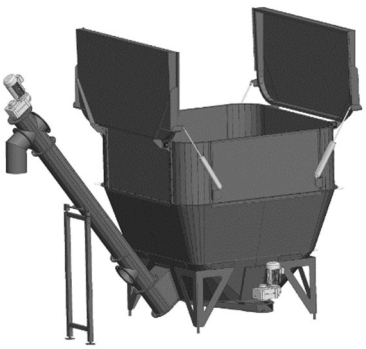
Technik für Agrar & Bau

TAB

Betriebsanleitung



Roto-Single-Line

Andreas Brandt

Tab GmbH

23/11/2016

Technik für Agrar & Bau

EC declaration of conformity (A)

Acc. to the EC Machinery Directive (2006/42/EC) of 17 May 2006, annex IIA
We herewith declare that the design and type as well as the model of the machine described below, which we have launched on the market, conforms to the basic health and safety requirements set forth in the EC Directive 2006/42/EC.

Manufacturer/legal representative:
TAB GmbH,
Bollerheide 1
D-54597 Auw bei Prüm
Phone no.: +49(0)65525558

Description of the machine:
- Function: Dosing and conveying of organic solids
- Type/model: Roto-Single-Line
- Serial number: 46 P500 B 9025
- Year of manufacture: 2016

We explicitly declare that the machine complies with all relevant provisions of the following EC Directive:
- EC Machinery Directive 2006/42/EC

Related harmonized standards, in particular:

EN ISO 13857:2008	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO13857:2008)
EN 349:1993+A1:2008	Safety of machinery – Minimum gaps to avoid crushing of parts of the human body

Place/date:

Details of the signatory:

Andreas Brandt, Managing Director

Signature:

Auw, 28.07.2017

Contents

Introduction

Dear customer,

You have purchased a quality product from the comprehensive range of products made by TAB. We would like to thank you for your trust. When you receive the machine, inspect it for transport damage and missing components! Check the delivered machine and the ordered special equipment for completeness using the delivery note. File a complaint immediately in order to receive a compensation! Read these instructions, in particular the safety instructions, before commissioning. Read this instruction manual carefully in order to fully exploit your newly purchased machine. Ensure that these instructions are made available to all operating staff members before the commissioning of this machine. Should you have any questions or issues, read this manual or contact us. Regular maintenance and prompt replacement of worn or damaged components will increase the service life of your machine.

1 User instructions

Attention!!

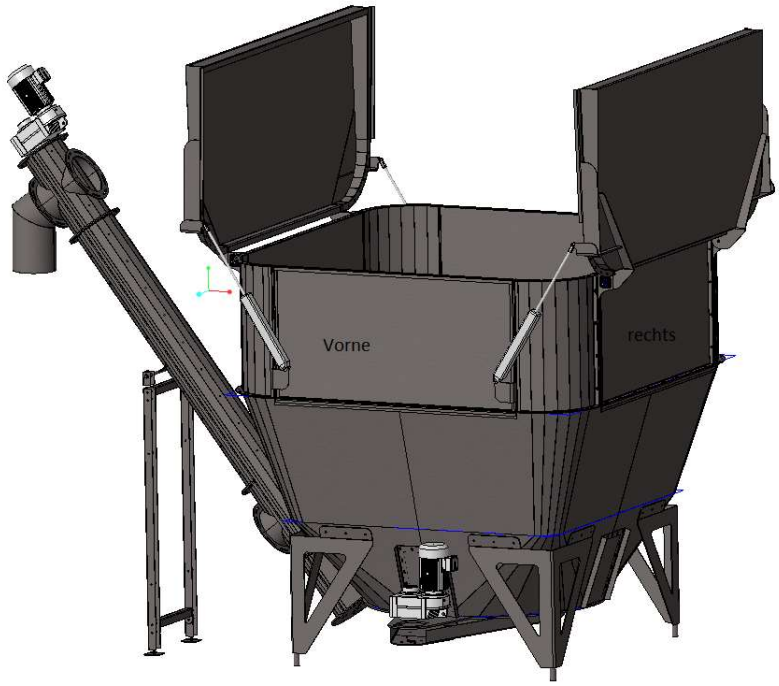
Unauthorised persons are not allowed to stay in this area. Entering the storage tank is prohibited. Training by the manufacturer is obligatory prior to commissioning. The system must be installed in accordance with the operating instructions.

1.1 Purpose of this document

These operating instructions provide important information about the mode of operation, handling and maintenance of the machine. It also provides important information on safe and efficient handling of the machine.

1.2 Position information in the operating instructions

All directions and positions in this manual refer to the operator's work station.



1.3 Safety symbols

All safety instructions are indicated by a symbol and a signal word. The signal word describes the severity of the potential risk.

DANGER

This symbol represents an immediate risk to life or health of people

WARNING

This symbol represents a potential risk to life or health of people

NOTE

Indicates tips and particularly useful information

IMPORTANT

Indicates an obligation to special behaviour or an activity required for proper machine handling

Warning about specific risks

Risk due to open flames

Risk due to electric voltage

Read the operating instructions

Risk due to automatic start-up

2 Basic safety instructions

IMPORTANT INFORMATION ON WORKING WITH THE DOSING DEVICE

2.1 Warning about damage to persons, property and the environment

Observe the relevant accident prevention regulations, other engineering standards and the safety and installation instructions.

In addition to the operating manual, generally applicable as well as local directives governing accident prevention and environmental protection must be clearly displayed and followed.

Persons who are under the influence of alcohol, drugs or medicines must not transport, set up, commission, operate or repair the applicator
.

The minimum age for operators shall be 18 years.

Observe the warning and information signs fitted on the applicator.

Wear tightly fitting clothes when handling, servicing and repairing the applicator.

When working with the applicator, use the personal protective equipment, if required.

All personnel who are involved in the transport, assembly, commissioning, operation, maintenance and repair of the applicator must have read and understood the operating instructions.

We recommend that the operator has all personnel confirm in writing that they have read and understood the operating instructions.

All operators who work with the applicator must be trained with regards to the operation and safety precautions.

The operator should have this training confirmed in writing.

Never leave the device unattended during assembly and maintenance work.

When work is performed on the applicator, it must be de-energized and secured against start-up.

The applicator must not be put into operation without the safety equipment and protective covers fitted by the manufacturer or by the customer.

Malfunctions must be reported immediately to the manufacturer. In case of malfunctions that affect the safety, the applicator must not be used until the fault is rectified.

In case of malfunctions, the applicator must be stopped immediately.

Defects in the applicator must be removed immediately. The applicator may only be put into operation again when all malfunctions have been corrected.

Keep people and animals away from the pit and the operating range of the device during all assembly and maintenance work.

Pay special attention to playing children!

If the work is not carried out by TAB GmbH, it must be carried out and approved by qualified persons. Qualified persons are persons who have been trained by TAB.

Do not make any changes or conversions to the applicator. Unauthorized changes will void the manufacturer/conformity declaration!

The maintenance intervals specified in the operating instructions are mandatory!

Defective components must be replaced with genuine parts with the same electrical and mechanical specifications, otherwise safety and function cannot be guaranteed.

All safety devices (such as protective grilles), fastenings, electrical connections and cables and hydraulic lines must be regularly inspected to ensure that they are in good condition.

Do not suspend safety-relevant components.

The location of isolating safeguards must not be changed!

Make sure that no lubricant, hydraulic or gear oil is released into ground or water.

Always dispose of lubricant residues and waste oil as well as contaminated containers and cloths in accordance with the regulations.

After decommissioning, the equipment must be recycled or disposed of according to the statutory regulations.

2.2 Warning about dangerous electric voltage

Electrical work that is not described in these operating instructions may only be performed by a qualified electrician.

Always switch the electric system off before working on it.

Switch off the main switch before starting the work and secure it against unintended restart by means of a padlock. (Remove key) and attach warning signs.

Use insulated tools only.

Check the electrical equipment and all safety-relevant circuits and modules for proper function after commissioning, maintenance, testing, set-up and repair work. Fasten loose connections and replace damaged cables.

2.3 Warning about automatic start-up

 Risk of injury due to moving and rotating parts (due to feed screws).

No person should stay inside the housing of the applicator during operation!

Do not open the applicator during operation (e.g. protective grating, covers, etc.)

2.4 Hazard due to residual power

 Mechanical residual power may occur on the applicator during maintenance and repair work.The residual power must be safely dissipated. Take appropriate measures when training the staff.

Depressurize system sections to be opened before you start repair work.

Unauthorized assembly and installation work is prohibited. Incorrect installation may result in considerable hazards.

2.5 Liability exclusions

TAB GmbH accepts no liability for damage to people, property or environment and/or loss of profit resulting from the fact that the operating instructions were not observed or not fully observed.

Unauthorised interventions will invalidate the warranty.

TAB GmbH accepts no liability or warranty if a different spare part is used instead of a genuine spare part recommended in the operating instructions, and personal injury, material damage and/or downtime occurs due to the use of that non-genuine spare part.

Warranty and liability claims relating to personal injury and material or environmental damage shall be excluded if these problems arose as a result of one or more of the following causes:

Improper transport, installation, commissioning, operation or maintenance of the applicator; operating the device with defective safety equipment or safety and protection equipment that has been improperly fastened or is not functioning; ignoring the operating instructions
with regards to assembly, commissioning, operation and maintenance; unauthorized structural modifications to the motors (e.g. drive characteristics: power and speed); inadequate monitoring of parts subject to wear; improper repairs;
improper use of the applicator; impact of foreign bodies.

Warranty conditions are set forth in our general
delivery terms and in your contract documents.

2.6 Proper use

Storing and feeding wood chips into processing devices.

The following goods must not be conveyed or introduced using the applicator:

- Bulky solids
- Wood chips with grain size > 40mm
- Other bulk materials

Any other use or use beyond this scope is considered to be improper. The owner or the operator of the applicator shall be responsible for all damage caused by improper use!

To comply with the intended use, do not operate the incomplete machine in hazardous areas.

Intended use also includes:

- Compliance with all the instructions in this operating manual
- Compliance with inspection and maintenance requirements
- Using only genuine parts

IMPORTANT!

Operate the machine only as intended and in a technically faultless condition with regard to safety!

This is the only way to guarantee the operational safety of the machine!

2.7 Reasonably foreseeable misuse

Any applications other than those specified under “intended use”, or usage beyond this scope
shall be deemed improper!

In the event of damage occurring as a result of incorrect use,

- The operator shall be solely responsible
- The manufacturer accepts no liability

NOTE

Improper use may give rise to hazards. Improper use is for example:

- Operating the machine in explosion-risk zones
- Exceeding the technical values set for standard operating mode

Conversions and modifications

Unauthorized conversions and modifications to the
machine will void any liability and warranty
on the part of the manufacturer! This also applies to welding of load-bearing components.

The electromagnetic behaviour of the machine may be impaired by additions or modifications of any kind.

Therefore, do not make any modifications or additions to the machine without consulting it with the manufacturer and obtaining its written consent.

Spare and wear parts and auxiliary materials

Use of spare and wear parts by third parties may lead to risks. Use only original spare parts, or parts that have been approved by the manufacturer.

The manufacturer assumes no liability for damages resulting from the use of spare and wear parts or auxiliary materials that have not been approved by the manufacturer.

2.8 Hazards when working with the machine

Using the machine may cause risks and impairment to

- life and health of operators or third parties
- the machine itself
- other material assets

The basis for the safe handling and the error-free operation of this machine is the knowledge of the safety and user instructions in this manual.

IMPORTANT

The operating manual must always be kept near the machine. The operating instructions must be freely accessible to operators and maintenance personnel.

Observe also

- general and local regulations concerning accident prevention and environmental protection

2.9 Residual risks

The machine is designed in accordance with the state of the art and the recognized safety-related technical rules.

DANGER!

Watch out for mechanical, pneumatic and electrical residual power at the machine, as well as pressure in the cylinders and valves after actuating the emergency shut-down device, or after switching off the machine!

In addition to the counter-measures of the manufacturer, the operator must take other counter-measures to counter the risks of residual power. The personnel must be trained on these risks and the appropriate countermeasures.

2.10 Operator duties

The operator is obliged to only permit those personnel to work on the machine who:

- Are familiar with the main regulations pertaining to work safety and accident prevention
- Have been instructed in how to handle the machine
- Have read and understood these operating instructions.

The requirements of the EC Directive on the use of work equipment 2007/30 / EC must be observed.

2.11 Personnel duties

Before starting work, all persons that are tasked with works on the machine must:

- Observe the basic directives on work safety and accident prevention
- The safety chapter and the safety instructions in these operating instructions must be read and observed.

Contact the manufacturer if there are any questions.

2.12 Qualification of the staff

The minimum age for operating the system is 18 years

2.13 Personal protective equipment

The operator must provide the following personal protective equipment:

- Safety helmet
- Safety goggles
- Safety gloves
- Protective footwear
- Skin protection agent

2.14 Safety and protective equipment

IMPORTANT

Only operate the machine when all safety and protective devices are fully installed and functioning!

2.15 Machine labels

Never reach into the rotating worm gear. Never clear blockages while the machine is operating. Switch off the system and lock the switch.

Do not enter the dosing chamber when the motor is running. Switch off the system and lock the switch.

Repair, maintenance, cleaning, modification work, and eliminating any malfunctions are only permitted if the system has been switched off and the switch has been locked.

Never remove protective covers if the system has not been switched off and the switch secured against unintended activation.

Name plate for the specific identification of the machine

3 Description of the machine

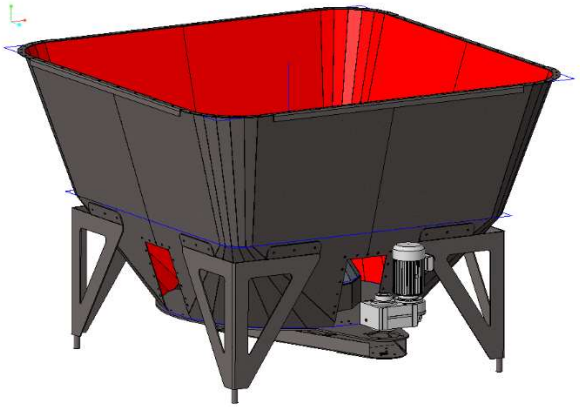
This chapter provides a comprehensive overview of the structure and function of the machine. Read it ideally while standing close to the machine. This will help you to familiarize yourself with the machine.

3.1 Applications

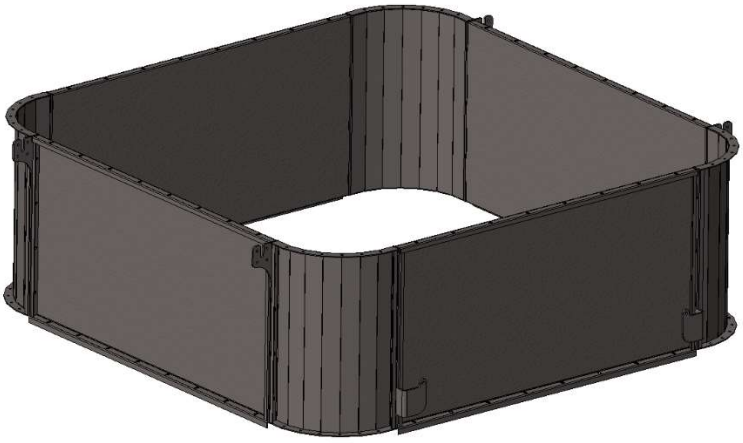
The dosing device serves exclusively to expand the volume of an existing dosing device and to convey the filler into a processing system.

3.3 Scope of delivery

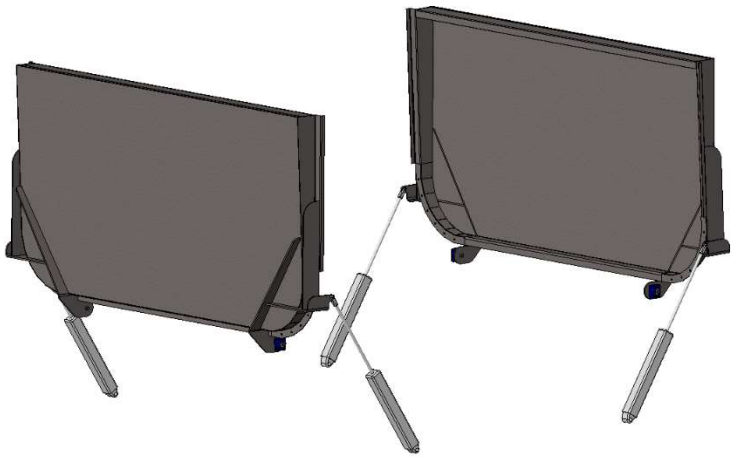
1x bunker base incl. drive motor, support and discharge blade



1x top unit incl. brackets for cylinder and bearing



1x cover (optional)



1x ascending worm screw incl. outlet pipe

1x ascending worm screw support

4x adjustable feet

Screw packet

3.4 Function description

Loading the machine

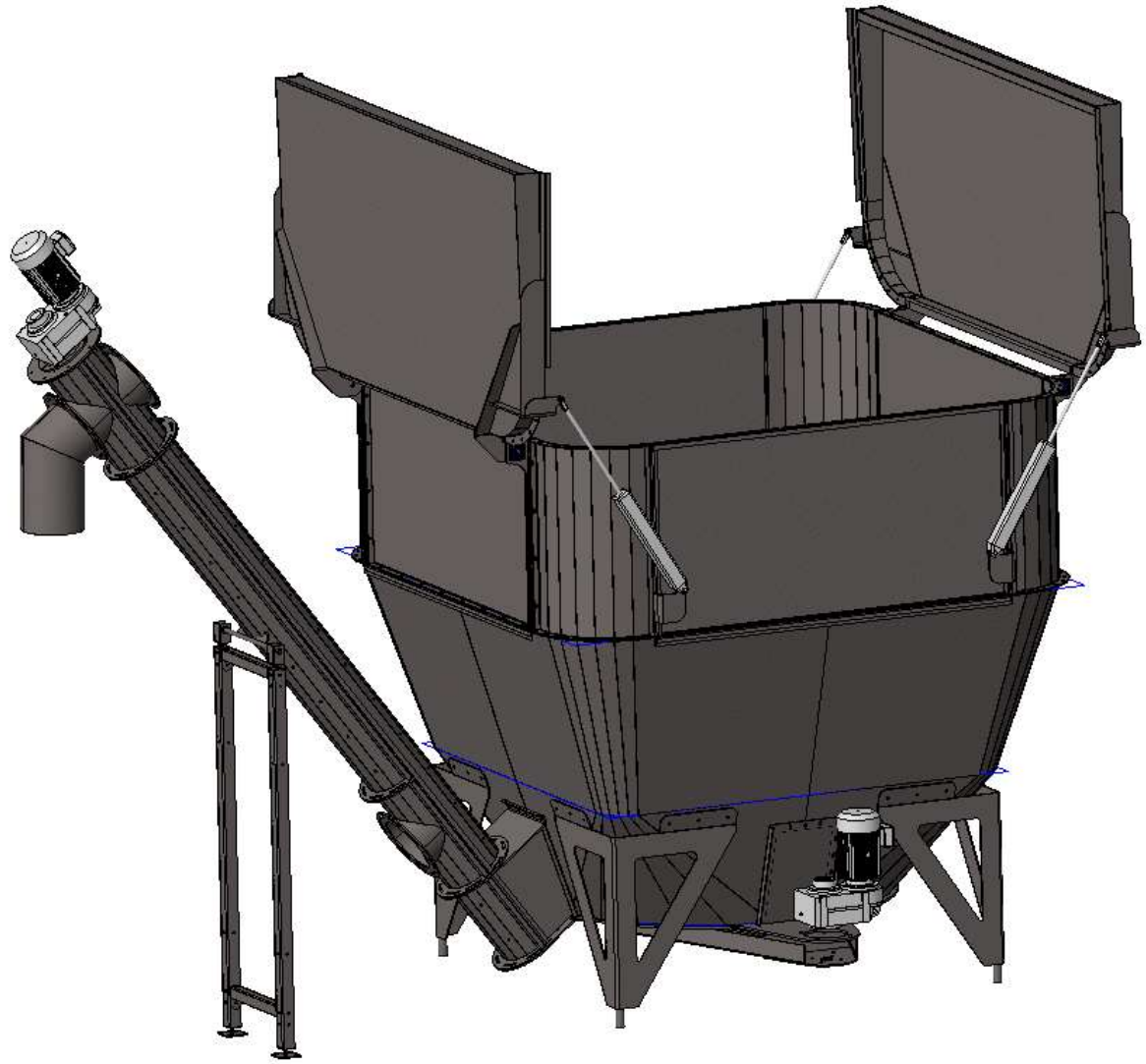
The operator pours the fillers manually into the container by means of a loading device (front loader, wheel-type loader, etc.)

Unloading the machine

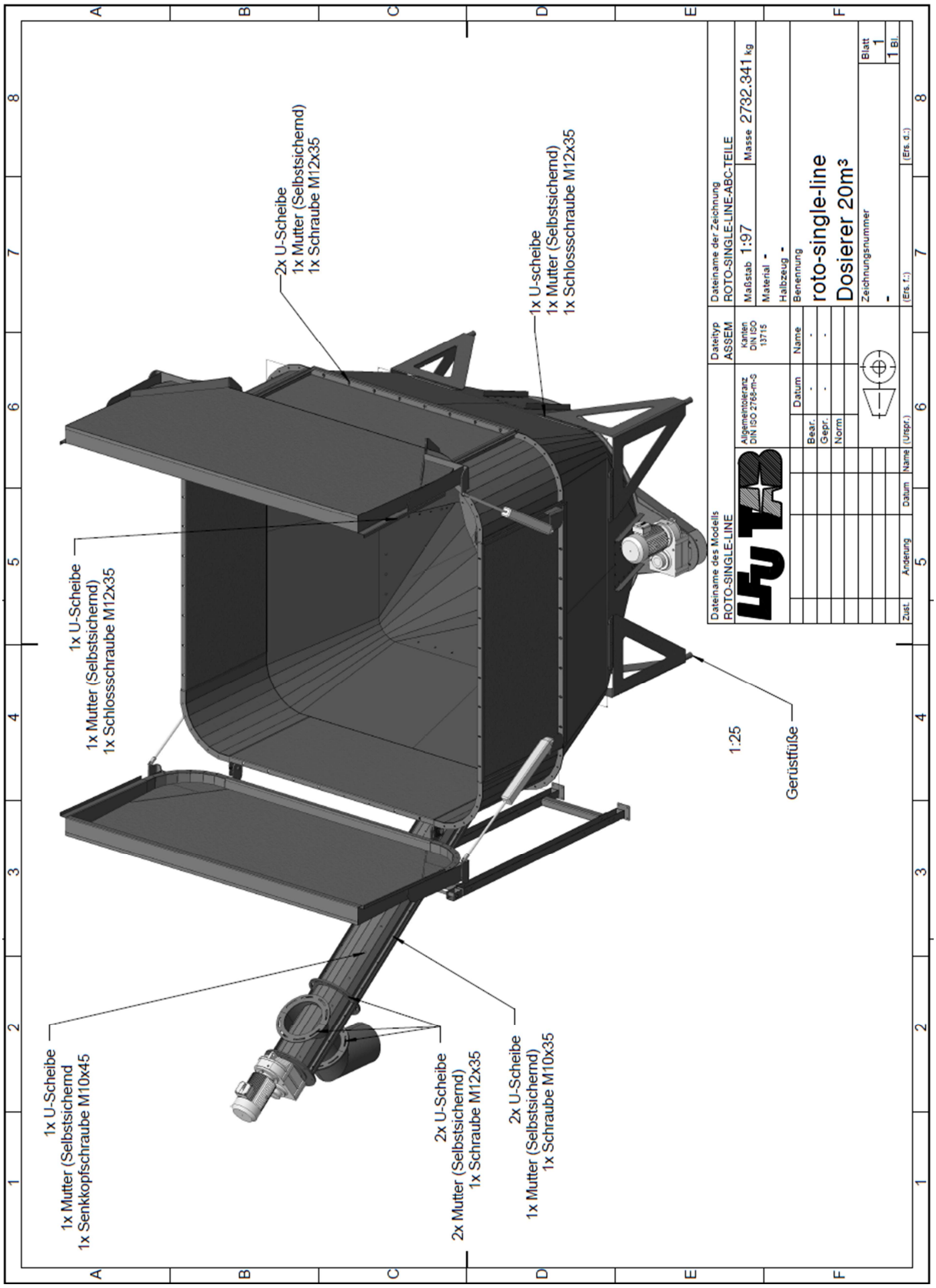
Feeding is done automatically, via time or weight control

3.5 Structure of the machine

The following figures provide an overview of the key components and modules, and show their installation location on the machine.



3.6 Modules and components


2x U-Scheibe
1x Mutter (Selbstsichernd)
1x Schraube M12x35
1x U-scheibe
1x Mutter (Selbstsichernd)
1x Schlossschraube M12x35
1x U-Scheibe
1x Mutter (Selbstsichernd)
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1x Schraube M12x35
2x U-Scheibe
1x Mutter (Selbstsichernd)
1x Schraube M10x35
1:25
Gerüstfüße
Dateiname des Modells
ROTO-SINGLE-LINE
Dateityp
ASSEM
Dateiname der Zeichnung
ROTO-SINGLE-LINE-ABC-TEILE
Maßstab 1:97
Masse 2732.341 kg
Material -
Halbzeug -
Allgemeintoleranz
DIN ISO 2768-m-S
Kanten
DIN ISO
13715
Datum
Name
Bear.
Gepr.
Norm
Benennung
roto-single-line
Dosierer 20m³
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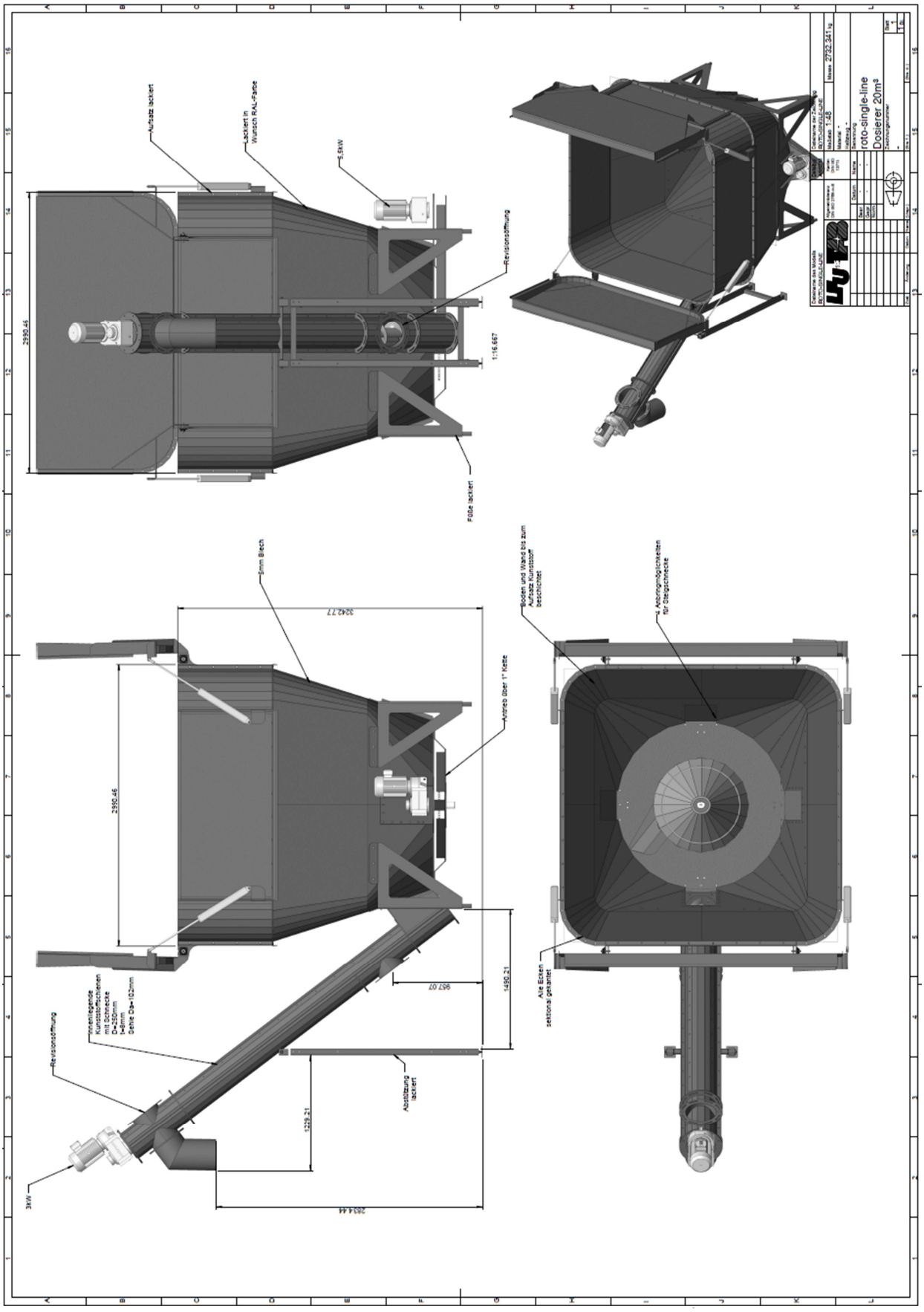


Functional description

Filling

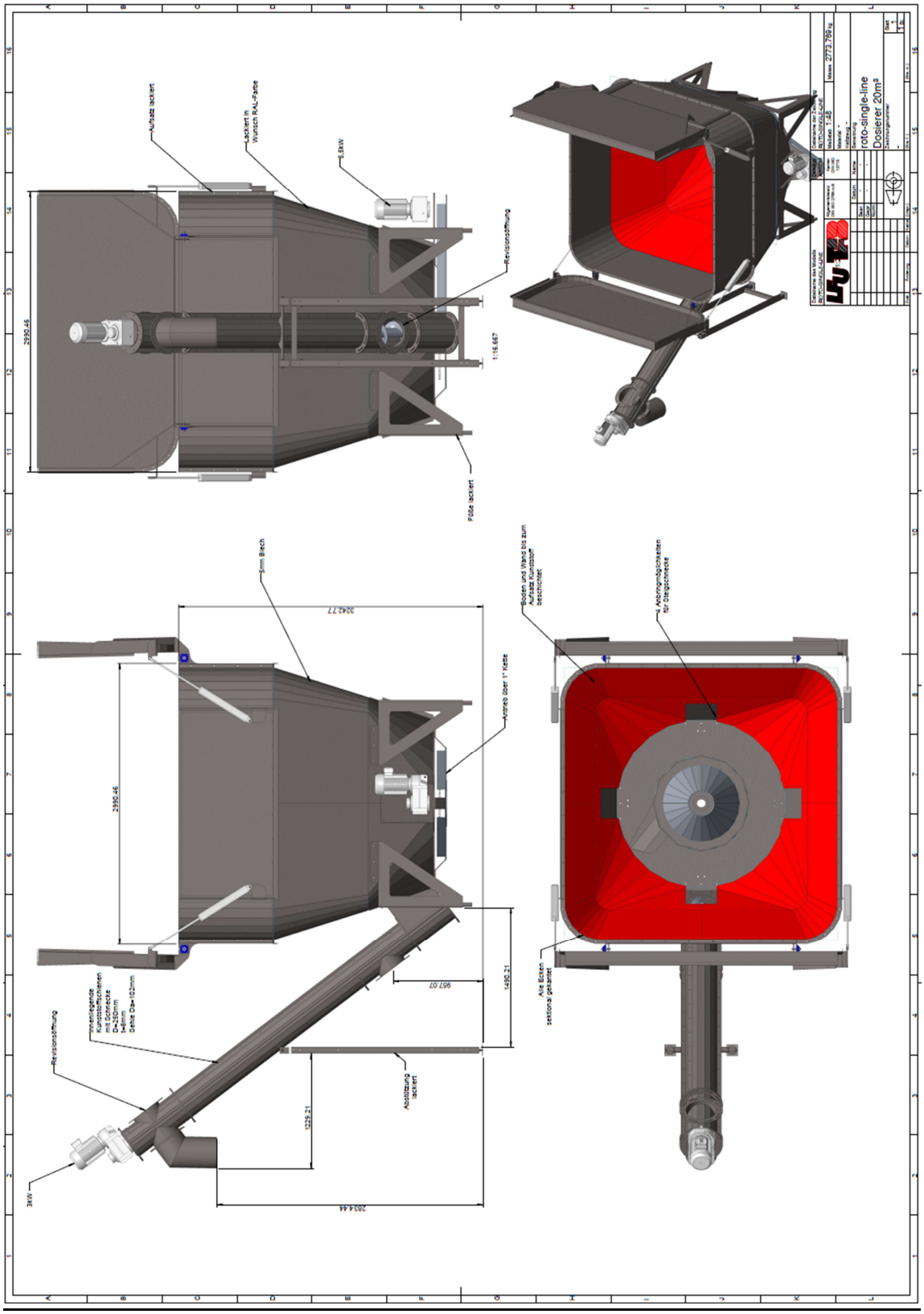
The cover of the dosing device is opened by means of a pneumatic control valve. The filling material is then poured into the container from a loading vehicle. After filling, the cover of the dosing feeder is closed again.

Dosing

First, the ascending worm screw of the dosing device must be activated with a lead time of min. 5 sec. The discharge blade of the dosing bunker is then activated. It runs until the desired quantity has been applied.

The discharge blade conveys the filling material outwards so that it falls into the screw through the opening of the ascending worm screw. It is then transported from the screw upwards to the upper T-piece, where it is ejected by a paddle.

3.7 Technical data



Usable storage capacity	20m³
Power rating	8.5kW

4 Transport and installation

ATTENTION!

Transport the machine using the indicated lifting points.

4.1 Transporting the machine to the installation location

ATTENTION!

Use low loaders, mobile cranes, etc.

4.1.1 Transport equipment

The following transport equipment is required to transport the machine:

- A crane or a suitable lifting device
- Suitable cable harness
- A forklift or
- A pallet forklift for accessories

4.1.2 Prior to transport

NOTE

The exact set-up locations of the individual components can be found in the installation plan.

This plan can be obtained from the owner of the facility

The supply connections for the electric current are located at the drive motors

Mark the exact installation location

Determine the transport route and remove any obstacles.

Keep unauthorized persons away from the transport route and the place of installation. Cordon off the area.

Inspect the transport locks on the machine.

4.1.3 Transporting the machine

The applicator may only be lifted from the back using
a suitable forklift/crane at the
parts of the frame provided for this purpose.

1. Attach the cable harness for crane transport to the marked lifting lugs. Ensure that the cable harness does not run over protective grilles or other attachments.

2. Carefully lift the machine a little. Pay attention to the balance! If necessary, adjust the cable lengths so that the machine is hanging straight on the crane.

3. Transport the machine as close to the ground as possible to the place of installation.

4. Slowly lower the machine.

A flat and horizontal installation surface as well as a suitable foundation are prerequisites for an error-free operation of the applicator.

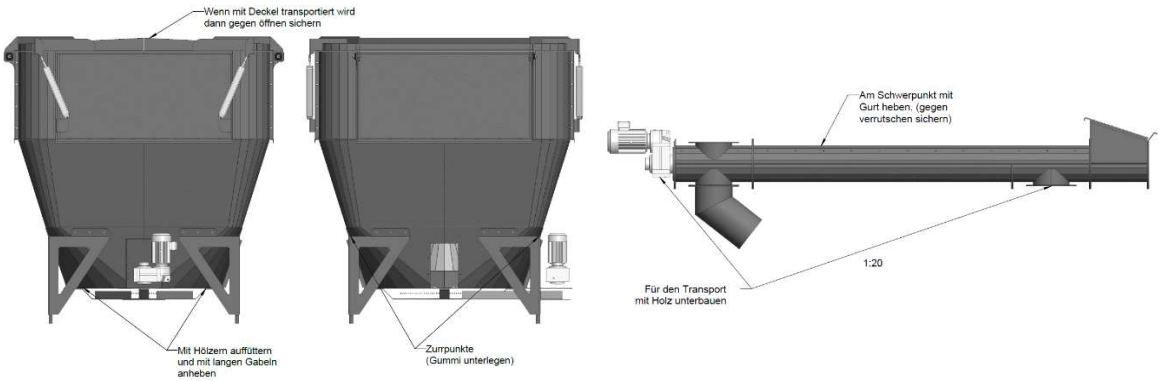
NOTE

Help us to protect the environment.

The packaging material of the machine is completely reusable.

The machine weighs approx. 2000 kg in total. Use suitable lifting devices and lift as shown. Special caution is required when lifting and moving the machine. If necessary, contact a specialist company.

Machine weight approx. 2000 kg



Roto-Single-Line attachment points Screw attachment points

Opening the packaging

In case of visible damage during delivery, immediately inform the vendor or the manufacturer.

Keep the packaging material out of reach of children. There is a risk of suffocation when used as a toy.

4.2 Setting up and installing the machine

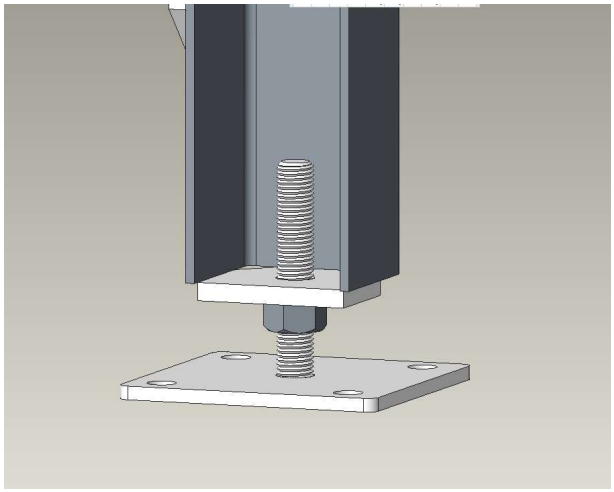
Have the installation performed by TAB GmbH or an authorized company.

4.2.1 Setting up; support legs

Before commissioning, check the alignment of the machine and anchor the adjusting feet to the base plate.

The machine must be horizontally aligned along both axes using a spirit level.

Set up and align the dosing device first; then mount and align the ascending worm screw. Finally, anchor everything to the ground.



Adjusting foot ascending worm screw

Adjusting foot "Roto-Single-Line"

Note.

The adjusting feet must be locked from above to prevent the feet from shifting.

The ascending worm screw must be set such that no loads are introduced into the side of the dosing device.

4.3 Power supply and connection

The power supply of the system must be provided on-site; the connection must be carried out by a specialist.

4.3.1 Connecting to power supply

All electrical actuators are activated on-site.

4.3.2 Connecting the components

Connect the electric drives according to the valid regulations

Get rid of loose cables to avoid tripping

Protect the cable against damage

5. Commissioning

The commissioning should take place in the presence of the TAB customer service or a installer

Pay attention to the direction of rotation of the feed screw and of the discharge blade during commissioning (to the right as viewed from above).

Before commissioning, check oil levels in all drive gears.

All lubrication points must be lubricated before commissioning.

6 Operation and handling

Attention

Risk of personal injury and damage to the property and the environment!

Only authorised personnel are permitted to operate the controls.

Risk of damage to the applicator!

Do not transport the applicator while it is filled or discharged.

Pay attention to unusual noise during operation (e.g. lack of lubrication, loose parts, damage to motor, gearbox, bearing or shaft, etc.)

7 Servicing and maintenance

Important

In the following, you will find information on fault elimination and maintenance of the machine. Regular maintenance in accordance with the maintenance plan is an essential prerequisite for the efficient use of the machine.

Chapter 7.5 describes troubleshooting and malfunctions.

Chapter 7.3 contains this

Chapter 7.4 describes how to carry out specific maintenance tasks.

7.1 Customer service

TAB GmbH

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Gewerbegebiet Bollerheide 1

DE-54597 Auw bei Prüm

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Fax: +49 (0)65525646

Email: info@tab-maschinen.de

7.2 Maintenance during operation

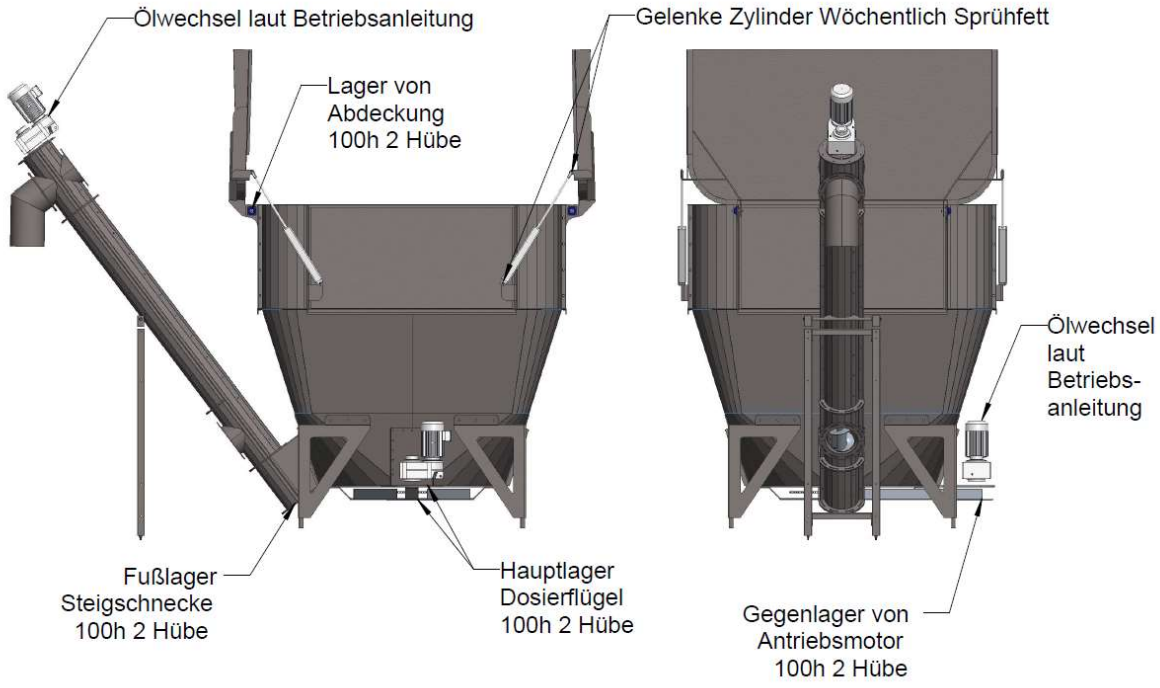
Maintenance during operation helps to ensure a smooth and efficient production process. The operators may carry out this work following appropriate training.

7.3 Maintenance plan

Periodic inspections

The components listed below must be regularly maintained at least once a week or more often, at a runtime of more than 8 hours per day. Use Longlife grease for lubrication.

- Check oil levels in the drive units weekly.
- Grease lubrication as indicated, weekly at the minimum



7.4 Troubleshooting and fault elimination

The following overview provides information on malfunctions, their causes and solutions. In case of malfunctions:

Notify qualified service personnel,

If necessary contact the manufacturer's customer service.

7.4.1 Malfunctions and correcting faults

Fault	Cause	Solution
Ascending worm screw no longer rotates	Defective drive unit	Replace the drive unit
	Worn drive clutch	Replace the drive clutch
	Defective power supply	Contact an electrician
Discharge blade no longer rotates	Defective drive unit	Replace the drive unit
	Torn drive chain	Replace the drive unit
	Worn drive gear wheel	Replace the drive gear wheel
	Defective power supply	Contact an electrician

7.5 Auxiliary and operating materials

Components	Lubricant
Lubricating points in general	Lubricating grease acc. to DIN 51 825-1 to 4 (e.g. SM11 K2E-20, L71V, FAG, ISO VG 100)
Flanged bearing	Standard grease for bearings ISO VG 100 (-30 - +140°C)
Gears	Mineral oil ISO VG 220
Chain drive	Standard grease for bearings ISO VG 100 (-30 - +140°C)

7.6 Lubricating points with grease nipples

7.7 Maintenance regulations

Siemens flat gear motors: We recommend changing the gear oil for the first time no later than after half a year, then approx. every year. For filler opening, oil level etc. refer to the operating instructions for the gear motors.

Roto-Single-Line discharge blade: regularly tighten the fixing bolts of the taper lock bush.

8 Spare parts

We recommend using only genuine spare parts.

Spare parts lists are provided separately, and are not included in the operating instructions. If you need a new list, contact the manufacturer.

TAB GmbH

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