



## INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

# SERIES 1100 AND 5100 VERTICAL MIXER



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Original manual

03.100.30.00EN  
ED. 2012/02

CE



## ▣▣ DECLARATION OF CONFORMITY

(according to Directive 2006/42/EC, annex II, part A)

Manufacturer: **INOXPA, S.A.**  
C/ Telers, 54  
17820 Banyoles (Girona) - SPAIN

Hereby declares, that the product:

**VERTICAL MIXER**

**1100-5100**

Name

Type

conforms to the specifications of the Council Directive:

**Machine Directive** 2006/42/EC, and complies with the essential requirements of the Directive and Harmonised Standards:

UNE-EN ISO 12100-1/2:2004  
UNE-EN ISO 13857:2008  
UNE-EN 953:1997  
UNE-EN ISO 13732-1:2007

**Low Voltage Directive** 2006/95/EC (what repeal to 73/23/CEE Directive), and are conforms with UNE-EN 60204-1:2006 and UNE-EN 60034-1:2004

**EMC Directive** 2004/108/EC (what repeal to 89/336/CEE Directive), and are conforms with UNE-EN 60034-1:2004

In compliance with the Regulations **(CE) n° 1935/2004**, relating to materials and articles intended to come into contact with foodstuff (repeal Directive 89/109/CEE), the materials in contact with the product do not transfer their components in quantities which may jeopardise consumer's health or safety

Banyoles, 2012

A handwritten signature in blue ink, appearing to read "Josep Mª Benet".

Josep Mª Benet  
Technical manager

# 1. Safety Instructions.

## SAFETY INSTRUCTIONS.

This instruction manual contains the basic indications that should be complied with during installation, start-up and maintenance. Consequently, it is essential that, before installation, both the installer and the plant technical manager read this instruction manual and that it be permanently available alongside the mixer or corresponding installation.

Not only must the detailed safety instructions in this chapter be complied with, but so also should the special measures and recommendations added in the other chapters of this manual.

## SYMBOLS USED.

The safety instructions included in this manual, whose non-compliance may cause risk to persons or to the machine and its correct operation, are expressed by means of the symbols indicated below:



**Danger to people in general.**



**Electrical hazard.**



**Danger of injury caused by the mixer.**



**Danger due to suspended loads.**



**Danger for the mixer and its correct operation.**



**General obligation.**

## GENERAL SAFETY INSTRUCTIONS.



- Read the instructions in this manual before installing the mixer and before starting it up.
- The installation and use of the mixer must always be in accordance with the rules applying to health and safety.
- Before starting up the mixer, check that it be correctly anchored and that the shaft be perfectly aligned. Poor alignment and/or excessive force in fitting may cause serious mechanical problems for the mixer.



- Specialised personnel should carry out all electrical work.
- To control the engine characteristics and its control panel, especially in areas where there is a risk of fire or explosion, the user company's technical manager shall establish danger areas (area 1 – 2 – 3).
- Do not spray the motor directly during cleaning.
- Do not disassemble the mixer without previously disconnecting the power supply. Remove the fuses and disconnect the motor feed cable.



- Do not operate the mixer if turning components do not have the protection system or if they are badly fitted.
- The mixer has rotating parts. Do not put hands or fingers into an mixer whilst it is operating. This may cause serious injury.
- Do not touch any of the parts of the mixer that are in contact with liquid whilst in operation. If the mixer works with hot products at temperatures exceeding 50 °C, there is a risk of burns. In these cases, collective protective measures should be put in order of priority (distance, protective screen, heat resistance), or -failing this possibility- to provide individual protection (gloves).
- In the event of dangerous fluid (e.g. explosives, toxic agents, hot liquids) leakages (e.g. mechanical seal), the appropriate measures must be taken in order to avoid any personal or environmental risk that might arise.



- Take all possible precautions in lifting the mixer. Always ensure that it securely attached when being transported by crane or any other lifting mechanism.



- Withdraw all the tools used in mounting before starting up the mixer.
- The mixer is unable to work without liquid. Standard mixers are not designed to operate during the filling or emptying of tanks.



- Do not exceed the mixer's maximum operating conditions. Do not modify the operating parameters that were initially set for the mixer without the prior written consent of INOXPA.
- The mixers 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.

### **WARRANTY.**

We wish to point out that any warranty issued will be null and void and that we are entitled to an indemnity for any civil liability claim for products which might be filed by third parties if:

- operation and maintenance work has not been done following the corresponding instructions; the repairs have not been made by our personnel or have been made without our written authorization;
- modifications are made to our material without prior written authorization;
- the parts or lubricants used are not original INOXPA parts/lubricants;
- the material has been improperly used due to error or negligence or have not been used according to the indications and the intended purpose.
- all components subject to wear are excluded from the guarantee.

The General Delivery Terms which you have already received are also applicable.

### **INSTRUCTIONS MANUAL.**

The information provided in the instruction manual refers to updated data.

We reserve the right to modify the design and/or manufacturing specifications of our products as required, devoid of any obligation on our part to adapt any product supplied prior to such alteration.

The technical information made available in this instruction manual, together with the graphs and technical specifications provided, shall continue to belong to us and should not be used (except for starting up this installation), copied, photocopied, made available or otherwise given to third parties without our prior written consent.

INOXPA is reservation the right to modifying this instructions manual without previous notice.

### **INOXPA SERVICE.**

In the event of doubt or should you require a fuller explanation on particular data (adjustment, assembly, disassembly...), please do not hesitate to contact us.

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## 2. Reception, storage and transport.

### RECEPTION.

On reception of the mixer, check the packing and its contents to ensure that it agrees with delivery note. INOXPA packs the mixers completely assembled or disassembled according to the case. Ensure that the mixer has not suffered any damage. In the case of it being found not to be in correct condition and/or some part(s) are missing, the transporter shall have to prepare a report as quickly as possible.

### STORAGE.

If the mixer is not immediately installed, it must be stored in an appropriate place. The mixer must be stored in a horizontal position and on some wooden or similars supports placed between the motor and flange. The mixer in such a position will not become deformed and must not support loads of any description.

### TRANSPORT.

Take all possible precautions in lifting the mixer. Always use the sling hooks when moving the mixer with a crane or any other type of lifting equipment.



**Depending on the model, the mixers are too heavy to store or install manually. Use an adequate means of transport. Do not manipulate the mixer by the shaft because it can easily become deformed.**

Type	Group Weight [Kg]
ME-1100	27
ME-5100	
ME-1101	41
ME-5101	
ME-1105	73
ME-5105	
ME-1110	168
ME-5110	
ME-1125	300
ME-5125	
ME-1130	523
ME-5130	
ME-1150	614
ME-5150	
ME-1175	818
ME-5175	
ME-1110	955
ME-5110	

## 3. Identification, description and use.

### IDENTIFICATION.

The mixer is identified by means of a plate stating its characteristics attached to the motor or bearing support. The type of mixer and serial number are on the plate. See figure 3.1.

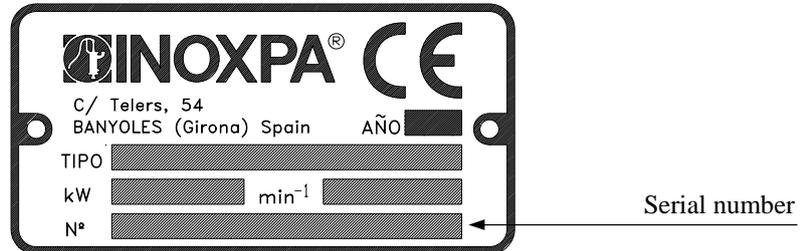


Figure 3.1: Characteristics plate.

### Example:

#### Complete mixer

<b>ME</b>	-	<b>1</b>	<b>105</b>	-	<b>NN</b>
1		2	3		4

#### 1. Name of mixer.

ME = Emulsifier mixer.

#### 2. Series.

1000 = Vertical mixer.

5000 = Vertical mixer with seal.

#### 3. Mixer size.

100, 101, 105, .....1100.

#### 4. Version.

NN = Standard.

## DESCRIPTION AND OPERATING PRINCIPLE.

The emulsifier mixers have been designed in a versatile construction, which offers the user a new and more efficient process technique.

The material is absorbed from the bottom of the container. The rotor accelerates the product, which is expelled through the openings in the stator, subjecting the mixture to intense mechanical and hydraulic power.

The standard head is slotted. There two other head designs available, should the process need same. Moreover, circulating or downthrust propellers can be fitted to the shaft in order to increase the mixture, or to create a vortex.

At the bottom, the shaft is guided by a bushing, fitted just above the head. Standard ones are supplied in PTFE, however, they may be made of other materials in accordance with the process for which they are needed.

The ME-1100 series is used in open and closed tanks, operating at atmospheric pressure. It is driven by a direct motor. The sealing system consists of a V-Ring. There are three attaching clamps supplied in order to secure the mixer to the tank.

The ME-5100 series is used in closed tanks that operate under pressure or in a vacuum. They are fitted with a head which has a coupling flange and a bearing. The sealing is accomplished by means of a double sealing cartridge. It is driven by a direct motor. This series comes with only one tank attaching clamp in accordance with DIN 2632 PN10.

Other clamps can be made upon request.

## APPLICATION.

Rotor / stator mixers are ideal for applications that need speedy reductions of particles and drops.

The most common applications are homogenisation, solubilization and emulsification.

## FIELD OF APPLICATION.

Reactor Volum (litres)	Reactor Size		Selected mixer (Liquids 1 cPs)
	D. (mm)	H. (mm)	
100	500	500	<b>ME-100</b>
	440	700	
200	640	640	<b>ME-101</b>
	550	900	
300	730	730	<b>ME-105</b>
	650	1000	
500	865	865	<b>ME-110</b>
	750	1200	
750	1000	1000	<b>ME-105</b>
	860	1400	
1000	1100	1100	<b>ME-110</b>
	950	1500	
1500	1250	1250	<b>ME-125</b>
	1100	1700	
2000	1400	1400	<b>ME-130</b>
	1200	1800	
2500	1500	1500	<b>ME-125</b>
	1300	2000	

Should you require information on larger volumes, please contact INOXPA S.A.

# 4. Installation and assembly.

## INSTALLATION AND ASSEMBLY.



**If the mixer is supplied without a drive or other element, the purchaser shall be responsible for its assembly, installation, start-up and operation.**

### SITE.

Place the mixer in such a manner that it can facilitate inspections and checks. Leave enough room around the mixer to enable appropriate checking, separation and maintenance. It is very important that easy access is to be had to the mixer's electrical connection device, even when it is in operation.

When the fitting of the mixer is centred on the tank, a circuit breaker will be required.

Ask our technical department for each specific application. Should you require them, the approximate dimensions of the circuit breakers, in accordance with the diameter of the tank, are given in figure 4.1. and table 4.1.

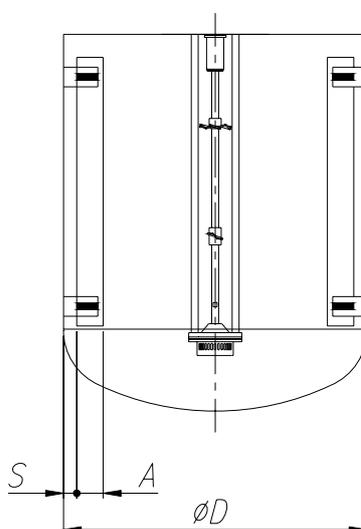


Figure 4.1

Ø D	300	400	500	600	800	1000	1200	1600	2000	2500	3000	3500	4000
A	20	30	35	40	50	70	80	115	130	180	200	240	280
S	5	5	10	10	10	15	20	20	30	30	50	50	50

Table 4.1

### ASSEMBLY.

In order to assure a good mixing process, the mixer should be positioned at a point corresponding to 1/3 of the diameter of the tank. Moreover, the distance from the mixer head to the bottom of the tank must be between 2 and 3 three times the diameter of the head. After the base of the mixer has been fitted onto the support bracket, the securing screws and nuts will be fitted to their corresponding holes, without being tightened. After this operation has been carried out, the mixer must be levelled, which is accomplished as follows:

- Put a spirit level up against the mixer shaft.
- Check four points at 90° to each other, at which are at the same height.

After the levelling has been done, screw the securing nuts and screws tightly.

It is a good idea to consult the mechanical sealing specifications before fitting the mixer.



**Never apply too much force at the tip of the shaft or to the mixer's rods, given that they might easily become permanently deformed.**

## **ELECTRICAL CONNECTION.**

Before connecting the electric motor to the mains, check the local regulations and the corresponding standards regarding electrical safety. Take special account of those parts referring to command and control of the mixer. Check the manufacturer's instruction manual of the motor for connecting it to the mains.

**Let the electrical connection of the motors to qualified personnel. Take the necessary measures in order to prevent any type of breakdown.**



**The motor should be protected with devices against overload and short-circuits.**

**It is not possible to use the mixer in areas of risk of fire or explosion if this has not been included in the order. Risk areas (zones 1 -2 - 3).**

## 5. Start-up, operation and shutdown.

The mixer can be commissioned after the detailed instructions in the chapter on installation and fitting have been carried out.

### START-UP.

- Check that the power supply falls into line with the indications given on the motor plate.
- Check the liquid level in the tank. If not specified on the order, the mixers cannot be put into operation during the filling and emptying of the tank.
- Make sure that the mechanical sealing is ready to enter correctly into operation. To this end, the fitting specifications for the manual sealing must be followed.



**The mixer must NEVER be put into operation without a product. The mixing element has to be submerged to, at the very least, twice its diameter and must have a clearance, with respect to the bottom, of 2 to 3 times the diameter of the head.**

- All of the protective devices must be in position.
- The performance of the emulsifier mixer depends on the viscosity of the working fluid. The following loading process must be followed in order to use the mixer properly:
  1. Pour all of the low viscosity components into the container.
  2. Put the mixer into operation.
  3. Make sure that the impeller is turning in the right direction (clockwise as viewed from the drive side). See Figure 5.1.
  4. Add the remaining liquids or soluble components.
  5. Add the solids that need to be cut, or that need a pre-setting time to bring about the reaction.
  6. Add the remaining components, including the solids required to stabilise the formulation, or those that are needed to increase the viscosity of the mix in question.



**Respect the turning direction of the mixing element, as indicated by the arrow stuck to the motor. Operation in the wrong direction will provoke of loss of effectiveness as far as the mixture is concerned.**

- Check the motor's electrical consumption.

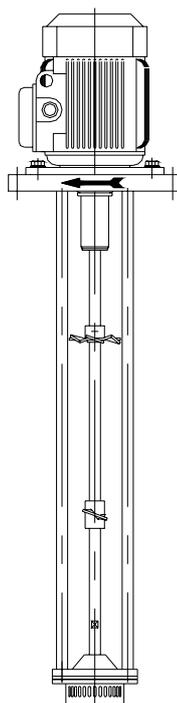


Figure 5.1

## OPERATION.



**Do not modify the operating parameters for which the mixer was initially selected without prior written consent of INOXPA. (Risk of deterioration and danger for the user).**

**Follow the operating instructions and safety indications described in the instructions manual of the tank on which the mixer is mounted.**



**Mechanical risks (drag, shearing, cutting, knocking, crushing, pinching, ..., etc.) . If the mixing element is accessible from the upper part of the tank, or from the its manhole, the user is exposed to the aforementioned risks.**

The tank should be equipped with protection devices and safety equipment. Check the manufacturer's instructions manual.



**Introducing an object or raw material may give rise to a breakage in the mixing element or the breakage of other mechanical parts, and may jeopardise its safety or its guarantee.**

**Control motor consumption in order to avoid circuit overloading.**

## 6. Maintenance and conservation.



Maintenance work can only be carried out by qualified personnel that are trained and equipped with the necessary resources to carrying out this work.

Before beginning maintenance work, ensure that the electric motor is disconnected and that the tank is empty.

### MAINTENANCE.

- Inspect the mixer regularly.
- Do not fail to keep the mixer clean.
- Check the condition of the motor.
- Check the condition of the head bearings (5100 Series).
- Check the sealing: V-ring (1100 Series).
- Check the sealing of the mechanical seal (5100 Series)
- Check the teflon bearing for wear and tear on completing every process. In the event of coming across excessive wear and tear, it must be changed.

The motor will be maintained in accordance with the manufacturer's instructions. Check the operating instructions of same.

### LUBRICATION.

The 5100 series vertical mixers are fitted with permanently greased bearings, which means that these do not require any maintenance work. The bearings can be re-greased by stripping the bracket, cleaning the bearings themselves, or replacing them, as well as their lantern, finally putting in new grease to the order of 50-70 %.

If re-greasing, only use special bearing grease, with the following properties:

- Lithium based or composed of good quality lithium.
- A viscosity of 100 - 140 cSt at 40 °C.
- NLGI consistence, grade 2 or 3.
- Continuous operating temperature - 30 °C to + 120 °C.

The greasing of the motor's bearings will be carried out in accordance with the manufacturer's instructions.

### SPARE PARTS.

To order spare parts it is necessary to indicate the type and serial number included on the mixer's characteristics plate, as well as the position and description of the part as found in chapter 9 of technical specifications.

### CONSERVATION.

If the mixer is out of service for a long period of time, clean and treat the parts with VG 46 mineral oil. The mixer must be stored in a horizontal position and on wooden supports, or similar. These supports will be positioned at the head.

## 7. Operating problems: causes and solutions.

Operating problems	Probable causes
Motor overload.	1, 2, 13.
Insufficient mixture.	1, 3, 4, 5.
Vibrations and noise.	6, 7, 8, 9, 10, 13.
Peakage.	11, 12.

Probable causes		Solutions
1	Viscosity of the liquid too high.	Reduce its viscosity, for example by heating the liquid.
2	High density.	Increase motor power.
3	Tank too big for the chosen mixer.	Consult the technical department.
4	Wrong direction of rotation.	Change the turning direction.
5	Mixer speed too low.	Increase the speed.
6	Liquid level insufficient or none.	Check the level of liquid in the tank.
7	Shaft bended.	Replace the shaft.
8	Critical speed.	Consult the technical department.
9	Worn drive bearings.	Replace the drive bearings.
10	Worn or damaged bearing.	Replace the bearing.
11	Worn or damaged V-ring.	Replace the V-ring.
12	Worn or damaged mechanical seal.	Replace the seal.
13	The rotor is rubbing against the stator.	Replace the bearing.



**If the problems persist stop using the mixer immediately. Contact the mixer manufacturer or the representative.**

## 8. Disassembly and assembly.

The assembly and disassembly of the mixers should only be carried out by qualified personnel. Ensure that staff read this instruction manual carefully, especially those parts that make direct reference to their work.

### ELECTRICAL SAFETY.

Ensure that the motor starter is turned off when carrying out disassembly or assembly work on the mixer.



- Place the mixer switch in the “off” position.
- Block the electrical panel and put a warning notice on it.
- Take out the fuses and take them with you to the work area.

### SERIE 1100.

#### DISASSEMBLY.

Once the motor is disconnected, disassembly work may begin:

- Disassemble the positioning apparatus.
- Clean and dry the Mixer.
- Unscrew and remove the rotor (21).
- Loosen the screws (52A), which will enable you to take out the stator (22), the lower flange (42A) and the bearing (17).
- In those cases where downthrust (02) and recirculation (02A) propellers have been fitted, loosen the allen setscrews (55B).
- Take out the V-ring (81), the retaining ring (30) and the sleeve (13).
- Remove the pin (56) which will enable you to take out the shaft (05).
- Loosen the screws (52), remove the motor (93) in which the shaft complement (26) will still be secured, after the motor (93) has been taken out, remove the shaft complement, by loosening the all setscrews (55 and 55A).
- Remove the screws (50) which will enable the separation of the structural rods (29) from the upper flange (42).
- Unscrew the structural rods from the coupling flange (23).

#### ASSEMBLY.

- Screw the structural rods (29) to the coupling flange (23).
- Position the structural rods in the upper flange (42) securing them by means of the allen setscrews (50).
- Place the shaft complement (26) onto the motor shaft (93) and secure it by means of the allen setscrews (55 and 55A).
- Fit the motor (93) onto the flange (42), and secure it by means of the screws (52).
- Position the shaft (05) into the shaft complement (26). The proper positioning of the shaft will enable its securing by means of the pin (56).
- Fit the sleeve (13) onto the shaft complement (26), fitting the retaining ring (30) in order to avoid the shifting of same.
- Fit the V-ring (81) in accordance with the Figure on page 9.4.
- Should the mixer come with downthrust (02) and recirculation (02A) propellers, fit them onto the shaft in their corresponding position and secure them by means of the setscrews (55B).
- Place the lower flange (42A) and the stator (22) onto the coupling flange (23). These elements are secured by means of screws (52A).
- Slide the bearing (17) onto the shaft (05) until it reaches up to the lower flange (42A).
- Position the rotor (21) at the end of the rotor shaft (05), with a spanner placed at the shaft interface, in order to avoid it turning, then fit the rotor.
- Fit the apparatus in its designated position.

## SERIE 5100.

### DISASSEMBLY.

Once the motor is disconnected, disassembly work may begin:

- Disassemble the positioning apparatus.
- Clean and dry the Mixer.
- Unscrew and remove the rotor (21).
- Loosen the screws (52A), which will enable you to take out the stator (22), the lower flange (42A) and the bearing (17).
- In those cases where downthrust (02) and recirculation (02A) propellers have been fitted, loosen the allen setscrews (55B).
- Loosen the screws (52C), which will enable the separating of the base plate (11) from the lantern. This base plate will be secured to the structural rods (29) and the coupling flange (23).
- Loosen the screws (50), which will enable the separating of the structural rods (29) from the base plate, and then these can be unscrewed from the lower ring.
- On loosening the screws (51A) it is possible to remove the upper flange (42) along with the mechanical seal (08). Consult the mechanical sealing device's instructions manual before disassembly same. The sealing can be separated from the base plate by loosening screws (52B).
- Loosen screws (52) in order to separate the motor from the lantern (06). The motor will be fitted with a half coupling (90) on its shaft, this can be stripped by loosening the allen screw.
- By loosening screws (51) it is possible to remove the shaft (05) along with the other half of the coupling, the bushing (17A) and the bearing (70) from inside the lantern.
- Loosen the allen screw (55) from the coupling and from the bearing, which will enable the removal of same from the shaft, along with the bushing.

### ASSEMBLY.

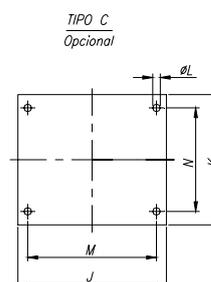
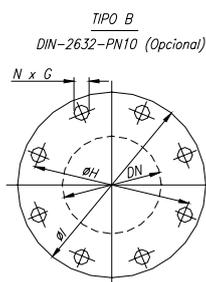
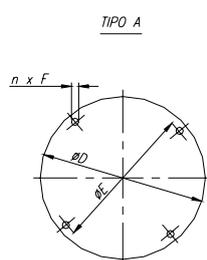
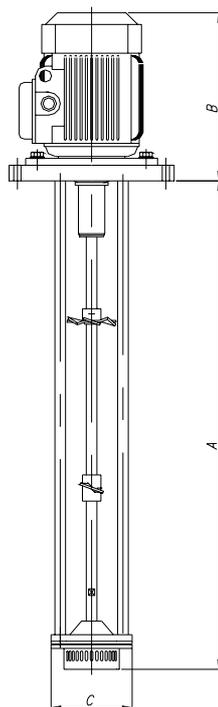
- Fit the bearing (70) onto the upper part of the shaft (05) and, then fit the bushing (17A).
- Position half of the corresponding coupling (90) onto the shaft (05) securing with the setscrew (55C) to its operating position.
- Fit the shaft (05) through the upper part of the lantern (06) until it comes up against the bearing support (70). Secure this by means of the allen screws (51). Immediately after, secure the bearing.
- Secure its corresponding half coupling (90) to the end of the motor (93) by means of the setscrew (55).
- Fit the motor (93) onto the lantern (06) and secure it by means of the screws (52).
- Make sure that both halves of the coupling are not touching each other.
- Fit the seal (08) onto the base plate (42), securing it by means of the screws (52B).
- Fit the seal-base plate assembly onto the shaft. Consult the mechanical sealing device's instructions manual before fitting same. As soon as it has been properly positioned secure the whole assembly by means of the allen screws (51A).
- Screw the structural rods (29) into the coupling flange (23).
- Position the structural rods on the base plate (11) securing them with the corresponding screws (50).
- Fit the base plate (11) to the upper flange (42), securing it by means of the corresponding screws (52C).
- Should the mixer come with downthrust (02) and recirculation (02A) propellers, fit them onto the shaft in their corresponding position and secure them by means of the setscrews (55B).
- Place the lower flange (42A) and the stator (22) onto the coupling flange (23). These elements are secured by means of screws (52A).
- Slide the bearing (17) onto the shaft (05) until it reaches up to the lower flange (42A).
- Position the rotor (21) at the end of the shaft (05), with a spanner placed at the shaft interface, in order to avoid it turning, then screw the rotor on until the end.
- Make sure that the rotor blades are centred with respect to the stator windows. Should it prove necessary, adjust the shaft position.
- Fit the apparatus in its designated position.

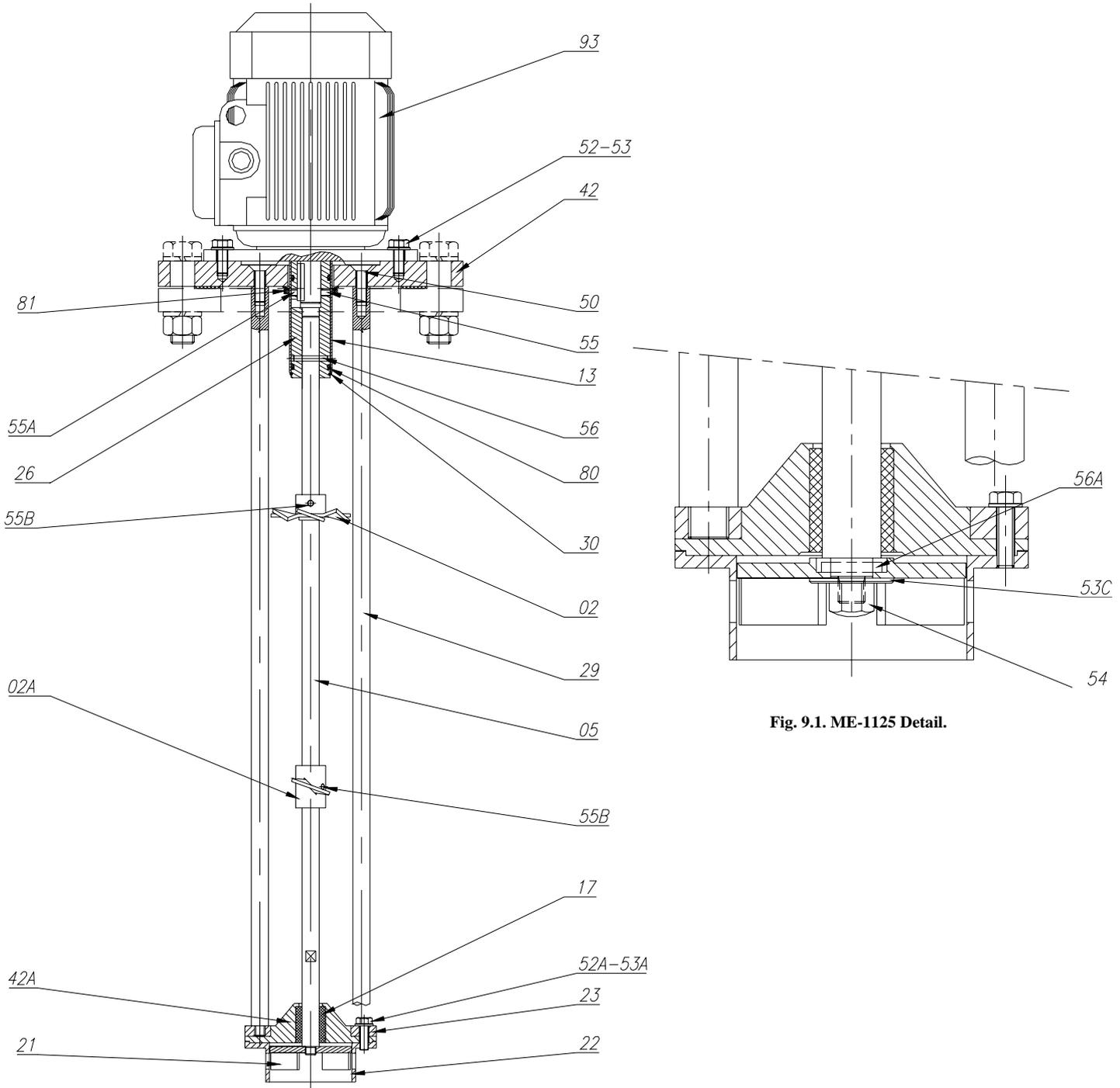
# 9. Technical Specifications.

## TECHNICAL SPECIFICATIONS AND DIMENSIONS.

### SERIE 1100

Mixer type	Motor power	Speed	Dimensions															
			[kW]	[rpm]	A	B	C	TYPE A Flange			TYPE B Flange				TYPE C Flange			
	$\phi D$	$\phi E$						$n \times F$	DN	I	H	$n \times G$	M	N	J	K	L	
ME-1100	0,55	3000		700	235	95	210	185	4x $\phi 11$	125	250	210	8x $\phi 18$	170	135	195	160	9,5
ME-1101	1,1			750	258	125	250	225	4x $\phi 11$	150	285	240	8x $\phi 23$	195	159	225	200	11,5
ME-1105	4			850	355	170	310	280	4x $\phi 13$	200	340	295	8x $\phi 23$	280	159	310	250	11,5
ME-1110	7,5			1206	430	185	360	330	4x $\phi 13$	250	395	350	12x $\phi 23$	310	250	360	300	14
ME-1115	11			1206	430	185	360	330	4x $\phi 13$	250	395	350	12x $\phi 23$	310	250	360	300	14
ME-1125	18,5			1392	525	210	430	390	4x $\phi 17,5$	300	445	400	12x $\phi 23$	-				
ME-1130	22	1500		1465	615	290	430	390	4x $\phi 17,5$	300	445	400	12x $\phi 23$	-				
ME-1150	37	1000		1770	798	450	650	600	8x $\phi 18$	500	670	620	20x $\phi 26$	-				
ME-1175	55			2120	998	475	650	600	8x $\phi 18$	500	670	620	20x $\phi 26$	-				
ME-11100	75			2740	1086	520	760	715	8x $\phi 23$	600	780	725	20x $\phi 30$	-				



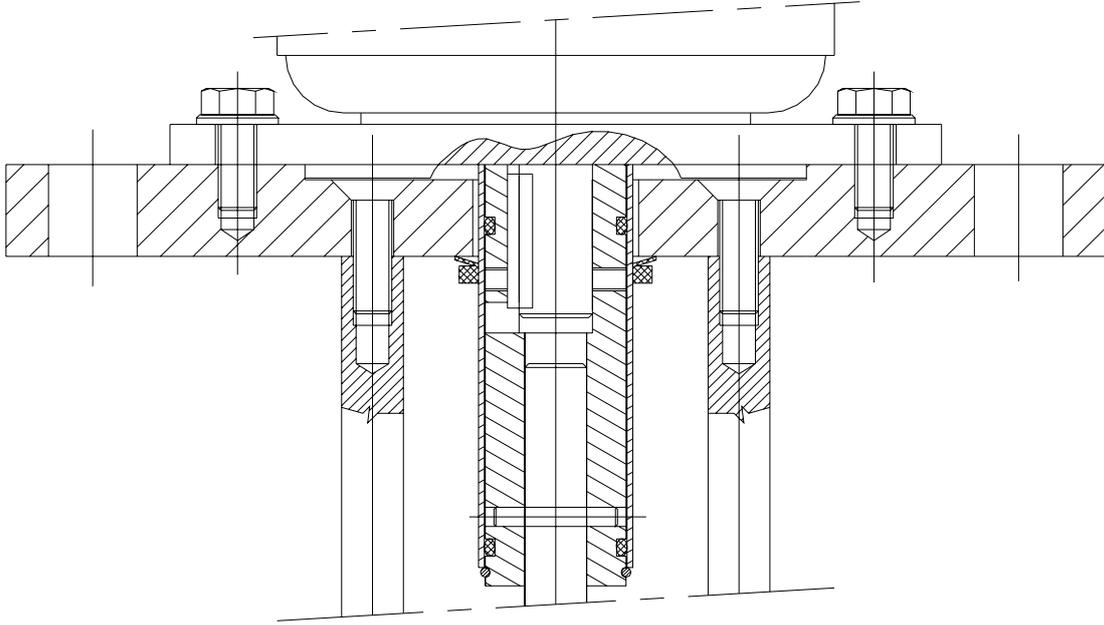


**Fig. 9.1. ME-1125 Detail.**

**MIXER SERIE 1100 PARTS LIST.**

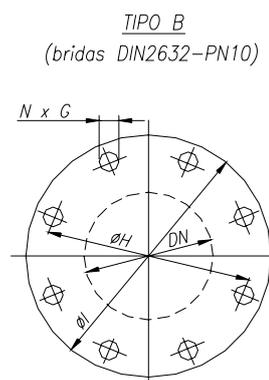
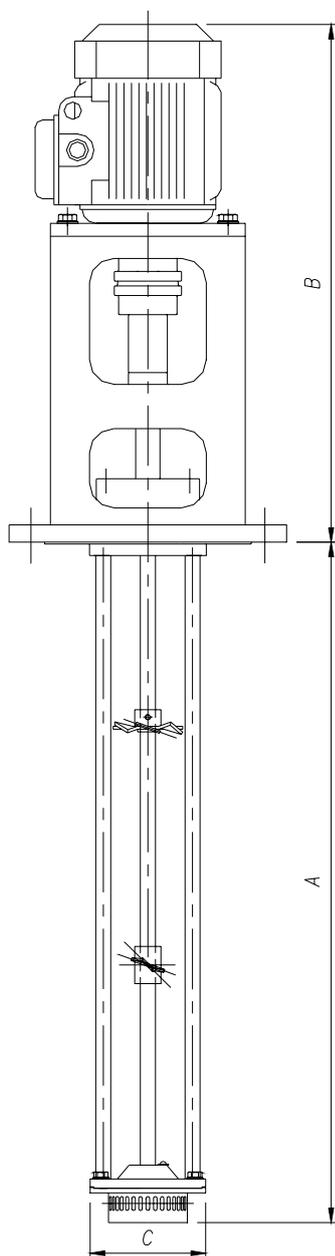
Position	Quantity	Description	Material
02	1	Downthrust propeller	AISI-316
02A	1	Large flow propeller	AISI-316
05	1	Rotor shaft	AISI-316
13	1	Coupling sleeve	AISI-316
17	1	Bearing	Teflon
21	1	Rotor	AISI-316
22	1	Stator	AISI-316
23	1	Coupling flange	AISI-316
26	1	Shaft complement	AISI-316
29	4	Structural rod	AISI-316
30	1	Retaining ring	AISI-316
42	1	Upper flange	AISI-316
42A	1	Lower flange	AISI-316
50	4	Countersunk screw	A-2
52	4	Hexagonal screw	A-2
52A	2	Hexagonal screw	A-2
53	4	Flat washer	A-2
53A	2	Flat washer	A-2
53C*	1	Flat washer	A-2
54*	1	Nut	A-2
55	3	Allen setscrew	A-2
55A	1	Allen setscrew	A-2
55B	4	Allen setscrew	A-2
56	1	Pin	AISI-316
56B*	1	Pin	AISI-316
80	2	O-ring	70-NBR
81	1	V-Ring	70-NBR
93	1	Motor	-

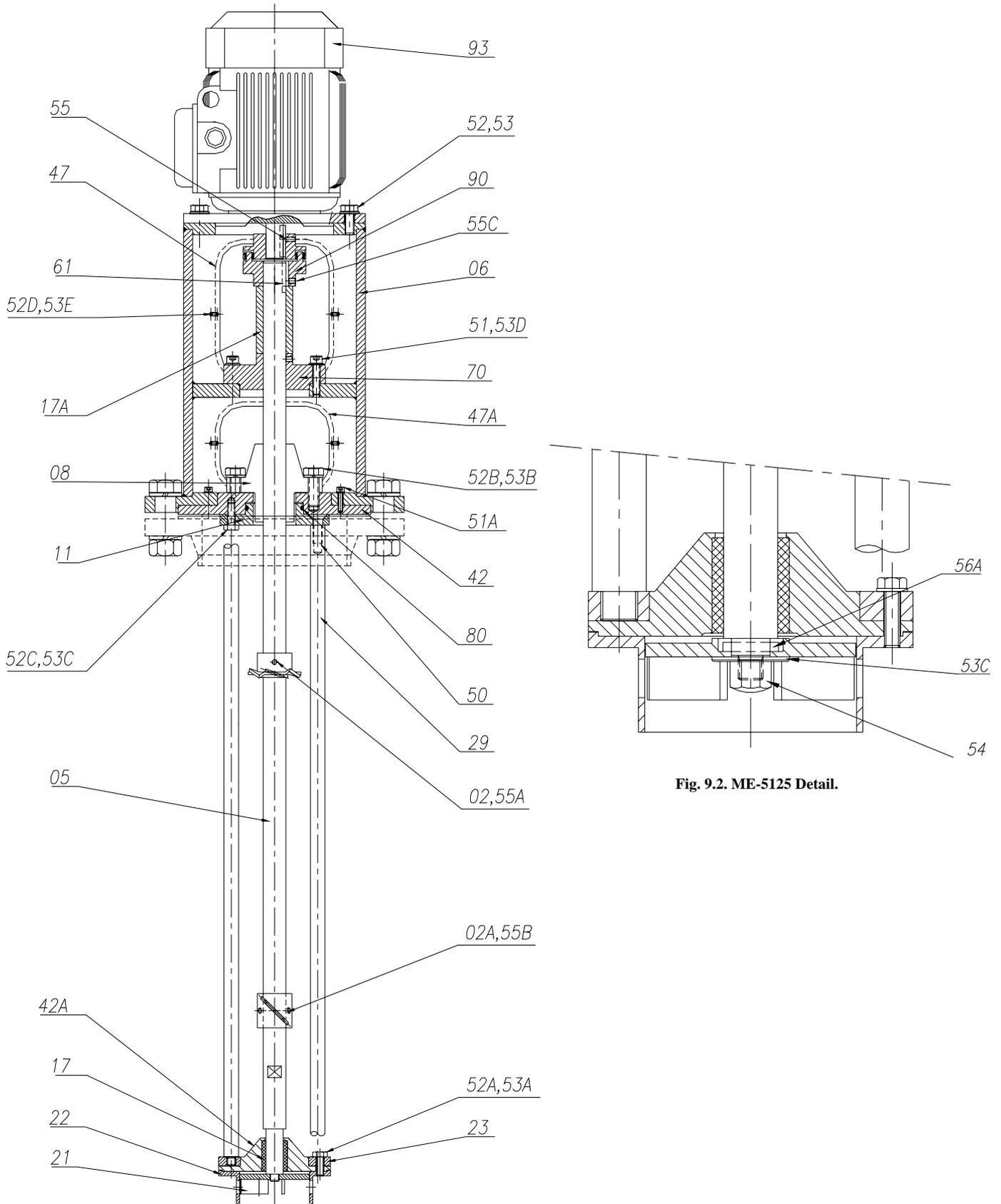
\* ME-1125 (see fig. 9.1)



**SERIE 5100**

Mixer type	Motor power	Speed	Dimensions						
			A	B	C	TYPE B Flange			
	[kW]	[rpm]				DN	I	H	nxG
<b>ME-5100</b>	0,55	3000	715	525	95	125	250	210	8x $\phi$ 18
<b>ME-5101</b>	1,1		765	560	125	150	285	240	8x $\phi$ 23
<b>ME-5105</b>	4		862	650	170	200	340	295	8x $\phi$ 23
<b>ME-5110</b>	7,5		1224	694	185	250	395	350	12x $\phi$ 23
<b>ME-5115</b>	11		1224	694	185	250	395	350	12x $\phi$ 23
<b>ME-5125</b>	18,5		1415	896	210	300	445	400	12x $\phi$ 23
<b>ME-5130</b>	22	1500	1488	973	290	300	445	400	12x $\phi$ 23
<b>ME-5150</b>	37	1000	1815	1390	450	500	670	620	20x $\phi$ 26
<b>ME-5175</b>	55		2165	1603	475	500	670	620	20x $\phi$ 26
<b>ME-51100</b>	75		2786	1690	520	600	780	725	20x $\phi$ 30





**Fig. 9.2. ME-5125 Detail.**

**MIXER SERIE 5100 PARTS LIST.**

Position	Quantity	Description	Material
02	1	Downthrust propeller	AISI-316
02A	1	Large flow propeller	AISI-316
05	1	Rotor shaft	AISI-316
06	1	Lantern	AISI-316
08	1	Mechanical seal	Sil/Tun-Sil/Gr/Tun
11	1	Base plate	AISI-316
17	1	Bearing	Teflon
17A	1	Bushing	F-1100
21	1	Rotor	AISI-316
22	1	Stator	AISI-316
23	1	Coupling flange	AISI-316
29	4	Structural rod	AISI-316
42	1	Upper flange	AISI-316
42A	1	Lower flange	AISI-316
47	2	Seal side protection	AISI-304
47A	2	Coupling side protection	AISI-304
50	4	Countersunk screw	A-2
51	4	Allen screw	A-2
51A	4	Allen screw	A-2
52	4	Hexagonal screw	A-2
52A	2	Hexagonal screw	A-2
52B	4	Hexagonal screw	A-2
52C	4	Hexagonal screw	A-2
52D	8	Screw	A-2
53	4	Flat washer	A-2
53A	2	Flat washer	A-2
53B	4	Flat washer	A-2
53C	4	Flat washer	A-2
53C*	1	Flat washer	A-2
53D	4	Flat washer	A-2
53E	8	Flat washer	A-2
54*	1	Nut	A-2
55	3	Allen setscrew	A-2
55A	1	Allen setscrew	A-2
55B	4	Allen setscrew	A-2
55C	1	Allen setscrew	A-2
56B*	1	Pin	AISI-316
61	1	Key	F-114
70	1	Bearing	Steel
80	2	O-ring	70-FPM
90	1	Coupling	F-1140
93	1	Motor	-

\* ME-5125 (see fig. 9.2)