

Operating Manual

Stand-mounted Agitator for Small Containers and Laboratory Use

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Foreword

This operating manual contains all necessary information in accordance with the Machinery Directive 2006/42/EC in its current version.

To avoid errors with the system and to ensure smooth and safe operation, it is essential to follow this operating manual carefully. Therefore, it should be known to all responsible personnel and operators.

The operating manual is an integral part of the user information when placing the system on the market and must be kept in a way that ensures easy access for the operator and user. If the system is relocated, the operating and/or user manuals, including those from suppliers, must be handed over as well. During all phases of the system's lifecycle, the instructions in the operating and/or user manuals (including those from suppliers) must be carefully followed. Please read the relevant chapters of the manual thoroughly before starting any work.

We accept no liability for damages or malfunctions resulting from failure to observe this operating manual. Within the company, it is crucial and must be clearly defined who is responsible for the system (operator) and who is authorized to work on it (user). Responsibilities for personnel involved in transport, installation, setup, configuration, operation, maintenance, and service must be clearly assigned.

Technical modifications and additions to the description are subject to change without notice.

No liability is assumed for the content, for any damage resulting from existing, missing, or incorrect information.

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1 Technical Data

ATEX Equipment Marking:

II 2G Ex h IIB Gb

II 2D Ex h IIB Db

| | |
|------------------------------|---------------------------|
| Supply values: | |
| Maximum air pressure: | 6 bar |
| Minimum air pressure: | 2 bar |
| | |
| Dimensions L x W x H: | 630 mm x 690 mm x 1770 mm |
| | |
| Ambient conditions: | Dry |
| | +5° to +40°C |
| | Frost-free |
| | Corrosion-protected |

2 Safety

2.1 Explanation of Symbols and Notices

Table 1: Symbols and notices of this operating manual



Danger!

This symbol indicates an imminent hazard to the life and health of individuals.
Failure to observe may result in severe or life-threatening injuries.



Warning!

This symbol indicates a potentially hazardous situation.
Failure to observe may result in significant property damage or personal injury.



Note!

This symbol indicates important information and operating instructions.
Failure to observe may result in impairments or damage to the system.

Table 2: Symbols on the machine



Warning of dangerous electrical voltage.



Warning of explosive atmosphere.



Warning of harmful or irritating substances.



No unauthorized access.



No smoking.



No open flames or sources of ignition.



Use respiratory protection.



Wear protective gloves.



Caution, sharp edges.

2.2 Safety Instructions

Hazards may arise from the ...

1. ... pneumatic agitator drive
2. ... pneumatic lifting device

As the operator, you are obliged to inform and instruct operating personnel about the applicable legal and accident prevention regulations, as well as the existing safety devices on the system.

The operating personnel must have understood the instructions, and it must be ensured that they are followed.

Both the operator and the user are responsible for ensuring that the operating and/or user manuals (including those from suppliers) are readily available at the machine. The operator undertakes to use the system only when it is in proper working condition. Before commissioning, the system must be inspected, and any defects must be rectified prior to startup.

The operator is also obliged to allow only those individuals to work on the machine who are familiar with basic occupational safety and accident prevention regulations, and who have been instructed in the operation of the machine. Additionally, these individuals should have read and understood the safety chapter and the warning notices in this manual.

The operator is responsible for ensuring that the operating personnel wears any required personal protective equipment, such as work clothing, safety shoes, protective gloves, safety goggles, and respiratory protection.

2.3 Personnel Requirements

All work on the machine may only be carried out by qualified and trained personnel. Work on electrical components may be performed exclusively by certified electricians, specialists for defined electrical work (German: festgelegte elektronische Tätigkeiten (FET)), or electrically instructed persons. Proof of the required training and relevant experience must be available.

Note!



Safety-conscious work by the personnel should be regularly monitored by a responsible person who is familiar with the local conditions and the machine.

2.4 Intended Use

The operational safety of the delivered machine is only guaranteed when it is used as intended. Any use beyond this is considered improper use. Intended use also includes compliance with all safety and operating instructions as well as the execution of all maintenance and service work.



Warning!

Warranty and liability claims for personal injury and property damage are excluded if they are caused by one or more of the following reasons:

Improper installation, commissioning, operation, and maintenance of the machine.

Operating the machine in a faulty condition and/or without protective covers.

Improper use of devices, accessories, peripheral equipment, etc.

Operation without safety devices or with safety devices in a defective condition.

Use of operating materials not approved by the manufacturer.

Improperly performed repairs.

Unauthorized structural modifications to the machine.

Unauthorized modifications to performance parameters (air pressure, speed).



Note!

Upon handover of the machine to the operator, responsibility for maintenance and inspection duties - particularly regarding safety devices - passes to the operator!

2.5 Basic Safety Instructions

The safety instructions are intended to protect people and property from harm and hazards that may result from improper use, incorrect operation, insufficient maintenance, or other faulty actions.

2.5.1 Hazards When Operating the Machine

In general, the applicable accident prevention regulations (German: Unfallverhütungsvorschriften (UVV)) must be observed, especially those concerning machine safety. The operator is obligated to comply with all relevant laws and regulations, particularly when the machine is used outside the EU. This obligation applies especially

when changes in laws and regulations require the implementation of additional or extended requirements.

2.5.2 Ambient Conditions

It must be ensured that the machine is adequately ventilated and vented, and that no external heat transfer occurs. In shaft areas where aggressive chemical vapors and gases are present, protective measures must be taken to prevent electrochemical corrosion.

2.5.3 Machine Monitoring

The operator is obligated to regularly inspect the machine or system for faults and to evaluate the recorded fault statistics. Identified faults must be reported to the manufacturer without delay - ideally via the maintenance log - so that the manufacturer can take the necessary corrective actions promptly.

During the period between fault detection and complete fault resolution, it is the operator's responsibility to decide whether the machine can continue to operate normally or in a limited capacity.

In case of doubt, the following always applies:

Shut down the machine immediately!



Hazard!

Using unsuitable extinguishing agents for firefighting may produce toxic gases (fumes).

Do not use water!

Use only Class ABC fire extinguishers.

Familiarize yourself with the location and operation of the fire extinguishers, as well as the appropriate firefighting methods.

2.5.4 Accident Report

Immediately inform your supervisors and PTM Mechatronics GmbH about any accidents, potential hazards, or so-called "near misses."

2.6 Safety Devices

The machine may only be operated when all safety devices are operational. Removing, overriding or deactivating any safety device is strictly prohibited.

For repair work where the dismantling of safety devices is unavoidable, utmost caution must be exercised. Immediately after completing the repair work, the dismantled safety devices must be reattached and checked for their effectiveness.

Structural modifications to the machine, as well as the use of non-original spare and wear parts not from PTM Mechatronics GmbH, carried out by the operator or third parties, are the

responsibility of the operator, particularly concerning machine safety and overall functionality.

The manufacturer assumes no liability for damages resulting from such modifications, including any consequential damage (including towards third parties).

Note!



All components of the machine, especially safety components, may only be replaced with original parts or, with the written approval of PTM Mechatronics, with other components.

If malfunctions or defects in the safety devices are detected, the machine must be shut down immediately. The following procedure must always and in all cases be followed:

- 1. Stop the machine and wait for it to come to a complete standstill.**
- 2. Mark the machine as non-operational (attach warning signs).**
- 3. Immediately notify the person responsible for the machine.**

Before recommissioning, the causes of the defects must be identified, documented, and rectified by qualified personnel in accordance with technical standards.



Hazard!

It is strictly prohibited to dismantle or disable safety devices.

2.7 Safety Instructions for Operating Personnel



Note!

Wear the provided personal protective equipment, including safety shoes, solvent-resistant work gloves, safety helmet, safety goggles, and respiratory mask.

Only perform the tasks assigned to you.

Do not allow unauthorized people to access the machine.

During repair and maintenance work on the machine, the compressed air supply must be disconnected and vented and secured against accidental reactivation.

When handling operating materials (oils, greases, and other chemical substances), follow the manufacturer's instructions and safety guidelines for each product.

Use appropriate lifting equipment for transporting heavy or bulky parts.

Additionally, read the operating manual for each individual machine component.

Observe the safety regulations and work instructions required for the explosive atmosphere (Ex) area.

2.8 Special Safety Instructions for Equipment in ATEX Areas

Work on explosion-protected components requires additional training and knowledge about explosion protection. The relevant regulations and rules for the assembly, handling, and operation of explosion-protected equipment must be known. Proof of the required training and relevant experience must be provided on request.

Note!



The safety-conscious work of the personnel should be regularly monitored by a responsible person who is familiar with the local conditions and the equipment, and who has appropriate expertise in explosion protection (Ex protection).

Only assemblies or devices that are approved for use in explosive (Ex) areas may be installed and operated.

Drives, motors, and auxiliary electrical equipment may only be operated in the explosion-protected area if the specified conditions, regulations, and measures are met.

Hazard!



In the presence of explosive gas mixtures or dust concentrations, there is a risk of severe or even fatal injuries due to hot surfaces, open live electrical connections, friction from moving parts, switching, grinding, or sparking.

Important safety instructions for installation, maintenance, and repair work on explosion-protected equipment

Due to the specific hazardous situation that necessitates explosion protection, special regulations apply to installation, maintenance, and repair work, and additional precautions must be taken. This includes the strict adherence to a work permit system.

Work Permit System

All work that must be carried out in or near an explosive atmosphere and could potentially lead to an explosion (e.g., welding work or activities involving sparks) must be approved by the operator or a responsible person in writing, in the form of a "work permit," before the work begins.

The written work permit should include the following details:

Date, work area, involved personnel, responsible contacts, estimated duration of the work, and a brief description of the protective measures to be implemented.

If the work extends over multiple days, a new "work permit" must be issued for each additional day.

All work in the explosive atmosphere area must be performed by the operating company, which is also responsible for issuing the "work permit".

PTM Mechatronics is exempt from these tasks!

It must be ensured that all necessary protective measures are in place, and that the presence of a hazardous explosive atmosphere in the work area can be excluded.

This must be guaranteed for the entire duration of the work, and if necessary, even beyond that.

After completing the work, the machine's safety must be verified **before** recommissioning. The explosion protection measures required for normal operation must be reactivated.

Additional Safety Regulations for the Ex Area

A strict no-smoking policy applies throughout the entire area!

Activities that may cause heating, electrostatic charging, sparking, or fire development are strictly prohibited in the entire area!



Warning!

Due to the increased safety risk in the explosive atmosphere areas, the warning, hazard, and safety instructions in this operating manual must be given special attention!

Compliance with the safety regulations must be checked regularly.

The following work instructions for the Ex-area must be observed:

- For connections of devices in explosive atmospheres, the applicable local, national, and international regulations must be observed.
- Work should only be carried out on a de-energized machine, secured against reactivation.
- Before opening connection and terminal boxes, ensure that the machine is de-energized and secured against unauthorized reactivation.
- The type and cross-section of connection and protective conductors, as well as the potential equalization, must comply with installation regulations.
- Devices must be continuously connected with a secure protective conductor connection and adequate cross-section. The cross-section of the potential equalization conductors (grounding) should be at least 4mm² Cu. The conductivity of the construction parts and their connections to the protective conductor must meet a cross-section of at least 10mm² Cu.
- Use the corresponding cable end configuration for the connection. The connection must be made in such a way that a permanently secure electrical connection is maintained (no protruding wire ends).

- No foreign objects, dirt, or moisture should be present in connection and terminal boxes. They must meet the required Ex-protection standards and be sealed dust- and waterproof.
- Cable entries must be approved for the relevant Ex-area with an EU-type examination certificate and secured against loosening.
- Unused cable entry openings must be sealed dust- and waterproof with special plugs approved and certified for the Ex-area. They must be secured against accidental loosening.
- All connections must ensure strain relief.

3 Machine Description

3.1 Machine Overview

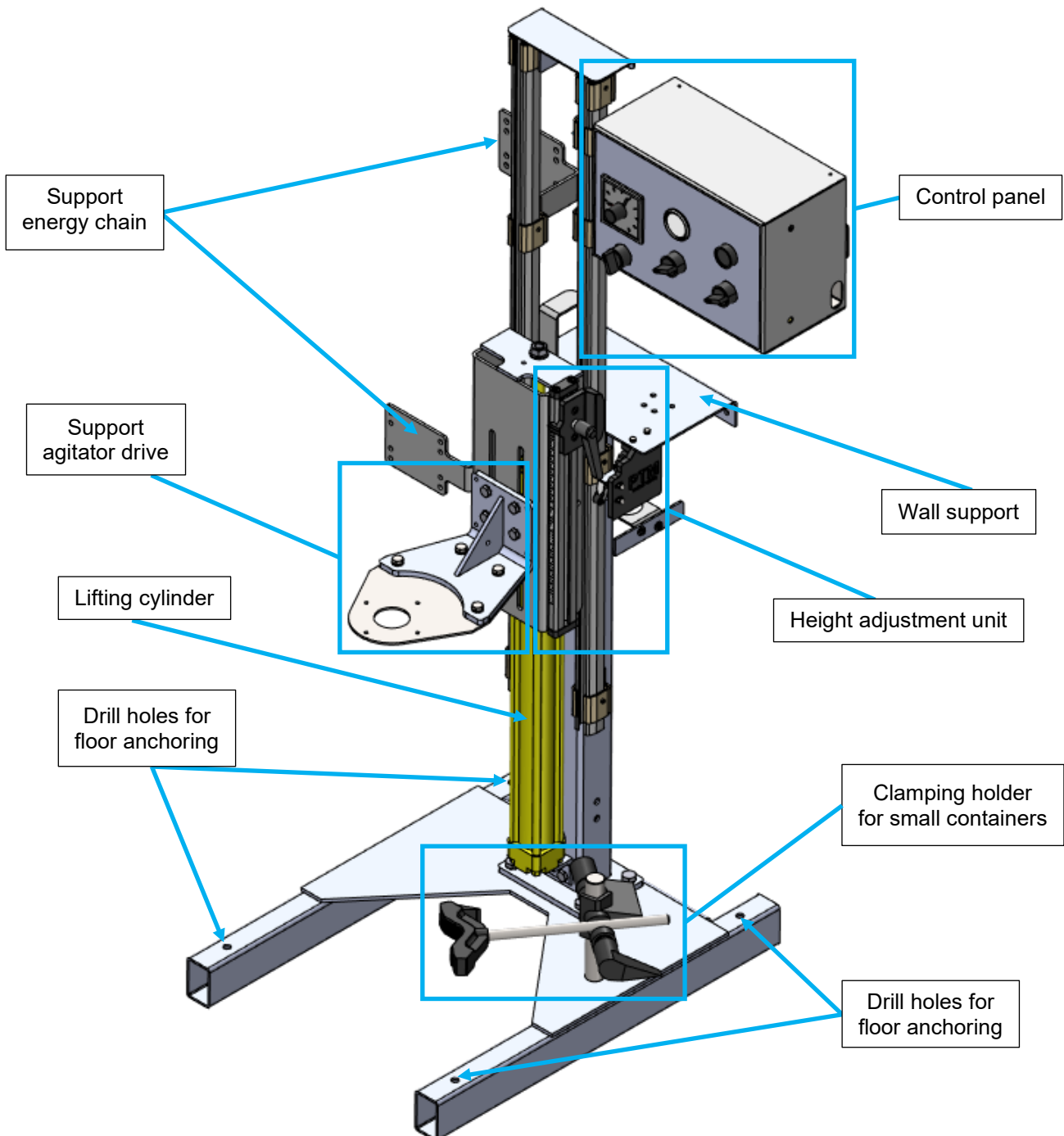


Figure 1: Stand-mounted agitator with height adjustment and clamping holder for small containers

The pneumatic lifting station "Stand-mounted Agitator for Small Containers and Laboratory Use" is used to lift/lower an agitator drive from/to an agitator container. The agitator drive (not shown here) is mounted on the designated support (Figure 1). As an alternative to the shown support for the agitator drive, a suitable lid for the agitator container with the mounted agitator drive can also be used. The support/lid, along with the agitator drive, is moved up/down by the lifting cylinder (Figure 1). The control of the lifting cylinder and the agitator drive is carried out via the control panel (Figure 1). The control panel can be mounted on either side of the lifting station. The energy chain (not shown) is fixed to the designated holders (Figure 1). The stand-mounted agitator optionally features a height adjustment unit and/or a clamping holder for small containers (Figure 1). Instead of the clamping holder, a barrel support can also be chosen to secure the agitator container (not shown in Figure 1). The entire stand-mounted agitator is fixed to the floor using four drill holes for floor anchoring, and can also be screwed to a wall using two additional drill holes in the wall support (Figure 1). As an alternative to the shown base for floor anchoring, the station can also be selected without a base for wall mounting (not shown in Figure 1).

3.2 Component Description

3.2.1 Mechanical Components

Clamping holder

The clamping holder allows for the fixation of the agitator container in the stand-mounted agitator (Figure 2):

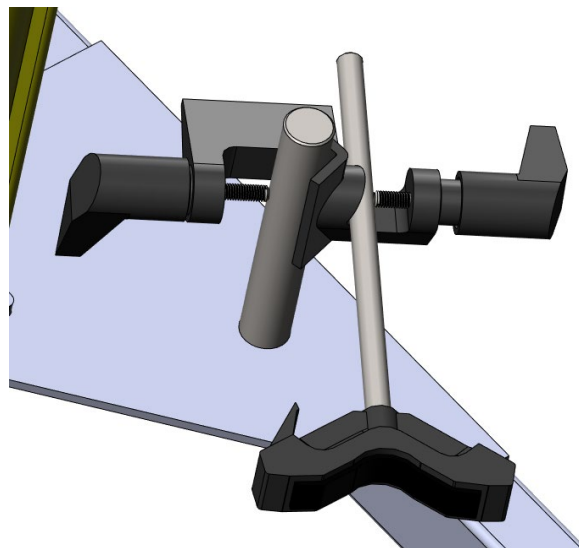


Figure 2: Clamping holder for small containers

The clamping holder can be adjusted in both vertical and horizontal directions to accommodate different container diameters and heights.

- Available travel in vertical direction: 88.5 mm
- Maximum container outer diameter: 355 mm

- Minimum container height: 110 mm

For adjusting the clamping holder, refer to section 5.1.1.

Barrel support (custom-made upon request)

Alternatively to the clamping holder, a barrel support can also be used to secure the agitator container (Figure 3):

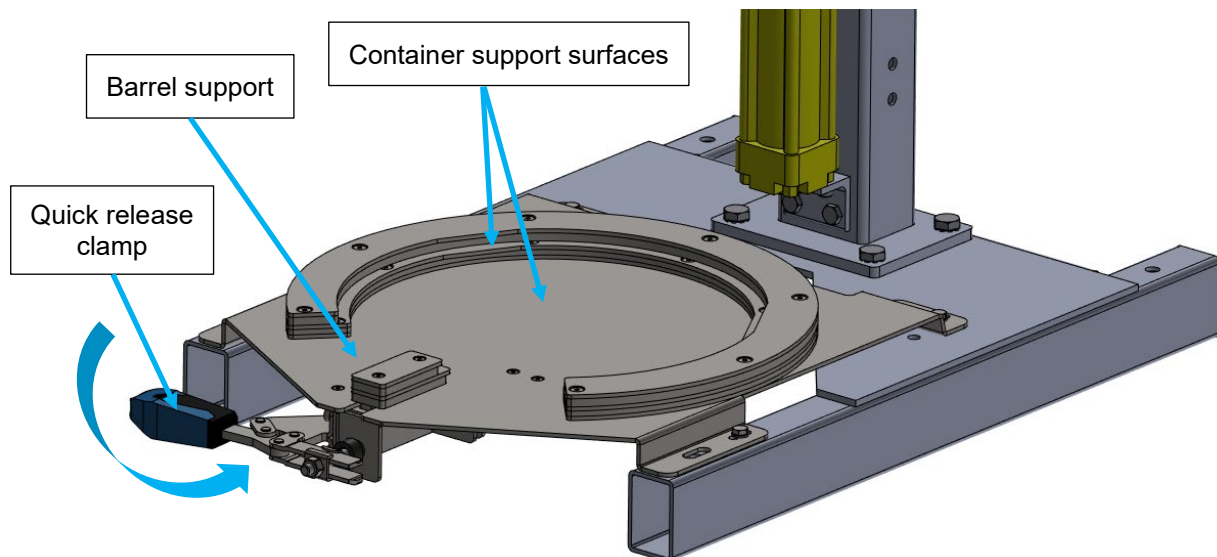


Figure 3: Barrel support

The barrel support is mounted on the base of the stand-mounted agitator. It is used to secure Hobcock containers.

For the operation of the barrel support, refer to section 5.1.1.

Barrel stop (optional)

As an alternative to the clamping holder for small containers (Figure 2), a barrel stop (Figure 4) can also be mounted on the stand-mounted agitator:

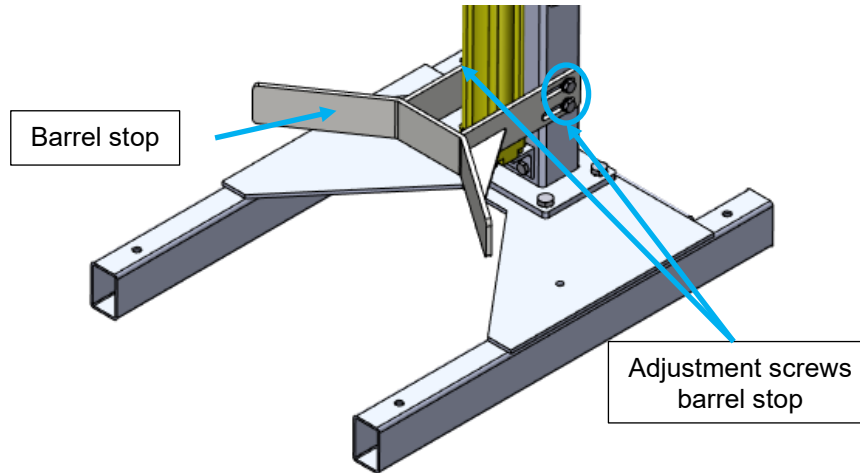


Figure 4: Barrel stop

The barrel stop can only be used in combination with a lid featuring an integrated agitator release. The maximum container outer diameter for the barrel stop is 355 mm.

For the adjustment of the barrel stop, refer to section 5.1.1.

Support agitator drive

The support shown in Figure 1 is suitable for agitator drives from PTM Mechatronics GmbH. Alternatively, a lid compatible with the used agitator container can be screwed onto the support.

Height adjustment unit

Using the height adjustment unit (Figure 5), the lower end position of the lifting cylinder (Figure 1) can be adapted to different agitator shaft lengths (or agitator container heights):

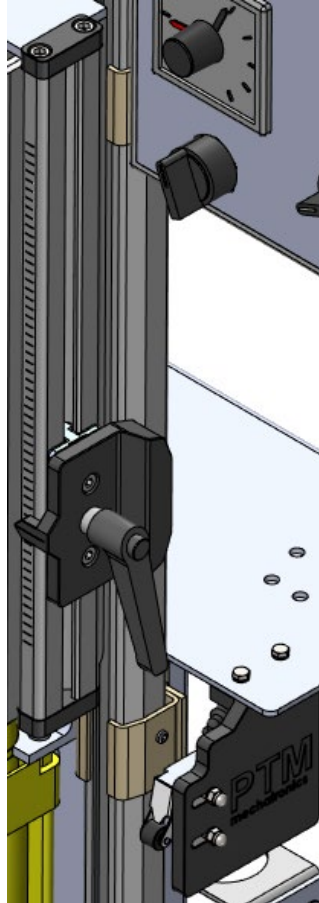


Figure 5: Height adjustment unit

The height adjustment unit offers a total adjustment range of 475 mm.

For the adjustment of this unit, refer to section 5.1.1.

3.2.2 Pneumatic Components

Maintenance unit

The maintenance unit with coupling connector NW 7.2 for connecting the compressed air and adjusting the machine pressure is located on the rear of the stand-mounted agitator (Figure 6):

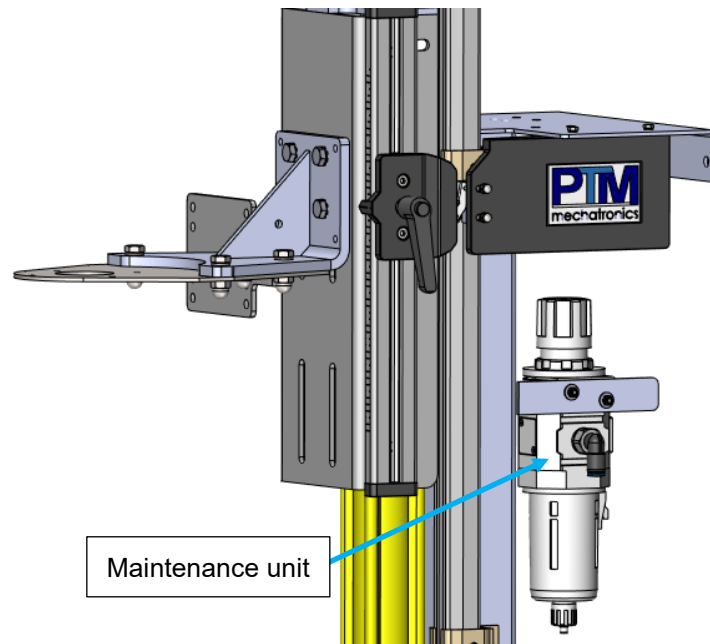


Figure 6: Maintenance unit

For adjusting the operating pressure of the machine, refer to section 4.3.

Control panel

Figure 7 shows the control panel of the stand-mounted agitator with its control elements:

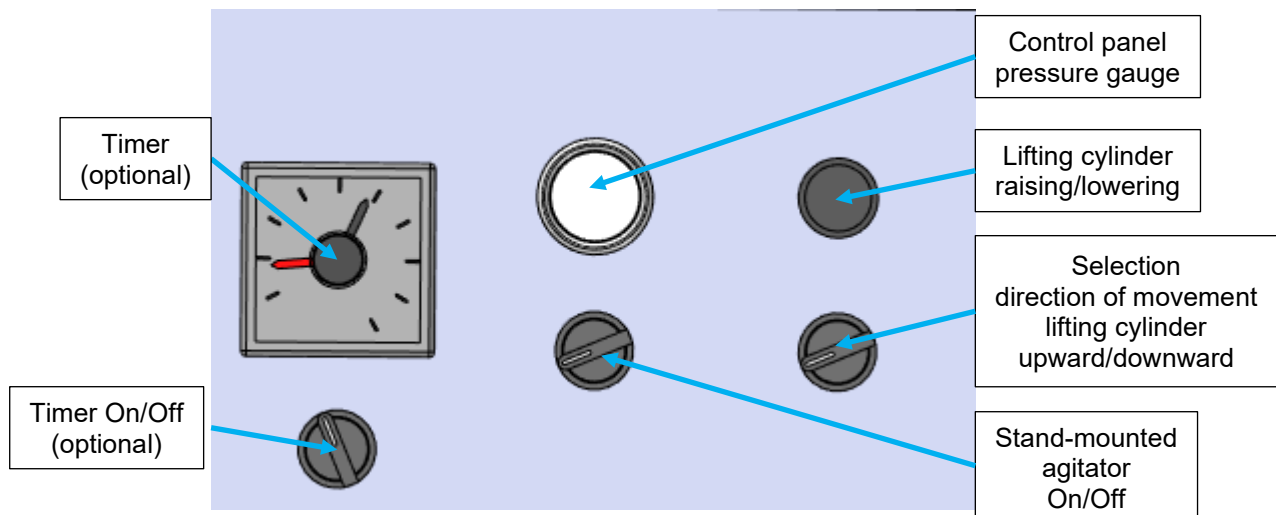


Figure 7: Control panel with control elements

For operating the control panel, refer to section 5.1.2.

Reference is also made to the pneumatic circuit diagram here:

- Without timer: Pneumatikplan eco-Station und Stativrührwerk für Kleingebinde-01E.pdf
- With timer: Pneumatikplan eco-Station und Stativrührwerk für Kleingebinde mit Timer-01C.pdf

Agitator release

The agitator release only allows the compressed air for the agitator drive once the agitator drive has been moved to a defined mixing position. Depending on the configuration of the stand-mounted agitator, the agitator release is positioned differently:

- Barrel support: Here, the agitator release is split across two pneumatic valves. One pneumatic valve is activated on the underside of the support when a container is positioned on the barrel support and the quick-release clamp is closed (Figure 3). The second part is controlled via the agitator release of the height adjustment unit (Figure 12; Figure 13) or through the agitator release integrated into the lid. The agitator release in the lid is only triggered once the lid is resting on the agitator container. The agitator release of both the height adjustment unit and the lid also limits the downward travel of the lifting cylinder.
- Barrel stop: When using the barrel stop to position the agitator container, the agitator release is integrated either in the corresponding lid (not shown) or in the height adjustment unit (Figure 12; Figure 13). In both cases, the agitator release also represents the lower end position of the lifting cylinder.
- Clamping holder for small containers: When using the clamping holder for small containers to position the agitator container, the agitator release is integrated either in the corresponding lid (not shown) or in the height adjustment unit (Figure 12; Figure 13). In both cases, the agitator release also represents the lower end position of the lifting cylinder.

Agitator drive

The following pneumatic agitator drives from PTM Mechatronics GmbH can be mounted on the stand-mounted agitator (Table 3):

Table 3: Performance data pneumatic motor

| | | |
|-------------------------|----------------------------------|----------------------------------|
| Manufacturer: | PTM mechatronics GmbH | |
| Motor type: | | |
| eco-Drive/eco-Seal 450 | Max. torque [Nm]: | 4 |
| | Max. speed [rpm] (w/o gearbox): | 300 |
| | Average air consumption [L/min]: | 25 |
| eco-Drive/eco-Seal 900 | Max. torque [Nm]: | 8 |
| | Max. speed [rpm] (w/o gearbox): | 300 |
| | Average air consumption [L/min]: | 50 |
| eco-Drive/eco-Seal 1800 | Max. torque [Nm]: | 16 |
| | Max. speed [rpm] (w/o gearbox): | 300 |
| | Average air consumption [L/min]: | 100 |
| eco-Drive/eco-Seal 3600 | Max. torque [Nm]: | 32 |
| | Max. speed [rpm] (w/o gearbox): | 300 |
| | Average air consumption [L/min]: | 200 |
| eco-Drive 450 ... 3600 | Link operating manual: | <u>eco-Drive</u> |
| eco-Seal 450 ... 3600 | Link operating manual: | <u>eco-Seal</u> |

3.3 Pneumatic connection

The compressed air connection is made via a coupling connector size NW 7.2 on the maintenance unit at the rear of the stand (Figure 6). The operating pressure of the machine must be between 2 and 6 bar.

4 Commissioning

4.1 Initial commissioning

Note!



If the assembly of the stand-mounted agitator is not carried out by PTM Mechatronics GmbH, the responsibility for proper and safe installation lies entirely with the company performing the assembly.

The commissioning of the control system includes:

- Checking of the compressed air connections.
- Connection of the compressed air.

Before commissioning, the following points should be checked:

- Are all safety devices present and functioning correctly? For the stand-mounted agitator, this includes the agitator release (eco-Start).
- Has the operating personnel been trained on the operating manual of the machine?
- Has an internal operating instruction been conducted, and has it been understood by the personnel?
- Has the machine been set up correctly?

4.2 Assembly of the agitator shaft



Warning!

Disconnect the stand-mounted agitator from the compressed air supply before assembling/disassembling the agitator shaft to avoid injuries.

Note!



The barrel/agitator container should be removed from the system during the assembly and disassembly of the agitator shaft.

The procedure for assembling/disassembling the agitator shaft depends on the chosen agitator shaft connection (eco-Quick/threaded hub/chuck).

The following steps must be considered when inserting or replacing the agitator shaft:

1. It is recommended to move the machine to its upper end position.
2. Assembly/Disassembly of the agitator shaft:
 - 2.1. If you have an agitator drive with an eco-Quick connection, follow the instructions in Operating Manual_eco-Quick.pdf.
 - 2.2. If you have an agitator drive with a threaded hub, follow steps 2.2.1 to 2.2.4.
 - 2.2.1. Thoroughly clean the agitator shaft and the threaded hub on the motor before assembling the agitator shaft.
 - 2.2.2. Screw the agitator shaft into the hub by hand, while countering the hub with a spanner (size 21 spanner for M12 threaded hub; size 24 spanner for M16 threaded hub).
 - 2.2.3. Once the agitator shaft is screwed in completely, use a second spanner to tighten the agitator shaft (size 13 or 17 spanner for M12 threaded agitator shafts; size 17, 21, 24, or 27 spanner for M16 threaded agitator shafts).
 - 2.2.4. To disassemble the agitator shaft, proceed in reverse order.
 - 2.3. If you have an agitator drive with a chuck, follow steps 2.3.1 to 2.3.4.
 - 2.3.1. Open the chuck by turning the outer ring clockwise.
 - 2.3.2. Insert the agitator shaft into the center of the chuck.
 - 2.3.3. Turn the chuck counterclockwise until the agitator shaft is firmly and securely clamped.
 - 2.3.4. To disassemble the agitator shaft, proceed in reverse order.

4.3 Pneumatic connection

Connect the system to the designated pneumatic system. The coupling connector is located at the rear of the stand-mounted agitator (Figure 6).

Check the pressure gauge to ensure that the required operating pressure of 2 to 6 bar is reached. If this is not the case, the pressure can be adjusted at the maintenance unit. To do this, the upper part of the maintenance unit must be pulled upwards and rotated. The direction of rotation determines the pressure regulation: turning counterclockwise reduces the pressure, while turning clockwise increases the pressure.

5 Operation of the Machine

Warning!



Before using the machine and making any adjustments, it is essential to read the operating manual carefully. The manual is intended for individuals who are trained and familiar with the machine. Adjustments may only be made by authorized personnel, as improper actions can lead to serious damage to both individuals and the machine!



Hazard!

There is a risk of crushing due to the movement of the machine. Therefore, no other persons (other than the operator) should be near the stand-mounted agitator during operation.

5.1 Description of the Control Elements

5.1.1 Mechanical Control Elements

Clamping holder

The clamping holder for small containers has two adjustment options: one to adjust its vertical position and another to adjust its horizontal position (Figure 8):

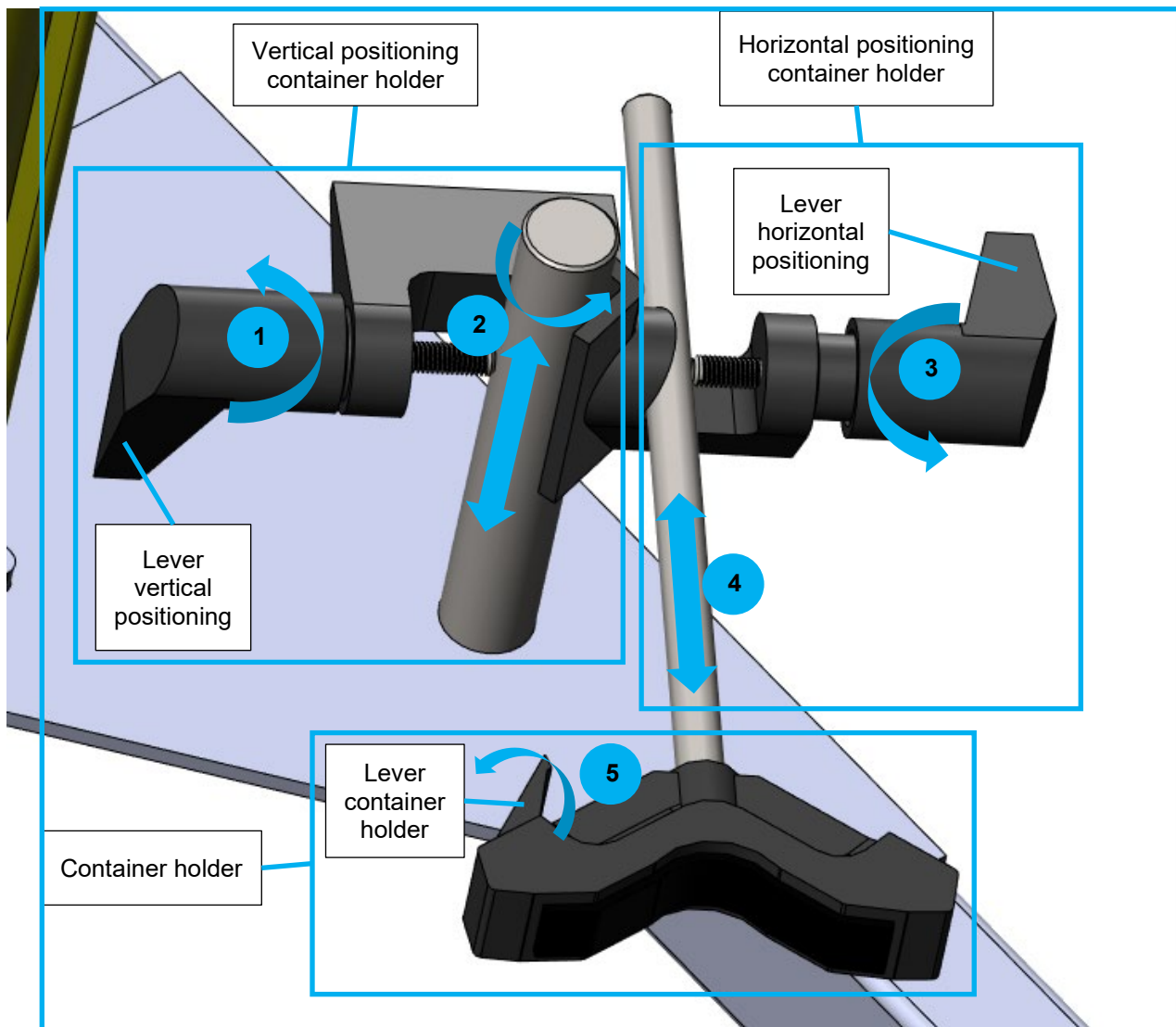


Figure 8: Clamping holder for small containers in the top view

To correctly adjust the clamping holder for small containers, proceed as follows:

1. First, place your agitator container in the center of the stand-mounted agitator.
2. To open the vertical positioning of the container holder, turn the lever for vertical positioning in the direction of the arrow ("1" in Figure 8).
 - a. Now, it is possible to move the entire fastening mechanism vertically ("2" in Figure 8) and additionally adjust the horizontal angle ("2" in Figure 8) of the container holder.

- b. Position the mechanism in a way that the container holder (Figure 8) is as close as possible to the upper edge of the agitator container in the vertical direction.
 - c. Once you have reached the desired vertical position, turn the lever for vertical positioning in the opposite direction of the arrow ("1" in Figure 8) and ensure that the lever is securely locked in place.
 3. Next, open the lever for horizontal positioning in the direction of the arrow ("3" in Figure 8).
 - a. Move the container holder horizontally ("4" in Figure 8) until it is in contact with the agitator container.
 - b. Then, turn the lever for horizontal positioning in the opposite direction of the arrow ("3" in Figure 8) to secure it.
 - c. Also, ensure that the lever is securely locked in place.
 4. Open the lever of the container holder in the direction of the arrow ("5" in Figure 8), wrap the rubber band of the container holder (not shown here) around the agitator container once, and thread it into this lever.
 5. Finally, pull the rubber band tightly around the agitator container and close the container holder lever in the opposite direction of the arrow ("5" in Figure 8).

Barrel support (custom-made upon request)

To position the Hobbock container on the barrel support, proceed as follows:

1. Open the quick-release clamp of the barrel support according to Figure 3 in the direction of the arrow.
2. Place the Hobbock container in the barrel support so that it sits flat on the container support surface (Figure 3) with the appropriate outer diameter.
3. Close the quick-release clamp of the barrel support according to Figure 3 in the opposite direction of the arrow.

If the quick-release clamp is not correctly adjusted and cannot be closed or does not secure the Hobbock container tightly enough, adjust the quick-release clamp as follows:

1. Open the quick-release clamp of the barrel support according to Figure 3 in the direction of the arrow.
2. Loosen the locking nut (Figure 9) of the quick-release clamp by turning it counterclockwise.
3. If the quick-release clamp is loose in the closed position, turn the screw with the rubber cap (Figure 9) clockwise so that the rubber cap moves further "towards the barrel support" in the closed position of the quick-release clamp.
 - a. If the clamping force of the quick-release clamp is too high and it cannot be closed, turn the screw with the rubber cap (Figure 9) counterclockwise so that the rubber cap moves further "away from the barrel support" in the closed position of the quick-release clamp.
4. Test the clamping force of the quick-release clamp by placing the Hobbock container on the barrel support (as described above) and closing the quick-release clamp.
5. Once you have achieved the desired clamping force of the quick-release clamp, tighten the locking nut (Figure 9) clockwise.

6. **IMPORTANT:** the clamping force of the quick-release clamp must be high enough to ensure that the lip of the Hobbock container, as shown in Figure 10, is pushed into the barrel support, thereby preventing the Hobbock container from falling out during stirring.

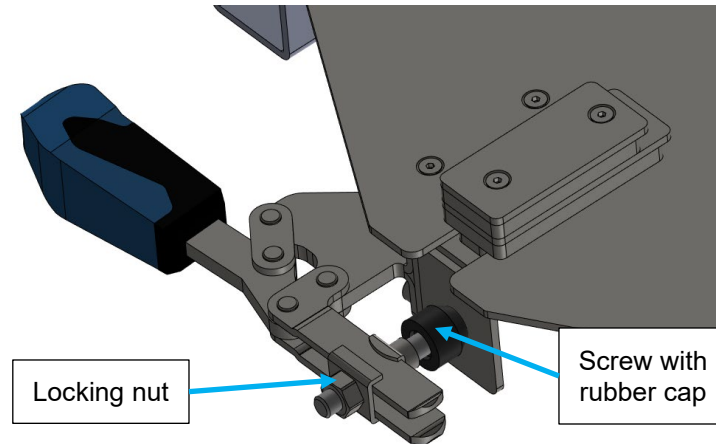


Figure 9: Adjustment of quick release clamp

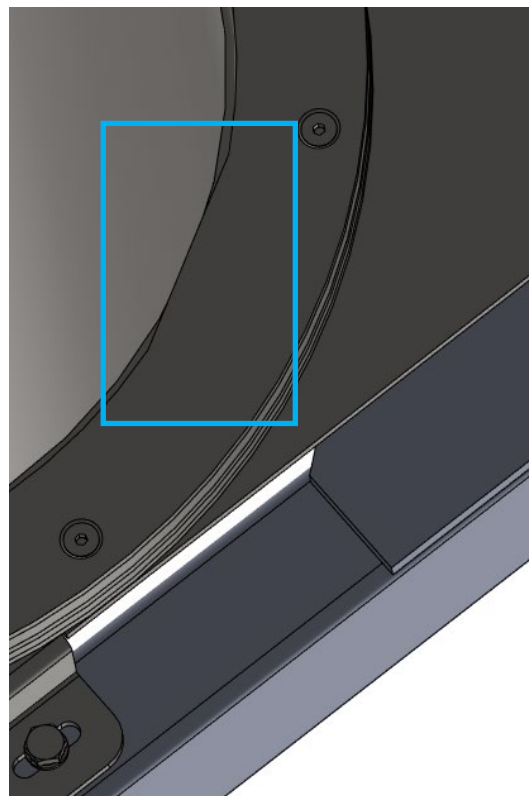


Figure 10: Correct positioning of the Hobbock container in the barrel support

Barrel stop (optional)

The barrel stop can be adjusted using four hexagon screws (Figure 4). To adjust the barrel stop to your agitator container, proceed as follows:

1. Loosen the four adjustment screws of the barrel stop (Figure 4) and slide the barrel stop towards the lifting cylinder.
2. Position your agitator container in the stand-mounted agitator so that it is approximately centered beneath the lid/agitator drive.
3. Now, gradually lower the agitator drive (see section 5.1.2) and, if necessary, adjust the position of your agitator container.
4. Once the lid is centered on the agitator container, pull the barrel stop forward until it touches the agitator container (Figure 11).

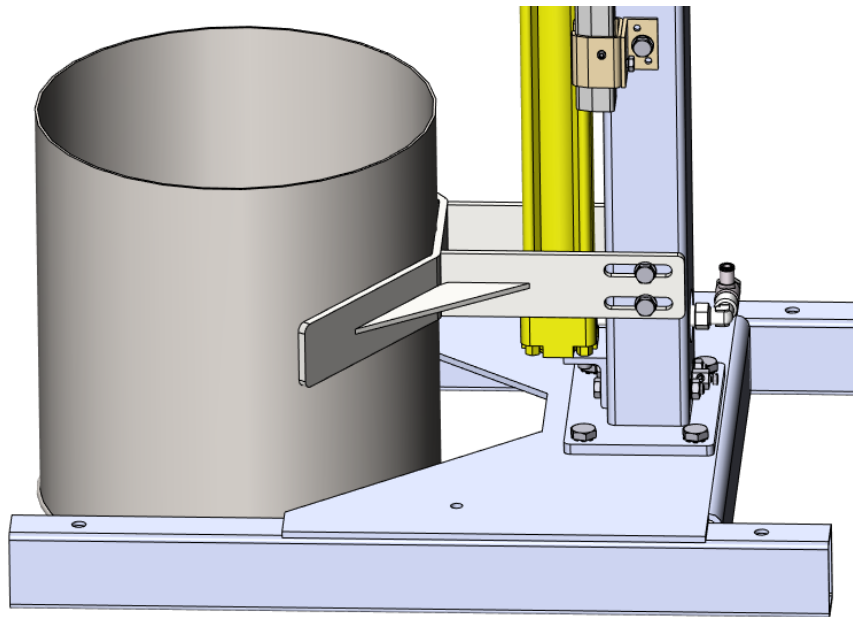


Figure 11: Correct adjustment of the barrel stop

5. Tighten the four adjustment screws of the barrel stop (Figure 4) again.

Height adjustment unit

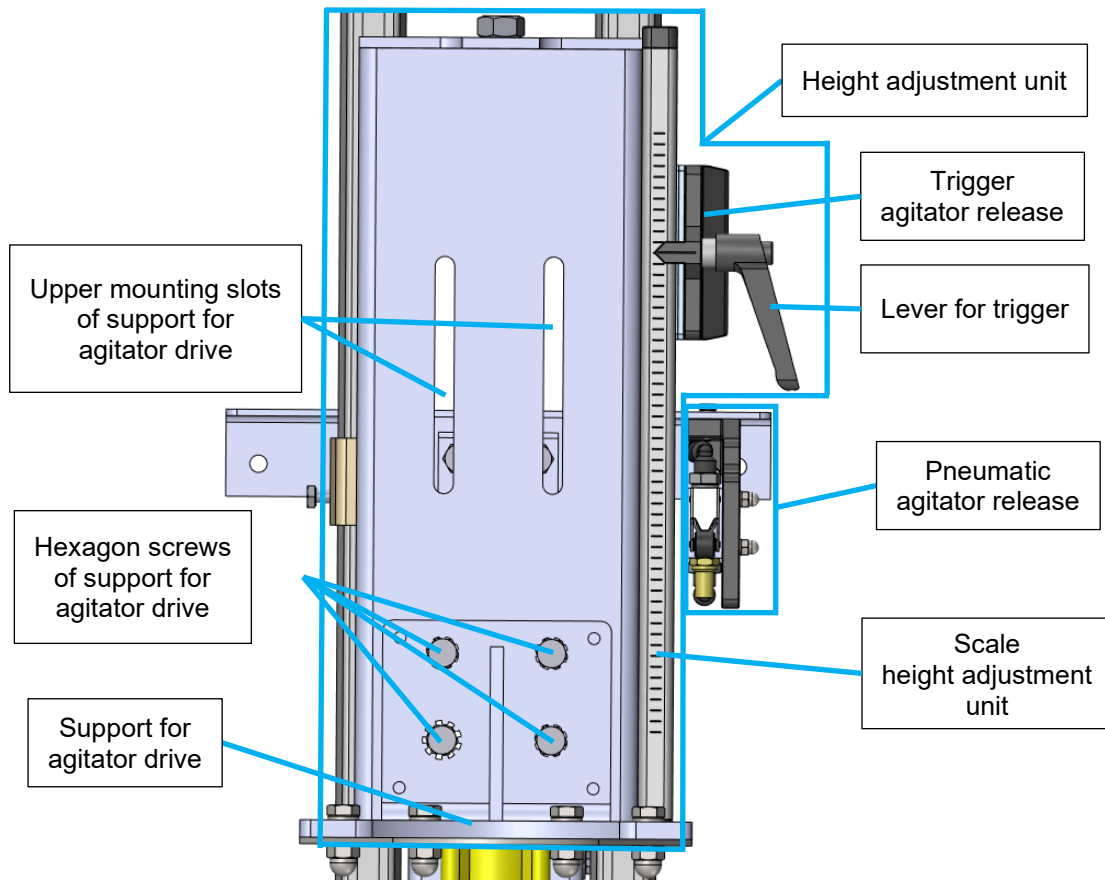


Figure 12: Height adjustment unit front view

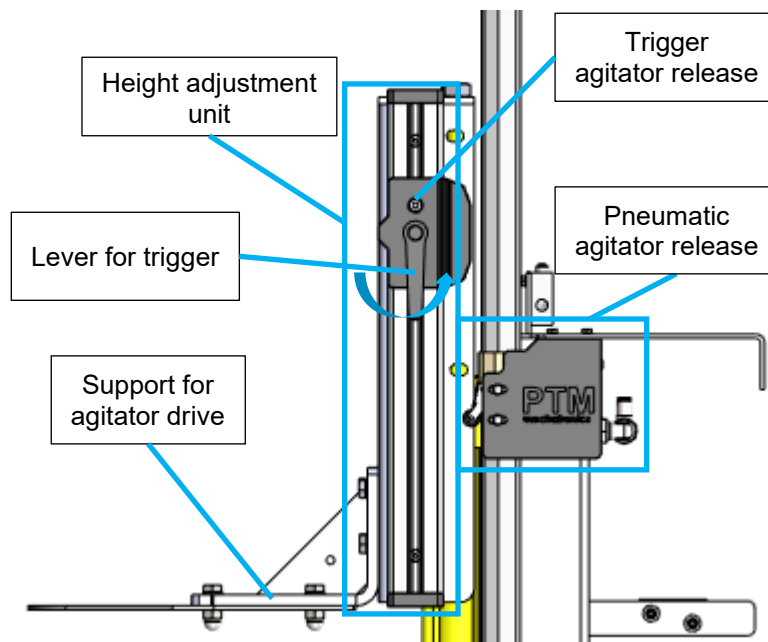


Figure 13: Height adjustment unit side view

Warning!



When positioning the height adjustment unit for the small container stand-mounted agitator, the following points must be strictly observed to prevent collisions between components or between components and people:

- Only adjust the height when no other person is in immediate proximity to the station.
- Remove the agitator container from the machine before making the adjustment.
- Only move the machine with the mounted agitator shaft downward if you are sure that the safety distances to the ground, as mentioned in points 4.a.i and 4.a.ii (see below), are maintained.
- Always move the machine slowly and gradually during the adjustments and continuously check that any collision is excluded.

To properly adjust the height adjustment unit, proceed as follows (for the described procedure, no agitator shaft is mounted initially):

1. Move the station to its upper end position.
2. Set the trigger for the agitator release to the lowest point on the scale (Figure 12; Figure 13).
 - a. To do this, turn the lever of the trigger (Figure 12; Figure 13) counterclockwise (in the direction of the arrow in Figure 13).
 - b. Slide the trigger (Figure 12; Figure 13) along the scale until it reaches the bottom stop.
 - c. Close the lever of the trigger again (Figure 12; Figure 13, opposite the direction of the arrow) and ensure that the lever is securely closed.
3. Now, lower the station until the trigger activates the agitator release (Figure 12; Figure 13).
4. Measure the distance between the lower edge of the agitator drive support and the ground.
 - a. If your longest agitator shaft is the correct length, take it and mount it (refer to section 4.2).
 - i. **When doing so, ensure a safety distance of 25 mm between the bottom edge of the agitator and the bottom of the container when the agitator shaft is mounted.**
 - ii. **Also, consider the distance from the container bottom to the ground (this is especially relevant when using the barrel support).**
 - b. If your longest agitator shaft is too long, you will need to move the agitator drive support upward. Proceed as follows:
 - i. Loosen the four hexagon screws while simultaneously countering the nuts on the back of the bracket (Figure 12).
 - ii. Slide the agitator drive support upward. If the available distance of the lower mounting slots (not shown) is insufficient, mount the bracket in the upper mounting slots (Figure 12).
 - iii. Ensure that the four hexagon screws are securely tightened at the end.

- c. If your longest agitator shaft is too short, you have two options:
 - i. Either you move the trigger for the agitator release the corresponding distance upward (Figure 12; Figure 13) ...
 - ii. ... or you move the agitator drive support downward in the upper/lower mounting slots (if the bracket is not already mounted at the lowest point of the lower mounting slots) (Figure 12).
5. Once you have completed the adjustments for your longest agitator shaft and considered **points 4.a.i and 4.a.ii** (see above), mark the position of the trigger on the scale as well as the position of the agitator drive support (Figure 12; Figure 13).
6. The adjustments for all other (shorter) agitator shafts should then be carried out as follows:
 - a. Measure the length difference between your longest agitator shaft and the (next) shorter agitator shaft.
 - b. Compensate for this length difference by...
 - i. ... moving the trigger for the agitator release upward by this length difference (if there is still enough distance available to adjust the trigger upward), or ...
 - ii. ... moving the agitator drive support downward by this length difference (if there is still enough distance available to adjust the bracket downward), or ...
 - iii. ... combining the upward adjustment of the trigger and the downward adjustment of the support.

Once you have found the correct settings for the (next) shorter agitator shaft, mark the positions of the bracket and the trigger here as well (consider **points 4.a.i and 4.a.ii** for each new agitator shaft).

5.1.2 Pneumatic Control Elements

Once the stand-mounted agitator is connected to the compressed air supply (section 4.3), it can be controlled via the control elements on the control panel (Figure 7):

Stand-mounted agitator

The selector switch is used to turn the system on and off (Figure 7). To turn on the stand-mounted agitator, the selector switch must be rotated to its upper position. In the lower position, the stand-mounted agitator is turned off.

Control panel pressure gauge

The operating pressure applied to the stand-mounted agitator can be read on the control panel pressure gauge (Figure 7).

Selection direction of movement lifting cylinder upward/downward

This selector switch is used to choose the direction of movement for the stand (Figure 7). To move the stand with the agitator drive upward, the selector switch must be turned to its upper position. To move it downward, the selector switch must be turned downward accordingly.

Lifting cylinder raising/lowering

After selecting the direction of movement for the stand (as above), the movement of the stand is activated using this button (Figure 7).

Timer On/Off (optional)

This selector switch allows you to switch between operation with or without a timer (Figure 7). For operation with a timer, the selector switch must be turned to its right position. In the left position of the selector switch, the operation without a timer is set.

Timer (optional)

The optionally available timer (Figure 7) allows you to set a defined mixing time, after which the agitator drive will automatically stop. Once the operation with the timer is activated (as mentioned above), a mixing time must be set on the timer itself; otherwise, the agitator drive will not start. To set the mixing time, turn the timer's rotary knob clockwise until the timer's pointer shows the desired mixing time.

5.2 Stirring Process

The following steps must be performed for the stirring process:

1. Move the agitator to the upper end position (see section 5.1.2).
2. If necessary, mount the agitator shaft (see section 4.2).
3. Position and align the agitator container in the system (see section 5.1.1).
4. Lower the agitator until it comes to a stop in the lower end position (see section 5.1.2).
5. The stirring process starts automatically when the agitator release is activated and operation without a timer is selected.
 - a. If the operation with a timer is selected, a time must be set on the timer to start the agitator drive (see section 5.1.2).
6. After the stirring process is complete, move the agitator to the upper end position (see section 5.1.2).
7. Remove the agitator container from the system.
8. Disassemble the agitator shaft and then clean it (see section 4.2).

6 Maintenance and Care

In general, the mechanical and pneumatic operating equipment should be checked at regular intervals to ensure their proper condition and functionality. The intervals should be chosen so that any issues can be identified in a timely manner, or any existing damage can be promptly addressed.



Warning!

Maintenance work may only be carried out on the machine when it is stationary.

Regarding the maintenance and care of the agitator drive, please refer to the specific operating manual of the motor:

For eco-Seal:

<https://ptm-mechatronics.com/wp-content/uploads/2023/09/Bedienungsanleitung-eco-Seal.pdf>; section 9, page 8.

For eco-Drive:

<https://ptm-mechatronics.com/wp-content/uploads/2024/06/Betriebsanleitung-Lagerflanschruhrwerke-DE-EN-2022-12.pdf>; section 12, page 57.

The length of the cleaning intervals depends on the frequency of use of the machine.