

DRIVE AND STIRRING TECHNOLOGY for

FOOD | COSMETICS | PHARMA | CHEMICALS | AUTOMATION

Operating Instructions

eco Station 30 / eco Station 100 / eco-station 200 / eco Station IBC



We generate movement in special special environments

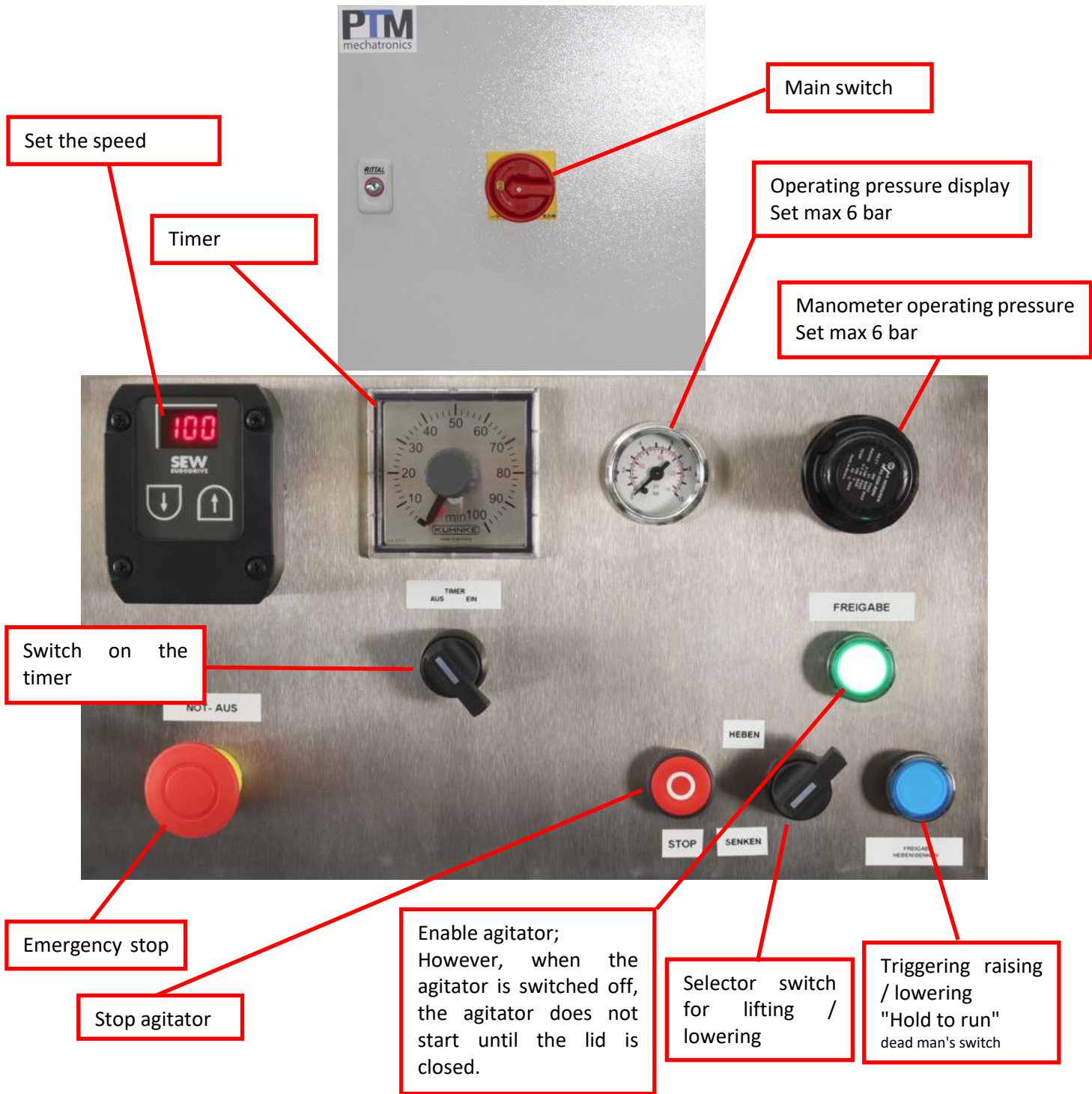
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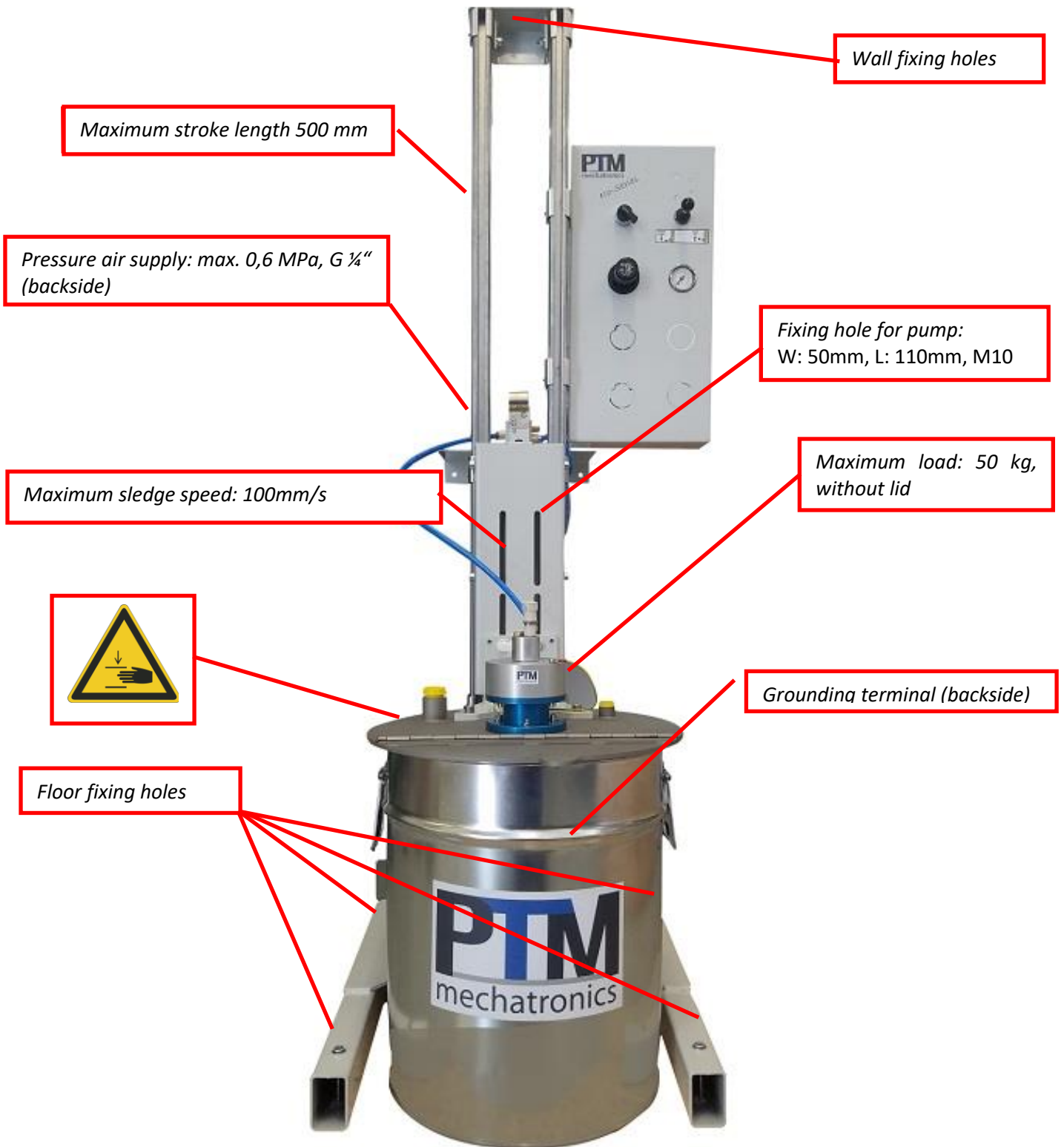
1 Quickstart

eco-Station with electric agitator

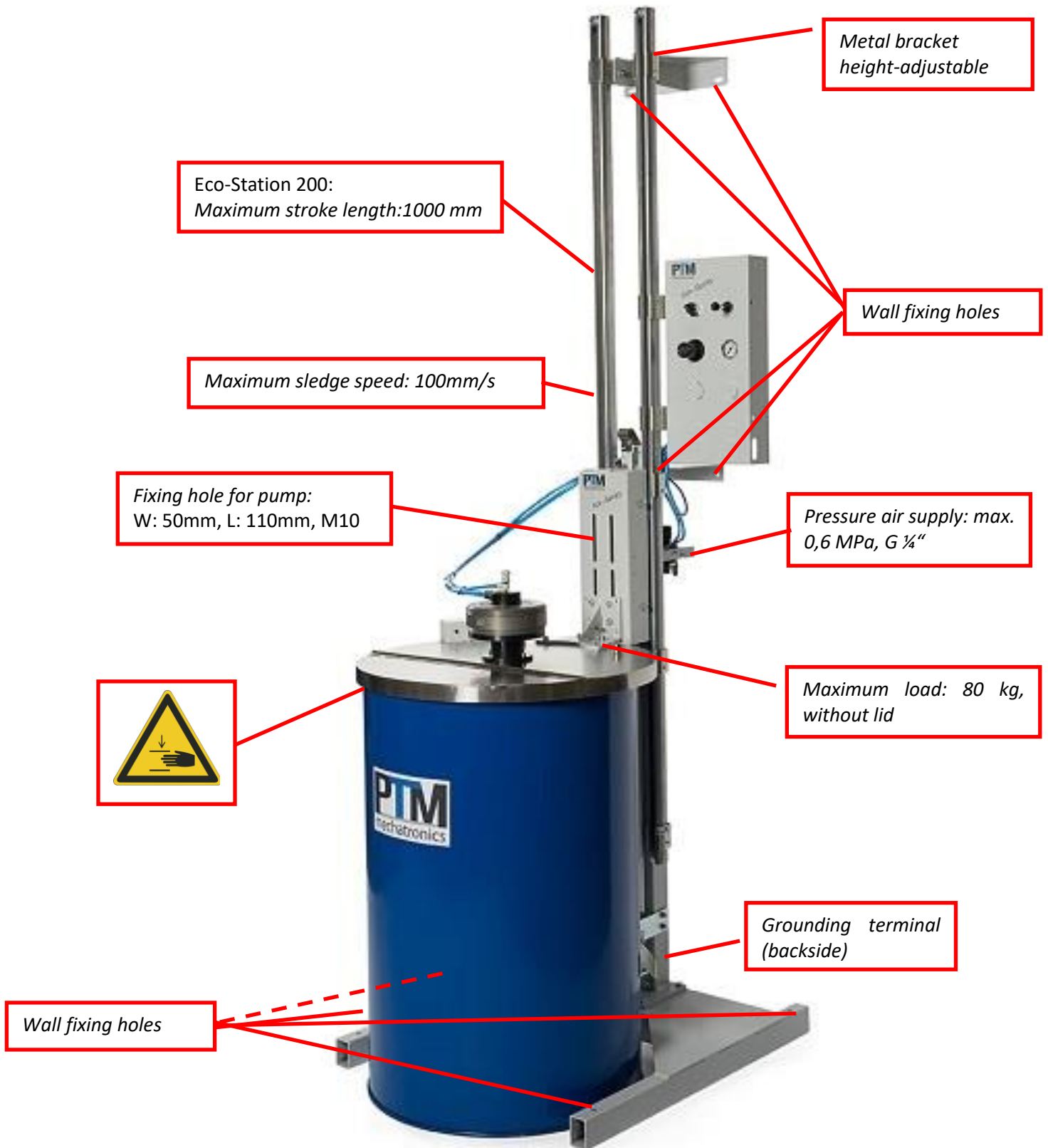


Eco-Station 30

(Shown: pedestral)



Eco-Station 200



Eco-Station IBC

v

Metal bracket height-adjustable

Eco-Station IBC:
Maximum stroke length: 1200 mm

Pressure air supply: max. 0,6 MPa, G 1/4"

Maximum sledge speed: 100mm/s

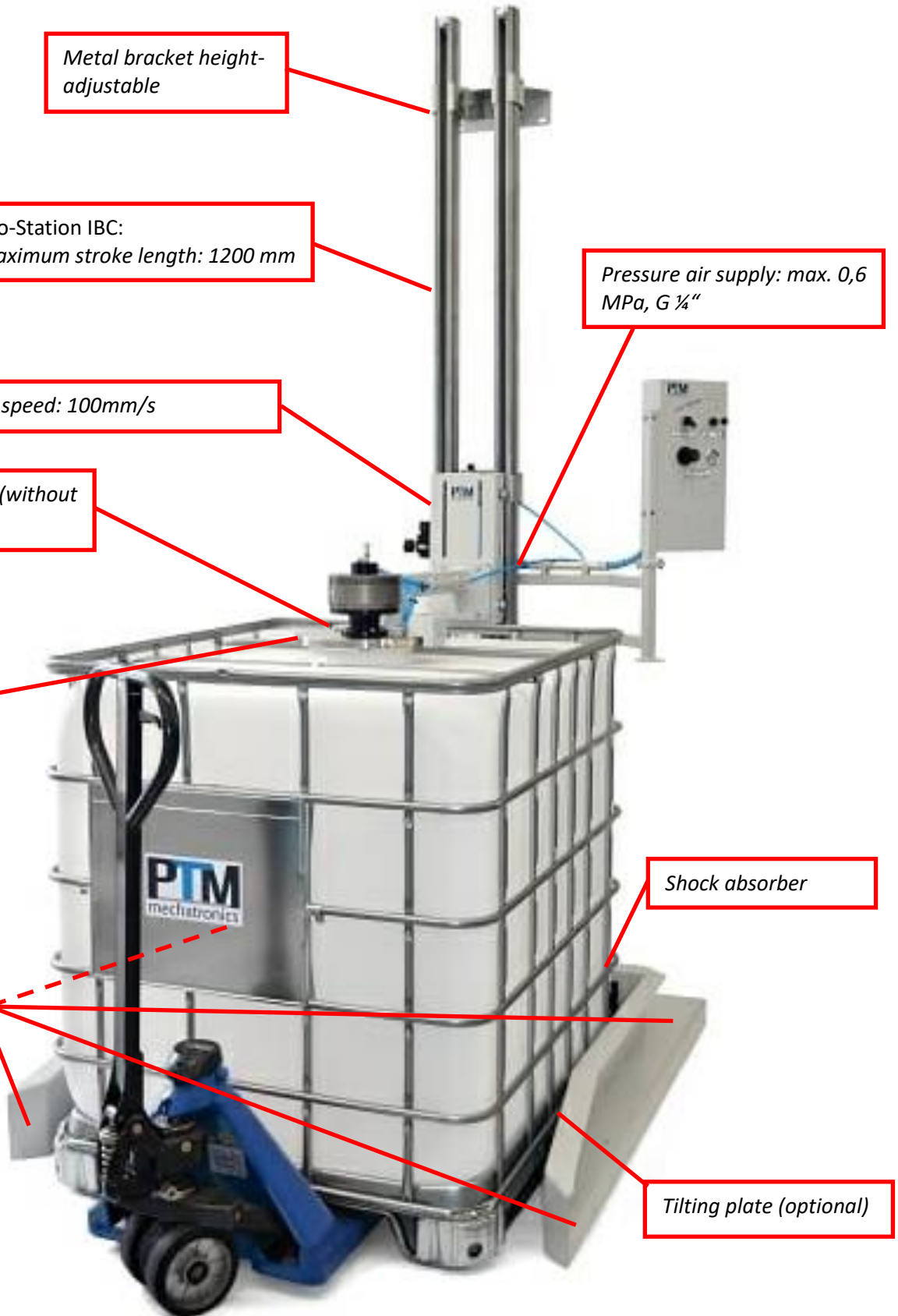
Maximum load (without lid):130kg



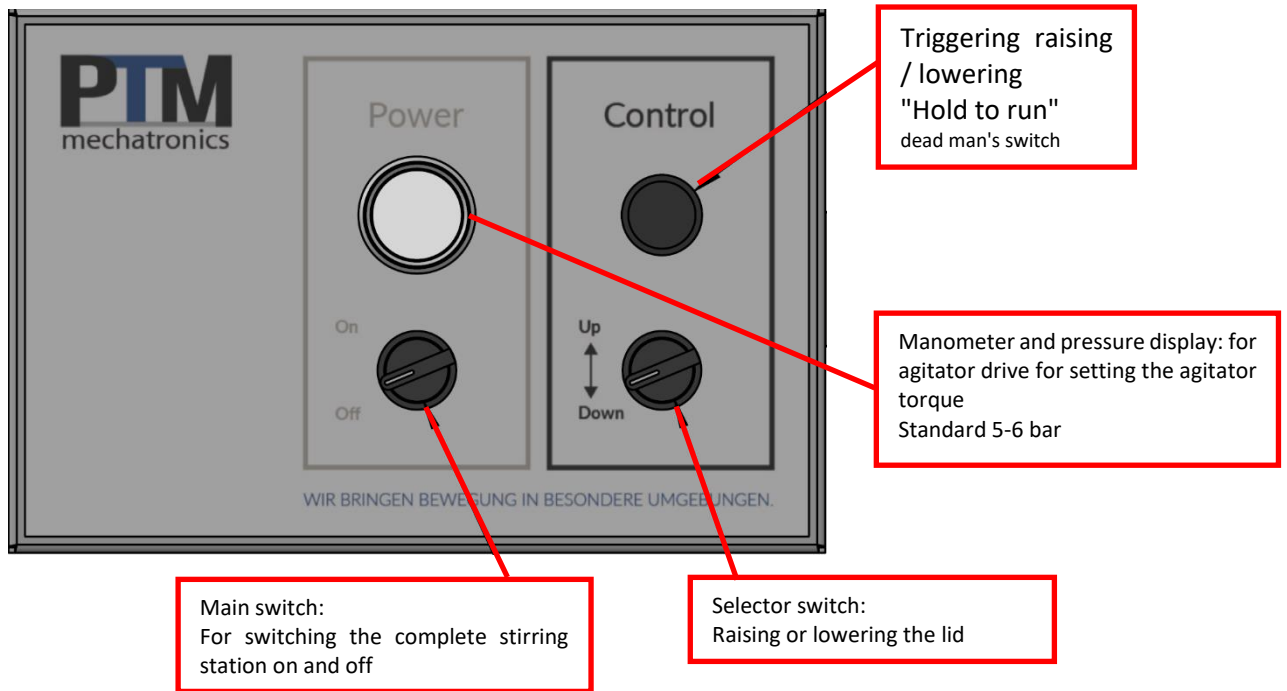
Shock absorber

Floor fixing holes

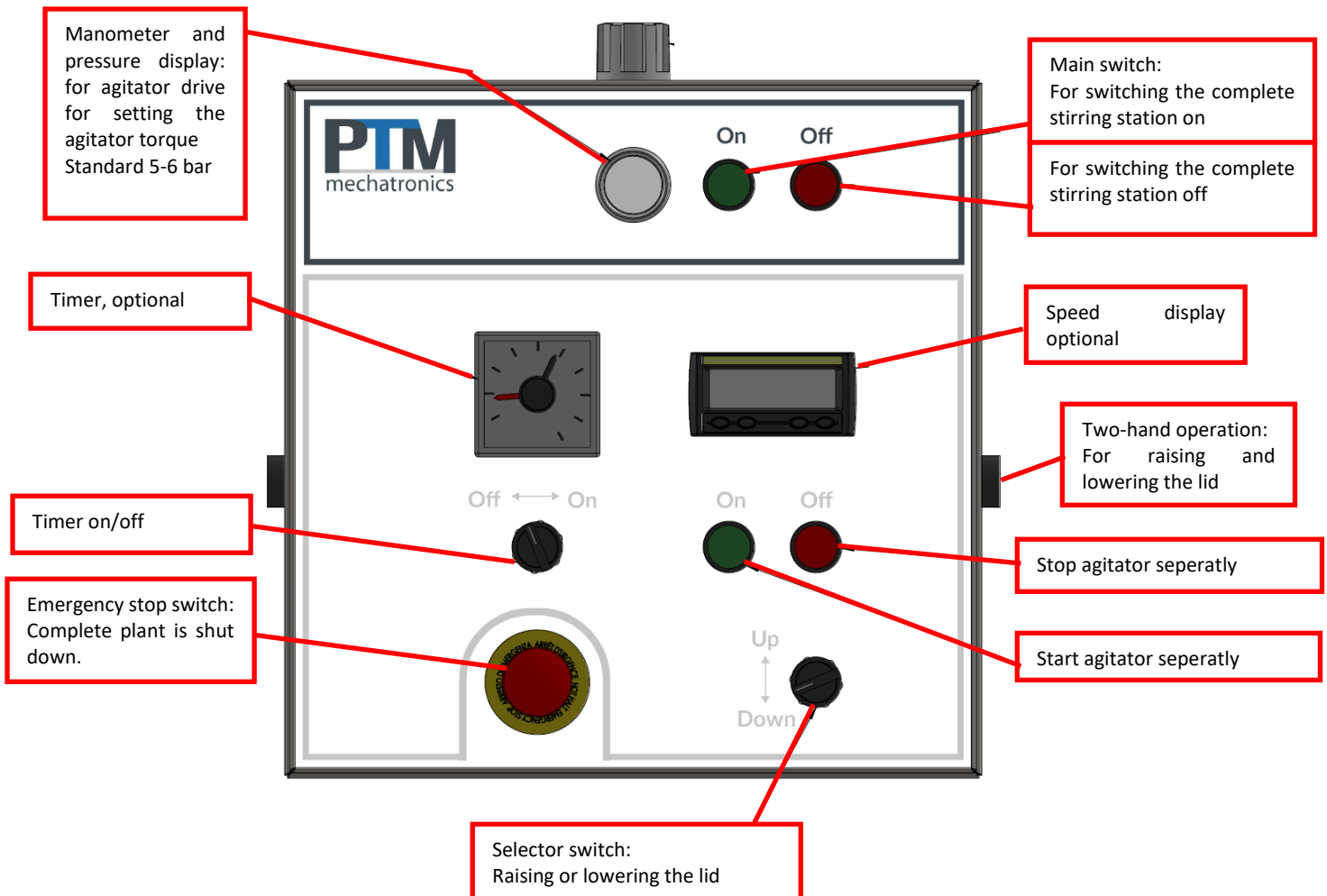
Tilting plate (optional)



eco-station standard control panel with „Hold to run“ – dead man’s switch



eco-station control panel with two hand switch



2 General information

2.1 About this guide

This operating manual contains important information on commissioning, safe operation, cleaning, maintenance and repair. It must be accessible to the operating personnel at all times.

Training of the operating personnel in accordance with these operating instructions is absolutely necessary to ensure that the device can be used safely and for its intended purpose.

2.2 Intended use



The Eco-Station 30/ Eco-Station 200/ Eco-Station IBC 1000 pneumatically operated lifting device is used to lift drum lids and/or pumps and accessories (e.g. level sensors, agitators, etc.) attached to the unit and lower them onto a container placed underneath. Any other use must be classified as improper and is therefore not permitted. It may only be used in industrial plants.


Lifting and lowering may take place at a maximum speed of 100 mm/s. Higher speeds are not permitted.

Always follow the technical data and the manufacturer's instructions. Technical modifications without the manufacturer's consent are not permitted. The intended use of the device also includes reading and understanding the notes and instructions in this document. This also refers to the device parameters described on the type label, which can also be found in →[chapter 5.1](#) of this manual.

Devices with an ATEX marking on the nameplate are designed to be installed and operated in potentially explosive areas.

The operator of this device must determine the potentially explosive areas in his production area and ensure that the device is only installed and operated in appropriately permitted areas.

CAUTION	
	<p>If any abnormalities occur in everyday operation, the device must be shut down immediately. Please contact PTM MECHATRONICS GMBH for further assistance before it is put back into operation.</p>
NOTE	
	<p>PTM MECHATRONICS GMBH shall not be liable for any damage resulting from improper use of this equipment.</p>

NOTE	
	Only use original PTM MECHATRONICS GMBH spare parts and accessories and do not override any safety devices (e.g. agitator switch-off, throttle valve)!

2.3 Fields of application

Eco-Station series hoists can be used for lifting and lowering lids with or without attachments (agitators etc.) in industrial plants (e.g. paint shops). Their ATEX classification allows them to be used in Zone 1 areas where there is a gas explosion hazard (see → [chapter 4](#) for more information).

2.4 Functional description

Eco-Station lid lifting devices are pneumatically powered. A pneumatic cylinder (double acting) moves a sledge on which a lid is mounted, up and down in a rail system. The maximum allowed travel speed is 100mm/s (for further information see → [chapter 4.4](#)). The lifting force and lifting height varies depending on the model (see also → [chapter 5.1](#)). Lifting and lowering is controlled by a 5/3-way pneumatic valve with dead man's switch (spring return, middle position closed).

Additional components (switch panel, agitator switch-off, etc.) can be used to conveniently control devices (agitator, pump, etc.) mounted on or next to the hoist (further information on accessories in → [chapter 2.8](#)).



2.5 Declaration of conformity

EC DECLARATION OF CONFORMITY

In accordance with EG-Guidelines for Machines 2006/42/EG, Annex II, 1.A

MANUFACTURER: PTM MECHATRONICS GMBH
Gewerbepark 1, 82281 Egenhofen

We herewith declare that the machine described below complies with the requirements of the above mentioned directive due to its design and construction as well as in the version marketed by us. In the event of a modification of the machine not agreed with us, this declaration will be null and void.

Designation: **Pneumatic lid lifting device**

Machine type: **eco-Station**

Applied harmonized standards:
DIN EN ISO 12100:2010


Other applied standards, specifications and guidelines:
BGR 500-29

EU DECLARATION OF CONFORMITY

In accordance with ATEX-Guideline 2014/34/EU

MANUFACTURER: PTM MECHATRONICS GMBH
Gewerbepark 1, 82281 Egenhofen

We hereby declare that the above mentioned machine, by virtue of its design and construction and in the version we have placed on the market, complies with the requirements of the above directive. In the event of a modification of the machine not agreed with us, this declaration will be null and void.

Marking:  II 2G Ex h IIB Gb

Applied harmonized standards:
EN ISO 80079-36:2016 | EN ISO 80079-37:2016

Other applied standards, specifications and guidelines:
DIN EN 1127-1 | DGUV 209-046 | BGR 104 | TRBS 2153

Egenhofen, 01.10.2021

2.6 Information about the manufacturer


PTM mechatronics GmbH
Gewerbepark 1,
D-82281 Egenhofen
www.ptm-mechatronics.com
info@ptm-mechatronics.com

2.7 Scope of delivery

The hoist is supplied in ready to use condition including

- ▶ Pedestal
- ▶ Hoist
- ▶ Air pressure regulator with pressure gauge
- ▶ Hoist control (dead man's switch)
- ▶ Lid mount
- ▶ Preparation for automatic agitator switch-off (only if no agitator switch-off with vessel detection is mounted)

delivered.

NOTE	
	The unit can also be supplied with a wall bracket instead of the stand. The device can also be delivered pre-assembled. In this case, please observe the assembly instructions in → chapter 6.2

Please also note the available accessories in →[chapter 2.8](#).


2.8 Accessories


A wide range of accessories is available for Eco-Station series devices, e.g. lids, control panels, wall brackets, sensors, etc. As experience has shown that this type of device must be adapted to the respective application, we recommend that this adaptation work to be carried out by your PTM MECHATRONICS GMBH contact person. Therefore we will not list any options here.


3 Safety


3.1 Explanation of symbols

The following markings and symbols are used in these operating instructions:


NOTE	
	Notes on the proper use of the machine. Non-observance can cause damage to the machine and its surroundings


CAUTION	
	Non-observance of the safety instructions can result in injuries

WARNING	
	Non-observance of the safety instructions can result in serious injuries or even death

DANGER	
	Non-observance of the safety instructions can in all probability result in serious injuries or even death

Context-specific pictograms are also used, e.g:

	Risk of accidents due to electrical voltage or electrostatic charge
---	---


	Danger of explosion due to explosive atmosphere
---	---

and others if necessary.

In addition, this document contains safety instructions as indicated below, e.g:

	Use breathing protection
---	--------------------------

	Wear safety shoes
---	-------------------

	Wear gloves
---	-------------

	Wear protective goggles
---	-------------------------




and others if necessary.

The type of protective equipment required depends on the material processed and must be defined by the operator of the plant. Information on the requirements for protective equipment (PPE, personal protective equipment) is also given in the safety data sheets of the materials to be processed or the paint manufacturers.

Please observe the guidelines valid for your country. Furthermore, the manufacturer's instructions and processing guidelines of the material conveyed/processed in each case must always be observed.

Please refrain absolutely from any operation that could impair the safety of the device and its operating personnel.

3.2 Safety Instructions

WARNING	
	The following safety instructions must be followed under all circumstances. Non-observance can cause damage to the device or injuries to the operating personnel!
WARNING	
	It is essential that you also observe the safety instructions in the operating manuals of any additionally installed equipment (pumps, agitators, etc.)
WARNING	
	Certain activities (e.g. pumping over, agitating liquids) can under certain circumstances lead to concrete explosion hazards. Please observe the separate instructions on explosion protection in →chapter 4

General information:

- ▶ The device may only be installed, operated and maintained by trained personnel. This operating manual must be available at all times
- ▶ Devices with an ATEX device identification and their installed components (e.g. controller, filter) must be grounded and integrated into the on-site equipotential bonding. You can find more information at **→chapter 4**
- ▶ The device may only be used for its intended purpose
- ▶ Use only hoses that are designed for the pressure range of this device
- ▶ Always wear appropriate protective equipment (e.g. breathing mask, safety goggles, gloves)
- ▶ To prevent accidents, keep the device and its immediate surroundings free of coating deposits
- ▶ Observe the applicable accident prevention regulations
- ▶ Never mend material hoses
- ▶ Observe the regular maintenance intervals. You can find more information in the **→chapter 9**
- ▶ Never seal leaks by hand or by wrapping around them
- ▶ Memorize escape routes and locations of emergency supply facilities
- ▶ Become familiar with first aid measures
- ▶ Lifting of persons or loose equipment is not permitted
- ▶ Never touch the moving parts of the device (e.g. U-profile slide) or of any additionally mounted devices (e.g. agitator shaft).
- ▶ Before installation/maintenance, the device must be brought into the lowered position and depressurized
- ▶ Never exceed the maximum permissible pressure of the hoist and its accessories
- ▶ Never step under suspended loads

When using a paint spray gun:

- ▶ Never reach into the spray jet of the gun. There is a danger of liquid injection
- ▶ Never point the spray jet of the gun at people or animals
- ▶ Secure the spray gun against unintentional operation at every interruption of work
- ▶ Before installation/maintenance, the device must be depressurized. More information can be found in →[chapter 8](#) or [9](#)
- ▶ Do not coat any unearthed parts

Mobile installation (only with corresponding device version):

- ▶ Make sure that the device cannot tip over and secure it against rolling/slipping
- ▶ Never pull mobile devices by the material hoses to another place
- ▶ Ensure that the device is properly grounded. More information can be found in →[chapter 4](#)
- ▶ Please observe separate safety instructions for Eco-Stations in mobile version

Safe ATEX working environment:

- ▶ The floor of the working area must be designed to be dissipative ($R < 108 \text{ Ohm}$ according to TRBS 2153)
- ▶ The shoes of the operating personnel must be conductive ($R < 108 \text{ Ohm}$ according to TRBS 2153)
- ▶ When working with manual paint spray guns, the operating personnel must wear dissipative gloves (contact resistance $< 10^8 \text{ Ohm}$ according to TRBS 2153)
- ▶ The operating personnel should wear dissipative clothing unless the dissipative capacity is ensured by appropriate footwear and gloves (specific surface resistance $< 5 \times 10^{10} \text{ Ohm}$ according to TRBS 2153)
- ▶ Hose lines and equipment (e.g. paint spray guns, fittings etc.) must be designed for the maximum material pressure specified on the type plate
- ▶ During the coating process, no ignition sources (e.g. open flames, sparking work, hot surfaces) may be in the vicinity
- ▶ The operating personnel have to wear PPE (personal protective equipment, gloves, safety goggles, respiratory protection if necessary)

Tubing:

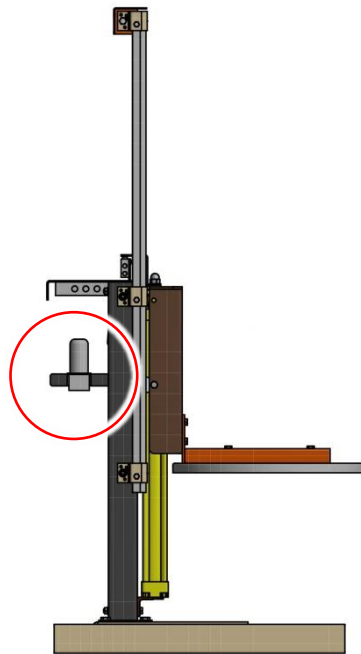
- ▶ The chemical resistance to the medium to be processed must be ensured
- ▶ The hose must be suitable for the maximum possible material pressure that the pump can generate
- ▶ The following information must be visible on the hose: Manufacturer, permissible operating pressure (p_{DYN}), date of manufacture
- ▶ Hydraulically stressed hoses should be replaced in accordance with BGR 237 after 2 or 6 years at the latest, depending on the stress
- ▶ Never pull mobile devices by the material hoses to another place
- ▶ Do not lay hoses on sharp edges, in busy places, on moving parts or hot surfaces
- ▶ Hoses for coating tasks must be electrically conductive ($R < 106 \text{ Ohm}$)

Handling of hazardous liquids:

- ▶ The safety and processing instructions of the manufacturer according to the safety data sheet or technical data sheet must be observed
- ▶ The operating personnel must wear PPE in accordance with the requirements laid down by the manufacturer
- ▶ Ensure adequate ventilation of the processing site

3.3 In case of emergency

The Eco-Station has an air pressure regulator on the back (see picture). Interrupt the compressed air supply by turning the air regulator counterclockwise until no more pressure is displayed on the pressure gauge.


**NOTE**

It is recommended that the compressed air supply to the device is designed in a way so that it can easily be disconnected from the compressed air supply at any time. For this purpose, e.g. a commercially available compressed air shut-down valve can be used, which is installed at an easily accessible and appropriately marked location near the device.

In case of injury (e.g. eyes, swallowing of spray material), seek medical attention immediately and have the safety data sheet or material container with the material designation ready.

3.4 Periodic inspections (operator obligations)

The device and its connected components must be checked at least every 12 months by a competent person (e.g. PTM MECHATRONICS GMBH technician) to ensure that they are in a safe working condition (basis: ZH 1/406 or BGR 500, part 2, chapter 2.36)

NOTE	
	The test badge attached to the device serves to identify the next test due and should not be removed.

In addition, devices that are operated in potentially explosive atmospheres must be checked for their explosion-proof condition by a competent person at least every 3 years (Section 3, points 5.1 and 5.2 BetrSichV). The test results must be documented.

Further information on the above inspection intervals can be found in the BetrSichV.

3.5 Alterations and modifications

Unauthorized modifications and alterations, especially concerning safety devices (e.g. safety valve, pressure relief device, trigger safety) are not allowed and will lead to the expiration of the warranty or liability. This also applies to spare parts not supplied or manufactured by PTM MECHATRONICS GMBH. The device limits (e.g. pressure range, temperature range) must be strictly observed.

4 Explosion protection

4.1 General Information

The device fulfills the requirements of the ATEX Directive 2014/34/EU for the group, device category and temperature class indicated on the type plate.



The device is classified in device group II (marking "II") and is suitable for Ex zone 1 (marking "2G", gas atmosphere).

It is a non-electrical device (marked "Ex h").

Substances of explosion groups IIB and IIA (marking "IIB") can be processed.

The device complies with the Equipment Protection Level (EPL) Gb (gas atmosphere, zone 1)

The operator of the device is obliged in accordance with § 6 GefStoffV to create an explosion protection document for his work areas, including the determination of specified potentially explosive endangered atmospheres. The designation on the type plate of the device to be installed must correspond to the requirements of the particular explosion hazardous area.


If the device is operated in a machine group at the same location, the ATEX markings on all other devices must be checked to see if they are also suitable for the respective area.


NOTE	
i	If the Eco-Station is to be operated with add-on parts (e.g. agitator, pump, level sensor, etc.), the operator must check in advance whether these are also suitable for the planned location of use and whether new potential sources of ignition are created due to the assembly. The declaration of conformity according to the ATEX directive of the Eco-Station does not cover any add-on parts.

4.2 ATEX Grounding/ potential equalization of the Eco-Station

It is important that the device is grounded before use. For this purpose, a special grounding terminal is provided on the rear panel near the floor. Use a suitable grounding cable ($R \leq 10^6$ Ohm). If the grounding terminal is defective, it must be replaced immediately (Art.No. 68350506). In this case please contact the company PTM MECHATRONICS GMBH.




WARNING	
	<p>In principle, the complete process starting with the material container and ending with the point of delivery should be grounded and integrated into the on-site equipotential bonding to avoid the generation of electrostatic charges.</p>

WARNING	
	<p>The unit can be delivered pre-assembled, so that it can be easily finalized and installed on site by a third party. If the unit is not commissioned by PTM MECHATRONICS GMBH, the installation instructions in →chapter 6.2 must be strictly observed! Please also use only the supplied mounting materials and use them as prescribed!</p>

4.3 Safe use of ATEX attachments and ATEX equipment

Eco-Station units can be equipped with a variety of add-on components and devices (agitators, level sensors, pumps, etc.). Since no general statement can be made regarding their suitability for Ex areas, it is the responsibility of the user to assess to what extent the respective devices are suitable for the respective Ex area.

WARNING	
	<p>In general, it must be checked before commissioning whether the combination of Eco-Station - attachment(s) results in one or more new potential ignition sources (ignition source analysis). For support please contact your PTM MECHATRONICS GMBH contact person.</p>

4.3.1 ATEX Grounding/Equipotential bonding

All devices that are combined with the Eco-Station must be grounded separately. Please use the grounding terminal of the respective device and follow the instructions in the

corresponding operating manual. It is not permitted to combine several devices on a single ground terminal.

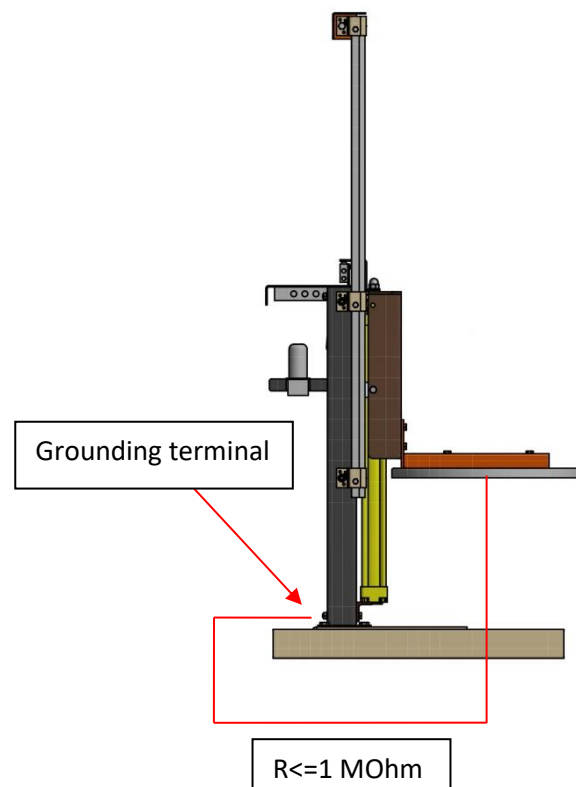
When grounded, it must be ensured that all devices, including the Eco-Station, are included in a common potential equalization on site to avoid dangerous potential differences. If necessary, consult a qualified electrician.

WARNING

The operation of non-grounded accessories mounted on the Eco-Station, such as agitators, can generate a dangerous electrostatic charge that can become a potential ignition source and must therefore be avoided at all costs!

4.3.2 ATEX Verification of the grounding activity (final assembly by the customer)

The following grounding measurement is already performed by PTM MECHATRONICS GMBH at the factory. However, if the Eco-Station is only pre-assembled at the factory and final assembly is carried out by the customer, the continuity of the grounding must be confirmed again with a suitable measuring device (multimeter) after assembly.




Measured values during final assembly by the customer

	Measurement cover - ground terminal on the spar
Date of measurement	
Measured value [Ohm]	

4.4 Lifting speed

The lifting speed is preset to 100mm/s at the factory before delivery. If, however, the operator installs additional parts on his own (e.g. pump, agitator, etc.), the lifting speed may have to be readjusted after installation due to the higher weight of the lifting load. We recommend to fix the throttle screws after the final adjustment with thread lock lacquer.

WARNING	
	The lifting speed (lifting and lowering) must not exceed a maximum of 100 mm/s . This can be adjusted at the throttle valves on the pneumatic cylinder. Higher speeds endanger both the explosion protection and the safety of the operating personnel.



Lower throttle





Upper throttle


This instruction label is located near the upper throttle and shows how to adjust:

Turn clockwise: throttle

Turn counterclockwise: Relax

DROSSELEINSTELLUNG ADJUSTING CHOKING COILS	
DROSSELN CHOKE  ENTSPANNEN RELEASE	
	OBERE UND UNTERE DROSSEL SO EINSTELLEN, DASS DIE MAXIMALE HUB- UND SENKGESCHWINDIGKEIT 100MM/S NICHT ÜBERSCHREITET! UPPER AND LOWER CHOKING COILS ARE TO BE ADJUSTED SO THAT A MAXIMUM LOWERING AND RAISING SPEED OF 100MM/S CANNOT BE EXCEEDED!

If any changes in the lifting/lowering speed during operation are noticed, it must be readjusted if necessary.

NOTE	
	A fixed throttle orifice plate is installed in the lower cylinder inlet in addition to the adjustable one. It limits the maximum possible travel speed and provides additional protection against lifting or lowering too quickly. It must not be removed.

5 Technical data

5.1 Device parameters

Parameters	Eco-Station model		
	30	200	IBC
Lifting force max. [kg]*	50	80	130
Stroke length max. [mm]	500	1000	1200
Lifting speed max. [mm/s]	100	100	100
Max. compressed air supply [MPa]	0,6	0,6	0,6
Compressed air connection (quick connector, outer diameter, standard) or at your choice	8	8	8

*calculated lifting force without lid

NOTE	
i	The above values must not be exceeded, as this may lead to malfunctions in the function of the Eco-Station and impair operator safety.

Tank heights

The following container heights can be covered with the standard version of the Eco-Station (each calculated with base and lid thickness 5mm)

Model	Minimum [mm]	Maximum [mm]
Eco-Station 30	380	460
Eco-Station 200	870	960
Eco-Station IBC	must be adapted to the respective IBC	

Container diameter

The following container diameters can be covered with the standard version of the Eco-Station (lid adjustment is always necessary!):

Model	Minimum [mm]	Maximum [mm]
Eco-Station 30	220	380
Eco-Station 200	590	590
Eco-Station IBC	must be adapted to the respective IBC	

Customizations on request. If you are unsure whether your container fits under a Eco-Station, please contact your PTM MECHATRONICS GMBH contact person.

5.2 Safety devices

Eco-Station hoists are equipped with throttle valves that limit the travel speed of the lid to a maximum of 100 mm/s. They must not allow a faster operating speed. In addition, an orifice is installed in the lower cylinder inlet, which additionally limit the travel speed and further ensure that in case of severe damage (e.g. shearing off the complete air supply assembly at the cylinder) the lid does not drop uncontrolled (unbroken fall).


In addition, the lifting control is carried out by a 5/3-way pneumatic valve with dead man's control.


Furthermore, all Eco-Station models are equipped with an anti-sink device that prevents the air cylinder from dropping uncontrolledly in the event of a burst hose.



Lower throttle with lowering protection/ upper throttle internal orifice

Lifting control valve

WARNING	
	<p>These and any other safety devices may neither be changed nor completely removed. This leads to the immediate expiration of the declaration of conformity.</p>

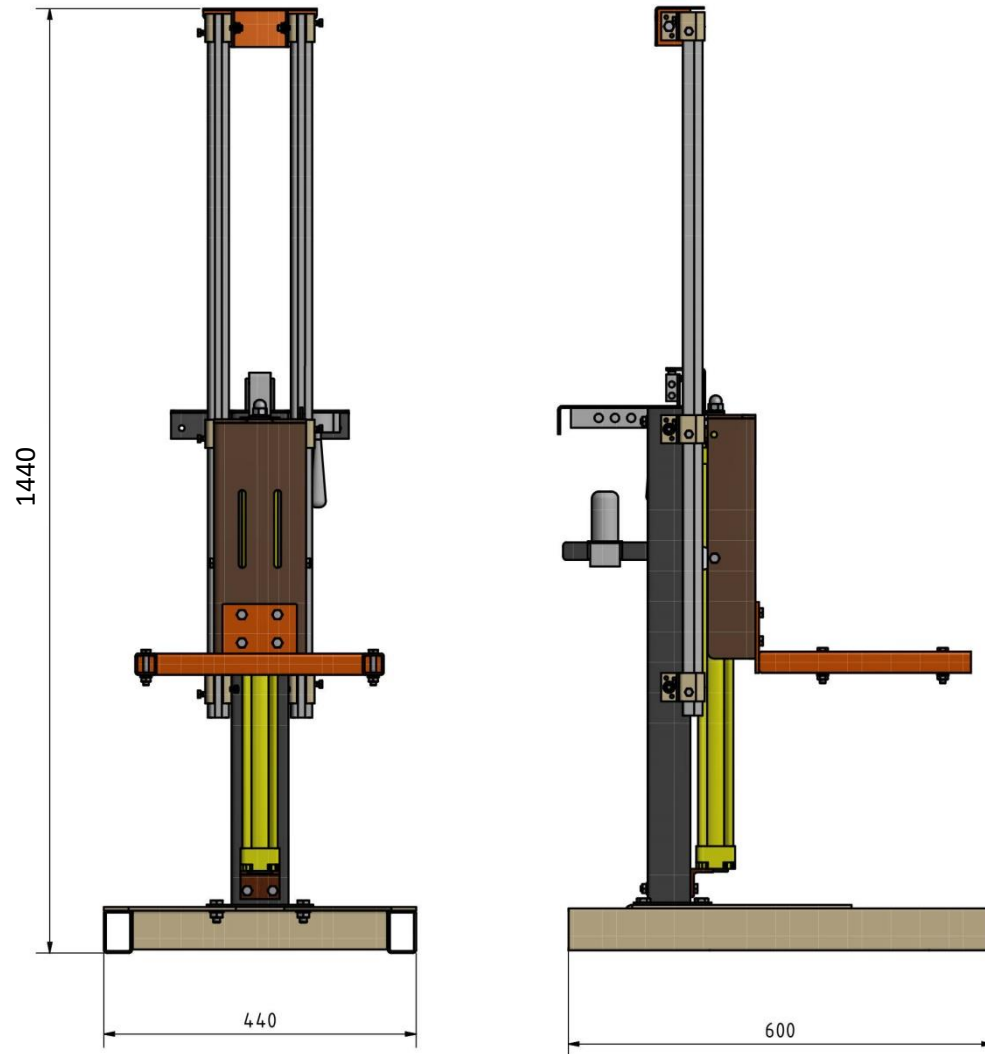
WARNING	
	<p>Agitators must be secured by a suitable automatic agitator shutdown device so that they are automatically switched off when lifted. The operation of agitators without such installations is not recommended.</p>

5.3 Mounting position

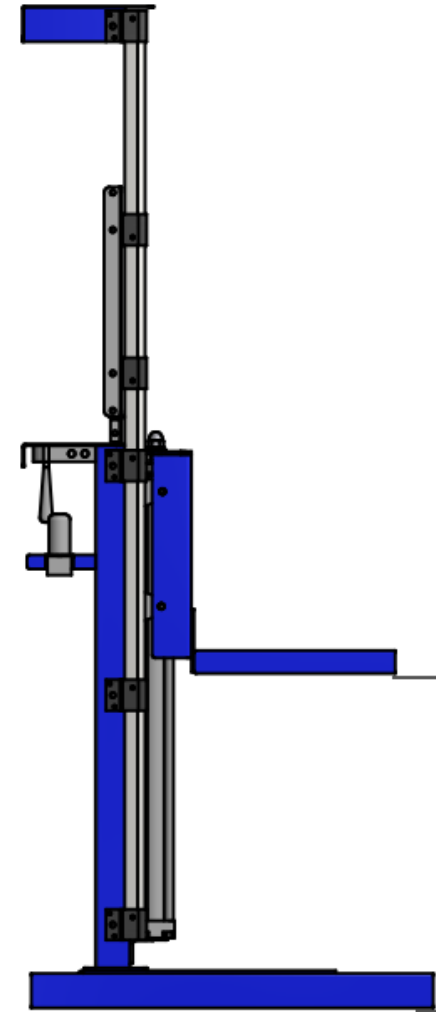
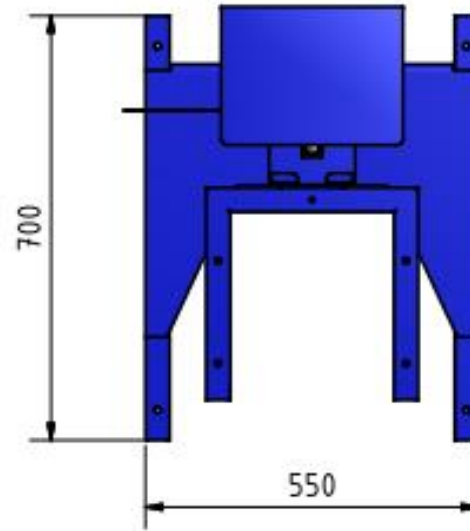
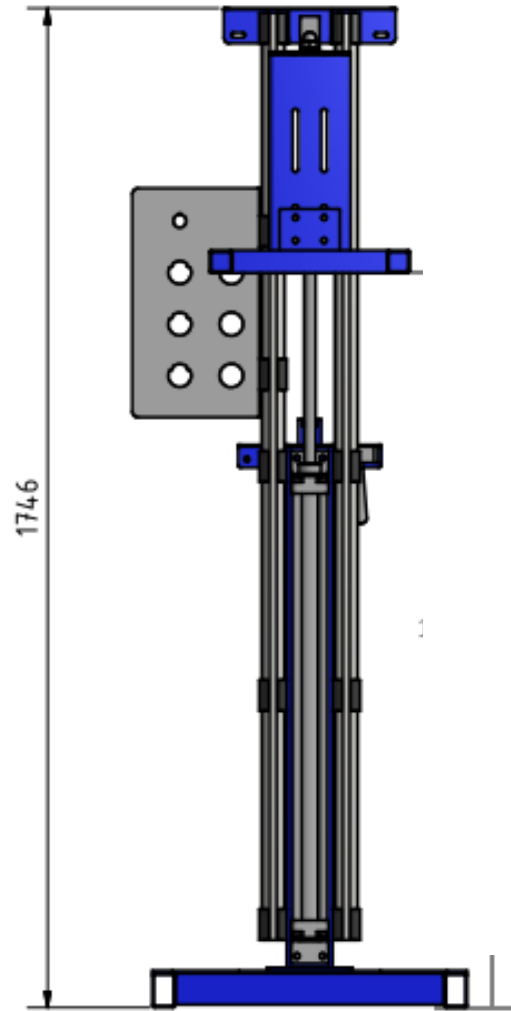
Eco-Station hoists may only be operated upright. We further recommend wall mounting with heavy setups or floor anchoring with unstable/uneven surfaces.

5.4 Dimensions

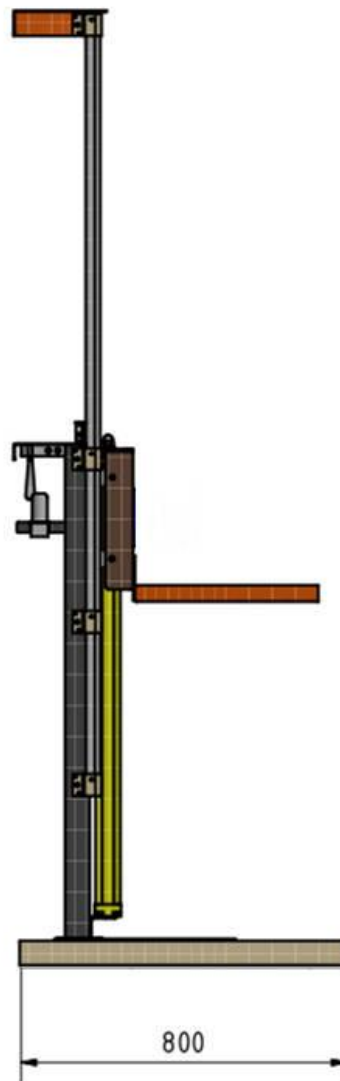
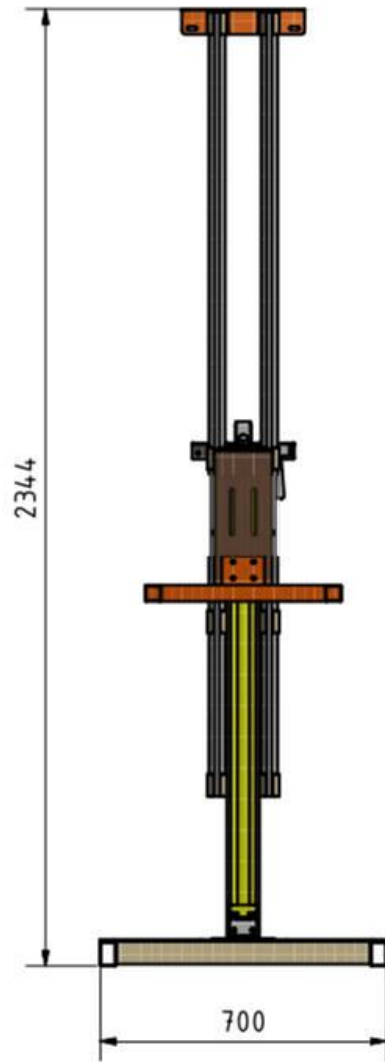
Eco-Station 30



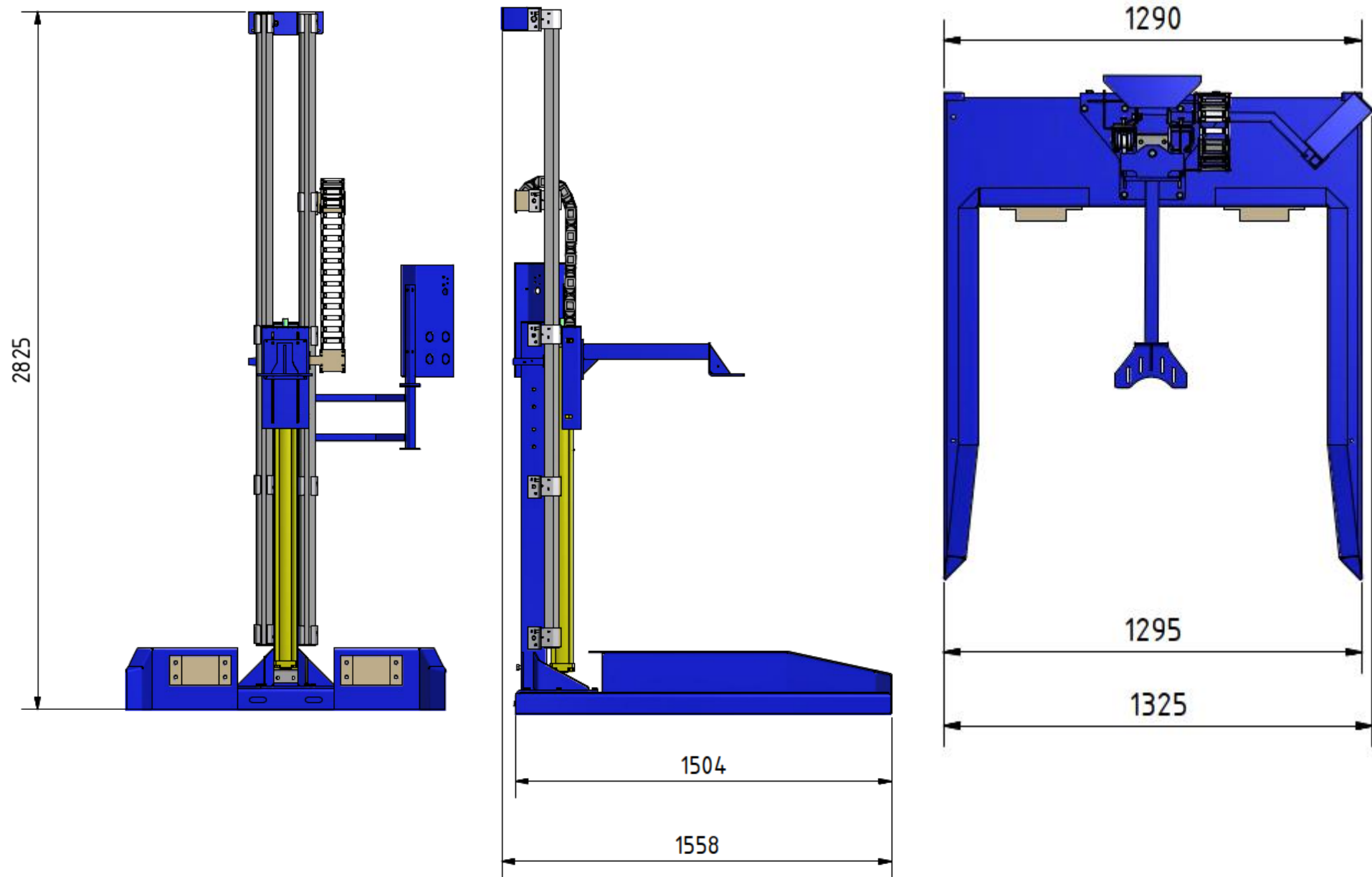
Eco-Station 700



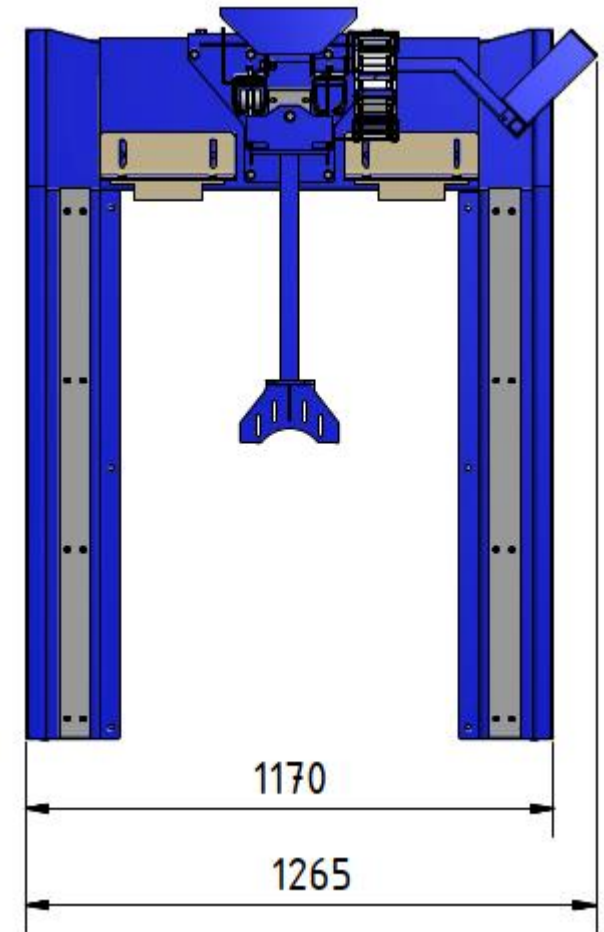
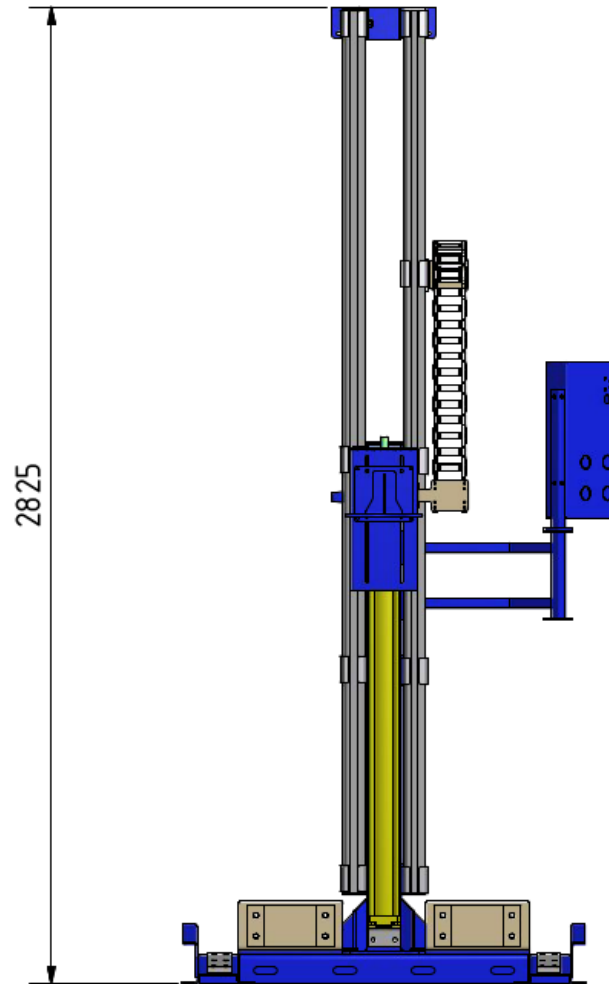
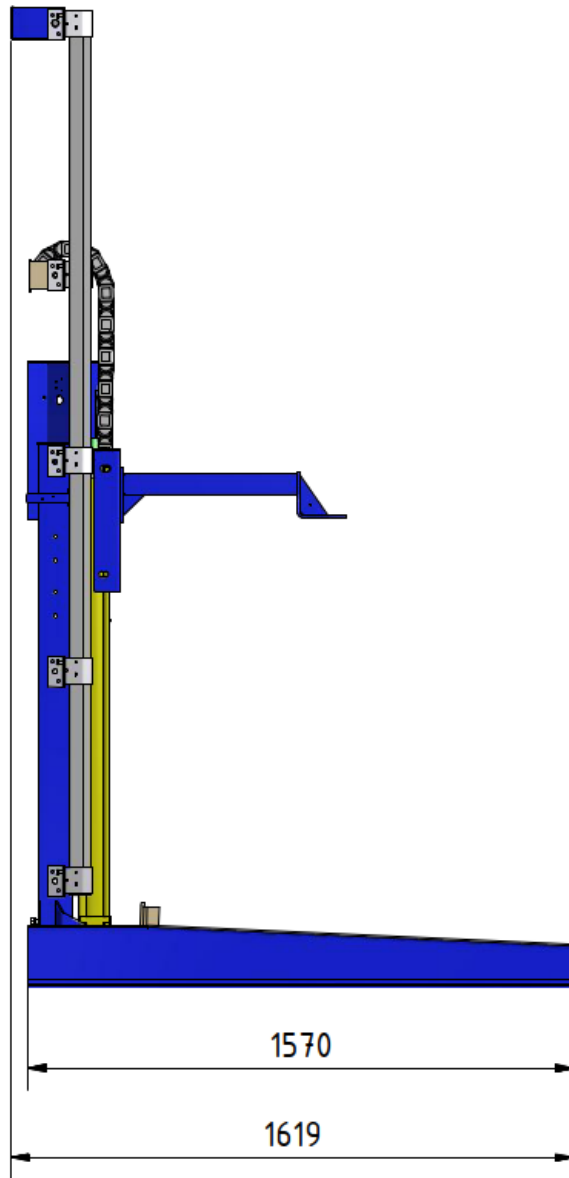
Eco-Station 200



Eco-Station IBC (standard base)



Eco-Station IBC (inclined base)



6 Installation

This chapter will guide you step by step through the assembly/installation process. Please follow the described procedure so that you can put your Eco-Station hoist into operation safely and quickly.

NOTE	
i	If you are already familiar with this type of device, you will find a Quickstart Guide at the beginning of this document in → chapter 1 with the most important points to be observed for installation/commissioning. We recommend that at least the Quickstart instructions are always available within reach of the hoist in order to be able to quickly answer any questions that may arise.

NOTE	
i	Please read this chapter completely before starting installation or commissioning. This prevents errors during installation.

Only install and use the Eco-Station in suitable rooms, e.g. paint supply rooms with their own technical ventilation (DGUV 209-046). Also observe the regulations regarding the storage/processing of hazardous substances (GefStoffV, TRGS 510).

6.1 Unboxing/Inspection

Before starting installation, you should ensure that the Eco-Station is optically in perfect condition and does not show any damage, e.g. due to transport. Check the scope of delivery in →**chapter 2.7** or on the basis of your order confirmation for completeness and whether any accessories ordered are also complete and free of damage. If any parts are defective or missing, please contact PTM MECHATRONICS GMBH customer service immediately (Tel +49 911 34 77 0) and abort the installation.

NOTE	
i	Every Eco-Station hoist is piece-tested according to a standardized procedure before it leaves the factory. The test process can be traced at any time using the serial number stamped or printed on the type plate.

The following notes are located directly on the device:

- ▶ Maintenance/test badge with the next test date according to BGR 500
- ▶ Type plate
- ▶ "tested" sticker, documentation of the output control
- ▶ Serial number stamped onto the spar or on the type plate

6.2 Assembly

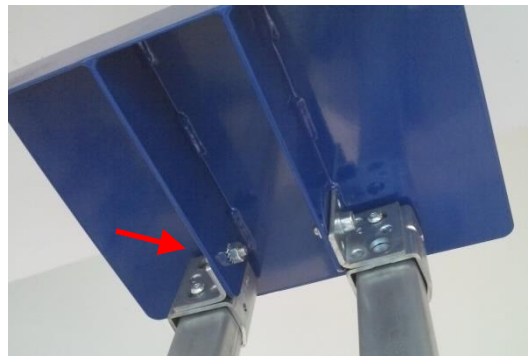
NOTE	
i	Depending on the scope of delivery, parts may have to be mounted to the Eco-Station before it can be put into operation (e.g. a control panel). In case of pre-assembly (e.g. Eco-Station IBC 1000) the rails and the lid must be mounted and aligned. It may also be necessary to install the lid on site.

Required tools:

- 1X open-end wrench SW 10
- 1X open-end wrench SW 13
- 1X allen key size 3
- 1X allen key size 4
- 1X allen key size 6

Step 1: Mounting the rails

Usually Eco-Station hoists are delivered with retracted rails to reduce the loading height. First loosen the clamping screws on the back of the cover plate clamps with the Allen key size 4 and remove it (if not supplied separately).



Then also loosen the remaining clamping screws and grub screws at the rail clamps along the spar with an Allen key size 4 and 3 so that the rails can be moved.

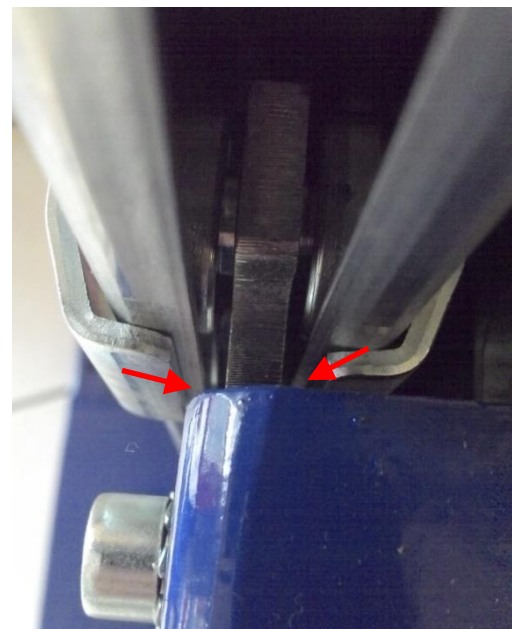


Now push both rails into position, observing the glued-on assembly instructions, and fix them handtight over the clamping screw (Allen key size 4) at this clamp only.



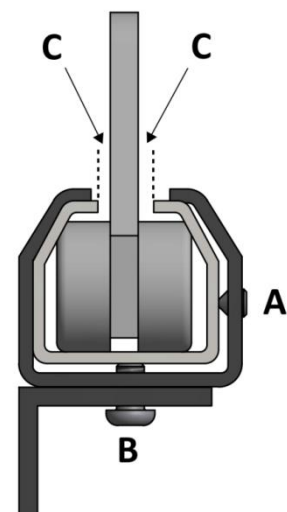
Now the rails must be aligned in such way that the carriages of the U-profile are positioned as centrally as possible in the rails and do not rub against the sides.

This is done on the one hand by the grub screws (A, next picture) in the outer cheeks of the rail clamps, and on the other hand by the clamping screws (B, next picture) on the back.



The optimum setting is achieved when the carriages run centrally in the rails or the rails are pressed against the front and inside of the clamps via the grub screws (A) and clamping screws (B).

The clamping screws (B) must **only** be screwed in **hand-tight**, otherwise the clamp will bend open and the rail will no longer sit properly in it.



WARNING



Centering without grinding contact of the carriages to the rails is important for explosion protection. If you cannot center the rails optimally, please contact your PTM MECHATRONICS GMBH contact person immediately and do not put the hoist into operation.

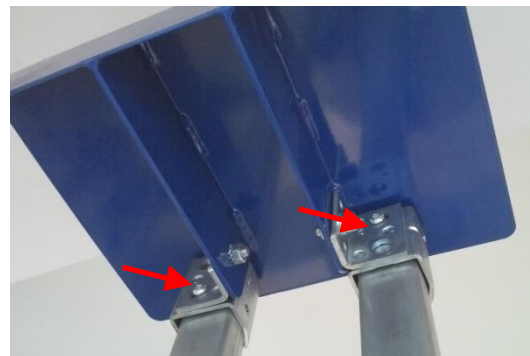
Step 2: Mounting a control panel (optional)

Eco-Station hoists can be equipped with various control panels, which allow for more comfortable operation or control of connected equipment such as mixers. However, all control panels have the common feature that they must be attached to one of the two rails by means of rail clamps.

Before the cover plate is mounted and the rails are fixed with it, the brackets for the respective control panel must be pushed over the desired rail and hand-tightened with an open-ended wrench SW 10 via the clamping screw on the rear side. Only then can the cover plate be fixed.

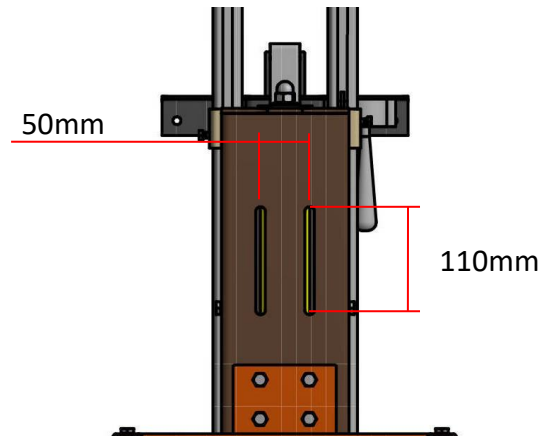


Information on correct tubing can be found in [→chapter 11](#).



Step 3: Mounting a pump (optional)

The carriage is prepared to accommodate a pump so that it does not have to be mounted directly on the lid. The two long holes (diameter 10.5 mm) shown below can be used for mounting.



WARNING



Please note that an assembled pump as well as any accessories such as agitators etc. must always be grounded separately (see also →chapter 4.2).

Step 4: Installation of an automatic agitator switch-off device (optional)

The Eco-Station units are prepared to be equipped with a pneumatic limit switch (article number 68150030), which automatically interrupts the compressed air supply to a pneumatic agitator when the lid is lifted. When the lid is lowered again, the compressed air supply is switched on again.

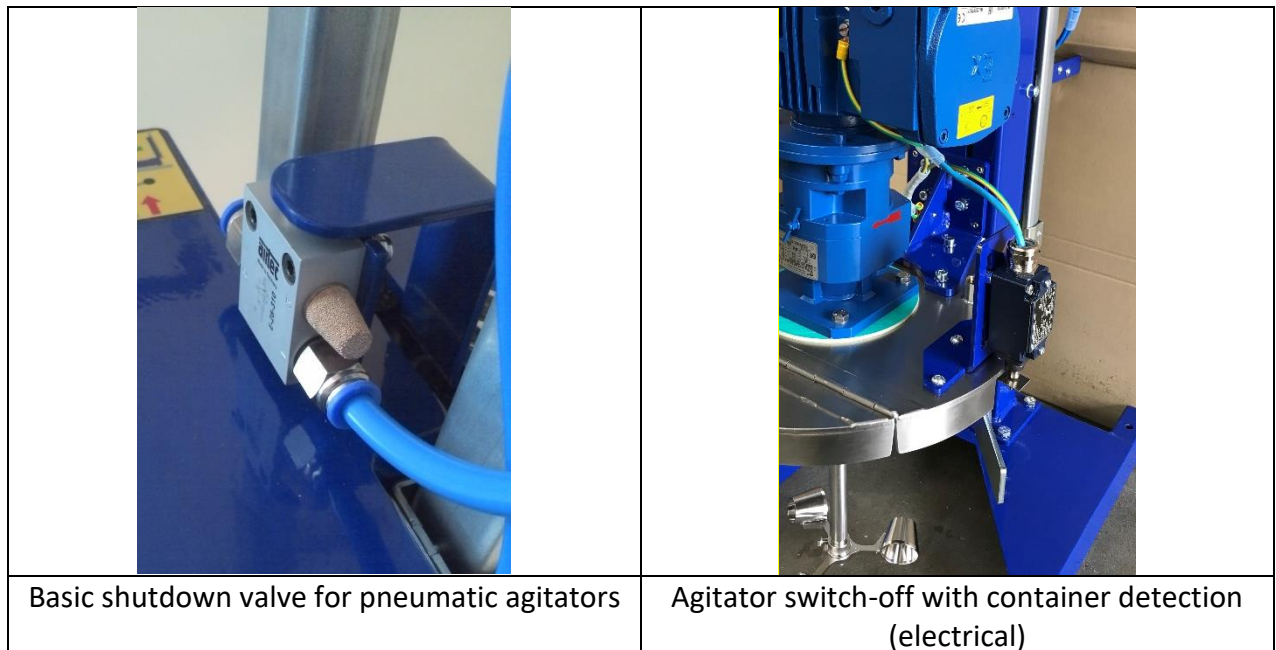
More safety, however, is offered by an agitator switch-off device with container detection, which can also be obtained from PTM MECHATRONICS GMBH. It should be noted, however, that this variant cannot be retrofitted, as the equipped lid must be prepared for mounting. Talk to your PTM MECHATRONICS GMBH contact person to find the right solution for your application (pneumatic, electrical, explosion-proof).

WARNING



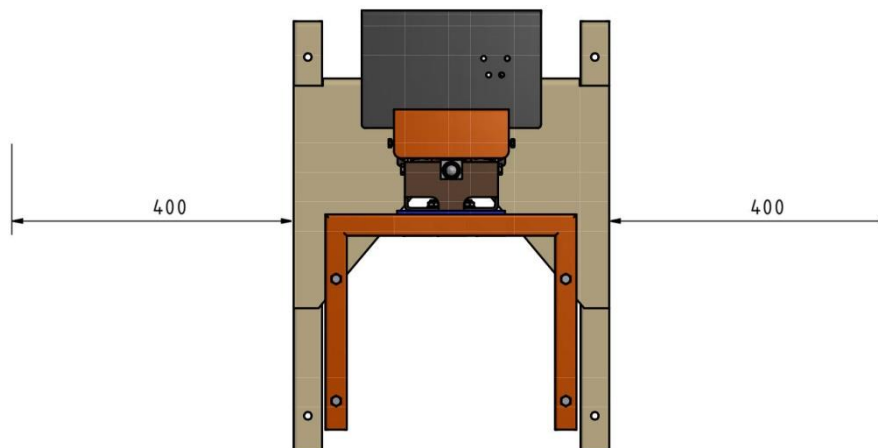
For safety reasons, PTM MECHATRONICS GMBH advises against operating Eco-Station hoists with mounted agitator without an appropriate shutdown device.

Design examples of agitator switch-off devices



Step 5: Set up/attach the hoist

To ensure easy operation and good maintainability/settability, the device should have at least 400 mm distance to adjacent devices. If the distance is less, it can become difficult or even impossible to operate the hoist without endangering the safety of the operator!

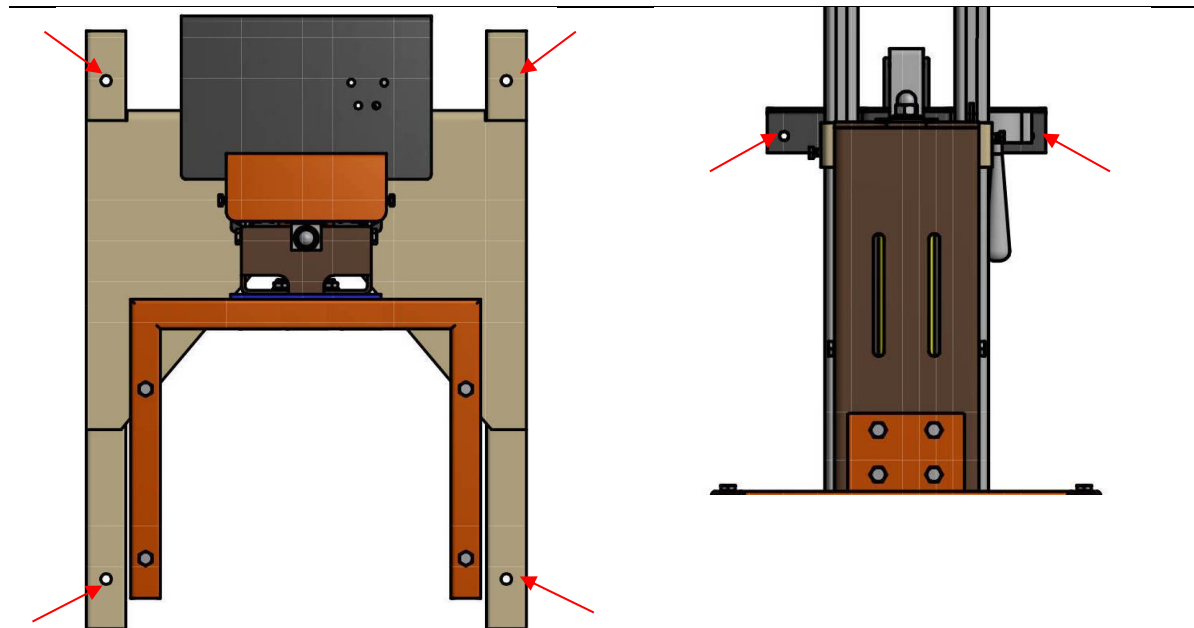


It is also possible to remove the control elements (control panel) and install them on a wall near the Eco-Station, for example. Thus, the distances given above can be decreased if necessary.

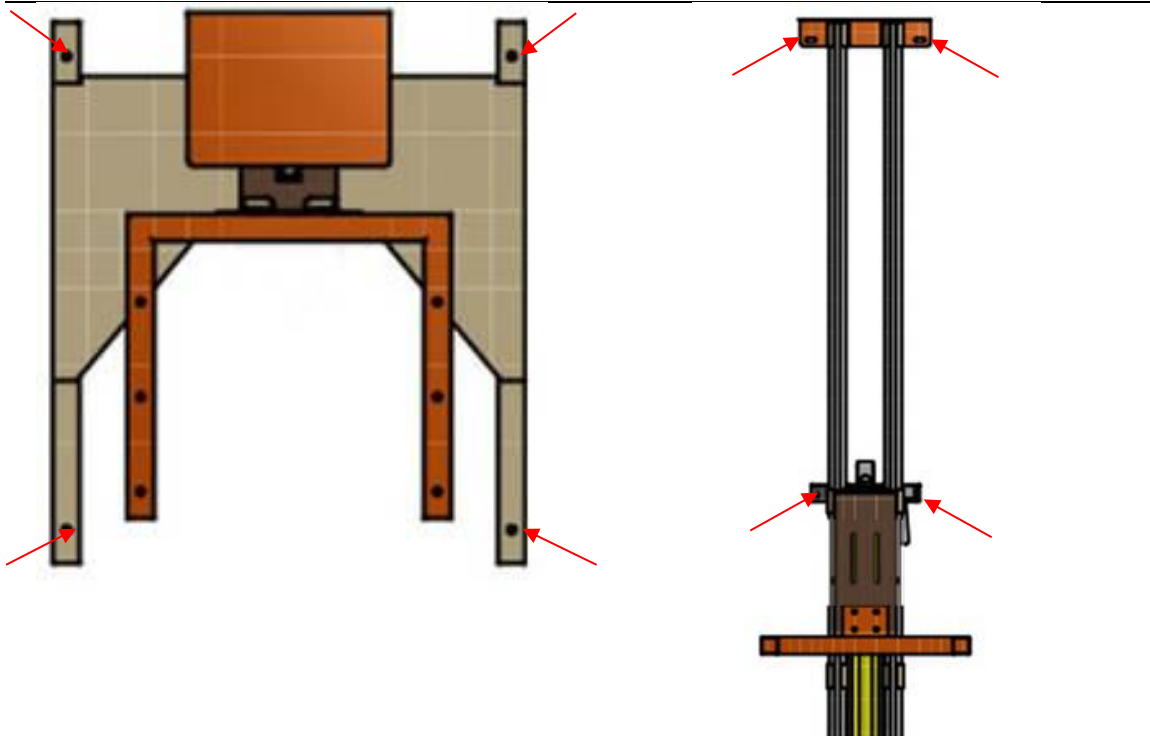
In order to ensure that the device is stable, it should be fixed either on the floor and/or on the wall. The unit is equipped with special mounting holes:

NOTE	
i	Especially when using industrial trucks (ant, forklift) when changing containers, it is strongly recommended to anchor the Eco-Station to the ground. Otherwise the Eco-Station may be damaged when the container (especially Eco-Station IBC 1200) is placed, e.g. if it is pressed against the rear wall.

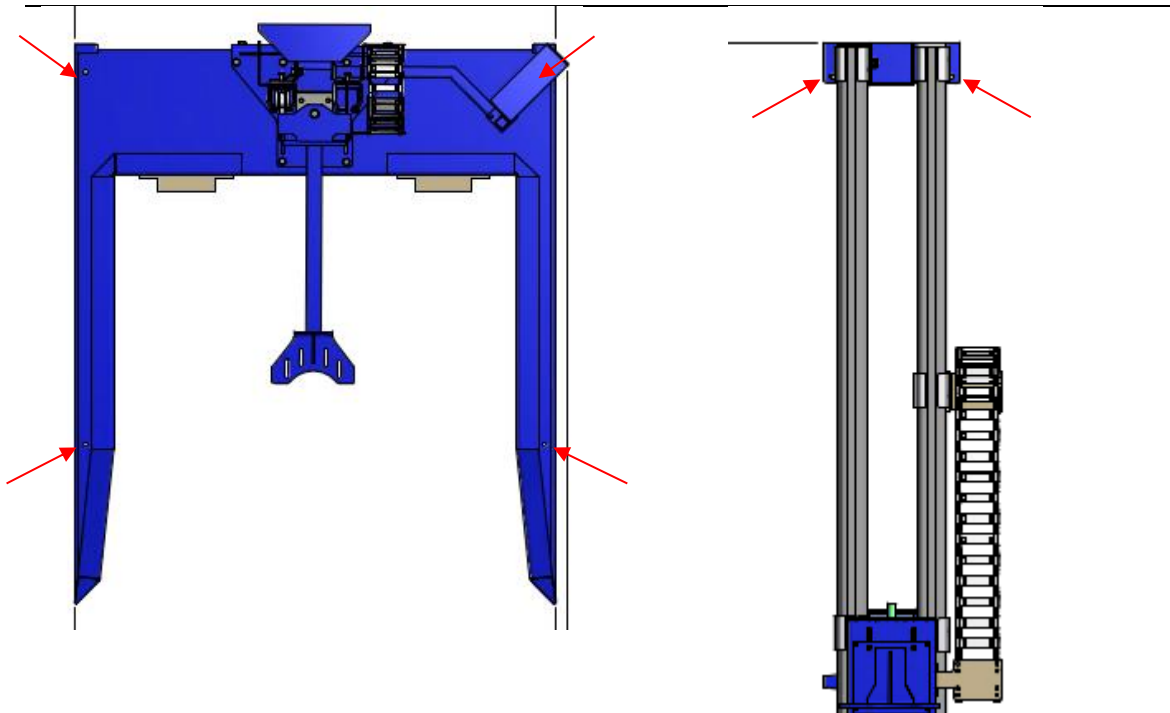
Eco-Station 30



Eco-Station 200



Eco-Station IBC

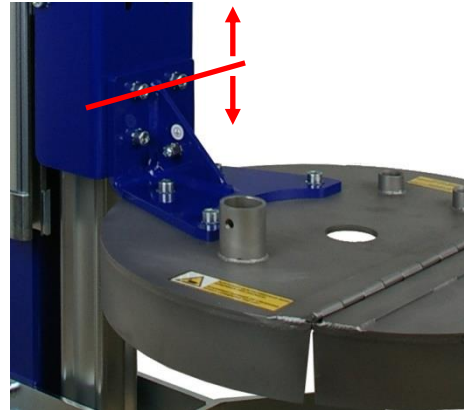


6.3 Alternative mounting with wall bracket

As an alternative to the base, Eco-Station hoists can also be mounted suspended using a separately available wall bracket. This has the advantage that the space below the hoist can be used flexibly. Proceed as follows for this mounting method:

Step 1: Center the lid holder

In order to have adjustment possibilities after mounting, the lid holder should be attached to the U-profile before wall mounting in such a way that the adjustment range is approximately the same at the top and bottom.

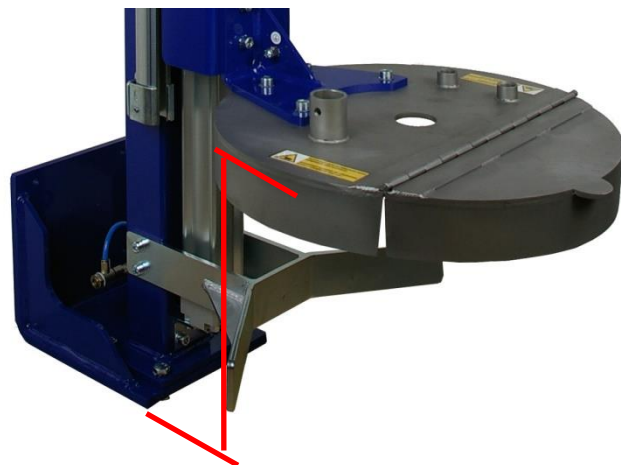


Step 2: Determine mounting height

Place the container to be used later on in its future location and, using a spirit level for example, transfer its top edge to the wall where the Eco-Station is to be mounted later.

Now measure from the lower edge of the lid to the lower edge of the wall mounting bracket of your Eco-Station.

Now take this measurement on the wall, starting from the marked upper edge of the container.



Step 3: Fixing the hoist

Now the wall mounting bracket can be fixed to the wall. Place it with the lower edge at the lowest mark from step 2 and mark the mounting holes.

NOTE



Make sure to use suitable screws and dowels according to the wall condition.

After drilling the mounting holes, the mounting bracket can be screwed tight to the wall. Then place the Eco-Station on it and mark the remaining wall mounting holes.

7 Startup

Initial situation: The Eco-Station device is completely assembled.

The lid holder is in lowered position and is equipped with a drum lid. The device is set up and fixed as described in →chapter 6.2 All required accessories (agitator, pump, pipes, level sensor) are already mounted on the device and correctly grounded.

NOTE

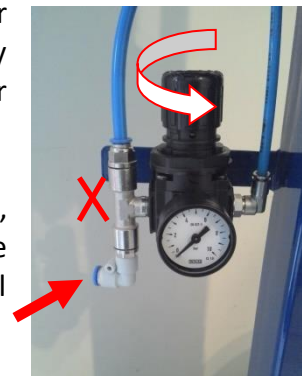


Steps 2, 4, 5, 6, 7 are carried out at the factory and may only be necessary if additional attachments (pump, agitator etc.) are attached by the operator.

Step 1: Compressed air connection

Turn the knob on the air pressure regulator on the back of the spar counterclockwise until it feels loose. Connect a compressed air supply hose to the compressed air regulator inlet ("G ¼" or hose connector for hose 8/6).

Note: Only if a control panel or an automatic agitator switch-off is used, the air inlet is equipped with a T-piece (X) as shown in the picture. The upper outlet is then used as the main air supply for the control panel or the agitator.



Step 2: Close the lower throttle

Take a flat screwdriver and turn the adjusting screw of the lower throttle of the pneumatic cylinder clockwise until **dead end**.

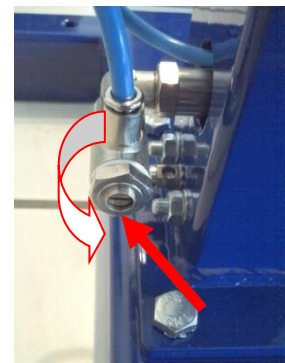


Step 3: Pressurize the device

Turn the knob of the air pressure regulator on the back of the spar clockwise and set the air pressure to 6 bar (lower pressure values can be set if required).

**Step 4: Setting the lifting speed**

Take a flat screwdriver and turn the adjusting screw of the lower throttle **half a turn** counterclockwise. Use the lift control valve valve to check if the desired speed (max. 100 mm/s) has been reached. If not, carefully readjust the throttle until the desired speed is reached.

**Step 5: Setting the lowering speed**

Take a flat screwdriver and turn the set screw of the upper throttle of the pneumatic cylinder clockwise until **dead end**, then **half a turn** counterclockwise. Use the lift control valve valve (only a short tap at a time) to check the sink rate. If it is too high, use a flat screwdriver and turn the adjusting screw of the upper throttle clockwise until the desired speed (max. 100 mm/s) is reached.

**Step 6: Check for smooth movement**

Use the lift control valve to check that the lifting movement is smooth and not erratic. Use the air pressure regulator and the throttles to find the setting for optimum smoothness.

Note: If it appears that the piston rod of the pneumatic cylinder bends during lifting/lowering and the carriage therefore runs unevenly or erratic, the nut of the piston rod can be loosened a little so that it can move freely (use screw locking lacquer!).

**Step 7: Check for air leaks**

Use the lift control valve valve to lift the lid to a middle position. Release the lever and check for at least 5 minutes that the lid does not move on its own. If so, check all air connections for leaks. The lid should not sink for at least 5 minutes for safety reasons.

➔ **When steps 1 to 7 have been successfully completed, the Eco-Station hoist is ready for operation.**

CAUTION

Note that there is a risk of limbs being crushed between the lid and the edge of the container when the lid is lowered. Appropriate warnings can be found on the top of the lid.

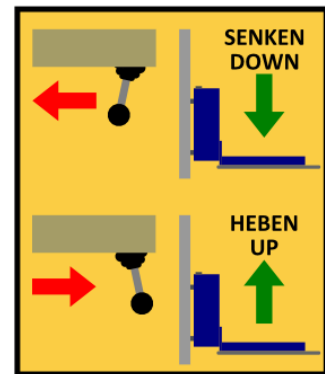
WARNING

Please note that when using an agitator without an automatic shut-off valve, injuries can occur due to the agitator blade lag after the lid has been lifted. It is strongly recommended to use an automatic shut-off valve.

7.1 Operation

As shown in the illustration, the carriage can be raised or lowered using the lever located on the right-hand side directly on the underside of the middle connecting plate. If you press the lever to the left, the U-profile will be lowered, if you press the lever to the right, the carriage will be lifted.

When the lever is released, it automatically returns to a neutral position, which causes the U-profile to stop immediately (dead man's switch).

**Option: Control panel**

When using an appropriate control panel, the lift control valve can also be integrated there. You will find a corresponding note above the lever of the lift control valve.



8 Shutdown

CAUTION



Attention: Risk of injury! First switch off all peripheral devices (pump, agitator etc.) according to the respective operating instructions or depressurize them. Make sure that a connected agitator is switched off manually before lifting the lid.

Step 1: Remove working materials from the lift control valve

Remove the container located under the lift control valve and clean dirty parts of the lift control valve (e.g. suction pipe, agitator shaft, agitator blades) with a suitable cleaning medium. Now move the lid to the lower end position (pneumatic cylinder is retracted).

Step 2: Depressurize the lift control valve

Turn the knob on the air pressure regulator on the back of the spar counterclockwise until it feels loose. Close the upstream-connected compressed air supply hose of the hoist. Now remove the supply air hose.

Now press the lever of the lift control valve in the direction "lifting" to depressurize the pneumatic cylinder completely.



➔ **Your Eco-Station is now out of service.**

9 Maintenance

The device and its connected components must be checked at least every 12 months by a competent person (e.g. PTM MECHATRONICS GMBH technician) to ensure that they are in a safe working condition (basis: ZH 1/406 or BGR 500, part 2, chapter 2.36).

On your Eco-Station hoist there is a maintenance instruction as shown below:



A test badge is attached to the circular field on delivery. This shows the year and the month of the next inspection. Please contact your PTM MECHATRONICS GMBH contact person prior to reaching the indicated period to arrange a service appointment.

In addition, devices that are operated in potentially explosive atmospheres must be checked for their explosion-proof condition by a competent person at least every 3 years (Section 3, points 5.1 and 5.2 BetrSichV). The test results must be documented.

CAUTION	
	<p>Before each maintenance/check, the device must be completely depressurized. In case of material accumulation or drying out, there may still be residual pressures in connected attachments (pump etc.) despite pressure relief. Always carry out maintenance with suitable protective equipment (e.g. safety goggles and gloves).</p>

9.1 Cleaning the Eco-Station

To maintain its functionality, the Eco-Station should be cleaned regularly - like all equipment that is exposed to the risk of contamination. The following points should be observed:

- ▶ Do not use solvents or abrasive cleaning agents for coated surfaces, but only a damp cloth
- ▶ Galvanized or stainless steel parts (lid, barrel stop etc.) can be mechanically freed from coarse adhesions if required.
- ▶

WARNING

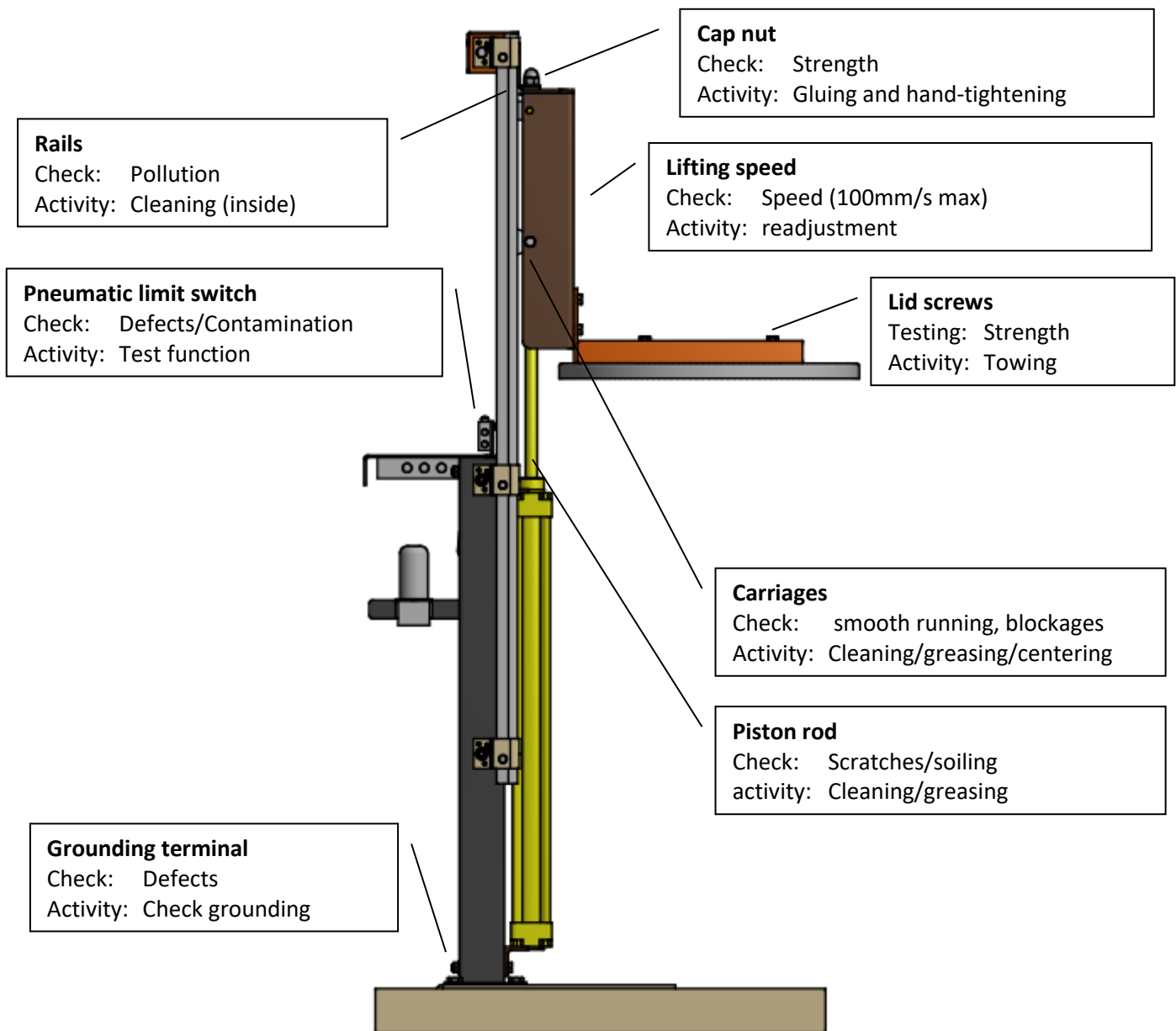
Do not use abrasive (e.g. drill wire brushes) or other sparking devices for cleaning. Only clean the Eco-Station manually with devices/tools made of low-sparking materials and perform a clearance measuring using an Ex-detector.

9.2 Routine tests

Also subject your hoist to regular visual inspections during the daily work routine in order to detect damage to the equipment and dangers to the operating personnel at an early stage.

Use the maintenance plan in → **chapter 9.3** to note down your test results.

The following areas should be reviewed at least every 12 months:



- ▶ Check general defects that could endanger safe operation (e.g. damaged rails)
- ▶ In general, check all screws for tightness (also wall/floor mounting screws)
- ▶ Clean the device regularly (create a cleaning schedule)

9.3 Maintenance plan

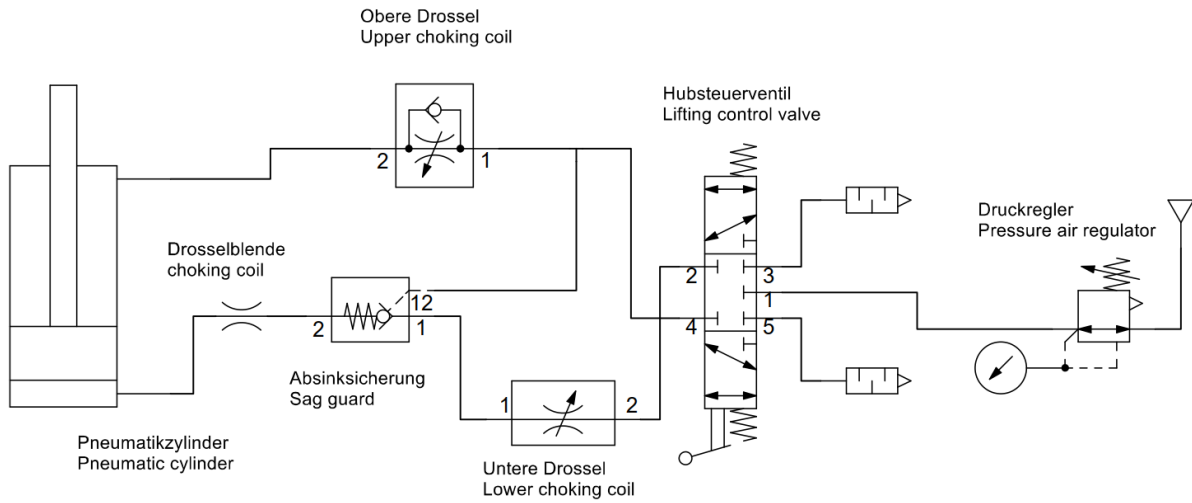
Date	Auditor	Scope of testing

10 Troubleshooting

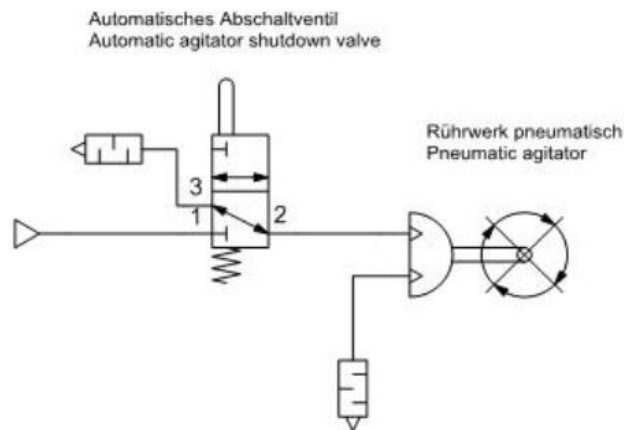
Problem	Cause	Remedy
Eco-Station is not working at all	No pressure air supply	Check pressure air regulator for pressure setting (e.g. 6 bar)
	Choking coils closed	Check adjustment screws on choking coils with flat screw driver
	Lift control valve malfunction	Check for correct functionality/replace
	Faulty tubing	Check connections and synchronize with the pneumatic scheme
	Pneumatic piston malfunction	Dismount lid holder and check functionality/replace
	Too much load on the sledge	Reduce load and try again
The lifting speed is too high/slow	Wrong setting of the lower choking coil	Readjust lower choking coil with flat screw driver
	Supply air pressure too high/low	Readjust supply air pressure
The lowering speed is too high/slow	Wrong setting of upper choking coil	Readjust upper choking coil with flat screw driver
	Supply air pressure too high/low	Readjust supply air pressure
The movement of the sledge is jerking	Damaged wagons and/or sledge trolleys	Check for damages and even sliding of sledge/wagons. Replace damaged parts
	Wrong setting of the lower/upper choking coil	Readjust choking coils with flat screw driver
	Cylinder piston rod is tilting	loosen nut on top of the sledge; check if the rod touches the inner wall of the bore, realign sledge (call PTM MECHATRONICS GMBH service if necessary)
Lifting stroke insufficient	Wrong cask height	Choose other Eco-Station model
	Wagons faulty mounted	Check mounting

11 Pneumatics plan

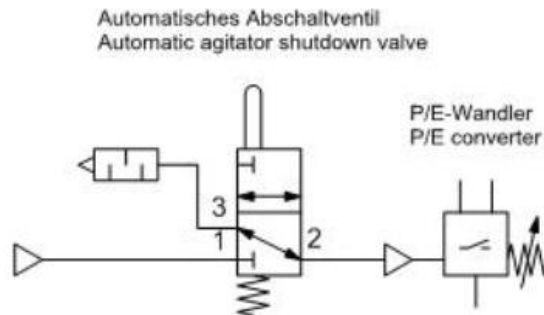
Basic layout



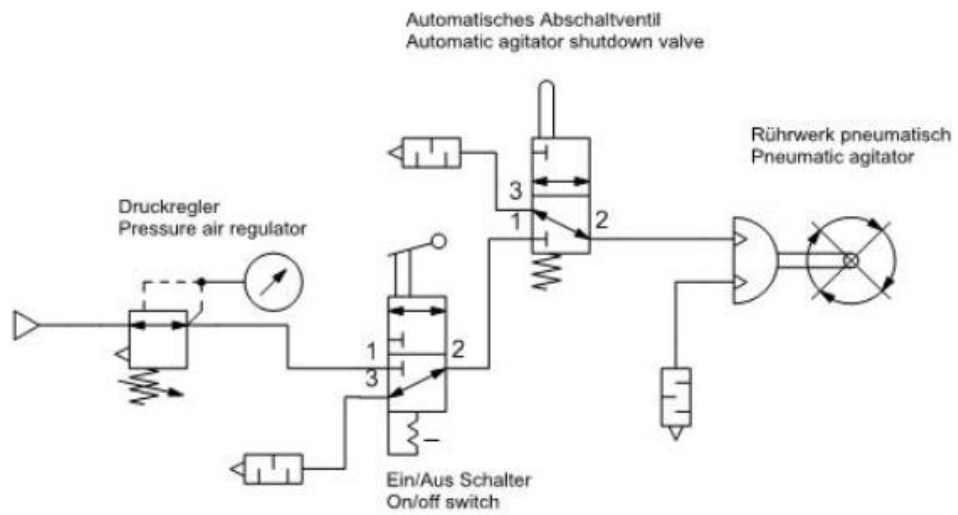
Automatic agitator shutdown valve



Automatic agitator shutdown valve with P/E converter

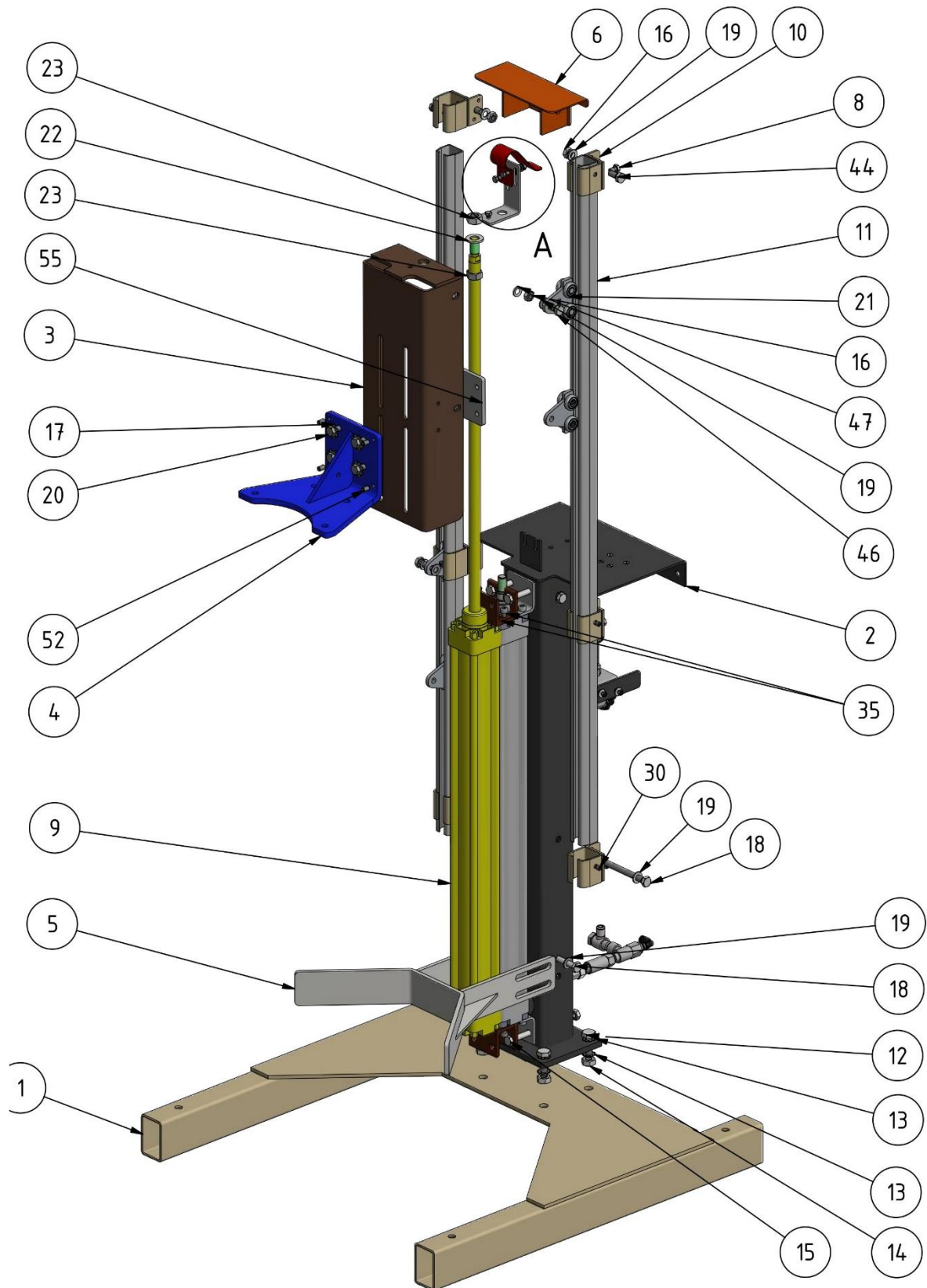


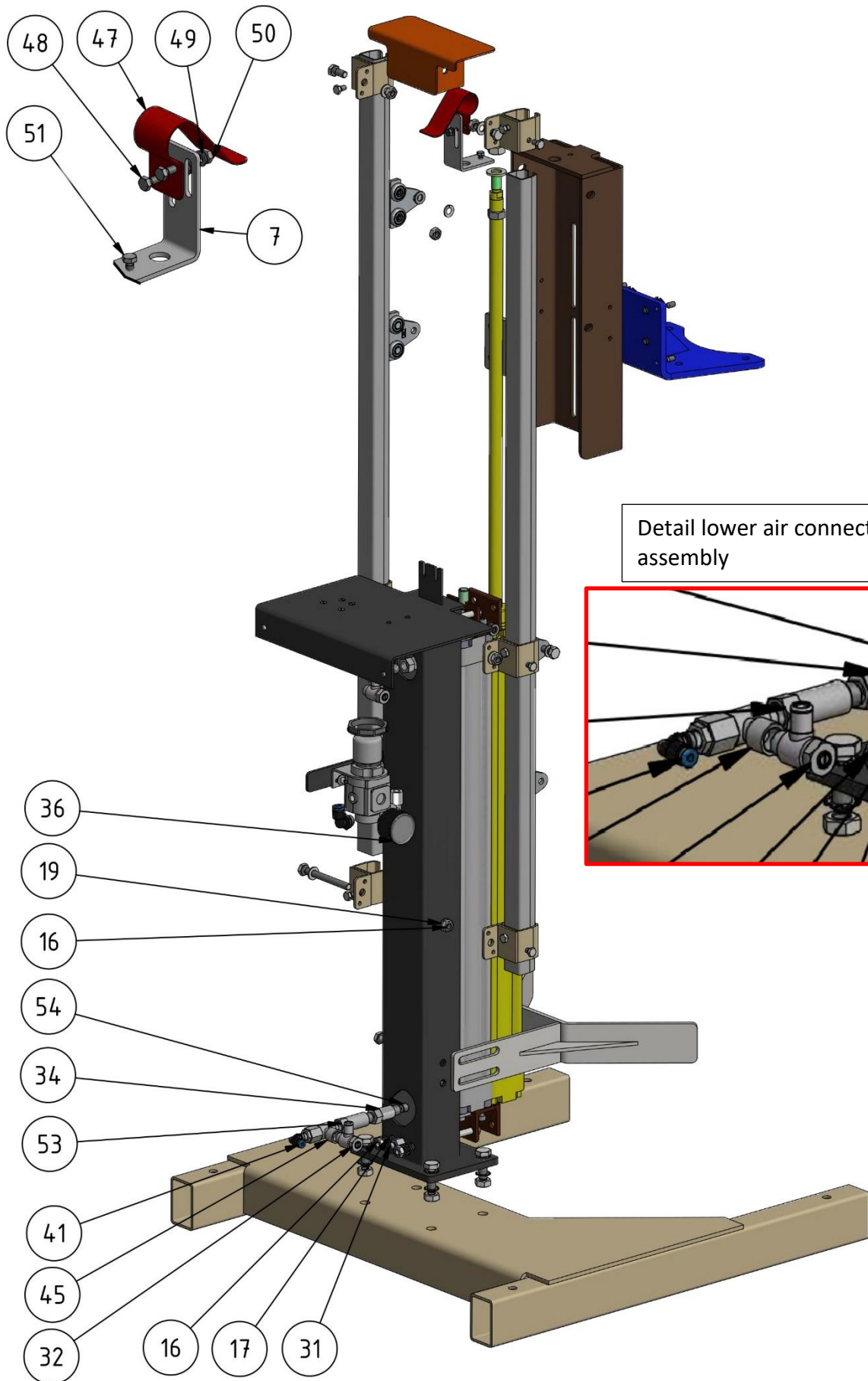
Automatic agitator shutdown valve with pressure regulator and on/off switch

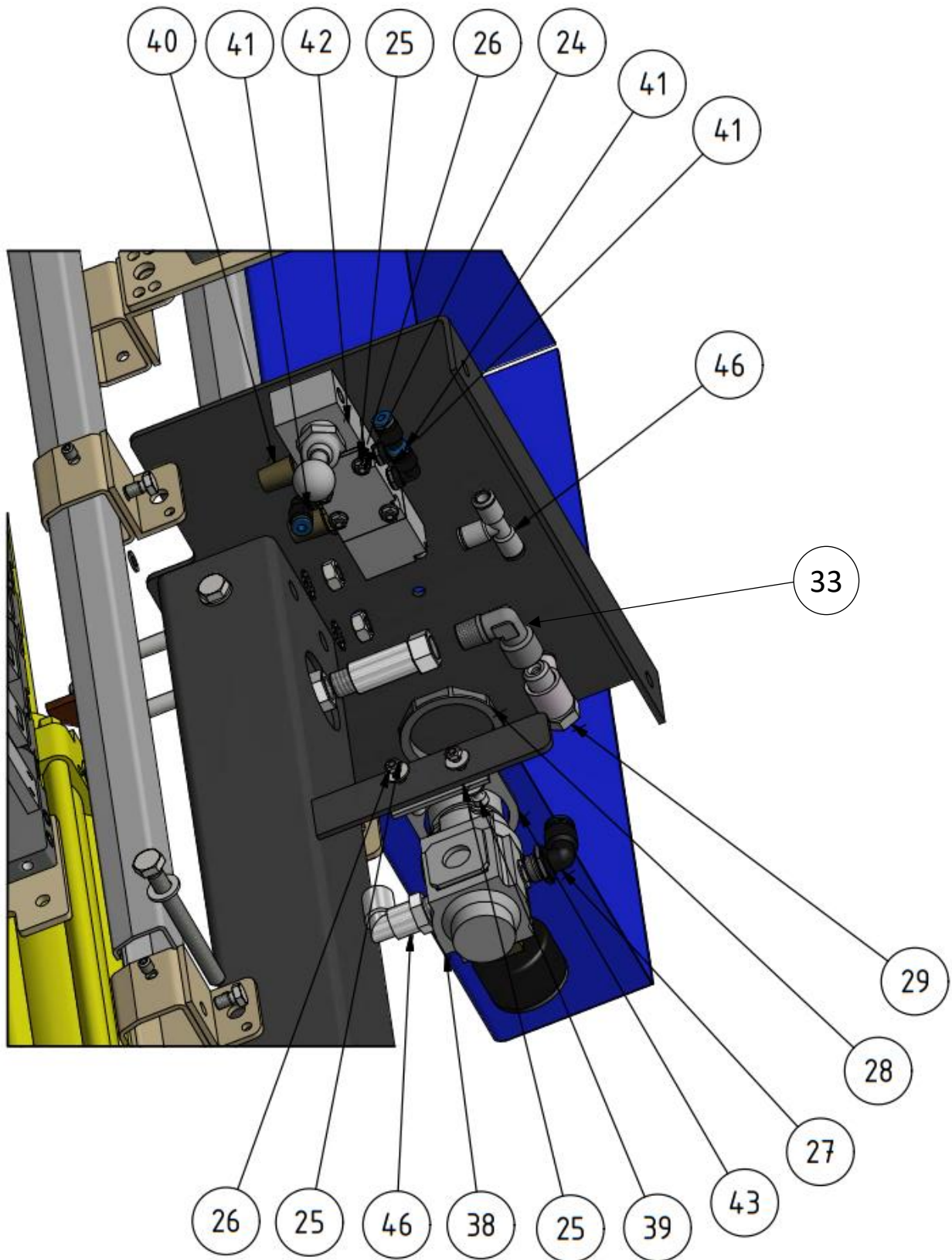


12 Spare parts drawings/lists

12.1 Eco-Station 30







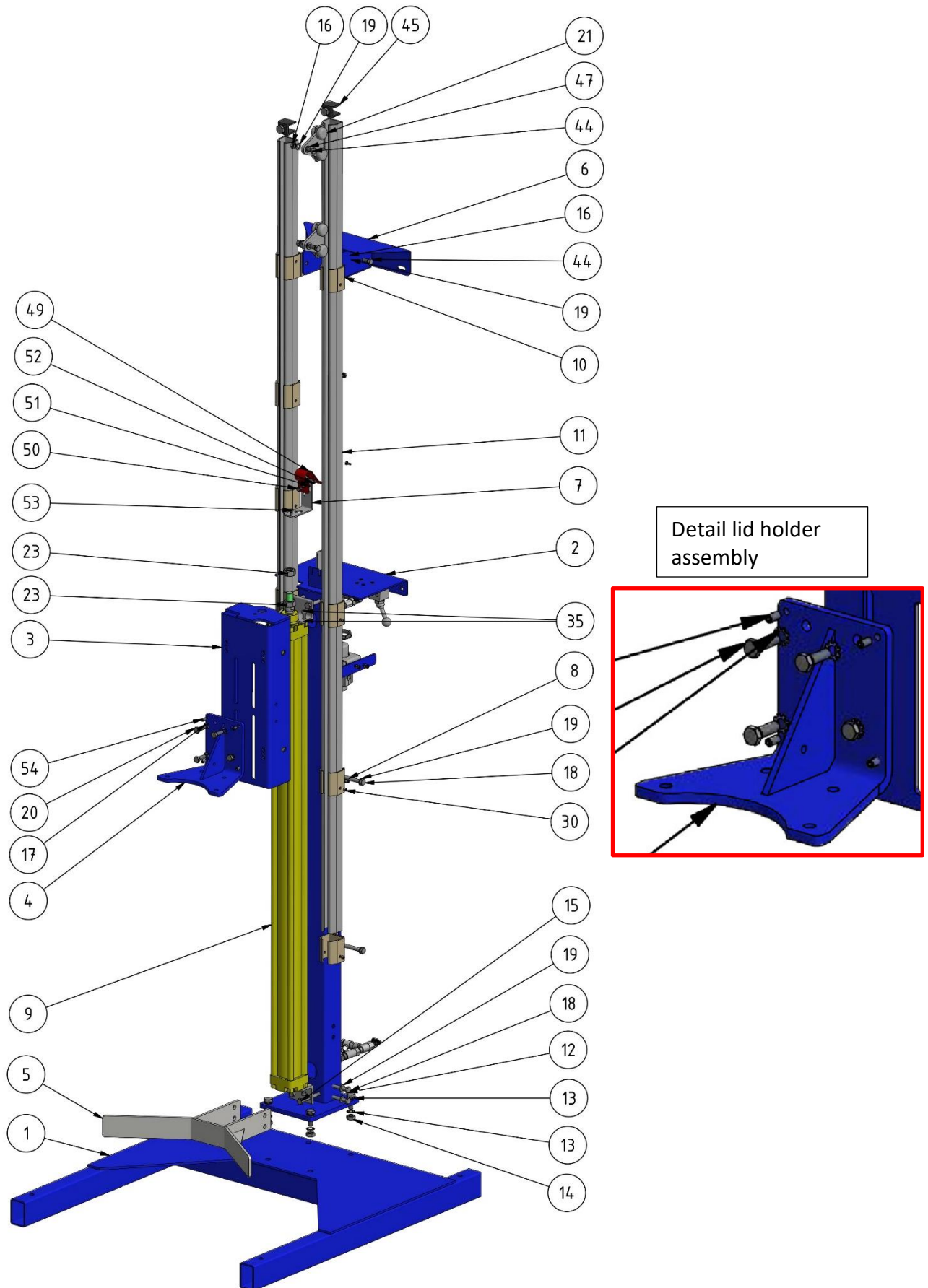
Pos	V	D	R	Art.Nr.	Description	Quantity	
1				68150545	Eco-Station 30 BASE RAL 5002	1	piece
1.1				68150542	Eco-Station 30 wall bracket powder-coated (optional)	1	piece
2				68150530	Eco-Station 30 ROD RAL 5002	1	piece
3				68150535	Eco-Station 30 U-PROFIL RAL 5002	1	piece
4				68151020A	Eco-Station 30/700/1000 LID HOLDER RAL 5002	1	piece
5				68150532	Eco-Station 30 LIMIT STOP für 30l-Hobbocks	1	piece
6				68150515	Eco-Station 30 COVER PLATE RAL 5002	1	piece
7				68150527	Eco-Station 30 LEVER FOR FLAT SPRING STANDARD	1	piece
7.1				68150526	Eco-Station 30 LEVER FOR FLAT SPRINGS el. sensor (optional)	1	piece
8				99130881	SCREW M6 x 10 DIN 7380-1	6	piece
9	V			68150540	Eco-Station 30 PNEUMATIC CYLINDER	1	piece
10				68150510	Eco-Station 30 MOUNTING KIT	6	piece
11				68150599	Eco-Station 30 RAIL 1075 mm	2	piece
12				68100309	°Screw M10 x 30 DIN 933	4	piece
13				68100318	LOCK WASHER DIN 6797-AZ 10,5	8	piece
14				99310178	°NUT M10 DIN 934	4	piece
15				21903900	°Screw M8 x 80 DIN 912	4	piece
16				11073700	°NUT M8 DIN 934	20	piece
17				68100319	LOCK WASHER DIN 6797-AZ 8,4	20	piece
18				13373900	°Screw M8 x 100 DIN 931	2	piece
19				13363901	° WASHER DIN 125-A 8,4	20	piece
20				13380200	°Screw M8 x 30 DIN 912	4	piece
21				68150511	Eco-Station 30 WAGON F.U-PROFILE	4	piece
22				21203901	° WASHER DIN 125-A 13	1	piece
23				68150501	FLAT NUT M12x1,25	1	piece
24				68100322	°COUNTERSUNK SCREW M4 x 30 DIN 965	4	piece
25				68100321	°WASHER DIN 9021-D 4,3	4	piece
26				13381503	°NUT M4 DIN 985 self-locking	6	piece
27				51660400	ANGLE PUSH IN CONNECTOR WED 8-1/4	1	piece
28				64111012	MOUNTING NUT FOR 64111000	1	piece
29	V			68150007	Eco-Station-NON-RETURN CHOKING COIL "AS"	1	piece
30				71105542	°GRUB SCREW M6 x 6 DIN 914 VA	10	piece
31				68350506	GROUNDING TERMINAL BIS 16 MM ²	2	piece
32	V			68150008	Eco-Station-CHOKING COIL "DS"	1	piece
33				93931900	ANGLE FEMALE/MALE R1/4"	2	piece
34				68150018	DOUBLE NIPPLE LONG ¼"l – ¼"A and 1/8"l	1	piece
35				68150541	Eco-Station 30 CYLINDER MOUNTING KIT	2	piece
36				64600010	Manometer	1	piece
37				51400400	AIR CONNECTOR SCREW-IN LCS-1/4-PK4-KU	1	piece
38	V			64111000	AIR CONTROL UNIT 1/4" KPL.	1	piece
39				11081503	°SCREW M4 x 12 DIN 912	2	piece
40				78050230	SILENCER D1-08	2	piece
41				51400310	AIR CONNECTOR SCREW-IN LCK-1/8-PK4	3	piece
42	V			68201009	5/3-WAY LIFT CONTROL VALVE VALVE 1/8"	1	piece
43				64111011	MOUNTING KIT FOR 64111000	1	piece
44				22007750	°SCREW M8 x 20 DIN 912	6	piece

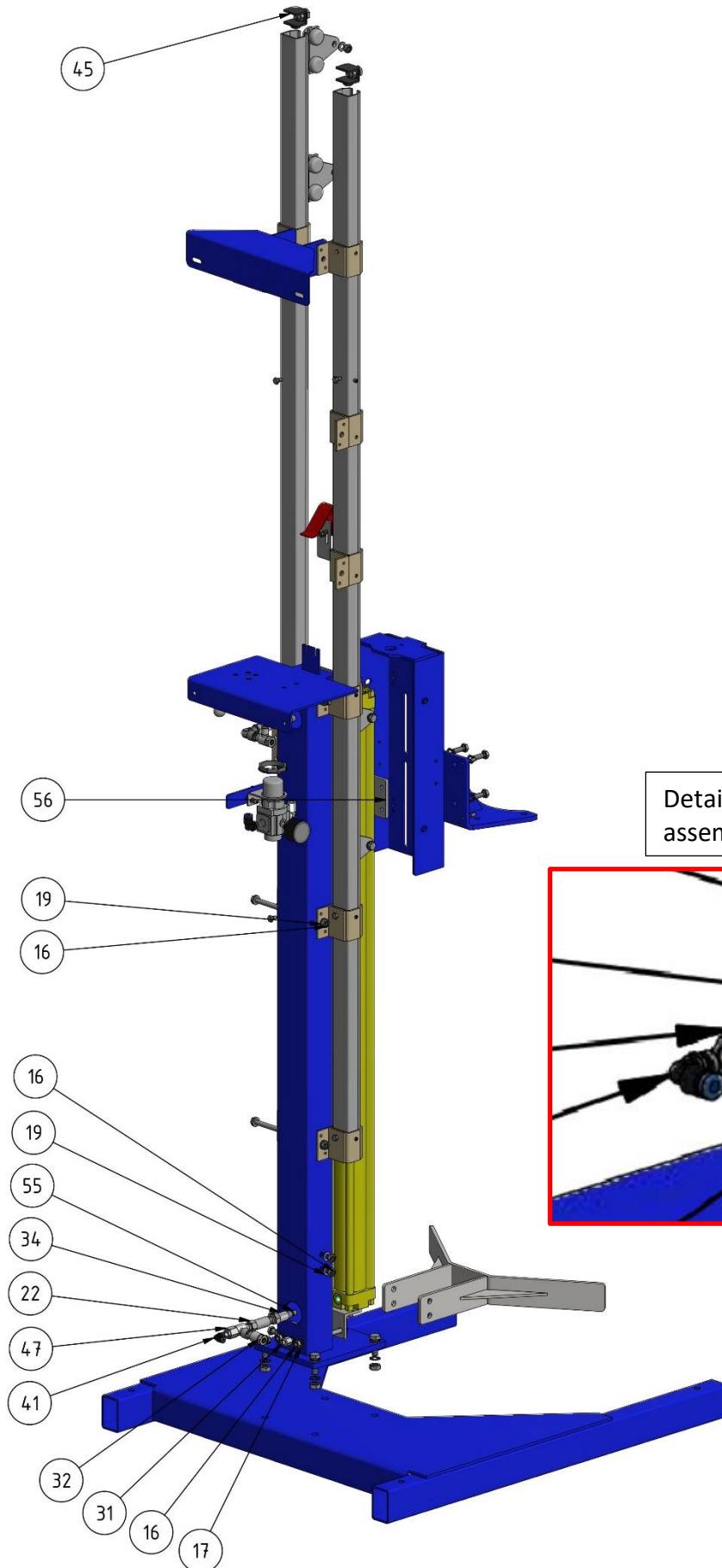
Pos	V	D	R	Art.Nr.	Description	Quantity	
45	V			68150009	UNLOCKABLE RS VALVE	1	piece
46				51660600	T-CONNECTOR 6/4	1	piece
47	V			68151027	FLAT SPRING ECO-STATION 30-1000	1	piece
48				68100325	°Screw M5 x 10 DIN 7380-1	2	piece
49				68401515	NOTCHED WASHER DIN 6798-J 5,3	2	piece
50				68401507	°NUT M5 DIN 934	2	piece
51				11062300	°Screw M5 x 12 DIN 912	1	piece
52				71105542	See pos. 30		
53				93150520	DOUBLE NIPPLE R 1/4 " I/A L	3	piece
54				68150013	Orifice 1/8" MS diameter 0.8mm	1	piece
55				68150521	Eco-Station 30/1000 Lid holder counter plate	1	piece

Note on ordering spare parts

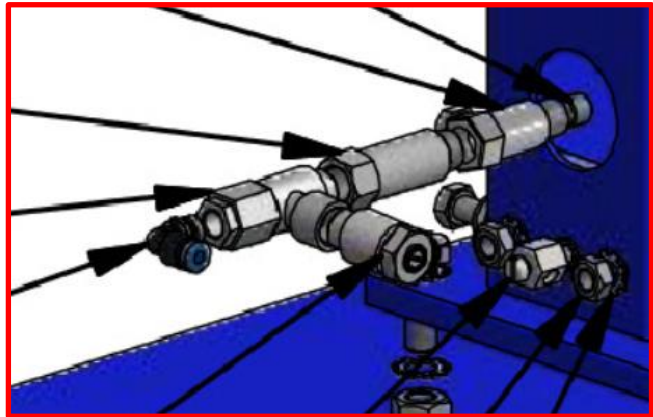
V Indicates a wear part that only needs to be replaced when necessary

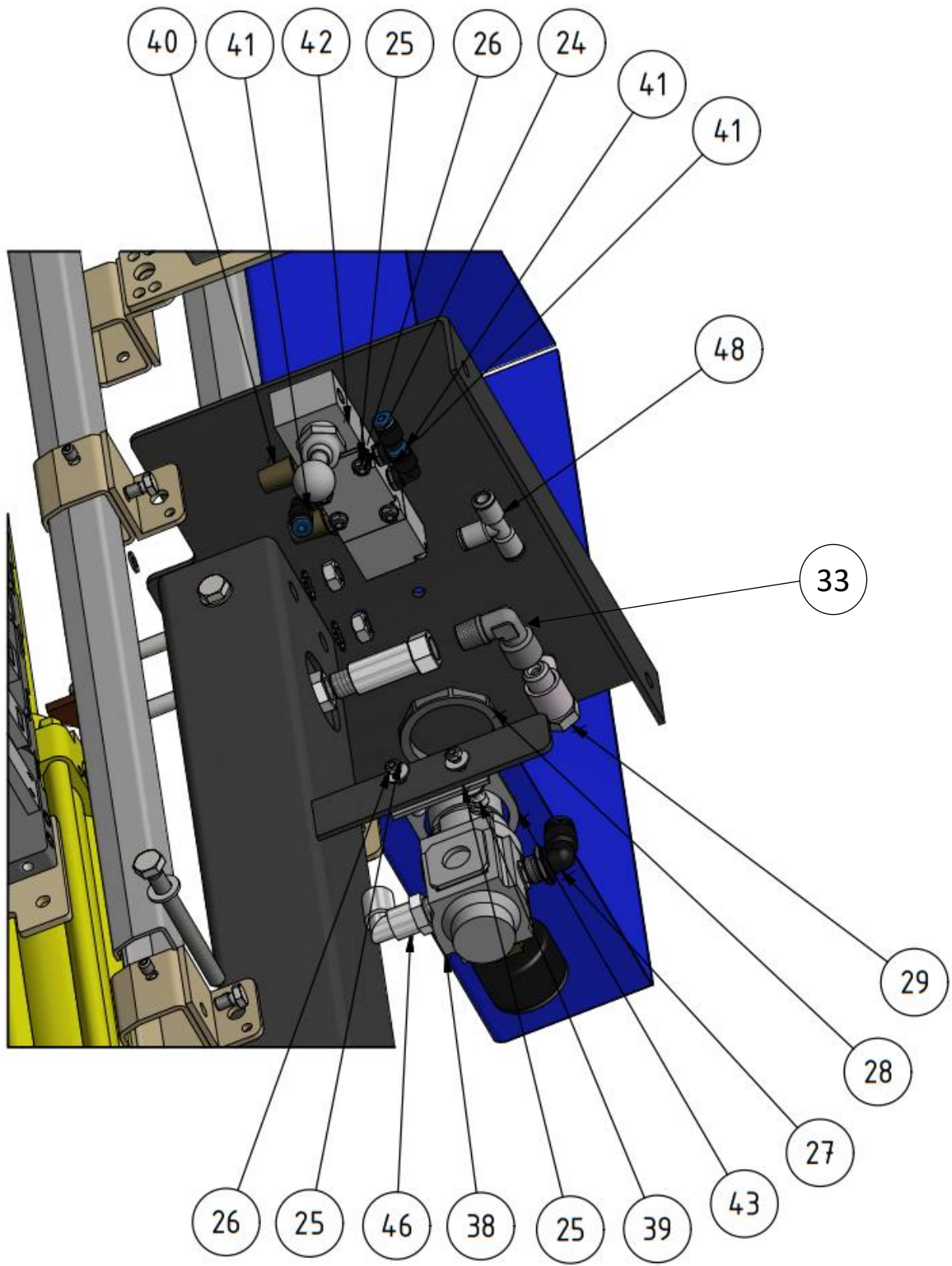
12.2 Eco-Station 200





Detail lower air connection assembly





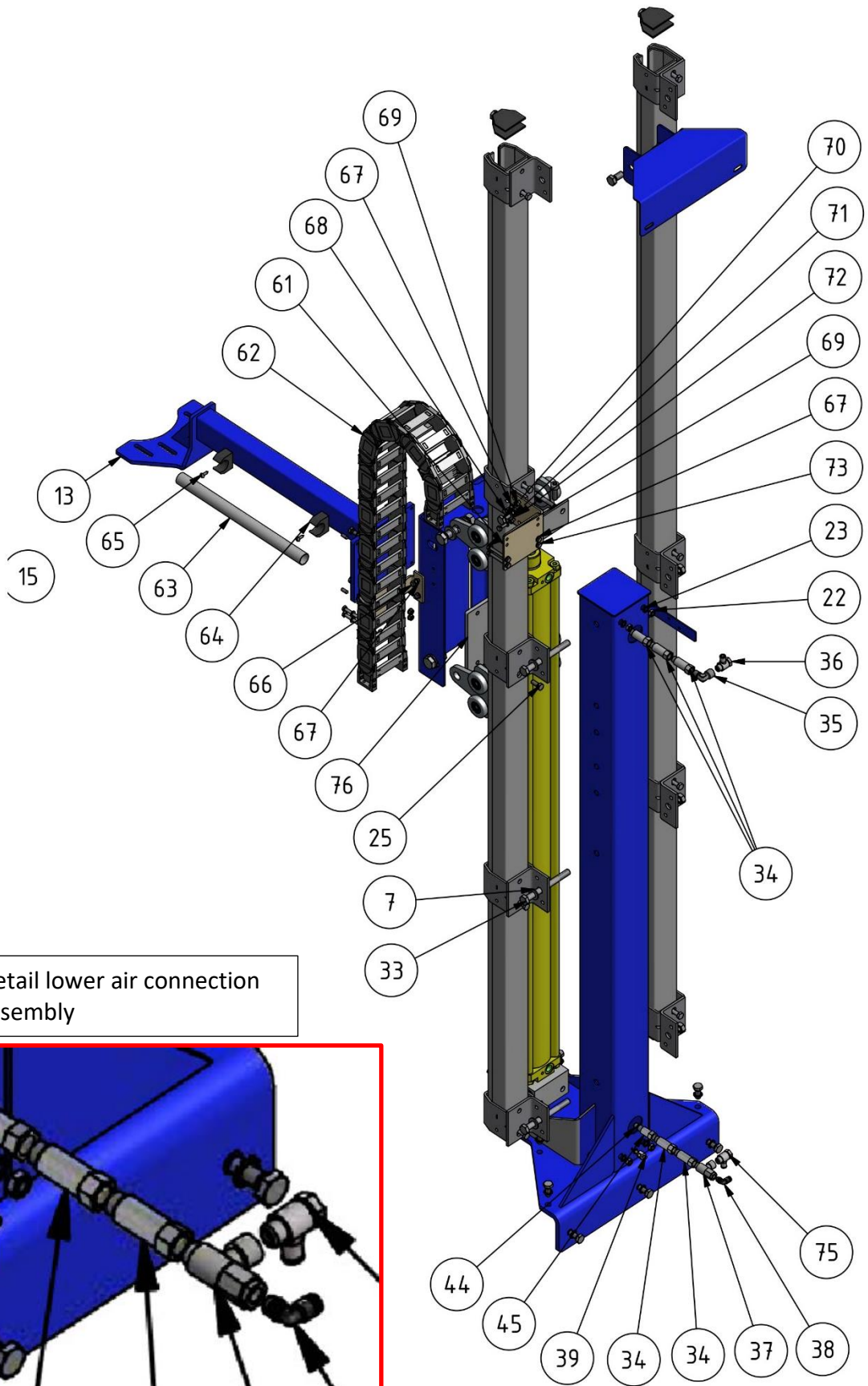
Pos	V	D	R	Art.Nr.	Description	Quantity	
1				68151040	Eco-Station 200 BASE RAL 5002	1	piece
1.1				68151041	Eco-Station 200 wall bracket RAL 5002 (optional)	1	piece
2				68151030	Eco-Station 200 ROD RAL 5002	1	piece
3				68151035	Eco-Station 200 U-PROFILE RAL 5002	1	piece
4				68151020A	Eco-Station 30/200 LID HOLDER RAL 5002	1	piece
5				68151032	Eco-Station 200 LIMIT STOP FOR 200I DRUMS	1	piece
6				68151015	Eco-Station 200 COVER PLATE RAL 5002	1	piece
7				68151028	Eco-Station 200 LEVER FOR FLAT SPRING STANDARD	1	piece
7.1				68151026	Eco-Station 200 LEVER FOR FLAT SPRING EL SENSOR (optional)	1	piece
8				99130881	°SCREW M6 x 10 DIN 7380-1	8	piece
9	V			68151050	Eco-Station 200 PNEUMATIC CYLINDER	1	piece
10				68151010	Eco-Station 200 MOUNTING KIT	8	piece
11				68151920	Eco-Station 200 RAIL 1920 mm	2	piece
12				68100309	°SCREW M10 x 30 DIN 933	4	piece
13				68100318	°LOCK WASHER DIN 6797-AZ 10,5	8	piece
14				99310178	°NUT M10 DIN 934	4	piece
15				21903900	°SCREW M8 x 80 DIN 912	4	piece
16				11073700	°NUT M8 DIN 934	20	piece
17				68100319	°LOCK WASHER DIN 6797-AZ 8,4	20	piece
18				13373900	°SCREW M8 x 100 DIN 931	5	piece
19				13363901	°WASHER DIN 125-A 8,4	24	piece
20				13380200	°SCREW M8 x 30 DIN 933	4	piece
21				68151011	Eco-Station 200 WAGON F.U-PROFILE	4	piece
22				93150520	DOUBLE NIPPLE R 1/4 " I/A L	3	piece
23				68151001	FLAT NUT M16x1,5	2	piece
24				68100322	°COUNTERSUNK SCREW M4 x 30 DIN 965	4	piece
25				68100321	°WASHER DIN 9021-D 4,3	4	piece
26				13381503	°NUT M4 DIN 985 self-locking	6	piece
27				51660400	ANGLE PUSH IN CONNECTOR WED 8-1/4	1	piece
28				64111012	MOUNTING NUT für 64111000	1	piece
29	V			68150007	Eco-Station-NON-RETURN CHOKING COIL "AS"	1	piece
30				71105542	°GRUB SCREW M6 x 6 DIN 914 VA	12	piece
31				68350506	GROUNDING TERMINAL BIS 16 MM²	2	piece
32	V			68150008	Eco-Station-CHOKING COIL "DS"	1	piece
33				93931900	ANGLE FEMALE/MALE R1/4"	1	piece
34				68150018	DOUBLE NIPPLE LONG ¼"l – ¼"A and 1/8"l	1	piece
35				68151051	Eco-Station 700/Eco-Station 1000 CYLINDER MOUNTING KIT	2	piece
36				64600010	Manometer	1	piece
38	V			64111000	AIR CONTROL UNIT 1/4" KPL.	1	piece
39				11081503	°SCREW M4 x 12 DIN 912	2	piece
40				78050230	SILENCER D1-08	2	piece
41				51400310	AIR CONNECTOR SCREW-IN LCK-1/8-PK4	3	piece
42	V			68201009	5/3-WAY LIFT CONTROL VALVE VALVE 1/8"	1	piece
43				64111011	MOUNTING KIT FOR 64111000	1	piece
44				22007750	°SCREW M8 x 20 DIN 912	6	piece
45				68151925	Eco-Station 200 RAIL LIMIT STOP	2	piece
46				51400400	AIR CONNECTOR SCREW-IN LCS-1/4-PK4-KU	1	piece
Pos	V	D	R	Art.Nr.	Description	Quantity	
47	V			68150009	SAG GUARD	1	piece

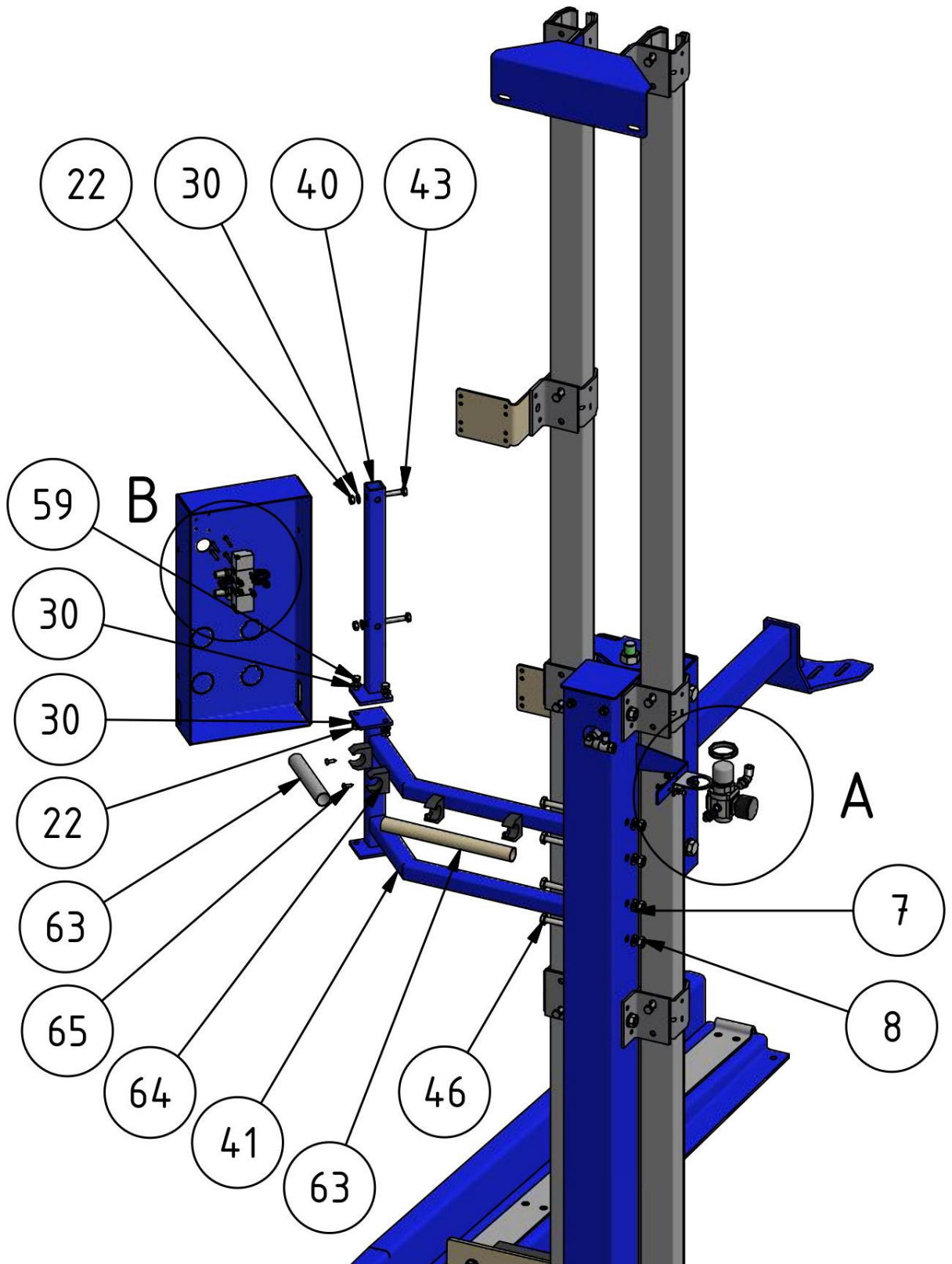
48			51660600	T-CONNECTOR 6/4	1	piece
49	V		68151027	FLAT SPRING ECO-STATION 30-1000	1	piece
50			68100325	°SCREW M5 x 10 DIN 7380-1	2	piece
51			68401515	°NOTCHED WASHER DIN 6798-J 5,3	2	piece
52			68401507	°NUT M5 DIN 934	2	piece
53			11062300	°SCREW M5 x 12 DIN 912	1	piece
54			71105542	See pos. 30		
55			68150014	Orifice 1/8" MS diameter 1.2mm	1	piece
56			68150521	Eco-Station 30/1000 Lid holder counter plate	1	piece

Note on ordering spare parts

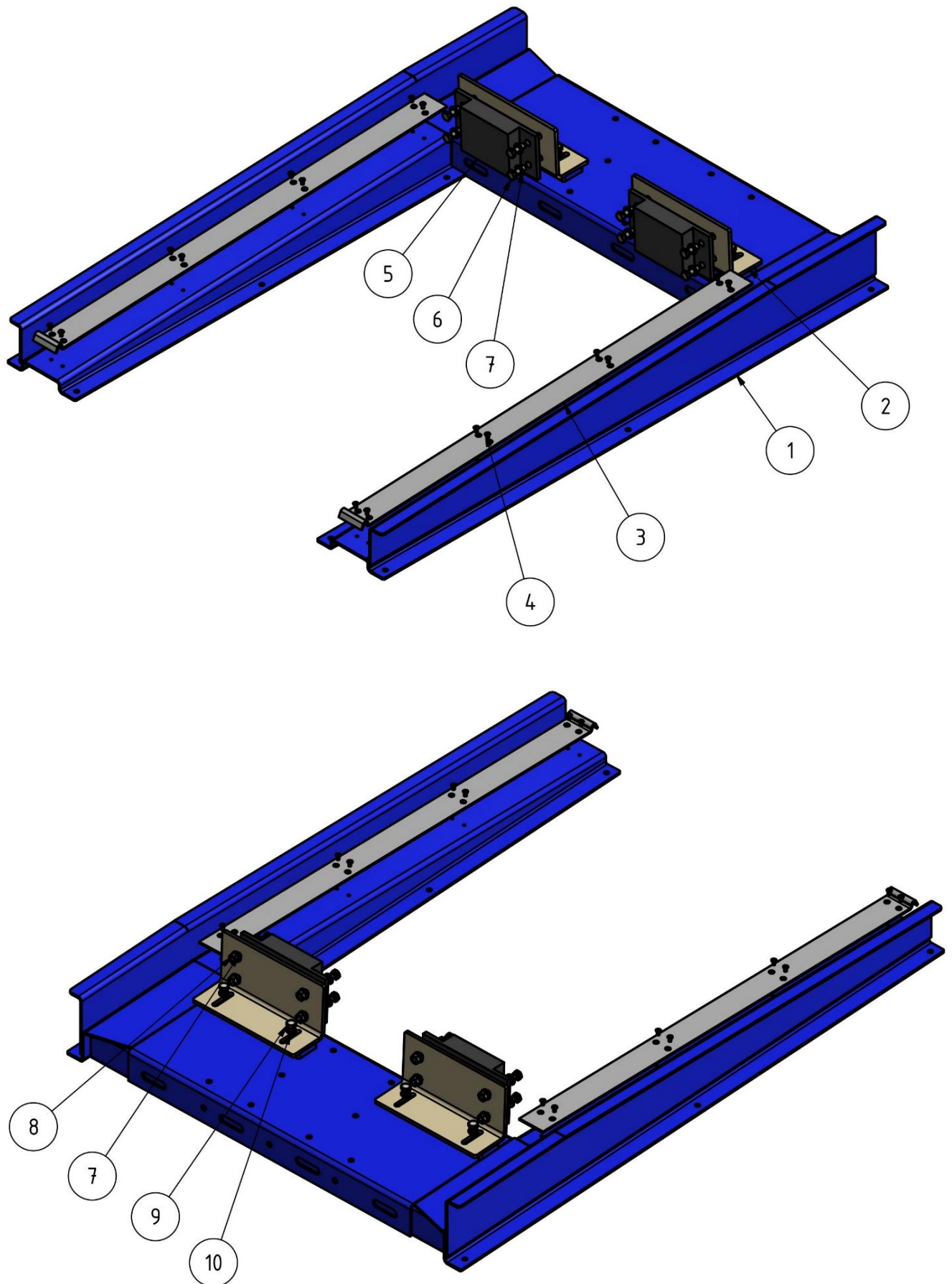
V Indicates a wear part that only needs to be replaced when necessary

12.3 Eco-Station IBC

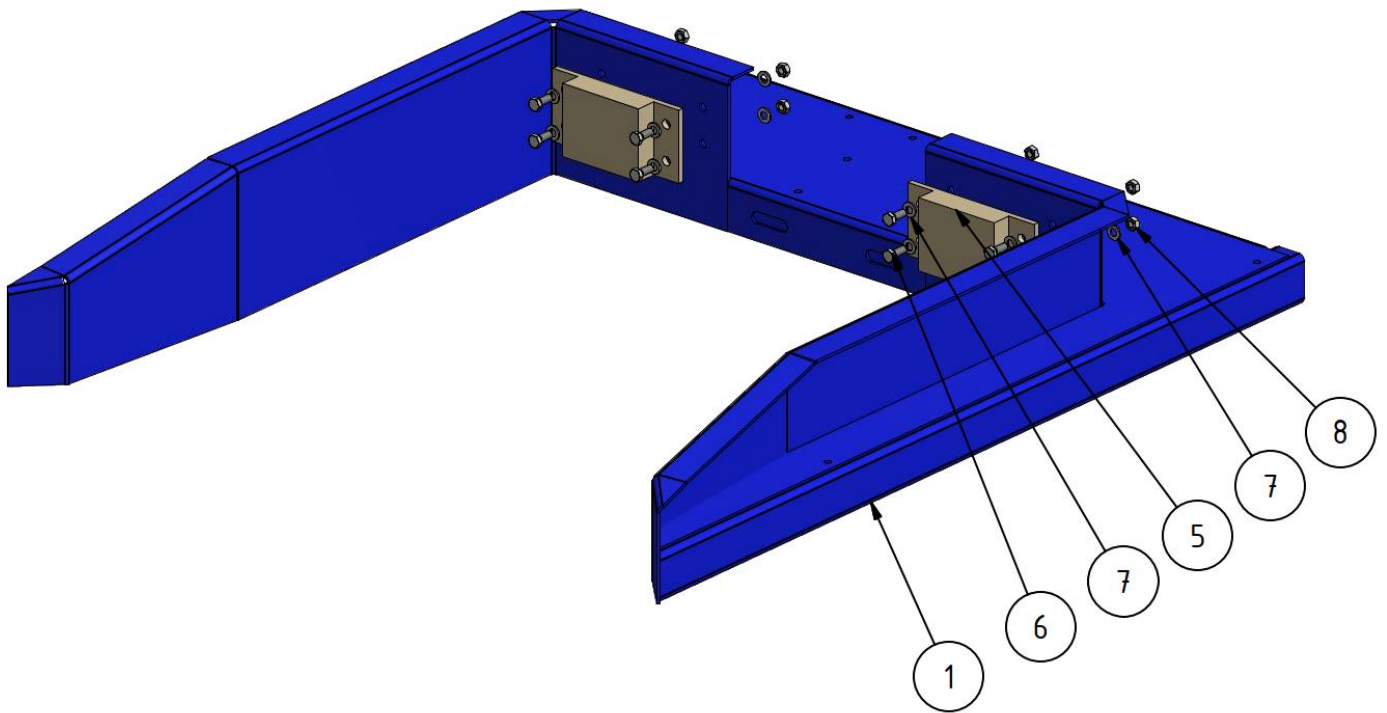




12.3.1 Eco-Station IBC Inclined base for IBC



12.3.2 Eco-Station IBC standard base for IBC



Pos	V	D	R	Art.Nr.	Description	Quantity	BME
1				68151245	Eco-Station IBC STANDART BASE for IBC RAL 5002	1	piece
1.1				68151241A	Eco-Station IBC INCLINED BASE for IBC RAL 5002 (optional)	1	piece
2				68151244	Eco-Station IBC INCLINED BASE STOP BUFFER (included in 1.1)	2	piece
3				68151243	Eco-Station IBC IBC FIXING PLATE (included in 1.1)	2	piece
4				99310169	Countersink screw M6 x 16 DIN 7991 VA (included in 1.1)	16	piece
5	V			68151242	Eco-Station IBC BASE STOP BUFFER (both part of 1 and 1.1)	2	piece
6					Screw M12x35 DIN 933	8	piece
7				21203901	°WASHER DIN 125-A 13		piece
8				24003903	°NUT M12 DIN 934		piece
9					Screw M12x22 DIN 933	4	piece
10					Washer A12 DIN 127 (lock washer)	4	piece
11				68151230A	Eco-Station IBC ROD	1	piece
12				68151235	Eco-Station IBC U-PROFILE	1	piece
13				68151221	Eco-Station IBC LID HOLDER SCHÜTZ IBC	1	piece
13.1				68151220	Eco-Station LID HOLDER G65 (optional)	1	piece
14				68151217	Eco-Station IBC COVER PLATE	1	piece
15				68152550	Eco-Station IBC C- RAIL 2550 mm	2	piece
16				68151210	Eco-Station IBC MOUNTING CLAMPS	9	piece
17				68151253	Eco-Station IBC PNEUMATIC CYLINDER	1	piece
18				68151251	Eco-Station IBC CYLINDER MOUNTING KIT	2	piece
19				68151211	Eco-Station IBC WAGON F.U-PROFILE	4	piece
20				68100309	°Screw M10 x 30 DIN 933	4	piece
21				13673900	°Screw M8 x 120 DIN 912	4	piece
22				11073700	°NUT M8 DIN 934	4	piece
23				68100319	LOCK WASHER DIN 6797-AZ 8.4		piece
24					Screw M16x35 DIN 933	4	piece
25				11273900	°Screw M8 x 25 DIN 933	9	piece
26					Washer A 16 DIN 127 (lock washer)		piece
27					Nut M16 DIN 934		piece
28				11273900	°Screw M8 x 25 DIN 933	4	piece
29				71106114	Threaded pin M6 x 12 DIN 914 VA	4	piece
30				13363901	°WASHER DIN 125-A 8,4	4	piece
31				68100318	LOCK WASHER DIN 6797-AZ 10.5		piece
32				68402502	°Screw M10 x 25 DIN 933	2	piece
33					Screw M12 x 120 DIN 931	3	piece
34				93150520	DOUBLE NIPPLE R 1/4 " I/A L	5	piece
35				93931900	ANGLE I/A R1/4	1	piece
36	V			68150007	Eco-Station Eco-Station-NON-RETURN CHOKING COIL "AS"	1	piece
37	V			68150009	SAG GUARD	1	piece
38				51400310	AIR CONNECTOR SCREW-IN LCK-1/8-PK4	4	piece
39				68350506	GROUNDING TERMINAL UP TO 16 MM ²	2	piece
40				68151252	Eco-Station IBC ROD Control panel PILL Part 2	1	piece
41				68151250	Eco-Station IBC ROD Control panel Part 1	1	piece

Pos	V	D	R	Art.Nr.	Description	Quantity	BME
42				xxx	xxx		piece
43				10480200	°Screw M8 x 45 DIN 912	2	piece
44				68150019	Orifice 1/8" MS with 2.2mm	1	piece
45				68150018	DOUBLE NIPPLE LONG ¼" I – ¼" A and 1/8" I	1	piece
46				68100329	°STOCK SCREW M10 x 120	4	piece
47				68100322	COUNTERSUNK SCREW M4 x 30 DIN 965	4	piece
48				68100321	°WASHER DIN 9021-E 4.3	8	piece
49				13381503	°NUT M4 DIN 985 self-locking	6	piece
50	V			68201009	5/3-WAY LIFT CONTROL VALVE VALVE 1/8"	1	piece
51				68151225	Eco-Station 1200 RAIL LIMIT STOP	2	piece
52				78050230	SILENCER D1-08	2	piece
53				51660400	ANGLE PUSH IN CONNECTOR WED 8-1/4	1	piece
54				11081503	°Screw M4 x 12 DIN 912	2	piece
55				64111011	MOUNTING KIT FOR 64111000	1	piece
56				64111012	MOUNTING NUT für 64111000	1	piece
57				51400400	AIR CONNECTOR SCREW-IN LCS-1/4-PK4-KU	1	piece
58	V			64111000	PRESSURE CONTROL VALVE 1/4" CPL	1	piece
59				11273900	°Screw M8 x 25 DIN 933	2	piece
60				68151036	E-Chain U-profile bracket Eco-Station 30 - 1200	1	piece
61				68151298	Eco-Station 1200 E-Chain C-RAIL	1	piece
62	V			68150874	ENERGY CHAIN	1	piece
63				99161008	Frank. Aluminium pipe, thread ES 50, 3.0 m	0,1	piece
64				99161007	Franconian aluminum clamp AKS-E 50	2	piece
65				99310182	DRILLING SCREW 4,2x22 DIN 7504	2	piece
66				68100330	SCREW M6 x 10 DIN 933 ISO 4017	2	piece
67				11062301	°WASHER DIN 125-A 6.4		piece
68				13602500	°Screw M6 x 18 DIN 933		piece
69				11062600	°NUT M6 DIN 934		piece
70				68402502	°Screw M10 x 25 DIN 933		piece
71				68402504	°WASHER DIN 125-A 10.5		piece
72				99310178	°NUT M10 DIN 934		piece
73				(93952001)	Screw M6 x 55 DIN 933		piece
74				68151002	NUT FLAT M20x1,5	2	piece
75	V			68150008	Eco-Station-CHOKING COIL "DS"	1	piece
76				68151222	Eco-Station IBC lid holder counter plate	1	piece

Note on ordering spare parts

V Indicates a wear part that only needs to be replaced when necessary

