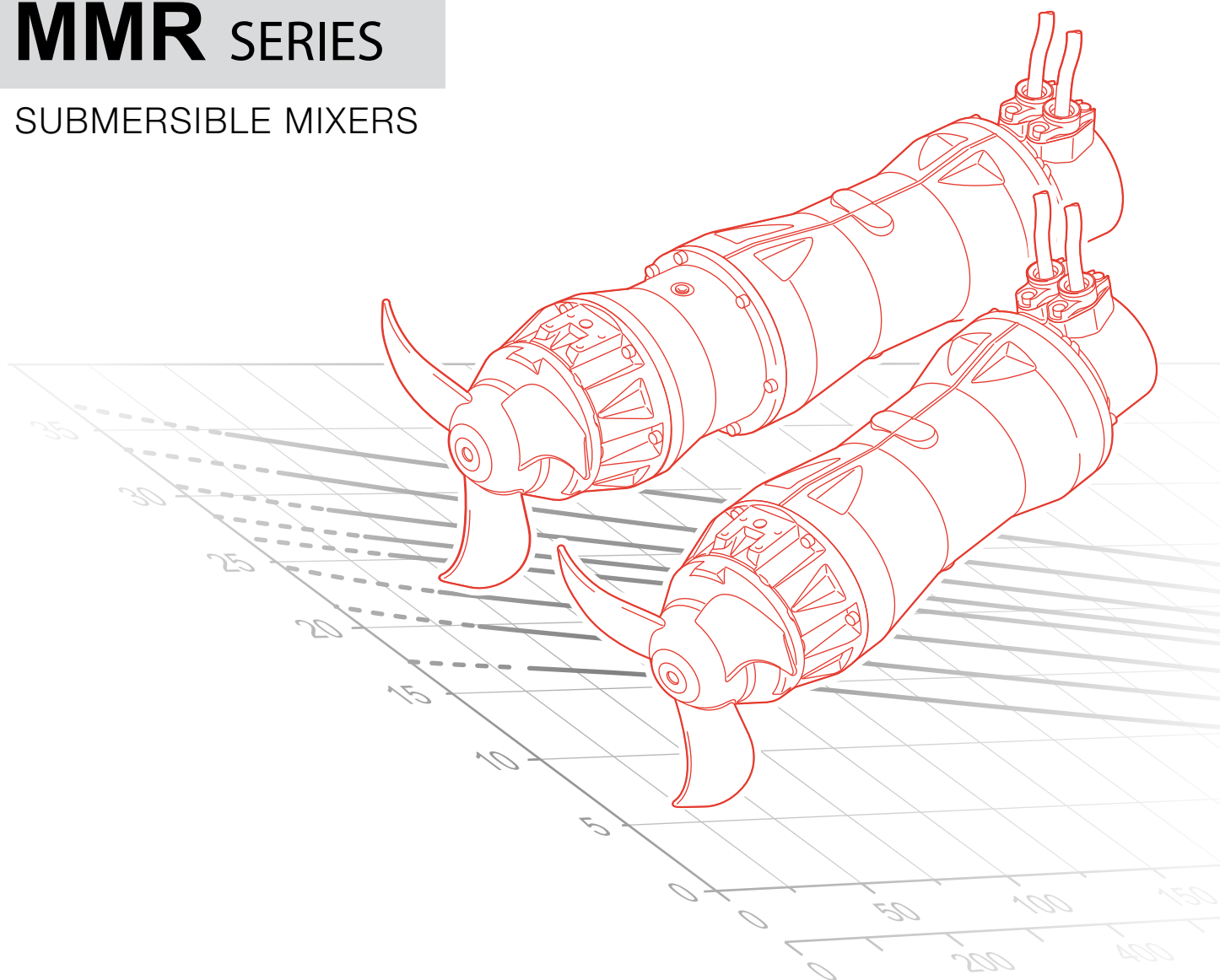


**TSURUMI AVANT**

# MMR SERIES

SUBMERSIBLE MIXERS



MMR Series

General characteristics



- Innovative cable gland system with cable holder. The universal thread ring-nut can be removed to fix a rigid or flexible duct to the cable gland to protect the cable from physical and mechanical stresses.
- Premium IE3 class cold-running motor for high efficiency and minimal energy use. Insulation class H (180°C).
- Suitable for 60°C max ambient temperature.
- Two silicon carbide (SiC) mechanical seals protected inside a large, inspectable oil chamber. MMR 650-series equipped with 3 mechanical seals.
- Cast AISI 316 stainless steel propeller, designed with specially shaped blades to ensure high hydraulic efficiency and prevent fouling with filaments and solids. Extra thick for ruggedness and reliability even in heavy-duty conditions.
- Ball bearings with lifetime lubrication designed to guarantee 100,000 working hours. Temperature sensor on request.
- Rugged planetary reduction gearbox which provides high reduction ratios and torque transfer and withstands heavy radial loads, with compact size and light weight.
- Water sensor detecting seepage into the mechanical seal oil chamber. The temperature sensor prevents possible damage due to overheating of the motor. Bearing temperature sensors are available on request. (other monitoring options are available for the MMR 650-series on request)
- Wide range of rugged stainless steel accessories for optimal installation in relation to the system layout and when replacing existing devices.

Available series



DIRECT TRANSMISSION (200 - 300 - 400 Series)

page 3

- 4 - 6 - 8 poles motor with DIRECT TRANSMISSION
- Motor power 0.75 - 4.5 kW
- Propeller Ø 200 - 300 - 400 mm



REDUCTION GEARS (650 Series)

page 13

- 4 poles motor with REDUCTION GEARS
- Motor power 4 - 7.5 kW
- Propeller Ø 650 mm

Key to product code

MMR 2 3 NF 4 1.5 D - 5

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Series

② Propeller diameter

2 : Ø 200

3 : Ø 300

4 : Ø 400

6 : Ø 650

③ Type of propeller

④ Material

NF : Cast iron

NR : Stainless steel (coming soon)
- ⑤ Poles

⑥ Motor power (kW)

⑦ Drive type

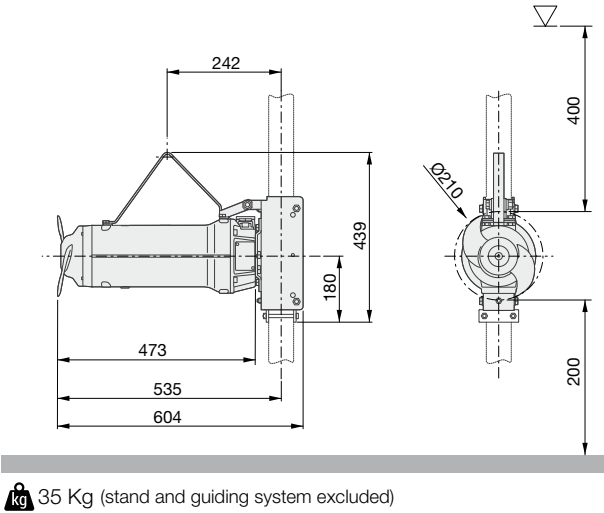
D : Direct transmission

Gxxx : Reduction gear + ratio

ex) G072 : Gear with 7.2 ratio

⑧ Frequency

MMR21NF4.75D-5



Product

Type	SUBMERSIBLE MIXER
Name	MMR21NF4.75D-5
Configured	-
Standard	CE

Motor

Rated Voltage	400 V
Frequency	50 Hz
Motor phases	3
Number of poles	4
Incoming power P2	0.75 kW
Electric power P1	0.9 kW
Rated current	1.8 A
rpm	1444 rpm
Efficiency	82.5 %
Cos Ø	0.729
Rated torque	5.0 Nm
Start	DOL
Starting current	11.2 A
Starting torque	12.1 Nm
Degree of protection	IP 68
Insulation class	H
Motor efficiency class ref.	IE3

Gear unit

Type	-
Gear ratio	1

Propeller

Name	21
Rated diameter	200 mm
Number of blades	2
rpm	1444 rpm
Pp2	0.51 kW
Propeller thrust	165 N

Cable

Type	4G1.5 + 3x1
Length	10 m

Monitoring

Thermal protector	klixon
Leakage sensor	1 in mechanical seals chamber

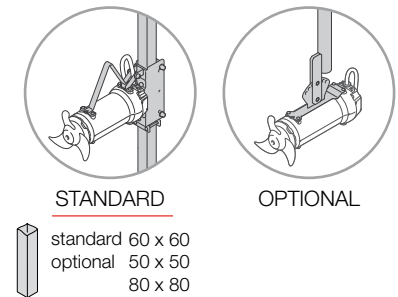
Operating limits

Ambient temperature	0 - 60°C
Max. density treated liquid	1100 Kg/m³
pH treated liquid	6-14
Max. start per hour	20 /h (equally distributed)
Max. acoustic pressure level	Max 70 dB (A)
Operating mode	S1 – Continuous use

Construction materials

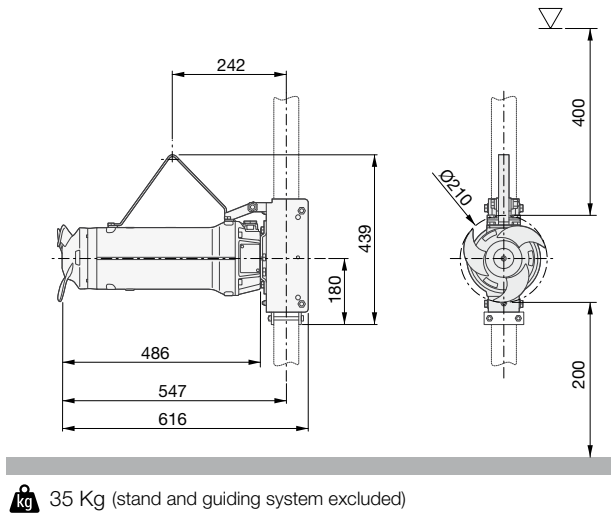
Case	Cast iron EN-GJL-250
Gear box	-
Propeller	AISI 316 (optional AISI 329)
Jet ring	-
Shaft	AISI 431
Mechanical seal (motor side)	Silicon carbide
Mechanical seal (propeller side)	Silicon carbide
Painting	Bi-epoxy 200 µm (optional 400 µm)
Screws	Stainless steel A2-70 (optional A4)
Gaskets	NBR
Fixing system	AISI 304 stainless steel (optional AISI 316)

Installation

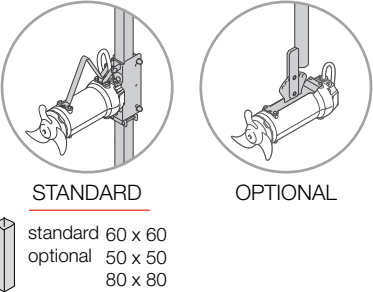


MMR

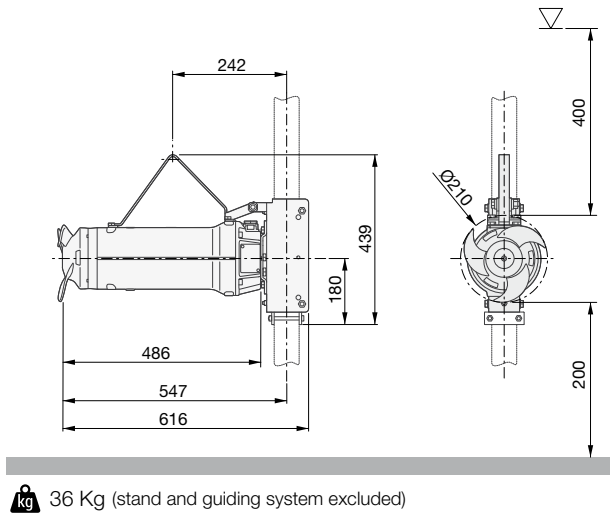
MMR22NF41.1D-5



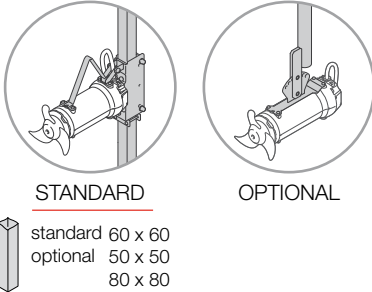
35 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR22NF41.1D-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	4	Max. start per hour	20 /h (equally distributed)
Incoming power P2	1.1 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	1.3 kW	Operating mode	S1 – Continuous use
Rated current	2.7 A	<b>Construction materials</b>	
rpm	1436 rpm	Case	Cast iron EN-GJL-250
Efficiency	84.1%	Gear box	-
Cos Ø	0.710	Propeller	AISI 316 (optional AISI 329)
Rated torque	7.3 Nm	Jet ring	-
Start	DOL	Shaft	AISI 431
Starting current	15.7 A	Mechanical seal (motor side)	Silicon carbide
Starting torque	21.3 Nm	Mechanical seal (propeller side)	Silicon carbide
Degree of protection	IP 68	Painting	Bi-epoxy 200 µm (optional 400 µm)
Insulation class	H	Screws	Stainless steel A2-70 (optional A4)
Motor efficiency class ref.	IE3	Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
<b>Gear unit</b>		<b>Installation</b>	
Type	-		
Gear ratio	1		
<b>Propeller</b>			
Name	22		
Rated diameter	200 mm		
Number of blades	3		
rpm	1436 rpm		
Pp2	0.98 kW		
Propeller thrust	220 N		
<b>Cable</b>			
Type	4G1.5 + 3x1		
Length	10 m		

MMR23NF41.5D-5



36 Kg (stand and guiding system excluded)

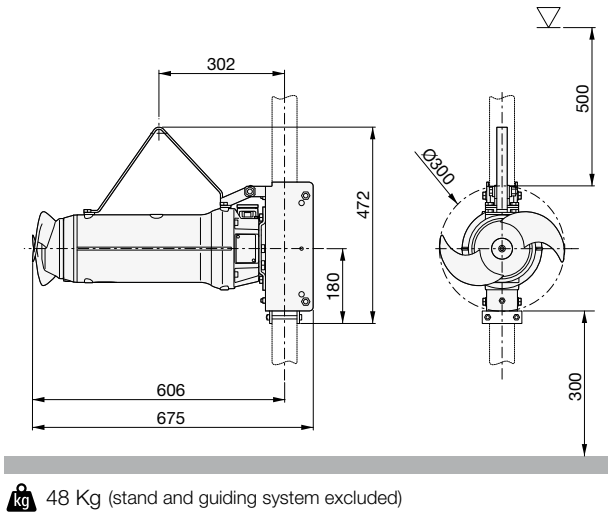
<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR23NF41.5D-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	4	Max. start per hour	20 /h (equally distributed)
Incoming power P2	1.5 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	1.8 kW	Operating mode	S1 – Continuous use
Rated current	3.6 A	<b>Construction materials</b>	
rpm	1432 rpm	Case	Cast iron EN-GJL-250
Efficiency	85.3%	Gear box	-
Cos Ø	0.703	Propeller	AISI 316 (optional AISI 329)
Rated torque	10.0 Nm	Jet ring	-
Start	DOL	Shaft	AISI 431
Starting current	20.3 A	Mechanical seal (motor side)	Silicon carbide
Starting torque	26.2 Nm	Mechanical seal (propeller side)	Silicon carbide
Degree of protection	IP 68	Painting	Bi-epoxy 200 µm (optional 400 µm)
Insulation class	H	Screws	Stainless steel A2-70 (optional A4)
Motor efficiency class ref.	IE3	Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
<b>Gear unit</b>		<b>Installation</b>	
Type	-		
Gear ratio	1		
<b>Propeller</b>			
Name	23		
Rated diameter	200 mm		
Number of blades	3		
rpm	1432 rpm		
Pp2	1.0 kW		
Propeller thrust	230 N		
<b>Cable</b>			
Type	4G1.5 + 3x1		
Length	10 m		

MMR

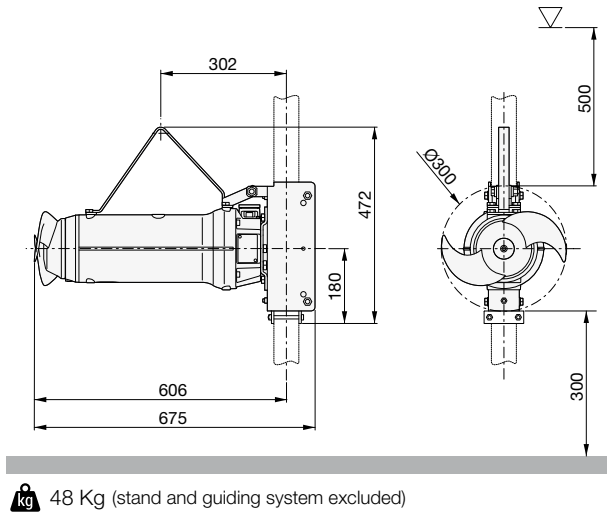
MMR

MMR33NF61.5D-5

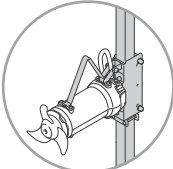
MMR31NF61.5D-5

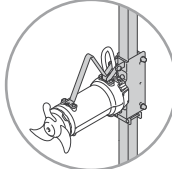


48 Kg (stand and guiding system excluded)



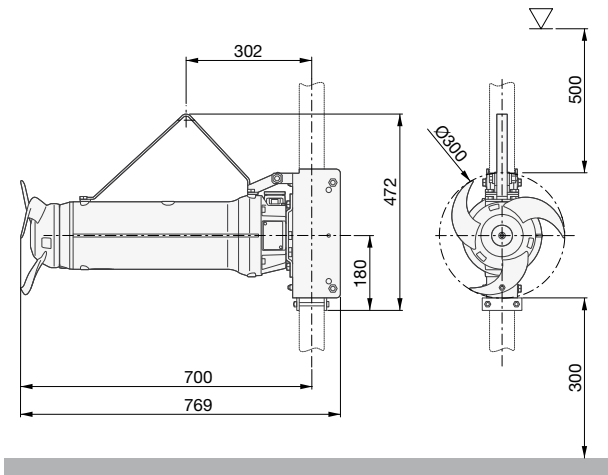
48 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR33NF61.5D-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	6	Max. start per hour	20 /h (equally distributed)
Incoming power P2	1.5 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	1.8 kW	Operating mode	S1 – Continuous use
Rated current	3.7 A	<b>Construction materials</b>	
rpm	942 rpm		
Efficiency	82.5%	Case	Cast iron EN-GJL-250
Cos Ø	0.703	Gear box	-
Rated torque	15.2 Nm	Propeller	AISI 316 (optional AISI 329)
Start	DOL	Jet ring	-
Starting current	18.9 A	Shaft	AISI 431
Starting torque	32.5 Nm	Mechanical seal (motor side)	Silicon carbide
Degree of protection	IP 68	Mechanical seal (propeller side)	Silicon carbide
Insulation class	H	Painting	Bi-epoxy 200 µm (optional 400 µm)
Motor efficiency class ref.	IE3	Screws	Stainless steel A2-70 (optional A4)
<b>Gear unit</b>		Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
Type	-	<b>Installation</b>	
Gear ratio	1		
<b>Propeller</b>			
Name	33		
Rated diameter	300 mm	<b>STANDARD</b>	
Number of blades	2	standard 60 x 60	
rpm	942 rpm	optional 50 x 50	
Pp2	0.92 kW	80 x 80	
Propeller thrust	350 N	100 x 100	
<b>Cable</b>			
Type	4G1.5 + 3x1		
Length	10 m		

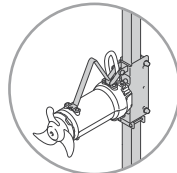
<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR31NF61.5D-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	6	Max. start per hour	20 /h (equally distributed)
Incoming power P2	1.5 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	1.8 kW	Operating mode	S1 – Continuous use
Rated current	3.7 A	<b>Construction materials</b>	
rpm	942 rpm		
Efficiency	82.5%	Case	Cast iron EN-GJL-250
Cos Ø	0.703	Gear box	-
Rated torque	15.2 Nm	Propeller	AISI 316 (optional AISI 329)
Start	DOL	Jet ring	-
Starting current	18.9 A	Shaft	AISI 431
Starting torque	32.5 Nm	Mechanical seal (motor side)	Silicon carbide
Degree of protection	IP 68	Mechanical seal (propeller side)	Silicon carbide
Insulation class	H	Painting	Bi-epoxy 200 µm (optional 400 µm)
Motor efficiency class ref.	IE3	Screws	Stainless steel A2-70 (optional A4)
<b>Gear unit</b>		Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
Type	-	<b>Installation</b>	
Gear ratio	1		
<b>Propeller</b>			
Name	31		
Rated diameter	300 mm	<b>STANDARD</b>	
Number of blades	2	standard 60 x 60	
rpm	942 rpm	optional 50 x 50	
Pp2	1.33 kW	80 x 80	
Propeller thrust	450 N	100 x 100	
<b>Cable</b>			
Type	4G1.5 + 3x1		
Length	10 m		

MMR

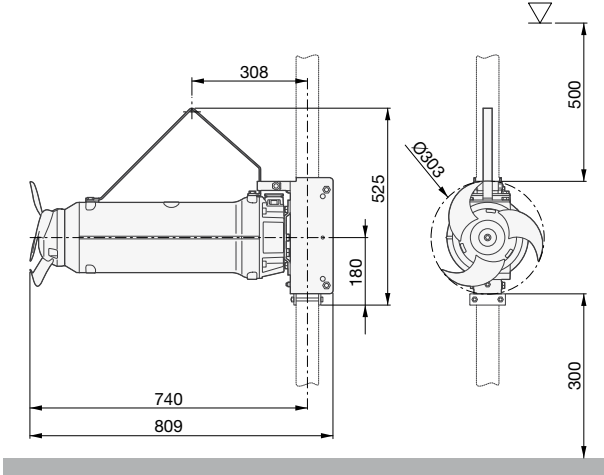
MMR32NF62.2D-5



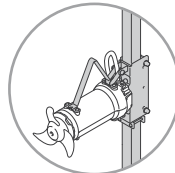

57 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR32NF62.2D-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>			
Rated Voltage	400 V		
Frequency	50 Hz		
Motor phases	3		
Number of poles	6		
Incoming power P2	2.2 kW		
Electric power P1	2.6 kW		
Rated current	5.5 A		
rpm	942 rpm		
Efficiency	84.3%		
Cos Ø	0.685		
Rated torque	22.3 Nm		
Start	DOL		
Starting current	29.6 A		
Starting torque	47.6 Nm		
Degree of protection	IP 68		
Insulation class	H		
Motor efficiency class ref.	IE3		
<b>Gear unit</b>		<b>Construction materials</b>	
Type	-	Case	Cast iron EN-GJL-250
Gear ratio	1	Gear box	-
		Propeller	AISI 316 (optional AISI 329)
		Jet ring	-
		Shaft	AISI 431
		Mechanical seal (motor side)	Silicon carbide
		Mechanical seal (propeller side)	Silicon carbide
		Painting	Bi-epoxy 200 µm (optional 400 µm)
		Screws	Stainless steel A2-70 (optional A4)
		Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
<b>Propeller</b>		<b>Installation</b>	
Name	32		
Rated diameter	300 mm		
Number of blades	3		
rpm	942 rpm		
Pp2	1.62 kW		
Propeller thrust	500 N		
<b>Cable</b>			
Type	4G1.5 + 3x1		
Length	10 m		

MMR34NF63.0D-5



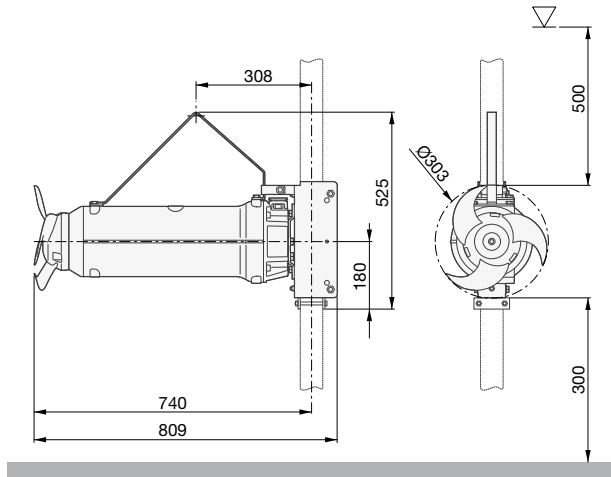
79 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>			
Type	SUBMERSIBLE MIXER	Thermal protector	klixon		
Name	MMR34NF63.0D-5	Leakage sensor	1 in mechanical seals chamber		
Configured	-	<div><b>Operating limits</b></div> <div>Ambient temperature Max. density treated liquid pH treated liquid Max. start per hour Max. acoustic pressure level Operating mode</div> <div><b>Construction materials</b></div> <div>Case Gear box Propeller Jet ring Shaft Mechanical seal (motor side) Mechanical seal (propeller side) Painting Screws Gaskets Fixing system</div> <div><b>Installation</b></div> <div></div> <div><div>STANDARD</div><div><div>standard 60 x 60 optional 50 x 50 80 x 80 100 x 100</div></div></div>			
Standard	CE				
<b>Motor</b>				<div>0 - 60°C 1100 Kg/m³ 6-14 20 /h (equally distributed) Max 70 dB (A) S1 – Continuous use</div>	
Rated Voltage	400 V				
Frequency	50 Hz				
Motor phases	3				
Number of poles	6				
Incoming power P2	3.0 kW				
Electric power P1	3.5 kW				
Rated current	6.8 A				
rpm	960 rpm				
Efficiency	85.6%				
Cos Ø	0.749				
Rated torque	29.8 Nm				
Start	DOL				
Starting current	37.8 A				
Starting torque	44.8 Nm				
Degree of protection	IP 68				
Insulation class	H				
Motor efficiency class ref.	IE3				
<b>Gear unit</b>		<div>Cast iron EN-GJL-250 - AISI 316 (optional AISI 329) - AISI 431 Silicon carbide Silicon carbide Bi-epoxy 200 µm (optional 400 µm) Stainless steel A2-70 (optional A4) NBR AISI 304 stainless steel (optional AISI 316)</div>			
Type	-				
Gear ratio	1				
<b>Propeller</b>					
Name	34				
Rated diameter	300 mm				
Number of blades	3				
rpm	960 rpm				
Pp2	2.15 kW				
Propeller thrust	660 N				
<b>Cable</b>					
Type	4G1.5 + 3x1				
Length	10 m				



MMR

MMR35NF63.2D-5



79 Kg (stand and guiding system excluded)

<b>Product</b>	
Type	SUBMERSIBLE MIXER
Name	MMR35NF63.2D-5
Configured	-
Standard	CE

<b>Motor</b>	
Rated Voltage	400 V
Frequency	50 Hz
Motor phases	3
Number of poles	6
Incoming power P2	3.2 kW
Electric power P1	3.7 kW
Rated current	7.1 A
rpm	957 rpm
Efficiency	85.9%
Cos Ø	0.757
Rated torque	31.9 Nm
Start	DOL
Starting current	37.6 A
Starting torque	45.0 Nm
Degree of protection	IP 68
Insulation class	H
Motor efficiency class ref.	IE3

<b>Gear unit</b>	
Type	-
Gear ratio	1

<b>Propeller</b>	
Name	35
Rated diameter	300 mm
Number of blades	3
rpm	957 rpm
Pp2	2.99 kW
Propeller thrust	820 N

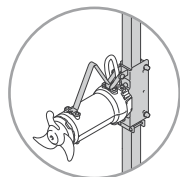
<b>Cable</b>	
Type	4G1.5 + 3x1
Length	10 m

<b>Monitoring</b>	
Thermal protector	klixon
Leakage sensor	1 in mechanical seals chamber

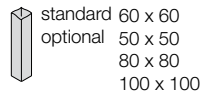
<b>Operating limits</b>	
Ambient temperature	0 - 60°C
Max. density treated liquid	1100 Kg/m³
pH treated liquid	6-14
Max. start per hour	20 /h (equally distributed)
Max. acoustic pressure level	Max 70 dB (A)
Operating mode	S1 – Continuous use

<b>Construction materials</b>	
Case	Cast iron EN-GJL-250
Gear box	-
Propeller	AISI 316 (optional AISI 329)
Jet ring	-
Shaft	AISI 431
Mechanical seal (motor side)	Silicon carbide
Mechanical seal (propeller side)	Silicon carbide
Painting	Bi-epoxy 200 µm (optional 400 µm)
Screws	Stainless steel A2-70 (optional A4)
Gaskets	NBR
Fixing system	AISI 304 stainless steel (optional AISI 316)

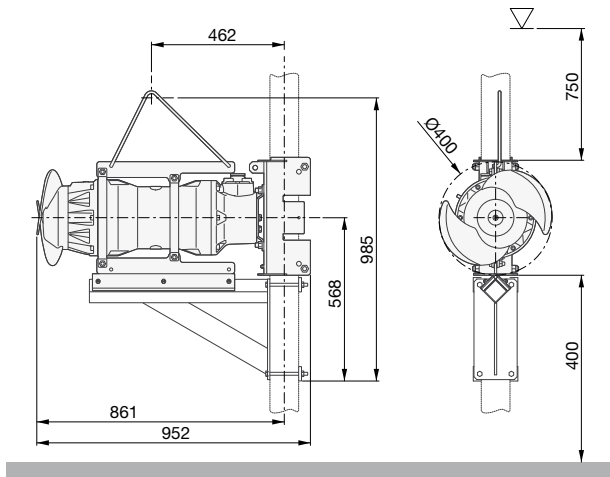
Installation



STANDARD



MMR42NF83.0D-5



123 Kg (stand and guiding system excluded)

<b>Product</b>	
Type	SUBMERSIBLE MIXER
Name	MMR42NF83.0D-5
Configured	-
Standard	CE

<b>Motor</b>	
Rated Voltage	400 V
Frequency	50 Hz
Motor phases	3
Number of poles	8
Incoming power P2	3.0 kW
Electric power P1	3.6 kW
Rated current	7.3 A
rpm	716 rpm
Efficiency	83.5%
Cos Ø	0.707
Rated torque	40 Nm
Start	DOL
Starting current	25.0 A
Starting torque	44.3 Nm
Degree of protection	IP 68
Insulation class	H
Motor efficiency class ref.	IE3

<b>Gear unit</b>	
Type	-
Gear ratio	1

<b>Propeller</b>	
Name	42
Rated diameter	400 mm
Number of blades	2
rpm	716 rpm
Pp2	2.18 kW
Propeller thrust	625 N

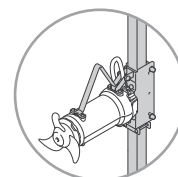
<b>Cable</b>	
Type	4G2.5 + 3x1
Length	10 m

<b>Monitoring</b>	
Thermal protector	klixon
Leakage sensor	1 in mechanical seals chamber

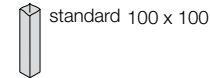
<b>Operating limits</b>	
Ambient temperature	0 - 60°C
Max. density treated liquid	1100 Kg/m³
pH treated liquid	6-14
Max. start per hour	20 /h (equally distributed)
Max. acoustic pressure level	Max 70 dB (A)
Operating mode	S1 – Continuous use

<b>Construction materials</b>	
Case	Cast iron EN-GJL-250
Gear box	-
Propeller	AISI 316 (optional AISI 329)
Jet ring	-
Shaft	AISI 431
Mechanical seal (motor side)	Silicon carbide
Mechanical seal (propeller side)	Silicon carbide
Painting	Bi-epoxy 200 µm (optional 400 µm)
Screws	Stainless steel A2-70 (optional A4)
Gaskets	NBR
Fixing system	AISI 304 stainless steel (optional AISI 316)

Installation



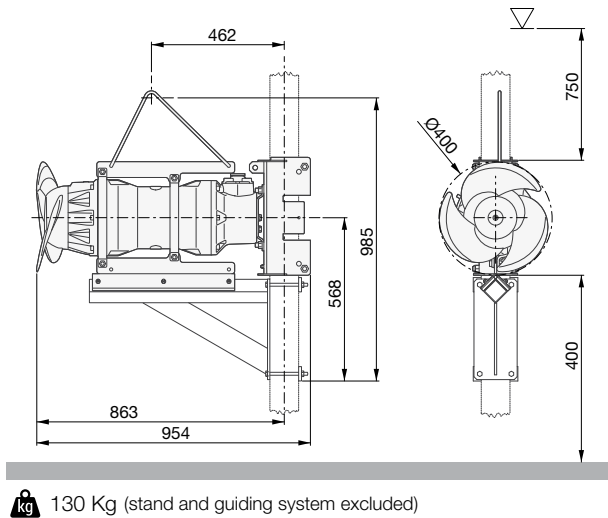
STANDARD



MMR

MMR

MMR44NF84.5D-5



130 Kg (stand and guiding system excluded)

Product

Type	SUBMERSIBLE MIXER
Name	MMR44NF84.5D-5
Configured	-
Standard	CE

Motor

Rated Voltage	400 V
Frequency	50 Hz
Motor phases	3
Number of poles	8
Incoming power P2	4.5 kW
Electric power P1	5.28 kW
Rated current	10.61 A
rpm	718 rpm
Efficiency	85.3 %
Cos Ø	0.717
Rated torque	59.87 Nm
Start	DOL
Starting current	40.4 A
Starting torque	49.3 Nm
Degree of protection	IP 68
Insulation class	H
Motor efficiency class ref.	IE3

Gear unit

Type	-
Gear ratio	1

Propeller

Name	44
Rated diameter	400 mm
Number of blades	3
rpm	714 rpm
Pp2	4.0 kW
Propeller thrust	1060 N

Cable

Type	4G2.5 + 3x1
Length	10 m

Monitoring

Thermal protector	klixon
Leakage sensor	1 in mechanical seals chamber

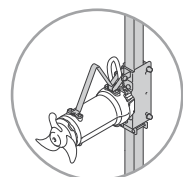
Operating limits

Ambient temperature	0 - 60°C
Max. density treated liquid	1100 Kg/m³
pH treated liquid	6-14
Max. start per hour	20 /h (equally distributed)
Max. acoustic pressure level	Max 70 dB (A)
Operating mode	S1 – Continuous use

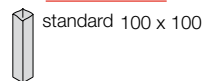
Construction materials

Case	Cast iron EN-GJL-250
Gear box	-
Propeller	AISI 316 (optional AISI 329)
Jet ring	-
Shaft	AISI 431
Mechanical seal (motor side)	Silicon carbide
Mechanical seal (propeller side)	Silicon carbide
Painting	Bi-epoxy 200 µm (optional 400 µm)
Screws	Stainless steel A2-70 (optional A4)
Gaskets	NBR
Fixing system	AISI 304 stainless steel (optional AISI 316)

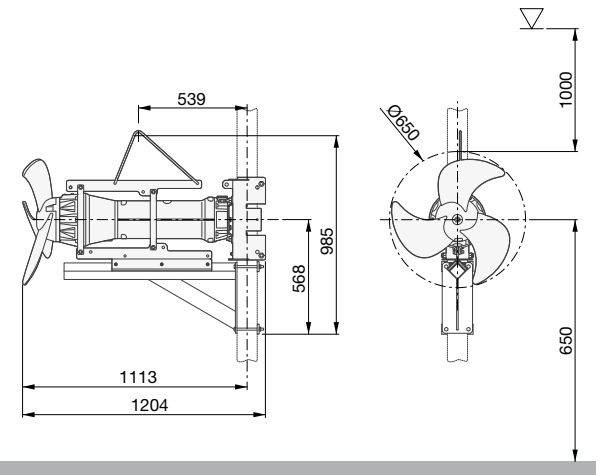
Installation



STANDARD



MMR61NF44.0G072-5



145 Kg (stand and guiding system excluded)

Product

Type	SUBMERSIBLE MIXER
Name	MMR61NF44.0G072-5
Configured	-
Standard	CE

Motor

Rated Voltage	400 V
Frequency	50 Hz
Motor phases	3
Number of poles	4
Incoming power P2	4.0 kW
Electric power P1	4.5 kW
Rated current	8.4 A
rpm	1455 rpm
Efficiency	88.7 %
Cos Ø	0.770
Rated torque	26.3 Nm
Start	DOL
Starting current	48.7 A
Starting torque	52.0 Nm
Degree of protection	IP 68
Insulation class	H
Motor efficiency class ref.	IE3

Gear unit

Type	1-stage planetary
Gear ratio	7.2

Propeller

Name	44
Rated diameter	650 mm
Number of blades	3
rpm	202 rpm
Pp2	1.98 kW
Propeller thrust	1025 N

Cable

Type	4G2.5 + 3x1
Length	10 m

Monitoring

Thermal protector	klixon
Leakage sensor	1 in mechanical seals chamber

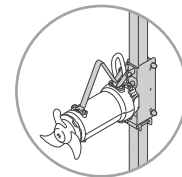
Operating limits

Ambient temperature	0 - 60°C
Max. density treated liquid	1100 Kg/m³
pH treated liquid	6-14
Max. start per hour	20 /h (equally distributed)
Max. acoustic pressure level	Max 70 dB (A)
Operating mode	S1 – Continuous use

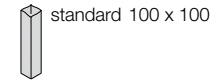
Construction materials

Case	Cast iron EN-GJL-250
Gear box	-
Propeller	AISI 316 (optional AISI 329)
Jet ring	-
Shaft	AISI 431
Mechanical seal (motor side)	Silicon carbide
Mechanical seal (propeller side)	Silicon carbide
Painting	Bi-epoxy 200 µm (optional 400 µm)
Screws	Stainless steel A2-70 (optional A4)
Gaskets	NBR
Fixing system	AISI 304 stainless steel (optional AISI 316)

Installation

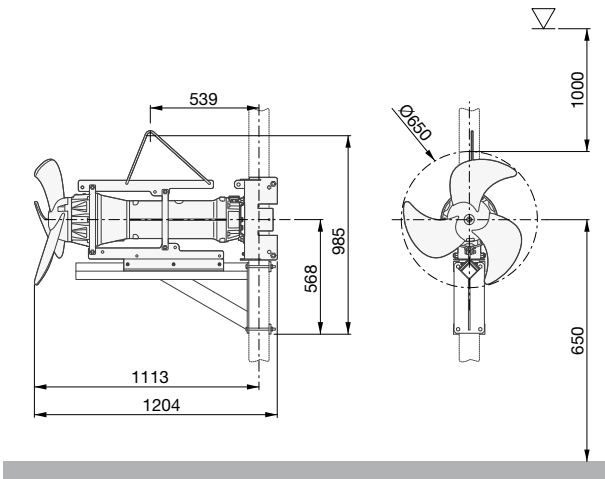


STANDARD

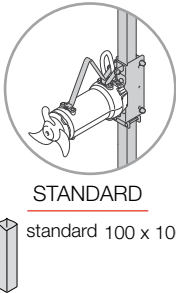


MMR

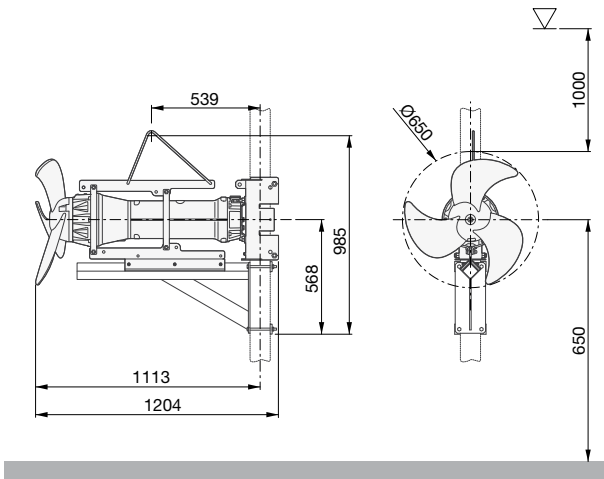
MMR61NF44.0G066-5



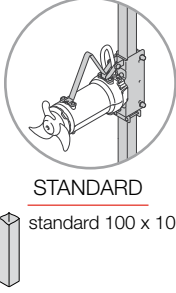
145 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR61NF44.0G066-5	Leakage sensor	1 in mechanical seals chamber
Configured	-	<b>Operating limits</b>	
Standard	CE		
<b>Motor</b>		<b>Construction materials</b>	
Rated Voltage	400 V	Case	Cast iron EN-GJL-250
Frequency	50 Hz	Gear box	-
Motor phases	3	Propeller	AISI 316 (optional AISI 329)
Number of poles	4	Jet ring	-
Incoming power P2	4.0 kW	Shaft	AISI 431
Electric power P1	4.5 kW	Mechanical seal (motor side)	Silicon carbide
Rated current	8.4 A	Mechanical seal (propeller side)	Silicon carbide
rpm	1455 rpm	Painting	Bi-epoxy 200 µm (optional 400 µm)
Efficiency	88.7 %	Screws	Stainless steel A2-70 (optional A4)
Cos Ø	0.770	Gaskets	NBR
Rated torque	26.3 Nm	Fixing system	AISI 304 stainless steel (optional AISI 316)
Start	DOL	<b>Installation</b>	
Starting current	48.7 A		
Starting torque	52.0 Nm		
Degree of protection	IP 68		
Insulation class	H	<b>Cable</b>	
Motor efficiency class ref.	IE3		
<b>Gear unit</b>		Type	1-stage planetary
Type	1-stage planetary	Gear ratio	6.6
<b>Propeller</b>		<b>Propeller</b>	
Name	61	Name	61
Rated diameter	650 mm	Rated diameter	650 mm
Number of blades	3	Number of blades	3
rpm	219 rpm	rpm	251 rpm
Pp2	2.52 kW	Pp2	3.80 kW
Propeller thrust	1165 N	Propeller thrust	1500 N

MMR61NF45.5G058-5



148 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR61NF45.5G058-5	Leakage sensor	1 in mechanical seals chamber
Configured	-	<b>Operating limits</b>	
Standard	CE		
<b>Motor</b>		<b>Construction materials</b>	
Rated Voltage	400 V	Case	Cast iron EN-GJL-250
Frequency	50 Hz	Gear box	-
Motor phases	3	Propeller	AISI 316 (optional AISI 329)
Number of poles	4	Jet ring	-
Incoming power P2	5.5 kW	Shaft	AISI 431
Electric power P1	6.1 kW	Mechanical seal (motor side)	Silicon carbide
Rated current	11.7 A	Mechanical seal (propeller side)	Silicon carbide
rpm	1450 rpm	Painting	Bi-epoxy 200 µm (optional 400 µm)
Efficiency	89.6 %	Screws	Stainless steel A2-70 (optional A4)
Cos Ø	0.760	Gaskets	NBR
Rated torque	36.2 Nm	Fixing system	AISI 304 stainless steel (optional AISI 316)
Start	DOL	<b>Installation</b>	
Starting current	64.0 A		
Starting torque	72.4 Nm		
Degree of protection	IP 68		
Insulation class	H	<b>Cable</b>	
Motor efficiency class ref.	IE3		
<b>Gear unit</b>		Type	1-stage planetary
Type	1-stage planetary	Gear ratio	5.8
<b>Propeller</b>		<b>Propeller</b>	
Name	61	Name	61
Rated diameter	650 mm	Rated diameter	650 mm
Number of blades	3	Number of blades	3
rpm	251 rpm	rpm	251 rpm
Pp2	3.80 kW	Pp2	3.80 kW
Propeller thrust	1500 N	Propeller thrust	1500 N

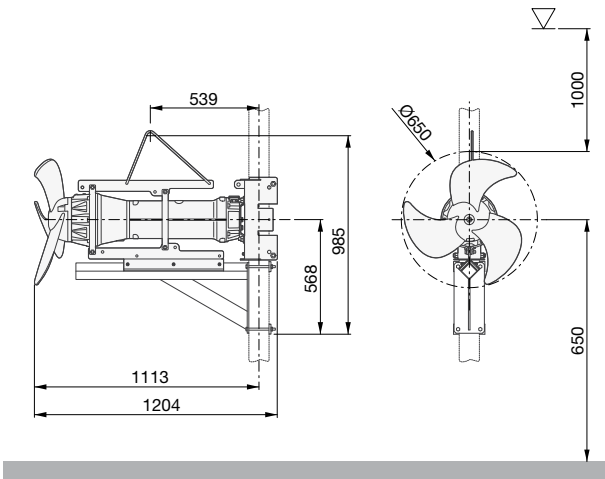


MMR

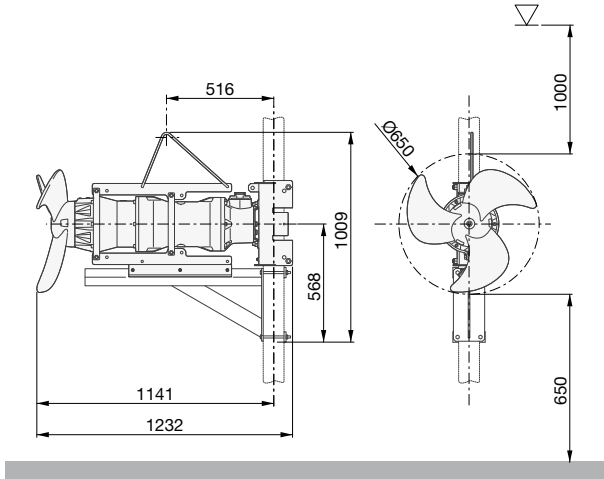
MMR

MMR61NF45.5G054-5

MMR61NF47.5G049-5



148 Kg (stand and guiding system excluded)



184 Kg (stand and guiding system excluded)

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR61NF45.5G054-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	4	Max. start per hour	20 /h (equally distributed)
Incoming power P2	5.5 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	6.1 kW	Operating mode	S1 – Continuous use
Rated current	11.7 A	<b>Construction materials</b>	
rpm	1450 rpm	Case	Cast iron EN-GJL-250
Efficiency	89.6 %	Gear box	-
Cos Ø	0.760	Propeller	AISI 316 (optional AISI 329)
Rated torque	36.2 Nm	Jet ring	-
Start	DOL	Shaft	AISI 431
Starting current	64.0 A	Mechanical seal (motor side)	Silicon carbide
Starting torque	72.4 Nm	Mechanical seal (propeller side)	Silicon carbide
Degree of protection	IP 68	Painting	Bi-epoxy 200 µm (optional 400 µm)
Insulation class	H	Screws	Stainless steel A2-70 (optional A4)
Motor efficiency class ref.	IE3	Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
<b>Gear unit</b>		<b>Installation</b>	
Type	1-stage planetary		
Gear ratio	5.4		
<b>Propeller</b>		<b>Cable</b>	
Name	61	Type	4G2.5 + 3x1
Rated diameter	650 mm	Length	10 m
Number of blades	3		
rpm	267 rpm		
Pp2	4.40 kW		
Propeller thrust	1700 N		

<b>Product</b>		<b>Monitoring</b>	
Type	SUBMERSIBLE MIXER	Thermal protector	klixon
Name	MMR61NF47.5G049-5	Leakage sensor	1 in mechanical seals chamber
Configured	-		
Standard	CE		
<b>Motor</b>		<b>Operating limits</b>	
Rated Voltage	400 V	Ambient temperature	0 - 60°C
Frequency	50 Hz	Max. density treated liquid	1100 Kg/m³
Motor phases	3	pH treated liquid	6-14
Number of poles	4	Max. start per hour	20 /h (equally distributed)
Incoming power P2	7.5 kW	Max. acoustic pressure level	Max 70 dB (A)
Electric power P1	8.3 kW	Operating mode	S1 – Continuous use
Rated current	14.5 A	<b>Construction materials</b>	
rpm	1460 rpm	Case	Cast iron EN-GJL-250
Efficiency	90.4 %	Gear box	-
Cos Ø	0.830	Propeller	AISI 316 (optional AISI 329)
Rated torque	49.1 Nm	Jet ring	-
Start	DOL	Shaft	AISI 431
Starting current	96.6 A	Mechanical seal (motor side)	Silicon carbide
Starting torque	119.2 Nm	Mechanical seal (propeller side)	Silicon carbide
Degree of protection	IP 68	Painting	Bi-epoxy 200 µm (optional 400 µm)
Insulation class	H	Screws	Stainless steel A2-70 (optional A4)
Motor efficiency class ref.	IE3	Gaskets	NBR
		Fixing system	AISI 304 stainless steel (optional AISI 316)
<b>Gear unit</b>		<b>Installation</b>	
Type	1-stage planetary		
Gear ratio	4.9		
<b>Propeller</b>		<b>Cable</b>	
Name	61	Type	4G6
Rated diameter	650 mm	Length	10 m
Number of blades	3		
rpm	300 rpm		
Pp2	5.80 kW		
Propeller thrust	2100 N		

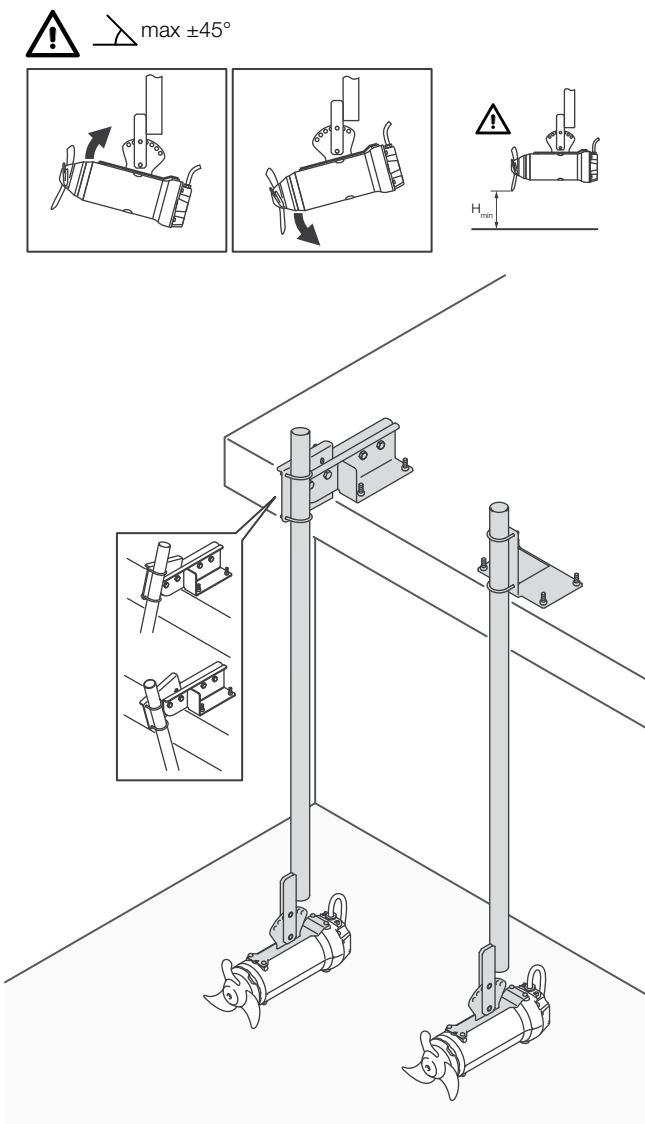
MMR

Installations and accessories

To guarantee top mixer performance, Tsurumi has developed a wide range of accessories for adjusting devices' positions in the tank and lifting and removing them without having to drain the system.  
Designed for easy installation and generously sized to guarantee durability, accessories are available in galvanised or stainless steel.

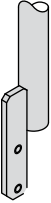
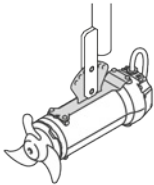
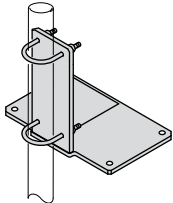
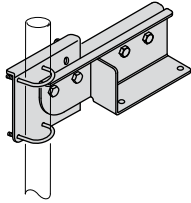
The recommended installation modes are:

Pendular installation



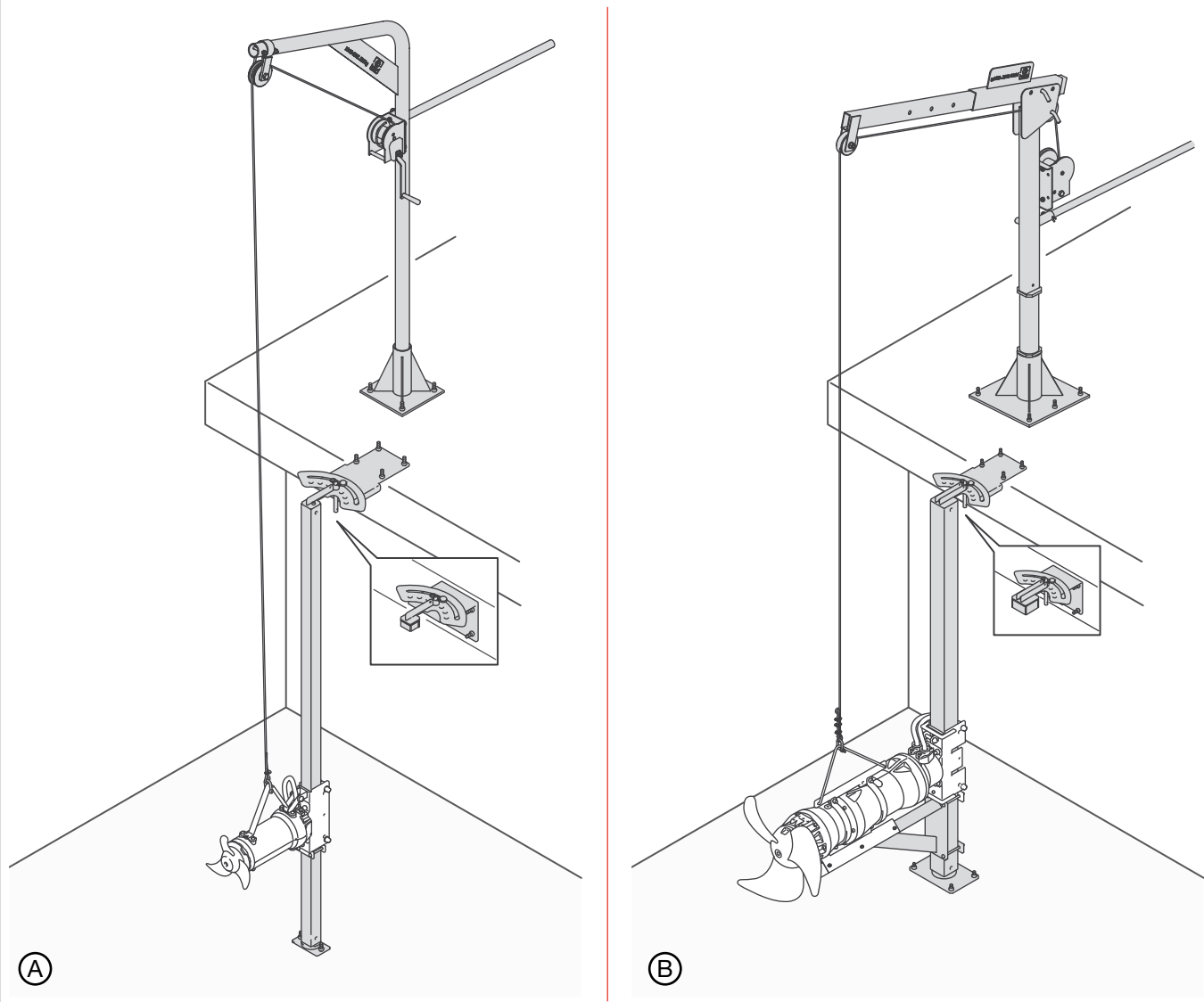
Mobile installation in which the mixer can be both installed and removed with the tank full.  
The mixer is suspended from a suspension pipe and fixed to a mounting bracket, it can be adjusted both horizontalz and vertically

Accessories (Pendular installation)

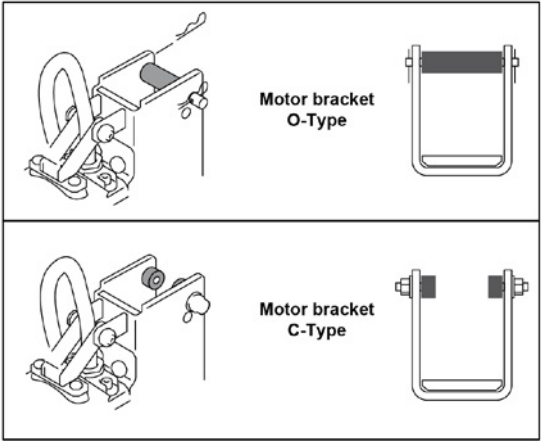
	Code	Description	Material	Suitable for mixers
	27.992	Guide for suspended installation (Length = 2m)	AISI 304	MMR 200
	PEND	Pendular installation plate	AISI 304	MMR 200
	27.996	Fixed upper bracket floor for Ø 2" pole	AISI 304	MMR 200
	28.032	Adjustable upper bracket floor for Ø 2" pole	AISI 304	MMR 200

MMR

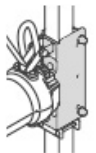

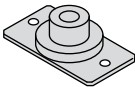
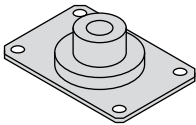
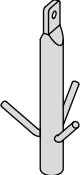
Mast installation (fig. A and B)



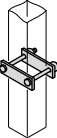
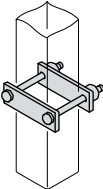
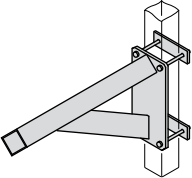
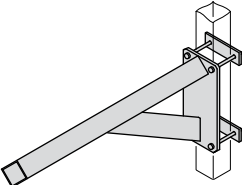
The most widely used installation mode, suitable for mixers of any shape and size.  
The mixer, fitted with a runner which is also compatible with existing installations, slides along a square post and can be removed with no need to drain the tank, thanks to rugged lifting jib cranes. The mixer can be horizontally adjusted for the best possible position, while vertical adjustment is possible with the aid of special optional runners.

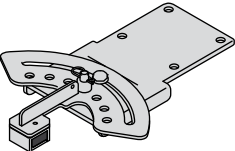
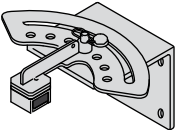
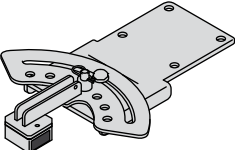
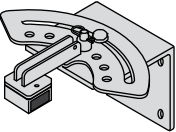


Accessories (Mast installation)

	Code	Description	Material	Suitable for mixers
	MAST 50 (option)	Mast 50mm bracket (O-type / C-type)	AISI 304	MMR 200 MMR 300
	MAST 60 (standard)	Mast 60mm bracket (O-type / C-type)		
	MAST 80 (option)	Mast 80mm bracket (O-type / C-type)	AISI 304	MMR 200 MMR 300
	MAST 100 (standard)	Mast 100mm bracket (O-type / C-type)		MMR 300 MMR 400 MMR 650
	27.814	Base pole 60 x 60mm	AISI 304	MMR 200 MMR 300
	27.812	Base pole 100 x 100mm	AISI 304	MMR 300 MMR 400 MMR 650
	24.659	Lifting hook	Galvanized steel	MMR 200 MMR 300 MMR 400 MMR 650

Accessories (Mast installation)

	Code	Description	Material	Suitable for mixers
	27.982	Stop fitting for 60x60 mm pole	AISI 304	MMR 200 MMR 300
	26.157	Stop fitting for 100x100 mm pole	AISI 304	MMR 300
	28.715	Stop fitting support for 100x100 mm pole	AISI 304	MMR 400
	28.056	Stop fitting support for 100x100 mm pole	AISI 304	MMR 650

	Code	Description	Material	Suitable for mixers
	28.018	Upper bracket floor 60x60 mm pole	AISI 304	MMR 200 MMR 300
	28.017	Upper bracket wall 60x60 mm pole	AISI 304	MMR 200 MMR 300
	28.016	Upper bracket floor 100x100 mm pole	AISI 304	MMR 300 MMR 400 MMR 650
	28.015	Upper bracket wall 100x100 mm pole	AISI 304	MMR 300 MMR 400 MMR 650



Product images and specifications may differ from actual products due to improvements.