TurboMix™

TurboMix™ Eductor Mixing Nozzle

DESIGN FEATURES

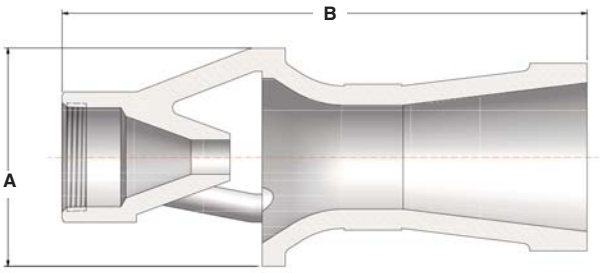
- Effective, economical way to circulate liquids in closed or open tanks
- No moving parts
- Inherently clog resistant
- Requires minimal maintenance
- Nozzle operation creates multiplying effect on fluid flow
- The volume of discharge liquid will be 3-5 times greater than the motive liquid pumped

SPRAY CHARACTERISTICS

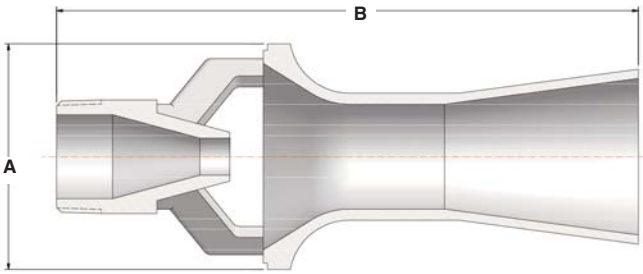
- Cone-shaped plume

Flow rates: 7 to 3180 gpm (motive)

Metal



Metal



Plastic

Dimensions are approximate. Check with BETE for critical dimension applications.

TurboMix™ *in Molded Plastic*

NPT or BSP Connection Size		TurboMix Number	K Factor	Motive Flow Rate GALLONS PER MINUTE @ PSI*							Dimensions (In.)	
				10 PSI	15 PSI	20 PSI	25 PSI	30 PSI	40 PSI	50 PSI	A	B
Male	3/8	TM73	2.3	7.3	8.9	10.3	11.5	12.6	14.6	16.3	2.13	4.5
	1/2	TM120	3.8	12	14.7	17	19	20.8	24	26.8	2.5	6.5
	3/4	TM137	4.3	13.7	16.8	19.4	21.7	23.7	27.4	30.6	2.88	6.38
	1	TM240	7.6	24	29.4	33.9	37.9	41.6	48	53.7	3.5	9.5
	1 1/2	TM340	10.8	34	41.6	48.1	53.8	58.9	68.3	76.4	4.5	9.75

Standard Material: Glass-filled Polypropylene. *PSI = supply pressure at the TurboMix minus the pressure in the tank

TurboMix™ *in Metal*

NPT or BSP Connection Size		TurboMix Number	K Factor	Motive Flow Rate GALLONS PER MINUTE @ PSI*							Dimensions (In.)	
				10 PSI	20 PSI	30 PSI	40 PSI	60 PSI	80 PSI	100 PSI	A	B
Male	3/8	TM70	2.2	7	9.8	12.1	13.9	17.1	19.8	22.1	1.69	4.25
	1/2	TM110	3.5	11	15.6	19.1	22	26.9	31.1	34.8	2.16	5.25
	3/4	TM150	4.7	15	21.2	25.7	29.7	36.7	42.4	47.4	2.63	6.25
	1	TM230	7.3	23	32.5	39.8	46	56.3	65.1	72.7	3.25	7.88
Female	1 1/2	TM320	10.1	32	45.3	55.4	63.9	78.4	90.5	101	3.81	9.19
	2	TM620	19.6	62	87.7	107	124	152	175	196	4.75	11.25
	3	TM1500	47.4	150	212	260	300	367	424	474	5.75	19.38
150# Flange	4	TM2510	79.4	251	355	435	502	615	710	794	8.38	34
	6	TM6010	190	601	850	1040	1200	1470	1700	1900	12.63	52
	8	TM10050	318	1005	1420	1740	2010	2460	2840	3180	16.38	68

Motive Flow Rate (GPM) = $K\sqrt{PSI}$

Standard Materials: Brass, Carbon Steel, 316 Stainless Steel. *PSI = supply pressure at the TurboMix minus the pressure in the tank

TurboMix

Recent Applications

Fire protection water storage tanks

The water in these tanks is stagnant, often stays there for an extended period of time, and can form thermally stratified layers. Creating movement in the tank decreases bacterial growth. You can also use the nozzles for efficient adding and mixing of chlorine or other water additives. Mixing also reportedly decreases ice formation in winter by keeping the water moving.

Clearing sediment

A customer is pumping water from a river into a pond and wants to keep the area under and around the pump clear of sediment. TurboMix eductor nozzles are arranged to keep water flowing across these surfaces and hence keep silt from settling. A similar application in enclosed sump pits is frequent.

Clearing sludge

A customer has a tank in which sludge deposits on the bottom. The mechanical scraper system currently in use is prone to breakage and another removal system is desired. The customer is looking at banks of TurboMix eductor nozzles to push the sludge along the bottom into a removal trough. Using a fluid driven system over a mechanical system minimized downtime as the fluid system has no moving parts in the tank.

General particle agitation

Many applications are for the usual role of the TurboMix, which is to keep particles in suspension by essentially stirring the tank.

Material injection and mixing

A customer had the typical pump-around configuration to keep the liquid in the tank circulating. The situation also existed where they needed to inject a chemical into the tank to keep it within limits. They added an injection port into the pump-around line so that the sulfuric acid could be injected into the line and then mixed efficiently as it emitted through the TurboMix.

Breaking up a grease layer

A bio-fuel customer had a tank in which a layer of grease would form at the surface and harden. They set up a system with a sump pump and TurboMix eductor nozzles pointed at the surface to break up the grease layer and keep it from solidifying into a single mass.