



GERMANY

LABORATORY TECHNOLOGY®
Buddeberg
WWW.BUDEBERG.DE

Operating instructions BA 2022-001 PMC for compressed air container stirrers



Buddeberg GmbH
Mallastr. 49
DE-68219 Mannheim

Tel.: +49 (0) 621-87690-0
Fax: +49 (0) 621-87690-95
E-Mail: info@Buddeberg.de
Web: www.Buddeberg.de



Contents

1. Important notices	Page 2
1.1 Important note symbols.....	Page 2
1.2 Important general notices	Page 2
2. Safety instructions.....	Page 3
2.1 General safety instructions	Page 3
2.2 Additional safety instructions when used in potentially explosive atmospheres	Page 3
2.3 Hazards from ignition sources in the mixing container	Page 3
2.4 Sources of ignition from differences in potential.....	Page 4
3. Technical data	Page 4
3.1 General technical data	Page 4
3.2 Specific technical data	Page 4
3.3 Markings	Page 4
3.4 Temperature classes	Page 5
4. Installation.....	Page 5
4.1 Before you start.....	Page 5
4.2 Pneumatic installation	Page 5
4.3 Adjustment	Page 5
4.4 Mounting the compressed air container stirrer	Page 5
4.5 Fitting the connection coupling	Page 5
4.6 Fitting the stirring rotor	Page 5
5. Putting into service	Page 6
6. Maintenance and repair.....	Page 6
7. Lubrication	Page 6
8. Guarantee.....	Page 6
9. Accessories	Page 7
9.1 Accessories.....	Page 7
9.2 Stirring rotors	Page 7

1. Important notices

1.1 Important note symbols

Failure to observe these danger and safety notices can lead to serious personal injury !



Danger



Information and safety notices



Important notices on explosion protection

1.2 Important general notices

The compressed air container stirrers from Buddeberg GmbH are explosion-protected according to the current ATEX regulation 2014/34/EU and are assigned to device categories II, explosion group IIB, zone 0 and 1 (gas atmosphere G), see marking on the stirrer.

2. Safety instructions

2.1 General safety instructions

Introductory remarks

Read through these instructions carefully before using the compressed air container stirrer for the first time. Please also take account of the supplementary safety instructions in the individual chapters of these operating instructions.

During and after use, the stirring rotor and the moving parts may very possibly have hot surfaces.


All work with respect to setting-up, connections, commissioning, maintenance and repair may only be carried out by properly qualified specialist personnel. Improper use and incorrect installation or operation can lead to serious personal injury and damage to property.

Handling compressed air

- Always wear protective glasses.
- Do not remain in a direct line with the jet of compressed air.
- Do not attempt to operate the appliance with other gases or liquids.
- Do not operate the appliance with pressures higher than that which is recommended for it.
- Damage may occur if the appliance is operated at higher speeds than those recommended.

Use for the intended purpose

The compressed air container stirrers are designed for all mixing tasks in the laboratory, technical colleges or in production for dispersion, emulsifying, homogenising, suspending and blending.

 They comply with all current standards and regulations and fulfil the requirements laid down by the Directive 2014/34/EU (ATEX). The technical data and the details of permitted conditions are to be found in this documentation with a declaration of conformity. **All specifications must be followed scrupulously! Buddeberg GmbH disclaims any liability arising from alterations undertaken to the compressed air stirrers and mixers without prior consultation with Buddeberg GmbH and the latter's written agreement.**

2.2 Additional safety instructions when used in potentially explosive atmospheres

Explosive gas mixtures or concentrations of dust in conjunction with hot and moving parts of the stirrer can lead to serious or even fatal injury.


All work with respect to setting-up, connections, commissioning, maintenance and repair may only be carried out by properly-qualified specialist personnel, taking into account

- these instructions and the declaration of conformity
- the warning and instruction labels on the stirrer
- all other documentation and commissioning instructions related to the stirrer
- any instructions and requirements specific to the plant
- currently-valid national/regional regulations (explosion protection, safety, accident prevention)

2.3 Hazards from ignition sources in the mixing container

- Monitoring the content level is prescribed in order to avoid the mechanical generation of sparks from friction, striking or wearing processes.
- To avoid electrostatic loading in liquids, these liquids must have a conductivity of $>10^{-8}$ S/m.
- It must be ensured that the stirring level remains fully immersed during operation.
- The stirring container must be authorised for ATEX operations. If containers are made of plastic, these must be conductive. In case of doubt, clarify this with the manufacturer.

2.4 Sources of ignition from differences in potential

To avoid generation of sparks due to potential differences, an earthing cable must be firmly attached to the stirrer at the point provided. The bolts equipped with the Earth symbol  can be found laterally on the crossbeam.


PMC-type container stirring units can also alternatively be earthed via the steel frames of the IBC container. It must hereby be observed that the star bolts for fixing the stirring unit crossbeam fits tightly to the frame of the container and that a metallic contact between the stirring unit and the frame is ensured.

3. Technical data

3.1 General technical data

Working pressure: Maximum 6 bar, a reduction is permitted at any time

Temperature range: Ambient temperature in normal operation (not potentially explosive atmosphere):
 $-20^{\circ}\text{C} \leq \text{TA} \leq +80^{\circ}\text{C}$

 Ambient temperature in a potentially explosive atmosphere: $-20^{\circ}\text{C} \leq \text{TA} \leq +40^{\circ}\text{C}$


The temperature of the compressed air used must not exceed the maximum permitted ambient temperature.

3.2 Specific technical data

Type	Power output	No-load speed rpm	Torque Nm	Pressure max. bar	Air consumption litres/sec. at 6 bar unstressed	Article No. EAN-No.
PMC 120/300	1.2 kW	300	63	6	23	40 26446 00810 0
PMC 120/600	1.2 kW	600	38	6	23	40 26446 00811 6
PMC 120/1000	1.2 kW	1000	19	6	23	40 26446 00812 3

3.3 Markings

Marking sample, type PMC 120/300:

Buddeberg GmbH Mallaustr. 49 68219 Mannheim	Manufacturer
PMC 120-300	Appliance type
max. 6 bar	max. pressure
Art-Nr: 4026446008100	Article number
Ser-Nr: 123456 / 2022	Serial number / year of manufacture
 II 1/2G Ex h IIB T4 Ga/Gb	ATEX marking


Information on explosion safety	
Equipment group:	II
Equipment category:	1/2G
Ignition protection type(s):	Ex h
Explosion group:	IIB
Temperature class:	T4
Equipment safety level	Ga/Gb

3.4 Temperature classes

The temperature classes designate the maximum permitted surface temperature of the used appliances. Unless otherwise specified, the compressed air container stirrers are classified in temperature class T4 (max. 135°C).

4. Installation

4.1 Before you start

 The compressed air stirrer may only be assembled when the details on the rating plate correspond with the permitted potential explosive atmosphere on the site and the stirrer is undamaged.

4.2 Pneumatic installation

For maximum safety, performance and service life, the compressed air container stirrers should be operated with a maximum air pressure of 6 bar and a corresponding compressed air tubing (see accessories).

The working air must be clean and dry (insert a service unit for this purpose). Do not use worn or damaged compressed air tubing or connections. Care must be taken that all tubing and connections are of the correct size.

4.3 Adjustment

Lubrication: For continuous operation, a lubricator is to be installed in the compressed air feed, and it must be set to feed one drop of oil per approximately 2 m³ of compressed air.

Speed regulation: The speed of the stirrer is controlled by the valve mounted on the stirrer.


4.4 Mounting the compressed air container stirring unit

Mounting of the compressed air container stirring unit occurs over the mounted crossbeam on the IBC container. Before putting it on, the 4 star bolts on the crossbeam must be opened insofar as the frame of the container fits securely into the recesses provided.

Subsequently, the 4 star bolts must be closed, whilst ensuring that all 4 bolts make contact with the frame of the container.

The motor is placed on the bolt circle of the crossbeam provided and attached with the bolts supplied.

4.5 Fitting the connection coupling

 In ex-operation, only use the connection couplings from our range of accessories. Please note that, for safety reasons, drill chucks may not be used in potentially explosive areas.

Separate the stirrer from the compressed air supply.

Before fitting the connection coupling, ensure that the take-off shaft from the stirrer is neither dirty nor damaged. Fasten the connection coupling to the drive shaft of the motor and fix the locking screws using a suitable tool.

4.6 Fitting the stirring rotor



Separate the stirrer from the compressed air supply.

Before fitting the stirring rotor, ensure that the stirrer shaft is neither dirty nor damaged. Fasten the stirring rotor to the connection coupling provided and fix the locking screws using a suitable tool.


Both stirring blades of the swing-out stirring system BuddeMix SW are mounted onto both booms without using tools. If mounted correctly, the flat sides of the blades face outwards and can move freely on the axle.

When inserting the stirrer through the IBC container bung, both free-swinging blades of the stirring tool must be facing downwards.

5. Putting into service

-  • **Before connecting to the compressed air supply and putting into service, ensure that the valve on the stirrer is closed.**
- Check that the pressure is at max. 6 bar from the compressed air supply. This will guarantee an optimum start when the speed regulator valve is opened.
- Compressed air container stirrers must not be used under no-load conditions or in pass-through operation. The stirring level must be constantly immersed in the liquid.
- Only use stirring rotors from the range of accessories provided. Wait until the motor has come to a standstill and the compressed air supply is disconnected before removing the stirring rotors.
-  • Disconnect the compressed air container stirrers from the compressed air supply once the working process is completed.

6. Maintenance and repair

- Maintenance and repairs may only be carried out by the manufacturer or trained personnel. If the compressed air container stirrer is faulty, please contact the manufacturer.
- Only original Buddeberg replacement parts may be used.
- Before maintenance work is carried out, the compressed air stirrers must be disconnected from the compressed air supply.
- The filter in the service unit must be cleaned regularly and emptied of condensate while the stirrer is in use.
- Check the oil level regularly in the lubricator and top up as necessary.
-  • In order to conform to the safety regulations in accordance with the ATEX Directive 2014/34/EU, vanes and ball bearings need to be changed immediately on deterioration of power. Please contact the manufacturer.

7. Lubrication

- Only use the types of lubricating oil listed below:
Shell – Tellus HL/HLP 32 | Aral – Vitam GF 32 | BP – Energol HL P 32 | Fuchs Renolin B 10
- Only use the types of lubricating grease listed below:
Fuchs – Renolit LX-GFL 0/00
- When used in the food industry:
Food grade oil according to USDA-H1 and/or FDA 178.3570 viscosity class 32
Grease: USDA-H1 and/or FDA 178.3570, NLGI class: 2 – DIN 51818

8. Guarantee

The manufacturer provides a guarantee of 12 months on material and construction defects. Damage arising from wear, overuse or improper use is not covered by the guarantee.

9. Accessories

9.1 Accessories

	Article no.
Connection coupling VK 19 x 25 mm	4026446005501
Service unit WE-2022	4026446009359
Compressed air tubing ø 13mm	4026446000721
Cylinder oil 500 ml	4026446000813
Food grade oil 500 ml	4026446005245
Crossbeam CTR	4026446005528

9.2 Stirring rotors

	Article no.
BuddeMix SW 2 ø 78/400 mm	4026446005399
BuddeMix SW 3 ø 100/500 mm	4026446005405
BuddeMix SW 4 ø 44/300 mm	4026446005740
BuddeMix SW residue paddle	4026446005139