

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

# HORIZONTAL BLENDER

# MIXBLEND



02.020.32.0002



Original Instructions

02.020.30.02EN

(0) 2022/02

# EC Declaration of Conformity



**INOXPA S.A.U.**

Telers, 60  
17820 - Banyoles (España)

hereby declare under our sole responsibility that the

Machine: **HORIZONTAL BLENDER**

Model: **MIXBLEND**

Type: **MB-05, MB-10**

Serial number: **IXXXXXXXXXX to IXXXXXXXXXX**  
**XXXXXXXXXXIINXXX to XXXXXXXXXXXIINXXX**

fulfills all the relevant provisions of the following directive:

**Machinery Directive 2006/42/CE**  
**Regulation (EC) n° 1935/2004**  
**Regulation (EC) n° 2023/2006**

and with the following harmonized standards and/or regulations:

**EN ISO 12100:2010**  
**EN 809:1998+A1:2009/AC:2010**  
**EN 12162:2001+A1:2009**  
**EN 60204-1:2018**  
**EN ISO 14159:2008**  
**EN 1672-2:2005+A1:2009**

The technical file has been prepared by the signer of this document.

A handwritten signature in black ink, appearing to read 'David Reyer Brunet'.

David Reyer Brunet  
Technical Office Manager  
7th February 2022



Document: 02.020.30.01EN

Revision: (A) 2022/02



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Telers, 60  
17820 - Banyoles (Spain)

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fulfils all the relevant provisions of these regulations:

**Supply of Machinery (Safety) Regulations 2008**

and with the following designated standards:

**EN ISO 12100:2010**  
**EN 809:1998+A1:2009/AC:2010**  
**EN 12162:2001+A1:2009**  
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**EN 1672-2:2005+A1:2009**

The technical file has been prepared by the signer of this document.

A handwritten signature in black ink, appearing to be "DRB", written over a light grey grid.

David Reyer Brunet  
Technical Office Manager  
7th February 2022



Document: 02.020.30.03EN  
Revision: (0) 2022/02

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## 2. Generalities

### 2.1. INSTRUCTIONS MANUAL

This manual contains information about the reception, installation, operation, assembly and maintenance of the Mixblend blenders.

Carefully read the instruction before starting the blender, familiarize yourself with the installation, operation and correct use of the blender and strictly follow the instructions. These instructions should be kept in a safe location near the installation area.

The information published in the instruction manual is based on updated data.

INOXPA reserves the right to modify this instruction manual without prior notice.

### 2.2. COMPLIANCE WITH THE INSTRUCTIONS

Not following the instructions may impose a risk for the operators, the environment and the machine, and may cause the loss of the right to claim damages.

This non-compliance may cause the following risks:

- failure of important machine/plant functions,
- failure of specific maintenance and repair procedures,
- possible electrical, mechanical and chemical hazards,
- the risk to the environment due to the type of substances released.

### 2.3. WARRANTY

The conditions of the warranty are specified in the General Sales Condition that has been delivered at the time of placing your order.



The machine may not undergo any modification without prior approval from the manufacturer.

For your safety, only use original spare parts and accessories. The usage of other parts will relieve the manufacturer of any liability.

Changing the service conditions can only be carried out with prior written authorization from INOXPA.

The non-compliance of the prescribed indications in this manual means misuse of this gear on the technical side and the personal safety and this, exempts INOXPA of all responsibility in case of accidents and personal injuries and/or property damage. Also, excluded from the warranty all breakdowns caused by improper use of the gear.

Please do not hesitate to contact us in case of doubts or if further explanations are required regarding specific data (adjustments, assembly, disassembly, etc.).

## 3. Safety

### 3.1. WARNING SYMBOLS



Safety hazard for people in general and/or for the equipment



Electric hazard

#### ATTENTION

Important instruction to prevent damage to the equipment and/or its function

### 3.2. GENERAL SAFETY INSTRUCTIONS



Read the instruction manual carefully before installing and starting the blender. Contact INOXPA in case of doubt.

#### 3.2.1. During installation



Always take into account the [Technical Specifications of chapter 9](#).  
Never start the blender before connecting it to the lines.  
Do not start up the blender if the cover has been removed.



During the installation, all the electric work should be carried out by authorized personnel.  
Check for proper specifications of the motors, especially if working conditions create an explosions hazard.

#### 3.2.2. During operation



The [Technical Specifications of chapter 9](#) should always be observed.  
Under no circumstances can the specified limit values be exceeded.  
NEVER touch the blender or the pipework during operation if the blender is being used for transferring hot liquids or during cleaning.  
The blender contains moving parts. Never place your fingers inside the blender during operation.  
NEVER operate with the suction and discharge valves closed.  
NEVER spray water directly on the electrical motor. The standard motor protection is IP55: protection against dust and water spray.



The blenders and their installation may cause noise levels that exceed 85 db(A) in some unfavourable operating environments. In such cases, operators should wear hearing protection.

### 3.2.3. During maintenance



The [Technical Specifications of chapter 9](#) shall always be observed.

NEVER disassemble the blender until the pipes have been emptied. Remember that liquid will remain inside the housing (if does not have a purge). Bear in mind that the product may be hazardous or extremely hot. Consult the regulations in effect in each country for these cases.

Do not leave loose parts on the floor.



ALWAYS disconnect the electrical power to the blender prior to carrying out any maintenance.

Remove the fuses and disconnect the cable from the motor's terminals.

All electrical work must be carried out by authorized personnel.

## 4. General Information

### 4.1. DESCRIPTION

The Mixblend horizontal blender is a compact unit. It consists of an in-line mixer with a venturi system in the suction and a hopper with a butterfly valve above the venturi system to add solids to the liquid which it passes for the mixer.

The mixer in-line is in the ME-4100 range. Is a compact design mixer, with axial suction, radial discharge and sanitary connections.

### 4.2. OPERATING PRINCIPLE

The ventury system creates negative pressure at the base of the hopper. When the hopper valve opens, the solid are drawn and easily dissolved as they pass through the mixer housing.

It is recommended to recirculate the product until all the solid/powder product is suctioned in and then, when the solid product is completely incorporated into the liquid product, continue recirculating the product for a while to ensure the most homogenous dissolution possible.

### 4.3. PRODUCTS TO BE AVOIDED

The products to be avoided in order to have a blender optimum operation are:

- **abrasives:** these products deteriorate the mechanical seals and impellers.
- **effervescent:** the gas that emits these products prevents the vacuum from forming and the powder from falling from the hopper.
- **high temperatures:** it is not advised to work at temperatures above 65°C. Also, if the temperature approaches the boiling point can cause cavitation in the blender.
- **very high viscosities:** the blenders cannot pump products with a viscosity above 250 cPs.
- **incompatible products:** products incompatible with the various mechanical seals and elastomers.

### 4.4. APPLICATION

Mixblend blenders are used to add solids that tend to clump when mixed with liquids. Unlike many other blender models, the advantage of this blender is that it is suitable for use with products with higher concentrations of gums and thickening agents. Its field of application is limited to adding small amounts of solids that are dispersed and sheared quickly into the product.

#### ATTENTION



The range of application for each type of blender is limited. The blender was selected for a given set of conditions when the order was placed. Misuse or its use beyond the operating limits may be dangerous or cause permanent damage to the equipment. INOXPA shall not be liable for any damage resulting from the incompleteness of the information provided by the purchaser (nature of the fluid, rpm, etc.)



# 5. Installation

## 5.1. RECEPTION OF THE BLENDER



INOXPA cannot be held responsible for the damage sustained by the equipment during transport or unpacking. Please visually check that the packaging is not damaged.

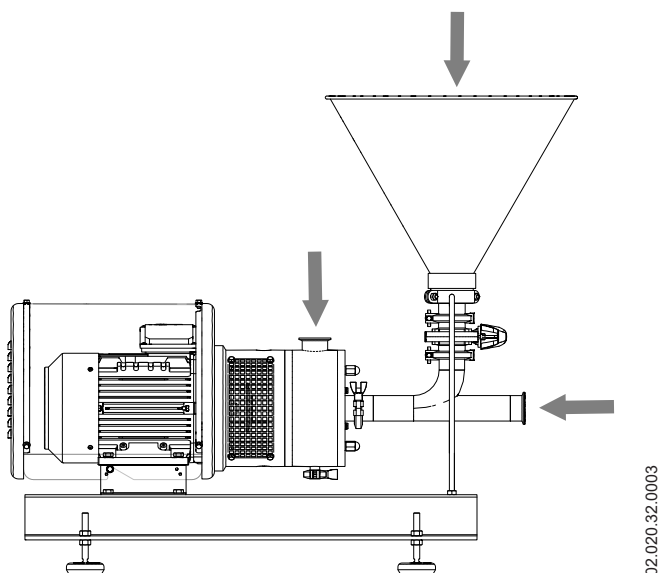
The blender package includes the following documents:

- shipping documents,
- installation, service and maintenance instructions manual,
- instructions and service manual of the motor<sup>1</sup>

1) if the blender has been supplied with a motor from INOXPA

Unpack the blender and check the following:

- the suction and discharge connections of the blender and the blender hopper are not damaged and remove any rest of the packaging material,




- the blender is not damaged,

If the equipment is not in good condition and/or any part is missing, the carrier should report accordingly as soon as possible.

## 5.2. IDENTIFICATION OF THE BLENDER

Each blender has a nameplate with the basic data required to identify the model.



**CE EAC**

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GIRONA (SPAIN) - www.inoxpa.com

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Type

Serial number → No  Year

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### 5.3. TRANSPORT AND STORAGE

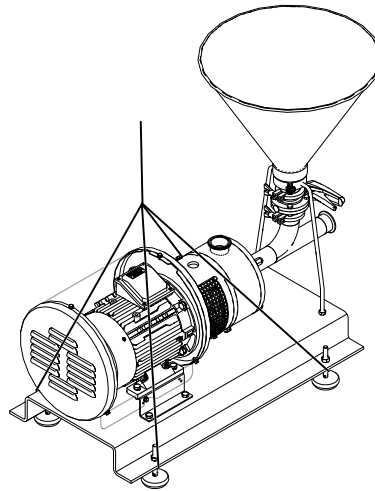
#### ATTENTION



The MB blenders are often too heavy to be stored manually. Use an appropriate means of transport. Use the points which are indicated in the drawing for lifting the blender. Only authorized personnel should transport the blender. Do not work or walk under the heavy loads.

Lift the blender as indicated below:

- always use two support points placed as far apart as possible.



- secure the supports so that they will not move.

See chapter 9. [Technical Specifications](#) to consult the dimensions and weight of the blender.

#### ATTENTION



During the transport, disassembly or assembly of the blender, there is a risk of loss of stability and that the blender could fall down and cause damages to the operators. Make sure that the blender is properly supported.

### 5.4. LOCATION

Place the blender as close as possible to the suction tank whenever possible below the liquid and leaving enough space around to can access the blender and the motor. If necessary, consult in chapter 9. [Technical Specifications](#) the dimensions of the blender.

Once a place is chosen, the blender should be mounted on a flat and level surface.

#### ATTENTION



Install the blender so as to allow proper ventilation. If the blender is installed outdoors, it should be covered by a roof. Its location should allow easy access for inspection or maintenance operations.

#### 5.4.1. Excessive temperatures

Depending on the fluid to be mixed, high temperatures can be reached inside and around the blender.



Over 68°C the operator should take protective measures and place warning notices advising of the danger which exists if the blender is touched.  
The type of protection selected should not isolate the blender entirely.

## 5.5. PIPES

About the installation pipes:

- As a general rule, install the suction and discharge lines in straight sections, with the minimum possible number of elbows and fittings to reduce any pressure losses that may be caused by friction.
- Make sure that the blender's ports are properly aligned with the pipework and have a diameter similar to that of the blender connections.
- Place the blender as close as possible to the suction tank and whenever possible below the liquid level in order to achieve its priming .
- Install support brackets for the lines as close as possible to the blender's suction and discharge ports.

### 5.5.1. Shut-off valves

The blender may be isolated for maintenance. To accomplish this, shut-off valves must be installed and connected to the blender's suction and discharge connections.



#### ATTENTION

These valves must ALWAYS be open during operation of the mixer.

## 5.6. ELECTRICAL INSTALLATION



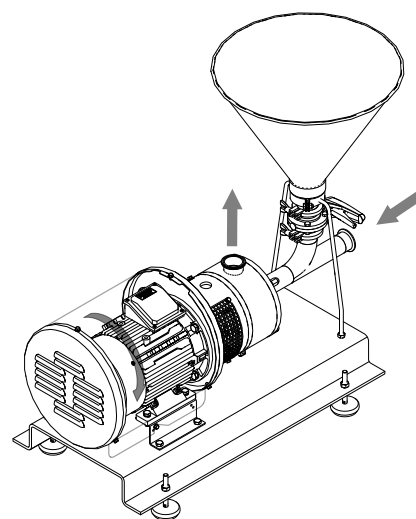
Only qualified personnel can connect the electric motors.  
Take the necessary measures to prevent damage to cables and connections.



Electrical equipment, terminals and components of the control systems may still carry current when they are disconnected. Contacting them may impose a hazard to operators or cause irreparable material damage.  
Before handling the blender make sure that the motor is stopped.

To do the electrical installation:

- connect the motor in accordance with the instructions supplied by the motor manufacturer, in accordance with the current national legislation and in compliance with EN 60204-1,
- check the direction of rotation (see the signalling label on the blender),
- start and stop the blender motor momentarily. Make sure, looking at the blender by the hopper side, that the rotation direction of the motor fan is counterclockwise.



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#### ATTENTION

ALWAYS check the direction of rotation of the motor with liquid inside the blender.

## 6. Start-up



Before starting the blender, carefully read the instructions in section [5. Installation](#). Carefully read section [9. Technical Specifications](#). INOXPA will not be liable for improper use of the equipment.



NEVER touch the blender or the lines of hot liquids that are being mixed.

### 6.1. CHECKS BEFORE STARTING THE BLENDER

Before starting the blender:

- completely open the shut-off valves on the suction and discharge lines,
- if the liquid does not flow towards the blender, fill it with the liquid to be mixed,



#### ATTENTION

The blender must never turn dry.

- check that the power supply matches the rating indicated on the motor plate.
- check that the motor rotation direction is correct.
- check that the impeller of the mixer rotates without friction.

### 6.2. CHECKS WHEN STARTING THE BLENDER

When starting the blender check:

- that the blender is not making any strange noises,
- check the flow pressure,
- that there are no leaks in the sealing areas.



#### ATTENTION

Shut-off valves on the suction pipe must not be used to regulate the flow. All shut-off valves must be fully open during operation.



#### ATTENTION

Control the motor consumption to prevent an electrical overload.



Use special protection when the sound pressure in the operation area exceeds 85 dB(A).

# 7. Troubleshooting

The following table provides solutions to problems that might arise during the operation of the blender. The blender is assumed to have been properly installed and be suitable for the relevant application. Please contact INOXPA if technical assistance is required.

The blender does not suction																																									
Insufficient pressure on impulsion																																									
Motor overload																																									
Noise																																									
Vibrations																																									
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# 8. Maintenance

## 8.1. GENERAL CONSIDERATIONS

This blender, just like any other machine, requires maintenance. The instructions contained in this manual cover the identification and replacement of spare parts. The instructions are aimed at maintenance personnel and those responsible for the supply of spare parts.



Carefully read chapter 9. [Technical Specifications](#).  
Maintenance work can only be carried out by qualified personnel that are trained and equipped with the necessary resources to carry out this work.  
All parts or materials that are replaced must be properly disposed of/recycled in accordance with the current directives applicable in each area.



ALWAYS disconnect the blender before beginning any maintenance work.

## 8.2. CHECK THE MECHANICAL SEAL

Periodically check that there are no leaks around the shaft. If leakage is detected through the mechanical seal, replace it following the instructions in chapter 8.10. [Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer](#).

## 8.3. MAINTENANCE OF THE SEALS

SEALS REPLACEMENT	
Preventive maintenance	Replace after twelve (12) months. We also recommend replacing the gaskets during mechanical seal replacement.
Maintenance after a leak	Replace at the end of the process
Scheduled maintenance	Regularly check that there are no leaks and that the blender is operating correctly. Keep a maintenance record of the blender. Use statistics to plan inspections.
Lubrication	During assembly, use soapy water or oil compatible for the food industry when fitting the different gaskets to allow them to slide better.

The period between each preventive maintenance service will vary depending on the operating condition of the blender: temperature, flow, number de cycles per day, cleaning solutions used, etc.

## 8.4. TIGHTENING TORQUE

Size	Nm	lbf-ft
M6	10	7
M8	21	16
M10	42	31
M12	74	55
M16	112	83

## 8.5. STORAGE

Before being stored the blender must be completely emptied of liquids. Avoid, as far as possible, the exposure of the parts to excessively damp atmospheres.

## 8.6. CLEANING



The use of aggressive cleaning products such as caustic soda and nitric acid may give raise to skin burns.

Use rubber gloves during cleaning procedures.

Always use protective goggles.

### 8.6.1. Automatic CIP (clean-in-place)

If the blender is installed in a system with a CIP process, it is not necessary to disassemble the blender.

If the automatic cleaning process is not provided, proceed to disassemble the blender as indicated in the chapter [8.10. Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer](#).

Two types of solutions can be used for CIP processes:

**a. alkaline solution:** 1% by weight of caustic soda NaOH a 70°C (150°F). To make this solution:

1 kg NaOH + 100 l H<sub>2</sub>O<sup>1</sup> = cleaning solution

2,2 l NaOH 33% + 100 l H<sub>2</sub>O = cleaning solution

**b. acid solution:** 0,5% by weight of nitric acid HNO<sub>3</sub> a 70°C (150°F). To make this solution:

0,7 l HNO<sub>3</sub> 53% + 100 l H<sub>2</sub>O = cleaning solution

1) only use chlorine-free water to mix with the cleaning agents

#### ATTENTION



Check the concentration of the cleaning solutions. Incorrect concentrations may lead to the deterioration of the blender seals.

To remove any traces of cleaning products ALWAYS perform a final rinse with clean water at the end of the cleaning process.

### 8.6.2. Automatic SIP (sterilization-in-place)

The steam sterilisation process is applied to all equipment including the blender.

#### ATTENTION



Do NOT operate the equipment during the steam sterilisation process.

The parts and the materials will not suffer damage provided the instructions set out in this manual are followed.

Cold liquid cannot be introduced until the blender temperature is below 60°C (140°F).

The blender generates a substantial pressure loss through the sterilisation process. We recommend the use of a bypass circuit provided with a discharge valve to ensure that the steam or overheated water sterilises the entire circuit.

Maximum conditions during the steam or overheated water SIP process:

a. maximum temperature: 140°C / 284°F

b. maximum time: 30 min

c. cooling: sterile air or inter gas

d. materials: EPDM (the materials HNBR y FPM are not recommended)

## 8.7. DISASSEMBLY AND ASSEMBLY OF THE BLENDER

The assembly and disassembly of the blenders should be done by qualified personnel. Make sure that the personnel read carefully this instruction manual and, in particular, those instructions which refer to the work they will perform.

### ATTENTION



Incorrect assembly or disassembly may cause damage in the blender's operation and lead to high repair costs and a long period of downtime.  
INOXPA is not responsible for accidents or damages caused by a failure to comply with the instructions in this manual.

### Preparation

Provide for a clean working environment so some parts, including the mechanical seal, require very careful handling and others have close tolerances.

Check that the parts which are used are not damaged during transport. When doing this, you need to inspect the adjustment edge, the butted faces, the tight fit, burrs, etc.

After each disassembly, carefully clean the parts and check for any damage. Replace all damaged parts.

### Tools

Use the proper tools for assembly and disassembly operations. Use them correctly.

### Cleaning

Before disassembling the blender, clean it outside and inside.

## 8.8. DISASSEMBLY OF THE MB-05 BLENDER

Before starting to perform the disassembly works of the blender:

- disconnect the motor of the mixer
- close the suction and discharge valve of the mixer
- place some trays for collection of liquids

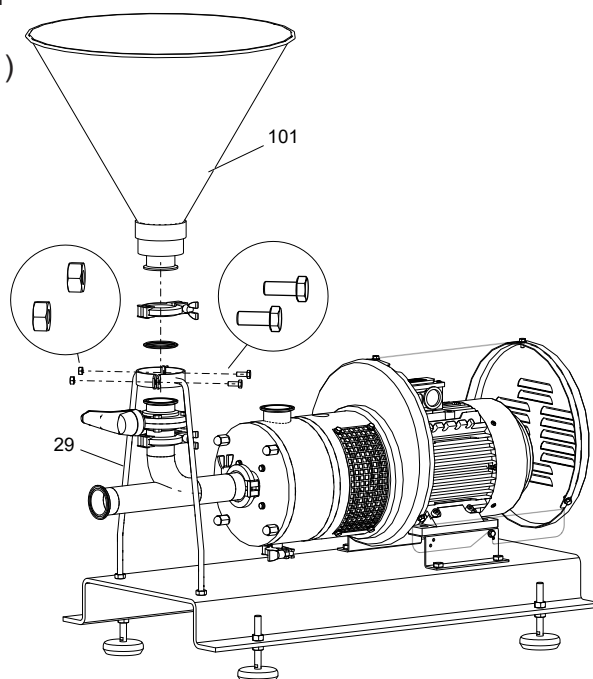


Use gloves and safety goggles to empty the blender.



### 8.8.1. Disassembly of the hopper

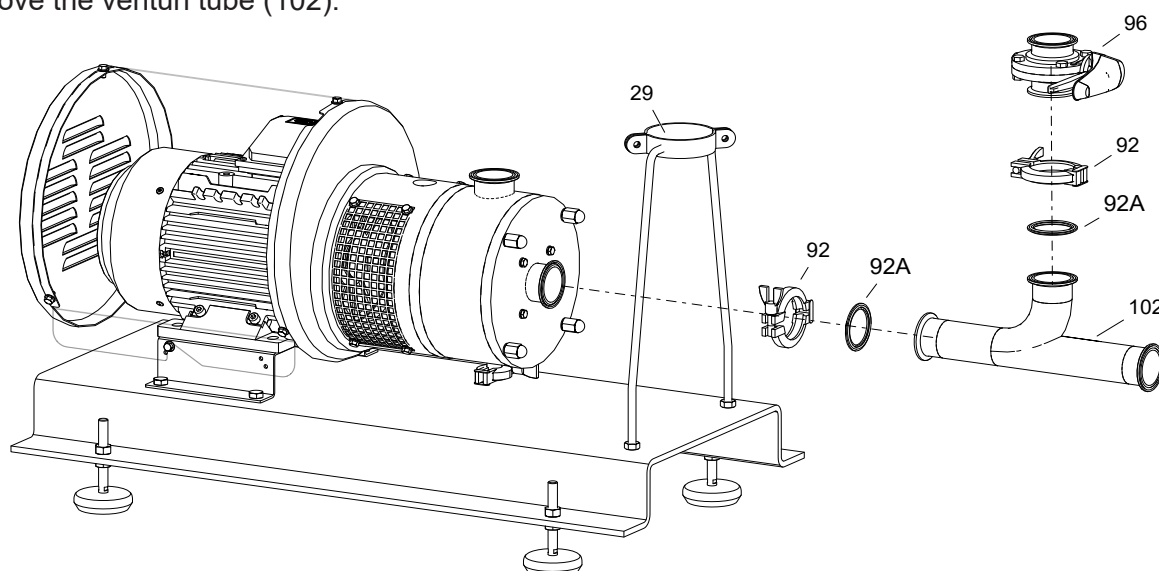
1. Loosen and remove the screws and nuts of the support (29) of the hopper (101).
2. Remove the clamp (92) that joints the hopper (101) to the butterfly valve (96).
3. Remove the hopper (101).



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### 8.8.2. Disassembly of the venturi tube

1. Remove the clamp (92) that joins the mixer to the venturi tube (102).
2. Remove the clamp (92) that joins the venturi tube (102) to the butterfly valve (96).
3. Remove the venturi tube (102).



02.020.32.0007

When the disassembly of the hopper and the venturi tube is finished proceed to disassembly the in-line mixer following the instructions of chapter 8.10. [Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer.](#)

## 8.9. DISASSEMBLY OF THE MB-10 BLENDER

Before starting to perform the disassembly works of the blender:

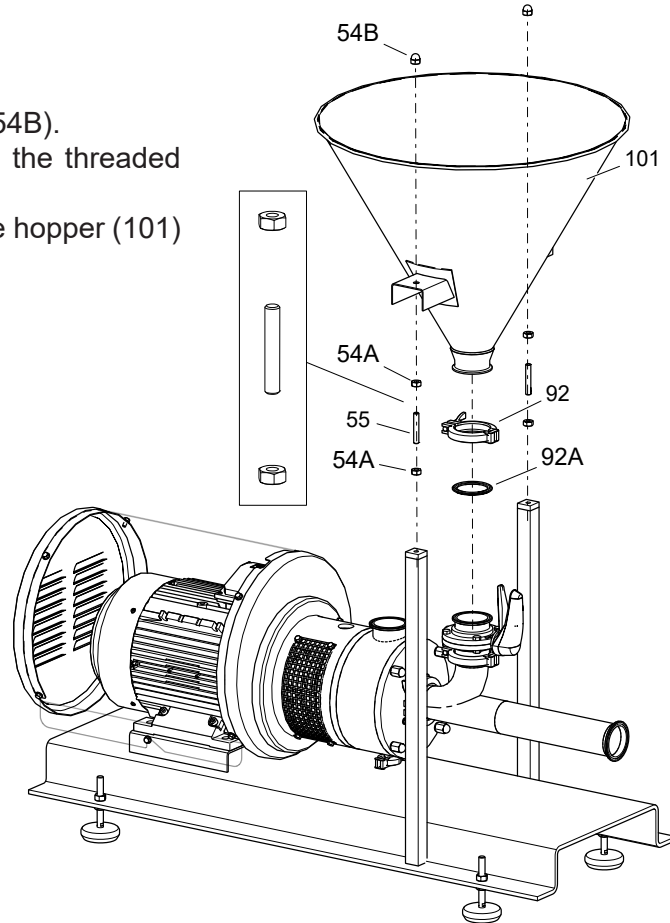
- disconnect the motor of the mixer
- close the suction and discharge valve of the mixer
- place some trays for collection of liquids



Use gloves and safety goggles to empty the blender.

### 8.9.1. Disassembly of the hopper

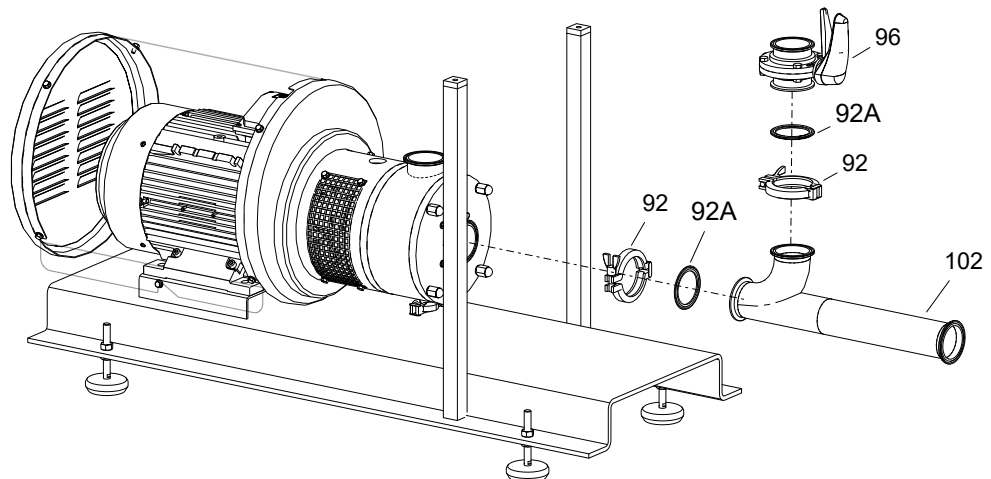
1. Loosen and remove the blind nuts (54B).
2. Loosen the nuts (54A) and remove the threaded rods (55).
3. Remove the clamp (92) that joins the hopper (101) to the butterfly valve (96).
4. Remove the hopper (101).



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### 8.9.2. Disassembly of the venturi tube

1. Remove the clamp (92) that joins the mixer to the venturi tube (102).
2. Remove the clamp (92) that joins the venturi tube (102) to the butterfly valve (96).
3. Remove the venturi tube (102).



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When the disassembly of the hopper and the venturi tube is finished proceed to disassembly the in-line mixer following the instructions of chapter 8.10. [Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer.](#)

## 8.10. DISASSEMBLY AND ASSEMBLY OF THE ME-4105 / ME-4110 IN-LINE MIXER

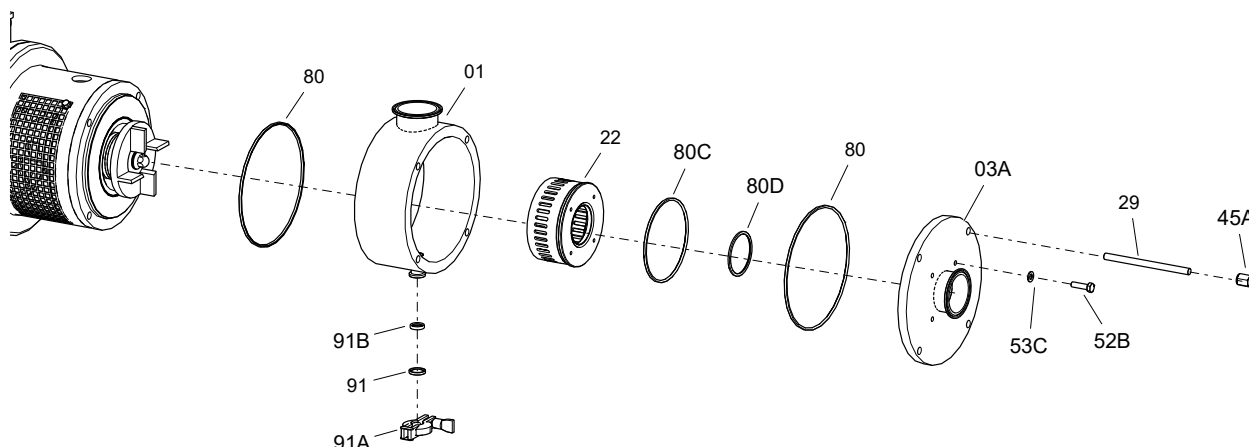
### 8.10.1. Mixer casing and stator

#### Disassembly:

1. Disassemble the in-line mixer from its emplacement.
2. Clean and dry the in-line mixer.
3. Loosen the blind nuts (45A).
4. Separate the front cover (03A) and remove the O-ring (80).
5. Separate the stator (22) from the front cover (03A) loosening the screws (52B) and its washers (53C).
6. Remove the O-rings (80C,80D) from the stator (22).
7. Remove the casing (01) and the O-rings (80) from the internal cover (03).
8. Unscrew the tie bars (29) from the lantern (04).

#### Assembly:

1. Place the O-rings (80C,80D) to the stator (22).
2. Place the stator (22) on the front cover (03A) and fix it with the screws (52B) and its washers (53C).
3. Place the O-rings (80) on the internal cover (03) and the front cover (03A).
4. Screw the tie bars (29) to the lantern (04).
5. Place the casing (01), through the tie bars (29), to the lantern (04).
6. Mount the front cover (03A) on the casing (01) and fix it with the blind nuts (45A).

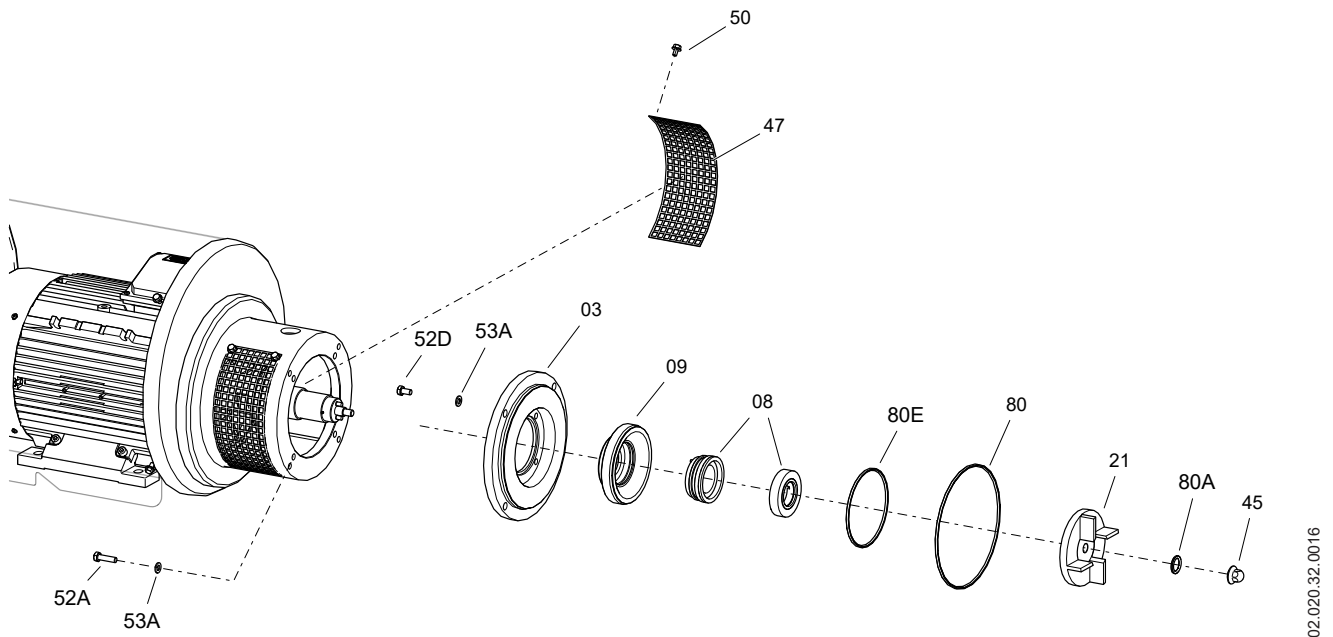


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### 8.10.2. Simple mechanical seal

#### Disassembly:

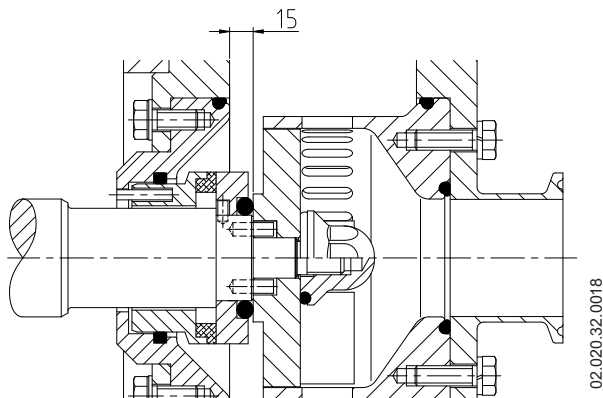
1. Dismount the lantern protectors (47) removing the screws (50).
2. Loosen and remove the blind nut (45) together with the O-ring (80A) by fixing the shaft with a wrench from the inside of the lantern (04).
3. Remove the impeller (21) and the rotary part of the mechanical seal (08).
4. Loosen and remove the screws (52A) and their washers (53A) to be able to dismount the inner cover (03).
5. Together with the internal cover (03), the cover (09) and the stationary part of the mechanical seal (08) will dismount.
6. Separate the stationary part of the mechanical seal (08) together with the mechanical seal cover (09).
7. Loosen and remove the screws (52D) and their washers (53A) and separate the mechanical seal cover (09) from the inner cover (03).
8. Remove the O-ring (80E) from the mechanical seal cover (09).



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### Assembly:

1. Place the O-ring (80E) to the mechanical seal cover (09).
2. Place the O-ring (80) to the inner cover (03).
3. Mount the mechanical seal cover (09) above the inner cover (03) and fix them with the screws (52D) and their washers (53A).
4. Fix the mechanical seal cover - inner cover (09,03) assembly to the lantern and fix it with the screws (52A) and their washers (53A).
5. Place the stationary part of the mechanical seal (08) with its O-ring to the housing of the mechanical seal cover (09). Respect the assembly dimension of the following figure:



02.020.32.0018

6. Slide the rotary part of the mechanical seal (08) through the shaft (05) fitting the slot and the pin together until the end.
7. Place the impeller (21) on the shaft (05) fitting the slots with the pins of the shaft (05).
8. Place the O-ring (80A) on the nut (45) and tighten it strongly with a pipe wrench fixing the shaft with a wrench from the inside of the lantern (04).

### ATTENTION

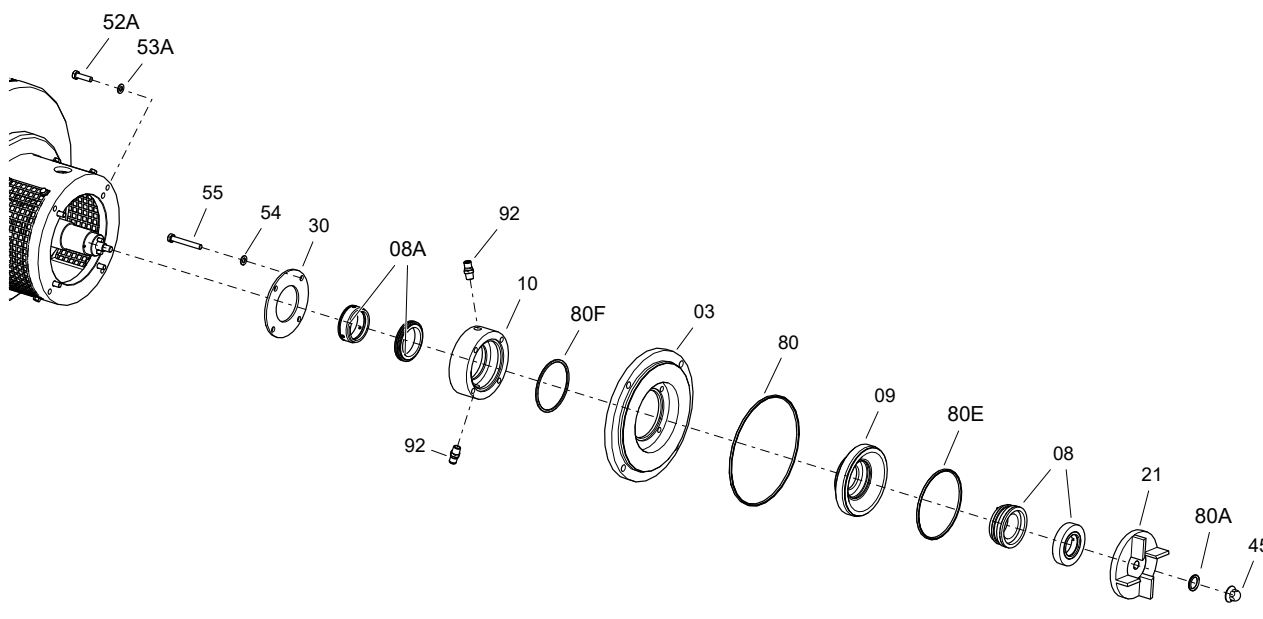


When installing the new seal, use soapy water when fitting the different parts and seals to allow them to slide better. Apply to the stationary as well as the rotating parts.

### 8.10.3. Cooled mechanical seal

#### Disassembly:

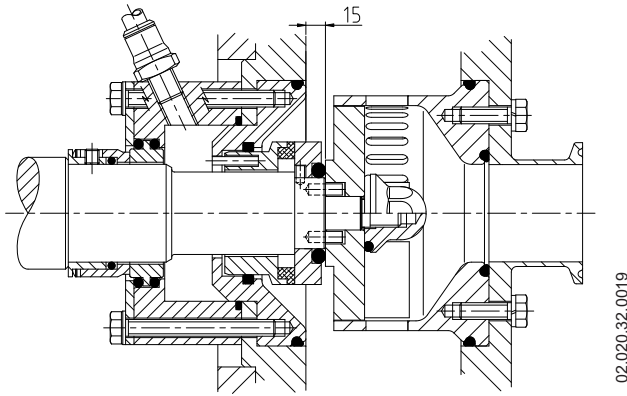
1. Dismount the lantern protectors (47) removing the screws (50).
2. Loosen and remove the blind nut (45) together with the O-ring (80A) by fixing the shaft with a wrench from the inside of the lantern (04).
3. Remove the impeller (21) and the rotary part of the mechanical seal (08).
4. Loosen and remove the screws (52A) and their washers (53A) to be able to dismount the inner cover (03).
5. Together with the inner cover (03), the mechanical seal cover (09), the cooled mechanical seal cover (10), the ring of the mechanical seal cover (30) and the rotary part of the mechanical seal will dismount (08A).
6. Separate the stationary part of the mechanical seal (08) together with the mechanical seal cover (09).
7. Loosen the nut (54) and remove the ring of the mechanical seal cover (30), the rotary part of the mechanical seal (08A) and the cooled mechanical seal cover (10).
8. Remove the O-ring (80F) from the cooled mechanical seal cover (10).
9. Separate the mechanical seal (09) from the inner cover (03) and the O-ring (80E).
10. Remove the threaded pins (55A).
11. Loosen the set screws of the rotary part of the mechanical seal (08A) and separate it from the shaft (05).



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#### Assembly:

1. Place the rotary part of the mechanical seal (08A) on the shaft (05) fixing it with their set screws.
2. Place the threaded pins (55A) on the mechanical seal cover (09).
3. Place the O-ring (80E) on the mechanical seal cover (09).
4. Place the mechanical seal cover (09) on the inner cover (03).
5. Place the rotary part of the mechanical seal (08A) with its O-rings on the cooled mechanical seal cover (10).
6. Place the O-ring (80F) on the cooled mechanical seal cover (10).
7. Place the cooled mechanical seal cover (10) on the inner cover (03) through threaded pins (55A).
8. Mount the ring of the mechanical seal cover (30) on the cooled mechanical seal cover (10) and fix this assembly with the nuts (54).
9. Place the assembly of the previous step, carefully to not damage the mechanical seal (08A), on the lantern (04) and fix it with the screws (52A) and their washers (53A).
10. Place the stationary part of the mechanical seal (08) with its O-ring on the housing of the mechanical seal cover (09). Respect the assembly dimension of the following figure:



11. Slide the rotary part of the mechanical seal (08) through the shaft (05) fitting the slot and the pin together until the end.
12. Place the impeller (21) on the shaft (05) fitting the slots with the pins of the shaft (05).
13. Place the O-ring (80A) on the nut (45) and tighten it strongly with a pipe wrench fixing the shaft with a wrench from the inside of the lantern (04).

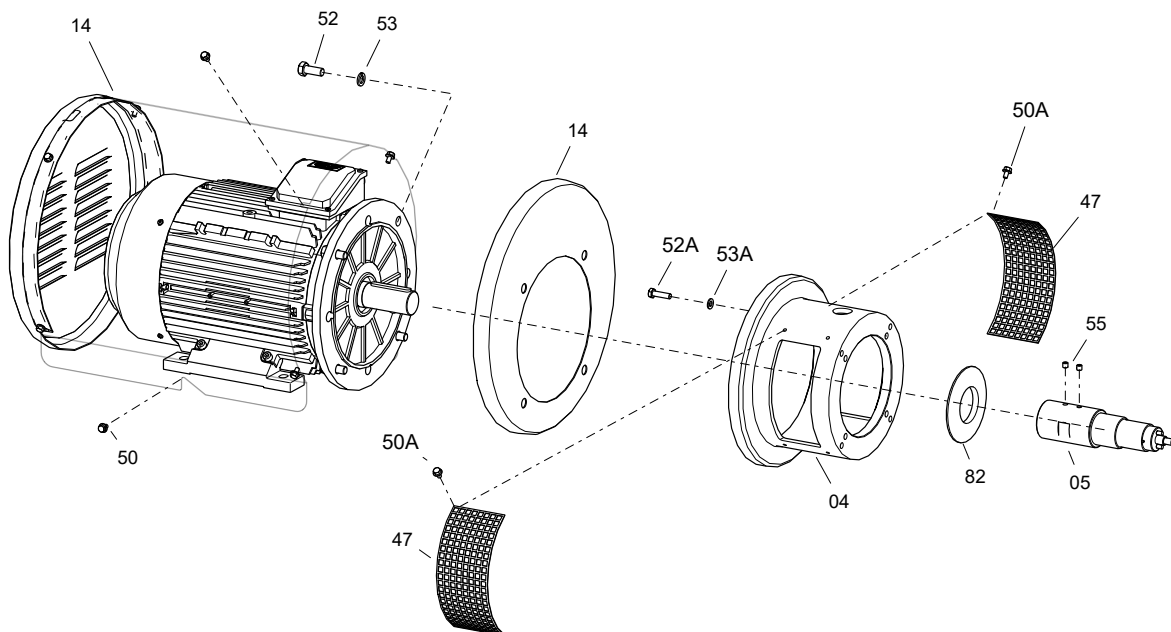
#### 8.10.4. Shaft, lantern and motor

##### Disassembly:

1. Remove the casing of the shroud (14) unscrewing the screws which fix it.
2. Loosen the screws (52) and their washers (53) and separate the motor (93) from the lantern (04).
3. Remove the front part of the shroud (14).
4. Remove the splash ring (82) from the shaft (05).
5. Remove the studs (55) from the shaft (05) to separate the shaft from the motor (93).

##### Assembly:

1. Place the shaft (05) on the motor shaft (93) and fix it with the studs (55).
2. Place the splash ring (82) on the shaft (05).
3. Place the shroud front part (14) on the motor flange (93).
4. Mount the lantern (04) on the motor (93) fix it with the screws (52) and their washers (53).
5. Mount the shroud casing (14) and fix it with the screws.



#### ATTENTION



When installing the new seal, use soapy water when fitting the different parts and seals to allow them to slide better. Apply to the stationary as well as the rotating parts.

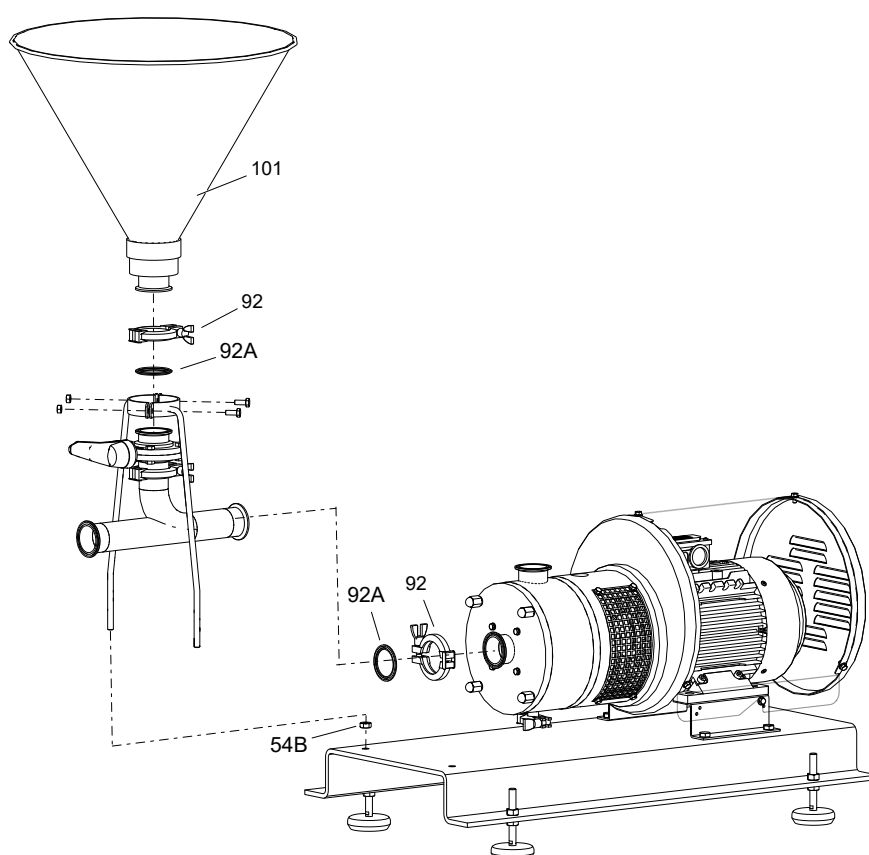
## 8.11. ASSEMBLY OF THE MB-05 BLENDER

### 8.11.1. Assembly of the venturi tube

1. Place the venturi tube (102).
2. Mount two seals (92A) in two clamps (92).
3. Mount and tighten the clamp (92) that joins the blender to the venturi tube (102).
4. Place the butterfly valve (96).
5. Mount the clamp (92) that joins the venturi tube (102) to the butterfly valve (96).

### 8.11.2. Assembly of the hopper

1. Place the support (29) of the hopper to the base plate (38) and fix it with the nuts (54A).
2. Place the hopper (101).
3. Mount the seal (92A) in the clamp (92).
4. Place and tighten the clamp (92) that joins the venturi tube (102) to the hopper (101).
5. Place and tighten the screws with their nuts on the support (29) of the hopper (101).



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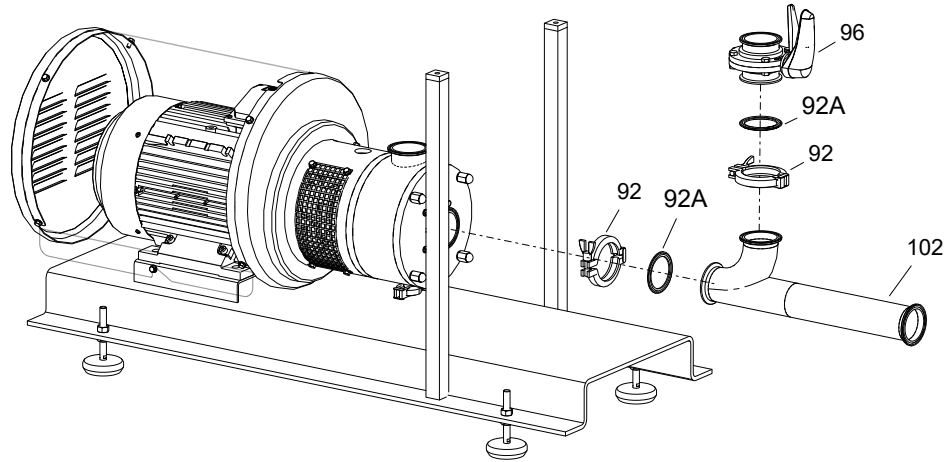
When the assembly of the hopper and the venturi tube is finished proceed to assembly the in-line mixer following the instructions of chapter 8.10. [Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer](#) and fix it to the base plate.



## 8.12. ASSEMBLY OF THE MB-10 BLENDER

### 8.12.1. Assembly of the tube venturi

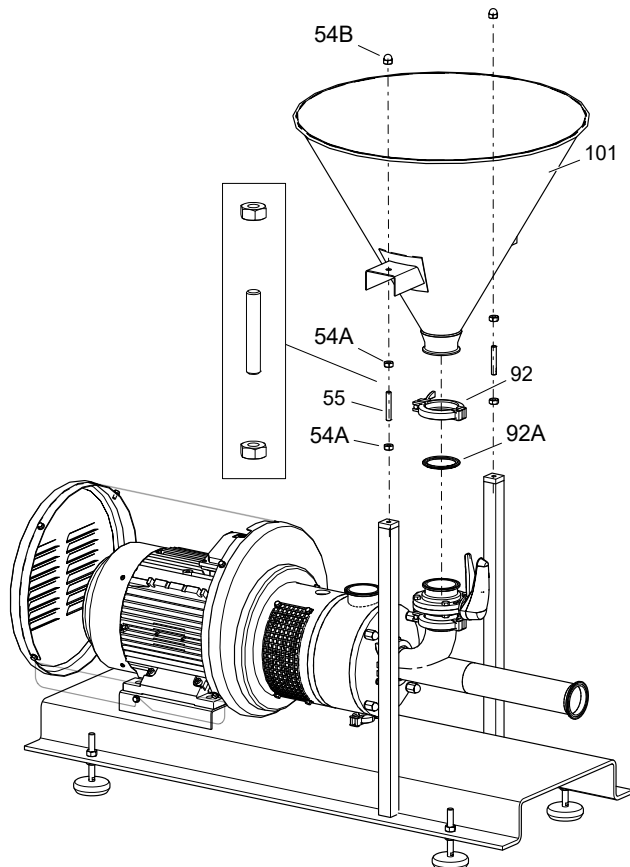
1. Place the venturi tube (102).
2. Mount the clamp (92) that join the mixer to the venturi tube (102).
3. Place the butterfly valve (96).
4. Mount the clamp (92) that joins the venturi tube (102) to the butterfly valve (96).



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### 8.12.2. Assembly of the hopper

1. Place the hopper (101).
2. Mount the clamp (92) that joins the hopper (101) to the butterfly valve (96).
3. Place the threaded rods (55) and tighten the nuts (54A).
4. Place and tighten the blind nuts (54B).



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When the assembly of the hopper and the venturi tube is finished proceed to assembly the in-line mixer following the instructions of chapter [8.10. Disassembly and assembly of the ME-4105 / ME-4110 in-line mixer](#) and fix it to the base plate.

# 9. Technical Specifications

	<b>MB-05</b>	<b>MB-10</b>
Approximate flow (m <sup>3</sup> /h)	20	30
Maximum solids intake (kg/h)	1300 <sup>1</sup>	2000 <sup>1</sup>
Blender base	ME-4105	ME-4110
Motor (3000 rpm)	4 kW	7,5 kW
Maximum temperature (°C)	65°C	65°C
Connections	clamp	clamp
Hopper capacity (l)	25	48
Hopper valve	clamp butterfly valve	clamp butterfly valve

## Materials

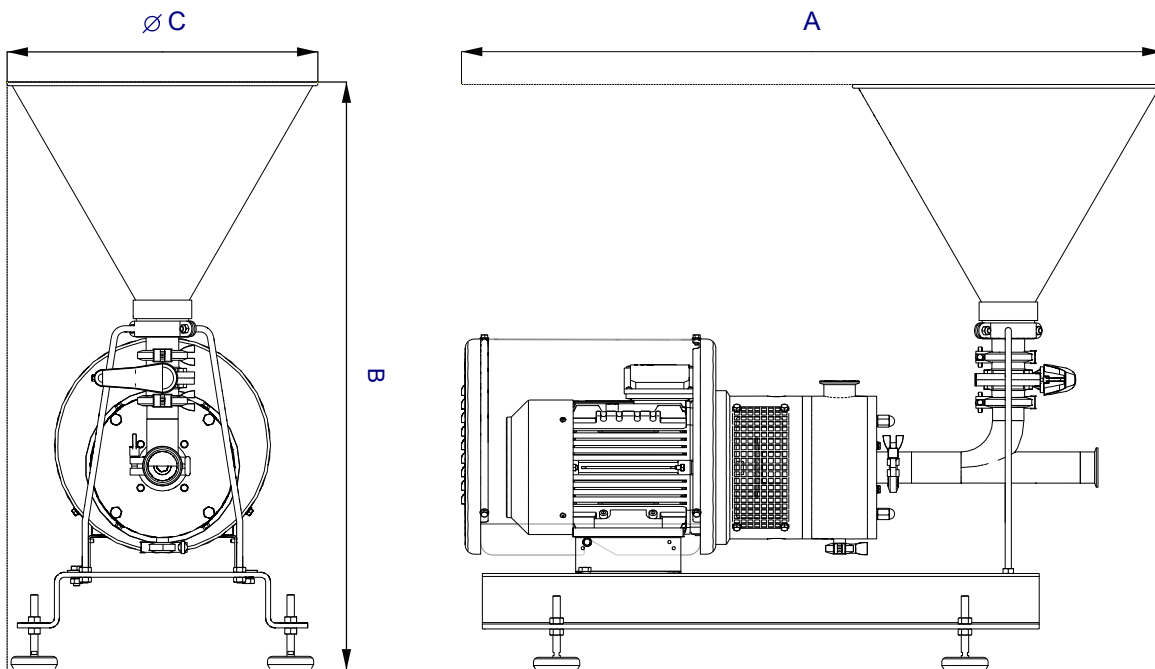
Parts in contact with the product	1.4404 (AISI 316L)
Other stainless steel parts	1.4301 (AISI 304)
Seals in contact with the product	EPDM
Internal surface finish	bright polish Ra ≤ 0,8 µm
External surface finish	matt

## Mechanical seal

Stationary part material	Carburo de silico (SiC)
Rotary part material	Carburo de silicio (SiC)
Seal material	EPDM

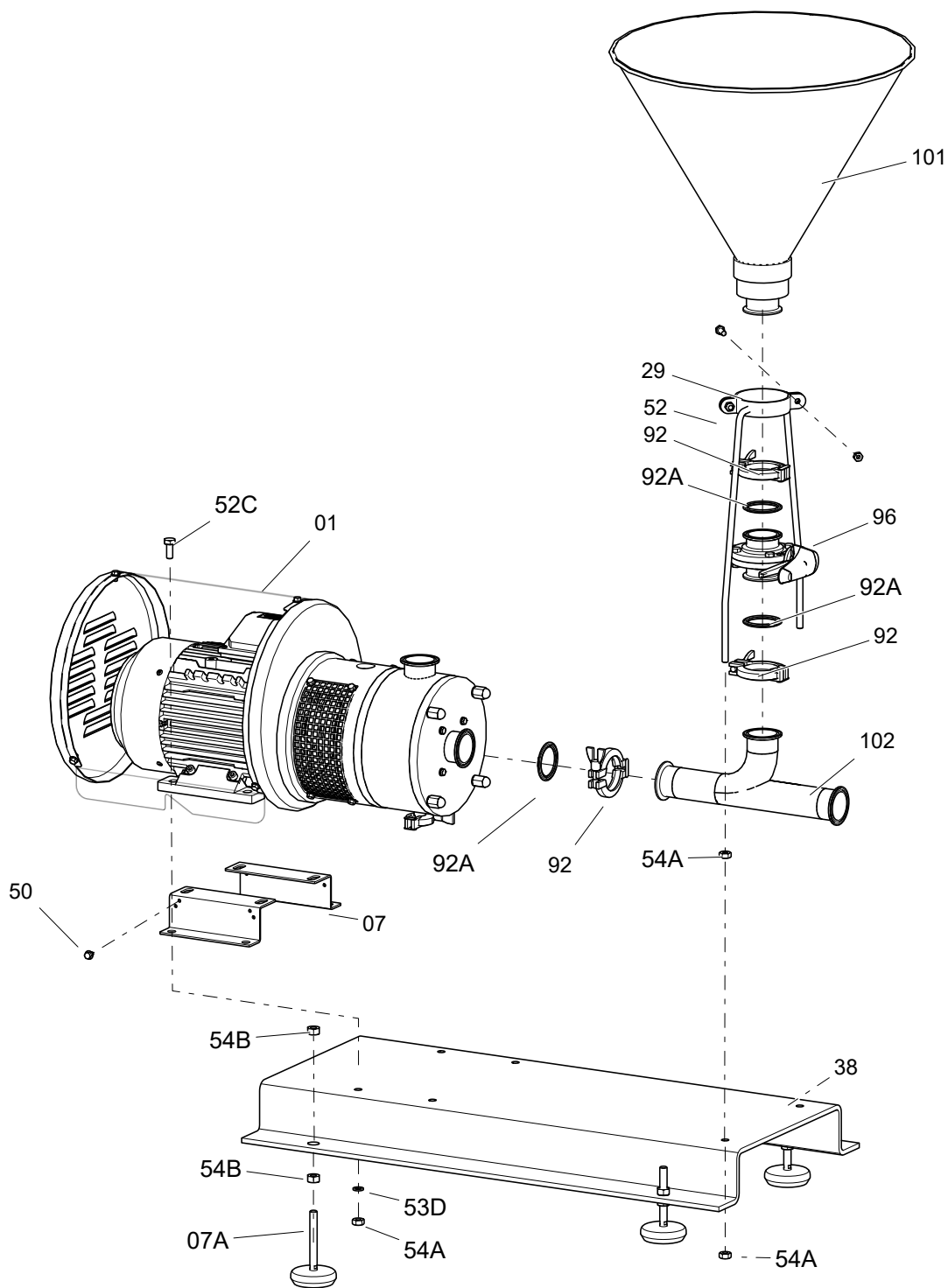
1) The intake of solids can vary depending on their properties

## 9.1. WEIGHTS AND DIMENSIONS



Mezclador	Dimensiones (mm)			Peso
	A	B	ØC	
<b>MB-05</b>	1133	952	505	135
<b>MB-10</b>	1263	1012	605	172

### 9.2. EXPLODED DRAWING OF MB-05 BLENDER

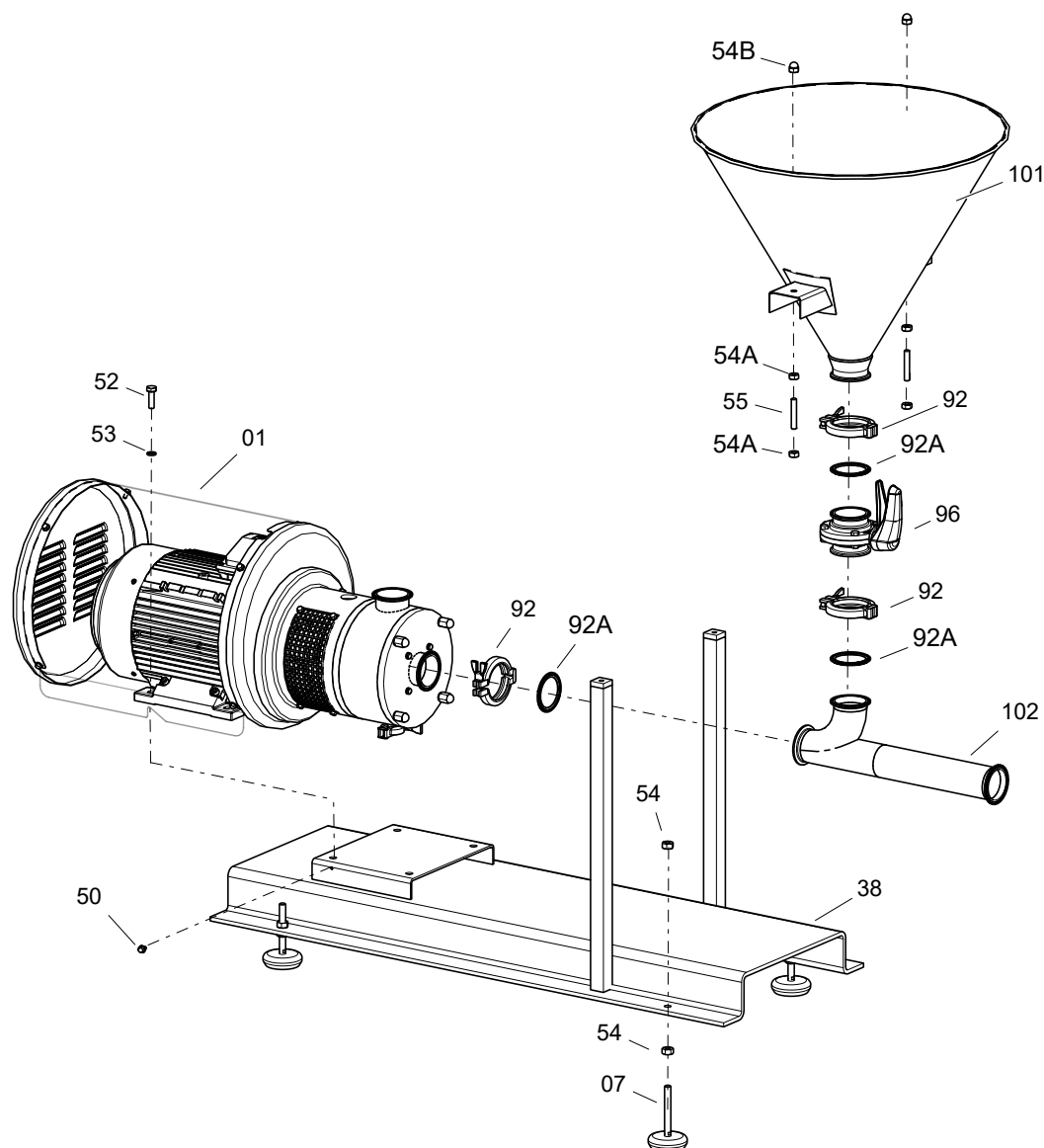


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### 9.3. PARTS LIST OF MB-05 BLENDER

Position	Description	Quantity	Material
01	ME-4105 in-line mixer	1	-
07	leg motor	2	1.4307 (AISI 304L)
07A	antivibrating support	4	1.4301 (AISI 304)
29	hopper support	1	1.4301 (AISI 304)
38	base plate	1	1.4301 (AISI 304)
50	screw with flange	2	A2
52C	hexagonal screws	4	A2
53D	grower washer	4	A2
54A	nut	8	A2
54B	nut	8	A2
92	clamp	3	1.4301 (AISI 304)
92A	clamp seal	3	EPDM
96	butterfly valve with multiposition mini handle	1	1.4404 (AISI 316L) + plástico
101	hopper	1	1.4404 (AISI 316L)
102	venturi tube	1	1.4404 (AISI 316L)

### 9.4. EXPLODED DRAWING OF MB-10 BLENDER

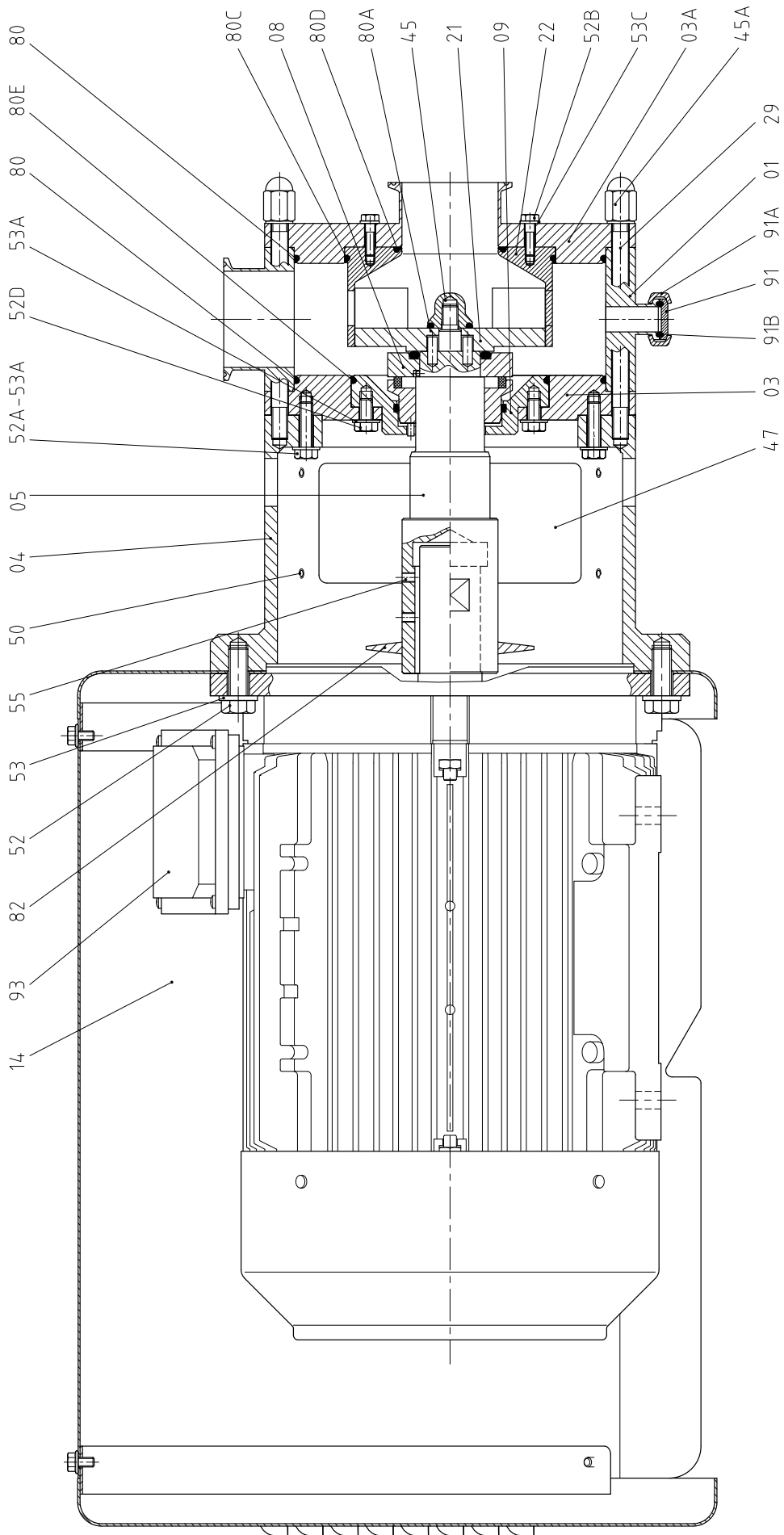


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### 9.5. PARTS LIST OF MB-10 BLENDER

Position	Description	Quantity	Material
01	ME-4110 in-line mixer	1	-
07	antivibrating support	4	1.4301 (AISI 304)
38	base plate	1	1.4301 (AISI 304)
50	screw with flange	2	A2
52	hexagonal screw	4	A2
53	washer	4	A2
54	nut	8	A2
54A	nut	4	A2
54B	blind nut	2	A2
55	threaded rod	2	1.4307 (AISI 304L)
92	clamp	3	1.4301 (AISI 304)
92A	clamp seal	3	EPDM
96	butterfly valve with multiposition mini handle	1	1.4404 (AISI 316L) + plástico
101	hopper	1	1.4404 (AISI 316L)
102	venturi tube	1	1.4404 (AISI 316L)

### 9.6. TECHNICAL SECTION OF ME-4105 / ME-4110 IN-LINE MIXER



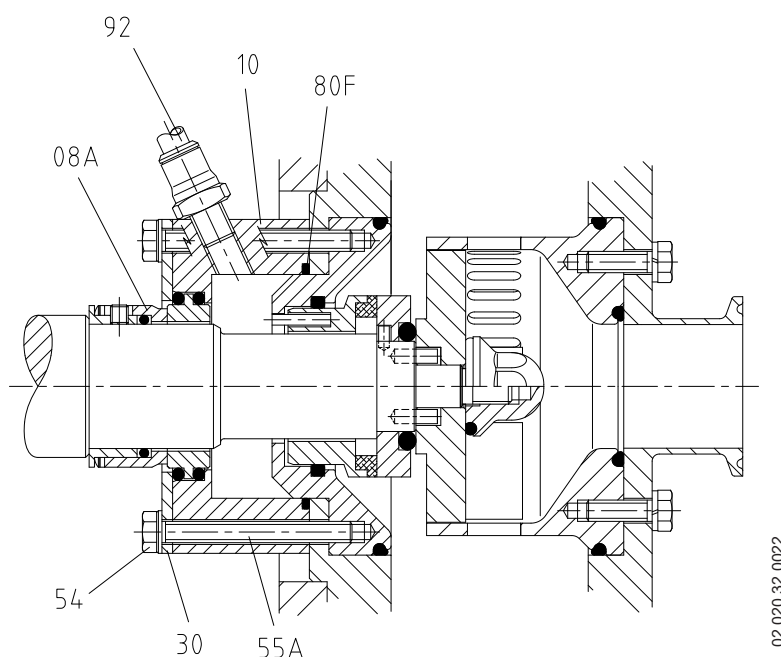
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## 9.7. PARTS LIST OF ME-4105 / ME-4110 IN-LINE MIXER

Position	Description	Quantity	Material
01	casing	1	1.4404 (AISI 316L)
03	inner cover	1	1.4404 (AISI 316L)
03A	front cover	1	1.4404 (AISI 316L)
04	lantern	1	1.4301 (AISI 304)
05	shaft	1	1.4404 (AISI 316L)
08	mechanical seal <sup>1</sup>	1	-
09	mechanical seal cover	1	1.4404 (AISI 316L)
14	shroud	1	1.4404 (AISI 316L)
21	impeller	1	1.4404 (AISI 316L)
22	stator	1	1.4404 (AISI 316L)
29	tie bars	4	1.4301 (AISI 304)
47	lantern protector	2	1.4301 (AISI 304)
45	blind nut	1	A2
45A	blind nut	4	A2
50	screw with flange	10	A2
52	screw	4	A2
52A	screw	4	A2
52B	screw	4	A2
52D	screw	4	A2
53	washer	4	A2
53A	washer	8	A2
53C	washer	4	A2
55	stud	2	A2
80	O-ring <sup>1</sup>	2	EPDM
80A	O-ring <sup>1</sup>	1	EPDM
80C	O-ring <sup>1</sup>	1	EPDM
80D	O-ring <sup>1</sup>	1	EPDM
80E	O-ring <sup>1</sup>	1	EPDM
82	splash ring	1	EPDM
91	clamp end cap	1	1.4404 (AISI 316L)
91A	clamp	1	1.4301 (AISI 304)
91B	clamp seal	1	EPDM
93	motor	1	-

1) recommended spare parts

### 9.8. TECHNICAL SECTION COOLED MECHANICAL SEAL ME-4105 / ME-4110 IN-LINE MIXER



02.020.32.0022

### 9.9. PARTS LIST COOLED MECHANICAL SEAL ME-4105 / ME-4110 IN-LINE MIXER

Position	Description	Quantity	Material
08A	mechanical seal <sup>1</sup>	1	-
10	cooled mechanical seal cover	1	1.4404 (AISI 316L)
30	ring of mechanical seal cover	1	1.4404 (AISI 316L)
54	nut	4	A2
55A	threaded pins	4	A2
80F	O-ring <sup>1</sup>	1	EPDM
92	straight connector 1/4 BSPT D.8	2	1.4301 (AISI 304)

1) recommended spare parts





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