

Assembly Instructions

Belt Hoppers

BU-S 65
BU-S 100
BU-S 150
BU-S 200
BU-S 250
BU-S 350

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Declaration of Incorporation

in terms of the Machine Directive 2006/42/EC

We herewith declare that the product is provided for incorporation in a machine or to be assembled with other machines to constitute a machine as defined by the above-mentioned Directive (or parts of it), and that it is not allowed to be put into operation until the machine into which the above is to be incorporated is in conformity with the provisions of the EC Machine Directive.

Applied harmonised standards: DIN EN 60204 T1, DIN ES ISO 12100-2011-03DIN EN 619, DIN EN 620

Comments:

The product has been manufactured according to the Low Voltage Directive 2014/35/EU.

We assume that our product will be integrated in a stationary machine.

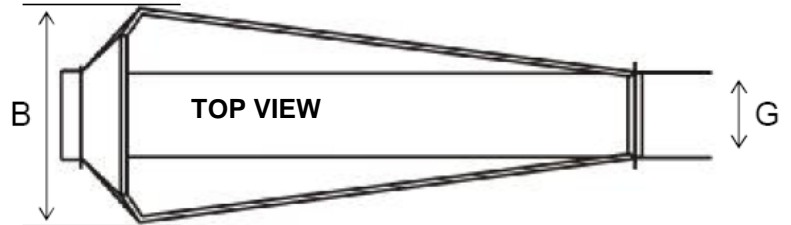
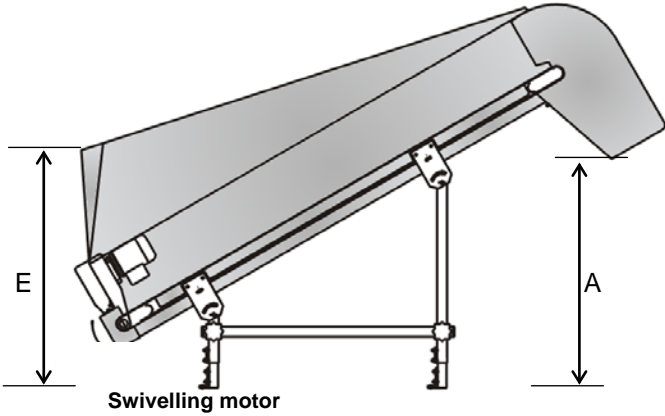
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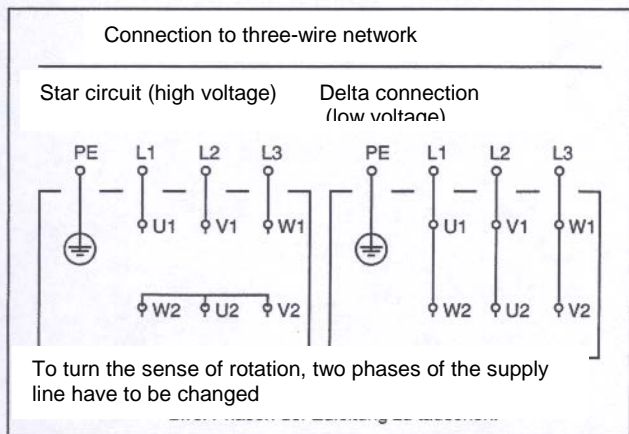
1. Technical Data

1.1. Table

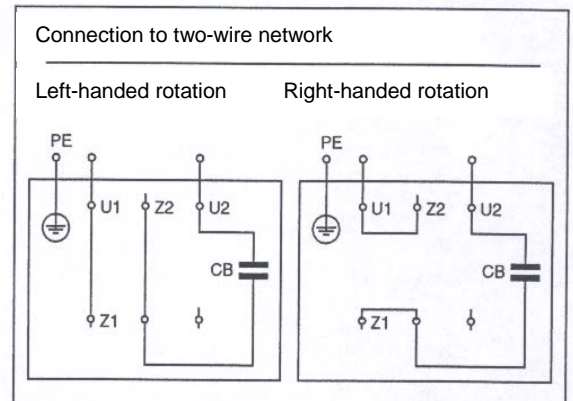


	BU-S65/1	BU-S100/1,5	BU-S150/1,5	BU-S250/1,5	BU-S200/2	BU-S250/2	BU-S350/2
Filling volume at 30° in litres	65	100	150	250	200	250	350
Max. filling weight in kg	75	75	75	75	75	75	75
Hopper width in mm (B)	600	600	780	880	800	900	1.000
Min. filling height at 30° in mm (E)	780	750	850	950	850	950	1.050
Discharge height at 30° in mm (A)	525	680	680	680	915	915	915
Min. filling height at 40° in mm (E)	700	650	750	850	750	700	950
Discharge height at 40° in mm (A)	640	880	880	880	1180	1180	1180
Distance between centres in mm	1.000	1.500	1.500	1.500	2.000	2.000	2.000
Belt width in mm (G)	250	300	300	400	300	300	400
Belt type with setting angle > 30°	AR belt or cleat belt with cleats type T20, L30 or L35 (number depends on part)						
Belt speed m/min	1 m/min						
Motor	3-phase or AC motors						
Motor position	Beginning of belt pos. 1 or 6						
Accessories	Seals, foldable quick discharge, covers, mobile substructures						

1.2. Connecting data for motors



3-phase motor connectin plan



Capacitor motor connecting plan

2. Safety Instructions

We have taken great care in the planning and production of our belt hoppers to guarantee trouble-free and safe operation. You too can make an important contribution towards job safety by reading these short operating instructions through completely before putting into operation. Always follow the safety instructions!



Attention

This warning indicates safety instructions. Non-observance of these warnings can result in serious injuries or death!



Caution

This warning indicates safety instructions. Non-observance of this warning can result in serious personal injuries or damage to property.



Note

This hand shows that there are Notes to give you helpful hints for operating the conveyor belts.

Make sure that all persons working with or at this machine also read the following safety instructions attentively and observe them!

These operating instructions only apply to the machine types mentioned on the title sheet.

The instructions must always be available there where the conveyor belt is operated.

When using the belt hopper in moist or wet surroundings (humid area), one must make sure that the required type of protection is met.



Note

For full information about the entire range of control boxes, please refer to "Control Boxes" in the operating instructions.

Putting into operation, conversion, maintenance and repair work may only be carried out by qualified and authorised staff (see also "Requirements for the User" in this chapter).

During assembly, maintenance and repair work, the conveyor belt has to be all-pole disconnected from the mains in accordance with the Association of German Electrotechnical Engineers (VDE).

Work on electrical equipment may only be carried out by a specialist electrician or by a person instructed in electro-technics under the supervision of a specialist electrician according to the electrotechnical regulations.



Attention

There is the risk of injury and danger through electric shock!

- Users and operators are to make sure that only authorised staff work at the conveyor belt.
- Changes that impair safety must be reported to the operator immediately.
- The belt hopper may only be operated when it is in perfect condition.
- The belt hopper may only be operated in the sense of its intended use.
- Please follow the safety regulation VBG 10 for continuous conveyors and VBG 4 for electrical equipment and operating material.
- Make sure that the protective earthing of the power supply is in perfect condition.
- It is absolutely forbidden to operate the belt hopper without its casing and protective covers (chain drive).
- The gap at the drawing-in points of the belt may not be wider than 4 mm, otherwise there is a drawing-in hazard. Should the gap become wider after adjusting the belt, the protective collar also has to be readjusted.

Intended use

The belt hoppers' intended use is the storage and transport of the material to be conveyed.

This material must have a smallest side length of at least 5 mm.



Caution

Smaller parts may get caught under the belt, causing damage or failure to the conveyor belt.

With standard belts, the material to be conveyed must be dry, clean and not have sharp edges. For the transport of sharp-edged, oily, wet or hot (> 70°C) material, special belts have to be used.

The material to be conveyed must not fall onto the conveyor belt from a greater height. The maximum permissible impact energy is 0.1 J.

In case of doubt, please ask the manufacturer.

The belt hoppers are designed for inclined transport with maximum loading. Please ask the manufacturer what is possible in this particular case.

Please refer to Technical Data (Chapter 1) for the permissible belt loading.

Noise emission

The continuous sound level is maximum 70 dB(A). The transport of material or the quality of the belt can produce a higher level of noise. For these exceptions, you can ask your manufacturer about noise abatement measures.

Requirements for the User

Putting into operation, conversion work as well as maintenance and repair work may only be carried out by qualified and authorised staff.

We differentiate between four levels of qualification:

Qualified staff

are persons acquainted with the installation, assembly, setting up and operation of the conveyor belt. They have an adequate qualification for their job.

Authorised staff

is qualified staff that has been made familiar with a clearly defined duty by the operator of the conveyor belt.

Specialist electricians

(according to IEC 364 and DIN VDE 0105 Part 1) are persons who, thanks to their training in the subject, specialist knowledge and technical experience of the relevant norms, are able to assess the tasks they have been entrusted with and recognise any possible hazards.

Electrotechnically instructed person

(according to IEC 364 and DIN VDE 0105 Part 1) is someone who has been instructed by a specialist electrician in the tasks entrusted to him/her. This person has also been informed about the possible dangers that can occur through inappropriate behaviour and about the necessary protective gear and precautionary measures.

2.1. Applicable Directives and Standards

The hopper has been built in accordance with the following directives:

- EC Directive "Machinery" 2006/42/EC
- EC Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU

We assume that our product will be integrated in a stationary machine. The User is to follow the regulations of the EMC Directive.

Please refer to the Declaration of Incorporation for the applicable standards.

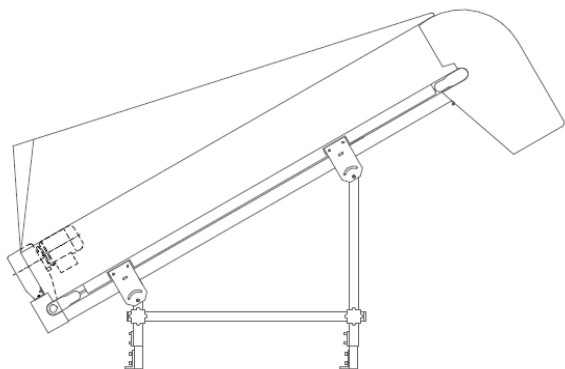
3. Construction and Function of the Belt Hoppers

Basis of the belt hoppers is the RNA conveyor belt FP120, the body of which consists of a special aluminium groove profile. For the drive, one can choose 3-phase motors or AC motors that can be mounted either left or right at the beginning of the belt.



Note

For information about the control units, please refer to "Control Units" in the separate Operating Instructions.



4. Transport and Assembly

4.1. Transport

Transport ex works

The belt hoppers are delivered ex works packed in boxes or on pallets.

Internal transport

The weight of the belt hopper depends on the measurements and motor rating. You will find the weight of your special model in the transport documents.



Attention

When unpacking, control all the safety devices. Replace damaged parts before putting into operation.



Caution

One-piece conveyor belts can be brought to their place of use on a sufficiently stable haulage car.

4.2. Assembly

The delivered belt hopper is ready-assembled. It is assembled on a stand frame.

4.2.1. Belts



Note

The standard belts are made continuous with a finger connection. The moving sense of these belts can be any way.

With belts that have an overlapping connection, the moving sense should be chosen according to the following figure:

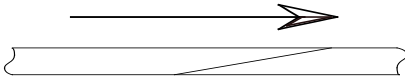


Fig. 2: Choice of the moving sense

Accumulation operation forms an exception. In this case, turn the belt.

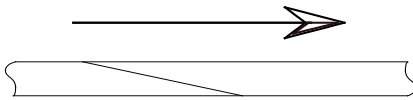


Fig. 3: Moving sense with accumulation operation

4.2.2. Aligning the axes

Align the axes of the driving rollers and deflection pulleys towards each other and to the body of the conveyor (Fig. 3).

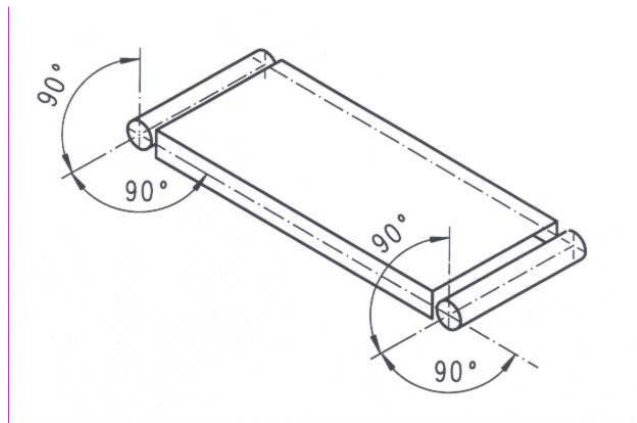


Fig. 3: Aligning the axes

4.2.3. Drive (belt hoppers without RNA control units)

Have the motor connected by a specialist electrician according to the wiring diagram (see Chapter 1). Then check the sense of rotation.



Attention

Make sure the drive has an adapted overload protection. The ratings are indicated on the rating plate of the motor.

The drives of the belt hoppers can be continuously adjusted. To do this, loosen the fixing screws of the motor flange and fix the drive into the desired position (see Fig. 4).

Slew the motor into the desired position and tighten the fixing screw again.

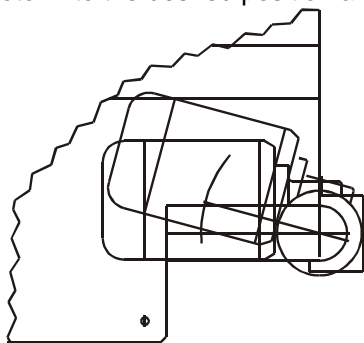


Fig. 4: Continuously slewable motor



Caution

The protective motor switches included in the delivery may not be operated overhead, otherwise the protective function is no longer given. In this case, mount the protective switch in such a way to ensure that the prescribed fitting position is correct.

5. Putting into Operation



Attention

The electric connection of the conveyor belt may only be carried out by trained staff (specialist electricians).

When making changes on the electrical connection, please follow the Operating Instructions for the protective motor switch or control unit.

The conveyor belt is switched on and off with the protective motor switch that is mounted next to the motor.

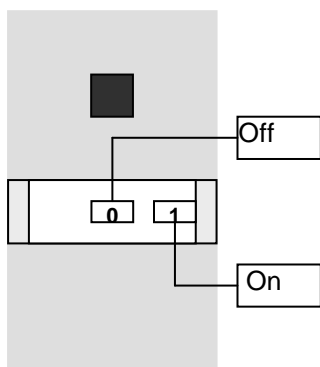


Fig. 5: Protective motor switch

To operate belt hoppers that are equipped with other control units, please refer to the separately supplied Operating Instructions of the control unit.

Adjusting the belt run

The motor and belt hopper went through a trial run at the manufacturer's and have been subject to final inspection. Owing to the reassembly of the conveyor belt and running in of the belt, an adjustment of the belt run may be necessary. This fine adjustment is done with the headless setscrews that are integrated in the deflection station.

The following figure shows details of the deflection station.

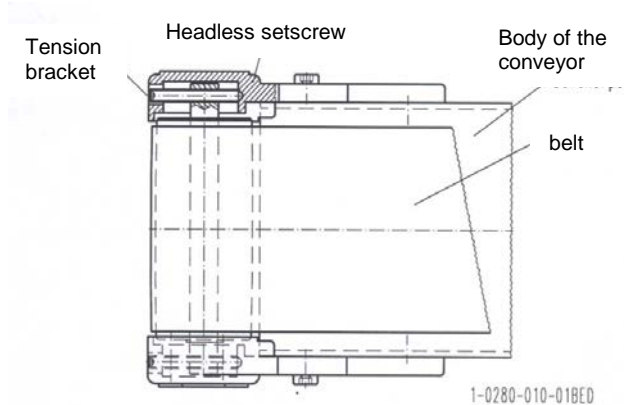


Fig. 11: Deflection station

If the belt runs off-centre after starting the motor, carry out the adjustment in the deflection station first. If this is not sufficient, carry out the adjustment in the driving station.

Adjusting the deflection station

- Tighten the GS headless setscrew on the side towards which the belt runs (tension belt) or
- loosen the GS headless setscrew on the opposite side (slacken belt).



Caution

Tensioning the belt too strongly can overstrain both the belt and drive. After having carried out the fine adjustment, measure the current consumption of the motor. If it exceeds the nominal data on the rating plate, the GS headless setscrews have to be loosened evenly.

After finishing the adjustment, it is indispensable to perform a trial run for several hours. During the first running hours, the belt has to be checked at shorter intervals (about 2-3 times a day) for its centred run.

6. Maintenance



Attention

During assembly, maintenance and repairs, the belt hopper has to be all-pole disconnected from the mains in accordance with the VDE. Work on the belt hopper's electrical equipment may only be carried out by a specialist electrician or by an instructed person (see Chapter 2) under the directions and supervision of a specialist electrician according to the electrotechnical regulations.

6.1. Belt

When the belt is soiled, clean it with spirit and a clean cloth that doesn't make fluff. To clean belt hoppers used for foodstuffs, use an authorised spirit substitute.



Attention

Make sure to let in plenty of fresh air! Wear protective clothing!

6.2. Motor

With DC motors, the carbon brushes have to be replaced after 2000 operating hours. Afterwards, thoroughly clean their surroundings.

Geared motors on the other hand are maintenance-free for 10,000 operating hours.

Depending on the ratio of dust, clean the ventilator cowl of the motor, the motor itself and the gear body. This ensures that the drive is always sufficiently cooled.

6.3. Gears

The gears are ready for operation upon delivery and filled with gear grease and oil. This ensures long-time lubrication of all movable parts.

Disassembly, cleaning and oil change are not necessary.

6.4. Chain drive

Depending on the strain, the tension of the chain drive has to be checked and greased at regular intervals.

Commercially available chain grease can be used for lubrication.



Note

Check the chain tension at regular intervals.

To do so, remove the chain protection hood and clean off the dirt and old lubricant remains from the pinion and chain. Then mount the chain protection hood again.



Caution

Before putting into operation again, check that the chain protection hood is properly in place.

6.5. Deflection pulleys, driving and supporting rollers

When the rollers are soiled, clean them with spirit and a clean cloth that doesn't make fluff. To clean conveyor belts used for foodstuffs, use an authorised spirit substitute.



Caution

Make sure to let in plenty of fresh air! Wear protective clothing!

6.6. Environmental influence

When installing the conveyor belts, take care that the belts are not exposed to strong heat radiation. Please observe the permissible temperatures for the belts (see brochure). Otherwise, the belts could expand and slip on the driving rollers.

Keep oil, shavings, etc. away from the conveyor belts.

7. Stockkeeping of Spare Parts and Customer Service

For an overview of the available spare parts, please refer to the separate spare parts sheet.

In order to guarantee that your order is carried out quickly and correctly, please always indicate the machine type (see type plate), required number of pieces as well as name and number of the spare part.

You can find a list of service addresses on the back cover.



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