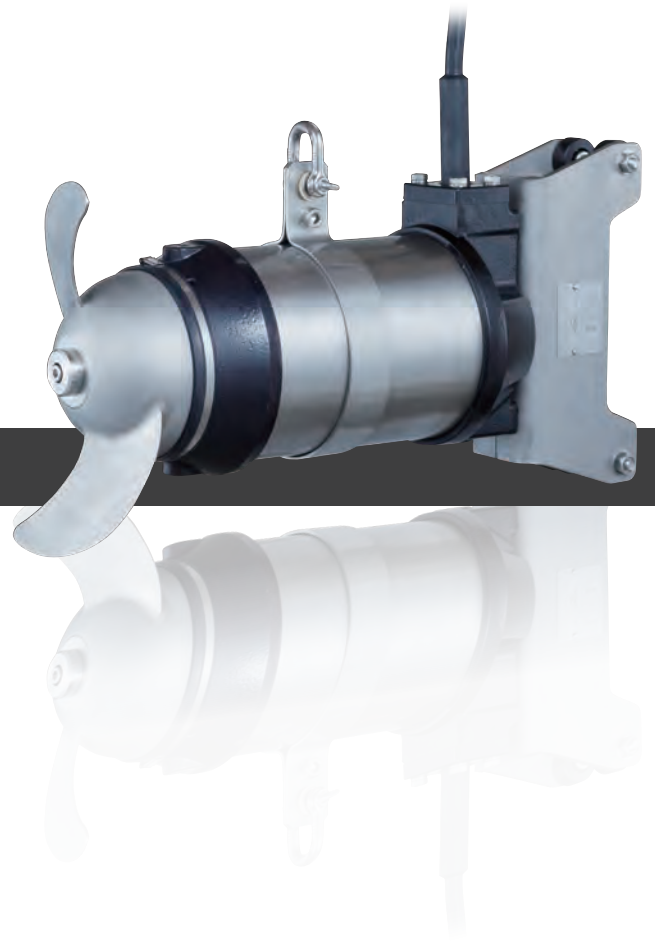


MR

SUBMERSIBLE MIXERS



Mahar Fan

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.

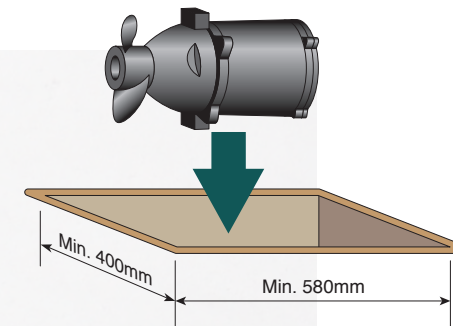
Applications

- 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



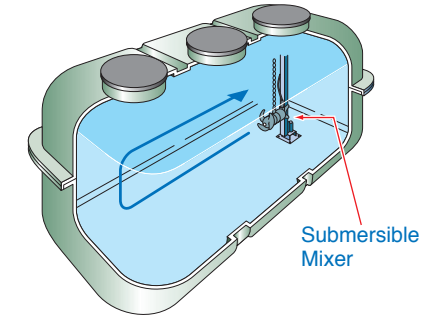
Tsurumi submersible mixers are available in wide variations that can be selected according to application.

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 of Factory Production Type



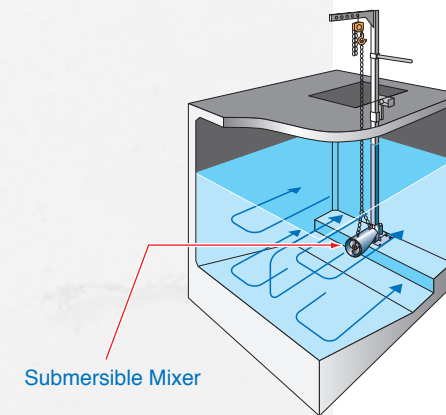
The MR-series is effective in equalizing water quality while preventing the sedimentation of solids. Also, when used in combination with an air diffuser, the MR-series effectively improves aerobic/aeration treatment efficiency and anaerobic mixing, as with an aerator.

Without/With Guide Ring Type



MR-series

Denitrifying Wastewater Treatment



Submersible Mixer

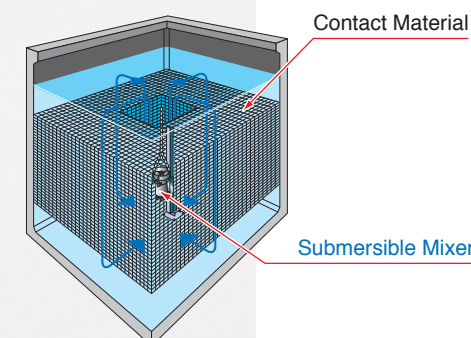
The MR/MRL-series are effective towards preventing the sedimentation of solids and equalizing water quality in flow rate regulating tanks and intermediate flow rate regulating tanks that do not need air (oxygen).

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.

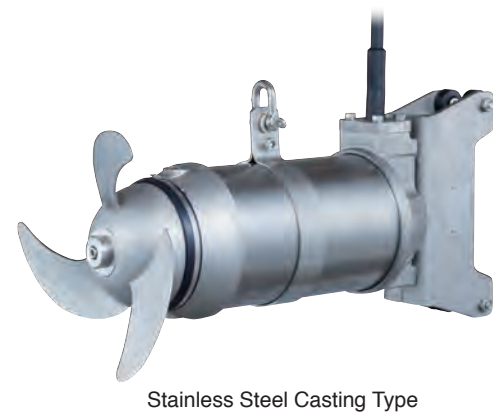
Vertical Top-discharge Type



MRT-series

Mahar Fan

Without Guide Ring Type



Model Selection 50Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min ⁻¹	Flow Rate m³/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

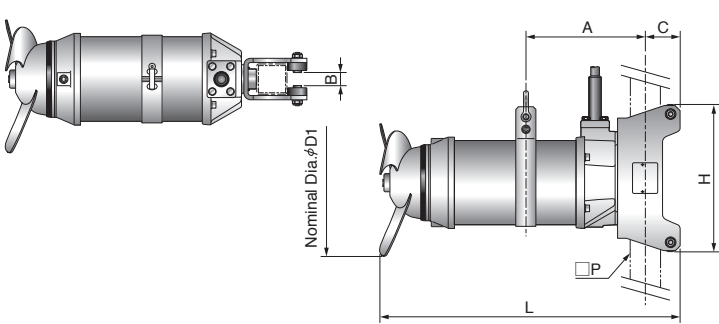
* TOMR type lifting equipment is also available. For details, contact your dealer.

Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min ⁻¹	Flow Rate m³/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

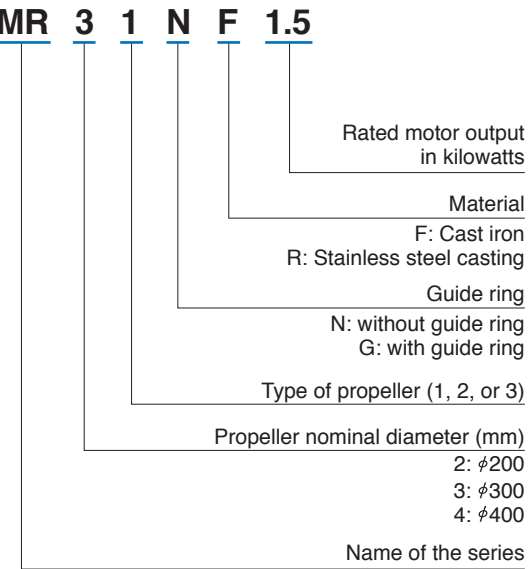


Model	D1	L	H	A	B	C	P
MR21NF250	155/145	473	247	205	20	30	50
MR21NF400	185/155	473	247	205	20	30	50
MR21NF750	190/185	473	247	205	20	30	50
MR2521EC/CR	270/240	470	258	177	21	67	50
MR31NF/NR1.5	300	556	294	210	26	70	60
MR32NF/NR1.5	300	557	294	210	26	70	60
MR33NF/NR1.5	300	560	294	210	26	70	60
MR31NF/NR2.8	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
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

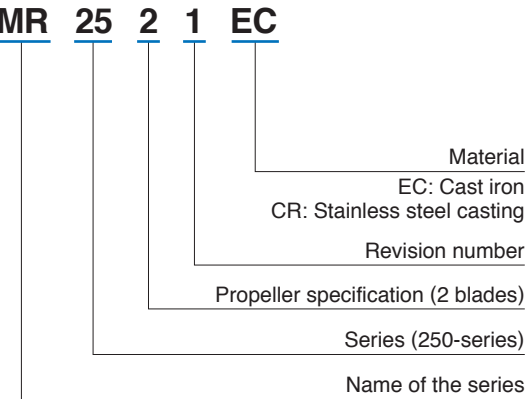
* Dimension "A" is a reference value.

Model Number Designation

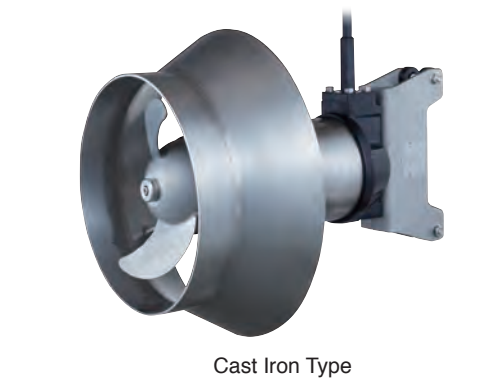
4-pole motor, 0.75kW and below
6-pole motor, 1.5kW and above



Model MR2521EC/CR



With Guide Ring Type



Model Selection 50Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min ⁻¹	Flow Rate m³/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

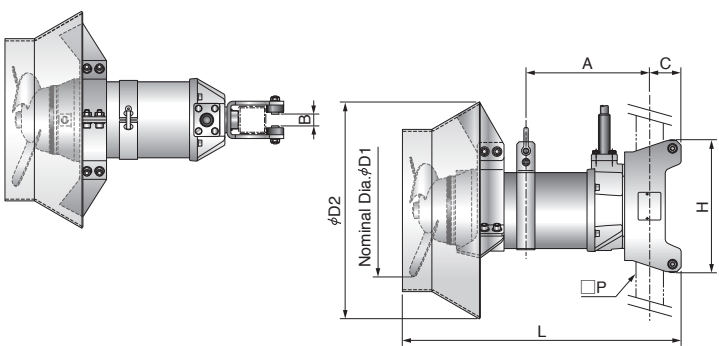
* TOMR type lifting equipment is also available. For details, contact your dealer.

Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min ⁻¹	Flow Rate m³/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



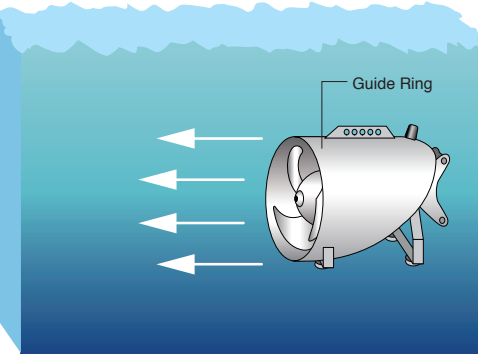
Model	D1	D2	L	H	A	B	C
MR31GF/GR1.5	300	479	576	294	255	26	70
MR32GF/GR1.5	300	479	576	294	255	26	70
MR33GF/GR1.5	300	479	576	294	255	26	70
MR31GF/GR2.8	300	479	616	294	275	26	70
MR32GF/GR2.8	300	479	616	294	275	26	70
MR33GF/GR2.8	300	479	616	294	275	26	70
MR41GF/GR3.0	400	572	691	300	300	26	70
MR42GF/GR3.0	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 ⁻¹	Flow Rate m ³ /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

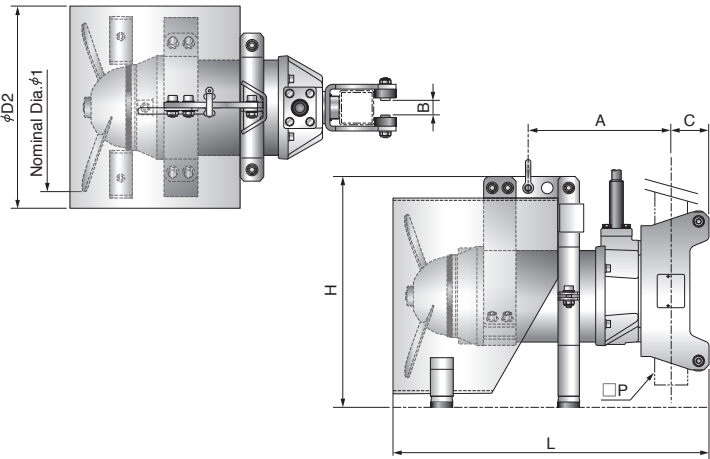
* TOMRL type lifting device is also available. For details, contact your dealer.

Model Selection 60Hz

Model	Motor Output kW	Pole	Propeller Rotation Speed min ⁻¹	Flow Rate m ³ /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

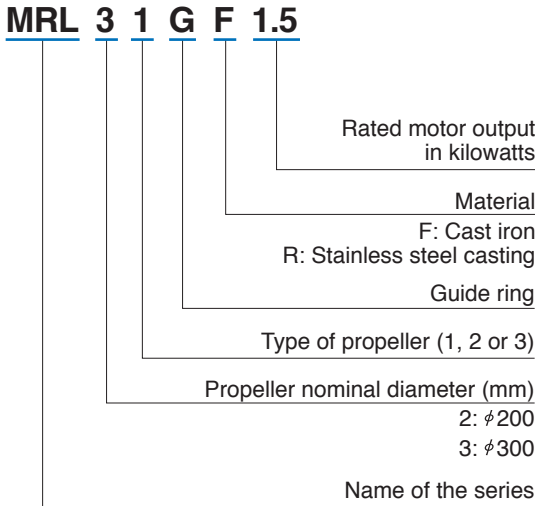


Model	D1	D2	L	H	A	B	C	P
MRL21GF250	155/145	289	498	294	230	20	30	50
MRL21GF400	185/155	289	498	294	230	20	30	50
MRL21GF750	190/185	289	498	294	230	20	30	50
MRL2541EC/CR	270/240	319	495	393	208	21	67	50
MRL31GF/GR1.5	300	355.6	576	421	260	26	70	60
MRL32GF/GR1.5	300	355.6	576	421	260	26	70	60
MRL33GF/GR1.5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

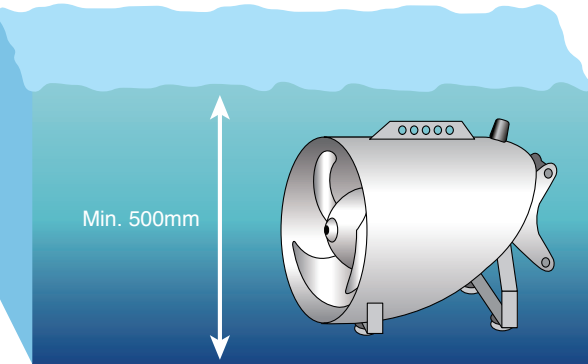
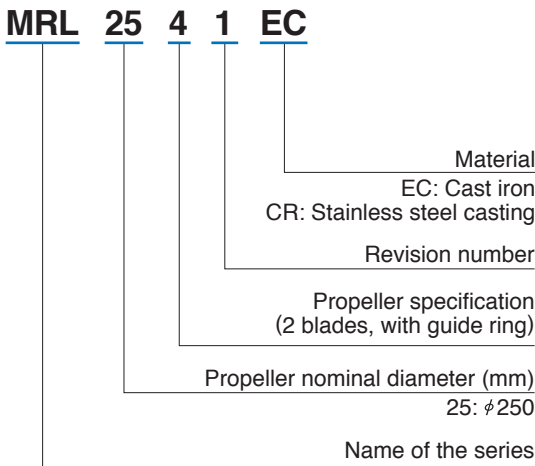
* Dimension "A" is a reference value.

Model Number Designation

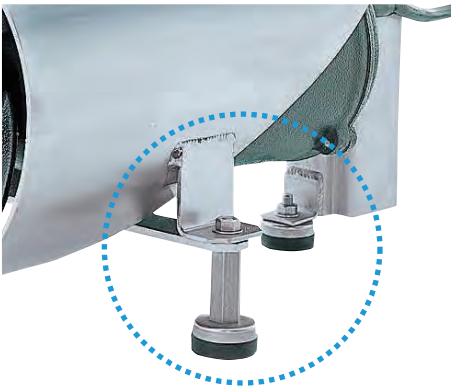
MRL200/300-series



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.

**TSURUMI
MANUFACTURING CO., LTD.**

Your Dealer

Mahar Fan

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