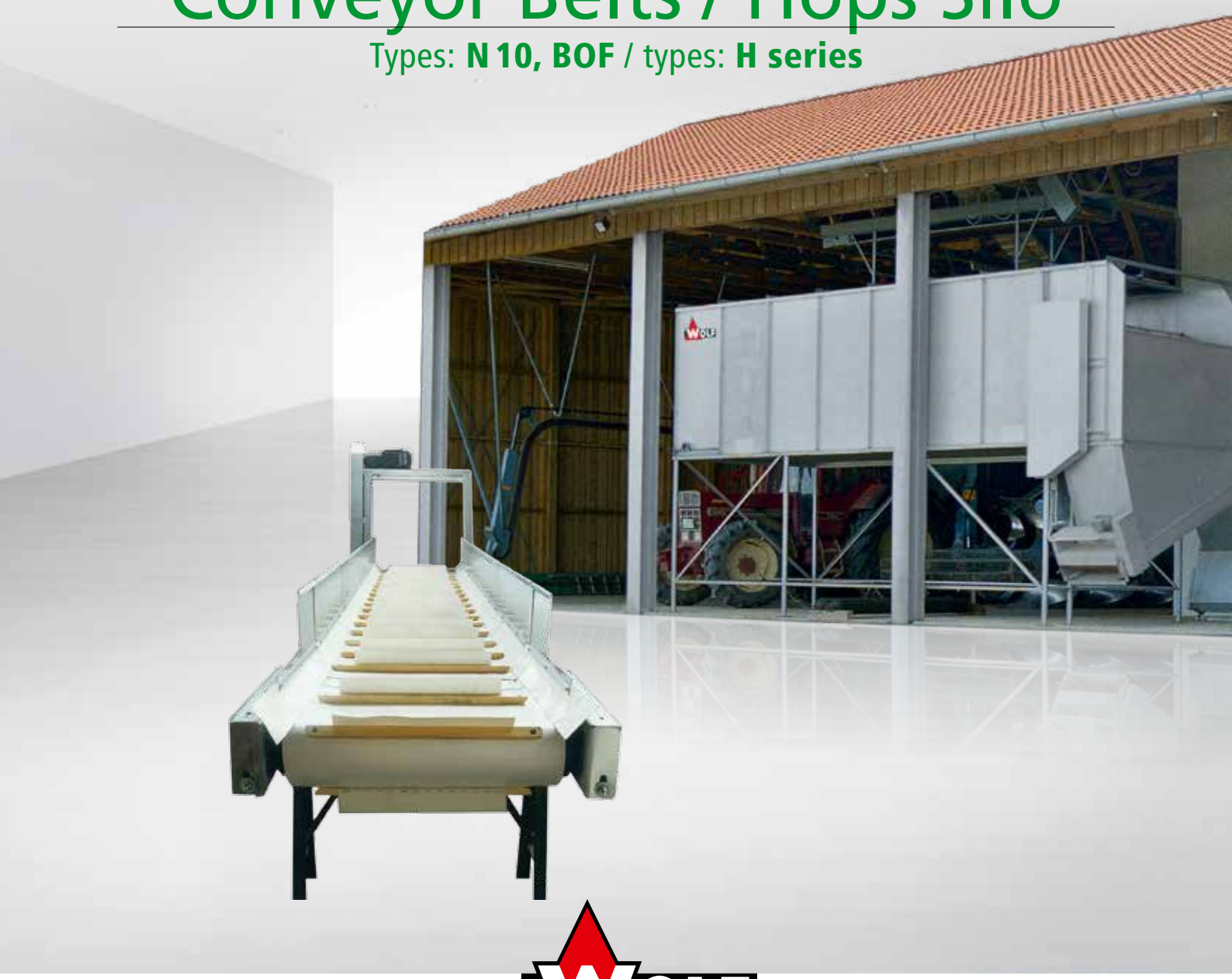
Landtechnik
Agricultural Engineering

Operation & Maintenance

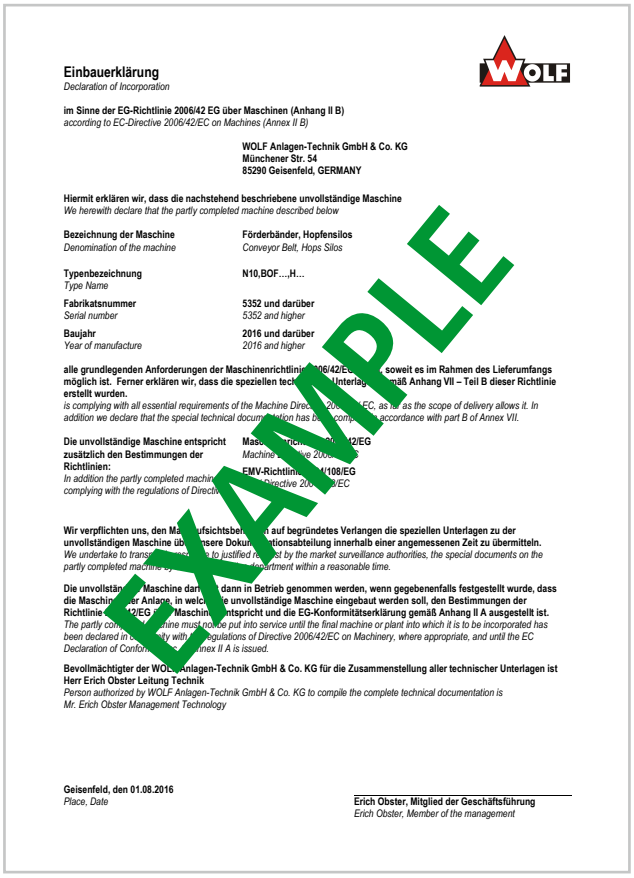
Conveyor Belts / Hops Silo

Types: **N 10, BOF** / types: **H series**



WOLF

Declaration of Incorporation



Einbauerklärung
Declaration of Incorporation

im Sinne der EG-Richtlinie 2006/42 EG über Maschinen (Anhang II B)
according to EC-Directive 2006/42/EC on Machines (Annex II B)

WOLF Anlagen-Technik GmbH & Co. KG
Münchener Str. 54
85290 Geisenfeld, GERMANY

Hiermit erklären wir, dass die nachstehend beschriebene unvollständige Maschine
We herewith declare that the partly completed machine described below

Bezeichnung der Maschine *Denomination of the machine*	**Förderbänder, Hopfensilos** *Conveyor Belt, Hops Silos*
Typenbezeichnung *Type Name*	**N10,BOF...,H...**
Fabrikatsnummer *Serial number*	**5352 und darüber** *5352 and higher*
Baujahr *Year of manufacture*	**2016 und darüber** *2016 and higher*

alle grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG, soweit es im Rahmen des Lieferumfangs möglich ist. Ferner erklären wir, dass die speziellen technischen Unterlagen gemäß Anhang VII – Teil B dieser Richtlinie erstellt wurden.
is complying with all essential requirements of the Machine Directive 2006/42/EC, as far as the scope of delivery allows it. In addition we declare that the special technical documentation has been compiled in accordance with part B of Annex VII.

Die unvollständige Maschine entspricht zusätzlich den Bestimmungen der Richtlinien:
In addition the partly completed machine is complying with the regulations of Directive

Maschinenrichtlinie 2006/42/EG
Machinery Directive 2006/42/EC
EMV-Richtlinie 2004/108/EG
EMC Directive 2004/108/EC

Wir verpflichten uns, den Marktaufsichtsbehörden auf begründetes Verlangen die speziellen Unterlagen zu der unvollständigen Maschine über unsere Dokumentationsabteilung innerhalb einer angemessenen Zeit zu übermitteln.
We undertake to transmit, in response to justified request by the market surveillance authorities, the special documents on the partly completed machine by our documentation department within a reasonable time.

Die unvollständige Maschine darf solange nicht in Betrieb genommen werden, wenn gegebenenfalls festgestellt wurde, dass die Maschine oder Anlage, in welche die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EG entspricht und die EG-Konformitätserklärung gemäß Anhang II A ausgestellt ist.
The partly completed machine must not be put into service until the final machine or plant into which it is to be incorporated has been declared in conformity with the regulations of Directive 2006/42/EC on Machinery, where appropriate, and until the EC Declaration of Conformity in accordance with Annex II A is issued.

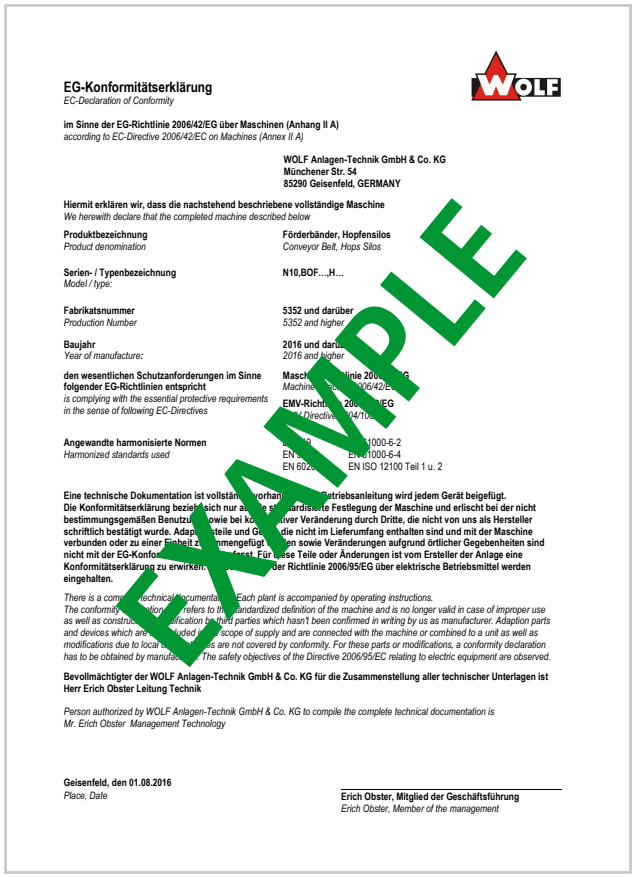
Bevollmächtigter der WOLF Anlagen-Technik GmbH & Co. KG für die Zusammenstellung aller technischer Unterlagen ist Herr Erich Obster Leitung Technik
Person authorized by WOLF Anlagen-Technik GmbH & KG to compile the complete technical documentation is Mr. Erich Obster Management Technology

Geisenfeld, den 01.08.2016
Place, Date

Erich Obster, Mitglied der Geschäftsführung
Erich Obster, Member of the management

EXAMPLE

EC Declaration of Conformity



EG-Konformitätserklärung
EC-Declaration of Conformity

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to EC-Directive 2006/42/EC on Machines (Annex II A)

WOLF Anlagen-Technik GmbH & Co. KG
Münchener Str. 54
85290 Geisenfeld, GERMANY

Hiermit erklären wir, dass die nachstehend beschriebene vollständige Maschine
We herewith declare that the completed machine described below

Produktbezeichnung *Product denomination*	**Förderbänder, Hopfensilos** *Conveyor Belt, Hops Silos*
Serien- / Typenbezeichnung *Model / type:*	**N10,BOF...,H...**
Fabrikatsnummer *Production Number*	**5352 und darüber** *5352 and higher*
Baujahr *Year of manufacture:*	**2016 und darüber** *2016 and higher*
den wesentlichen Schutzanforderungen im Sinne folgender EG-Richtlinien entspricht *is complying with the essential protective requirements in the sense of following EC-Directives*	**Maschinenrichtlinie 2006/42/EG** *Machinery Directive 2006/42/EC* **EMV-Richtlinie 2004/108/EG** *EMC Directive 2004/108/EC*
Angewandte harmonisierte Normen *Harmonized standards used*	EN 61000-6-2 EN 61000-6-4 EN 60204-1 EN ISO 12100 Teil 1 u. 2

Eine technische Dokumentation ist vollständig vorhanden. Der Betriebsanleitung wird jedem Gerät beigefügt. Die Konformitätserklärung bezieht sich nur auf die standardisierte Festlegung der Maschine und erlischt bei der nicht bestimmungsgemäßen Benutzung sowie bei konstruktiver Veränderung durch Dritte, die nicht von uns als Hersteller schriftlich bestätigt wurde. Adapterteile und Geräte die nicht im Lieferumfang enthalten sind und mit der Maschine verbunden oder zu einer Einheit zusammengefügt werden sowie Veränderungen aufgrund örtlicher Gegebenheiten sind nicht mit der EG-Konformität verbunden. Für diese Teile oder Änderungen ist vom Ersteller der Anlage eine Konformitätserklärung zu erwirken. Die Sicherheitsziele der Richtlinie 2006/95/EG über elektrische Betriebsmittel werden eingehalten.

There is a complete technical documentation. Each plant is accompanied by operating instructions. The conformity declaration refers to the standardized definition of the machine and is no longer valid in case of improper use as well as construction modification by third parties which hasn't been confirmed in writing by us as manufacturer. Adaption parts and devices which are not included in the scope of supply and are connected with the machine or combined to a unit as well as modifications due to local circumstances are not covered by conformity. For these parts or modifications, a conformity declaration has to be obtained by manufacturer. The safety objectives of the Directive 2006/95/EC relating to electric equipment are observed.

Bevollmächtigter der WOLF Anlagen-Technik GmbH & Co. KG für die Zusammenstellung aller technischer Unterlagen ist Herr Erich Obster Leitung Technik

Person authorized by WOLF Anlagen-Technik GmbH & Co. KG to compile the complete technical documentation is Mr. Erich Obster Management Technology

Geisenfeld, den 01.08.2016
Place, Date

Erich Obster, Mitglied der Geschäftsführung
Erich Obster, Member of the management

EXAMPLE

Quality Assurance

QZV
Verein zur Qualitätssicherung und Zertifizierung für den Mittelstand e.V.

QZV DIN EN ISO 9001:2008

CERTIFICATE

The Verein zur Qualitätssicherung und Zertifizierung für den Mittelstand e.V. certifies that the company

Wolf Anlagen-Technik GmbH & Co. KG
Heizung-Lüftung-Klimatechnik
Oberflächen- und Landtechnik
Münchener Str. 54
85290 Geisenfeld

has established and maintains a Quality Management System according to DIN EN ISO 9001:2008.
Proved in an audit.

Audit-no.: 012T1195

Conducted by: Prof. Dr. rer. nat. F. Schneider, Professor an der Hochschule München

This certificate was issued the: 27.02.2015 and is valid until: 26.02.2018
Certificate registration no.: 01171195

For the QZV: Prof. Dr.-Ing. Deubllein, Professor an der Hochschule München

QZV e.V. Schleißheimer Str. 48, 81539 München
Registrierungsnummer 33150102 (AICB e.V.)

ACB

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1. Intended Use

- The conveyor belt/hops silo is only suitable for the conveyance or intermediate storage of hops and may not be used for other goods.
- It is a conveyor belt/hops silo that is suitable for siting and installation in a building. Parts of the conveyor belt/ hops silo that protrude outdoors must be protected from wet conditions.
- The electric motor and other mounted electrical components and control devices must not be exposed to weather.
- Place the conveyor belt/hops silo on level ground and make sure it is stable at all times. The condition of the ground must be such that no damage can occur in the long term (even in case of vibrations).
- Position the conveyor belt/hops silo so that there is adequate safety clearance (escape route) to walls, partitions, driveways and the like.
- Do not make any modifications to the conveyor belt/hops silo. Modifications will render the declaration of installation or Declaration of Conformity and any warranty claim null and void.
- Only knowledgeable personnel who have received full instruction in the function and operation may install and start up the conveyor belt/hops silo.
- The attributes guaranteed in the delivery kit refer only to the specified operating purpose. Do not remove components designed for the protection of persons and animals!
- Do not clean the conveyor belt/hops silo when wet and/or (polyethersulfone and PVC coated on both sides) with chemically aggressive agents.

At the time of its development and manufacturing the conveyor belts and hops silo were built in accordance with applicable engineering practices. They are considered to be operationally safe. However, there are hazards associated with the operation of the conveyor belts and hops silo if they are not used properly by trained personnel. As a consequence, every person who is assigned to work on or with the conveyor belts and hops silo must be properly trained in the state of operation of the equipment and must have read and understood the operator's manual prior to commencing work on or with the conveyor belts and hops silo.

⚠WARNING **Risk resulting from improper use**
Any use deviating from the use described in this operator's manual is considered improper. WOLF cannot be held liable for any resulting damage or injury. The user / operator carries the risk resulting from improper use. Any improper use, misoperation and abuse can cause life-threatening injuries or death.

01.01. Instructions for the Operator – General

This operator's manual describes the safe and efficient handling of the conveyor belts/hops silo. A copy of the operator's manual must be stored near the equipment in a way that allows the user / operator to refer to it at any time. Users/operatorsmust carefully read the operator's manual before commencing work and must be capable of following the instructions and heeding the warnings in the manual. All safety notes, warnings and instructions must strictly be complied with. The local accident prevention guidelines and any applicable state and federal safety laws as well as any other pertinent state and federal laws, regulations and guidelines apply.

Qualified personnel delegated with the following

- installation
- commissioning
- operation
- maintenance
- troubleshooting
- decommissioning

must be instructed to follow the operating manual before starting work.

⚠ DANGER **Risk of death from electrical current**
Contact with live components and any exposure to electrical currents possesses a risk of death. Electric components that are switched on can move uncontrollably. Serious injury and death are a result.
- Work on the electrical system may only be performed by authorized qualified electricians.
- Before beginning to work on the electrical system, switch off the electrical power supply and secure it against being switched on.
- Cordon off the danger area and mark it with warning signs.

⚠ WARNING

Risk due to unqualified personnel
Only trained expert personnel of legal age without any physical limitations (fully competent persons) are allowed to operate the conveyor belt and hops silo. The operators must be instructed annually, before the start of harvest, about accident prevention regulations, the correct operation of the equipment, any possible health hazards, the course of action if there is danger of fire, the operation of fire extinguishing equipment, etc. Each individual who is assigned to do work on or with the equipment must be properly trained in the state of operation and must have read and understood the operator's manual prior to commencing work on or with the equipment.

⚠ WARNING

Danger if personal protective equipment is not worn
Persons who monitor, operate, clean, maintain, transport, etc. the conveyor belts/hops silo must always wear the necessary personal protective equipment. Protective equipment guards against physical injury and death in hazardous areas.

⚠ WARNING

Risks from moving parts
Contact with the moving parts of the conveyor belts /hops silo can seriously injure persons or cause death.
- Exercise extreme caution when performing tasks involving the moving parts of the conveyor belts /hops silo.
- Coordinate work with all persons involved and instruct them accordingly.
- Make sure that nobody comes into contact with moving parts.
- Every person working with the conveyor belts / hops silo must wear the appropriate safety equipment.

⚠ WARNING

Risks due to automatic startup
Automatic startup of the conveyor belt and/or hops silo is possible depending on the integration of the conveyor belts / hops silo into the control system of the hop-picking machine, drying chamber, drying chamber filling, etc. and can cause serious injuries or death. The operator must identify possible danger zones with visible markings. In case of an emergency, install partitions (barriers) and instruct employees daily about the dangerous situation. **Unauthorized individuals are not allowed in the danger zone.**

⚠ WARNING

Hazard analysis:
The operator of the conveyor belt and hops silo must carry out a risk assessment and take the resulting appropriate work safety measures. In case of ambiguities please contact the responsible state and federal safety authorities.

⚠ WARNING

Risk due to deactivation of safety devices
Do not remove or deactivate safety devices, barriers, limit switches and the like.

⚠ WARNING

Risks due to modifications
It is strictly prohibited to make any type of modifications to the conveyor belt, hops silo or their controller. Doing so can lead to serious injury or death.

⚠ WARNING

Risk due to remaining in danger area
Only trained operators are allowed to remain in the vicinity of the conveyor belt and hops silo while it is operating. All other persons are strictly prohibited from remaining in the danger area. Failure to follow these instructions may result in severe injury or death.

Accessing the conveyor belt and hops silo in the operational state is not allowed.

RISK TO LIFE!

⚠ WARNING

Checks of the conveyor belt and hops silo:
The conveyor belt and hops silo must be under control at all times. Check several times a day whether the drive rollers have accumulated dirt and debris and clean them if necessary. When working, performing inspections or cleaning the machine, switch off the power supply and secure it against reconnection.

⚠ WARNING

Risk due to accidental reactivation
Unauthorized or unintentional reactivation of the conveyor belt and/or hops silo from a standstill could result in serious injury or death.
- Secure the conveyor belt and/or hops silo against reactivation.
- Cordon off the danger area and mark it with warning signs.

After the end of working hours, a responsible person must perform an inspection run to check whether there are any unsafe conditions on the conveyor belt or hops silo.

WARNING

Fire hazard notices:
The conveyor belt and hops silo usually do not generate a fire hazard. Nevertheless, overheating of roller bearings and electrical drive motors can lead to smoldering fires. Regular preventive cleaning of the electric motors is therefore absolutely essential. The textile belt of the conveyor belt (polyethersulfone and PVC coated on both sides) must not be exposed to heat. In a similar manner no hot parts (welding, sparks from grinders, drilling chips, burning cigarette butts, etc.) must end up on the textile belt.

The operator must register the conveyor belt and hops silo in the fire prevention record and take preventive fire protection measures accordingly.

Fire extinguishing equipment:
Place an adequate number of suitable, officially authorized and tested handheld fire extinguishers in the vicinity of the conveyor belt and hops silo in visible locations.

NOTICE

Transport materials:
Freshly harvested green hops may only be conveyed with the type N10 conveyor belt and dried hops with the type BOF conveyor belt.

WARNING

Reference to regulations
The owners and operators are responsible for knowing and adhering to all applicable laws, regulations, rules, and ordinances regarding accident prevention and occupational safety in industry and agriculture.

01.02 General Safety – Accident Prevention

WARNING

Failure to observe the operating and maintenance manual can jeopardize persons appointed to do work and can lead to malfunctions on the conveyor belt or hops silo. Persons appointed to work on the equipment must have demonstrated technical qualifications to do the job. The accident prevention rules and regulations must be followed at all times. Appointed persons must use the personal protective equipment needed for the task.

WARNING

Activities on the conveyor belt or hops silo may only be carried out if the following functions are ensured:

- Mains isolator on the switch cabinet switched off and secured with a padlock to prevent restarting
- Power supply disconnected across all poles
- Stoppage of rotating parts
- Equipment components cooled down to standard ambient temperature (room temperature)

NON-COMPLIANCE MAY RESULT IN SEVERE INJURY OR DEATH

After work is completed, restart the system according to the commissioning procedure!

WARNING

Only qualified expert personnel may be assigned to work on electrical components. Follow all applicable local, state and federal regulations.

01.03 Symbols

Warnings Insert
This is the safety alert symbol. It is used to alert you to potential death and physical injury hazards. Youmust strictly obey all safety messages that follow this symbol to avoid injury or death.

Warnings in this operator's manual are marked by signal word boxes. The signal words indicate the level of danger. You must always comply with the warnings and act with care in order to avoid fatal accidents, injury and damage to property:

Death or severe injury will result if the corresponding precautionary measures are not taken.

Death or severe injurymay result if the corresponding precautionary measures are not taken.

Indicates a potentially dangerous situation that may result in minor to medium-severe injuries if it is not avoided.

Indicates a potentially dangerous situation that may result in property damage if it is not avoided.

You will find the adjoining symbol in the operating and maintenance manual in case of crushing hazard.

You will find the adjoining symbol in the operating and maintenance manual in case of danger due to falling.

You will find the adjoining symbol in the operating and maintenance manual in case of danger due to slipping.

You will find the adjoining symbol in the operating and maintenance manual in case of danger due to unintentional entry.

You will find the adjoining symbol everywhere in the operating and maintenance manual where grounding is urgently needed.

The adjoining symbol points to information in the operating and maintenance manual where trained personnel must be deployed.

You will find the adjoining symbol in the operating and maintenance manual in case of danger due to noise.

You will find the adjoining symbol in the operating and maintenance manual in case of risk of eye injury.

You will find the adjoining symbol in the operating and maintenance manual in case of risk to respiratory organs.

You will find the adjoining symbol in the operating and maintenance manual in case of risk of head injuries.

The adjoining symbol points to guidelines or cross-references in the operating and maintenance manual that are important for the operation of the machine.

The adjoining symbol refers to information or application tips in the operating and maintenance manual.

The adjoining symbol refers to information in the operating and maintenance manual where PVC is used and particular attention is necessary.

The material is fully recyclable and can therefore be consigned to a recycling scheme.

01.04 General Information

01.04.01 Area of Application

Please refer to the order confirmation (especially the technical specifications) and, if applicable, the specifications on the machine's nameplate for the area of application of the delivered system.

01.04.02 Safety-Related Components

The controller for the conveyor belt and hops silo can be equipped with safety-related components. Electrical components are subject to a limited operating life. After a certain time, these components must be replaced. Make sure that the same components or the types specified for them are used as replacements.

WARNING

Risk associated with non-original replacement parts
The use of non-original replacement parts that have not been approved is strictly prohibited. Non-compliance may result in severe injury or death.
- Only use original replacement parts or replacement parts approved by WOLF.

01.05 Specific Regulations for the Operator

In general the instructions listed in clause 1.0 apply. Furthermore, trained and certified personnel must carry out full inspection and maintenance on the conveyor belt and hops silo once a year. This inspection should adhere to manufacturer's instructions and the current safety requirement standards of the institution(s) for statutory accident insurance and prevention.

Always have a trained and certified technician perform these tasks!

01.05.01 Safety Instructions – Accident Prevention

WARNING

- The operator of the conveyor belt and/or hops silo is responsible for ensuring that all state-specific and federal accident prevention regulations are noted and followed during operation.
- Operators may only execute the work expressly assigned to them.
- Operators must not wear flapping clothes or have long hair loose.
- Any type of repair, cleaning, lubrication (greasing) and the like is prohibited during operation.
- Only the responsible machine operator may start up the conveyor belt and/or hops silo. This person is responsible for ensuring that no one can be injured when the drives start up.
- Operators must receive special instruction:

a. Make sure that there are no unauthorized persons in the area of the conveyor belt and/or hops silo.
b. Note that it is expressly forbidden to reach into the conveyor belt, hops silo or other rotating machine parts.
c. Do not step on or hold the conveyor belt.
d. Do not enter the hops silo while it is operational.

WARNING

Failure to observe safety instructions, regulations and measures
There is an enormous risk of injury or death in the machine area if anyone is careless or does not observe safety instructions, and all applicable state and federal accident prevention laws, regulations, and measures. You must always mark the danger zones appropriately and provide employees with continuous instruction (at least once daily).

- The sound level in the vicinity of the conveyor belt and/or hops silo is above 70 dB(A). Mark this area accordingly.
- When occupied in the area of the conveyor belt, wear hearing protection as well as other protective equipment such as safety shoes, safety goggles, head protection (helmet), safety clothing, etc. as a precautionary measure.

01.06 Protective Measures Taken

WARNING

The conveyor belt and hops silo are equipped with safety devices. The relevant standards (see Declaration of Conformity) were taken into consideration during engineering, design and system execution.

Covers behind which there is a hazard may only be removed only with tools. Before these are removed, shut down the conveyor belt and/or hops silo and secure against restarting.

WARNING

Risk due to accidental reactivation
Unauthorized or unintentional reactivation of the conveyor belt and/or hops silo from a standstill could result in serious injury or death.
- Secure the conveyor belt and/or hops silo against reactivation.
- Cordon off the danger area and mark it with warning signs.

01.07 Noise

The conveyor belt and/or hops silo is constructed according to customer-specific requirements. There is therefore no uniform noise data. During engineering and design, define and implement the necessary measures to satisfy the noise level specifications laid down in the order. The noise level specifications are usually between 70 and 80 dB(A).

Regardless of the noise reduction measures, wear hearing protection when the conveyor belt/hops silo is running!

01.08 Lightning Protection and Grounding

The conveyor belt and/or hops silo and all mounted parts must be fitted with professional lightning protection pursuant to VDE 0185-T1.

Execution lies within the system operator's scope of responsibility.

2. Storage and transport

02.01 Goods Acceptance, Damage in Transit

Unpack the machine parts in the presence of the carrier and check for completeness and damage using the delivery note.

Report transit damage immediately to the carrier, and log and confirm this on the delivery note (date and signature necessary)!

Report the damage immediately to the factory!

The freight carrier's insurer will reject any subsequent complaints.

02.02 Disposable Packaging Information

The delivery package is purely for transport use. It was quantitatively reduced to the absolute minimum so that high grade parts can be transported and unloaded without being damaged. The material is fully recyclable and can therefore be consigned to a recycling scheme.

The recipient of the goods bears the disposal costs.
Alternatively, it is also possible to return the packaging material to us. The contracting body of the goods will bear the costs of the return transport. Please note that the packaging material must not be contaminated and must be delivered separately according to groups.

02.03 Storage and Functional Integrity

If parts are packed in sheets, remove them immediately after delivery. Sheets promote condensation formation and thereby oxidation, especially on galvanized material.

All equipment components and parts must be stored so as to rule out the possibility of spoilage, damage due to soiling, condensation, weather conditions and external influence.

Release the tension from the belts on any belt-driven components during storage, delayed commissioning or idle periods (stoppages longer than 3 months). Move and rotate any parts that turn or rotate, such as motors and actuators, once a month.

As a fundamental principle, proceed as follows:

- Remove sheets
- Store devices, switch cabinets, drive motors, frequency converters and other electrical components temporarily in a dry and dust-free place protected from the effects of weather.
- Prevent condensation formation on the machine and components, especially in the switch cabinet and terminal boxes
- Ensure the functional integrity of components and mounted parts
- Follow additional maintenance and operating instructions of component manufacturers.

  Protect components and devices from soiling even when assembling the system.
- Protect the switch cabinet (if present) from moisture even during machine downtimes (after a harvest until the next harvest).

02.04 Transport of the Machine, Assemblies and Dismantling Parts to the Building Site

NOTICE

Machine components may only be transported to the installation location. Do not overturn or rotate them on the longitudinal axis since this can cause damage to the components.

WARNING

Risk when transporting the equipment
Suspended loads can tip over or fall. Tipping or falling loads can cause severe injury or death.
- Always move the equipment with great care and caution.
- When transporting any equipment with a forklift, make sure that the fork length reaches beyond the full load range.
- Never position yourself or anybody else under suspended loads.
- Keep unauthorized persons out of the danger area.
- Ensure the area is well lit.
- Only move loads under supervision.

02.05 Foundation

Correct assembly of the conveyor belt and/or hops silo requires level, horizontal ground. The foundation must undergo structural calculation and be executed accordingly.

02.06 Space Requirement for Operation and Maintenance

WARNING

There must be appropriate space available for the conveyor belt and/or hops silo.

If there are no official specifications for maintenance intervals, the required space must be a free distance of 1.0 m between the conveyor belt and/or hops silo and the adjoining obstacle (wall, partition, etc.).

Make sure that escape routes and maintenance access points are unobstructed when laying supply lines and cables (electrical, compressed air, etc.).

02.07 Equipotential Bonding

WARNING

- Do not remove pre-assembled equipotential bonding devices.
- To prevent electrostatic charging and electrocution, bypass all electrically non-conductive connection points with equipotential bonding.
- Local equipotential bonding measures must include all metal parts of the conveyor belt and/or hops silo.
- The conveyor belt and/or hops silo, switch cabinet and all mounted parts must have lightning protection and must be grounded according to current engineering standards (equipotential bonding/foundation ground terminal).

02.08 Switch Cabinet (option)

The switch cabinet is usually provided by the customer. It can also be obtained from WOLF as an option. If this option is exercised, the switch cabinet is produced and tested in-house according to customer-specific and system-specific requirements. Mounted parts are fully operational on delivery.

WARNING

Switch cabinet risks
Ensure that sensitive mounted parts are not exposed to vibrations,moisture or humidity during transport, storage or installation. Install the switch cabinet in an area protected from weather.When doing so make sure that there is a solid and sturdy subgrade for fastening.

The software (if included) is protected against third party interference. Disregarding the protection and modifying the controller invalidate any warranty claim and the Declaration of Conformity.

3. Installation – Commissioning the Conveyor Belt

WARNING

Risks due to improper installation
Installation and commissioning may only be performed by personnel especially trained for this purpose. Improper installation and commissioning by unqualified personnel may result in accidents causing death, severe injury and/or damage to property.
- Before installation and commissioning, observe all relevant notes in this owner's manual and comply with them.
- Pay particular attention to the correct and safe fastening of the conveyor belt, its support structures and bracings.
- The buyer must carry out the structural verification for the fastening points (on site).

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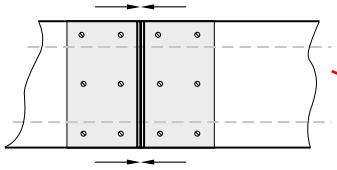
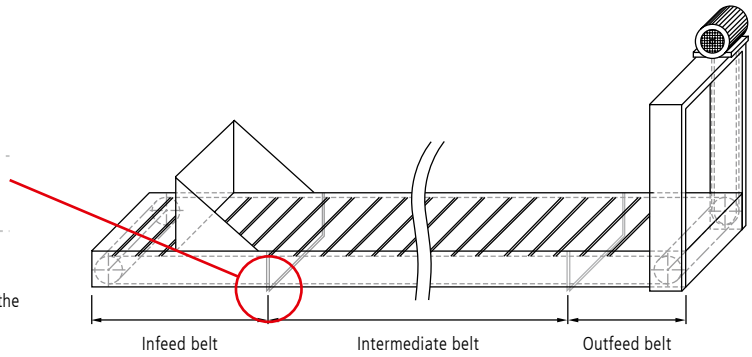
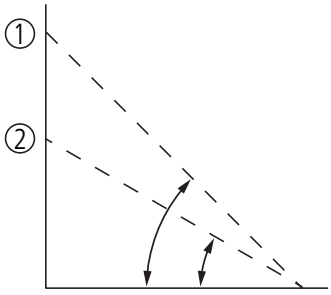


Components secured **before** installation in the building



WARNING

Install a supporting beam where the total belt length is 10 m or more.



1 Conveyor belt from picking machine to the kiln, or from the silo to the kiln up to a maximum of 45°

2 Conveyor belt from the conditioning chamber to the hops press up to a maximum of 30°

03.01 Electrical Connection of Conveyor Belt

03.01.01 General Information

DANGER

Risk of death from electrical current
Contact with live components and any exposure to electrical currents possesses a risk of death. Electric components that are switched on can move uncontrollably. Serious injury and death are a result.
- Work on the electrical system may only be performed by authorized qualified electricians.
- Before beginning to work on the electrical system, switch off the electrical power supply and secure it against being switched on.
- Cordon off the danger area and mark it with warning signs.

Important!
Please refer the electrician performing work to this operating and maintenance manual.

NOTICE

When connecting the conveyor belt and/or hops silo to the power grid, be absolutely sure that the direction of rotation indicated on the drive elements is observed!

Carry out the first operational check only in brief manual mode! Even a few motor rotations in the opposite direction can cause damage!

WARNING

Before commissioning the conveyor belt and/or hops silo, correctly install all safety devices. A specialist company (dealer) must install as well as test and pass (acceptance report required) the conveyor belt and/or hops silo according to safety requirements.

WARNING

Retighten all terminal screw points in the (optional) switch cabinet during commissioning and maintenance.

03.01.02 Electrical Connection – Standard Motors

WARNING

Safety Instructions
Electric motors are equipment with hazardous, live and rotating parts during operation. Physical injury and property damage can therefore be caused in case of incorrect operation, incorrect application or inadequate maintenance.

- For this reason, only electricians may work on electric motors!
- Perform all work on electric motors only in the de-energized state!
- Secure electric motors to prevent accidental restarting and spontaneous startup!

Follow safety instructions!
Always use suitable cable fittings that must correspond at least to protection class IP 54. Protect motor terminals from water penetration. There must be no humidity penetration in the area of the terminals (terminal boxes).

Open the terminal box cover only when wiring the connecting cable!

On-site requirements

a. Power cable pursuant to applicable regulations of the relevant power utility as well as state-specific and federal regulations and standards. Execute and confirm professional electrical installation pursuant to applicable state and federal regulations.

- Connection of the power cable must be carried out carefully by an expert.
- Adjust the supply cable cross-sections to the rated current.
- Provide strain relief fittings for the connecting cables.
- Cable entries must correspond to at least protection class IP 54.
- It is essential to connect earth conductors to the marked grounding screw according to VDE 0100.
- Use the original gasket when closing the terminal box.
- Close unneeded entries so that they are dust-proof and watertight (minimum IP 54).

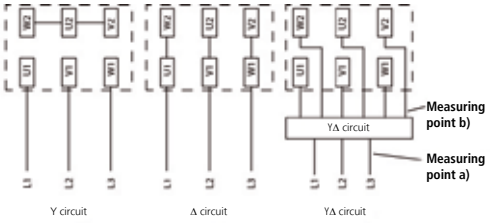
Adjust the power cable cross-section to the rated current and cable length. Protect the power cable as per regulations. See DIN 57100.

b. The voltage indicated on the nameplate and in circuit diagrams must be present on the switch cabinet infeed. Voltage deviations greater than +/- 6 % lead to malfunctions. Three-phase AC motors can be used in the range of 400 V + 6 % / -10 % in accordance with DIN/EC 38.

c. Prior to commissioning, carry out the tests specified in DIN VDE 0100 part 610, DIN VDE 0105, DIN VDE 0800-1, DGUV Regulation 3.

Terminal diagram for motor with single speed

		Mains voltage L1-L2 / L1 / N		
		230 / 133 V	400 / 230 V	690 / 400 V
		*	*	*
Voltage indication on the motor	133 / 230 V	Y	/	/
	*			
	230 / 400 V	Y Δ	Y	/
	*			
	400 / 690 V, 400 V Δ	/	Y Δ	Y
	*			
*Country-specific connected loads				



03.01.03 Commissioning the Electric Motor

NOTICE

a) Check the direction of rotation

b) Measure the motor current (ampere):

- Measuring point between fuse and YΔ switch. > Power consumption must be under the rated current indicated on the nameplate.
- Measuring point between YΔ switch and motor terminals: > Power consumption must be under the rated current indicated on the nameplate x factor of 0.58.

c) Install motor protection.
The motor must be monitored against inadmissible heating as a result of an overcurrent device with current-dependent delayed tripping in accordance with EN 60947-5-1, VDE 0660-200:2010-04 (e.g. circuit breaker). This must be omnipolar protection.

NOTICE

Set the thermal overcurrent relay:
This must be set to the measured value. In the YΔ circuit setting downstream of the corresponding measuring point.

NOTICE

Do not use an overloaded motor! Disregarding this will invalidate warranty services. Use the motor only for continuous operation and for standard, not frequently recurring startups and where no significant startup heating takes place.

NOTICE

Commissioning the Conveyor Belt

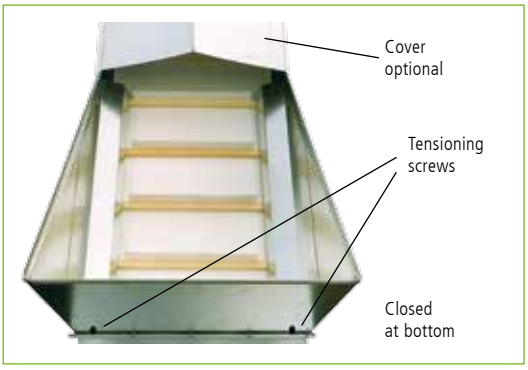
WOLF conveyor belts have been especially developed for the conveyance of hops. The side sealing is unique to WOLF conveyor belts. The canvas runs into a pan. This results in even transport of the harvested material. It prevents the hops being crushed through friction in spite of a high conveying rate. Every hop cone/hop umbel reaches the drying device undamaged.

The conveyor belt must be commissioned by trained personnel. Incorrect adjustments can damage the belt. Our trained installation and service engineers can carry out professional commissioning for you.

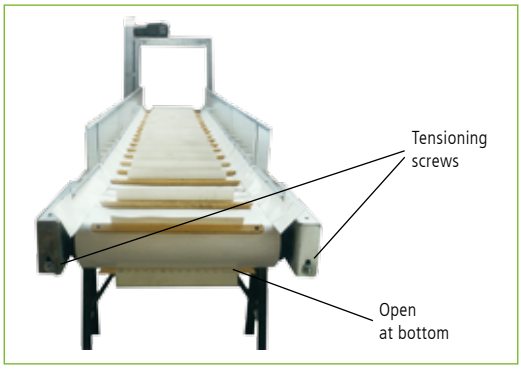
- During startup of the conveyor belt, center the belt using the tensioning screws (on the infeed and outfeed belt) so that it runs in the middle of the driving and output rollers. Before retightening, first loosen the screws of the roller bearings so that the bearing unit can be moved slightly.

WARNING

Special care must be taken as these adjustments are carried out when the belt is running. Do not wear gloves since there is risk of being pulled in!



Green material conveyor belt N10



Dry material conveyor belt BOF

03.02 Maintenance of Conveyor Belt

The maintenance time for subsequent points cannot be determined precisely. Periodic maintenance and cleaning are based on the application and operating time of the conveyor belt. Always ensure that the device is in good overall condition.

Timely maintenance prevents damage.

03.02.01 Conveyor Belt Maintenance – General

Warranty

Our warranty is voided if damage is caused by incorrect handling and maintenance. Moreover, experience has shown that as products age, greater defects occur due to deficient maintenance.

Only knowledgeable and expert personnel may carry out examinations of safety devices.

System components should undergo maintenance **before every harvest**.

WARNING

Use only food-grade lubricants!
Contact our service department in order to enter into a maintenance contract.

03.02.02 Conveyor Belt Maintenance – Motor

The gear motor requires no maintenance. However, it must undergo regular "dry" cleaning to eliminate dust. Protect the motor from weather by placing a cover over it on site.

03.02.03 Conveyor Belt Maintenance – Chain Drive

Remove contamination from the sprockets and chains. Lubricate the chain using food-grade lubricants after 30 operating hours.

Check the chain tension regularly and retighten.

⚠ WARNING **Before removing the safety devices, switch off the mains isolator and secure it against unauthorized restarting (padlock).**

03.02.04 Conveyor Belt Maintenance – Belt Track

Check the belt track regularly and during every maintenance.

Corrections can be made by adjusting the drive and output rollers.

03.02.05 Maintenance Checklist (for Conveyor Belt) – Daily Checks

(Recommendations without guarantee of completeness) This should be amended by the conveyor belt/silo operator pursuant to operational experience and the machine's operating time.

- Check drive motor for dirt accumulation and clean if necessary.
- Check for dirt accumulation on the rollers of the infeed and outfeed belt and clean if necessary.
- Check the belt track (uniform belt guidance on the rolls) and readjust if necessary.
- Check the belt tension and retighten if necessary. This can be done on the infeed and/or the outfeed belt. Before retightening, first loosen the screws of the roller bearings so that the bearing unit can be moved slightly.
- The belts are retightened with the tensioning screws. Then tighten the bearing screws again and lock the tensioning screws into place. Finally, check the belt track (even belt guidance on the rollers).

03.03 Conveyor Belt Malfunctions

In the event of belt malfunctions or standstill, check the following:

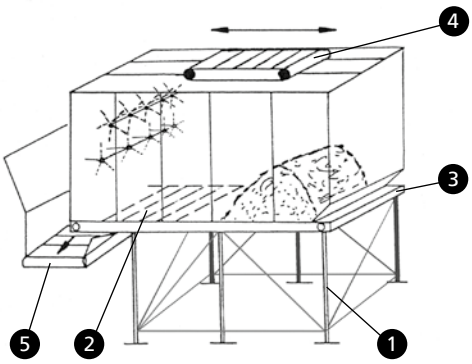
- Power connection (fuses, power plug, cable, phase polarity)
- Belt track (centering)
- Belt tension
- Blockage caused by deposits on rollers and lateral guides (hop cones/hop umbels, petals, lupulin)

4. Installation – Commissioning the Hops Silo

NOTICE

Installation may only be performed by specialist personnel especially trained for this purpose. Ensure the silo is sited in a secure location and pay particular attention to the correct and safe fastening of the conveyor belts, their support structures and bracings. The buyer must carry out the structural verification for the location and fastening points (on site).

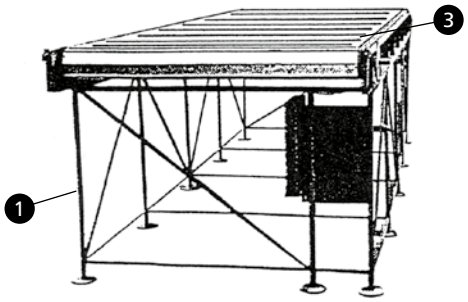
04.01 Installation Sequence



The delivery units are pre-assembled at the factory.

1.) Align the silo substructure ❶ on site in an absolutely horizontal position.
2.) Position the silo fully on the substructure and secure in place.
3.) Fully install steel plates ❷ in the retractable floor ❸.
4.) Install the drive.
5.) Fully install the safety device.

04.01.01 Installation Sequence – Retractable Floor (optional silo structure on site)



The delivery units are pre-assembled at the factory.

1.) Align the silo substructure ❶ on site in an absolutely horizontal position.
2.) Position steel plates/retractable floor ❸ on the silo substructure and secure in place.
3.) Construct the on-site silo.
5.) Fully install the safety device.

04.01.02 Installing the Conveyor Belts

1.) Mount the distributing belt ❹ on the silo structure.
2.) Mount the drainage belts ❺ according to local requirements.

Conveyor belts: See operating and maintenance manual "Conveyor Belts".

04.02 Electrical Connection of Hops Silo

As per the conveyor belt; see „03.01 Electrical Connection of Conveyor Belt“ 12

04.03 Maintenance of Hops Silo

As per the conveyor belt; see „03.02 Maintenance of Conveyor Belt“ 14

Check the steel plates regularly and remove deposits.

04.04 Operation of Hops Silo

Fault Emergency Off: Emergency stop device was triggered
Disorder: Fault message (for example, protective motor switch)
Automatic ON: Automatic filling of both silos
Semiautomatic ON: Automatic filling of one silo
Manual ON: Manual filling of the silo
External ON: Filling from an external box
Control Voltage ON: Voltage on the system
OFF: System off
Cart front/back: Manual movement of the silo car
(only if Manual ON is in the ON position)
Distributor front/back: Manual activation of the distributor belt
(only if Manual ON is in the ON position)
Silo 1/2: Selection of the silo in Semiautomatic ON or Manual ON.

5. Dismantling and Disposal

Most materials used are fully recyclable and can be consigned to a recycling scheme. Prepare a dismantling plan even before the start of dismantling.

Dismantling must be carried out by qualified persons in compliance with state and federal occupational safety law and regulations and whilst wearing personal protective equipment.

05.01 Dismantling – Disassembly

Before the start of disassembly, de-energize the conveyor belt and/or silo and the units inside it. Have an expert electrician remove all live connection cables.

Furthermore, have an expert shut off all components that carry media and power.

DANGER

Risk of death from electrical current
Contact with live components and any exposure to electrical currents possesses a risk of death. Electric components that are switched on can move uncontrollably. Serious injury and death are a result.
- Work on the electrical system may only be performed by authorized qualified electricians.
- Before beginning to work on the electrical system, switch off the electrical power supply and secure it against being switched on.
- Cordon off the danger area and mark it with warning signs.

The professional disposal of

- lubricants,
- plastics
- metals

should be carried out by a specialist company!

The system can then be disassembled on site into its individual modules or parts. This should likewise be performed by a specialist company that has expertise in the environmentally responsible disposal of individual parts.

WARNING

Wear suitable protective equipment and a breathing mask when handling dusty and dirty components!

Disposal:

Our devices (units) use the following materials:

- Housing – frame sections > coated and/or galvanized steel/steel plate
- Motors > cast iron, copper, steel

All metals can be recycled as special waste.

- Belt strips: uncoated natural wood
- Sealants > polyurethane - waste code no. 55980, 080404

All materials can be disposed of via special waste landfill or, depending on their condition (pursuant to current provisions), via the standard construction waste site.

- Conveyor belts: > polyethersulfone and PVC coated on both sides

  > wooden slats KTO (Pterygota macrocarpa)

NOTICE

Before disposing of any waste, contact the appropriate community and/or disposal company and discuss the situation!

6. Emergency telephone number (US) 911

The operator of the conveyor belt and/or hops silo must place the customary emergency telephone number in a visible place in the work area!

06.01 Firefighting

WARNING

The conveyor belt and hops silo do not generate any direct fire hazard. The built-in fabric belts can burn off due to external factors. The quantity depends on the length of the conveyor belt.

WARNING

PVC COMBUSTION CAN RESULT IN POISONOUS DIOXINS.

In case a fire occurs, place the emergency telephone number in a visible location beside the extinguishing agents and provide suitable extinguishing devices for firefighting. In the event of fire, de-energize the system/picking machine.

The following are suitable extinguishing agents:

- water spray jet
- fire extinguishing foam
- fire extinguishing powder

06.02 Escape/Leakage of Harmful Substances

WARNING

In the event of fire, certain amounts of toxic substances can arise due to the combustion of polyethersulfone and PVC. Based on the materials used, these substances are nitrogen oxides, carbon oxides, carbon monoxide and hydrogen chloride.

For this reason, particular prudence is necessary!

WARNING

In addition, substances can escape from hops residues in the event of fire. The hop-picking machine operator determines the extent to which these are classified as harmful.

Our conveyor belts and hops silo are continuously enhanced. We reserve the right to make structural changes. We would like to expressly point out that there could be deviations in the instruction manual due to the different designs of the conveyor belts and hops silos, frequent structural changes and due to the many special-purpose designs we produce.

If in doubt, please contact us.

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7. Inspection List

		Drive roller		Output roller		Drive motor		Drive chain	
Name	Inspection date	Dirt	Belt track	Dirt	Belt track	Dirt	Fastening	Tension	Lubrication

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