

K-SERIES MOBILE DRYER



INSTALLATION MANUAL

M180k, M205k, M240k, M275k, M300k, M365k and M420k

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1. FOREWORD

This Manual contains instructions for installing a K-series mobile dryer.

Before starting to install the dryer please read the Manual carefully, and familiarise yourself with the operations and precautions, in order to ensure that you install the unit efficiently and safely.

Keep this Manual at hand, and review it always with any new employees. If you need additional information or help, please call your machine dealer or the Mepu Oy service number.

There is also an installation video available on YouTube for the installation of this mobile dryer.

2. When carrying out the installation work please note the following

2.1. General safety aspects

Important: The section discussing matters related to general safety contains guidelines, which are connected with any safety related practices. Safety instructions related to a certain specialised aspects (e.g. safe installation practices) can be found in the respective section.

Only YOU are responsible for SAFE operations and maintenance of the product. YOU must take care to ensure that you or any other individual operating the product understands the SAFETY MATTERS related to operating and safety of the machine, which are outlined in this document.

Remember that YOU are the key factor affecting the safety. Proper attitude towards safety does not protect just yourself, but also people around you. Adopt these practices as part of your daily routines.



- Carefully read all safety instructions, safety pictograms and guideline(s) before assembly or operating the unit, and make sure that you understand them.
- The product may be operated or used only by trained and competent operators. An untrained operator does not have skills to run the unit.
- Keep the first aid kit at hand to be used when necessary, and make sure that you know how to use it.
- Make sure that there is a fire extinguisher at hand for cases of emergency. Keep it in a visible place.
- Do not allow children, bystanders or any other unauthorised persons into the working zone.
- Use appropriate protective gear. This list is not comprehensive:
 - safety helmet
 - safety footwear with anti-slip soles
 - safety goggles
 - ear muffs
- Electrical equipment: before starting any maintenance, adjustment or repair work, disconnect plugs, set all switches to the neutral or off position, stop the engine, remove the ignition key or disconnect the power source and wait until all moving parts have stopped.
- Review the safety instructions with all persons operating the product before starting to use the product, and once a year.
- Observe the proper work practices:
 - Keep the work zone clean and dry.
 - Make sure that all sockets and tools are properly grounded.
 - Use lighting, which is sufficient for performing the work.



2.2. Safety of installation

- Make sure that heavy large items are handled by two persons.
- Avoid falling down! Be particularly careful when working on the roof in rain, or if the roof is covered with ice.
- Tighten all connections carefully, and observe the installation instructions.
- Towing of a mobile dryer filled with grain is categorically prohibited.
- Keep away from saggy wires or other obstacles when performing the assembly work. Contact with live wires can cause a lethal electrical shock.
- Never work in strong wind conditions.

2.3. Dryer delivery specification

The delivery set of the mobile dryer is specified below.

PRE-INSTALLED	M180 k	M205 k	M240 k	M180 k	M205 k	M275 k	M300 k	M300 k	M365 k	M420 k
Elevator	chain 40 t	chain 40 t	chain 40 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	Bucke t 60tn
Grain bin	X	½*								
Level guard	X	s*	s*	X	s*	s*	s*	s*	s*	S*
Central ridge	X	X		X	X					
Exhaust air cases	X	X	X	X	X	X	X			
Dryer furnace	X	X	X	X	X	X	X	X	X	X
Electrical equipment	X	X	X	X	X	X	X	X	X	X

TO BE INSTALLED	M180 k	M205 k	M240 k	M180 k	M205 k	M275 k	M300 k	M300 k	M365 k	M420 k
Elevator	chain 40 t	chain 40 t	chain 40 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	bucke t 60 t	Bucke t 60tn
Railings	X	X	X	X	X	X	X	X	X	X
Pre-cleaner	X	X	X	X	X	X	X	X	X	X
Bottom auger	X	X	X	X	X	X	X	X	X	X
Hopper	X	X	X	X	X	X	X	X	X	X
Additional shaft supports			X	X	X	X	X	X	X	X
Additional outrigger supports				X	X	X	X	X	X	X
Channel aspirators								X	X	X

½*) Grain bin partially installed.

s*) The level guard is fastened to the grain bin.

2.4. Assembly at the work site

In order to ensure that the unit installed quickly and functionally, carry the work out in the following sequence:

1. Position the dryer at the installation site.
2. Install the drying cells.
3. Install the air cases.
4. Install the grain bin and the ladder.
5. Fasten the bottom auger.
6. Install the elevator.
 - Attach the belt and installation of the buckets (bucket elevators).

- Attach the chain (chain elevators).
- 7. Fasten the pre-cleaner and the divider.
- 8. Install the feeding auger and the hopper.
- 9. Aspirators, grain, dust and debris pipes.
- 10. Electrical connections, oil line connections and the smokestack.

3. Positioning of the dryer

3.1. Regulatory requirements

When choosing a position for the dryer pay attention to fire safety. Contact the local fire safety authorities to check the requirements. Make sure that there is a fire extinguisher available near the dryer's electrical switchboard; the location is marked on the unit. Check the requirements applied to the fire extinguisher with the local authorities. In Finland the minimum requirement set to grain dryers: one 6 kg 27 A 144 B-C class manual fire extinguisher.

In particular, if the dryer is deployed indoors, make sure that the furnace of the dryer is supplied clean outdoor air, and that all exhaust, dust and debris pipes are installed such that exhaust air from these pipes does not get mixed with furnace intake air. Dust around the dryer increases fire hazard and causes the furnace and the oil burner to get dirty.



Note the location for storing the manual fire extinguisher (A).

3.2. Supporting the dryer and fastening to the base

The place for deployment of the dryer should be level and strong to carry the weight of the dryer, preferably a cast concrete slab. A recommended site for installing a mobile dryer is an area of about 12 m x 6 m (depending on the accessories), in which case the dryer is safe and easy to run.

Also note, when supporting the dryer, whether the soil or the floor is inflexible enough and has sufficient load-bearing properties. It is recommended that the mobile dryer is fastened to the strong floor or cast base structure from holes in the outriggers.

When the mobile dryer is placed on a level and strong base, support the frame at its corners and the drawbar with outriggers (5 pcs), so that the dryer is horizontal. Lower the outriggers of the dryer, and check with e.g. a water level whether the dryer is horizontal. Do not use any decaying materials such as timber under the outriggers.

On every dryers equipped with a bucket elevator and on the M240k dryer with a chain elevator, place supports (2 pcs) under the driving axles of the dryer, which are included in the delivery set.

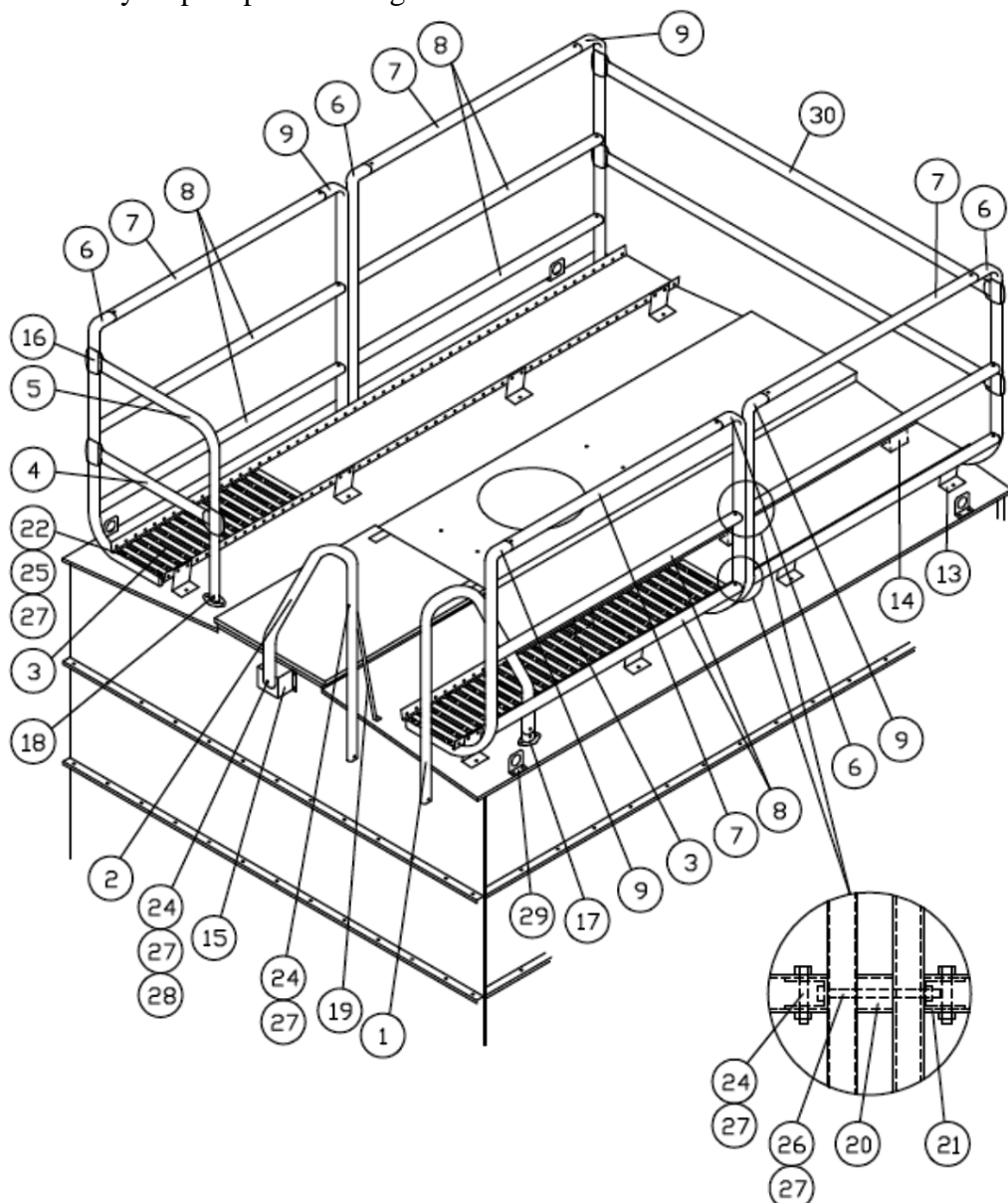
Dryers with bucket elevators are supported, depending on a situation, with long support stands. In this case the machine is also equipped with support plates, which are used to support the stands against the frame.

It is advisable to remove the drawbar to reduce the risk of industrial accidents.

4. Assembling the dryer

4.1. Grain bin

Start assembly of the mobile dryer from the grain bin; you can find clear and model specific assembly drawings in the spare parts catalogue. On the M180k model the grain bin is pre-installed, in larger models the grain tank is delivered separately; when delivered to destinations in Finland, the bin is pre-assembled. In case the dryer is delivered abroad, the bin is detached to save space. When the grain bin is still detached on the ground, it is advisable to install the roof railings due to the risk of fall. It is advisable to be extremely careful when mounting the railings. The more detailed and model specific assembly drawing of the roof railings can be found in the mobile dryer spare parts catalogue.



The figure shows the roof railings of the mobile dryer. Note the lifting lugs (29).

Railing lengths:

- 7. L = 1210 mm
- 8. L = 1400 mm
- 30. L = 2470 mm

The vertical pipes (6 and 9) in the middle are attached to each other with a spacer sleeve (20) and M8x90 hex screws. Remember, the same screw is also used to fasten the horizontal pipe to the fastener (21).



The side railings running lengthwise in respect to the mobile dryer consist of two railing elements, which are attached to the roof bridge with M8x75 hex screws and 26x48 mm washers. The railing elements are built using the parts assembled at the preceding stage and parts 6, 7, 8 and 9.





The end railings are attached to the side railings with guide brackets (16). The bracket is attached to the horizontal pipe (30) with M8x35 hex screws, and the halves of the brackets are tightened to each other with M8x16 hex screws.



The horizontal pipes at the elevator end should be positioned such that:

- the top pipe is as high as possible,
- the lower pipe is located at the halfway distance, measured from the roof bridge surface.



The railing pipe (5) used at the furnace end is fastened directly to the roof of the grain bin with a diagonal wall bracket (18). Use M8x16 screws and Butyl mastic for assembly.



After the railings are fastened securely on top of the grain bin, it may be lifted and fastened to the drying cells. This does not apply to models M150k and M180k.

Connect the ladder with M8x35 screws and fasten the guide brackets and the rung pipes. The locations of the brackets can be measured broadly from the wall brackets attached to the grain bin and the drying cells. Note that the actual service ladder starts at the grain bin roof level.



Attach the upper arcs to the ladder, the left is 5 cm shorter (1)923908, the right (2) 902000, by using the screws M8x35.



Assembly and fastening of the safety arcs to the ladder with M8x40 screws. The safety arcs are installed as high as possible. Note the topmost arc on the figure, the left grip of which is bent 90°. Install 4 flat iron bars per interval between the arcs all the way down to the ground.

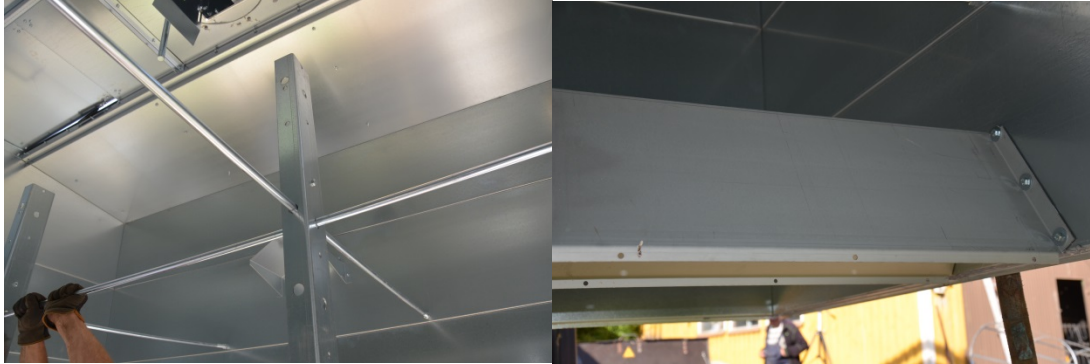


After the ladder with the safety arcs has been assembled, it can be attached to the side of the dryer assembly.



4.1.2 Grain bin support bars

It is recommended to mount the grain bin support bars while the structure is still on the ground. These parts will receive the final tightening when the bin has been lifted on top of the dryer and attached.



Central ridge installed to the lower edge of the grain bin.

4.2. Installation of drying cells

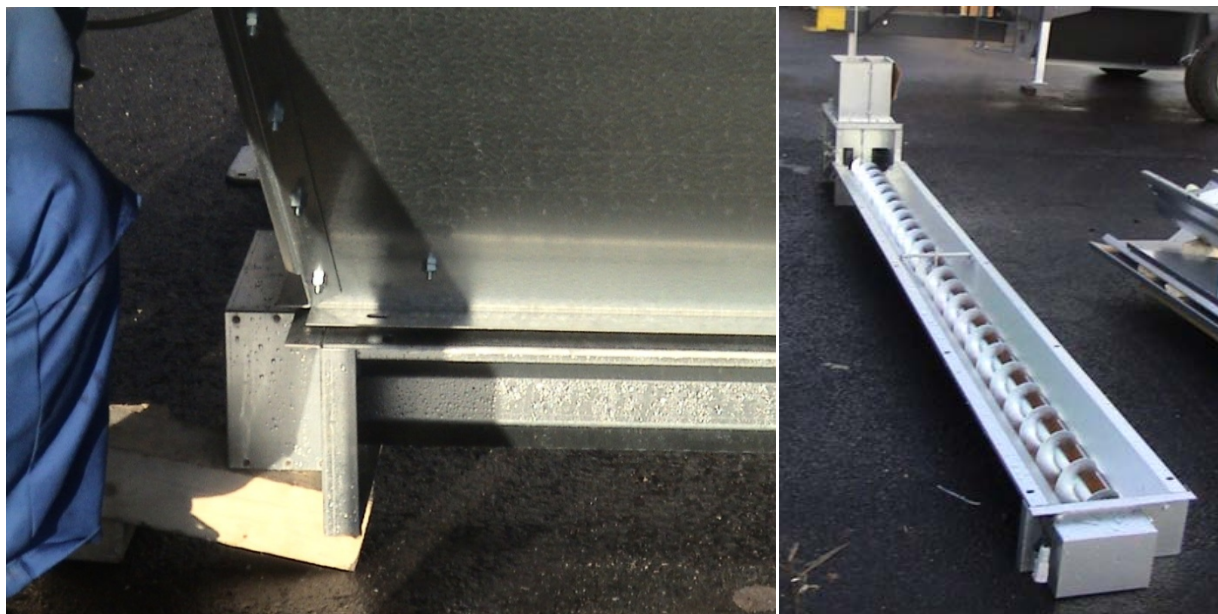
For larger dryers, drying cells are delivered separately, either pre-assembled or in parts. Before the final installation, clean the lower edge of the drying cells and apply sealant to the entire area.



The so-called reinforced drying cell will be installed in the uppermost position. This drying cell can be identified by the reinforcement in the lower edge of the ridge, cf. the above photograph.

4.3. Bottom auger

The bottom auger is delivered pre-assembled, with the bottom end of the elevator attached to it. The bottom auger is attached to the bottom trough with M8x20 hex screws, washers at both sides. You can use e.g. a lever arm as an aid for assembly. Seal the contact surfaces with Butyl mastic.

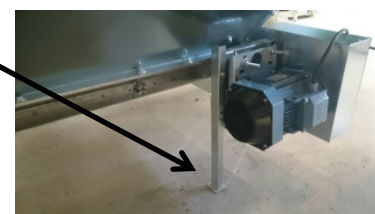


Connect the plug of the rotation sensor at the end of the bottom auger into the rectangular socket under the furnace. If the bottom auger is equipped with its own motor, the auger's power cable should also be connected, and the plug of the rotation sensor from the elevator is connected to its own socket.



4.2.1 Bottom auger with its own motor.

A bottom auger with its own motor is supported with the support leg (T)

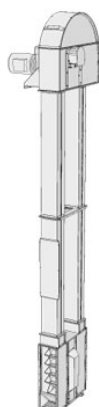


The bottom auger is fitted with a hatch, which makes it easier to clean the equipment, e.g. when drying seed grain. **It is forbidden to open the hatches when the dryer is in use.**

4.3 Elevator

Mepu's mobile dryers are fitted with two different types of elevators. The options include the chain elevator for the models M180k, M205k and M240k or the Skandia Elevators bucket elevator for all models; the capacity varies according to the order specifications.

4.3.1 Skandia bucket elevator (SE140 TVM)

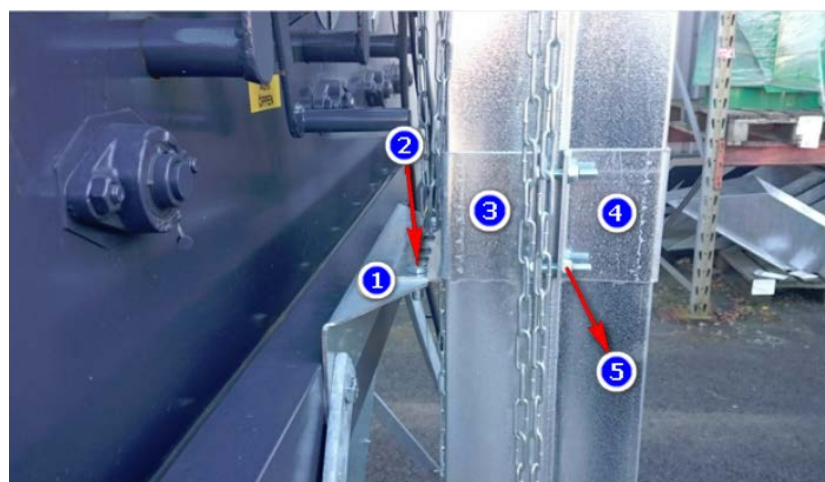


Start installing the bucket elevator to the mobile dryer after you have assembled the elevator in accordance with the installation manual included in the delivery.

INSTALLATION OF THE LOWER SUPPORT OF THE ELEVATOR

Secure the elevator in a straight position, at a correct angle (if necessary, check with an angle level and a spirit level), starting from below, tighten all connections carefully.

Part 1	1 pce	103595	Elevator mounting plate (angled)
Part 2	2 pcs		Hex screw M10x25 + nut
Part 3	1 pce	102549	Support band, support perforations (bucket) 40/60 tn
Part 4	1 pce	102548	Support band bucket elevator 40/60tn L=200 mm
Part 5	4 pcs		Hex screw M8x50 + nut

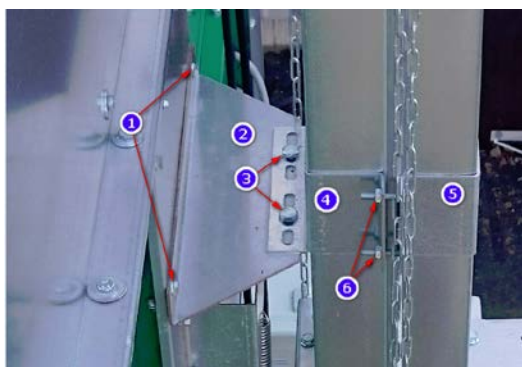


INSTALLATION OF THE MIDDLE SUPPORT OF THE ELEVATOR



Check that the elevator is in a straight position (if necessary, check with an angle level and a spirit level). Tighten all connections carefully.

Part 1	1 pce	103595	Hex screw M8x16 + washer + nut
Part 2	1 pce	103862	Upper mounting plate, bolted to the cell
Part 3	2 pcs		Hex screw M10x25 + nut
Part 4	1 pce	102549	Support band, support perforations (bucket) 40/60 tn
Part 5	1 pce	102548	Support band, bucket elevator 40/60tn L=200 mm
Part 6	4 pcs		Hex screw M8x50 + nut

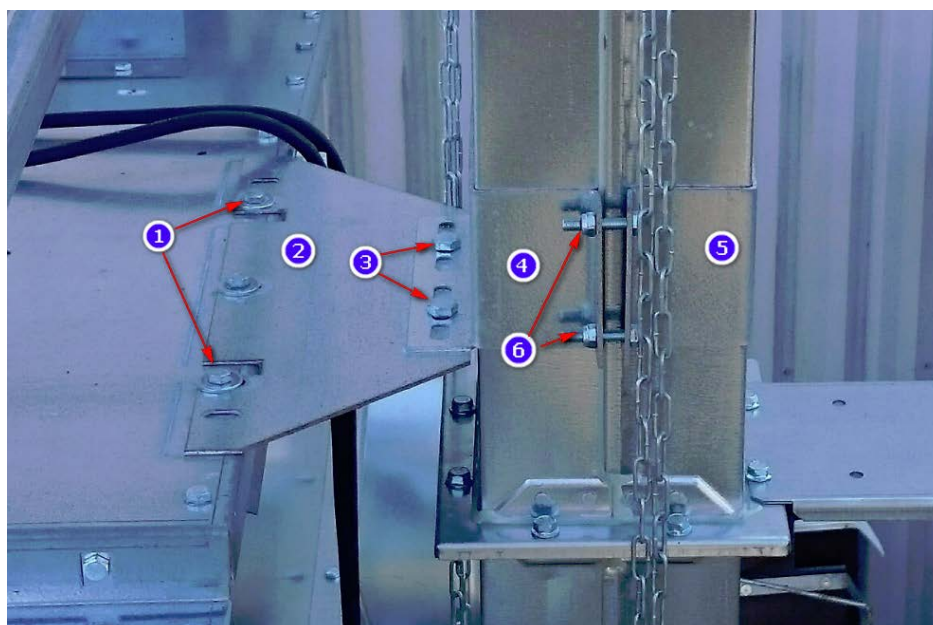


INSTALLATION OF THE UPPER SUPPORT OF THE ELEVATOR

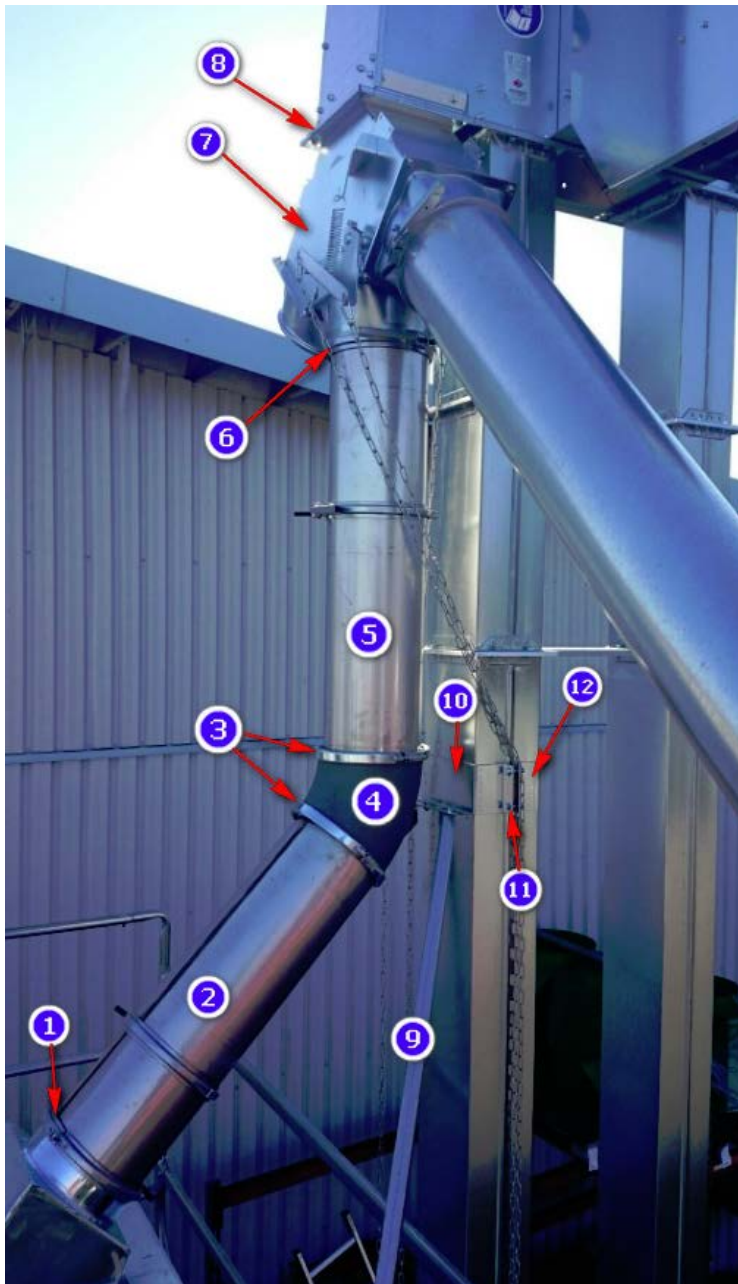


Check that the elevator is in a straight position (if necessary, check with an angle level and a spirit level). Tighten all connections carefully.

Part 1	1 pce	103595	Hex screw M8x16 + washer + nut
Part 2	1 pce	101717	Upper mounting plate, bolted to the cell
Part 3	2 pcs		Hex screw M10x25 + nut
Part 4	1 pce	102549	Support band, support perforations (bucket) 40/60 tn
Part 5	1 pce	102548	Support band, bucket elevator 40/60tn L=200 mm
Part 6	4 pcs		Hex screw M8x50 + nut



4.4 INSTALLATION OF THE GRAIN CONVEYOR PIPELINES AND THE ELEVATOR SUPPORT



Parts 1 and 6	1 pce	SK620001	Band quick connector $\phi 200$
Parts 2 and 5	2 pcs	400676	Teles.pipe(reinf.)+dust seal+band $\phi 200$ L=0.5+0.75 m
Part 3	2 pcs	137121	Band cast/sheet metal (+M6x50+nut.) $\phi 200$
Part 4	1 pce	RK970124	Corner piece D=200 mm 45°
Part 7	1 pce	HM970091	3-way divider $\phi 200$ mm
Part 8	4 pcs		Hex screw M8x16 + nut
Part 9	2 pcs	102281	Support band (elevator) L=2330 mm
Part 10	1 pce	102549	Support band, support perforations (bucket) 40/60 tn
Part 11	4 pcs		Hex screw M8x50 + nut

Part 12 1 pce 102548 Support band, bucket elevator 40/60tn L=200 mm

Attach the 3-way divider ø200mm (part 7), to the upper end of the bucket elevator, using hex screws M8x16 +nuts (part 8). Check the fit and that the divider is straight.

Then, the telescope pipe (part 5) will be installed to the 3-way divider, the locking will be done with the ø200 quick connector (part 6). Ensure that the connection is secure and tight.

The corner piece ø200 45° (part 4) is installed between the telescope pipes (parts 2 and 5). The band connector (part 3) is used in the installation: it is tightened evenly, ensuring that the corner piece (part 4) is positioned centrally at the end of the pipe (cf. the image below). Ensure that the connection is secure and tight.

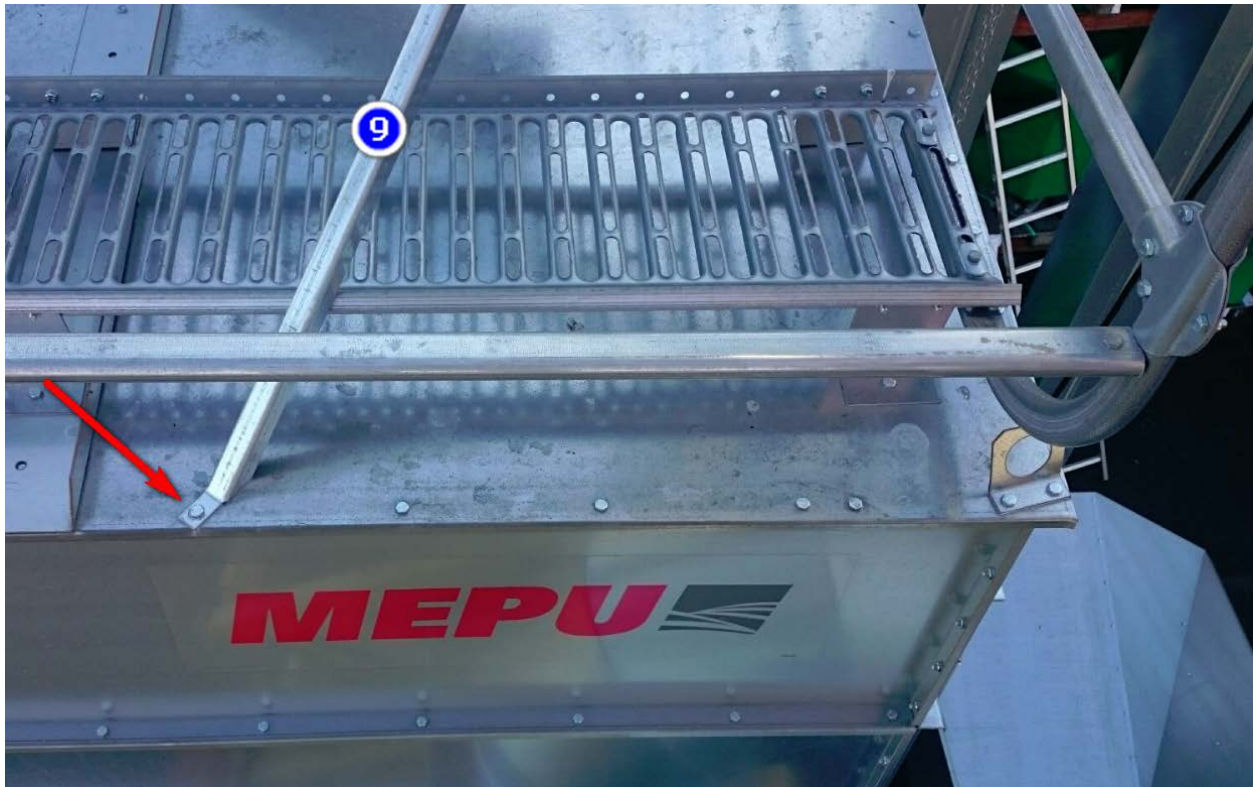


Finally, the telescope pipe (part 2) is attached to the inlet conduit of the pre-cleaner. The locking will be done with the ø200 quick connector (part 1). Ensure that the connection is secure and tight, and that the pipe is centred.

When the above-mentioned parts have been installed, the positioning of the pipes is checked. The telescope pipe (part 5) must be straight when viewed from the front and from the side.

Then, ensure that the hatches of the 3-way divider (part 7) function properly.

Elevator supports 2 pcs (part 9) are installed according to the image, with parts 10, 11 and 12.



Elevator supports (lower) 2 pcs (part 9) are installed on both sides within the grain container, according to the image.



Grain unloading pipes (part 1) must be supported sufficiently, so that the divider (part 2) would not become bent.

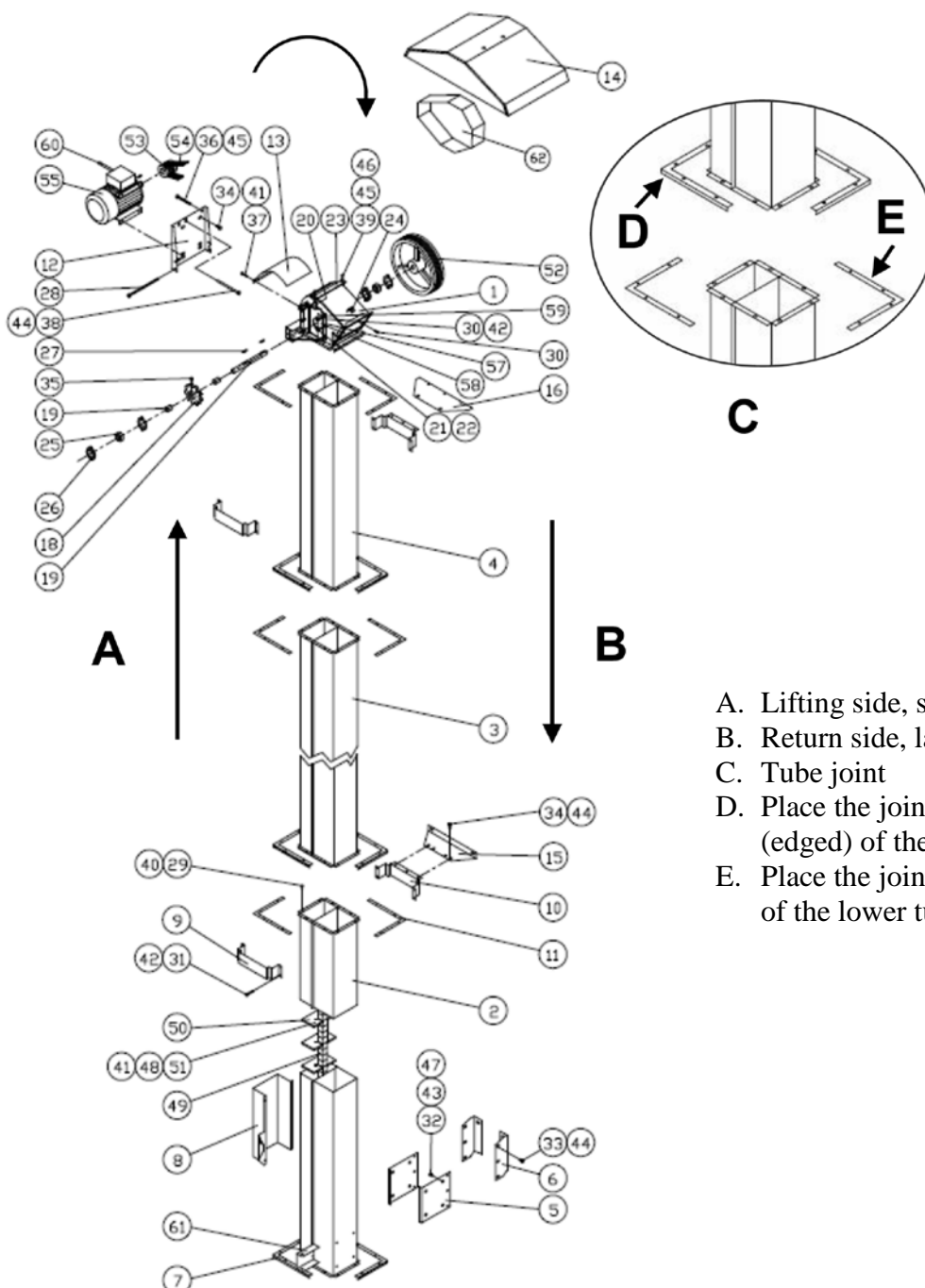
4.4.1 Chain elevator

In case of the Mepu 40t model with a flap elevator, the elevator chain is delivered as a separate part, and is not cut to measure. Therefore, the assembly is inclusive of installation of the chain in the elevator tube, and its cutting to measure. The chain has to be handled carefully to avoid damaging it during the hoisting process. The standard delivery set contains 2 pcs of chain extensions.

In a 40t flap elevators the chain is not pre-installed in the elevator tube. Before installation of the elevator chain the elevator assembly process can be carried out in two ways:

- By installing the elevator tube first to the dryer, and slipping e.g. a piece a string into the elevator to pull the chain up.
- By assembling the elevator on the ground, and hoisting the complete elevator up using e.g. a crane.

The figure shows a 40t chain elevator M205k

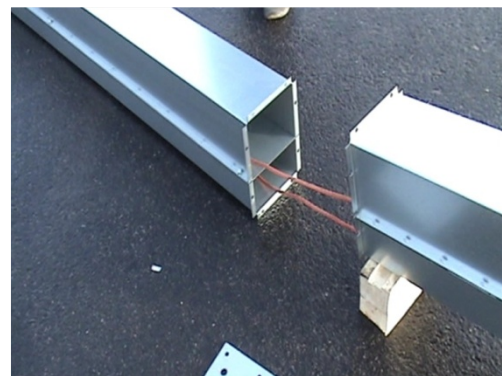


- A. Lifting side, small tube
- B. Return side, large tube
- C. Tube joint
- D. Place the joint (D) on top of seam (edged) of the upper tube section.
- E. Place the joint (E) under the seam of the lower tube section.

Installation of the chain starts from slipping a piece of rope of sufficient length over the shaft at the top of the elevator.



The tubes are joined together only after the rope has been slipped through.



After that the tubes are connected to each other with L-brackets. Use hex screws M8x20.



Fasten the rope to the end of the chain such that it can be pulled through the lifting tubes flaps ahead. By pulling the rope at the return side the chain is installed in the tube. To install the chain, pull the rope and at the same time help the chain to move into the elevator.



When the chain has reached the shaft at the top of the elevator, you can ease the advancing of the chain in the elevator by rotating the shaft at the top end. Remove the rope only after the chain is situated in both tubes all the way from top to bottom.



At this stage you can also attach the divider to the 40t elevator (page 15).

Lift the elevator in the vertical position and attach to the carriage before connecting the ends of the chain to each other. The elevator tube is supported from its bottom with M8x12, on top of the drying cell with M8x110, and on top of the grain bin. Fasten the elevator tube bottom end using L-brackets.

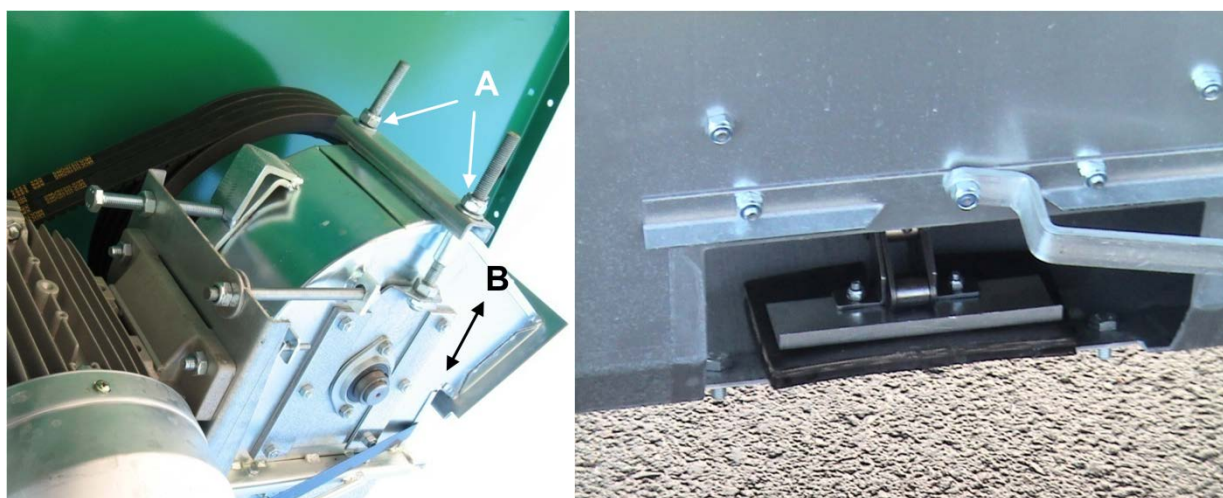


Remember to check the alignment of the elevator! Never leave the elevator in a position where it is supported only from its bottom end, the weight of the elevator can damage the bottom auger. Also install the shutter to the hopper end.

After the elevator tube is attached to the bottom auger and fastened to the dryer assembly, check that the shaft at the top end of the elevator is set to the lower position in order to ensure sufficient tightening reserve. After that you can connect the ends of the chain through the inspection door. Cut the chain to the suitable measure and connect using the connecting link (960202) or a half-link (960216).

4.4.2 Tightening of the elevator chain

The chain is tightened properly when the chain can be moved sideways on the plate chain sprocket. Also note that the chain has to move in the centre of the plate chain sprocket. Tightness of the elevator chain is adjusted with the tightening nuts using a 19 mm spanner. Check that the chain is tightened uniformly, measure the distance between the backing plate and the bearing on both sides, not at the threaded rod side. The chain has to be tightened such that, when it is rotated with the pulley the elevator moves easily. An incorrectly tightened chain can damage the bottom auger, the elevator and, above all, the plate chain sprocket.



The tightening nuts for tightening the elevator chain (A), and the place to measure the distance (B).

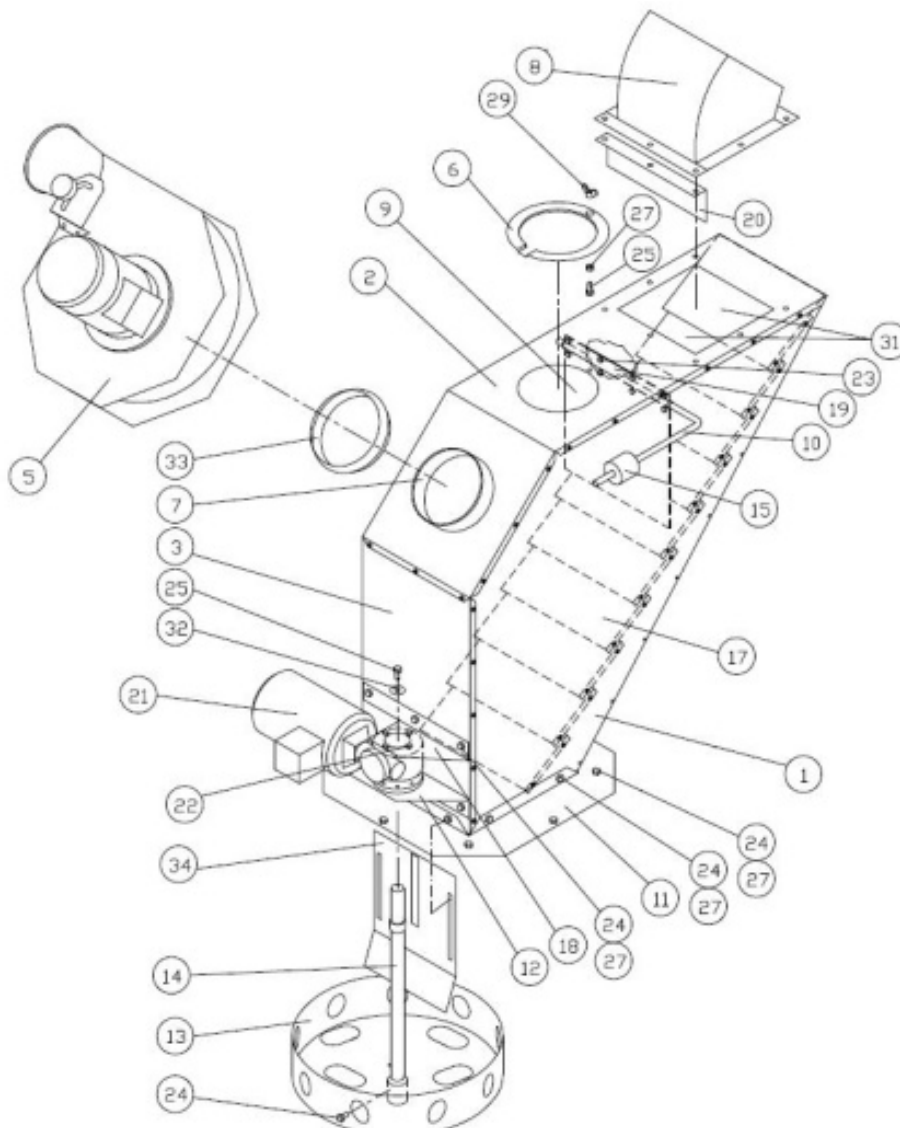
1.5 m and higher elevator extensions requires installing a grain brake between the elevator and the pre-cleaner, and adequate supports.

4.4.3 Pre-cleaner

The pre-cleaner is mounted between the elevator and the grain bin. After the elevator is raised up, install the divider and the pre-cleaner between the auger. In all mobile dryers of at least 40t with a flap or a bucket elevator grain is conveyed through a stainless steel pipe to the pre-cleaner, which is situated in the centre of the grain bin roof. All 40t and 60t elevator models are equipped with a 3-way divider.

The section below describes the process of installation of a 40t–60t pre-cleaner. More detailed information about adjusting the spreader is presented in the Mobile dryer operating manual.

Note that on models with a chain elevator the pre-cleaner is mounted diagonally, while on the models with a bucket elevator it is installed straight. The pipes run always along the straightest rout from the elevator to the pre-cleaner.



First remove the rain cover in the middle of the roof, which covers the hole for the pre-cleaner. After that, attach the pre-cleaner loosely with hex screws M8x20, washers on both sides. Tighten the seams to prevent leaks with Butyl mastic between the edges.

Next install the adjustment plate (34) so that the fastening screws are at about 1/3 distance from the top edge of the notch. Make sure that you set the adjustment plate in the right direction.

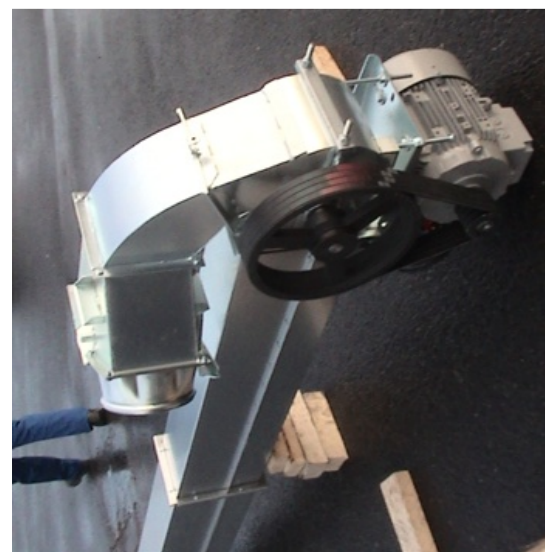


Fasten the shaft (14) to the worm gear motor (21) with hex screws M8x20 and a wedge 8x40. Mount the spreader disk (13) inside the grain bin with hex screws M8x16 and tighten with nuts. You can pre-adjust the spreader disc such that the holes in its bottom seem round. More detailed instructions can be found in the operating manual.



Connect the divider's changeover sleeve to the divider. Note that the orifice of the sleeve must be on the same side as the divider's operating lever (i.e. at the elevator's side). Use hex screws M6x16.

Place the divider's sleeve into the slot in the discharge hole of the top of the elevator. Fasten the changeover sleeve with a hex screw M6x16.



Connect the divider and the pre-cleaner. Use for connection a $\text{Ø}200$ mm stainless steel telescope pipe, which is attached at the top end with a 15° cast bend, and at the bottom end with a 7° cast bend to the pre-cleaners coupling (8). Mount the inner pipe to the pre-cleaner and the outer pipe on the top of the elevator and fasten to the divider. Make sure to install the dust seal on top of the inner pipe and tighten with a quick tie.

Place the dust seal on top of the inner pipe.

Tightening of the telescope pipe with a quick tie, lock the catch of the tie with a cotter pin.

Connecting the cast bend. You may use Butyl mastic to seal the seams.

Finally attach the belt protector in front of the V-belt and the rain cover on top of the elevator with M12 nuts.

4.5 Grain pipes

To ensure proper grain flow and functioning of the elevator it is essential that the grain discharge pipe is installed correctly. Mepu mobile dryers are equipped with either 2-way dividers or 3-way dividers. The diameter of a 2-way divider coupling is $\text{Ø}160$ mm, and the diameter of a 3-way divider coupling is $\text{Ø}200$ mm. Therefore use appropriate pipes, bends and ties, and make sure that the pipes are fastened solidly enough. You will receive a list of pipe supplies that you need for the assembly from the Mepu vendor.



Wet grain runs in a pipe, which is positioned at a 45° angle, while dry grain runs in a pipe positioned at a 30° angle. If you use the elevator for conveying grain, it is advisable to position the pipe at a 30° angle, in order for the grain flow to be smoother and to avoid damaging the conveyor.



Do not forget to support the grain pipes to the dryer's structure. The content of a one metre long grain pipe can weigh over 20 kg, if the pipe is completely full. By carefully connecting the pipes and supporting them sufficiently you can prevent injuries.

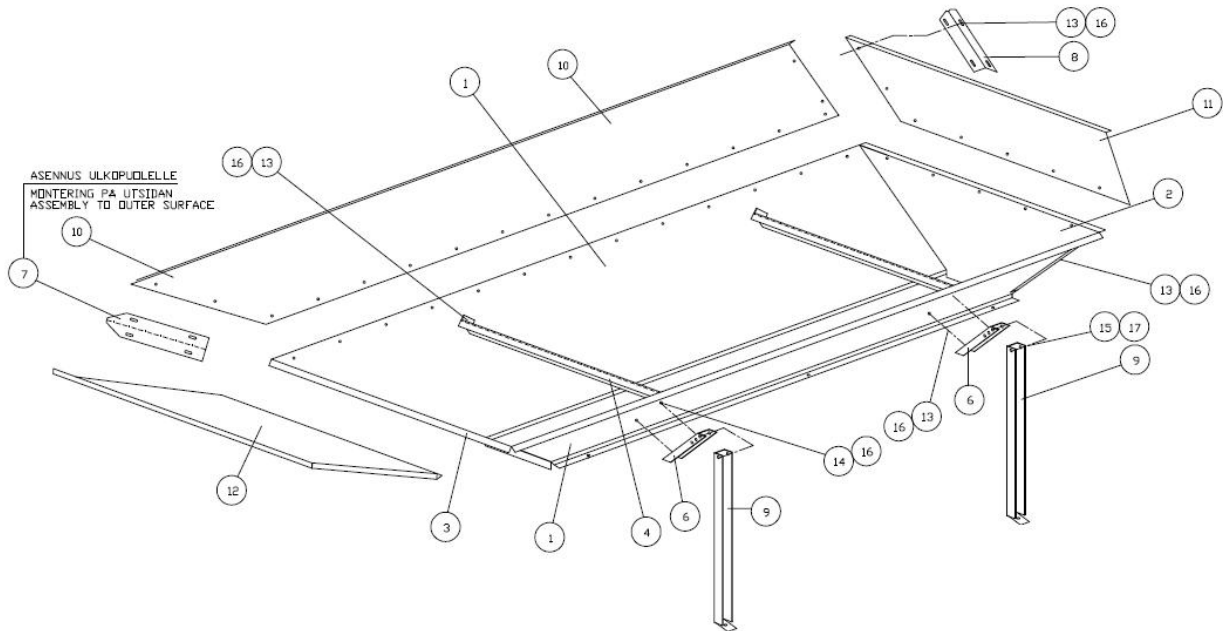


Use only heavy-duty metal (steel, stainless steel, cast iron) pipes to convey grain. For instance, a spiral seam pipe can cause the elevator to get clogged and damage kernels. Never use plastic pipes, as kernels sliding along the pipe surface generate static electricity and can cause fire hazard.



4.6 Hopper

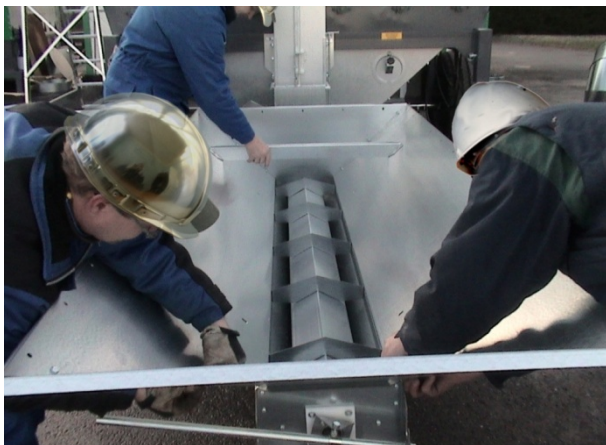
The standard delivery set of a Mepu mobile dryer includes a lengthwise mounted hopper. The mobile dryers can also be equipped with a crosswise mounted hopper, in which case grain is unloaded directly backward. You can find about more about various hopper solutions from your Mepu dealer.



The sections below describe the process of installation of a lengthwise mounted hopper (figure above).



The feeding auger is delivered assembled. The bottom auger of the hopper is connected to the bottom end of the elevator with 4 hex screws M8x20, and from the bottom of the trough with a countersunk hex socket screw.



Connect the bottom sheets of the hopper to each other with screws M10x20, and fasten to the feeding auger with M8x16 (parts 1, 2 and 3). After that attach the intermediate supports (4), the reinforcements (6) and legs (9) on both sides of the hopper with hex screws M8x16 and M10x60.

After the bottom sheets and the feeding auger of the hopper have been assembled, it is possible to mount sidewall extensions (10, 11 and 12) on top of the hopper. The sidewall extensions can be assembled so that the hopper is loaded either from the right side or the left side.



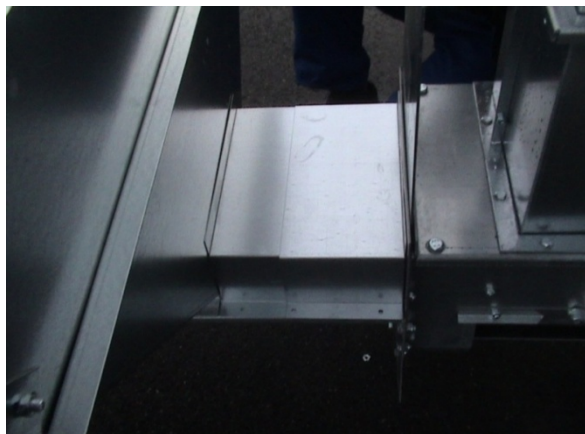
Fasten the articulation of the guide bar into the eye of the bearing at the end of the feeding auger.



Push the guide bar through the sleeve of the articulation from the desired direction, and lock with cotter pins, do not forget to use washers on both sides.

Fasten the protector between the feeding auger and the bottom end of the elevator.

Finally install the shutter, which prevents penetration of grain in the hopper into the machinery parts during the drying process.



4.7 Exhaust air channels

The Mepu mobile dryer features exhaust air channels on both sides of the drying machinery. The dimensions of the channels depends on the model of the dryer, in models M180k – M205k the pipe coupling diameter is Ø500 and in models M240k – M365 the diameter is Ø630. In models M300k and M365k the channel aspirators are also included in the standard equipment. A more detailed figure of the channels can be found in the spare parts catalogue.

After the product has arrived to its work site, all Mepu mobile dryers need to be equipped with a coupling case. First remove the weather cover from top of the exhaust air case, after that the case can be assembled on top of the channel. Use Butyl mastic to ensure that the seams are tight.



Fasten the end plates on top of the channel with hex screws M8x16.



Connect the cover sheets with M8x16 and fasten the outlet collar (ILU 500/630) with self-tapping screws.



Place the cover sheet on the end plates, and fasten with M8x16. Use resin based mastic to seal the seams.



A. Mobile dryers without a channel aspirator

Connect the double sleeve (MF 500/630) on the outlet collar. Use self-tapping screws to tighten the joint.

Place the elbow (BFU 500/630) on top of the double sleeve, fasten with self-tapping screws.

The seams of the channel joints do not need sealing, as they are equipped with lip seals.



B. Mobile dryers with a channel aspirator (accessory, M365k standard)

Connect the channel aspirator onto the outlet collar. Use self-tapping screws to tighten the joint. Note the arrow that shows the air flow direction. Place the arrow pointing upward.



Place the elbow (BFU 500/630) on top of the channel aspirator, fasten with self-tapping screws.

The seams of the channel joints do not need sealing, if they are equipped with lip seals. It is advisable to check the tightness of the channel aspirator joints, if necessary, use Butyl mastic to seal them. Connect the channel aspirator cables to the sockets on the front end of the exhaust air channels.

4.7.1 Exhaust air channels

In certain cases it may be necessary to use exhaust air channels (e.g. when the mobile dryer is used indoors). The exhaust air channels of Mepu mobile dryers are equipped with couplings, which can be extended, if necessary, with a standard sized spiral seam pipe (Ø500 mm or Ø630 mm).

If the length of the channel exceeds 6 metres, or if it is positioned e.g. at a 90° angle, it is advisable to also install a channel aspirator. If the channel is longer than 6 metres, the channel aspirators should be mounted as close to the exhaust air outlet as possible. Avoid too complex channel arrangements; elbows generate back pressure, which reduces drying efficiency. Try to make sure that the length of all channels is the same.

4.8 Aspirators

The pre-cleaner aspirator (1.5 kW) is attached to the pre-cleaner with a quick-tie. The diameter of the couplings of this aspirator is Ø200 mm. The models 25t are an exception, as the power of the pre-cleaner on this model is a 0.75 kW one and the diameter of the coupling is Ø160 mm.

Fasten the discharge pipe to the fan with a quick tie; the delivery set contains a coupling that can be used to connect the pipe with a spiral seam pipe (Ø200 or Ø160 mm).



The aspirator is connected to the rear socket of the mobile dryer, which serves as the power source (see section 3.9). Hang the cable onto the brackets running along the elevator.



The aspirator of the bottom cone (0.75 kW) is fastened below the electrical switchboard using a changeover sleeve. Connect the aspirator to the socket on the side of the debris duct.

The diameter of the aspirator couplings is Ø160 mm, and the spiral seam pipe can be connected to it via a changeover sleeve.

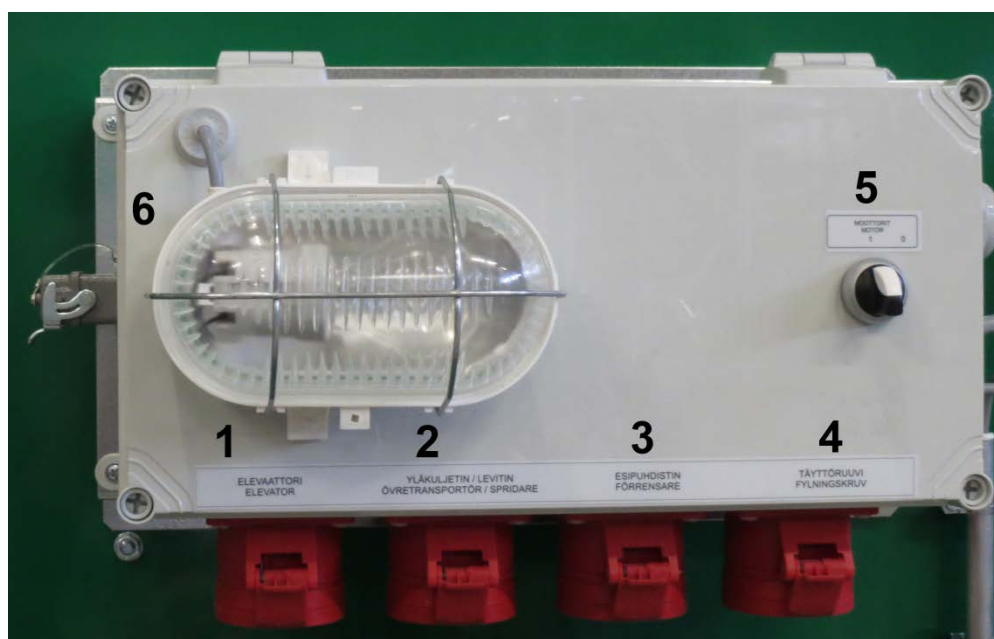


It is important to remember that the aspirator outlet is directed away from the electrical switchboard and the oil burner, as dust can cause the dryer to malfunction and a serious fire risk!

4.9 Rear electrical socket

After the elevator and the drying equipment with accessories have been installed, it is possible to make the electrical connections. The electrical connections on Mepu mobile dryers are made with quick connectors and sockets, so you can connect the electrical equipment safely. Do not forget to fasten the cables to their intended places.

1. Elevator socket
2. (Socket for the spreader disk).
3. Pre-cleaner socket
4. Feeding auger socket (models with a bucket elevator)
5. Power switch I/O
6. Plug of the bucket elevator's rotation sensor



4.10 Level guard

The level guard is standard on all Mepu mobile dryers; on models M180k it has been pre-installed. On M205k and larger models the grain bin is detached, and therefore the level guard has to be connected at the work site.



Open the packet fastened to the side of the grain bin. The packet contains the level guard cable inside its protective tube, the fasteners and the plug.

Attach the protective tubes to the side of the grain bin, using the fasteners provided, use self-tapping screws for fastening.



Connect the level guard cable to the electrical switchboard on the left side of the main electrical switchboard.

4.11 Smokestack

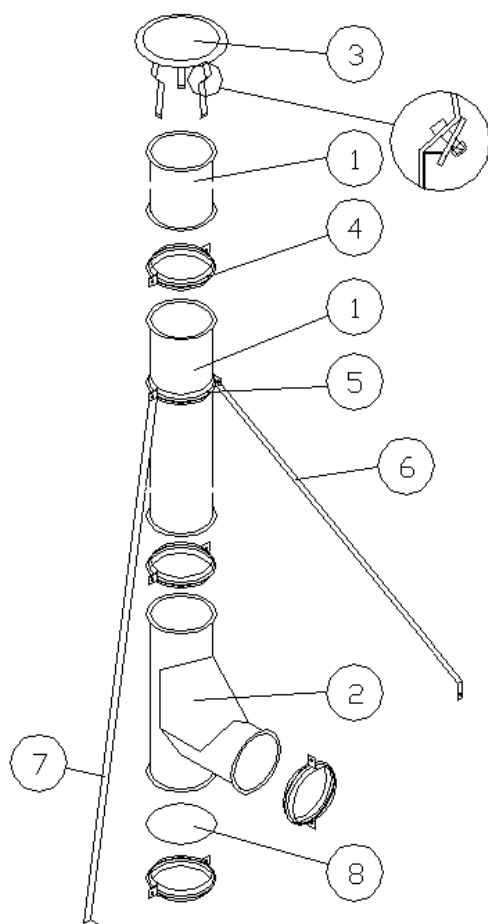
The delivery set of a Mepu mobile dryer includes a Ø200 mm stainless steel smokestack system, which includes an ash chamber, a rain cap, coupling collars and the smokestack. The length of the smokestack in individual models is presented in the table below. If the smokestack is 4 m or longer, it should be supported appropriately. For this purpose it is possible to get a support kit, which is attached to the smokestack and then supported on the dryer furnace roof. If necessary, order additional parts or extension pipes from Mepu.

Chain elevator models	M180k	M205k	M240k	
Smokestack height	2 m	2 m	2 m	
Support kit	-	-	-	

Bucket elevator models	M180k	M180k	M205k	M205k	M240k	M275k	M300k	M365k	M420k
Furnace	YP-250	YP-310	YP-250	YP-400	YP-400	YP-400	YP-500	YP-500	YP-500
Smokestack height	2 m	2 m	2 m	4 m	4 m	4 m	4 m	4 m	4 m
Support kit	-	-	-	-	+	+	+	+	±



Carefully study the fire safety regulations or contact the local fire authorities, if you intend to install the mobile dryer indoors. If you lead the smokestack through combustible structures, insulate the smokestack with at least 100 mm fireproof wool and make sure that the smokestack complies with the regulatory requirements.



Connect the ash chamber (2) to the smokestack coupling at the ladder side with a coupling collar (4).

Set the smokestacks 2 m (1) on top of the ash chamber. Place the rain cap (3) on top of the uppermost pipe.

Support the smokestack on the dryer furnace roof with supports (6 and 7). Use self-tapping screws for fastening.



4.12 Oil line connections

The connecting hoses of the oil burner are 4 metres long; an oil line arrangement consisting of 2 pipes is NOT included in the delivery. Position the oil tank so that it does not prevent moving around the mobile dryer. Make sure that oil hoses do not pose risk of tripping. Place the oil tank at a distance of at least 3 metres from the oil burner and connect the hoses tightly such that they cannot get detached

The Oilon light oil burner has been test run at the factory, and its emission measurement has been certified. This document can be found in the manual pocket situated on the side of the dryer furnace. Never adjust the burner yourself, if any trouble is detected please contact an authorised Oilon service workshop.

Poltin	KP-26	KP-26 H	KP-50 H
Teho kg/h kW	8 - 20 95 - 240	8 - 30 95 - 350	17 - 70 200 - 830
Polttimen moottori 1~ 230 V 50 Hz			
Teho kW	0,25	0,25	0,75
Virta A	1,7	1,7	2,0
Kierrosluku r/min	2750	2750	2850
Ohjelmarele	LOA24 / BHO64	LOA24 / BHO64	LAL1.25
Säätömoottori	-	SQN	SQN
Öljyletkun liitäntäyhde	R 1/4"	R 1/4"	R 3/8"
Öljypumppu	AN/AS67	AN/AS67	AJ4

4.13 Electrical connections

A delivery set of a Mepu mobile dryer includes a 10 metre cable, which is fitted with a 32 A/ 63 A plug. The electrical switchboard, to which the mobile dryer is connected, has to have fuses with sufficient capacity so that the voltage does not drop too low. When the operating voltage drops the current taken by the electrical equipment increases and can cause overheating.

ELECTRICAL EQUIPMENT	M180k	M205k	M240k	M180k	M205k	M240k	M275k	M300k	M365k	M420k
Chain elevator	40 t	40 t	40 t							
Bucket elevator				60 t	60 t	60 t	60 t	60 t	60 t	60 t
Electric power (kW)	13.3	15.3	16.8	13.8	13.8	17.3	18.1	26.0*	27.0*	27.6*
Current (A)	22.0	22.0	27.8	22.8	22.8	30.0	30.0	43.1	44.7	50.1
Fuse capacity (A)	25	25	35	25	35	50	50	50	50	50

*) in these models the channel aspirators installed as standard.



The channel aspirators increase the capacity of the mobile dryer: on M150k – M205k models 3 kW (7A) and on M240k – M420k models 4.4 kW (10A).



Elevator extensions and dryer furnace modifications varying from the standard models, increase the overall electrical power.

5 Frequently asked questions

How close to a building may a dryer be positioned?

A dryer is considered detached, if it is situated from the nearest building at a distance of at least the height of the dryer. As opposed to the requirements set to positioning of a stationary grain dryer, a mobile dryer may be positioned in a shelter located at a distance of at least 4 m from other buildings. The requirements can vary from place to place. Contact the local construction and fire safety authorities.

May the dryer be erected indoors?

The grain dryer can be built adjacent to another production or storage building, or a motor vehicle shelter, provided that it is separated from the rest of the building with a firewall type wall without any openings. The dryer may not be built adjacent to an animal shelter. In case the dryer is erected indoor, make sure to provide emergency exits. The requirements can vary from place to place. Contact the local construction and fire safety authorities.

Air vents in case of indoor installation.

In order to ensure ventilation and air for the combustion process the room where the dryer is erected must have two openings of at least 600 cm² (Ø200 mm) covered with protective mesh, one of which has to be located near the ceiling of the room and the other – near the floor level. In respect of the mobile dryer the vertical distance of the vents is 2 metres, where the lower vent is at most at the burner's height. The requirements can vary from place to place. Contact the local construction and fire safety authorities.

Installation and insulation of the smokestack.

If the smokestack is situated at the distance of at least 1.5 metres from the non-combustible parts of the dryer building, or at the distance of at least 3 metres from a wall built of combustible construction materials, its height needs not fulfil the requirements of the E3 design guidelines. The temperature of the surface of the visible and easily accessed parts of the smokestack may be at most 80 °C. The surface temperature of other parts of the smokestack may be higher, provided that the surface temperature of structures standing next to the smokestack does not raise above 85 °C. If necessary, insulate the smokestack with fireproof wool. The requirements can vary from place to place. Contact the local construction and fire safety authorities.

Malfunctioning of electrical equipment.

- Make sure that all plugs are connected to the right sockets.
- If you use extension cords check whether all the sections are securely connected.

The electrical diagrams of the mobile dryer are provided inside the electrical switchboard.

Adjustments and operating the mobile dryer.

The aspects related to operating and adjusting the mobile dryer, are described in the operating manual. The operating manual and the spare parts catalogue have been/ will be delivered at the latest with the mobile dryer delivery.

Maintenance and repair of the dryer.

Maintenance and inspection of the mobile dryer must be carried out once a year; Mepu recommends to carry out preventive maintenance before the harvesting season and to use services of an authorised workshop.



Mepu Oy:n huoltopalvelu:
Puh. (02) 275 4444 / Huolto
Fax. (02) 256 3361
E-mail: service@mepu.com

Mepu Oy service:
Tel: (02) 275 4444 / Maintenance
Fax: (02) 256 3361
E-mail: service@mepu.com

MEPU Oy
Mynämäentie 59, 21900 Yläne, Finland
p. [\(02\) 275 4444](tel:022754444), mepu@mepu.com
www.mepu.com