

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

SIDE-ENTRY AGITATOR

LR / LM



20.025.32.0001



EC Declaration of Conformity

We,

INOXPA, S.A.U.

Telers, 60
17820 – Banyoles (Girona)

Hereby declare under our sole responsibility that the machine

LR/LM side entry agitator

From serial number **IXXXXXX** to **IXXXXXX** ⁽¹⁾ / **XXXXXXXXXXIIN** to **XXXXXXXXXXIIN** ⁽¹⁾

Fulfills all the relevant provisions of the following directive:

Machinery Directive 2006/42/EC

Low Voltage Directive 2014/35/EU

Electromagnetic Compatibility Directive 2014/30/EU

Applicable harmonized standards:

UNE-EN ISO 12100:2012

UNE-EN 14120:2016

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

A handwritten signature in black ink, appearing to be 'David Reyer Brunet', written over a light gray rectangular background.

David Reyer Brunet
Technical Office Manager

Banyoles, 7th February, 2019

⁽¹⁾ The serial number may be preceded by a slash and by one or two alphanumeric characters

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2. Generalities

2.1. INSTRUCTIONS MANUAL

This manual contains information about the reception, installation, operation, assembly, disassembly and maintenance of the LR/LM side-entry agitator.

Carefully read the instruction prior to starting the agitator, familiarize yourself with the installation, operation and correct use of the agitator 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 result in the loss of the right to claim damages.

This non-compliance may result in the following risks:

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

2.3. WARRANTY

Any warranty will be void immediately and lawfully and, additionally, INOXPA will be compensated for any civil liability claims submitted by third parties, in the following cases:

- the service and maintenance work have not been carried out in accordance with the service instructions, the repairs have not been carried out by our personnel or have been carried out without our written authorisation,
- modifications have been carried out on our material or equipment without written authorisation,
- the parts or lubricants used are not original INOXPA parts and products,
- the material or equipment has been improperly used, has been used negligently, or has not been used according to the instructions and their intended.

The General Conditions of Delivery already in your possession are also applicable:



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.

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 equipment



Electric hazard

ATTENTION

Important instruction for the protection of the equipment and its functions

3.2. GENERAL SAFETY INSTRUCTIONS



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

3.2.1. During the installation

The [Technical Specifications](#) of [chapter 9](#).

The installation and use of the agitator should always be in accordance with applicable regulations in regard to health and safety.



Before starting up the agitator, check that it is properly anchored and its shaft is perfectly aligned. Incorrect alignment and/or excessive stress during coupling can cause serious mechanical problems in the agitator.

Take all possible precautions when lifting the agitator. Always use properly attached slings when moving the agitator with a crane or other lifting device.

Keep the motor and the switchboard under control, particularly in areas where there is a risk of fire or explosion.



When cleaning, do not spray directly on the engine.

Do not disassemble the agitator until the switchboard has been disconnected. Remove the fuses and disconnect the power cable supplying the motor.

All electric work should be carried out by specialised personnel.

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.

Before starting up the agitator, remove all the tools used during the assembly.

Do not operate the agitator when the rotating parts are not equipped with their guards or are not properly assembled.

The agitator has rotating parts. Do not place hands or fingers in the agitator while it is operating. This may cause serious injuries.



Do not touch the parts of the agitator that are in contact with the fluid when in operation. When the agitator operates with hot fluids (temperatures above 50°C), there is a risk of skin burning. In such cases, collective-protection means (in this order or priority: separation, protective screen, heat-insulating material) or, in the absence of this, individual protection gear (gloves) must be used.



The agitator and its installation can generate sound levels above 85 dB(A) under unfavourable operating conditions. In such cases, the operators must use devices for protection against noise.

3.2.3. During maintenance



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

The agitator cannot operate without fluid. Standard agitators are not designed to work during the filling or emptying of tanks.

The maximum operating conditions of the agitator should not be exceeded. Nor should the operating parameters for which the agitator was initially designed be modified without written authorisations from INOXPA.



Do not leave loose parts on the floor.

Do not disassemble the agitator until the switchboard has been disconnected. Remove the fuses and disconnect the power cable supplying the motor.

All the electric work should be carried out by specialised personnel.

4. General Information

4.1. DESCRIPTION

The LM agitator range includes the side-entry agitators with the agitator shaft fixed directly onto the motor and the LR agitator range includes side-entry agitators with the agitator shaft fixed directly onto the gear motor. The lantern connected to the tank has a base plate made of stainless steel. The agitator shaft is guided by a bearing. The sealing of the shaft is carried out mechanically and is standardized according to DIN 24960.

The standard mixing element is the marine propeller type 10.

4.2. OPERATING PRINCIPLE

The LR agitators are driven by geared motors and the LM agitators are provided with direct motors.

These agitators are installed in a slanted position.

The rotation of the propeller creates a flow that impells the product to the bottom of the tank and then raises up to the surface along the wall apposite to the agitator. The effect is promoted if the bottom is curved.

The agitator is installed decentralized to enhance the circular flow. Thus a complete homogenization of the product is achieved.

4.3. APPLICATION

This lightweight range allows mixing and blending processes to be carried out in open and closed tanks with a variable viscosity between 1 and 1000 cPs.

The main application is agitation of low viscosity products like wine, oil, milk, beer, alcohol, etc. in large volume tanks.



Each agitator has performance limits. The agitator was selected for a given set of mixing conditions when the order was placed. INOXPA shall not be held responsible for any damage that might be suffered or malfunctioning of the equipment if the information provided by the buyer is incomplete or incorrect (e. g. nature of the fluids or installation details).

5. Installation

5.1. RECEPTION OF THE AGITATOR



INOXPA is not liable for any deterioration of the material caused by its transport or unpacking. Visually check that the packaging has not been damaged.



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

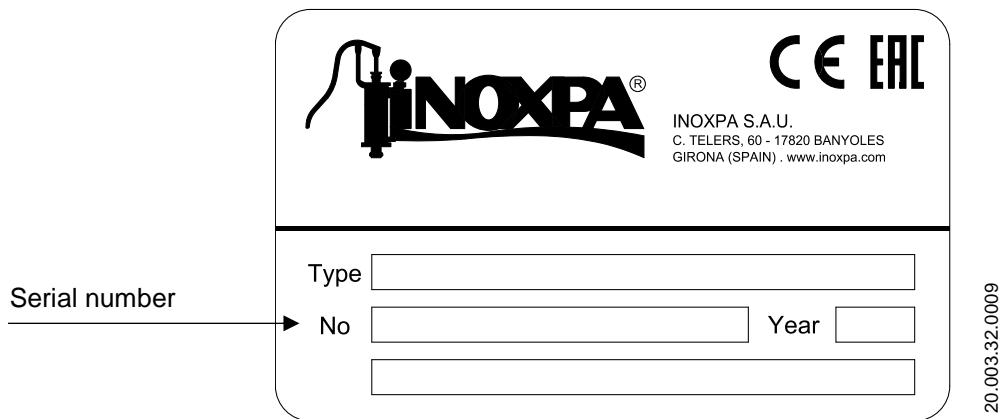
When receiving the agitator, check the packaging and its content to ensure that it matches the delivery note. INOXPA packs the agitator in their fully assembled form or disassembled on a case-by-case basis. Ensure that the agitator has not been damaged in any way. If it is not in good conditions and/or any parts are missing, the carrier must submit a report as soon as possible.

The following documentation is included with the agitator:

- shipping documents,
- instructions and Servicing manual for the agitator,
- instructions and Servicing manual for the gear-motor when the agitator is supplied by INOXPA.

5.2. IDENTIFICATION OF THE AGITATOR

The agitator is identified using a rating plate fixed onto the motor. The type of agitator and the serial number appear on the nameplate.



LR	1.	10	-	200	05	-	1	-	325
Diameter of agitation element									
325 325 mm									
400 400 mm									
500 500 mm									
600 600 mm									
650 650 mm									
Motor									
1 IP-55									
2 IP-65									
3 Flameproof									
6 Explosion-proof									
7 Single phased									
Motor power									
05 0,55 kW									
07 0,75 kW									
15 1,5 kW									
30 3 kW									
40 4 kW									
Motor speed									
200 200 rpm									
Type of agitation elements									
10 marine propeller									
Number of agitation elements									
1 one agitation element									
2 two agitation elements									
Name of the agitator									
LR side-entry agitator with gear motor									

LM	1.	10	-	4	015	-	1	-	175
Diameter of agitation element									
175 175 mm									
200 200 mm									
225 225 mm									
250 250 mm									
275 275 mm									
300 300 mm									
350 350 mm									
Motor									
1 IP-55									
2 IP-65									
3 Flameproof									
4 Explosion-proof									
5 Single phased									
Motor power									
011 1,1 kW									
015 1,5 kW									
022 2,2 kW									
030 3 kW									
055 5,5 kW									
075 7,5 kW									
092 9,2 kW									
110 11 kW									
Motor speed									
4 1500 rpm									
6 1000 rpm									
Type of agitation elements									
10 marine propeller									
Number of agitation elements									
1 one agitation element									
2 two agitation elements									
Name of the agitator									
LM Side-entry agitator with motor									

5.3. TRANSPORT AND STORAGE

ATTENTION



According to the model, the agitators are too heavy to be stored or installed manually. Use an appropriate mode of transport. Do not handle the agitator by the shaft as this may become deformed.

ATTENTION



Take all possible precautions when lifting the agitator. Always use properly attached slings when moving the agitator with a crane or other lifting device.

If the agitator is not to be installed immediately, it must be stored in an appropriate place. The shaft must be stored in a horizontal position and placed on wooden supports or for a similar material. In this position, the shaft will not become deformed but it must not be subject to any type of load.

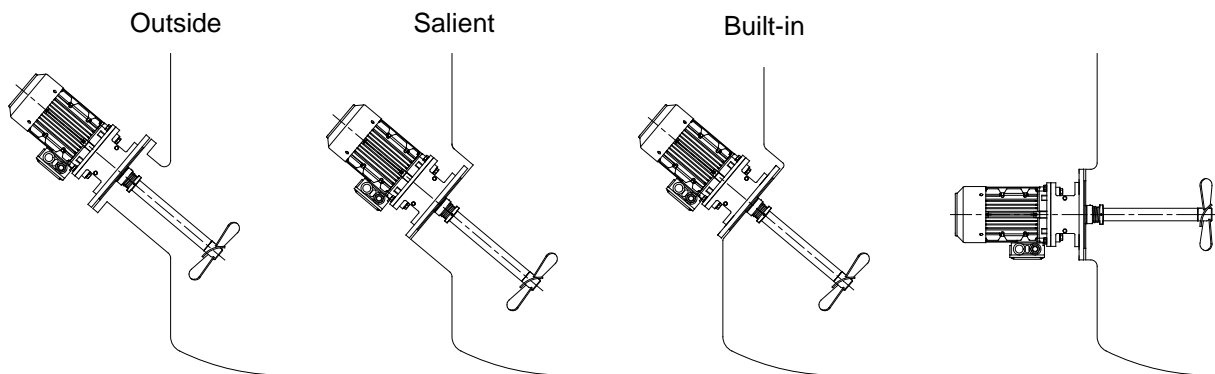
5.4. LOCATION

Place the agitator in such a way as to facilitate inspections and checks. Leave enough room around the agitator for service, disassembly and maintenance operations. It is very important to be able to access the electric connection device of the agitator, even when in operation.

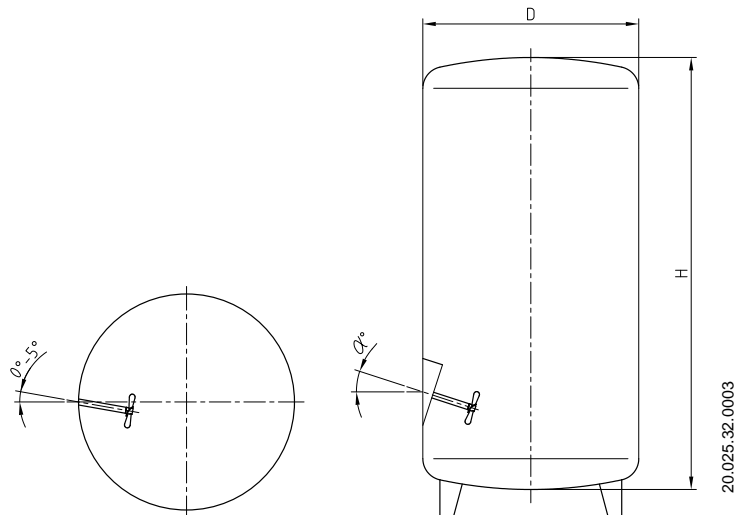
For a good agitation process, it may be necessary to place a deflector in the tank. Ask our Technical Department for information on any particular application. If required, the approximate dimensions for the deflector for different tank diameter are shown in the next figures and the next table:

VERTICALS:




HORIZONTAL:



20.025.32.0002



20.025.32.0003

ANGULOS DE ATAQUE									
Relación H/D		0,5	1	1,5	2	2,5	3	4	5
α°		0°	8°	14°	18°	25°	30°	40°	50°
Visc. máx cPS		3000	3000	1500	1500	500	300	150	100
FONDOS		0	0	0	0	-	-	-	-
		0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0

5.5. ELECTRICAL INSTALLATION

Before connecting the electrical motor to the mains, check local regulations on electrical safety as well as the applicable standards.

Check the instructions manual of the manufacturer of the motor for information on how to connect it to the mains.



Take the connection of the electrical motors must be performed by qualified personnel.

Take the appropriate measures to prevent any fault.

The motor must be provided with devices for protection against power overload and short-circuits.

The agitator cannot be used in areas where there is a risk of fire or explosion when this has not been specified in the order.

5.6. ASSEMBLY

To situate and fit the agitator in the flange support of the tank, you should disassemble the propeller from the shaft. Then, the agitator flange should be fitted on to the one of the tank screws placed in position in their corresponding drilled holes, and the fit the nuts. When they are fully tightened, fit the propeller to the end of the agitator shaft. Be careful, when assembling the agitator element not to knock the agitator shaft, to avoid any distortion.

ATTENTION



Force should never be applied to the end of the agitator shaft, as it can easily suffer permanent damage.

ATTENTION



Check the alignment of the agitator shaft with the half shaft once its assembly is completed.

6. Start-up



The start-up of the agitator can be carried out provide the instructions indicated in the chapter [5. Installation](#) have been followed.

- Check that the power supply matches the rating indicated on the motor plate.
- Check the alignment of the agitator shaft.
- Check the level of fluid in the tank. When not specified in the order, the agitator cannot be operated during the filling or emptying of the tank.

ATTENTION



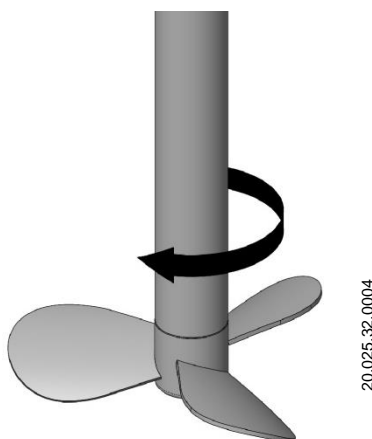
The agitator can NEVER operate without fluid. The agitation elements may only be submerged to a height equal to 1,5 times its diameter.

- All the guards must be in place.
- Start up the agitator.
- Check that the direction of rotation of the propellers is correct (it must rotate clockwise when see form the drive side).



Follow the direction of rotation of the agitation components as indicated by the arrow attached to the engine. An incorrect direction of rotations results in a loss of agitation performance.

- Check the electrical consumption of the motor.
- After a running-in period, check that the mechanical seal does not leak. If it does change it as shown in the chapter [8.6. Disassembly and assembly agitator](#).



ATTENTION

Do not modify the operating parameters for which the agitator was initially designed without written authorisation from INOXPA (risk of damage and user hazard).



Follow the instructions for use and the safety requirements described in the instructions manual for the tank in which the agitator is mounted.

Mechanical risk (e.g. drag, shear, cutting, impact, flattening and pinching). If the agitation element is accessible from the top or the tank inspections hatch, then the user will be exposed to the above-mentioned risks.

The tank must be fitted with protective devices and safety equipment. Consult the manufacturer's instructions manual.



ATTENTION

Introducing an object or solid raw material may cause the agitation component and other mechanical parts to break and compromise its safety or guarantee.

7. Troubleshooting

The attached table lists solutions to problems that may arise while operating the agitator. It is assumed that the agitator has been properly installed and that it has been selected correctly for the specific application. Contact INOXPA if technical assistance is required.

Motor overload																									
↓	Insufficient agitation																								
↓	Vibrations and noise																								
↓	Leaks																								
↓	<table border="1"> <thead> <tr> <th>PROBABLE CAUSES</th> <th>SOLUTIONS</th> </tr> </thead> <tbody> <tr> <td>• Viscosity of the liquid too high</td> <td>Reduce the viscosity, e.g. by heating the liquid</td> </tr> <tr> <td>• High density</td> <td>Increase motor power</td> </tr> <tr> <td>• Tank too big for the chosen agitator</td> <td>Check with the technical department</td> </tr> <tr> <td>• Wrong direction of rotation</td> <td>Change direction of rotation</td> </tr> <tr> <td>• Agitator speed too low</td> <td>Increase the speed</td> </tr> <tr> <td>• Liquid level insufficient or none</td> <td>Check liquid level in the tank</td> </tr> <tr> <td>• Shaft bended</td> <td>Replace the shaft</td> </tr> <tr> <td>• Critical speed</td> <td>Check with the technical department</td> </tr> <tr> <td>• Worn bearings</td> <td>Replace the bearings agitator</td> </tr> <tr> <td>• Lip seal worn or damaged</td> <td>If the lip seal is worn, replace it. If the lip seal is damaged, consult the technical department.</td> </tr> <tr> <td>• O-rings not the right ones for the liquid</td> <td>Fit the proper O-rings, check with the supplier</td> </tr> </tbody> </table>	PROBABLE CAUSES	SOLUTIONS	• Viscosity of the liquid too high	Reduce the viscosity, e.g. by heating the liquid	• High density	Increase motor power	• Tank too big for the chosen agitator	Check with the technical department	• Wrong direction of rotation	Change direction of rotation	• Agitator speed too low	Increase the speed	• Liquid level insufficient or none	Check liquid level in the tank	• Shaft bended	Replace the shaft	• Critical speed	Check with the technical department	• Worn bearings	Replace the bearings agitator	• Lip seal worn or damaged	If the lip seal is worn, replace it. If the lip seal is damaged, consult the technical department.	• O-rings not the right ones for the liquid	Fit the proper O-rings, check with the supplier
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If the problems persist stop using the agitator immediately. Contact the agitator manufacturer or the representative.

8. Maintenance

8.1. GENERAL CONSIDERATIONS

This agitator, 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 carrying out this work.

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

All parts or Materials that are replaced must be properly disposed of/recycled in accordance with the current directives applicable in each area.



Before beginning maintenance work, ensure that the agitator is disconnected.

8.2. MAINTENANCE

- Inspect the agitator regularly.
- Do not fail to keep the agitator clean.
- Check the state of the motor or the gear motor.
- Check the state of the bearings.
- Check the sealing: seal and/or V-ring.

Motor or gear motor maintenance shall be carried out in accordance with the manufacturer's instructions, see the instructions manual.

8.3. LUBRICATION

The LR/LM side-entry agitators are supported on permanently lubricated bearings, which means maintenance is not required. The bearings can be re-greased disassembling the support, cleaning the previous grease off the bearings or by replacing them. The bearing houses are also cleaned and finally re-greased with a 50%-80% grease.

When re-greasing, use only special grease for ball bearings with the following properties:

- Lithium-based or made up of high quality lithium,
- Viscosity 100-140 cSt at 40°C,
- Consistency NLGI grade 2 or 3,
- Continuous work temperature -30°C to 120°C.

The lubrication of the bearings of the motor or the gear motor will be carried out according to the manufacturer's instructions.

8.4. SPARE PARTS

To order spare parts it is necessary to indicate the type and serial number included on the agitator's characteristics plate, as well as the position and description of the part as found in chapter [9. Technical Specifications](#).

8.5. CONSERVATION

If the agitator is out of service for a considerable period of time, clean and treat the parts with VG46 mineral oil. The shaft must be stored in the horizontal position and on wooden supports or on supports of a similar material.

8.6. DISASSEMBLY AND ASSEMBLY OF THE AGITATOR



The disassembly and assembly of the agitators should only be carried out by qualified personnel using only appropriate tools. Ensure that staff read these instructions manual attentively, particularly the instructions that relate to their work.



Stop the motor from starting up when carrying out assembly and disassembly work on the agitator.

Place the agitator switch in the “off” position.

Lock out the electrical switchboard or place a warning sign.

Remove the fuses and take them to the workplace.

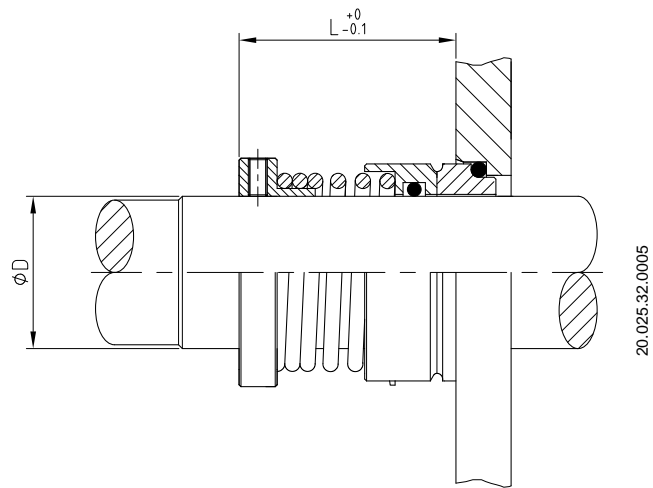
8.6.1. Disassembly of the agitator

Once the motor is disconnected, disassembly work may begin:

- Empty the tank.
- Remove the propeller (02) that is screwed to the agitator shaft (05) knocking a blade lightly with a plastic hammer in counter-clockwise direction as seen from the front of the propeller. Take care to retain the O-ring (80) in the agitator shaft (05).
- Remove carefully the two parts of the mechanical seal (08), loosening the allen studs that hold them.
- Remove shaft guards (47) together with its hexagonal screws (52B) and flats washers (53B).
- Remove the hexagonal screws (52C) from the motor or gear motor and loosen the allen studs (55A) from the bearing support (70).
- Move the motor or gear motor and the agitator shaft (05) backwards, taking care not to hit or strain the agitator shaft.
- Remove the allen studs (55) that fix the shaft to the motor and separate the motor or gear motor (93) of the agitator shaft (05).
- Finally, remove the hexagonal screws (52, 52A), flat washers (53, 53A) that separate the flange (23) from the lantern (04) and the latter from the bearing support (70).

8.6.2. Assembly of the agitator

- Assemble the agitator shaft (05) onto the motor or gear motor (93). Locate the threaded holes above the keyway. Introduce the allen studs into these holes and tighten until they lock on the keyway. The allen studs must not protrude from the external diameter of the shaft.
- Assemble the bearing support (70) in the lantern by means of the hexagonal screws (52A) and flat washers (53A), without tightening them.
- Introduce the agitator shaft and the motor through the bearing support (70) until the flange of the lantern, and firmly tighten the hexagonal screws (52C).
- Tighten the hexagonal screws (52A) of the bearing support (70).
- Next, place the flange (23) on the lantern centering (04) fixing through the hexagonal screws (52) and flat washers (53).
- Check that the surfaces of the agitator shaft (05) and the flange (23) are in good condition (perfectly polished finish).
- When fitting the new seals, be sure to wet the O-rings with soapy water so that the fixed parts slide easily into their locations and the rotating parts onto the shaft.
- Place the stationary part of the mechanical seal (08) on its location on the flange (23).
- Place the rotating part of the mechanical seal (08) and fix it to the agitator shaft through its fixing studs as shown in the assembly instructions, figure 8.1.
- Locate the shaft guards (47) with the hexagonal screw (52B) and flat washers (53B) to the lantern (04).
- Place the O-ring (80) on the agitator shaft (05).
- Install the agitator in the flange of the tank.
- Finally, mount the propeller (02) firmly on the agitator shaft (05), checking that it will not become loose.



$\varnothing D$	L
40	47
50	51,5
60	61,5

9. Technical Specifications

9.1. MATERIALS

Parts in contact with the product	AISI 316L
Other steel parts	GG15
V-ring and retainer	C/SiC/EPDM
Bearing support	EPDM
Surface finish	Ra ≤ 0,8 µm

9.2. OTHER FEATURES

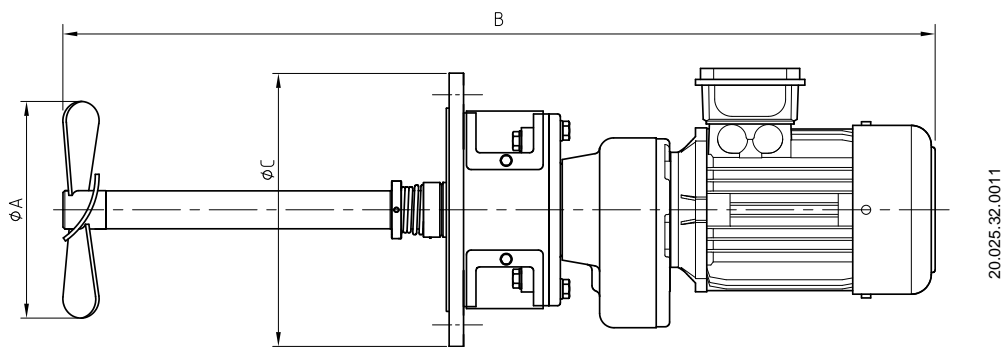
Motor	4 poles, 3 ph, 230/400 V, 50 Hz
Speed (rpm)	1.500
Maximum motor power (kW)	LR: 4 kW; LM: 11 kW
Maximum shaft length (mm)	LR: 500; LM: 600
Maximum shaft diameter (mm)	60
Maximum propeller diameter (mm)	LM: 350; LR: 650
Propeller	Marine propeller (type 10)

9.3. WEIGHTS

Type agitator	Weigh (kg)
LR 1.10-20005-1-325	54
LR 1.10-20007-1-400	57
LR 1.10-20015-1-500	64
LR 1.10-20030-1-600	77
LR 1.10-20040-1-650	135

Type agitator	Weigh (kg)
LM 1.10-4015-1-175	46
LM 1.10-4030-1-200	56
LM 1.10-4055-1-225	66
LM 1.10-4075-1-250	75
LM 1.10-4110-1-275	145
LM 1.10-6011-1-200	48
LM 1.10-6022-1-225	62
LM 1.10-6030-1-250	66
LM 1.10-6055-1-275	75
LM 1.10-6075-1-300	150
LM 1.10-6110-1-350	182

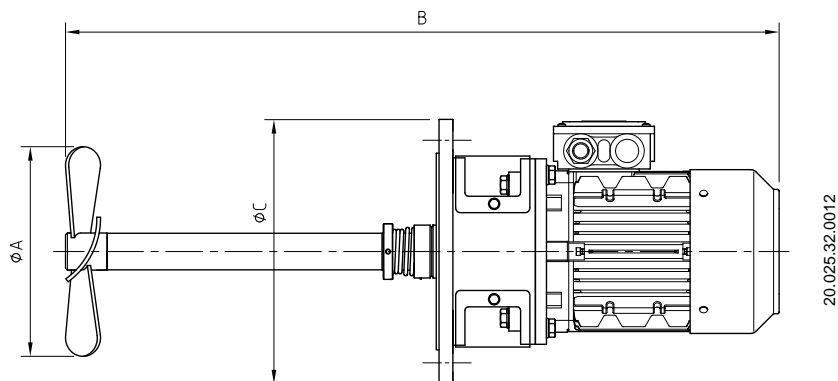
9.4. DIMENSIONS OF LR SIDE-ENTRY AGITATOR



20.025.32.0011

Type agitator	Dimensions (mm)		
	A	B	C
LR 1.10-20005-1-325	325	910	285
LR 1.10-20007-1-400	400	910	285
LR 1.10-20015-1-500	500	950	285
LR 1.10-20030-1-600	600	1.165	340
LR 1.10-20040-1-650	650	1.205	395

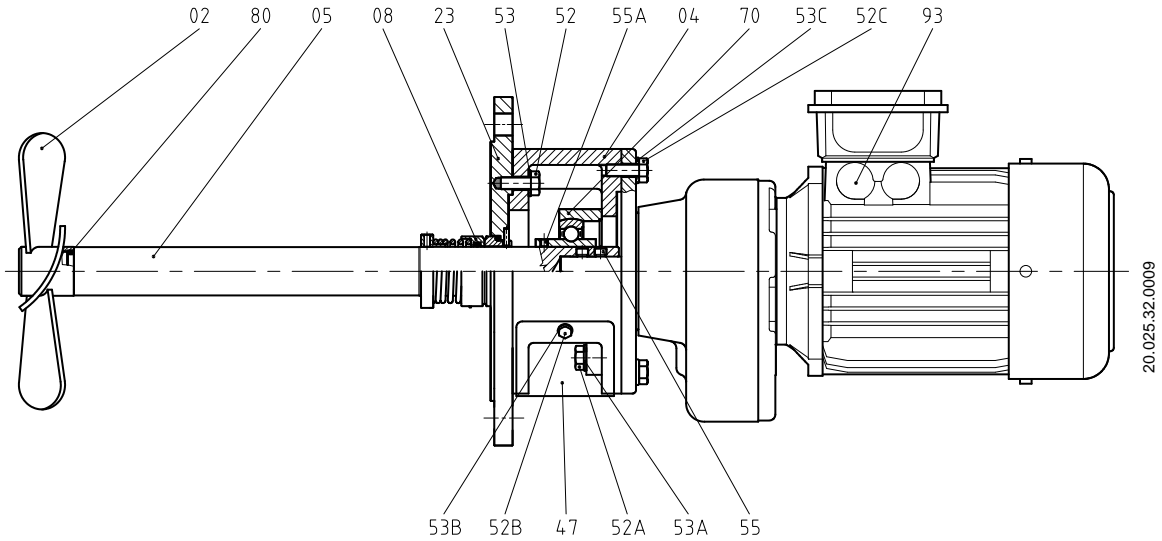
9.5. DIMENSIONS OF LM SIDE-ENTRY AGITATOR



20.025.32.0012

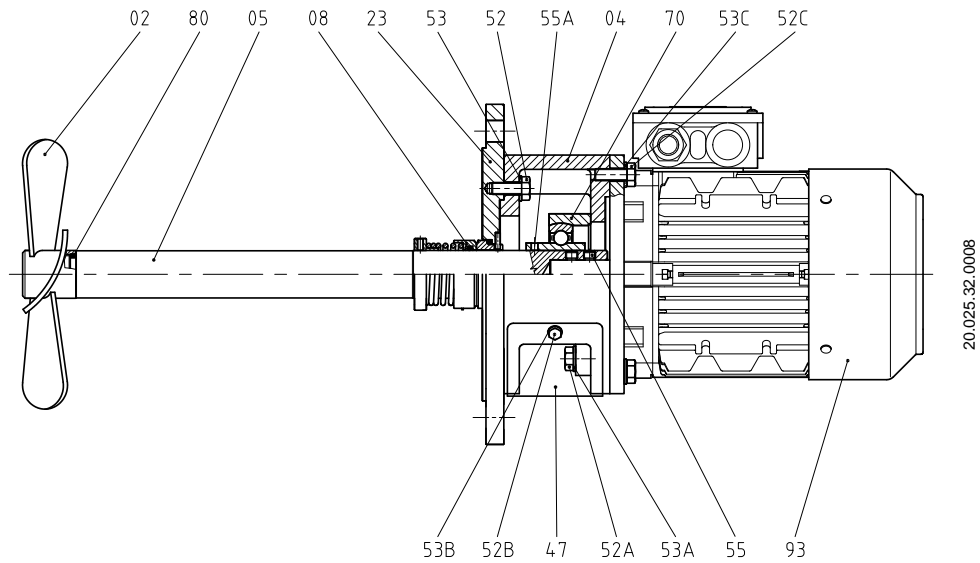
Type agitator	Dimensions (mm)		
	A	B	C
LM 1.10-4015-1-175	175	775	285
LM 1.10-4030-1-200	200	905	285
LM 1.10-4055-1-225	225	1.000	340
LM 1.10-4075-1-250	250	1.000	340
LM 1.10-4092-1-250	250	1.000	340
LM 1.10-4110-1-275	275	1.295	395
LM 1.10-6011-1-200	200	775	285
LM 1.10-6022-1-225	225	925	285
LM 1.10-6030-1-250	250	1.000	340
LM 1.10-6055-1-275	275	1.000	340
LM 1.10-6075-1-300	300	1.295	395
LM 1.10-6110-1-350	350	1.295	395

9.6. EXPLODED DRAWING AND PARTS LIST OF LR SIDE-ENTRY AGITATOR



Position	Description	Quantity	Material
02	Marine propeller type 10	1	AISI 316L
04	Lantern	1	GG15
05	Agitator shaft	1	AISI 316L
08	Mechanical seal	1	-
23	Flange	1	AISI 316L
47	Shaft guard	2	Methacrylate
52	Hexagonal screw	4	8.8
52A	Hexagonal screw	2	8.8
52B	Hexagonal screw	4	8.8
52C	Hexagonal screw	4	8.8
53	Flat washer	4	8.8
53A	Flat washer	2	8.8
53B	Flat washer	4	8.8
53C	Flat washer	4	8.8
55	Allen stud	2	A2
55A	Allen stud	2	A2
70	Bearing support	1	Steel
80	O-ring	1	EPDM
93	Reduction gearbox	1	-

9.7. EXPLODED DRAWING AND PARTS LIST OF LM SIDE-ENTRY AGITATOR



Position	Description	Quantity	Material
02	Marine propeller type 10	1	AISI 316L
04	Lantern	1	GG15
05	Agitator shaft	1	AISI 316L
08	Mechanical seal	1	-
23	Flange	1	AISI 316L
47	Shaft guard	2	Methacrylate
52	Hexagonal screw	4	8.8
52A	Hexagonal screw	2	8.8
52B	Hexagonal screw	4	8.8
52C	Hexagonal screw	4	8.8
53	Flat washer	4	8.8
53A	Flat washer	2	8.8
53B	Flat washer	4	8.8
53C	Flat washer	4	8.8
55	Allen stud	2	A2
55A	Allen stud	2	A2
70	Bearing support	1	Steel
80	O-ring	1	EPDM
93	IEC Standard motor	1	-

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