2 Transport, installation and assembly

This chapter shows how the machine/plant components must be transported, installed and assembled and which supply connections and connection ports must be implemented.
When selecting the installation site, ensure that it is well lit, adequately ventilated and that there is sufficient space for assembly, disassembly and maintenance work.

2.1 General

2.1.1 Observe during transport

- ► For transport, only use lifting gear and load handling devices with sufficient load-bearing capacity which are operated by authorised persons.
- ► During transport, the pictograms on the packaging must be observed.

Top

Centre of gravity

Attach here

- ► Only lift the machine/plant parts properly using lifting equipment at the attachment points for load lifting devices, observe the lifting instructions on the machine.

Lifting point

- ► Appoint a competent person to guide the lifting operation!

2.1.2 Storage

Truck freight, air freight:
To avoid corrosion, the individual components of the plant must be stored in a covered place or in a closed room until installation.

Sea freight:
The packaged machine/plant can be stored for up to 5 months in a covered place or in a closed room without corrosion damage occurring.

Care must be taken to ensure that no external damage can occur. Unless specifically agreed in the contract, the packaging must be based on the HPE packaging guidelines.

2.1.3 Accessories included in the scope of delivery

- ► Screw push-off device (see also folder "Mechanical drawings, parts lists")
- ► Standard accessory packages (toolbox, machine package incl. auxiliary tools)
  Also see folder "*Mechanical drawings, parts lists*"
- ► Spare parts package

Opening the toolbox for the first time is only permitted in the presence of an EREMA technician. Otherwise no liability for damaged or missing parts!

2.1.4 Observe during installation

For placement of the plant parts, also see the "Installation plan" under "Mechanical drawings, parts lists".

The heavy-duty rollers, lifting traverse and shims are not included in the scope of delivery.

- ► Only use technically trained, authorised personnel with appropriate knowledge.
- ► Select the installation site so that there is sufficient space for assembly, disassembly and maintenance work. (see installation plan)
- ► Access using lifting equipment must be guaranteed in order to be able to remove the individual parts quickly and safely during disassembly work.
- ► The installation site must be well lit, sufficiently ventilated and in a closed room with on-site lightning protection in order to be able to carry out all work with the required precision.
- ► The foundation at the installation site must be level and firm so that no twisting occurs. Before installation, check the ceiling or floor load, pay attention to any vibrations that may occur. (see foundation plan)
  The bearing surface should be made of concrete of grade C 25/30 according to DIN 1045.

Use anchor bolts to secure the plant parts.

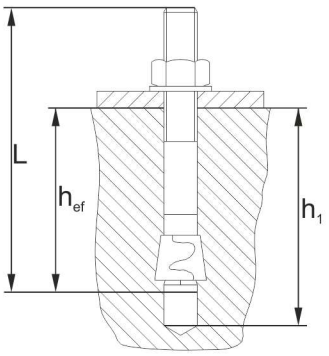


Fig. 1: Anchor bolt

	M8	M10	M12	M16	M20
L Anchor length	75	90	100	140	170
h_1 Min. drilling depth	65	70	95	115	130
h_{ef} Anchoring depth	48	50	70	84	103

Tab. 1: Anchor bolt diameter

Anchor bolt diameter according to the bore of the fixing lugs.

2.1.4.1 Flatness tolerances

Excerpt from DIN 18202:

Industrial floors	
Measuring point distances in m to:	*Depth gauges as limit values in mm:*
0.1	5
1	8
4	12
10	15
15	20

Tab. 2: Flatness tolerances

The plant must be level and horizontal.

2.2 INTAREMA processing unit

⚠WARNING

Risk of injury and damage!

Insufficient lifting capacity of the crane can cause serious injuries and damage to the plant.

► Two cranes must be used to lift the process combination.
First lift the process combination slightly in the extruder end area to avoid damaging the frame.

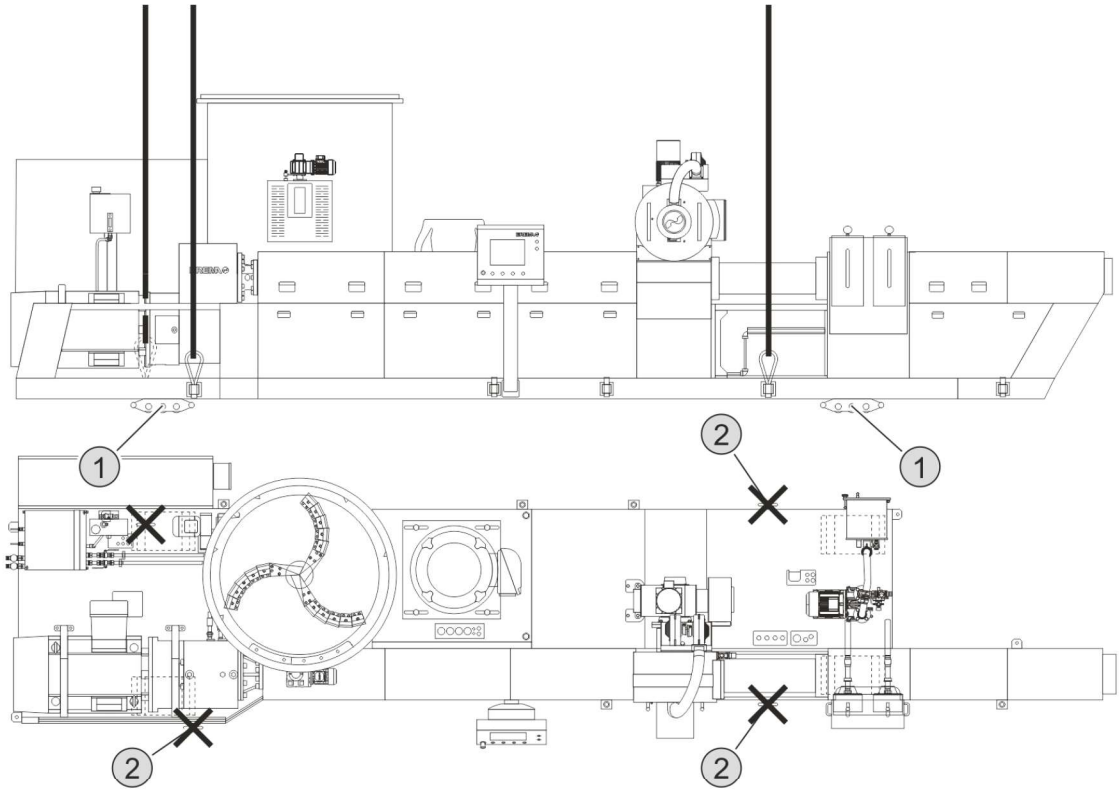


Fig. 2: Transporting the processing unit I_1714_TVEplus – weight approx. 19345 kg

► Use heavy duty rollers (1) for transporting on the ground.

ATTENTION

Risk of damage to the control cabinet!

► Incorrectly positioned heavy duty rollers can damage the control cabinet.
Position the heavy duty rollers under the base frame and not under the control cabinet.

► Remove the rope eyelets at all lifting points and insert hexagon head screws/threaded pins (3) at the lifting points (2).

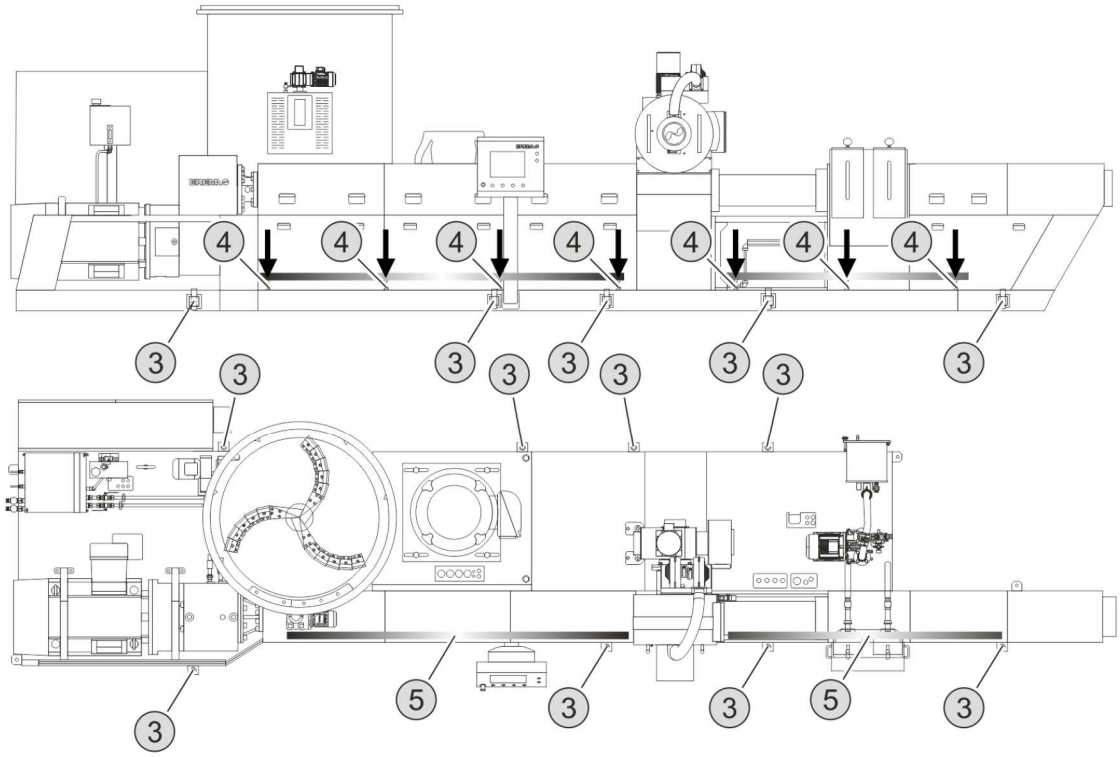


Fig. 3: Setting up the processing unit

► Adjust the hexagon head screws/threaded pins (3) to level the processing unit with a spirit level (5); start at the measuring points (4) marked in red gear unit side (flatness tolerance ±1mm).

Care must be taken to ensure clean contact with the shop floor or foundation, especially in the extruder and PCU drive areas, the degassing area (optional) and at the end of the barrel. This is where the main static load and the dynamic forces of the processing unit's main drives are transferred to the shop floor.

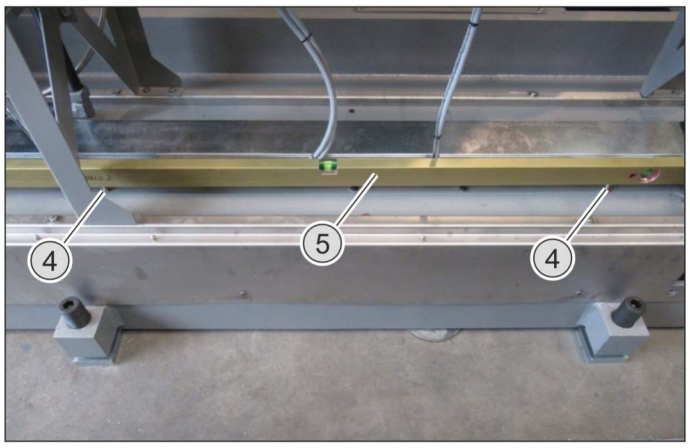


Fig. 4: Setting up the processing unit

- ► Support the aligned processing unit with shims (not included in the scope of delivery) of at least 150x150mm, at a maximum distance of 1m, on the supporting base frame profiles (but not under the control cabinet platform).
- ► Fix the processing unit to the floor at the installation site using anchor bolts.

Anchor bolt diameter according to the bore of the fixing lugs.

2.2.1 PCU hood and accessories

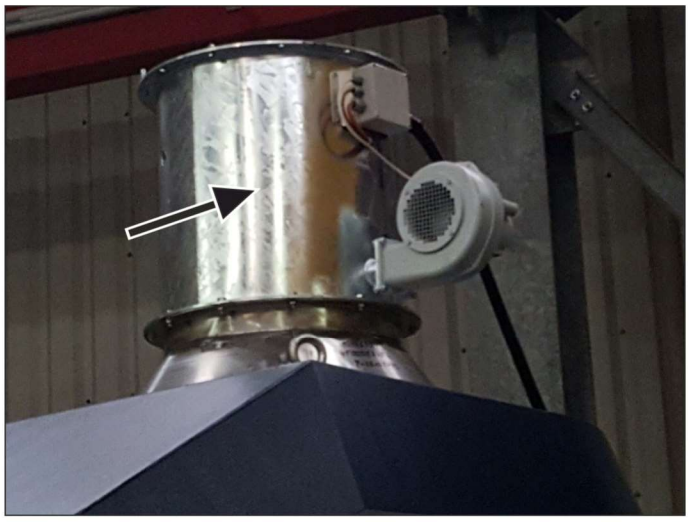


Fig. 5: Trox exhaust blower

► Fasten the Trox exhaust blower on the PCU hood.

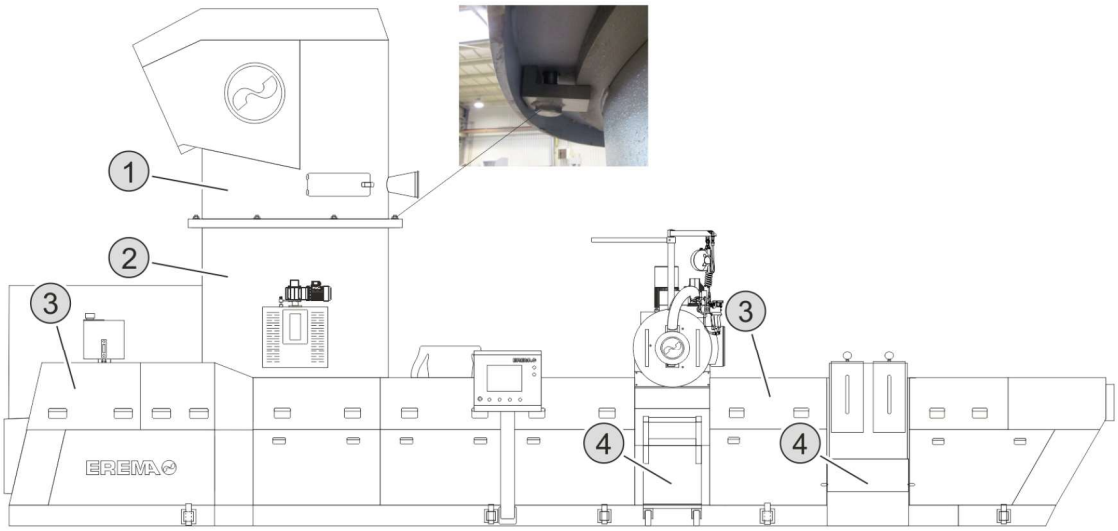


Fig. 6: Installation - weight of PCU hood approx. 1150 kg

► Lift the PCU hood (1) onto the PCU container (2) and fasten it with clamping jaws.

► Install the extruder cover (3).

► Place the catchment tray (4) under the dirt outlets on the degassing unit and the melt filter (optional).

2.2.2 Supply connections

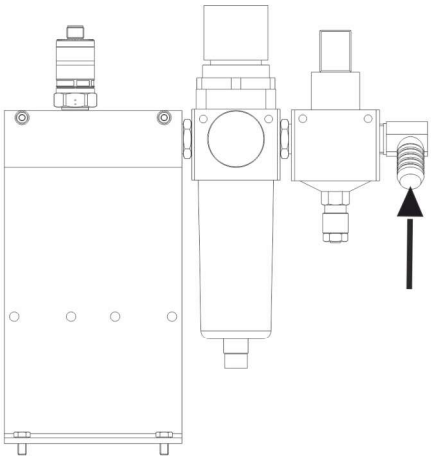


Fig. 7: Central compressed air connection

► Connect the compressed air (7 bar).
The central compressed air connection supplies all pneumatic components with compressed air.

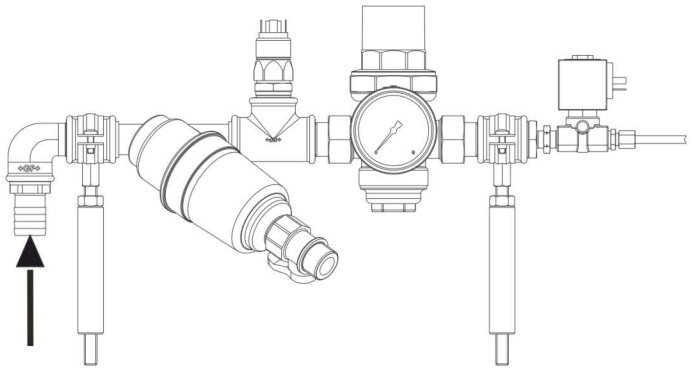


Fig. 8: Water connection

► Connect the water supply for water injection.

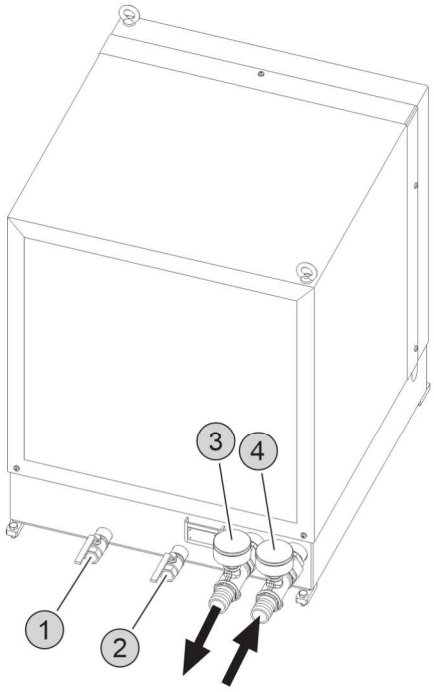


Fig. 9: Extruder cooling

1) Heat transfer oil drain
2) Leakage oil drain
3) Cooling water outlet
4) Cooling water supply

The oil screw connections must be retightened after six months.

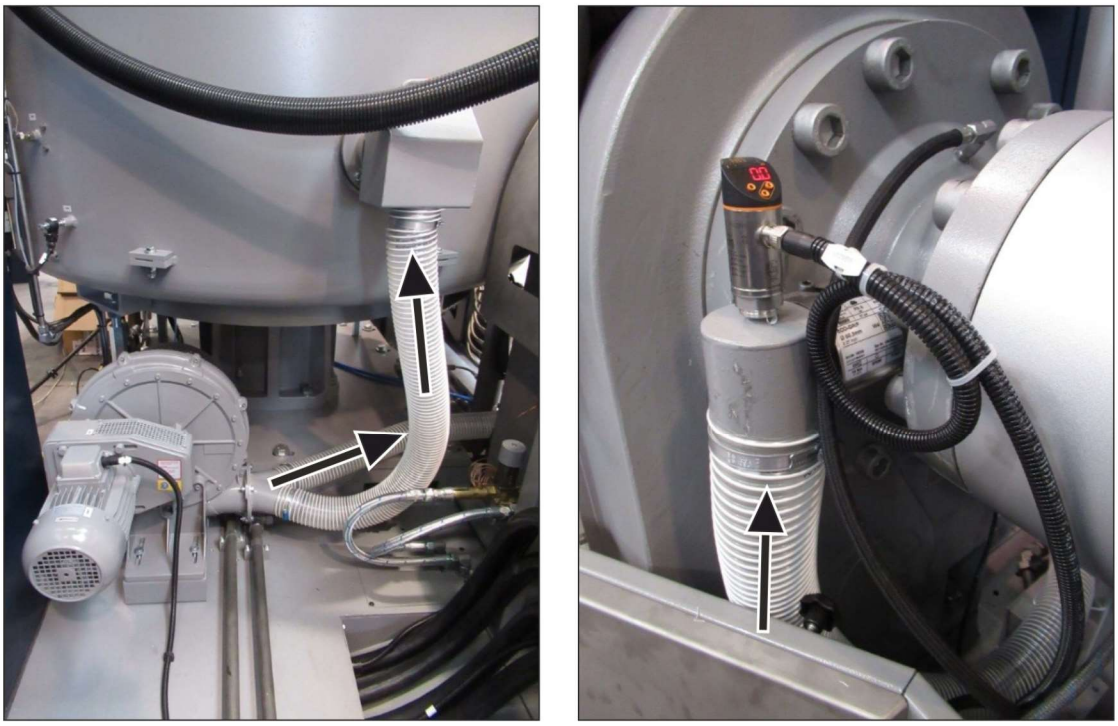


Fig. 10: High-pressure blower (backpressure blower / Air flush technology)

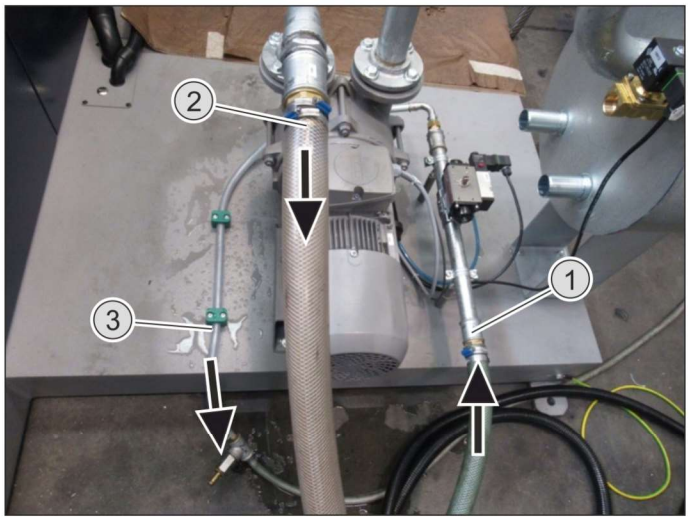


Fig. 11: Vacuum system

1) Water supply
2) Gas/water outlet
3) Emptying hose (optional)

To prevent increased wear on the vacuum pump, it is advisable to continuously supply approx. 1%-5% fresh water (max. grain size 50µm) to the water system for vacuum pump.
For complaint-free operation of the vacuum pump and a good vacuum, the max. water temperature should be 15 °C. The higher the water temperature, the poorer the vacuum. This means that heat exchanger cooling water at approx. 8-12°C is required.

⚠WARNING

Danger from corrosive substances!

The water discharged from the vacuum pump in the water system for vacuum pump can contain aggressive gases, depending on the material to be processed.

► Check whether it is permissible to discharge the water from the water system for vacuum pump into the sewer system.

2.3 Belt conveyor

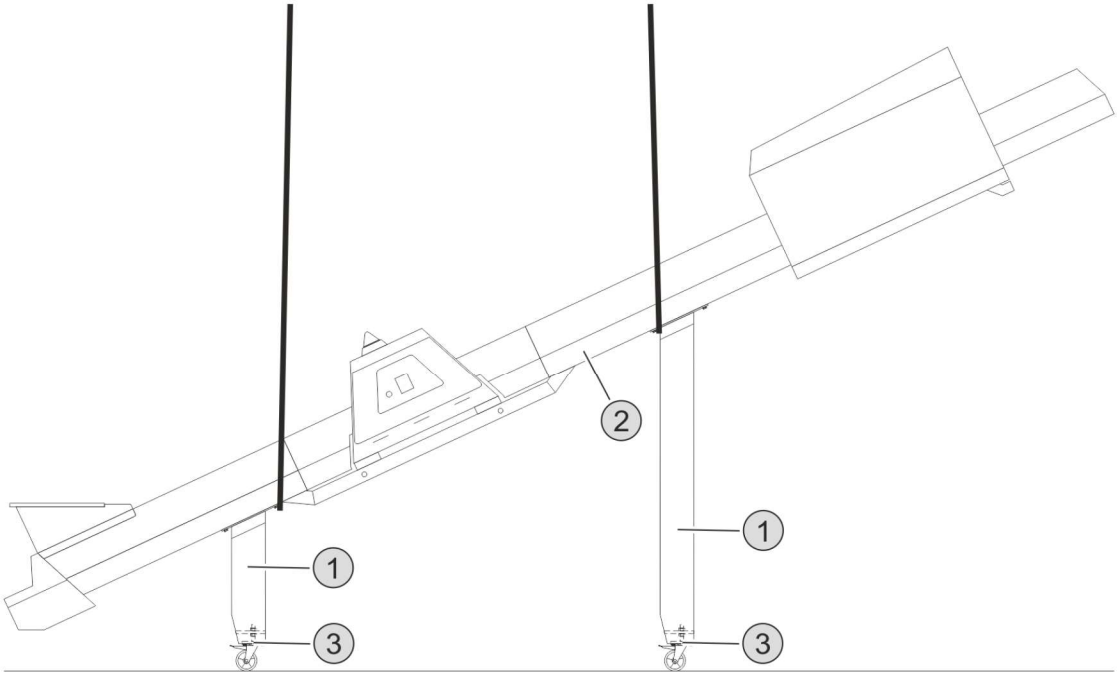


Fig. 12: Transport and assembly FB_10000_1200_SH – weight approx. 2180 kg

► Bolt the belt conveyor feet (1) onto the frame (2).

► Place the belt conveyor on the floor and fasten it with the hood.
The substrate must be horizontal, level and firm!

Slight unevenness can be levelled with the levelling roller (3)!

► Check the distance between the conveyor belt and the hood.

2.4 Powered exhaust system

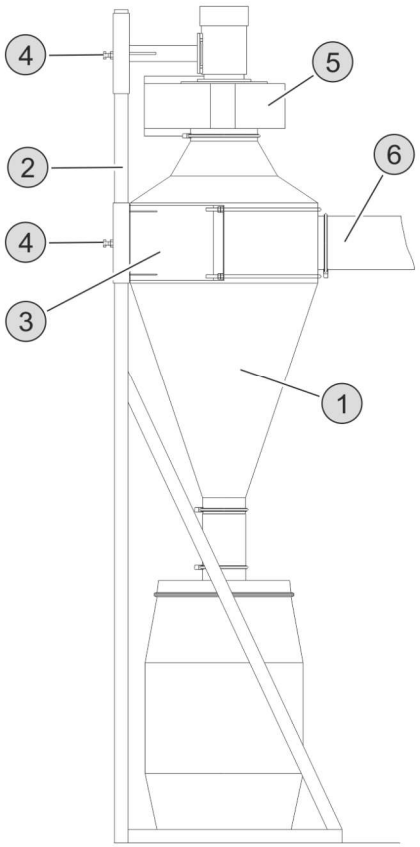


Fig. 13: Setting up the powered exhaust system SAS_2500 - weight approx. 174 kg

- ► Fasten the cyclone support (2) to the cyclone (1) with the half shell (3).
- ► Install the exhaust blower (5).
- ► Set up the powered exhaust system and anchor it on the floor.
- ► Set the height with the screws (4).
- ► Route the pipes (6).
- ► Install the protective grille or filter box with filter bags on the exhaust blower.

⚠WARNING

Danger due to electrostatic charge!

Electrostatic discharges can lead to adverse health effects. Furthermore, there is a risk of explosion or fire under suitable conditions.

- ► Silo, cyclones and pipelines must be grounded throughout by the operator.

2.5 Water system for vacuum pump

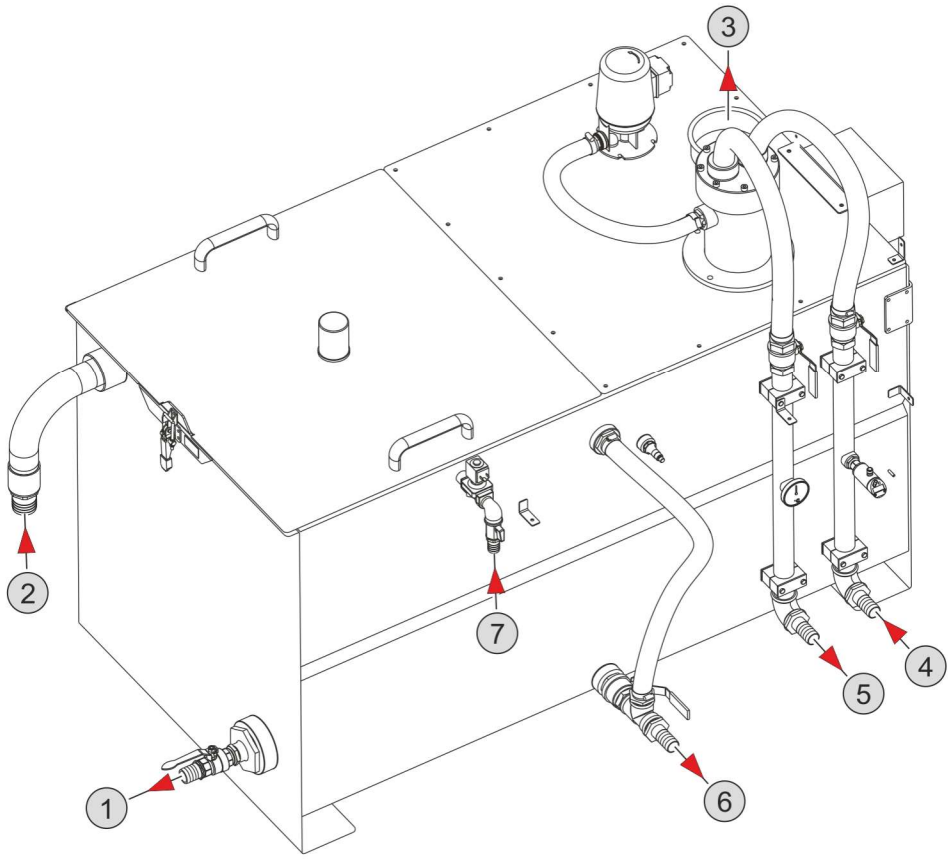


Fig. 14: Water system for vacuum pump BWB_1000_S - weight approx. 141 kg

1) Process water for vacuum pumps
2) Supply side gas/water mixture from the vacuum pumps
3) Connection for suction
4) Cooling water supply
5) Cooling water outlet
6) Water outlet (water overflow)
7) Fresh water supply

See the "Connection and consumption data" document included in the EREMA documentation for the fresh water and cooling water specifications.

To prevent increased wear on the vacuum pump, it is advisable to continuously supply approx. 1%-5% fresh water (max. grain size 50µm) to the water system for vacuum pump.
For complaint-free operation of the vacuum pump and a good vacuum, the max. water temperature should be 15 °C. The higher the water temperature, the poorer the vacuum. This means that heat exchanger cooling water at approx. 8-12°C is required.

⚠WARNING

Danger from corrosive substances!

The water discharged from the vacuum pump in the water system for vacuum pump can contain aggressive gases, depending on the material to be processed.

► Check whether it is permissible to discharge the water from the water system for vacuum pump into the sewer system.

2.5.1 Note on filling level

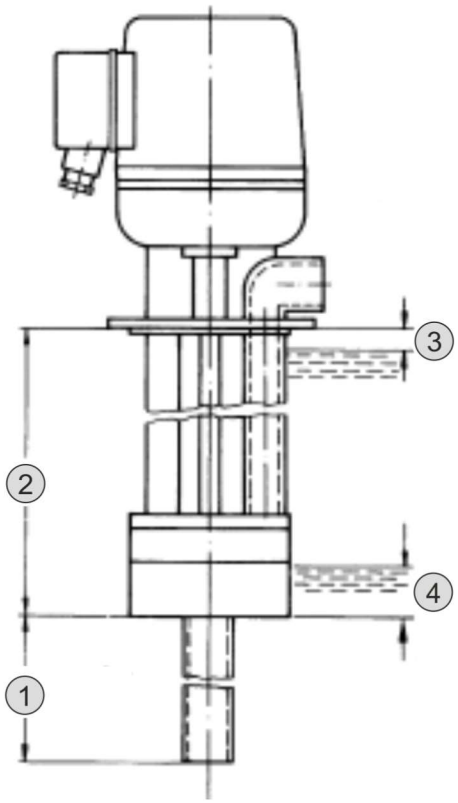


Fig. 15: Filling level

1) Extension tube
2) Immersion depth
3) 20 mm maximum permissible liquid level
4) 50 mm minimum liquid level at the pump limit switch

ATTENTION

Risk of damage!

Switching on the control voltage while the water system for vacuum pump is not completely filled, can cause damage to the water circulation pump due to dry running.

► Make sure that the water system for vacuum pump is completely filled with water before switching on the plant's control voltage.

2.6 EREMA laserfilter

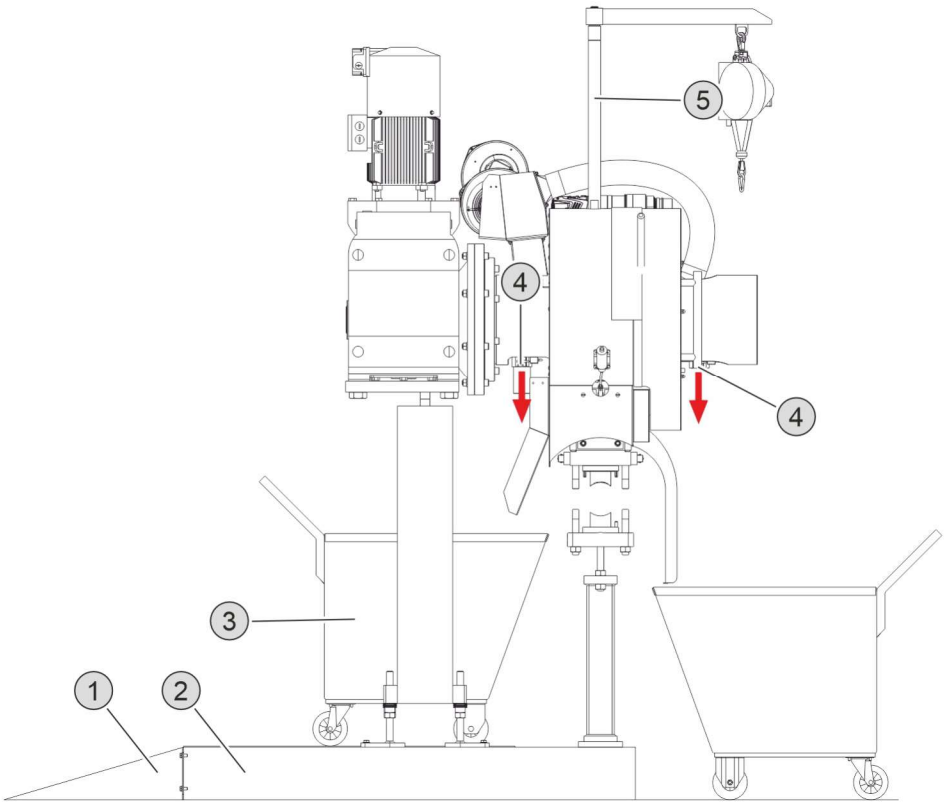


Fig. 16: Installation LF_2_406

► Bolt the travel ramp (1) onto the base frame (2) of the process combination.

► Place the catchment trays (3) under the dirt outlets (4) of the laserfilter.

ATTENTION

Risk of damage due to excessive heat!

Excessive exposure to heat can damage the torque wrench.

► The torque wrench may only be attached to the swivel arm during maintenance work and must be removed again afterwards.

Also see "Plarad; DA2 docu-20-SO" in the appendix.

► Check the connection and function of the pressure gauges to the melt filter.

⚠WARNING

Risk of injury and damage!

If no pressure gauge is fitted to the melt inlet, overpressure can cause injuries and damage to the plant.

► The melt inlet must have a pressure gauge with PLc which signals the maximum operating pressure and switches off the upstream plant (extruder) at maximum pressure or releases an outflow opening.

2.7 Melt pump

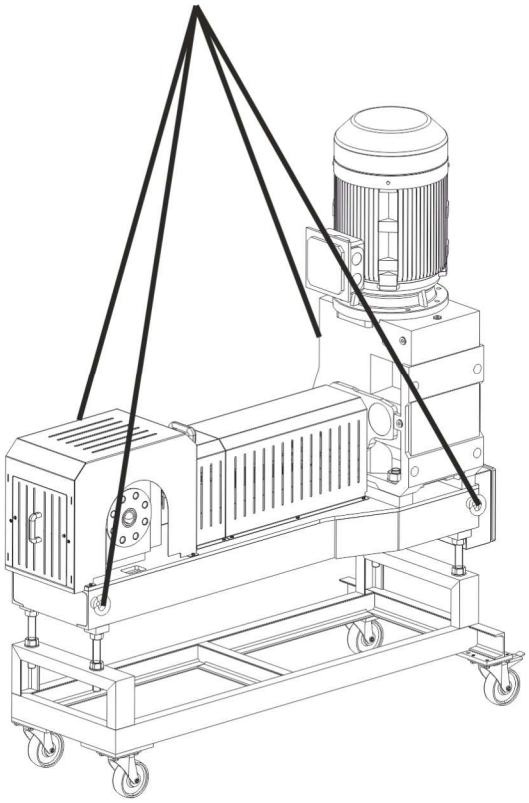


Fig. 17: Installing the melt pump MP_1800_DFC weight approx.1080 kg

For the placement of the plant parts, see also the "Installation plan" in the section "Drawings, parts lists".

► Connect the Harting connector.

Also see "Maag; EX 100-6 EPST" in the appendix.

2.8 EREMA backflush filter

⚠WARNING

Risk of damage and injury!

If the cleaning rope supplied is used to lift the backflush filter, damage and injury may result from the load falling.

► Only lift the backflush filter using lifting cranes with sufficient load-bearing capacity.

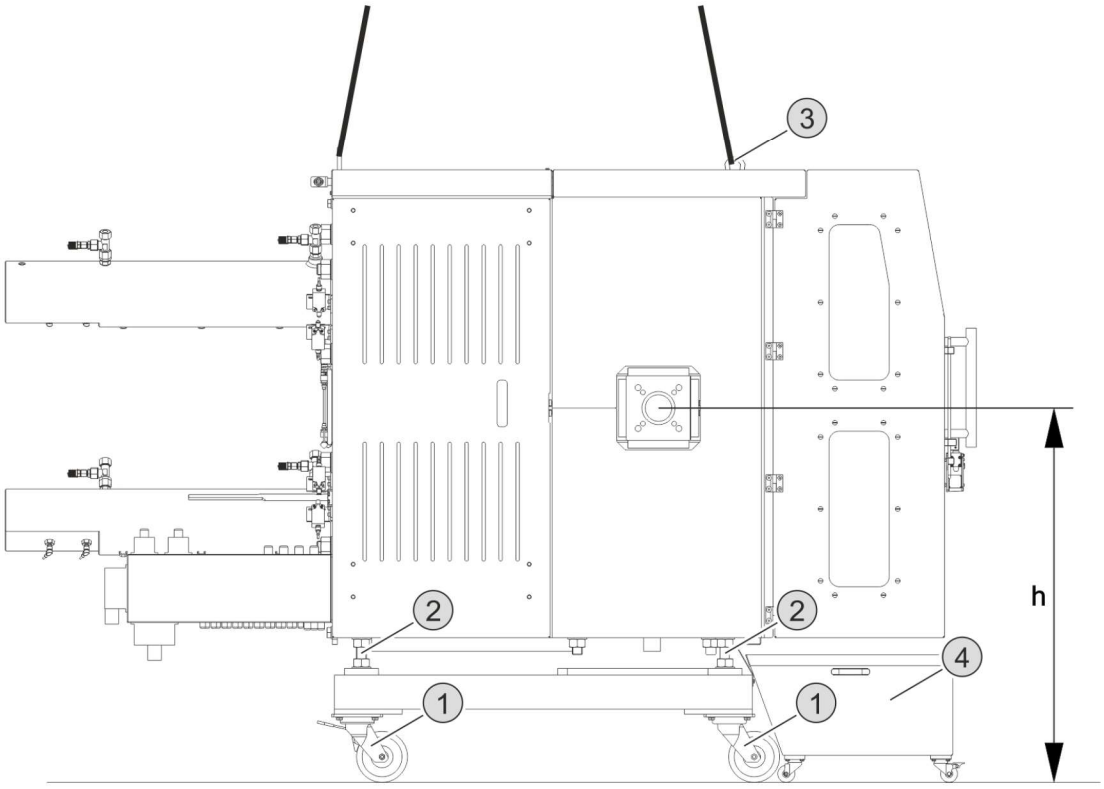


Fig. 18: Transport and assembly SW_4_250_RTF – weight approx. 3700 kg

► Screw the rollers (1) onto the carriage and place the hydraulic unit next to it (2).

► Align the backflush filter and adjust the height (h) with the nuts (3) so that the extruder melt outlet flange and the backflush filter melt inlet flange are aligned and the sealing surfaces are parallel.

► Tighten the flange screws on the melt inlet and outlet flanges.

In case of different flange dimensions or if not otherwise possible for structural reasons, use intermediate flanges.

ATTENTION

Risk of damage!

If the rope eyelets (4) are not removed during operation of the backflush filter, thermal deformation may cause damage to the rope eyelets. This means that safe lifting of the backflush filter is no longer guaranteed.

► After finishing the installation, dismantle all the rope eyelets (4).

► Check the connection and function of the pressure gauges to the melt filter.

⚠WARNING

Risk of injury and damage!

If no pressure gauge is fitted to the melt inlet, overpressure can cause injuries and damage to the plant.

► The melt inlet must have a pressure gauge with PLc which signals the maximum operating pressure and switches off the upstream plant (extruder) at maximum pressure or releases an outflow opening.

► Place the backflush cup under the melt drain of the backflush filter.

2.8.1 Connecting the hydraulic system

Make sure that the unit is easily accessible for maintenance work at all times.
The focus is on routine maintenance work such as:

- Checking the oil level
- Refilling or changing hydraulic oil
- Replacing the filter

Always keep the unit clean and free of splash water. Ensure good ventilation. If the unit is exposed to major air pollution or high temperatures, special protective devices are required.

Connect the hydraulic piston (1) and hydraulic unit (2) with hydraulic hoses.
To avoid incorrect connection, the connection points and the hydraulic hoses are marked ex works.

ATTENTION

Risk of damage!

Impurities in the pipelines and hoses can cause the hydraulic system to malfunction.

► All pipes and hoses used for the hydraulic plant must be absolutely free of rust and dirt particles.
Pipes must not be welded or soldered after installation.

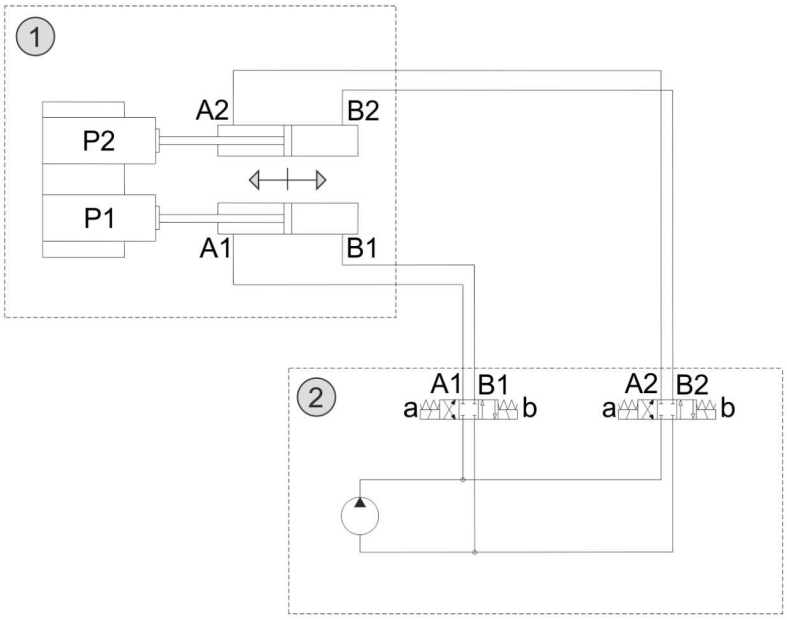


Fig. 19: Connections of the hydraulic system

2.9 Hot die face pelletiser

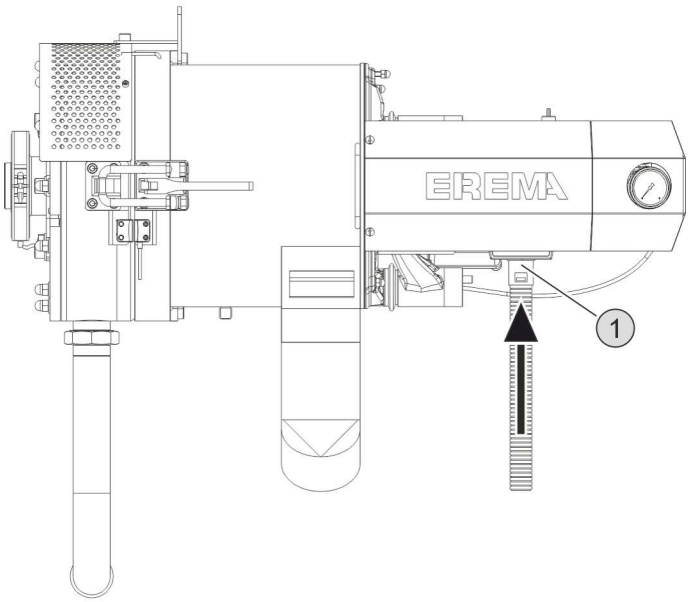


Fig. 20: Installing the HG_244D – weight approx. 230 kg

- ► Install the pelletising head directly on the melt filter or extruder outlet flange (depending on the plant design).
- ► Connect the Harting connector (1).
- ► Set the air pressure (approx. 0.8 bar per pelletising knife).

2.10 Pellet dewatering screen

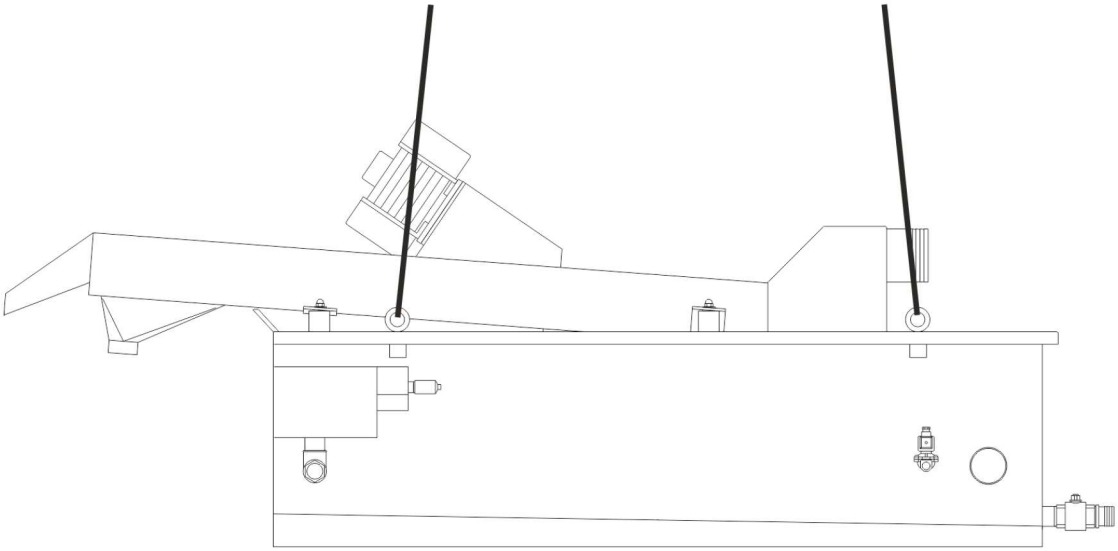


Fig. 21: Installing the GS_2010_1000 – weight approx. 360 kg

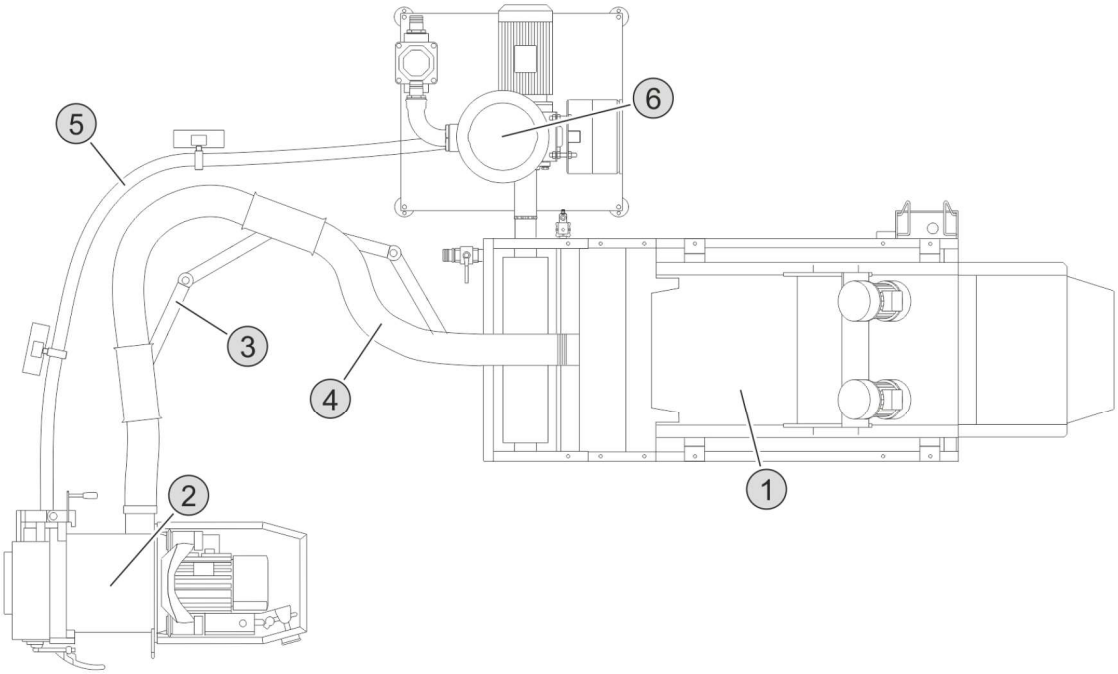


Fig. 22: Installing the pellet dewatering screen

- ► Align the pellet dewatering screen (1) with the pelletising head (2).
- ► Use the fastening screws to fasten the hose support (3) on the pellet dewatering screen.
- ► Fasten the pellet transport hose (4) on the pelletising head (2) and the pellet dewatering screen (1).
- ► Use hose clamps to fasten the water hose (5) on the pelletising head (2) and heat exchanger (6).

The top of the pellet transport hose (4) must not be higher than the bottom of the pelletising housing at any point. ► Check the hose routing!

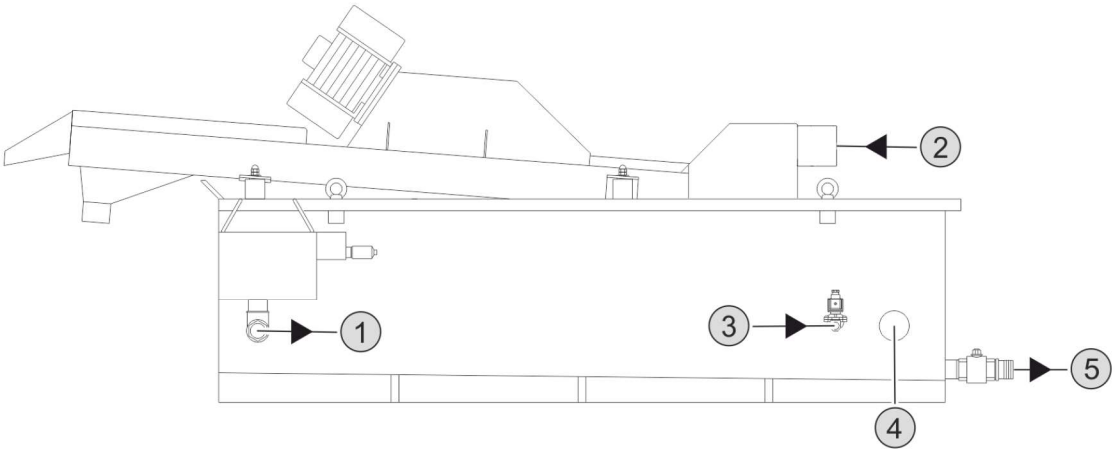


Fig. 23: Establishing the supply connections

1) Water overflow
2) Pellet transport hose connection
3) Fresh water supply
4) Water pump connection
5) Water outlet

See the "Connection and consumption data" document included in the EREMA documentation for the fresh water and cooling water specifications.

⚠WARNING

Danger from corrosive and toxic substances!

The water in the pellet dewatering screen can be acidic/basic or toxic depending on the material to be processed.

► The operator must ensure that the water is handled and discharged safely to reflect the level of danger.

2.11 Water pump stand

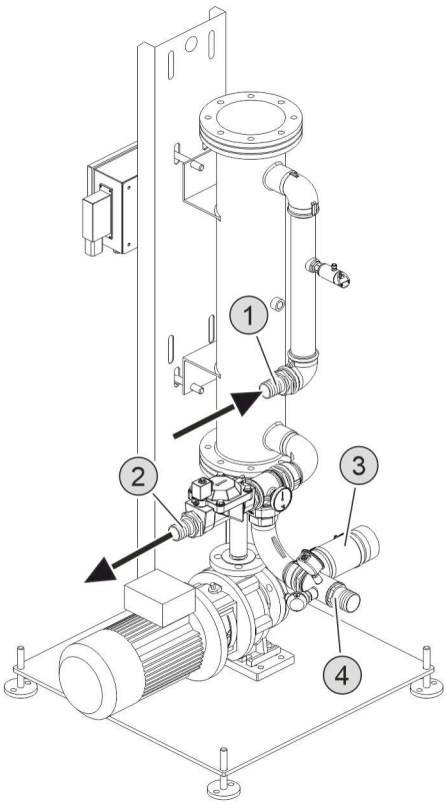


Fig. 24: Installing the WPS_700 – weight approx. 472 kg

1) Cooling water supply
2) Cooling water outlet
3) Pellet dewatering screen connection
4) Water hose connection

See the "Connection and consumption data" document included in the EREMA documentation for the fresh water and cooling water specifications.

2.12 Pellet drying centrifuge

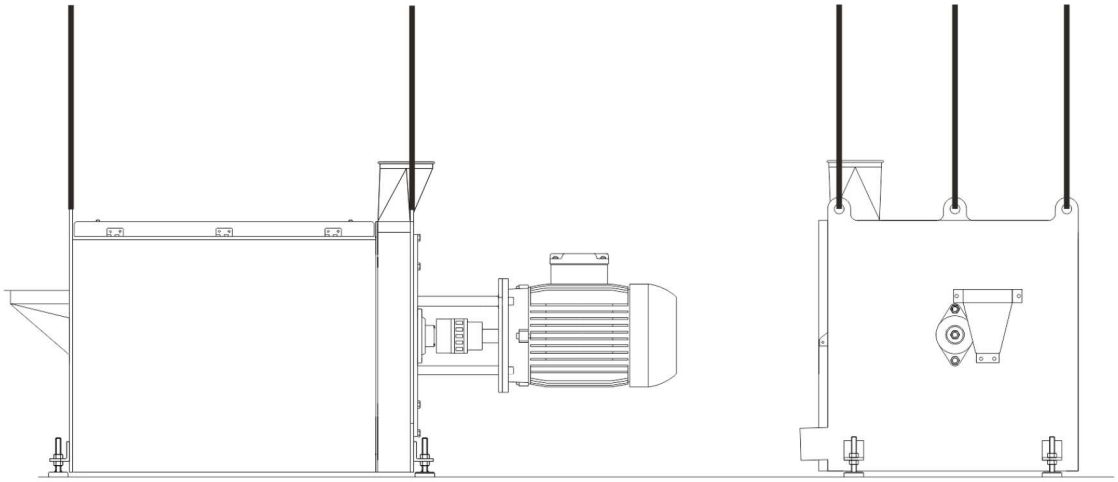


Fig. 25: Transport GZ_1000_M15 – weight approx. 595 kg

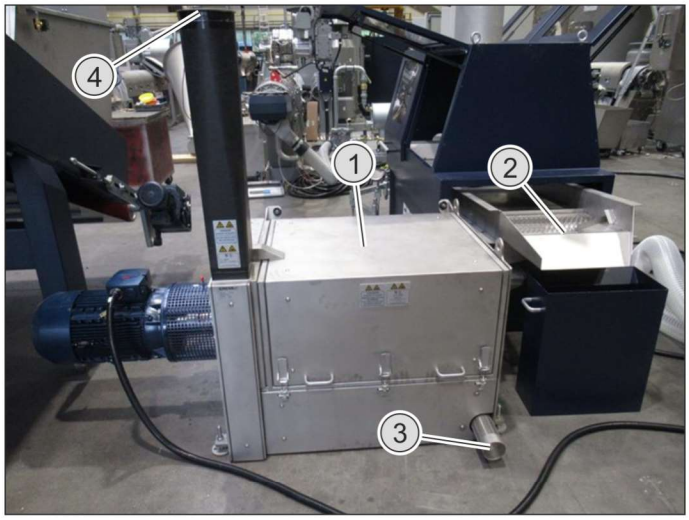


Fig. 26: Installing the pellet drying centrifuge

1) Centrifugal dryer
2) Pellet dewatering screen
3) Drain for extracted residual moisture
4) Screw-type clamp

► Pay attention to correct positioning.

► Position the sound absorbing cover.

⚠WARNING

Risk of injury due to rotating parts!

Pipelines and cover grids that are not fastened correctly can cause injuries.

► Only use screw-on clamps; do not use quick-release fasteners that can be actuated without tools.

2.13 Pellet transport system

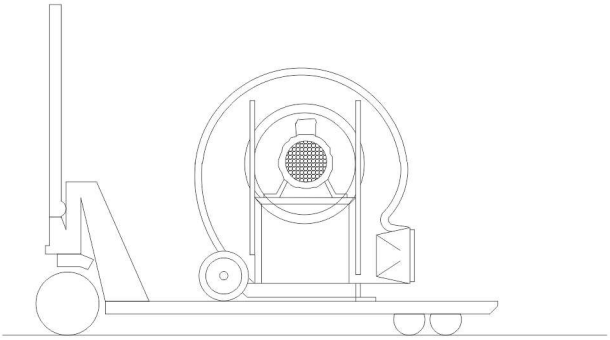


Fig. 27: Transporting the transport blower – weight approx. 74 kg

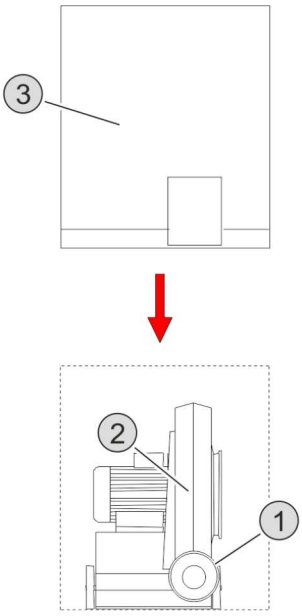


Fig. 28: Installing the sound absorbing cover – weight approx. 51 kg

► Use a hose clamp to fasten the spiral hose (1) to the transport blower (2).

► Lift the sound absorbing cover (3) over the transport blower.

⚠WARNING

Risk of injury due to rotating parts!

Pipelines and cover grids that are not fastened correctly can cause injuries.

► Only use screw-on clamps; do not use quick-release fasteners that can be actuated without tools.

2.13.1 Pipe routing for pellet transport

Lay the pipes along the shortest possible routes and use only the necessary number of bends and manifolds. This achieves the maximum delivery capacity.

The pipeline must be as tight as possible, as leaks reduce the delivery capacity. Leaks in the first part of the pipe downstream of the blower have the greatest impact on output. For this reason, older pipes and couplings should be placed at the end of the pipeline.

Always use pipes with the same diameter for the entire pipeline, as even a short piece with a different diameter can impair the delivery capacity.

For horizontal pipe routes, the pipes must be installed such that the seam is turned upwards or sideways. This reduces the wear and tear.

Route pipes only vertically or horizontally. Inclined pipe routing reduces the delivery capacity.

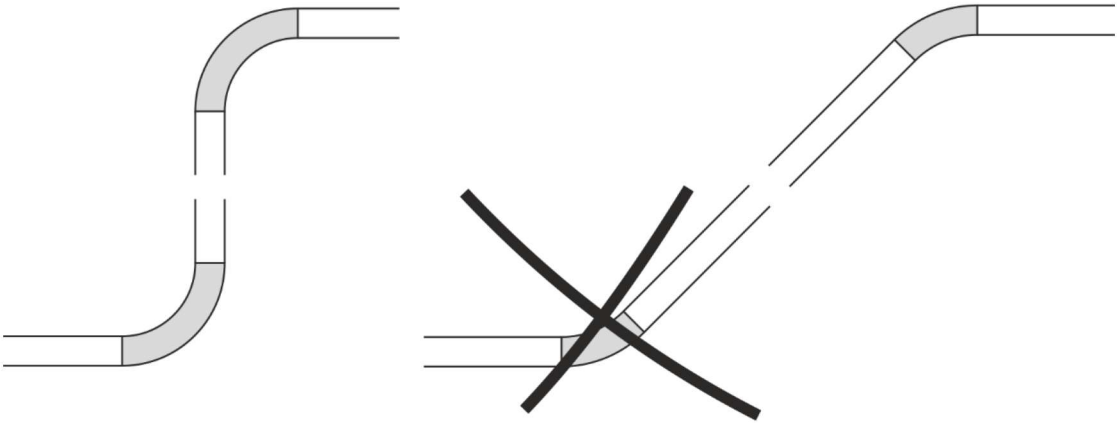


Fig. 29: Correct pipe routing

Terminate the piping with a cyclone or blowout head.

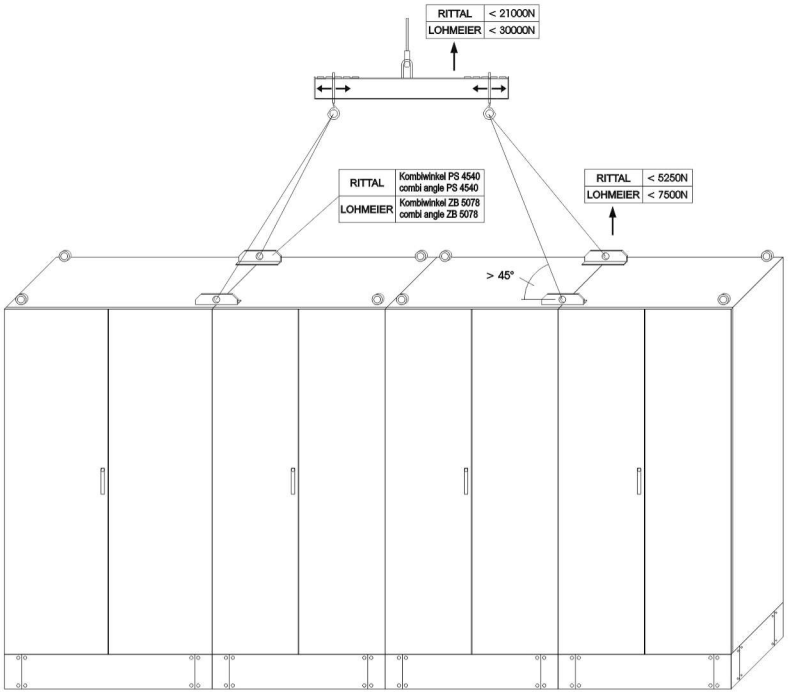
⚠WARNING

Danger due to electrostatic charge!

Electrostatic discharges can lead to adverse health effects. Furthermore, there is a risk of explosion or fire under suitable conditions.

► Silo, cyclones and pipelines must be grounded throughout by the operator.

2.14 Control cabinet



RITTAL		LOHMEIER	
max. Belastbarkeit max. load capacity		max. Belastbarkeit max. load capacity	
Winkel angle	pro Transportöse per eyebolt	Winkel angle	pro Transportöse per eyebolt
45°	5250N	45°	7500N
60°	7000N	60°	10000N
90°	---	90°	---

Fig. 30: Transport control cabinet – weight approx. 2180 kg

⚠WARNING

Danger of tipping over when lifting and setting up!

The control cabinet can tip over when lifting and setting up, which can lead to damage to the control cabinet and serious injuries.

► When lifting, balance the weight using the adjustable lifting beam.

Fix the control cabinet to the floor at the installation site using anchor bolts.

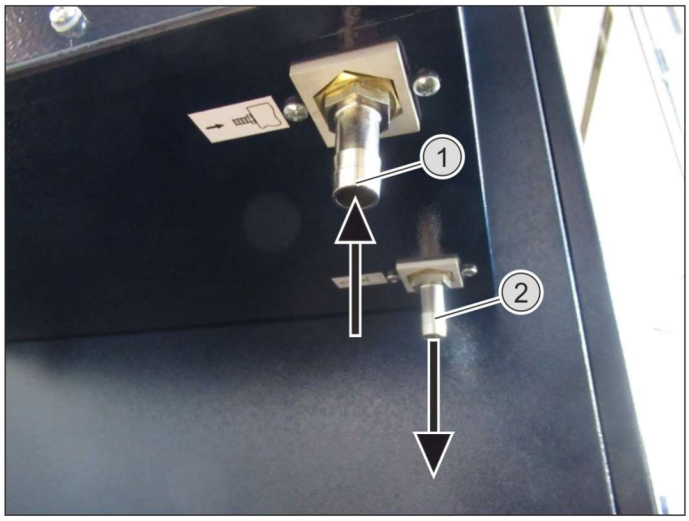


Fig. 31: Cooling water connection (control cabinet on the base frame)

1) Cooling water inlet 2) Cooling water outlet

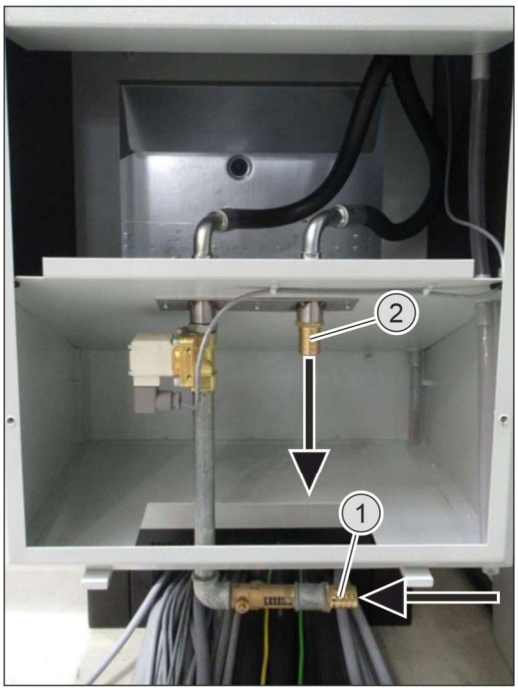


Fig. 32: Cooling water connection (external control cabinet)

1) Cooling water inlet 2) Cooling water outlet

2.15 Cable route

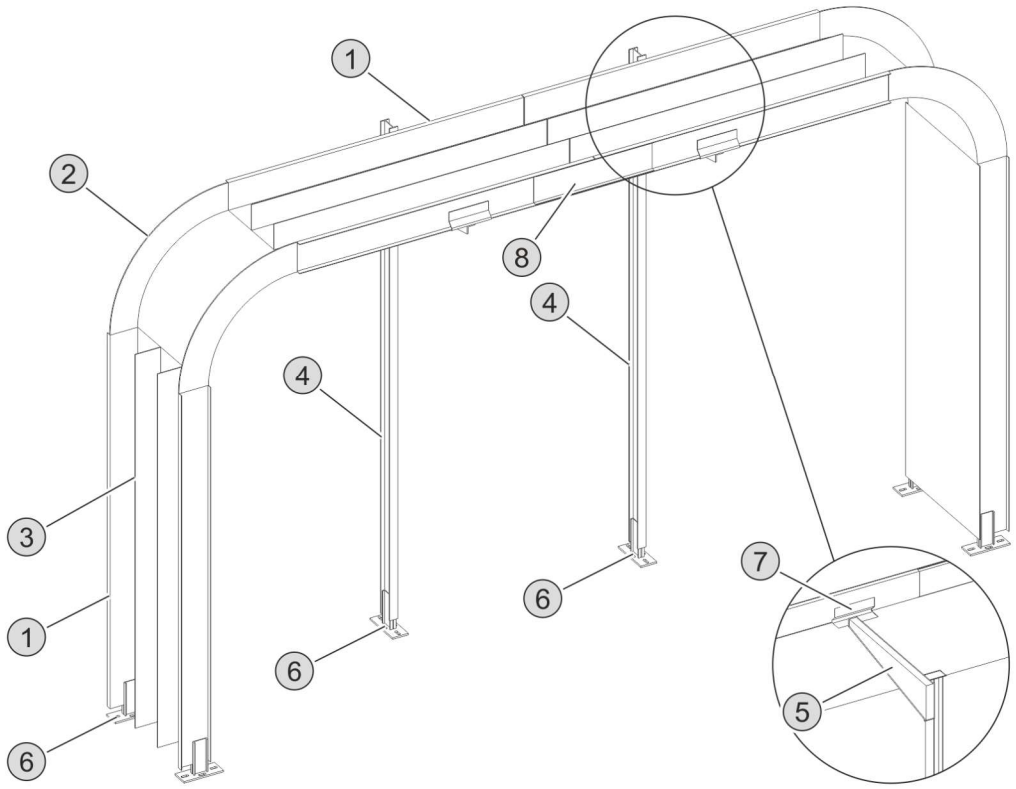


*Fig. 33: Cable route installation **

1) Wide span cable ladder
2) Wide span vertical elbow
3) Wide span divider
4) Wide span bracket holder
5) Wide span bracket
6) Head plate
7) Wide span tiebar support
8) Wide span connector

* only if present, or depending on the plant version

The wide span cable ladders (1) are supplied in lengths of 6m, wide span dividers (3) in lengths of 3m; they must be shortened appropriately on site.

Also see "Puk; Cable route" in the appendix.