
Zellofant M95 insulation material processing machine



Operating instructions

Before using the machine: please read the operating instructions thoroughly and take note of the safety instructions, to exclude possible hazards. Keep the operating instructions in a safe place for future reference. Extra copies of these operating instructions can be ordered from the manufacturer.

These instructions apply for the following machines:

- M95-230V-3,6kW
- M95-2x230V-4,7kW
- M95-400V-4,7kW
- M95-400V-6,7kW

Version: See name plate



1 Important safety instructions

This insulation material processing machine is equipped with moving parts and electrical components. Considerable hazards for humans and health, including serious injuries, can arise as a result of incorrect operation or non-observance of the safety instructions.



To prevent serious physical injuries or considerable damage to plant and property, only qualified persons may work on the machine.

Before any commissioning or maintenance work, these persons must have successfully completed a recognised training course on insulation material processing on the construction site. In addition, a briefing on operation of the machine must have been held. Anyone working on the machine must be familiar with the relevant sections in these operating instructions. Take note of the following important safety instructions:

1.1 Informal instructions

- Read and follow the operating instructions.
- Obey all warning and hazard instructions on the machine and in the operating instructions. The essential information needed for safe operation of the machine is contained in these operating instructions.
- The operating instructions must always be kept at the point of use of the machine.
- All safety and hazard instructions on the machine must be maintained in a legible condition.
- Do not make any constructional modifications to the machine. A modification can cause new safety risks and invalidate any warranty claim.

1.2 General hazard information

- The machine may only be used, operated and run by qualified specialist staff and for the intended purpose.
- Persons in the immediate vicinity of the machine must protect themselves against the harmful effects of any dust that may be produced. Use an effective dust extractor or wear respiratory protection.
- To exclude hazards due to incorrect operation by third parties or children, never leave the machine unattended in the ready state.
- Never reach or step into the hopper attachment or the airlock with any part of the body, or with an aid or tool
- Do not use the machine on a damp or wet base.
- Do not position the machine on an unstable base. If the machine falls over it can cause injuries and damage.

- Make sure that the machine, and particularly the hopper attachment, is free from foreign objects like stones, nails, contaminated insulation material or packaging material, for example. Otherwise, parts of the machine could be damaged.
- Only process insulation materials that are approved by the responsible building authority. Other processing materials can involve additional hazards due to ignition, electrostatic discharge or other risks.
- To exclude hazards due to incorrect operation by third parties or children, never leave the machine unattended in the ready state.

1.3 Electrical hazard instructions

- Do not establish the electrical supply until the machine is fully assembled and the hopper attachment is firmly attached to the machine base.
- Disconnect the supply and remove the control plug of the cabled or radio remote control before detaching the hopper attachment and before cleaning the machine. Do not re-establish the electrical supply until the machine is fully assembled and the hopper attachment is firmly attached to the machine base.
- Only use the mains cable supplied, with a cross-section of 2.5mm².
- Fully uncoil the mains cable from the cable drum, to avoid overheating and damage.
- To reduce the risk of electric shock, the machine may only be dismantled, maintained and repaired by qualified specialist staff. Opening the control cabinet, removing covers or the like, as well as faulty assembly of the machine, increases the danger of hazardous electric shocks and other risks.
- Use the control jack end caps provided, to prevent any accidental contact due to exposed electrical contacts.



2 Contents

1	Important safety instructions.....	2	11.7 Wet spraying	28
1.1	Informal instructions	2	11.8 TwinPack Zellofant M95	29
1.2	General hazard information.....	2	12	Technical data.....
1.3	Electrical hazard instructions.....	2	12.1	Overview
2	Contents	3	12.2	Miscellaneous data
3	Preface.....	4	12.3	Optional accessories
3.1	Service.....	4	13	Drawings.....
3.2	Copyright	4	13.1	Exploded drawings
3.3	Signs and symbols	4	13.2	Schematic diagrams
3.4	Warranty and liability	4	14	EC Declaration of Conformity.....
4	Safety instructions	5	14.1	Registration form.....
4.1	Principle.....	5	15	Index.....
4.2	Resale	5		
4.3	Intended use.....	5		
4.4	Use for other than the intended purpose...	5		
4.5	Liability disclaimer	5		
4.6	Constructional modifications	5		
4.7	Hazard sources	5		
4.8	Personal protective equipment.....	5		
4.9	Training of staff.....	6		
4.10	Electrical hazards	6		
4.11	Maintenance and troubleshooting	6		
5	Delivery and commissioning.....	7		
5.1	Delivery package	7		
5.2	Taking delivery of the machine.....	7		
5.3	Registration	7		
5.4	Commissioning.....	7		
6	Description of the machine	8		
6.1	Product features	8		
6.2	Process materials, field of application.....	8		
7	Machine construction	9		
7.2	How it works	12		
8	Operation.....	14		
8.1	Shutdown in an emergency.....	14		
8.2	General notes	14		
8.3	Transporting the machine.....	14		
8.4	Setting up the machine.....	15		
8.5	Electrical connection	15		
8.6	Connecting the hand-held control unit	16		
8.7	Preparing the machine for operation.....	16		
8.8	Blower selector switch.....	16		
8.9	Warming up the machine	17		
8.10	Filling the machine.....	17		
8.11	Control of the machine	17		
8.12	Control programmes.....	18		
9	Maintenance.....	20		
9.1	Overview.....	20		
9.2	Maintenance work in detail.....	21		
9.3	Miscellaneous routine maintenance.....	24		
10	Troubleshooting	25		
10.1	Frequent faults.....	25		
10.2	Frequently asked questions	26		
11	Tips on processing practice.....	27		
11.1	General.....	27		
11.2	Cellulose insulation material.....	27		
11.3	Setting chart	27		
11.4	Friable insulation materials.....	28		
11.5	Wood and grass fibres (and similar materials)	28		
11.6	Mineral fibre granulate.....	28		

3 Preface

These operating instructions are designed to help you get to know the machine and the possible ways of using the machine for its intended purpose.

The operating instructions contain important information which will help you operate the machine safely, properly and economically. Your observance will help prevent hazards, reduce repair costs and downtimes, increase reliability and extend the service life of the machine..

The operating instructions must be complemented by any relevant instructions arising from existing national regulations on safety and environmental protection. As well as the operating instructions and any safety regulations mandatorily applicable in the country of use, and at the place of use, the generally acknowledged technical regulations for safe and competent working must also be followed.

The operating instructions must be available at all times at the point of use of the machine.

3.1 Service

If any unexpected queries or problems come up, contact the dealer from whom you purchased the machine, where you will be given more information either from the dealer, or direct from the manufacturer.

3.2 Copyright

Copyright on these operating instructions remains with **X-Floc GmbH**. These operating instructions are only intended for the Operator and his staff. The content of these operating instructions may not be reproduced, distributed or communicated in any other way, in whole or in part, without the prior written approval of **X-Floc GmbH**. All technical data, drawings etc. are protected by copyright law.

Copyright infringements can have legal consequences.

3.3 Signs and symbols

The following pictograms are used for improved clarity and to emphasise safety-related details:

	Electric shock hazard. Non-observance of this warning can result in seriously harmful effects and even serious or fatal injuries.
	Crushing hazard. Non-observance of this warning can result in seriously harmful effects and even serious or fatal injuries.

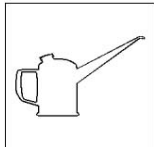
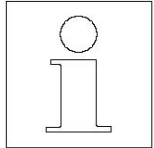
	Information, rules and prohibitions to prevent damage and personal injury. Non-observance of this warning can result in seriously harmful effects and even serious or fatal injuries.
	Hazard due to automatic or remotely-controlled starting of the machine. Non-observance of this warning can result in seriously harmful effects and even serious or fatal injuries.
	Information relating to maintenance.
	Information on economical use of the machine.

Table 3-1: Symbols used

3.4 Warranty and liability

In principle, our "General Terms of Business" apply. These will be made available to the Operator at the latest by the time the contract is signed. Warranty and liability claims relating to personal injury and damage to plant and property are excluded if they can be attributed to one or more of the following causes:

- Use of the machine for other than its intended purpose.
- Improper installation, commissioning, operation and maintenance of the machine.
- Operation of the machine with defective safety devices or with safety and protective devices that are not properly fitted, or are not fully functional.
- Non-observance of the instructions and information in the operating instructions with regard to transport, storage, installation, commissioning, operation, maintenance and preparation of the machine.
- Unauthorised constructional modifications to the machine.
- Unauthorised changes to the machine (e.g. drive ratios: power and speed).
- Inadequate monitoring of machine parts that are subject to wear.
- Incorrectly carried out repairs.
- Effects of foreign bodies and *force majeure*.

4 Safety instructions

Essential safety instructions are described in this section, in summarised form. The information reproduced is particularly suitable for initial basic instruction of new employees.

4.1 Principle

The machine may only be used in a technically perfect condition and for its intended purpose. It must only be used by safety-conscious operators who are fully aware of the risks and hazards involved, and in full observance of the operating instructions. Safety-related faults in particular must be rectified immediately.

4.2 Resale

If the machine is resold, it must be borne in mind that:

- All accompanying documents (operating instructions, test certificates etc.) that were supplied with the machine must be passed on to the purchaser. Additional copies of the accompanying documents must be ordered where necessary.
- In order to be kept informed of safety-related modifications or improvements, registration using the form in Section 14.1 on page 43 is necessary.

4.3 Intended use

The machine is manufactured in accordance with state-of-the-art standards and generally recognised safety rules. However, use of the machine may result in a danger to life or limb of the user or of third parties, or may cause damage to the machine or other plant or property.

Intended use also includes observance of the operating instructions and compliance with the inspection and maintenance conditions and intervals.

The machine is intended for processing building authority-approved thermal insulation material through hoses of various diameters.

4.4 Use for other than the intended purpose

Any other use, or any use going beyond that intended, is only regarded as use for the intended purpose with the written approval of the manufacturer. The equipment must not be used in hazardous areas.

4.5 Liability disclaimer

The manufacturer of the machine accepts no liability for damage arising from incorrect or negligent operation, maintenance or repair. This also applies for modifications, attachments and conversions on

the machine that adversely affect safety. In this case the factory warranty service is invalidated.

4.6 Constructional modifications

No modifications, attachments or conversions may be made on or to the machine without the approval of the manufacturer. This also applies to welding on load-bearing parts.

All conversion measures require written confirmation from **X-Floc GmbH**.

Machine parts that are not in perfect condition must be replaced immediately.

Only use original spare parts and replacement wearing parts. With parts sourced from other suppliers, there is no guarantee that they have been designed and manufactured to cope with the stresses and safety requirements demanded of them.

4.7 Hazard sources



The machine is remotely controlled and so can start running without prior warning.

The machine contains moving parts and particular hazard sources.

- Rotating crusher arm and comb mechanism in the hopper attachment. Danger of fingers and arms being crushed or cut off.
- Rotary airlock
- When intervening in the moving parts, the drives must be made safe against inadvertent switch-on, by either disconnecting the supply or by removing the control plug.
- Never reach into the area of the crusher arm and comb mechanism when the agitator unit is running.

The danger is heightened with the hopper attachment removed

In the event of malfunctions, shut down the machine and make it safe. Arrange for faults to be rectified immediately.

4.8 Personal protective equipment

When the machine is operating, dust can be produced as a result of the process material, and operating noise produced. So, where required, the following protective equipment must be provided to protect workers:

- dust masks
- hearing protection



Depending on the local conditions (e.g. in a confined space) the noise level produced can exceed that specified in 12.2.1. In this case, operators must be protected by appropriate protective equipment or protective measures. An increased noise level can cause permanent hearing loss.

4.9 Training of staff

Only properly trained and instructed staff may work on the machine, or carry out maintenance, cleaning or repair work.

Staff requiring training may only work on the machine under the supervision of an experienced person.

4.10 Electrical hazards

Only authorised qualified electricians may carry out work on the electrical supply.

The electrical equipment of the machine must be checked regularly. Defects such as loose connections, scorched cables or exposed contacts must be rectified immediately.

The control cabinet must be kept closed at all times. Access is only permitted for authorised staff, using either a key or a tool.

4.11 Maintenance and troubleshooting

Carry out the specified adjustment, maintenance and inspection work on the due dates. Inform operators before starting any maintenance and repair work.

All plant components and operating media, such as compressed air and hydraulics, connected upstream and downstream of the machine must be safeguarded against inadvertent start-up.

The machine must be switched off and made dead for all maintenance, inspection and repair work, and the main switch locked off to prevent unexpected reclosure.



5 Delivery and commissioning

5.1 Delivery package

The *Zellofant* is delivered with the basic accessories listed on the delivery note. Basic accessories include aids, tools, spare parts, as well as these operating instructions and test certificates.

5.2 Taking delivery of the machine

On receipt of the machine, check the delivery for completeness on the basis of the delivery note.

The data on the rating plate (see front of control cabinet) must agree with the details on the cover of these operating instructions.

A final acceptance certificate is included in the delivery package. The machine has been tested in accordance with VDE0113 before delivery. The test must be repeated after 12 months at the latest.

Please check whether the delivery items show any sign of damage. Any damage must be notified to us in writing within 8 days after delivery.

Any packaging of the delivery items is used solely to prevent damage in transit. The packaging material is environmentally harmless and we are quite happy to accept it back for recycling.

5.3 Registration

In the case of a delivery direct from the manufacturer, registration has already taken place and so no further action is required.

The purchaser of a used machine, or of a machine not delivered direct from the manufacturer, is obliged to notify us of his address and the rating plate data. This enables us to keep owners informed of any improvements, changes, hazards or product recalls, and so improve service and safety. Please use the prepared form on page 42 for this.

5.4 Commissioning

If the machine has been dismantled for transport to the customer, normally only the hopper attachment needs to be fitted on the machine base, and the black crusher arm securely bolted on (see 8.3.1 *Removing the hopper attachment*).

Special maintenance steps are necessary after 10 operating hours at the latest. For more on this, please read Section 9 *Maintenance*.



6 Description of the machine

6.1 Product features

The design complies with the European Directives and Standards (CE marking) applicable at the time the machine was placed on the market. The *Zellofant* offers the following features and advantages:

- Adjustment of air capacity and material delivery direct at the injection point, via cabled or radio remote control
- Metering of the material delivery by means of variable speed of the airlock rotor and adjustable airlock slide gate
- Machine dimensions matched to practical situations
- Good handling thanks to easily removable hopper attachment and pluggable transport frame
- High material delivery due to optimised filling level of the airlock chamber and airlock venting
- Optimal preparation of the supplied flakes through two-stage agitator
- Low dust production due to slow-rotating assemblies
- Increased occupational safety due to electronic and design-related safety precautions
- Airlock parts subject to abrasive wear are made from stainless steel
- High reliability due to robust construction
- Drive motors are lubricated for life
- Shaft bearings are protected against salt and dust deposits and moisture ingress by means of sealing elements

6.2 Process materials, field of application

Standard commercially-available and building authority-approved insulation materials such as cellulose thermal insulation, wood, grass or mineral fibres for example, as well as friable bulk materials such as perlite, foam glass, expanded polystyrene (EPS) granulate, polyurethane (PUR) granulate, or cork granulate, for example, can be processed.

The process material must satisfy the following minimum requirements:

- Building authority approval with approval number of the Institut für Bautechnik (Institute for Building Technology) in Berlin (public institution)
- The fire performance of the insulation material must be classified as at least "normal flammability" in accordance with DIN 4102-B2
- Maximum fibre length, or largest grain diameter with granulate, approx. 15 mm
- The date of filling is clearly evident on every delivery container
- The packing density in the delivery container complies with the details in Table 12-1 on page 30
- The moisture content by weight is less than 15

Bear in mind that different versions of the machine have different technical features and suitabilities. The table on page 19 offers useful guidance.

In principle, processing of other materials is possible. However, process-related requirements, including all safety aspects, must be checked in advance.

		Method				Minifant	Zellofant				M03	EM400
Material	Examples ³⁾	Offenes Aufblasen	Einfüllen	Verdichtetes Einblasen	Feuchtsprühen	M99-230V- 3,2kW	M95-230V- 3,6kW	M95-400V- 4,2kW	M95-400V- 4,7kW	M95-400V- 6,7kW	M03-400V- 8,0kW	EM400-400V- 7,5kW
Cellulose	Isofloc, climacell, dämmstatt, finefloc,...	X		X	X	X	X	X	X	X	X	X
Woodfibre	Steicocell, Thermocell,...	X		X				X ¹⁾	X ¹⁾	X ¹⁾	X ¹⁾	X ¹⁾
Perlite	Hyperdämm, SLS20, Thermofill S, Bacht Perlit,...	X	X			X	X	X	X	X	X	X
Grass	AgriCell	X		X				X ¹⁾	X ¹⁾	X ¹⁾	X ¹⁾	X ¹⁾
EPS-Granulate	RigiBead, HK35,...	X	X	X		X	X	X	X	X	X	X
Cork-Granulate	Div. Recycling-Produkte	X	X	X		X	X	X	X	X	X	X
Glass wool	Isover-Blaswolle,	X		X				X ²⁾	X ²⁾	X ²⁾	X ²⁾	X ²⁾
Mineral wool	Rochwool RG, KD, Kematherm, ...	X		X				X ²⁾	X ²⁾	X ²⁾	X ²⁾	X ²⁾
Other		needs suitability test										
1) Only in conjunction with amplifier station or amplifier station compact; 2) Only certain products; 3) Manufacturers names, the list makes no claim to be complete												

Table 6-1: Process materials and fields of application

7 Machine construction

The machine consists of the machine base, transport frame and hopper attachment. The hopper attachment is fastened to the machine base by three

case clips. The transport frame is plugged onto the machine base and secured by a spring cotter pin.

Item	Description
1	Zellofant M95H machine
2	Accessories case
3	Mains cable
4	Control cable
5	Operating instructions



Fig. 7-1. Machine with accessories

Item	Description
1	Description
2	Hopper attachment
3	Electrical control cabinet
4	Main switch / E-Stop
5	Carrying handles
6	Case clip

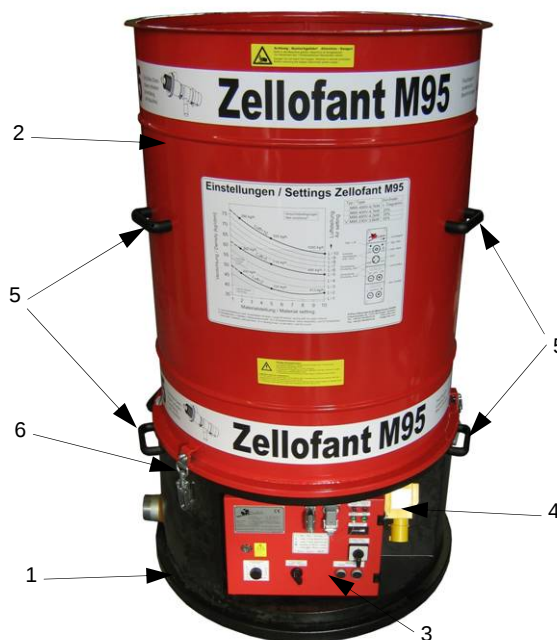


Fig. 7-2. View of the operating side

Item	Description
1	Crusher arm
2	Interchangeable grille
3	Comb mechanism
4	Fixing bolt



Fig. 7-3. Top view / internal view from above

The electrical control cabinet, filter unit and outlet connection are arranged on the machine base. Operating and control elements and a rating plate with the power ratings and serial number are fitted on the front of the electrical control cabinet.

The filter unit consists of an air inlet hood with inlet connection and an air filter cartridge.

The agitator – consisting of the crusher arm, interchangeable grille and comb mechanism – is located in the hopper. Below the agitator is the airlock opening with an airlock slide gate (optional).

7.1.1 Machine base

Inside the machine base are the rotary airlock, two or three centrifugal fans and the individual drive motors to drive the agitator and the rotary air lock.

The airlock and centrifugal fans are connected to one another by extremely pressure-tight hoses with non-return valves.

Item	Description
1	Rotary air lock
2	Rotary airlock drive motor
3	Crusher mechanism drive motor
4	Centrifugal fan
3.6 kW, 4.2kW and 4.7kW types	
5	Non-return valves
6.7kW type	
6	Manifold with integral non-return valves

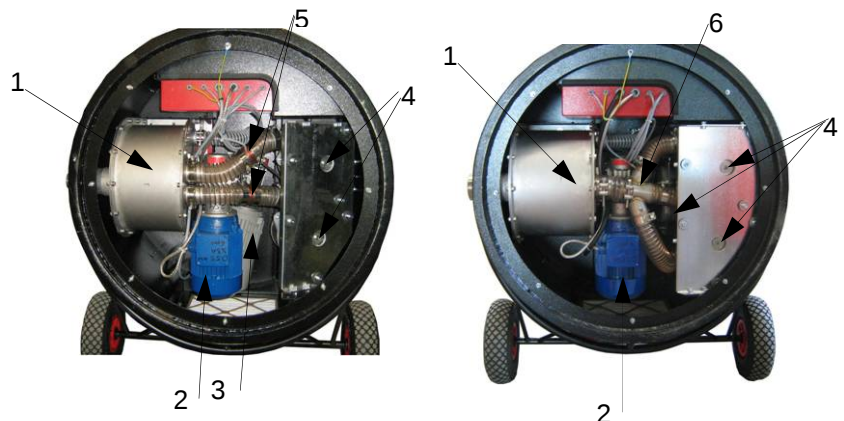


Fig. 7-4. Internal view from below

Item	Description
1	Outlet connection
2	Inlet connection
3	Filter unit
4	Star knob nut
5	Transport frame
6	Spring cotter pin
7	Pneumatic wheel



Fig. 7-5. Rear view

Item	Description
1	Rating plate
2	Control unit socket
3	Auxiliary appliance socket
4	"Agitator fault" indicator lamp
5	"Airlock fault" indicator lamp
6	"Ready" indicator lamp
7	Hours run meter
8	Blower selector switch
9	"Agitator maintenance" push button
10	"Airlock maintenance" push button
11	"Direction of rotation" changeover switch
12	Pressure threshold adjustment
	230V machines only
13	"Material ON" indicator lamp
	400V machines only
14	Phase indicator lamp
15	Phase change switch

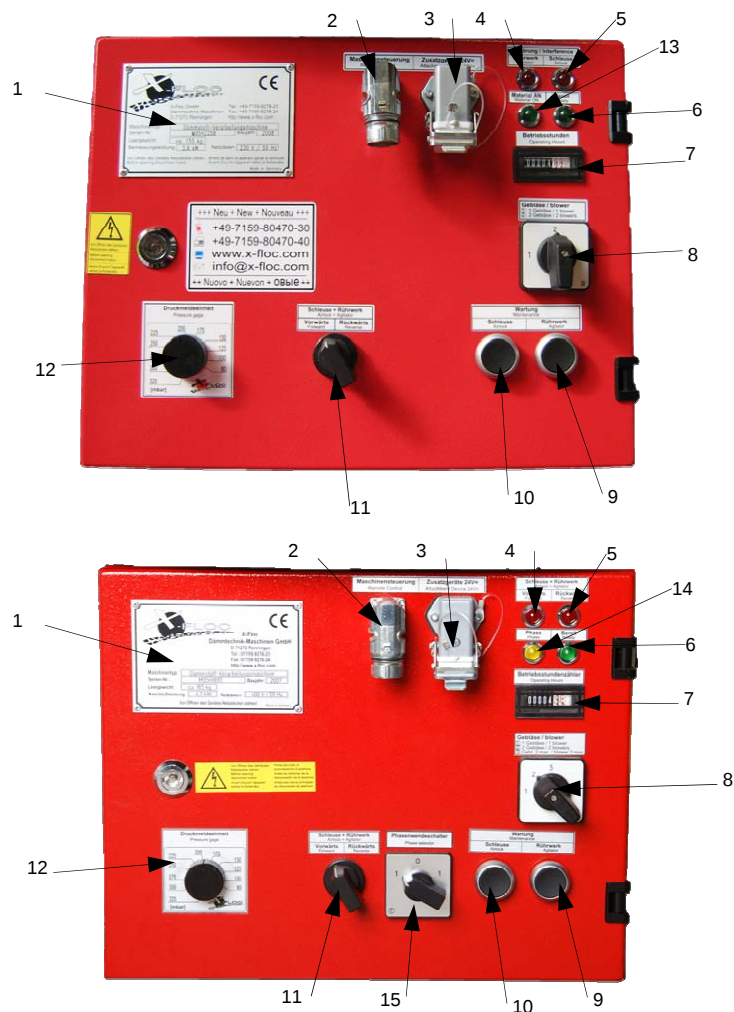


Fig. 7-6: View of the control cabinet front

7.1.2 Electrical control cabinet

The electrical control cabinet is spray water proof (protection class IP54).

Undervoltage protection is fitted on the main switch on all machine types. In the event of a power failure, or loss of mains supply voltage, the main switch permanently disconnects the supply. This prevents uncontrolled starting of the machine when the supply is restored.

Indicator lamps:

The green lamp indicates that the machine is ready (power on), and the two red lamps indicate malfunctions.

On all 400V machine types, the yellow lamp indicates a phase fault or wrong phase rotation. If the machine is fitted with a phase change switch, the phase rotation can be changed using the switch. On 400V machines without phase change switch, the phase rotation can be changed in the main switch.

The hours run meter shows the time during which the air feed was switched on¹.

The second and third blowers can be switched off via the blower selector switch.

¹ On M95A to M95F series equipment, the hours run meter shows the time during which the material feed was switched on.

7.2 How it works

The material - which is normally extruded into balls - is fed into the hopper attachment. The balls are split into smaller pieces by the rotating crusher arm.

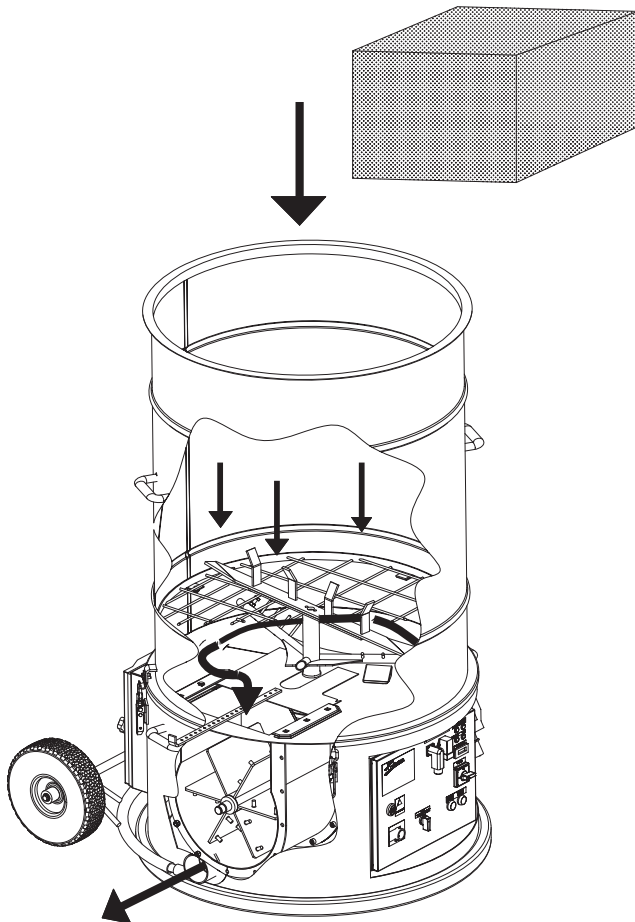


Fig. 7-7: How the machine works

Only sufficiently small pieces can pass through the interchangeable grille into the comb mechanism below. The comb mechanism breaks up these pieces further until the material can be blown.

The material falls through the airlock opening into the airlock due to gravity. The filling level in the individual chambers can be reduced by means of the airlock slide gate. This is particularly beneficial with free flowing bulk materials.

The airlock rotor turns and so moves the filled airlock chamber into the lower position. An air stream directed at right angles to the airlock blows the material out of the bottom chamber and conveys it out of the airlock through the outlet connection.

The airlock chambers are separated from one another by seals. Any residual air remaining in the airlock chamber under pressure is returned to the hopper attachment via an airlock vent. This makes the next filling of the airlock chamber much easier.

7.2.1 Adjustment options

The material delivery depends on the filling level of the airlock chambers and the speed of the airlock rotor. With a specific slide gate position, the filling level remains the same and the delivery is determined by the speed of the airlock rotor. This can be adjusted via the remote control.

Air pressure and air volume can be influenced by changing the air capacity, and by switching the second and/or third blowers on and off. The blowers are connected in parallel, so that the air volume increases at almost the same pressure when a blower is switched on.

Air capacity and material delivery can be adjusted independently of one another, via the hand-held control unit. This enables fast and flexible adjustment of the machine settings direct from the point of use.

A high airlock rotor speed results in a high material delivery. If the air volume remains constant, this results in a lower air/material ratio. As a result, the installation density of the insulation material decreases.

Reducing the airlock rotor speed reduces the material delivery. If the air volume remains constant, this results in a higher air/material ratio. As a result, the installation density of the insulation material increases.

7.2.2 Pressure annunciator unit

The machine is fitted with a pressure switch which is pneumatically connected to the discharge pressure of the airlock chamber. The pressure threshold of the pressure annunciator unit is adjustable between 80 and 325 mbar by means of a knob on the front of the control cabinet.



Fig. 7-8: Pressure threshold adjustment

The pressure switch is electrically connected to the "Overpressure" signal on the hand-held control unit.

The mode of action can be described like this: when the set pressure threshold is reached, the overpressure condition is signalled by an audible alarm at the hand-held control unit, and by the

"Overpressure" indication lighting up at the same time. So, with a specific application, the user is alerted of a possible material blockage occurring.

The pressure threshold must be matched to the respective application, by performing the following steps:

1. First injection process with the threshold set at approx. 200 mbar.
2. If a blockage occurs during injection without prior signalling of the overpressure condition, the threshold must be reduced.
3. If, during injection, an overpressure condition is signalled well before an actual blockage occurs, the value must be increased.

7.2.3 Automatic shutdown

If the threshold for the pressure annunciator unit is matched to the particular site situation and the automatic shutdown function is activated, the machine shuts down automatically after the pressure signal occurs.

7.2.3.1 Benefit for the installer

Using the automatic shutdown function, the installer can arrange that the machine shuts down without any manual operation. This makes it easier to operate the machine in suitable applications.

7.2.4 Dynamic pressure control

A pressure threshold is set at the machine. With the dynamic pressure control function activated, the air capacity is reduced to the extent that the set pressure threshold is not exceeded. The preset air setting is displayed flashing on the hand-held control unit, whilst the controlled value is also displayed. So both the setpoint or target value (preset) and the actual value are displayed.

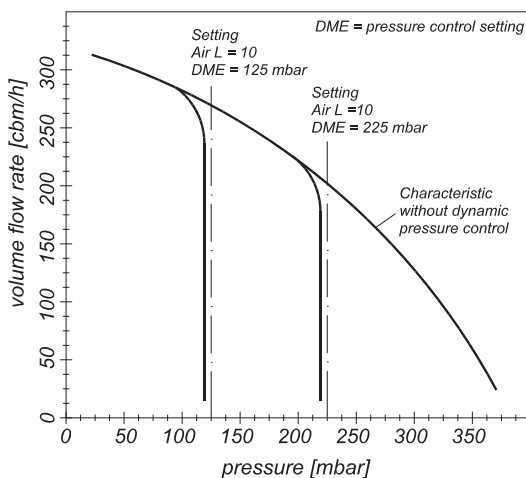


Fig. 7-9: Dynamic pressure control characteristic

If the dynamic pressure control function is not activated, the overpressure condition is signalled at the hand-held control unit, but no limiting of the air capacity occurs.

7.2.4.1 Benefit for the installer

When injecting into elements with low load-bearing capacity boarding (e.g. plaster fibre board or plasterboard), the boarding can be damaged by excessive injection pressure.

In addition, places with high compression often develop during injection, mainly due to the maximum pressure of the injection machine being reached when a material blockage occurs, and the insulation material being highly compressed accordingly.

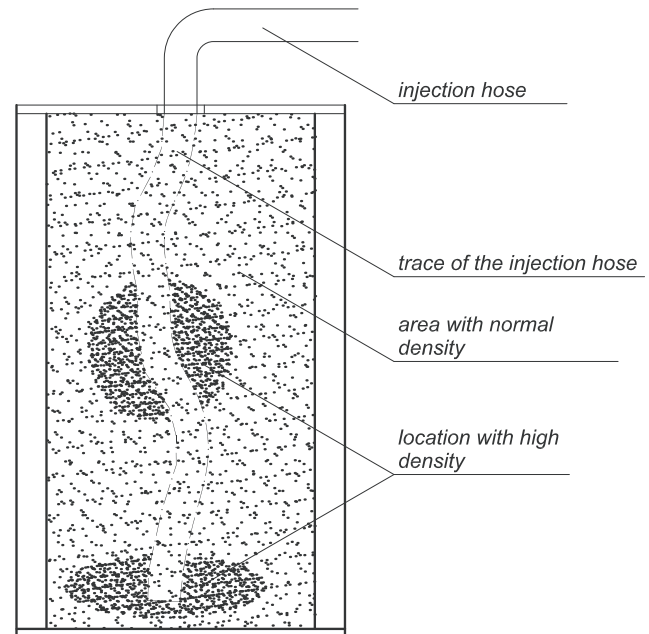


Fig. 7-10: Injection with dynamic pressure control

With dynamic pressure control, the forces acting on the boarding are reduced. A more uniform distribution of the insulation material is produced in the element. Places with high compression are avoided.

Dynamic pressure control effectively limits the pressure during injection. Even so, a high injection capacity can be achieved with a low back pressure.

8 Operation

8.1 Shutdown in an emergency

- Switch the main switch on the control cabinet to "0".
- Find the cause of the fault and fully rectify it.
- Restart the system in accordance with commissioning instructions.

8.2 General notes

The description of the construction and mode of operation of the *Zellofant* can be found in Sections 6 and 8.

- Professional work requires your full attention and competence. Don't limit them due to avoidable dust and noise production! Protect yourself and your workmates with respiratory protection, extraction, and hearing protection.
- Switch the machine off during longer duration material blockages.
- Transport the machine either in separate parts using the carrying handles provided, or complete, on the transport frame provided. The transport frame must be secured with the spring cotter pin provided.
- Check the transport frame pneumatic wheels regularly for adequate air pressure. The transport frame must be secured with the spring cotter pin.
- The delivery or injection hose and the metal parts connected by it can become electrostatically charged. Adequately earth metal parts to reduce the possible risks of electrostatic discharges.

8.3 Transporting the machine

Both the hopper attachment and the machine base are fitted with four carrying handles. The carrying handles are not suitable for transporting the fully-assembled machine. Only handle the hopper attachment or the machine base separately by the carrying handles.

The fully-assembled machine must only be transported with the transport frame.

8.3.1 Removing the hopper attachment

The hopper attachment is removed from the machine base by the following actions:



1. Disconnect the control plug from the control cabinet.
2. Remove the crusher arm from the comb mechanism. To do this, unscrew the fixing bolt on the crusher arm with the SW 24 (width across flats) hexagonal spanner provided. Then remove the crusher arm.
3. Open the three case clips.

4. Take the hopper attachment off the machine base.

The hopper attachment is refitted in the reverse order. When doing so, make sure that the crusher arm is fitted with the warning sign facing upwards and is securely bolted to the agitator. The quick-release fasteners must be firmly closed.

8.3.2 Fitting the transport frame

The transport frame can be plugged into the two sections of pipe on the casing of the machine base. It is essential that the transport frame is secured with the spring cotter pin, to prevent the transport frame coming loose from the machine during transportation.

Check the pneumatic wheels regularly for adequate air pressure (see Section 12.2.5)!

8.3.3 Using the transport frame

To move the machine on the transport frame, it must be tilted backwards.

1. Check that the locking pin is properly engaged.
2. Position yourself behind the machine, between the two pneumatic wheels of the transport frame.
3. Grasp the top edge of the hopper with both hands.
4. Stand with one foot on the transport frame axle.



Fig. 8-1: Tilting the machine back

5. Pull the edge of the hopper firmly towards you.

The machine tilts back and you can move it about on the pneumatic wheels as you would a sack barrow.



8.4 Setting up the machine

8.4.1 Hose connection

A 75 mm NB hose can be directly connected to the outlet connection with a hose clip.

The hose is extended using hose connectors and hose clips as required. Smaller diameter hoses are connected using reducing connectors which reduce the cross-section gradually and evenly. Material blockages can only be avoided by using this type of reducer.

For perfect material flow, the hose must be laid without kinks. Vertically rising sections must be provided with hose loops every 3 – 4 m, to prevent plugs due to material dropping back down.

8.4.2 Location

The machine operator must take note of the following information when selecting the location:

- Sufficient space must be available for subsequent filling.
- The subsurface and the surroundings must be dry and well consolidated. The machine needs a firm base.
- The temperature must be within the permissible range. Avoid direct sunlight.
- The machine must not come into contact with water or moisture. Only use the machine outdoors in good weather or under cover!
- The inlet cross-section must be clear. It must be possible to lay the hoses out without kinking.

8.4.3 Fresh air supply

The air drawn in by the blowers is cleaned by an air filter cartridge. A heavily contaminated filter results in an inadequate fresh air supply. As a result, the material delivery of the machine can be reduced and the blowers can overheat.

The machine must be set up in a dust-free environment. Take care not to produce too much dust when filling the machine.

If this condition cannot be met, clean air must be fed to the inlet connection via a hose (75 mm NB). In addition, a coarse filter fitted on the inlet hose can pre-clean the air.

8.4.4 Foreign objects

When the machine is running, the agitator and airlock rotor are moving. So foreign objects can cause damage to the agitator, airlock, seals and other components.

The process material must not be contaminated with foreign objects such as nails, screws or stones, for example.

In extreme cases, larger foreign bodies (e.g. wooden laths) can jam in the agitator and then suddenly be ejected – totally out of control - from the machine.

8.5 Electrical connection

8.5.1 General

Depending on the version, the machine is connected either to the 230V / 50Hz AC single-phase mains supply or to the 400V 3-phase supply network, via a socket equipped with a protective earth contact. The protective contact must be correctly earthed.

The supply voltage and frequency must agree with the data on the rating plate. Voltage and frequency fluctuations up to $\pm 5\%$ are permissible. Do not operate the 400V machines on a 3-phase supply network with no neutral.

The machine is not protected against longer duration overvoltage conditions. The frequency converter and other components can suffer considerable damage. So, avoid running the machine on unstabilised supplies, or connect a voltage limiter before the machine.

When the machine is operating, the mains cable must be fully unwound from the drum to prevent any damage due to overheating.

Too low a supply voltage or an undersized mains cable can significantly reduce the performance of the machine.

8.5.2 Supply

8.5.2.1 M95-230V-3.6kW

The "light current" version is connected to a separately fused circuit (normally the construction site distribution board) The circuit is fused at 16A (Type B or Type C MCB or slow blow fuse), supply cable

2.5 mm². The connection is made in accordance with VDE 0100. When using cable drums, make sure that the full length of cable is laid out (induction). The CEE connector (blue) is connected to the main switch of the machine.

8.5.2.2 M95-400V-x.xkW

In accordance with VDE 0100, equipment designed for operation on a 3-phase supply must be connected to a special supply point (normally the construction site distribution board fitted with RCD). The construction site cable must be HO7 RNF type cable (rubber insulated, rubber outer jacket), 5 x 2.5 mm², fused at 16 A (Type B or Type C MCB or slow blow fuses).

The CEE connector socket (red) is plugged into the main switch. The phase rotation may have to be changed in the main switch, or with a phase change switch, where fitted.

The three-phase version of the *Zellofant* produces an unequal loading in the phases of the supply network. A portable generator set can only be used to supply the power if it is considerably oversized.

8.6 Connecting the hand-held control unit

The cable plug of the unwound control cable is connected to the connector socket on the control cabinet of the machine. The cable plug of the hand-held control unit is connected to the free end of the control cable.

When making the plug connections, the correct insertion position can be recognised by the alignment of the flattened side. The plug sleeve is pulled back as the plug is inserted. After insertion, the plug connection is secured by moving the sleeve forwards.

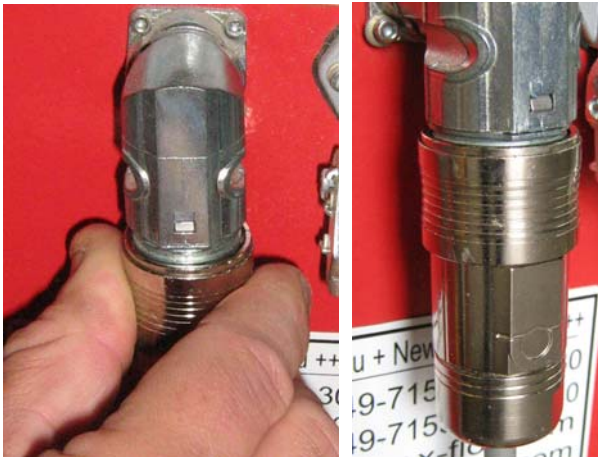


Fig. 8-2: Establishing the plug connection

8.7 Preparing the machine for operation

After establishing the supply, the handle on the main switch is set to the "ON" position. If the supply is not present, with an undervoltage condition, or after a power failure, the handle does not stay in the "ON" position and drops back to "OFF".

If the yellow "Phase" indicator lamp comes on after switching on the main switch (only on 400V versions), the phase rotation must be changed, see 8.5.2.2, page 15.

After operation of the main switch, the green indicator lamp comes on (after a short self-test and brief illumination of the "Airlock fault" indicator lamp).

After the machine is switched on, some lamps on the hand-held control unit will start to flash. Press the "OFF" button to set the hand-held control unit to standby mode; the flashing will stop. The hand-held control unit is now ready and displays the most recent set values.

The machine is now in the "ready" state.

8.8 Blower selector switch

8.8.1 M95-230V-3.6kW

The machine is fitted with two blowers. At blower position "1", only one blower is operated, at position 2 both blowers are operated in parallel. The air capacity of both blowers can be adjusted via the hand-held control unit. Both blowers are operated from the single phase available.

Blower	Switch position	
	"1"	"2"
1	Adjustable	Adjustable
2	Off	Adjustable

8.8.2 M95-400V-4.2kW and M95-400V-4.7kW

In blower position "3", blower 1 is still adjustable, but is operated from a different phase to blower 2. Blower 2 runs on full load.

On weak supplies, this position can result in improved supply system utilisation and hence to increased machine performance. When operating with a portable generator set, the improved supply system utilisation can enable operation that is not possible on blower position "2".

Blower	Switch position		
	„1“	„2“	„3“
1	Adjustable Phase 1	Adjustable Phase 1	Adjustable Phase 1
2	Off	Adjustable Phase 1	Full load Phase 2

8.8.3 M95- M95-400V-6.7kW

The machine is fitted with three blowers.

In the standard version, on blower position "3", blower 3 runs on full load (booster) and is operated on a different phase to blowers 1 and 2.

With the optional "Distribution on three phases" equipment, on blower position "3", fan 3 is still adjustable and is operated from a different phase to blowers 1 and 2.

Blower	Switch position		
	„1“	„2“	„3“
1	Adjustable Phase 1	Adjustable Phase 1	Adjustable Phase 1
2	Off	Adjustable Phase 1	Adjustable Phase 1
3	Off	Off	Full load Phase 2 ^{*1)}
			Adjustable Phase 2 ^{*1)}

*1) dependent on the machine version

8.9 Warming up the machine

To prevent stoppages in the agitator, the machine must be warmed up empty. During the warm up, the airlock seals, gearbox oil and the electronics are brought up to operating temperature.

During the warm up, the machine reaches the required operating temperature after 5 to 20 minutes. All motors must be running: airlock, agitator and blowers.

The airlock drive reaches its maximum breakaway torque or torque on material setting M=7. This setting can be advantageous after replacing the airlock seals, in cold weather, or when starting up a full machine. The starting characteristics of the airlock can be further improved by spraying the running surfaces with a silicone spray (do not use any oil).

8.10 Filling the machine

Warning: never reach into or step into the hopper attachment and agitator of the machine

The first sack of extruded material must be precrushed before it is poured into the hopper attachment. Afterwards, the material can be poured into the hopper attachment without being precrushed, provided that there is still some loose material in the vicinity of the agitator.

8.11 Control of the machine

The machine is controlled from the injection point, via the hand-held control unit.

Item	Description
1	"ON" push button
2	"OFF" push button
3	"Air ON" indication
4	"Material ON" indication
5	"Air setting" indication
6	"Air -" push button
7	"Air +" push button
8	"Material setting" indication
9	"Material -" push button
10	"Material +" push button
11	"Pressure signal" indication

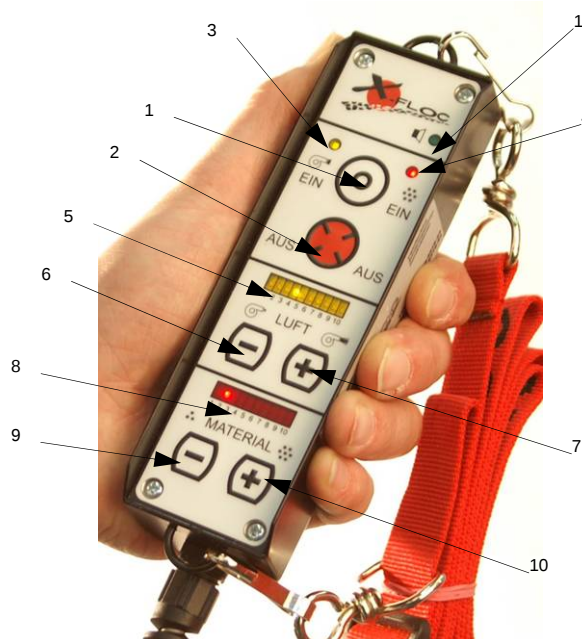


Fig. 8-3. View of the hand-held control unit

When the "ON" button is pressed once, the air feed starts, followed approx. 1 second later by the material feed. Repeated pressing of the "ON" button switches the material feed on and off alternately (toggle). The air feed is not interrupted here. If you press the "ON" button twice briefly in quick succession when starting the machine, only the air feed starts. .

Air and material feed are stopped at the same time by pressing the "OFF" button.

The "Air ON" and "Material ON" indicate the current switching status.

Element	Function
"ON" push button	- Starting the air and material feeds - Switching the material feed on and off with the air feed switched on
"OFF" push button	- Setting to standby mode after switch-on - Switching off the material and air feeds
"Air ON" indication	Indicates when the air feed is switched on.
"Material ON" indication	Indicates when the material feed is switched on.
"Air setting" indication	- Indicates the set air capacity - Flashing signalling when the dynamic pressure control is switched on
"Air -" push button	Reduces the air capacity
"Air +" push button	Increases the air setting, maximum level 10
"Material setting" indication	- Indicates the set material output - In standby and operating mode: material setting - Flashing signal when the dynamic material control is switched on
"Material -" push button	Reduces the material setting minimum level 1
"Material +" push button	Increases the material setting, maximum level 10
"Overpressure" indication	Indicates when the set pressure threshold has been reached
"Pressure signal" indication	- Flashing signal when automatic shutdown is activated - Audible alarm when overpressure is reached

Table 8-1: Overview of the hand-held control unit

8.12 Control programmes

As well as purely manual control, the *Zellofant* can make injection easier via three different programmes. With each of these programmes, the machine reacts differently to an infringement of the set pressure threshold. The pressure threshold can be adjusted at the machine using the knob. In the default state, all

programmes are not activated after a supply interruption.

8.12.1 Automatic shutdown

When this function is activated, the machine switches off automatically after the pressure signal has been present for longer than two seconds.

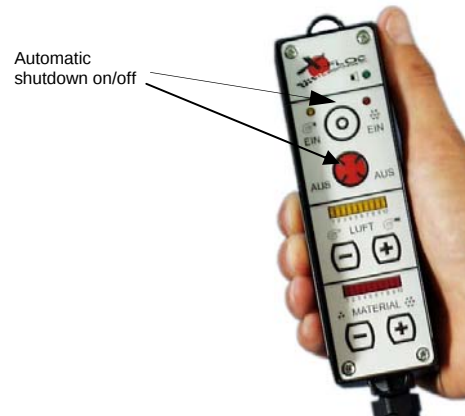


Fig. 8-4: Activation of the automatic shutdown function

8.12.2 Dynamic pressure control

The pressure is limited to the set threshold. The adjusted value is displayed on the air volume indication.

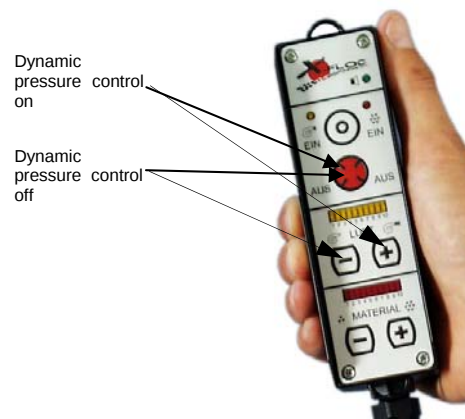


Fig. 8-5: Activation of the dynamic pressure control function

8.12.3 Dynamic material control

The material volume is reduced when the pressure threshold is exceeded. The adjusted value is displayed on the material volume indication.

As soon as the pressure falls below the threshold again, the original set value for the air and flow volume is automatically set once again.

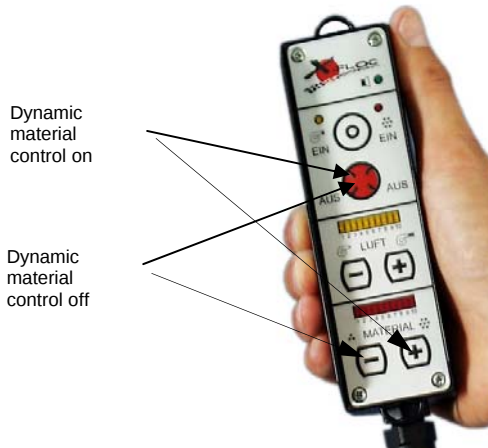


Fig. 8-6: Activation of the dynamic material control function

and the LED (green pressure signal) illuminates whenever the pressure threshold is exceeded.

In the default state, all controls are deactivated after switch-on. The programmes must be reactivated as required.

The air and material volume controls can be switched on and off individually. Both control options can be used together, or each one separately.

8.12.4 FFB radio remote control (optional)

The *Zellofant* can be operated with a radio remote control instead of the cabled remote control. The controls are identical. Please refer to the operating instructions for the radio remote control for special features and technical data.

Programme	Button combination	Function
Dynamic pressure control		
Activating	Press the Air + button with the OFF button pressed	Pressure is limited to the set threshold
Deactivating	Press the Air - button with the OFF button pressed	Overpressure is signalled visually and audibly.
Automatic shutdown		
Activating	Press the ON button with the OFF button pressed	Machine shuts down when overpressure condition is present for more than 2 seconds.
Deactivating	Press the ON button with the OFF button pressed	Machine does not shut down until the OFF button is pressed.
Dynamic material control		
Activating	Press the Material + button with the OFF button pressed	The material volume is reduced when the overpressure condition is reached.
Deactivating	Press the Material - button with the OFF button pressed	The material volume is not affected by the overpressure condition being reached.

Table 8-2: Control programmes

If none of the programmes is activated, an audible alarm simply sounds at the hand-held control unit

9 Maintenance

The machine must be disconnected from the supply network for all maintenance and cleaning work. Individual steps may require the supply to be established briefly, but the machine must be disconnected from the supply again immediately after the maintenance step. Always pull out the mains plug before opening the electrical control cabinet.

9.1 Overview

Interval	Position	Maintenance work	see Section
once after 10 hours	Hose clips in machine base	tighten. (clips for both blowers and airlock vent!)	9.2.7
after each use on site	Air filter cartridge	check, clean or replace several times daily if the inlet air is heavily contaminated.	9.2.2
	Pressure check	M95-230V-3.6kW 220 – 270 mbar M95-400V-4.2kW 250 – 320 mbar M95-400V-4.7kW 280 – 370 mbar M95-400V-6.7kW: 280 – 400 mbar	9.2.1
	Air lock sealing lips	check, replace if the minimum pressure (see above) is not reached	9.2.3
	Agitator	check for deformations, remove build-up deposits.	9.3.2
every 50 h	Felt rings in the airlock	relubricate with vegetable oil. Replace if damaged	9.2.4
	Carbon brushes in the blowers	check for wear, but with heavy wear replace after 350 h at the latest (brushes on new blowers last approx. 250 – 350 h)	9.2.6
	Pressure annunciator unit pressure hose	for cleaning, see if necessary, detach the pressure hose connection at the non-return valve as well and blow it through	9.2.5
every 80 h / annually	Hoses and hose clips in the machine base	tighten. (clips for both blowers and airlock vent)	9.2.7
	Non-return valves	check on position (vertical mounting with the machine standing upright) and free movement of the valves; remove the hose for this check	9.2.7
	Worm gears	check for leakage	9.2.9
	Interior space of the machine base	check for material residues. If larger residues can be found, locate the spot where the seal may be damaged and repair it, or establish where the residue is entering	9.2.8
250 – 350 h	Carbon brushes	replace. Waiting too long before replacing the brushes can result in damage to the blowers	9.2.6

Table 9-1: Overview of maintenance work

9.2 Maintenance work in detail

9.2.1 Pressure check

Defects on blowers, hose connections and airlock can be detected by regular pressure checks, before they result in breakdown of the machine or impaired machine performance.

Switch on all blowers. Set the air to level 10 and press the pressure gauge firmly against the outlet connection.



Fig. 9-1: Pressure check

A pressure in accordance with *Table 9-1: Overview of maintenance work* must be reached.

9.2.2 Air filter cartridge

Inadequate air supply can result in reduced output and damage to the blowers.

Depending on the dust burden at the point of use, the air filter cartridge should be cleaned once or several times daily. To do this, unscrew the star grip nuts and remove the filter cover.

Light contaminations can be knocked out or sucked out. If this does not loosen the contamination, or if the filter is damaged, it must be replaced.

Replace the filter cartridge after 150 hours operation at the latest



9.2.3 Airlock and sealing lips

The airlock must be checked after each use of the machine. A salt coating can build up on the internal surfaces of the airlock and this can increase wear on the sealing lips. Coatings like this should be removed promptly using a wet sponge, for example.

The airlock seals must be replaced from time to time, especially when:

- there is visible damage such as cracks or excessive wear.
- when the pressure measured at the outlet connection falls below 200 mbar after a few seconds (with maximum blower power and with the pressure limit set to maximum)
- when the material above the airlock ready to be processed is visibly blown up by escaping air

To replace the sealing lips, carry out the following steps:

1. Remove the hopper attachment
2. Bring the airlock rotor to a convenient position using the "Airlock maintenance" button
3. Unscrew the nuts on the clamping plate, take off the clamping plate, remove seal,
4. Insert and adjust new seal, fit clamping plate, screw nuts on by hand and then tighten to a torque of approx. 4 Nm
5. Repeat steps 2. to 4. for all 6 sealing lips.
6. After fitting the sealing lips, lubricate the airlock running surfaces with silicone spray and run the machine empty for 1-4 hours.

9.2.4 Felt ring seals

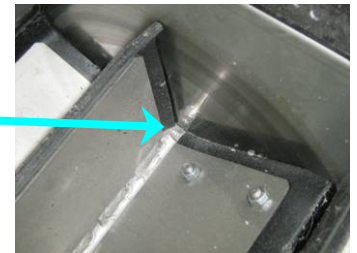
The felt ring seals must be lubricated regularly (lubricate with vegetable oil (cooking oil) every 50 operating hours). This prevents premature embrittlement of the felt rings. Worn felt rings can be by recognised by a visual inspection or increased air leakage when the machine is running.

Damaged or worn felt rings must be replaced.

When changing the felt ring seals, the airlock is taken off, dismantled and the radial shaft sealing rings and bearings are renewed too. We recommend having this work carried out by the manufacturer or dealer, or by a trained mechanical fitter.

The airlock construction is shown on the exploded drawings in Section 13.1 on page 32.

Replacement of the shaft sealing rings follows the same principle.



9.2.5 Pressure annunciator unit

For precise signalling of an overpressure condition, the tube running between the non-return valve and the pressure switch must be free from dirt or contamination.

The connecting tube should be checked and cleaned every 50 operating hours at the latest, or if the response of the pressure annunciator unit is sluggish.

1. Open the control cabinet

2. The pressure switch is located on the back of the control cabinet door. Detach the pressure tube from the pressure switch and blow it through



Fig. 9-2: Maintenance of the pressure annunciator unit

3. If necessary, detach the pressure tube at the connection to the non-return valve behind the blower as well, and blow it through.

Take this opportunity of checking that the bore of the tube connector is clear, and cleaning it if necessary.

9.2.6 Centrifugal fans carbon brushes

The supply air unit consists of two centrifugal fans (three on 400V-6.7kW type machines) with high speed universal motors.

The carbon brushes of the motors are wearing parts, and must be replaced every 350 operating hours at the latest. With premature wear (recognisable by excessive arcing, occasional intermittent or scraping noises, or by a reduction in the number of revolutions) the brushes must definitely be replaced earlier. If the brushes are not replaced promptly, there is a risk of damage to the motor.

The carbon brushes can only be replaced twice; after this the entire centrifugal fan must be replaced.

To replace the carbon brushes, proceed as follows:

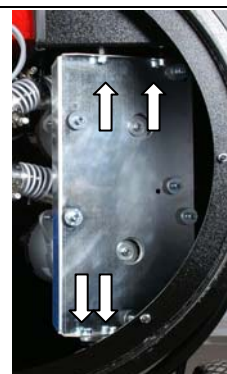
1. Tilt the machine back over the pneumatic wheels (see Section 8.3.3 *Using the transport frame*) and rest it down on the top edge of the hopper attachment. Remove the base plate.
2. Unscrew the 4 Allen screws securing the blower bracket to the casing.
3. Remove the bracket with the two blowers from the housing and rest it on a chair, for example, in front of the *Zellofant*. The connecting cables of the blowers are long enough, so these do not need to be unclipped. Now you can work comfortably on the two blowers.

	M95-230V-3.6kW and M95-400V-4.2kW	M95-400V-4,7kW and M95-400V-6.7kW
4.	Unscrew the screw on the plate enclosing the blower motor and remove the plate.	Extract the retaining plate on the carbon brushes with a screwdriver.
5.	Unscrew the screws on the metal strap around the carbon brushes and remove the strap.	Extract the carbon brushes
6.	Detach the tail from the plug by light pressure in the middle of the brush holder.	Insert new carbon brushes
7.	Detach the plug from the old brushes and plug it onto the new brushes.	Press the retaining plate back in with a screwdriver

8. Test run the motors after fitting the new brushes
9. Reassemble the blower unit and refit it in the casing.



Step 1



Step 2

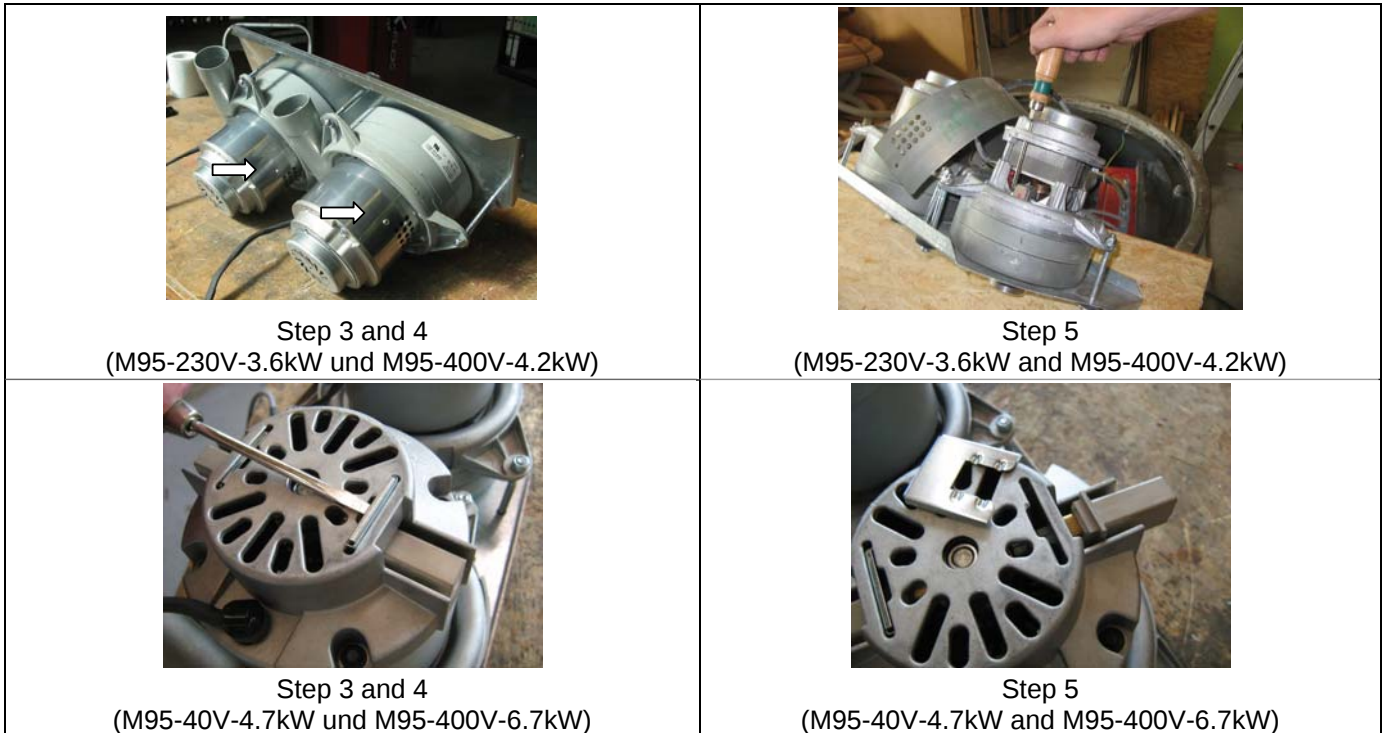


Fig. 9-3. Changing the carbon brushes on the centrifugal fan

Important:



When assembling the blowers, make sure that the connecting cables cannot come into contact with any moving parts!



Run the centrifugal fans at **mid-speed for approx. 30 to 40 minutes** to bed the new carbon brushes in.

9.2.7 Hose connections

The hose connections in the machine base can get very hot when the machine is running and, at the same time, are pressurised at 300-400 mbar. If a hose bursts or becomes detached, this can cause consequential damages to the machine.

New hoses deform faster and so must be checked after just 10 operating hours.

After that they should be checked at least every 80 operating hours, or annually, and each time the machine base is opened.

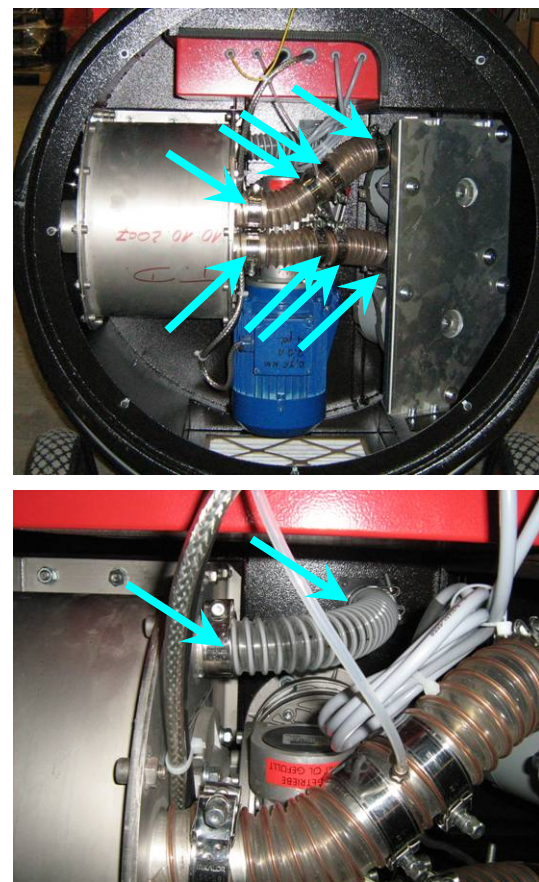


Fig. 9-4: Hose clips



To check the hose connections, carry out the following steps:

- Tilt the machine sideways over the transport frame and rest it on the ground (see above). Unscrew the base plate and remove it
- Check that the hoses running between blowers, non-return valves and airlock (and the hose for the airlock vent too, if necessary) are not kinked.
- Retighten all hose clips
- If you suspect a malfunction of a non-return valve, detach the hose and check the function of the non-return valve. Valves must be free moving and must close automatically.
- Replace any porous or very old hoses with new, reinforced hoses.

9.2.8 Cleaning the interior space

Dirt or contamination in the machine base can affect the thermal characteristics of the motors and the contacts (commutator). So remove as much dust and dirt as possible.

9.2.9 Gearbox

No maintenance required. If the gearbox is losing oil, it must be overhauled by the manufacturer, or replaced.

9.3 Miscellaneous routine maintenance

9.3.1 Cables

Regularly check the plugs and sockets of all mains and control cables, and their insulation.

Cable breaks and control cables pulled out of their plugs can result in safety risks and possibly to downtimes.

9.3.2 Agitator

The crusher arm should be checked for deformations after each use. A badly bent crusher arm cannot agitate the insulation material in the hopper attachment very well, so that the material no longer slides down (bridge formation), or forms lumps which can block the agitator.

In some cases, a deformed crusher arm can be bent back into shape. If it is very badly deformed, the arm should be replaced.

9.3.3 Cleaning

Regular cleaning of the machine increases its service life and enables a logical sequence of maintenance work. Do not wet the machine during cleaning.



10 Troubleshooting

If faults occur, please refer to the following table for the possible causes and recommended troubleshooting measures.

10.1 Frequent faults

Fault / Problem	Possible causes of fault	Rectification
Main switch cannot be switched on.	Supply voltage inadequate.	Check supply. On 3-phase systems, check all phases, neutral and earthing.
The yellow indicator lamp comes on, the machine shows no function whatsoever (400V versions only).	Wrong phase rotation.	Correct phase rotation with the reverser in the main switch or using the phase rotation selector switch.
	One or more phases missing.	Check supply.
Agitator fault: the red "Agitator fault" fault lamp on the control cabinet comes on. The fault is reset after approx. 30-90 seconds, the ready lamp comes on.	Agitator motor is overloaded.	With some insulation materials (e.g. wood fibres), a "half" crusher arm must be used.
	An object or some insulation material is jamming the agitator	Using the maintenance push button, run the agitator backwards and forwards alternately (whilst the material feed is switched on) until the jam is cleared.
	Operating temperature not reached yet	Empty machine and allow it to warm up empty.
The red "Airlock fault" fault lamp on the control cabinet comes on. Fault does not reset until machine is switched off and switched on again.	Sealing lips are too stiff	Let the machine warm up empty.
	Lubricant in gearbox is too cold	
	A foreign object or some insulation material is jamming the airlock	Empty machine. Remove the offending object by forward and backward movement of the airlock.
	Airlock overload	Switch off the main switch, wait for 2 minutes, switch it on again. If the fault occurs again, empty the machine, check the airlock for foreign objects and clean it.
The red "Airlock fault" indicator lamp comes on Even switching the machine off and switching it on again does not reset the fault. The machine is not ready.	Heavy salt deposits in the airlock	Clean the airlock with water additive
	A component in the electrical switchgear has been damaged.	If no other cause can be established, you can contact the manufacturer or dealer for further fault analysis.
The pressure at the outlet connection has been checked with the pressure gauge and is less than 200 mbar.	The airlock sealing lips are worn.	Visual inspection of the airlock seals. Replace airlock seals if necessary.
	Felt ring seals at the shaft ends of the airlock rotor are worn	Replacement of the felt ring seals by the manufacturer, dealer or maintenance partner.
	Internal hose connections or non-return valves damaged or faulty	Check the machine's internal hoses, clips and non-return valves.
	Supply voltage is too low.	Select a suitable supply voltage Use a shorter mains cable with 2.5 mm ² cross-section.
	A blower has failed Fehler! Textmarke nicht definiert.	Check the blower Information on this is available from X-Floc.
The blower capacity cannot be changed. The illuminated display for the air setting is not working. Other controller functions are faulty.	Electrical connection between controller and machine is faulty.	A pin of the control plug may not be making good contact, Check the pins and sockets for damage. Rectification by electrician, or manufacturer or dealer. The control cable may be damaged. Check and repair only by specialist staff.
The construction site supply protection trips repeatedly and disconnects the supply.	The MCB or fuse used is too small or too fast.	Use a different power source. With a "light current" machine, one phase of a 3-phase supply can be used with an adaptor. Normally the 3-phase supply is protected by slower fuses or MCBs. Shut down the second and third fans to reduce the power consumption.
Airlock rotor only turns slowly and stutteringly. Airlock shuts down after a short time. Frequency converter indicates overload.	The frequency converter in the electrical switchgear is damaged.	Disconnect the machine from the supply. Further error analysis through error report at the inverter is possible, in conjunction with a service point.
After an electrical defect, both the	Fuse F6 is damaged.	Replace fuse F6 with the aid of the circuit diagram in



Fault / Problem	Possible causes of fault	Rectification
red and green indicator lamps come on. The machine does not respond.		the operating instructions and the legends on the fuse holder (spare fuses in the control cabinet).
The construction site supply RCD reports excessive fault current (residual current) and goes into fault.	The residual current in the corresponding circuit is too high. Because of the frequency converter, the residual current of a Zellofant is approx. 3 – 5mA.	This is only a fraction of the permissible residual current (30 mA). Other load circuits are probably causing the RCD to trip, or the winding of a blower motor has an insulation fault after overheating, and this is causing the residual current.
Airlock and agitator start up but the blowers remain at a standstill (400V machines only).	Blowers are not connected to the neutral conductor	Check the neutral conductor in the supply
Material is turning round on the agitator of the machine, but no material is being delivered.	Under certain conditions, material bridges can form in the hopper attachment.	Check the crusher arm for deformations. Fit a deflector plate in accordance with the manufacturer's specification.

Table 10-1: Overview of troubleshooting measures

10.2 Frequently asked questions

Problem	Possible causes	Rectification
The compression density achieved when injecting loose insulation material falls below the required value. Example: Achieved: 40 kg / m ³ Required: 55 kg / m ³	Air capacity of the machine is inadequate	Consider using a booster station
	Seals worn	Airlock pressure check, seal replacement
	Supply voltage too low	Establish an adequate supply
	Air filter cartridge contaminated	Clean or replace
	Hose runs too long and/ or height of rise too great	Reduction to the next smaller size hose after approx. 40 – 60 m of 3" NB (75 mm NB) hose, possibly increase the air capacity with a booster station
	Adjust material and air settings	Set air to maximum, reduce material until the required compression is achieved.
	Is the dynamic pressure control function activated? (Air and overpressure indicator lamps flashing alternately)	If it is, increase the setting for the pressure threshold, or switch off the dynamic pressure control.
The compression density achieved when injecting loose insulation material exceeds the required value. Example: Achieved: 60 kg / m ³ Required: 45 kg / m ³	Is the second blower switched off?	Check the switch position, switch on second blower!
	Is the dynamic pressure control function activated? (Air and overpressure indicator lamps flashing alternately)	If it is, reduce the set pressure threshold at the machine. If not, switch on the dynamic pressure control.
	Adjust material and air settings?	Set the air lower, select a higher material setting, so that the required compression is achieved.
	Booster station connected	Uncouple booster station.
	Is the second blower switched on?	Check the switch position, switch off second blower!

Table 10-2: Frequently asked questions



11 Tips on processing practice

11.1 General

The dynamic pressure control function can be a major advantage in achieving uniform filling of cavities without nests or points with increased compression.

Using this function, the behaviour can be improved in the following cases:

- Insulation of cavities with boarding materials that are prone to deformation and damage. The pressure is effectively limited during injection.

- Insulation of sloping roof elements. Avoidance of points with increased compression density. Reduction of the effect of the hose routing chosen by the installer.

Practical settings are given by values at which the resulting pressure at the end of the hose is approx. 125 – 175 mbar with short hoses, and approx. 175 – 275 mbar with heights of rise and hose lengths over 50 m.

Please refer to Table 11-1 for the effect of the various parameters.

Influence parameter	Change	Processing density	Processing speed
Air volume setting	Increase with the same material volume setting	↑	--
Material volume setting	Increase with the same air volume setting	↓	↑
Electronic pressure control / control	Increase in the pressure threshold	↑	↑
Head	Increase	↓	↓
Hose length	Extension	↓	↓
Hose diameter	Increase	↑	↑
Hose property	Smooth / rough surface	↑ / ↓	↑ / ↓
Air tightness of the cavity	Sealed / ventilated / open	↓ / ↑ / ↓	↓ / -- / ↑

Table 11-1: Effect of air and material volume

11.2 Cellulose insulation material

In the standard version, the *Zellofant M95* is optimised for injection with cellulose insulation material. No accessories are required.

11.3 Setting chart

The settings for a specific application can be approximated on the basis of a setting chart (see figure). The chart can be used for compressed injection and injection with rotating nozzles. The density resulting from open blowing is a material property and can vary depending on the insulation material used.

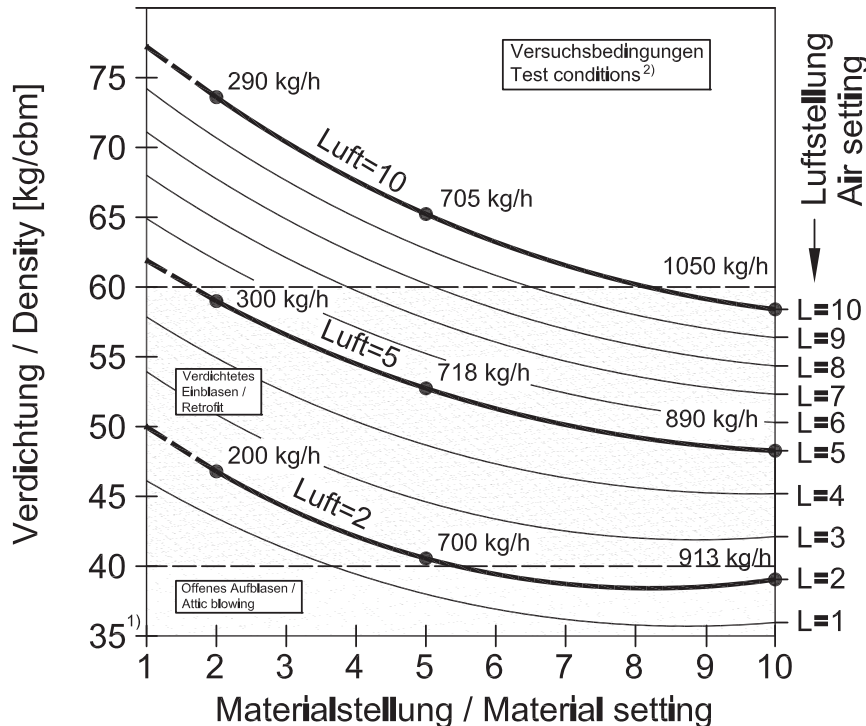
To use the chart, start from the required installation density on the left (vertical axis) and move to the right

to the point where the horizontal density line intersects the last of the air lines drawn on the chart. Now you can read off the air capacity setting vertically below this point (horizontal axis).

Example:

Required installation density = 55 kg/cbm → Air setting L=7 → Material setting M=10. The chart shows that the same installation density is achieved, for example, with the setting L=5 and M=4 (e.g. filling small cavities).

Any deviation from the chart required for on-site practice can, for example, be attributed to greater heights of rise, increased hose lengths, different hose diameters and other parameters. Consequently, under certain circumstance, the values with the particular application must be adjusted by the deviation that arises.



1) Lose Schüttdichte je nach verwendetem Produkt / Loose fill density varying with the used material
2) Wandelement, 2 Gebläse, Zellulosedämmstoff, 15 m Einblassschlauch, keine Steighöhe, x-jet 63 Einblasdüse
Stud wall, 2 blowers, cellulose fiber, 15 m blowing hose, no elevation, x-jet 63 nozzle

Fig. 11-1: Setting chart

11.4 Friable insulation materials

When processing friable bulk materials (for example, RigiBead, Thermofill S, SLS20, HK35, hyperdämm KD, expanded cork granules and similar materials), it is advisable to screen off the airlock at approx. 50 – 60% using an airlock slide gate. As a temporary measure, the screening can be achieved by fixing a metal plate or piece of card on with adhesive tape. This prevents excessive loading of the airlock chamber and the resulting material plugs in the hose. Airlock slide gates can be retrofitted to machines not already equipped with them.

As an additional facility, a hold-back grille can be used in the hopper attachment. The hold-back grille allows the bag to be set down on the grille, so that the bulk material trickles out automatically.

Typically, bulk material treated to make it water-repellent is injected into a cavity via injection nozzles.

11.5 Wood and grass fibres (and similar materials)

When processing fibrous materials with a unidimensional characteristic, (grass fibre, wood fibre, etc.), a larger conveying air volume is required because of the unidimensional characteristic of the fibre constituents. This can be achieved by using a booster station.

In some individual cases, the Zellofant M95-400V-6.7kW (with three fans fitted) is adequate.

For cases where repeated blockages occur in the agitator, the resistive torque in the agitator can be reduced by using a shortened crusher arm. The standard crusher arm can also be shortened by sawing off the bent-up section of the crusher arm.

The extruded balls must not be fed into the hopper either as whole blocks, nor should they be precrushed into too small lumps. Ideally, a ball should be split into 4 – 6 slices. In this way, the delay time above the interchangeable grille approaches an optimum. If the delay time is too short, the interchangeable grille fitted (100 mm mesh) can be replaced with an interchangeable grille with a 75 mm mesh.

11.6 Mineral fibre granulate

Mineral fibre granules are heavier than fibres of organic materials. So you always have to set a much higher air volume in relation to the material volume. As a result, the processing speeds that can be achieved are not as high as with organic fibres.

It is advisable to use an airlock slide gate. This reduces the size of the batches of material flowing out of the airlock into the hose. The risk of blockages in the hose, nozzle, or reducing pieces is lessened. Otherwise, the information given in the previous section also holds true here.

11.7 Wet spraying

Because of the outstanding agitation, the Zellofant is well suited for processing using the wet spraying



process. In this case, the most uniform material flow possible is required at the spray head. This can be achieved by the following measures:

- Use of an airlock slide gate / partially screening off the airlock
- Possible use of a 75 mm mesh interchangeable grille
- Possible use of a direct reduction DR75>63 or DR75>50
- Using at least 30 m of injection hose (material becomes more uniform)
- Material settings between M = 6 – 10
- Only 1 blower, air setting L = 2 – 4

One possible way of making the work easier is by synchronising switch-on and switch-off of the required liquid pump with the operation of the injection machine itself. The liquid pump is then controlled via the auxiliary appliance socket of the *Zellofant* and a master-slave switching controller.

11.8 TwinPack Zellofant M95

11.8.1 Description

The TwinPack *Zellofant M95* is an intelligent interconnection of two *Zellofant M95* machines. One machine (master) is operated directly via the remote control and the second machine (slave) is jointly controlled from this via a master-slave cable.

Both machines discharge into a common hose via a 3" (75 mm NB) Y-piece.

Two machines of any type can be interconnected, whose maximum pressures – as measured with the airlock pressure check – differ by as little as possible.

The combination offers quite a few advantages compared with using a single machine:

- With two machines coupled, higher throughputs can be handled. On suitable construction sites, this reduces the injection time without increased manpower requirements.
- If a large number of small elements have to be filled (split working), each of the two machines can be controlled separately by an installer (injector), whilst only one person fills both machines.
- Two different sites can be tackled on the same day, with one machine at each site.

- If one machine is being maintained, operation can still continue with the remaining machine.
- The investment can be spread out over a period, purchasing the second machine when the appropriate volume of orders is reached; reselling if the volume of orders declines.

11.8.2 Set-up

The following parts are needed to set up a TwinPack:

- Two *Zellofant M95* 230V or 400V machines (any combination).
- A control adaptor to connect one controller to two machines.
- A 3" (75 mm NB) Y-piece to route the two material flows together.
- Additional non-return valves directly after the blowers in the machine (if these are not already provided).

11.8.3 Operation

The following rules and regulations must be observed:

- The remote control must be connected to the machine that delivers the higher pressure with the pressure check. This machine also supplies both machines with the necessary control voltage.
- The second machine is connected via the master-slave cable.
- **Important:** the pressure threshold set on the master machine must be set to a value that the weaker (slave) machine can still deliver. For setting, the pressure level of each machine must be checked individually with the same pressure gauge. With air tight compartments, one or more blowers must be switched off on the respective machines.
- The hose sections running from the machines to the Y-pieces must be of a similar length (maximum 15 m each).
- The dynamic pressure control can be used in conjunction with the master machine's pressure annunciator unit.

11.8.4 Material delivery

The material delivery results from the throughputs of the two individual machines

	kg/h of the first machine
+	kg/h of the second machine
x	0.9
=	kg/h TwinPack

12 Technical data

12.1 Overview

Machine type :	Zellofant M95			
Storage volume / hopper volume	approx. 0.44 m ³			
Outlet connection diameter	76 mm / 3" hose connection			
Dimensions (approx. size) :	880 x 1420 mm (D x H)			
Airlock vent	standard			
Machine control	cabled remote control / optional radio remote control			
Dynamic pressure control	available			
Airlock material:	fully stainless steel			
Required ambient temperature:	-10°C to + 30°C			
	M95-230V-3,6kW	M95-400V-4,2kW	M95-400V-4,7kW	M95-400V-6,7W
Material delivery – compressed injection (max.)	685 kg/h ³⁾	750 kg/h ³⁾	800 kg/h ³⁾	1,000 kg/h
Material delivery – with open blowing (max.)	600 kg/h ⁴⁾	650 kg/h ⁴⁾	830 kg/h ⁴⁾	1,050 kg/h
Maximum height of rise	18-24 m	20-25 m	22-30 m	22-40 m
Maximum pressure at the outlet connection (approx)	300 mbar	300 mbar	340 mbar	390 mbar
Weight (empty)	155 kg	160 kg	160 kg	180 kg
Rated power	3.6 kW	4.2 kW	4.7 kW	6.7 kW
Installed air capacity	2 x 1.2 kW	2 x 1.2 kW	2 x 1.6 kW	3 x 1.6 kW
Airlock drive motor rated power	0.55 kW	0.75 kW	0.75 kW	0.75 kW
Agitator drive motor rated power	0.75 kW	0.75 kW	0.75 kW	1.1 kW
Supply required	230V~16 A	400V 3~16A/PE/N	400V 3~16A /PE / N	400V 3~16A/PE/N
Open blowing	●	●	●	●
Compressed injection	●	●	●	●
Wet spraying	● ¹⁾	● ¹⁾	● ¹⁾	● ¹⁾
up to a loose bulk density of	100kg/m ³	110 kg/m ³	130 kg/m ³	140 kg/m ³
Bulk material and cavity wall insulationl	50 kg/m ³	60 kg/m ³	60 kg/m ³	90 kg/m ³
				

1) suitable in conjunction with airlock slide gate

Table 12-1: Technical data overview

12.2 Miscellaneous data

12.2.1 Noise in operation

The workplace noise level, measured in accordance with EN ISO 11201, is

- 76.2 dB(A).

Depending on the local conditions (e.g. in a confined space) a higher noise level can arise.

12.2.2 Cabled remote control

Control cable length (standard): 50m

Up to 4 control cables can be connected together:
total control cable length: 200m

12.2.3 Radio remote control (optional)

See operating instructions for "FFB 2000" radio remote control.

12.2.4 Dynamic pressure control

Threshold for max. 80-325 mbar (infinitely pressure at the outlet adjustable) connection

12.2.5 Tyre pressures

Pneumatic tyres on transport frame: max. 2.5 bar

12.2.6 Material delivery

The material delivery depends on the type, length and diameter of the hose, the height of rise, the method of construction of the property to be insulated, and the insulation material used.

Maximum material deliveries related to cellulose insulation material:

M95-230V-3.6kW	600 kg/h
M95-400V-4.2kW	650 kg/h
M95-400V-4.7kW	830 kg/h
M95-400V-6.7kW	1050 kg/h

12.2.7 Electrical control cabinet

The electrical control cabinet is assembled using high-grade and previously proven components. Individual components can be replaced by a trained electrician, using the circuit diagram.

The machine is equipped with an auxiliary appliance socket (24V DC) with which, for example, a booster / extractor station master-slave can be controlled.

12.3 Optional accessories

Description	Item No.
Adjustable airlock slide gate	2749
Direct reduction 75>50 NB	1972
Direct reduction 75>63 NB	526
FB2000 radio remote control	1448
Deflector plate (to prevent bridges forming)	306
Booster / extractor station 3.0kW	1109
Booster / extractor station 3.0kW complete set	1374
Booster / extractor station 2.8 kW	2711
Booster / extractor station 2,8kW complete set	2886
Interchangeable grille 75 mm mesh	254
TwinPack adaptor	457
Y-piece 3" (75 mm NB)	456
Hold-back grille (for bulk materials)	2941
Master-slave switchbox 24V DC / 230V~	1057
Master-slave switchbox 24V DC / 400V~	2605

Table 12-2: Optional accessories

13 Drawings

13.1 Exploded drawings

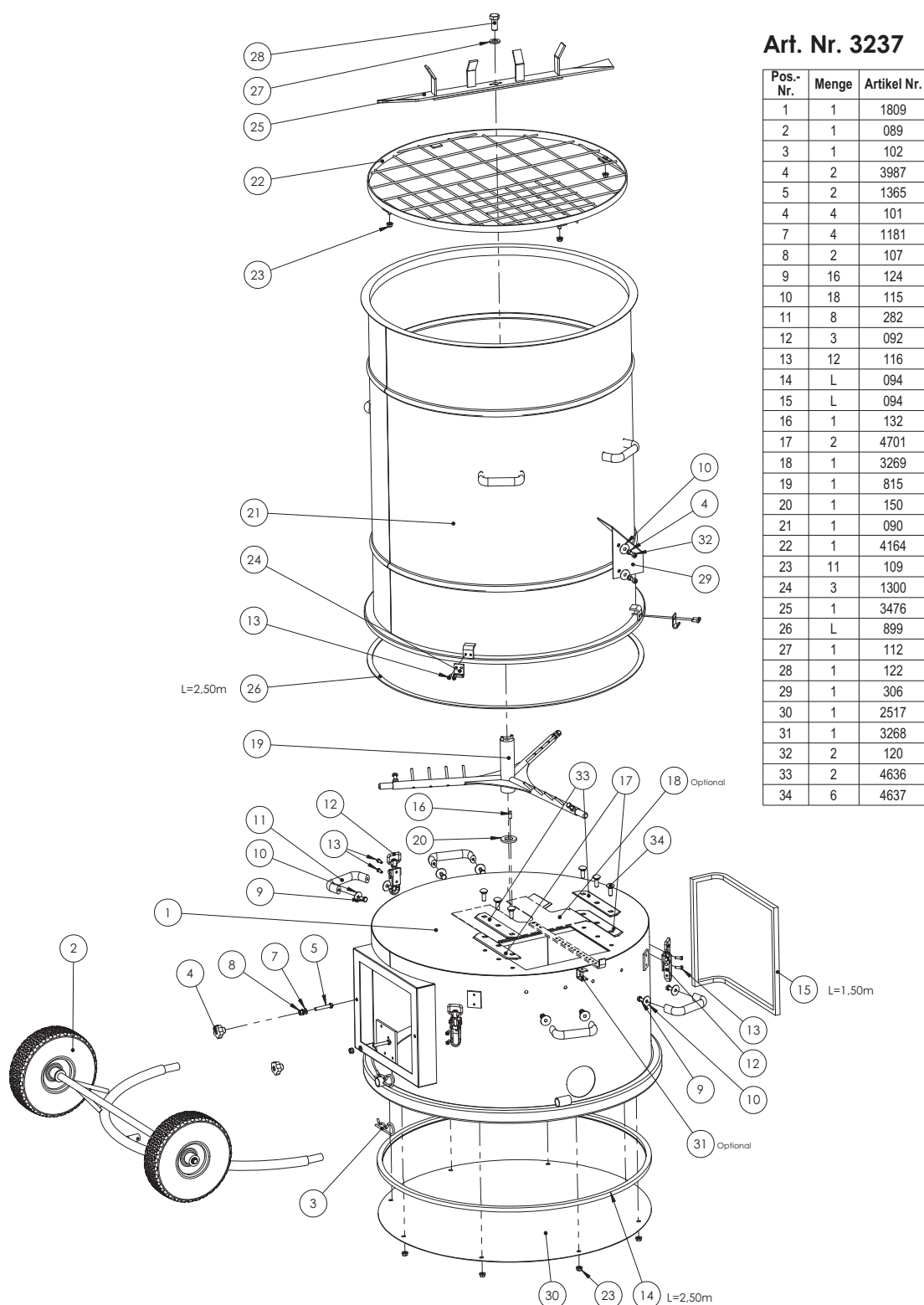
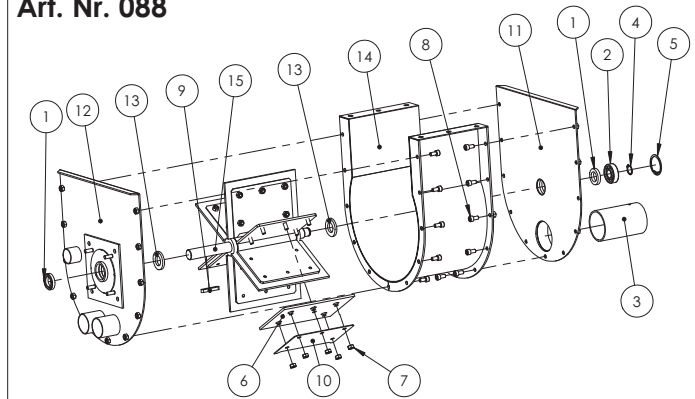


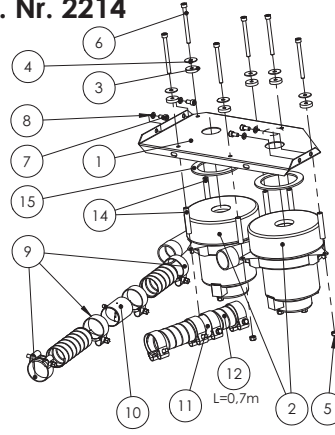
Fig. 13-1. 3D view of M95 casing

Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	2	099	9	1	111
2	1	419	10	6	1751
3	1	447	11	1	816
4	1	128	12	1	013
5	1	127	13	2	5666
6	1	1503	14	1	817
7	30	107	15	1	034
8	22	120			

Schleuse M95-200 2x50
Art. Nr. 088



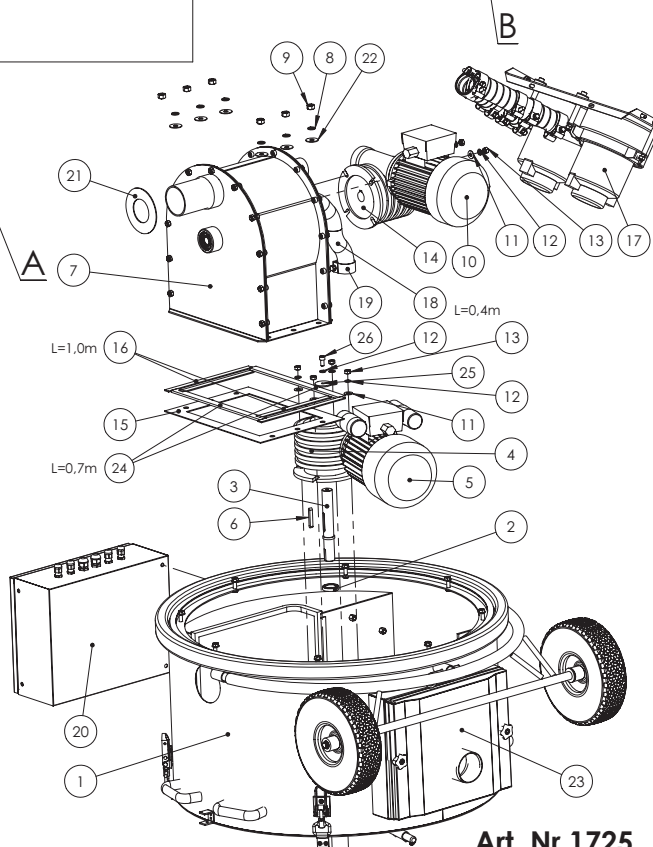
Zulußeinheit 2,6kW
Art. Nr. 2214



Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	2847	9	8	5097
2	2	1419	10	1	4491
3	6	768	11	1	1499
4	6	115	12	L	4497
5	6	347	14	6	4641
6	6	2213	15	2	1738
7	4	120			
8	4	101			

Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	3237	13	8	107
2	1	099	14	1	594
3	1	051	15	1	1861
4	1	316	16	L	899
5	1	1368	17	1	2214
6	1	111	18	L	4495
7	1	088	19	2	3125
8	6	100	20	1	2141
9	6	106	21	1	1662
10	1	595	22	6	3967
11	8	2548	23	1	3552
12	9	101	24	L	5189
			25	1	5211
			26	1	120

Zellofant M95-230V-3,6kW

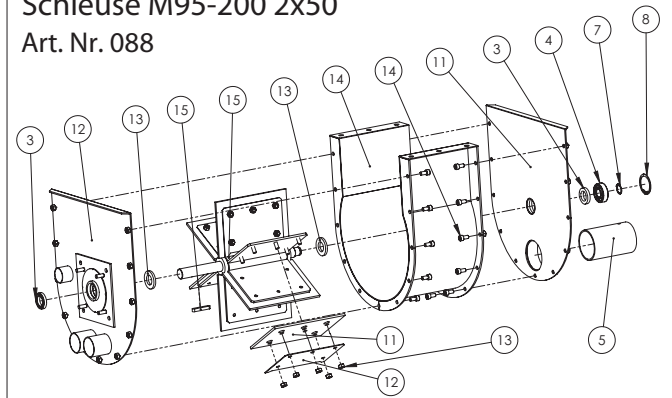


Art. Nr.1725

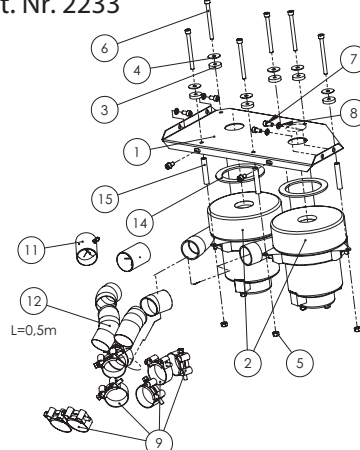
Fig. 13-2. 3D view of M95-230V-3.6kW

Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
3	2	099	14	22	120
4	1	419	15	1	111
5	1	447	11	1	816
7	1	128	12	1	013
8	1	127	13	2	5666
11	1	1503	14	1	817
12	6	1751	15	1	034
13	30	107			

Schleuse M95-200 2x50
Art. Nr. 088

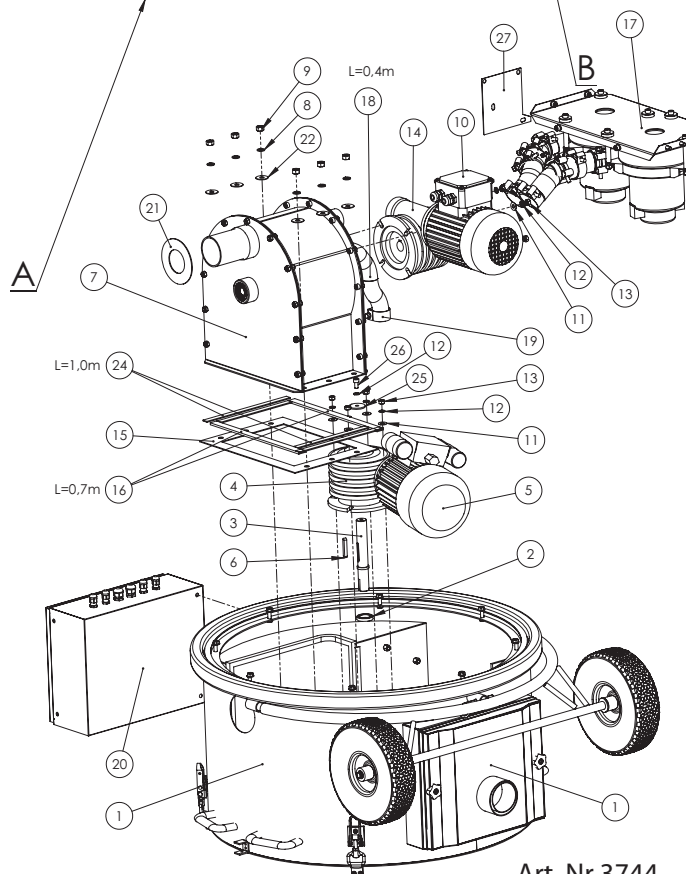


Zuluftinheit 3,2kW
Art. Nr. 2233



Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	2847	8	6	101
2	2	2360	9	8	5097
3	6	768	10	1	1499
4	6	115	11	1	4491
5	6	347	12	L	4497
6	6	2213	14	2	1738
7	6	120	15	6	4641

Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	3237	13	8	107
2	1	099	14	1	317
3	1	051	15	1	1861
4	1	316	16	L	5189
5	1	1368	17	1	2233
6	1	111	18	L	4495
7	1	088	19	2	3125
8	6	100	20	1	3749
9	6	106	21	1	1662
10	1	305	22	6	3967
11	8	2548	23	1	4907
12	9	101	24	L	899
			25	1	5211
			26	1	120
			27	1	3084



Zellofant M95-230V-4,7kW

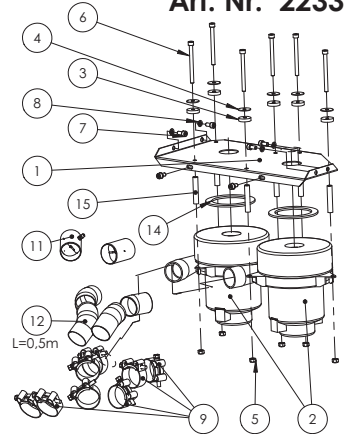
Art. Nr.3744

Fig. 13-3. 3D view of M95-230V-4.7kW

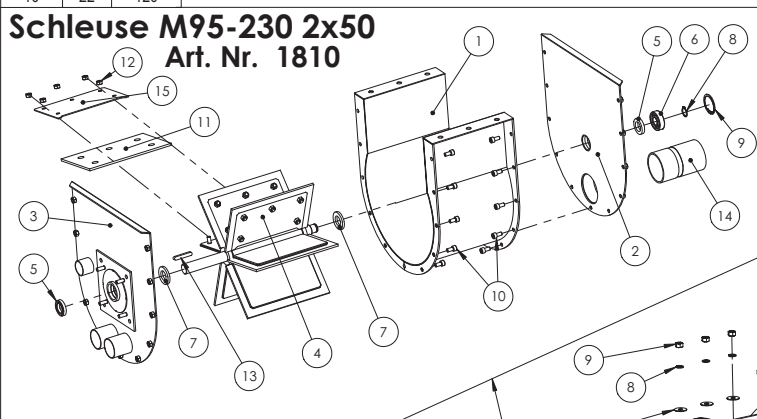
Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	1691	11	1	1760
2	1	816	12	30	107
3	1	013	13	1	111
4	1	1692	14	1	2829
5	2	099	15	6	1734
6	1	419			
7	2	5666			
8	1	128			
9	1	127			
10	22	120			

Pos.-Nr.	St.	Artikel Nr.
1	1	2847
2	2	2360
3	6	768
4	6	115
5	6	347
6	6	2213
7	6	120
8	6	101
9	8	5097
10	1	1499
11	1	4491
12	L	4497
14	2	1738
15	6	4641

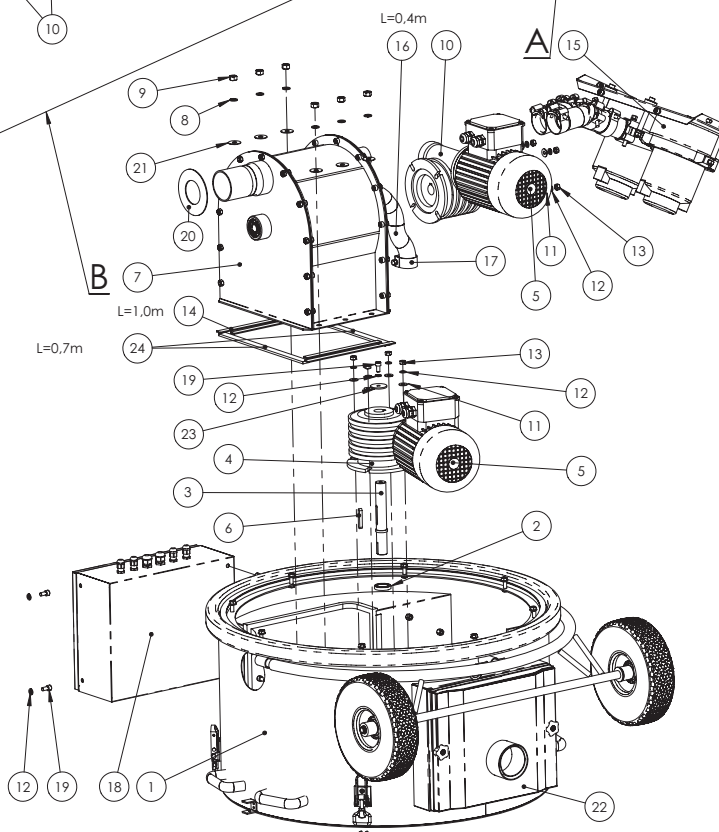
Zulußeinheit 3,2kW
Art. Nr. 2233



Schleuse M95-230 2x50
Art. Nr. 1810



Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	3237	12	13	101
2	1	099	13	8	107
3	1	051	14	L	899
4	1	317	15	1	2233
5	2	305	16	L	4495
6	1	111	17	2	3125
7	1	1810	18	1	2743
8	6	100	19	5	120
9	6	106	20	1	1662
10	1	317	21	6	3967
11	8	2548	22	1	4907
			23	1	5211
			24	L	5189



Zellofant M95-400V-4,7kW

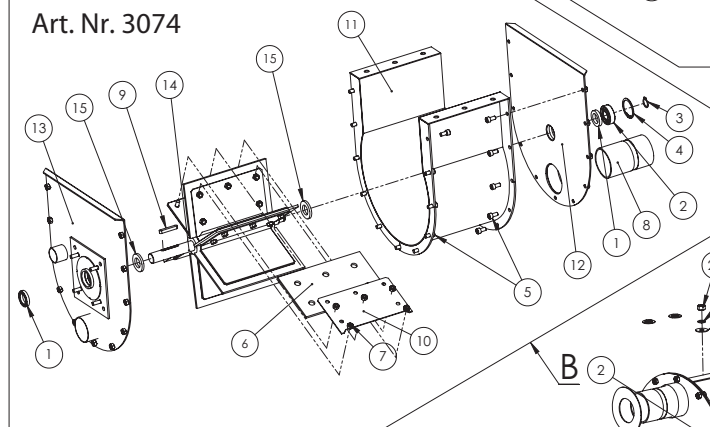
Art. Nr. 1835

Fig. 13-4. 3D view of M95-400V-4.7kW

Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	2	099	11	1	1691
2	1	419	12	1	816
3	1	128	13	1	028
4	1	127	14	1	1692
5	22	120	15	2	5666
6	1	1760			
7	30	107			
8	1	2829			
9	1	111			
10	6	1734			

Schleuse M95-230

Art. Nr. 3074



Pos.-Nr.	St.	Artikel Nr.	Pos.-Nr.	St.	Artikel Nr.
1	1	3237	13	1	1662
2	1	3074	14	2	3125
3	1	111	15	1	3238
4	1	051	16	1	099
5	6	100	17	L	4495
6	1	1369	18	7	120
7	1	843	19	1	2972
8	8	2548	20	6	3967
9	15	101	21	1	4907
10	8	107	22	6	106
11	1	305	23	L	899
12	1	317	24	L	5189
			25	1	5211
			26	1	3084

Zellofant M95-400V-6,7kW

Art. Nr. 2923

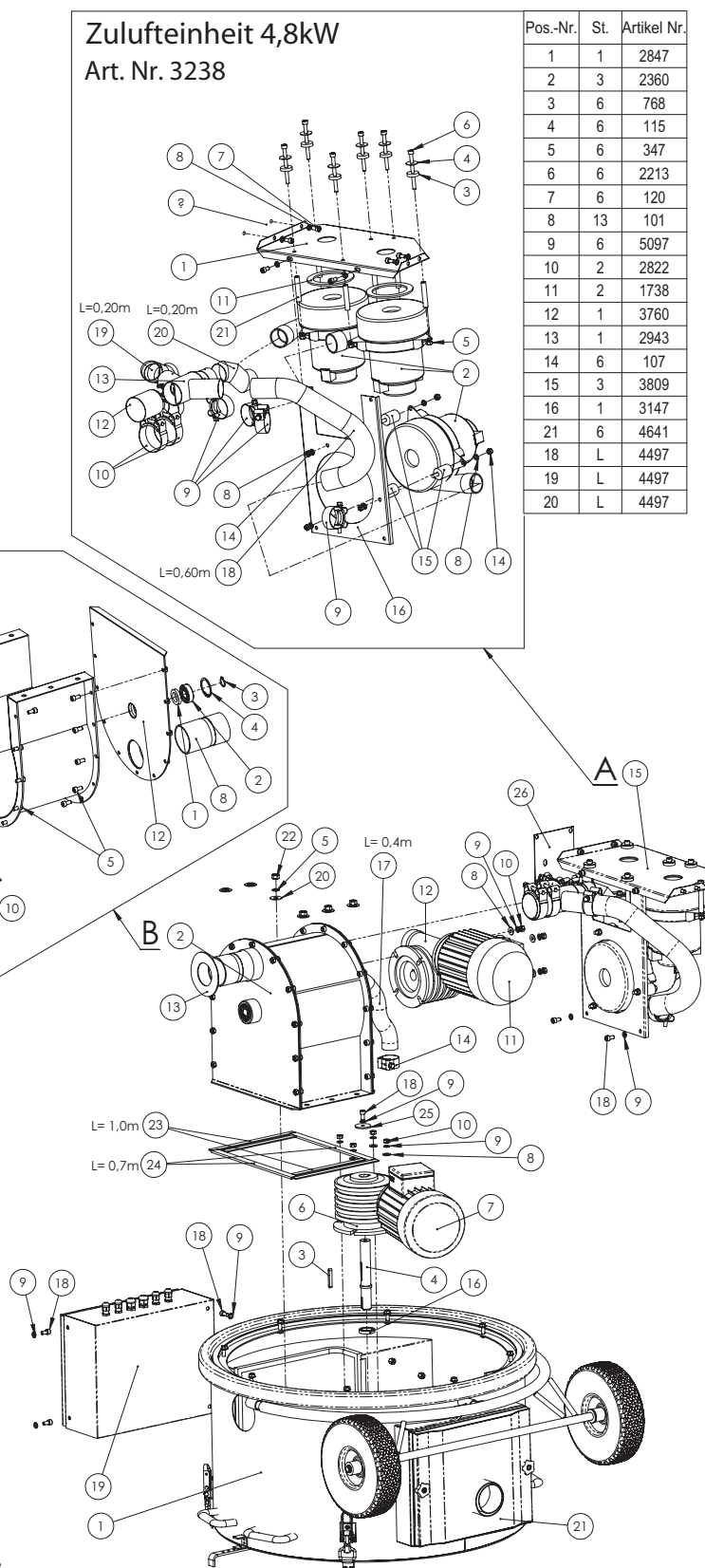


Fig. 13-5. 3D view of M95-400V-6.7kW

13.2 Schematic diagrams

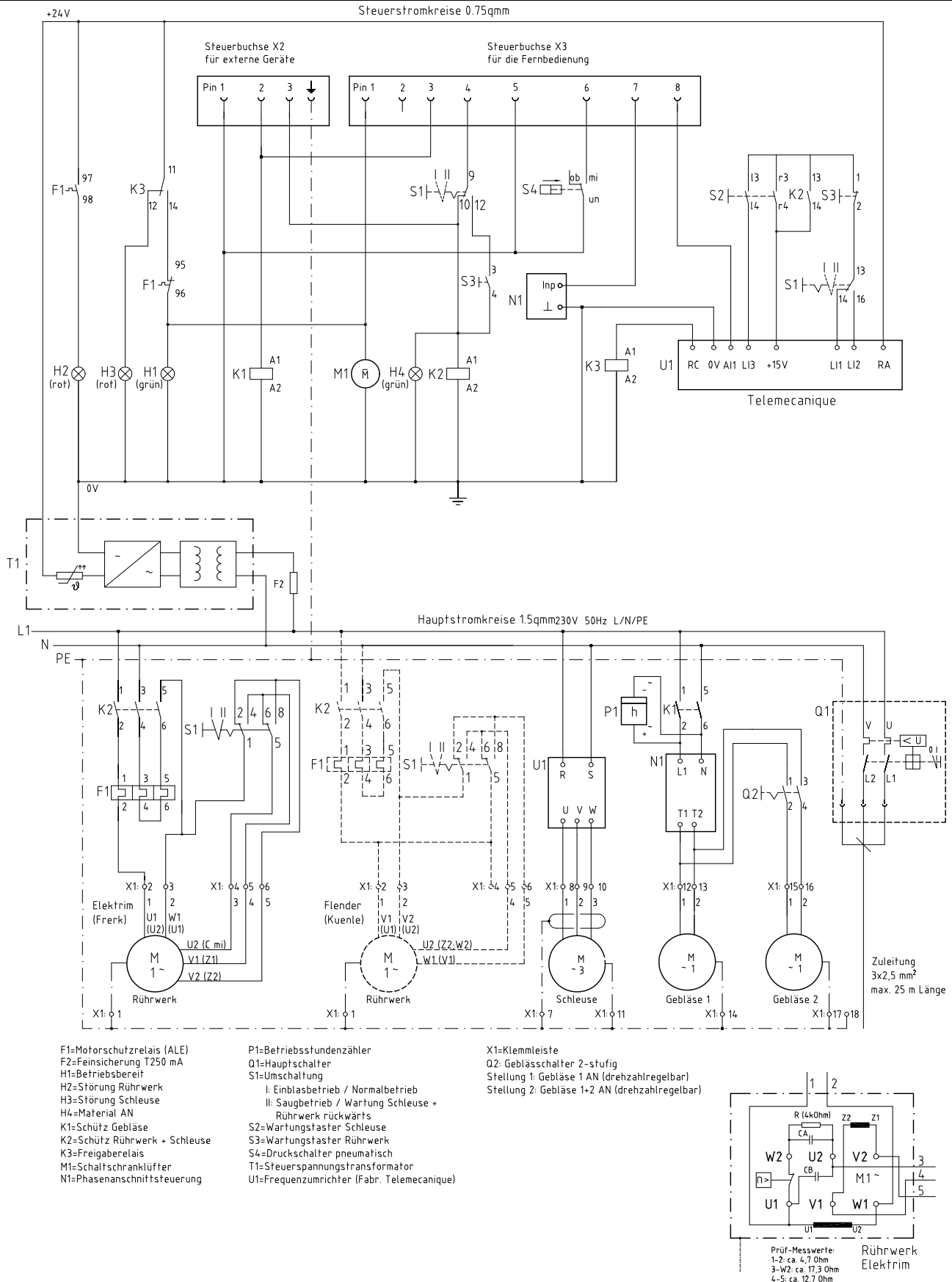
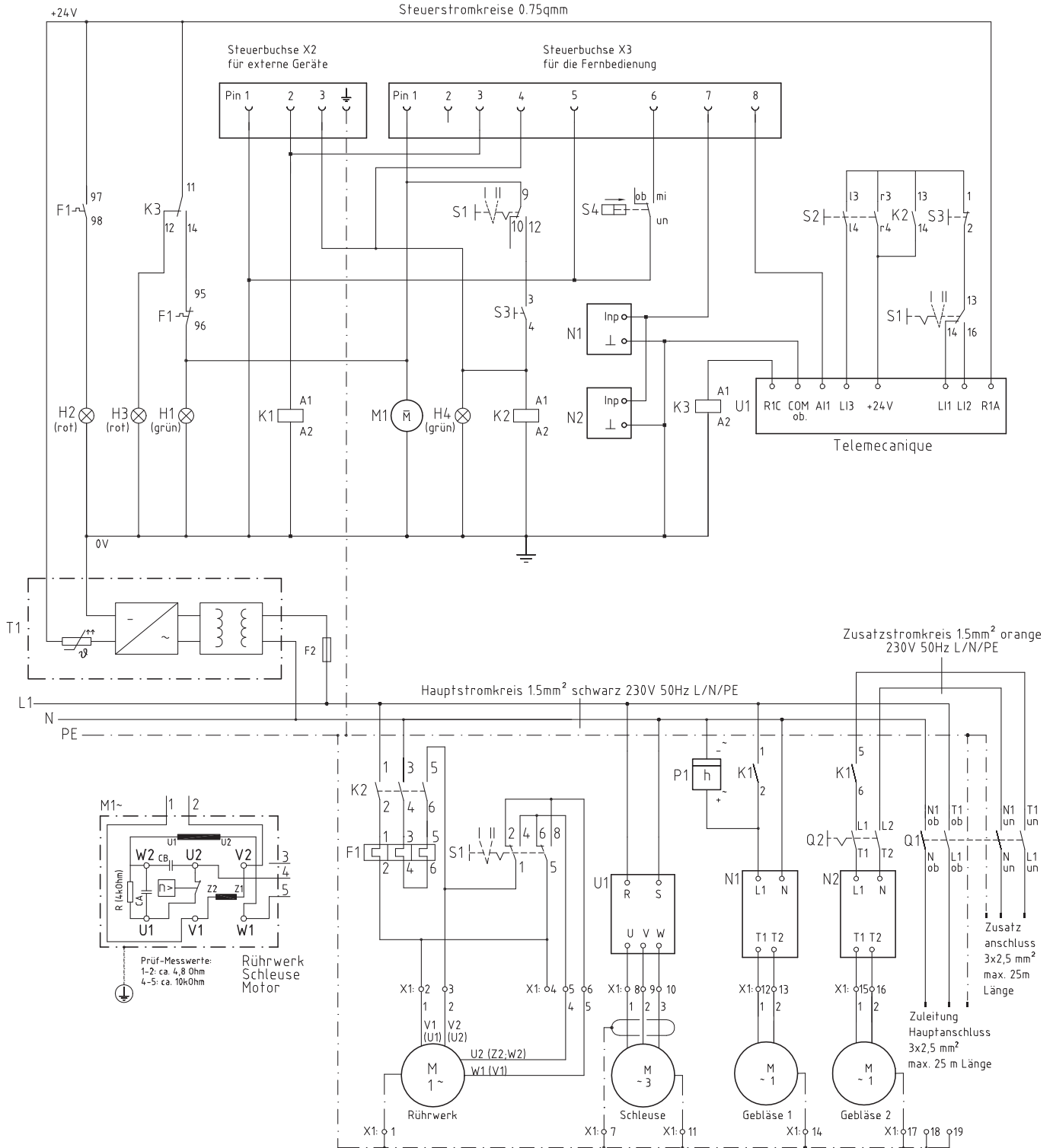


Fig. 13-6. Schematic diagram of M95H-230V-3.6kW



F1=Motorschutzrelais (ALE)
F2=Feinsicherung T250 mA
H1=Betriebsbereit
H2=Störung Rührwerk
H3=Störung Schleuse
H4=Material AN
K1=Schütz Gebläse
K2=Schütz Rührwerk + Schleuse
K3=Freigaberelais
M1=Schalterschranklüfter
N1=Phasenanschnittsteuerung

P1=Betriebsstundenzähler
Q1=Hauptschalter
S1=Umschaltung
I: Einblasbetrieb / Normalbetrieb
II: Saugbetrieb / Wartung Schleuse +
Rührwerk rückwärts
S2=Wartungstaster Schleuse
S3=Wartungstaster Rührwerk
S4=Druckschalter pneumatisch
T1=Steuerspannungstransformator
U1=Frequenzumrichter

X1=Klemmleiste
Q2: Geblässhalter 2-stufig
Stellung 1: Gebläse 1 AN (drehzahlregelbar)
Stellung 2: Gebläse 1+2 AN (drehzahlregelbar)

Fig. 13-7. Schematic diagram of M95H-400V-4.2kW and -4.7kW

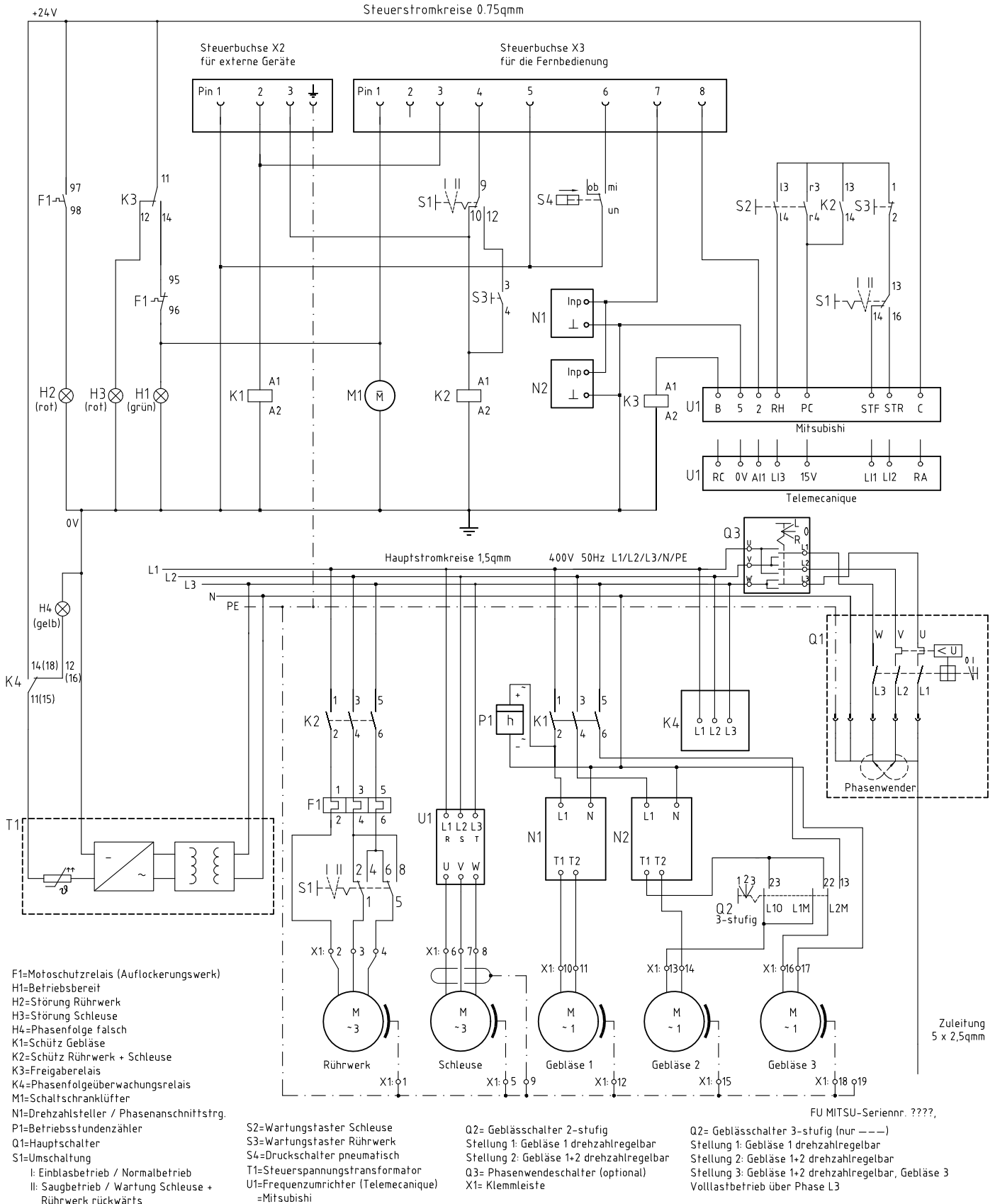


Fig. 13-8. Schematic diagram of M95H-400V-6.7kW

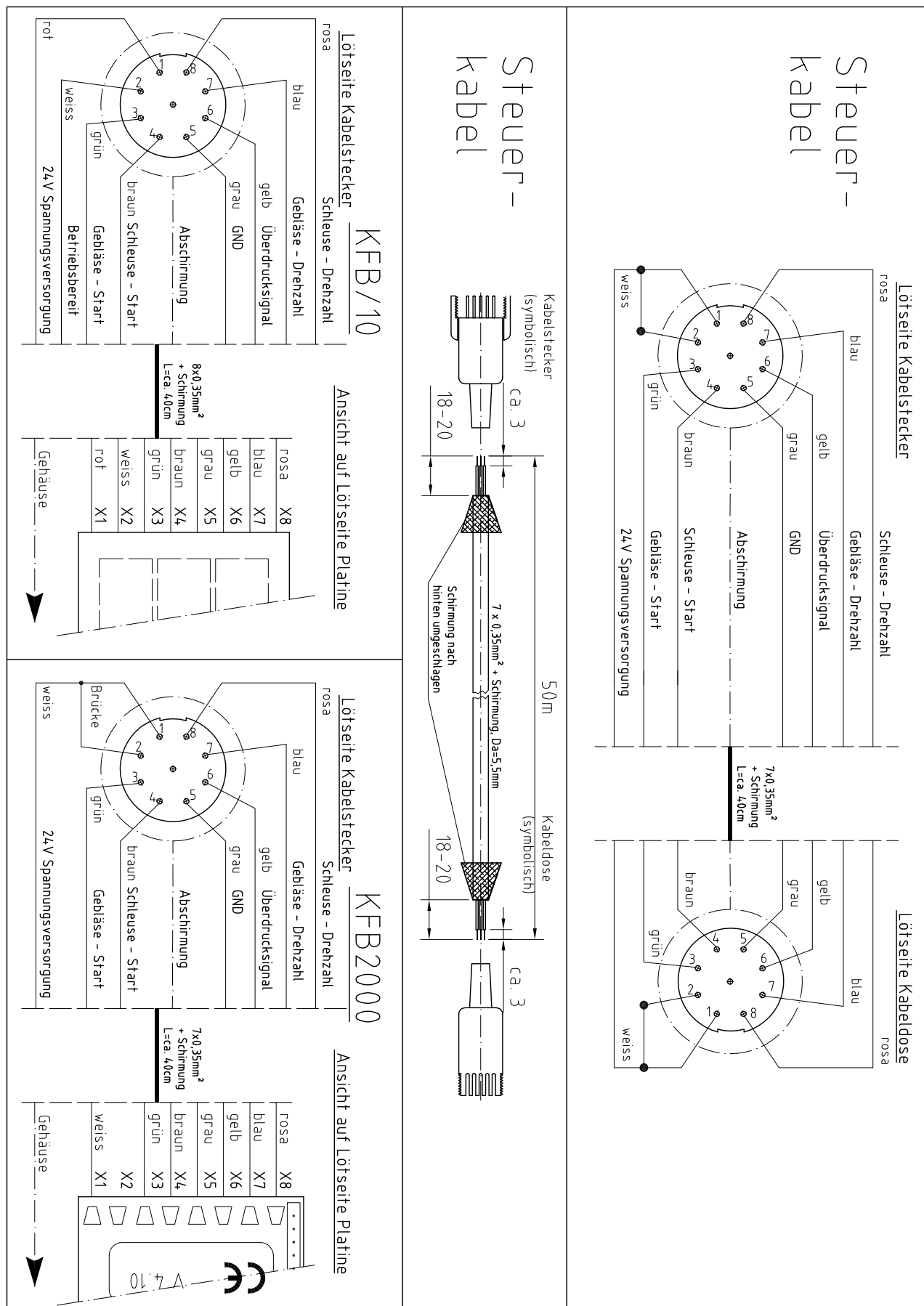


Fig. 13-9: Pin allocation diagram for control cable and controller

14 EC Declaration of Conformity

EC Declaration of Conformity

in accordance with the EC Machinery Directive 2006/42/EEC, Annex II A.

The manufacturer, **X-Floc GmbH**

declares under its own responsibility that the version of the

insulation material processing machine, type Zellofant M95

is developed, designed and manufactured in accordance with EC Directives 2006/42/EC

The following harmonised standards are applied:

- ⇒ EN 12100-1 and EN 12100-2, Safety of machinery; Basic concepts, general design principles;
- ⇒ EN 60204-1, Safety of machinery – Electrical equipment of machines;
Part 1: General requirements
- ⇒ EN ISO 13857, Safety distances to prevent danger zones being reached by the upper limbs
- ⇒ EN 349, Safety of machinery, minimum safety distances to avoid crushing of parts of the human body

The following national standards, directives and specifications have been applied:

- ⇒ standards in common use in machine building in Germany.

In addition, for the product described above, we confirm that it complies with the essential protection requirements as laid down in Council Directive 2004/108/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

To assess the product with regard to electromagnetic compatibility, the following standards have been used:

- ⇒ EN 55014-1, Limits and methods of measurement for radio disturbance of equipment with electric motor drives and electric heaters for domestic use and similar purposes, electric tools and similar electric appliances
 - ⇒ DIN-EN 61000-6-4, Electromagnetic compatibility (EMC) Generic emissions standard - Part 1
- Full technical documentation is available.

The operating instructions for the machine are available

- ⇒ in the original version
- ⇒ in the national language of the user.

Place, date: Renningen, Monday, 8. July 2013

Signature of the manager, **X-Floc GmbH**



14.1 Registration form

X-Floc GmbH • Rosine-Starz-Straße 12 • 71272 Renningen

X-Floc GmbH
Dämmtechnik-Maschinen
Customer Service Dept.
Rosine-Starz-Straße 12

71272 Renningen

Date:

Service registration form

Dear Machine Owner,

We, X-Floc GmbH, constantly strive to provide optimal support for our products. To enable us to keep you informed of all important processing and material-specific knowledge, and also about technical improvements, we kindly request that you complete the following form and return it to us. Please also take note of **Section 5.3** of our operating instructions. Up-to-date information can also be called up via our website on <http://www.x-floc.com>.

Machine details:

Machine type:	Insulation material processing machine
Type:	Zellofant M95-230V-3.6kW Zellofant M95-230V-4.7kW Zellofant M95-400V-4.2kW Zellofant M95-400V-4.7kW Zellofant M95-400V-6.7kW
Serial number:	
Date purchased:	

Owner details:

Firm:		Company stamp:
Sector:		
Street:		
Postcode, Company headquarters:		
Contact:		
Previous owner:		

Insulation material details:

We mainly process the following types of insulation material: (e.g. cellulose, cotton, wood fibre, etc.).		Brand, manufacturer, sales	
We also use your machine technology for the following materials: (e.g. perlite, cork granules, etc.).		Brand, manufacturer, sales	



15 Index

Agitator.....	11, 20, 24, 25, 30	Material blockage.....	15
Air filter.....	20, 21, 26	Material delivery.....	29, 30
Air setting.....	17, 18, 27	Material setting.....	17, 18, 27, 29
Airlock.....	8, 11, 16, 21, 25, 26, 28, 30	Mineral fibre.....	28
Airlock drive.....	30	Non-return valve.....	10, 20
Airlock rotor.....	25	Non-return valves.....	10, 20
Airlock slide gate.....	28	Open blowing.....	30
Airlock vent.....	30	Operation.....	4, 14, 29
Audible alarm.....	18	Outlet connection.....	10, 30
Blower.....	10, 11, 16, 17, 22	Overpressure.....	12, 13, 18, 19
Blower selector switch.....	11, 16	Phase.....	11, 16, 17
Booster station.....	26	Phase change switch.....	11
Carbon brushes.....	20	Phase indicator lamp.....	11
Cellulose.....	27	Pneumatic wheel.....	10
Cellulose insulation material.....	27	Pressure.....	11, 12, 17, 18, 19, 20, 21
Centrifugal fan.....	10, 11, 16, 17, 22	Pressure annunciator unit.....	12, 20, 21
Comb mechanism.....	10	Pressure check.....	20, 21
Compressed injection.....	30	Pressure threshold.....	11, 12
Control.....	9, 11, 17, 18, 19, 30	Processing speed.....	27
Control cable.....	9, 30	Radio remote control.....	30
Crusher arm.....	10	Rating plate.....	11
Deflector plate.....	31	Ready.....	11
Direct reduction.....	31	Registration.....	7, 43
E-Stop.....	14	RigiBead.....	28
Felt rings.....	20, 21, 25	Rotary airlock.....	5, 10
FFB 2000.....	30	Sealing lip.....	25
Friable.....	28	Shutdown.....	14
Hold-back grille.....	31	Supply.....	15, 25, 26, 30
Hopper attachment.....	9	Technical data.....	30
Indicator lamp.....	11	Three.....	15, 25
Injection.....	13	Threshold.....	30
Inlet connection.....	10	Throughput.....	27
Insulation material.....	43	Transport frame.....	10
Interchangeable grille.....	10, 31	Transportgestell.....	10
Machine base.....	10	TwinPack.....	29, 31
Main switch.....	9, 25	Warming up.....	17
Master-slave.....	31	Wet spraying.....	28, 30
Master-slave switchbox.....	31	Wood.....	28

Revision tracking

Date	Where	What	Revised by
02.06.2008	Sect. 11.3	Table extended by 2 entries	AG
05.06.2008	Sect. 10.3	New setting chart section added	AG
12.6.2008	Document	Various corrections to text, photographs revised	AG / BL
13.06.2008	Cover	Photograph for 3.6kW replaced	BL
17.06.2008	Exploded drawings	Latest eps inserted	BL
09.10.2008	Abb.12-2	„M95-230V-3,6kW“ statt „M95-400V-3,6kW“	BL
23.02.2009	Tab. 6-1	Aktualisiert	BL
25.03.2009	Abb 12.6	Aktualisiert	BL
2011.06.30	Abb 12.ff	Aktualisiert	MPR