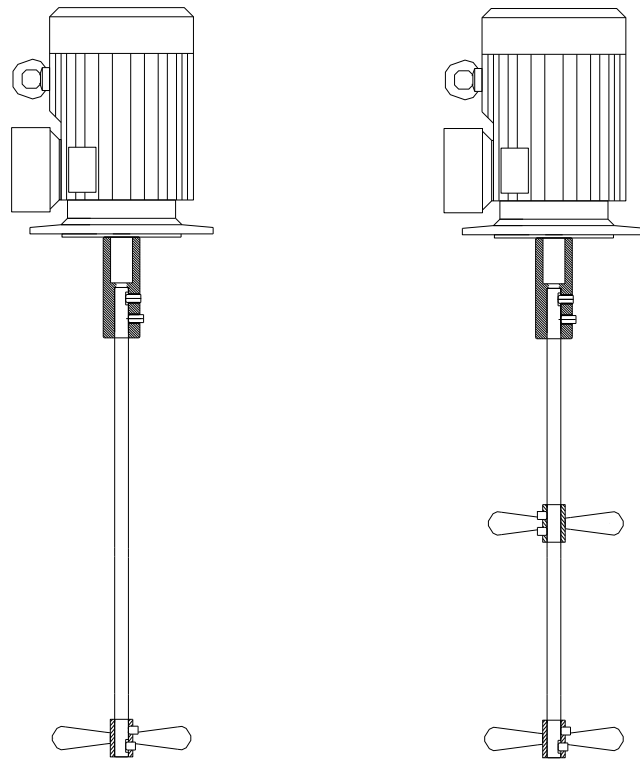


Operating instructions

Electric stirrer for Ultromat®



A0411

Please carefully read these operating instructions before use! · Do not discard!
The operator shall be liable for any damage caused by installation or operating errors!
Technical changes reserved.

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5 - 11
69123 Heidelberg
Telephone: +49 6221 842-0
Fax: +49 6221 842-419
email: info@prominent.de
Internet: www.prominent.com

986474, 3, en_GB

General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. It is aimed equally at both men and women. We kindly ask female readers for their understanding in this simplification of the text.

Supplementary information

Read the following supplementary information in its entirety!

The following are highlighted separately in the document:

■ Enumerated lists

▬ Instructions

⇒ Results of the instructions

Information

This provides important information relating to the correct operation of the system or is intended to make your work easier.

Safety information

Safety information are provided with detailed descriptions of the endangering situation, see 🔗 *Chapter 1.1 'Explanation of the safety information' on page 6*

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1 Introduction

About this product

The electric stirrers are used to mix polymer solutions in an Ultromat®.

The stirrers can be ordered and delivered separately, but also together with an Ultromat®.

The media-contacting parts of the stirrers are made from stainless steel. Media viscosities up to 1500 mPas are permissible

Stirrer for Ultromat ULFa-chamber 1:

Article no.	Description	Performance	Propellers
1030267	Stirrer 0.25 kW, 2 propellers, ULFa 400	0.25 kW	2
1030269	Stirrer 0.55 kW, 2 propellers, ULFa 1000	0.55 kW	2
1030270	Stirrer 0.75 kW, 2 propellers, ULFa 2000	0.75 kW	2
1030271	Stirrer 1.1 kW, 2 propellers, ULFa 4000	1.1 kW	2
1030272	Stirrer 2.2 kW, 2 propellers, ULFa 8000	2.2 kW	2

Stirrer for Ultromat ULFa chamber 2/3:

Article no.	Description	Performance	Propellers
1031374	Stirrer 0.18 kW, 1 propellers, ULFa 400	0.18 kW	1
1031375	Stirrer 0.55 kW, 1 propellers, ULFa 1000	0.55 kW	1
1031376	Stirrer 0.75 kW, 1 propellers, ULFa 2000	0.75 kW	1
1031377	Stirrer 1.1 kW, 1 propellers, ULFa 4000	1.1 kW	1
1031378	Stirrer 2.2 kW, 1 propellers, ULFa 8000	2.2 kW	1

Stirrer for Ultromat ULDa:

Article no.	Description	Performance	Propellers
1039149	Stirrer 0.75 kW, 1 propeller, ULDa 400	0.75 kW	1
1039144	Stirrer 1.1 kW, 1 propeller, ULDa 1000	1.1 kW	1
1039124	Stirrer 2.2 kW, 1 propeller, ULDa 2000	2.2 kW	1

Stirrer for Ultromat ULPa:

Article no.	Description	Performance	Propellers
1037003	Stirrer 0.75 kW, 1 propeller, ULPa 400	0.75 kW	1
1036747	Stirrer 1.1 kW, 1 propeller, ULPa 1000	1.1 kW	1

Article no.	Description	Performance	Propellers
1037024	Stirrer 2.2 kW, 1 propeller, ULPa 2000	2.2 kW	1
1037032	Stirrer 3.0 kW, 1 propeller, ULPa 4000	3.0 kW	1

Stirrer for Ultromat ATR:

Article no.	Description	Performance	Propellers
1031374	Stirrer 0.18 kW, 1 propeller, ATR 400	0.18 kW	1
1031375	Stirrer 0.55 kW, 1 propeller, ATR 1000	0.55 kW	1
1031376	Stirrer 0.75 kW, 1 propeller, ATR 2000	0.75 kW	1

Stirrer for Ultromat MT:

Article no.	Description	Performance	Propellers
1005114	Stirrer MT 140, 0.18 kW	0.18 kW	1
1005115	Stirrer MT 250, 0.55 kW	0.55 kW	1
1005116	Stirrer MT 500, 0.75 kW	0.75 kW	1
1005117	Stirrer MT 1000, 1.1 kW	1.1 kW	1
1005118	Stirrer MT 2000, 2.2 kW	2.2 kW	1
1007722	Stirrer MT 3000, 2.2 kW	2.2 kW	1
1007723	Stirrer MT 4000, 3.0 kW	3.0 kW	1

1.1 Explanation of the safety information

Introduction

These operating instructions provide information on the technical data and functions of the product. These operating instructions provide detailed safety information and are provided as clear step-by-step instructions.

The safety information and notes are categorised according to the following scheme. A number of different symbols are used to denote different situations. The symbols shown here serve only as examples.



DANGER!

Nature and source of the danger

Consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Danger!

- Denotes an immediate threatening danger. If this is disregarded, it will result in fatal or very serious injuries.

**WARNING!****Nature and source of the danger**

Possible consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger

Warning!

- Denotes a possibly hazardous situation. If this is disregarded, it could result in fatal or very serious injuries.

**CAUTION!****Nature and source of the danger**

Possible consequence: Slight or minor injuries, material damage.

Measure to be taken to avoid this danger

Caution!

- Denotes a possibly hazardous situation. If this is disregarded, it could result in slight or minor injuries. May also be used as a warning about material damage.

**NOTICE!****Nature and source of the danger**

Damage to the product or its surroundings

Measure to be taken to avoid this danger

Note!

- Denotes a possibly damaging situation. If this is disregarded, the product or an object in its vicinity could be damaged.

***Type of information***

Hints on use and additional information

Source of the information, additional measures

Information!

- *Denotes hints on use and other useful information. It does not indicate a hazardous or damaging situation.*

1.2 Users' qualifications



WARNING!

Danger of injury with inadequately qualified personnel!

The operator of the plant / device is responsible for ensuring that the qualifications are fulfilled.

If inadequately qualified personnel work on the unit or loiter in the hazard zone of the unit, this could result in dangers that could cause serious injuries and material damage.

- All work on the unit should therefore only be conducted by qualified personnel.
- Unqualified personnel should be kept away from the hazard zone

Training	Definition
Instructed personnel	An instructed person is deemed to be a person who has been instructed and, if required, trained in the tasks assigned to him/her and possible dangers that could result from improper behaviour, as well as having been instructed in the required protective equipment and protective measures.
Trained user	A trained user is a person who fulfils the requirements made of an instructed person and who has also received additional training specific to the system from ProMinent or another authorised distribution partner.
Trained qualified personnel	A qualified employee is deemed to be a person who is able to assess the tasks assigned to him and recognize possible hazards based on his/her training, knowledge and experience, as well as knowledge of pertinent regulations. The assessment of a person's technical training can also be based on several years of work in the relevant field.
Electrician	<p>Electricians are deemed to be people, who are able to complete work on electrical systems and recognize and avoid possible hazards independently based on his/her technical training and experience, as well as knowledge of pertinent standards and regulations.</p> <p>Electricians should be specifically trained for the working environment in which they are employed and know the relevant standards and regulations.</p> <p>Electricians must comply with the provisions of the applicable statutory directives on accident prevention.</p>
Customer Service department	Customer Service department refers to service technicians, who have received proven training and have been authorised by ProMinent to work on the system.



Note for the system operator

The pertinent accident prevention regulations, as well as all other generally acknowledged safety regulations, must be adhered to!

2 Safety and responsibility

2.1 General safety notes

**WARNING!****Live parts**

Possible consequence: Fatal or very serious injuries

- Measure: The device must be disconnected from the power supply before opening the housing
- Isolate damaged, faulty or manipulated devices from the mains in order to de-energise.

**WARNING!****Unauthorised access**

Possible consequence: Fatal or very serious injuries

- Measure: Ensure that there can be no unauthorised access to the device

**CAUTION!****Risk of injury from the rotating propeller**

Slight or minor injuries.

- The stirrers must not be electrically installed, until they have been mounted in their operating position.
- The stirrer must only be operated if it has been ensured that no danger can originate from the propellers.
- Switch off the system and only then remove the screwed cover of an inspection opening

2.2 Intended use

**NOTICE!****Intended use**

- Only use the stirrers with an Ultromat®
- Any other use or modification is prohibited.
- Only use the stirrers as described in the relevant Ultromat® operating instructions
- The stirrers should only be mounted and installed by qualified personnel

3 Commissioning


CAUTION!
Risk of injury from the rotating propeller

Slight or minor injuries.

- The stirrers must not be electrically installed, until they have been mounted in their operating position.
- The stirrer must only be operated if it has been ensured that no danger can originate from the propellers.
- Switch off the system and only then remove the screwed cover of an inspection opening

3.1 Storage and transport

Ambient conditions for storage and transportation

- Temperature: -10 °C to 50 °C
- Air humidity: max. 92 % relative humidity, non-condensing

Ambient conditions for operation

- Temperature: -10 °C to 40 °C
- Air humidity: max. 92 % relative humidity, non-condensing

3.2 Construction

The stirrers comprise the following components:

Stirrer construction with 1 propeller and one stirrer with 2 propellers

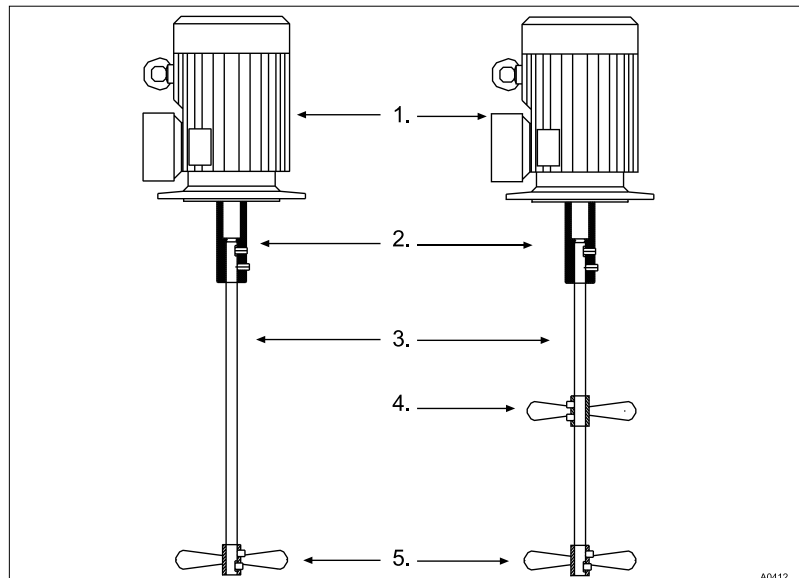


Fig. 1: Stirrer with 1 propeller or 2 propellers

1. Electric motor
2. Coupling
3. Stirrer shaft
4. Propeller 2
5. Propeller 1

3.3 Assembly



NOTICE!

Mounting instruction

The stirrers must only be mounted on the intended tank flange of the Ultromat®

Ensure that cooling air can circulate freely.

Mounting the stirrer

1. ➤ Remove the shaft of the stirrer from the coupling
2. ➤ Place the motor flange on the prepared tank flange and screw the motor flange to the tank flange.
3. ➤ Open the cover of the corresponding inspection opening
4. ➤ Screw the stirrer shaft back into the coupling

3.4 Sound pressure level

The sound pressure level is < 70 dB (A), according to EN ISO 11202:1997 (Acoustics - Noise emission from machinery and equipment)

3.5 Installation



WARNING!

Danger of an electric shock

- Only an electrical technician may carry out the stirrer electrical installation!
- Only install the stirrers, if the system is disconnected from the mains and secured to prevent switching back on.
- Only connect the motor to the mains voltage and frequency, which are specified on its nameplate



CAUTION!

Thermal overloading

- The stirrer motors may be damaged by thermal overloading
- To protect the motor against overloading provide appropriate motor protection devices (e.g. motor protection switch with thermal overcurrent trip)
 - Fuses do not provide motor protection

Installation

1. ➤ Connect the motor according to the wiring diagram
2. ➤ Switch the system on briefly to determine the direction of rotation of the motor (arrow on the motor housing)
 - ⇒ If the motor is rotating in the incorrect direction, immediately completely disconnect the system from the mains and then connect the motor correctly.
3. ➤ The inspection opening cover must now be replaced without fail and secured with the screw

4 Repairing and maintaining the stirrers

4.1 Maintenance

Regularly

- Regularly blow clean the motor fan and the cooling fins using clean, oil-free compressed air
 - The stirrers are otherwise maintenance free

4.2 Repairs



WARNING!

Possibility of sudden start-up

The stirrers can start up abruptly once they are connected to mains voltage via the system, even if a fault alert or exists or the system is stationary (Start/Stop key).

Remove the stirrer for repair:

1. ➤ Switch the main system switch to 'Off' and secure to prevent switching back on
2. ➤ Disconnect the motor from the mains
3. ➤ Remove the flange screws
4. ➤ Remove the cover of the corresponding inspection opening
5. ➤ Slightly lift the stirrer and release the coupling
6. ➤ You can now lift the motor off in an upwards direction
7. ➤ Remove the shaft with the propeller through the inspection opening
8. ➤ Refit the stirrer after repairs are concluded by following the reverse sequence
9. ➤ The inspection opening cover must now be replaced without fail and secured with the screw

5 Technical data

5.1 Motor data

Stirrer motor of 0.18 kW (740878)

Mains supply frequency	50 Hz	60 Hz
Power	0.18 kW	0.18 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	1.47 / 0.84 A	1.27 / 0.73 A
Speed:	675 - 695 rpm	810-850 rpm
cos φ :	0.59	0.64
Motor type:	K21R80K8	
Size:	80 K8	
Mounting:	IM V1 FF130	
Degree of protection:	IP 55	
Weight:	10.5 kg	
Insulation class:	F	
Motor flange/hole circle:	A 160 / 130 mm	
Manufacturer:	VEM	

Stirrer motor of 0.25 kW (1021090)

Mains supply frequency	50 Hz	60 Hz
Power	0.25 kW	0.25 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	2.15 / 1.23 A	1.86 / 1.07 A
Speed:	685 - 700 rpm	830 - 850 rpm
cos φ :	0.56	0.58
Motor type:	K21R80G8	
Size:	80 G8	
Mounting:	IIM V1 FF165	
Degree of protection:	IP 55	
Weight:	12 kg	
Insulation class:	F	
Motor flange/hole circle:	A 200 / 165 mm	
Manufacturer:	VEM	

Stirrer motor of 0.55 kW (740879)

Mains supply frequency	50 Hz	60 Hz
Power	0.55 kW	0.55 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	4.05 / 2.3 A	3.5 / 2.0 A
Speed:	690 - 700 rpm	830 - 855 rpm
cos φ :	0.60	0.61
Motor type:	K21R90L8	
Size:	90L8	
Mounting:	IM V1 FF165	
Degree of protection:	IP 55	
Weight:	18 kg	
Insulation class:	F	
Motor flange/hole circle:	A 200 / 165 mm	
Manufacturer:	VEM	

Stirrer motor of 0.75 kW (740880)

Mains supply frequency	50 Hz	60 Hz
Power	0.75 kW	0.75 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	5.45 / 3.1 A	4.6 / 2.65 A
Speed:	700 - 710 rpm	840 – 860 rpm
cos φ :	0.60	0.60
Motor type:	K21R100L8	
Size:	100 L8	
Mounting:	IIM V1 FF165	
Degree of protection:	IP 55	
Weight:	23 kg	
Insulation class:	F	
Motor flange/hole circle:	A 200 / 165 mm	
Manufacturer:	VEM	

Stirrer motor of 1.1 kW (740881)

Mains supply frequency	50 Hz	60 Hz
Power	1.1 kW	1.1 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	5.95 / 3.4 A	5.3 / 3.05 A
Speed:	695 - 710 rpm	830 - 865 rpm
cos φ :	0.67	0.71
Motor type:	K21R100LX8	
Size:	100LX8	
Mounting:	IM V1 FF215	
Degree of protection:	IP 55	
Weight:	28 kg	
Insulation class:	F	
Motor flange/hole circle:	A 250 / 215 mm	
Manufacturer:	VEM	

Stirrer motor of 2.2 kW (740882)

Mains supply frequency	50 Hz	60 Hz
Power	2.2 kW	2.2 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	11.0 / 6.35 A	10.3 / 5.95 A
Speed:	675 - 695 rpm	805 - 850 rpm
cos φ :	0.68	0.73
Motor type:	K21R112MX8	
Size:	112 MX8	
Mounting:	IM V1 FF215	
Degree of protection:	IP 55	
Weight:	37 kg	
Insulation class:	F	
Motor flange/hole circle:	A 250 / 215 mm	
Manufacturer:	VEM	

Stirrer motor of 3.0 kW (1018470)

Mains supply frequency	50 Hz	60 Hz
Power	3.00 kW	3.00 kW
Voltage:	220 – 240 / 380 - 420 V	220 – 265 / 380 – 460 V
Current:	13.0 / 7.4 A	13.2 / 7.6 A
Speed:	695 - 705 rpm	830 - 855 rpm
cos φ :	0.75	0.73
Motor type:	K21R132M8	
Size:	90L8	
Mounting:	IM V1	
Degree of protection:	IP 55	
Weight:	53 kg	
Insulation class:	F	
Motor flange/hole circle:	A 300 / 265 mm	
Manufacturer:	VEM	

5.2 Materials used

Unit	Material number (AISI)
Stirrer shaft	1.4301 / 1.4404
Propellers	1.4571
Coupling	1.4305

5.3 Dimensions and weights for the ULFa stirrer

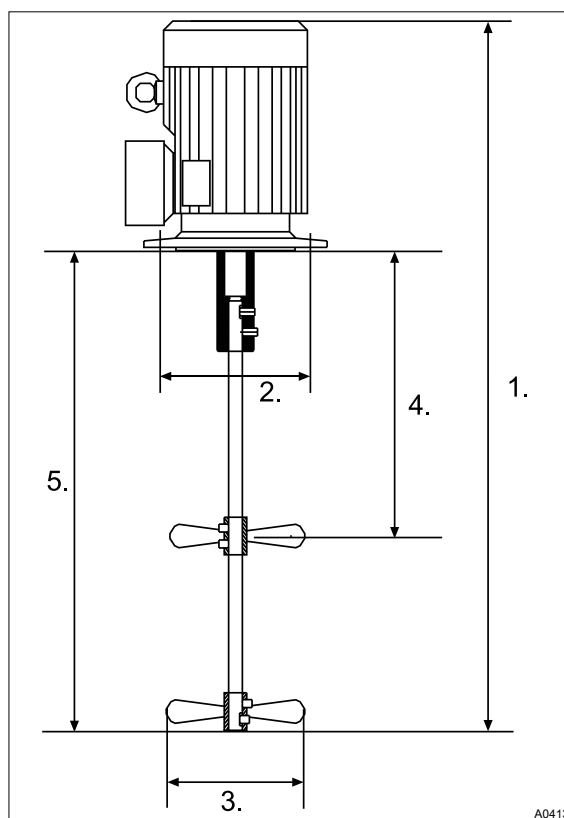


Fig. 2: Stirrer dimensions

Stirrer with 2 propellers for chamber 1 (dimensions in mm):

ULFa	Part no.	Performance	1.	2.	3.	4.	5.	Weight
400	1030267	0.25 kW	680	165	120	215	430	14 kg
1000	1030269	0.55 kW	960	165	150	360	720	21 kg
2000	1030270	0.75 kW	1100	165	170	395	790	26 kg
4000/6000	1030271	1.1 kW	1480	215	200	595	1190	36 kg
8000	1030272	2.2 kW	1540	215	220	605	1210	46 kg

Stirrer with 1 propeller for chambers 2+3 (dimensions in mm):

ULFa	Part no.	Performance	1.	2.	3.	4.	5.	Weight
400	1031374	0.18 kW	670	130	120	--	430	12 kg
1000	1031375	0.55 kW	960	165	170	--	720	21 kg
2000	1031376	0.75 kW	1100	165	200	--	790	26 kg
4000/6000	1031377	1.1 kW	1480	215	220	--	1190	36 kg
8000	1031378	2.2 kW	1540	215	260	--	1210	45 kg

5.4 Dimensions and weights for the ULDa stirrer

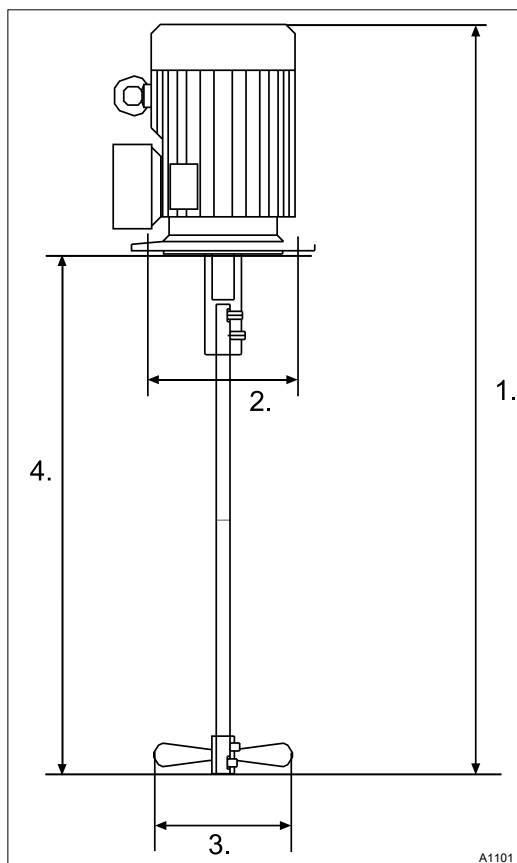


Fig. 3: Stirrer dimensions

Stirrer with 1 propeller (dimensions in mm):

ULDa	Part no.	Performance	1.	2.	3.	4.	Weight
400	1039149	0.75 kW	790	165	200	480	26 kg
1000	1039144	1.1 kW	1107	215	220	817	36 kg
2000	1039124	2.2 kW	1407	215	260	1077	45 kg

5.5 Dimensions and weights for the ULPa stirrer

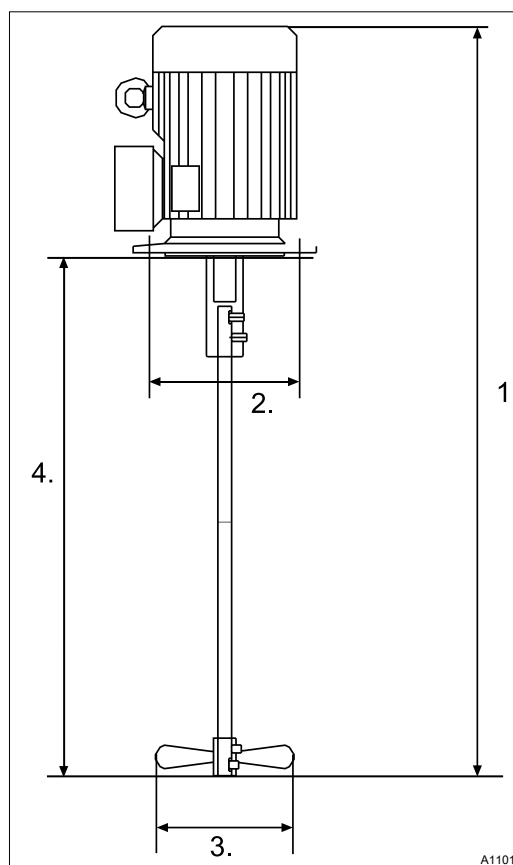


Fig. 4: Stirrer dimensions

Stirrer with 1 propeller (dimensions in mm):

ULPa	Part no.	Performance	1.	2.	3.	4.	Weight
400	1037003	0.75 kW	1130	165	200	830	26 kg
1000	1036747	1.1 kW	1220	215	220	915	36 kg
2000	1037024	2.2 kW	1610	215	260	1275	45 kg
4000	1037032	3.0 kW	1760	265	310	1341	65 kg

5.6 Dimensions and weights for the Ultromat ATR stirrer

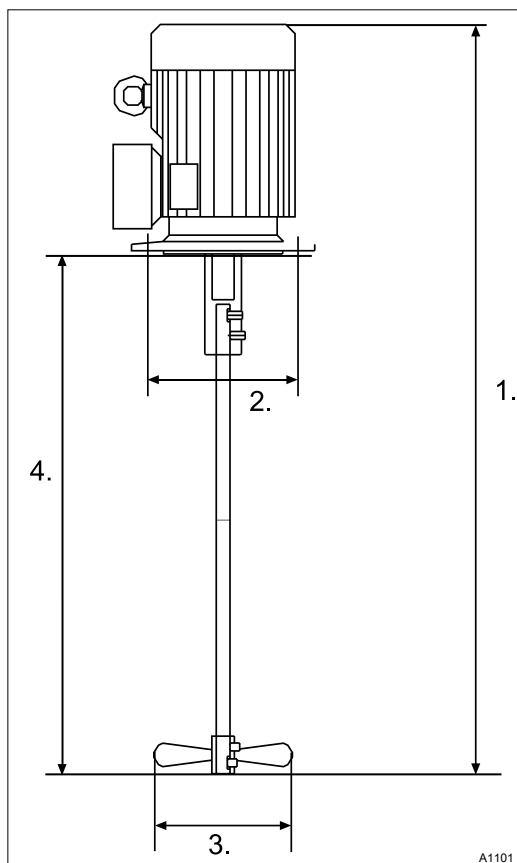


Fig. 5: Stirrer dimensions

Stirrer with 1 propeller (dimensions in mm):

ATR	Part no.	Performance	1.	2.	3.	4.	Weight
400	1031374	0.18 kW	670	130	120	430	12 kg
1000	1031375	0.55 kW	960	165	170	720	21 kg
2000	1031376	0.75 kW	1100	165	200	790	26 kg

5.7 Dimensions and weights for the Ultramat MT stirrer

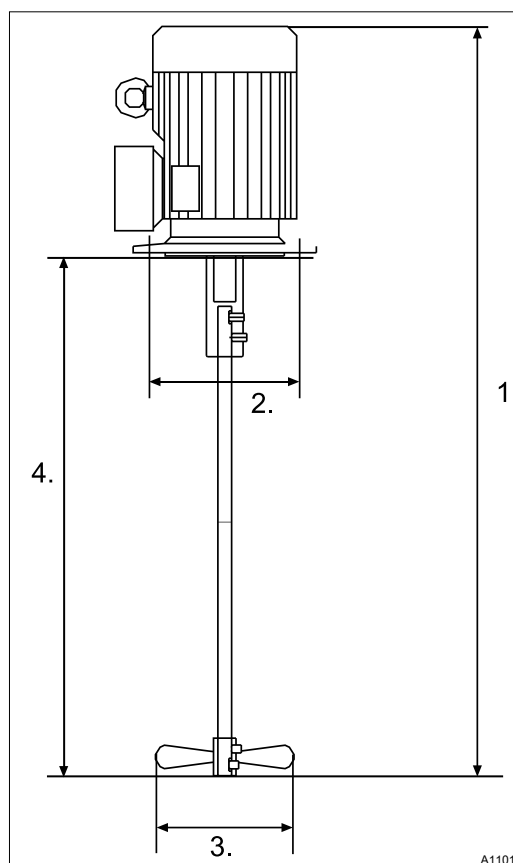


Fig. 6: Stirrer dimensions

Stirrer with 1 propeller (dimensions in mm):

MT	Part no.	Performance	1.	2.	3.	4.	Weight
140	1005114	0.18 kW	818	130	120	610	12 kg
250	1005115	0.55 kW	1211	165	170	965	21 kg
500	1005116	0.75 kW	1106	165	200	835	26 kg
1000	1005117	1.1 kW	1086	215	220	815	36 kg
2000	1005118	2.2 kW	1607	215	260	1275	45 kg
3000	1007722	2.2 kW	1707	215	260	1375	45 kg
4000	1007723	3.0 kW	2174	265	310	1775	65 kg

5.8 Spare parts

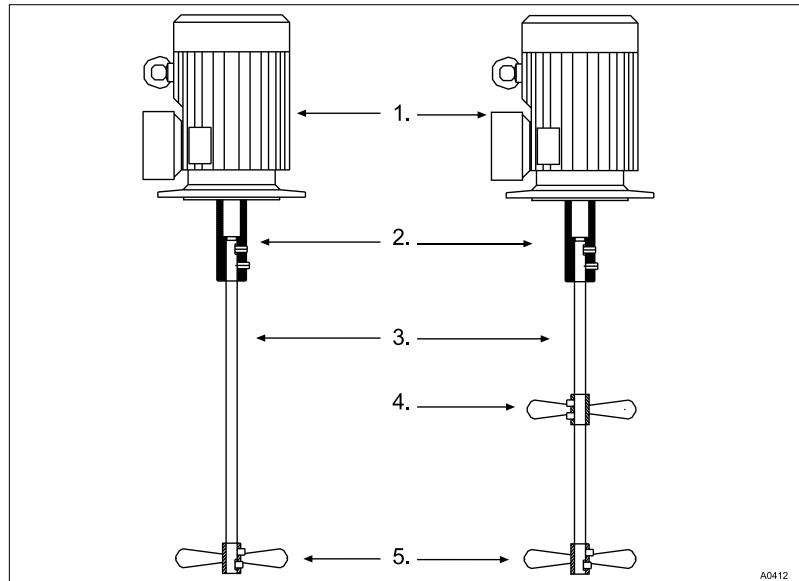


Fig. 7: Spare parts

1. Electric motor
2. Coupling
3. Stirrer shaft
4. Propeller 2
5. Propeller 1

Stirrer with 2 propellers (ULFa):

Part no.	Performance	1	2	3	4	5
1030267	0.25 kW	1021090	1031395	1030655	1031394	1031394
1030269	0.55 kW	740879	1031398	1026267	1031396	1031396
1030270	0.75 kW	740880	1031398	1030664	1031397	1031397
1030271	1.1 kW	740881	1026256	1030666	740885	740885
1030272	2.2 kW	740882	1026256	1030667	740886	740886

Stirrer with 1 propeller (ULFa):

Part no.	Performance	1	2	3	4.	5
1031374	0.18 kW	740878	1031395	1030655	--	1031394
1031375	0.55 kW	740879	1031398	1026267	--	1031397
1031376	0.75 kW	740880	1031398	1030664	--	1031400
1031377	1.1 kW	740881	1026256	1030666	--	740886
1031378	2.2 kW	740882	1026256	1030667	--	740887

Stirrer with 1 propeller (ULDa):

Part no.	Performance	1	2	3	5
1039149	0.75 kW	740880	1031398	1039147	1031400
1039144	1.1 kW	740881	1026256	1039143	740886
1039124	2.2 kW	740882	1026256	1039123	740887

Stirrer with 1 propeller (ULPa):

Part no.	Performance	1	2	3	5
1037003	0.75 kW	740880	1031398	1037000	1031400
1036747	1.1 kW	740881	1026256	1036746	740886
1037024	2.2 kW	740882	1026256	1037001	740887
1037032	3.0 kW	1018470	1037324	1037638	1018601

Stirrer with 1 propeller (ATR):

Part no.	Performance	1	2	3	5
1031374	0.18 kW	740878	1031395	1030655	1031394
1031375	0.55 kW	740879	1031398	1026267	1031397
1031376	0.75 kW	740880	1031398	1030664	1031400

Stirrer with 1 propeller (MT):

Part no.	Performance	1	2	3	5
1005114	0.18 kW	740878	1031395	1037281	1031394
1005115	0.55 kW	740879	1026265	1037283	740884
1005116	0.75 kW	740880	1026265	1037382	740885
1005117	1.1 kW	740881	1026256	1037321	740886
1005118	2.2 kW	740882	1026256	1037001	740887
1007722	2.2 kW	740882	1026256	1037323	740887
1007723	3.0 kW	1018470	1037324	1037325	1018601

6 Declaration of Conformity

EC Declaration of Conformity

We hereby declare,

ProMinent Dosiertechnik GmbH
Im Schuhmachergewann 5 - 11
DE - 69123 Heidelberg

that the following designated product complies with the pertinent fundamental safety and health requirements of the EC Directive in terms of its design and construction and in terms of the version marketed by us.
This declaration loses its validity in the event of a modification to the product not agreed with us.

Description of the product:

Electric stirrer in the explanations special steel and PVDF
for container 60 - 1000 liter and 0,02 - 0,75 kW

Serial no.:

Please refer to type plate on the device

Pertinent
EC Directives:

EG - Machinery Directive(2006/42/EC)
EC EMC Directive (2004/108/EC)
The protection targets laid out in the low-voltage regulations
2006/95/EG have, as shown in appendix I, Nr. 1.5.1
of the machine regulations 2006/42/EG been adhered to

Applied harmonised standards
in particular:

EN ISO 12100-1, EN ISO 12100-2, EN ISO 14121
EN 60034

Technical documents have been
compiled by documentation
specialists:

Norbert Berger
Im Schuhmachergewann 5-11
DE-69123 Heidelberg

Date / Manufacturer - Signature :

15.11.2010

Details of the signatory:

Joachim Schall, Development Director

Fig. 8: Manufacturer's declaration

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