



# Cyclix 200 L

Instruction manual

**DRT582350110**

B - 2024/01

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## Services



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Throughout the year, our company provides training courses that enable you to acquire the know-how required for the implementation and maintenance of your equipment in order to guarantee its long-term performance. A catalogue is available on request.

[www.sames.com/usa/en/services-training.html](http://www.sames.com/usa/en/services-training.html)



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As part of a technical assistance program for our customers using **Sames** equipment, line audits are designed to help you optimize and control your production tool.

Our network of experts is continuously trained and qualified to provide our customers with technical expertise on the liquid or powder installations in which our equipment is integrated. The overall environment of the production lines is taken into account during this technical audit.

A brochure is available for download:

[www.sames.com/usa/en/services-service-contract.html](http://www.sames.com/usa/en/services-service-contract.html)



### Maintenance contract

An annual maintenance contract (including or not the consumables to be replaced during each intervention) can be considered with the partnership of **Sames**. It is associated with a preventive maintenance plan established during a first audit visit which details the control points necessary to guarantee the performance of the installed equipment.

[www.sames.com/usa/en/services-service-contract.html](http://www.sames.com/usa/en/services-service-contract.html)



### Hotline

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## Cyclix 200 L

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## 1. Health and safety instructions

### 1.1. Configuration of the certified equipment

This manual defines the configuration of the certified equipment.

The following user manuals are listed:

- DRT 582.180.110: General safety instructions,
- DRT 582.391.110: Cyclix 200 L / 52.8 US gal single ram.

### 1.2. Marking

#### 1.2.1. Description of the nameplate marking

Each device is marked with the name of the manufacturer, the device reference and important informations for the use of the device: air pressure, electrical power,...

If you purchase an agitator unit without a ram, it can be installed in zone 0.  
On the other hand, an agitator unit with a ram must be installed in zone 1.

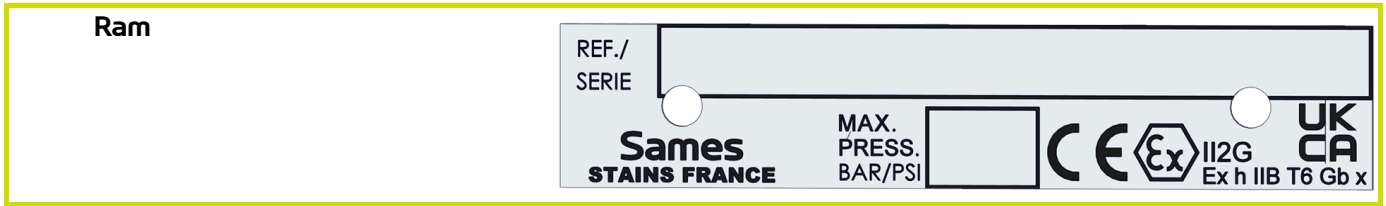
This equipment therefore complies with the following provisions:

- ATEX Directive (2014/34/EU):

 II 2 G - group II, category 2, gas) for the ram,

 II 1/2 GD - group II, categories 1 and 2, gas, dusts) for the agitator motor.




The EU declaration of conformity and the UKCA declaration (specific for the British market) are included in this document in annexes.



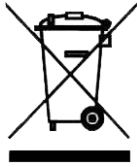
Description	
<b>Sigle Sames</b>	Manufacturer's brand
<b>STAINS FRANCE</b>	Manufacturer's address
<b>REF.</b>	Part number of the unit
<b>SERIE</b>	Number given by <b>Sames</b> . The two first numbers indicate the manufacturing year.
<b>MAX. PRESS. BAR/PSI</b>	Maximum pressure
<b>Ex II 2 G</b>	<p><b>Ex</b> : Use in explosive area</p> <p><b>II</b>: Group II</p> <p><b>2</b>: Category 2</p> <p>Surface equipment intended for use in environment where explosive atmospheres due to gases, vapors, mists are likely to occur occasionally during normal operation</p> <p><b>G</b>: Gas</p>
<b>Ex</b>	<b>Ex</b> : Marking of conformity to european standards
<b>h</b>	<b>h</b> : Protection mode for non-electrical devices
<b>IIB T6</b>	<p><b>IIB</b>: Reference gas for equipment qualification</p> <p><b>T6</b>: Temperature class</p> <p>- Maximum surface temperature: 85°C / 185°F</p>
<b>Gb</b>	<b>Gb</b> : Equipment protection level (gas Zone 1)
<b>X</b>	<b>X</b> : Special conditions apply to the use of the safe operation. Refer to the instructions in the instruction manuals that accompany this product
<b>UK CA</b>	<p><b>UK CA</b>: UK Conformity Assesment</p> <p>Marking required for certain products placed on the market in Great Britain (England, Wales, Scotland) on January 2021</p>
<b>CE</b>	<b>CE</b> : European conformity

<b>Agitator motor</b>	REF./ SERIE	<input type="text"/>	 
	<b>Sames</b> STAINS FRANCE	MAX. PRESS. BAR/PSI	

 II 1/2G Ex h IIC T6 Ga/Gb X  
 II 1/2D Ex h IIIC T85°C Da/Db X

Description	
<b>Sigle Sames</b>	Manufacturer's brand
<b>STAINS FRANCE</b>	Manufacturer's address
<b>REF.</b>	Part number of the unit
<b>SERIE</b>	Number given by <b>Sames</b> . The two first numbers indicate the manufacturing year.
<b>MAX. PRESS. BAR/PSI</b>	Maximum pressure
 II 1/2 G   II 1/2 D	 : Use in explosive area <b>II</b> : Group II <b>1/2</b> : Categories 1 and 2 Surface equipment intended for use in environment where explosive atmospheres due to gases, vapors, mists are likely to occur occasionally during normal operation <b>G</b> : Gas <b>D</b> : Dusts
<b>Ex</b>	<b>Ex</b> : Marking of conformity to european standards
<b>h</b>	<b>h</b> : Protection mode for non-electrical devices
<b>IIC T6</b>	<b>IIC</b> : Reference gas for equipment qualification <b>T6</b> : Temperature class - Maximum surface temperature: 85°C / 185°F
<b>IIC T85°C</b>	<b>IIC</b> : Reference gas for equipment qualification <b>T85°C</b> : Temperature class - Maximum surface temperature: 85°C / 185°F
<b>Ga/Gb</b>	<b>Ga/Gb</b> : Equipment protection level Ga: gas Zone 0; Gb: gas Zone 1
<b>Da/Db</b>	<b>Da/Db</b> : Equipment protection level Da: dusts Zone 20; Db: dusts Zone 21
<b>X</b>	<b>X</b> : Special conditions apply to the use of the safe operation. Refer to the instructions in the instruction manuals that accompany this product
<b>UK CA</b>	<b>UK CA</b> : UK Conformity Assesment Marking required for certain products placed on the market in Great Britain (England, Wales, Scotland) on January 2021
<b>CE</b>	<b>CE</b> : European conformity





Each appliance is fitted with a nameplate bearing the name of the manufacturer, the appliance reference number, essential information (pressure, power,...) and sometimes the pictogram shown opposite.

The equipment is made from high quality, recyclable and reusable materials.

Find out about dedicated collection systems for electrical and electronic appliances.

Respect local regulations and **do not dispose of your old appliances with your household waste**, in order to prevent environmental and health impacts.

### 1.2.2. Standards and guidelines applied

European Directives and Standards - EU	UK Directives and Standards - UKCA
• EN ISO 80079-36 Juin 2016	• EN ISO 80079-36 June 2016
• EN 1127-1: 2019	• EN 1127-1: 2019
• 2006/42/CE / 2006/42/EC	• SI 2008 No.1597
• 2014/34/UE / 2014/34/EU	• SI 2016 No. 1107
• 1907/2006/CE / 1907/2006/EC	• 1907/2006/EC

### 1.3. Meaning of the pictograms

				
Danger: Electricity	Danger: Automatic start	Danger: Hot parts or surfaces	Danger: Risk of explosion	Danger: General
				
Danger: High pressure	Danger: Pinching and/or crushing	Danger: Atex Zone	Danger: Flammability hazard	Danger: Corrosive products
				
Danger: Toxic materials	Danger: Harmful products	Prohibition of wearing a pacemaker	Obligation: Wear of hearing protection	Obligation: Wear of a protective visor
				
Obligation: Protection of the respiratory tract	Obligation: Wear of safety shoes	Obligation: Wear of protective clothes	Obligation: Wear of gloves	Obligation: Wear of a protective helmet
				
Obligation: Wear of safety glasses	Obligation: General	Obligation: Grounding	Obligation: Refer to the manual	

1.4. Precautions for use

1.4.1. General

	<p>Carefully read all operating instructions and device labels, including general safety instructions DRT 582.180.110.</p> 	
<p><b>Personnel qualification</b>                  Personnel using the Cyclix agitation unit 200L / 52.8 US gal must be qualified and competent in safety matters, and must comply with legal requirements. Safety data sheets for the products used must be consulted.                  Only qualified personnel may work on the equipment.</p>		
  	<p><b>Use of products and paints</b>                  Take care! Some toxic products or vapors can cause serious injury through contact with the body, in the eyes or under the skin, as well as through ingestion or inhalation.                  Ensure adequate <b>ventilation</b> to avoid the risk of toxic or flammable build-up.</p>	 <p><b>The use of halogenated hydrocarbon solvents and products containing such solvents in the presence of aluminium or zinc is prohibited.</b>  <b>Failure to follow these instructions could result in an explosion hazard causing serious injury or death</b></p>
<p><b>Professional use of the equipment</b>                  Follow safety instructions, use equipment as recommended and wear personal protective equipment (PPE). Keep your workstation clean, tidy and stable.                  Non-moving equipment must be fixed to the ground by suitable devices (spit, screws, bolts,...) to ensure its stability during use.                  Equipment must be checked periodically. Defective or worn parts must be replaced.                  Never exceed the maximum working pressure of equipment components.</p>	<p><b>Recommendations for hoses</b></p> <ul style="list-style-type: none"> <li>• Keep hoses away from traffic areas, moving parts and hot areas.</li> <li>• Never subject the product hoses to temperatures above 60°C / 140°F or below 0°C / 32°F.</li> <li>• Do not use the hoses to pull or move the equipments.</li> <li>• Tighten all connections as well as the hoses, connectors and the gun before putting the equipment into operation.</li> <li>• Check the hoses regularly and replace them if damaged.</li> <li>• Never exceed the Maximum Working Pressure (MWP) stated on the hoses.</li> <li>• For the assembly of the hoses and the gun: the wearing of PPE is mandatory.</li> <li>• Do not modify the hoses.</li> </ul>	

### 1.5. Warnings



It is imperative that anyone with a pacemaker not use the equipment or enter the projection area. Indeed, high voltage can cause the pacemaker to malfunction.



This equipment may be dangerous if not used, disassembled and reassembled in accordance with the rules specified in this manual and any applicable European Standard or national safety regulations.



The proper operating of the equipment is guaranteed only with the use of original spare parts, distributed by Sames.



In order to ensure optimum assembly, spare parts should be stored at a temperature close to their operating temperature. If not, a sufficient waiting time must be observed before installation, so that all parts are assembled at the same temperature.

#### 1.5.1. Installation rules



##### Grounding

To avoid risks due to static electricity, all system components and parts to be painted must be grounded:

- For pumping equipment (elevators, chassis...) a 2.5 mm section wire is attached to the equipment.

Use it to ground the equipment. If the environment is severe and could damage the ground connection (poor protection, vibrations, mobile equipment...), replace this wire with a more suitable option (thicker wire, ground braid, solid fixing).

- The motor is fitted with an earth cable. Connect the other end to a safe earth.
- The foot of the elevator is fitted with a threaded rod. You can connect it to a second earth ground.
- The materials to be painted must also be 'grounded' by means of clamps with cables or, if they are suspended, by means of hooks that must remain clean at all times.

Have a qualified electrician check for ground continuity. If ground continuity is not assured, check the terminal, wire and grounding point. Never operate the equipment without resolving this problem.

- **Do not store** more flammable materials than necessary inside the work area. These materials must be stored in **approved, grounded containers**.
- Use only grounded **metal pails** for flushing solvents.
- **Cardboard and papers are to be banned.** They are very bad conductors, even insulators.

## 1.6. Important recommendations

### 1.6.1. Non-intended use and/or foreseeable misuse

Any use other than the use described in the paragraph, 'Intended use' and in this operating manual, and any use that extends beyond the specified intended use, shall apply as non-intended use. The manufacturer shall not be liable for any damage resulting from non-intended use. This risk is borne solely by the user.

The following points describe incorrect, prohibited or dangerous use:

- Stay close to all moving parts. Stay in front of the exhaust.
- Supply the equipment with air pressures higher than those recommended. The equipment is designed for use with a maximum operating pressure of 6 bar / 87 psi. Damage may occur if the device is operated at speeds higher than those recommended.
- Run the equipment with no load can lead to a deterioration of the paint, vibrations and an early wear of the parts.
- The equipment is designed for a set number of propellers (2 propellers for the 200 L / 58.2 US gal version). Do not install more propellers than provided.



**Never place hands or fingers on rotating parts of the agitator. The blades may cause serious injury (cuts).**



**Keep a sufficient gap between the bottom of the drum and the blades of the agitator to avoid frictions and sparks.**

## 1.7. Warranty

**Sames** grants a contractual warranty for a period of twelve (12) months from the date of availability to the customer provided that the conditions of use indicated in this technical manual are complied with.

In order to be implemented, the warranty claim must define precisely, in writing the malfunction in question, must be accompanied by the defective material and/or component and must include the conditions under which the customer acquired the material from **Sames**.

**Sames** will only accept or refuse the implementation of the warranty after analysis of the 'defective' material. The warranty granted by **Sames** is limited to the replacement of the material in its entirety or to the partial replacement of the defective component.

**Sames** will only bear the cost of the parts necessary to replace the defective material.

No warranty will be granted by **Sames**:

- For defects and deteriorations resulting from abnormal conditions of storage and/or conservation of the customer's premises or for maintenance or use of the equipment not conforming to the rules of art or not respecting the prescriptions of the present technical manual given to the customer by **Sames**,
- For defects and damage resulting from replacement parts not approved by **Sames** or which have been modified by the customer or in the event that the replacement of a component of the equipment by the customer would damage other elements.
- If the equipment is dismantled without prior agreement from the supplier's technical support,
- For all damages resulting from negligence or lack of supervision on behalf of the customer,
- In the event of normal wear and tear of the equipment and/or its components or in the event of deterioration or accident resulting from faulty and/or abnormal use thereof.

## 2. Description

### 2.1. General

The Cyclix agitator is designed to be installed on drums, model 200 L / 52.8 US gal. It is designed to ensure the homogenization and to bring liquids or semi liquids products the drums contain. Each assembly consists of a ram, a cover fitted with an agitator, a suction rod and a return-rod. The ram makes easier the installation and the replacement of the drum.

#### Expected use

- High return on investment: no product loss.

#### Performance

- Double-acting support with 3-position control lever: up, off, down.
- Quick material change.
- Slotted paddle impeller for high viscosity materials.
- Geared motor with low air consumption.

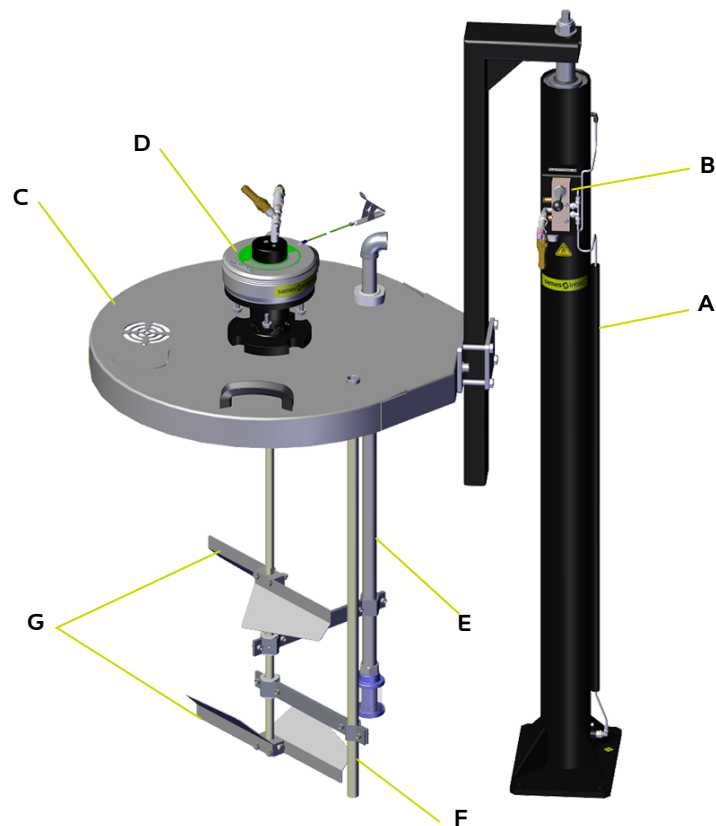
#### Productivity

- Use of a wide range of products.
- Agitator disengaged during elevator movement.

#### Sustainability

- Stainless steel cover, rods and agitator compatible with all types of products.

2.2. Function of the different components



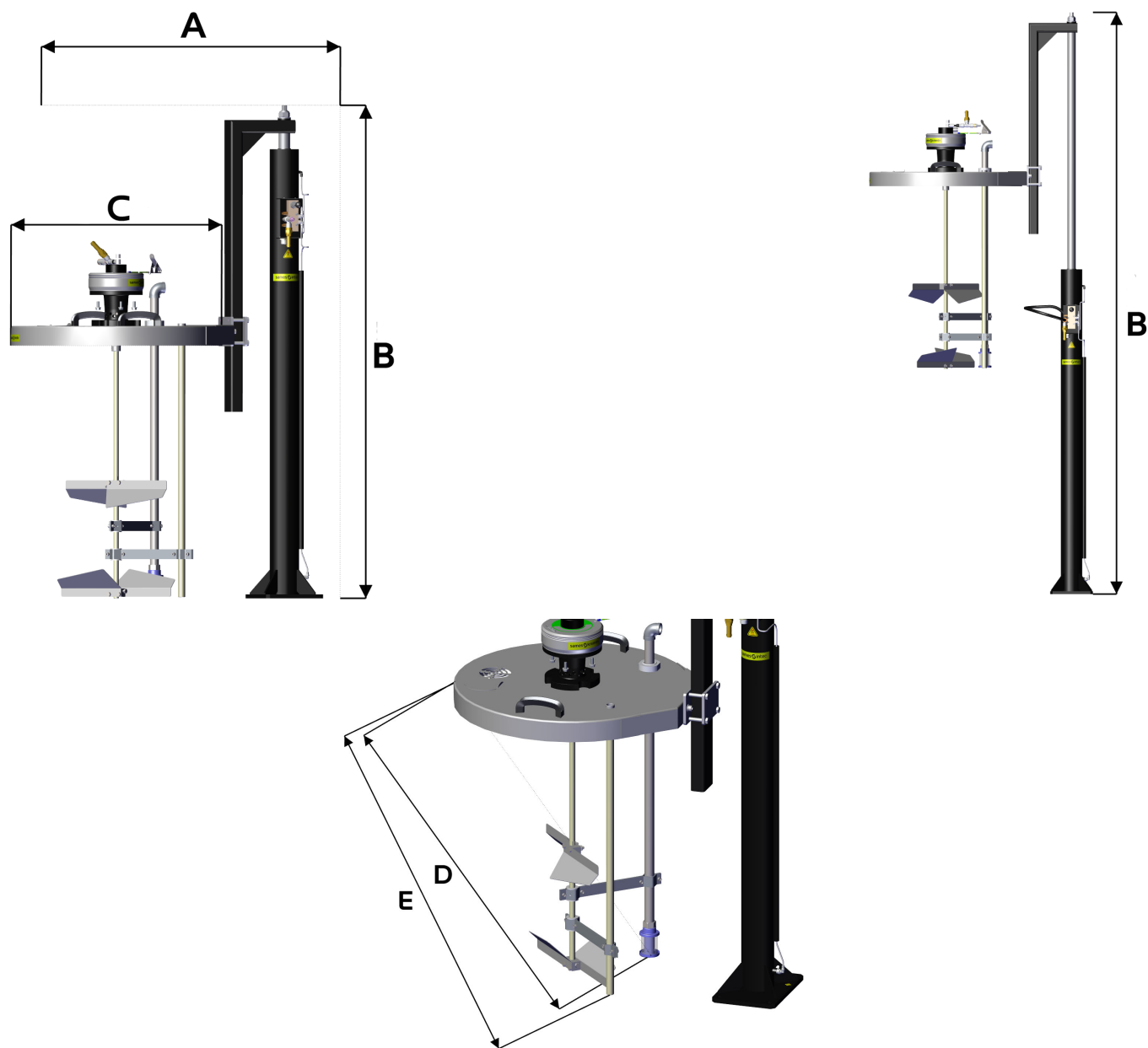
Benchmarks	Component	Function
<b>A</b>	Single-post ram	Simplifies lifting of cover/agitator assembly.
<b>B</b>	Single-post ram control	Operates the ram control lever to raise or lower the arm/cover assembly via the ram jack.
<b>C</b>	Cover	Enables the drum to be closed to prevent product splashing when the agitation unit is in operation. Equipped with an inspection hatch and two handles.
<b>D</b>	Agitator unit	Consists of geared motor, agitator rod and propellers. Mixes the product contained in the drum.
<b>E</b>	Suction rod	Brings paint from the product drum. Features a suction strainer.
<b>F</b>	Return rod	Allows product to be transferred back from the pump to the drum in the case of circulating.
<b>*-</b>	Air hose with quick release fitting	Supplies air to the agitator. Can be connected to the ram depending on the work phase.
<b>G</b>	Propellers	For mixing the product contained in the drum. For the 200 L / 52.8 US gal version, there are two.

\* Not shown on visual

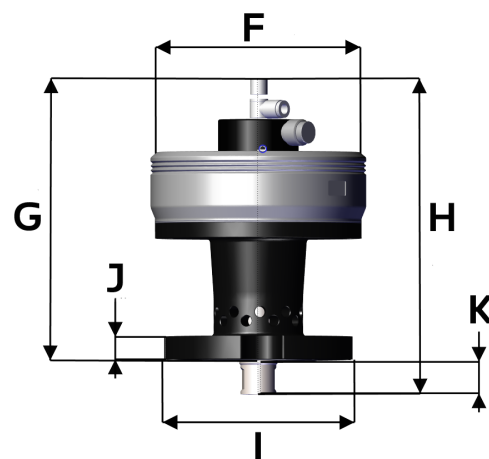
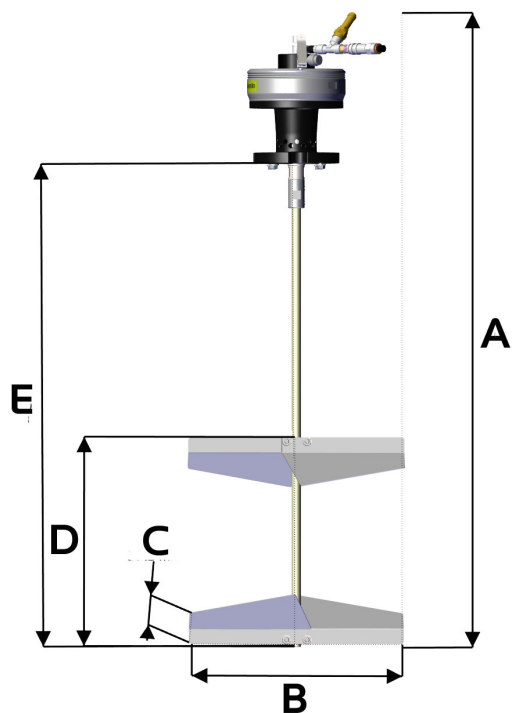


### 3. Technical features

#### 3.1. Dimensions (mm / ")



AGITATION UNIT ON RAM					
Dimensions (mm / ")					
A	B (up position)	B (down position)	C	D	E
942,4 / 37.1	1504 / 59.2	2454 / 96.6	Ø 641,5	977,3 / 38.4	949,1 / 37.3



**AGITATOR**

**Dimensions (mm / ")**

A	B	C	D	E
1090.5 / 42.9"	363.5 / 14.3"	57.3 / 2.2"	359.7 / 14.1"	830.2 / 32.7"
F	G	H	I	J
Ø 160	220.3 / 8.7"	247.2 / 9.7"	Ø 150	17.5 / 0.7"
K				
24.5 / 0.9"				

### 3.2. Operating features

Weight	
Agitation unit on ram	61 Kg / 134.5 Lbs
Agitation unit	22.6 Kg / 48.5 Lbs
Geared motor	6.2 Kg / 13.3 Lbs

	Agitator geared motor
Range	200 L / 52.8 US gal
Part number	146 020 466
Weight	6.2 Kg / 13.3 Lbs
Rotational speed (1/min)	30
Torque (N.m)	15
Air consumption (l/min)	52
Starting torque (N.m)*	14.2
Idle speed (tr/min)*	260
Air consumption at idle (l/min)*	136
Air consumption for 100tr (l/min)*	121
Torque for 100 tr/min (N.m)*	7.9
Maximum fluid temperature	60°C / 140°F
Ambient temperature	From + 1° to + 40°C / from + 33.8° to 104°F
Noise level	< 75 dB(A)

\* Given for an air equal to 6 bar / 87 psi

#### 3.2.1. Curves of performance

The curves below indicate the ratio of 'Torques / powers / rotation speed and air consumption' for a regular air pressure.

##### Torque and rotation speed

The numbers of turns decreases when the torque increases (torque and rotation are inversely proportional).

##### Power

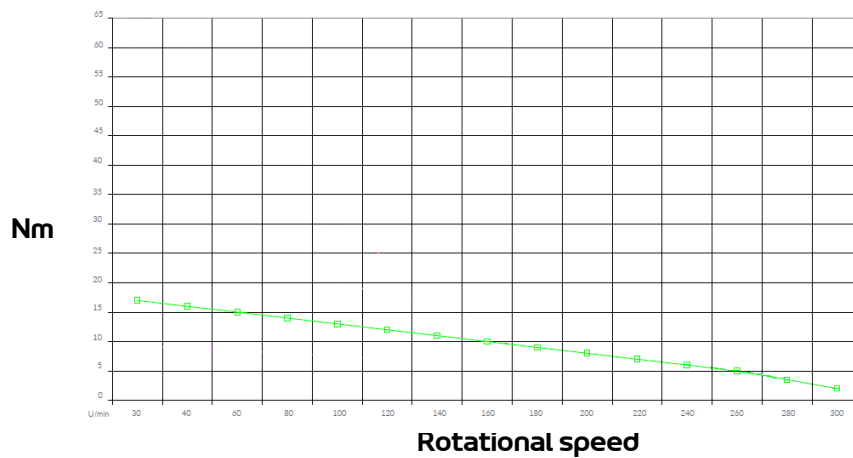
Maximum motor power is obtained by operating the motor at an intermediate speed (between minimum and maximum), which also saves energy.

##### Air consumption

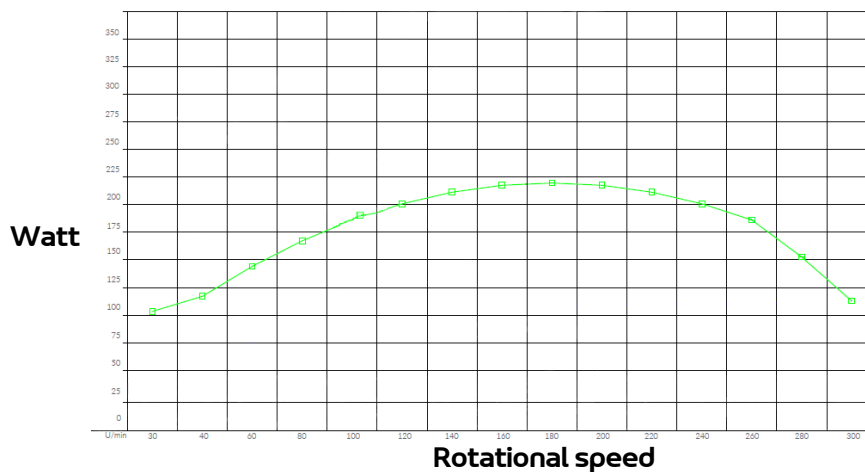
It is proportional to the effort required by the motor.

For your information: 1MPa = 10 bar / 145 psi.

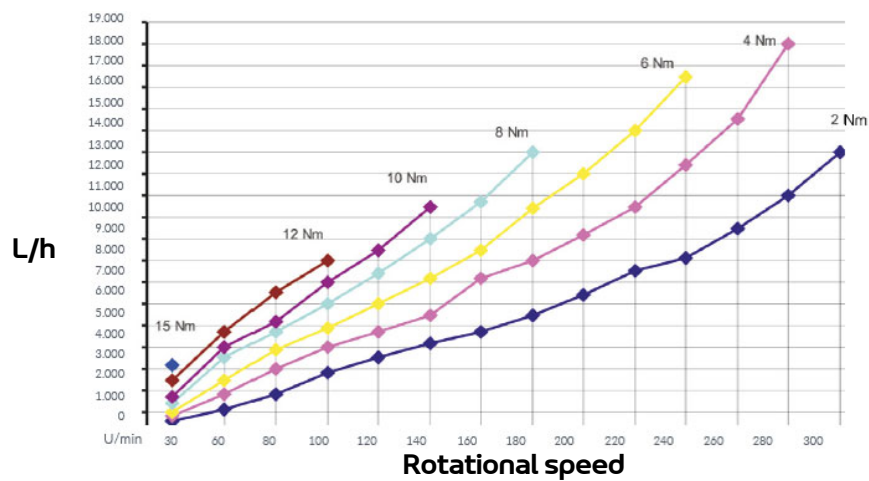
Torque / Rotational speed



Power / Rotational speed



Air consumption / Rotational speed



### 3.2.2. Connections

<b>Connection to the compressed air supply</b>	
Air fitting	G 1/4"
Compressed air supply inlet (2-6 bar / 29-87 psi)	Hose Ø 6 mm / 8 mm
Compressed air supply outlet	Hose Ø 10 mm / 12 mm
Level of filtration required	5 µm
Maximum connection capacity to compressed air network	6 bar / 87 psi
<b>Fluid connection</b>	
Suction rod	Elbow F 3/4" G
Tube	M 1/2"

### 3.3. Safety features



To ensure the longevity of your equipment, we advise you not to exceed the maximum speed indicated, in order to guarantee a long motor life.

The use of the air flow regulator assembly (ind. 7.3) is recommended [see § page 103](#).

A lower or minimum speed will not be stabilized.

### 3.4. Operating principle

The agitator is equipped with a geared motor with shaft and propellers. By adjusting the air pressure at the motor inlet, the liquids contained in the drum can be mixed at different speeds according to need.

The single-post ram is designed to move the agitator up or down along a vertical axis. The height of the agitator can be adjusted in relation to the drum containing the liquids to be mixed.

An air hose equipped with a quick-release coupling ensures system safety.

When the air hose is connected to the ram, the agitator motor does not work.

When the air hose is connected to the agitator motor, it is in motion. The ram does not work.

The combination of agitator with geared motor and single-post ram enables safe, efficient mixing of liquids in containers, without having to move the agitator manually.

#### 4. Schematics

Not applicable

#### 5. Start-up

##### 5.1. Tools



Part numbers	Description	Qty	Sales unit
554 180 004	Loctite 270 (50 ml / 1.7 oz)	1	1
554 180 015	Loctite 5772 (50 ml / 1.7 oz)	1	1
560 440 101	PTFE grease tube (10 ml / 0.3 oz)	1	1

##### Other tools and accessories required:

The tools listed below are recommended for installation and maintenance of the equipment:

- 3 mm, 5 mm and 6 mm hex keys,
- 7 mm, 8 mm, 13 mm, 24 mm (x2) and 30 mm flat wrenches,
- Spanner wrench,
- Circlip pliers,
- Fine brush.

5.1.1. Operating instructions

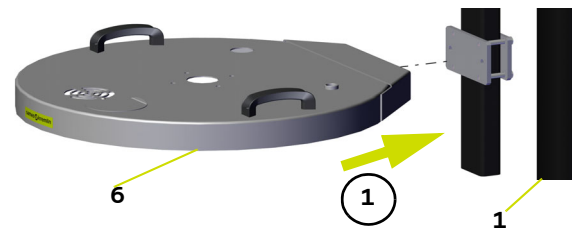


Before any intervention, respect the health and safety instructions [see § 1 page 6](#).

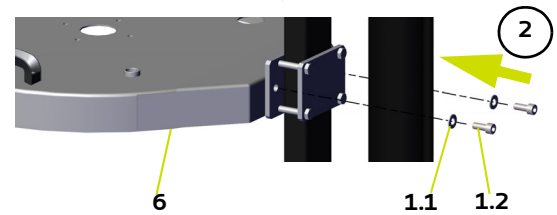


The ram (1) must be installed on a horizontal, stable and level surface (e.g. concrete slab). It must be secured to the floor by suitable fastening devices to ensure stability during use.

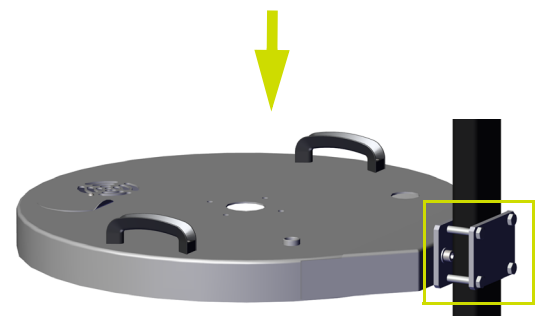
- **Step 1:**  
Place the cover (6) in front of the plate and the counterplate of the ram (1).



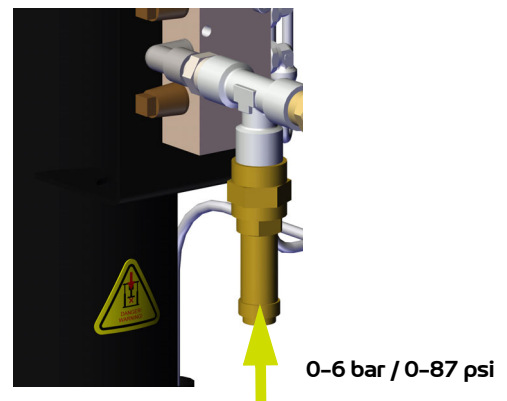
- **Step 2:**  
Place the 2 washers (1.1).



- **Step 3:**  
Tighten the 2 screws (1.2) on the cover (6) by means of a 8 mm flat wrench.

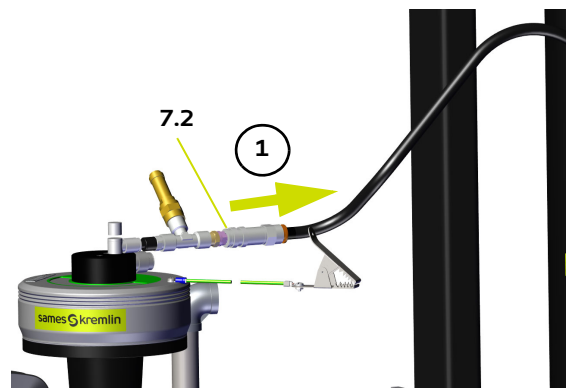


- **Step 4:**  
Connect the ram (1) air supply hose to the compressed air network (maximum 6 bar / 87 psi).

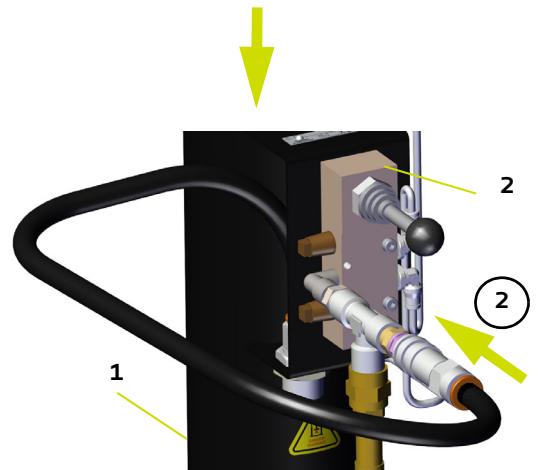




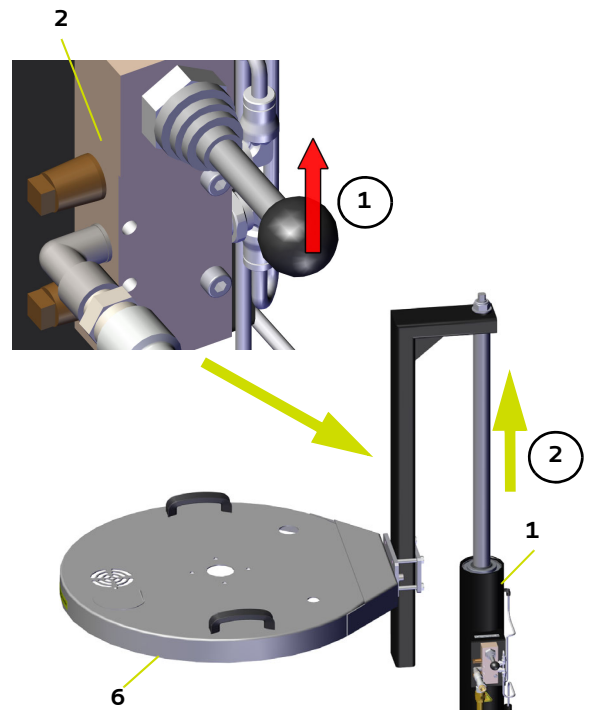
- **Step 5:**  
Get the air supply hose quick-release coupling (7.2).



- **Step 6:**  
Plug it into the air inlet of the ram (1) control valve (2).

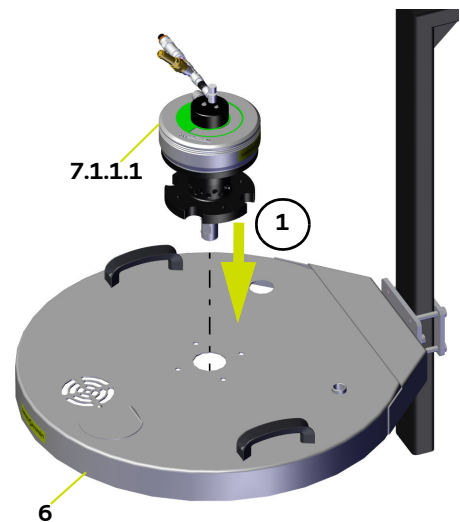


- **Step 7:**  
Hold the pneumatic control lever (2) of the ram (1) upwards to obtain a suitable working height for the cover (6).

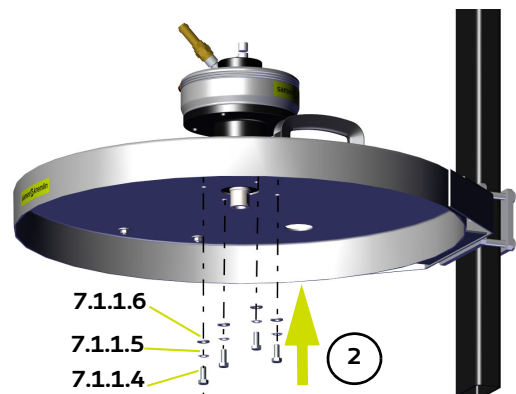


The arm/ram assembly lifts up to the upper position.

- **Step 8:**  
Place the geared motor (7.1.1.1) of the agitator (7) in the centre of the cover (6).



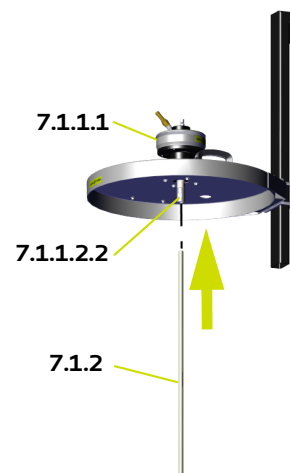
- **Step 9:**  
Tighten it by means of the 4 screws (7.1.1.4) and of the 8 washers (7.1.1.5 & 7.1.1.6) by means of a 13 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 10:**  
Apply glue (Loctite 270) on the thread of the adapter (7.1.1.2.2).

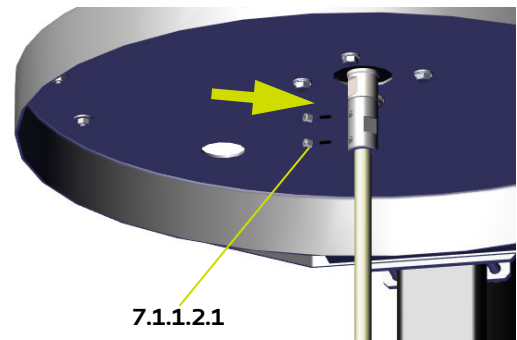
- **Step 11:**  
Insert it and fix it on the shaft of the geared motor by means of two 24 mm flat wrenches.  
Tightening torque: 35 N.m. / 25.8 Ft. Lbs

- **Step 12:**  
Install the agitator rod (7.1.2) in the adapter (7.1.1.2.2) of the geared motor (7.1.1.1).



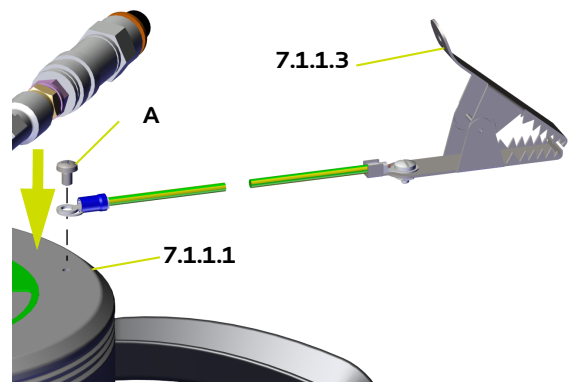
- **Step 13:**  
Apply glue (Loctite 5772) on the 2 screws (7.1.1.2.1).

- **Step 14:**  
Screw them by means of a 6 mm hex key.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 15:**  
Install the ground wire (7.1.1.3) on the geared motor (7.1.1.1).

- **Step 16:**  
Tighten the locking screw (A) by means of a 10 mm flat wrench.

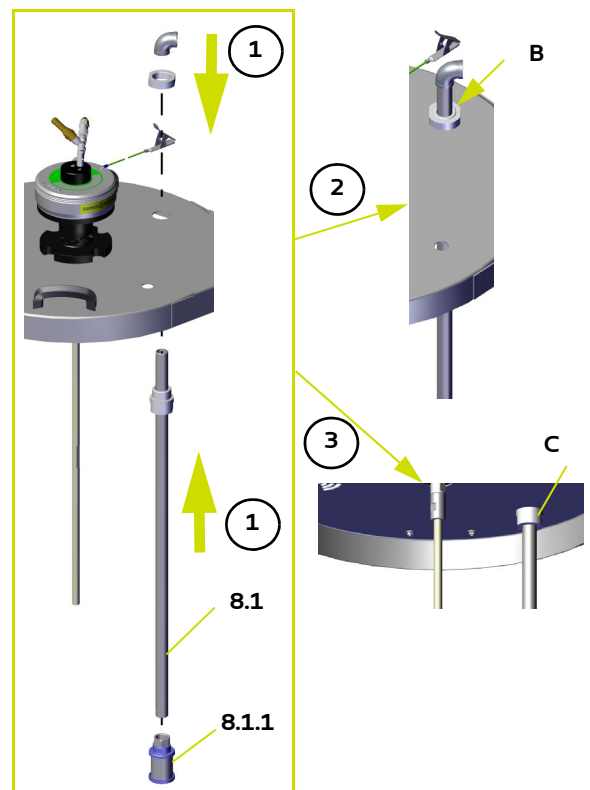


Please refer to ground section [see § 1.5.1 page 12.](#)

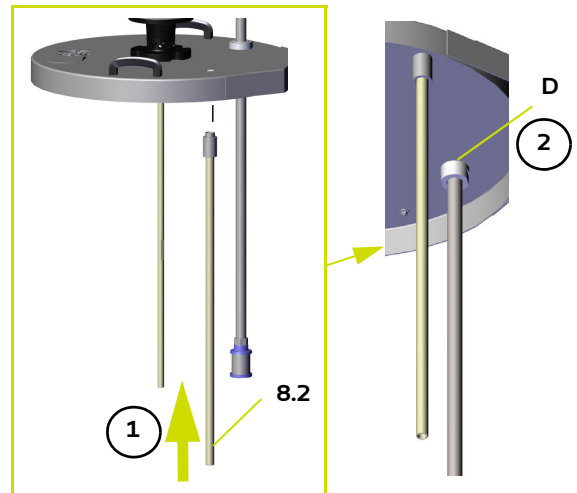
- **Step 17:**  
Install the suction rod (8.1) as well as the strainer (8.1.1).

- **Step 18:**  
Tighten the nut (B) by means of a spanner wrench.

- **Step 19:**  
Tighten the ring (C).



- **Step 20:**  
Install the tube (8.2).
- **Step 21:**  
Tighten the nut (D).



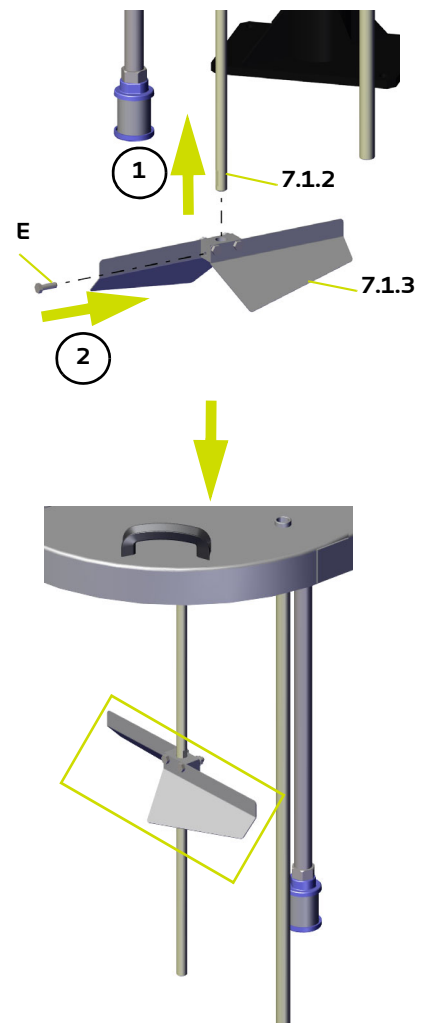
- **Step 22:**



To prevent injury or damage, the propellers are wrapped.

Place the upper propeller (7.1.3) on the agitator rod (7.1.2).

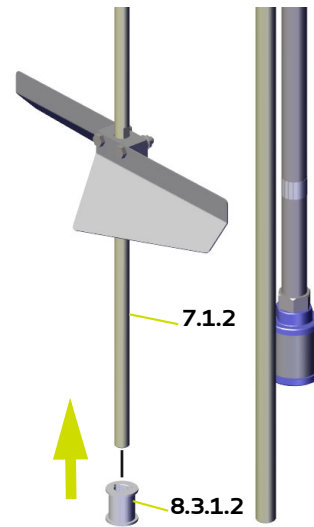
- **Step 23:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 24:**  
Install the ring (8.3.1.2) on the agitator rod (7.1.2).

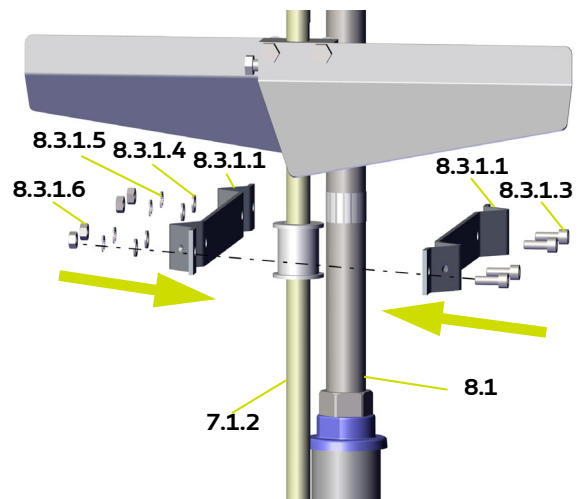


The ring must be located below the upper propeller previously installed.

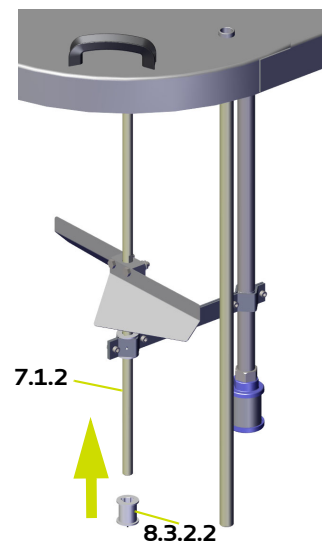


- **Step 25:**  
Place the agitator axis supports (8.3.1.1) on the agitator rod (7.1.2) as well as the suction rod (8.1).

- **Step 26:**  
Tighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.

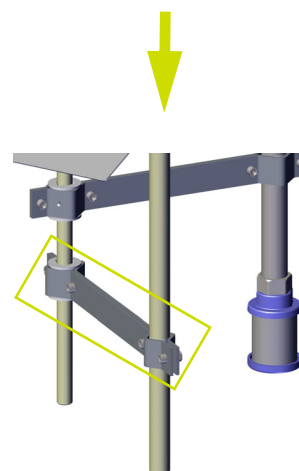
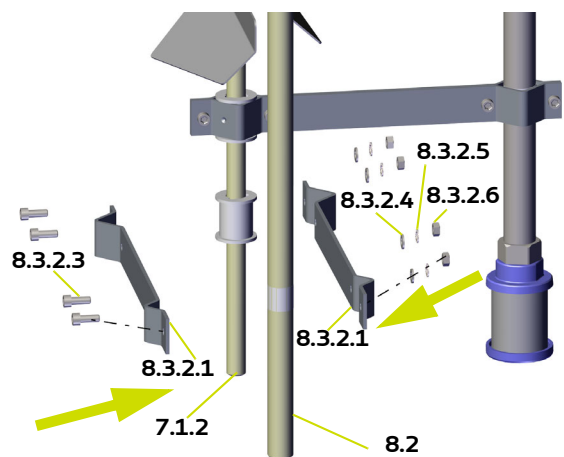


- **Step 27:**  
Install the ring (8.3.2.2) on the agitator rod (7.1.2).



- **Step 28:**  
Place the agitator axis supports (8.3.2.1) on the agitator rod (7.1.2) as well as the tube (8.2).

- **Step 29:**  
Tighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



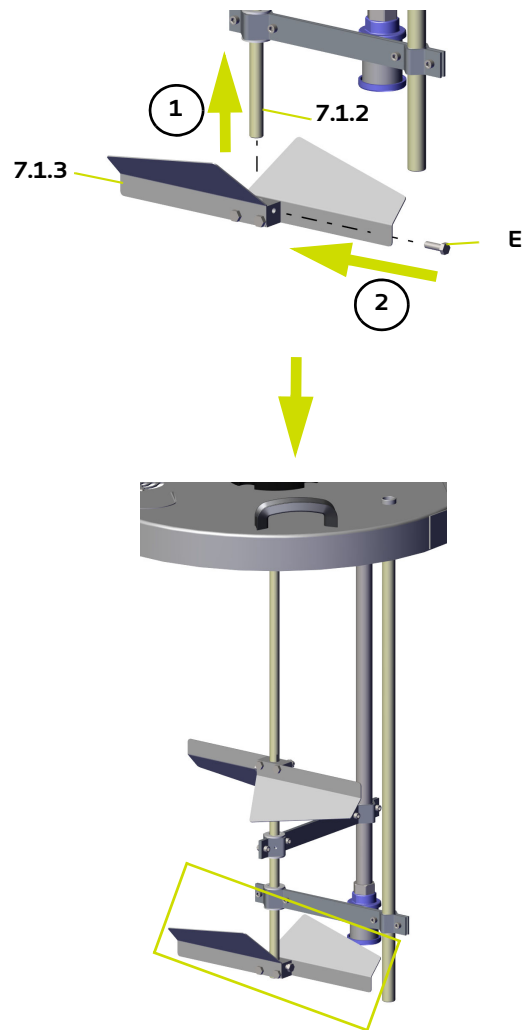
- **Step 30:**  
Place the lower propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 31:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



The mounting direction of the lower propeller differs from that of the upper propeller.



The agitator supports (8.3.1 & 8.3.2) must be between the 2 propellers.



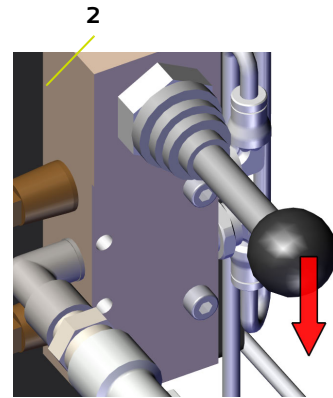
- **Step 32:**  
Locate a drum (F) under the agitation unit.



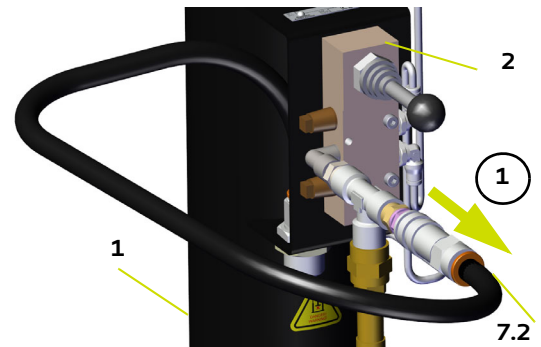
Center the drum (F) in relation to the cover to avoid any risk of friction and sparks, especially from the propellers.



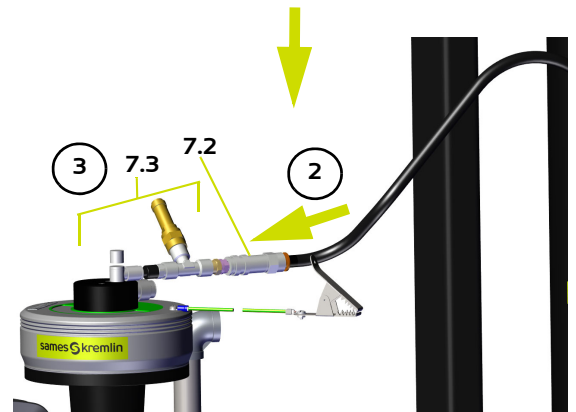
- **Step 33:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



- **Step 34:**  
Disconnect the quick release coupling from the air supply (7.2) hose of the ram (1) control (2).



- **Step 35:**  
Connect it to the agitator air supply.
- **Step 36:**  
Adjust the air regulator (7.3) by controlling the rotation speed of the agitator from the hatch.
- **Step 37:**  
Unscrew slightly the knob of the air regulator (7.3) - 6 bar / 87 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.

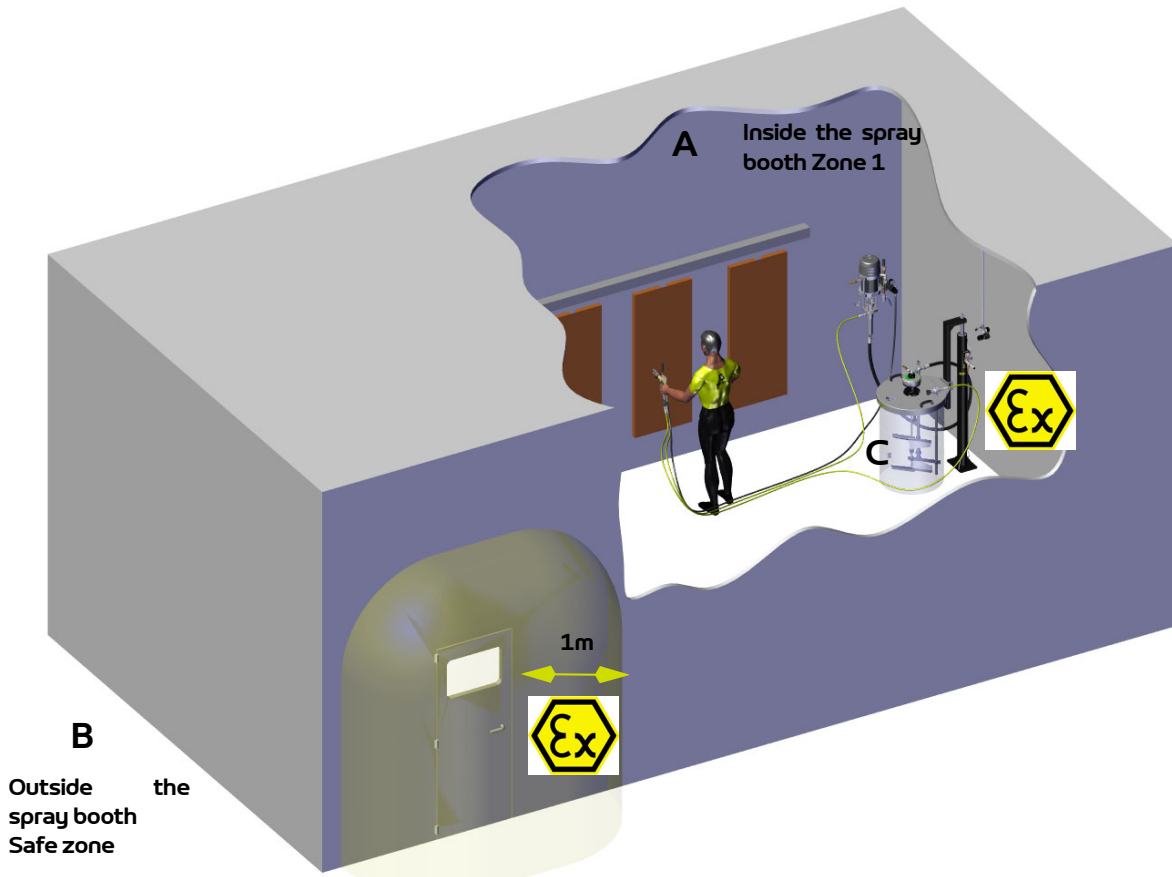


**Do not operate the agitator outside the drum or at too high speed.**  
**It can lead to a deterioration of the paint, vibrations and an early wear of the parts.**  
**Do not run the equipment with no load.**

- **Step 38:**  
Close the hatch.  
The agitation unit is ready to use.



5.2. Installation



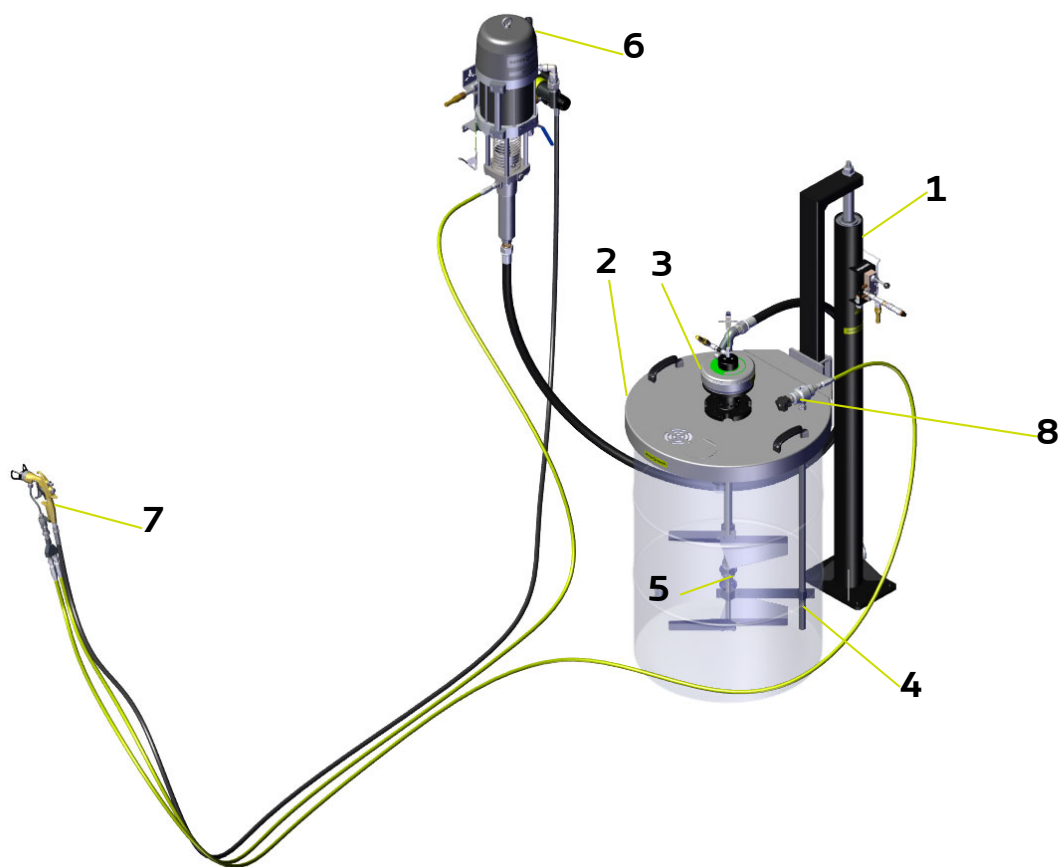
A - Zone 1 (Z1) or zone 2 (Z2) explosive zone: spray booth	B - Non-explosive zone	C - Zone 0 (Z0)
--	------------------------	-----------------



The 1 m / 39.37" distance indicated in this diagram is given as for information purposes only and hold harmless to Sames.

The exact delimitation of the zones is the express responsibility of the user, depending on the materials used, the environment and the conditions of use.

The 1 m / 39.37" distance can be modified if the analysis conducted by the user requires it. Everything under the cover, i.e. in the drum, is in zone 0.



Benchmarks	Description
1	Single-post ram
2	Cover
3	Agitator
4	Suction rod
5	Return rod
6	Pump (*)
7	Gun (*)
8	Circulating valve or back pressure regulator (*)

\* Not provided

### 5.3. Shutdown and start-up procedures

#### 5.3.1. Shutdown and replacement of the drum procedures



**Before any intervention, respect the health and safety instructions [see § 1 page 6](#).**

##### 5.3.1.1. Shutdown procedure

Before any work is carried out on the system during shutdown, assembly, cleaning or replacement of parts, shut the air and carry out the following procedure:

- Close the air supply by unscrewing the knob of the air regulator. The motor of the agitator stops.
- Disconnect the air hose that supplies the agitator motor.
- Connect the quick release fitting to the air inlet of the pneumatic control of the simple-post ram.
- Open the air.
- Move the distributor lever upwards to raise the assembly.

##### 5.3.1.2. Drum replacement procedure

- Close the air supply by unscrewing the knob of the air regulator. The motor of the agitator stops.
- Disconnect the air hose that supplies the agitator motor.
- Connect the quick release fitting to the air inlet of the pneumatic control of the simple-post ram.
- Open the air.
- Move the distributor lever upwards to raise the assembly.
- Take off the empty drum.
- Check that the tightening of the motor is correct.
- Place the new drum under the cover of the simple-post ram.
- Lower the assembly, holding the distributor lever down.



**Center the drum in respect of the cover so as not to damage.**

- Bring into contact the cover with the drum, to shut off the air.
- Disconnect the quick release fitting of the pneumatic control of the simple-post ram and connect it to the agitator air inlet.
- Open the air supply screwing the knob of the air regulator. The motor of the agitator starts up.

## 6. Maintenance

Preventive maintenance is an inherent part of production and ensures the reliability of the installation. As a reminder, the performance of equipment can only be guaranteed if a minimum of control and cleaning operations are performed on this equipment.



**Soiling and wear of the equipment depends on the operating and application conditions as well as the production rates.**

### **Required qualification levels - interventions described**

As the Cyclix agitation unit is easy to disassemble, this type of intervention can be carried out by a qualified technician, of average qualification, on the spot, with portable tools (wrench, screwdriver,...) defined by the maintenance instructions and the disassembly/reassembly procedures.

Wear personal protective equipment (PPE).

### 6.1. Maintenance summary table

The frequency of maintenance indicated in the procedures below is only indicative. The user will have to create his own range of maintenance as he uses the **Sames** equipment.

Procedure	Detail		Duration	Frequency (*)
<b>Replacement</b>				
<b>Maintenance of the ram (1)</b>				
<b>A</b>	<b>A1</b>	Disassembly of the ram (1)	30 min	Every 2 years
	<b>A2</b>	Re-assembly of the ram (1)	30 min	Every 2 years
<b>Maintenance of the cover (6)</b>				
<b>B</b>	<b>B1</b>	Disassembly of the cover (6)	1 min 50 s	Half-year
	<b>B2</b>	Re-assembly of the cover (6)	1 min 50 s	Half-year
<b>Maintenance of the 200 L / 52.8 US gal agitator - PTM motor - 2 sabre propellers (7)</b>				
<b>C</b>	<b>C1</b>	Disassembly of the 200 L / 52.8 US gal agitator - PTM motor - 2 sabre propellers (7)	1 min 50 s	Half-year
	<b>C2</b>	Re-assembly of the 200 L / 52.8 US gal agitator - PTM motor - 2 sabre propellers (7)	1 min 50 s	Half-year
<b>Maintenance of the 200 L / 52.8 US gal suction assembly (8)</b>				
<b>D</b>	<b>D1</b>	Disassembly of the 200 L / 52.8 US gal suction assembly (8)	1 min 50 s	Half-year
	<b>D2</b>	Re-assembly of the 200 L / 52.8 US gal suction assembly (8)	1 min 50 s	Half-year

(\*) Data for an average use of 8 hours per day.



The values are given for use without leakage or poor condition of the parts. Adapt the frequency of maintenance according to the use.

## 6.2. Preventive maintenance plan – PMP 582350110

[see § 10.1 page 108](#)

The proposed preventive maintenance plan aims to define in an exhaustive way, the actions of checking, replacement and cleaning of the installed **Sames** equipment.

In order to anticipate breakdowns and malfunctions that may be due to technical deviations of the installation, the preventive maintenance plan annexed to the user's manual recalls the routine maintenance operations necessary for a better comfort in the use of the production tool.

Depending on the skills, area of responsibility and clearance of each person involved, the preventive maintenance plan can be divided into two distinct levels: level 1 and level 2:

- **Level 1:** first level maintenance is essentially composed of visual control and cleaning operations of some elements of the equipment. To limit this level, only the specific tools provided with the equipment will be used. This first level of maintenance is generally taken care of by paint operators or installation managers.
- **Level 2:** the second level maintenance completes the first level by more complex disassembly operations requiring electrical engineering tools. This second level is generally handled by the factory maintenance department.

### 6.3. Maintenance



**Before any intervention, respect the health and safety instructions [see § 1 page 6](#).  
Please refer to the Preventive Maintenance Plan [see § 10.1 page 108](#) for more information.**

#### 6.3.1. Maintenance and monitoring periods

Schedule a routine maintenance after a set number of hours of operation. The user's maintenance department determines the frequency based on the product, the work rate and the usual pressure.

Replace parts showing cuts or wear (especially hoses) and clean organs using compatible products without abrasive materials.

Use 'special pneumatic grease' to install O-rings and inspect for damages, as a single cut in one of them can cause equipment malfunctions.

Familiarize yourself with the disassembly/reassembly procedures and the spare parts.

#### 6.3.2. Cleaning

Clean the equipment with compatible products, avoiding abrasive materials that could cause damage.  
Keep the equipment clean to ensure its proper operating.

## 6.4. Replacement

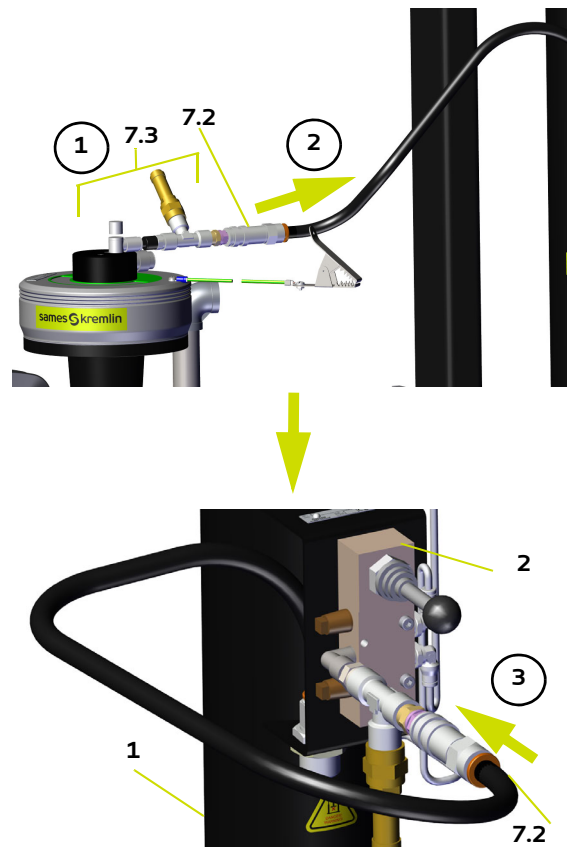


Before any intervention, respect the health and safety instructions [see § 1 page 6](#) and the shutdown procedure [see § 5.3.1.1 page 35](#). Please refer to DRT 582.391.110 instruction manual (Cyclix 200 L / 52.8 US gal single ram) for further information on the ram.

### 6.4.1. Procedure A: maintenance of the ram (1)

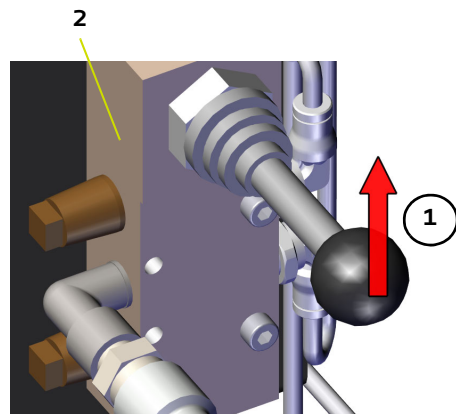
#### 6.4.1.1. Procedure A1: disassembly of the ram (1)

- **Step 1:**  
Screw the knob of the air regulator (7.3). The motor of the agitator stops.
- **Step 2:**  
Disconnect the quick release coupling of the air supply hose (7.2) from the air inlet of the agitator.
- **Step 3:**  
Connect it to the ram (1) control (2).
- **Step 4:**  
Open the air.





- **Step 5:**  
Hold up the pneumatic control lever (2) of the ram (1).

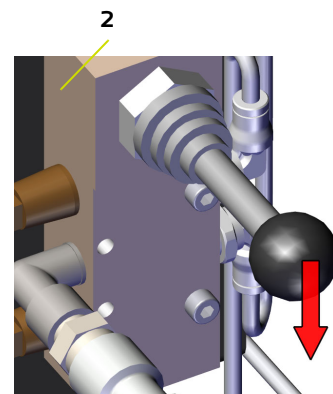


The arm/ram assembly lifts up to the upper position.

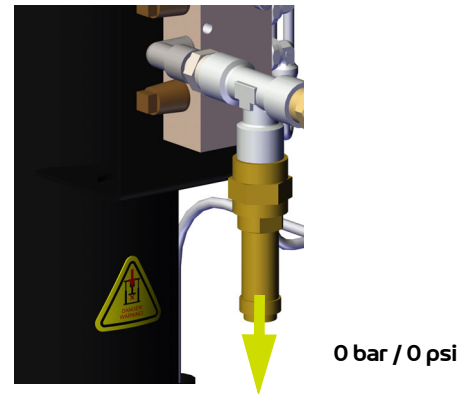
- **Step 6:**  
Take off the drum (F).



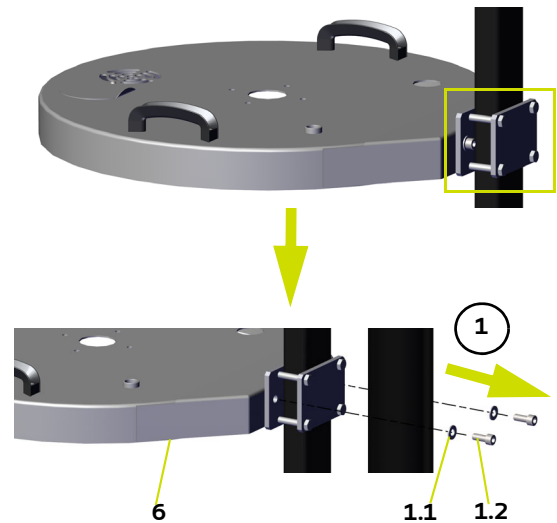
- **Step 7:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



- **Step 8:**  
Disconnect the ram (1) air supply hose from the compressed air network (0 bar / 0 psi).

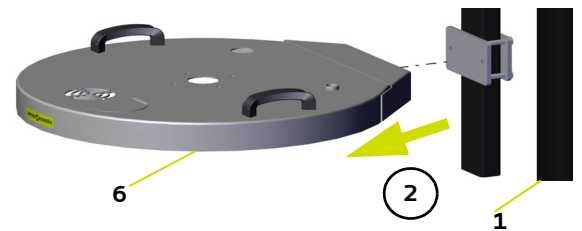


- **Step 9:**  
Untighten the 2 screws (1.2) from the plate and the counterplate of the ram (1) by means of a 8 mm flat wrench.



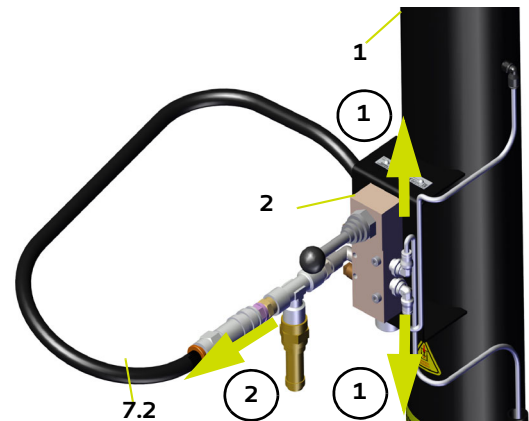
- **Step 10:**  
Take off the 2 washers (1.1).

- **Step 11:**  
Remove the cover (6) from the ram (1).

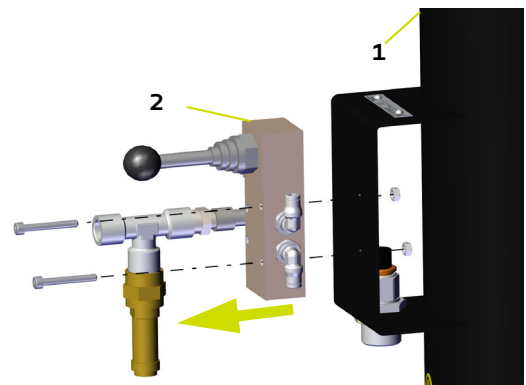


- **Step 12:**  
Disconnect the 2 air supply hoses from the control (2) ram (1).

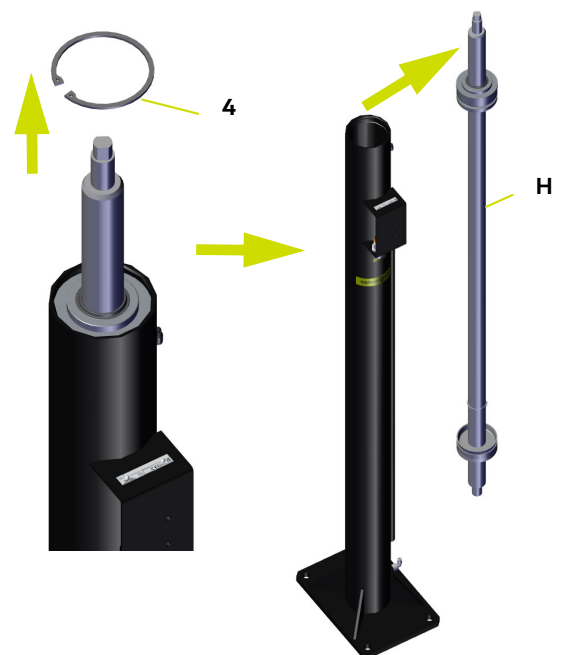
- **Step 13:**  
Disconnect the quick release coupling of the air supply hose (7.2) from the control (2) ram (1).



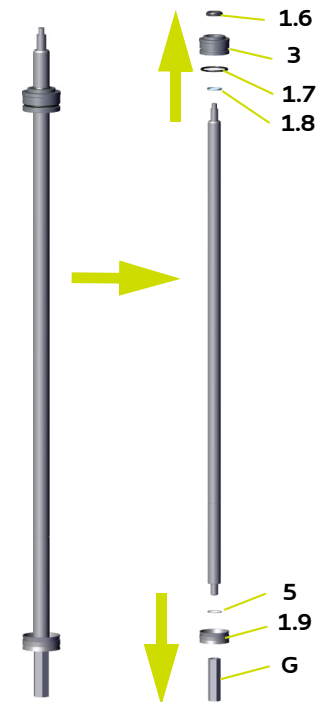
- **Step 14:**  
Untighten the 2 screws and the 2 nuts of the control (2) ram (1) by means of a 7 mm flat wrench and a 3 mm hex key.
- **Step 15:**  
Remove the ram control (2) from the ram (1).
- **Step 16:**  
Unscrew the nut (1.4) by means of a 30 mm flat wrench.
- **Step 17:**  
Take off the washer (1.5) from the ram lever-arm to remove it.



- **Step 18:**  
Remove the circlips (4) with the circlips pliers to change the ram seals.
- **Step 19:**  
Take off the jack ram (H).

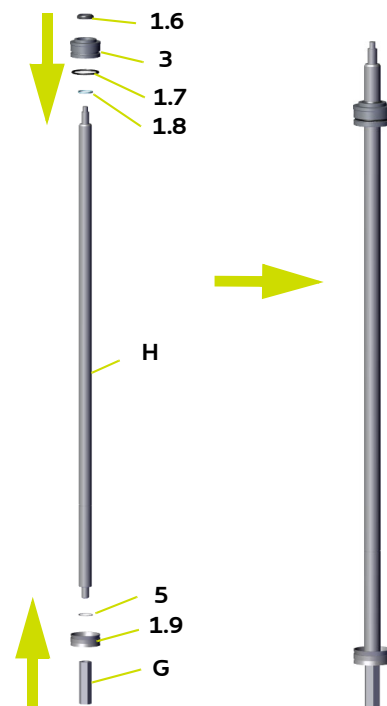


- **Step 20:**  
Take off the guide ring (3).
- **Step 21:**  
Remove the seals (1.7, 1.8 & 1.6) from the guide ring (3).
- **Step 22:**  
Unscrew the stop nut (G) by means of a 30 mm flat wrench.
- **Step 23:**  
Take off the jack seal (1.9).



#### 6.4.1.2. Procedure A2: Re-assembly of the ram (1)

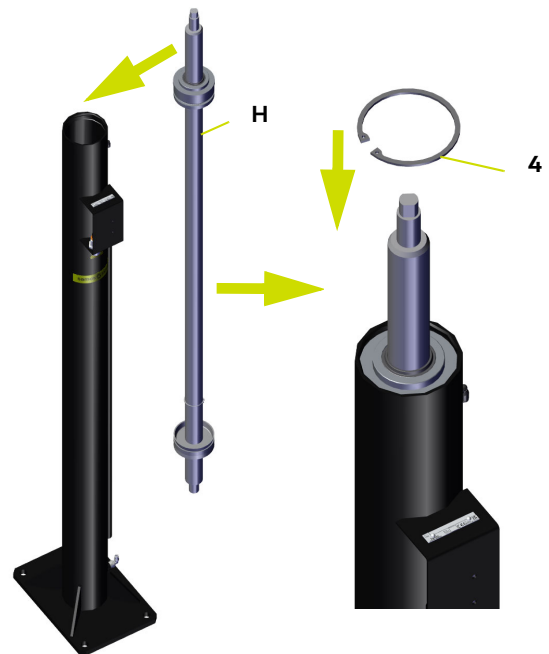
- **Step 1:**  
Apply grease (PTFE grease) on the seals as well as on the jack ram (H).
- **Step 2:**  
Place the seals (1.7, 1.8 & 1.6) of the guide ring (3).
- **Step 3:**  
Place the guide ring (3) on the jack (H).
- **Step 4:**  
Place the jack seal (1.9).
- **Step 5:**  
Screw on the stop nut (G) using a 30 mm flat wrench.



- **Step 6:**  
Grease the top of the jack (H).
- **Step 7:**  
Insert the jack (H) into the cylinder.
- **Step 8:**  
Reinstall the circlips (4) with the circlips pliers



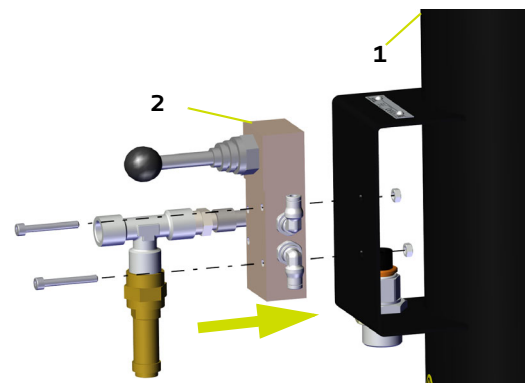
Seals 3, 4 and 5 are not included in the package of seals ref. 154.261.915.



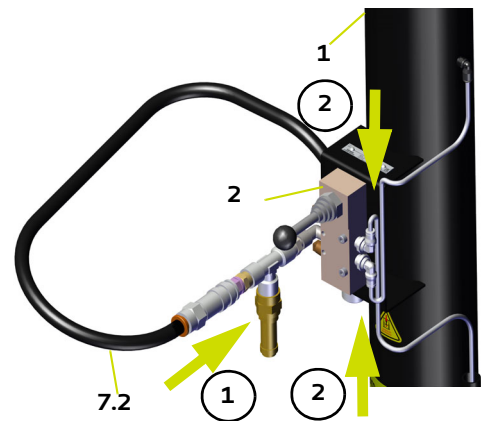
- **Step 9:**  
Install the arm-lever on the ram (1).
- **Step 10:**  
Install the washer (1.5).
- **Step 11:**  
Tighten the nut (1.4) by means of a 30 mm flat wrench.



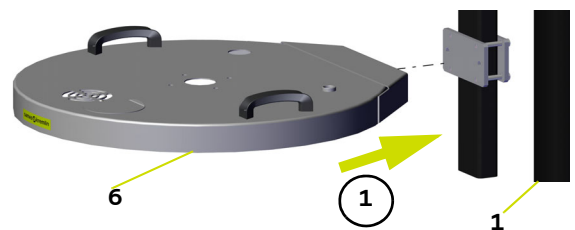
- **Step 12:**  
Reinstall the control (2) ram (1) tightening the 2 screws and the 2 nuts by means of a 7 mm flat wrench and a 3 mm hex key.



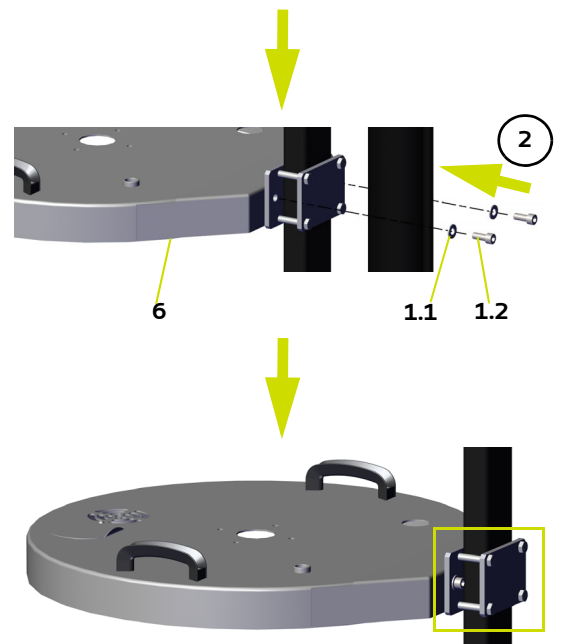
- **Step 13:**  
Connect the quick release coupling of the air supply hose (7.2) to the control (2) ram (1).
- **Step 14:**  
Connect the 2 air supply hoses to the control (2) ram (1).



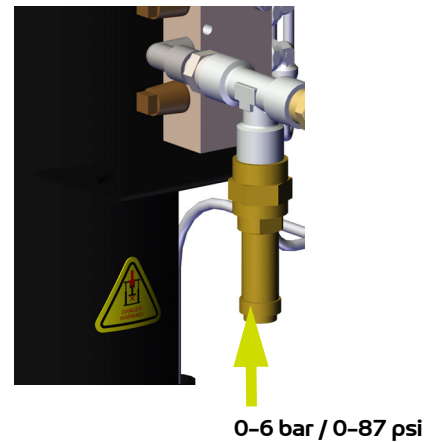
- **Step 15:**  
Place the cover (6) in front of the plate and the counterplate of the ram (1).



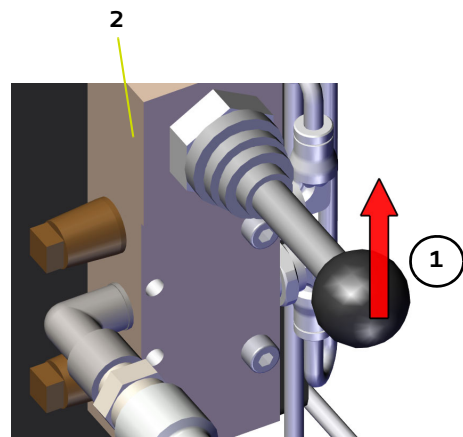
- **Step 16:**  
Place the 2 washers (1.1).
- **Step 17:**  
Tighten the 2 screws (1.2) on the cover (6) by means of a 8 mm flat wrench.



- **Step 18:**  
Connect the ram (1) air supply hose to the compressed air network (maximum 6 bar / 87 psi).

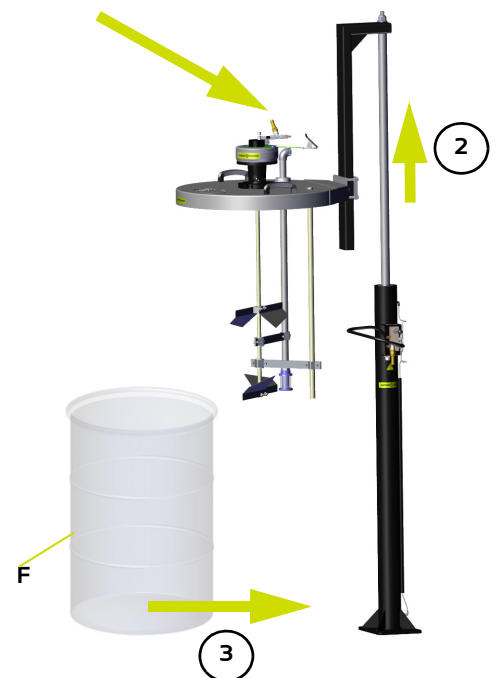


- **Step 19:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

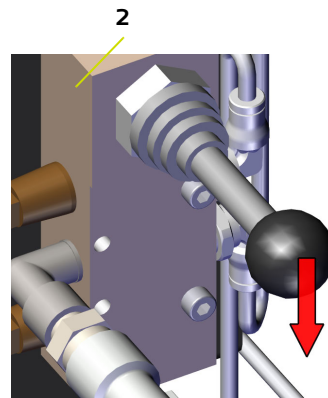


The arm/ram assembly lifts up to the upper position.

- **Step 20:**  
Locate a drum (F) under the agitation unit.

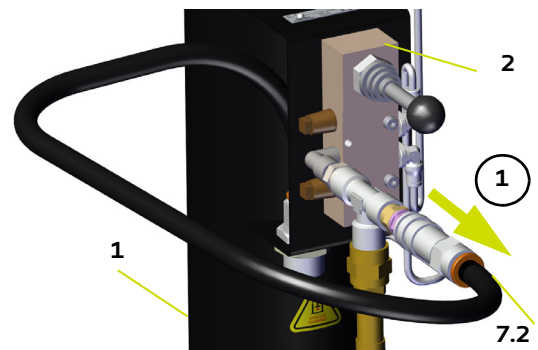


- **Step 21:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.

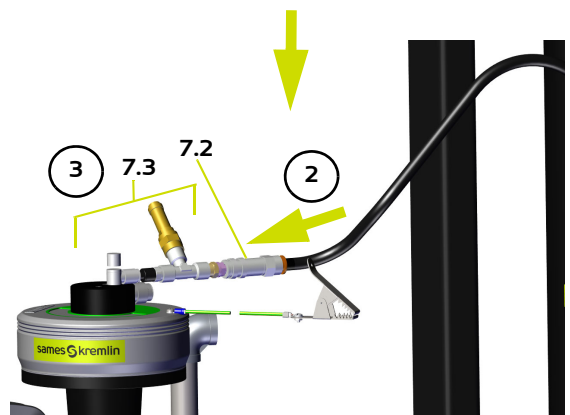


**Center the drum in relation to the cover to avoid any risk of friction and sparks, especially from the propellers.**

- **Step 22:**  
Disconnect the quick release coupling from the air supply (7.2) hose of the ram (1) control (2).



- **Step 23:**  
Connect it to the agitator air supply.
- **Step 24:**  
Adjust the air regulator (7.3) by controlling the rotation speed of the agitator from the hatch.
- **Step 25:**  
Unscrew slightly the knob of the air regulator (7.3) - 6 bar / 87 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.



**Do not operate the agitator outside the drum or at too high speed.  
It can lead to a deterioration of the paint, vibrations and an early wear of the parts.  
Do not run the equipment with no load.**

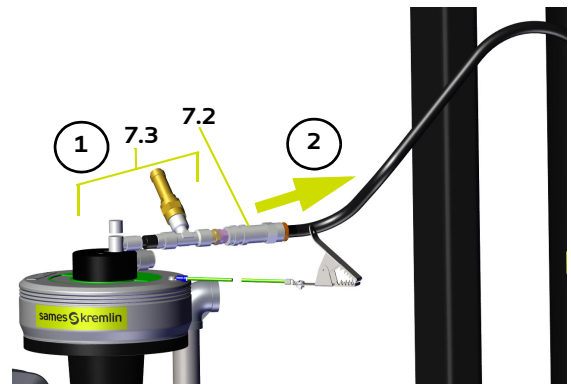
- **Step 26:**  
Close the hatch.  
The agitation unit is ready to use.



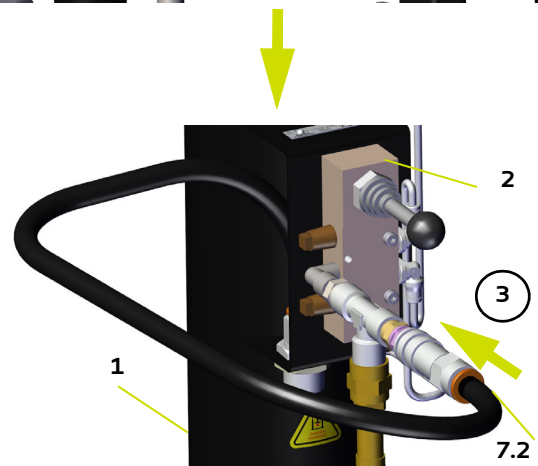
## 6.4.2. Procedure B: maintenance of the cover (6)

### 6.4.2.1. Procedure B1: disassembly of the cover (6)

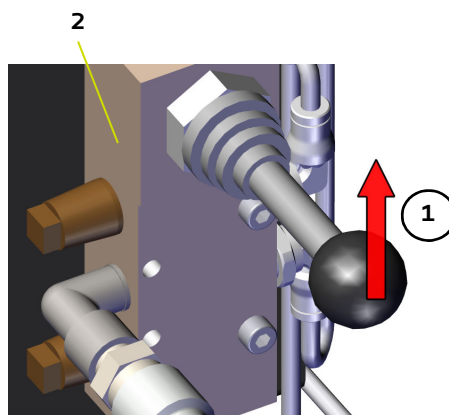
- **Step 1:**  
Screw the knob of the air regulator (7.3). The motor of the agitator stops.
- **Step 2:**  
Disconnect the quick release coupling of the air supply hose (7.2) from the air inlet of the agitator.



- **Step 3:**  
Connect it to the ram (1) control (2).
- **Step 4:**  
Open the air.

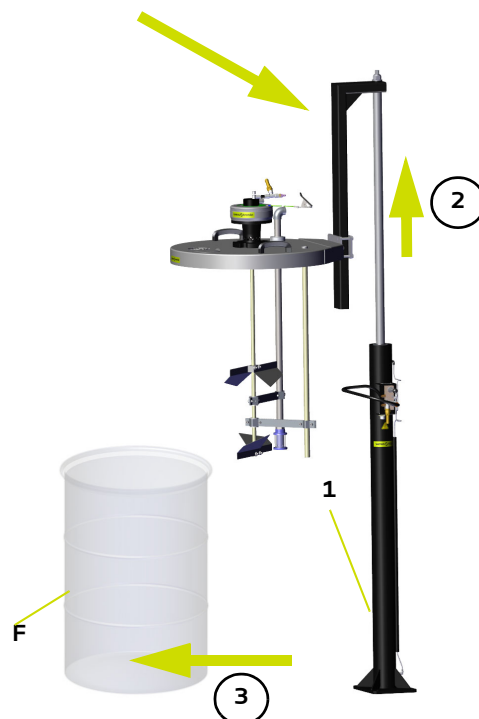


- **Step 5:**  
Hold up the pneumatic control lever (2) of the ram (1).

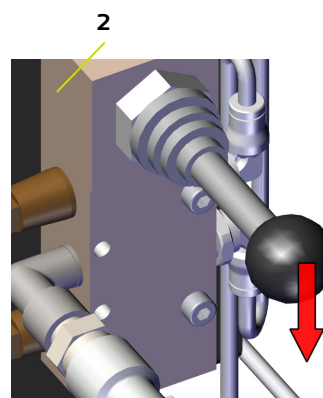


The arm/ram assembly lifts up to the upper position.

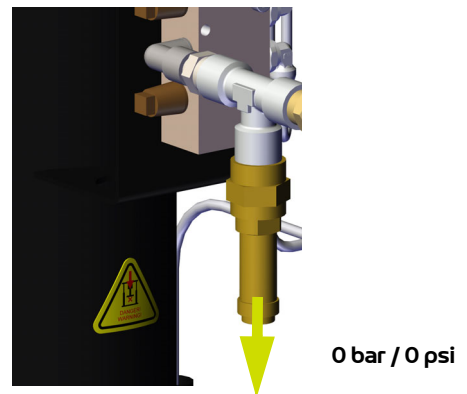
- **Step 6:**  
Take off the drum (F).



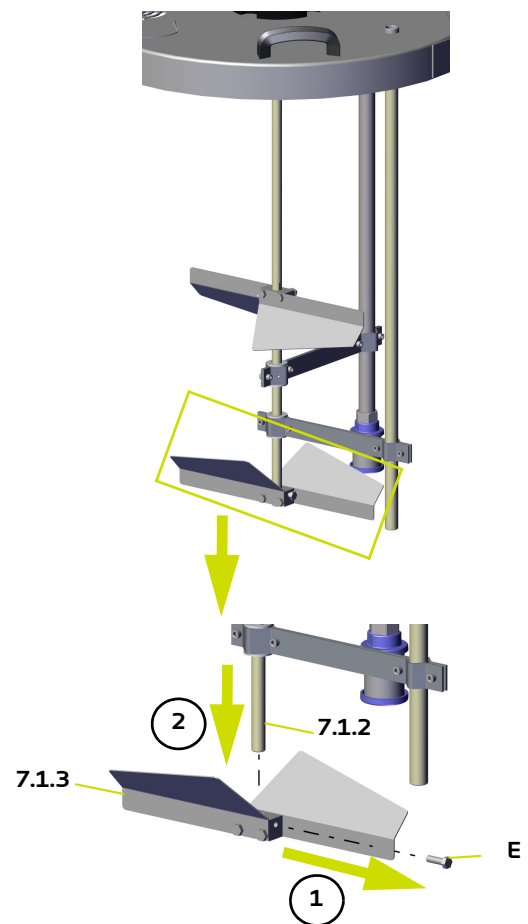
- **Step 7:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



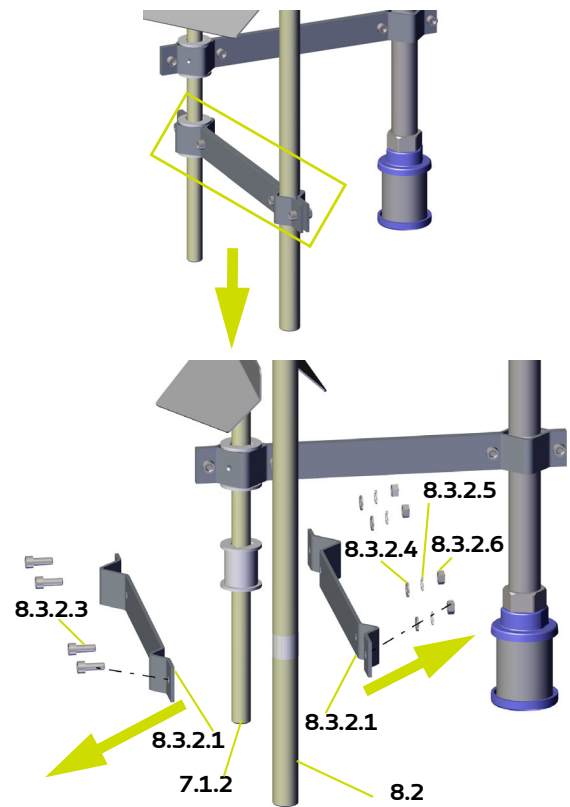
- **Step 8:**  
Disconnect the ram (1) air supply hose from the compressed air network (0 bar / 0 psi).



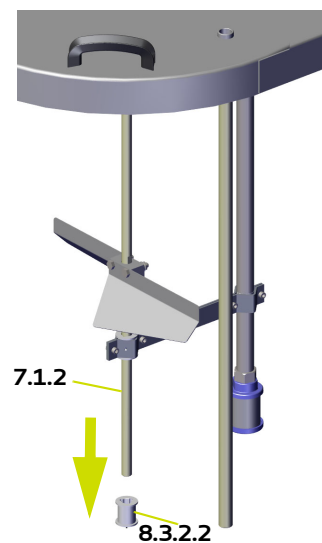
- **Step 9:**  
Untighten the screw (E) by means of a 8 mm flat wrench.
- **Step 10:**  
Remove the lower propeller (7.1.3) from the agitator rod (7.1.2).



- **Step 11:**  
 Untighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.
- **Step 12:**  
 Take off the agitator axis supports (8.3.2.1) from the agitator rod (7.1.2) as well as from the tube (8.2).

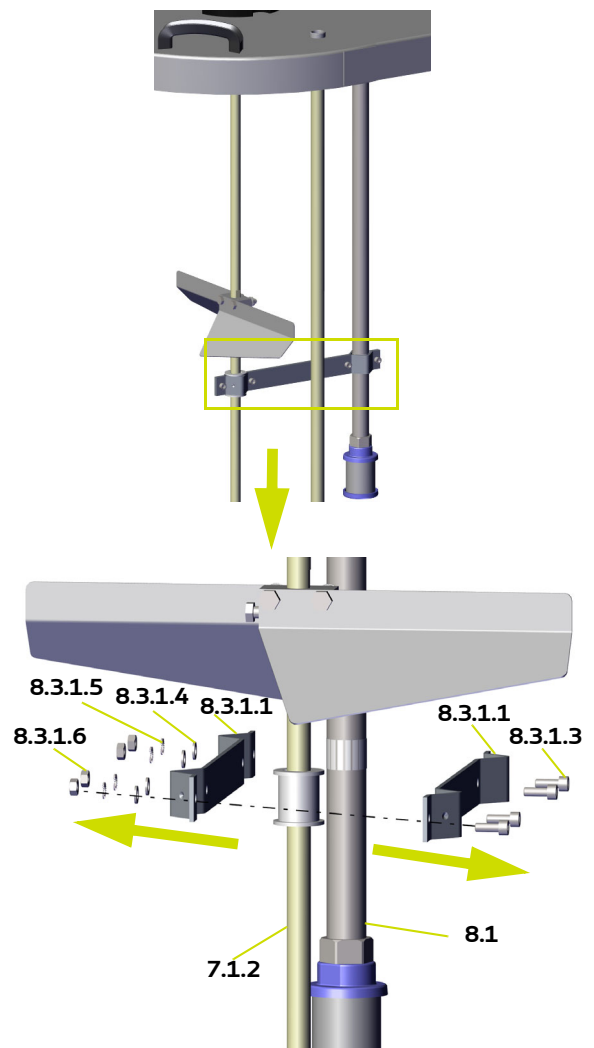


- **Step 13:**  
 Remove the ring (8.3.2.2) from the agitator rod (7.1.2).

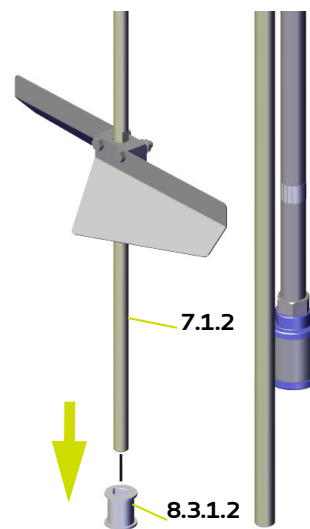


- **Step 14:**  
 Untighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.

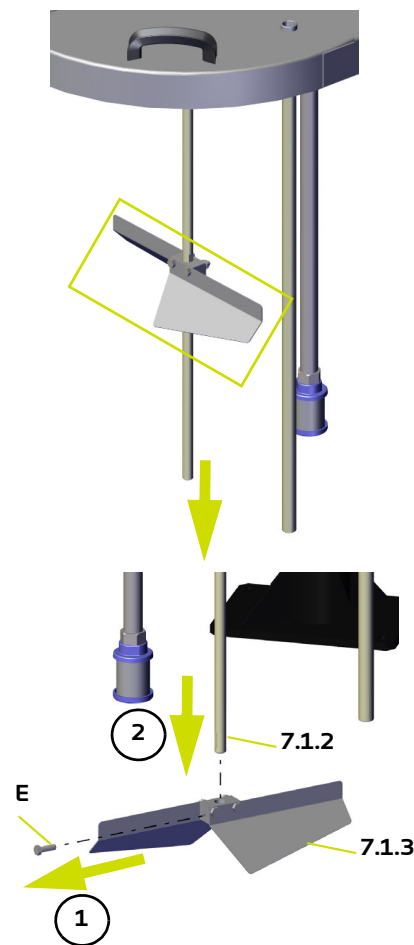
- **Step 15:**  
 Take off the agitator axis supports (8.3.1.1) from the agitator rod (7.1.2) as well as from the suction rod (8.1).



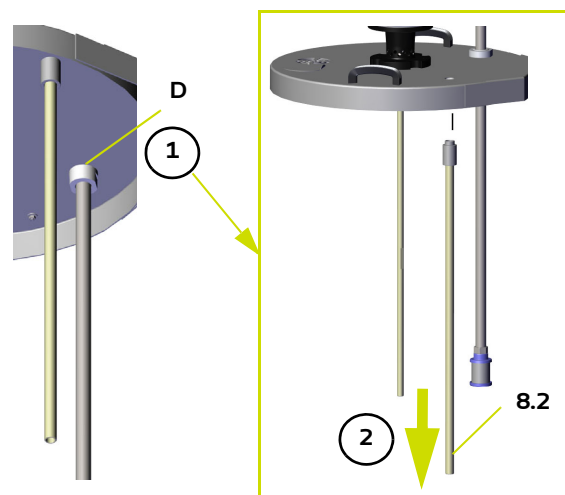
- **Step 16:**  
 Remove the ring (8.3.1.2) from the agitator rod (7.1.2).



- **Step 17:**  
Untighten the screw (E) by means of a 8 mm flat wrench.
- **Step 18:**  
Remove the upper propeller (7.1.3) from the agitator rod (7.1.2).



- **Step 19:**  
Untighten the nut (D).
- **Step 20:**  
Remove the tube (8.2).



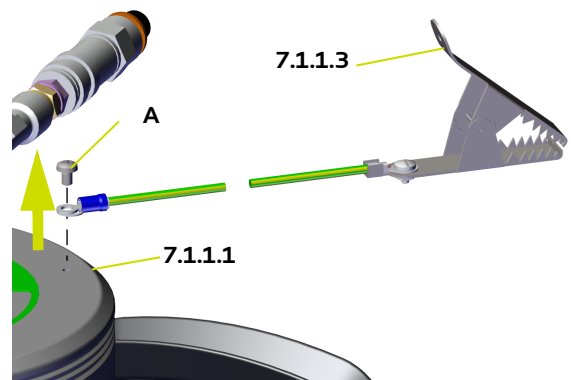
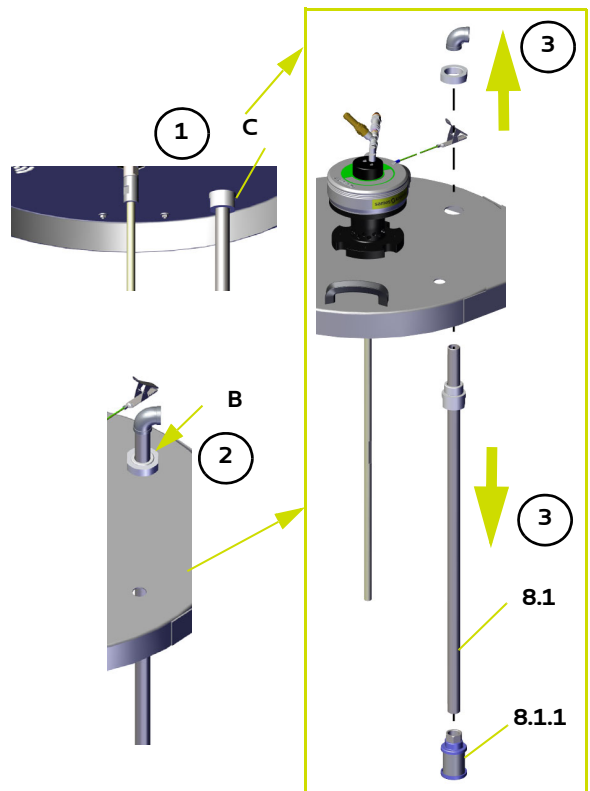
- **Step 21:**  
Untighten the ring (C).

- **Step 22:**  
Untighten the nut (B) by means of a spanner wrench.

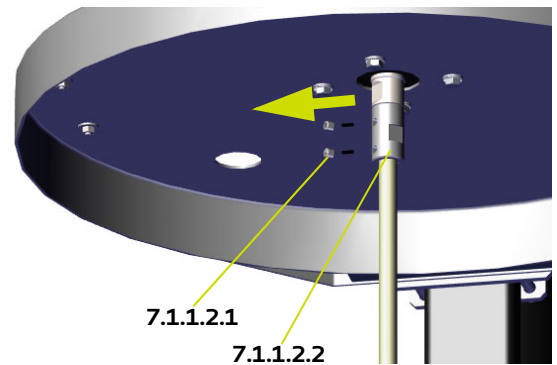
- **Step 23:**  
Remove the suction rod (8.1) as well as the strainer (8.1.1).

- **Step 24:**  
Untighten the locking screw (A) by means of a 10 mm flat wrench.

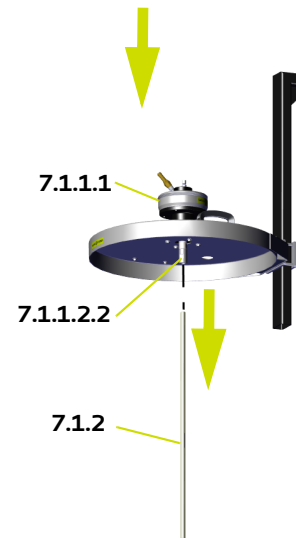
- **Step 25:**  
Manually remove the ground wire (7.1.1.3) from the geared motor (7.1.1.1).



- **Step 26:**  
Unscrew the 2 screws (7.1.1.2.1) from the adapter (7.1.1.2.2) by means of a 6 mm hex key.

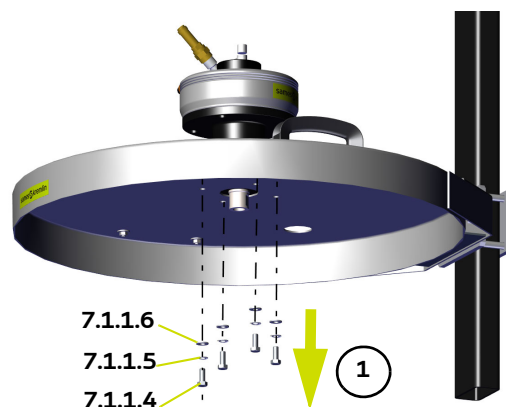


- **Step 27:**  
Remove the agitator rod (7.1.2) as well as the adapter (7.1.1.2.2).

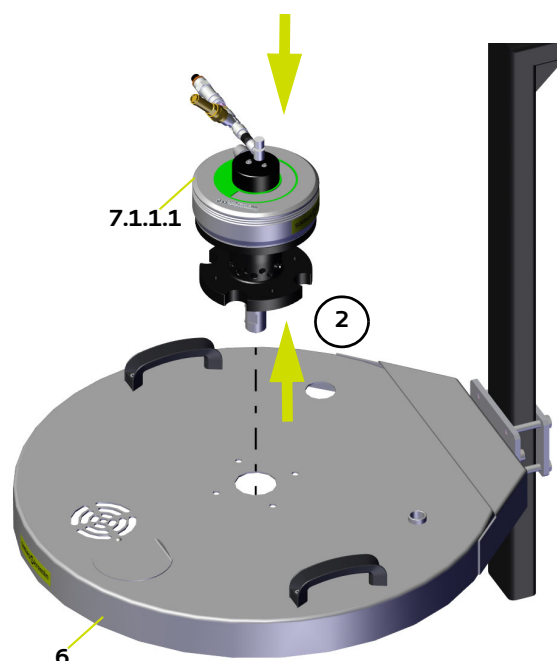




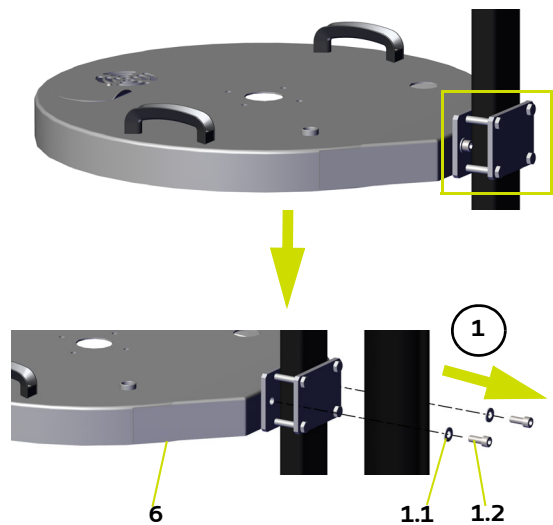
- **Step 28:**  
Untighten the 4 screws (7.1.1.4) located under the cover (6) by means of a 13 mm flat wrench.
- **Step 29:**  
Take off the 8 washers (7.1.1.5 & 7.1.1.6).



- **Step 30:**  
Remove the geared motor (7.1.1.1) of the agitator (7) from the cover (6).

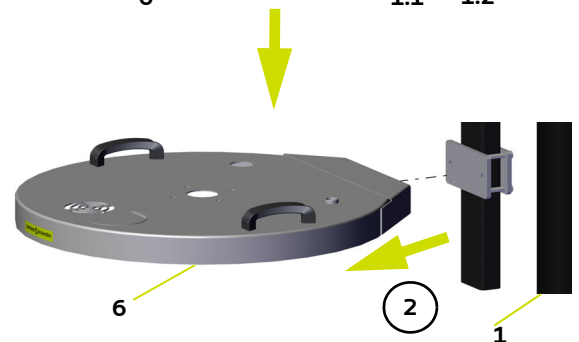


- **Step 31:**  
Untighten the 2 screws (1.2) from the plate and the counterplate of the ram (1) by means of a 8 mm flat wrench.

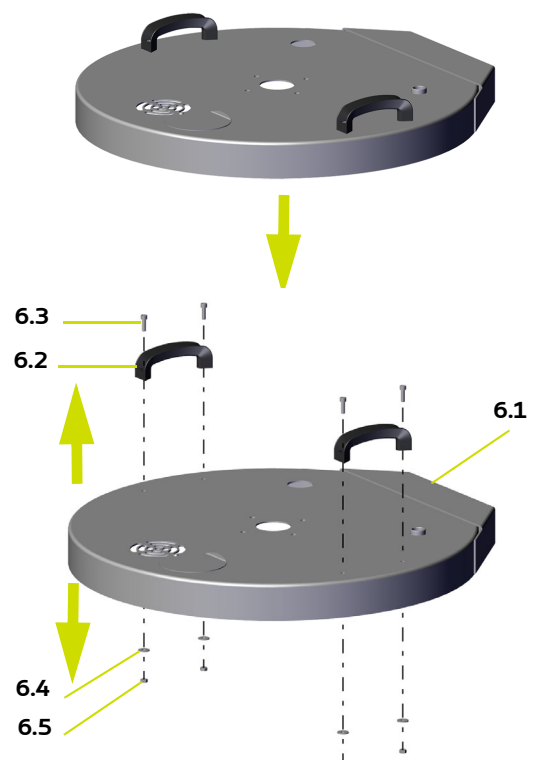


- **Step 32:**  
Take off the 2 washers (1.1).

- **Step 33:**  
Remove the cover (6) from the ram (1).

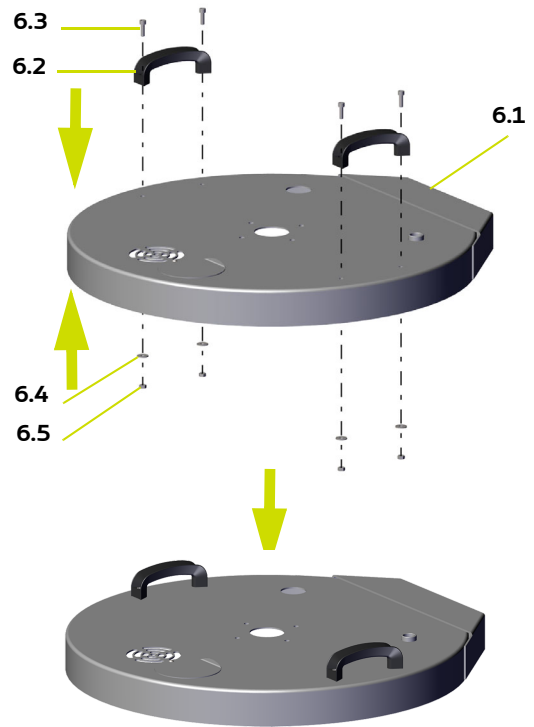


- **Step 34:**  
Untighten the 4 nuts (6.5), the 4 washers (6.4) and the 4 screws (6.3) by means of a 10 mm flat wrench and a 5 mm hex key to remove the handles (6.2) from the cover (6.1).

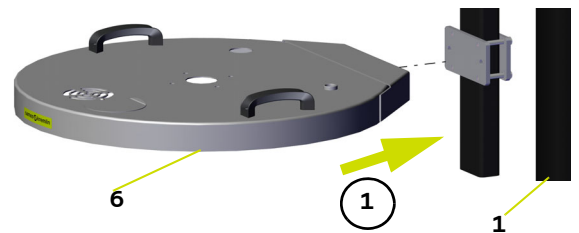


6.4.2.2. Procedure B2: Re-assembly of the cover (1)

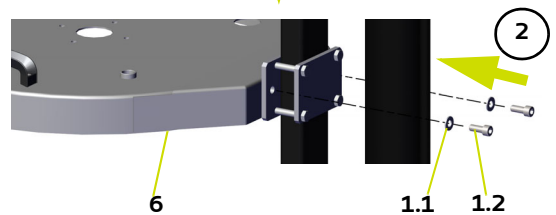
- **Step 1:**  
Tighten the 4 nuts (6.5), the 4 washers (6.4) and the 4 screws (6.3) by means of a 10 mm flat wrench and a 5 mm hex key to install the handles (6.2) on the cover (6.1).



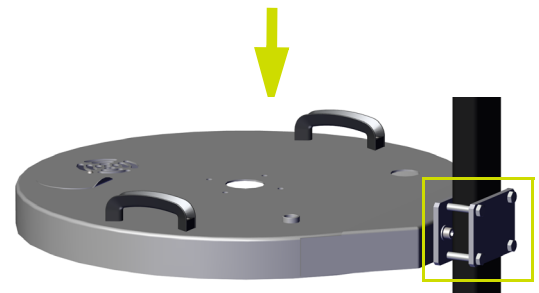
- **Step 2:**  
Place the cover (6) in front of the plate and the counterplate of the ram (1).



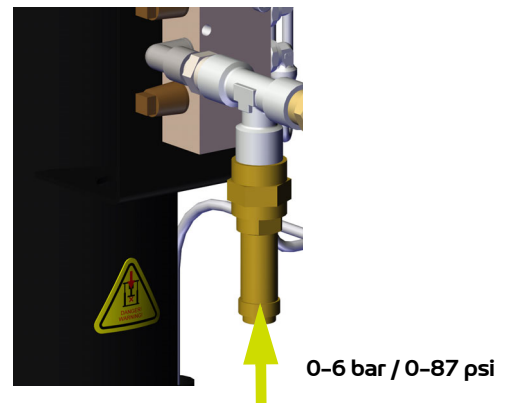
- **Step 3:**  
Place the 2 washers (1.1).



- **Step 4:**  
Tighten the 2 screws (1.2) on the cover (6) by means of a 8 mm flat wrench.

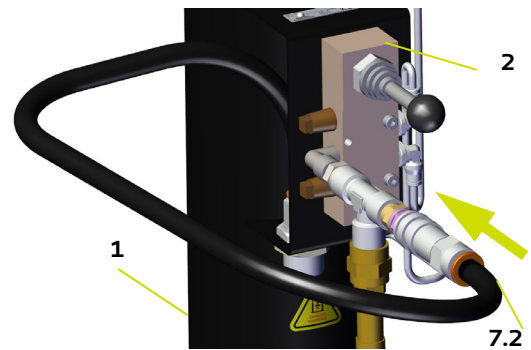


- **Step 5:**  
Connect the ram (1) air supply hose to the compressed air network (maximum 6 bar / 87 psi).

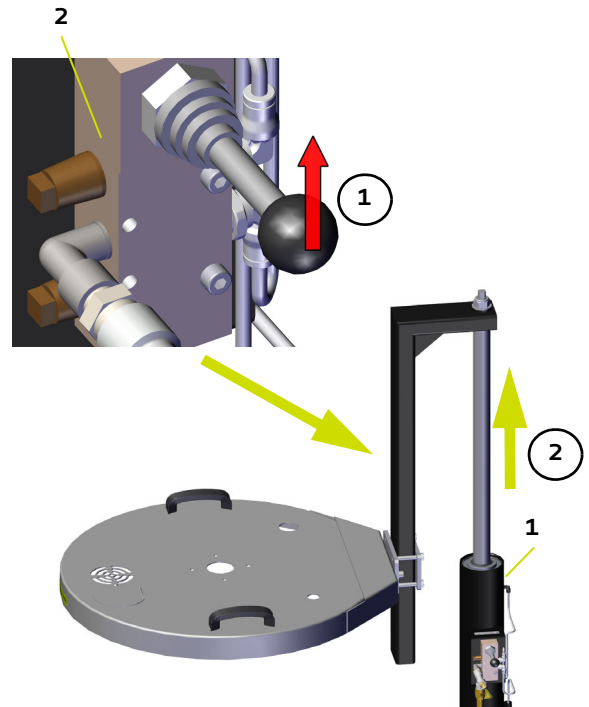


- **Step 6:**  
Take the quick release coupling of the air supply hose (7.2).

- **Step 7:**  
Connect it to the control (2) ram (1).

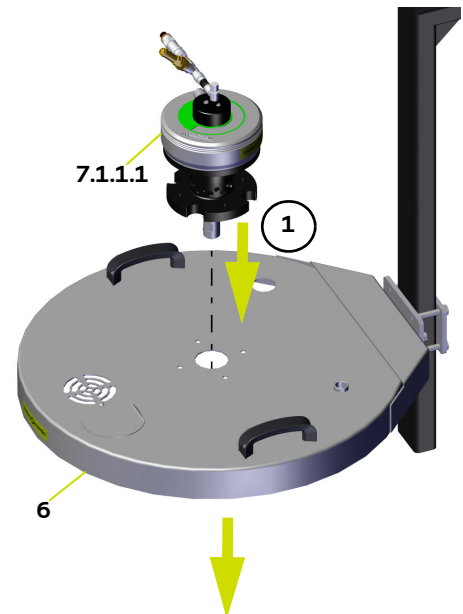


- **Step 8:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

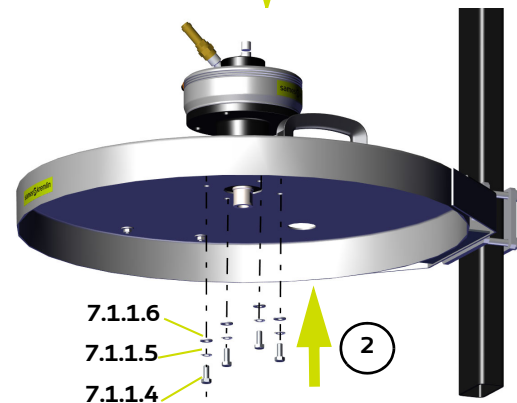


The arm/ram assembly lifts up to the upper position.

- **Step 9:**  
Place the geared motor (7.1.1.1) of the agitator (7) in the centre of the cover (6).



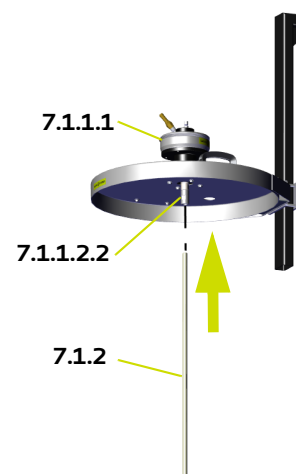
- **Step 10:**  
Tighten it by means of the 4 screws (7.1.1.4) and of the 8 washers (7.1.1.5 & 7.1.1.6) by means of a 13 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



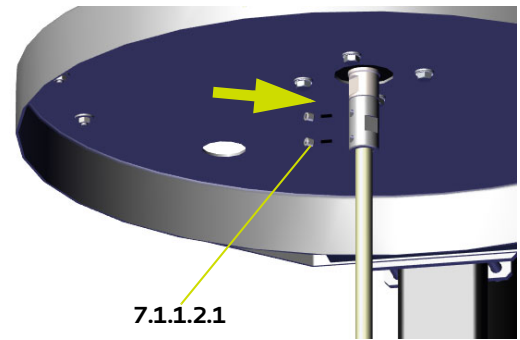
- **Step 11:**  
Apply glue (Loctite 270) on the thread of the adapter (7.1.1.2.2).

- **Step 12:**  
Insert it and fix it on the shaft of the geared motor by means of two 24 mm flat wrenches.  
Tightening torque: 35 N.m. / 25.8 Ft. Lbs

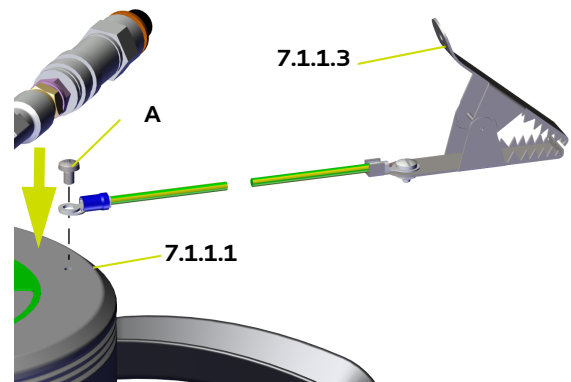
- **Step 13:**  
Install the agitator rod (7.1.2) in the adapter (7.1.1.2.2) of the geared motor (7.1.1.1).



- **Step 14:**  
Apply glue (Loctite 5772) on the 2 screws (7.1.1.2.1).
- **Step 15:**  
Screw them by means of a 6 mm hex key.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs

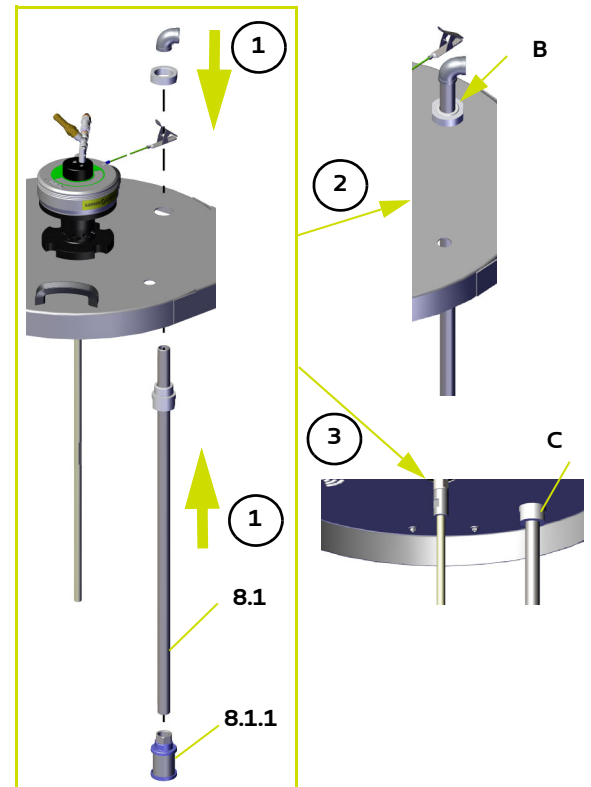


- **Step 16:**  
Install the ground wire (7.1.1.3) on the geared motor (7.1.1.1).
- **Step 17:**  
Tighten the locking screw (A) by means of a 10 mm flat wrench.



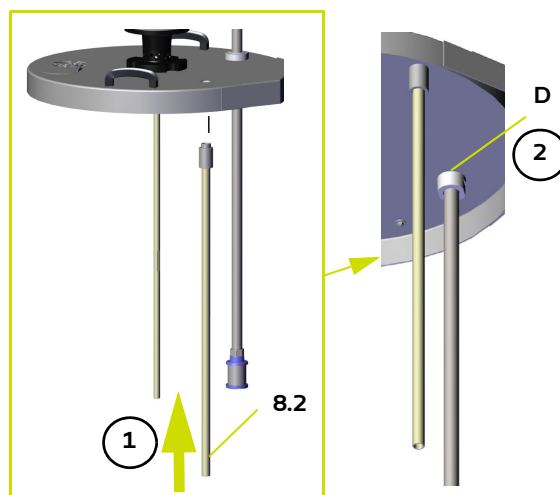
Please refer to ground section [see § 1.5.1 page 12.](#)

- **Step 18:**  
Install the suction rod (8.1) as well as the strainer (8.1.1).
- **Step 19:**  
Tighten the nut (B) by means of a spanner wrench.
- **Step 20:**  
Tighten the ring (C).



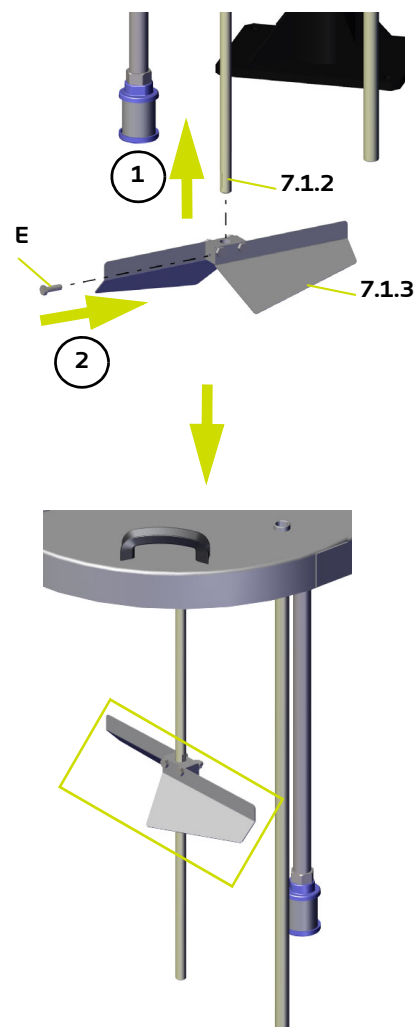
- **Step 21:**  
Install the tube (8.2).

- **Step 22:**  
Tighten the nut (D).



- **Step 23:**  
Place the upper propeller (7.1.3) on the agitator rod (7.1.2).

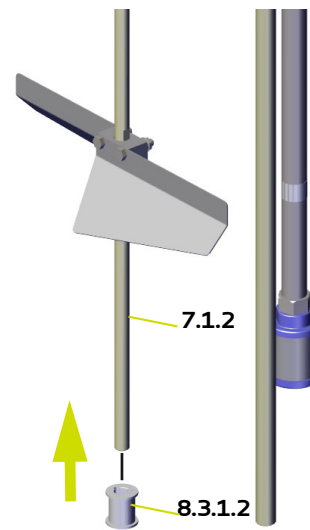
- **Step 24:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 25:**  
Install the ring (8.3.1.2) on the agitator rod (7.1.2).

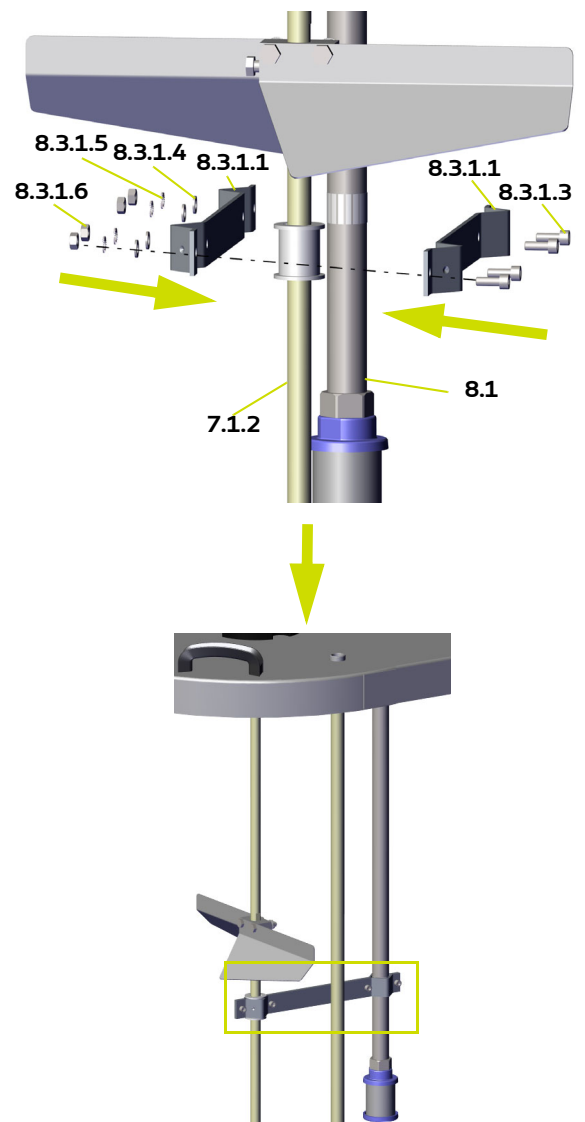


The ring must be located below the upper propeller previously installed.



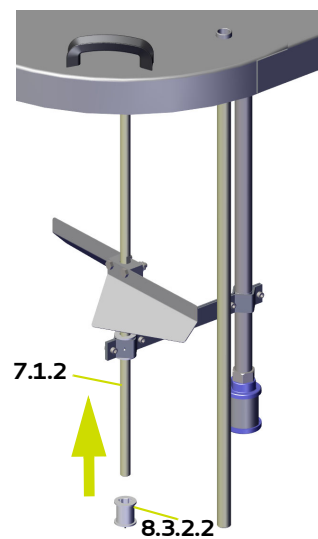
- **Step 26:**  
Place the agitator axis supports (8.3.1.1) on the agitator rod (7.1.2) as well as the suction rod (8.1).

- **Step 27:**  
Tighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.

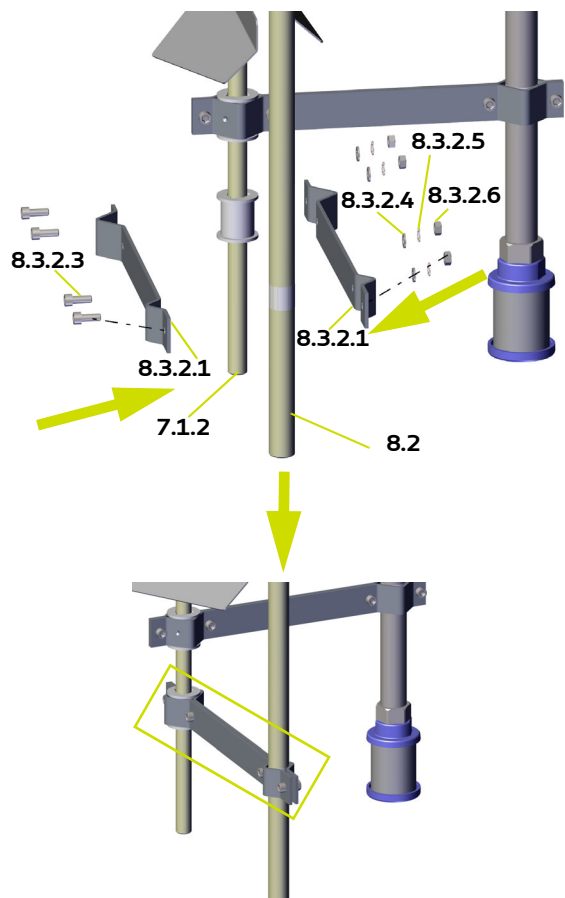




- **Step 28:**  
Install the ring (8.3.2.2) on the agitator rod (7.1.2).



- **Step 29:**  
Place the agitator axis supports (8.3.2.1) on the agitator rod (7.1.2) as well as the tube (8.2).
- **Step 30:**  
Tighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



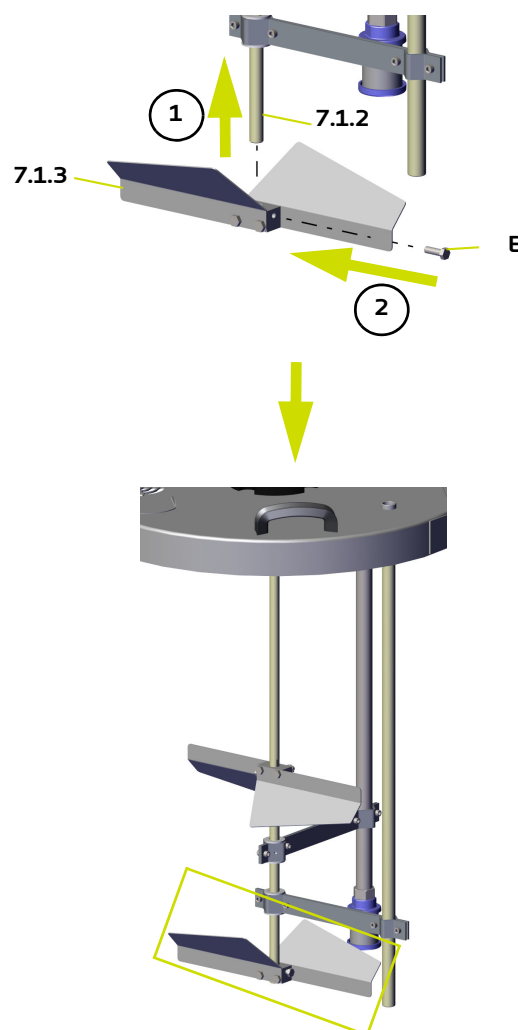
- **Step 31:**  
Place the lower propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 32:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



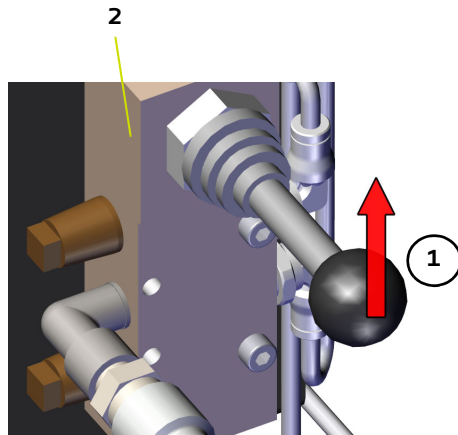
The mounting direction of the lower propeller differs from that of the upper propeller.



The agitator supports (8.3.1 & 8.3.2) must be between the 2 propellers.

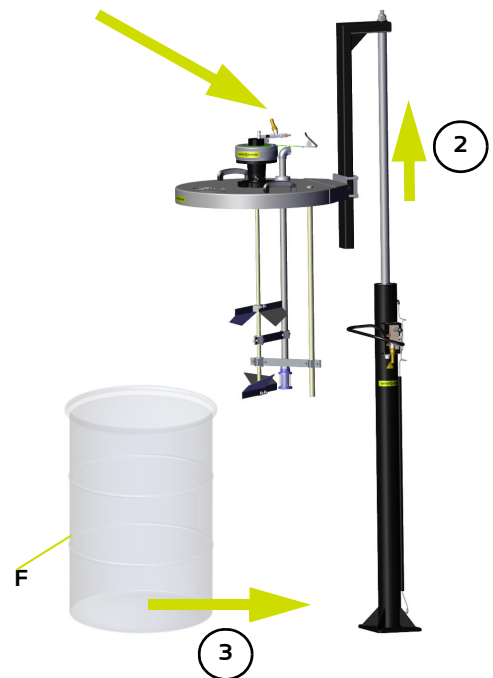


- **Step 33:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

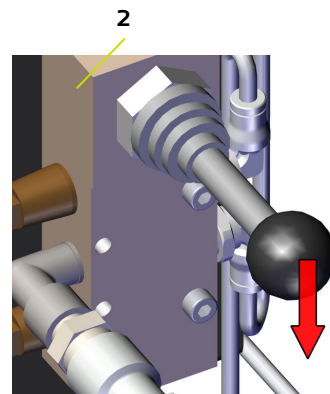


The arm/ram assembly lifts up to the upper position.

- **Step 34:**  
Locate a drum (F) under the agitation unit.

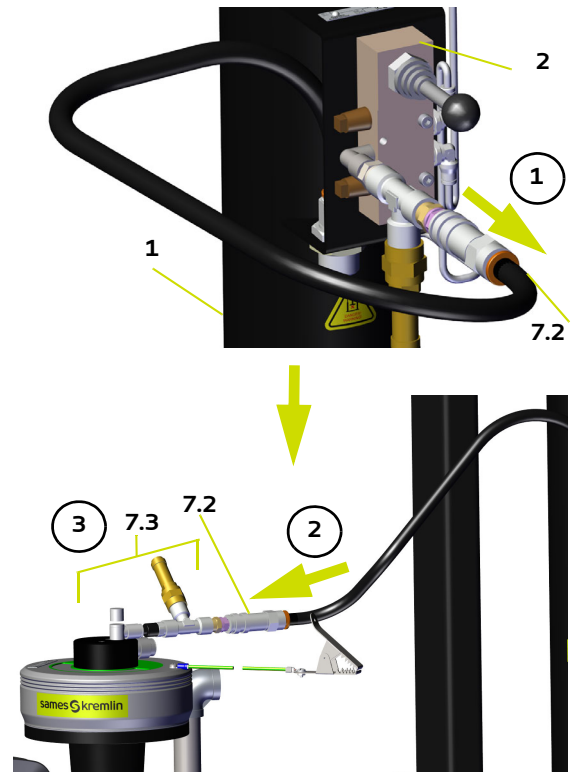


- **Step 35:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



**Center the drum in relation to the cover to avoid any risk of friction and sparks, especially from the propellers.**

- **Step 36:**  
Disconnect the quick release coupling from the air supply (7.2) hose of the ram (1) control (2).
- **Step 37:**  
Connect it to the agitator air supply.
- **Step 38:**  
Adjust the air regulator (7.3) by controlling the rotation speed of the agitator from the hatch.
- **Step 39:**  
Unscrew slightly the knob of the air regulator (7.3) - 6 bar / 87 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.



**Do not operate the agitator outside the drum or at too high speed.**

**It can lead to a deterioration of the paint, vibrations and an early wear of the parts.**

**Do not run the equipment with no load.**

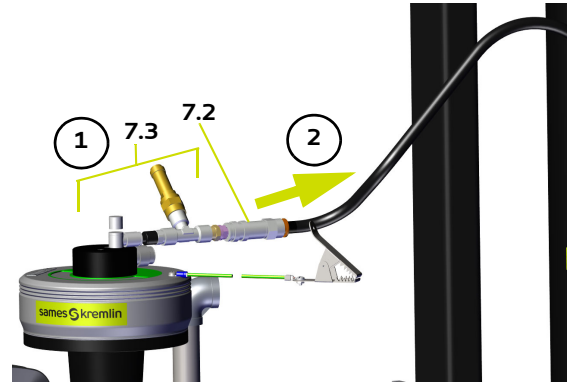
- **Step 40:**  
Close the hatch.  
The agitation unit is ready to use.

6.4.3. Procedure C: maintenance of the 200 L / 52.8 US gal agitator – PTM motor – 2 sabre propellers (7)

6.4.3.1. Procedure C1: disassembly of the 200 L / 52.8 US gal agitator – PTM motor – 2 sabre propellers (7)

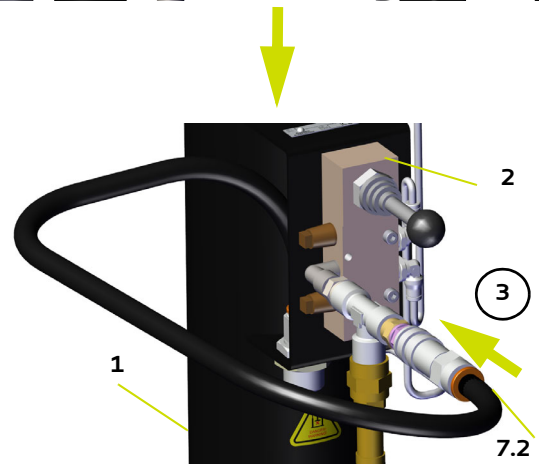
- **Step 1:**  
Screw the knob of the air regulator (7.3). The motor of the agitator stops.

- **Step 2:**  
Disconnect the quick release coupling of the air supply hose (7.2) from the air inlet of the agitator.

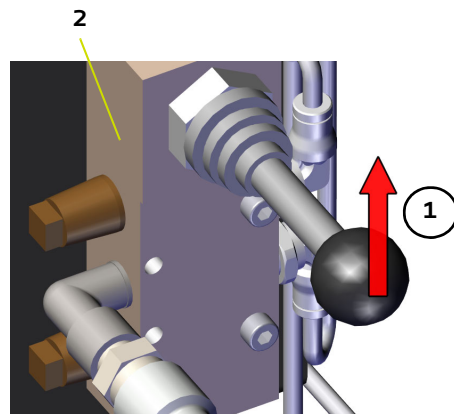


- **Step 3:**  
Connect it to the ram (1) control (2).

- **Step 4:**  
Open the air.

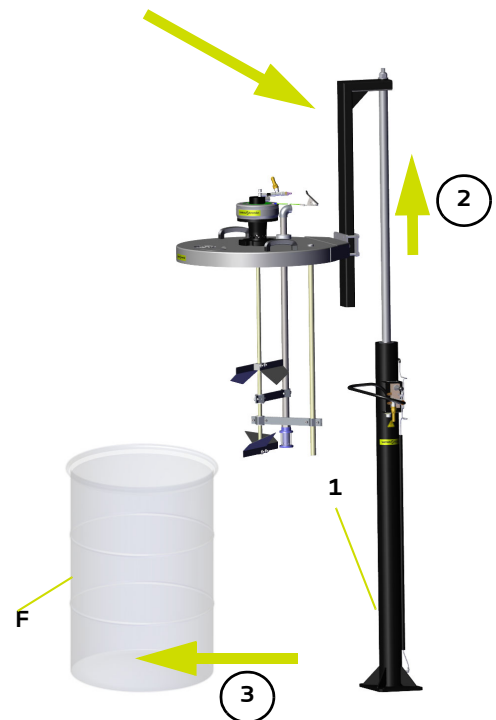


- **Step 5:**  
Hold up the pneumatic control lever (2) of the ram (1).

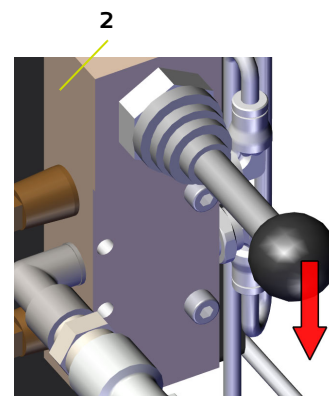


The arm/ram assembly lifts up to the upper position.

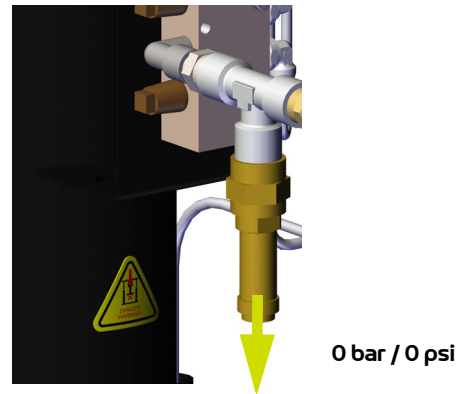
- **Step 6:**  
Take off the drum (F).



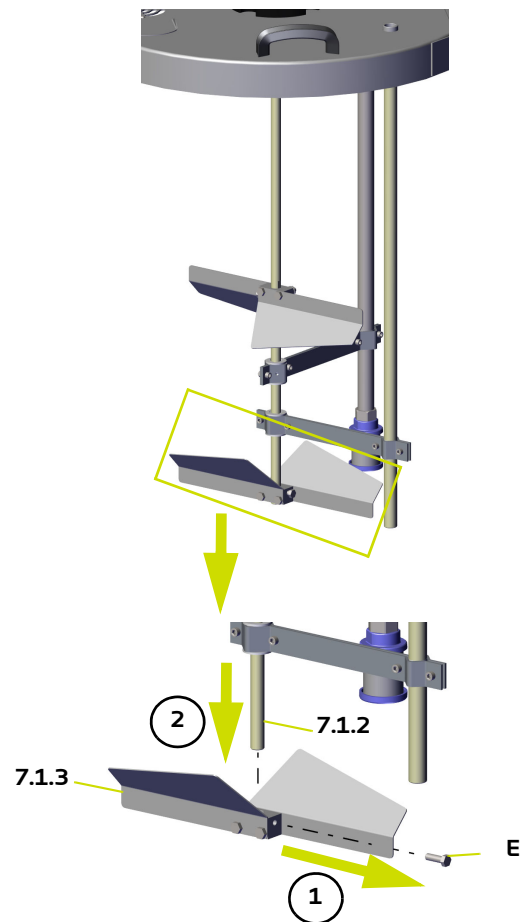
- **Step 7:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



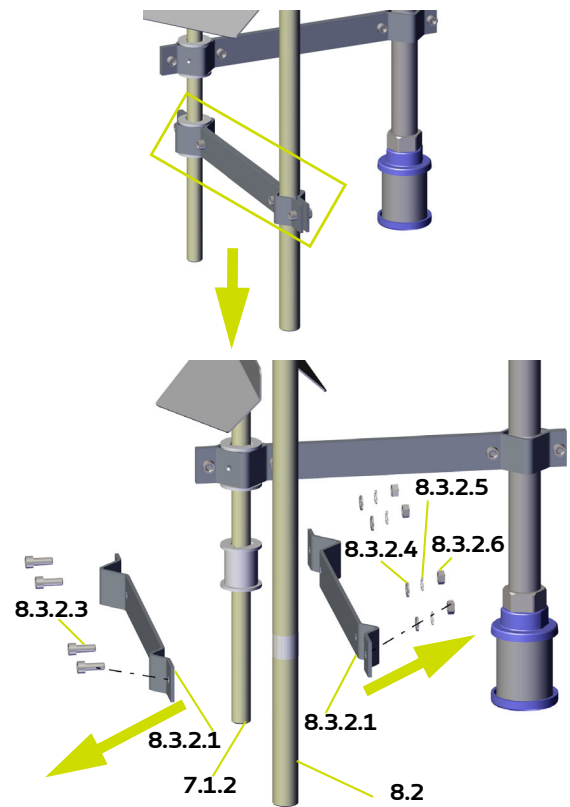
- **Step 8:**  
Disconnect the ram (1) air supply hose from the compressed air network (0 bar / 0 psi).



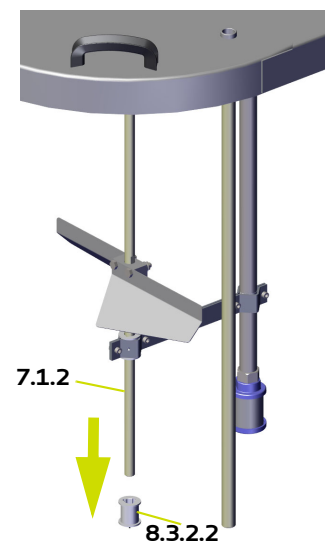
- **Step 9:**  
Untighten the screw (E) by means of a 8 mm flat wrench.
- **Step 10:**  
Remove the lower propeller (7.1.3) from the agitator rod (7.1.2).



- **Step 11:**  
 Untighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.
- **Step 12:**  
 Take off the agitator axis supports (8.3.2.1) from the agitator rod (7.1.2) as well as from the tube (8.2).



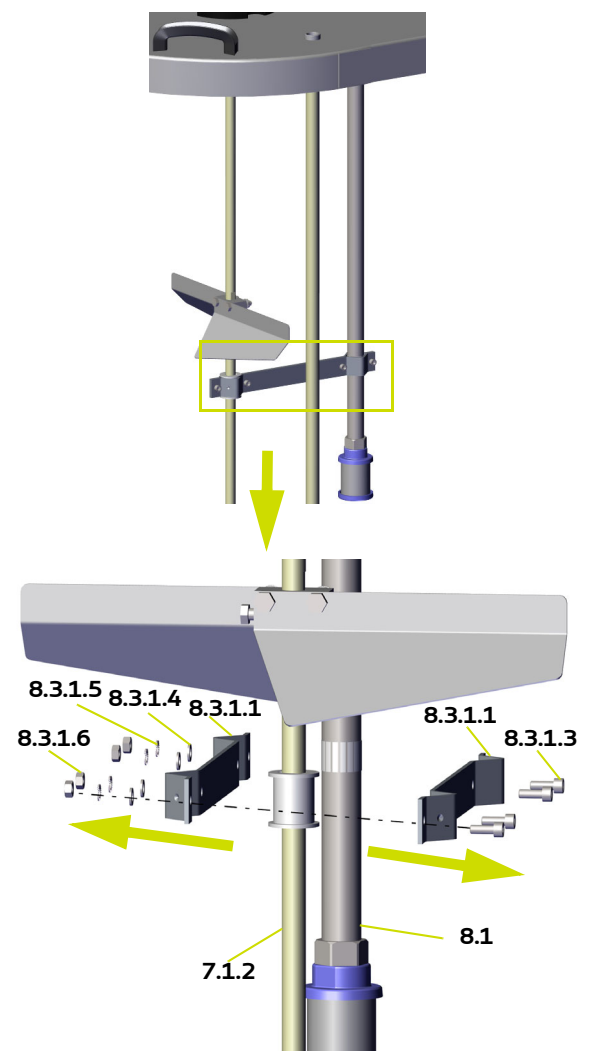
- **Step 13:**  
 Remove the ring (8.3.2.2) from the agitator rod (7.1.2).



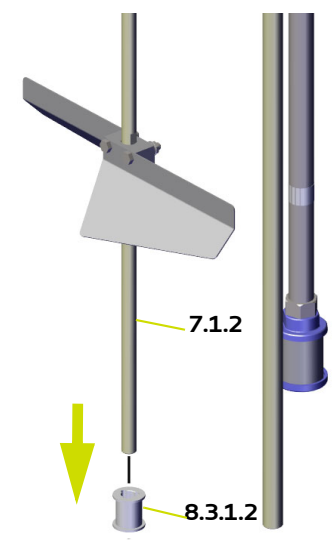


- **Step 14:**  
 Untighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.

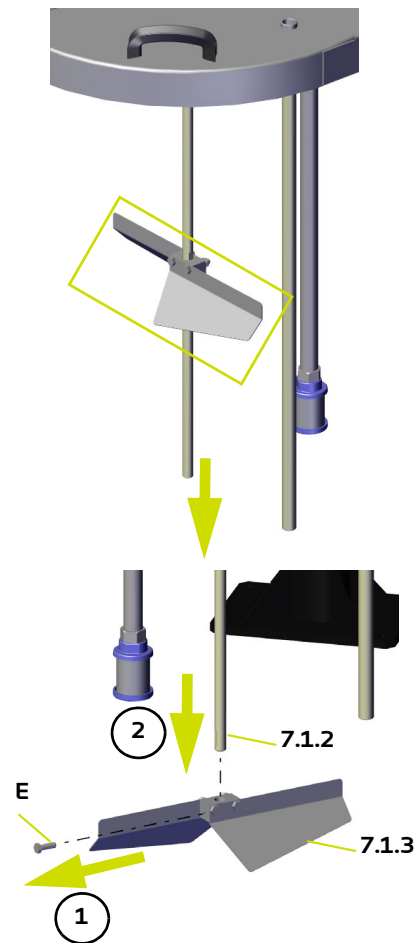
- **Step 15:**  
 Take off the agitator axis supports (8.3.1.1) from the agitator rod (7.1.2) as well as from the suction rod (8.1).



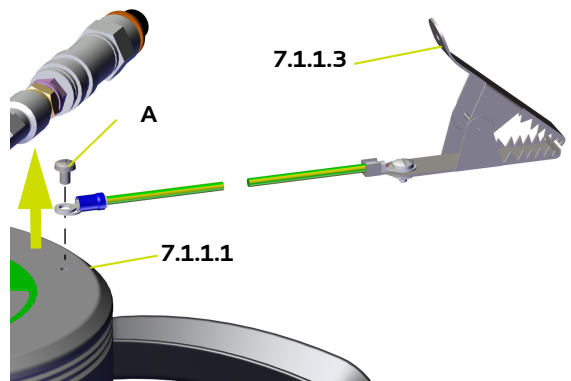
- **Step 16:**  
 Remove the ring (8.3.1.2) from the agitator rod (7.1.2).



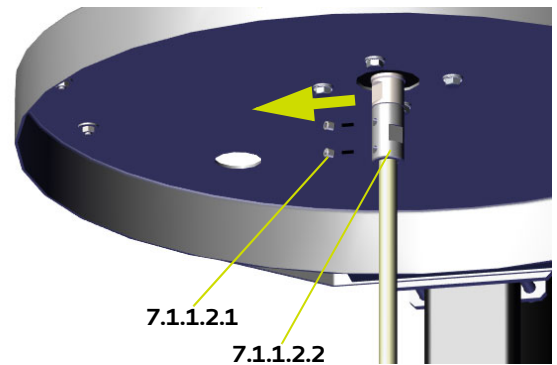
- **Step 17:**  
Untighten the screw (E) by means of a 8 mm flat wrench.
- **Step 18:**  
Remove the upper propeller (7.1.3) from the agitator rod (7.1.2).



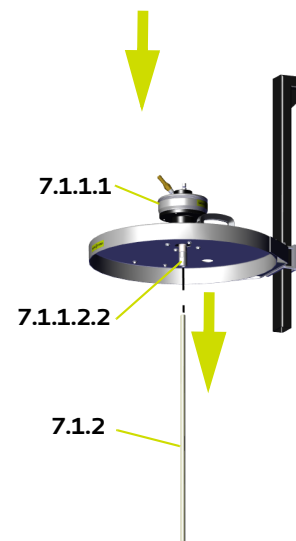
- **Step 19:**  
Untighten the locking screw (A) by means of a 10 mm flat wrench.
- **Step 20:**  
Manually remove the ground wire (7.1.1.3) from the geared motor (7.1.1.1).



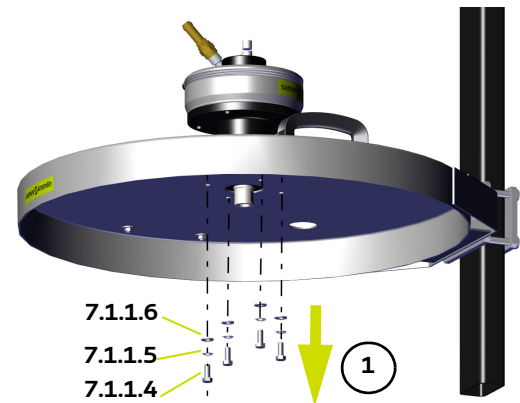
- **Step 21:**  
Unscrew the 2 screws (7.1.1.2.1) from the adapter (7.1.1.2.2) by means of a 6 mm hex key.



- **Step 22:**  
Remove the agitator rod (7.1.2) as well as the adapter (7.1.1.2.2).



- **Step 23:**  
Untighten the 4 screws (7.1.1.4) located under the cover (6) by means of a 13 mm flat wrench.
- **Step 24:**  
Take off the 8 washers (7.1.1.5 & 7.1.1.6).



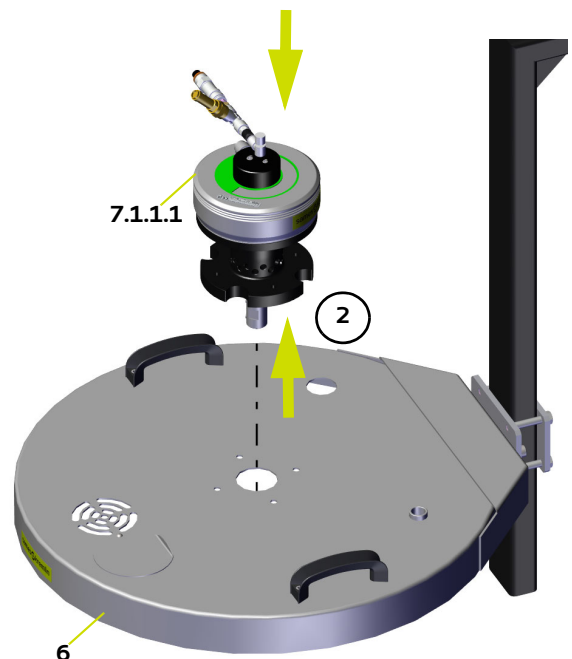
- **Step 25:**  
Remove the geared motor (7.1.1.1) of the agitator (7) from the cover (6).



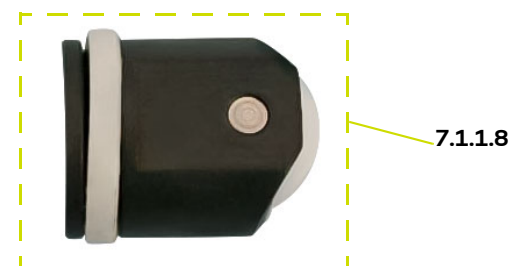
If the maintenance of the piston-motor kit (ind. 7.1.1.8) is required, go to step 26. Otherwise, go directly to procedure C2.



It is not necessary to disassemble the motor (7.1.1.1) if you only wish to service the propellers (7.1.3).

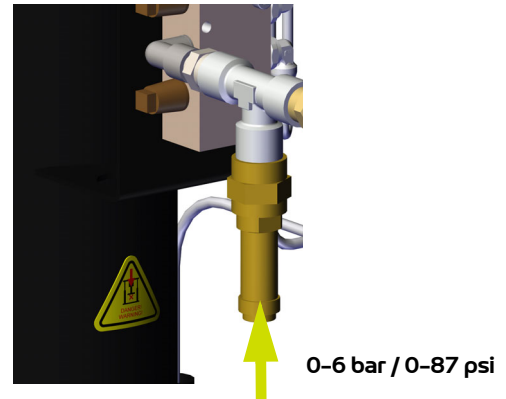


- **Step 26:**  
For maintenance of the piston-motor kit (ind. 7.1.1.8), see §8.1.2.1 page 105, please refer to the supplier's manual supplied with your kit.

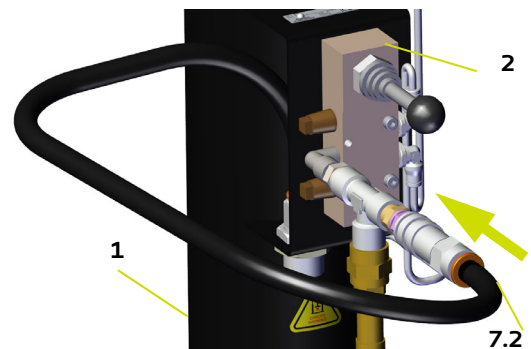


6.4.3.2. Procedure C2: Re-assembly of the 200 L / 52.8 US gal agitator – PTM motor – 2 sabre propellers (7)

- **Step 1:**  
Connect the ram (1) air supply hose to the compressed air network (maximum 6 bar / 87 psi).

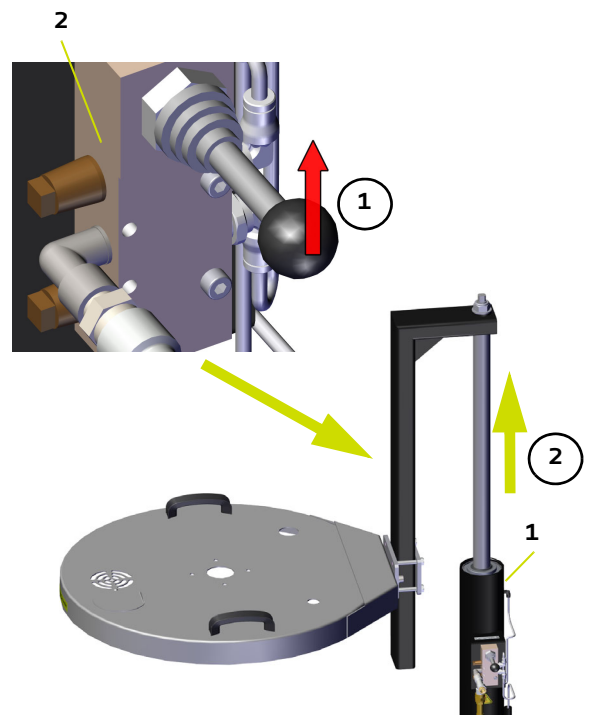


- **Step 2:**  
Take the quick release coupling of the air supply hose (7.2).



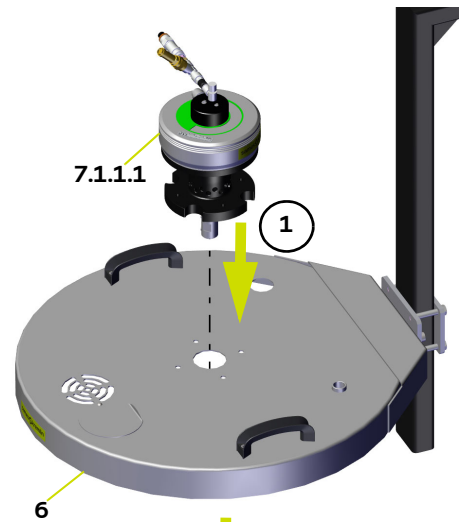
- **Step 3:**  
Connect it to the control (2) ram (1).

- **Step 4:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

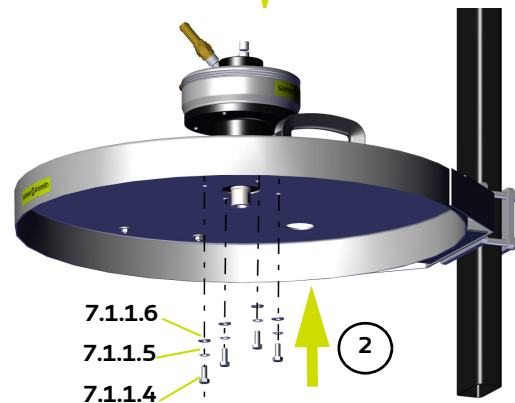


The arm/ram assembly lifts up to the upper position.

- **Step 5:**  
Place the geared motor (7.1.1.1) of the agitator (7) in the centre of the cover (6).



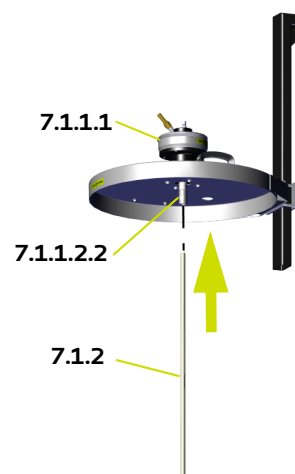
- **Step 6:**  
Tighten it by means of the 4 screws (7.1.1.4) and of the 8 washers (7.1.1.5 & 7.1.1.6) by means of a 13 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 7:**  
Apply glue (Loctite 270) on the thread of the adapter (7.1.1.2.2).

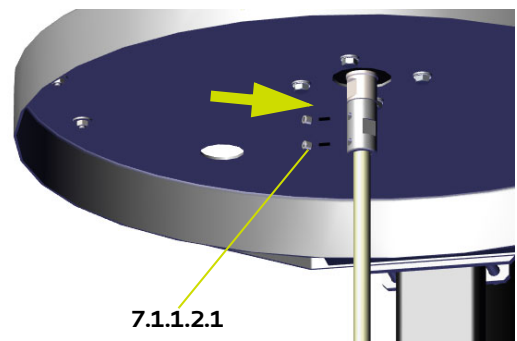
- **Step 8:**  
Insert it and fix it on the shaft of the geared motor by means of two 24 mm flat wrenches.  
Tightening torque: 35 N.m. / 25.8 Ft. Lbs

- **Step 9:**  
Install the agitator rod (7.1.2) in the adapter (7.1.1.2.2) of the geared motor (7.1.1.1).



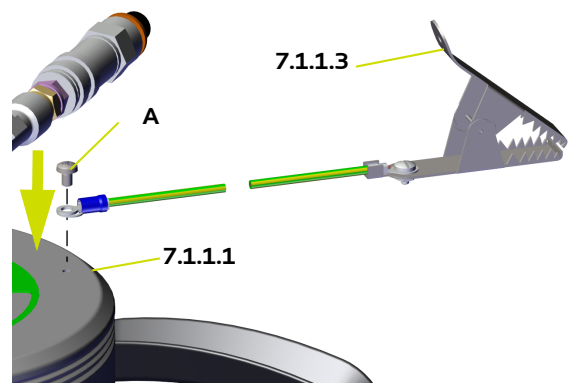
- **Step 10:**  
Apply glue (Loctite 5772) on the 2 screws (7.1.1.2.1).

- **Step 11:**  
Screw them by means of a 6 mm hex key.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



- **Step 12:**  
Install the ground wire (7.1.1.3) on the geared motor (7.1.1.1).

- **Step 13:**  
Tighten the locking screw (A) by means of a 10 mm flat wrench.



Please refer to ground section [see § 1.5.1 page 12.](#)

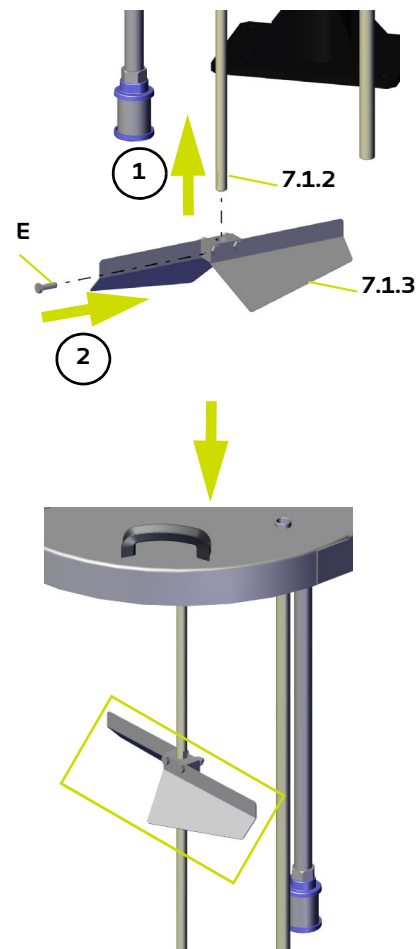
- **Step 14:**



To prevent injury or damage, the propellers are wrapped.

Place the upper propeller (7.1.3) on the agitator rod (7.1.2).

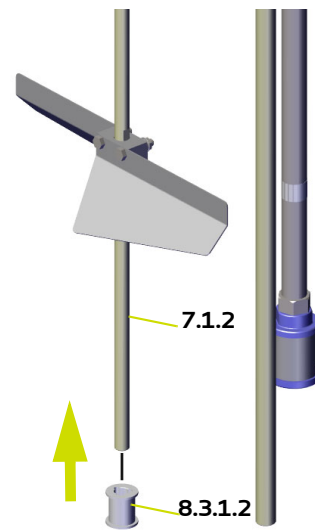
- **Step 15:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



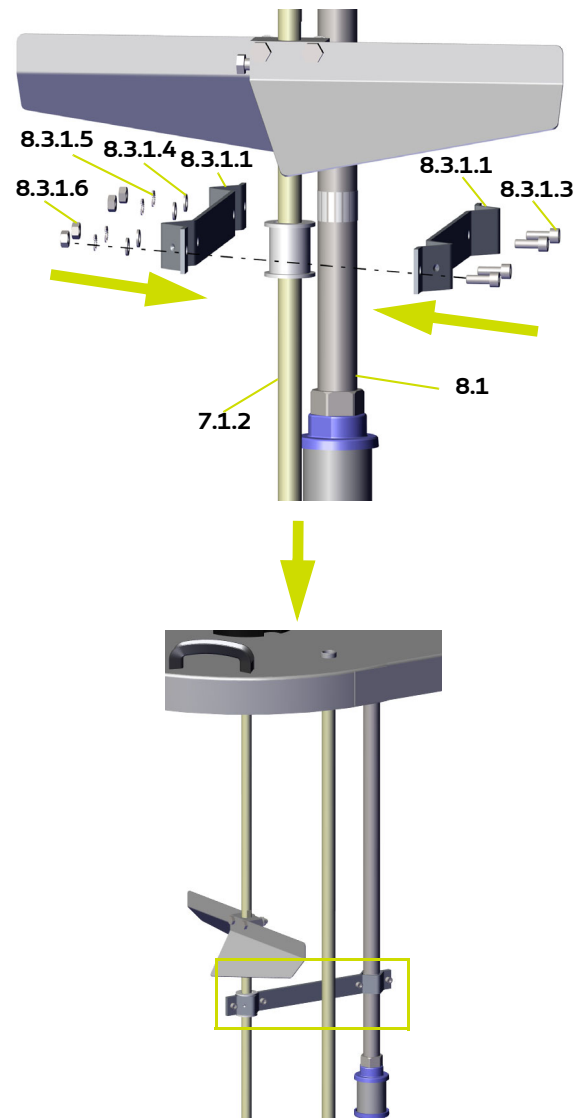
- **Step 16:**  
Install the ring (8.3.1.2) on the agitator rod (7.1.2).



The ring must be located below the upper propeller previously installed.

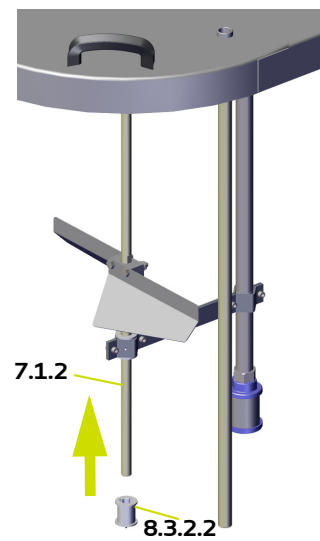


- **Step 17:**  
Place the agitator axis supports (8.3.1.1) on the agitator rod (7.1.2) as well as the suction rod (8.1).
- **Step 18:**  
Tighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



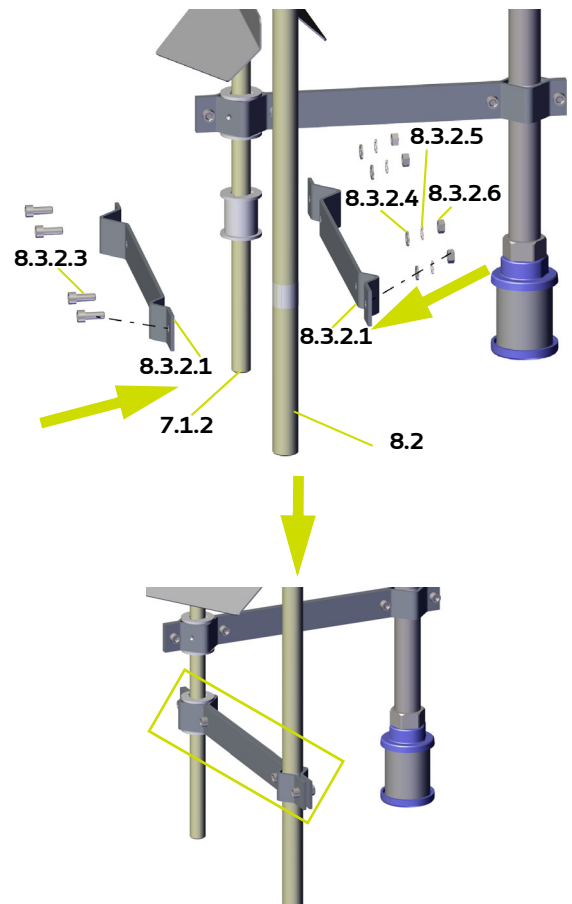


- **Step 19:**  
Install the ring (8.3.2.2) on the agitator rod (7.1.2).



- **Step 20:**  
Place the agitator axis supports (8.3.2.1) on the agitator rod (7.1.2) as well as the tube (8.2).

- **Step 21:**  
Tighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



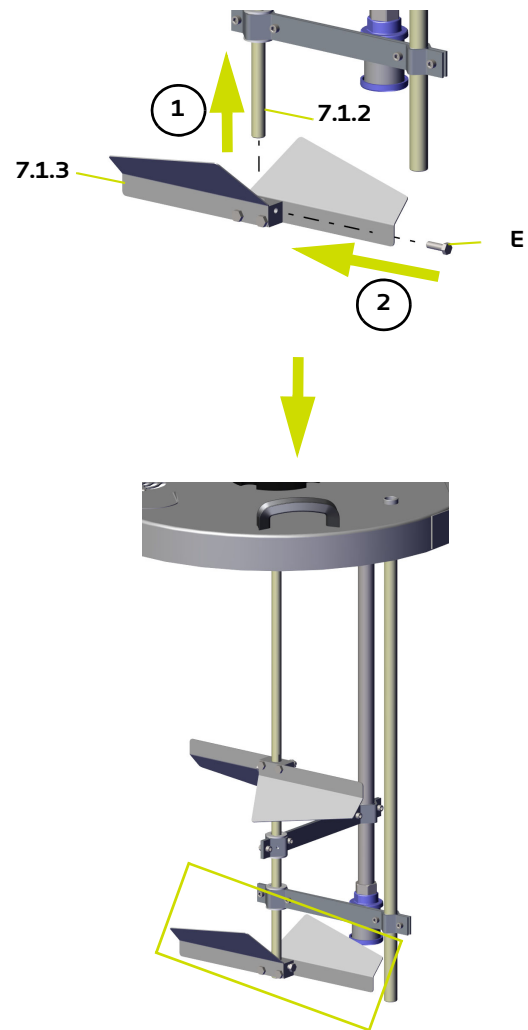
- **Step 22:**  
Place the upper propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 23:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



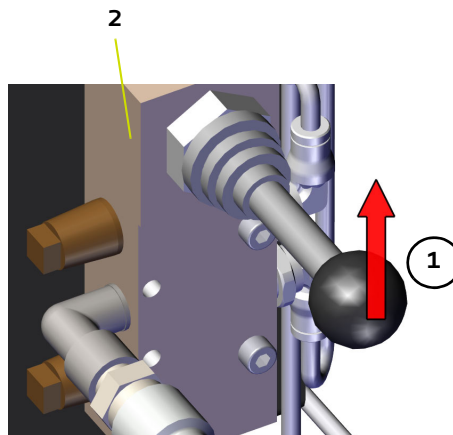
The mounting direction of the lower propeller differs from that of the upper propeller.



The agitator supports (8.3.1 & 8.3.2) must be between the 2 propellers.

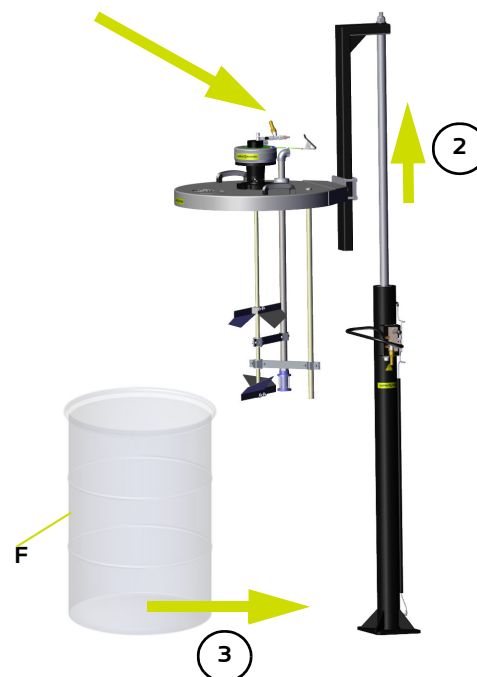


- **Step 24:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

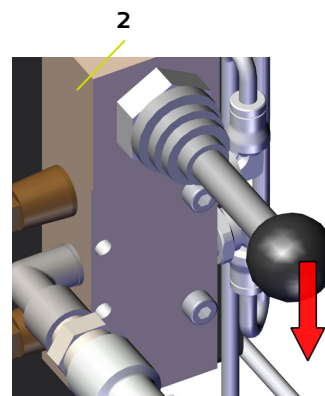


The arm/ram assembly lifts up to the upper position.

- **Step 25:**  
Locate a drum (F) under the agitation unit.

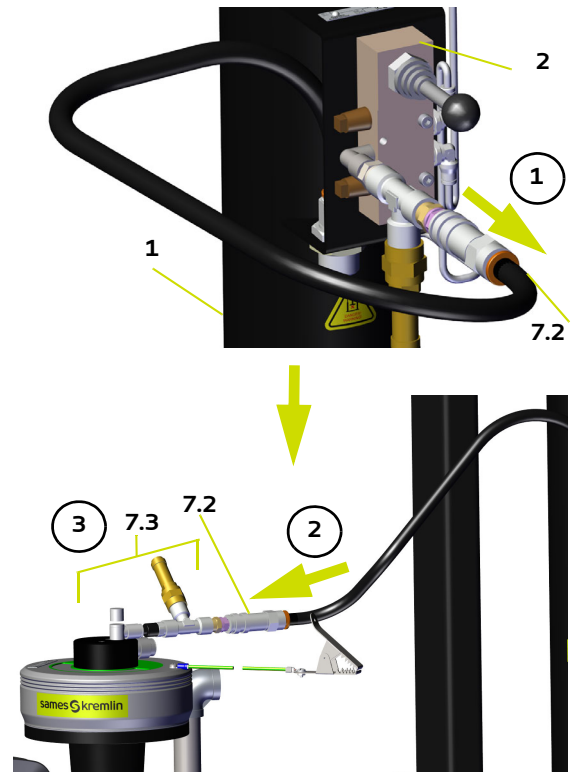


- **Step 26:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



**Center the drum in relation to the cover to avoid any risk of friction and sparks, especially from the propellers.**

- **Step 27:**  
Disconnect the quick release coupling from the air supply (7.2) hose of the ram (1) control (2).
- **Step 28:**  
Connect it to the agitator air supply.
- **Step 29:**  
Adjust the air regulator (7.3) by controlling the rotation speed of the agitator from the hatch.
- **Step 30:**  
Unscrew slightly the knob of the air regulator (7.3) - 6 bar / 87 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.



**Do not operate the agitator outside the drum or at too high speed.**  
It can lead to a deterioration of the paint, vibrations and an early wear of the parts.  
**Do not run the equipment with no load.**

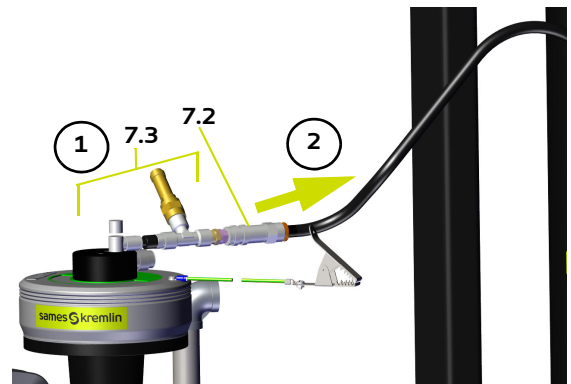
- **Step 31:**  
Close the hatch.  
The agitation unit is ready to use.

## 6.4.4. Procedure D: maintenance of the 200 L / 52.8 US gal suction assembly (8)

### 6.4.4.1. Procedure D1: disassembly of the 200 L / 52.8 US gal suction assembly (8)

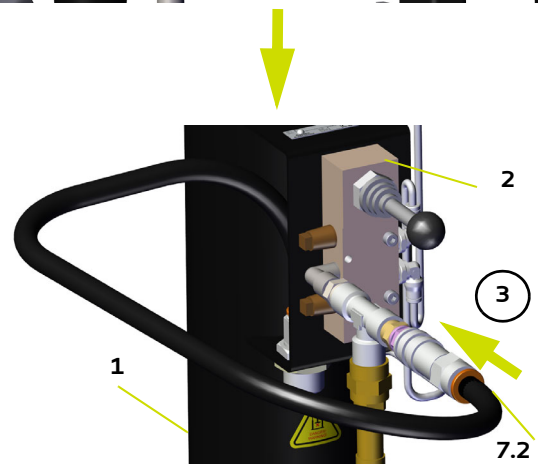
- **Step 1:**  
Screw the knob of the air regulator (7.3). The motor of the agitator stops.

- **Step 2:**  
Disconnect the quick release coupling of the air supply hose (7.2) from the air inlet of the agitator.

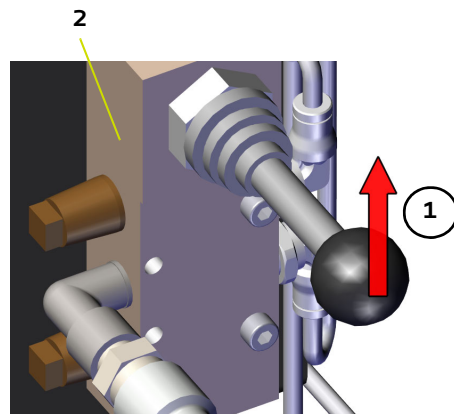


- **Step 3:**  
Connect it to the ram (1) control (2).

- **Step 4:**  
Open the air.

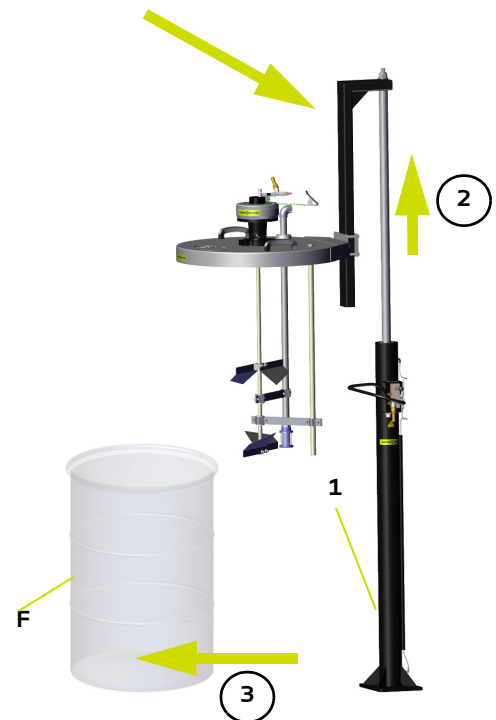


- **Step 5:**  
Hold up the pneumatic control lever (2) of the ram (1).

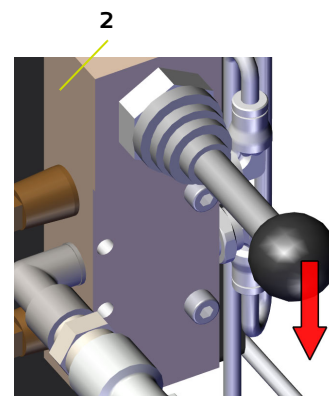


The arm/ram assembly lifts up to the upper position.

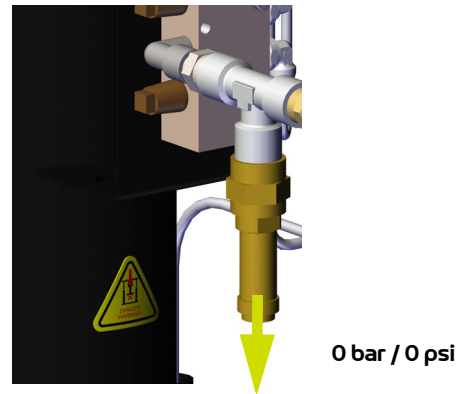
- **Step 6:**  
Take off the drum (F).



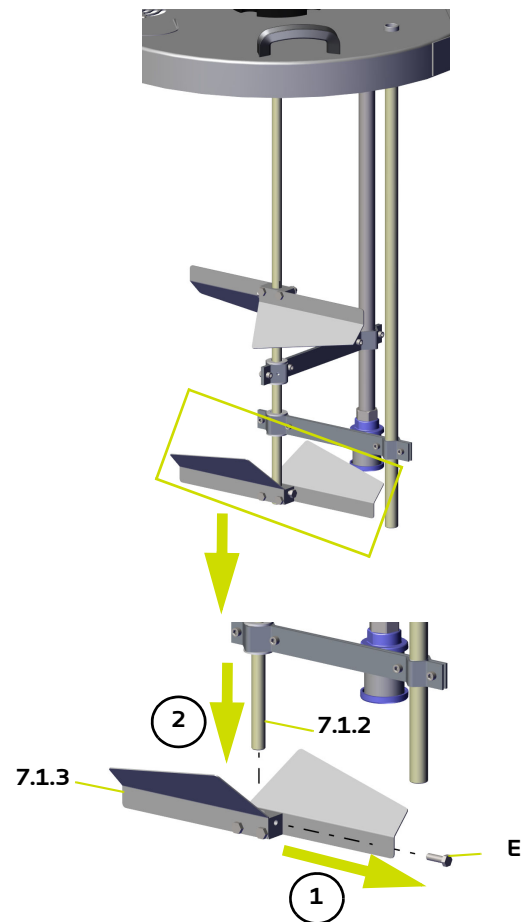
- **Step 7:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



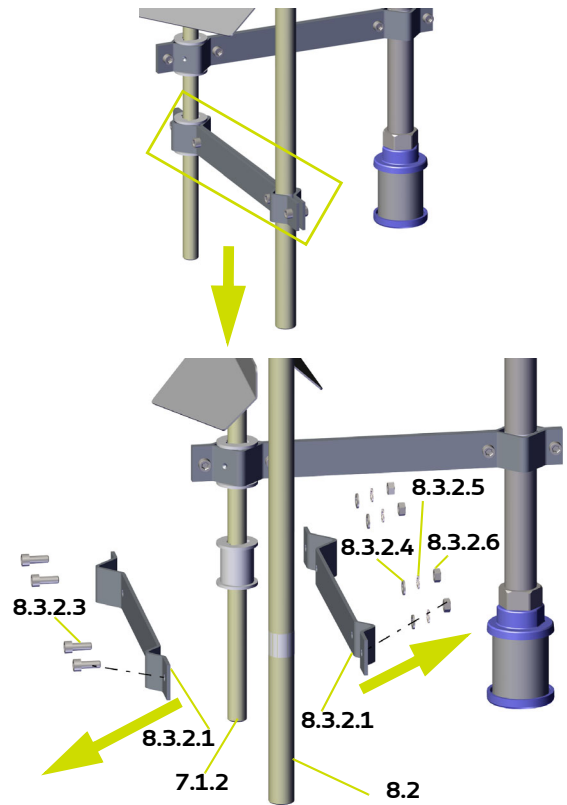
- **Step 8:**  
Disconnect the ram (1) air supply hose from the compressed air network (0 bar / 0 psi).



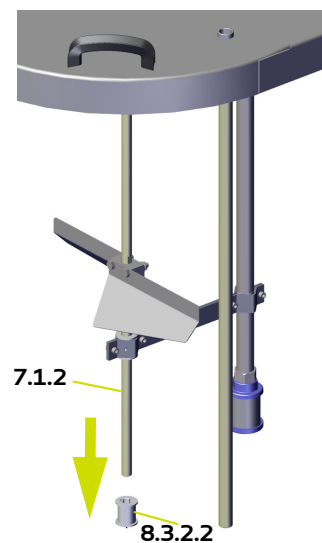
- **Step 9:**  
Untighten the screw (E) by means of a 8 mm flat wrench.
- **Step 10:**  
Remove the lower propeller (7.1.3) from the agitator rod (7.1.2).



- **Step 11:**  
 Untighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.
- **Step 12:**  
 Take off the agitator axis supports (8.3.2.1) from the agitator rod (7.1.2) as well as from the tube (8.2).



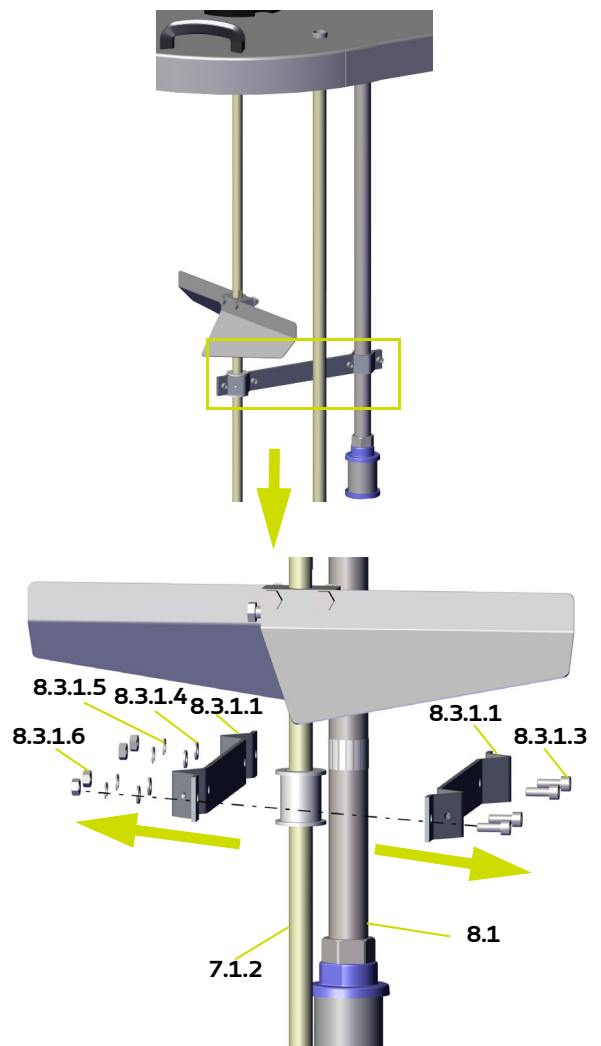
- **Step 13:**  
 Remove the ring (8.3.2.2) from the agitator rod (7.1.2).



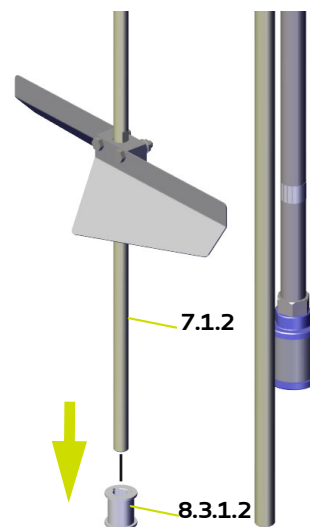


- **Step 14:**  
Untighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.

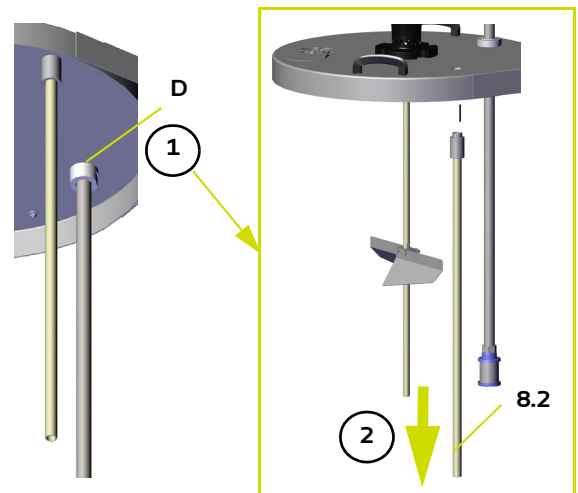
- **Step 15:**  
Take off the agitator axis supports (8.3.1.1) from the agitator rod (7.1.2) as well as from the suction rod (8.1).



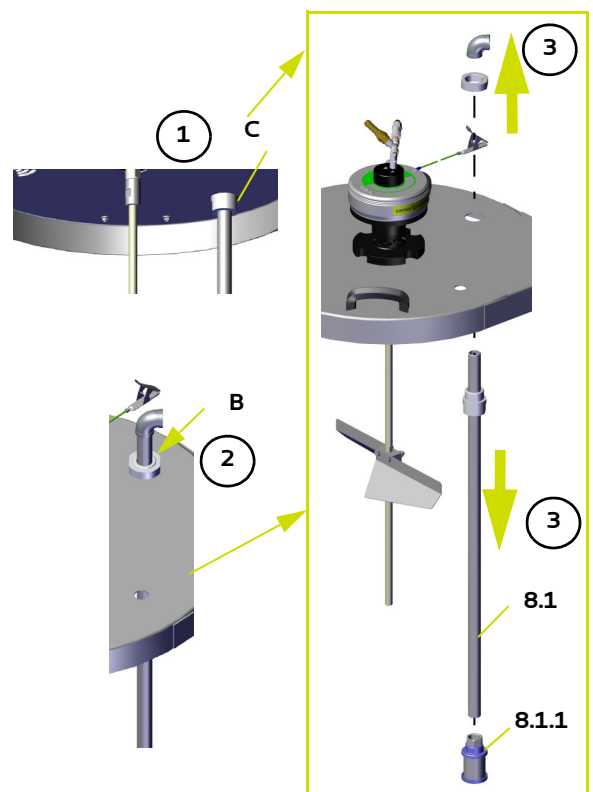
- **Step 16:**  
Remove the ring (8.3.1.2) from the agitator rod (7.1.2).



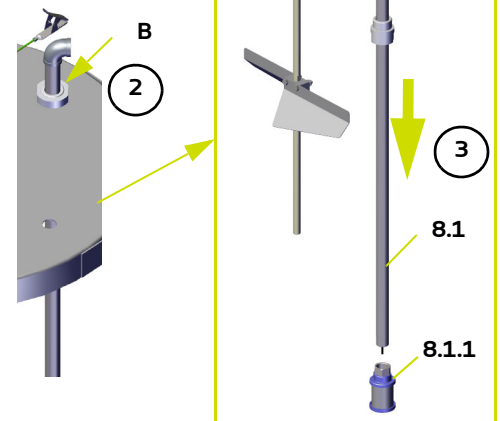
- **Step 17:**  
Untighten the nut (D).
- **Step 18:**  
Remove the tube (8.2).



- **Step 19:**  
Untighten the ring (C).

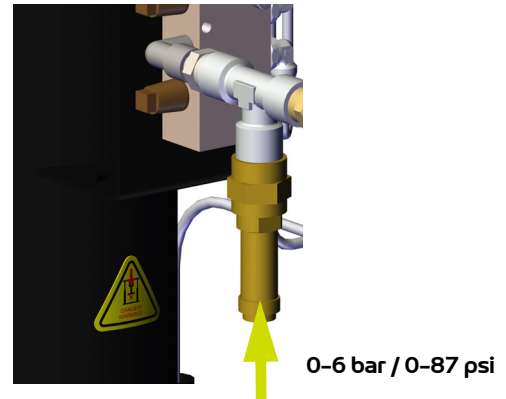


- **Step 20:**  
Untighten the nut (B) by means of a spanner wrench.
- **Step 21:**  
Remove the suction rod (8.1) as well as the strainer (8.1.1).

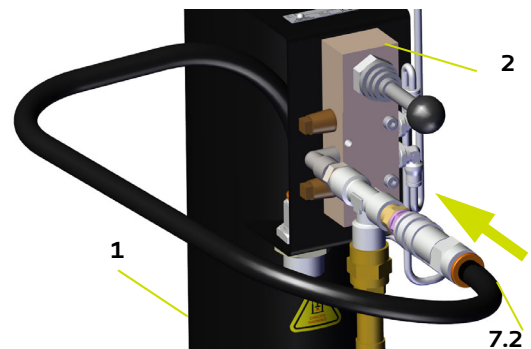


6.4.4.2. Procedure D2: Re-assembly of the 200 L / 52.8 US gal suction assembly (8)

- **Step 1:**  
Connect the ram (1) air supply hose to the compressed air network (maximum 6 bar / 87 psi).

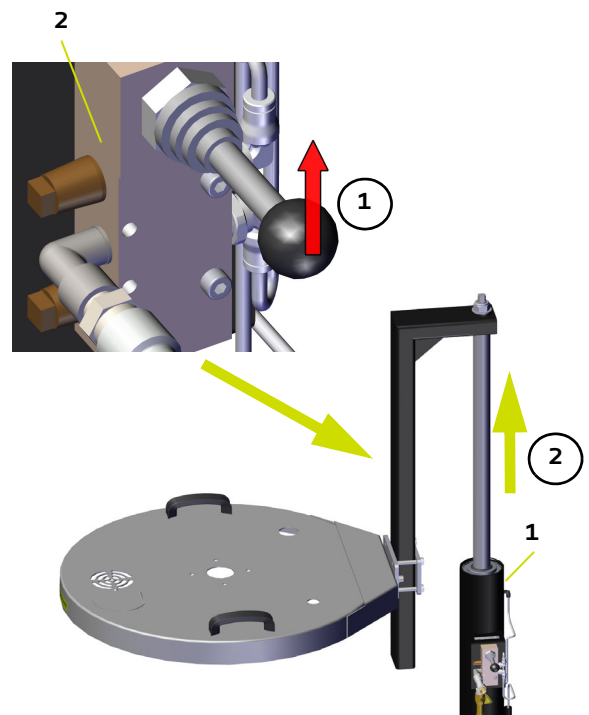


- **Step 2:**  
Take the quick release coupling of the air supply hose (7.2).



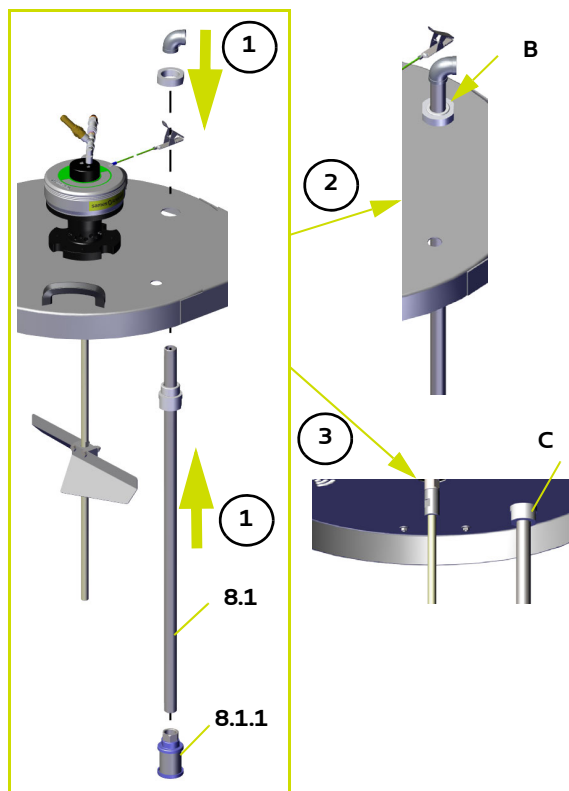
- **Step 3:**  
Connect it to the control (2) ram (1).

- **Step 4:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

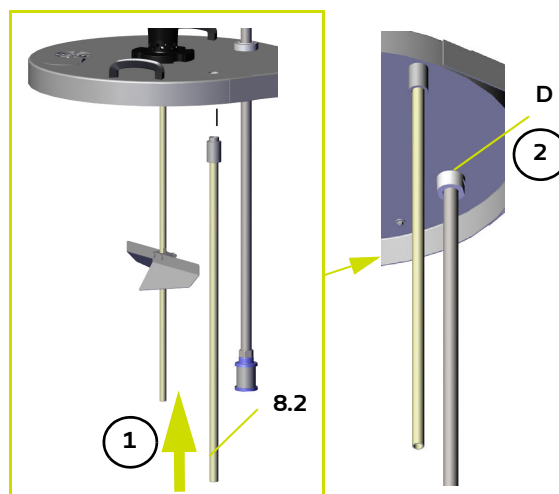


The arm/ram assembly lifts up to the upper position.

- **Step 5:**  
Install the suction rod (8.1) as well as the strainer (8.1.1).
- **Step 6:**  
Tighten the nut (B) by means of a spanner wrench.
- **Step 7:**  
Tighten the ring (C).



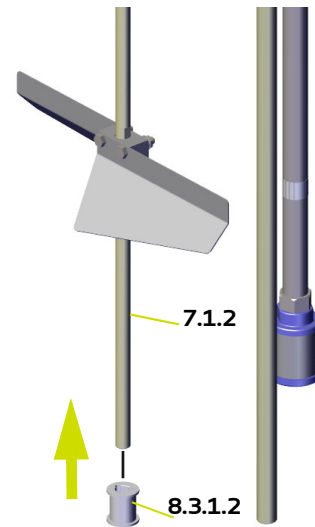
- **Step 8:**  
Install the tube (8.2).
- **Step 9:**  
Tighten the nut (D).



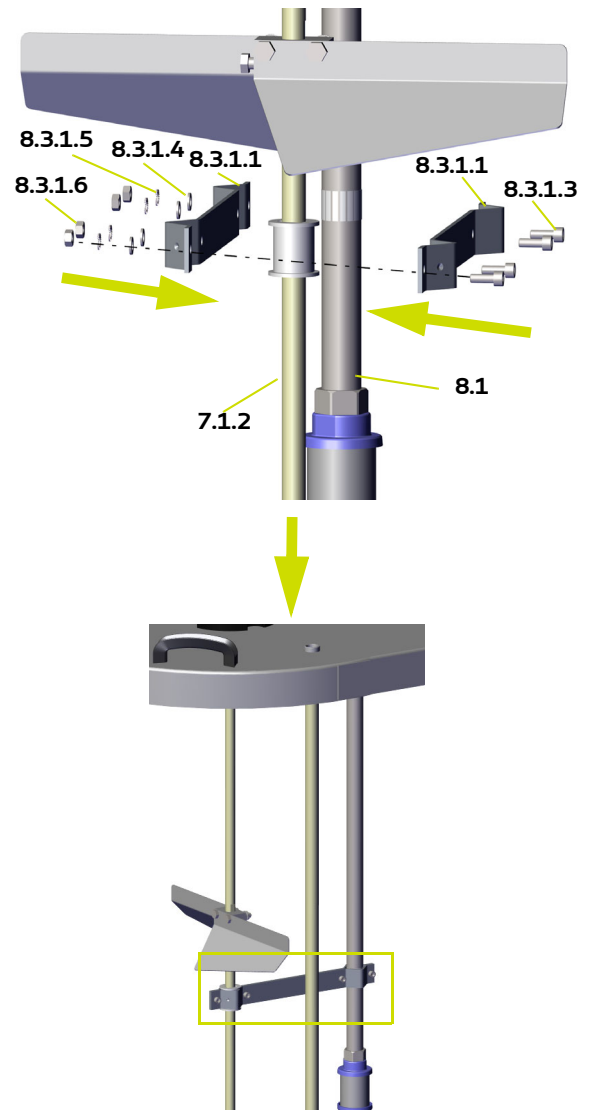
- **Step 10:**  
Install the ring (8.3.1.2) on the agitator rod (7.1.2).



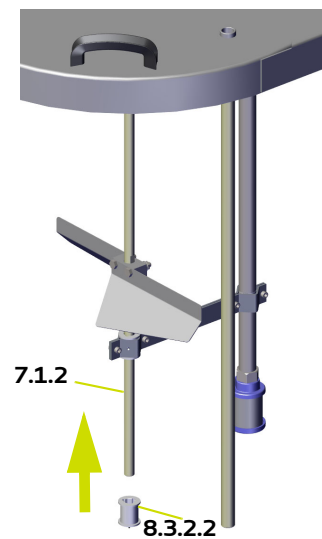
The ring must be located below the upper propeller previously installed.



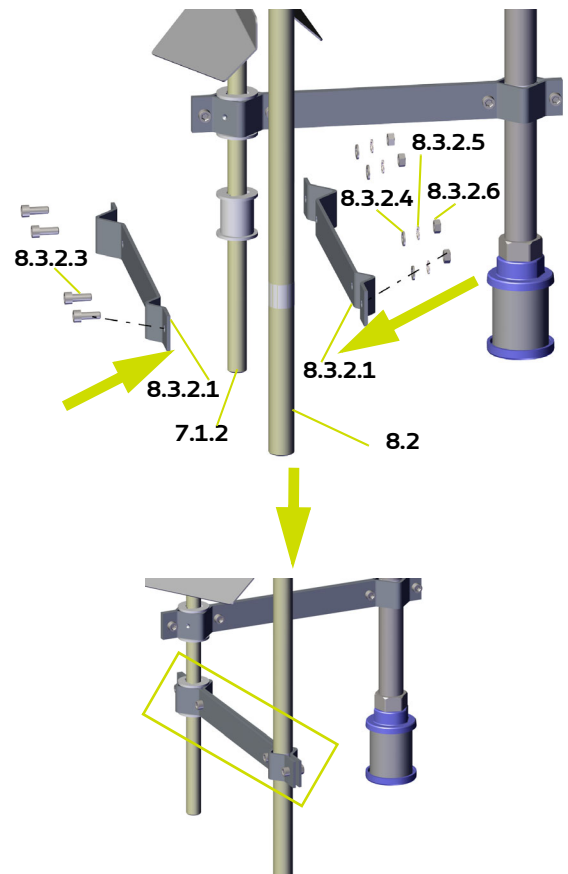
- **Step 11:**  
Place the agitator axis supports (8.3.1.1) on the agitator rod (7.1.2) as well as the suction rod (8.1).
- **Step 12:**  
Tighten the 4 screws (8.3.1.3), the 8 washers (8.3.1.4 & 8.3.1.5) and the 4 nuts (8.3.1.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



- **Step 13:**  
Install the ring (8.3.2.2) on the agitator rod (7.1.2).



- **Step 14:**  
Place the agitator axis supports (8.3.2.1) on the agitator rod (7.1.2) as well as the tube (8.2).
- **Step 15:**  
Tighten the 4 screws (8.3.2.3), the 8 washers (8.3.2.4 & 8.3.2.5) and the 4 nuts (8.3.2.6) by means of a 10 mm flat wrench and of a 5 mm hex key.



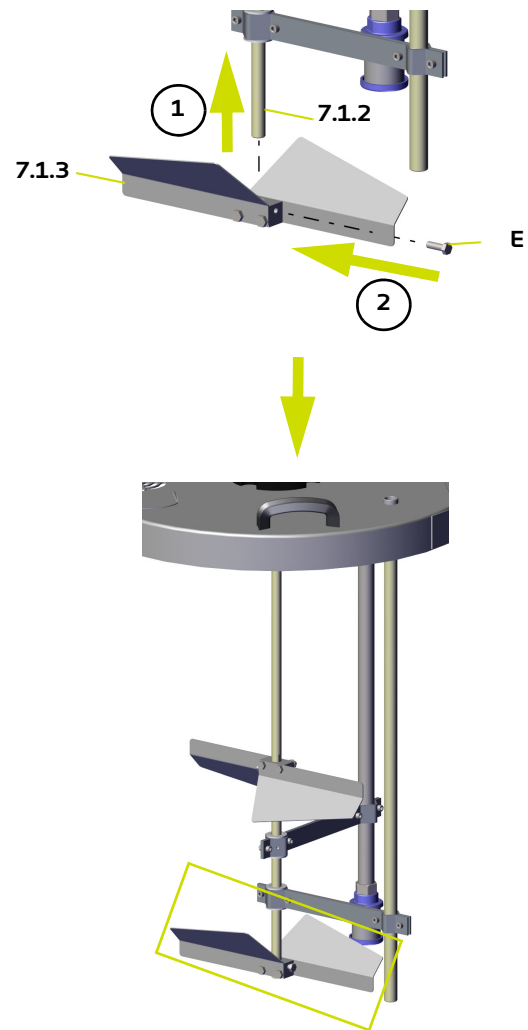
- **Step 16:**  
Place the lower propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 17:**  
Tighten the screw (E) by means of a 8 mm flat wrench.  
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



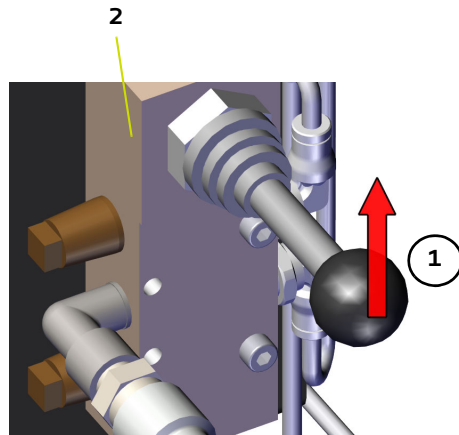
The mounting direction of the lower propeller differs from that of the upper propeller.



The agitator supports (8.3.1 & 8.3.2) must be between the 2 propellers.

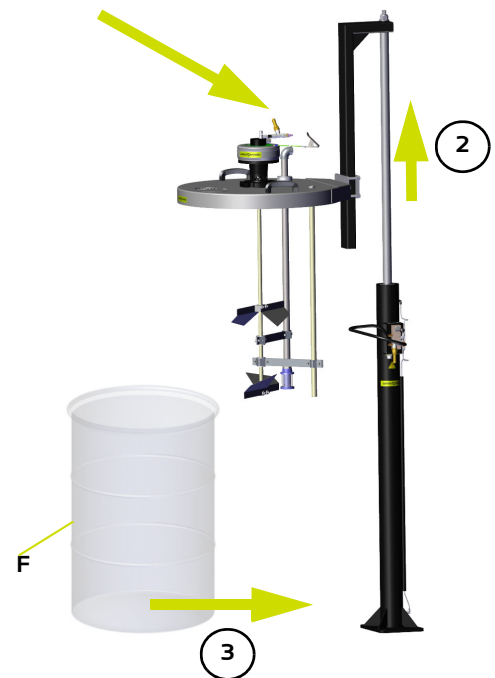


- **Step 18:**  
Hold the pneumatic control lever (2) of the ram (1) upwards.

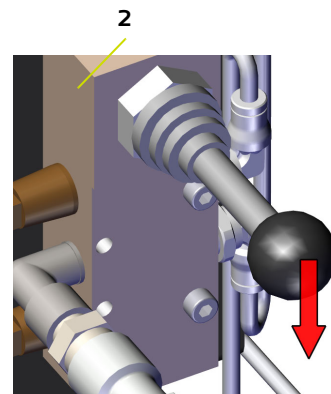


The arm/ram assembly lifts up to the upper position.

- **Step 19:**  
Locate a drum (F) under the agitation unit.



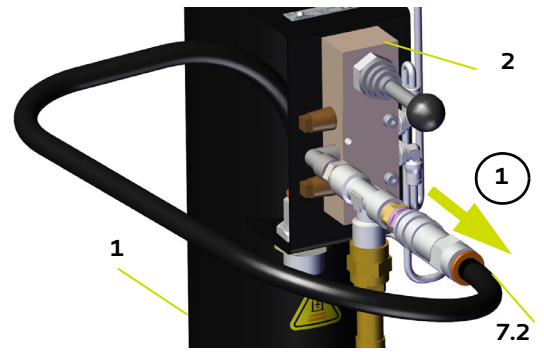
- **Step 20:**  
Hold down the pneumatic control lever (2) of the ram (1).  
The arm/ram assembly lowers to the bottom position.



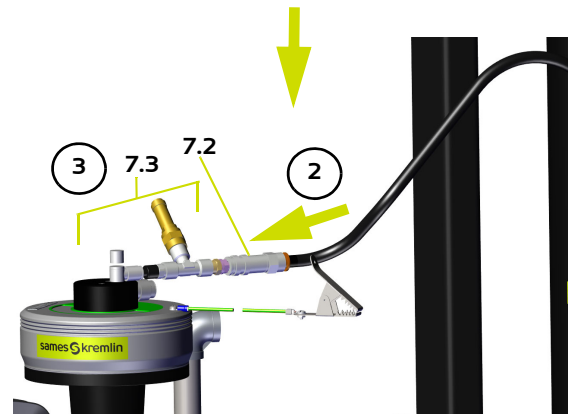
**Center the drum in relation to the cover to avoid any risk of friction and sparks, especially from the propellers.**



- **Step 21:**  
Disconnect the quick release coupling from the air supply (7.2) hose of the ram (1) control (2).



- **Step 22:**  
Connect it to the agitator air supply.
- **Step 23:**  
Adjust the air regulator (7.3) by controlling the rotation speed of the agitator from the hatch.
- **Step 24:**  
Unscrew slightly the knob of the air regulator (7.3) - 6 bar / 87 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.



**Do not operate the agitator outside the drum or at too high speed.**

**It can lead to a deterioration of the paint, vibrations and an early wear of the parts.**

**Do not run the equipment with no load.**

- **Step 25:**  
Close the hatch.  
The agitation unit is ready to use.

## 7. Troubleshooting

### 7.1. Possible symptoms of faults – Causes of faults – Remedies to be applied

Defaults	Possible causes	Remedies
The agitator does not start up or its speed is too low.	Insufficient air supply of the agitator.	Raise the air pressure unscrewing the needle valve Check the air supply pressure upstream of the agitator.
	Restrictive exhaust.	Clean the muffler. Change it if necessary.
	The motor has not been used for several weeks.	Increase the air pressure.
The agitator starts but nothing happens.	Loose propellers.	Check the screws of the propellers. Tighten if necessary.
	Loose coupling sleeve.	Check the screws of the coupling sleeve. Tighten if necessary.
Overheating.	Too high speed rotation.	Reduce rotation speed of the agitator.
Vibrations.	Loose of one of the propeller.	Check the screws of the propellers. Tighten if necessary.
	Loose coupling sleeve.	Check the screws of the coupling sleeve. Tighten if necessary.
	Loose geared motor.	Check the tightening of the geared motor.
	Worn guide ring.	Change the guide ring.
The single-post ram does not go up any more.	Insufficient air supply.	Increase the air pressure. Check the connection.
	Lever of the distributor in the middle position.	Hold the distributor lever upwards to raise the single-post ram..
Suction fault.	Plugged strainer.	Check the strainer. Clean it or change it if necessary.
	The pump does not start.	Check the pump.
	Empty drum.	Check the drum. Fill it. Change it if necessary.

## 8. Spare Parts List

The spare parts are classified into 2 distinct categories:

- **The 1st emergency parts:**

The 1st emergency parts are strategic elements which are not necessarily consumables but which in case of failure prohibit the operation of the machine.

Depending on the commitment of the painting line and the production rates imposed, the 1st emergency parts are not necessarily kept available in the customer's stock.

Indeed, if an interruption of the production flow is possible, storage is not necessary.

However, if a stop is not possible, the 1st emergency parts will be kept in stock.

- **Wear parts:**

Wear parts are consumable items such as O-rings that undergo regular degradation over time during normal operation of the installation. It is therefore advisable to replace them according to a defined frequency and adapted to the operating time of the installation.

The wearing parts must therefore be kept in the customer's stock.



**In order to ensure optimum assembly, spare parts should be stored at a temperature close to their operating temperature. If not, a sufficient waiting time must be observed before installation, so that all parts are assembled at the same temperature.**

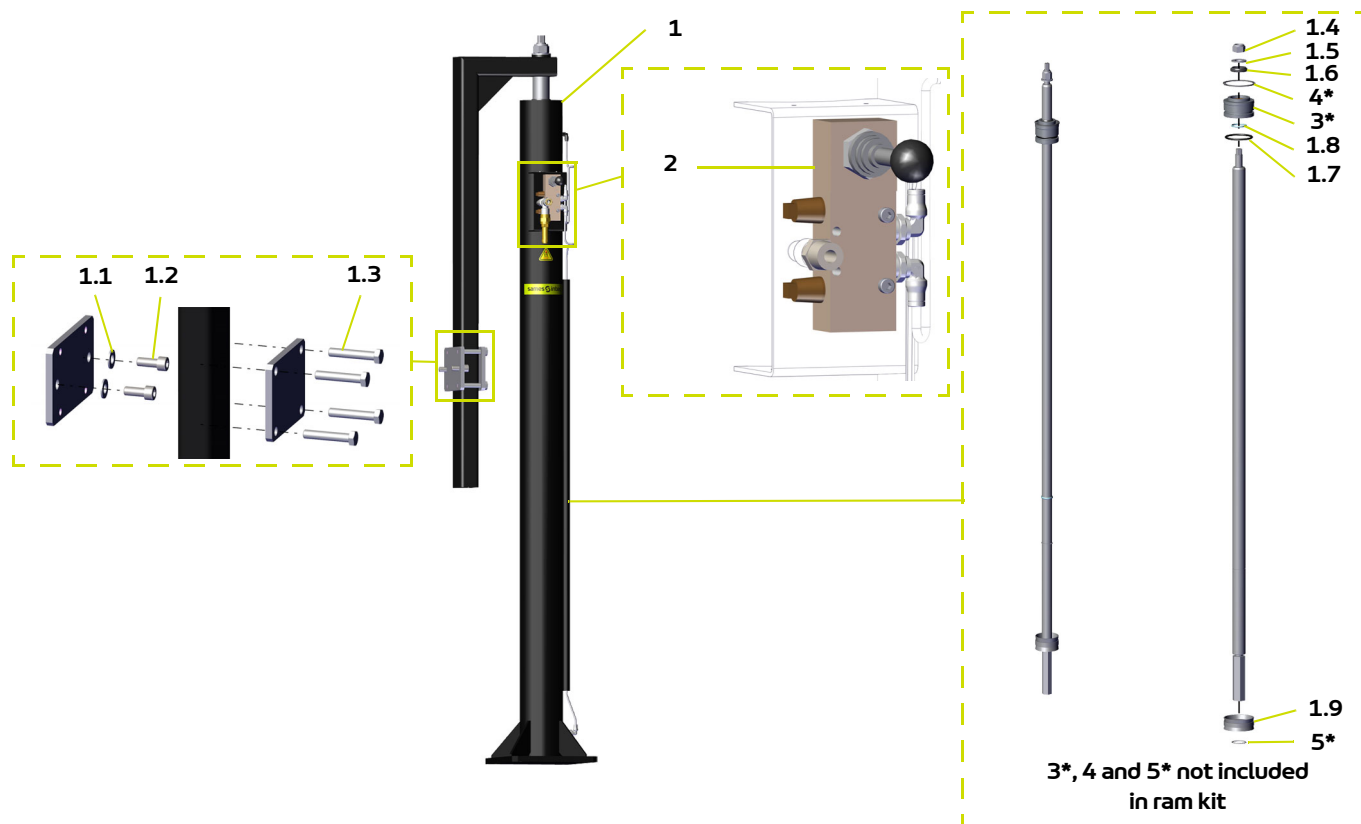
8.1. Cyclix 200 L / 52.8 US gal



Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
-	-	Cyclix agitation unit 200 L / 52.8 US gal	1	-	-

(\*)  
 Level 1: 1st emergency parts  
 Level 2: Wear parts

## 8.1.1. Wear parts

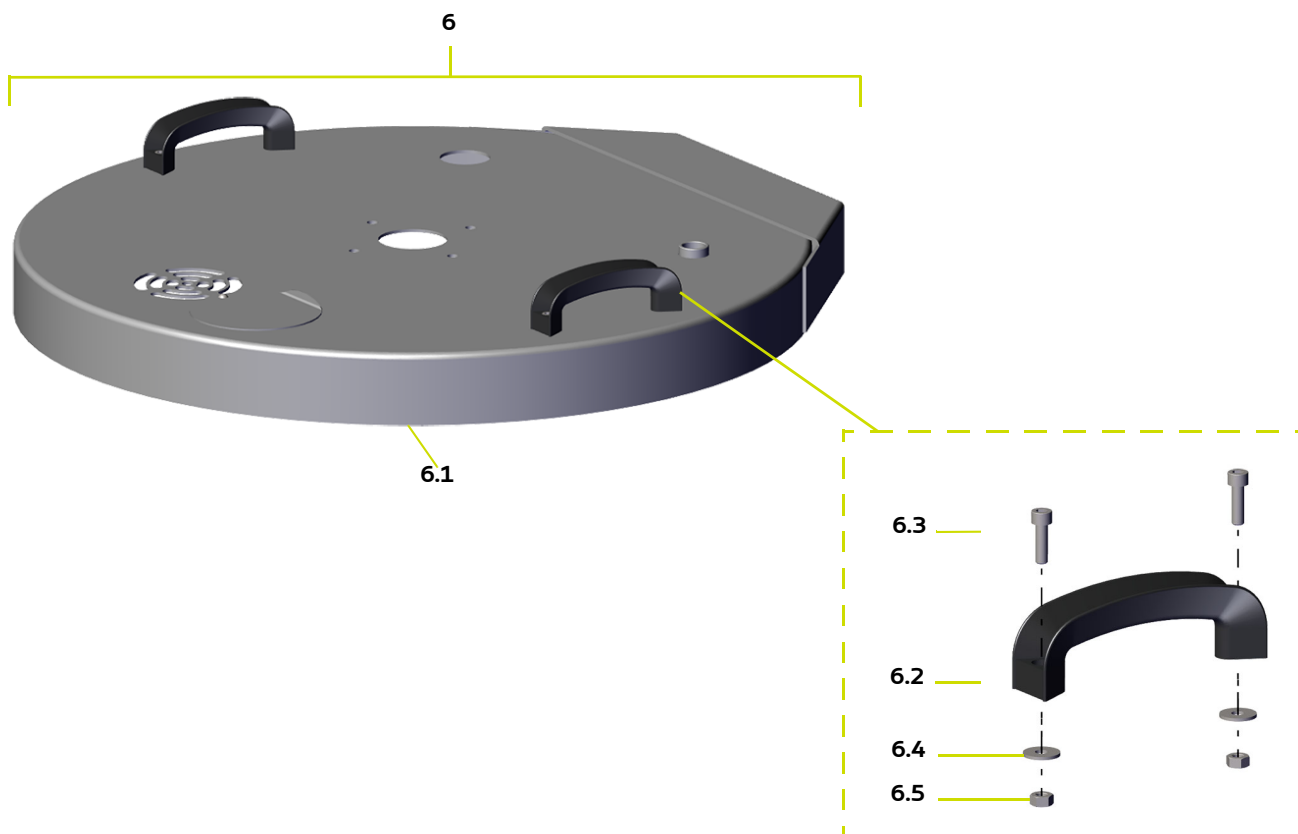


Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
<b>1</b>	151 091 000	200 L / 52.8 US gal ram + arms + fixation	1	1	2
<b>1.1</b>	963 040 021	• Washer MN 10	2	1	1
<b>1.2</b>	88 170	• Screw CHc M 10 x 25	2	1	1
<b>1.3</b>	88 754	• Screw HM 10 x 55	4	1	1
<b>1.4</b>	88 338	• Steel nut M20	1	1	1
<b>1.5</b>	963 040 027	• Washer MN 20	1	1	1
<b>1.6</b>	203 222	• Seal	1	1	1
<b>1.7</b>	909 130 540	• Viton black ring R38	1	1	1
<b>1.8</b>	81 025	• NBR black O Ring	1	1	1
<b>1.9</b>	-	• Seal	1	0	1
<b>2</b>	154 261 910	3 way valve ram control	1	1	2
<b>3</b>	-	Guide ring	1	0	0
<b>4</b>	88 489	Circlips	1	1	2
<b>5</b>	88 497	Circlips	1	1	2

(\*)

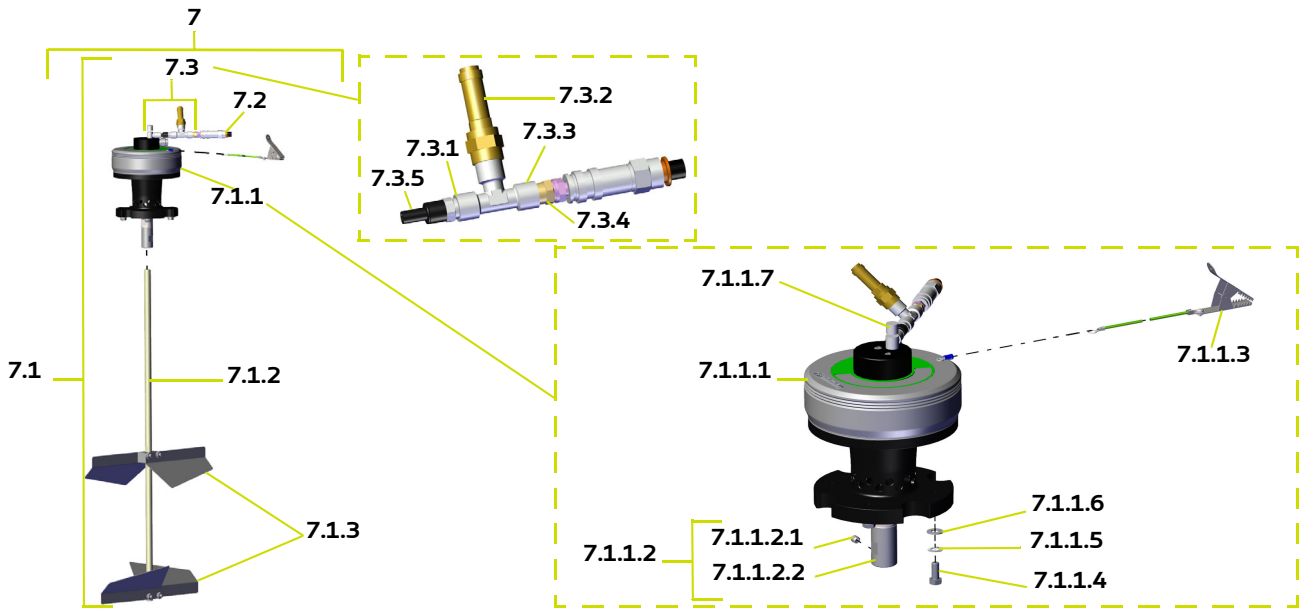
Level 1: 1st emergency parts

Level 2: Wear parts



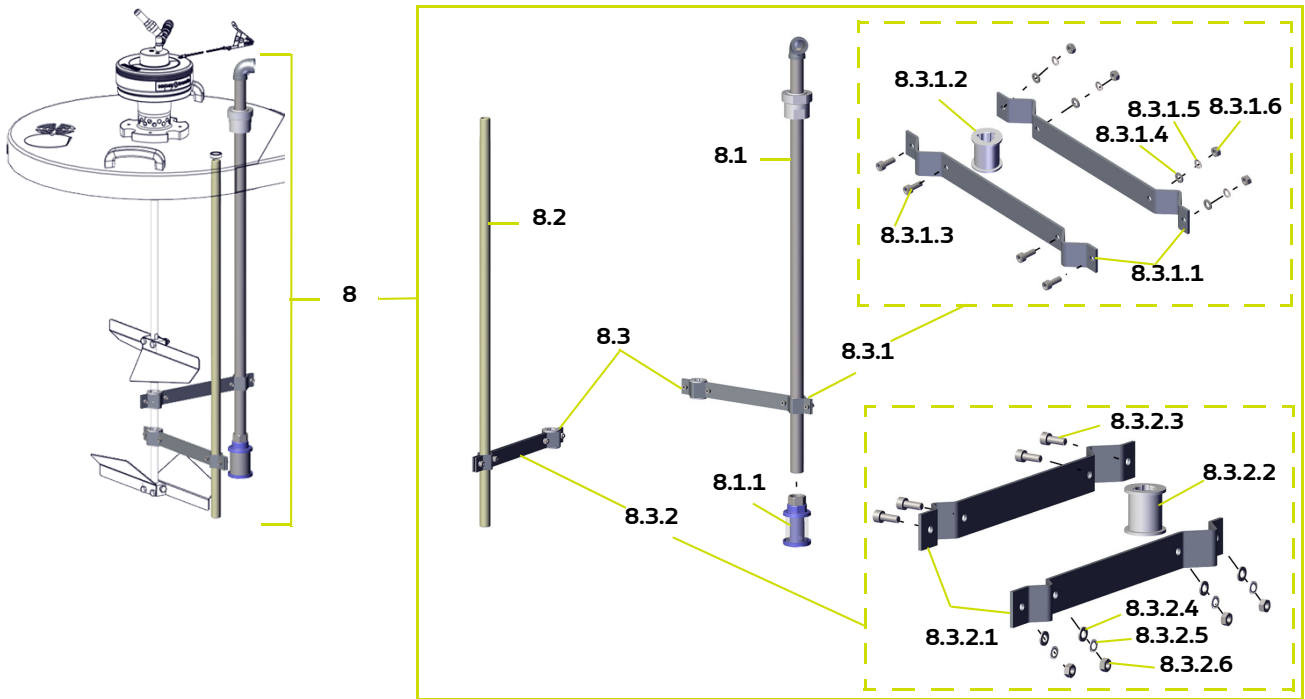
Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
6	154 261 200	Cyclix cover for 200 L / 52.8 US gal agitator	1	1	2
6.1	-	• Cover	1	1	0
6.2	91 929	• Handle	2	1	2
6.3	-	• Screw CHc M 6 x 20 stainless steel	4	1	2
6.4	-	• Washer Ø 6 stainless steel	4	0	0
6.5	-	• Nut HM 6 stainless steel	4	1	2

(\*)  
 Level 1: 1st emergency parts  
 Level 2: Wear parts



Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
7	154 260 000	200 L / 52.8 US gal agitator - PTM motor - 2 sabre propellers	1	1	2
7.1	154 260 698	• 200 L / 52.8 US gal agitator	1	1	1
7.1.1	146 020 466	•• PTM 1800 motor + adapter	1	1	1
7.1.1.1	-	••• PTM 1800 motor	1	0	0
7.1.1.2	146 020 465	••• Adapter + screw	1	1	1
7.1.1.2.1	934 171 124	•••• Screw HC M 8 x 8	4	1	1
7.1.1.2.2	-	•••• Adapter	1	1	0
7.1.1.3	901 180 024	••• Ground wire - Length : 5m	1	1	1
7.1.1.4	88 500	••• Screw HM 8 x 20 steel	4	1	1
7.1.1.5	88 404	••• Washer AZ 8 steel	4	1	1
7.1.1.6	963 040 019	••• Washer MN 8	4	1	1
7.1.1.7	907 520 111	•• Air regulation valve	1	1	2
7.1.1.8	907 520 112	••• Repair kit - Piston / Motor PTM 1800	1	1	2
7.1.2	91 874	•• Agitator rod	1	1	2
7.1.3	154 261 950	•• Stainless steel sabre propeller Ø 370 mm	1	1	1
7.2	154 261 930	• Air supply assembly	1	1	1
7.3	154 260 101	• PTM air flow regulator assembly	1	0	0
7.3.1	905 120 904	•• Connector M 1/4 - 6x8 tube	1	1	2
7.3.2	903 080 401	•• Pressure relief valve 6.5 bar / 94 psi	1	1	2
7.3.3	-	•• Tee FFF 1/4"	1	0	0
7.3.4	-	•• Reducing bushing MF 1/4" - 1/8"	1	0	0
7.3.5	-	•• Tube PU 8x12	1	0	0

(\*)  
**Level 1: 1st emergency parts**  
**Level 2: Wear parts**



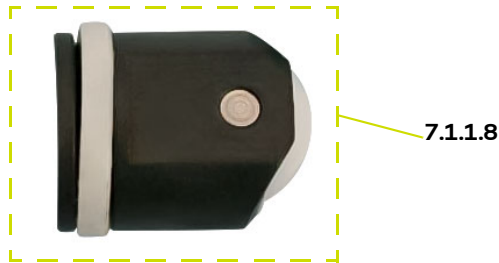
Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
8	154 261 400	200 L / 52.8 US gal suction assembly	1	1	2
8.1	-	• 200 L / 52.8 US gal suction rod	1	0	0
8.1.1	154 261 940	•• Strainer (pack of 2)	1	1	1
8.2	-	• Tube 1/2" stainless steel	1	0	0
8.3	154 260 599	• Replacement kit agitator axis supports	1	1	1
8.3.1	-	•• Agitator axis support	1	0	0
8.3.1.1	-	••• Agitator axis support	2	0	0
8.3.1.2	210 930	••• Ring	1	1	1
8.3.1.3	88 512	••• Screw CHc M 6 x 16 stainless steel	4	1	1
8.3.1.4	88 548	••• Washer M 6 stainless steel	4	1	1
8.3.1.5	88 558	••• Washer AZ 6 stainless steel	4	1	1
8.3.1.6	954 010 016	••• Nut HM 6 stainless steel	4	1	1
8.3.2	-	•• Agitator axis support	1	0	0
8.3.2.1	-	••• Agitator axis support	2	0	0
8.3.2.2	210 930	••• Ring	1	1	1
8.3.2.3	88 512	••• Screw CHc M 6 x 16 stainless steel	4	1	1
8.3.2.4	88 548	••• Washer M 6 stainless steel	4	1	1
8.3.2.5	88 558	••• Washer AZ 6 stainless steel	4	1	1
8.3.2.6	954 010 016	••• Nut HM 6 stainless steel	4	1	1

(\*)  
**Level 1: 1st emergency parts**  
**Level 2: Wear parts**



8.1.2. References spare parts or repair kits

8.1.2.1. Repair kit



Part number	Description	Qty	Sales unit	Spare parts level (*)
154 261 920	Repair kit - Cover (item 6.1 (x2), 6.2 (x4), 6.3 (x4), 6.4 (x4))	1	1	1 - 2
907 520 112	Repair kit - Piston / Motor PTM 1800 (item 7.1.1.8)	1	1	1 - 2

(\*)

**Level 1: 1st emergency parts**

**Level 2: Wear parts**

8.1.2.2. Package of seals

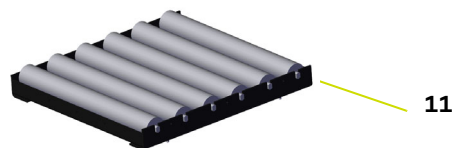
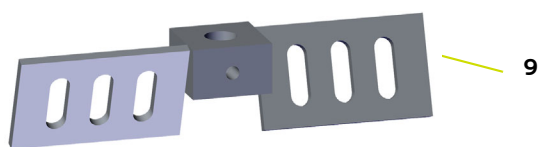
Part number	Description	Qty	Sales unit	Spare parts level (*)
154 261 915	Package of seals (item 1.6, 1.7, 1.8, 1.9)	1	1	1 - 2

(\*)

**Level 1: 1st emergency parts**

**Level 2: Wear parts**

8.1.2.3. Option



Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
9	154 261 952	Slotted paddle	1	1	1 - 2
11	151 098 100	200 L / 52.8 US gal roller table	1	1	1 - 2

(\*)

Level 1: 1st emergency parts

Level 2: Wear parts

## 9. History of indexes history

Created by		Verified by	Approved by:
Date	By	Index	Purpose of the modification and location
11/10/2023	C. Husson	A	Creation of instruction manual in Framemaker
10/01/2024	C. Husson	B	Page 11: regulator becomes Cyclix agitation unit 200L / 52.8 Us gal, Page19: Noise level added, § 8.1.1: p.o. 909.130.340 becomes 909.130.540, Steps + DRT 582.391.110 added, Deletion p.o. 149.990.017, 154.261.996 & 154.261.997.

## 10. Annexes

### 10.1. Preventive Maintenance Plan

**PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN**

Numéro d'ordre / Serial	Ensemble - Assembly	Sous ensemble / Sub assembly	Désignation de l'élément / Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers / Operators - skill (3)				Niveau / Level (4)		Manuel d'utilisation / Instruction manual	Outil / Tool	Document / Note	
				Action à effectuer / Action to carry out	Temps prévu / Estimated Time (1)		Périodicité / Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										

(1) Temps moyen d'intervention à titre indicatif, et à ajuster par les équipes d'intervention du site / This average intervention time is given for information and should be adjusted by the operating teams on site.  
 (2) Les périodicités mentionnées sont des moyennes basées sur l'expérience de Sames. A charge des utilisateurs de les adapter aux conditions de leur installation notamment en fonction de la nature des produits utilisés, des vitesses de travail, etc. Sames se réserve le droit de modifier les informations mentionnées dans ce document, sans préavis / The given periodicities are averages based on Sames experience. It is the responsibility of the operators to adapt them to the conditions of their installation, in particular with respect to the nature of the products being used, the work speeds, etc. Sames Kremlin reserves the right to change the information in this document without notice.  
 (3) M : Mécanicien - F : Spécialiste fluide - E : Electricien - A : Automaticien / M : Mechanic - F : Fluid specialist - E : Electrician - A : Automation specialist  
 (4) 1 = Niveau de Base, 2 = Niveau Avancé / 1 = Basic level, 2 = Advanced level

**Avant toute intervention, se référer au chapitre sécurité du manuel de l'équipement / Before any intervention, see chapter safety equipment manual**

1	Général General	Equipement Equipment	Câble de masse Ground connection	Vérifier la mise à la terre du moteur par un câble de masse. Raccorder l'autre extrémité à une terre sûre. Check that the motor is grounded using a ground cable. Connect the other end to a safe earth.	0.17	0.10	A chaque utilisation At each use	X	1						Avant chaque début de production Before each production start		
2				Vérifier la mise à la terre de l'élévateur par un deuxième câble de masse, le pied de l'élévateur étant équipé d'une tige filetée. Check that the ram is earthed with a second ground cable, as the foot of the ram is fitted with a threaded rod.													
3			Tuyaux Hoses	Vérification l'état et le bon fonctionnement Checking the state and proper functioning	0.17	0.10	A chaque utilisation At each use	X		1						Avant chaque début de production Before each production start	
4			Raccords Connections	Vérifier l'état et le serrage. Check the state and the correct tightening.	0.17	0.10	A chaque utilisation At each use	X		1						Avant chaque début de production Before each production start	
5			Vannes Valves	Vérifier l'état et le serrage. Check the state and the correct tightening.	0.17	0.10	A chaque utilisation At each use	X		1						Avant chaque début de production Before each production start	
6			Elévateur 200L + bras + fixation 200L / 52.8 US gal ram + arms + fixation		Vérifier le maintien en position haute. Check that the ram is held in the up position.	1.67	1.00	1/mois 1/month	X		1						A remplacer si endommagé Replace if broken
7					Vérifier la présence de fuite d'air. Check if there is no air leakage.	1.67	1.00	1/mois 1/month	X		1						
8					Vérifier l'état des tuyaux d'air de pilotage des vérins. Check the condition of the rods' air hoses. Nettoyer les tiges de vérin (position haute). Les graisser. Clean the rods (up position). Grease them.	1.67	1.00	1/mois 1/month	X		1						A remplacer si endommagé Replace if broken
9					Remplacement Replacement	3.33	2.00	1/an 1/year	X		1				Pince au Brush		A remplacer si endommagé Replace if broken
10																	

PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
11	Cyclix 200L		Joint Seals	Contrôler l'aspect et leur étanchéité. Les nettoyer <i>Check the condition and the tightness. Clean them.</i>	1.67	1.00	1/mois <i>1/month</i>	X				1			A remplacer si endommagé <i>Replace if broken</i>	
12			Commande élévateur vanne 3 voies <i>3 way valve ram control</i>	Remplacement <i>Replacement</i>	3.33	2.00	1/an <i>1/year</i>	X				1			A remplacer si endommagé <i>Replace if broken</i>	
13		Couvercle Cyclix pour agitateur 200L <i>Cyclix cover for 200L / 52.8 US gal agitator</i>	Couvercle Cyclix pour agitateur 200L <i>Cyclix cover for 200L / 52.8 US gal agitator</i>	Vérifier l'état et le serrage. <i>Check the state and the correct tightening.</i>	1.67	1.00	1/mois <i>1/month</i>	X				1			A remplacer si endommagé <i>Replace if broken</i>	
14			Agitateur 200L - Moteur PTM - 2 hélices sabre <i>200L / 52.8 US gal agitator - PTM motor - 2 sabre propellers</i>	Vérifier que l'écartement entre le fût et les organes en rotation (hélices, axes,...) soit suffisant. <i>Check that there is sufficient distance between the drum and rotating parts (propellers, axles, etc.).</i>	0.17	0.10	A chaque utilisation <i>At each use</i>	X				1			Avant chaque début de production <i>Before each production start</i>	
15			Hélices sabre <i>Sabre propellers</i>	Vérifier le serrage des hélices. <i>Check propellers for tightness.</i>	0.17	0.10	A chaque utilisation <i>At each use</i>	X				1			Avant chaque début de production <i>Before each production start</i>	
16		Agitateur 200L - Moteur PTM - 2 hélices sabre <i>200L / 52.8 US gal agitator - PTM motor - 2 sabre propellers</i>		Nettoyer les pales de l'agitateur avec le nettoyant préconisé. <i>Clean the propellers of the agitator with the appropriate cleaner.</i>	1.67	1.00	1/mois <i>1/month</i>	X				1				
17				Vérifier le filtre d'air. <i>Check the air filter.</i>	1.67	1.00	1/mois <i>1/month</i>	X				1				
18			Ensemble alimentation d'air <i>Air supply assembly</i>	Vérifier la propreté du silencieux. Le nettoyer ou le changer s'il est encrassé. <i>Check that the muffler is clean. Clean or replace if dirty.</i>	0.17	0.10	A chaque utilisation <i>At each use</i>	X				1			A remplacer si endommagé <i>Replace if broken</i>	
19			Moteur PTM 1800 <i>PTM 1800 motor</i>	Vérifier le moteur ainsi que le serrage et les pistons. <i>Check the motor as well as the tightening and the pistons.</i>	8.33	5.00	2 fois/an <i>2 times/year</i>	X				1			A remplacer si endommagés <i>Replace if broken</i>	
20			Ensemble régulateur débit d'air PTM <i>PTM air flow regulator assembly</i>	Contrôler l'aspect. Le changer si nécessaire. <i>Check the condition. Change it if necessary.</i>	0.17	0.10	A chaque utilisation <i>At each use</i>	X				1			Avant chaque début de production <i>Before each production start</i>	
21			Supports agitateur <i>Agitator supports</i>	Vérifier le serrage des supports agitateur. <i>Check agitator supports for tightness.</i>	0.17	0.10	A chaque utilisation <i>At each use</i>	X				1			Avant chaque début de production <i>Before each production start</i>	
22			Ensemble aspiration retour 200L <i>200L / 52.8 US gal suction assembly</i>	Bagues <i>Rings</i>	Vérifier l'usure de la bague des supports agitateurs. Les changer si nécessaire. <i>Check the rings of the agitator supports. Replace them if necessary.</i>	8.33	5.00	2 fois/an <i>2 times/year</i>	X				1			

**PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN**

Numéro d'ordre Serial	Ensemble - Assembly	Sous ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Pour 1 ensemble - For 1 assembly			Acteurs Métiers Operators - skill (3)				Niveau Level (4)		Manuel d'utilisation Instruction manual	Outil Tool	Document Note	
				Action à effectuer Action to carry out	Temps prévu Estimated Time (1)		Périodicité Periodicity (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
23	<b>Pièces de rechange</b> Spare parts	Stock Stock	Pièces Spare parts	Vérification disponibilité des pièces de première urgence. Checking availability of spare parts	8.33	5.00	2 fois/an 2 times/year	X	X			1	2			



PIÈCES DE RECHANGE / SPARE PARTS

Numéro d'ordre Serial	Ensemble Assembly	Sous-ensemble Sub assembly	Désignation de l'élément Designation of the assembly	Référence Reference	Qté Qty	Pièces de rechange Spare parts		Remarques Comments
						Usure Wear	1 <sup>ère</sup> Urgence 1 <sup>st</sup> Emergency	
1	Elévateur 200L + bras + fixation 200L / 52.8 US gal ram + arms + fixation	Elévateur 200L + bras + fixation 200L / 52.8 US gal ram + arms + fixation	Elévateur 200L + bras + fixation 200L / 52.8 US gal ram + arms + fixation	151 091 000	1	X		Inclus dans pochette de joints <b>154 261 915</b> Included in the package of seals <b>154 261 915</b>
2			Joint Seal	203 222	1		X	
3			Joint FKM noir 70 sh Viton black ring R38	909 130 540	1		X	
4			Joint NBR noir 70 sh NBR black O Ring	81 025	1		X	
5			Joint de vérin Seal	/	1		X	
6				Commande élévateur vanne 3 voies 3 way valve ram control	154 261 910	1	X	
7	Couvercle Cyclix pour agitateur 200L Cyclix cover for 200L / 52.8 US gal agitator	Couvercle Cyclix pour agitateur 200L Cyclix cover for 200L / 52.8 US gal agitator	Couvercle Cyclix pour agitateur 200L Cyclix cover for 200L / 52.8 US gal agitator	154 261 200	1	X		
8			Pochette de maintenance Couvercle Repair kit - Cover	154 261 920	1		X	Pochette de 2 poignées, 4 vis, 4 rondelles et 4 écrous Package of 2 handles, 4 screws, 4 washers and 4 nuts
9	Cyclix 200L	Agitateur 200L - Moteur PTM - 2 hélices sabre 200L / 52.8 Us gal agitator - PTM motor - 2 sabre propellers	Agitateur 200L - Moteur PTM - 2 hélices sabre 200L / 52.8 Us gal agitator - PTM motor - 2 sabre propellers	154 260 000	1	X		
10			Agitateur 200L 200L / 52.8 Us gal agitator	154 260 698	1		X	
11			Moteur PTM 1800 + manchon PTM 1800 motor + adapter	146 020 466	1		X	
12			Manchon d'accouplement + vis Adapter + screw	146 020 465	1		X	
13			Câble de mise à la terre Ground wire	901 180 024	1		X	
			Vanne d'étranglement d'air Air regulation valve	907 520 111	1	X		
			Kit piston moteur PTM 1800 Repair kit - Piston / Motor PTM 1800	907 520 112	1	X		Se reporter à la notice fournisseur présente dans le kit. Please refer to the supplier's instructions included in the kit.
14			Tige d'agitateur Agitator rod	91 874	1	X		
15			Hélice sabre inox Ø 370 mm Stainless steel sabre propeller Ø 370 mm	154 261 950	1		X	
16			Ensemble alimentation air Air supply assembly	154 261 930	1		X	
			Ensemble régulateur d'air PTM PTM air flow regulator assembly	154 260 101	1	X		
17			Raccord M 1/4 - Tube 6x8 Connector M 1/4 - 6x8 tube	905 120 904	1	X		
18			Soupape de décharge 6,5 bar Pressure relief valve 6.5 bar / 94 psi	903 080 401	1	X		
19	Ensemble aspiration retour 200L 200L / 52.8 US gal suction assembly	Ensemble aspiration retour 200L 200L / 52.8 US gal suction assembly	154 261 400	1	X			
20		Crépine d'aspiration Suction strainer	154 261 940	1		X	Pochette de 2 crépines Package of 2 strainers	
21		Bague Ring	210 930	1		X		



## 10.2. EU and UKCA Declarations of conformity



DECLARATION OF INCORPORATION  
OF PARTLY COMPLETED MACHINERY  
EU DECLARATION OF CONFORMITY

**(1) The manufacturer herewith declares that the equipment is in conformity with the relevant Union harmonization legislation.**

<b>(2) Equipment type</b>	CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS WITH PTM MOTOR		
<b>(3) Applicable Directives</b>	2006/42/CE	<b>(4) The relevant technical documentation was compiled as specified in annex VII, part B.</b>	
		The essential health and safety requirements mentioned in the Directive 2006/42/CE on Machinery have been applied. Articles: 1.1, 1.1.5, 1.2.4, 1.2.4.1, 1.3, 1.3.4, 1.3.7, 1.3.8.1, 1.3.8.2, 1.3.9, 1.5, 1.5.5, 1.5.7, 1.5.8, 1.5.9, 1.5.15, 1.6, 1.6.1, 1.7, 1.7.4.2	
	2014/34/UE	<b>(5) That partly completed machinery is also in conformity with the provisions of</b>	
		<b>(6) Marking</b>	<p>CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS PTM MOTOR WITH ELEVATOR</p> <p> II2G Ex h IIB T6 Gb X</p> <p>CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS PTM MOTOR</p> <p> II1/2G Ex h IIC T6 Ga/Gb X</p> <p> II1/2D Ex h IIIC T85°C Da/Db X</p> <p>Ex h =&gt; Protection par sécurité de construction (c) / Protection by constructional safety (c)</p> <p>Conditions spéciales d'utilisation, le signe X indique de se référer aux prescriptions figurant dans le manuel d'instructions qui accompagnent le produit.</p> <p>Specific conditions of use, X indicates to refer to the prescriptions specified in the instructions manual that accompanies the product.</p>
<b>(9) Notified body</b>	INERIS 0080 – 60550 Verneuil-en-Halatte – France – INERIS-EQEN		
<p><b>(10) This partly completed machinery must not be put into service until the final machinery in which it is to be incorporated has been declared in conformity with Directive 2006/42/CE on Machinery.</b></p> <p><b>Sames is allowed to compile the technical documentation.</b></p> <p><b>Sames undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery in the most appropriate form. This declaration of incorporation of partly completed machinery and this declaration of conformity are issued under the sole responsibility of the manufacturer.</b></p>			

Director of the STAINS site - Executive Management (EM)

Hervé WALTER

Established in Stains, on 08<sup>th</sup> March, 2024

DocuSigned by:

*Herve Walter*

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SAMES

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SAS au capital de 12.720.000 euros | RCS Grenoble: 572 051 688 | Code APE: 2829B | TVA intracom: FR36 572051688





DECLARATION OF INCORPORATION  
OF PARTLY COMPLETED MACHINERY  
UK DECLARATION OF CONFORMITY

**(1) The manufacturer herewith declares that the equipment is in conformity with the UK statutory requirements.**

<b>(2) Equipment type</b>	CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS WITH PTM MOTOR	
<b>(3) Applicable Directives</b>	2008 No 1597	<b>(4) The relevant technical documentation was compiled as specified in annex VII, part B.</b> The essential health and safety requirements mentioned in Supply of Machinery (Safety) Regulations 2008 have been applied. Articles: 1.1, 1.1.5, 1.2.4, 1.2.4.1, 1.3, 1.3.4, 1.3.7, 1.3.8.1, 1.3.8.2, 1.3.9, 1.5, 1.5.5, 1.5.7, 1.5.8, 1.5.9, 1.5.15, 1.6, 1.6.1, 1.7, 1.7.4.2
	<b>(5) That partly completed machinery is also in conformity with the provisions of</b>	
	2016 No. 1107	<b>(6) Marking</b> CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS PTM MOTOR WITH ELEVATOR II2G Ex h IIB T6 Gb X CYCLIX AGITATOR_200L / 52.8 US GAL DRUMS PTM MOTOR II1/2G Ex h IIC T6 Ga/Gb X II1/2D Ex h IIIC T85°C Da/Db X Ex h => Protection par sécurité de construction (c) / Protection by constructional safety (c) Conditions spéciales d'utilisation, le signe X indique de se référer aux prescriptions figurant dans le manuel d'instructions qui accompagnent le produit. Specific conditions of use, X indicates to refer to the prescriptions specified in the instructions manual that accompanies the product.
		<b>(7) Harmonised standards</b> EN ISO 80079-36 : 2016 EN ISO 80079-37 : 2016 EN 1127-1 : 2019
		<b>(8) Conformity assessment procedure</b> Module A Technical documentation (Annex VIII)
2016 No. 1092	The Simple Pressure Vessels (Safety) Regulations 2016	
<b>(9) Approved body</b>	CML 2503 - Ellesmere Port - United Kingdom	
<b>(10) This partly completed machinery must not be put into service until the final machinery in which it is to be incorporated has been declared in conformity with Supply of Machinery (Safety) Regulations 2008. Sames is allowed to compile the technical documentation. Sames undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery in the most appropriate form. This declaration of incorporation of partly completed machinery and this declaration of conformity are issued under the sole responsibility of the manufacturer.</b>		

Director of the STAINS site - Executive Management (EM)

Hervé WALTER

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