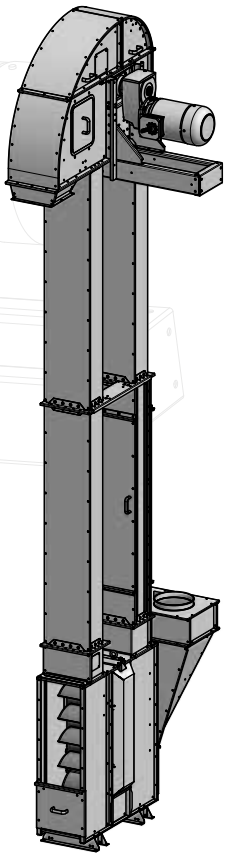
SKANDIA
ELEVATOR

ASSEMBLY INSTRUCTIONS
H-LINE

New generation SEH
50/18, 50/23 & 63/30



ZMA015GB 2020-09-01

Goods inspection

Check that the number of packages agrees with the delivery note and that the packing and goods are not damaged. Make a note of any damage and missing materials on the consignment note and report it to the carrier and to us. Make sure the delivery is complete after unpacking the goods. Any materials that are found to be incorrect must not be assembled.

Warranty

A 2-year factory warranty from the day of delivery applies to all models of Skandia Elevator AB machinery. A condition of the warranty and any subsequent compensation is that Skandia Elevator AB is contacted and an agreement reached between the customer and Skandia Elevator AB on how any faults should be rectified. The warranty covers all parts that are damaged or break due to faulty design or manufacture. Faults and damage caused by faulty assembly, incorrect use or lack of maintenance will not be covered by the warranty.

CE mark

A CE mark is located on the transmission side of the elevator head and is proof that the machine has been manufactured in accordance with EU machine directives and complies with safety requirements. The CE mark contains information concerning year of manufacture, model designation and order number. Always specify the order number in the event of a claim and on orders for spare parts.

EC Declaration

Skandia Elevator AB
Arentorp
S-53494 Vara
SWEDEN

declare under our sole responsibility that the product:

SEH

order number:

.....

to which this declaration relates is in conformity with Council Directive of 29 December 2009 on the harmonisation of the member States relating to machinery, 2006/42/EC.

Unless otherwise specified on the CE mark, the product is manufactured in accordance with the EU Machinery Directive and is classified as Category II 3D/0D. It is intended for the transport of materials that comply with ATEX Zone 22 and where the external environment is unclassified.

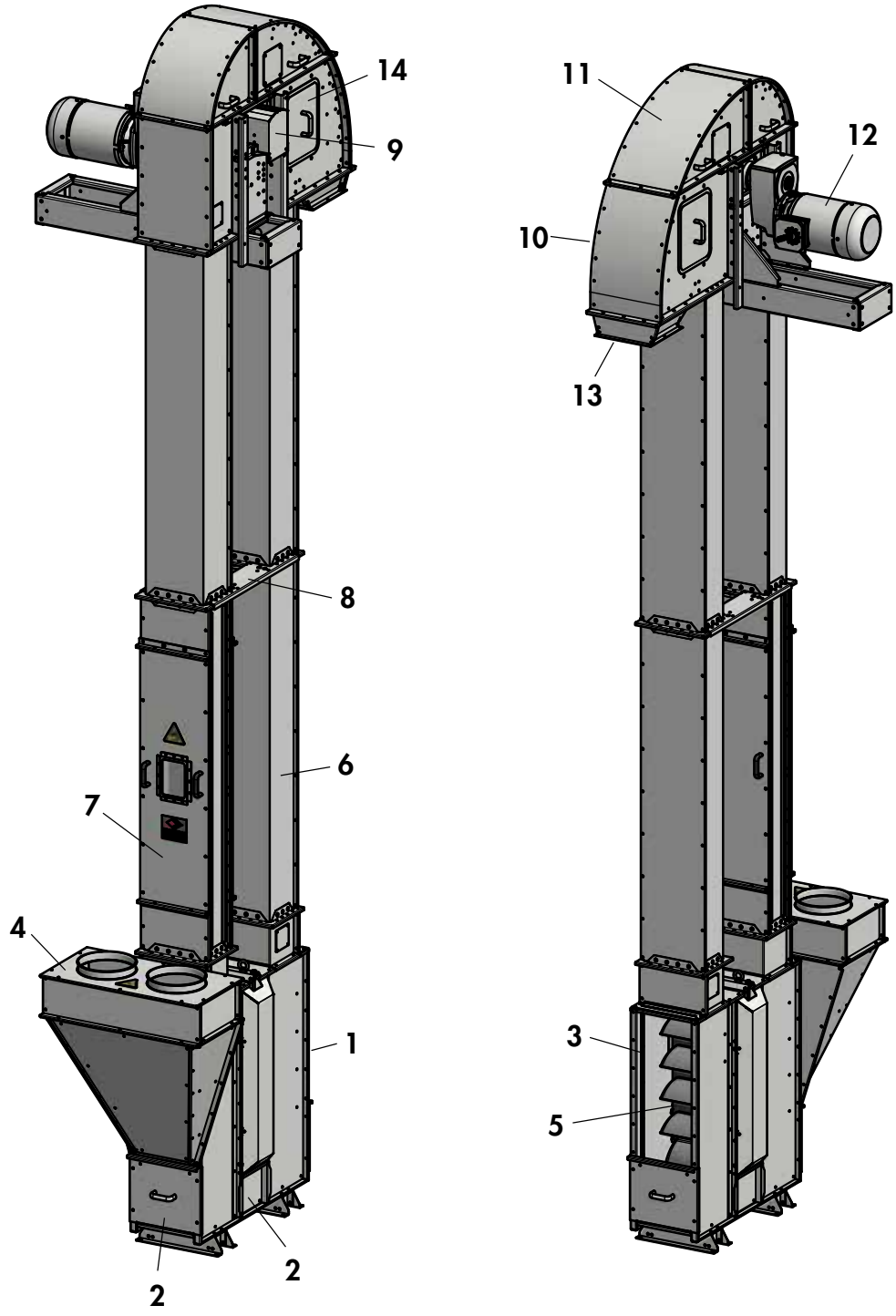
Vara 1 September 2020

Joakim Larsson, CEO

Thank you for choosing Skandia Elevator!

Your conveyor system must be assembled correctly and maintained thoroughly if it is to operate satisfactorily. These assembly instructions and the separate maintenance instructions must be followed for the warranty to apply.

We hope you will be pleased with your Skandia conveyor equipment for a long time.



Parts	Pos.
Elevator boot	1
Clean out hatch	2
Inlet opening	3
Cover plate, inlet hopper	4
Bucket belt	5
Elevator leg	6
Service door	7

Parts	Pos.
Leg spacer plate	8
Back stop with guard	9
Elevator head	10
Elevator hood	11
Geared motor	12
Outlet	13
Inspection cover	14

The owner of the transport equipment is responsible for these assembly instructions always being available to the fitters, electricians, maintenance technicians and engineering technicians concerned.

Incorrect assembly and/or operation may lead to personal injury or damage to the conveyor equipment and/or other equipment. It can also cause malfunctions or a reduction in capacity.

Read the assembly instructions carefully before assembly, electrical connection, maintenance or operation commences. If any part of these instructions should be difficult to comprehend, please get in touch with your reseller for assistance.

The safety information is presented and interpreted as follows:

⚠ **WARNING!**
Disregarding instructions given in warnings can cause serious personal injury or death.

⚠ **IMPORTANT!**
Ignoring the instructions given in important texts may cause damage to the conveyor equipment and/or other equipment. It can also cause malfunctions or a reduction in capacity.

NB! indicates that the text contains information that will simplify the assembly process.

General

⚠ **WARNING!**

- Ensure that everyone responsible for assembly, electrical connection, maintenance and operation of the conveyor equipment has read and understood the instructions and safety information.
- Use protective gloves, helmet, steel-toed boots, ear defenders, protective goggles and high-vis vest when carrying out assembly, electrical connection, maintenance and operation of conveyor equipment.

⚠ **WARNING!**

- Stop the machinery and turn off electric power before attempting any type of assembly, electrical connection or maintenance work.
- Do not start the machinery without the elevator hood and all hatches, covers, lids and guards fitted in such a way they can only be opened with tools.
- Connections to, from and between machinery must be permanently mounted and fully enclosed. If the design of the installation does not allow this at an outlet, finish off with a 1 m pipe.

⚠ **IMPORTANT!**

- If the machine is being assembled outdoors, the motors and transmissions must be fitted with a weather cover.
- If a short circuit should occur, ensure that the electrical equipment is in working order before continuing operation.
- Ensure that the electrical equipment is kept free from dirt, dust, moisture and electrostatic charge.

Electrical connection

Incorrect electrical connection may lead to personal injury or damage to the conveyor equipment and/or other equipment. It can also cause malfunctions or a reduction in capacity.

⚠ **WARNING!**

- All electrical equipment is to be connected by a qualified electrician. See separate connecting directions for electronics.
- The power switch must be permanently mounted and located to allow easy access when carrying out maintenance work.
- Ensure the speed monitor is engaged during operation.

⚠ **IMPORTANT!**

- Ensure the motor protection is set to the correct ampere setting for the motor.
- Read the "Back stop" section in the elevator's assembly instructions before test starting the motor for the first time.
- Ensure all breakers for the belt alignment switch (optional extra) are engaged during operation.
- Ensure all switches for the explosion relief panels (optional accessory) are engaged during operation.

Maintenance

Inadequate maintenance may lead to personal injury or damage to the conveyor equipment and/or other equipment. It can also cause malfunctions or a reduction in capacity.

⚠ **WARNING!**

Read the separate maintenance instructions before taking the machine into service.

Safety decals

⚠ WARNING!

The machine is supplied with safety decals on delivery. They must not be removed or defaced. If a safety decal becomes damaged, you can order a new one free of charge from Skandia Elevator AB. Specify the part number of the decal. See the section below and the previous chapter Machine Overview.

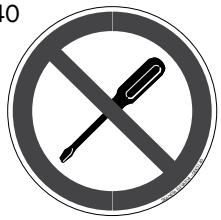
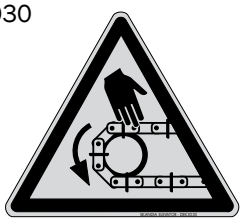
There are safety decals for:

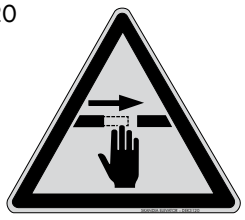
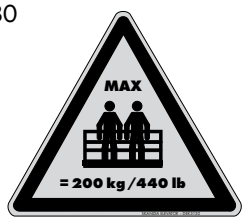
- Mandatory (white symbol on round blue background).
- Forbidden (black strike-through symbol on round white background with red surround).
- Warning (black symbol on triangular yellow background with black surround).

⚠ WARNING!

The mandatory instruction, forbiddance or warning given on all safety decals must be considered or serious injury or death may follow.

Skandia Elevator machines have the following safety decals:

Part number/Safety decal Refer to the "Machine Overview" chapter for placement.	**Written definition**
DEK3090 	Read the "Back stop" section in the elevator's assembly instructions before test starting the motor for the first time.
DEK3100 	Do not place the valve with the motor side face down.
DEK3140 	Changing settings and equipment is prohibited.
DEK3030 	Warning for conveyor chain!

DEK3060 	Warning for bucket belt!
DEK3040 	Warning for chain drive!
DEK3070 	Warning for rotating conveyor drive shaft!
DEK3080 	Warning for rotating elevator drive shaft!
DEK3110 	Warning for moving machinery!
DEK3120 	Warning for moving machinery!
DEK3010 	Warning for dust explosion!
DEK3130 	Warning, a maximum of 2 people = 200 kg/440 lbs may be on the platform and ladders simultaneously!

⚠ IMPORTANT!

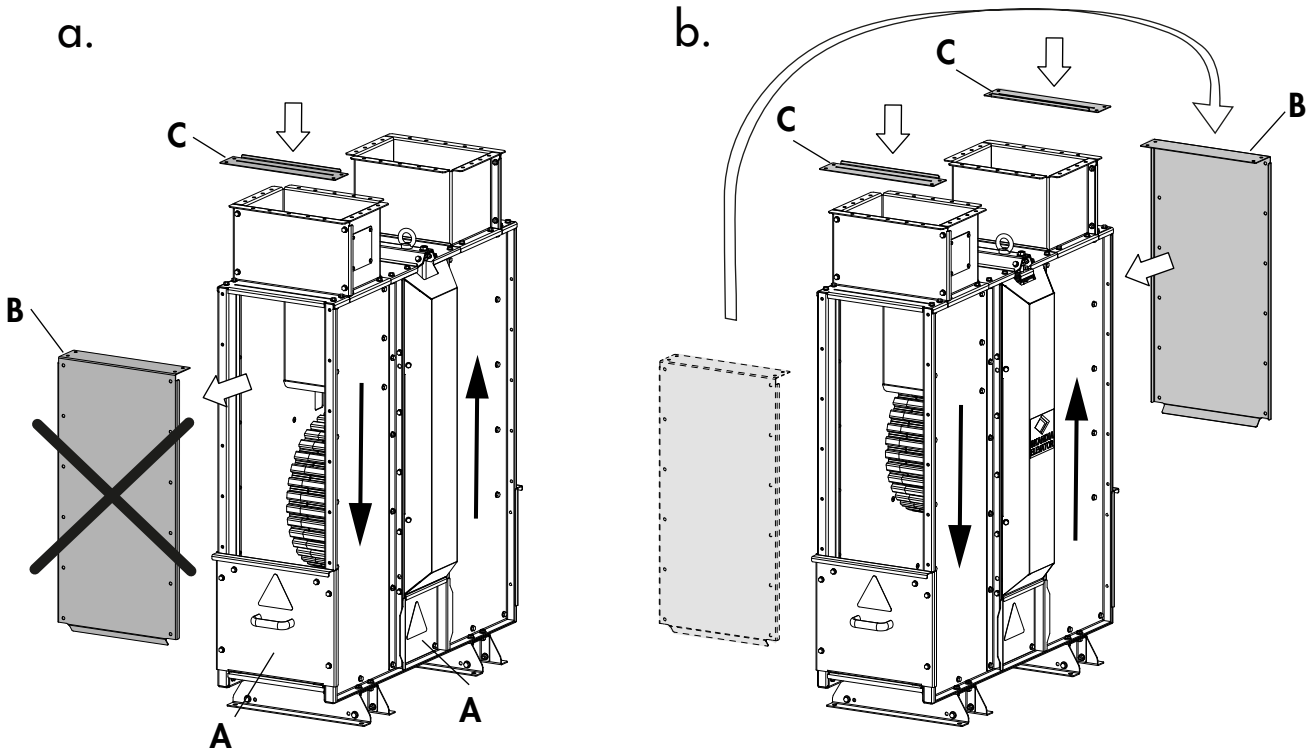
- Sections can be assembled together to a maximum of 8 metres in length and then lifted into place. The weight must be distributed over several lifting points.
- Ensure that the bracing requirements are followed for the elevator as specified in the Assembly, machine chapter, in the Legs and Elevator head sections.
- Ensure there is no risk of the elevator boot standing in water. Lift/ raise it if necessary.

NB! Position the elevator boot so that the clean out hatches on all sides of the boot (A) are accessible and so that the planned connections can be made.

The elevator boot is prepared for feeding to the upward side plate.

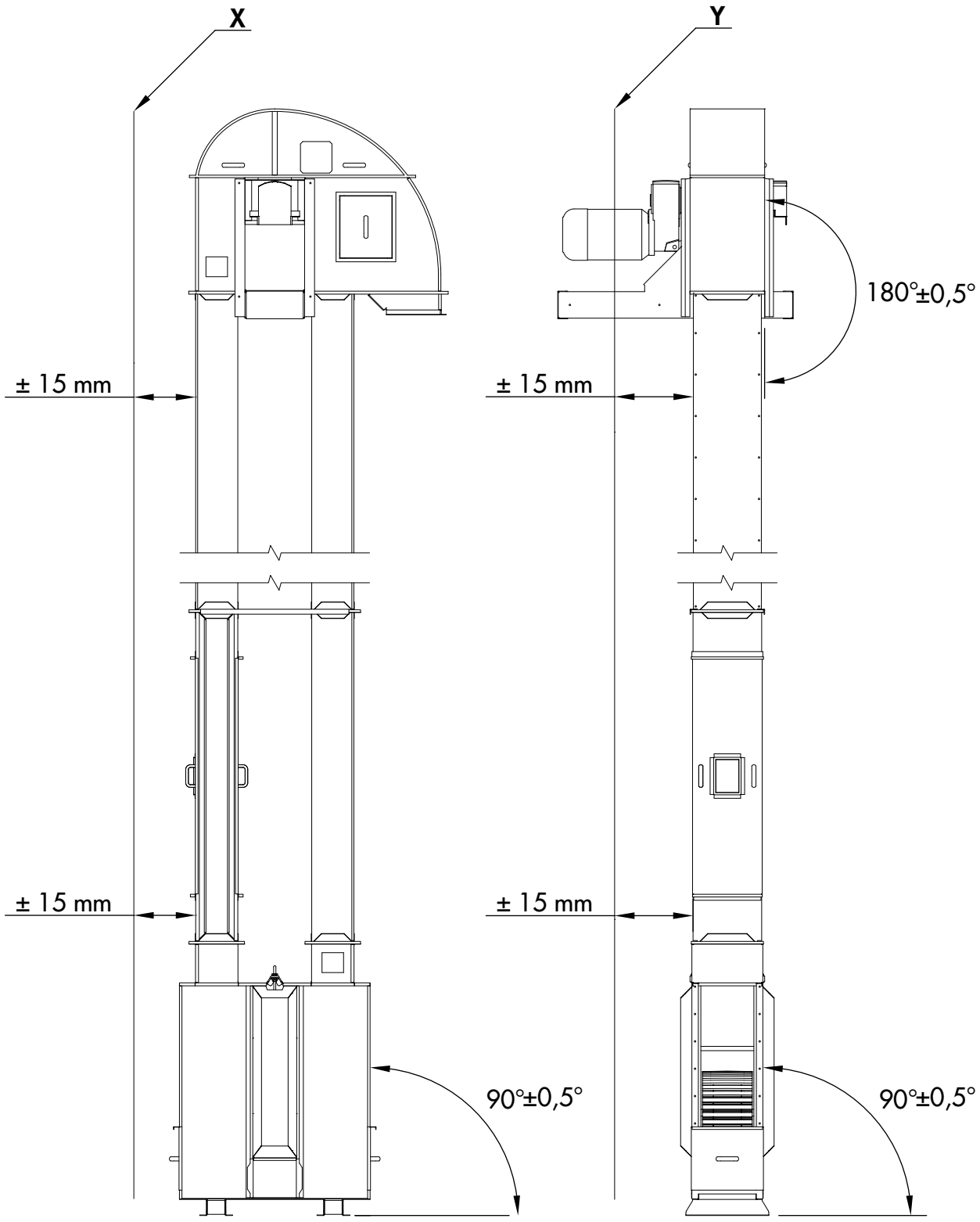
a.
When feeding from both side plates, remove the cover plate (B) from the downward side plate and refit the rib plate (C) as illustrated.

b.
When feeding to the downward side plate only, first remove the rib plates (C) from both side plates, move the cover plate (B) from the downward to the upward side plate and then refit the rib plates (C) on both side plates, turn the rib plates as illustrated.



⚠ IMPORTANT!

Fit the elevator vertically within the specified tolerances (X and Y are vertical references).



⚠ WARNING!

- Connections to, from and between machinery must be permanently mounted and fully enclosed. If the design of the installation does not allow this at an outlet, finish off with a 1 m pipe.
- Unused inlets are to be sealed.
- Always use the cover on the inlet hopper (A/B/C).

⚠ IMPORTANT!

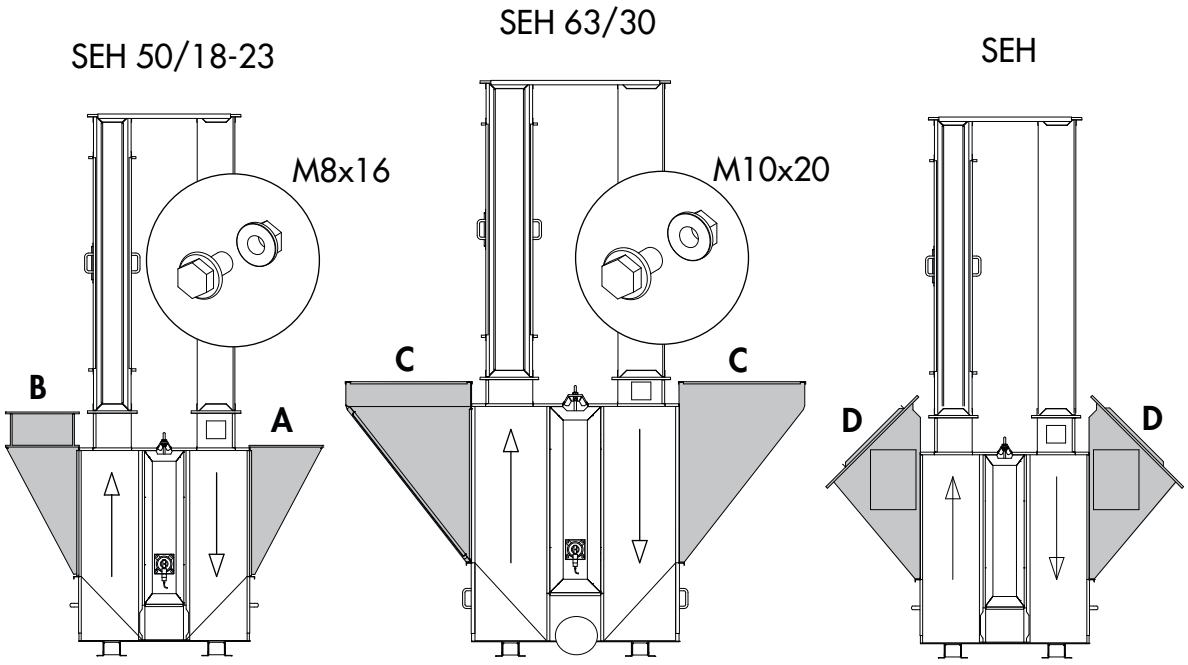
- Mealy, light material and slow running material must always be fed on the descending leg side.
- Use only recommended inlet, outlet and connecting components.
- Ensure the ducting is dimensioned sufficiently and that its angle of inclination is at least 45°.

Location of inlet

The inlet hoppers (A/B/C) and the connection hoppers (D) are always positioned at the same prepared height.

Applies to SEH 50/18-23::

NB! Inlet hopper (A) is designed for a descending leg side and extended inlet hopper (B) for an ascending leg side.

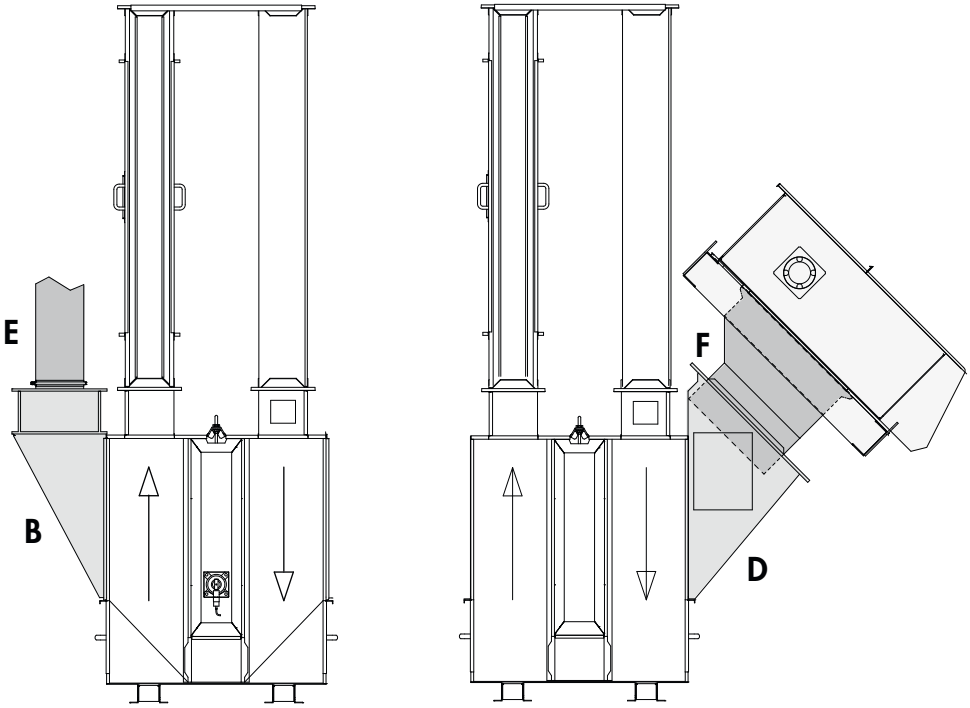


Connecting another machine to the elevator

A conveyor or elevator is connected through a closed ducting (E) from the machines outlet hopper to the cover plate on the inlet hopper (B) of the elevator. A conveyor can also be connected through a special outlet connection (F) directly to a connection hopper (D).

Connecting the elevator to the conveyor

Connect the elevator to the conveyor according to the assembly instructions for the respective conveyor.



Belt alignment switch

The belt alignment switch is an optional extra that stops the elevator if the bucket belt starts to foul on the slatted pulleys.

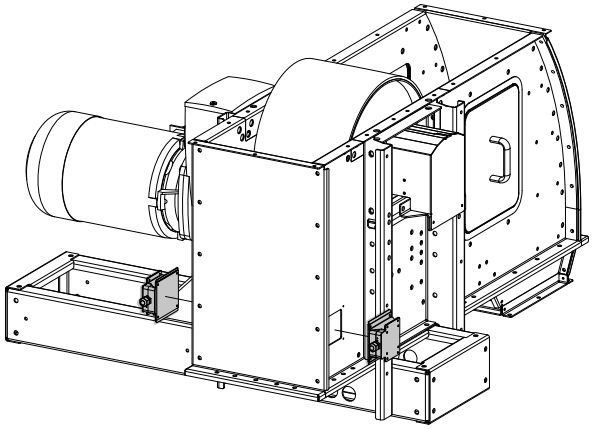
⚠ **WARNING!**

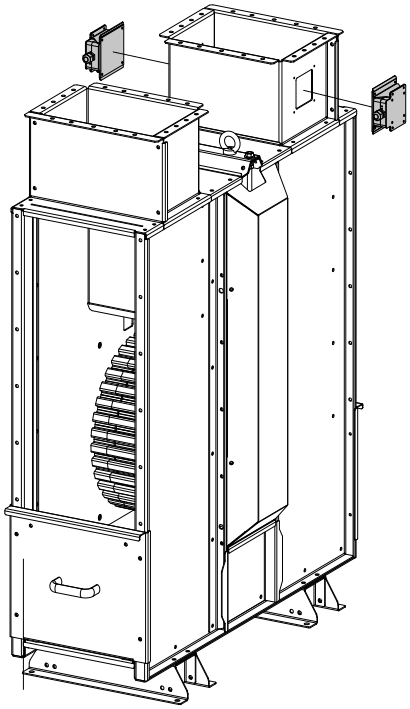
All electrical equipment is to be connected by a qualified electrician. See separate connecting directions for electronics.

Fit the belt alignment switch in the prepared location in the elevator boot and/or the elevator head.

⚠ **IMPORTANT!**

The bucket belt must be able to move 20 mm laterally in both directions without the belt alignment switch switching off the power.





Elevator legs

Fit the legs with leg spacer plates (A) in each joint except for the lowest joint against the elevator boot.

NB! The legs have female and male joining pieces that are to be fitted together.

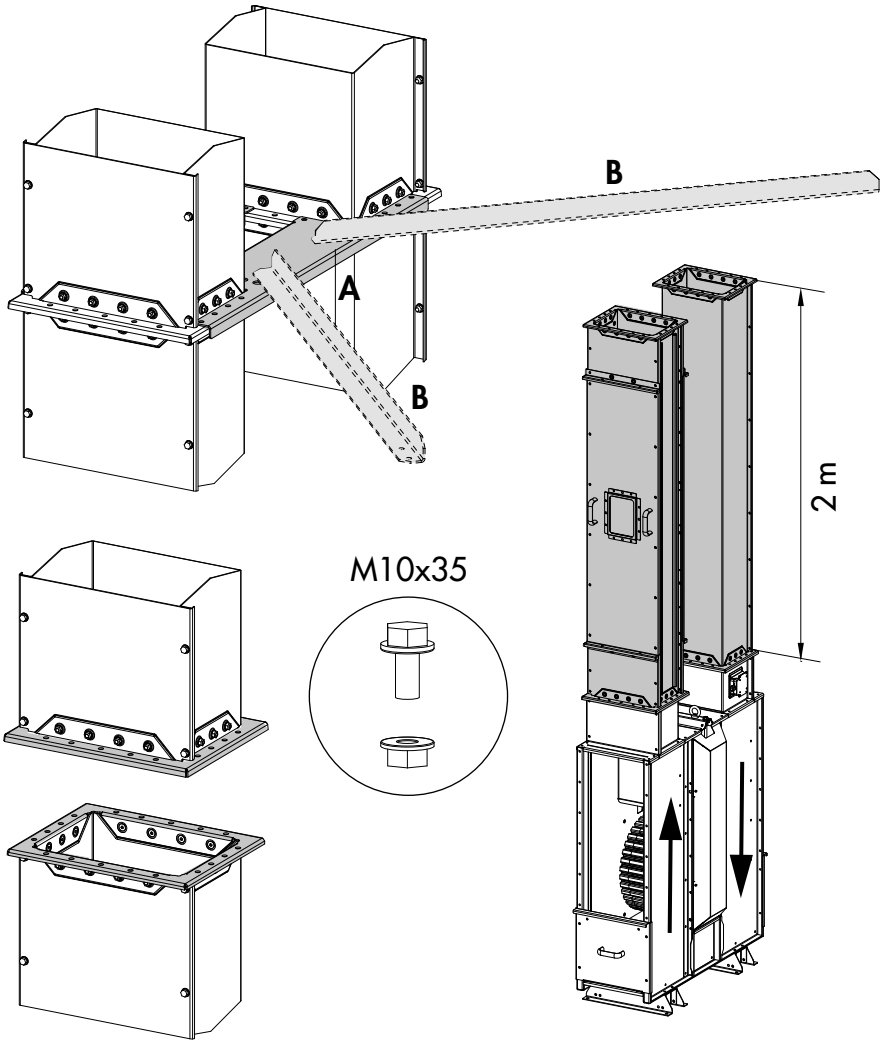
⚠ WARNING!

The leg spacer plates (A) must be braced horizontally to a fixed structure every 6 metres. If the top horizontal bracing (B) is located more than 2 metres below the lower edge of the elevator head, cable bracing or similar is required for the elevator head's support frame (read more in the Elevator head section, in the following information). NB! The bracing requirements above are a basic condition for the strength of the elevator and must be followed. If there is a risk of gusts of wind stronger than 42 m/s, the distance between each horizontal bracing must be reduced in relation to the increased load.

⚠ IMPORTANT!

- Always fit 2-metre legs against the elevator head and elevator boot in order to ensure that all types of accessory can be retrofitted.
- If the elevator shall be equipped with explosion relief panels, read the instructions on the next page before fitting the legs.

NB! Fit the leg with the service door on the ascending leg side at ground level.



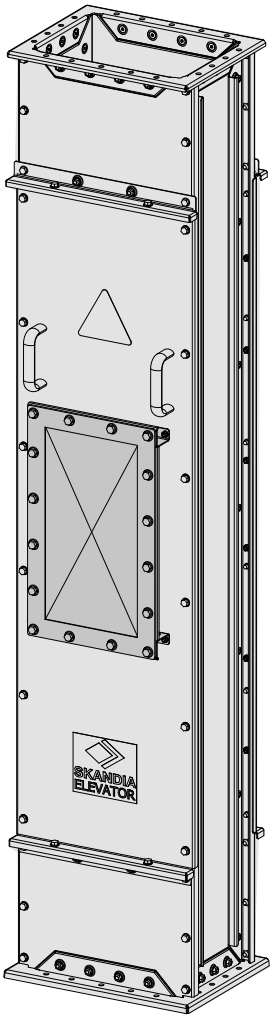
Explosion relief panels

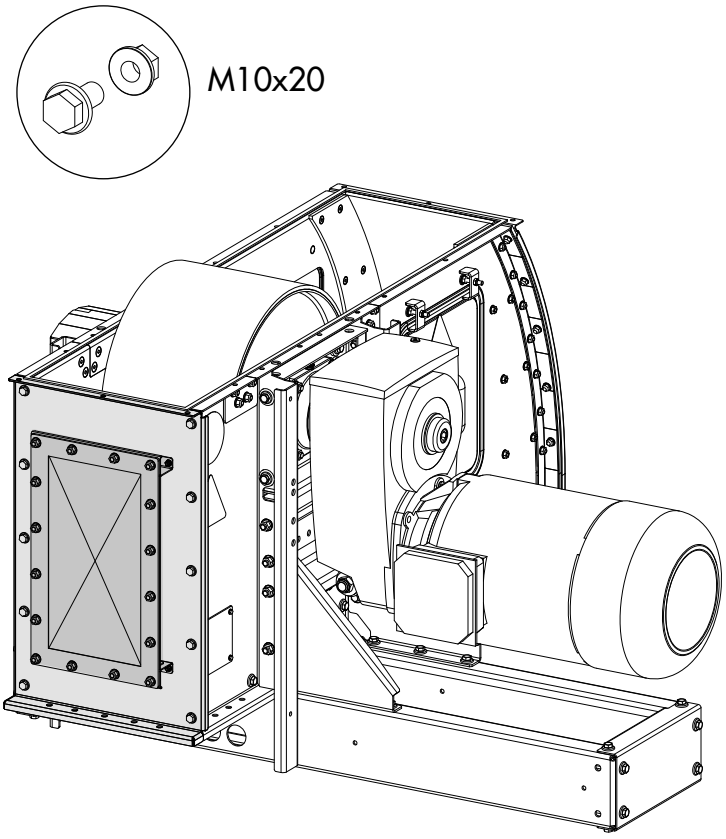
⚠ WARNING! & IMPORTANT!

If the elevator shall be equipped with explosion relief panels, fit the explosion relief panels in the associated legs and the end of the elevator head. Align the first pair of legs with explosion relief panels directly against the elevator boot and the others with a maximum of 6 metres spacing. Fit the dust curtain with explosion relief panel in the head. Use only explosion relief panels supplied by Skandia Elevator.

⚠ WARNING!

- Never stand in front of an explosion relief panel while the elevator is in operation.
- All electrical equipment is to be connected by a qualified electrician. See separate connecting directions for electronics.





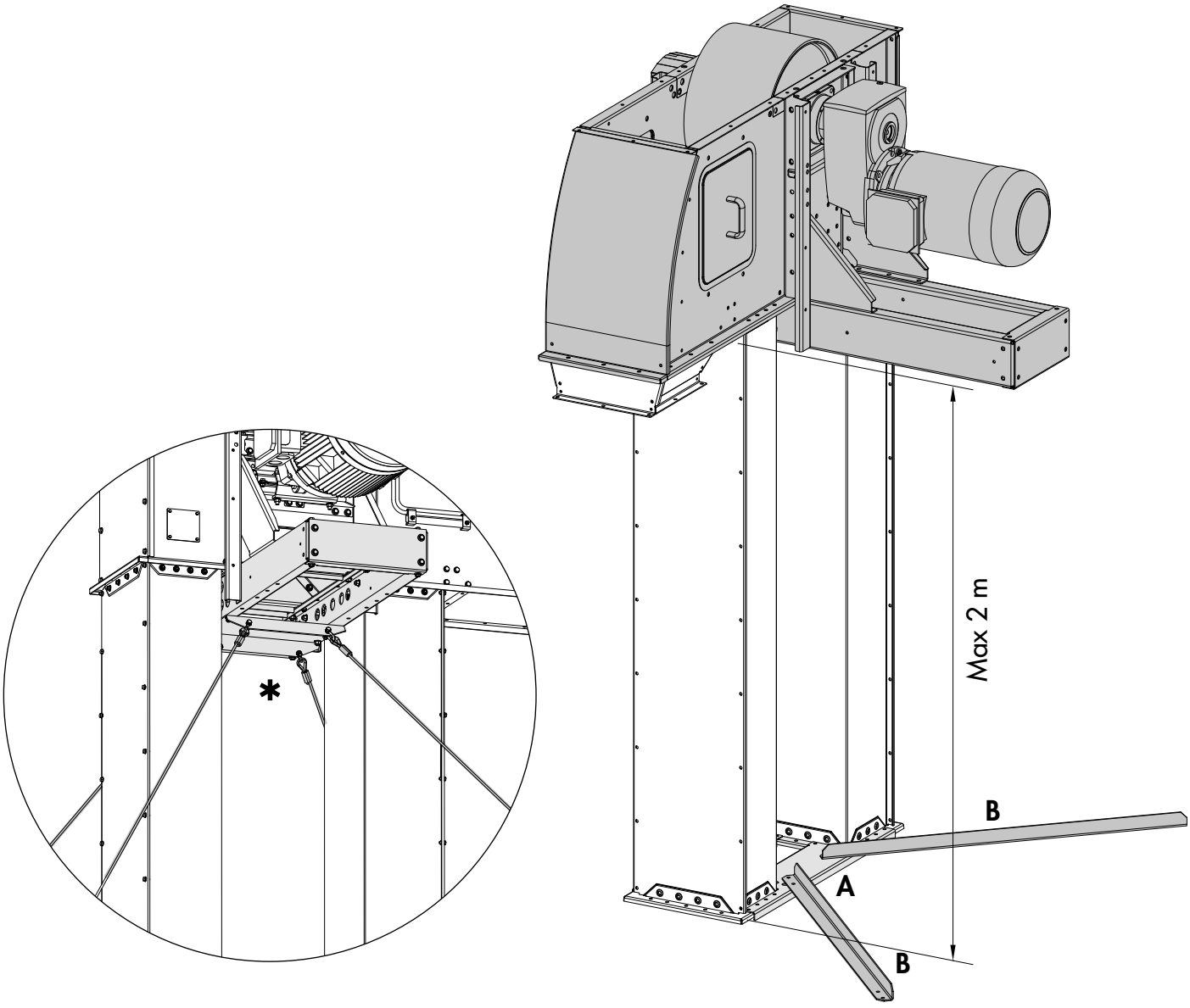
Elevator head

Fit the elevator head.

⚠ WARNING!

If the top leg spacer plates (A) with horizontal bracing (B) to a fixed structure are positioned more than 2 metres below the lower edge of the elevator head, cable bracing* or similar is required for the elevator head's support frame. NB! The bracing requirements above are a basic condition for the strength of the elevator and must be followed. If there is a risk of gusts of wind stronger than 42 m/s, the distance between each horizontal bracing must be reduced in relation to the increased load.

* 4 pcs bracing cables, Ø = 8 mm, are fitted so that their division relative to the plane is 90° and the angle of the cables from the horizontal plane is 45°. – Tension each cable using turnbuckles to 2.0 ± 0.5 kN. - The attachment of the cable must withstand a load of at least 8 kN. – Use an M10 shackle for mounting in the support frame.



Back stop

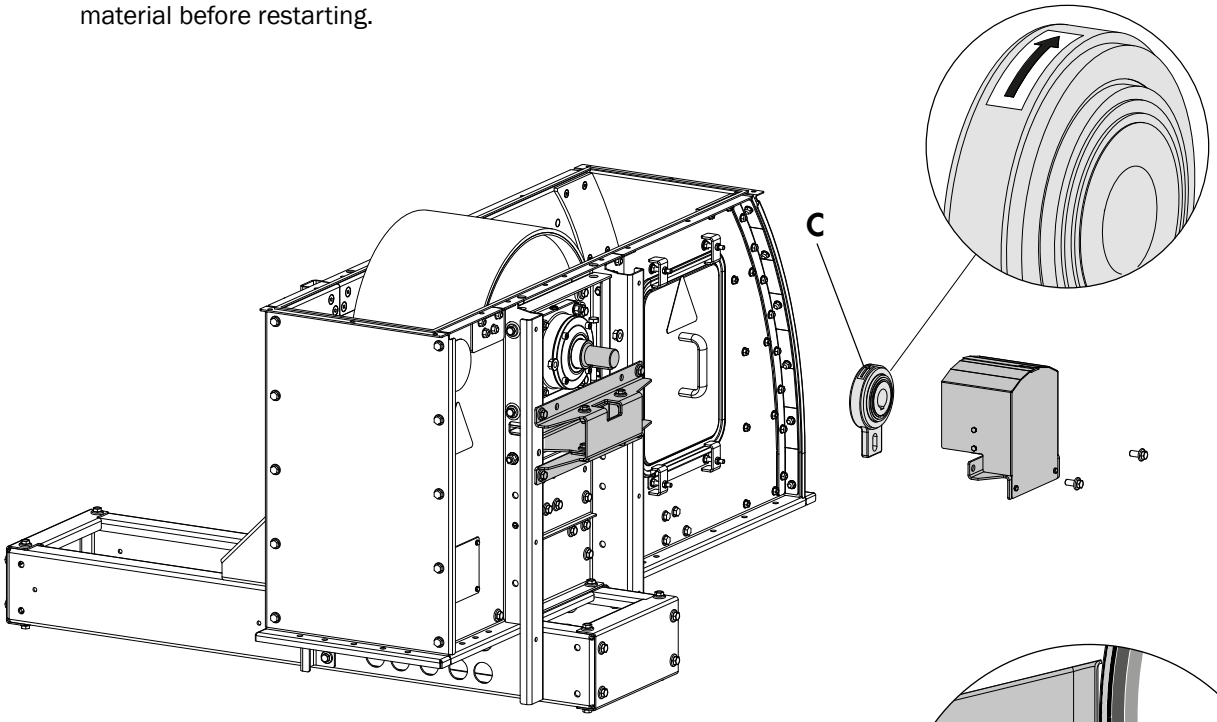
The back stop prevents the bucket belt reversing if the elevator stops during operation. It is mounted on the drive shaft protected behind a touch guard.

⚠ **WARNING!**

Ensure back stop and its touch guard are fitted at all times except during start-up trial of elevator. The back stop (C) must be fitted so that the arrow sticker points to the outlet.

⚠ **IMPORTANT!**

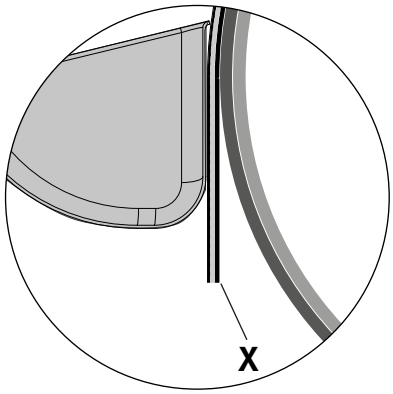
- Remove the back stop from the drive shaft before the elevator is test started for the first time. Ensure that the bucket belt runs in the correct direction before refitting the back stop. The damage that can be caused to the back stop/geared motor by an incorrectly connected geared motor is not covered by the warranty.
- In the event of stoppage in operation, troubleshoot as described in the maintenance instructions and ensure the elevator boot is free of material before restarting.



Bucket belt

⚠ **WARNING!**

The bucket belt is always to be inserted/removed/tightened in situ using a vertical force or there is a risk of uneven loading and collapse of the legs.



⚠ **IMPORTANT!**

Ensure that the bucket belt is fitted with the thickest rubber coating (X) (3 mm) turned toward the slatted pulleys.

Check that the bucket belt is running on the slatted pulleys. If it gets twisted it must be adjusted.

⚠ IMPORTANT!

If the adjustable slatted pulley in the elevator boot is to achieve maximum capacity, it must be in as low a position as possible after the bucket belt has been assembled and restretched.

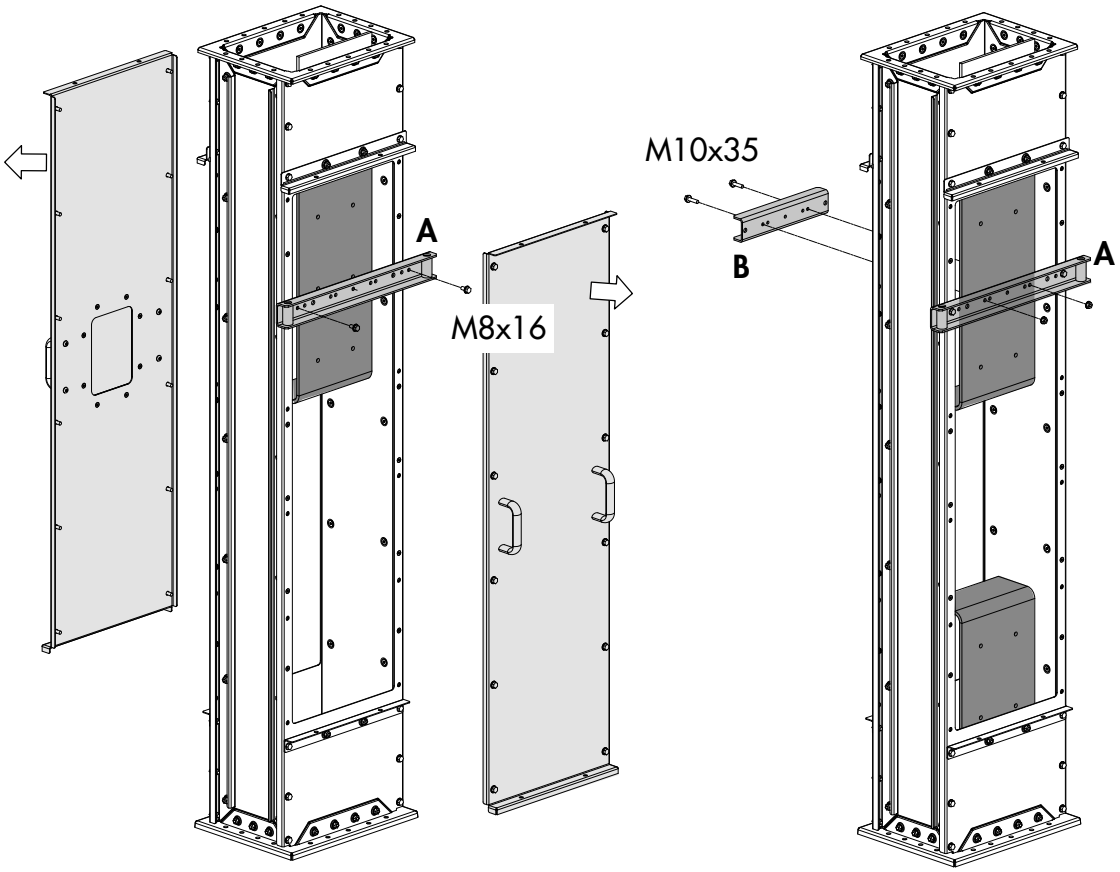
1.
Remove the service doors on both sides of the elevator leg.

2.
Fit the sleeve profile (A) on the back of the elevator leg.

3.
Pull the bucket belt in place over the slatted pulleys so that the joins position themselves in the service opening.

4.
Fit the descending belt end between the sleeve profile (A) and the backing profile (B) with nut and bolt. NB! If the hole pattern does not align, only the outer holes need to be used.

5.
Lubricate the threaded rods (C) and lower them into the sleeve profile (A).



6.
Screw the threaded rods through the nut profile (D) so that they stick out slightly below.

7.
Pull up the ascending belt end as much as possible by hand and fit it to the nut profile (D) with backing profile (B).

8.
Tension the bucket belt by screwing the threaded rods further into the nut profile.

9.
Position the splice bars (E) over the join, make holes in the bucket belt and assemble together.

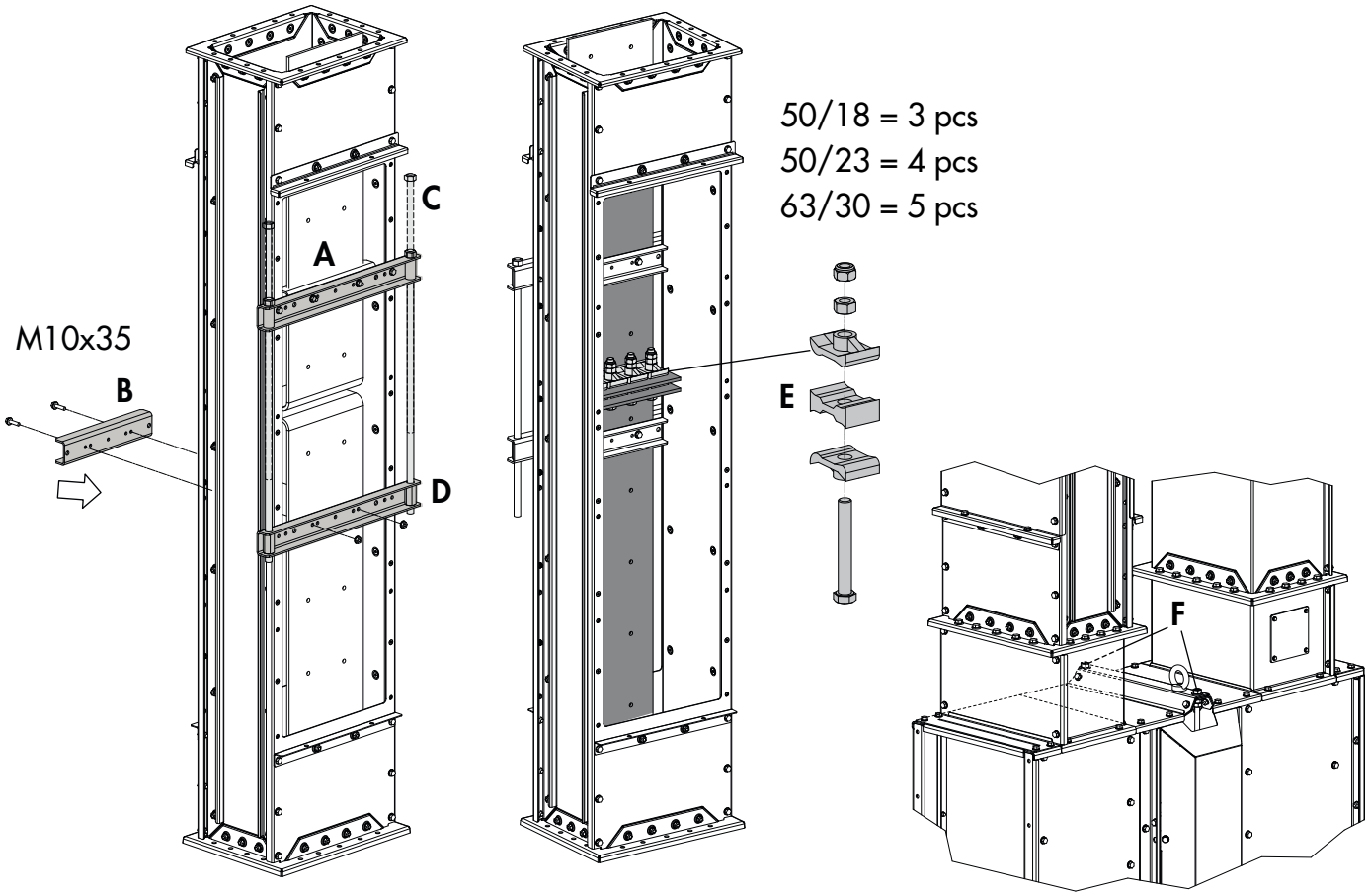
10.
Cut the belt ends 10 mm outside the splice bars and remove the belt tensioner profiles.

11.
Mount the buckets as described below under "Buckets".

12.
Once the buckets have been mounted, tension the bucket belt further with the tensioning bolts (F) in the elevator boot. Recommended torque for belt tensioning is specified in the section "Technical specifications" in the separate maintenance instructions.

⚠ **IMPORTANT!**

Bucket belt tension must be checked and adjusted shortly after the elevator has been taken into service. Follow the description in the separate maintenance instructions.



Buckets

1.

⚠ WARNING!

- The buckets are to be mounted so their weight is distributed evenly over the bucket belt during assembly.
- The buckets can have sharp edges.

Mount 10 buckets, one directly after the other, and then leave a space corresponding to 11 buckets. Repeat this around the belt.

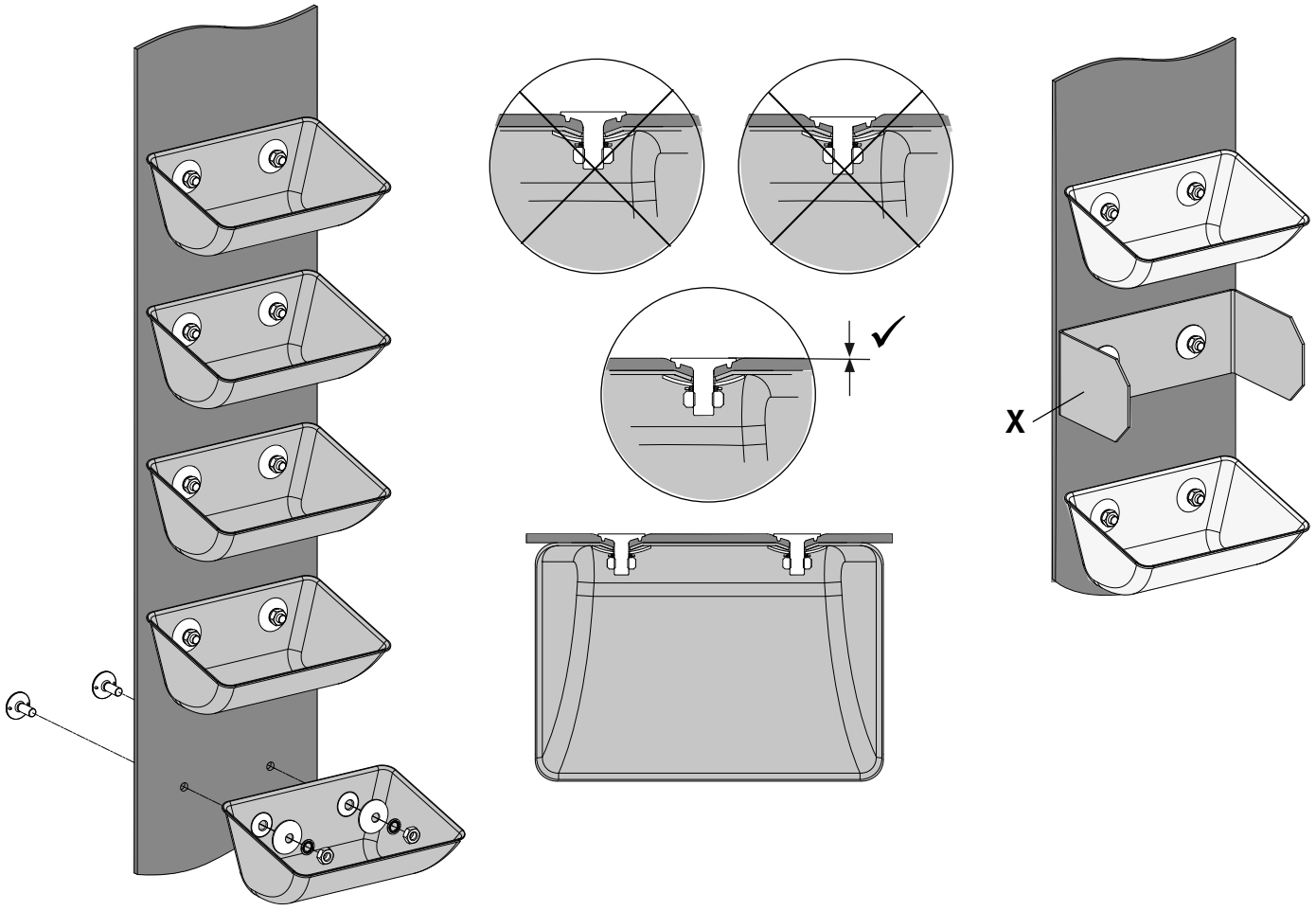
Mount half the number of buckets on the next turn. Repeat turn after turn until all the buckets are mounted.

⚠ IMPORTANT!

- Fit the washers as illustrated and tighten the nuts hard enough so that the screw heads align exactly with the surface of the bucket belt.
- If the buckets are plastic and a belt alignment switch (which is inductive) shall be used, a metal reflector (X) must be fitted every 10 metres instead of a bucket. Use the same bolted joints as for the buckets.

NB! The bucket belt can only be drawn upwards as the back stop prevents it from going down.

2.
Retighten the bucket belt as described in "Bucket belt" (12).



Centring of bucket belt

⚠ IMPORTANT!

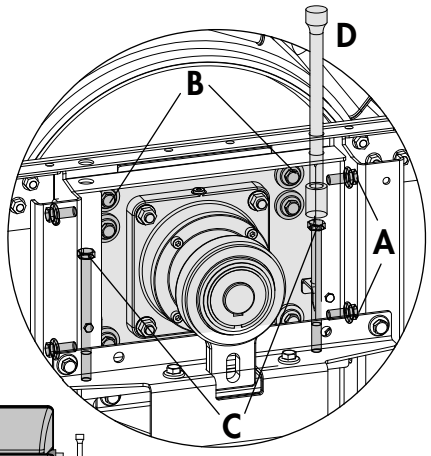
- Ensure the bucket belt is centred on the drive- and slatted pulley.
- When adjusting the position of the bucket belt on the drive wheel in the elevator head, it is only permitted to raise the drive shaft. This is achieved by means of tightening the adjustment ratchets (C).

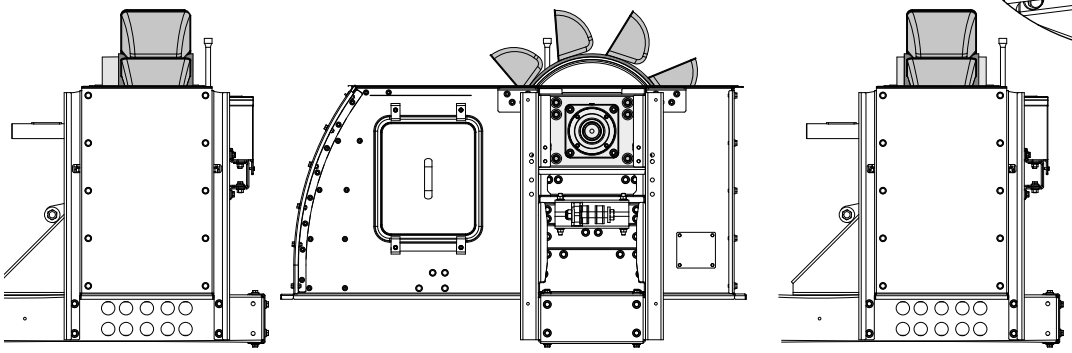
Check how the bucket belt is running on the drive and slatted pulley. If it runs askew then it must be centred.

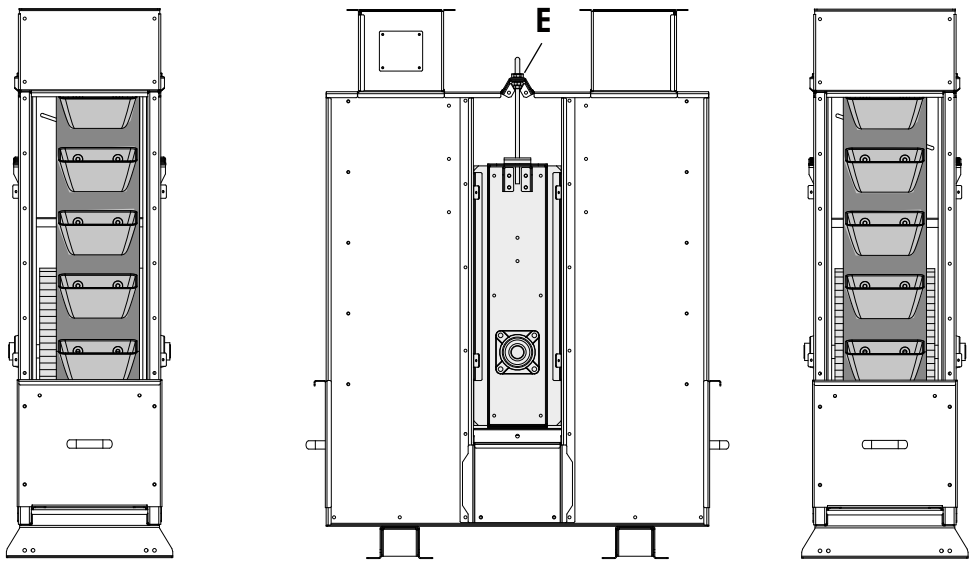
Example:

If the bucket belt runs to the right of the drive wheel in the elevator head, loosen (not fully) the bolts (A=4 pcs) and (B=6 pcs) on the right-hand side plate. Raise the drive wheel by tightening the tensioning screws (C) using a socket wrench with extension (D) until the bucket belt runs centrally. Retighten the bolts (A=4 pcs) and (B=6 pcs).

If the bucket belt is running to the right on the slatted pulley in the elevator boot. Raise the slatted pulley (D) on the left-hand side plate by reducing the tension of the tensioning bolt (E) until the bucket belt is running centred.

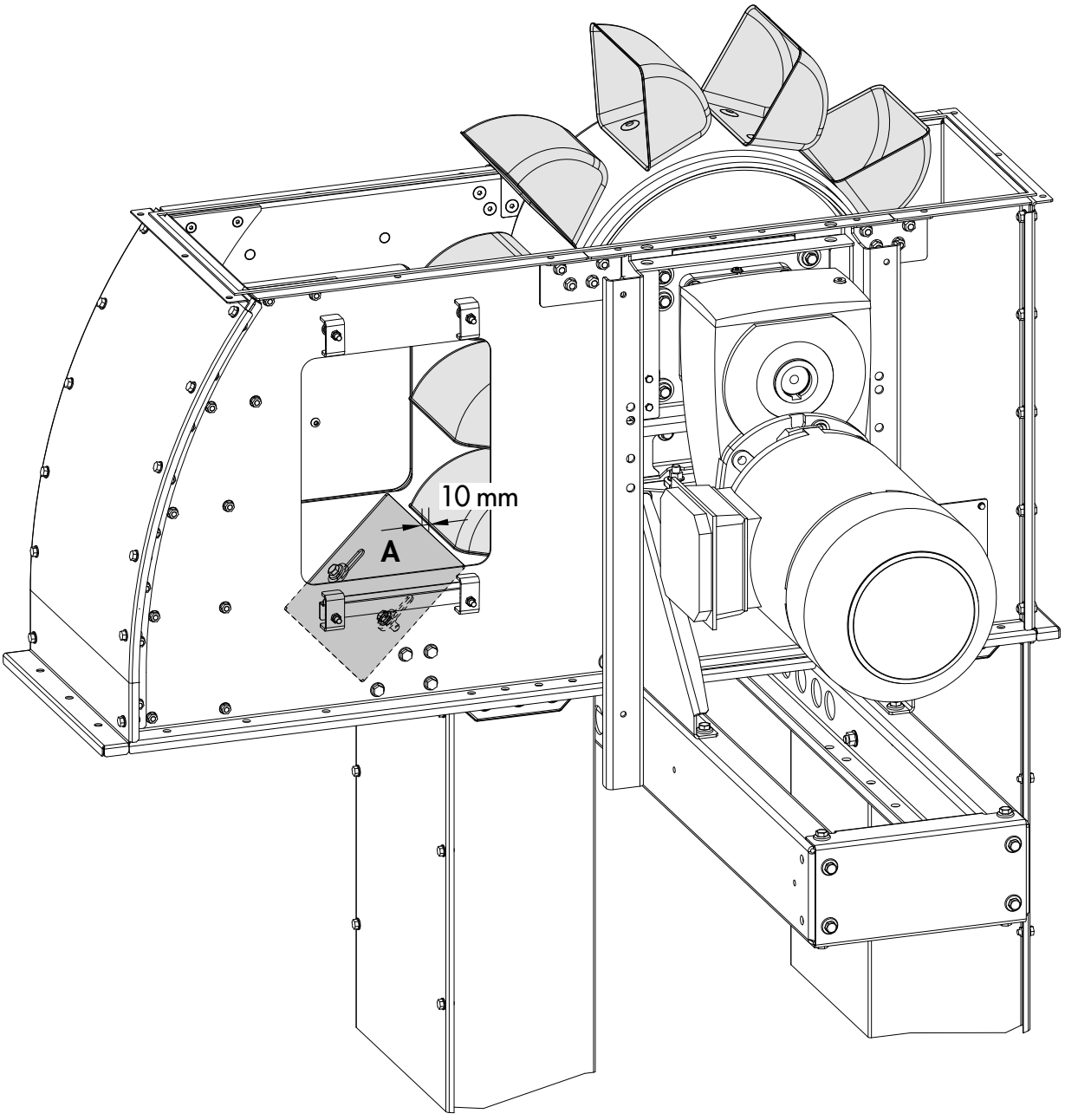






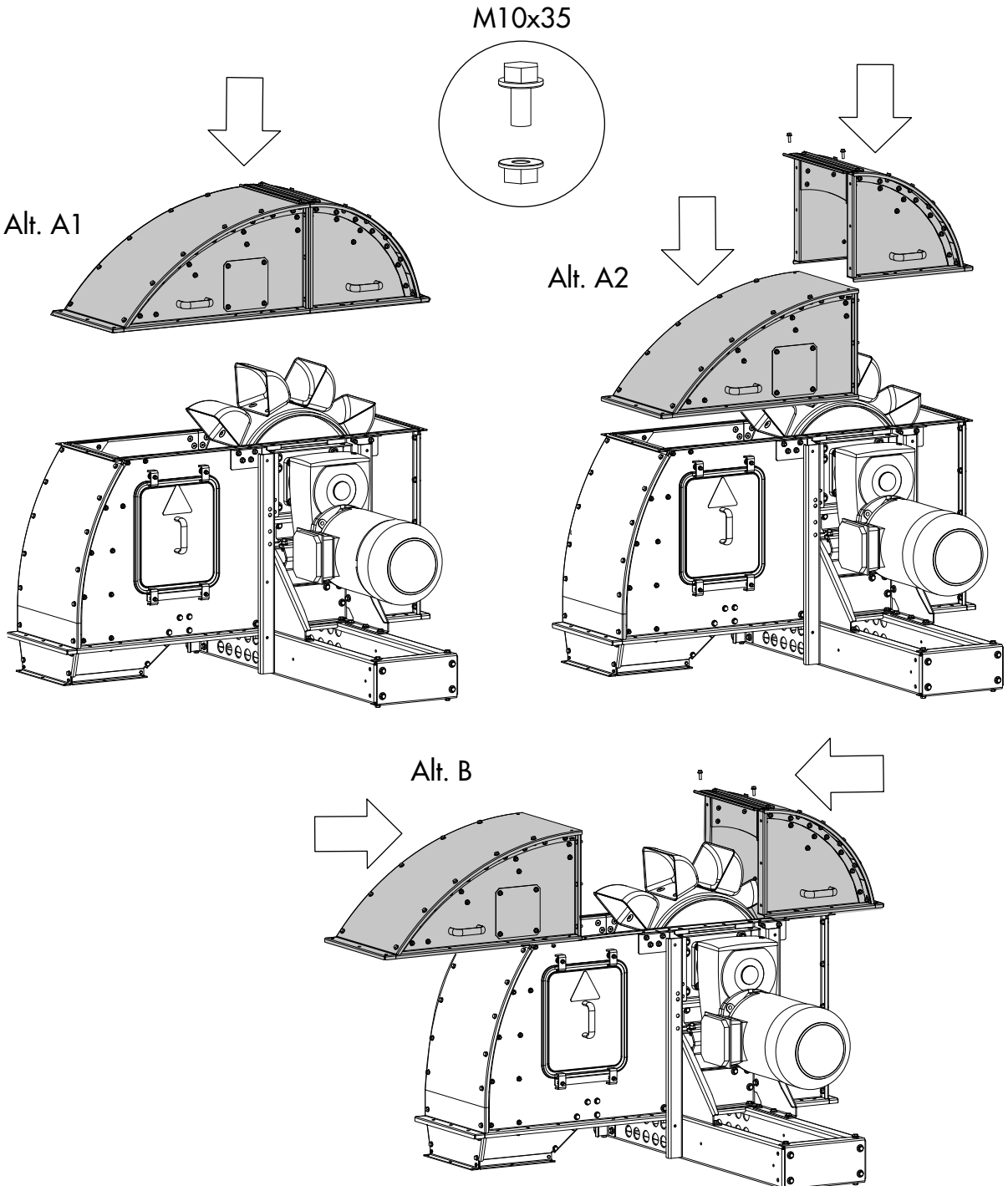
Adjusting the splash guard

Adjusting the splash guard



Elevator hood

Lift the parts of the hood into place (Alt. A) or slide them into place (Alt. B) fit and secure them.



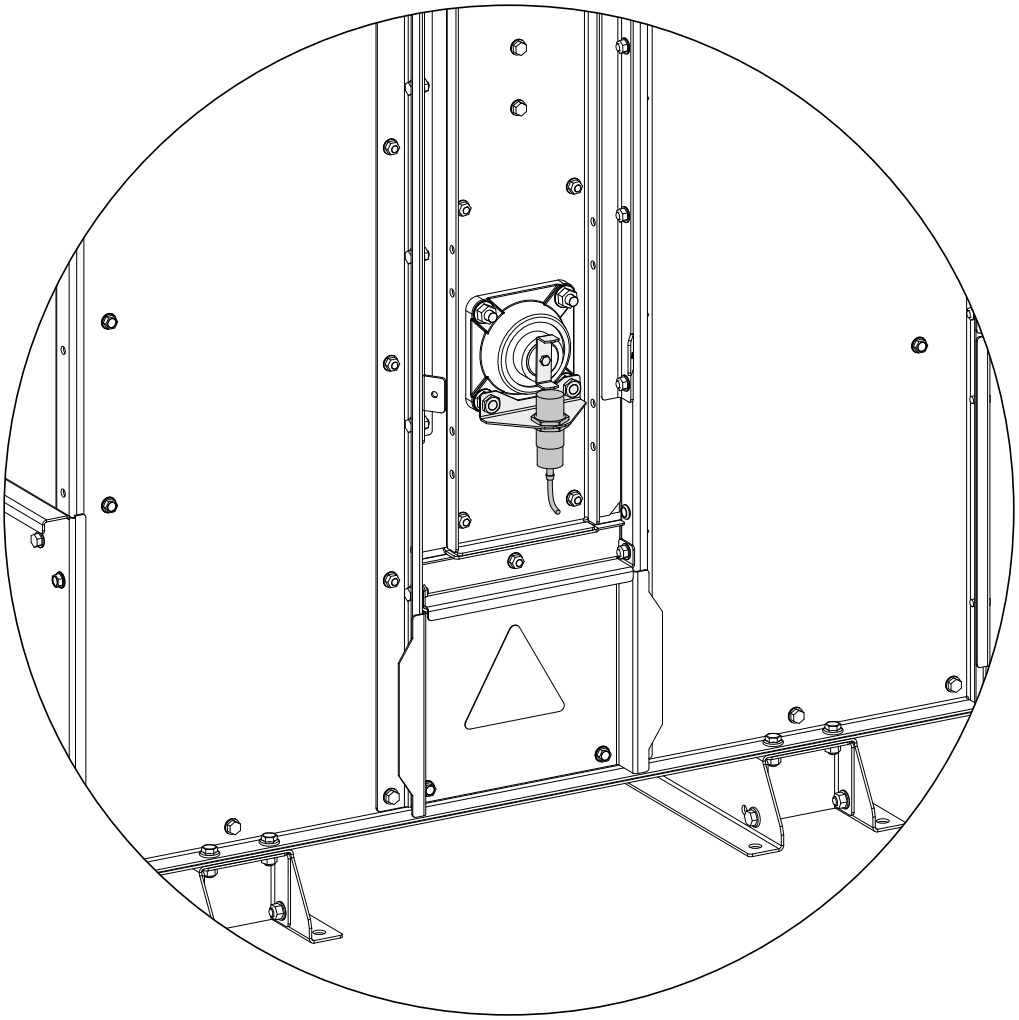
Speed monitor

⚠ WARNING!

- Ensure the speed monitor is engaged during operation.
- All electrical equipment is to be connected by a qualified electrician. See separate connecting directions for electronics.

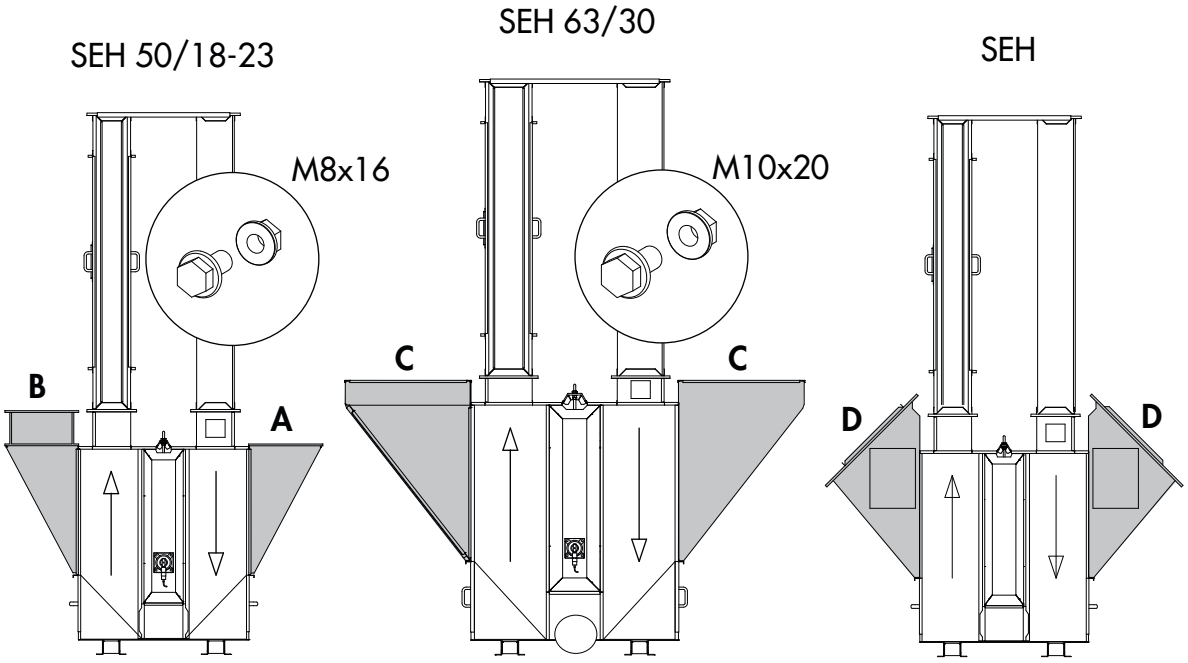
The speed monitor stops the elevator if the bucket belt slips.

Fit the speed monitor in the holder that is fitted on the elevator boot.



Inlet

Prepare for and fit the inlet hoppers (A/B/C) or connection hopper (D) according to the chapter "Before connection" and "Connection, machine".



Water seal

⚠ **IMPORTANT!**

When assembling outdoors, seal all the bolts, flanges and folds with silicone.

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