

INDAG

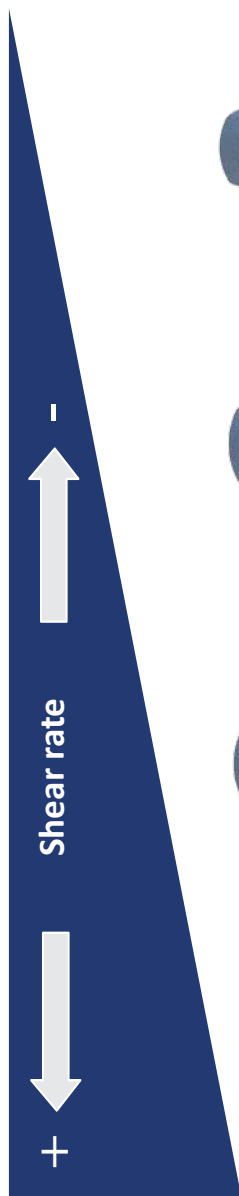
Maschinenbau GmbH

The FlowMix[®]-Company

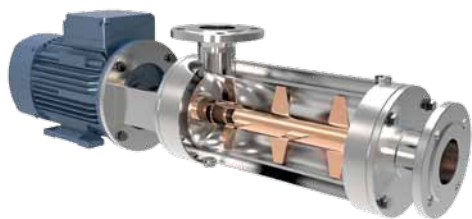


**Intensive inline mixer
Type DLM/S**

For challenging mixing applications



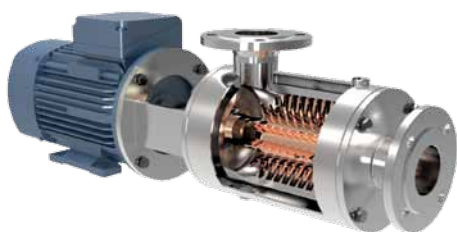
Mixer type DLM/M



Mixer type DLM/P



Mixer type DLM/S



Mixer type DLM/H



■ Function and applications of DLM/S

INDAG intensive inline mixer type DLM/S is used for effective mixing, emulsifying, dispersing and aerating of fluids, solids and gases. Shear rate of DLM/S is of medium level compared to DLM/H homogenizer.

A small selection of examples for applications are: continuous production of emulsion of oil / water / emulsifier; dispersion of oil / acid; emulsion of silicon-oil / water / emulsifier; dispersion of polymer / high pressure steam; foam of latex / vulcanizer / gelling agent; mixture of bitumen / polymer modified bitumen / acid / adhesive; mixture of plastic melts (PET, PA, PE, PMMA) / additives; mixture of vegetable oil / methanol / methyleate.

■ 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 (70,000,000 mPas). Mixing energy is introduced efficiently into product. It is possible (as an option) to heat or cool rotor and stator. INDAG mixer DLM/S is designed in a modular way. A single acting mechanical seal can be changed to double acting mechanical seal without change of mixer. INDAG mixers are designed likewise for explosive range and products (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), 1.4539 (AISI 904L), 1.4462 (AISI 318), PVDF, PTFE, Teflon coated, Tantal coated, 1.0421 (AISI 106-A)

Seals

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

Connections

EN, DIN, ANSI flange

Rotational speed

100 rpm to 3,600 rpm

Capacities

50l/h to 120,000l/h

Temperatures

0 °C to 350 °C

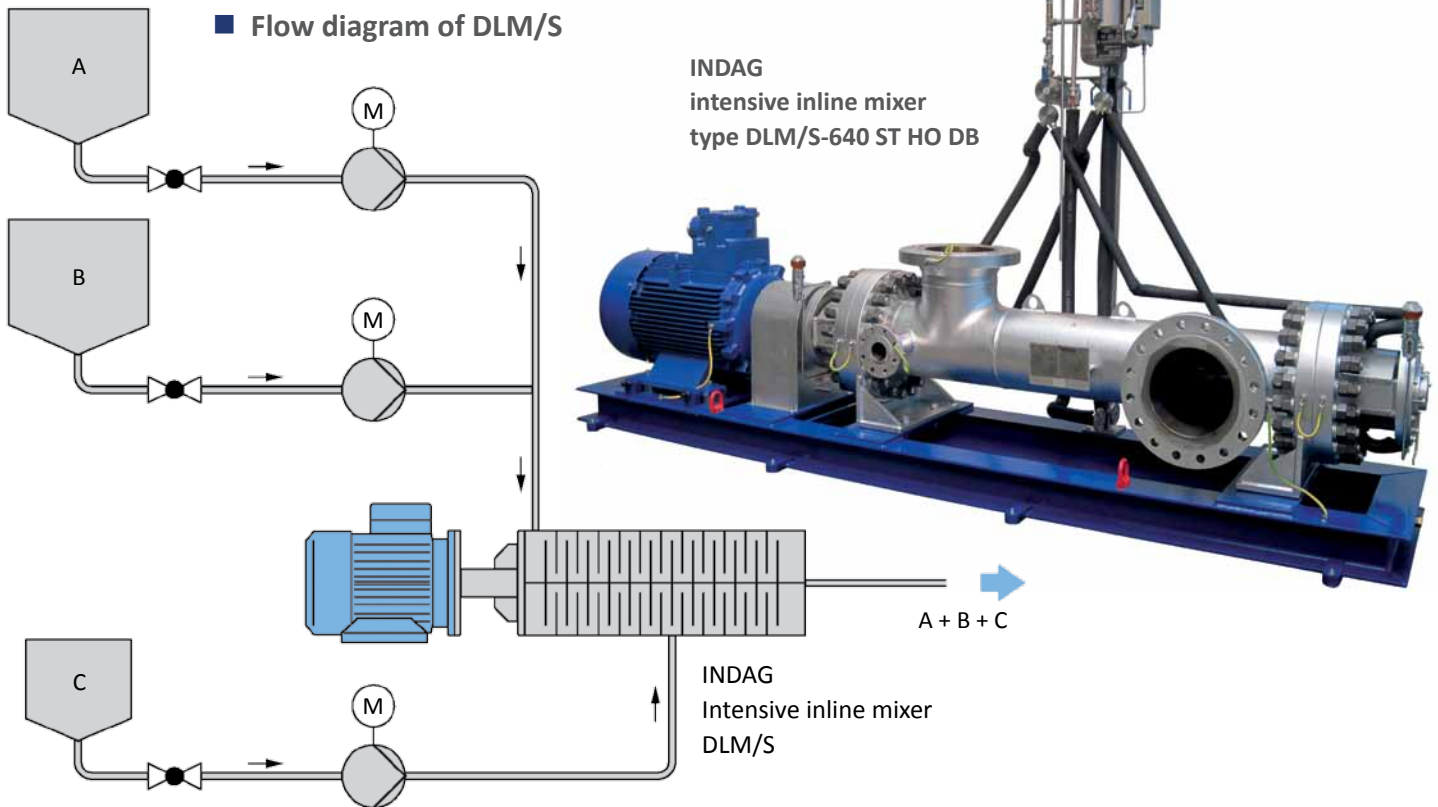
Viscosities

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
- Mixing energy can be changed variable and adapted to product or capacity changes

■ Flow diagram of DLM/S



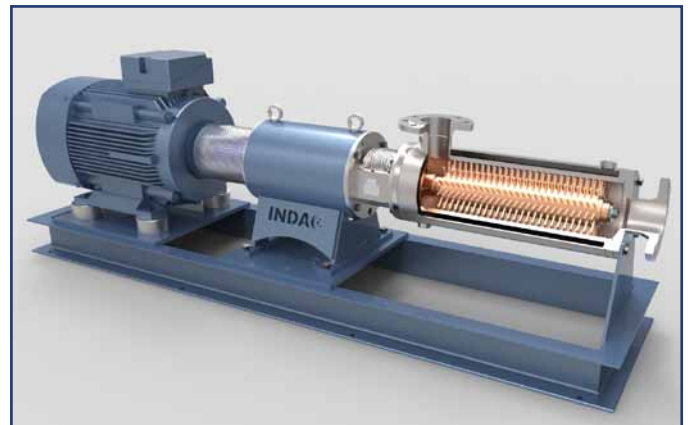
■ Mixer capacities of DLM/S

Type DLM/S ... ST *	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	200-1,800	200-1,800	200-1,500	1,500
mixing stages	5	DLM/S-105 KB	DLM/S-205 KB	DLM/S-305 KB	DLM/S-405 KB	DLM/S-505 KB	DLM/S-605 KB
compact version	10	DLM/S-110 KB	DLM/S-210 KB	DLM/S-310 KB	DLM/S-410 KB	DLM/S-510 KB	DLM/S-610 KB
mixing stages	10/15	DLM/S-110 LB	DLM/S-215 LB				
bearing block version	20		DLM/S-220 LB	DLM/S-320 LB	DLM/S-420 LB	DLM/S-520 LB	DLM/S-620 LB
	30			DLM/S-330 LB	DLM/S-430 LB	DLM/S-530 LB	DLM/S-630 LB

*depends on product ** Type designation ST = standard execution has been left out within the table.

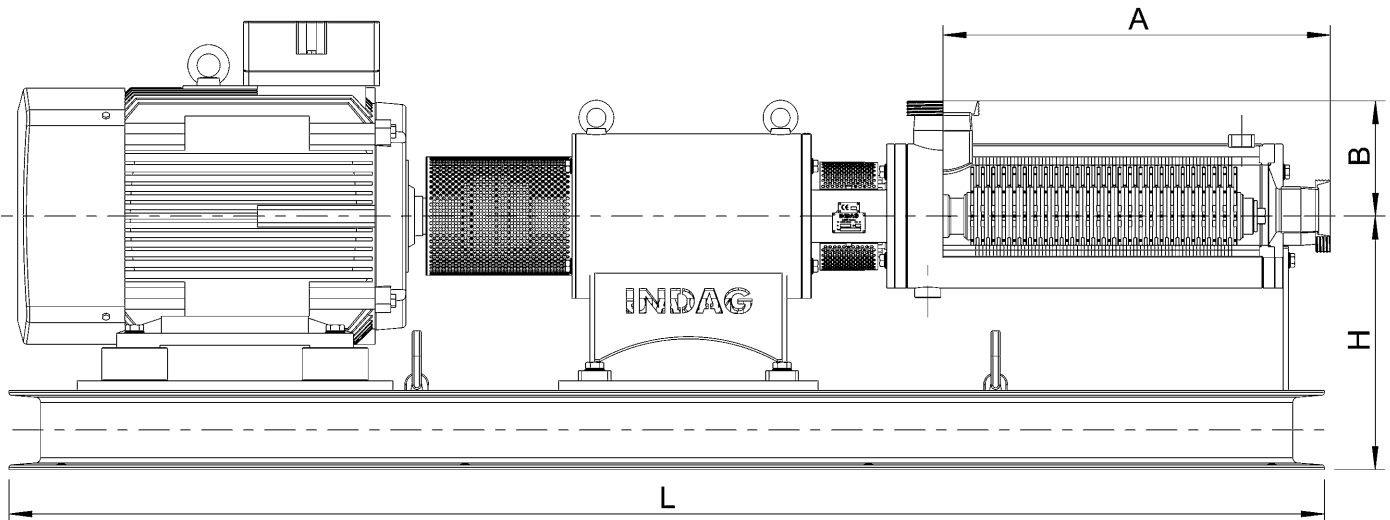


INDAG DLM/S open

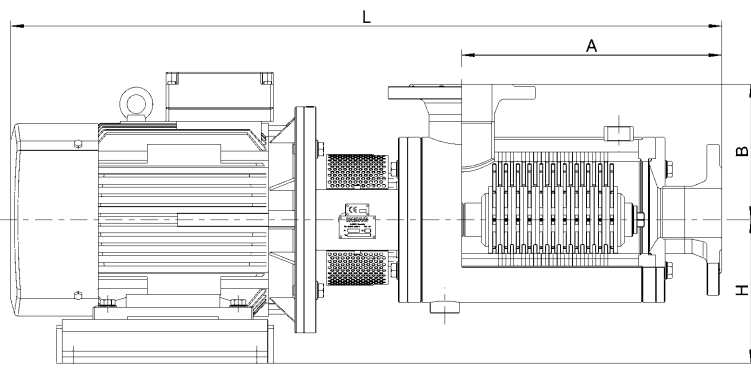


INDAG DLM/S-320 ST HO LB

■ 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-110 KB	mm	327	138	148	855
DLM/S-210 KB	mm	348	165	148	799
DLM/S-310 KB	mm	354	180	190	968
DLM/S-410 KB	mm	387	210	190	1030
DLM/S-510 KB	mm	413	242	218	1092
DLM/S-120 LB	mm	487	138	250	1300
DLM/S-220 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 over 60 years INDAG develops, designs and produces dynamical inline mixers and complete metering and mixing systems in Borsfleth, Germany.

INDAG products claim to meet highest requirements in quality and efficiency.

Product and service spectrum

Product spectrum includes: dynamic inline mixer type DLM/M, intensive inline mixer type DLM/P, intensive inline mixer type DLM/S, homogenizer type DLM/H, solid-liquid mixer type DLM/FS, complete systems type FlowMix for metering, mixing, emulsifying, dispersing and aerating.

Complete systems are equipped with PLC control and sensors for automatic and monitored production. Service spectrum includes commissioning and maintenance of mixers and complete systems.



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