



WE SOLVE & MOVE.

Agitators & Pumps for biogas



AGITATORS FOR BIOGAS

Thanks to our years of experience, as the first inventor and manufacturer of the electric agitator, we collect great knowhow and have the possibility to optimize our products throughout.

Our biogas agitators are specially designed for use in fermenter, secondary fermenter, digestate tanks as well as pre-pits and hydrolysis. This enables us to guarantee you optimum homogenization of the substrate for maximum gas yields.

Whether submersible mixers, long axis agitators, central mixers or paddle agitators – with SUMA, you get a comprehensive concept from a single source. In addition, our PRESSURA pump range offers a perfectly matched system of agitator and pump for stirring, mixing, homogenizing, transferring and filling.



Our propellers

The propeller influences the efficiency and the result of agitation like no other component of the agitator. However, depending on the tank, the agitator location and the substrate properties, the requirements on the agitator blade vary significantly. We provide you a large selection of varieties. So we can offer you the perfect solution for your application.

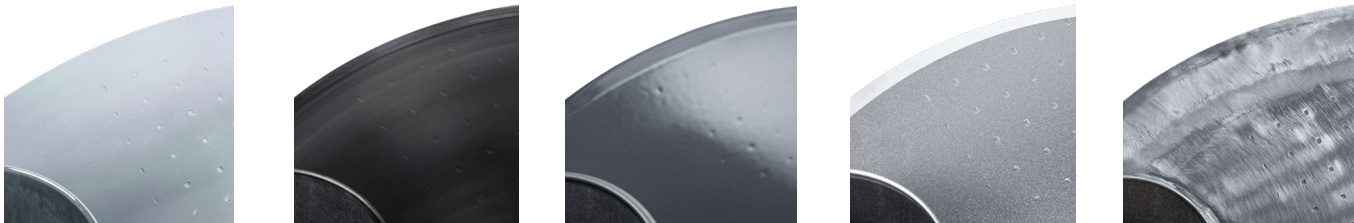
We develop and manufacture suction and push propeller as well as aerodynamically optimised high-performance blades (HD+). Diameters from 275 mm to 900 mm and speeds from 1,450 rpm to 65 rpm allow specific configurations. All our agitator blades are precisely balanced. This guarantees bearing-friendly energy-saving operation.

The material of the propeller must be suitable for the pH value of the substrate. Depending on the aggressiveness of the medium, the appropriate material can be selected from a wide range of options.

However, stirring blades are also wearing parts. Therefore, we design our propellers to be downward compatible. Your SUMA agitator can always be retrofitted with a new propeller.



Propeller L4 Propeller LD Propeller HD+ Propeller XT Propeller HT

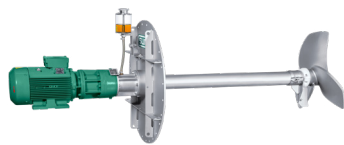


Galvanised Hardened steel Polymer coated Stainless steel 304/316 Spray coated

TANK TYPES



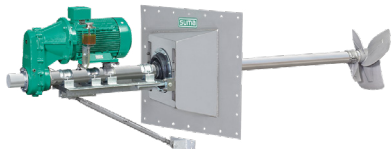
Long axis agitators for the biogas sector



GIANTMIX FR light



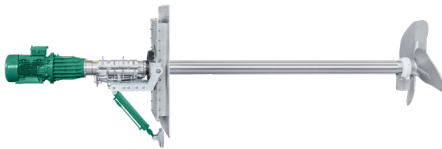
GIANTMIX FR SP



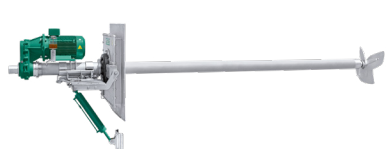
GIANTMIX FR 30°



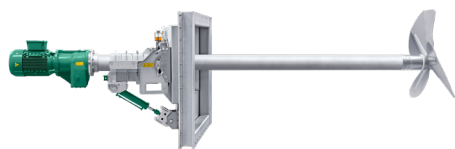
GIANTMIX FR stationary



GIANTMIX FX |
FX Top mounting



GIANTMIX FT |
FT Top mounting



GIANTMIX AMX |
AMX Top mounting



REKORDMIX



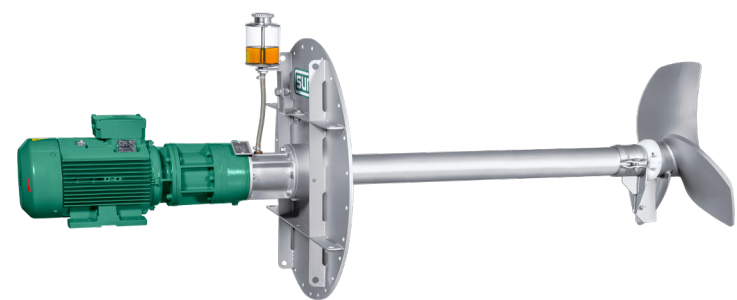
REKORDMIX B1



GIANTMIX BG2 |
BG2 Top mounting



GIANTMIX FR light

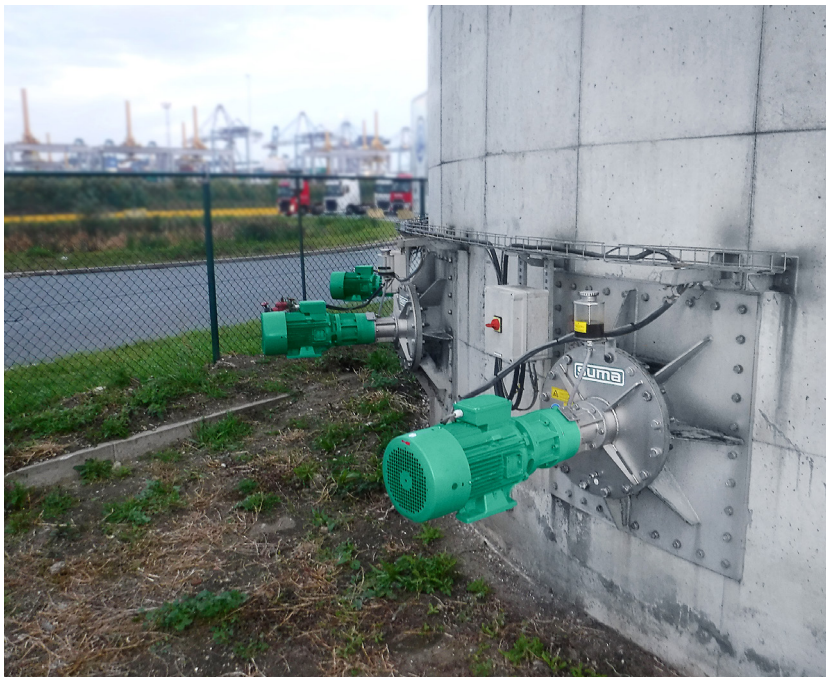


Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
FR 40-180	4.0 kW	700 mm	180 rpm	1.0 1.5 m	101.6 x 5.74 mm
FR 40-250	4.0 kW	620 mm	250 rpm	1.0 1,5 m	101.6 x 5.74 mm
FR 75-280	7.5 kW	700 mm	280 rpm	1.0 1.5 m	101.6 x 5.74 mm
FR 75-380	7.5 kW	520 mm	380 rpm	1.0 1.5 m	101.6 x 5.74 mm

- Especially for concrete- or steel tanks with nearly constant substrate levels
- For dry matter content up to 12 %
- Installation depth up to 6 m beneath substrate level
- Easy assembly and maintenance outside the tank
- Optional available without engine and only with PTO connection



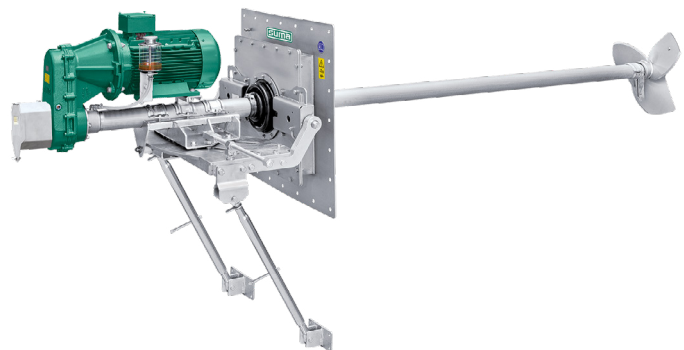
FR light - Closed tank



FR light - Concrete tank



GIANTMIX FR SP

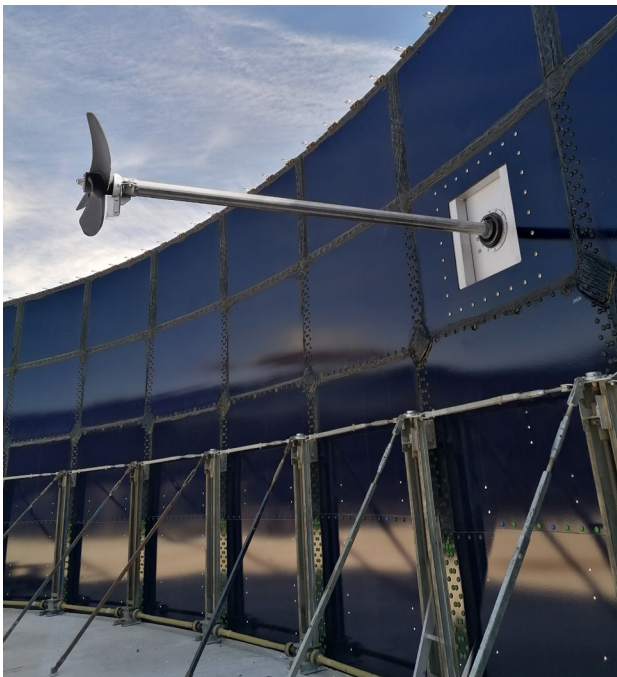


Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
FR3	11.0 kW	800 620 mm	275 400 rpm	3.0 4.0 m	101.6 x 4.0 mm
FR4	15.0 kW	850 660 mm	275 400 rpm	3.0 4.0 m	101.6 x 4.0 mm
FR5	18.5 kW	700 mm	400 rpm	3.0 4.0 m	101.6 x 4.0 mm

- Mainly for fermenter and end storages with nearly constant substrate levels
- For dry matter content up to 14 %
- Installation depth up to 8 m beneath substrate level
- Horizontally adjustable $\pm 25^\circ$
- Vertically adjustable through upper link $\pm 11^\circ$
optional $\pm 30^\circ$ through hydraulic cylinder or pinion rack
- Easy assembly and maintenance outside the tank



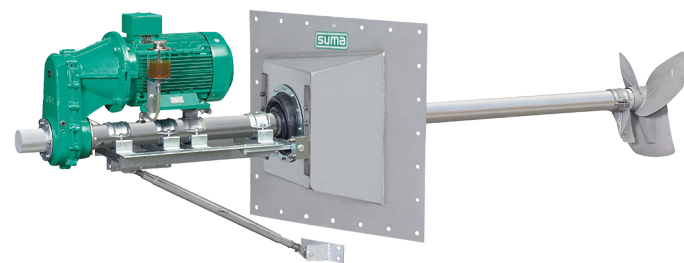
FR SP - Concrete tank



FR SP - Steel tank

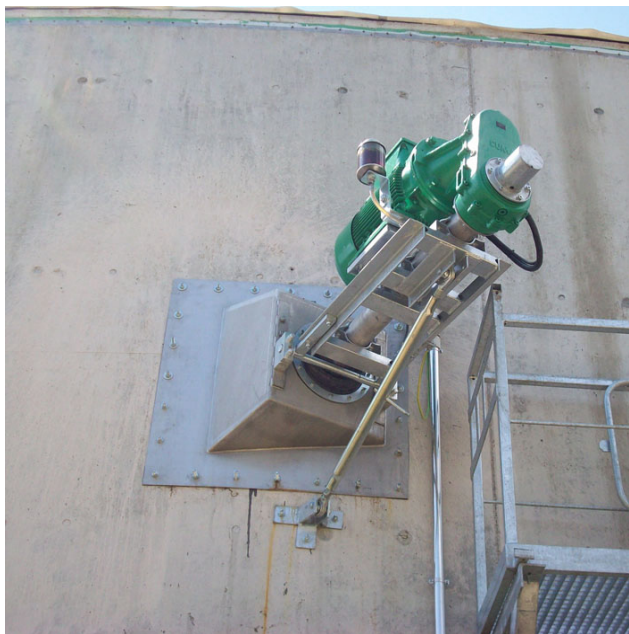


GIANTMIX FR 30°



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
FR3	11.0 kW	800 620 mm	275 400 rpm	3.0 4.0 m	101.6 x 4.0 bzw. 5.7 mm
FR4	15.0 kW	850 660 mm	275 400 rpm	3.0 4.0 m	101.6 x 4.0 bzw. 5.7 mm
FR5	18.5 kW	700 mm	400 rpm	3.0 4.0 m	101.6 x 4.0 bzw. 5.7 mm

- Specially for fermenter and secondary fermenter with nearly constant substrate
- For dry matter content up to 14 %
- Installation depth up to 1.5 m beneath substrate level
- Vertical inclination $\pm 11^\circ$ through upper link or optional $\pm 25^\circ$ through rack winch
- Optional PTO with protection for an alternative tractor operation



FR 30° - Concrete tank



GIANTMIX FR stationary | FR HY stationary



Type	Rated power	Ø Propeller	Speed	Tube length	Ø Tube
FR3	11.0 kW	750 mm	275 rpm	2.5 3.0 m	101.6 x 4.0 5.7 mm
FR3	11.0 kW	580 mm	400 rpm	2.5 3.0 m	101.6 x 4.0 5.7 mm
FR4	15.0 kW	800 mm	275 rpm	2.5 3.0 m	101.6 x 4.0 5.7 mm
FR4	15.0 kW	620 mm	400 rpm	2.5 3.0 m	101.6 x 4.0 5.7 mm
FR5	18.5 kW	660 mm	400 rpm	2.5 3.0 m	101.6 x 4.0 5.7 mm

- Together with installation console for the stationary installation
- For dry matter content up to 14 %
- Installation depth up to 8 m beneath substrate level
- Optional PTO with protection unit for alternative tractor operation
- Optional without engine only with PTO (FR HY stationary)
60-88 kW | 540 or 750 rpm | Propeller 560 - 700 mm



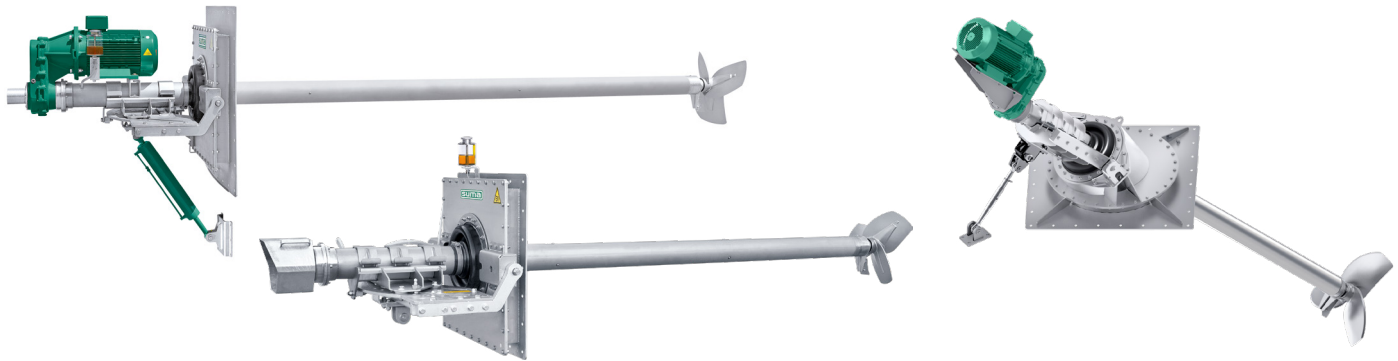
FR stationary - Closed tank



FR HY stationary - Concrete tank



GIANTMIX FT | FT HY | FT top mounting



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
FT4	15.0 kW	850 660 mm	275 400 rpm	4.0 5.0 5.5 6.0 m	159 x 5 mm
FT5	18.5 kW	880 700 mm	275 400 rpm	4.0 5.0 5.5 6.0 m	159 x 5 mm

- For dry matter content up to 14 %
- Installation depth up to 8 m beneath substrate level
- Horizontal adjustment up to ± 30° through handspindle
- Vertical adjustment up to ± 30° through hydraulic cylinder
- Optional PTO with protection for alternative operation with tractor
- Optional without engine only with PTO (FT HY)
72 - 100 kW | 540 or 750 rpm | Ø-Propeller 580 - 750 mm
- GIANTMIX FT top mounting for installation on top of the tank



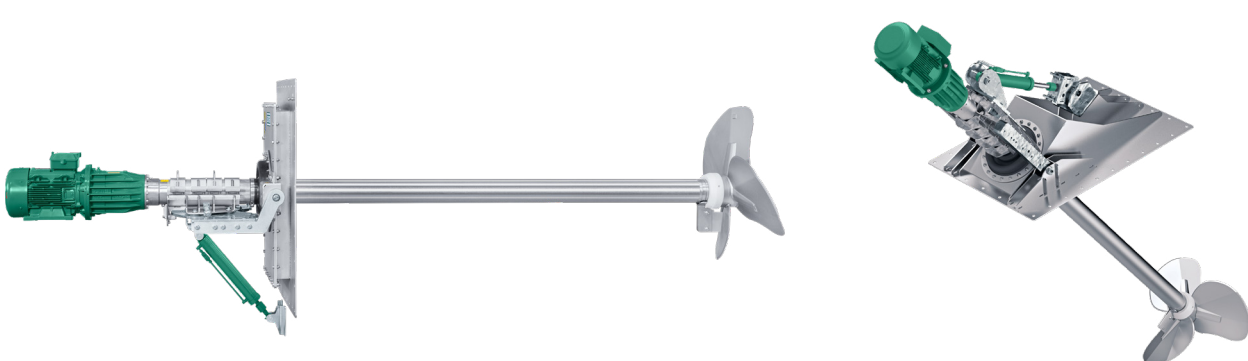
FT - Concrete tank



FT top mounting



GIANTMIX FX | FX top mounting



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
FX4	15.0 kW	1.200 mm	128 rpm	4.0 m	159 x 8 mm
FX5	18.5 kW	1.600 mm	65 rpm	4.0 m	159 x 8 mm
FX6	22.0 kW	1.300 mm	128 rpm	4.0 m	159 x 8 mm

- For highly viscous substrates with dry matter content up to 15 %
- Installation depth up to 6 m beneath substrate level
- Vertical inclination up to -2° to -30°
- Thrust of up to 8.1 kN
- GIANTMIX FX top mounting for installation on top of the tank



GIANTMIX AMX | AMX top mounting



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
AMX5	18.5 kW	1.600 mm	82 rpm	4.0 5.0 6.0 m	220 x 8 mm
AMX6	22.0 kW	1.600 mm	82 rpm	4.0 5.0 6.0 m	220 x 8 mm

- Especially for highly viscous substrates with high dry matter content up to 16 %
- Installation depth up to 6 m beneath substrate level
- Vertical inclination through hydraulic cylinder +5° / -30°
- GIANTMIX AMX top mounting for installation on top of the tank



AMX - Closed tank



Rekordmix



Optional with trolley
Standard 100 cm / Narrow 58 cm

Optional with hanging rack EB2

Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
L1	4.0 kW	320 mm	945 rpm	2.25 - 4.25 m	70 x 3 mm
L2	5.0 kW	275 mm	1.450 rpm	2.25 - 4.25 m	70 x 3 mm
L3	7.5 kW	300 mm	1.450 rpm	2.25 - 4.25 m	70 x 3 mm

- Application in small tanks with low dry matter content of up to 8 %
- Motor handle with handhold
- Multiple bearing stub shaft in oil bath
- Optional mobile version with trolley
- Optional mounting on tank wall or opening through brackets for dowelling or hanging rack EB2



REKORDMIX - Closed tank with concrete top



REKORDMIX with trolley



REKORDMIX B1



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
B1	4.0 kW	320 mm	950 rpm	3.75 4.25 m	70 x 3 mm

- Especially for lagoons
- For dry matter content up to 10 %
- Vertical adjustment through upper link
- Gastight lead through using EPDM membrane with ring flanges on the foil reduces the risk of cracking due to vibrations



B1 - Closed lagoon



B1 - Open lagoon



GIANTMIX BG2 | BG2 top mounting



Type	Power	Ø Propeller	Speed	Tube length	Ø Tube
BG2	4.0 kW	700 620 mm	180 250 rpm	4.0 5.0 m	101.6 x 5.7 mm
BG2	7.5 kW	700 520 mm	280 380 rpm	4.0 5.0 m	101.6 x 5.7 mm
BG2	10.0 kW	750 580 mm	280 380 rpm	4.0 5.0 m	101.6 x 5.7 mm

GIANTMIX BG2

- Especially for lagoons
- For dry matter content up to 12 %
- Vertical adjustment through upper link
- Gastight lead through using EPDM membrane with ring flanges on the foil reduces the risk of cracking due to vibrations

GIANTMIX BG2 top mounting

- Especially for installation on top of concrete- and steel tanks
- For dry matter content up to 12 %

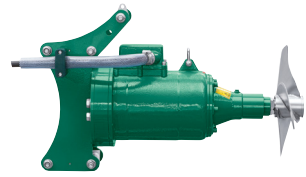


BG2 - Steel tank

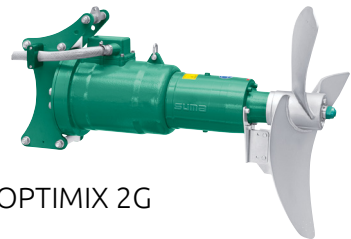


BG2 top mounting - Concrete tank

Submersible agitators for the biogas sector



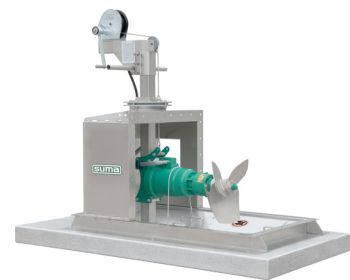
OPTIMIX 2G 30-710



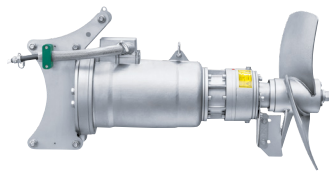
OPTIMIX 2G



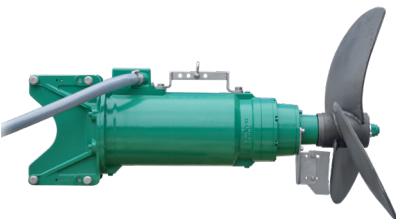
OPTIMIX 2G 90-65



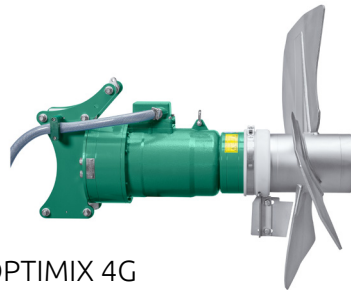
GDD



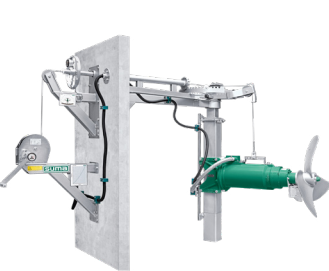
OPTIMIX 2A



OPTIMIX 3G



OPTIMIX 4G



MGD

Suspension mounting
frame EV

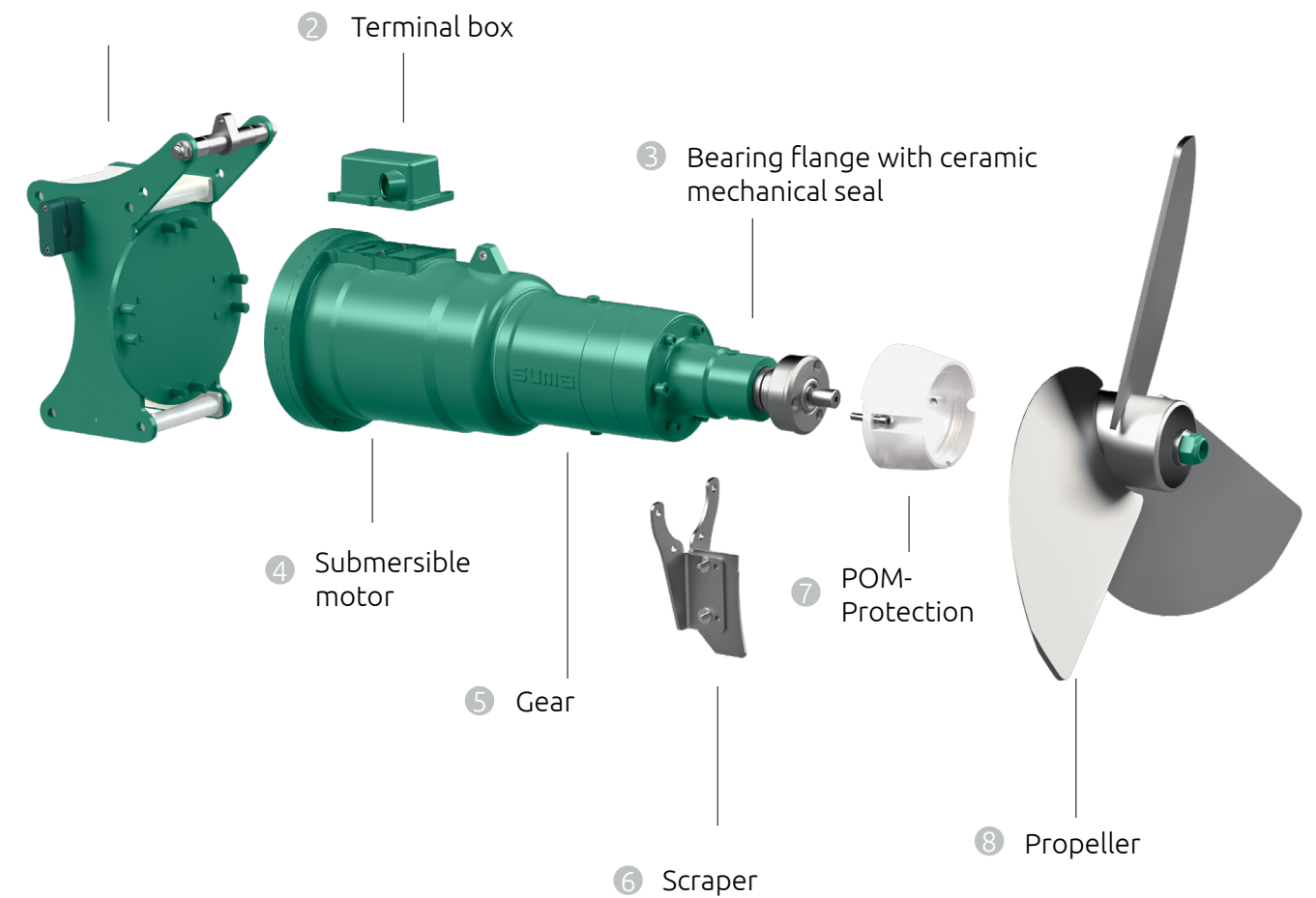
Submersible agitator OPTIMIX

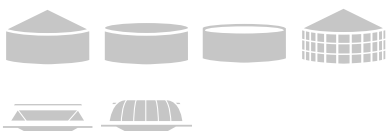
Thanks to our modular design, our submersible mixers can be individually combined in regard to motor power, gear, propeller and mast size. This enables us to offer an agitator that is optimally matched to your needs.

All our submersible mixers are suitable for substrate temperatures of up to 55°C and have separated oil chambers for motor, gear and bearing housing. Our special SUMA mechanical seal SiC/SiC seals the rotating shaft to the bearing flange and prevents substrate from entering the agitator blade bearing.

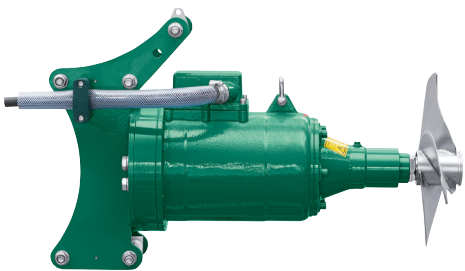
Microbe-resistant cable includes as standard in the delivery.

① 4-roller guide unit





OPTIMIX 2G 30-710

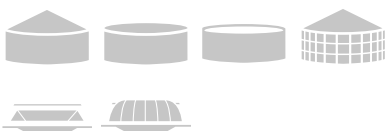


Type	Power	Ø Propeller	Speed
2G	3.0 kW	380 mm	710 rpm

- Especially for smaller tanks
- For dry matter content up to 8 %



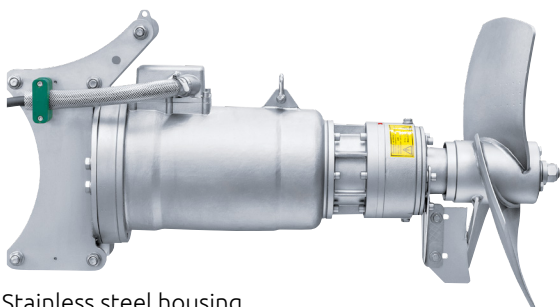
2G 3 kW - Closed tank



OPTIMIX 2G | 2A



Cast iron housing



Stainless steel housing

Type	Power	Ø Propeller	Speed
2G 2A	4.0 kW	620 mm	250 rpm
2G 2A	9.0 kW	800 580 mm	280 380 rpm
2G	11.0 kW	820 620	280 380 rpm
2A	15.0 kW	850 mm	280 rpm
2G 2A	15.0 kW	660 mm	380 rpm
2A	13.5 kW	800 620 mm	280 380 rpm

OPTIMIX 2G

- For dry matter content up to 12 %
- Optional available as direct rotor without gear

OPTIMIX 2A

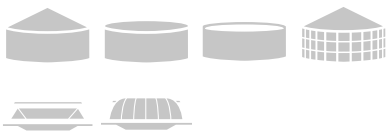
- For aggressive media with low pH values
- For dry matter content up to 12 %
- OPTIMIX 2A 13.5 kW authorized for Ex-Zone 1



2G with EV



2A with EV

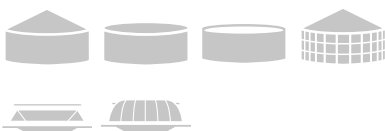


OPTIMIX 2G 90-65

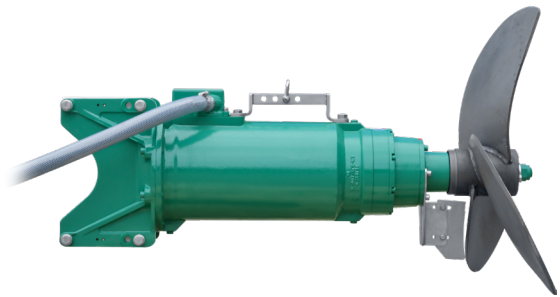


Type	Power	Ø Propeller	Speed
2G	9.0 kW	1.400 mm	65 rpm

- Mainly for flow preservation in combination with other agitators
- For dry matter content up to 12 %
- 3-bladed XT 1400-25 propeller painted steel, optionally V2A, or hardened steel



OPTIMIX 3G



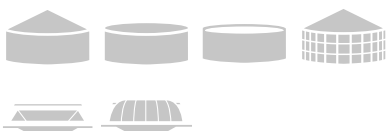
Cast iron housing

Type	Power	Ø Propeller	Speed
3G	25.0 kW	900 mm	270 rpm

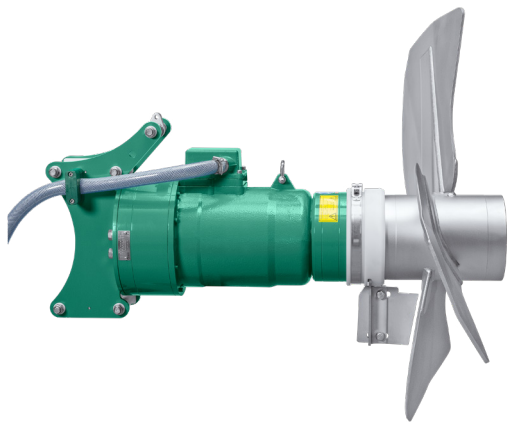
- For dry matter content up to 12 %
- Optional available as direct rotor without gear



3G with EV



OPTIMIX 4G 150-135



Type	Power	Ø Propeller	Speed
4G	15.0 kW	1,200 mm	135 rpm

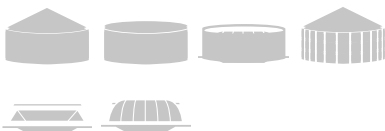
- Submersible agitator especially for viscous substrate
- For dry matter content up to 14 %
- IE4 motor with efficiency of 93.3%



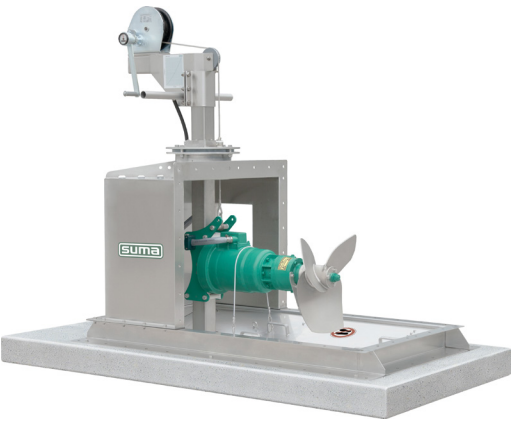
4G with EV - Closed tank



4G - Open tank



Gasttight ceiling lead through GDD



- Especially for closed tanks, lagoons with bridges and other special tanks up to 12 m depth
- Lateral adjustment up to 360°
- SUMA height indication to determine the exact agitator height in the tank
- For all OPTIMIX series applicable
- Optional available access cover reduces the loss of gas while maintenance
- Optional other heights on request



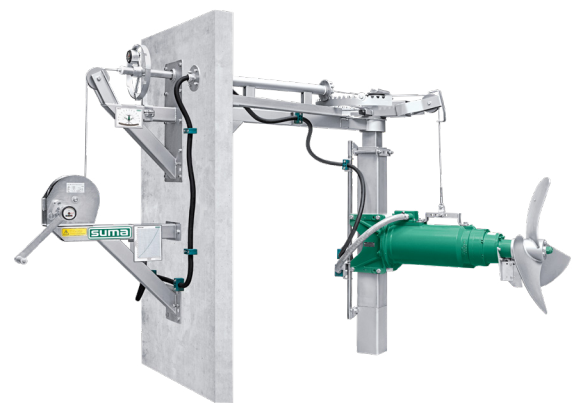
GDD - Concrete tank



GDD - Steel tank



Mast gastight wall lead through MGD



- Guide mast with base frame for tanks with a depth up to 14 m
- External vertically rotation 240°
- Adjustable in height through cable winch
- Optional SUMA height indication to determine the exact agitator height in the tank
- Optional angle display to determine the exact angle position of the agitator
- Optional other hights on request

Suspension mounting frame EV



Type	Doweling	Tank height	Cable guidance	Tank types
EV3	Wall support inside	4-12 m	on the rope / mast	
EV4	Wall support outside	4-12 m	on the rope	
EV5	Wall support inside	4-12 m	on the rope / mast	

- For a 4-12 m container height
- Lateral rotation $\pm 60^\circ$
- SUMA cable guidance and strain relief behind the guide mast
- Easy maintenance of the agitator without draining off the substrate or decending into the tank
- The whole OPTIMIX series are suitable
- Optional height indication to determine the exact height of the agitator within the tank



MGD - Concrete tank with 2G



MGD - Concrete tank with 2G



EV3



EV4



EV5



ASTRAMIX PT



STEVOMIX HX



STEVOMIX AX



STEVOMIX VX



Our slow running paddle agitators complement SUMA's long axis and submersible mixers for stirring floating and sinking layers in the most demanding processes.

With different paddle geometries, customised to your specific requirements, our agitators offer maximum flexibility. The paddle agitators can be used for highly viscous media with a dry matter content of up to 16%.

Various materials are available for the construction of the agitators: durable structural steel, coated structural steel for increased corrosion protection or high-quality ss316 stainless steel for the highest demands. All models are also equipped with highly wear-resistant and maintenance-free internal bearings made of bearing plastic - for smooth and low-maintenance operation over many years.

The intelligent combination of long-axis agitator, submersible mixer and paddle agitator guarantees optimum mixing of the substrate - even under the most difficult conditions.

Rely on quality and efficiency - our paddle agitators are the ideal choice for your mixing processes.



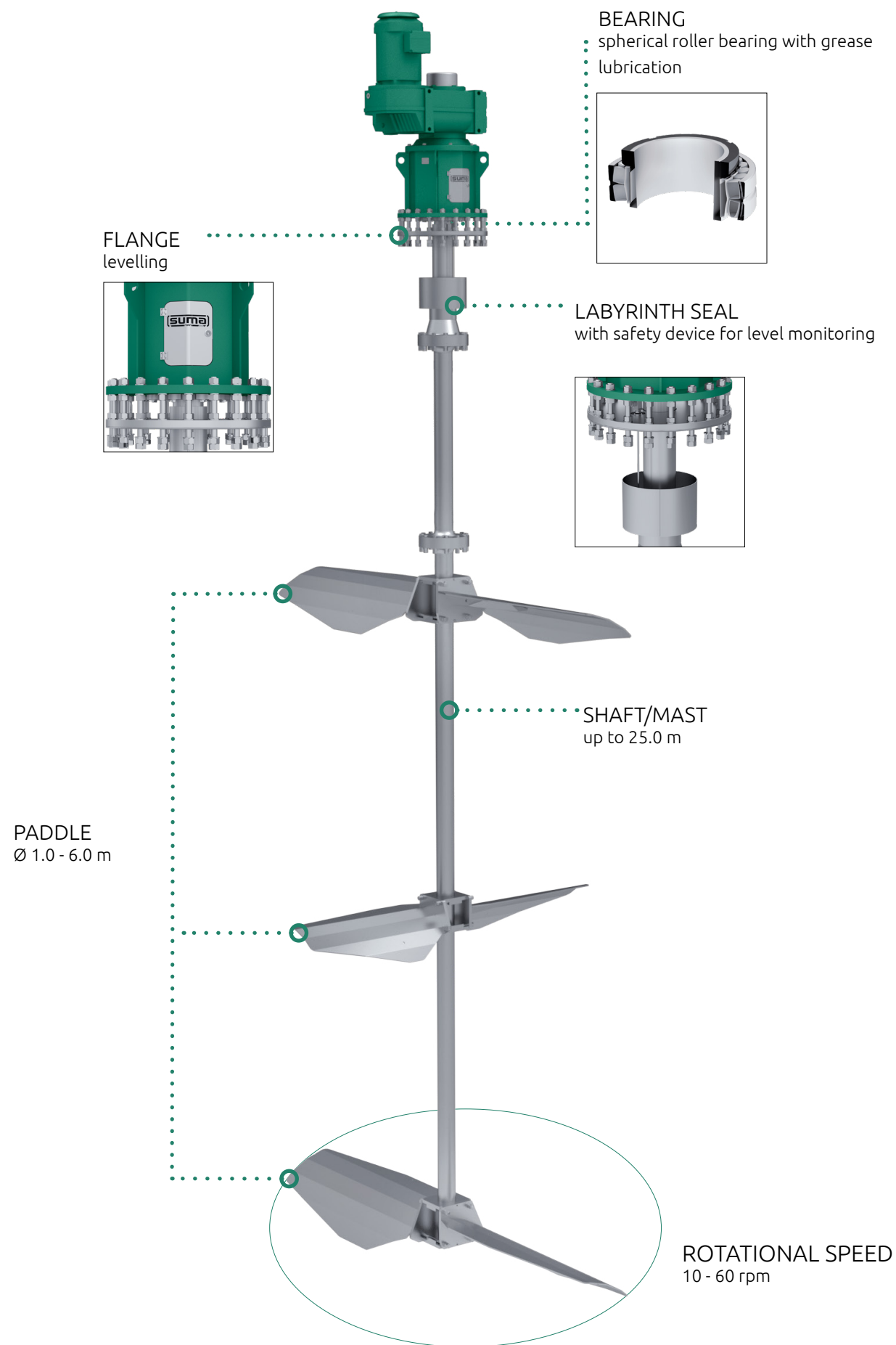
Efficiency and reliability for every application

The paddle agitators are available with the following technical specifications:

Motor power	15.0 - 22.0 kW*
Paddel-Ø	3.7 - 5.2 m*
Rotational speed	8 - 10 rpm*
Installation height	2.5 - 12.0 m*
Dry matter content	up to 16 %
Area of application	Fermenters, secondary fermenters and digestate storage tanks

* depending on type

Central mixer

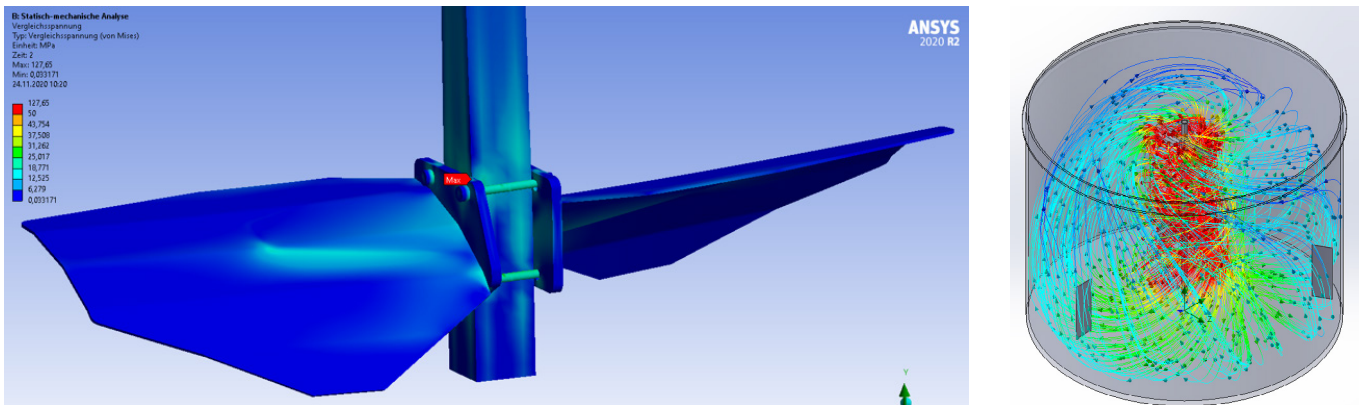


Central mixer

For solutions perfectly tailored to your requirements, we draw on our extensive product portfolio of agitators. This includes the central mixer Z-MIX, which ensures axial mixing of your ferment for fermentation of sewage sludge, waste, and agricultural and industrial residues. In particular, the Z-MIX is suitable for use in tanks, where diameter and height correspond to a similar length. The agitator is characterized by low energy consumption.

ENGINEERING

Based on tank geometry, substrate properties and many other factors, our engineers use software-supported flow simulations and load capacity calculations to design a central mixer that will perfectly meet with your requirements.



PRODUCTION

Since the company foundation in 1957 the value creation has almost exclusively taken place at our headquarters. Our ideal manufacturing depth impacts the quality during the entire process chain, enabling us to carry out adjustments with ease any time and to execute customization cost-effectively.



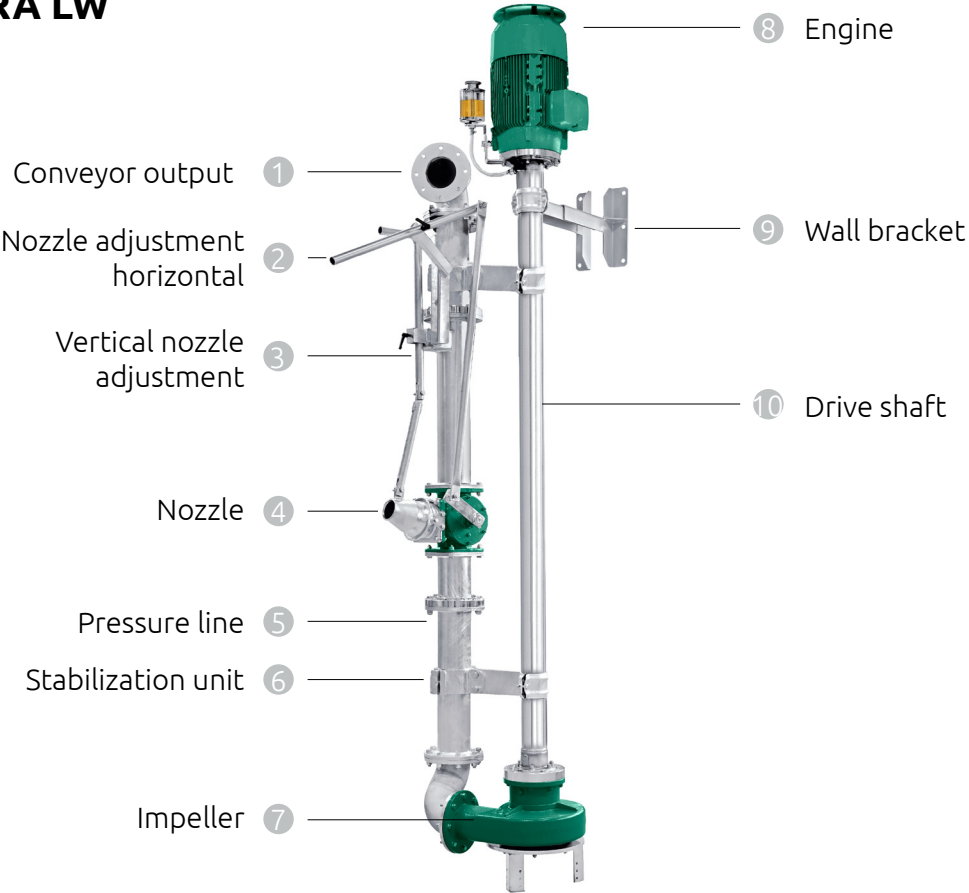
SERVICE & ASSEMBLY

By purchasing a SUMA mixer, you have chosen maximum quality. Be it for a new installation, modification, component exchange or maintenance work - our team of experienced service specialist will support you 24 hours a day, 365 days a year. Depending on the customer's requirements, the Z-MIX can be installed from outside or in sections from inside. In addition access to the drive shaft offers easy maintenance.

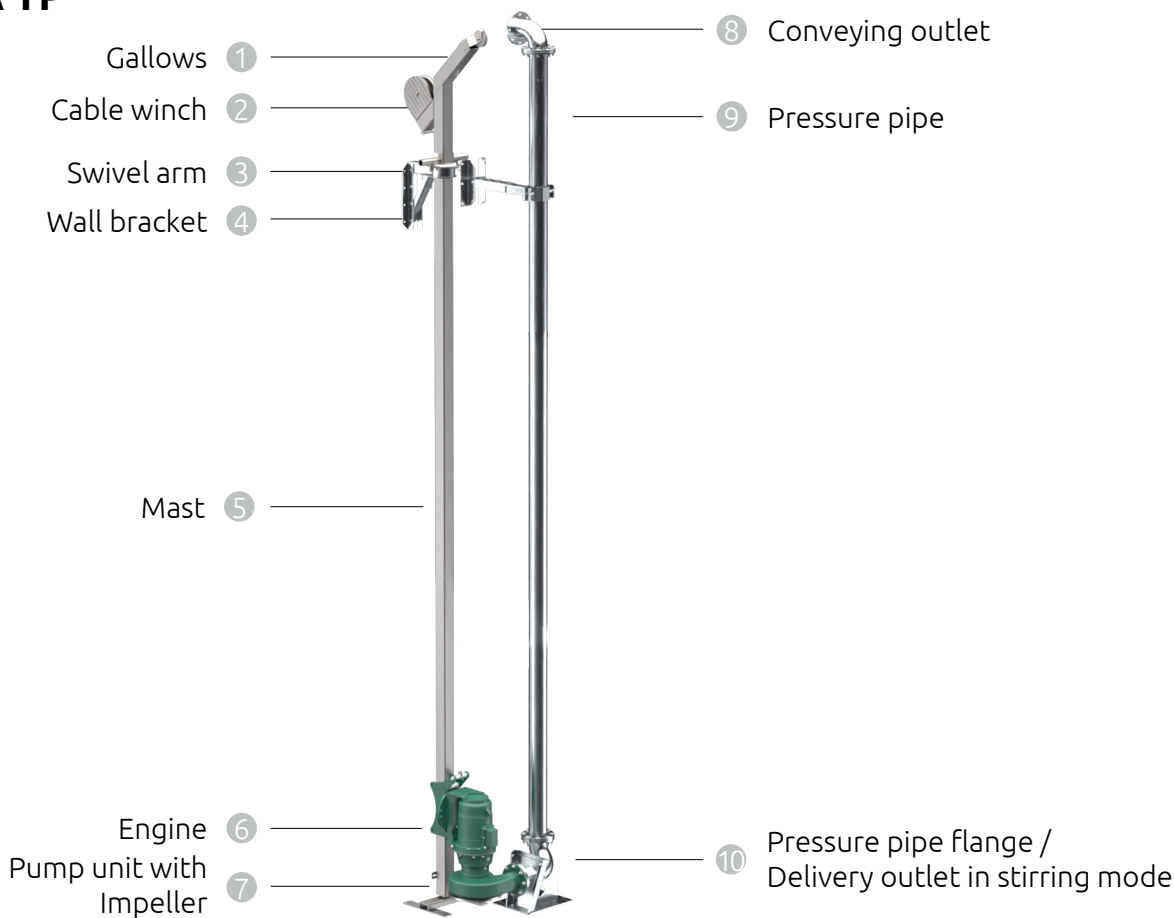




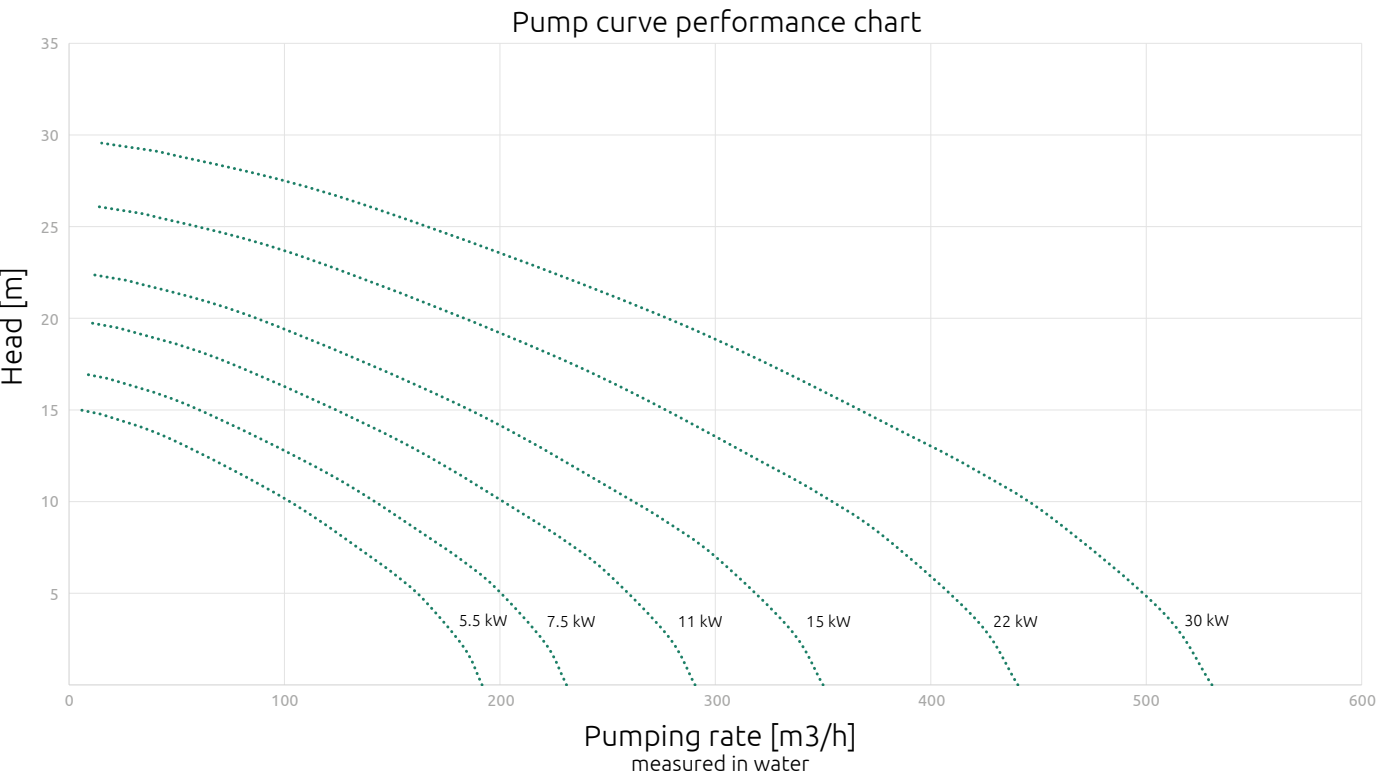
PRESSURA LW



PRESSURA TP



Performance chart



Technical data

Type	Rated power [kW]	Rotation speed [rpm]	Max. pumping rate [m ³ /h]	Max. head [m]	Ø Impeller [mm]	Flange connection [DN]
TP / LW 55	5.5	1,458	192	15	200	100
TP / LW 75	7.5	1,458	231	17	211	100
TP / LW 110	11.0	1,458	291	20	235	125
TP / LW 150	15.0	1,458	350	22	250	125
LW 220	22.0	1,458	440	26	270	150
LW 300	30.0	1,458	531	30	287	150



Contact



SUMA Rührtechnik GmbH
Martinszeller Str. 21
87477 Sulzberg
Germany

Tel: +49 8376 92131-0
Fax: +49 8376 92 131-19
E-Mail: info@suma.de

www.suma.de/en