

MAX

Multiphase Adjustable Extreme Mixer

Homogeneous Mixing of Multiphase Flows with Low Pressure Drop Over the Entire Turndown Range.

DESIGN

The design of the MAX is distinct compared to other mixing technologies such as globe valves and static mixers because it provides homogeneous, high efficiency mixing regardless of the process flowrate. The modulated mixing cylinder achieves this by rotating to maintain a set, constant pressure drop, thereby providing more or less open area, as the fluid flowrate varies. The individual flow channels in the mixing cylinder are designed to provide the ideal shear force for the given process fluid properties. As the mixing cylinder is modulated to maintain the set pressure drop, the MAX maintains the correct number of flow channels exposed to match the process flow volume. The MAX is often combined with a modified AIM as an integrated system supply for injection and mixing, referred to as the MAX+.



APPLICATIONS

- Multiphase flows
- Desalting
- Demulsifier injection
- Crude blending
- Solvent extraction

BENEFITS

- Low differential pressure
- Inline solution
- Easily retrofitted
- Low maintenance
- Modulates with flow
- Maintains efficiency at all turndown conditions
- Millions of gallons of water saved per year in desalting applications
- ROI < 18 months
- 10 Year IRR > 25%

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THE MIXING PROCESS

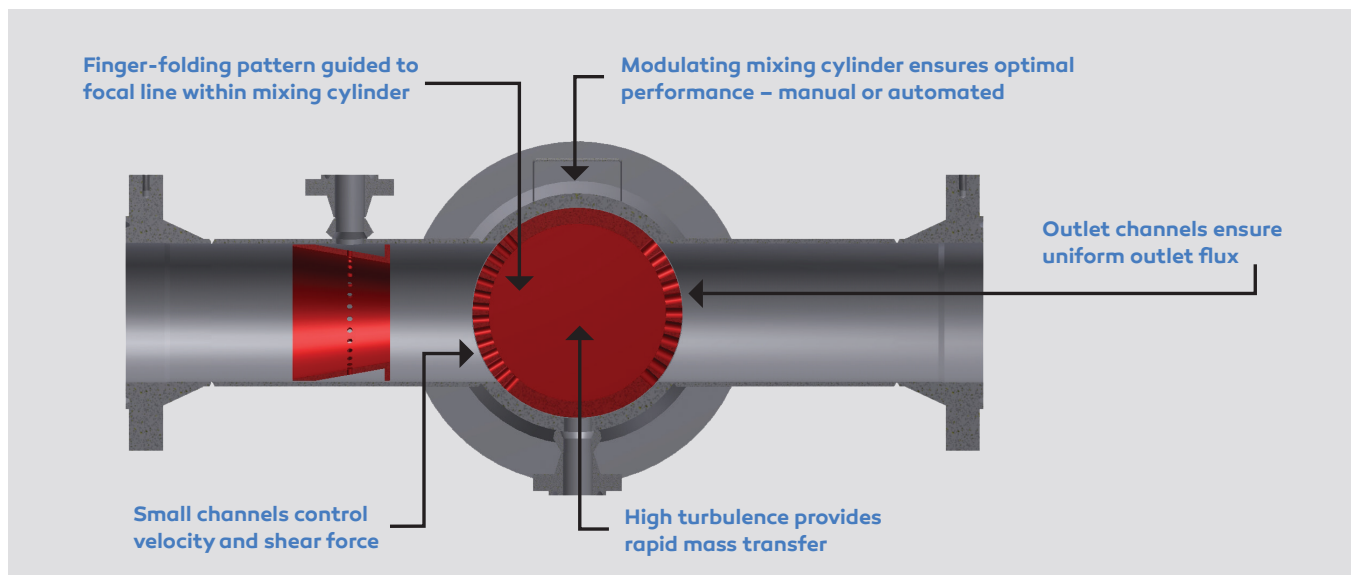
Small channels control velocity and shear force:
Injected phase exposed to evenly distributed shear forces.

Finger folding pattern guided to focal line within mixing cylinder: Overlapping streams begin high mass transfer activity.

Modulating mixing cylinder ensures optimal performance: Modulating mixing cylinder adjusts for optimal performance – manual or automated.

High turbulence provides rapid mass transfer:
High turbulence created in upper and lower cylinder space provides rapid mass transfer.

Outlet channels ensure uniform outlet flux: Pressure drop engineered to keep cylinder fluid filled and mixed.



MAX	Liquid Flow Rate MBPD (M3/h)		Dimension (inches)(F-F)			Approx. Weight (lbs)		
Mixer Size	Minimum	Maximum	150#	300#	600#	150#	300#	600#
3"	3.7 (25)	7.5(50)	28.4	29.1	30.7	427	504	712
4"	6.0 (40)	13 (86)	30.7	31.5	34.3	689	766	992
6"	15 (100)	30 (200)	35.4	34.3	37.4	1121	1276	1429
8"	28 (185)	54 (360)	39.4	41.3	45.3	1653	1764	1820
10"	44 (290)	85 (565)	41.3	43.3	50.0	1764	1874	2008
12"	65 (430)	120 (795)	45.3	49.2	55.1	1984	2094	2369
14"	86 (570)	160 (1060)	49.2	51.2	59.1	2535	2646	2992
16"	110 (730)	210 (1390)	51.2	53.1	61.0	2866	2976	3433
18"	140 (960)	270 (1790)	57.1	59.1	66.8	3527	3748	4486
20"	180 (1190)	340 (2250)	59.1	61.0	69.0	3968	4189	5158
24"	260 (1720)	490 (3250)	65.0	66.9	74.2	4630	4850	6301

Specifications included in above chart are provided as reference only. ProSep Mixers are fully customizable based on customer requirements.

Weights and dimensions provided in this document are approximate.