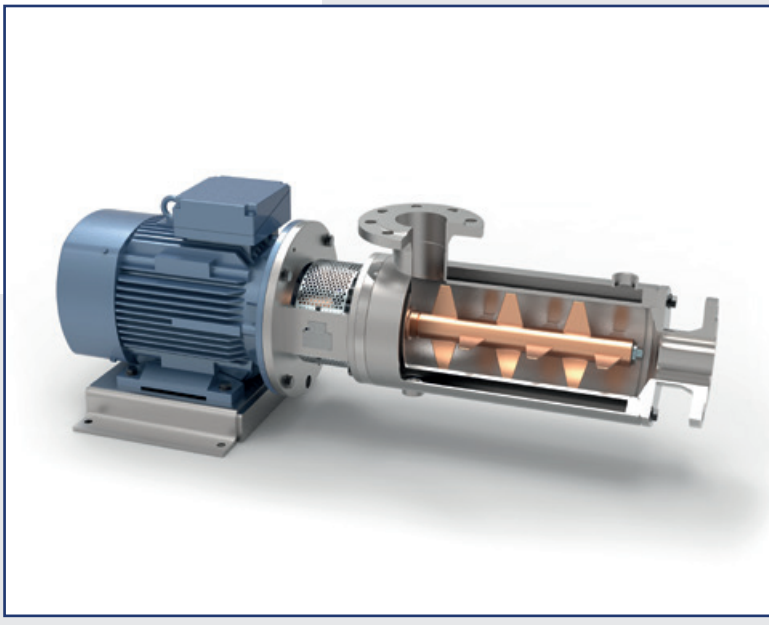
INDAG
Maschinenbau GmbH

The FlowMix®-Company





Gentle Inline Mixer
Type DLM/M

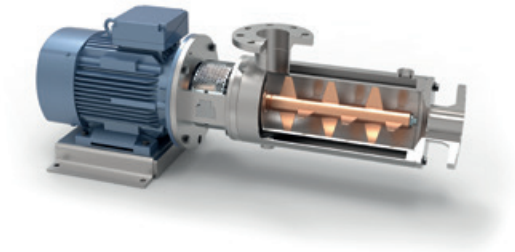
Gentle mixing with paddle mixing elements
for shear sensitive products

Shear rate

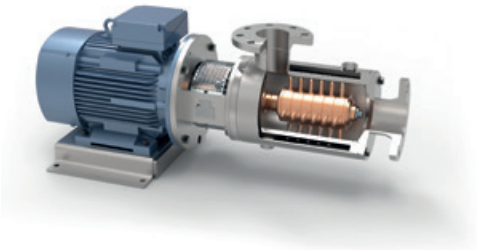
-

+

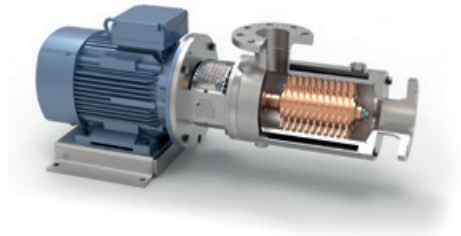
Gentle Inline Mixer Type DLM/M



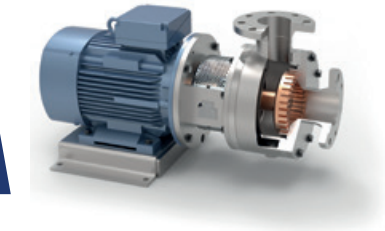
Dynamic Inline Mixer Type DLM/P



Intensive Inline Mixer Type DLM/S



Inline Homogenizer Type DLM/H



Function and applications of DLM/M

INDAG Gentle Inline Mixer type DLM/M is used to mix homogeneously a diversity of liquids. Even shear sensitive liquids or liquids with high solid content can be mixed. Only DLM/M rotor is equipped with mixing elements. Stator is without mixing elements. Therefore even fibrous particles will not lead to blockage of mixer.
Examples of mixing tasks are: Sewage sludge + polymer solution; paper sludge + polymer solution; sewage sludge + water vapor; latex + additives; latex foams + additives; caustic soda + water; lubricating oil + additives; wax + additives. Additives can be mixed gently into foams without affecting the foam quality.

Technology of DLM/M

INDAG Gentle Inline Mixer type DLM/M has only mixing elements on rotor and no mixing elements in stator (mixer casing). Rotor can be equipped with mixing elements of different geometry. Geometry depends on products to be mixed. The DLM/M is offered in compact design (KB) and in bearing block design (LB). In the compact design, the rotor is mounted by the output shaft of the motor. In the bearing block design, the rotor is mounted by its own bearing block. With a separate bearing block, longer rotors and thus larger mixing volumes can be realized. Furthermore, this design is also suitable for mixing under high pressure or high temperature. The type of rotor seal is selected to suit each application. For the supply of the double acting mechanical seal INDAG offers the suitable barrier fluid system. INDAG mixers are designed likewise for explosive areas and substances (ATEX).

Positioning
Horizontal or vertical position of mixer is possible

Pressure levels
6 bar, 10 bar, 16 bar, 25 bar, 40 bar, 100 bar

Materials
1.4301 (AISI 304), 1.4404 (AISI 316L) 1.4462 (AISI 318), PVDF, PTFE, Teflon coated, Tantal coated

Seals
Single acting mechanical seal; double acting mechanical seal; stuffing box seal; magnetic coupling; visco seal

Connections
EN, DIN, ANSI flange and various others on request

Rotational speed
100 rpm to 1,800 rpm

Capacities
50 l/h to 120,000 l/h

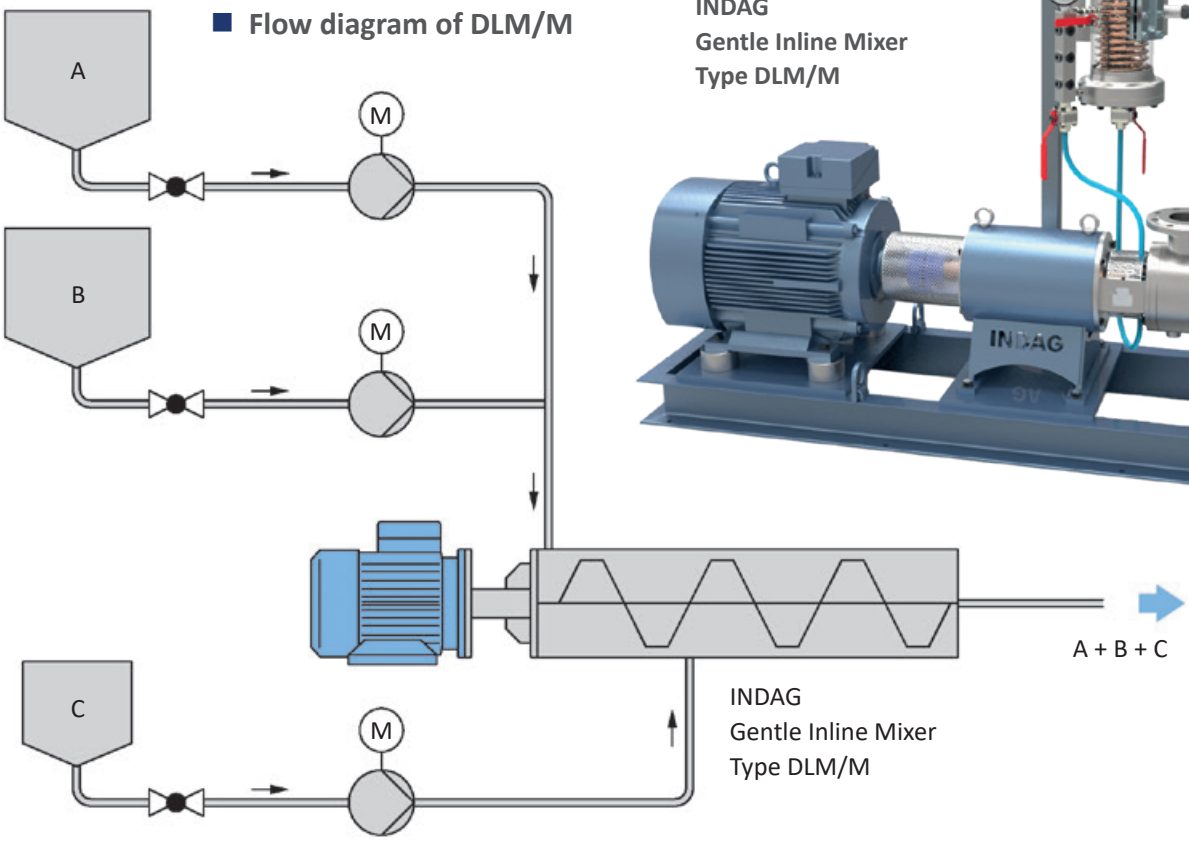
Temperatures
0 °C to 300 °C

Viscosities
1 mPas to 1,000,000 mPas

Advantages of DLM/M

- Very good self-cleaning during CIP-cleaning
- No pressure loss
- No blockage entwining (clog) free
- Very homogenous mixing result
- Variable mixing energy by speed change via frequency converter
- Applicable at high pressures and high temperatures

Flow diagram of DLM/M

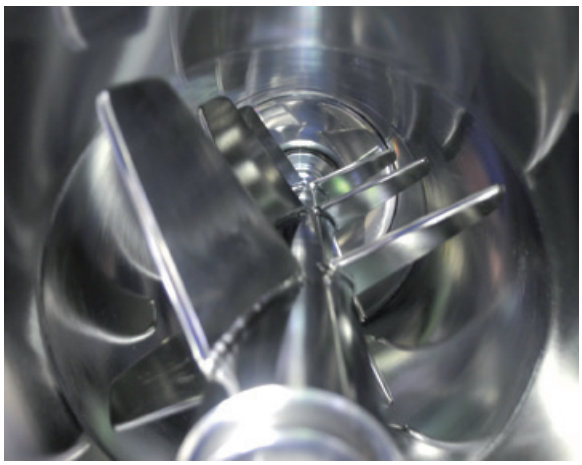


INDAG
Gentle Inline Mixer
Type DLM/M

Mixer sizes and capacities of DLM/M

Type DLM/M	unit	1	2	3	4	5	6
capacity*	l/h	100 - 2,000	200 - 5,000	500 - 10,000	1.000 - 20,000	3,000 - 60,000	6,000 - 120,000
connection	DN	40 - 80	50 - 100	65 - 150	80 - 200	100 - 250	125 - 300
optional	ASME	1.5”- 3”	2”- 4”	2.5”- 6”	3”- 8”	4”- 10”	5”- 12”
power	kW	0.75 - 2.2	1.1 - 3	1.5 - 4	2.2 - 7.5	5.5 - 18.5	7.5 - 30
rotational speed	1/min	100 - 1,800	100 - 1,800	100 - 1,800	100 - 1,800	100 - 1,000	100 - 1,000

*Capacity depends on product.

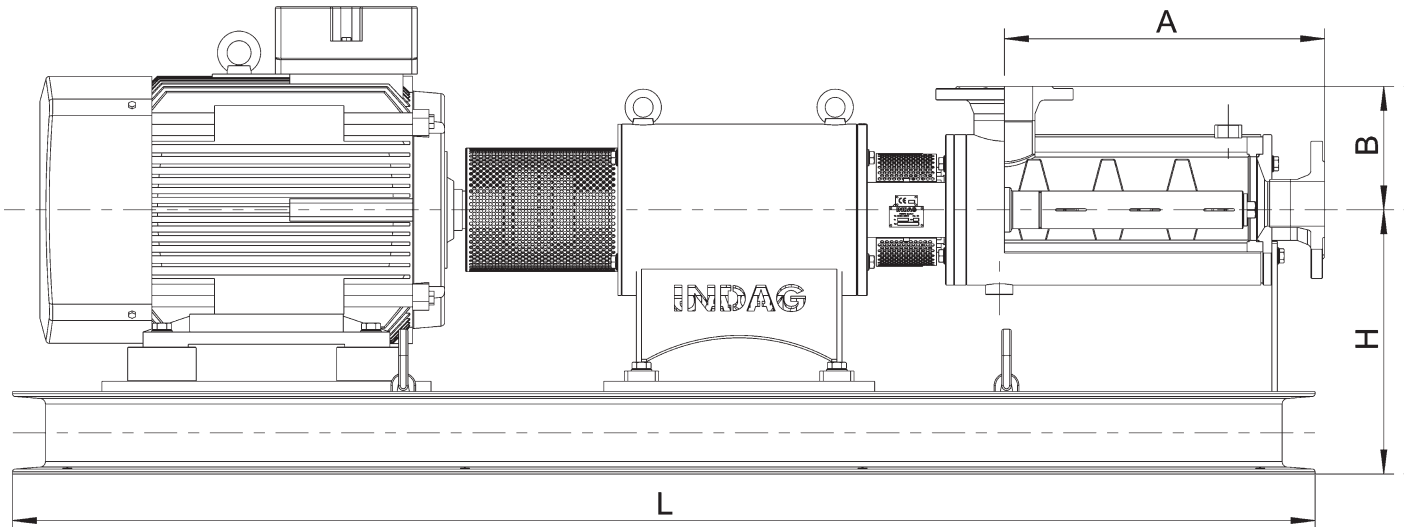


Mixing elements of INDAG DLM/M

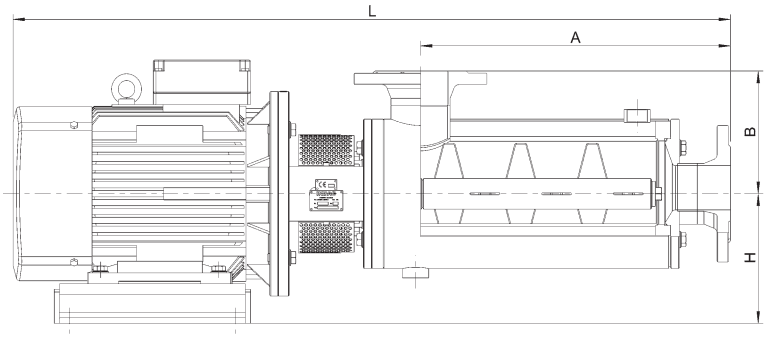


INDAG Gentle Inline Mixer Type DLM/M-4

Dimension drawing of DLM/M (LB)



Dimension drawing of DLM/M (KB)



Dimension table of DLM/M

Type	unit	A	B	H*	L*
DLM/M-1 KB	mm	340	138	158	892
DLM/M-2 KB	mm	376	165	170	998
DLM/M-3 KB	mm	467	180	190	1081
DLM/M-4 KB	mm	569	210	190	1230
DLM/M-5 KB	mm	652	242	218	1390
DLM/M-1 LB	mm	340	138	250	1500
DLM/M-2 LB	mm	376	165	312	1700
DLM/M-3 LB	mm	467	180	385	1900
DLM/M-4 LB	mm	569	210	460	2200
DLM/M-5 LB	mm	652	242	460	2500

* depends on the drive

Company profile

For more than 70 years, INDAG has been developing, designing and manufacturing dynamic inline mixers in Borsfleth near Hamburg.
INDAG mixers are designed to meet the highest quality and efficiency standards.

Product range and services

Our product range covers: Dynamic inline mixers for gentle, intensive, or high shear mixing. Possible applications are: Mixing, emulgating, dispersing and foaming.
Our services include: Commissioning, maintenance, and repair of INDAG mixers, spare parts service and customer support based on many years of experience.

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