:

Switch position “0”

Rotary compressor is deactivated.

Switch position “M” (Manual)

The rotary compressor runs continuously in “Manual” mode.

Switch position “A” (AUTOMATIC)

Rotary compressor runs when the rotary wing sensor requests material.

Switch position “S” (SILO)

Rotary compressor ventilates the silo.



NOTE!

Switch position “S” (silo ventilation)

The silo can be additionally ventilated using this position.

- When the shut-off valve is open, the rotary compressor blows a part of the conveyor air into the silo.
- The remaining air continues to convey material to the plastering machine.

19 SILOJET III plus control box operating modes from 02.2021

19.1 SILOJET III plus control box item number 00681407 with potentiometer for time-delay relay



Fig. 12: Transport time

Potentiometer with time setting and delivery reach:

- Set the approximately planned delivery reach on the potentiometer on the SILOJET control box door.



NOTE!

- The conveying procedure is additionally monitored via the pressure switch in the pressure control.
- If the pressure falls below 0.5 bar, the conveying system stops the conveying cycle.

20 Function

20.1 Function description and operating sequence

As soon as the level sensor of the plastering machine reports “empty”, the flap opens (“open” position) and the conveying vessel is filled with approx. 62 l of dry material while the silo outlet flap is open.

The vibrator runs at the same time in order to support the flow of material from the silo / container.

When the filling time has elapsed, the flap closes again (“closed” position). The conveying vessel is now sealed pressure-tight to the silo / container.

The rotary compressor now begins to run and blows air into the conveying vessel through the bottom of the emulsifier with a membrane. In this way, the mortar is aerated and pressed through the extraction connection of the conveying vessel into the conveying line and on to the plastering machine. Pressure is built up in the conveying line, which is monitored by the pressure switch. If the pressure drops below the set value of 0.5 bar, then the conveying vessel and conveying line are empty. The system completes the conveying cycle and shuts down. As soon as there is a new signal from the level sensor at the control box of the SILOJET III T, a new conveying cycle is started.

The distribution of air can be set by hand using the bypass on the conveying vessel.

The system can then be adapted to suit the individual material (specific weight).



20.2 Brief description

The conveying system **PFT SILOJET III T** is a fully automatic conveying system for transporting ready-mix dry mortar from the silo / container to the plastering machine.

21 Safety regulations



Important!

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

22 Intended use of rotary compressor

22.1 Purpose of rotary compressor

The equipment has been designed and constructed only for the intended use described below.



Caution!

The rotary compressor is only intended for generating compressed air and may only be used with connected work devices. Another use or a use extending beyond this, such as with freely accessible and/or open hoses or pipes is deemed to be unintentional. Connected work devices or system parts are to be designed for the maximum generated pressure of 2.5 bar.

The rotary compressor should only be used if it is in technically perfect condition and in compliance with the regulations. Pay attention to safety and operating instructions.

In particular faults that can impair safety must be rectified immediately before the rotary compressor is put back into operation.

22.2 Safety devices of rotary compressor



WARNING! **Danger of death due to non-functioning safety devices!**

Safety devices provide the highest possible levels of operational safety. Even if safety devices make work processes more complicated, they must never be disabled. Safety is only assured when the safety devices are intact.

Therefore:

- Check that the safety devices and functional and correctly installed before starting work.
- Never deactivate safety devices.
- Do not block the access to safety devices such as Emergency OFF pushbuttons, pull cords, etc.

22.3 General set-up of the rotary compressor

The rotary compressor corresponds to the national and international safety regulations and can therefore also be used in the open air. Areas with as clean and dry air as possible should be preferred. Make sure that the device can suck in the air unimpeded. This applies in particular when an installation is intended.

The rotary compressor must be set up so that no hazardous admixtures, such as solvents, vapours, dusts or other harmful substances, can be sucked in. Set-up is only permitted in places in which an explosive atmosphere is not expected to occur.

The characteristic data are valid up to a height of 800 m above sea level.

22.4 Hot surfaces on the rotary compressor

General information



WARNING! **Risk of injury due to hot surface!**

Surface temperatures can reach up to 100°C during operation of the rotary compressor. It must therefore be ensured that the device does not come into contact with parts of the body during use as well as for a period of time afterwards appropriate to the degree of heating.



23 Transport, packaging and storage

23.1 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.
- When using ropes and chains in construction operations, the provisions of the accident prevention regulation "Load suspension devices in hoist operation" (VBG 9a) must be observed. Information on this is given below where ropes and chains are used as slings.

23.2 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.

23.3 Transport by car or truck



DANGER!

Risk of injury due to unsecured load!

All persons involved in the loading are responsible for securing the load properly during road transport. The relevant vehicle driver is responsible for the operational loading.



Fig. 13: Truck transport



NOTE!

Truck transport:

Pay attention before each journey:

- Close the switch cabinet door.
- Secure the conveying hoses with a strap.
- Secure or remove loose parts.
- Close conveying vessel and silo with blind cap
- Check for loose bolts or nuts.

Transportation of operational machines



DANGER!

Danger of injury due to escaping dry material!

Injury to the face and eyes can occur.

Therefore:

- Ensure the hoses are depressurised before opening the couplings.

Carry out the following steps before transporting:

1. from main power cable.
2. Remove material hoses.



24 Set up silo with SILOJET



Fig. 14: Setting up SILOJET



DANGER!

Risk of accident due to tipping silo!

Set up the silo or container with machine on a level and well secured surface.

It must be ensured that the subsoil does not give way due to the load on the silo and that the silo cannot tip over as a result.

Place silo with the machine where the machine cannot be hit by any falling objects.

The controls must be freely accessible.

24.1 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.

25 Operation

25.1 Safety

Personal protective equipment All machine operators must wear the following protective equipment:

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



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 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 101 dB (A) in close proximity to the machine. Close proximity is defined as the area within 5 metres of the machine.



26 Preparing the machine

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



Warning!

SILOJET systems for free-fall silos may only be connected to **unpressurized** silos / containers.

The **dust removal lines** of the silo / container must be open und unclogged.



NOTE!

To avoid there being **condensation water** in the system, prior to starting work:

- Detach the air hose from the conveyor block, starting at the rotary compressor.
- Switch on the rotary compressor and observe the direction of rotation.
- Air must escape from the C coupling (remove the air hose). If the direction of rotation is incorrect, turn the main reversing switch to the zero position.
- Push the direction plate to the opposite side and set the main switch in the other direction. The direction of rotation is now changed.
- Let the rotary compressor run for approx. 1-2 minutes.
- During this time, kink the hose several times and release it again after a short build-up of pressure.
- Repeat the procedure until no more water spray emerges from the hose.
- Switch off the system using the red control voltage "OFF" pushbutton.

27 Mains voltage connection



Fig. 15: Connecting the power

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".

Ensure that power cables are not damaged when connecting the machine.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.

28 Preparing conveying vessel

28.1 Connecting conveying vessel to the silo

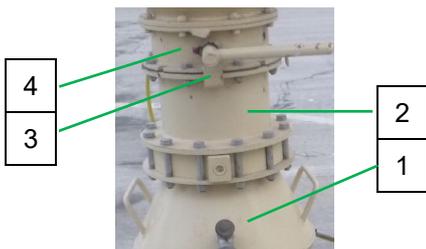


Fig. 16: Connecting the conveying vessel

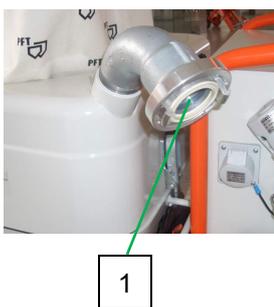
1. Attach conveying vessel (1) with intermediate piece (2) into assembly aid (3) and screw on the silo outlet flap (4).



NOTE!

Ensure that the silo / container flap is closed correctly so that no more material can continue to be conveyed.

28.2 Connecting conveying hoses



1. Connect conveying hose to the coupling (1) of the blow-in hood and to the conveying vessel (2).

Fig. 17: Connecting conveying hose



Preparing conveying vessel



3



4

2. Couple air hose (3) from the conveying vessel to the air fitting (4) from the rotary compressor.

Fig. 18: Connecting the air hose

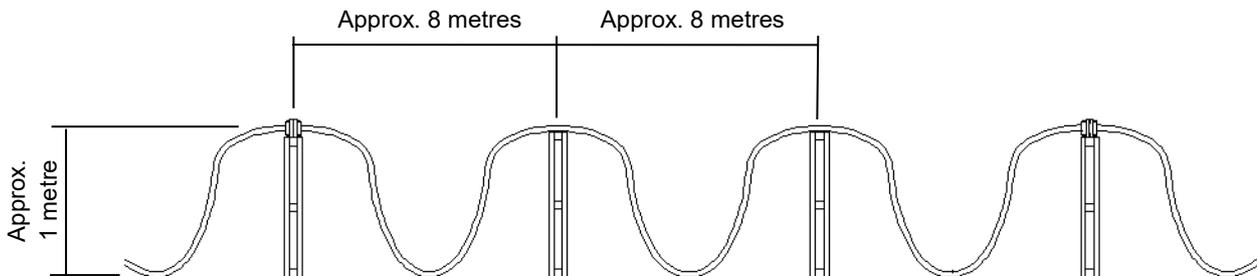
28.3 Laying conveying lines



NOTE!

To ensure that the system works optimally over long conveying distances, the conveying line should not be laid out flatly.

We therefore recommend that you create inclinations in the hose couplings using such as upright pallets.



NOTE!

Where the conveyor route is horizontal, at least three barrages should be incorporated every 25 metres. Clogging is prevented as a result.

Connections

29 Connections

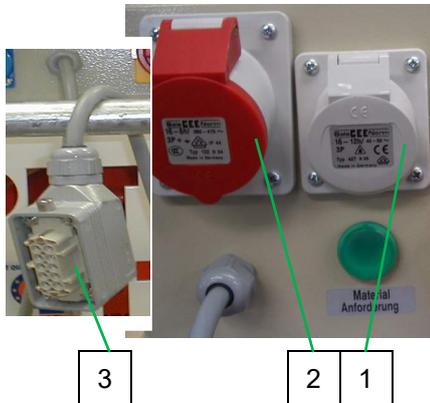


Fig. 19: Connections

1. Connect the control cable for the rotary wing sensor with the CEE panel mounted socket (3x16 A, white) (1).
2. Connect the power supply for the vibrator (2).
3. Control cable (3) to the block flap servo motor.



DANGER!
Danger of death due to electric current!

Ensure that power cables are not damaged when connecting the machine.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems, page 13.



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 via the corresponding control box of the machine.

Connection plugs and connecting elements must be free of any tensile and rotary forces.

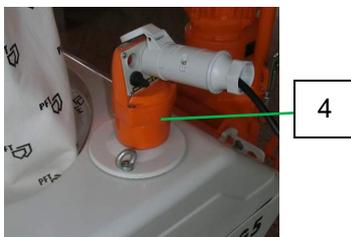


Fig. 20: Connecting the control cable

4. Connect the control cable from the CEE panel mounted socket (1) to the rotary wing sensor of the injection hood (4).

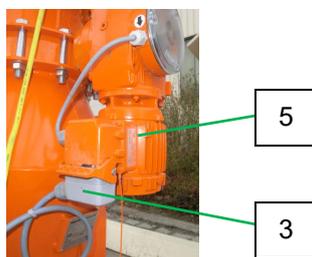


Fig. 21: Connecting the control cable

5. Connect the 10-pin control cable (3) from the control box to the servo motor of the block flap (5).



30 Opening the silo outlet flap

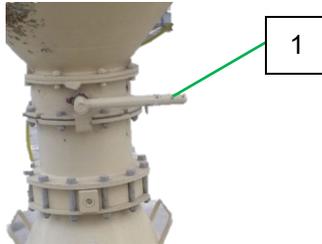


Fig. 22: Opening the silo outlet flap

1. Open the silo outlet flap (1) before switching on the conveying system.

31 Hazardous dust



Fig. 23: 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).

32 Switching on

32.1 Main switch

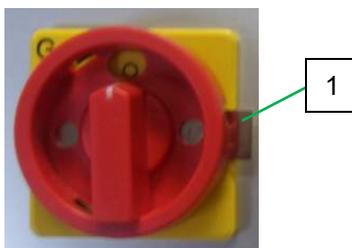


Fig. 24: Main switch

Switch on the main reversing switch.



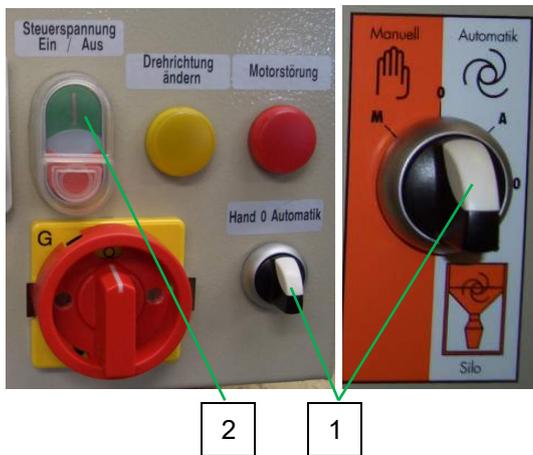
NOTE!

Check the direction of rotation. Pay attention to the direction arrow on the motor.

If the direction of rotation is incorrect, the following steps must be performed:

The main reversing switch is locked in the zero position by pushing the selector switch (1) 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. A digit is printed on the lamella which indicates the position in which the switch is locked.

32.2 Conveying procedure



1. Switch the manual - 0 - automatic switch (1) to the “AUTO” position.
2. Switch on the machine using the green ON / OFF pushbutton (2).
3. The SILOJET system starts the conveying procedure.



NOTE!

When the block flap is closed, the SILOJET system switches to the emptying phase. All remaining material is removed from the conveying hoses by the SILOJET system.

Fig. 25: Conveying procedure

33 SILOJET III plus control box conveying procedure from 02.2021



NOTE!

From 02.2021 a potentiometer is fitted on the control box door of the SILOJET III plus using which the approximate delivery reach can be set.

Fig. 26: Setting delivery reach



33.1 Empty reading of level sensor

As soon as the level sensor reports "EMPTY":

- the shut-off valve opens.
- during the defined filling time (6 seconds), the conveying container is filled with approx. 62 litres of dry material.
- at the same time, the vibrator attached to the silo runs.
- the shut-off valve closes after the filling time has elapsed and the compressor starts.
- the compressor is switched off after the conveying time has elapsed and the pressure has dropped below 0.5 bar (if the hose is empty).
- The system waits for a new signal to repeat the conveying cycle for the fully automatic supply of the plastering machine.



NOTE!

A level sensor is found in the injection hood of the plastering machine which signals the material requirements to the SILOJET system over the control line.

The conveying system is controlled by the material consumption of the plastering machine.

The PFT SILOJET III T can be connected to any free-fall silo, and can feed the mixing pump (e.g. PFT G 4) with approx. 20 kg of dry mortar per minute to a height of 140 m.

The shut-off valve is opened pneumatically when the level sensor in the injection hood shows an empty reading. When a full reading is detected, the shut-off valve is closed and the conveying lines are emptied.

33.2 Problematic materials for conveying

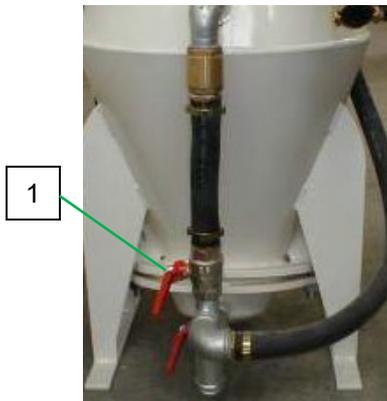


Fig. 27: Bypass



NOTE!

When material is used that is difficult to convey (e.g. Cement plaster), the conveying air must be set optimally using the taps.

By slightly opening the tap leading upwards, part of the air is led directly into the outlet of the conveying vessel (bypass system) and supports the conveying of the material.

Rule of thumb:

The heavier the material, the more the tap of the air line leading upwards must be opened.

33.3 Switching off

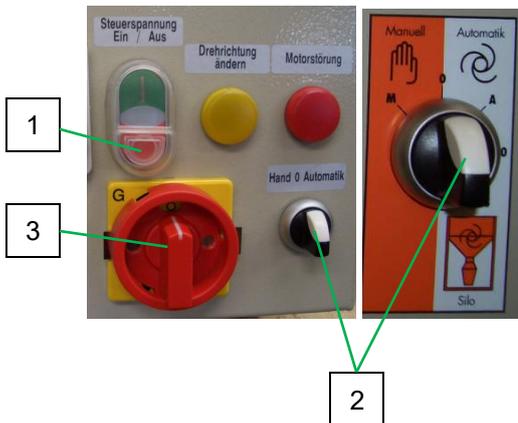


Fig. 28: Switching off

1. Switch off the system by pressing the red pushbutton(1) "ON/OFF".
2. Turn the manual - "0" - automatic switch (2) to the "0" position.
3. Turn the main reversing switch (3) to the "0" position.
4. Disconnect the electrical cables and hoses.



WARNING!

When doing any kind of work on the SILOJET system, you should make sure that the conveying system is depressurized and de-energized.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.



34 Switching off in an emergency



Fig. 29: Shutting down

After the emergency response

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:

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.



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.

Therefore:

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

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

35 Dealing with a power failure

35.1 De-energising the system



Fig. 30: Switching off



NOTE!

The system is de-energised by turning the main reversing switch to the "0" position.



Fig. 31: Interrupting the power supply



DANGER!
Danger of death due to unauthorised restarting!

When working on the SILOJET system, 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 on again, where necessary, interrupt the power supply by removing the connection cable.
- For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems, page 13.



NOTE!

The SILOJET system is equipped with a starting lock. After a power failure, the system can be restarted by pressing the green control voltage "ON/OFF" pushbutton.

36 Troubleshooting

36.1 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 OFF 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.

36.2 Fault displays

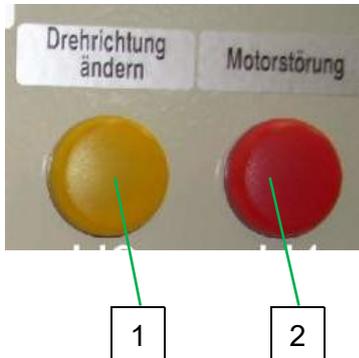


Fig. 32: Fault displays

36.3 Malfunctions

36.4 Safety

Personal protective equipment

Personnel

The following equipment indicates a fault:

Pos.	LED signal	Description
1	Control lamp yellow	Lights up in case of wrong motor rotation direction. Lights up when a phase is missing in the feed line.
2	Control lamp red	Lights up where there is a motor protection switch malfunction.

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.

Wear the following protective equipment for all maintenance work:

- Protective work clothing.
- Protective goggle, protective gloves, safety shoes, ear protection.
- 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.

36.5 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
	Direction of rotation control lamp (yellow) lights up	Change the direction of rotation, move the metal bar on the main reversing switch in the opposite direction	Operator
	Motor protection switch triggered	Turn the motor protection switch to the position "1" in the control box	Service technician
	Operating button "ON" not pressed	Press operating button "ON"	Operator
	Contactors is defective	Replace the contactors	Service technician
	Fuse is defective	Replace the fuse	Service technician
Program does not start	Microfuse on transformer is faulty	Replace the microfuse	Service technician
	Control cable, level sensor or manual - 0 - automatic switch is defective	Check the parts and replace if required	Service technician
	Conveying time or request is defective	Check the parts and replace if required	Service technician
	End switch on drive defective or misaligned	Replace or readjust the end switch	Service technician
	Filter hoses on the plastering machine are dirty or stuck together	Tap contents out of the filters and replace if required	Operator
Compressor heats up excessively	Drive control disc incorrectly set	Correctly set control disc	Service technician
	Air suction filter is dirty	Clean the filter	Operator
Program runs but compressor does not	Cable, motor protection switch or motor is defective	Replace the parts	Service technician
	Conveying line laid out incorrectly	Create inclinations (e.g. using pallets)	Operator
	Pressure control is misaligned	See setting values for pressure switch	Service technician

Malfunction	Possible cause	Solution	Performed by
Not enough material in the machine	Material does not flow out of the silo	Connect the vibrator	Operator
	Container flap is closed	Open the container flap	Operator
	Level sensor is too long	Attach the rotary wing at a higher position	Operator
Red control lamp lights up to show fault	Filling time set too short	Check K5	Service technician
	Fault in sequence program	Check the program settings	Service technician

37 Troubleshooting

37.1 Clearing hose blockages

- Performed by operator.
- Additional safety equipment:
 - Face guard



Fig. 33: Closing the silo outlet flap



NOTE!

Close the silo outlet flap (1) where malfunctions occur.



Fig. 34: Switching off

1. Turn the main reversing switch (2) to the "0" position.



DANGER!

Danger due to escaping material!

Never detach hose couplings if the feed pressure has not been released. The conveyed material can escape under pressure and lead to serious injuries, especially eye injuries.

For reasons of safety, all personnel clearing blockages must wear personal safety equipment (safety goggles, protective gloves) and position themselves so as not to be hit by escaping material. Other persons are not permitted in the vicinity.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.

End of work



Fig. 35: Depressurising the system

3

2. By turning the handwheel (3), the shut-off valve of the drive is opened slightly so that the pressure in the silo / container can escape.
3. Close the shut-off valve again by turning the handwheel.
4. Carefully disconnect the conveying hoses near the blockage.
5. Shake the hose and knock the coupling against a soft surface (e.g. wood) to loosen the obstructing material and remove it from the hose.
6. Then re-couple the conveying hoses and prepare the SILOJET system for operation (connect connecting cables and switch on the main reversing switch).



Fig. 36: Manual - "0" - Automatic

4

7. Turn the manual - "0" - automatic switch to the MANUAL (4) setting. Let the rotary compressor run until the hoses are empty.
8. Switch back to automatic operation (4).

38 End of work

38.1 End of work or interruption



Fig. 37: Pulling off control plug

1

1. Close the silo outlet flap
2. Wait until the conveying vessel is completely emptied.
3. Remove the control plug (1) from the injection hood.
4. Wait until the conveying hoses are empty before proceeding.



NOTE!

The request of material from the SILOJET to the plastering machine is interrupted by removing the control plug. The SILOJET system blows the conveying hoses until they are empty and then stops the conveying procedure.



Cleaning conveying system

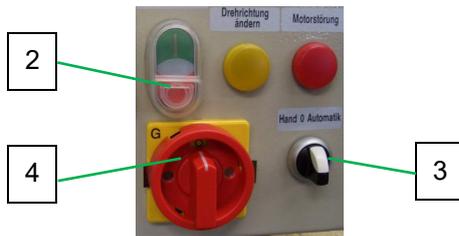


Fig. 38: End of work

5. Switch off the system by pressing the red control voltage pushbutton “ON/OFF” (2).
6. Turn the manual - “0” - automatic switch (3) to the “0” position.
7. Turn the main reversing switch (4) to the “0” position.
8. Disconnect the electrical cables and hoses at the end of work.

38.2 Removing conveying vessel



Fig. 39: Removing conveying vessel

1. Close the silo outlet flap (1).
2. Unscrew nuts (2) all around.
3. Remove bolts (3)
4. Pull conveying vessel (4) out of the assembly aid (5) and remove it from the silo / containers.

39 Cleaning conveying system

39.1 Cleaning

- Only clean the external machine parts with a damp cloth.



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 motor and control box).
- Remove all covers completely after cleaning.
- For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems, page 13.

39.2 Closing the silo outlet flap



Fig. 40: Closing the silo outlet flap

1. Close the silo outlet flap (1).
2. Blow out conveying vessel and hoses until they are empty as described in item 38.1 page 39.

Cleaning conveying system

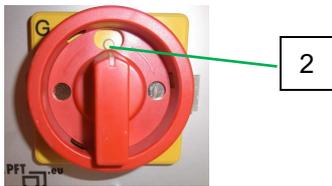


Fig. 41: Main reversing switch

- Turn the main reversing switch (2) to the “0” position.



DANGER!

When doing any kind of work on the SILOJET system, you should make sure that the conveying system is depressurized and de-energized.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.

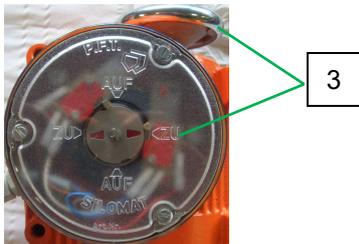


Fig. 42: Drive

- Move the drive to the “CLOSED” position by turning the handwheel (3).

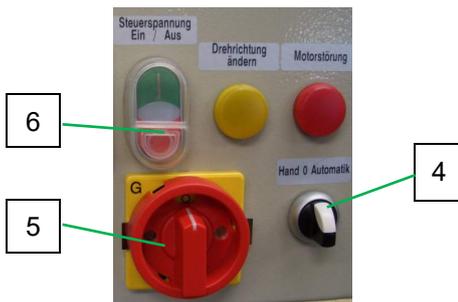


Fig. 43: End of work

- Turn the manual - “0” - automatic switch (4) to the “MANUAL” position.
- Turn the main reversing switch (5) to the “I” position.
- Press the green control voltage “ON / OFF” pushbutton (6).
- Blow out conveying vessel and conveying hoses until they are empty.
- Turn the main reversing switch (5) to the “0” position.

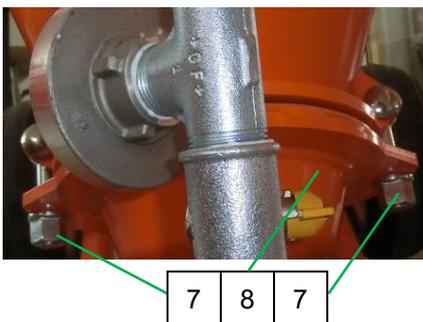


Fig. 44: Opening flanged nut

- By opening both of the flanged nuts (7), remove the bottom (8) from the conveying vessel.



39.3 Checking / cleaning emulsifying rubber

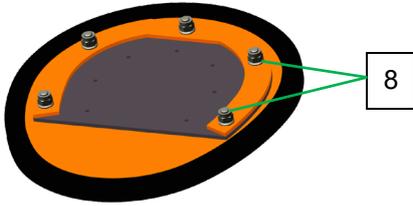


Fig. 45: Cleaning emulsifying rubber

10. Clean the emulsifying rubber and replace as necessary.



NOTE!

When inserting the membranes, ensure that the lock nuts (8) point upwards.

40 Maintenance

40.1 Safety

Personnel

- Unless otherwise stated, the maintenance work detailed here can be carried out by the machine operator.
- Some maintenance 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.

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 adequate space for assembly before starting any work.
- Keep the assembly area clean and tidy. Components and tools that are stacked on one another or left lying around can cause accidents.
- If components have been removed, ensure that they are installed again correctly, reattach all fastening elements and adhere to the specified screw tightening torques.



Fig. 46: Danger of burns



WARNING!

Risk of injury due to high temperatures!

The rotary compressor reaches high temperatures due to air compression.

Important: Danger of burns

Allow the rotary compressor to cool down before dismantling any parts.

For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.

Maintenance

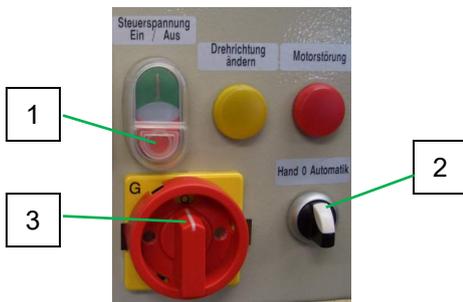


Fig. 47: Maintenance



DANGER!

When doing any kind of work on the SILOJET system, you should make sure that the system is depressurized and de-energized.

1. Switch off the system by pressing the red control voltage pushbutton “ON / OFF” (1).
2. Turn the manual - “0” - automatic switch (2) to the “0” position.
3. Turn the main reversing switch (3) to the “0” position.
4. Disconnect the electrical cables and hoses.

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.
- For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.

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.



40.2 Maintenance plan

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

Provided no increased wear can be seen during regular inspections, then reduce the required maintenance intervals according to wear appearance.

Contact the dealer in case of questions regarding maintenance tasks and intervals.

Interval	Maintenance task	To be performed by
Weekly	Cleaning the filter cartridges	Operator
After 1000 hours of operation	Lubricating the bearings	Operator
Yearly	Checking the slider width	Service technician

40.3 Lubricating KDT3.140

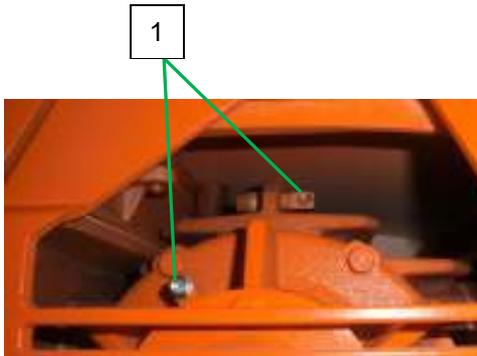
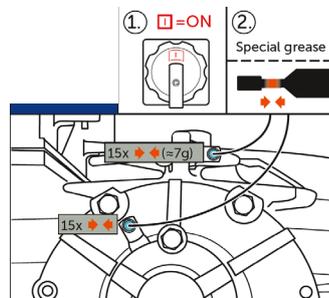


Fig. 48: Lubricating KDT3.140

1. Lubricating nipples (1) are fitted on the housing and on the side cover.
2. Lubricate each of the bearings after 1000 operating hours with the rotary compressor running.



40.4 Lubricating KDT3.145

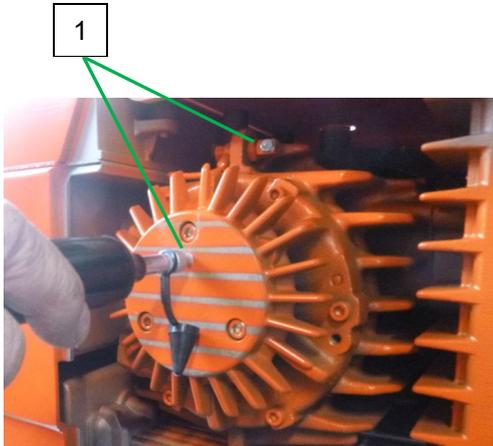
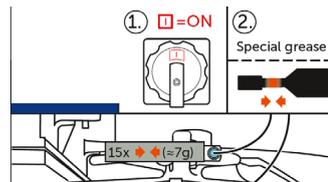


Fig. 49: Lubricating KDT3.145

1. Lubricating nipples (1) are fitted on the housing and on the bearing cover.
2. Lubricate each of the bearings after 1000 operating hours with the rotary compressor running.



41 Maintenance tasks



Fig. 50: Interrupting the power supply



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.
- Interrupt the power supply by removing the connection cable.
- For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems.



42 Clean the filter

42.1 Loosen filter cover



Fig. 51: Loosen filter cover

1. Loosen knurled screws on the filter cover and remove filter cover (1).



Fig. 52: Filter cartridges

2. Take filter cartridges C 1112/2 (2) and polyester filter cartridge (3) from filter housing.

NOTE!



Clean filter cartridges on a weekly basis.

If the filter cartridges are excessively dirty, the air output is reduced and the rotary compressor overheats.



Fig. 53: Cleaning the filter cartridges

3. Blow out the filter cartridges with dry compressed air from the inside out.
4. Replace damaged or very dirty filter cartridges.



Fig. 54: Cleaning filter housing

5. Blow out filter housing with dry compressed air.
6. Insert cleaned or replacement filters and screw on filter cover.



NOTE!

When inserting the filters, pay attention that they are in the correct order and are correctly seated.

Clean the filter

42.2 Checking slider width KDT3.140



Fig. 55: Slider width KDT 3.140

➤ Implementation by a service fitter.

Check slide width on an annual basis:



WARNING!

Damage to the rotary compressor as a result of a broken slider!

The width of the sliders (1) must not fall below the defined minimum of 32 mm (2).

1. When replacing the sliders, blow the housing out with dry air.
2. When dismantling, top up the grease in the roller bearings.

42.3 Checking slider width KDT3.145

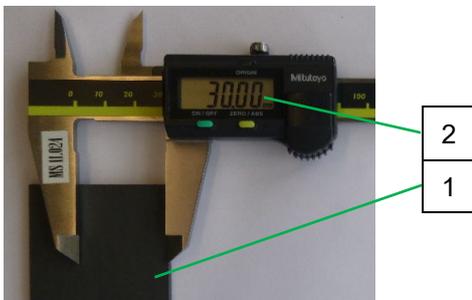


Fig. 56: Slider width KDT 3.145

➤ Implementation by a service fitter.

Check slide width on an annual basis:



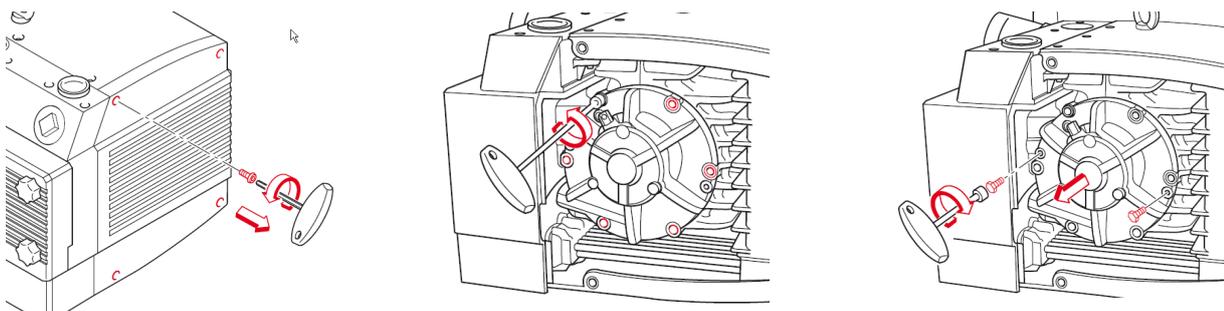
WARNING!

Damage to the rotary compressor as a result of a broken slider!

The width of the sliders (1) must not fall below the defined minimum of 30 mm (2).

1. When replacing the sliders, blow the housing out with dry air.
2. When dismantling, top up the grease in the roller bearings.

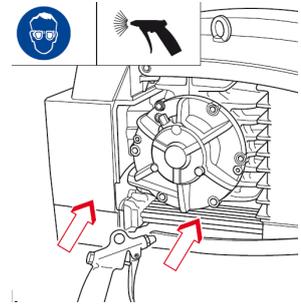
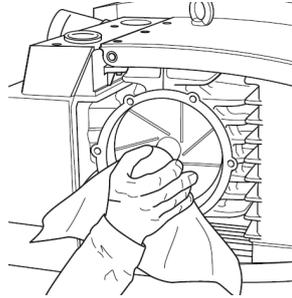
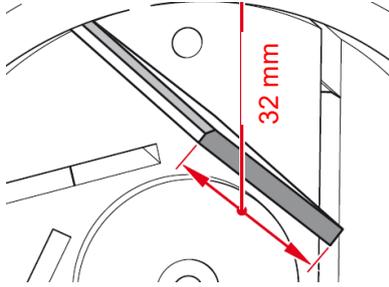
42.3.1 Screwing off side cover



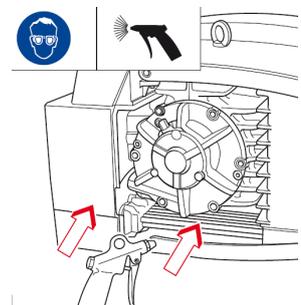
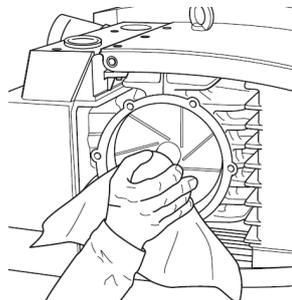
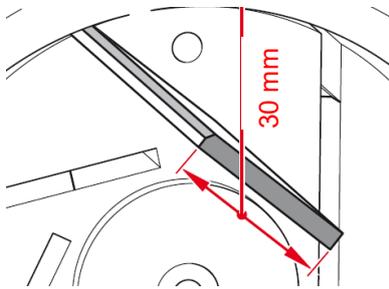


Clean the filter

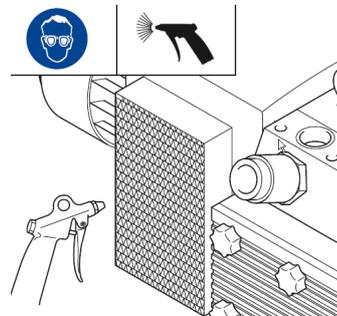
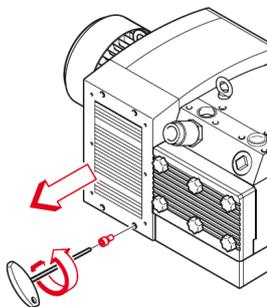
42.4 Slider width KDT3.140



42.5 Slider width KDT3.145



42.6 Cleaning cooler



42.7 When working on and in the control box

- Implementation by an electrician or a person trained in electrical engineering:



Fig. 57: Main reversing switch

1. Turn the main reversing switch to the “0” position.



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.



DANGER!

Danger of death due to unauthorised restarting!

When working on the SILOJET system, 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.
- Interrupt the power supply by removing the connection cable.
- For further instructions, refer to the booklet item number 00129465 Safety instructions manual for conveying systems



Fig. 58: Interrupting the power supply



NOTE!
 The control box may only be opened by an electrician or a person trained in electrical engineering.
 The conveying times may only be changed by an electrician or a person trained in electrical engineering while adhering to general safety instructions.

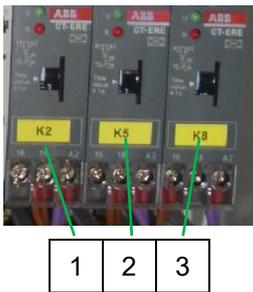


Fig. 59: Setting values for time-delay relay

Time-delay relay

Function	Designation	Setting value
(1) Request	K2	3 sec.
(2) Filling time	K5	6 sec.
(3) Conveying time	K8	18 sec.



Fig. 60: Pressure switch

Pressure switch

The machine is switched on at 0.8 bar.

NOTE!
 The pressure control is installed as standard.
 The conveying time is set to approx. 18 seconds when the pressure control is connected. The conveying procedure is only stopped when the complete air resistance drops under the set value (OFF) (i.e. the hose is empty).
 Using this device, lowered or optimal conveying times are reached, blockages are minimised and longer conveying distances are negotiated successfully.

Checking the pressure control

43 Checking the pressure control

Checking the pressure control

1. Kink the black pressure hose.
2. Let the set conveying time elapse.
3. Open the hose carefully.
4. The machine must switch off over the pressure control when the pressure is reduced.

43.1 Manual - "0" - Automatic switch



Fig. 61: Manual "0" Automatic switch

NOTE!



The Manual - 0 - Automatic switch on the system switching box also has the "MANUAL" position. In this position, the system does not run automatically. In this "MANUAL" position, the compressor runs continuously and can be used for blowing the conveying lines.

44 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.



45 Disassembly

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

45.1 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 correctly. 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.

Disassembly

Electrical system



Fig. 62: Interrupting the power supply

45.2 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.
- Remove operating and auxiliary materials as well as residual processing materials and dispose of them in an environmentally sound manner.

45.3 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.

46 Index

A

After performing maintenance 50

B

Brief description 19

C

Checking / cleaning emulsifying rubber 41

Checking slider width KDT3.140 46

Checking slider width KDT3.145 46

Clean the filter 45

Cleaning 39

Cleaning conveying system 39

Cleaning cooler 47

Closing the silo outlet flap 39

Connected load 10

Connecting conveying hoses 26

Connecting conveying vessel to the silo 26

Connections 28

Contents 3

Control box item no. 00046174 14

Control box SILOJET III plus item no. 00681407
..... 15

Conveying procedure 30

D

Dealing with a power failure 33

Dealing with malfunctions 34

De-energising the system 33

Design and function 12

Disassembly 51, 52

Disposal 52

E

EC Declaration of Conformity 5

Emergency stop 33

Empty reading of level sensor 31

End of work 38

End of work or interruption 38

Equipment or accessories 9

F

Fault displays 35

Function 18

Function description and operating sequence 18

G

General information 7

General set-up of the rotary compressor 20

General specifications 10

H

Hazardous dust 29

Hose blockages 37

Hot surfaces on the rotary compressor 20

I

Index 53

Information regarding the operating manual 7

Intended use of air compressor 19

K

Keep the manual for later use 7

L

Laying conveying lines 27

Layout 7

Loosen filter cover 45

Lubricating KDT3.140 43

Lubricating KDT3.145 44

M

Main switch 29

Mains voltage connection 26

Maintenance 41

Maintenance plan 43

Maintenance tasks 44

Malfunctions 35

Manual - 50

O

Opening the silo outlet flap 29

Operating modes 17

Operating requirements 11

Index

Operation	24	Screwing off side cover	46
OR code from 02.2021	8	Set up silo with SILOJET	23
Output values	11	SILOJET III plus control box item number 00681407 with potentiometer for time-delay relay	18
Overview of the assemblies	12	SILOJET III plus control box operating modes from 02.2021	18, 30
P		SILOJET III T conveying vessel	16
Packaging	21, 23	SILOJET III T item no. 00045837	17
Periodic inspection	6	SILOJET III T RAL1015 with silo ventilation item number 00106521	17
Personnel		Slider width KDT3.140	47
Disassembly	51	Slider width KDT3.145	47
Initial start-up	35	Solving malfunctions	37
installation	35	Sound power level	11
Maintenance	41	Spare part lists	8
Preparation of the machine	25	Storage	21
Preparing conveying vessel	26	Switching off	32
Pressure control	50	Switching on	29
Problematic materials for conveying	32	T	
Protective equipment		Table of malfunctions	36
installation	35	Technical data	10
Operation	24	Testing	6
Purpose of rotary compressor	19	Testing by machine operator	6
Q		transport	21
Quality control sticker	12	Transport by car or truck	22
R		Transport checklist	22
Removing conveying vessel	39	Troubleshooting	34
Rotary compressor / pressure control	13	Type plate	13
S		V	
Safety	24, 35, 41, 51	Vibrations	11
Safety devices of rotary compressor	20	W	
Safety instructions for transport	21	When working on and in the control box	48
Safety regulations	19		





PFT - ALWAYS AT YOUR SITE



Knauf PFT GmbH & Co. KG
Postfach 60 97343 Iphofen
Einersheimer Straße 53 97346 Iphofen
Germany

Tel. +49 9323 31-760

Fax +49 9323 31-770

Technical hotline: +49 9323 31-1818

info@pft.net

www.pft.net