

AIM

Annular Injection Mixer

Driven By Process Fluid Momentum – Delivering High Efficiency Mixing At Low Differential Pressures.

FEATURES

The patented design of the AIM creates intense, balanced turbulence in the mixer for optimized utilization of momentum transfer, measured as pressure drop across the AIM. The compact, high performance AIM minimizes chemical consumption by improving dispersion and mixing in the process stream for gaseous, liquid and multiphase fluid flows. The mixer is available with single and multiple injection ports in the same unit, is robust in design, and requires minimal maintenance.

DESIGN

The AIM design is similar to a venturi, with inlet and outlet cone sections. The upstream cone increases process flow velocity and pressure to enhance dispersion of the injected fluids. The downstream cone adds turbulence through the expanding cross-sectional area, simultaneously providing energy recovery while reducing the overall pressure drop across the unit. The area behind the neck of the cones offers volume for the injected fluid to be evenly distributed over the cross-sectional area of the pipe, yielding uniform injection.

APPLICATIONS

- Diluent Injection
- pH Control
- Demulsifier
- Corrosion Inhibitor
- Scale Inhibitor
- Chlorination

BENEFITS

- Reduced Chemical Consumption
- Low Pressure Drop
- Inline Solution
- Easily Retrofitted
- 3 in 1 solution – Injection, Dispersion, and Homogenization
- 25 - 50% reduction in chemical consumption
- ROI < 1 year
- 10 Year IRR > 25%

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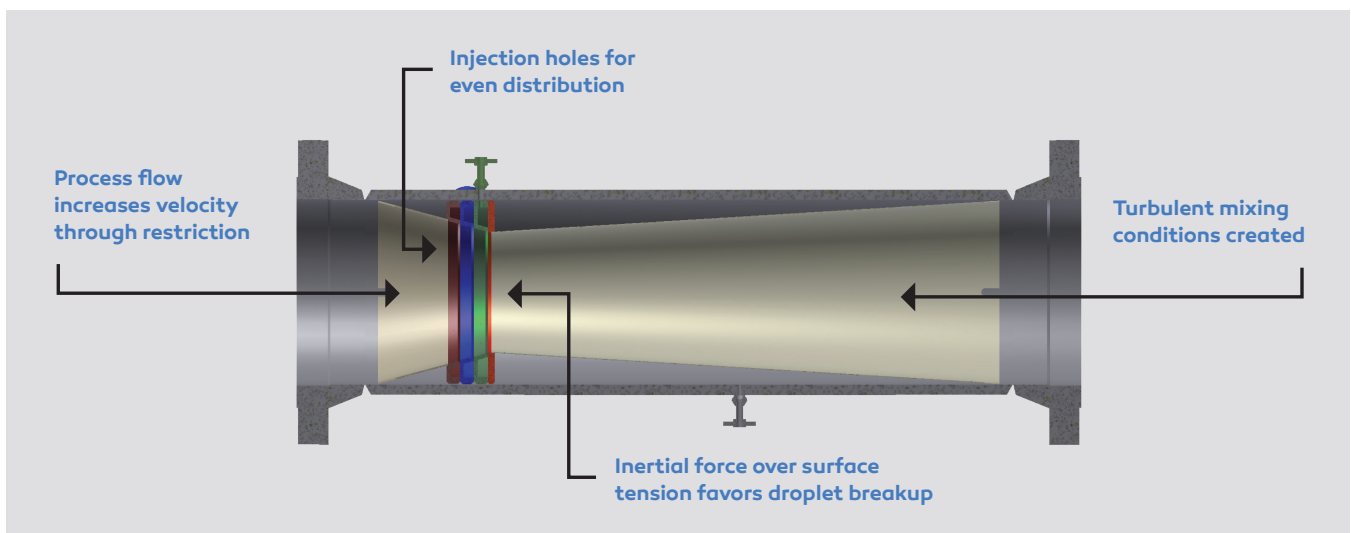
THE MIXING PROCESS

Process flow velocity increase through restriction: Local dynamic pressures increase.

Annular injection ring for even distribution: Shear stresses evenly applied to injected fluid over cross sectional area of pipe.

Inertial force over surface tension favors droplet breakup: Slip edge allows inertia to disperse injected fluid.

Turbulent mixing conditions created: Expanding pipe diameter creates turbulent mixing conditions.



AIM Mixer Size	Liquid Flow Rate MBPD (M3/h)		Dimension (inches)			Approx. Weight (lbs)		
	Minimum	Maximum	150#	300#	600#	150#	300#	600#
2"	2 (13)	3.3 (22)	20	20.5	20.75	34	38	64
3"	5 (33)	7.5 (50)	26.5	27.25	27.5	56	65	81
4"	9 (60)	13 (86)	34	34.75	36	76	94	126
6"	20 (132)	30 (200)	48	48.75	50.25	114	178	208
8"	35 (232)	54 (360)	64	64.75	66.5	216	294	354
10"	56 (371)	85 (565)	79	80.25	83	308	441	507
12"	80 (530)	120 (795)	93	94.25	96.125	479	659	739
14"	110 (730)	160 (1060)	107	108.25	110	603	857	1017
16"	145 (960)	210 (1390)	120	121.5	124	813	1153	1338
18"	180 (1190)	270 (1790)	134	135.5	137.5	993	1492	1712
20"	220 (1460)	340 (2250)	149.375	150.75	153	1244	1924	2147
24"	270 (1790)	490 (3250)	176	177.25	180	2019	2942	3002
26"	380 (2520)	560 (3710)	187	191.5	194.5	540	1230	1280

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.