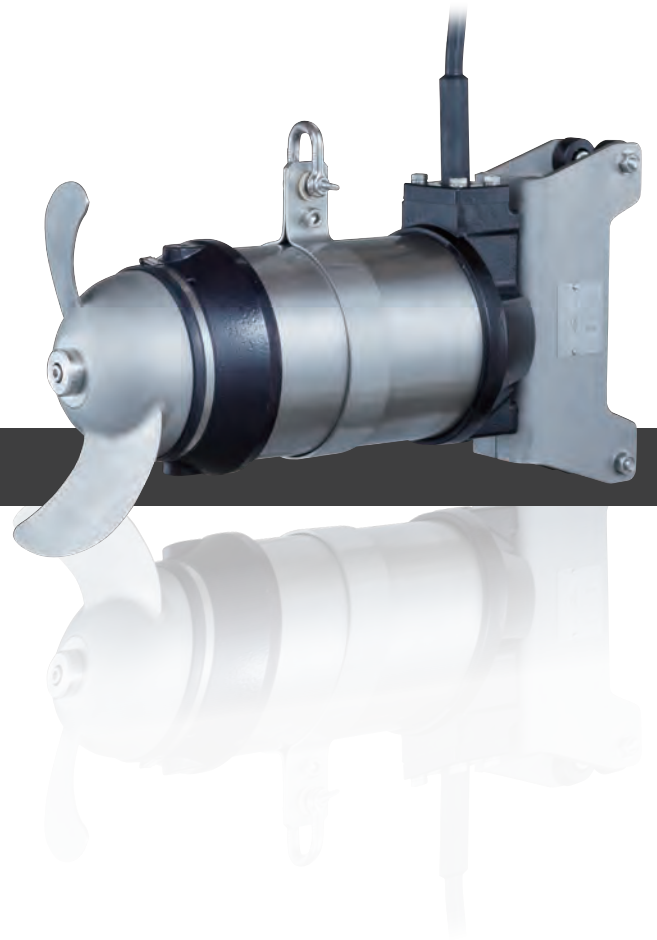


# MR

SUBMERSIBLE MIXERS

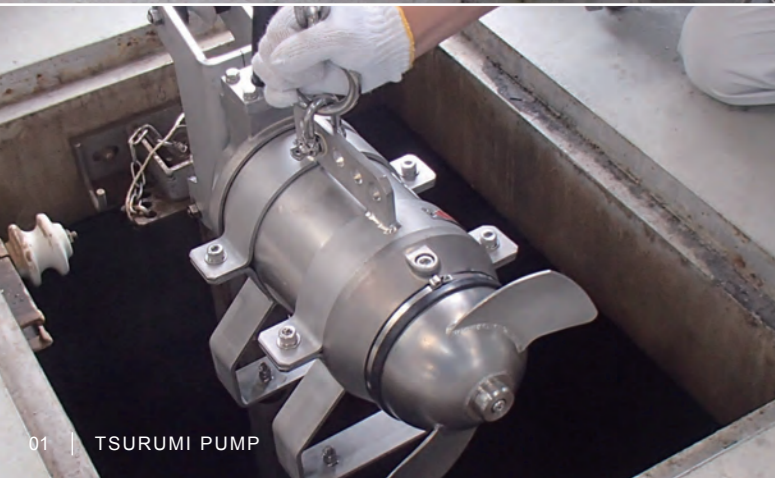


# Submersible Mixers

- The highly-efficient shape of the propeller, which is directly connected with the submersible motor, provides a powerful jet of water.
- The oil chamber incorporates an electrode type leakage sensor to detect for water intrusion into the chamber. (1.5kW and above)
- Tsurumi submersible mixers are available in wide variations. Lineups include models without a guide ring to improve the mixing effect while increasing water flow, models with a guide ring that provides an excellent flow regulating effect, and low-water level models that are applicable with a minimum operating water level of 500mm. The cast iron type or stainless steel casting type can be selected according to field applications.
- The mixers can be used for either aerobic/aeration treatment that mixes water and air, or anaerobic treatment that does not mix air into the water.
- When used in combination with lifting equipment (optional), the mixer can be easily inspected and serviced without entering the tank.

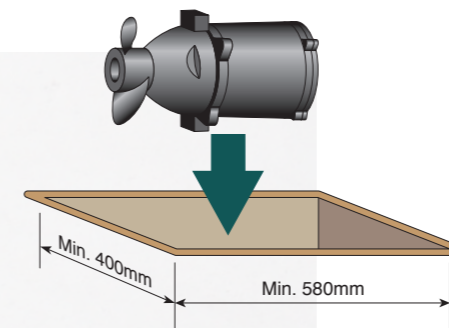
## Applications

- For industrial wastewater treatment and tap water/sewage treatment
- For environmental conservation in ponds and rivers
- For artificial water flow in amusement facilities
- For mixing, stirring, dissolving, density equalization and aeration



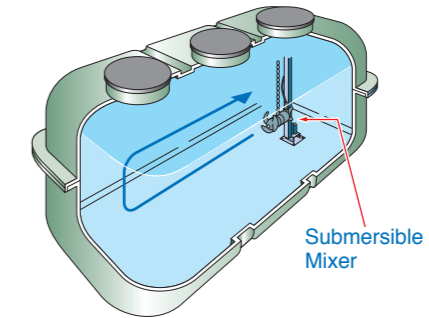
## Tsurumi submersible mixers are available in wide variations that can be selected according to application.

### Compact Design



The compact type MR-series (0.75kW and below) is easy to handle and can be smoothly inserted through narrow openings (400 x 580mm) for installation in small treatment tanks.

### Septic Tank/Johkasou or Factory Production Type



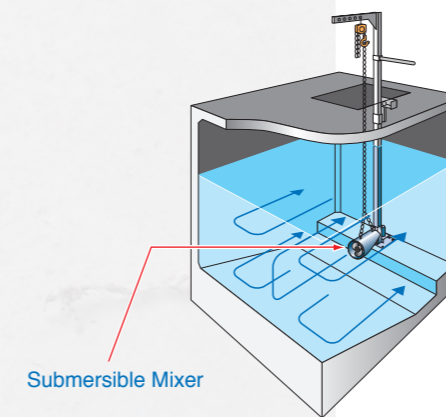
The MR-series is effective in equalizing water quality while preventing the sedimentation of solids. Also, when used in combination with an air diffuser, the MR-series effectively improves aerobic/aeration treatment efficiency and anaerobic mixing, as with an aerator.

### Without/With Guide Ring Type



MR-series

### Denitrifying Wastewater Treatment



Submersible Mixer

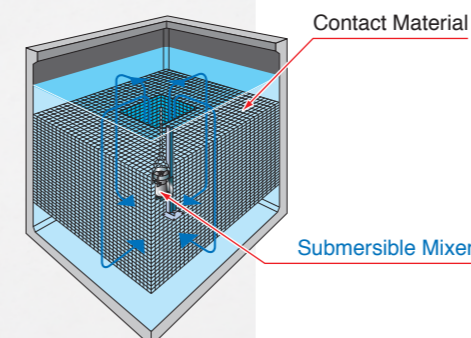
The MR/MRL-series are effective towards preventing the sedimentation of solids and equalizing water quality in flow rate regulating tanks and intermediate flow rate regulating tanks that do not need air (oxygen).

### Low Water Level Type



MRL-series

### Contact Tank



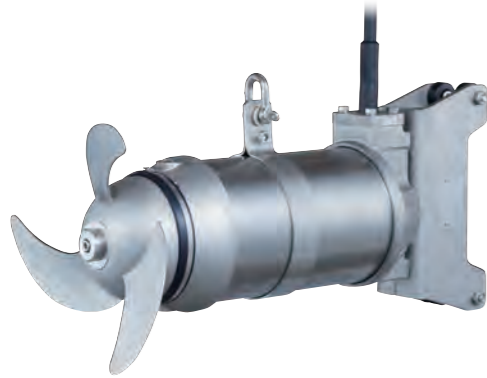
The MRT-series is used to generate a circulating flow in denitrifying contact tanks, etc. The simple structure of the MRT-series is suitable for small-scale treatment facilities where maintenance/inspection space is limited.

### Vertical Top-discharge Type

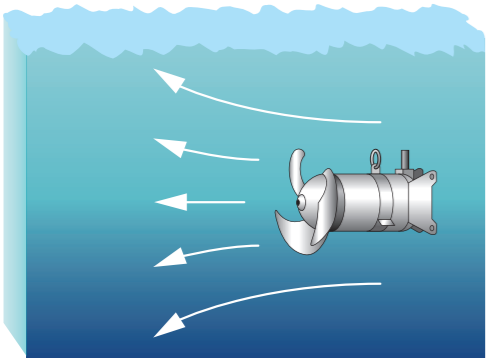


MRT-series

## Without Guide Ring Type



Stainless Steel Casting Type



### Model Selection 50Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MR21NF250	0.25	4	1420	2.0	0.12	50	24	155
MR21NF400	0.4	4	1420	2.8	0.17	80	24	185
MR21NF750	0.75	4	1410	3.6	0.35	130	24	190
MR2521EC/CR	0.75	6	942	5.0	0.62	170	28	270
MR31NF/NR1.5	1.5	6	910	7.5	1.0	195	36	300
MR32NF/NR1.5	1.5	6	910	7.8	1.1	210	36	300
MR33NF/NR1.5	1.5	6	910	9.8	1.2	295	36	300
MR31NF/NR2.8	2.8	6	915	10.9	2.1	395	46	300
MR32NF/NR2.8	2.8	6	915	11.8	2.3	420	46	300
MR33NF/NR2.8	2.8	6	915	13.0	2.5	500	46	300
MR41NF/NR3.0	3	8	730	11.6	2.5	330	112/122	400
MR42NF/NR3.0	3	8	730	13.0	2.6	465	112/122	400
MR43NF/NR3.0	3	8	730	15.0	2.7	570	112/122	400
MR41NF/NR4.0	4	8	710	17.4	3.4	610	112/122	400
MR42NF/NR4.0	4	8	710	19.0	3.6	660	112/122	400

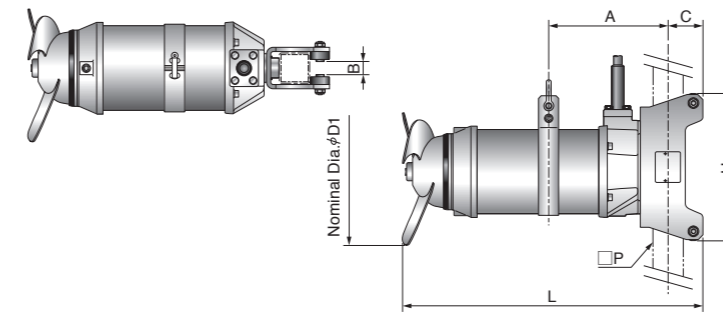
\* TOMR type lifting equipment is also available. For details, contact your dealer.

### Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MR21NF250	0.25	4	1700	1.4	0.08	40	24	145
MR21NF400	0.4	4	1700	1.8	0.13	60	24	155
MR21NF750	0.75	4	1690	3.2	0.28	110	24	185
MR2521EC/CR	0.75	6	1126	4.4	0.68	160	28	240
MR31NF/NR1.5	1.5	6	1085	9.3	1.2	260	36	300
MR32NF/NR1.5	1.5	6	1085	9.6	1.3	285	36	300
MR31NF/NR2.8	2.8	6	1090	11.9	2.1	430	46	300
MR32NF/NR2.8	2.8	6	1090	13.1	2.5	535	46	300

\* TOMR type lifting equipment is also available. For details, contact your dealer.

### Dimensions 50/60Hz

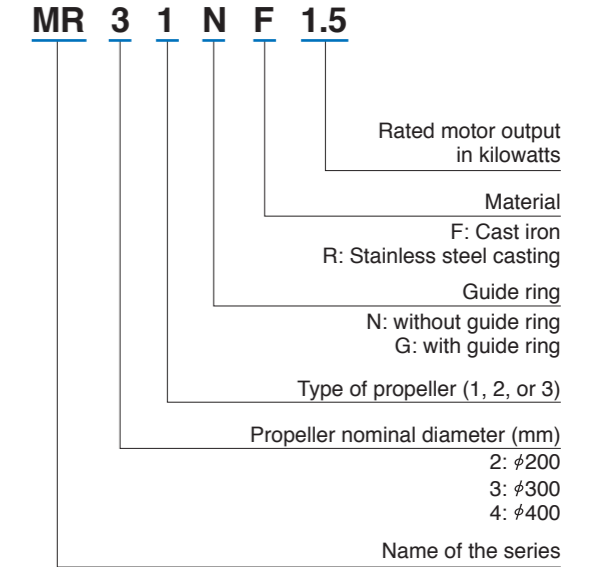


Model	D1	L	H	A	B	C	P
MR21NF250	155/145	473	247	205	20	30	50
MR21NF400	185/155	473	247	205	20	30	50
MR21NF750	190/185	473	247	205	20	30	50
MR2521EC/CR	270/240	470	258	177	21	67	50
MR31NF/NR1.5	300	556	294	210	26	70	60
MR32NF/NR1.5	300	557	294	210	26	70	60
MR33NF/NR1.5	300	560	294	210	26	70	60
MR31NF/NR2.8	300	600	294	240	26	70	60
MR32NF/NR2.8	300	608/600	294	240	26	70	60
MR33NF/NR2.8	300	608	294	240	26	70	60
MR33NF/NR3.0	400	668	300	285	26	70	60
MR41NF/NR3.0	400	668	300	285	26	70	60
MR42NF/NR3.0	400	668	300	285	26	70	60
MR43NF/NR3.0	400	668	300	285	26	70	60
MR41NF/NR4.0	400	682	300	285	26	70	60
MR42NF/NR4.0	400	686	300	285	26	70	60

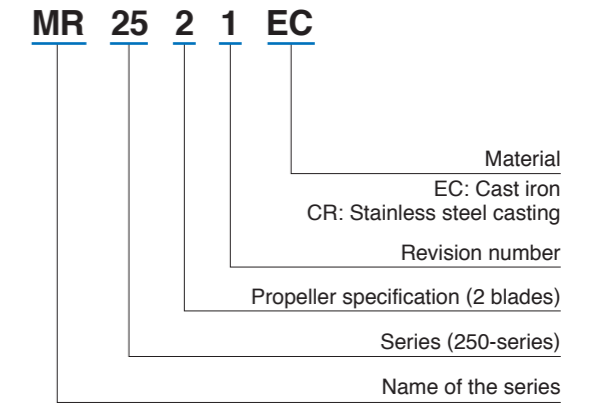
\* Dimension "A" is a reference value.

### Model Number Designation

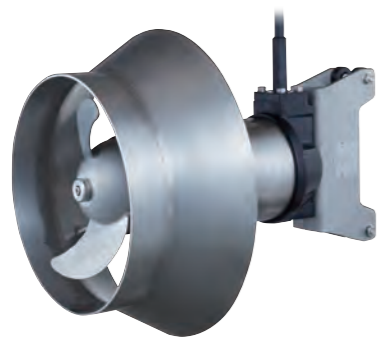
4-pole motor, 0.75kW and below  
6-pole motor, 1.5kW and above



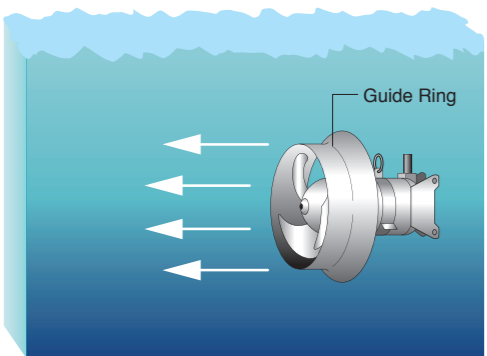
### Model MR2521EC/CR



## With Guide Ring Type



Cast Iron Type



### Model Selection 50Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MR31GF/GR1.5	1.5	6	910	7.3	0.9	185	46	300
MR32GF/GR1.5	1.5	6	910	7.7	1.0	200	46	300
MR33GF/GR1.5	1.5	6	910	9.6	1.2	285	46	300
MR31GF/GR2.8	2.8	6	915	10.7	2.1	385	56	300
MR32GF/GR2.8	2.8	6	915	11.5	2.2	410	56	300
MR33GF/GR2.8	2.8	6	915	12.7	2.4	490	56	300
MR41GF/GR3.0	3	8	730	11.3	2.4	235	125/135	400
MR42GF/GR3.0	3	8	730	12.6	2.5	375	125/135	400
MR43GF/GR3.0	3	8	730	14.4	2.6	435	125/135	400
MR41GF/GR4.0	4	8	710	16.6	3.2	475	125/135	400
MR42GF/GR4.0	4	8	710	18.1	3.3	540	125/135	400

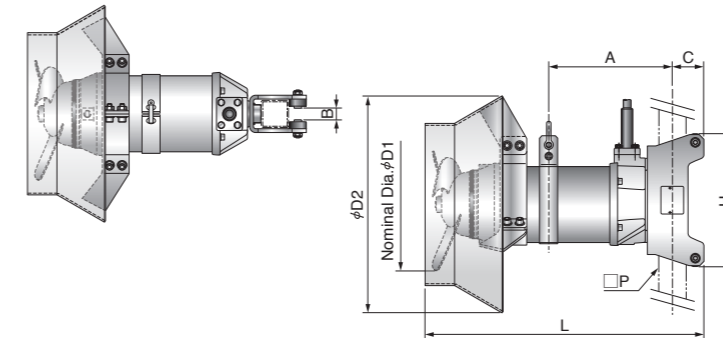
\* TOMR type lifting equipment is also available. For details, contact your dealer.

### Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MR31GF/GR1.5	1.5	6	1085	9.0	1.1	245	46	300
MR32GF/GR1.5	1.5	6	1085	9.4	1.2	275	46	300
MR31GF/GR2.8	2.8	6	1090	11.5	2.0	420	56	300
MR32GF/GR2.8	2.8	6	1090	12.6	2.3	525	56	300
MR41GF/GR3.0	3	8	870	13.4	2.4	345	125/135	400
MR42GF/GR3.0	3	8	870	15.6	2.7	530	125/135	400
MR41GF/GR4.0	4	8	840	17.7	3.4	630	125/135	400

\* TOMR type lifting equipment is also available. For details, contact your dealer.

### Dimensions 50/60Hz



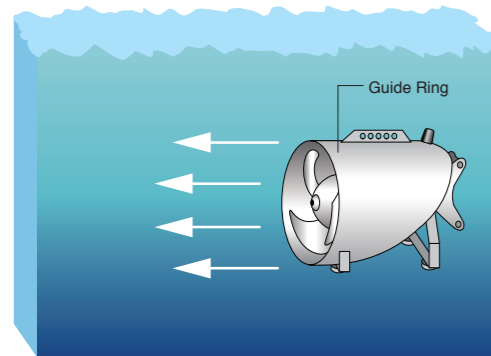
Model	D1	D2	L	H	A	B	C
MR31GF/GR1.5	300	479	576	294	255	26	70
MR32GF/GR1.5	300	479	576	294	255	26	70
MR33GF/GR1.5	300	479	576	294	255	26	70
MR31GF/GR2.8	300	479	616	294	275	26	70
MR32GF/GR2.8	300	479	616	294	275	26	70
MR33GF/GR2.8	300	479	616	294	275	26	70
MR41GF/GR3.0	400	572	691	300	300	26	70
MR42GF/GR3.0	400	572	691	300	300	26	70
MR43GF/GR3.0	400	572	691	300	300	26	70
MR41GF/GR4.0	400	572	691	300	300	26	70
MR42GF/GR4.0	400	572	691	300	300	26	70

\* Dimension "A" is a reference value.

# MRL ( Low Water Level Type )



Cast Iron Type



## Model Selection 50Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MRL21GF250	0.25	4	1420	1.91	0.09	45	27	155
MRL21GF400	0.4	4	1420	2.67	0.13	72	27	185
MRL21GF750	0.75	4	1410	3.44	0.27	117	27	190
MRL2541EC/CR	0.75	6	942	4.8	0.61	160	39	270
MRL31GF/GR1.5	1.5	6	910	6.2	0.9	120	50	300
MRL32GF/GR1.5	1.5	6	910	6.6	1.0	130	50	300
MRL33GF/GR1.5	1.5	6	910	8.1	1.2	185	50	300
MRL31GF/GR2.8	2.8	6	915	9.5	2.1	225	61	300
MRL32GF/GR2.8	2.8	6	915	10.2	2.2	265	61	300
MRL33GF/GR2.8	2.8	6	915	11.0	2.4	300	61	300

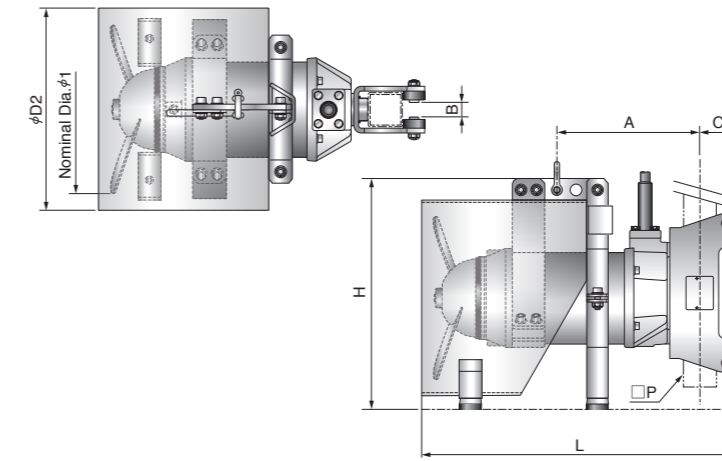
\* TOMRL type lifting device is also available. For details, contact your dealer.

## Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min <sup>-1</sup>	Flow Rate m <sup>3</sup> /min	Fresh Water Mixing Output kW	Reaction Force N	Dry Weight kg	Propeller Nominal Dia. mm
MRL21GF250	0.25	4	1700	1.32	0.06	37	27	145
MRL21GF400	0.4	4	1700	1.7	0.10	55	27	155
MRL21GF750	0.75	4	1690	3.02	0.22	101	27	185
MRL2541EC/CR	0.75	6	1126	4.2	0.67	150	39	240
MRL31GF/GR1.5	1.5	6	1085	7.7	1.1	160	50	300
MRL32GF/GR1.5	1.5	6	1085	8.0	1.2	180	50	300
MRL31GF/GR2.8	2.8	6	1090	10.4	2.0	275	61	300
MRL32GF/GR2.8	2.8	6	1090	11.3	2.3	310	61	300

\* TOMRL type lifting device is also available. For details, contact your dealer.

## Dimensions 50/60Hz



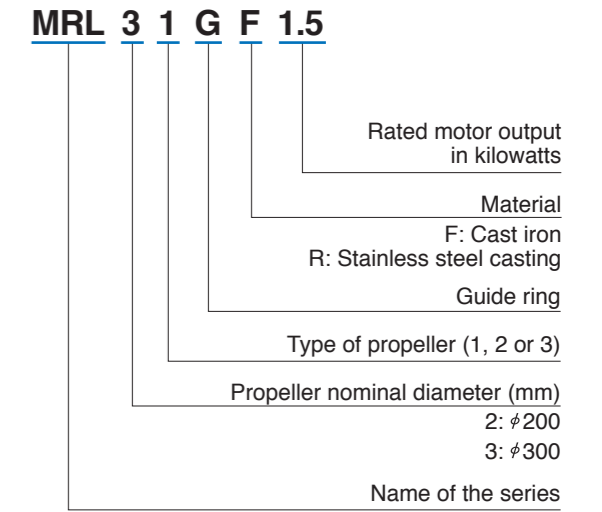
Unit: mm

Model	D1	D2	L	H	A	B	C	P
MRL21GF250	155/145	289	498	294	230	20	30	50
MRL21GF400	185/155	289	498	294	230	20	30	50
MRL21GF750	190/185	289	498	294	230	20	30	50
MRL2541EC/CR	270/240	319	495	393	208	21	67	50
MRL31GF/GR1.5	300	355.6	576	421	260	26	70	60
MRL32GF/GR1.5	300	355.6	576	421	260	26	70	60
MRL33GF/GR1.5	300	355.6	576	421	260	26	70	60
MRL31GF/GR2.8	300	355.6	626	421	270	26	70	60
MRL32GF/GR2.8	300	355.6	626	421	270	26	70	60
MRL33GF/GR2.8	300	355.6	626	421	270	26	70	60

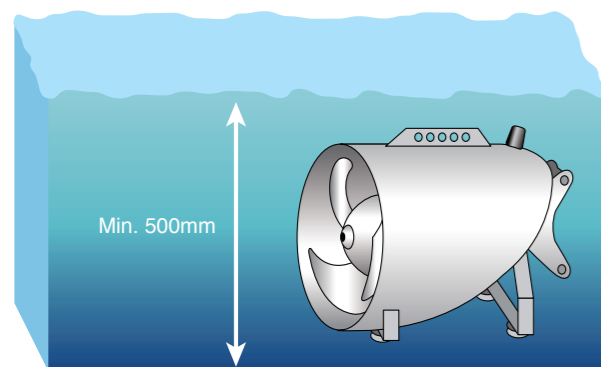
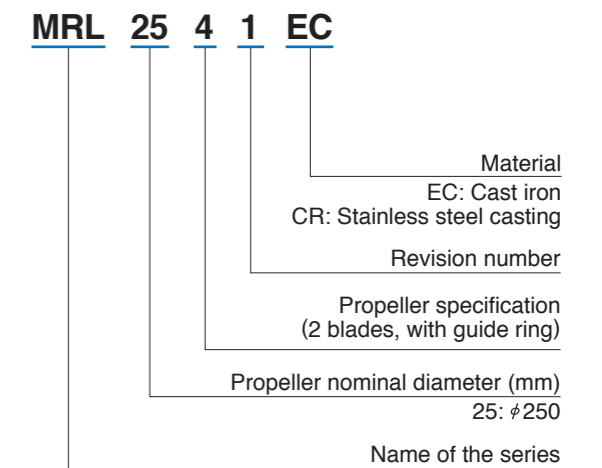
\* Dimension "A" is a reference value.

## Model Number Designation

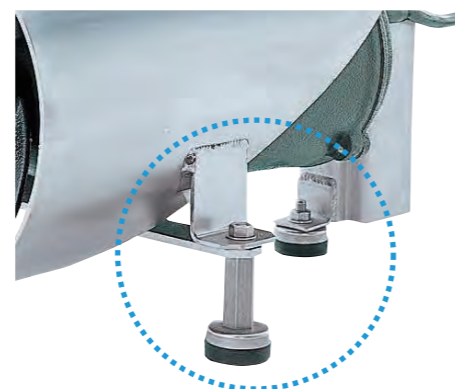
### MRL200/300-series



### MRL250-series



Applicable with a minimum operating water level of 500mm.



The mixer body has rubber feet, enabling installation at the bottom of a tank.



We reserve the right to change the specifications and designs for improvement without prior notice.

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