

# INDAG

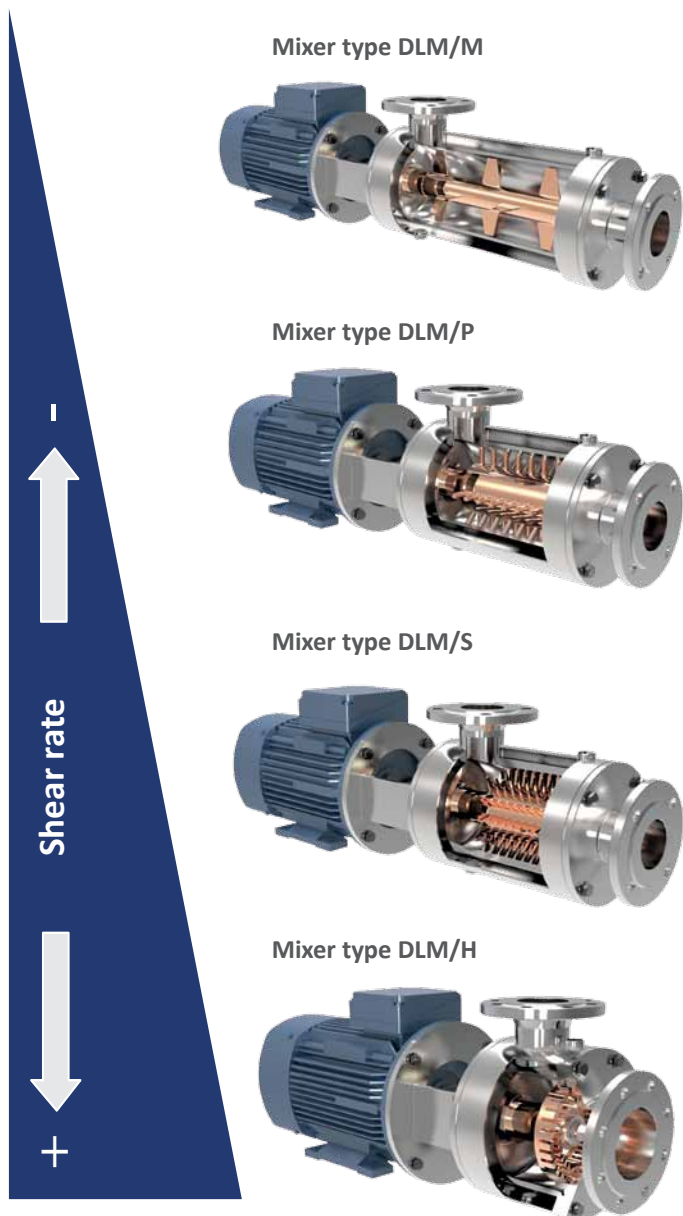
Maschinenbau GmbH

The FlowMix<sup>®</sup>-Company

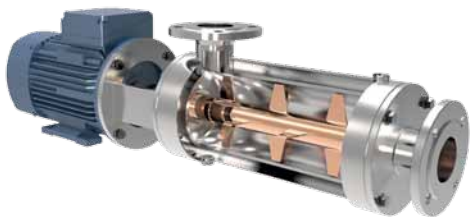


## Intensive inline mixer Type DLM/P

For shear sensitive mixing applications



Mixer type DLM/M



Mixer type DLM/P



Mixer type DLM/S



Mixer type DLM/H



## ■ Function and applications of DLM/P

INDAG intensive inline mixer type DLM/P is used to mix homogeneously shear sensitive liquids with additives. Even if concentration of additive (i.e. 0,01 %) is very small, mixing result will be absolutely homogeneous. Introduced mixing energy will not increase temperature of product more than 1°C. Especially shear sensitive products like aerated foams will not be destroyed by INDAG intensive inline mixer DLM/P. A small selection of examples for applications are: mixing of reactive additives into adhesive; mixing of pre emulsions with solvents; mixing of polybutadiene with water; mixing of collagen with colour;...

## ■ Technology of DLM/P

INDAG intensive inline mixer type DLM/P consists of round shape mixing elements on rotor and in stator (mixer casing). Round shape mixing elements are extremely robust to allow mixing of highly viscous products (> 10,000,000 mPas). Mixing energy is introduced efficiently into product. It is possible (as an option) to heat or cool rotor and stator. INDAG mixer DLM/P is designed in a modular way. DLM/P is offered in a compact design (KB) and a foundation plate design (LB). Compact design means that rotor is supported by drive shaft of motor. Foundation plate design means that rotor is supported by its own bearing block. An own bearing block allows a longer rotor and a larger mixing volume. DLM/P can be equipped with single acting mechanical seal or double acting mechanical seal. 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

### Materials

1.4301 (AISI 304), 1.4404 (AISI 316L), 1.4539 (AISI 904L), 1.4462 (AISI 318), Teflon coated, Tantal coated

### Seals

Single acting mechanical seal; double acting mechanical seal; stuffing box seal, visco seal

### Connections

EN, DIN, ANSI flange

### Rotational speed

100rpm to 1,800rpm

### Capacities

50l/h to 60,000l/h

### Temperatures

0°C to 250°C

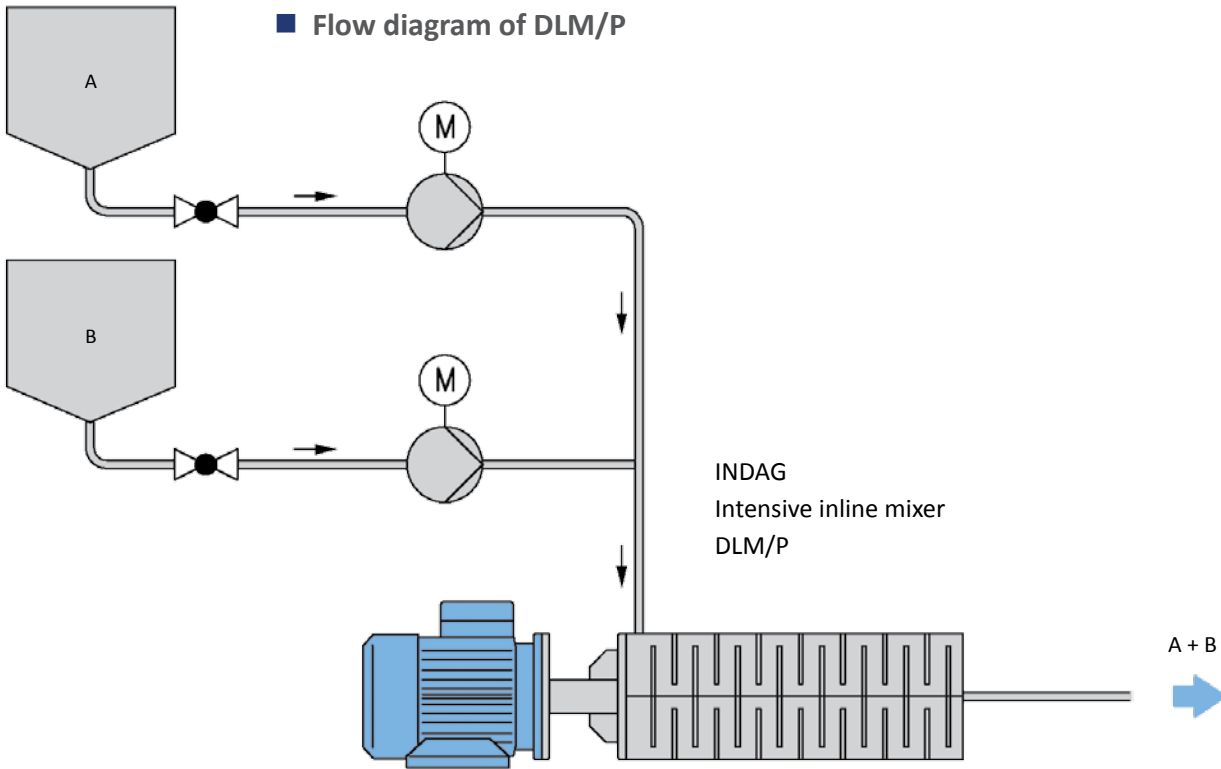
### Viscosities

1 mPas to 10,000,000 mPas

## ■ Advantages of DLM/P

- Very good self-cleaning during CIP-cleaning
- No pressure loss
- 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
- Temperature increase less than 1°C
- Gentle mixing of shear sensitive products

■ Flow diagram of DLM/P



■ Mixer sizes and capacities of DLM/P

Type DLM/P ... ST**	unit	1	2	3	4	5	6
capacity*	l/h	50-200	100-800	300-3,000	500-10,000	1,000-20,000	3,000-60,000
connection	DN	40	50	65	80	100	125
optional	ASME	1.5"	2"	2.5"	3"	4"	5"
power*	kW	0.55-4	1.5-7.5	2.2-22	4-35	5.5-55	11-75
rotational speed*	1/min	300-1,800	200-1,000	200-1,000	200-1,000	100-1,000	100-1,000
mixing stages compact version	8	DLM/P-108 KB	DLM/P-208 KB	DLM/P-308 KB	DLM/P-408 KB	DLM/P-508 KB	DLM/P-608 KB
mixing stages bearing block version	15 20 30	DLM/P-115 LB	DLM/P-215 LB	DLM/P-320 LB DLM/P-330 LB	DLM/P-420 LB DLM/P-430 LB	DLM/P-520 LB DLM/P-530 LB	DLM/P-620 LB DLM/P-630 LB

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

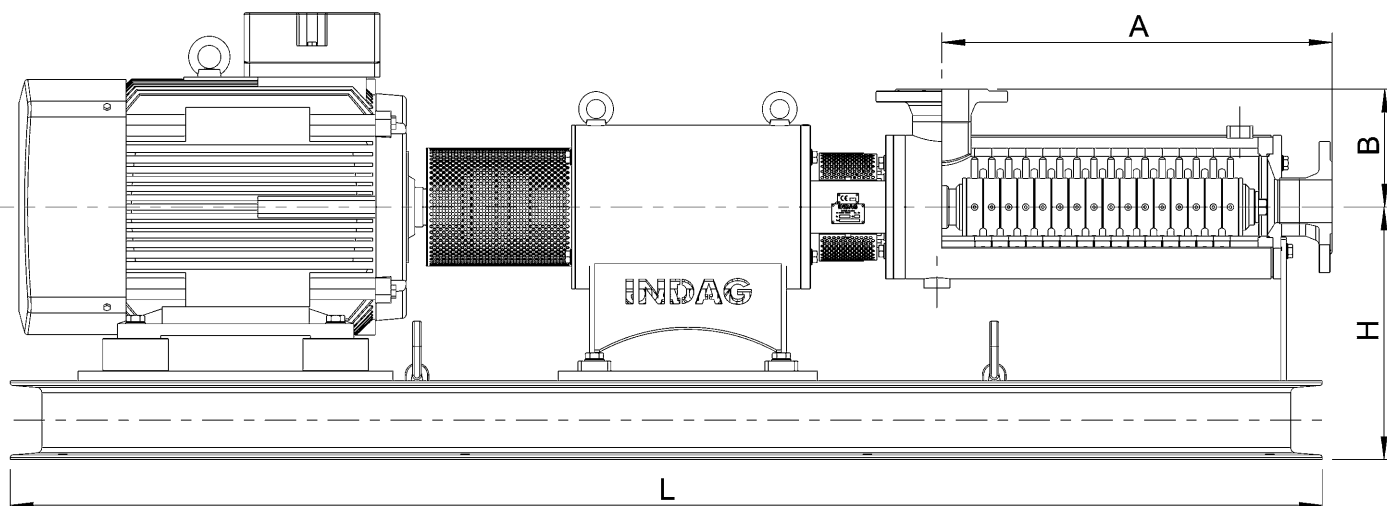


INDAG Inline mixer type DLM/P-308 ST HO LB

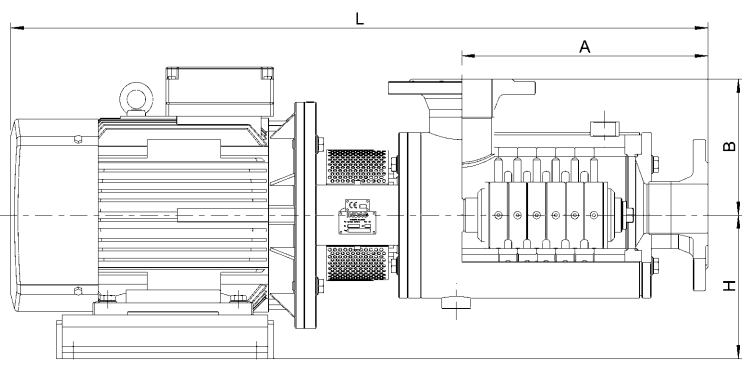


INDAG DLM/P stator mixing elements

## ■ Dimension drawing of DLM/P (LB)



## ■ Dimension drawing of DLM/P (KB)



## ■ Dimension table of DLM/P

Type	unit	A	B	H*	L*
DLM/P-108 KB	mm	386	138	148	976
DLM/P-208 KB	mm	407	165	148	996
DLM/P-308 KB	mm	413	180	190	1027
DLM/P-408 KB	mm	446	210	190	1062
DLM/P-508 KB	mm	472	242	218	1104
DLM/P-115 LB	mm	568	138	250	1500
DLM/P-215 LB	mm	589	165	312	1700
DLM/P-315 LB	mm	595	180	385	2000
DLM/P-415 LB	mm	628	210	460	2200
DLM/P-515 LB	mm	654	242	460	2300

\* 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.

# INDAG

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### 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.

