



Cyclix 40 L / 60 L

Original instructions

Instruction manual

DRT58234910

D - 2026/04

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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.

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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.

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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.

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Cyclix 40 L / 60 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 582.390.110: Cyclix 40 L / 10.6 US gal – 60 L / 15.9 US gal single ram.

1.2. Marking

1.2.1. Description of the nameplate marking

Each device has a label with:
Manufacturer's name
Reference
Essential information

An agitator assembly with or without 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 G – group II, category 2, gas) for the agitator motor.

The EU declaration of conformity is included in this document in annexes.

Ram

REF./ SERIE					
Sames STAINS FRANCE	MAX. PRESS. BAR/PSI				II2G Ex h IIB T6 Gb x

Description

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

Agitator – Motor + Shaft

REF./
SERIE

Ta +1°C to + 40°C
Tfluid Max +60°C

Sames
STAINS FRANCE

MAX.
PRESS.
BAR/PSI



0080


II1/2G Ex h IIC T4 Ga/Gb
INERIS 24 ATEX0010X

Description

Sigle Sames	Manufacturer's brand
STAINS FRANCE	Manufacturer's address
REF.	Part number of the unit
SERIE	Number given by Sames . The two first numbers indicate the manufacturing year.
Ta +1°C to + 40°C	Operating ambient temperature range
Tfluid Max +60°C	Maximum fluid temperature
MAX. PRESS. BAR/PSI	Maximum pressure
II 1/2 G	: Use in explosive area II : Group II Surface equipment intended for an environment in which explosive atmospheres due to gases, vapors, mists are: 1 : Category 1 present permanently or for long periods. 2 : Category 2 foreseeable in normal operation. G : Gas
Ex	Ex : Marking of conformity to european standards
h	h : Protection mode for non-electrical devices
IIC T4	IIC : Reference gas for equipment qualification T4 : Temperature class - Maximum surface temperature: 135°C / 275°F
Ga/Gb	Ga/Gb : Equipment protection level (Ga: zone 0 gas, Gb: zone 1 gas)
0080	Certification body number (INERIS)
INERIS 24 ATEX0010X	EU type examination
	CE : European conformity


Each device has a plate with:

Essential information
Pictogram shown opposite
Recyclable and reusable materials
Information on collection and recycling

1.2.2. Standards and guidelines applied

European Directives and Standards – EU	
•	EN ISO 80079-36 Juin 2016
•	EN ISO 80079-37 Juin 2016
•	EN 1127-1: 2019
•	2006/42/CE / 2006/42/EC
•	2014/34/UE / 2014/34/EU
•	1907/2006/CE / 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	Danger Electricité statique	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

	Carefully read all operating instructions and device labels, including general safety instructions DRT582180110.		
			
Personnel qualification: • Personnel must be qualified and competent. • Comply with legal regulations, consult safety data sheets. • Only qualified personnel may intervene.			
  	Use of products and paints • Beware of toxic products. • Risk of serious injury. • Avoid contact with body and eyes. • Ensure adequate ventilation. • Prevent risks of accumulation, toxic or flammable.		Ban on halogenated solvents • Do not use with aluminum or zinc. • Risk of explosion, serious injury. • Follow instructions to avoid accidents.
Professional use of the equipment • Follow safety instructions and recommendations. • Wear personal protective equipment. • Keep your workstation clean and stable. • Secure non-moving equipment to the floor. • Check and replace defective parts. • Do not exceed maximum pressure.		Pipe recommendations • Keep away from hazardous areas. • Avoid temperatures above 60°C/140°F or below 0°C/32°F. • Do not use for pulling equipment. • Tighten all connections before use. • Check and replace hoses regularly. • Observe Maximum Service Pressure (MSP). • Wear PPE for assembly. • Do not modify piping. • The product pipe must be conductive if necessary. • One of the two pipes (air or fluid) must be conductive.	

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

- Connect elements to earth.
- Use 2.5 mm wire.
- The foot of the ram has a threaded rod to connect to a second earth cable (optional).
- Regularly test and verify ground continuity.
- Limit storage of flammable products.
- Use metal buckets for solvents.
- Avoid cardboard and paper
- Do not operate equipment without ground continuity.



Use of a ram:

- If a ram other than the one supplied by **Sames** is used, the customer must carry out his own risk analysis for integration.
- Refer to the specifications of the ram used to ensure safe use.



Agitation unit:

- The agitation unit is grounded.
- If the **Sames** cover is not used, be sure to use a conductive cover to maintain grounding.

1.6. Important recommendations

1.6.1. Limits of use and/or improper use

Improper use
Do not follow instructions, avoid misuse.
Manufacturer not liable for damage.
Stay close to all moving parts.
Stay in front of the exhaust.
Supply this device with air pressures higher than those recommended.
Modify or transform the equipment.
Use a damaged equipment.
Exceed service parameters.
Install on unsuitable supports.
Non-compliance with maintenance intervals.
Operate the equipment empty.
Use in an explosive area without instructions.
Install more propellers than the configuration provides.



Make sure to install the air inlet in the correct direction to avoid rotating the agitator motor in the wrong direction.



Never place hands or fingers on rotating parts of the agitator. The blade 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.



The HDPE rings on the rod supports (suction/discharge with shaft) must be handled with care due to the risk of static electricity. Do not use a dry cloth during installation, maintenance, or cleaning.

1.6.2. Special conditions of use

Before putting the agitator into service, check the alignment of the agitator shaft and the suction and return hoses with respect to the lid.

- The agitator shaft must be centered in the hole in the lid with a minimum clearance of 2 mm.
- The discharge hose must be at least 26 mm from the tips of the blades.
- The return hose must be at least 49 mm from the tips of the blades.

See instruction manual for details.

- The critical dimensions of the lid and drums, as specified in the manual, must be observed to ensure the safety of the agitator.
- The lid supporting the agitator must be securely closed on the drum before startup and throughout the mixing process.

1.6.3. Installation conditions

Supplied by Sames:

- Cover with holes.
- Piping.

Customer's responsibility:

- Check centering of cover.
- Correct tightening and holding of hoses using fixing bars.
- Use flanges to secure hoses.

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 40 L / 10.6 US gal - 60 L / 15.9 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.

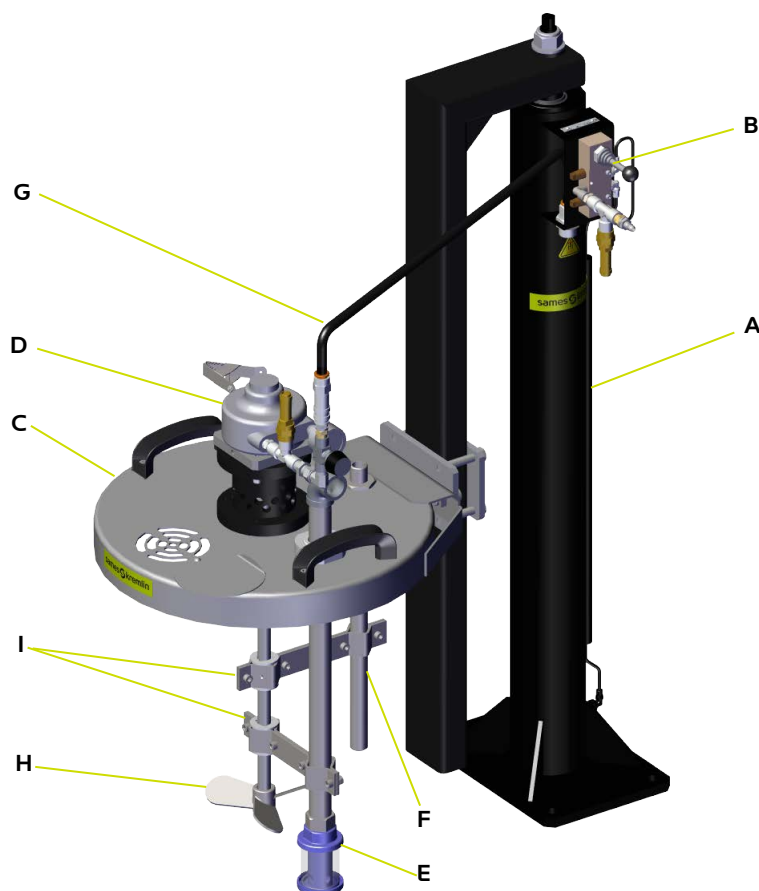
Productivity

- 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.

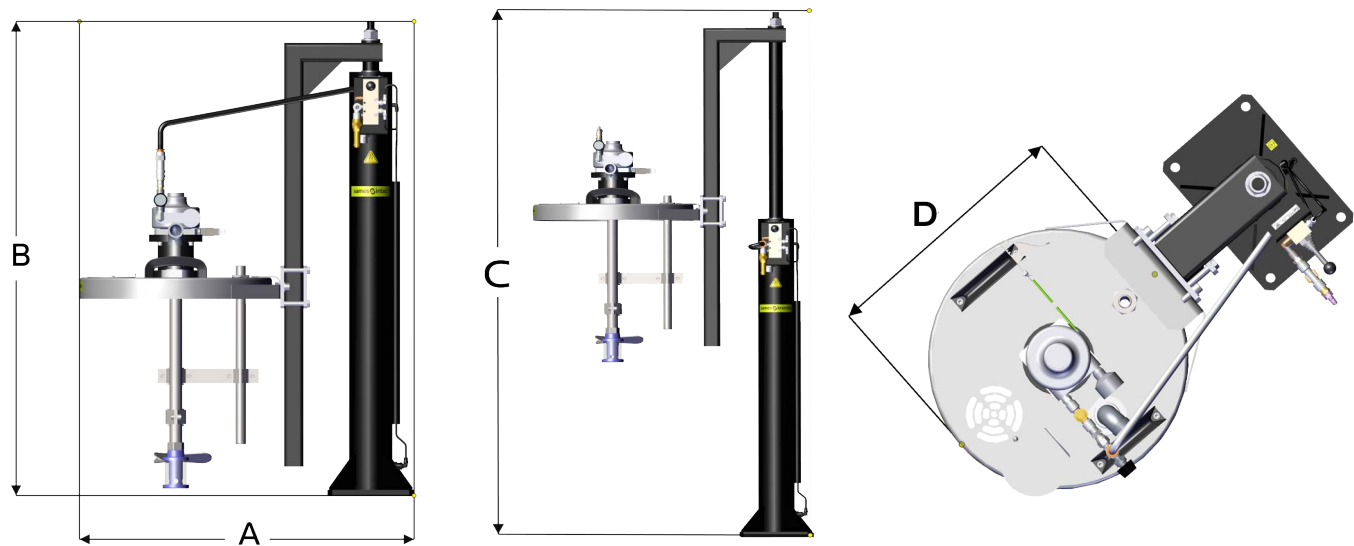
2.2. Function of the different components



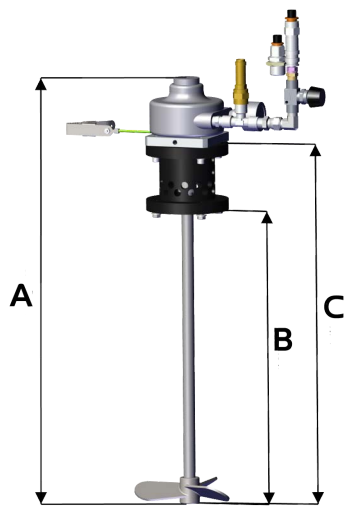
Benchmarks	Component	Function
A	Single-post ram	Simplifies lifting of cover/agitator assembly.
B	Single-post ram control	Operates the ram control lever to raise or lower the arm/cover assembly via the ram jack.
C	Cover	Enables the drum to be closed to prevent product splashing when the agitation unit is in operation. Equipped with an inspection hatch and two handles.
D	Agitator unit	Consists of geared motor, agitator rod and propellers. Mixes the product contained in the drum.
E	Suction rod	Brings paint from the product drum. Features a suction strainer.
F	Return rod	Allows product to be transferred back from the pump to the drum in the case of circulating.
G	Air hose with quick release fitting	Supplies air to the agitator. Can be connected to the ram depending on the work phase.
H	Propeller	Allow mixing of the product contained in the drum.
I	Mounting brackets	Spacer between propeller and hoses to prevent contact.

3. Technical features

3.1. Dimensions (mm / ")

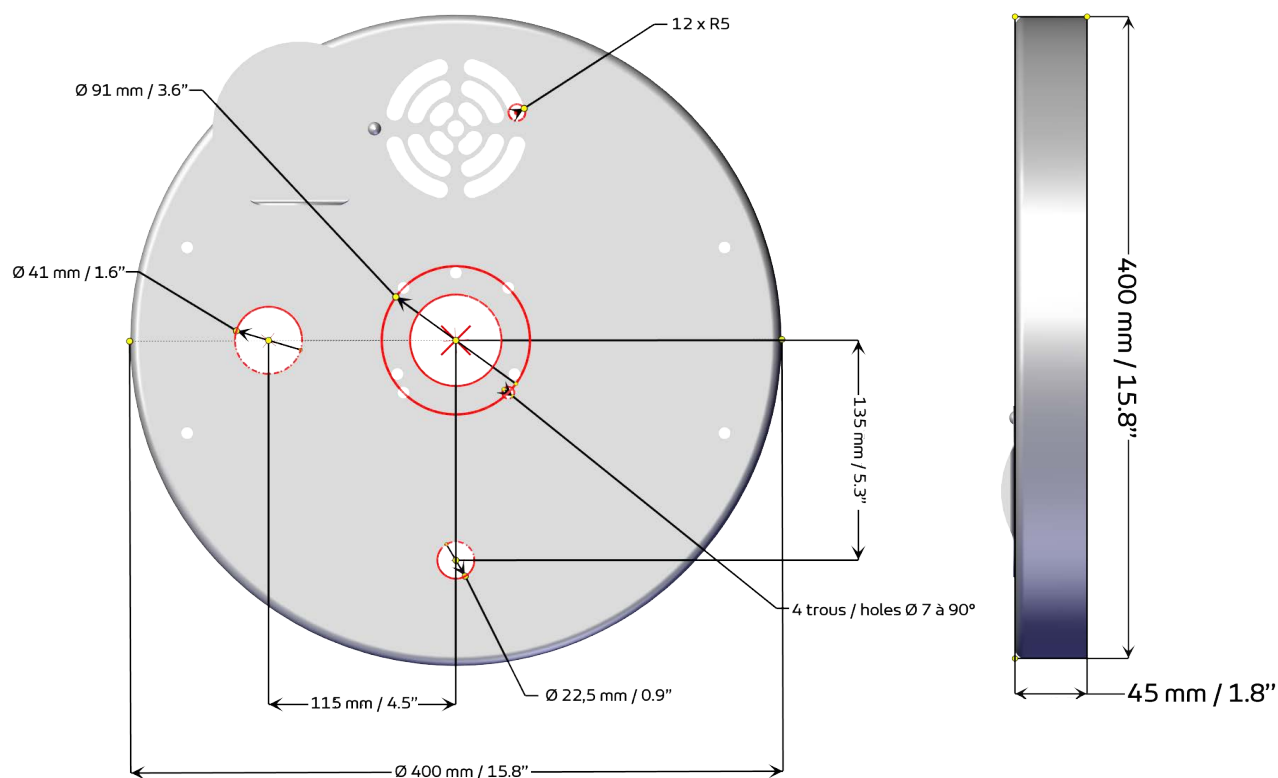


AGITATION UNIT ON RAM			
Dimensions (mm / ")			
A	B	C	D
695 / 27.4"	995 / 39.1"	1470 / 57.9"	Ø 400 / Ø 15.7"



AGITATOR		
Dimensions (mm / ")		
A	B	C
574 / 22.6"	396 / 15.6"	486 / 19.1"

Cover



3.2. Operating features

Weight	
Agitation unit on ram	4.2 Kg / 9.2 Lbs
Agitation unit	10.3 Kg / 22.7 Lbs
Geared motor	2.7 Kg / 5.9 Lbs

	Agitator geared motor
Range	40 L / 10.6 US gal - 60 L / 15.9 US gal
Part number	146 020 400
Weight	2.7 Kg / 5.9 Lbs
Maximum rotational speed (tr/min)	2000
Torque (N.m)	2.1
Air consumption (l/min)	1.2
Starting torque (N.m)*	2.1
Idle speed (tr/min)*	300
Air consumption at idle (l/min)*	620
Air consumption for 100tr (l/min)*	23
Torque for 100 tr/min (N.m)*	2.2
Maximum fluid temperature	60°C / 140°F
Ambient temperature	From + 1° to + 40°C / from + 33.8° to 104°F
Noise level	< 76.6 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

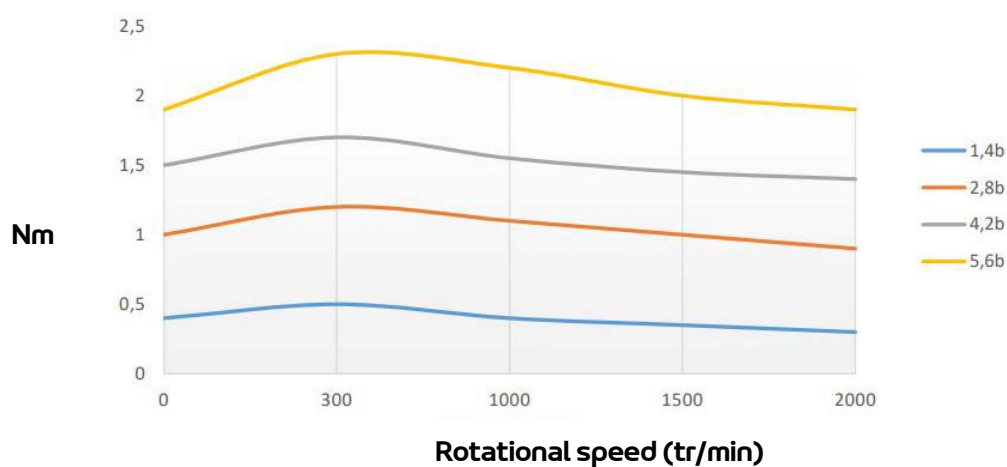
Maximum motor power is obtained by operating the motor at an intermediate speed (between minimum and maximum), which also saves energy.

Air consumption

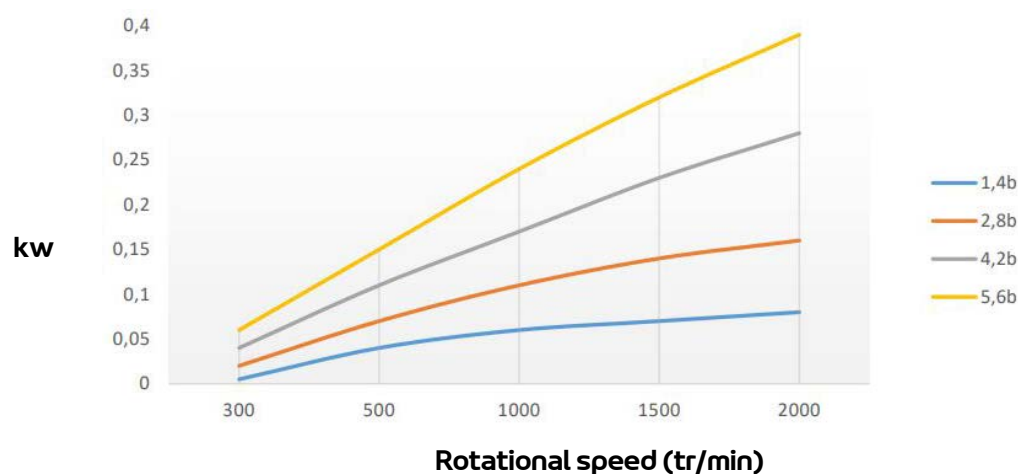
It is proportional to the effort required by the motor.

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

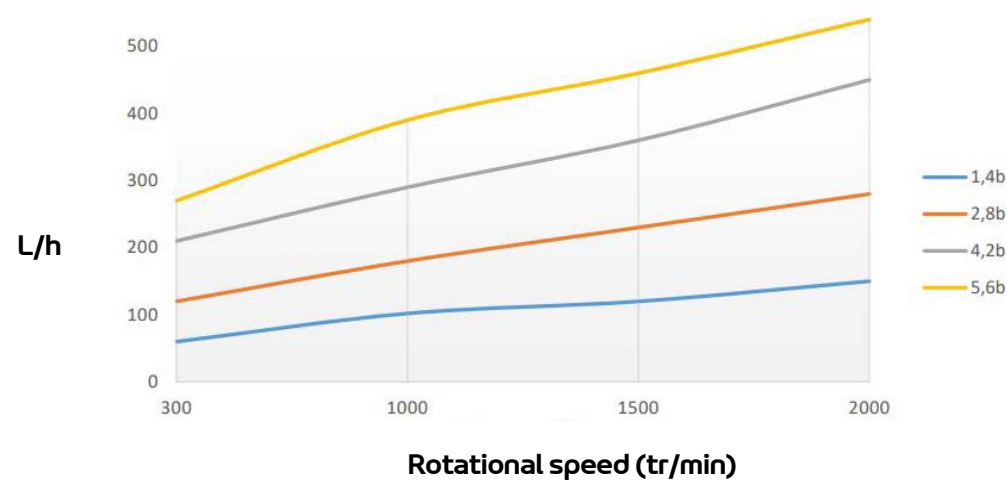
Torque / Rotational speed



Power / Rotational speed



Air consumption / Rotational speed



3.2.2. Connections

Connection to the compressed air supply	
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	5.5 bar / 79.8 psi
Fluid connection	
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.

A lower or minimum speed will not be stabilized.

3.4. Operating principle

The agitator is equipped with a geared motor with shaft and propeller. 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, 4 mm, 5 mm, 6 mm and 8 mm hex keys,
- 7 mm, 10 mm, 13 mm, 14 mm 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.

The components are to be assembled. Please remove the propeller (7.1.3) from the agitator assembly (7) before assembly.

- **Step 1:**

Place the cover (6) in front of the plate and the counterplate of the ram (1).

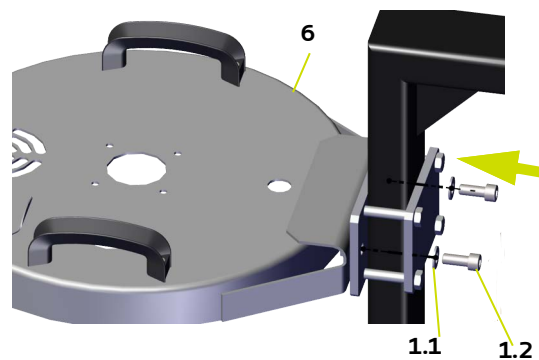


- **Step 2:**

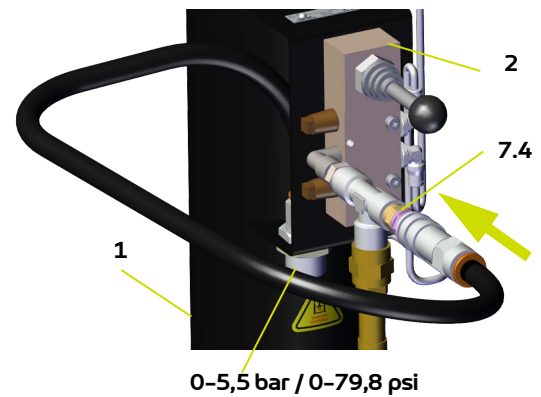
Place the 2 washers (1.1).

- **Step 3:**

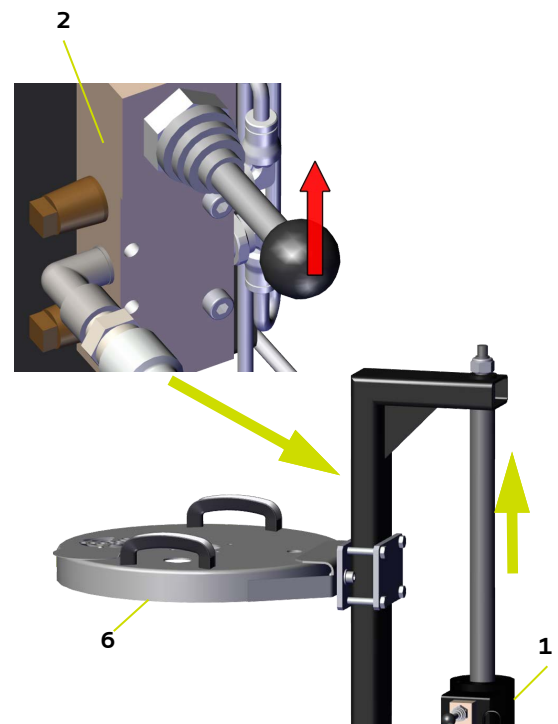
Tighten the 2 screws (1.2) on the cover (6) by means of a 8 mm hex key.



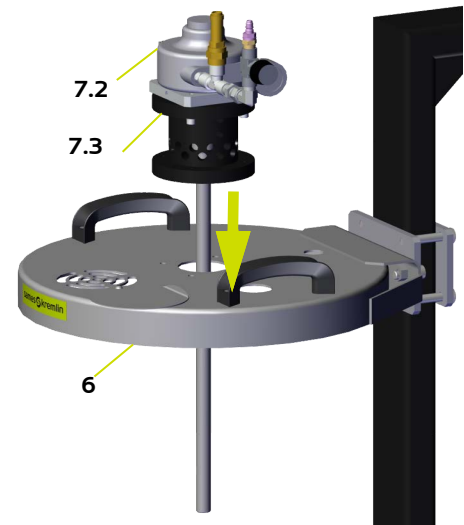
- **Step 4:**
Connect the ram (1) main air supply hose to the compressed air network (maximum 5.5 bar / 79.8 psi).
- **Step 5:**
Get the air supply hose quick-release coupling (7.4).
- **Step 6:**
Plug it into the air inlet of the ram (1) control valve (2).



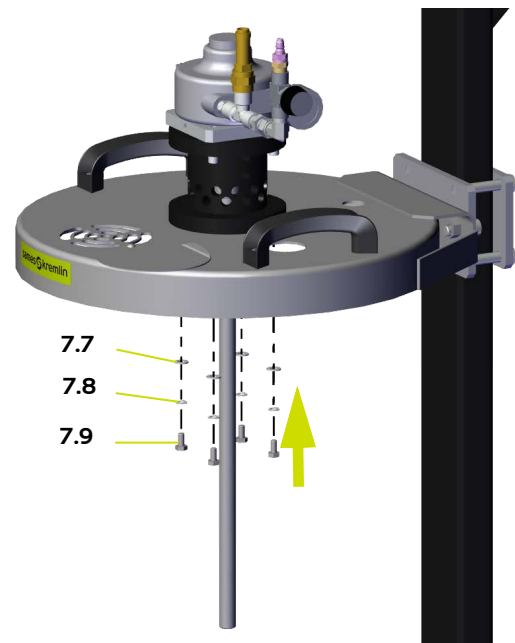
- **Step 7:**
Hold the pneumatic control lever (2) of the ram (1) upwards to obtain a suitable working height for the cover (6).



- **Step 8:**
Place the geared motor (7.2) equipped with its extension (7.3) in the center of the cover (6).



- **Step 9:**
Tighten it by means of the 4 screws (7.9) and of the 8 washers (7.7 & 7.8) by means of a 13 mm flat wrench. Tightening torque: 17 N.m. / 12.5 Ft.Lbs.



- **Step 10:**
Insert ring (8.3.2) onto agitator rod (7.1.2).

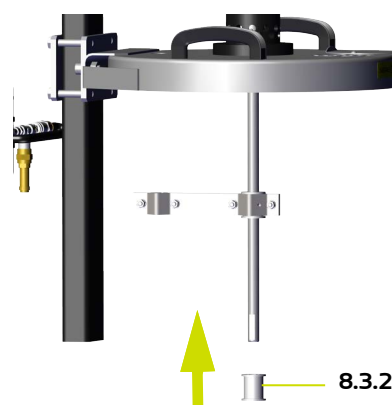
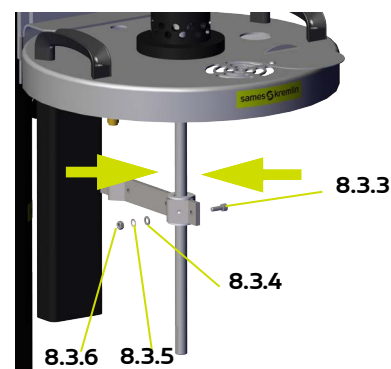
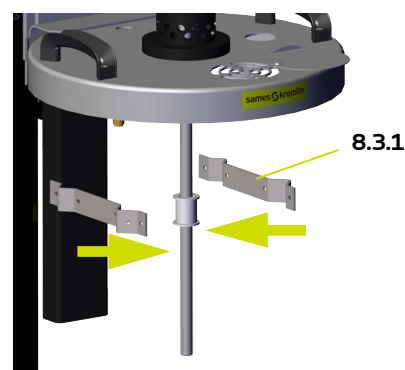


The HDPE rings on the rod supports (suction/discharge with shaft) must be handled with care due to the risk of static electricity. Do not use a dry cloth during installation, maintenance, or cleaning.

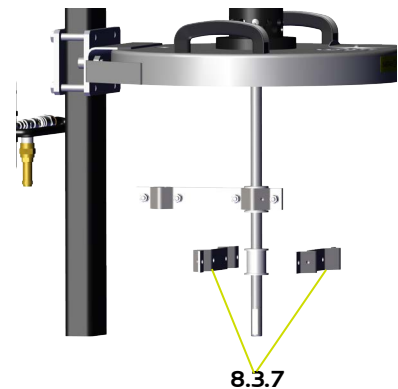
- **Step 11:**
Position the 2 brackets (8.3.1) around the ring (7.1.2).

- **Step 12:**
Position screws (8.3.3), washers (8.3.4 & 8.3.5) and nuts (8.3.6) in the 2 brackets (8.3.1).
- **Step 13:**
Tighten screws (8.3.3) with a 5 mm Allen key, holding nut (8.3.6) with a 10 mm open-end wrench.

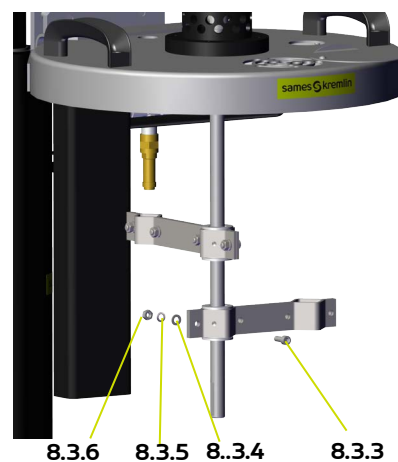
- **Step 14:**
Insert ring (8.3.2) onto agitator rod (7.1.2).



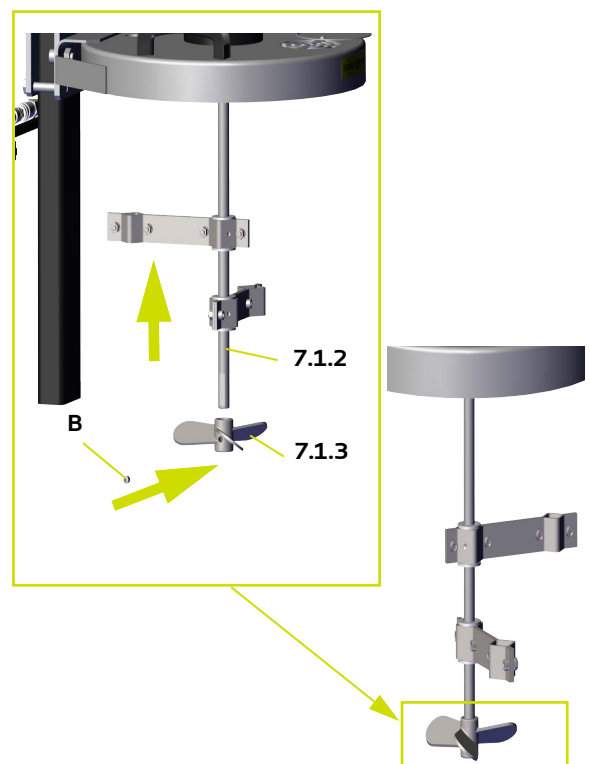
- **Step 15:**
Position the 2 brackets (8.3.7) around the ring (7.1.2).



- **Step 16:**
Position screws (8.3.3), washers (8.3.4 & 8.3.5) and nuts (8.3.6) in the 2 brackets (8.3.7).
- **Step 17:**
Tighten the screws (8.3.3) with a 5 mm Allen key, holding the nut (8.3.6) with a 10 mm open-end wrench.



- **Step 18:**
Place the propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 19:**
Apply glue (Loctite 5772) on the screw (B).
- **Step 20:**
Tighten the screw (B) by means of a 6 mm hex key. Tightening torque: 17 N.m. / 12.5 Ft.Lbs

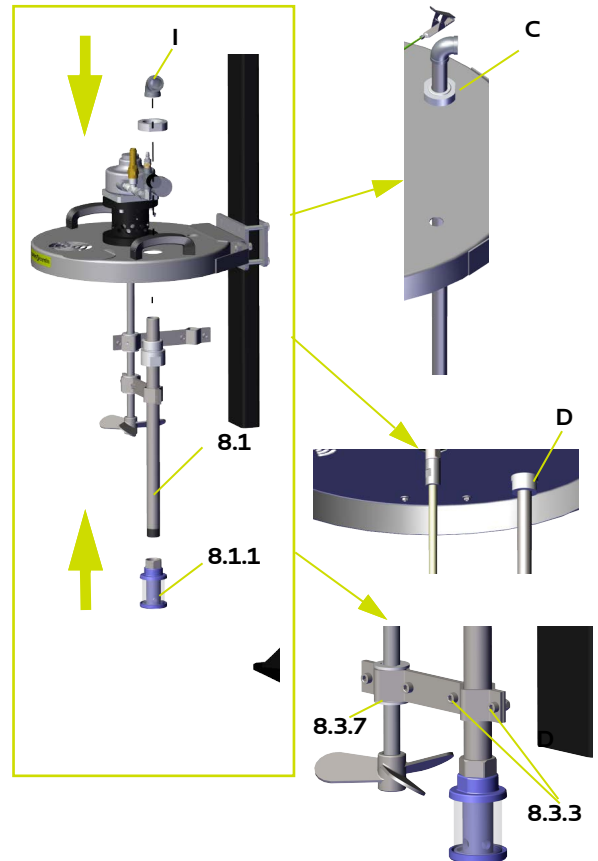


- **Step 21:**
Install the suction rod (8.1) as well as the strainer (8.1.1).



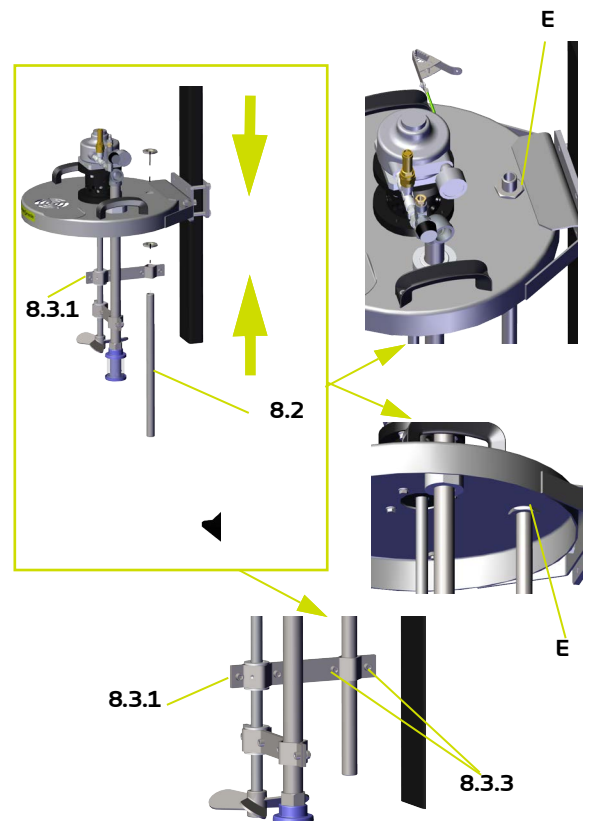
The HDPE rings on the rod supports (suction/discharge with shaft) must be handled with care due to the risk of static electricity. Do not use a dry cloth during installation, maintenance, or cleaning.

- **Step 22:**
Tighten the nut (C) by means of a spanner wrench.
- **Step 23:**
Tighten the ring (D).
- **Step 24:**
Screw on elbow fitting (I) using a wrench.
- **Step 25:**
Position screws (8.3.3), washers (8.3.4 & 8.3.5) and nuts (8.3.6) in the 2 brackets (8.3.1).
- **Step 26:**
Tighten the screws (8.3.3) with a 5 mm Allen key, holding the nut (8.3.6) with a 10 mm open-end wrench.



- **Step 27:**
Fit the return tube (8.2) through the support (8.3.1).
- **Step 28:**
Tighten nut (E).

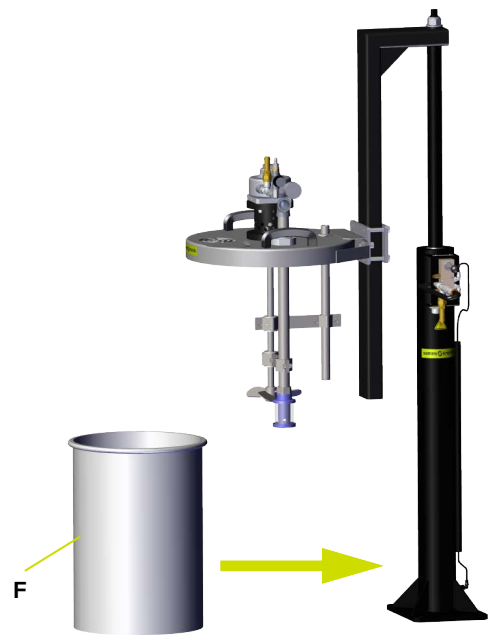
- **Step 29:**
Position screws (8.3.3), washers (8.3.4 & 8.3.5) and nuts (8.3.6) in the 2 brackets (8.3.1).
- **Step 30:**
Tighten the screws (8.3.3) with a 5 mm Allen key, holding the nut (8.3.6) with a 10 mm open-end wrench.



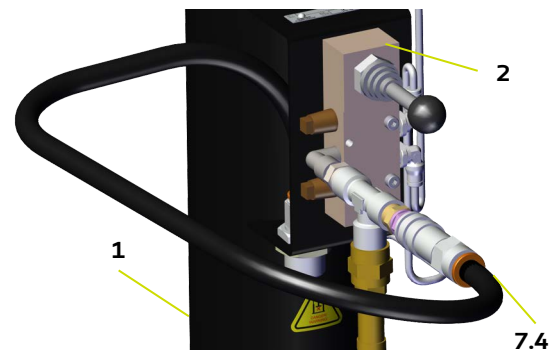
- **Step 31:**
Locate a drum (F) under the agitation unit.



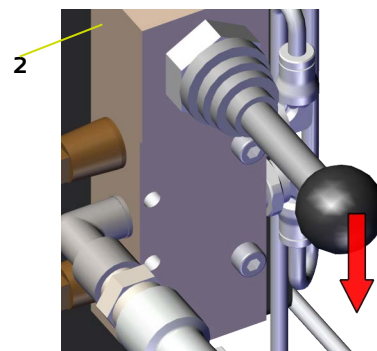
Center the drum (F) in relation to the cover to avoid any risk of friction and sparks, especially from the propeller.



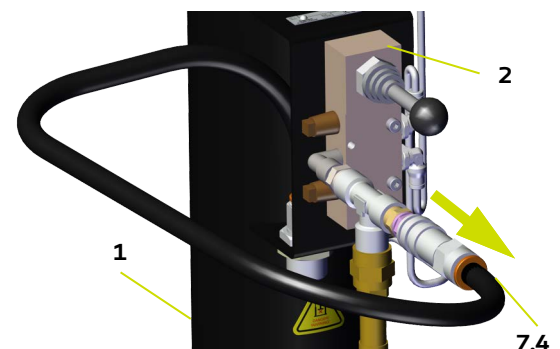
- **Step 32:**
Connect the ram's general air supply hose (1) to the compressed air network (5.5 bar maximum).



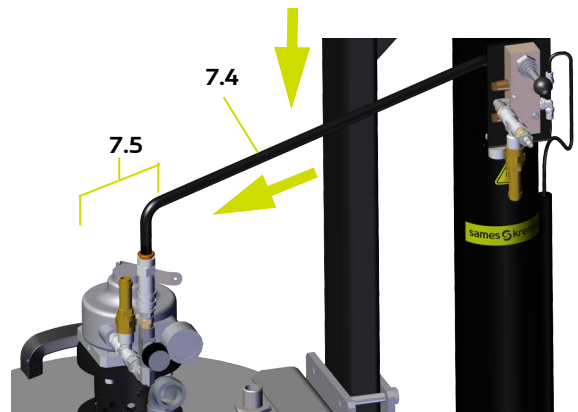
- **Step 33:**
Hold the pneumatic control lever (2) of the ram (1) downwards.
The arm/ram assembly lowers to the stop on the drum.



- **Step 34:**
Disconnect air supply hose quick coupling (7.4) from pneumatic control distributor (2) on ram (1).



- **Step 35:**
Connect it to the agitator air supply.
- **Step 36:**
Adjust speed using air regulator (7.5). Check speed through inspection hatch.
- **Step 37:**
Unscrew slightly the knob of the air regulator (7.5) - 5.5 bar / 79.8 psi maximum - to make the geared motor operate very slowly for a few seconds, then bring it up to nominal speed.

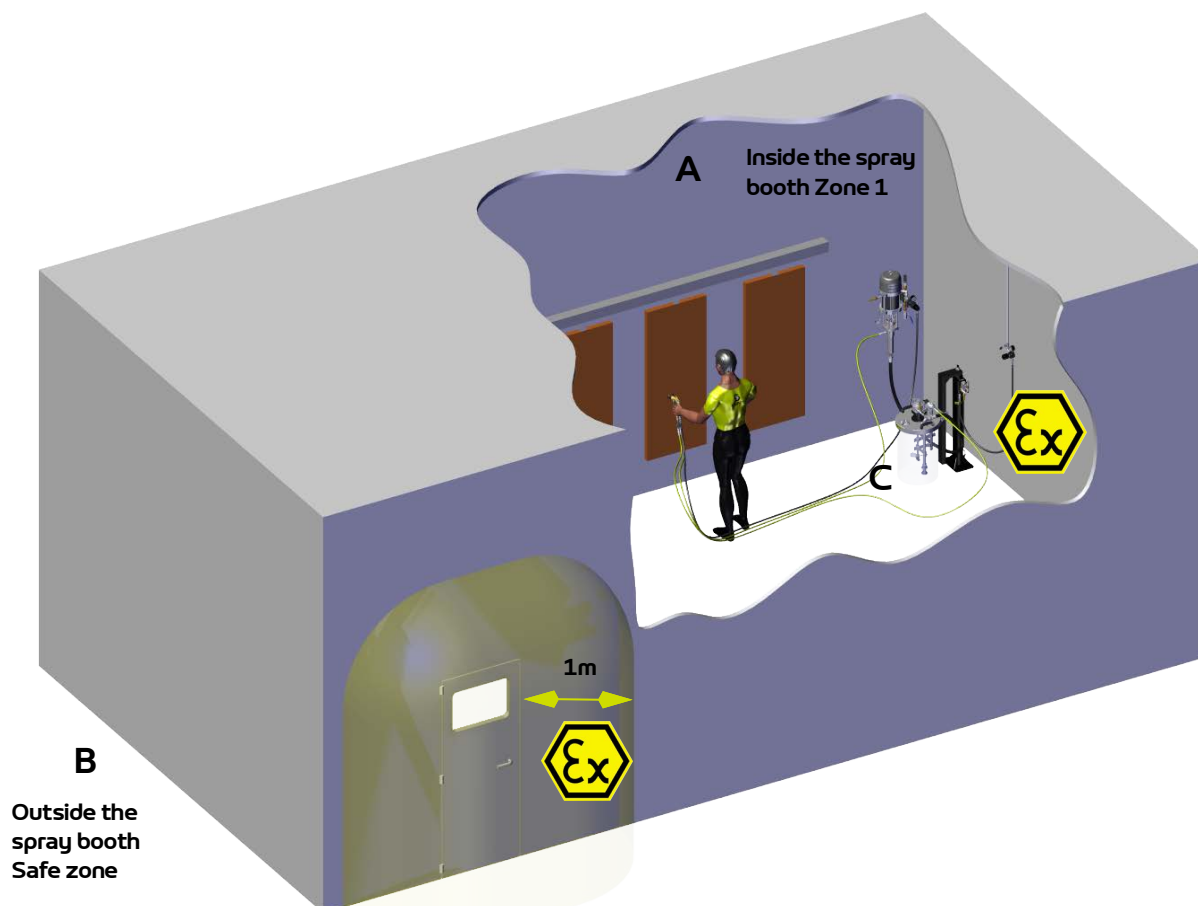


Do not operate the agitator outside the drum or at too high speed.

**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



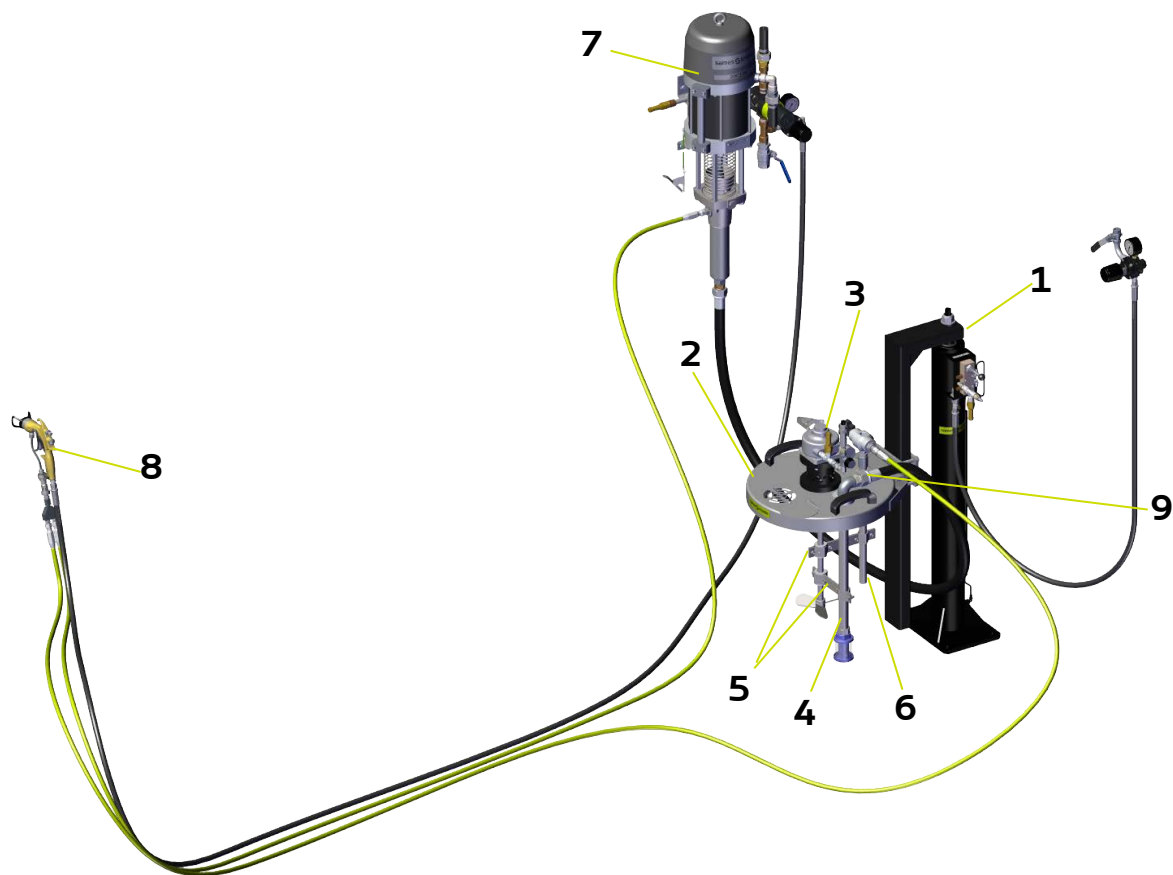
A - Zone 1 (Z1) or zone 2 (Z2) explosive zone: spray booth	B - Non-explosive zone	C - Zone 0 (Z0)
--	------------------------	-----------------



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	Mounting brackets
6	Return rod
7	Pump (*)
8	Gun (*)
9	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 (*)
Replacement			
Maintenance of the ram (1)			
A	A1 Disassembly of the ram (1)	30 min	Every 2 years
	A2 Re-assembly of the ram (1)	30 min	Every 2 years
Maintenance of the cover (6)			
B	B1 Disassembly of the cover (6)	30 min	-
	B2 Re-assembly of the cover (6)	30 min	-
	B3 Disassembly of the handles (6.2)	2 min	-
	B4 Re-assembly of the handles (6.2)	2 min	-
Maintenance of the 40 L / 10.6 US gal - 60 L / 15.9 US gal agitator - motor - 1 propeller (7)			
C	C1 Disassembly of the 40 L / 10.6 US gal - 60 L / 15.9 US gal agitator (7)	30 min	Annual
	C2 Re-assembly of the 40 L / 10.6 US gal - 60 L / 15.9 US gal agitator (7)	30 min	Annual
	C3 Disassembly of the propeller (7.1.3)	5 min	-
	C4 Re-assembly of the propeller (7.1.3)	5 min	-
	C5 Disassembly of the motor (7.2)	10 min	Annual
	C6 Re-assembly of the motor (7.2)	10 min	Annual
	C7 Disassembly of the grounding cable (7.6)	1 min	-
	C8 Re-assembly of the grounding cable (7.6)	1 min	-
Maintenance of the 40 L / 10.6 US gal - 60 L / 15.9 US gal suction assembly (8)			
D	D1 Disassembly of the 40 L / 10.6 US gal - 60 L / 15.9 US gal suction assembly (8)	15 min	Annual
	D2 Re-assembly of the 40 L / 10.6 US gal - 60 L / 15.9 US gal suction assembly (8)	15 min	Annual

(*) 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 582349110

[see § 10.1 page 85](#)

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 85](#) 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

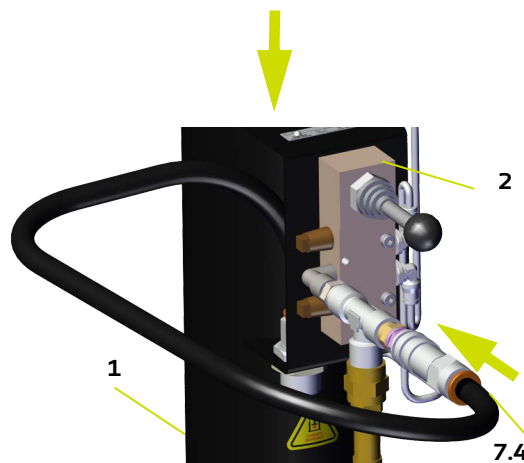
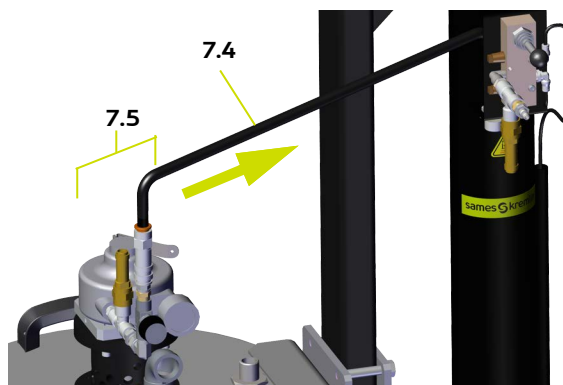


Before any intervention, respect the health and safety instructions [see § 1 page 6](#) and the shutdown procedure [see § 5.3.1.1 page 35](#). Please refer to DRT 582.390.110 instruction manual (Cyclix 40 L / 10.6 US gal – 60 L / 15.9 US gal single ram) for further information on the ram.

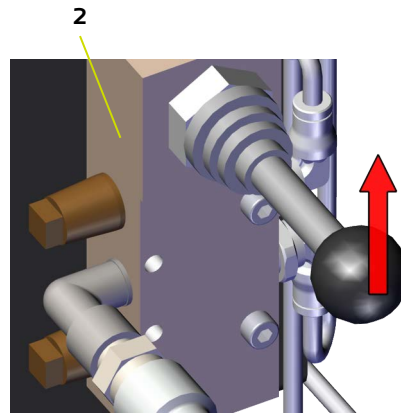
6.4.1. Procedure A: maintenance of the ram (1)

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

- **Step 1:**
Screw the knob of the agitator air regulator (7.5). The motor of the agitator stops.
- **Step 2:**
Disconnect the quick release coupling of the air supply hose (7.4) from the air inlet of the agitator.
- **Step 3:**
Connect it to the ram (1) control (2).
- **Step 4:**
Open the air.

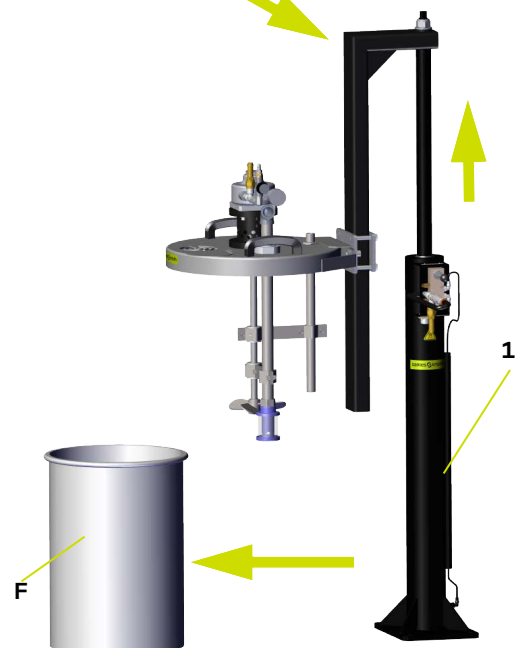


- **Step 5:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

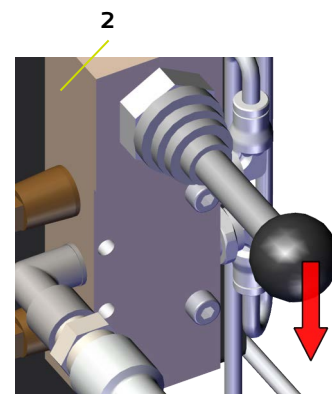


The arm/ram assembly lifts up to the upper position.

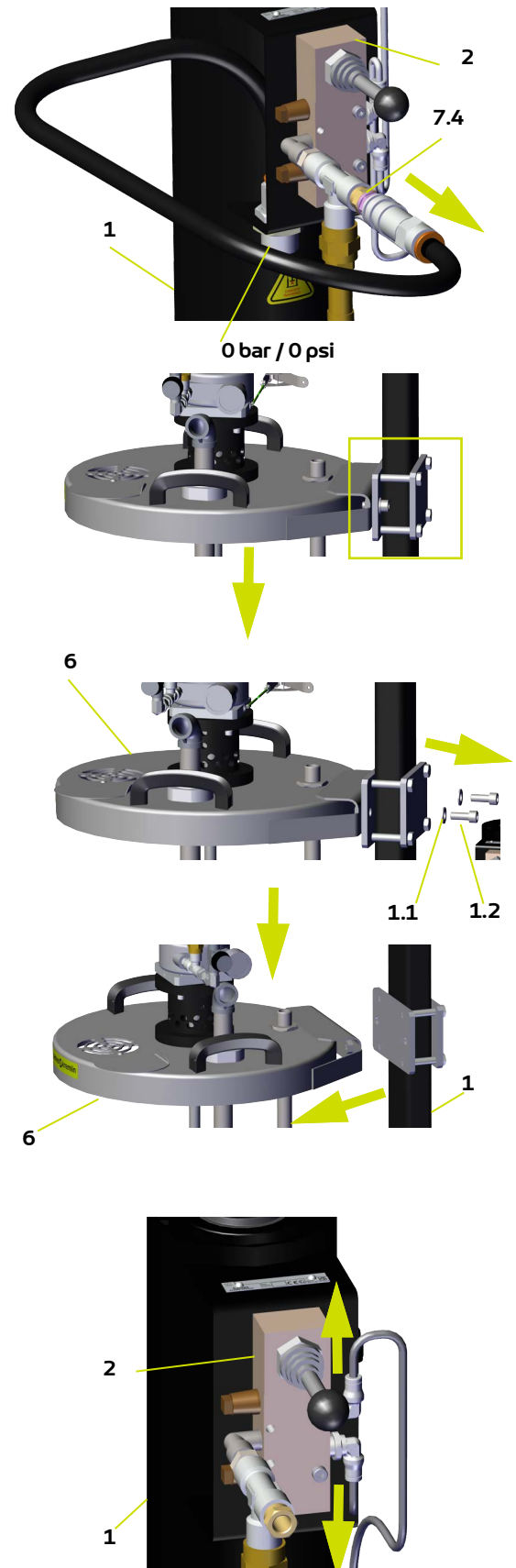
- **Step 6:**
Take off the drum (F).



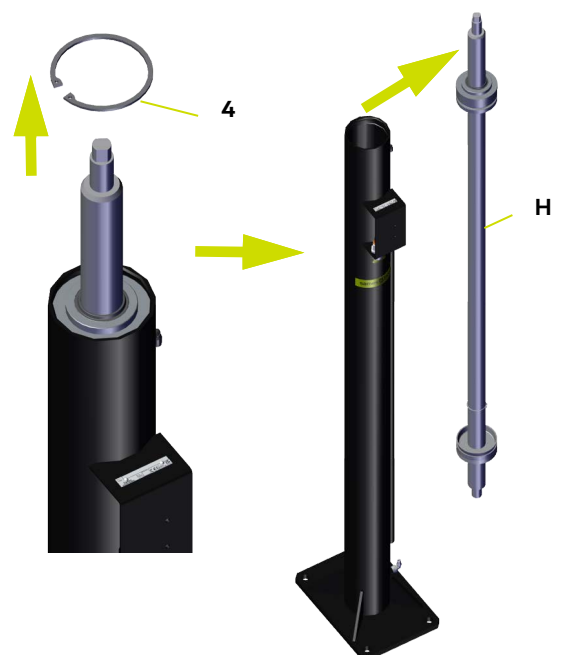
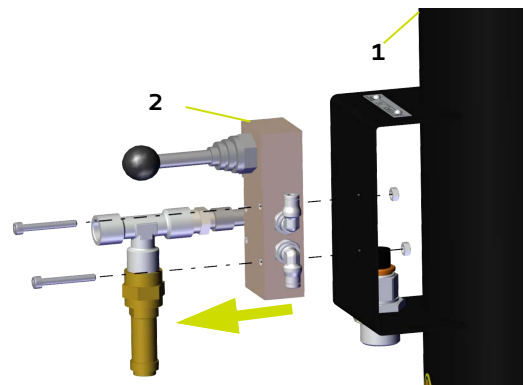
- **Step 7:**
Hold the pneumatic control lever (2) of the ram (1) downwards.
The arm/ram assembly lowers to the bottom position.



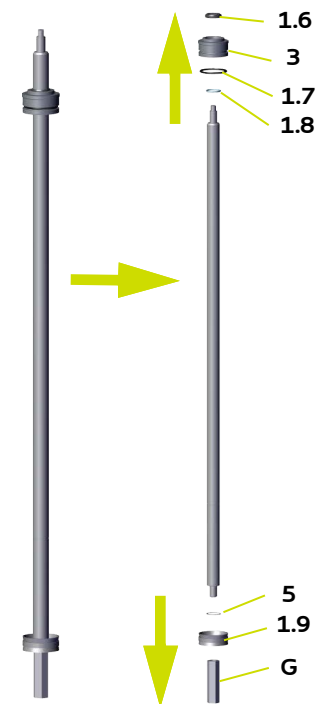
- **Step 8:**
Disconnect the ram (1) main air supply hose from the compressed air network (0 bar / 0 psi).
- **Step 9:**
Disconnect the quick release coupling of the air supply hose (7.4) from the control (2) ram (1).
- **Step 10:**
Unscrew the 2 screws (1.2) from the plate and the counterplate of the ram (1) by means of a 8 mm hex key.
- **Step 11:**
Take off the 2 washers (1.1).
- **Step 12:**
Remove the cover (6) from the ram (1).
- **Step 13:**
Disconnect the 2 air supply hoses from the control (2) ram (1).



- **Step 14:**
Unloosen 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 cylinder rod (H).

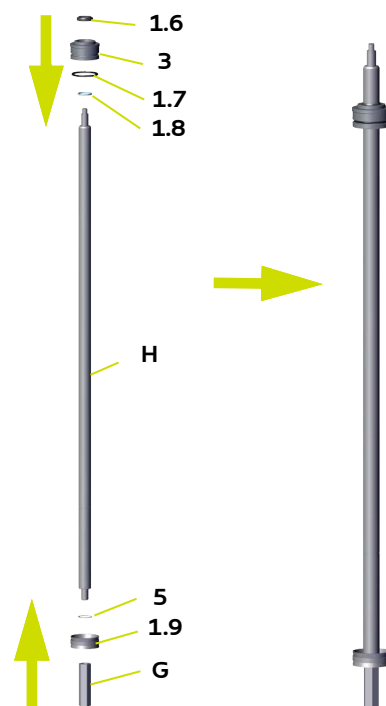


- **Step 20:**
Take off the guide ring (3).
- **Step 21:**
Remove the seals (1.7, 1.8 & 1.6) from the guide ring (3).
- **Step 22:**
Unscrew the stop nut (G) by means of a 30 mm flat wrench.
- **Step 23:**
Take off the cylinder rod seal (1.9).



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

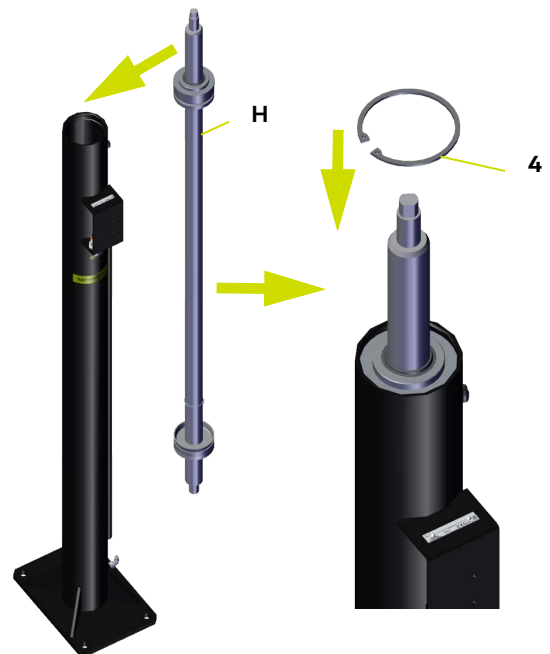
- **Step 1:**
Apply grease (PTFE grease) on the seals as well as on the jack ram (H).
- **Step 2:**
Place the seals (1.7, 1.8 & 1.6) of the guide ring (3).
- **Step 3:**
Place the guide ring (3) on cylinder rod (H).
- **Step 4:**
Place the cylinder seal (1.9).
- **Step 5:**
Screw on the stop nut (G)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



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



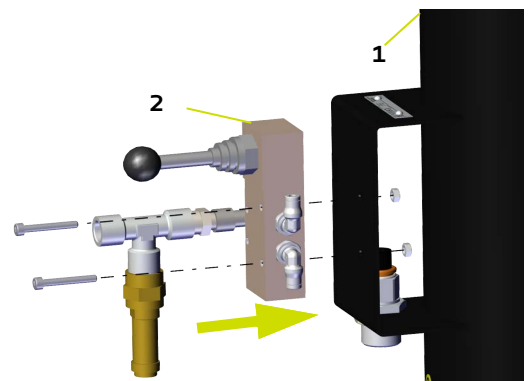
Seals 3, 4 and 5 are not included in the package of seals ref. 154.261.915.



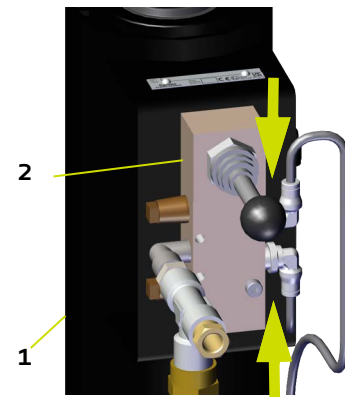
- **Step 9:**
Install the arm-lever on the ram (1).
- **Step 10:**
Install the washer (1.5).
- **Step 11:**
Tighten the nut (1.4) by means of a 30 mm flat wrench.



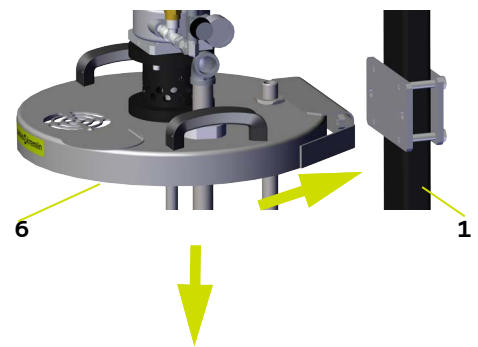
- **Step 12:**
Reinstall the control (2) ram (1) tightening the 2 screws and the 2 nuts by means of a 7 mm flat wrench and a 3 mm hex key.



- **Step 13:**
Connect the 2 air supply hoses to the control (2) ram (1).

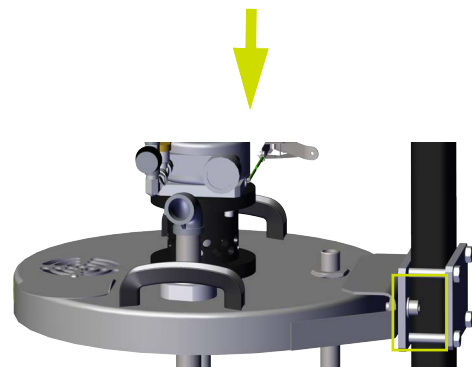
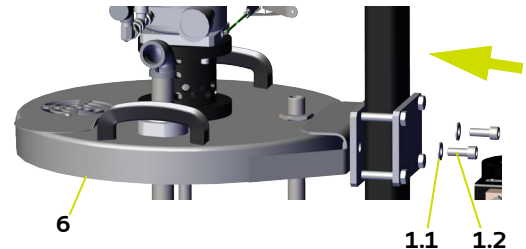


- **Step 14:**
Place the cover (6) in front of the plate and the counterplate of the ram (1).

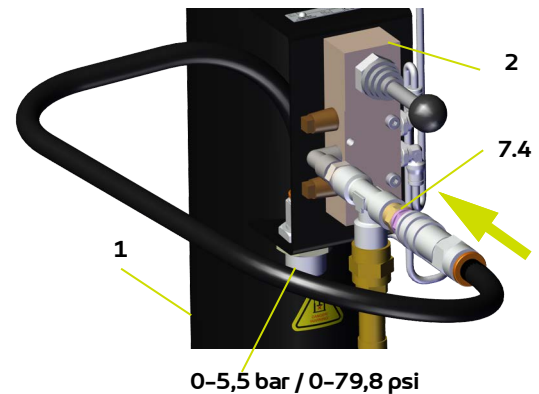


- **Step 15:**
Place the 2 washers (1.1).

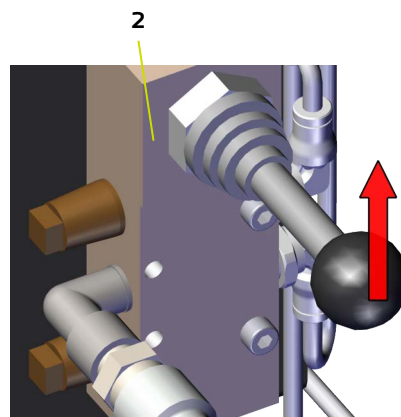
- **Step 16:**
Tighten the 2 screws (1.2) on the cover (6) by means of a 8 mm hex key.



- **Step 17:**
Connect the ram (1) main air supply hose to the compressed air network (maximum 5.5 bar / 79.8 psi).
- **Step 18:**
Get the air supply hose quick-release coupling (7.4).
- **Step 19:**
Plug it into the air inlet of the ram (1) control valve (2).



- **Step 20:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

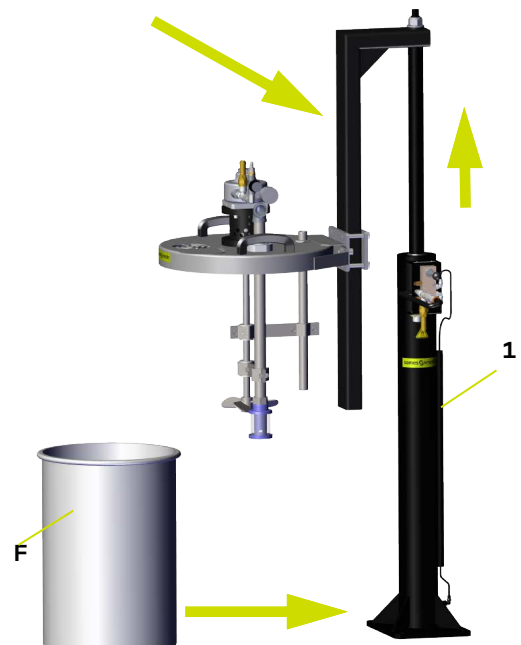


The arm/ram assembly lifts up to the upper position.

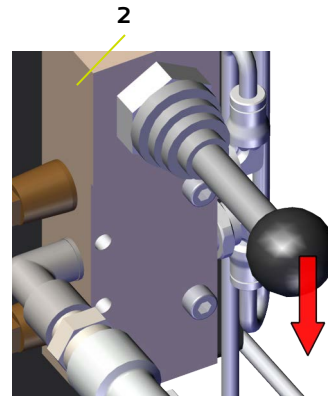
- **Step 21:**
Locate a drum (F) under the agitation unit.



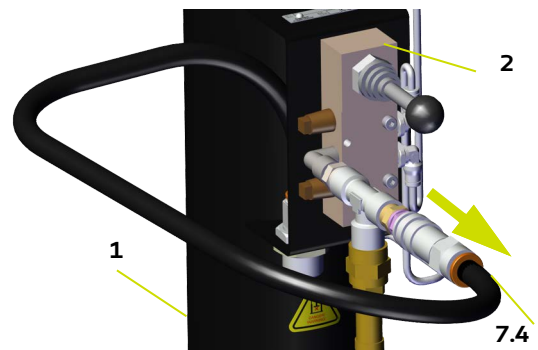
Center the drum (F) in relation to the cover to avoid any risk of friction and sparks, especially from the propeller.



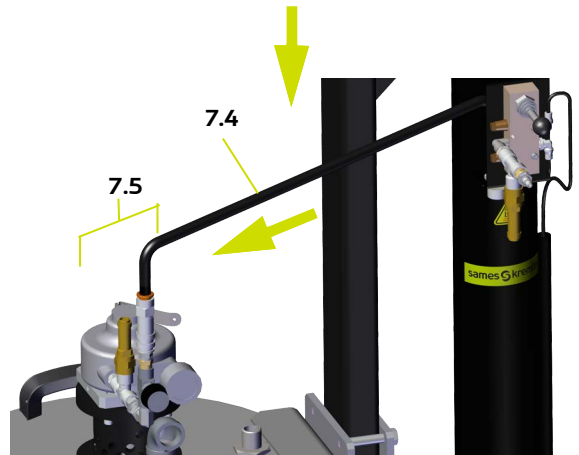
- **Step 22:**
Hold the pneumatic control lever (2) of the ram (1) downwards.
The arm/ram assembly lowers to the bottom position.



- **Step 23:**
Disconnect the quick release coupling from the air supply (7.4) hose of the ram (1) control (2).



- **Step 24:**
Connect it to the agitator air supply.
- **Step 25:**
Adjust the air regulator (7.5) by controlling the rotation speed of the agitator from the hatch.
- **Step 26:**
Unscrew slightly the knob of the air regulator (7.5) - 5.5 bar / 79.8 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 27:**
Close the hatch.
The agitation unit is ready to use.

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

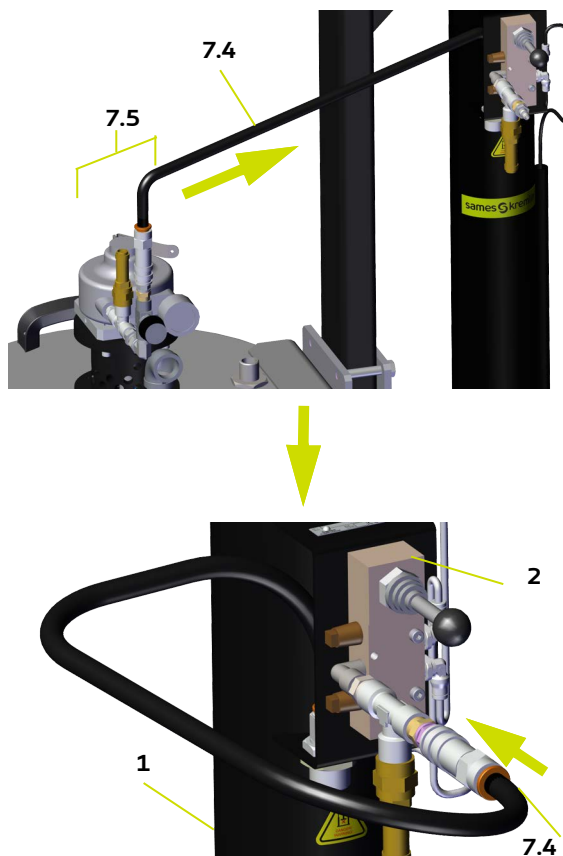


The procedure below details complete maintenance of the cover with grips.

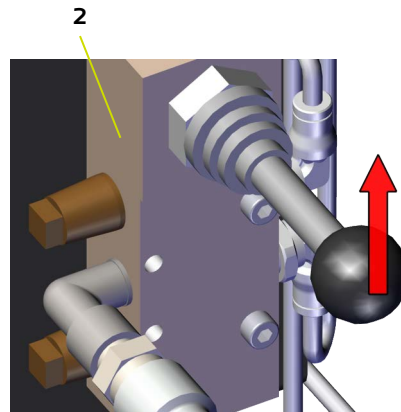
To carry out maintenance on grips only, perform maintenance procedures B3 & B4 [see § 6.4.2.3 page 58](#)

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

- **Step 1:**
Screw the knob of the agitator air regulator (7.5). The motor of the agitator stops.
- **Step 2:**
Disconnect the quick release coupling of the air supply hose (7.4) from the air inlet of the agitator.
- **Step 3:**
Connect it to the ram (1) control (2).
- **Step 4:**
Open the air.

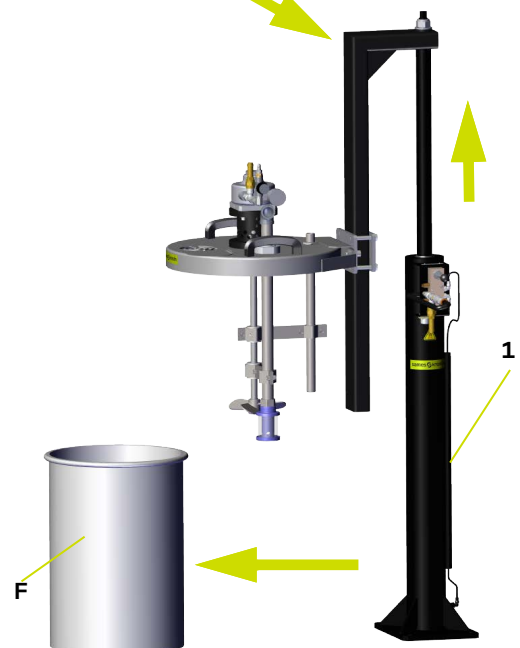


- **Step 5:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

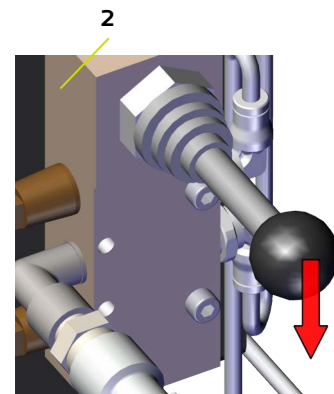


The arm/ram assembly lifts up to the upper position.

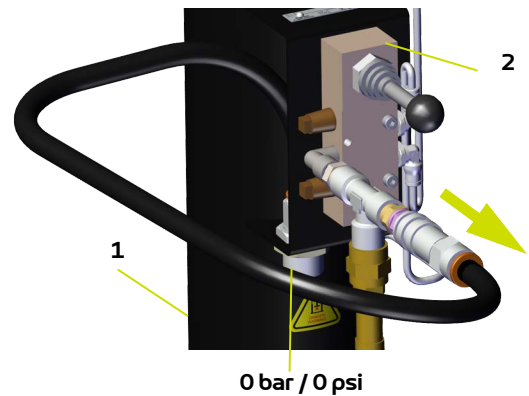
- **Step 6:**
Take off the drum (F).



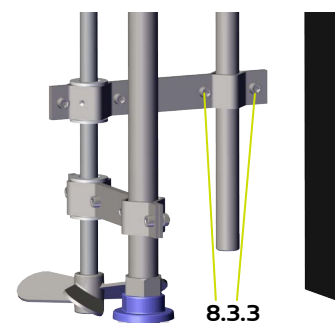
- **Step 7:**
Hold the pneumatic control lever (2) of the ram (1) downwards.
The arm/ram assembly lowers to the bottom position.



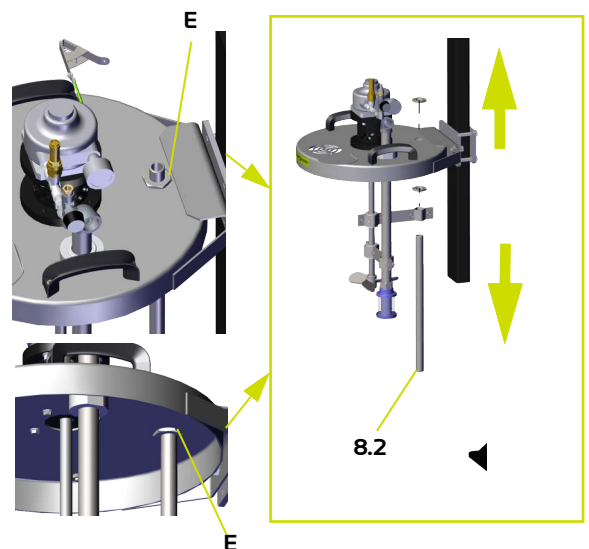
- **Step 8:**
Disconnect the ram (1) main air supply hose from the compressed air network (0 bar / 0 psi).



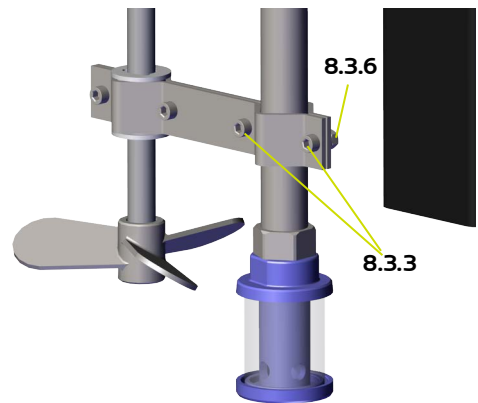
- **Step 9:**
Loosen the screws (8.3.3) with a 5 mm Allen key, holding the nut (8.3.6) with a 10 mm open-end wrench..



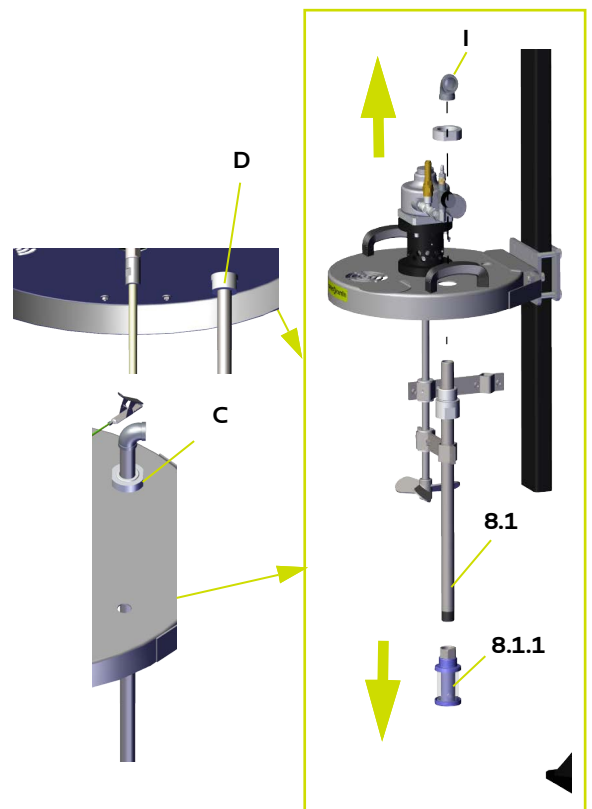
- **Step 10:**
Loosen nut (E).
- **Step 11:**
Remove the return tube (8.2).



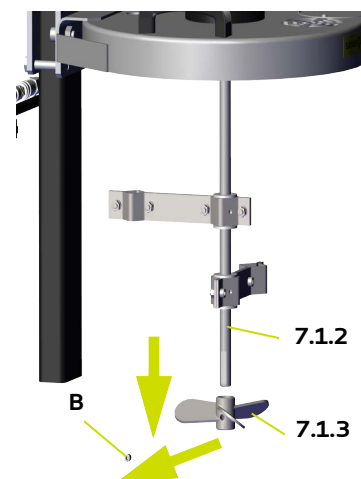
- **Step 12:**
Loosen screws (8.3.3) with a 5 mm Allen key, holding nut (8.3.6) with a 10 mm open-end wrench.



- **Step 13:**
Unscrew elbow fitting (I) using a wrench.
- **Step 14:**
Loosen guide ring (D).
- **Step 15:**
Unscrew nut (C) using a wrench.
- **Step 16:**
Dismantle suction rod (8.1) with strainer (8.1.1)



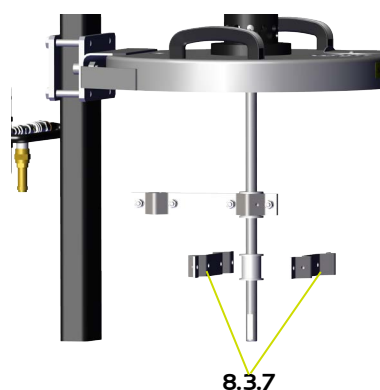
- **Step 17:**
Unscrew screw (B) using a 6 mm Allen key.
- **Step 18:**
Remove the propeller (7.1.3) from the agitator rod (7.1.2).



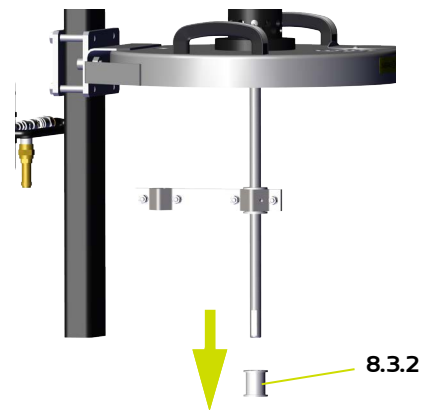
- **Step 19:**
Unscrew screws (8.3.3), remove washers (8.3.4 & 8.3.5) and nuts (8.3.6).



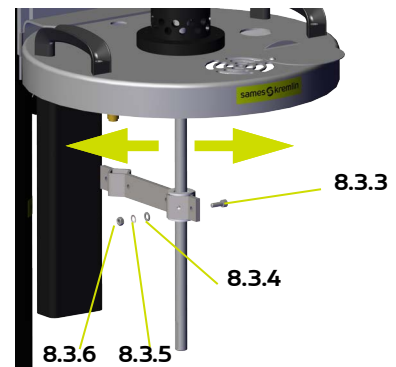
- **Step 20:**
Remove support assembly (8.3.7).



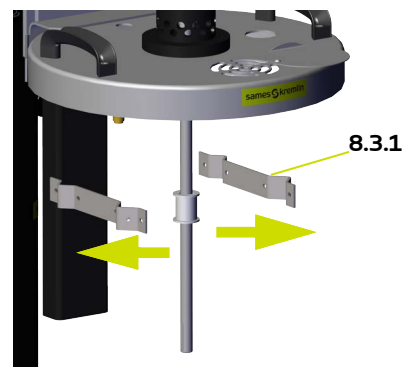
- **Step 21:**
Remove ring (8.3.2).



- **Step 22:**
Unscrew screws (8.3.3), remove washers (8.3.4 & 8.3.5) nuts (8.3.6) and 2 brackets (8.3.1).



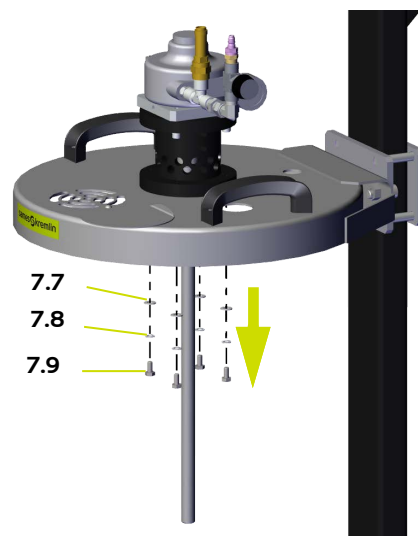
- **Step 23:**
Remove support assembly (8.3.1).



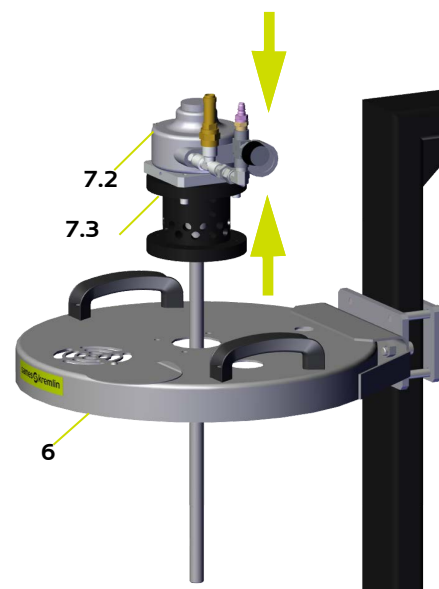
- **Step 24:**
Remove ring (8.3.2).



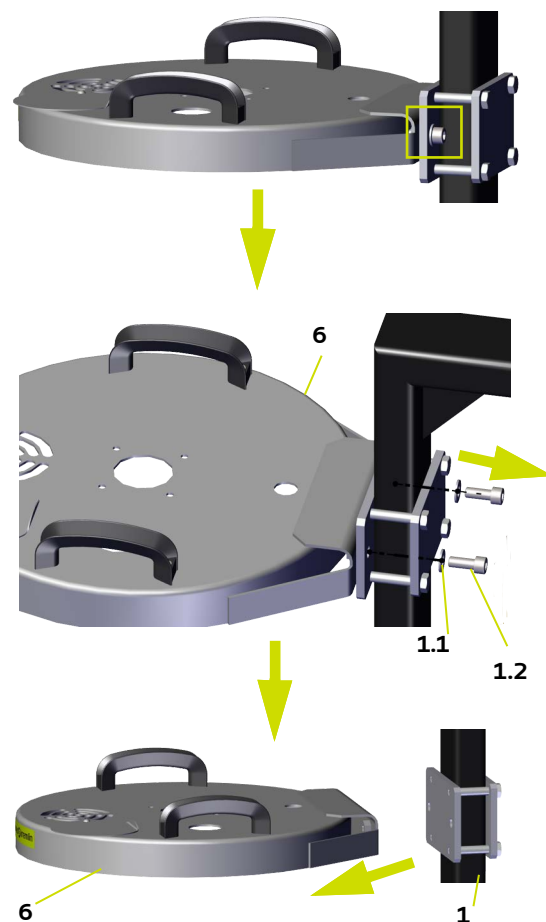
- **Step 25:**
Unscrew the 4 screws (7.9) located under the cover (6) using a 13 mm open-end wrench.
- **Step 26:**
Remove 8 washers (7.8 & 7.7).



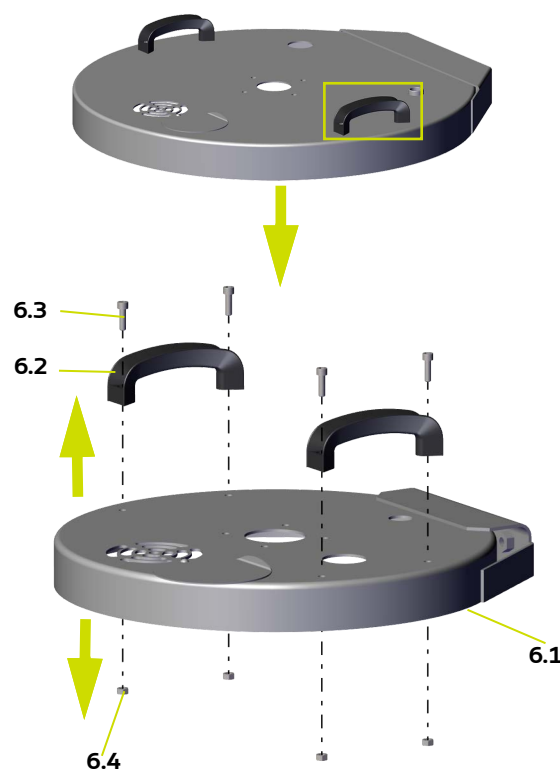
- **Step 27:**
Remove the motor (7.2) with its extension (7.3) from the cover (6)..



- **Step 28:**
Unscrew the 2 screws (1.2) on the elevator plate and counterplate (1) using an 8 mm Allen key.
- **Step 9:**
Remove 2 washers (1.1).



- **Step 30:**
Remove cover (6) from ram (1).



- **Step 31:**
Loosen the 4 nuts (6.4) and 4 screws (6.3) using a 10 mm open-end wrench and a 5 mm Allen 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:**
Follow steps 1 to 38 in [see § 5.1.1 page 25](#) to reassemble the agitator.



6.4.2.3. Procedure B3: disassembly of the handles (6.2)



To carry out the disassembly of the handles (6.2), perform steps from 1 to 9 then go directly to step 31 of the procedure B1: disassembly of the cover (1) [see § 6.4.2.1 page 49](#).

6.4.2.4. Procedure B4: re-assembly of the handles (6.2)

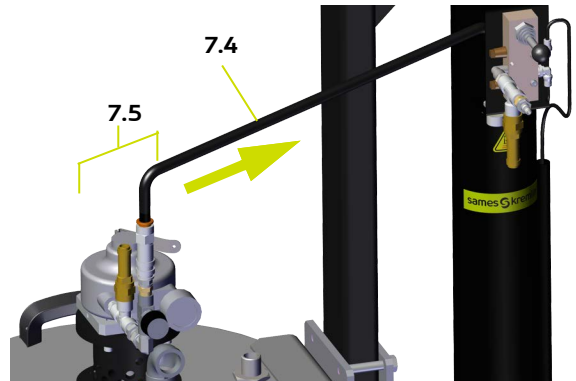


To carry out the re-assembly of the handles (6.2) only, perform step 1 of the procedure B2: re-assembly of the cover (1) see § 6.4.2.2 page 57 then go directly to step 31 to 37 of the commissioning instructions [see § 5.1.1 page 25](#).

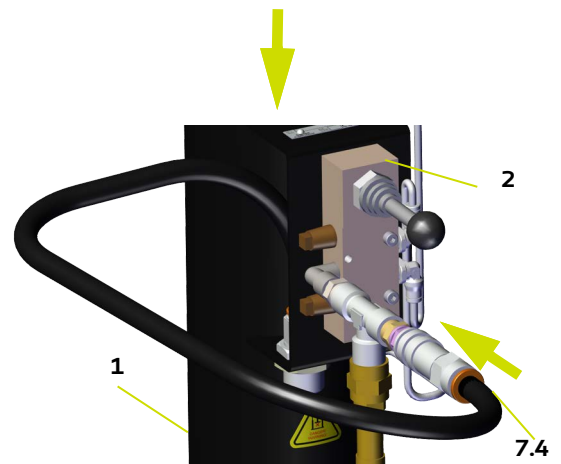
6.4.3. Procedure C: maintenance of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7)

6.4.3.1. Procedure C1: disassembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7.1)

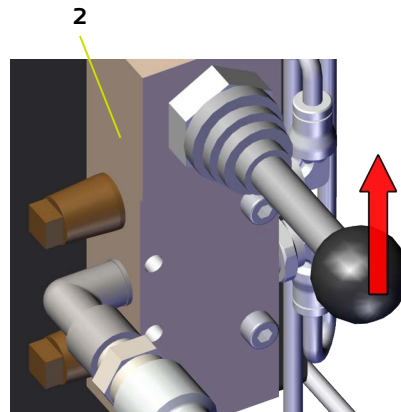
- **Step 1:**
Screw the knob of the agitator air regulator (7.5). The motor of the agitator stops.
- **Step 2:**
Disconnect the quick release coupling of the air supply hose (7.4) from the air inlet of the agitator.



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

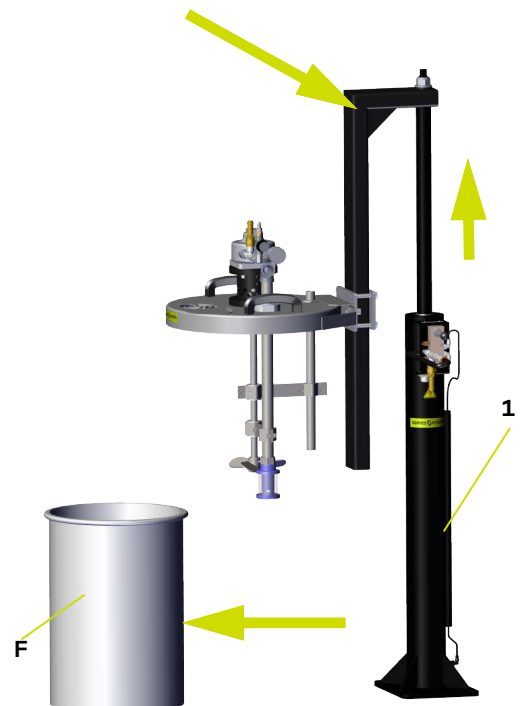


- **Step 5:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

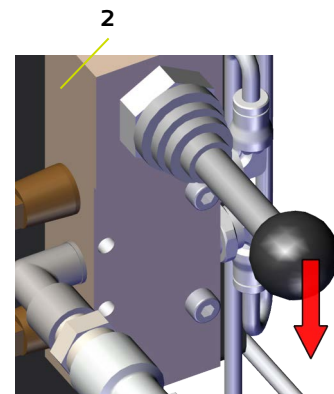


The arm/ram assembly lifts up to the upper position.

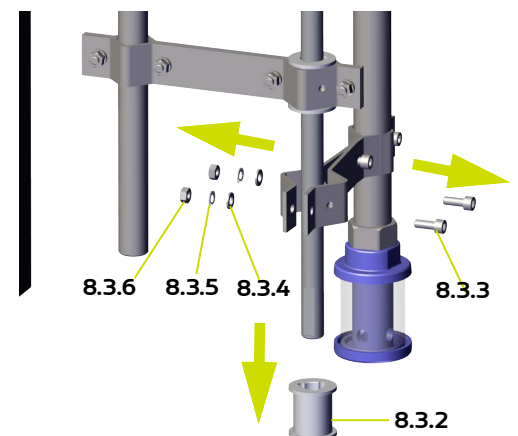
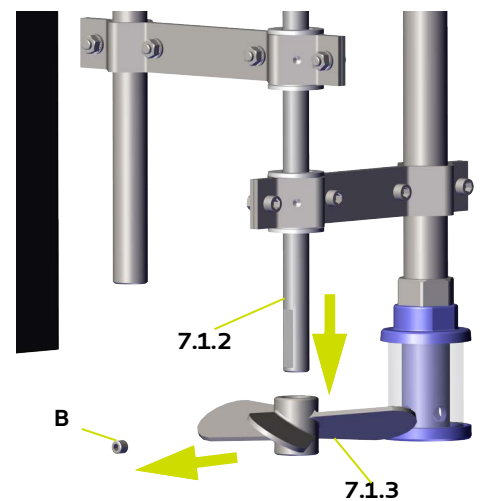
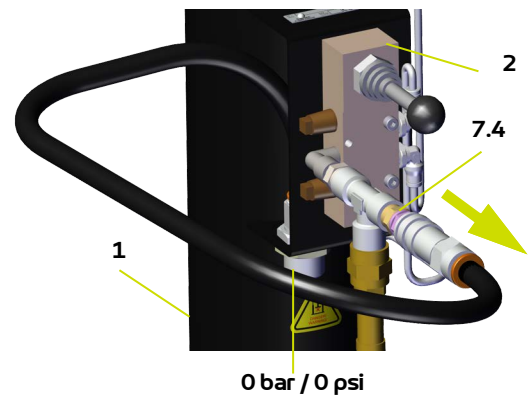
- **Step 6:**
Take off the drum (F).



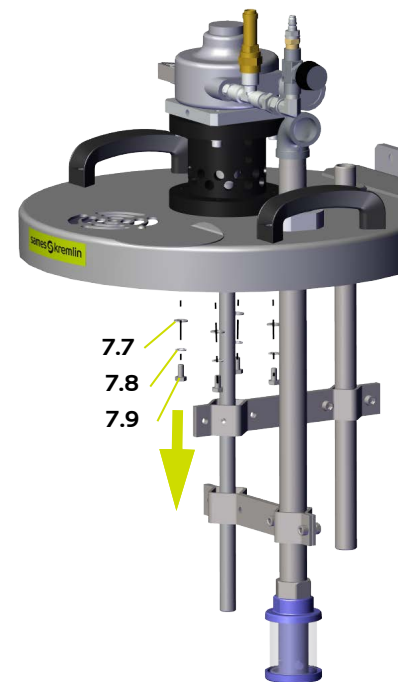
- **Step 7:**
Hold the pneumatic control lever (2) of the ram (1) downwards.
The arm/ram assembly lowers to the bottom position.



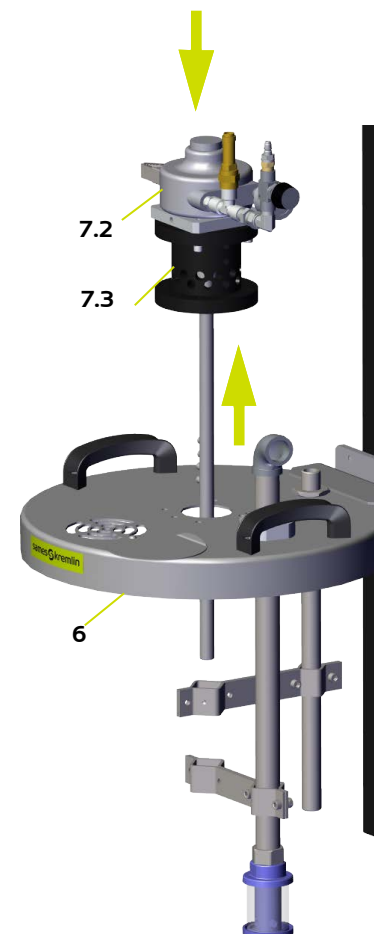
- **Step 8:**
Disconnect the ram (1) main air supply hose from the compressed air network (0 bar / 0 psi).
- **Step 9:**
Disconnect the quick release coupling of the air supply hose (7.4) from the control (2) ram (1).
- **Step 10:**
Loosen the screw (B) by means of a 6 mm hex key.
- **Step 11:**
Remove the propeller (7.1.3) from the agitator rod (7.1.2).
- **Step 12:**
Unscrew the 2 screws (8.3.3) using a 5 mm Allen wrench, holding the nut (8.3.6) with a 10 mm open-end wrench..
- **Step 13:**
Remove washers (8.3.4 & 8.3.5) and nuts (8.3.6).
- **Step 14:**
Spread the 2 tabs and remove the ring (8.3.2)..
- **Step 15:**
Repeat steps 12 to 14 to recover the ring on the other support.



- **Step 16:**
Loosen the 4 screws (7.9) located under the cover (6) by means of a 13 mm flat wrench.
- **Step 17:**
Take off the 8 washers (7.8 & 7.7).

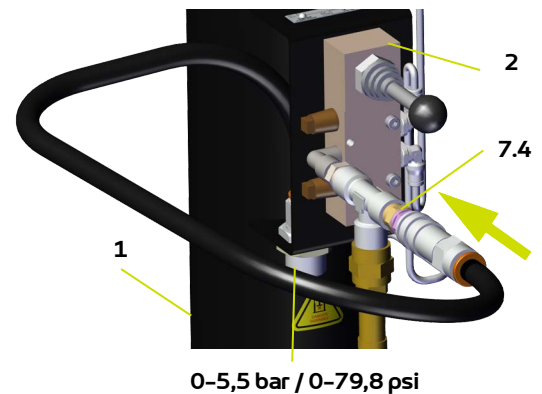


- **Step 18:**
Remove the geared motor (7.2) equipped with its extension (7.3) from the cover (6).

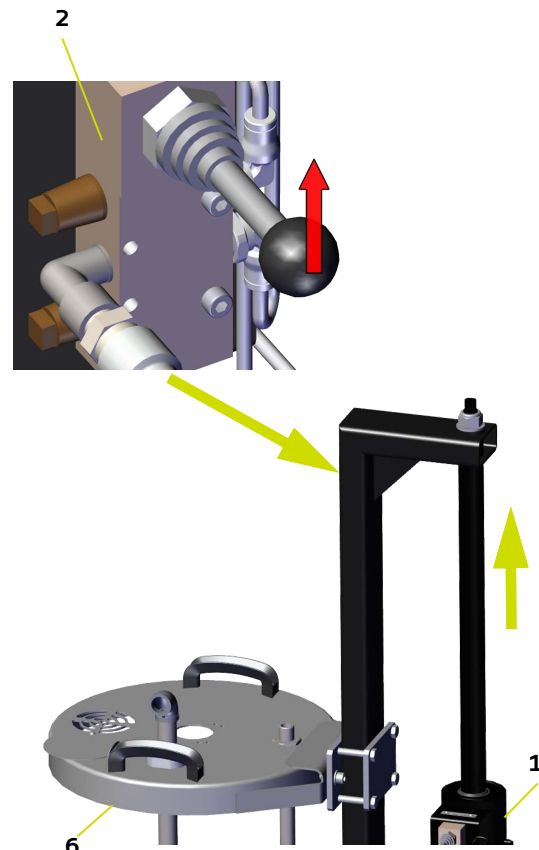


6.4.3.2. Procedure C2: Re-assembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7.1)

- **Step 1:**
Connect the ram (1) main air supply hose to the compressed air network (maximum 5.5 bar / 79.8 psi).
- **Step 2:**
Get the air supply hose quick-release coupling (7.4).
- **Step 3:**
Plug it into the air inlet of the ram (1) control valve (2).

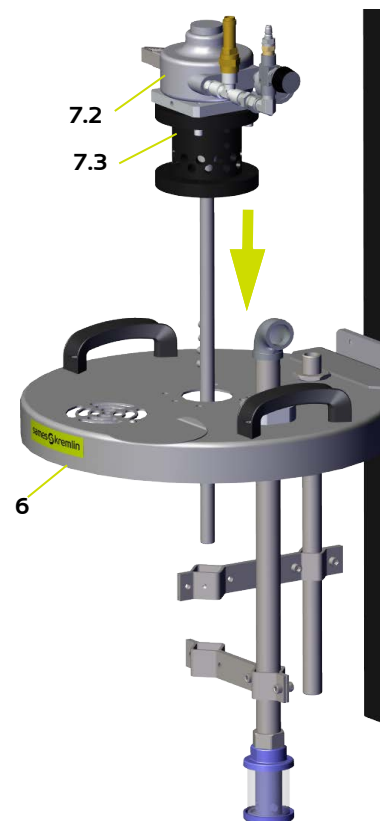


- **Step 4:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

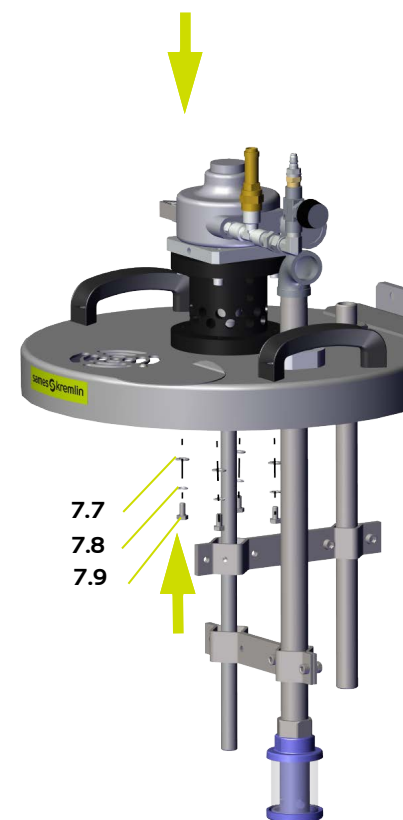


The arm/ram assembly lifts up to the upper position.

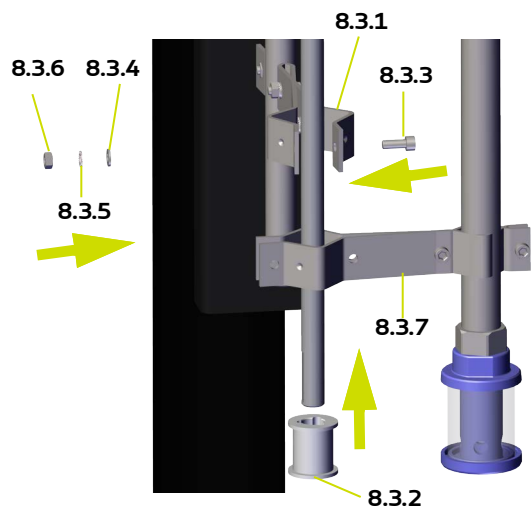
- **Step 5:**
Place the geared motor (7.2) equipped with its extension (7.3) in the centre of the cover (6).



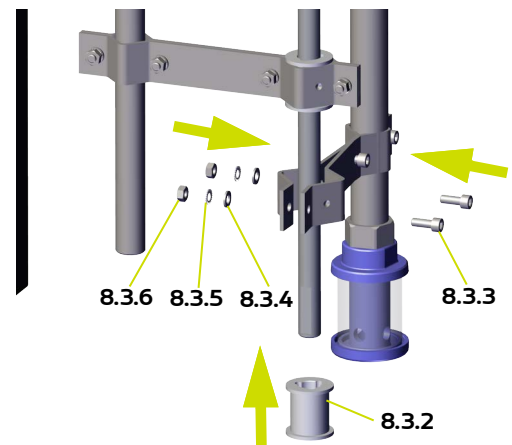
- **Step 6:**
Tighten it by means of the 4 screws (7.9) and of the 8 washers (7.7 & 7.8) by means of a 13 mm flat wrench.
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



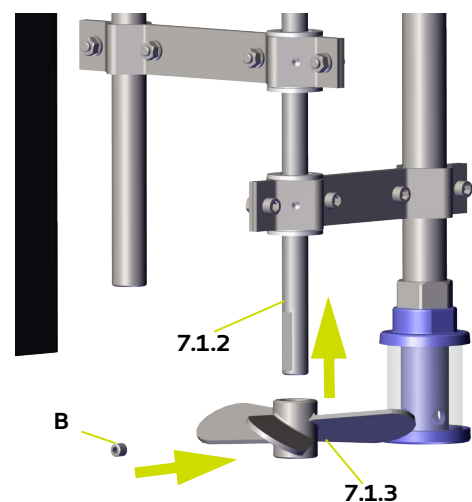
- **Step 7:**
Spread the 2 tabs (8.3.1 & 8.3.7) and insert the ring (8.3.2).
- **Step 8:**
Position washers (8.3.4 & 8.3.5) and nuts (8.3.6).
- **Step 9:**
Tighten the 2 screws (8.3.3) with a 5 mm Allen key, holding the nuts (8.3.6) with a 10 mm open-end wrench.



- **Step 10:**
Repeat steps 7 to 9 to install the ring on the other bracket.



- **Step 11:**
Place the propeller (7.1.3) on the agitator rod (7.1.2).
- **Step 12:**
Apply glue (Loctite 5772) on the screw (B).
- **Step 13:**
Tighten the screw (B) by means of a 6 mm hex key.
Tightening torque: 17 N.m. / 12.5 Ft.Lbs



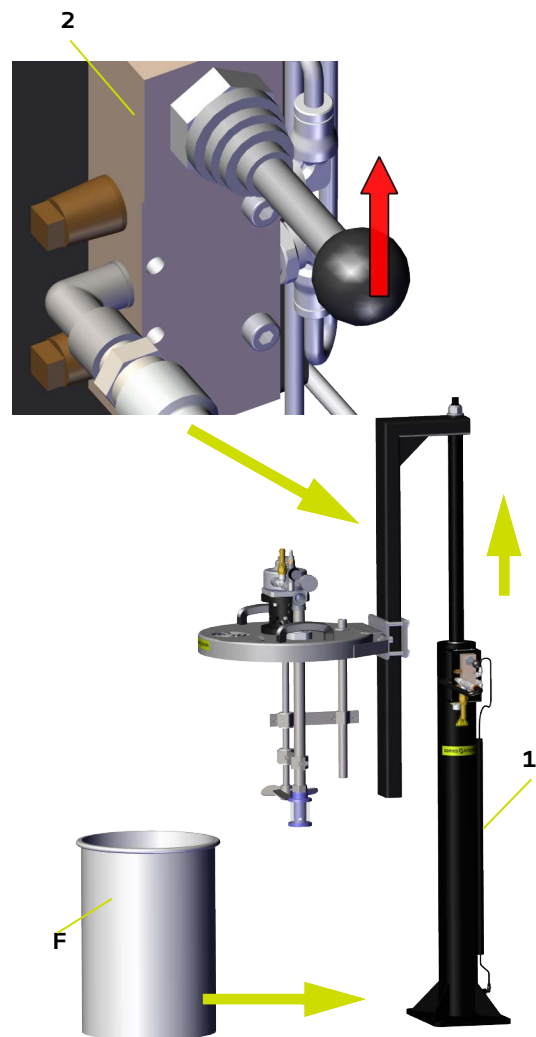
- **Step 14:**
Hold the pneumatic control lever (2) of the ram (1) upwards.

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

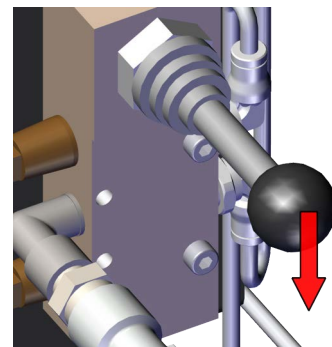
- **Step 15:**
Place a drum (F) under the agitator assembly.



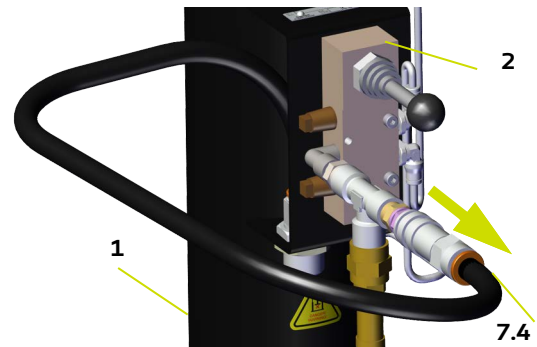
Center the drum (F) in relation to the cover to avoid any risk of friction and sparks, especially for the propeller.



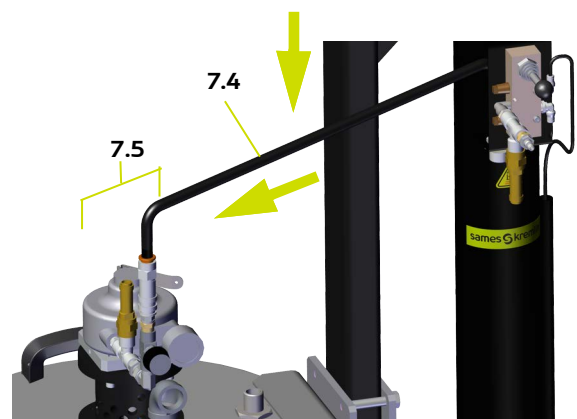
- **Step 16:**
Hold the pneumatic control lever (2) of the ram (1) down.
Arm/cover assembly lowers to bottom stop.



- **Step 17:**
Disconnect air supply hose quick coupling (7.4) from pneumatic control distributor (2) on elevator (1).



- **Step 18:**
connect it to the agitator air inlet.
- **Step 19:**
Adjust speed using air regulator (7.5). Check speed through inspection hatch.
- **Step 20:**
Slightly loosen the air regulator knob (7.5) – Maximum 5.5 bar / 79.8 psi – to let the motor run slowly for a few seconds, then bring it up to nominal speed.



**Do not operate the agitator out of a drum or at too high a speed.
This can lead to paint deterioration, vibration and premature wear of parts.
Do not run the equipment empty.**

- **Step 21:**
Close the inspection hatch.
The equipment is ready to use.

6.4.3.3. Procedure C3: disassembly of the propeller (7.1.3)



To carry out the disassembly of the propeller (7.1.3), perform steps from 1 to 11 of the procedure C1: disassembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7.1) [see § 6.4.3.1 page 59](#).

6.4.3.4. Procedure C4: re-assembly of the propeller (7.1.3)



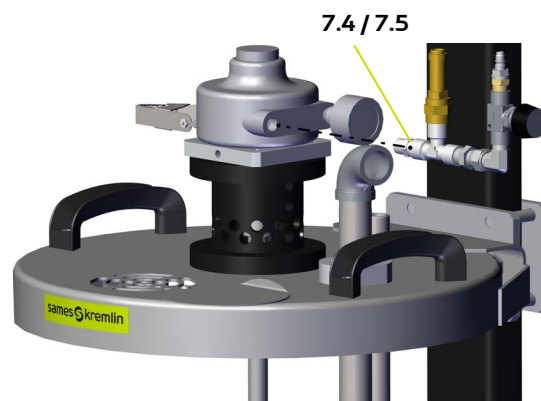
To carry out the re-assembly of the propeller (7.1.3), perform steps from 11 to 22 of the procedure C2: re-assembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7.1) [see § 6.4.3.2 page 63](#).

6.4.3.5. Procedure C5: disassembly of the motor (7.2)

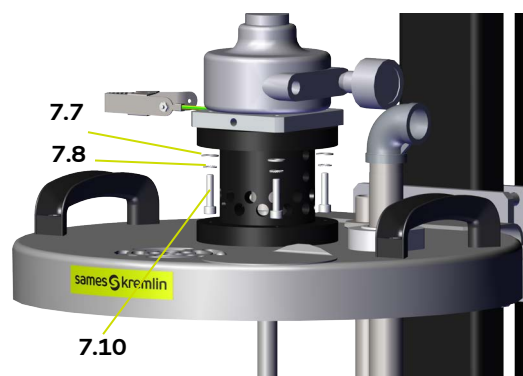


To carry out the disassembly of the motor (7.2), perform steps 1 to 11 in their entirety of the procedure C1: disassembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal agitator (7.1) [see § 6.4.3.1 page 59](#). Then follow these steps:

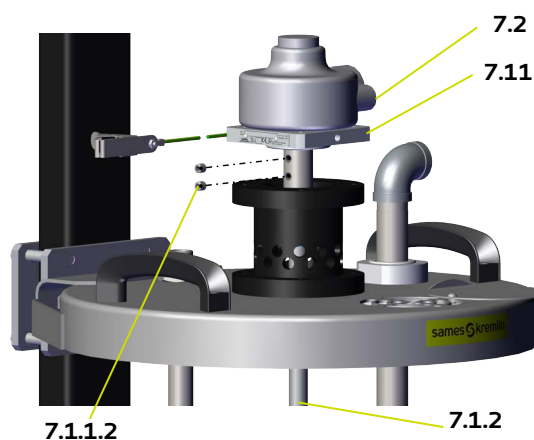
- **Step 12:**
Unscrew the air equipment (7.4 / 7.5) using a 14 mm open-end wrench.



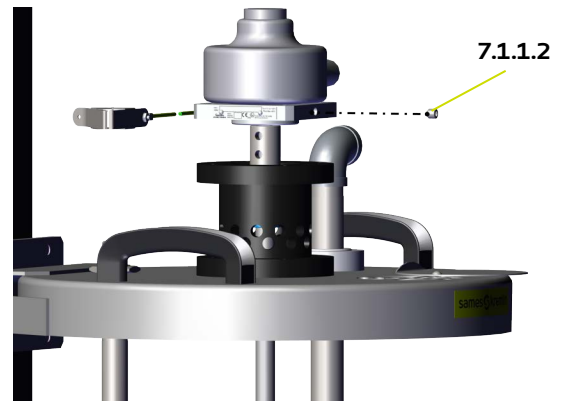
- **Step 13:**
Unscrew the 4 screws (7.10) using a 5 mm Allen key.
- **Step 14:**
Retrieve the 8 washers (7.7 & 7.8).



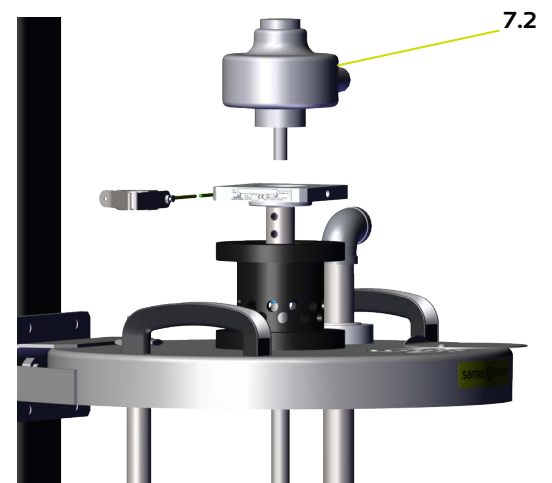
- **Step 15:**
Lift motor/flange/rod assembly (7.2, 7.13 & 7.1.2).
- **Step 16:**
Unscrew the 2 screws (7.1.1.2) using a 4 mm Allen key.



- **Step 17:**
Unscrew screw (7.1.1.2) using a 4 mm Allen key.



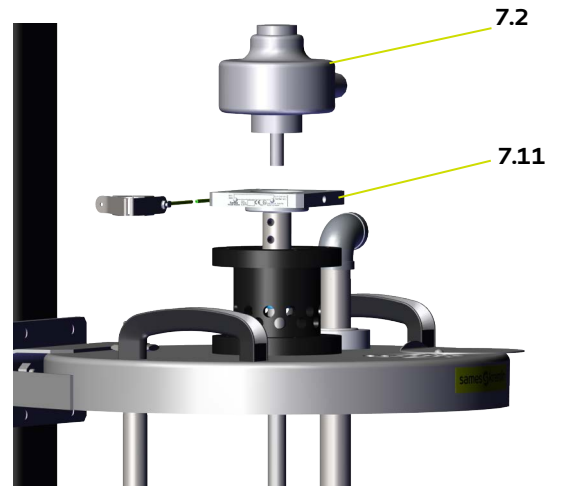
- **Step 18:**
Remove motor (7.2).



6.4.3.6. Procedure C6: Reassembly the motor (7.2)

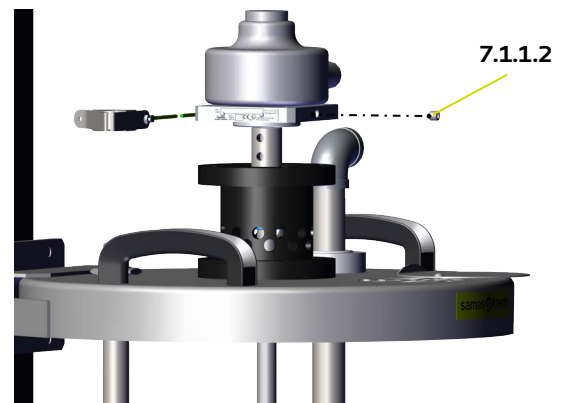
- **Step 1:**

Position motor (7.2) on flange (7.11).



- **Step 2:**

Tighten screw (7.1.1.2) using a 4 mm Allen key.



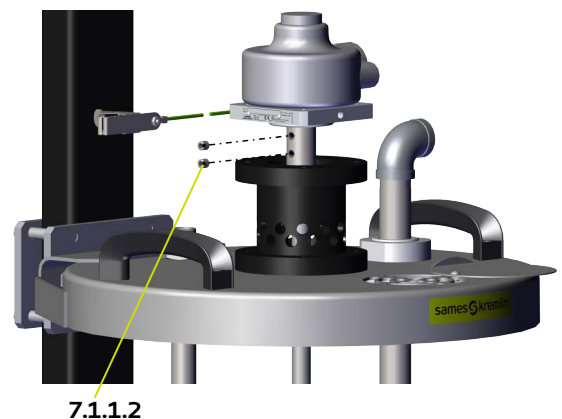
- **Step 3:**

Tighten screw (7.1.1.2) using a 4 mm Allen key.

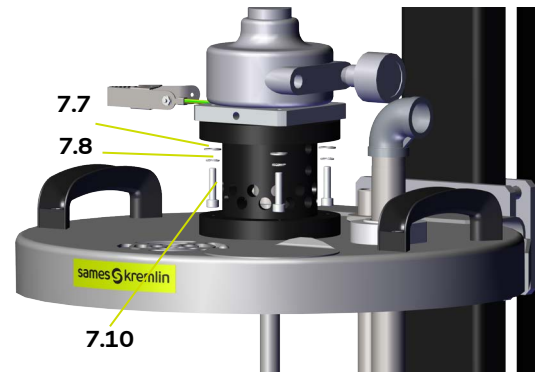
- **Step 4:**

Screw them onto the coupling sleeve (7.1.1.1) using a 4 mm Allen key.

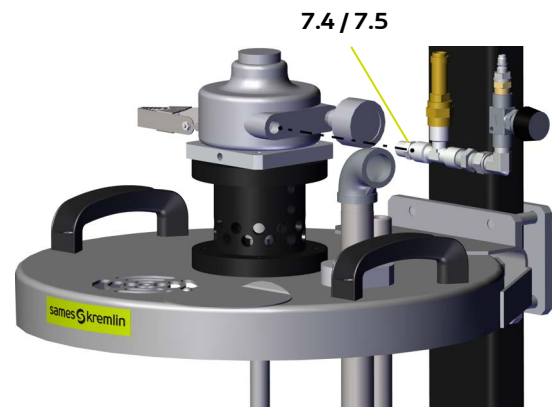
Tightening torque: 17 N.m.



- **Step 5:**
Position the 8 washers (7.7 & 7.8) and tighten the 4 screws (7.10) using a 5 mm Allen key.

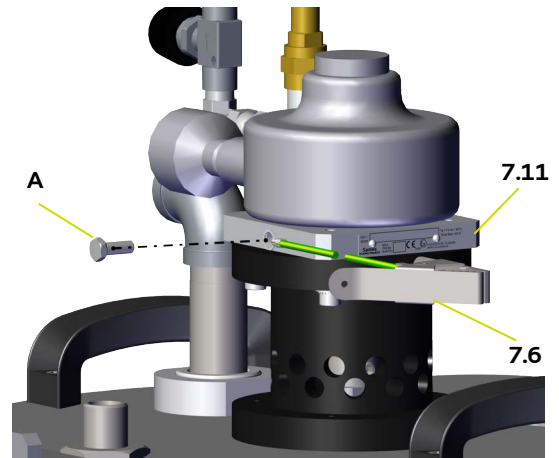


- **Step 6:**
Screw on air equipment (7.4 / 7.5) using a 14 mm open-end wrench.
- **Step 7:**
To reassemble the propeller (7.1.3), perform steps 11 to 21 of procedure C2: reassemble 40 L / 60 L agitator (7.1) [see § 6.4.3.2 page 63](#).



6.4.3.7. Procedure C7: Dismantle the grounding cable (7.6)

- **Step 1:**
Loosen locking screw (A) using a 10 mm open-end wrench.
- **Step 2:**
Manually remove ground terminal (7.6) from flange (7.11).

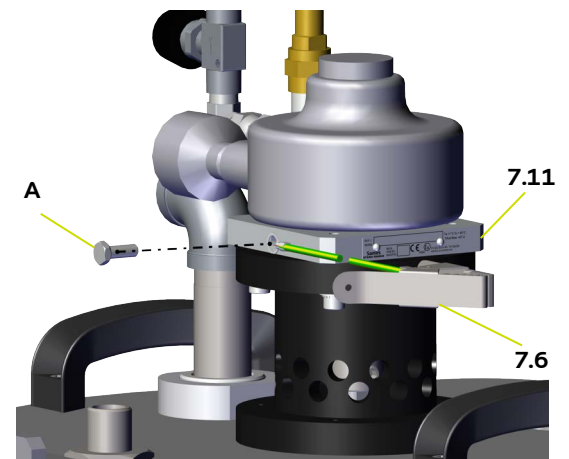


6.4.3.8. Procedure C8: reassemble grounding cable (7.6)

- **Step 1:**
Mount the ground terminal (7.6) on the motor (7.2).
- **Step 2:**
Tighten locking screw (A) using a 10 mm open-end wrench.



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



6.4.4. Procedure D: maintenance of the 40 L / 10.6 US gal – 60 L / 15.9 US gal suction assembly (8)

6.4.4.1. Procedure D1: disassembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal suction assembly (8)



To disassemble the 40 L / 60 L suction–return assembly (8), complete steps 1 to 16 of procedure B1: Remove cover (7.1). [see § 6.4.2.1 page 49](#).

6.4.4.2. Procedure D2: Re-assembly of the 40 L / 10.6 US gal – 60 L / 15.9 US gal suction assembly (8)



To reassemble the 40 L / 60 L suction–return assembly (8), complete steps 21 to 38 of the commissioning procedure. [see § 5.1.1 page 25](#).

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 the propeller.	Check the screw of the propeller. 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 40 L / 10.6 US gal – 60 L / 15.9 US gal



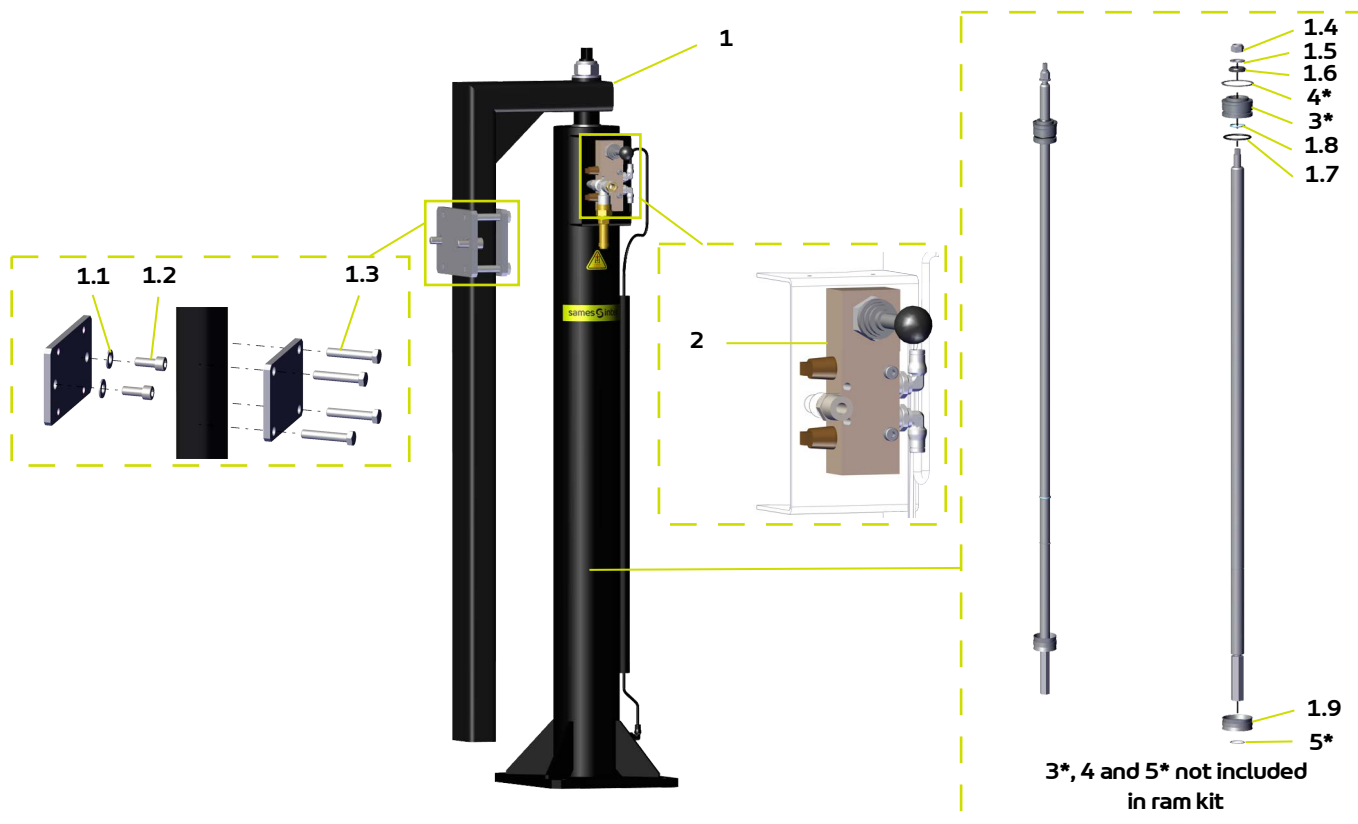
Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
-	-	Cyclix agitation unit 40 L / 10.6 US gal – 60 L / 15.9 US gal	1	0	-

(*)

Level 1: 1st emergency parts

Level 2: Wear parts

8.1.1. Wear parts

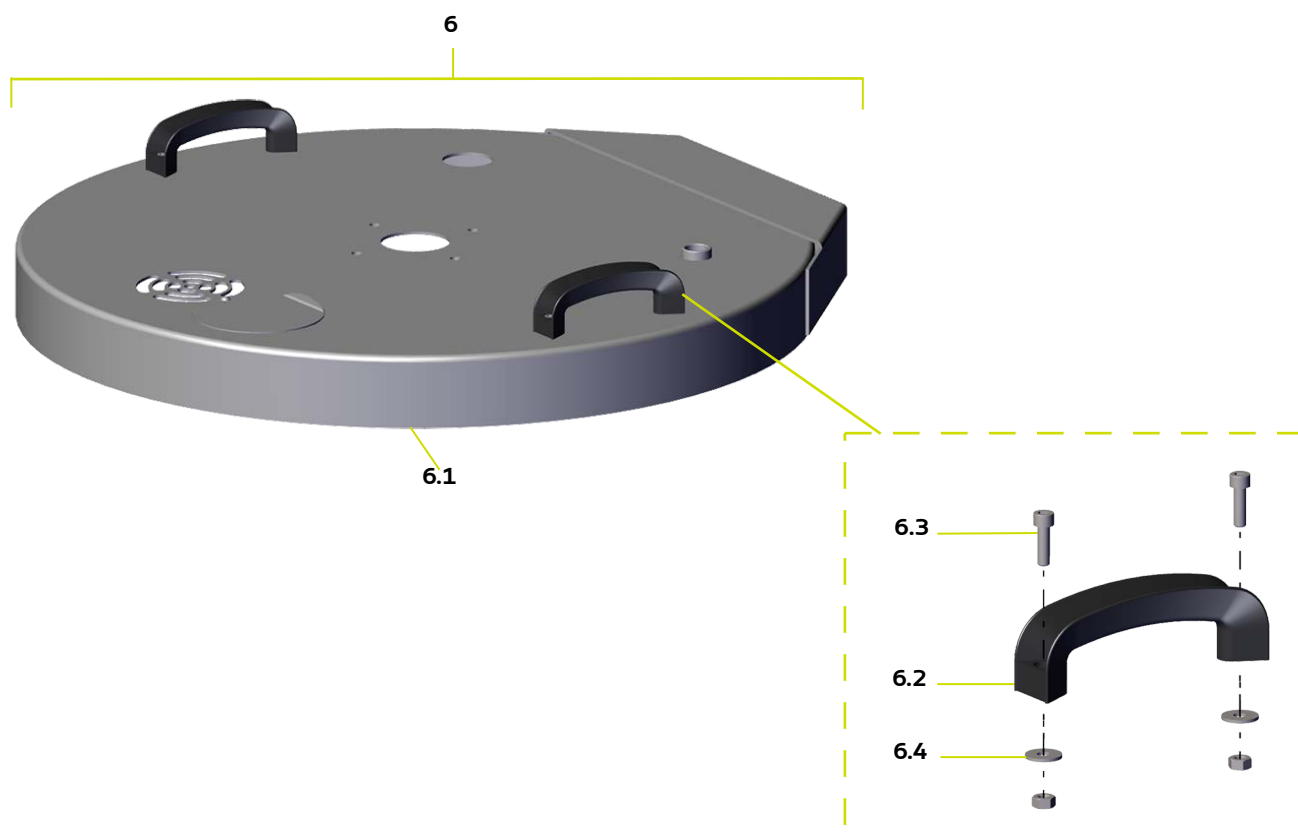


Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
1	151 081 000	40 L / 10.6 US gal – 60 L / 15.9 US gal ram + arms + fixation	1	1	1
1.1	963 040 021	• Washer MN 10	2	1	1
1.2	88 170	• Screw CHc M 10 x 25	2	1	1
1.3	88 754	• Screw HM 10 x 55	4	1	1
1.4	88 338	• Steel nut M20	1	1	1
1.5	963 040 027	• Washer MN 20	1	1	1
1.6	203 222	• Seal	1	1	2
1.7	909 130 340	• Viton black ring R38	1	1	2
1.8	81 025	• NBR black O Ring	1	1	2
1.9	-	• Seal	1	0	-
2	154 261 910	3 way valve ram control	1	1	1
3	-	Guide ring	1	0	-
4	88 489	Circlips	1	1	1
5	88 497	Circlips	1	1	1

(*)

Level 1: 1st emergency parts

Level 2: Wear parts

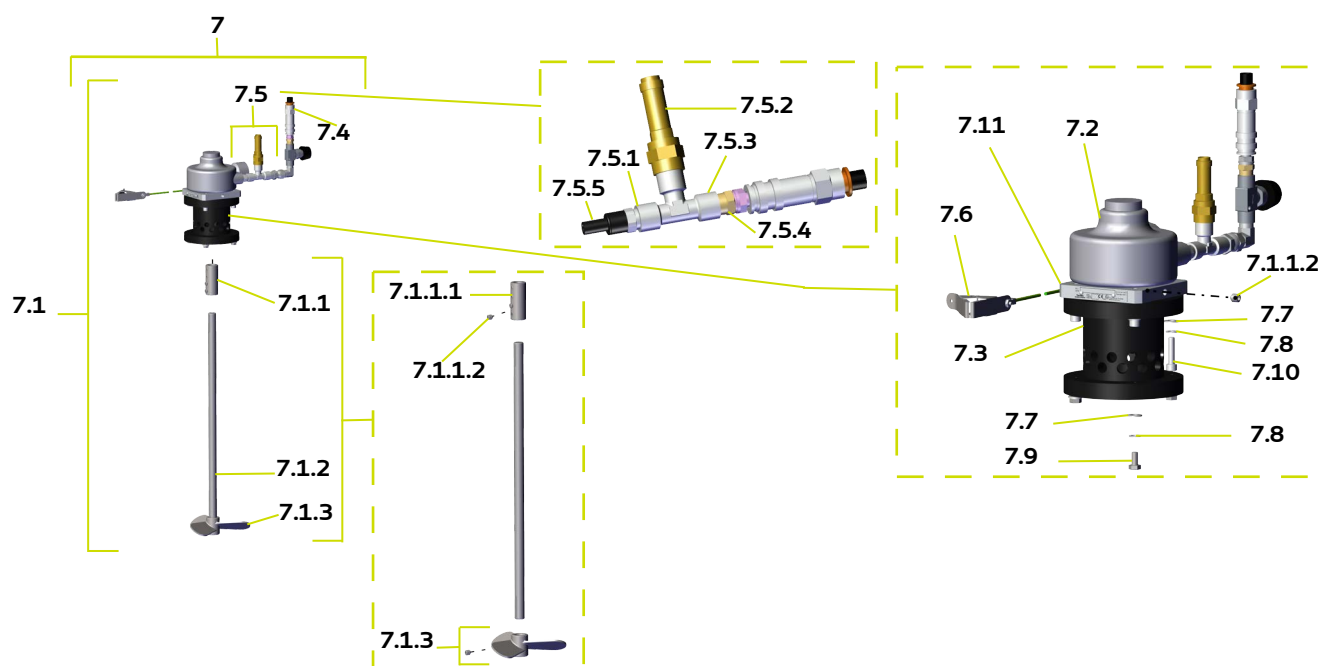


Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
6	154 261 600	Cyclix cover for 40 L / 10.6 US gal - 60 L / 15.9 US gal agitator	1	1	1
6.1	-	• Cover	1	0	-
6.2	91 929	• Handle	2	1	1
6.3	-	• Screw CHc M 6 x 20 stainless steel	4	0	-
6.4	-	• Nut HM 6 stainless steel	4	0	-

(*)

Level 1: 1st emergency parts

Level 2: Wear parts

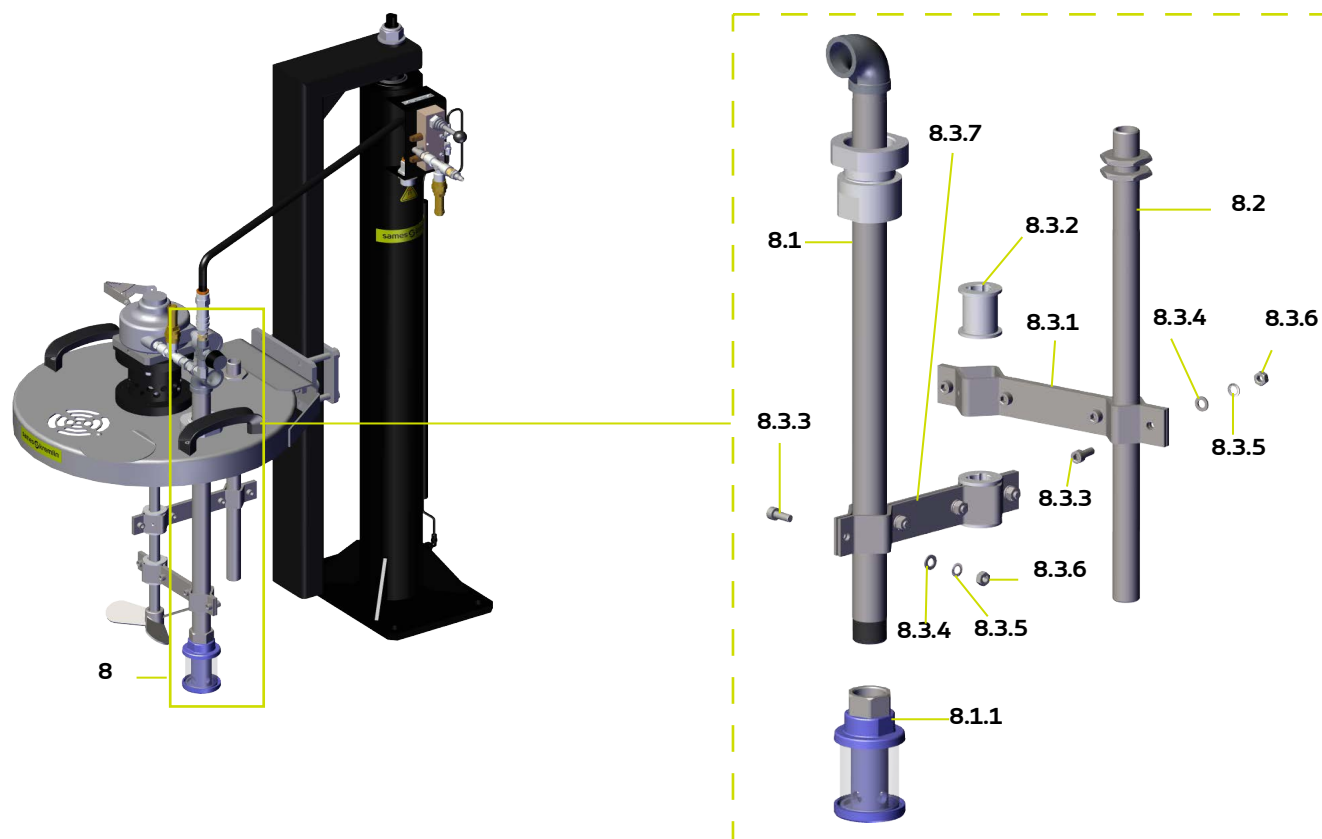


Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
7	154 261 700	40 L / 10.6 US gal - 60 L / 15.9 US gal agitator Cyclix	1	1	1
7.1	154 261 751	• 40 L / 10.6 US gal - 60 L / 15.9 US gal agitator Cyclix	1	1	1
7.1.1	91 562	• Coupling sleeve	1	1	1
7.1.1.1	-	• Coupling sleeve	1	0	-
7.1.1.2	934 171 124	• Screw HC M 8 x 8	5	1	1
7.1.2	054 261 699	• Agitator rod	1	1	1
7.1.3	154 261 951	• Stainless steel propeller Ø 150 mm	1	1	2
7.2	146 020 400	• GAST 2AM motor	1	1	1
7.3	046 020 464	• Extension	1	1	1
7.4	154 261 930	• Air supply assembly	1	1	1
7.5	154 260 101	• PTM air flow regulator assembly	1	1	1
7.5.1	905 120 904	• Connector M 1/4 - 6x8 tube	1	1	1
7.5.2	903 080 401	• Pressure relief valve 6.5 bar / 94 psi	1	1	1
7.5.3	-	• Tee FFF 1/4"	1	0	-
7.5.4	-	• Reducing bushing MF 1/4" - 1/8"	1	0	-
7.5.5	-	• Tube PU 8x12	1	0	-
7.6	901 180 124	• Ground wire - Length : 5m	1	1	1
7.7	963 040 016	• Washer MN6 galvanized	8	1	1
7.8	-	• Washer AZ6 galvanized	8	0	-
7.9	934 011 170	• Screw H 6x12 stainless steel	4	1	1
7.10	933 151 332	• Screw Chc M 6x25 galvanized steel	4	1	1
7.11	-	• Flange	4	0	-

(*)

Level 1: 1st emergency parts

Level 2: Wear parts



Item	Part number	Description	Qty	Sales unit	Spare parts level (*)
8	154 261 800	40 L / 10.6 US gal - 60 L / 15.9 US gal suction assembly	1	1	1
8.1	-	• 40 L / 10.6 US gal - 60 L / 15.9 US gal	1	0	-
8.1.1	154 261 940	• Strainer (pack of 2)	1	1	2
8.2	-	• 20 to 30 L / 5.3 to 8 US gal return tube	1	0	-
8.3	154 260 588	• Agitator support 40 L / 10.6 US gal - 60 L / 15.9 US gal	1	1	1
8.3.1	-	• Agitator support 40 L / 10.6 US gal - 60 L / 15.9 US gal	1	1	1
8.3.2	210 930	• Ring	2	1	2
8.3.3	88 512	• Screw Chc M 6x16	8	1	1
8.3.4	88 548	• Flat washer M 6	8	1	1
8.3.5	88 558	• Stainless steel washer AZ 6	8	1	1
8.3.6	954 010 016	• Nut H M 6	8	1	1
8.3.7	-	• Agitator support bar	8	0	-

(*)

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 6.2 (x2), 6.3 (x4), 6.4 (x4))	1	1	1 - 2



The washers (x4) contained in the repair kit are not to be fitted with your cover, version 40 L /10.6 US gal.

(*)

Level 1: 1st emergency parts

Level 2: Wear parts

8.1.2.2. Package of seals

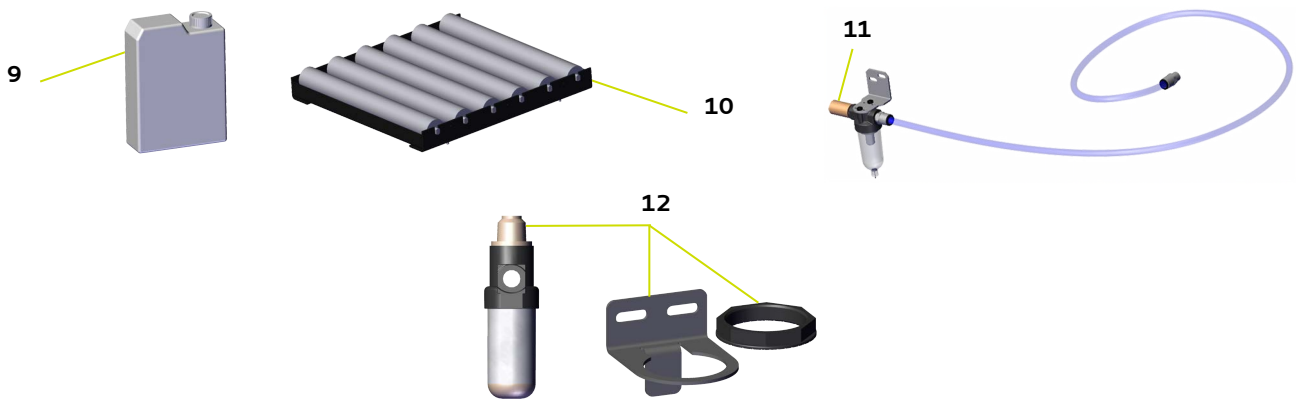
Part number	Description	Qty	Sales unit	Spare parts level (*)
154 261 915	Package of seals (item 1.6, 1.7, 1.8, 1.9)	1	1	1 - 2

(*)

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	149 990 017	HP 150 oil (2L drum)	1	1	1 - 2
10	151 098 100	200 L / 52.8 US gal roller table	1	1	1 - 2
11	154 261 996	Air filter 1/4	1	1	1 - 2
12	154 261 997	Air lubricator 1/4 + support	1	1	1 - 2

(*)

Level 1: 1st emergency parts

Level 2: Wear parts

9. History of Revision Indices

Created by		Verified by	Approved by:
Date	By	Index	Purpose of the modification and location
03/12/2025	C. Husson / F.Seguin	A	Creation of instruction manual in Framemaker
06/03/2025	F.Seguin	B	Amendment to the declaration
06/24/2025	F.Seguin	C	Addition of information regarding the risk of electrostatic discharge
04/14/2026	F.Seguin	D	Add PMP + declaration + update web links

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 / <i>This average intervention time is given for information and should be adjusted by the operating teams on site.</i> (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 / <i>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.</i> (3) M : Mécanicien - F : Spécialiste fluide - E : Electricien - A : Automaticien / <i>M : Mechanic - F : Fluid specialist - E : Electrician - A : Automation specialist</i> (4) 1 = Niveau de Base, 2 = Niveau Avancé / <i>1 = Basic level, 2 = Advanced level</i>																
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. <i>Check that the motor is grounded using a ground cable. Connect the other end to a safe earth.</i>	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. <i>Check that the ram is earthed with a second ground cable, as the foot of the ram is fitted with a threaded rod.</i>												
3			Tuyaux Hoses	Vérification l'état et le bon fonctionnement <i>Checking the state and proper functioning</i>	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. <i>Check the state and the correct tightening.</i>	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. <i>Check the state and the correct tightening.</i>	0.17	0.10	A chaque utilisation At each use	X				1			Avant chaque début de production Before each production start	
6		Elévateur 40L / 60L + bras + fixation 40L / 10.6 US gal - 60L / 15.9 US gal ram + arms + fixation		Vérifier le maintien en position haute. <i>Check that the ram is held in the up position.</i>	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. <i>Check if there is no air leakage.</i>	1.67	1.00	1/mois 1/month	X				1				
8				Vérifier l'état des tuyaux d'air de pilotage des vérins. <i>Check the condition of the rods' air hoses.</i>	1.67	1.00	1/mois 1/month	X				1			A remplacer si endommagé Replace if broken	
9				Nettoyer les tiges de vérin (position haute). Les graisser. <i>Clean the rods (up position). Grease them.</i>	1.67	1.00	1/mois 1/month	X				1		Pince au Brush		
10				Remplacement Replacement	3.33	2.00	1/an 1/year	X				1			A remplacer si endommagé Replace if broken	

PLAN DE MAINTENANCE PREVENTIVE / PREVENTIVE MAINTENANCE PLAN

Numéro d'ordre Serial	Ensemble - <i>Assembly</i>	Sous ensemble <i>Sub assembly</i>	Désignation de l'élément <i>Designation of the assembly</i>	Pour 1 ensemble - <i>For 1 assembly</i>			Acteurs Métiers <i>Operators - skill</i> (3)				Niveau <i>Level</i> (4)		Manuel d'utilisation <i>Instruction manual</i>	Outil <i>Tool</i>	Document <i>Note</i>	
				Action à effectuer <i>Action to carry out</i>	Temps prévu <i>Estimated Time</i> (1)		Périodicité <i>Periodicity</i> (H / hour) (2)	M	F	E	A	1				2
					100eme H	mn										
11	Cyclix 40L / 60L Cyclix 40L / 10.6 US gal - 60L / 15.9 US gal		Joints <i>Seals</i>	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 40L / 60L <i>Cyclix cover for 40L / 10.6 US gal - 60L / 15.9 US gal agitator</i>	Couvercle Cyclix pour agitateur 40L / 60L <i>Cyclix cover for 40L / 10.6 US gal - 60L / 15.9 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 40L / 60L - Moteur GAST - 1 hélice marine 40L / 10.6 US gal - 60L / 15.9 US gal agitator -GAST motor - 1 propeller	Agitateur 40L / 60L - Moteur GAST - 1 hélice marine 40L / 10.6 US gal - 60L / 15.9 US gal agitator -GAST motor - 1 propeller	Vérifier que l'écartement entre le fût et les organes en rotation (hélice, axes,...) soit suffisant. <i>Check that there is sufficient distance between the drum and rotating parts (propeller, 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			Hélice <i>Propeller</i>	Vérifier le serrage de l'hélice. <i>Check propeller 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				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			Ensemble alimentation d'air <i>Air supply assembly</i>	Vérifier le filtre d'air. <i>Check the air filter.</i>	1.67	1.00	1/mois <i>1/month</i>	X				1				
18				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 GAST 2AM <i>GAST 2AM motor</i>	Vérifier le moteur ainsi que le serrage et les pistons. <i>Check the 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		Ensemble aspiration retour 40L / 60L 40L / 10.6 US gal - 60L / 15.9 US gal suction assembly	Canne d'aspiration et canne de retour <i>Suction rod and tube</i>	Vérifier le serrage de la canne d'aspiration et du tube. <i>Check suction rod and tube 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>	
###	Pièces de rechange <i>Spare parts</i>	Stock <i>Stock</i>	Pièces <i>Spare parts</i>	Vérification disponibilité des pièces de première urgence. <i>Checking availability of spare parts</i>	8.33	5.00	2 fois/an <i>2 times/year</i>	X	X			1	2			

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.

(2) Equipment type	CYCLIX AGITATOR_40-60L / 10.6-15.8 US GAL DRUMS WITH GAST MOTOR		
(3) Applicable Directives	2006/42/CE	(4) The relevant technical documentation was compiled as specified in annex VII, part B.	
		The essential health and safety requirements mentioned in the Directive 2006/42/CE on Machinery have been applied. Articles: 1.1.2, 1.1.5, 1.1.6, 1.1.7, 1.2.1, 1.2.3, 1.3.3, 1.3.7, 1.5.2, 1.5.4, 1.5.7, 1.5.8, 1.5.13, 1.6.1, 1.6.4, 1.7.4.1, 1.7.4.2	
	(5) That partly completed machinery is also in conformity with the provisions of		
	2014/34/UE	(6) Marking	CYCLIX AGITATOR_40-60L / 10.6-15.8 US GAL DRUMS WITH GAST MOTOR II1/2G Ex h IIC T4 Ga/Gb Ex h => Protection par sécurité de construction (c) / Protection by constructional safety (c)
		(7) Harmonised standards	EN ISO 80079-36 : 2016 EN ISO 80079-37 : 2016 EN 1127-1 : 2019
		(8) Conformity assessment procedure	Module B: EU type Examination (Annex III)
(9) Notified body		INERIS 0080 – 60550 Verneuil-en-Halatte – France – INERIS-EQEN Attestation d'examen UE de type / EU Type examination : INERIS 24ATEX0010X Conditions spéciales d'utilisation, le signe X indique des conditions spéciales figurant dans le certificat concernant le produit. Specific conditions of use, X indicates special conditions appearing in the certificate of the product. Notification Assurance Qualité / Quality Assurance Notification : INERIS 25ATEXQ402	
(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. 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.			

Director of the STAINS site - Executive Management (EM)

Hervé WALTER
Established in Stains,

30-juin-26 | 08:47 CEST

DocuSigned by:

Hervé WALTER

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Sames

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DEC EU 578166130

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