

Spiralförderer

Operating Manual

Assignment number: KT/_____

Version:

Conveyer

- ☐ 30 ☐ 39 ☐ 53 ☐ 70 ☐ 80
- ☐ PC ☐ PCP ☐ PCR ☐ PS

Length: _____ metres

Motors

- ☐ Three-phase A.C. current ☐ Gear motor
- ☐ 0.18 kW ☐ 0.25 kW ☐ 0.37 kW ☐ 0.55 kW ☐ 0.75 kW
- ☐ 1.1 kW ☐ 1.5 kW ☐ 1.8 kW ☐ 2.2 kW
- ☐ _____ kW
- ☐ 700 rpm ☐ 1.000 rpm ☐ 1.500 rpm ☐ _____ rpm

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1 General

1.1 Information regarding Operating Manual

This operating manual contains special instructions that are important for the safe and proper handling of the machine. Prerequisite for safe working is the compliance with all specified safety and handling instructions.

Furthermore, the local accident prevention regulations and general safety conditions for the application of the machine also apply.

Read the operating manual carefully and every time before proceeding; it is a product component, which must be kept in direct proximity of the machine, well accessible to the personnel at all times.

If the machine is passed on to third parties, such passing must also include the operating manual.

The illustrations in this manual are for the purpose of explanation and may differ slightly from the actual design and dimensions of your machine.

The installed components enclosed in the appendix shall apply in addition to this operating manual.

The instructions, in particular, the safety instructions contained therein must be observed!

1.2 Explanation of Symbols

Warnings

Warnings are designated by symbols in this operating manual. The warning symbols are accompanied by a heading that indicates the severity of the danger. It is imperative to adhere to the safety instructions and act with caution in order to prevent accidents, personal injury and material damage



DANGER!

Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.



WARNING!

Indicates a possible hazardous situation, which if not avoided, will result in death or serious injury.



CAUTION!

Indicates a possible hazardous situation, which if not avoided may lead to minor or light injuries.



CAUTION!

Indicates a possible hazardous situation, which if not avoided may lead to material damage.



Tips and Recommendations

REMARK!

Highlights information that may be helpful to maintain efficient and trouble-free operation.

Specific Safety Instructions

The following safety instruction-related symbols are used to highlight particular dangers:



DANGER!

Risk of fatal injury from electric current!

Electrical work may only be performed by qualified electricians.

1.3 Limitation of Liability

All information and instructions contained in this operating manual were compiled in accordance with statutory standards and regulations, state of the art technology and our long-standing knowledge and experience.

The manufacturer assumes no liability for damage due to:

- Failure to comply with the Operating Manual
- Improper use

- Employment of untrained personnel
- Arbitrary modifications
- Technological changes
- Deployment of unauthorized spare parts or components
- Insufficient maintenance
- Incorrectly performed repairs.

In the event of customized versions, the actual scope of delivery may differ from the explanations and presentations described for utilization of additional order options or due to current technical modifications.

Moreover, the responsibilities agreed in the delivery contract, the General Terms and Conditions as well as the delivery conditions of the manufacturer and the statutory regulations valid at the time of conclusion of the contract shall apply.

We reserve the right to make technical changes towards improving the usability of the product and developing the product further.

1.4 Spare Parts



WARNING!

Risk of injury due to incorrect spare parts

Incorrect or defective spare parts can result in damages, malfunctions or total failure and also impair safety.

Therefore:

- Only use original spare parts from the manufacturer.

1.5 Customer service

Feel free to contact our customer service team for technical information.

Furthermore, our employees are always interested in new customer findings and experience arising from use and which can be valuable for the improvement of our products.

2 Security

This section contains an overview of the most important health and safety aspects at work in order to protect employees and to guarantee safe and fault-free operation.

The non-compliance of the handling and safety instructions provided in this manual can lead to serious hazards.

2.1 Responsibility of Operating Company

The machine is deployed in the commercial sector. The operator of the machine is therefore subject to the legal obligations concerning occupational health and safety.

In addition to the occupational health and safety instructions in this operating manual, the applicable safety, accident prevention and environmental regulations for the machine must also be complied with. In particular, the following applies:

The operator must observe the following:

- Be aware of the applicable health and safety regulations and determine through a risk assessment other hazards that may arise from the special working conditions at the place of operation of the machine. Implement this in the form of operating instructions for the operation of the machine.
- During the total operating time of the machine, check whether the operating instructions he created comply with the current status of rules and regulations and adapt if necessary.
- Clearly regulate and specify the responsibilities for installation, operation, maintenance and cleaning.
- Ensure that all personnel who work on or with the machine have read and understood the operating manual. In addition, he shall provide training to his personnel at regular intervals and keep them informed of risks and hazards.
- Before the machine is put into operation, install the emergency stop device for the machine and integrate it into the plant control safety chain.
- Ensure that the machines are only used for bulk materials authorized by the manufacturer.
- Ensure that any existing locally fixed access points are configured in compliance with current standards. Foundations, steelwork and fastening elements must be constructed for the loads to be expected.
- Ensure that any existing flexible or rigid conveyor tubes are supported and secured. All paths in the proximity of the vibrating tubes must be secured.
- Ensure that no bulk materials can be released and all transition points are secured against intervention during operation of the machine.
- Ensure that the machine cannot be switched on/off during operation.

Moreover, the operating company is responsible for ensuring that the machine is in proper technical condition at all times, the following therefore applies:

The operator must:

- Ensure that the maintenance intervals specified in this operating manual are complied with.
- Check all safety equipment regularly for functionality and completeness.
- Provide personnel with the required protective equipment and instruct the wearing thereof as compulsory.
- Ensure that safe access from all sides is possible when installing the machine in a plant.
- Ensure that the necessary space is available for installation, maintenance and repair.

2.2 Operating personnel

2.2.1 Requirements



WARNING!

Risk of injury due to inadequate operator qualification skills

Improper use can cause considerable personal injury and material damage.

Therefore:

- Particular tasks should only be performed by personnel specifically designated in the respective Chapters of the Manual
- When in doubt, consult technical experts.

The Operating Manual specifies the following qualification requirements for the different fields of activity:

- **Instructed persons**
Were briefed by the operating company of the work assigned to them and possible hazards arising from improper conduct.
- **Skilled personnel**
Due to their technical training, knowledge and experience as well as awareness of the relevant regulations, are in a position to carry out the tasks assigned to them and are able to autonomously identify possible hazards.
- **Qualified electricians**
Due to their technical training, knowledge and experience as well as awareness of the relevant standards and regulations, are in a position to work on electrical systems and are able to autonomously identify possible hazards.
A qualified electrician has been trained for the specific operating site at which he/she works and knows the relevant standards and regulations.

Only persons of whom it may be expected that they perform their work reliably are permitted as personnel. Persons whose responsiveness is affected, e.g. by drugs, alcohol or medicines are not authorized. When selecting the operating personnel, adhere to all age and occupational regulations applicable at the place of operation.

2.2.2 Unauthorized Persons



WARNING!

Danger for unauthorized persons!

Unauthorized persons who do not fulfil the requirements described here, do not know the hazards in the area of operation.

Therefore:

- Keep unauthorized persons clear of the area of operation.
- In case of doubt, approach these persons and instruct them to leave the operating premises.
- Stop work until any unauthorized persons have left the operating premises.

2.2.3 Instructions

Personnel must be instructed by the operating company on a regular basis. Training must be logged to keep better track.

2.3 Proper use

The machine is designed and constructed exclusively for the intended use as described in the purchasing documents.



WARNING!

Danger if used other than for designated purpose.

Any use beyond the intended use and/or other types of use is considered misuse and can lead to hazardous situations.

Therefore:

- The machine may only be operated as intended.
- All specifications in this operating manual must be strictly complied with.
- In particular, refrain from using the machine in the following way as the below is regarded as unintended use:
 - Operation in potentially explosive environments (Except with separate certification from the manufacturer).
 - Operation with potentially explosive bulk materials or fluid media.
 - Operation with bulk materials, which are not explicitly approved by the manufacturer.

All types of claims due to damage arising from unintended use are excluded.

The operating company alone is liable for all damages resulting from use other than for intended use.

2.4 Personal Protective Equipment

In order to minimize health hazards, it is mandatory to wear personal protective equipment when working.

- It is mandatory to wear the personal protective equipment required for the respective task whilst working.
- Any signs in the operating area regarding personal protective equipment must be observed.

Fundamental work wear for all tasks:



Protective work wear is close fitting, with low resistance to tearing, with narrow sleeves and without protruding garment parts. It serves primarily as protection from entanglement in moving machine parts. It is prohibited to wear rings, necklaces or other jewellery.



Safety footwear to protect against heavy falling parts and against slipping on slippery surfaces.

Safety wear for specific tasks:



Safety helmet to protect against parts and materials falling down and flying around.



Protective gloves to protect hands against rubbing, abrasions, cuts or deep wounds as well as contact with hot surfaces.

2.5 Specific hazards

The remaining risks, which result from the hazard analysis, are specified in the following section. All safety and warning instructions in further chapters of this manual must be strictly observed to reduce health hazards and to avoid dangerous situations.



Dusts hazardous to health Health hazard due to dust!

WARNING!

Inhaled dust may eventually lead to lung damage or other adverse health effects. Therefore:

- It is mandatory to wear respiratory protection in the danger zone.



Moving parts Risk of injury due to moving parts!

WARNING!

Rotating parts and/or parts, which move linearly can cause serious injuries. Therefore:

- Do not open covers during operation.
- Do not reach into moving parts or handle moving parts during operation.
- Comply with potential stopping times.
- Wear tight fitting protective clothing in the danger zone.



Suspended loads : Life-threatening hazard due to suspended loads!

DANGER!

Falling loads may cause severe injuries and/or death.

Therefore:

- Never walk under suspended loads.
- Only move loads under supervision.
- Deposit the load before leaving the operating premises.



Electric current: Risk of fatal injury from electric current!

DANGER!

A life-threatening hazard exists if there is contact with live components. Damage to the insulation or individual components may result in fatal injury.

Therefore:

- In the event of damage to the insulation, immediately disconnect the power supply and initiate repairs.
- All work on the electrical system must be performed by qualified electricians.
- Before commencing work on the electrical system, the power must be disconnected, and the system checked as zero voltage.
- Before maintenance, cleaning or repair work, switch off the power supply and secure it against being switched on again.
- Never bridge any safety equipment nor put out of operation. Always use the correct amperage when replacing fuses.
- Keep moisture away from live parts. This can lead to a short-circuit.

**Sharp edges and corners****WARNING!****Risk of injury due to sharp edges and corners!**

Sharp edges and corners can cause abrasions and cut the skin.

Therefore:

- Proceed with caution when working in the vicinity of sharp edges and corners.
- If in doubt wear protective gloves.

**Hot surfaces****CAUTION!****Risk of burns due to hot surfaces!**

Contact with hot surfaces can cause burns.

Therefore:

- Always wear protective clothing and gloves when working in the vicinity of hot components.
- Before commencing work, ensure that all components have cooled down to ambient temperature.

**Hygiene****CAUTION!****Requirements in respect of the hygiene of foodstuffs must be complied with if the machine is deployed to convey food!**

Foreign bodies in the conveyor line as well as unsuitable materials and lubricants can cause significant contamination and injuries. For this reason, materials should not

- transfer undesirable odours, dyes, flavourings
- cause contamination
- negatively influence the foodstuffs.

It must be ensured that components do not dissolve during operation and are ultimately absorbed by the output flow.

Seals must comply with hygiene requirements as regards design and quality.

**Pneumatics****WARNING!****Risk of injury due to pneumatic energies!**

Pneumatic energies can cause severe injury. Pneumatically driven parts can move unexpectedly. In case of damage to individual components, air can be discharged under high pressure.

Therefore:

- Only trained specialists should work on the pneumatics.
- Depressurise the pneumatic system, prior to commencing work. Pay attention to the pressure accumulator.

This should also be completely depressurised.

- Pressure adjustments should not be set above the maximum values.

2.6 Safety devices



WARNING!

Risk of injury due to non-functional safety devices!

Safety devices ensure maximum safety during operation. Safety devices should not be disabled, even if they make work processes more cumbersome. Safety is only ensured if safety devices are intact. Therefore:

- Prior to commencing work, ensure that all safety devices are functional and correctly installed.
- It is strictly prohibited to disable the safety devices.
- Do not adjust or block access to safety devices such as emergency stop buttons, etc..

Integration in an Emergency-Stop-Concept

The device is intended for use within a system. It has no separate control. Before the machine is put into operation, install the emergency stop devices for the machine and integrate them into the plant control safety chain.

Connect the emergency stop devices to ensure that dangerous situations for people and objects cannot arise if the energy supply is interrupted or the energy supply is activated. The emergency stop devices must always be freely accessible.

2.7 Securing against restart



DANGER!

Risk of fatal injury due to unauthorized restart!

When working in the danger zone, there is a risk that the energy supply could be switched on without authorization. This puts the life of people in the danger zone at risk

Therefore:

- Instructions in the chapters of this manual on how to secure against unintentional restart must be followed.
- Always adhere to the procedure described below to secure the machine against unintentional restart.

Securing against restart:

1. Disconnect the power supply.
2. If possible, secure the switch with a padlock and attach a clearly visible sign to the switch.
Fehler! Verweisquelle konnte nicht gefunden werden. .
3. The employee designated on the sign can keep the key.
4. Attach a clearly visible sign to the switch if it is not possible to secure the switch with a padlock.
Fehler! Verweisquelle konnte nicht gefunden werden. .
5. Once all work has been carried out, ensure that nobody is in the danger zone.
6. Ensure that all safety devices are installed and fully functional.
7. Only remove the sign at this point in time.

2.8 Rules of behaviour in case of emergencies and accidents

Preventative measures

- * Always be prepared for accidents or fire!
- * Keep first aid equipment (first aid kit, blankets etc.) and fire extinguishers within easy reach.
- * Familiarise personnel with accident reporting, first aid and rescue equipment.
- * Keep access routes clear for rescue vehicles.

In an emergency - act appropriately

- * Activate Emergency-Stop immediately.
- * Instigate first aid measures.
- * Rescue persons from the danger zone.
- * Inform responsible persons at the place of action.
- * Alert a doctor and/or the fire brigade.
- * Keep access routes clear for rescue vehicles.

2.9 Protection of the environment

CAUTION!



Danger to the environment due to mishandling!

Incorrect handling of environmentally hazardous substances, in particular incorrect disposal, can cause considerable damage to the environment.

Therefore:

- Always pay attention to the instructions below.
- Be sure to take appropriate measures whenever harmful substances penetrate (or threaten to penetrate) the environment. In case of doubt, inform competent local authorities about the damage.

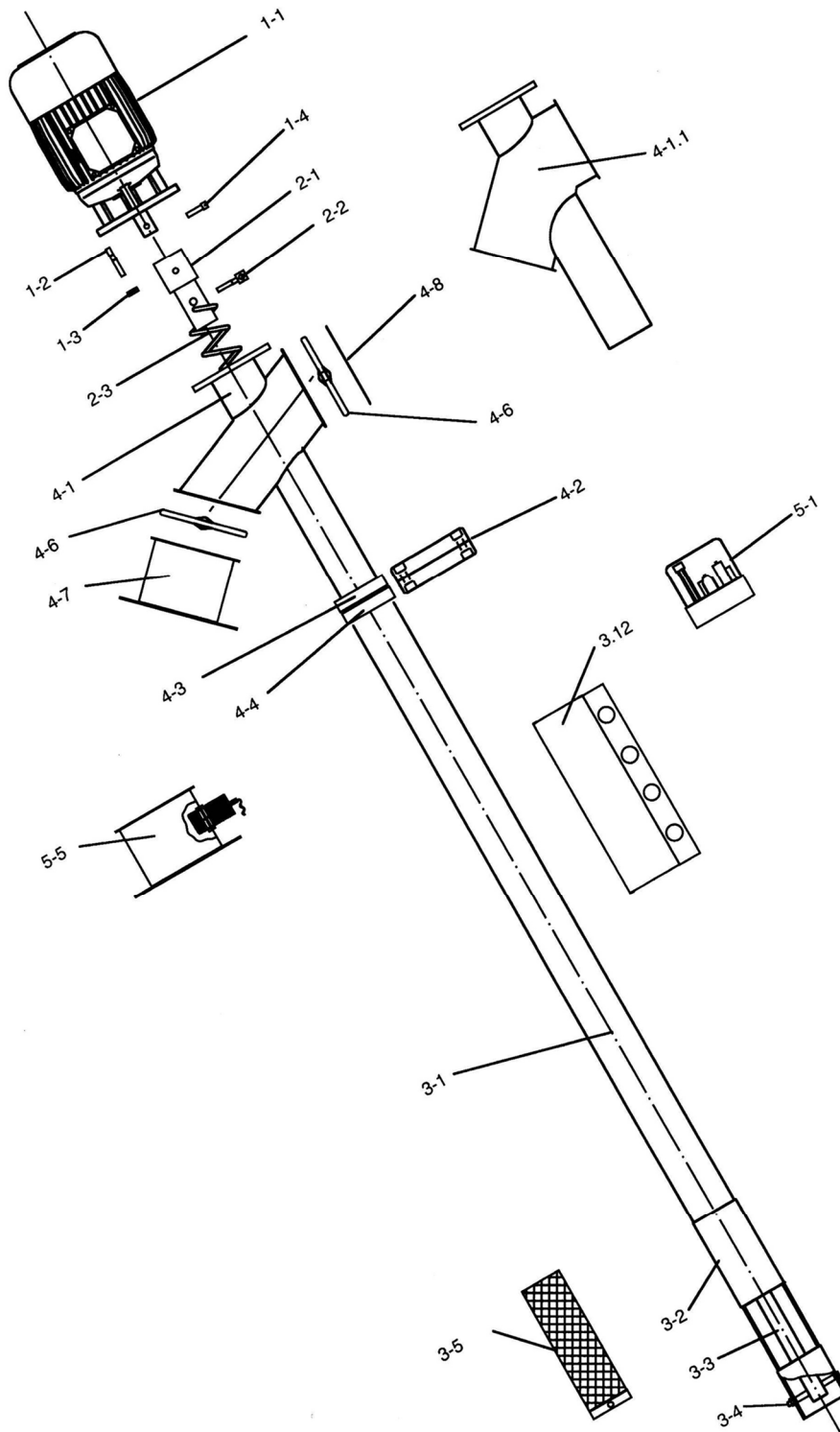
The following environmentally hazardous substances may be used:

Lubricants

Lubricants such as greases and oils contain toxic substances. These substances should not be released into the environment. The disposal must be carried out by professional waste disposal facilities.

3.1 Spiral Conveyor PS Series

3.1.1 Exploded View Drawing Type PS

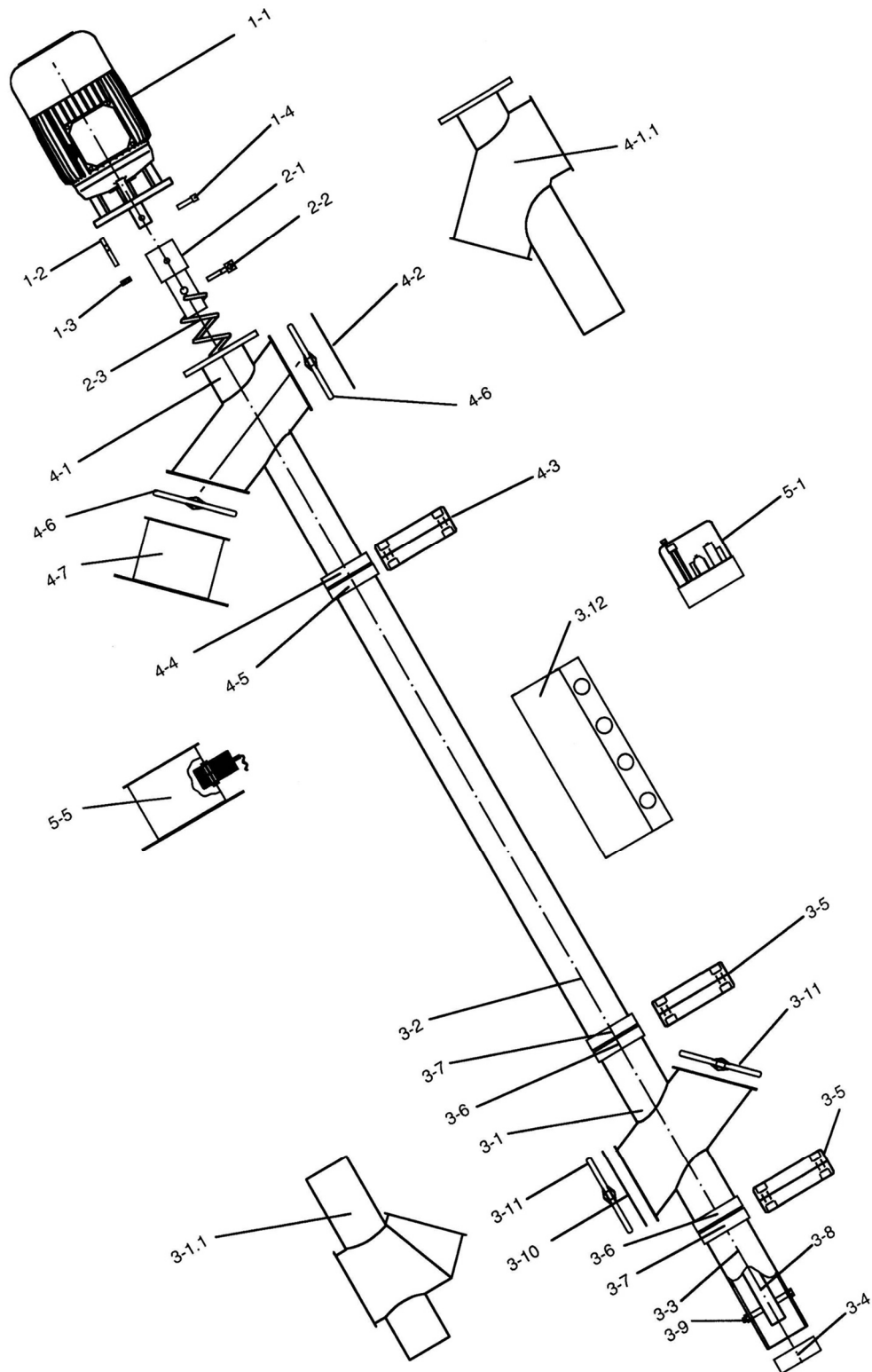


3.1.3 Assembly manual type PS

	<p>1 Outertube</p> <p>Put the outertube into the outlet until it hits the endstop "L". Close the quick clamp ring CS and fasten the outertube in that position with it. Please make sure to use the right CS-sealings (different diameters).</p>
	<p>2 Innertube</p> <p>Please fasten the innertube (3-3) inside the inlet probe "S" (3-2) as well as the hand protection cover (3-4) by using the centering bolt.</p> <p>The innertube should never be longer than "L" (middle of inlet).</p>
	<p>3 Feedingspiral</p> <p>Please never overbend the spiral during installation (imbalance). The spiral (2-3) will be mounted to the motor shaft by using the motor coupling (2-1) and the Allen screw (1-4). The end position of the spiral should be at "L" (middle of inlet) while the system is still empty.</p>
	<p>4 Motor</p> <p>The motor (1-1) will be mounted at the outlet (3-1) motor flange.</p>

3.2 Spiral Conveyor PC Series

3.2.1 Exploded View Drawing Type PC



3.2.2 Spare Parts List Type PC

Groupe-Part	Disignation	Short Cut
1-1	Motor	M
1-2	Bolt (M8)	
1-3	Nut (M8)	
1-4	Allen® screw (M8)	
2-1	motorcoupling	MBN
2-2	fasteningscrew	
2-3	spiral	SP
3-1	Inlet	PX
3-1.1	Inlet (stainless steel version)	SC
3-2	Outertube	TE
3-3	Adjustment tube	
3-4	Endplug	
3-5	Qucik clamp ring	CS
3-6	sealing for CS clampring	
3-7	sealing for CS clampring	
3-8	innertube	TI
3-9	centering bolt (older version)	
3-10	metal cover plate	BY
3-11	clamp ring	R
3-12	tube connector	CCS
4-1	outlet	GX
4-1.1	outlet (stainless steel version)	GW
4-2	handprotection and filterplate	GSF
4-3	Quick clamp ring	CS
4-4	sealing for CS clampring	
4-5	sealing for CS clampring	
4-6	Clamp ring	R
4-7	hopper connection devive	P1
5-1	controlunit	EST-Z
	hopper connection device with incorporated capacitive level indicator	P1DE

**The PC device series is divided again into the conveyor variants PC, PCP and PCR.
These refer only to the inserted conveying spiral:**

PC = Round profile

PCP = Flat profile

PCR = Square profile

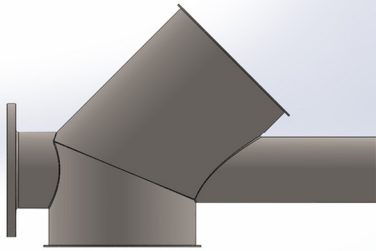
The device setup and/or other single parts are otherwise identical.

3.2.3 Versions of inlet and outlet flanges

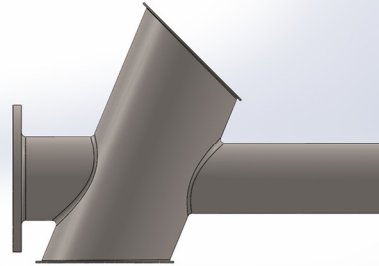
The following inlet and outlet variants may differ from the exploded view drawing.

These are applied with the same mounting on the spiral conveyor and are merely the adjusted connection to the preceding or subsequent machine part.

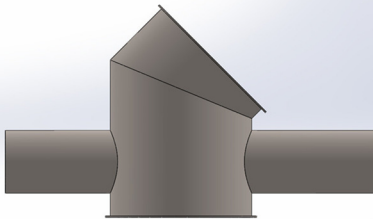
outlet type GW
(stainless steel)



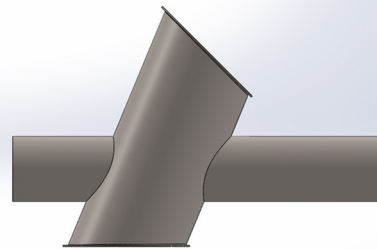
outlet type GX
(epoxy coated)



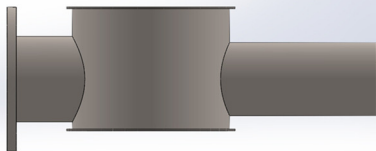
inlet type SC
(stainless steel)



inlet type PX
(epoxy coated)



in-/outlet type SR
(stainless steel and epoxy)



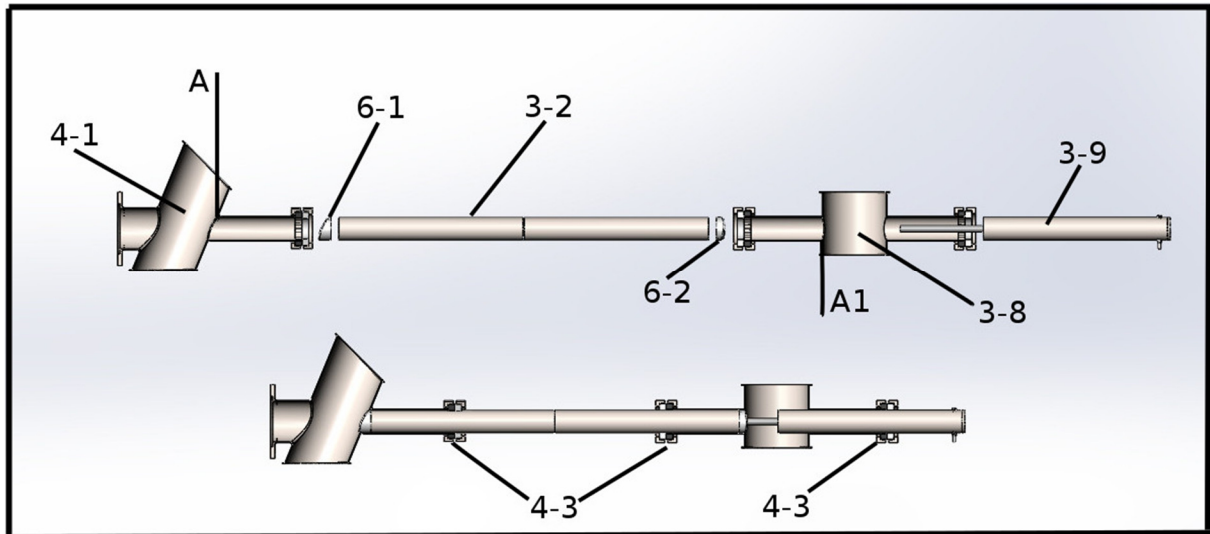
inlet type PCH
(stainless steel and epoxy)



When inserting flanged bushings (impact protection made of plastic) it must be ensured that the respectively fitting bushings are used. For this purpose, the respective bushings are provided as straight and inclined version. The flanged bushings must be installed between the conveying tube and the sheet metal part in a way that they protrude through the stopper of the sheet metal part whilst sitting closely at the rim stopper and that the conveying tube sits closely at the bushing. Thus, a contact of the conveying spiral with the sheet metal part is precluded. The insertion tube will be installed at the opposite side of the inlet metal sheet part (without stopper). In this context, it must also be ensured that the insertion tube at least intrudes thus far into the sheet metal part that any contact of the conveying spiral and the sheet metal part is precluded.

3.2.4 Assembly Manual Type PC

Outer tube (3-2), Inner tube (3-8) and Flange sleeve (6-1+6-2)



Insert the outer tube (3-2) with the flanged sleeves (6-1 + 6-2) into the inlet (3-1) and outlet flange (4-1) up to the stopper (A or A1).

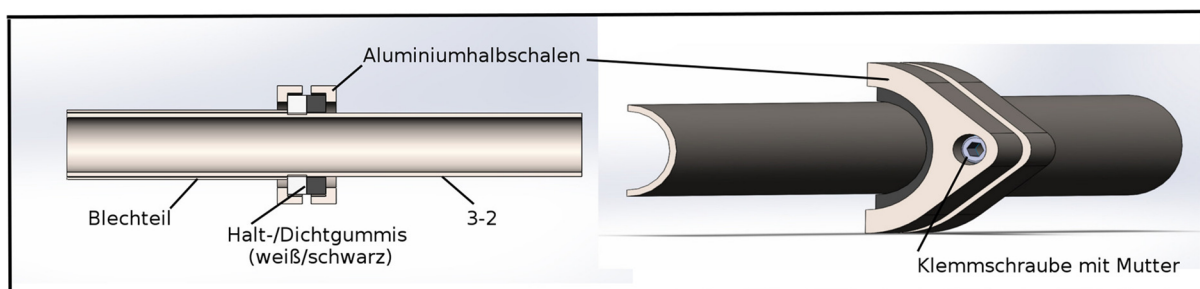
At this point, pay attention to the correct positioning of the flanged sleeves (notch pointing upwards)!

Insert insertion tube with centering device into inlet flange.

Ensure that the correct side of the inlet is used (without the stopper).

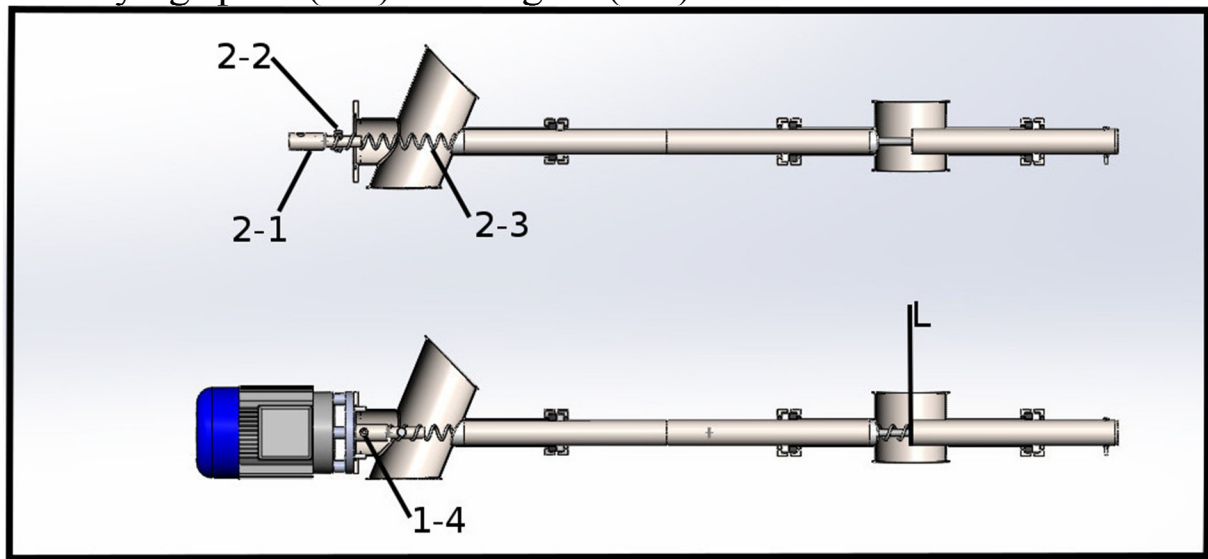
Screw all conveyor tubes securely with the quick clamp rings (4-3).

Quick clamp ring (4-3)



Slide one rubber ring over each end of the metal part as well as onto each conveyor tube. At this point, pay attention to the different inside diameters of the sealing rings. Then create a connection by compressing the sealing rubber by means of the aluminium half-shells and the clamping screws. Ensure that all parts are safely fitted and supported.

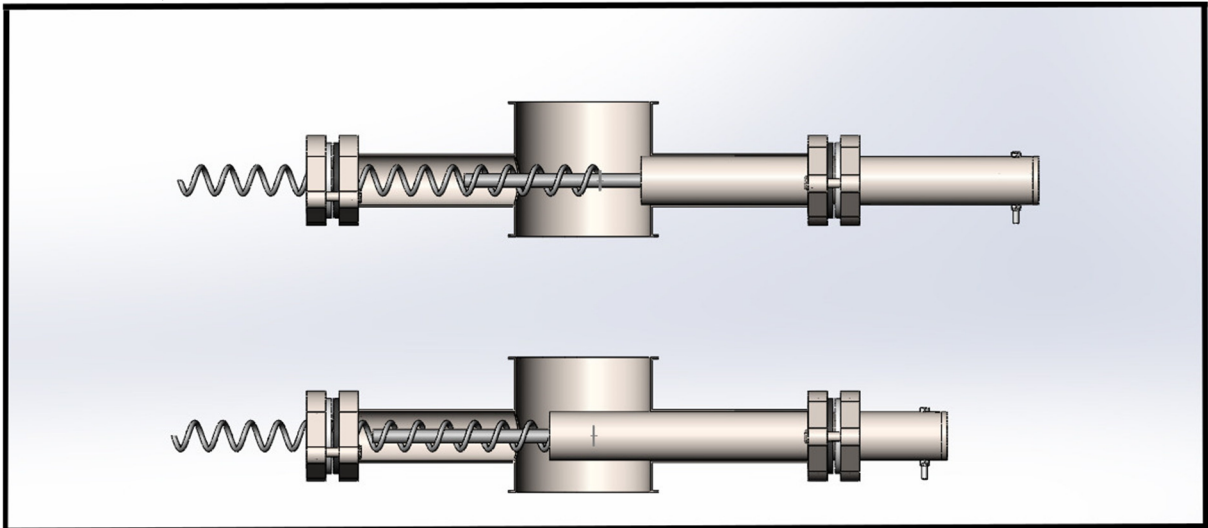
Conveying spiral (2-3) and Engine (1-1)



The conveying spiral (2-3) should not be bent during assembly (imbalance). By using the clamping screw (2-2), the conveying spiral is fastened to the motor coupling (2-1), and this in turn to the hexagon socket screw (1-4) on the motor shaft.

To ensure sufficient expansion area is available, it may only extend into the inlet flange as far as max. L (middle of sheet metal part). Refer to the following pages under “Shortening the conveying spiral” if the conveying spiral is longer.

Insertion tube settings (3-3) for regulating the inflow volume below a container, silo or other container.



The quick-lock ring (3-5) must be released to adjust the insertion tube settings. Subsequently, enlarging or reducing the opening can modify the inflow volume of the material to be conveyed to the conveyor. This should be selected in such a way that smooth movement of the conveying spiral is ensured. In the case of free-flowing bulk materials, ensure that the device is not too full and possibly even blocked. 70% filling of the conveying tube is the ideal amount in this case.

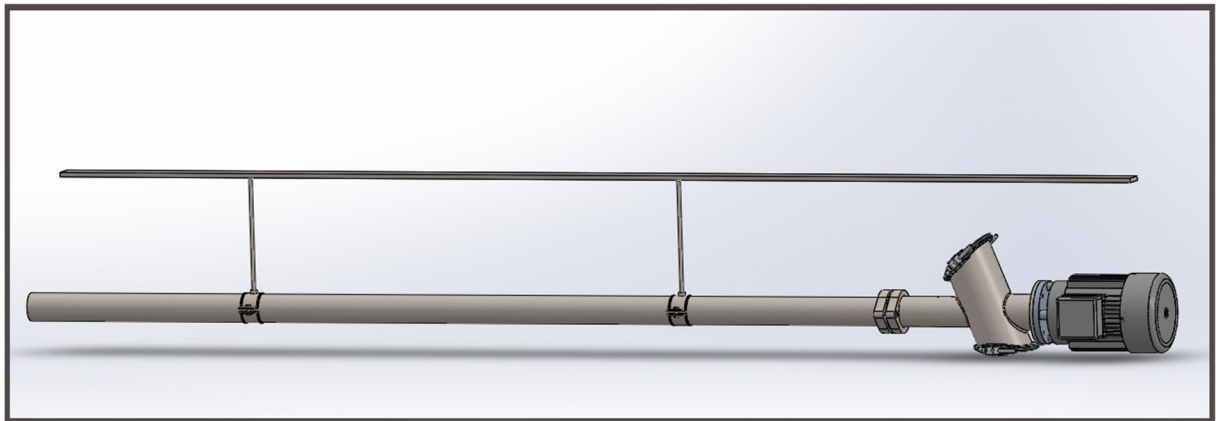
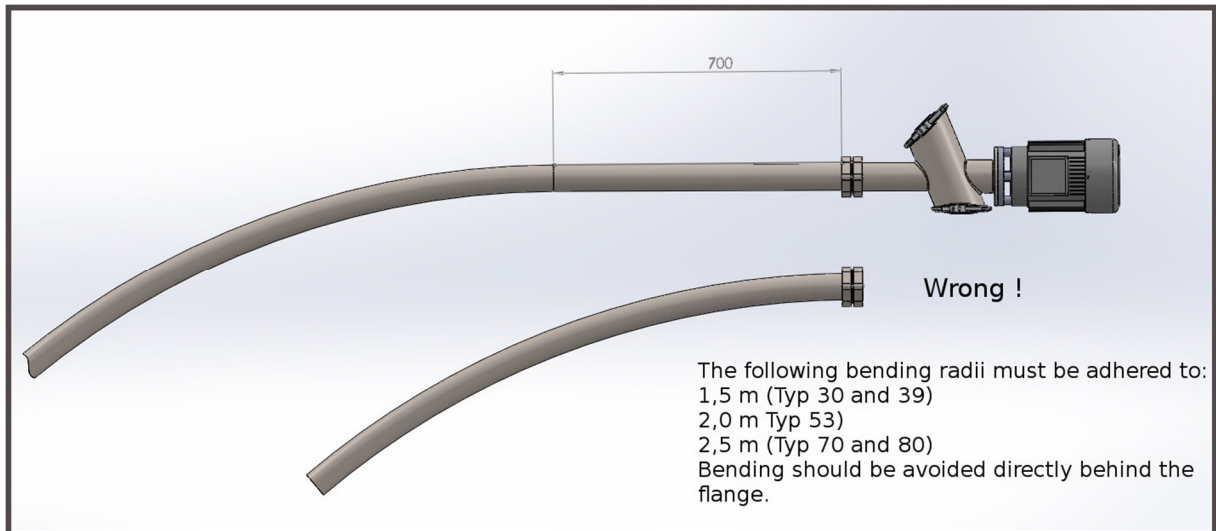
Grounding rivets and grounding lugs

All supplied or optional sheet metal parts made out of standard steel (epoxied) must be connected with grounding lugs to one another and to the ground potential. For this purpose, all sheet metal parts are equipped with applicable grounding rivets.

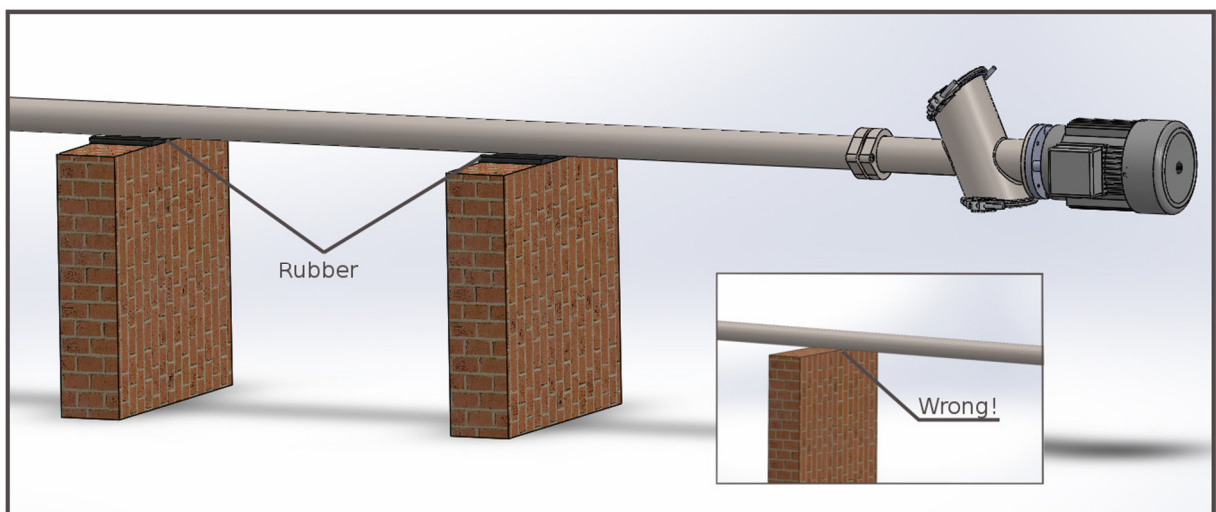
Electrically conductive sealing rings are deployed for sheet metal parts made of bright stainless steel. Here, in each case, one sealing ring is deployed per clamping ring connection. The sealing ring is mounted on a sheet metal part above the connection flange and seals the sheet metal parts from each other.

After installation, ensure there is a continuous grounding of sheet metal parts as well as sufficient connection to the ground potential.

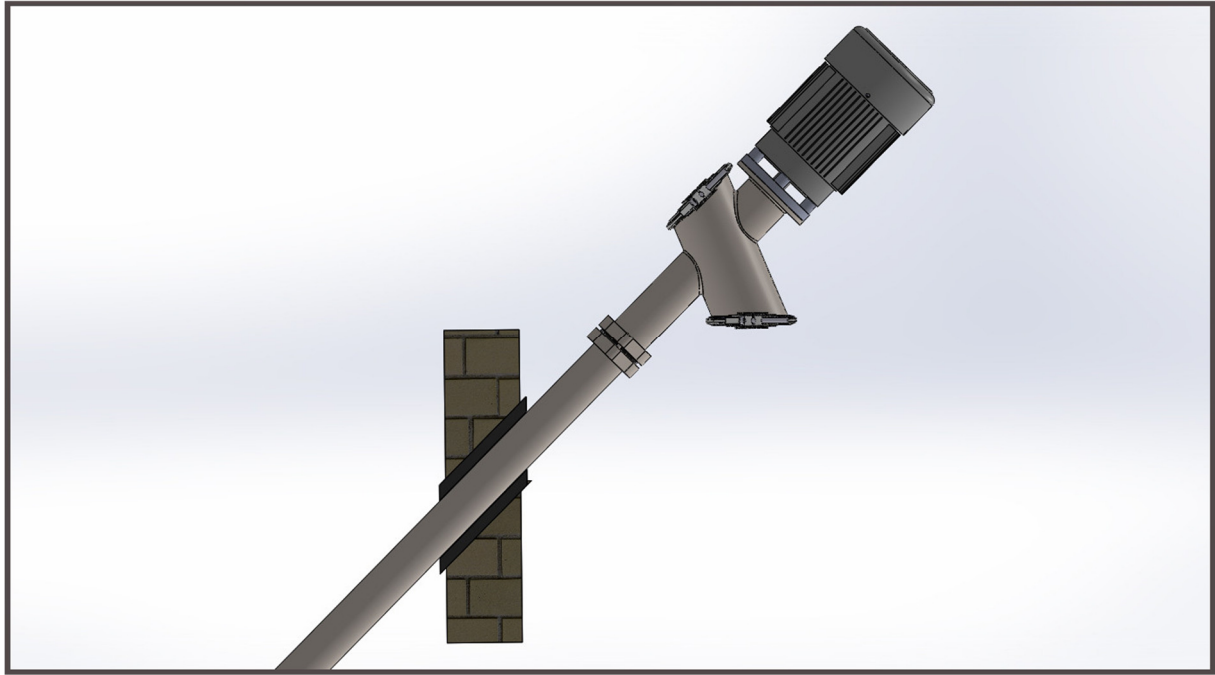
4 General assembly instructions



The horizontally running part of the conveyor device must be supported or suspended every 2 to 3 metres. Some versions may require that the conveyor motor is supported or suspended.



It must be ensured that the conveyor device is not supported or suspended by sharp-edged objects.



When passing through the wall, the outer polyamide tube must be protected in order to prevent damage from friction.

Shortening the spiral (2-3)



Disconnect and separate the spiral from the motor. Untighten the motor coupling clamping screw and unscrew the spiral from the clamping screw. Saw off the detected excessive length and reassemble in reverse order.

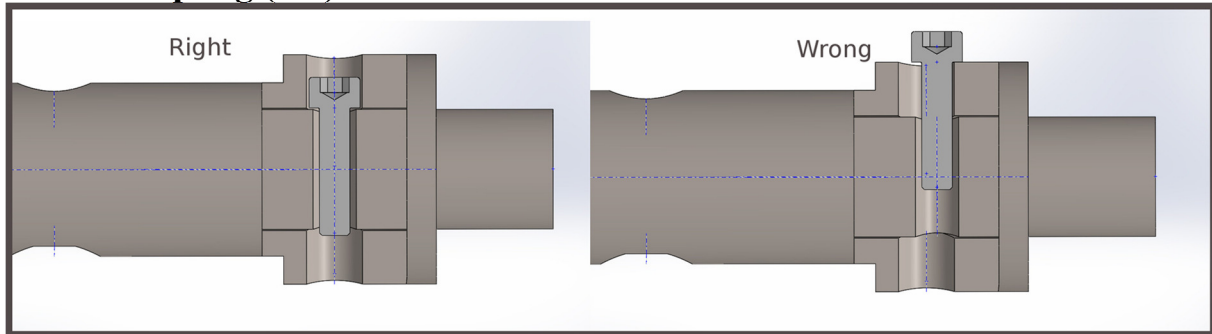
A spiral with excessive length may only be truncated at the side of the motor coupling !!

Outer tube (3.2) and inner tube (3.8) must also be truncated in this case. The cut surface of the inner tube must be sealed with a stopper.

An inner tube does not always exist for every application.

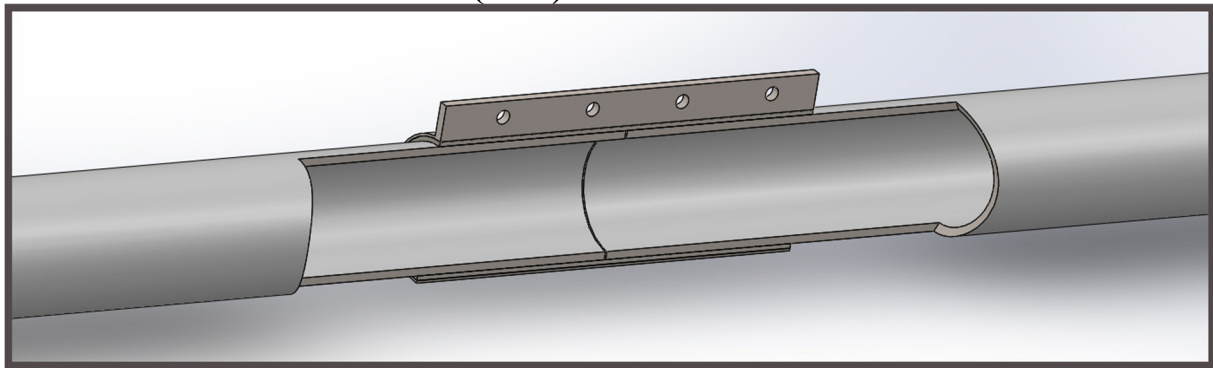


Motor coupling (2-1)



During the assembly of the conveyor screw it is essential to ensure that the hexagon socket screw (1-4) sits completely in the borehole.

Outertube connection device (3-12)



A connection tube will be inserted for lengths exceeding 5 or 6 metres. Please ensure that both outer tubes have flush contact and that the connecting flange is placed centrally above the pipes.

Attention:

The following bending radii must be adhered to:

1.5 m (Type 30, 39)

2.0 m (Type 53)

2.5 m (Type 70.80)

Unnecessary bending radii should be avoided.

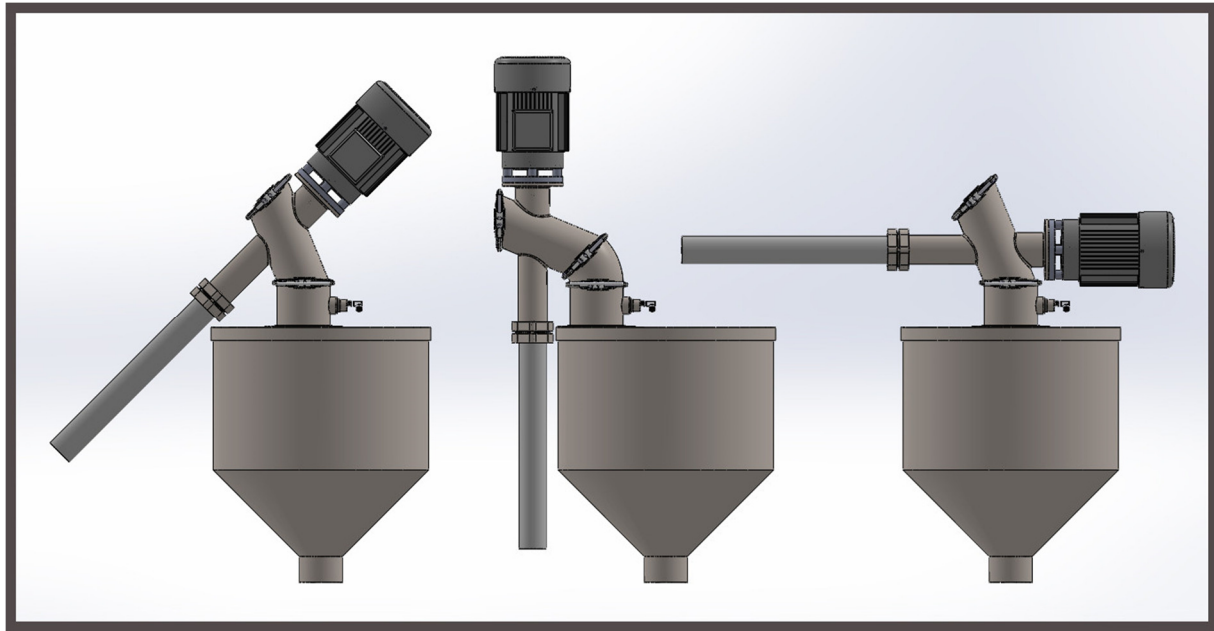
After starting up the spiral conveyor and a short running time it must be checked, whether the spiral has extended in width or length.

The maximum length of the conveying spiral should not be exceeded under any circumstances!!

A proper installation and the presence of flanged bushings are important!!

Depending on the product, inspections should be repeated in regular intervals.

Mounting options for conveyor outlet in combination with hopper connection device P1.



5 Connection of motors and filling level indicator



Electric current:

Risk of fatal injury from electric current!

A life-threatening hazard exists if there is contact with live components. Damage to the insulation or individual components may result in fatal injury.

Therefore:

Connection work on the electrical components must be performed by qualified electricians.

DANGER!

Any control cabinet, motor protection switch, filling level indicator or vibration sensor that we supply will include appropriate supporting documentation such as circuit diagram or wiring diagram enclosed in the operating manual.

6 ATEX

transitube® spiralfeeders for an ATEX environment have a special design and some different applications.

If you are using an ATEX signed feeder, please ask for the special instruction manual for ATEX-devices.

7 Commissioning

Having read and understood all points of our Operating Manual, the direction of rotation of the motor and the conveying spiral should be subsequently checked. As a rule, an arrow indicating the direction of rotation is affixed to the motor. Note again that the spiral conveyor should not run dry over a longer period of time!!

The so-called start-up of the conveyor device takes place in fact steps, i.e., by quickly switching on and off enabling the device to be filled without causing vibrations.

If the conveying sounds become quieter, the conveyor can be fully switched on and the filling level indicators take over control over the device.

Important! If capacitive proximity switches are deployed, it is imperative to align them with your product (calibrate).

8 Maintenance Manual

The flexible Transitube spiral conveyor is generally maintenance-free, however it is recommended at regular intervals of approximately 300 hours of operation to check the conveying spiral for visible expansion and submit the conveyor tube and the flange sleeve to a visual inspection (wear or damage).

Pay attention to the attached lubrication and maintenance plans provided by the manufacturer, if you have purchased a spiral conveyor device with a gear motor.

Be advised that wetted parts should undergo visual inspection regarding wear and tear approx. every six months in multi-shift operations or approx. every year in single-shift operations. A reasonable shorter interval may be necessary for abrasive materials - no general time period can be specified for this purpose and should conform to the product characteristics of the conveyor medium.

Worn parts should be replaced in good time in order to avoid production downtimes. Only use original spare parts.

ATTENTION!

*** The power supply must be switched off and secured against restarting for every repair and/or maintenance work of the spiral conveyor device.**

9 Trouble shooting

- Considerable noise levels when conveying the product.
 - Please ensure that the spiral conveyor is always supplied with sufficient material (bridging).
- Conveyor is overfilled.
 - Pay attention to the correct programming (NO/NC), if necessary, the filling level indicator may have to be adjusted.
- The spiral conveyor does not start automatically.
 - Check whether the minimum detector is covered with material. Pay attention to the correct programming (NO/NC), if necessary, the filling level indicator may have to be adjusted.

Please contact customer service for any other inquiries. We would be happy to assist.

10 EG-Installation Declaration

tim plast Anlagenbau GmbH
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Tel.: +49 (0) 211/97098-0
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EG – Einbauerklärung
Im Sinne der EG – Maschinenrichtlinie 2006/42/EG Anhang II B
CE – Declaration of Incorporation
as defined by machinery directive 2006/42/EC Annex II
Déclaration d'incorporation
selon les directives 2006/42/CE Annex II B

Hiermit erklären wir, dass die nachfolgend bezeichnete Maschine aufgrund ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie entspricht.

Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Herewith we declare, that the named machine are in conformity with the Community Directives and subsequent modifications.

Le matériel ci-dessous a été fabriqué par tim plast, selon les directives 2006/42/CE

Bezeichnung der Maschine :	transitube®-Spiralförderer
Designation of the machine :	<u>transitube®-spiral conveyor</u>
Dénomination de la machine :	transitube®-alimentateur mecanique flexible

Maschinen Typ :	
Type of the machine :	<u>PC/PCP/PCR / PS</u>
Type de la machine :	

EG-Richtlinien :	2006/42/EG
EC Directives :	2006/95/EG
CE-directives :	


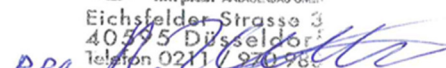
Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen

The person authorised to compile the relevant technical documentation

Personne autorisée à modifier les documents techniques

Herr Frank Schmidl

Unterschrift / Signature/signature


Eichsfelder Strasse 3
40595 Düsseldorf
Telefon 0211 / 970 980

Rolf Haverkamp (Prokurist)

Düsseldorf, 30.04.2015

11 EC-Declaration of Conformity

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Fax. : +49 (0) 211/7000862

EG – Konformitätserklärung
Im Sinne der EG – Maschinenrichtlinie 2006/42/EG Anhang II B
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Designation of the machine :	<u>transitube®-spiral conveyor</u>
Dénomination de la machine :	transitube®-alimentateur mécanique flexible

Maschinen Typ :	
Type of the machine :	<u>PC/PCP/PCR / PS</u>
Type de la machine :	

EG-Richtlinien :	2006/42/EG
EC Directives :	2006/95/EG
CE-directives :	

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen

The person authorised to compile the relevant technical documentation

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Herr Frank Schmidl

Unterschrift / Signature/signature


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Rolf Haverkamp (Prokurist)

Düsseldorf, 30.04.2015

12 Transport, Packaging and Storage

12.1 Safety instructions for transport



Inappropriate transport

CAUTION!

Damage due to inappropriate transport!

Inappropriate transportation can cause considerable material damage.

Therefore:

- When unloading delivered packages and when transporting on the premises, proceed with utmost care and caution:
- Adhere to the symbols on the packaging
- Only use the connecting points provided
- Remove the packaging immediately before start of installation.



Suspended loads

WARNING!

Life-threatening hazard due to suspended loads!

When lifting loads there is a risk of fatal injuries from falling parts.

Therefore:

- Never walk under suspended loads
- Ensure there is sufficient safety distance to the forklifts
- Observe the information on the positioning of the forks for pallet transport
- Only deploy forklift trucks with sufficient load-bearing capacity.

12.2 Transport inspection

Check the delivery immediately on receipt for completeness and transport damage.

In case of obvious external damage through transportation, proceed as follows:

- Do not accept the delivery or only under reservation
- Note extent of damages on the transportation documents or on the carrier's delivery receipt
- File complaint.

12.3 Transport and storage

Transporting pallets by forklift

Packing units on pallets may be transported with a forklift truck under the following conditions:

- The forklift must be designed to accommodate the weight of the transport units
- The driver must be authorized to drive the forklift.

Fastening:

1. Position the forks of the forklift truck between or below the pallet beams
2. Insert the forks until they stand out on the opposite side
3. Ensure that the pallet cannot tilt in the event of an eccentric centre of gravity
4. Lift the package and begin transportation.

Storage of packages

- Do not store outdoors
- Store in a dry and dust free location
- Avoid exposure to aggressive media
- Protect from direct sun light
- Avoid mechanical vibrations
- Storage temperature: 15 to 35°C
- Relative humidity: 60% max.
- When storing longer than three months, check general conditions of all parts and packaging in regular intervals. If required, refresh or renew the conservation.



REMARK!

There are potentially storage instructions on the packaging that exceed the requirements mentioned here and which should be complied with accordingly.

12.4 Packaging

Packaging Info

The individual packages should be packed according to the expected transportation conditions. Environmentally friendly material should be primarily used for the packaging. Until assembly, the packaging should protect the individual components from corrosion and damage during transportation. Hence, the packaging may not be destroyed and should only be removed shortly before the assembly. Keep original packaging for any potential further transportation. Disposal of packaging should only take place upon expiration of the warranty period if no subsequent further transportation is intended.

Handling packaging materials

It is necessary to separate materials according to type and size and prepare for further use or recycling, if no agreement was concluded concerning return of the packaging.

CAUTION!



Risk of environmental damage due to incorrect disposal!

Packaging material is valuable raw material and can be used again in many cases, or expediently reprocessed and recycled.

Therefore:

- Dispose of packaging material in an environmentally friendly fashion
- Adhere to the valid local regulations for disposal. If necessary, assign a specialized company for the disposal.