HOMA
PUMP TECHNOLOGY

Submersible Mixers
Flow Generators

Ranges
HRS/HRG, HRM/HRL

Innovation in Hydraulic Performance

A wide Spectrum

A wide Spectrum

HOMA submersible mixers are used for various applications in homogenisation, suspension of solids, horizontal flow generation or other mixing and flushing duties.

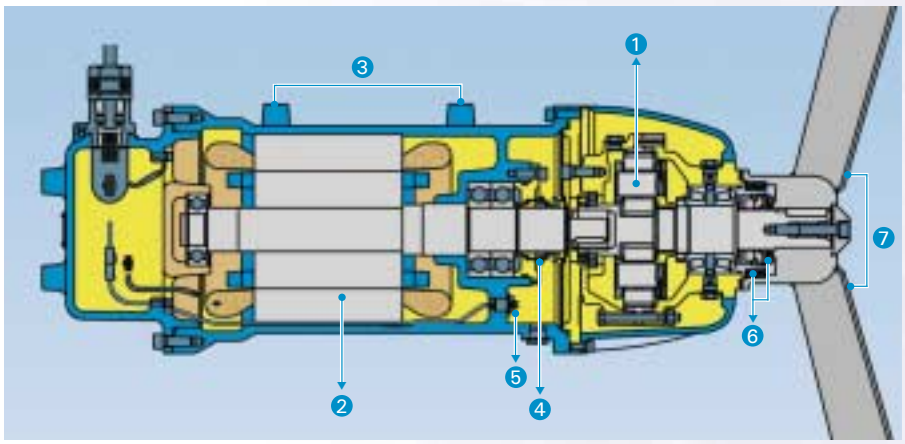
Areas of application are municipal and industrial wastewater treatment, industrial processing, agriculture, storm water tanks and many others.

The robust design of **HOMA** submersible mixers guarantees long-life trouble-free operation even under most demanding conditions.

The hydraulically optimized design of all propellers, transmission and motor drive results in outstanding efficiencies and excellent mixing performance with minimum flow losses.

A solid, flexible and easy handling installation system allows an optimum and individual positioning of the mixer combined with easy installation and maintenance.

Competence in Detail



1 Transmission
Long lifetime planetary transmission in big-volume oil chamber with inspection screw.

2 Motor
Pressure tight sealed motor, IP 68 protection, with thermal sensors embedded in the motor winding for motor temperature monitoring. Optional explosion proof according to ATEX Ex II 2GEExd.

3 Galvanic separation
Galvanic separation of motor housing and motor bracket prevents galvanic-corrosion.

4 Shaft seals motor housing
Lip seal protection with mechanical seal.

5 Moisture sensor
Moisture probe in oil chamber with electrode device

6 Propeller shaft seals
Two-level sealing system for optimum protection:

- 2 lip seals in the propeller hub rotate
- Silicon carbide mechanical seal on propeller shaft

provides optimal protection against seeping fluid

7 Propeller
Hydraulically optimized self-cleaning propeller from 1.4306 stainless steel (Model HRM/HRL from composite)

Ranges and Applications

Compact Design Mixers

HRS – with direct Motor Drive
HRG – with Transmission Drive

Multipurpose units for various applications.

- Streamlined compact design
- Self cleaning, high efficiency propeller
- Ideal for installation in any tank design
- Solid, compact and easy-handling installation and lifting system

Main applications are:

- Mixing, agitating, dissolving
- Sludge homogenisation
- Stormwater tanks
- Suspension of sediments or swimming covers also in pump pits
- Mixing of chemicals and high viscosity liquids
- Fishfarming
- Flow generation
- Cooling basins

Flow Generators

HRM / HRL

HOMA flow generators for a reliable and economic operation in waste water treatment.

- self cleaning, vibration free 2- or 3-blade propeller with high efficiency for high flow performance at low speed for low energy cost
- High performance propeller drive by robust planetary transmission
- Individual positioning in all tank designs for optimum flow generation by robust and easy-handling installation and lifting system

Main applications are:

- Nitrification
- Denitrification
- Phosphate-elimination
- Mixing, agitating
- Cooling basins
- Fishfarming

Type code:

HRG	185/	4-	2	03	(Ex)
Range	Motor rating (kW x 10)	Motor speed (poles)	No. of propeller blades	Model code	Explosion proof according to ATEX Ex II 2GEExd

Mixers with direct Propeller Drive

HRS

Design

- Propeller:
  2- or 3- blade propeller, self cleaning design
- Shaft seals:
  Propeller shaft sealing by mechanical seal in oil chamber, sealed from motor chamber by mechanical seal
- Motor shaft bearing:
  2 grooved ball bearings (HRS 32: 3 grooved ball bearings)
- Motor:
  Pressure tight sealed submersible motor, IP68 protection, insulation class F = 155 °C, pressure tight cable gland, thermal sensors for temperature control embedded in motor winding. Galvanic separation from motor bracket. Optional explosion proof according to ATEX Ex II 2GEExd.
- Seal condition monitoring probe:
  Electrode in oil chamber (at Ex-version optional)
- Installation:
  Installation and lifting device for individual mixer positioning, horizontally and vertically adjustable.

Materials

Propeller:
Stainless steel 1.4436

Mechanical seal:
SiC/SiC

Motor shaft:
Stainless steel 1.4104

Motor housing:
Cast iron GG 25

Bolts / Nuts:
Stainless steel 1.4306

Elastomeres:
NBR

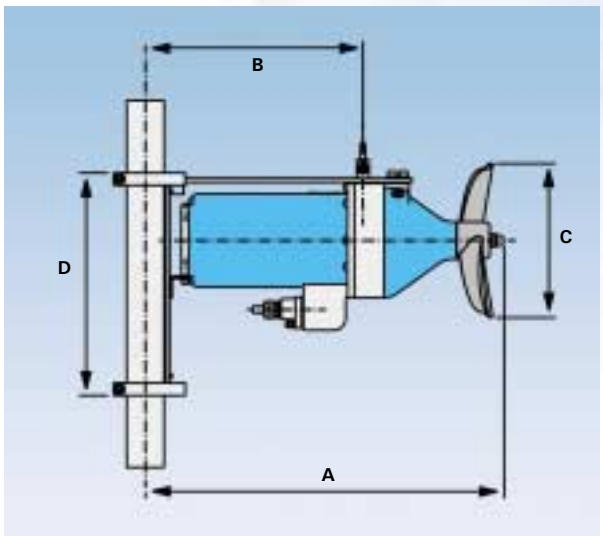
Motor bracket / Installation- and lifting system:
Stainless steel 1.4571

Technical Data

Type	Voltage (50 Hz)	Motor power (kW) P_1	Motor power (kW) P_2	Nominal current (A)	Speed motor / propeller (rpm)	No. of propeller blades	Axial force (N)	Flow (m^3/h)	Weight (kg)
HRS 08/4-302 (Ex)	400 V/3 Ph	1,1	0,8	2,8	1450/1450	3	143	264	30
HRS 12/4-302 (Ex)	400 V/3 Ph	1,7	1,2	3,3	1450/1450	3	210	372	31
HRS 19/6-202 (Ex)	400 V/3 Ph	3,1	2,1	5,7	950/950	2	296	786	36
HRS 29/4-202 (Ex)	400 V/3 Ph	3,4	2,65	6,2	1450/1450	2	429	1153	37
HRS 32/4-202 (Ex)	400 V/3 Ph	4,3	3,4	7,6	1450/1450	2	912	1558	45

Dimensions (in mm)

Type	A	B	C	D
HRS 08/4-302 (Ex)	495	232	190	320
HRS 12/4-302 (Ex)	495	232	190	320
HRS 19/6-202 (Ex)	531	269	250	330
HRS 29/4-202 (Ex)	531	269	250	330
HRS 32/4-202 (Ex)	577	350	250	360



HRS 32

Mixers with Transmission Drive

HRG

Design

- Propeller:
  2 blade propeller, self cleaning design
- Shaft seal:
  Two-level sealing system with 2 lip seals with grease filling in the propeller hub and additional mechanical seal. Gearbox with inspection screw forms oil chamber for mechanical seal lubrication. Sealing of gearbox from motor chamber by mechanical seal in oil chamber.
- Transmission:
  Planetary transmission in oil chamber
- Propeller shaft bearing:
  2 roller bearings in oil chamber
- Motor shaft bearing:
  2 grooved ball bearings, permanent lubrication
- Motor:
  Pressure tight sealed submersible motor, IP68 protection, insulation class F = 155 °C, pressure tight cable gland, thermal sensors for temperature control embedded in motor winding. Galvanic separation from motor bracket. Optional explosion proof according to ATEX Ex II 2GEExd.
- Seal condition monitoring probe:
  Electrode in oil chamber
- Installation:
  Installation and lifting device for individual mixer positioning, horizontally and vertically adjustable

Materials

Propeller:
Stainless steel 1.4306

Gearbox housing:
Cast iron GG 25

Mechanical seal:
Silicon carbide / Silicon carbide

Motor- / Propeller shaft:
1.5715

Motorhousing:
Cast iron GG 25

Bolts / Nuts:
Stainless steel 1.4306

Elastomeres:
NBR

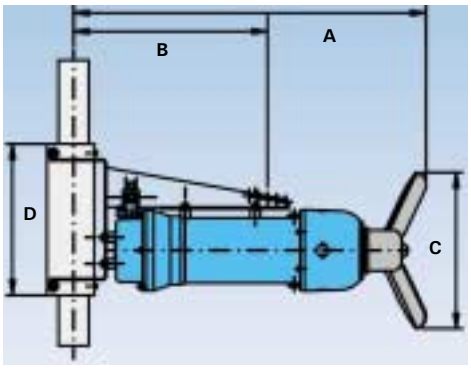
Motor bracket / Installation- and lifting system:
Stainless steel 1.4571

Technical Data

Type	Voltage (50 Hz)	Motor power (kW) P_1	Motor power (kW) P_2	Nominal current (A)	Speed motor / propeller (rpm)	No. of propeller blades	Axial force (N)	Flow (m^3/h)	Weight (kg)
HRG 30/4-203 (Ex)	400 V/3 Ph	3,5	3,0	6,5	1450/323	2	498	1462	130
HRG 40/4-203 (Ex)	400 V/3 Ph	4,7	4,0	8,2	1450/320	2	742	2000	133
HRG 55/4-203 (Ex)	400 V/3 Ph	6,4	5,5	13,1	1450/326	2	800	2162	136
HRG 75/4-203 (Ex)	400 V/3 Ph	8,7	7,5	14,6	1450/328	2	1131	2821	146
HRG 90/4-203 (Ex)	400 V/3 Ph	10,1	9,0	18,0	1450/328	2	1265	3013	148
HRG 110/4-203 (Ex)	400 V/3 Ph	12,5	11,0	21,0	1450/351	2	1475	3286	180
HRG 150/4-203 (Ex)	400 V/3 Ph	16,7	15,0	30,6	1450/351	2	2859	5489	221
HRG 185/4-203 (Ex)	400 V/3 Ph	21,0	18,5	38,6	1450/354	2	3725	6702	228

Dimensions (in mm)

Type	A	B	C	D
HRG 30/4-203 (Ex)	1009	441	460	400
HRG 40/4-203 (Ex)	1009	506	515	400
HRG 55/4-203 (Ex)	1009	566	535	400
HRG 75/4-203 (Ex)	1169	577	585	500
HRG 90/4-203 (Ex)	1169	637	595	500
HRG 110/4-203 (Ex)	1169	697	600	500
HRG 150/4-203 (Ex)	1184	578	720	600
HRG 185/4-203 (Ex)	1184	638	780	600



Flow Generators

HRM/HRL

Design

- Propeller:
  2 or 3 blade propeller, self cleaning design
- Shaft seal:
  Two level sealing system with 2 lip seals with grease filling in the propeller hub and additional mechanical seal.

  Gearbox with inspection screw forms oil chamber for mechanical seal lubrication and moisture probe. Sealing of gearbox from motor chamber by 2 lip seals.
- Transmission:
  Planetary transmission in oil chamber
- Propeller shaft bearing:
  2 roller bearings in oil chamber
- Motor shaft bearing:
  2 grooved ball bearings, permanent lubrication
- Motor:
  Pressure tight sealed submersible motor, IP68 protection, insulation class F = 155 °C, pressure tight cable gland, thermal sensors for temperature control embedded in motor winding. Galvanic separation from motor bracket. Optional explosion proof according to ATEX Ex II 2GEExd.
- Seal condition monitoring probe:
  Electrode in oil chamber
- Installation:
  Installation and lifting device for individual mixer positioning, resting on vibration absorbers

Materials

Propeller:
HRL: Polyamide-GF
HRM: Polyamide-GF

Gearbox housing:
Cast iron GG 25

Mechanical seal:
Silicon carbide / Silicon carbide

Motor- / Propeller shaft:
1.5715

Motorhousing:
Cast iron GG 25

Bolts / Nuts:
Stainless steel 1.4306

Elastomeres:
NBR

Motor bracket / Installation- and lifting system:
Stainless steel 1.4571

Vibration absorbers:
EPDM

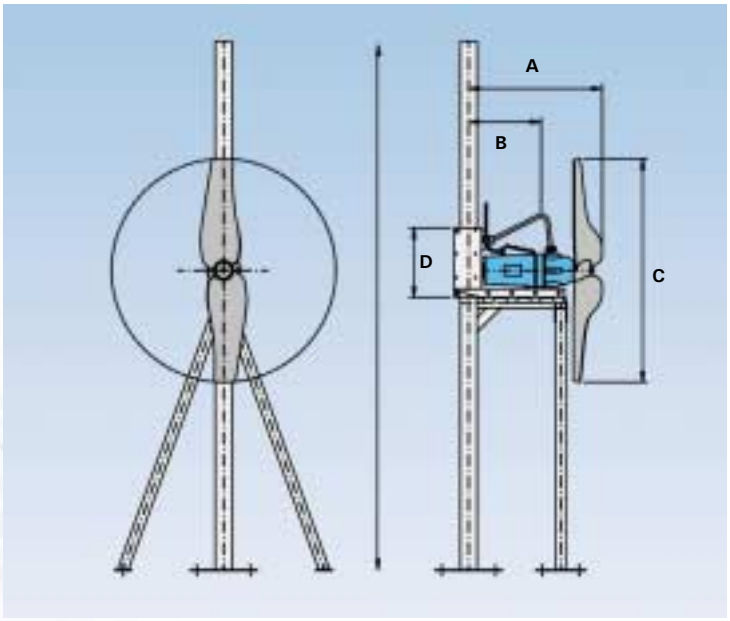
Technical Data

Type	Voltage (50 Hz)	Motor power (kW) P_1	Motor power (kW) P_2	Nominal current (A)	Speed motor / propeller (rpm)	No. of propeller blades	Axial force (N)	Flow (m^3/h)	Weight (kg)
HRM 15/4-202 (Ex)	400 V/3 Ph	2,1	1,5	4,2	1400/76	2	998	5874	113
HRM 22/4-202 (Ex)	400 V/3 Ph	2,9	2,2	6,0	1400/77	2	1344	6782	117
HRM 30/4-202 (Ex)	400 V/3 Ph	3,7	3,0	7,3	1410/93	2	1651	7546	134
HRM 40/4-202 (Ex)	400 V/3 Ph	4,9	4,0	9,2	1410/92	2	2073	8453	148
HRL 15/6-203 (Ex)	400 V/3 Ph	1,9	1,5	3,8	950/32,3	2	1016	10470	185
HRL 22/6-203 (Ex)	400 V/3 Ph	2,9	2,2	5,8	950/32,8	2	1411	12265	188
HRL 30/4-303 (Ex)	400 V/3 Ph	3,5	3,0	6,5	1450/34,1	3	2229	15556	192
HRL 40/4-303 (Ex)	400 V/3 Ph	4,7	4,0	8,2	1450/33,7	3	2822	17500	210

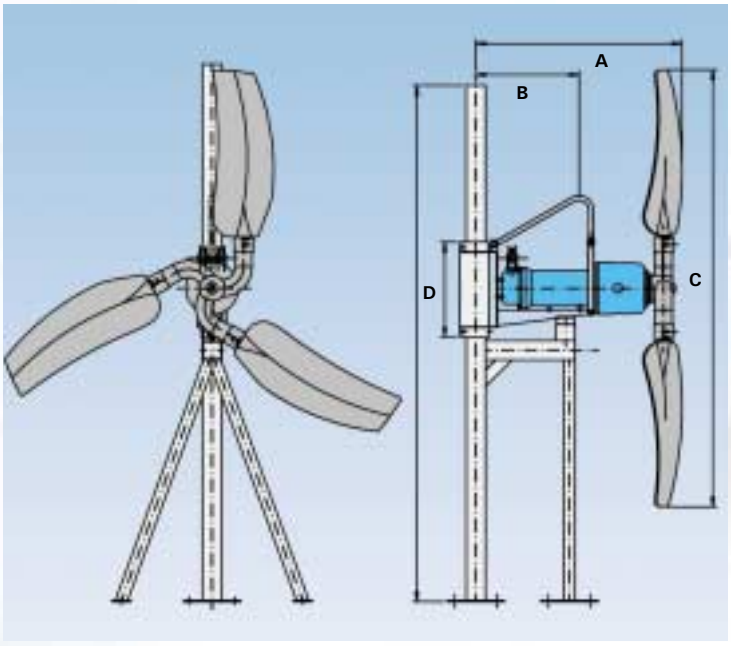
Installation and Dimensions (in mm)

Type	A	B	C	D
HRM 15/4-202 (Ex)	800	432	1340	500
HRM 22/4-202 (Ex)	800	432	1340	500
HRM 30/4-202 (Ex)	800	432	1340	500
HRM 40/4-202 (Ex)	800	432	1340	500
HRL 15/6-203 (Ex)	1080	540	2300	400
HRL 22/6-203 (Ex)	1080	540	2300	400
HRL 30/4-303 (Ex)	1080	540	2300	400
HRL 40/4-303 (Ex)	1080	540	2300	400

HRM 15... - HRM 40...



HRL 15... - HRL 40...



The source for world wide pump technology

HOMA
Product Range

- Submersible drainage pumps
- Contractor pumps
- Drainage pumps for emergency application
- Deepwell submersible pumps
- Submersible sewage pumps
- Submersible grinder pumps
- Domestic waste water disposal units
- Compact sewage disposal units
- Packaged pumps stations
- Mixers and flow generators
- Injector systems for tank cleaning
- Garden pumps
- Domestic booster units
- Fountain pumps
- Control panels

Worldwide Presence

HOMA pumps are installed in more than 60 countries around the world – in countless projects of various kinds. They comply to all international safety and quality standards and are certified by many institutions and organisations responsible for national waste water treatment standards. To maintain and further develop this high quality level is our main target.

Network of Sales and Service Partners

HOMA provides a worldwide network of agents and distributors supporting our customers with excellent sales and service assistance in planning, specification and selection, including a computer software program available on CD-ROM or from the WorldWideWeb.

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