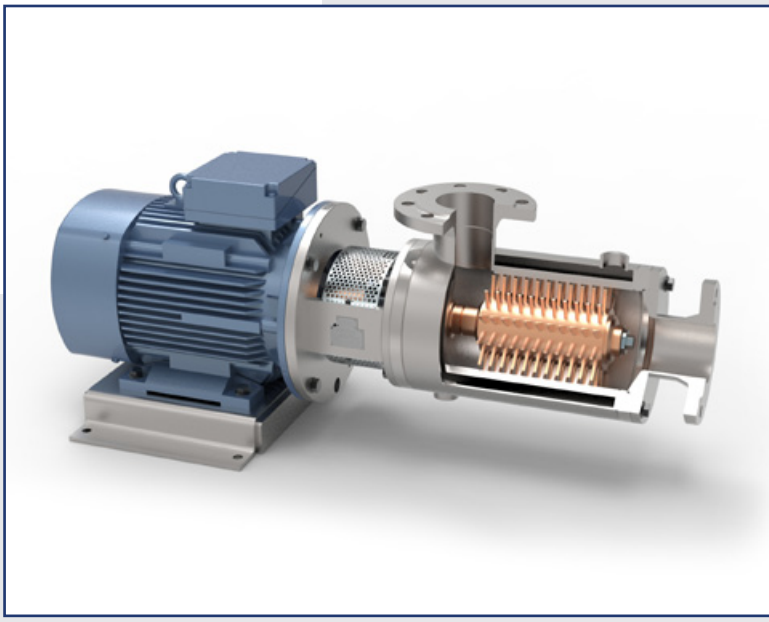
INDAG
Maschinenbau GmbH

The FlowMix®-Company

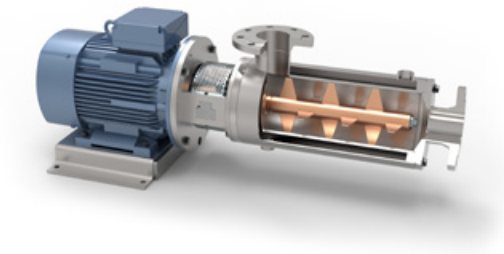




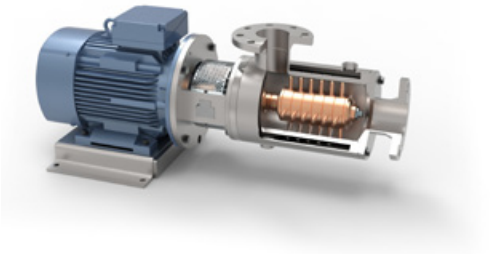
Intensive Inline Mixer Type DLM/S

Intensive mixing with star mixing elements
for challenging mixing applications

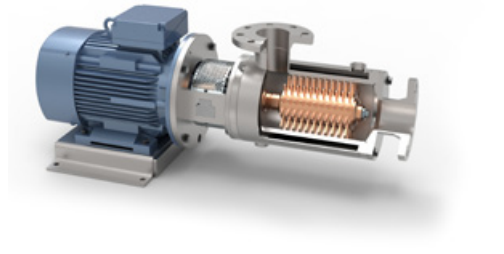
Gentle Inline Mixer Type DLM/M



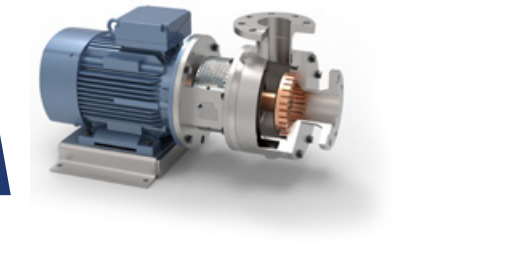
Dynamic Inline Mixer Type DLM/P



Intensive Inline Mixer Type DLM/S



Inline Homogenizer Type DLM/H



Shear rate

-

+

Function and applications of DLM/S

The INDAG Intensive Inline Mixer type DLM/S is used for effective mixing, emulsifying, dispersing and foaming of various liquids and liquids with gases. Some examples from a range of applications are: Emulsions of silicone oil + water + emulsifier; dispersions of polymer + steam; foams of latex + vulcanizing paste + gelling agent; mixing of bitumen + polymer + acid + bonding agent; mixing of plastic melts (PET, PA, PE, PBT) + additives; mixing of vegetable oil + methanol / methylate.

Technology of DLM/S

INDAG mixer type DLM/S consists of star shape mixing elements on rotor and in stator (mixer casing). Star shape design is extremely robust to allow mixing of highly viscous products (> 10,000,000 mPas). Mixing energy is introduced efficiently into product. Rotor and stator can be designed to be cooled or heated. The DLM/S 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, 160 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 3,600 rpm

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

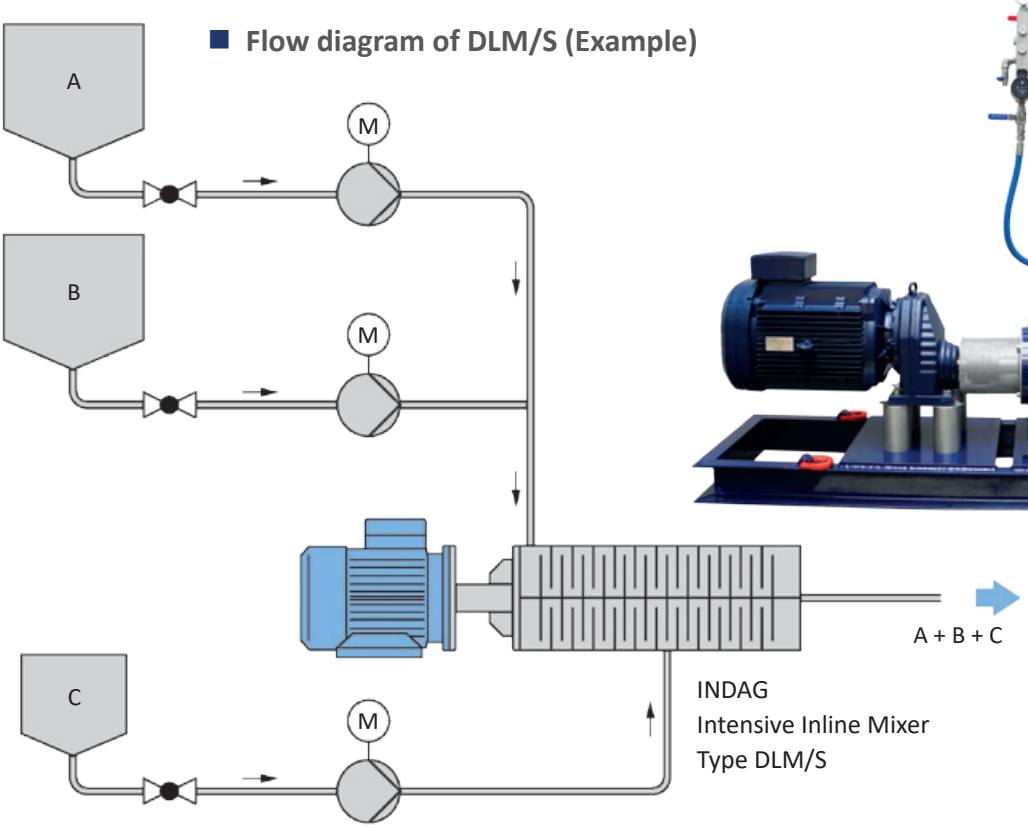
Temperatures
0 °C to 350 °C

Viscosities
1 mPas to 70,000,000 mPas

Advantages of DLM/S

- Very good self-cleaning during CIP-cleaning
- No pressure loss
- No blockage
- Very homogenous mixing result even for extreme concentration ratios
- Efficient introduction of mixing energy
- Variable mixing energy by speed change via frequency converter
- Applicable at high pressures and high temperatures

Flow diagram of DLM/S (Example)





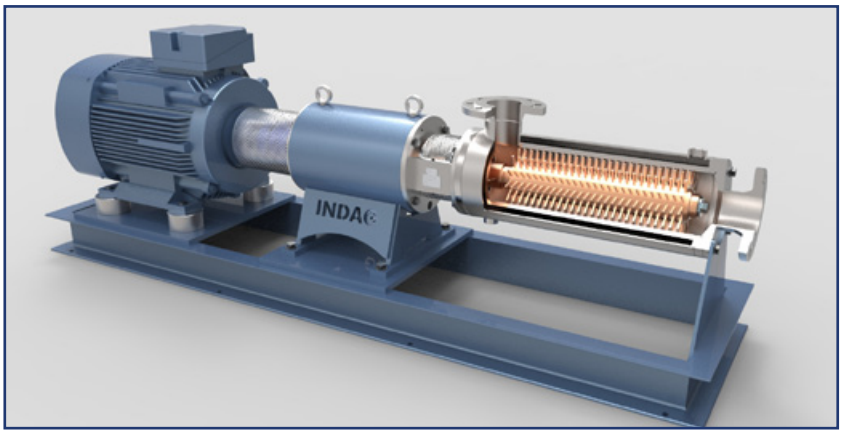
Mixer sizes and capacities of DLM/S

Type DLM/S	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	0.55-4	1.5-7.5	2.2-22	4-45	5.5-90	11-160
rotational speed*	1/min	200-3,600	200-3,600	200-1,500	200-1,500	200-1,500	100-1,500
mixing stages compact version		DLM/S-105 KB	DLM/S-205 KB	DLM/S-305 KB	DLM/S-405 KB	DLM/S-505 KB	DLM/S-605 KB
mixing stages bearing block version		DLM/S-110 LB	DLM/S-215 LB	DLM/S-320 LB	DLM/S-420 LB	DLM/S-520 LB	DLM/S-620 LB

*depends on product

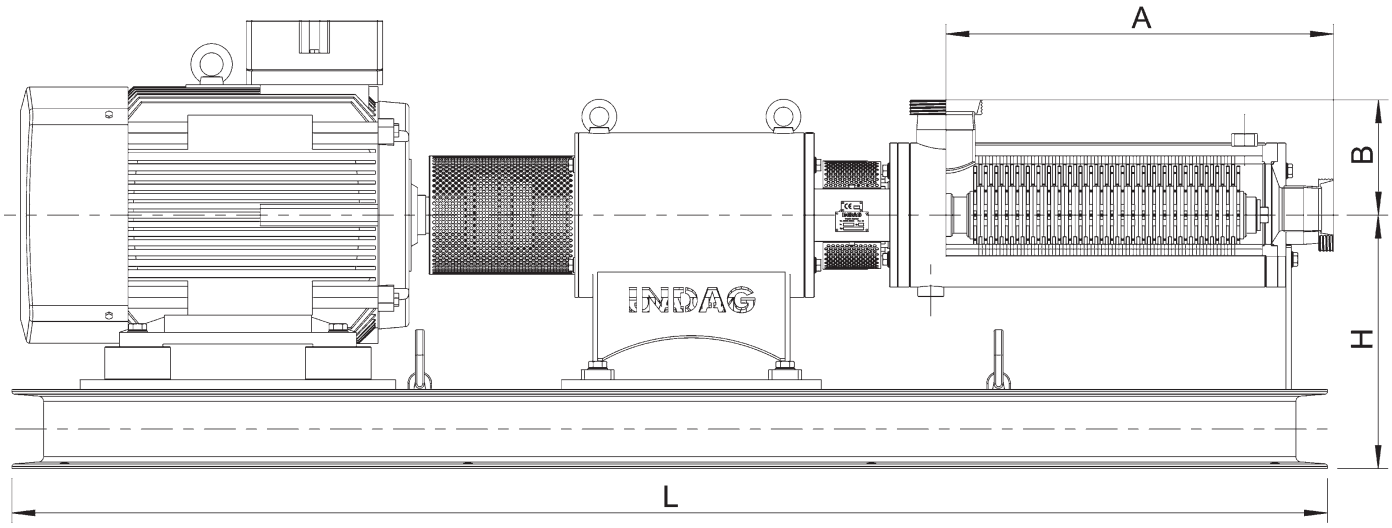


INDAG DLM/S open

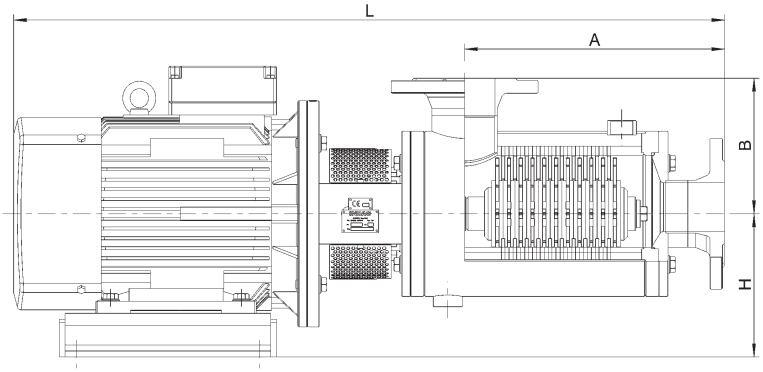


INDAG DLM/S-320

Dimension drawing of DLM/S (LB)



Dimension drawing of DLM/S (KB)



Dimension table of DLM/S

Type	unit	A	B	H*	L*
DLM/S-105 KB	mm	327	138	148	855
DLM/S-205 KB	mm	348	165	148	799
DLM/S-305 KB	mm	354	180	190	968
DLM/S-405 KB	mm	387	210	190	1030
DLM/S-505 KB	mm	413	242	218	1092
DLM/S-110 LB	mm	487	138	250	1300
DLM/S-215 LB	mm	508	165	312	1700
DLM/S-320 LB	mm	514	180	385	2000
DLM/S-420 LB	mm	547	210	460	2100
DLM/S-520 LB	mm	573	242	460	2200

* depends on the drive

Company profile

For more than 65 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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