

LIQUID JET MIXER

Installed inside tanks or basin

Mod. GEX



Model GEX - PVC
pipe union / threaded connection



Model GEX - PTFE
flanged connection

Liquid jet mixers are simple jet pumps to mix and circulate liquids.

They guarantee a continuous and efficient mixture, help the liquids homogenization avoiding the stratification of liquids with different specific gravity and the solids deposits.

Installed instead of mechanical agitators, have the advantage of a space-saving and efficiency and long life, having no parts subject to movement and lubrication.

The principle of operation is typical ejector. They are used in the food industry, chemical and petrochemical plants, pharmaceutical application, cosmetics and biotechnology industry.

Mode of Operation

Mod. GEX

The change from pressure energy to kinetic energy (velocity) creates a region of low pressure that entrains liquid from within the process vessel via the open suction ports. The motive and suction liquid streams combine and mix under high shear conditions in the Venturi diffuser. Due to the high turbulences in the diffuser, the result is an intimately mixed, uniform liquid without producing a rotating motion.

Typical entrainment ratio is 3:1.

Materials

All plastic Body and Nozzle (PVC, PP, PVC-C, PVDF, etc.)

All Stainless Steel Body and Nozzle:
AISI 304 / AISI 316

Carbon steel Body
Stainless Steel Nozzle

Special materials on request

Installation

The mixers should be installed at the deepest possible point of the tank so that a good operation is obtained even with a low liquid level.

They are installed lightly inclined so that the liquid outlet is oriented up.

Jet mixers should be installed more than 1,5 m below the liquid level, to prevent foaming due to the high turbulence generated.

For establishing the number of mixers required, the following criteria is taken into account: liquid contents and dimensions in the tank, physical-chemical characteristics of the liquids to be mixed, mixing time.

Jet mixers are usually used in the neutralisation basins where are sequentially installed. The principle is used for many process applications including blending, solids suspension, dilution. They are also utilized to dissolve powders.

Typical installation **Mod. GEX**

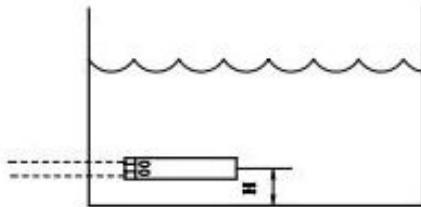


fig.1

min. 120 mm per 3/4 - 1"
 min. 140 mm per 1" - 1" 1/4
 min. 160 mm per 1"1/2 - 2"
 min. 230 mm per 2"1/2 - 3"

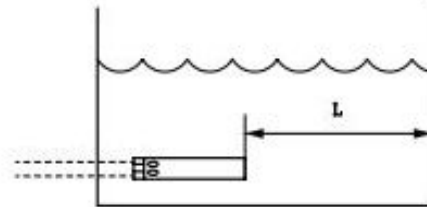


fig.2

min. 150 mm per press. da 0,5 a 2 bar
 min. 250 mm per press. da 2 a 4 bar
 min. 500 mm per press. da 4 a 7 bar
 min. 750 mm per press. da 7 a 10 bar

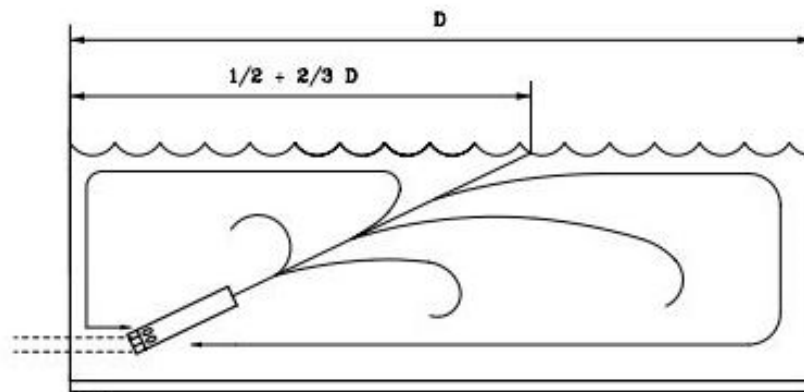


fig.3

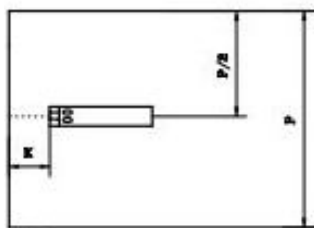


fig 4

~ 130-200 mm

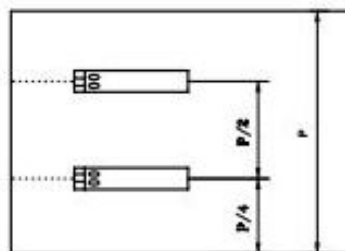


fig 5

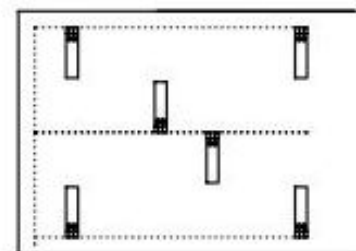


fig 6

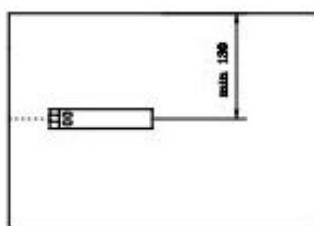


fig 7

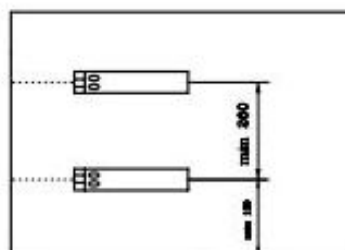


fig 8

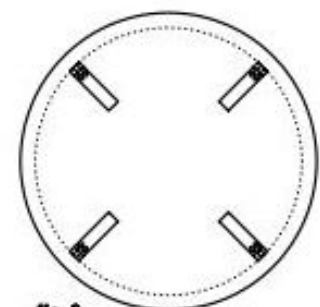
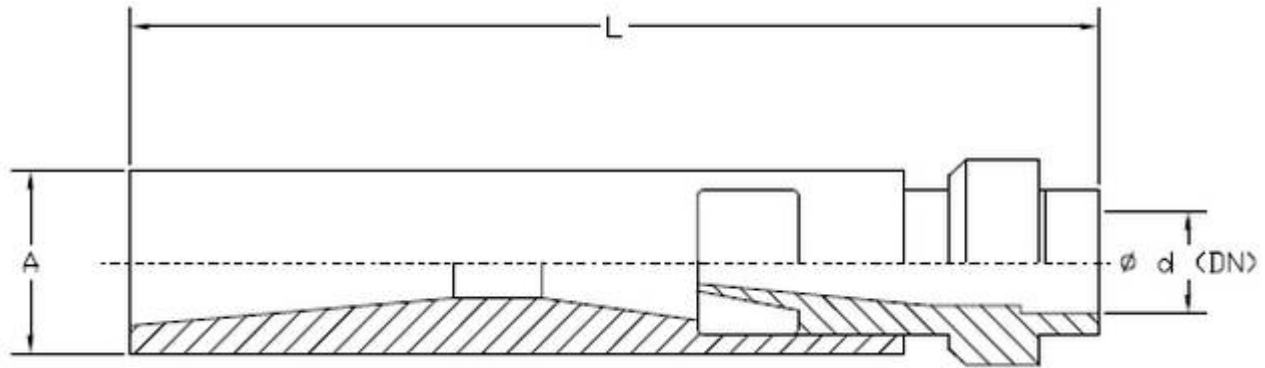


fig 9

Size characteristics

Mod. GEX- pipe union/threaded



Mod.	DN	Ø d	L	Ø A	Weight kg
GEX*-20**	20 - ¾"	25	215	40	0.8
GEX*-25**	25 - 1"	32	280	50	1.0
GEX*-32**	32 - 1 ¼ "	40	335	50	1.2
GEX*-40**	40 - 1 ½ "	50	420	60	1.5
GEX*-50**	50 - 2"	63	500	80	2.1
GEX*-65**	65 - 2 ½ "	75	560	100	3.0
GEX*-80**	80 - 3"	90	630	120	4.2
GEX*-100**	100 - 4"	100	770	150	7.0

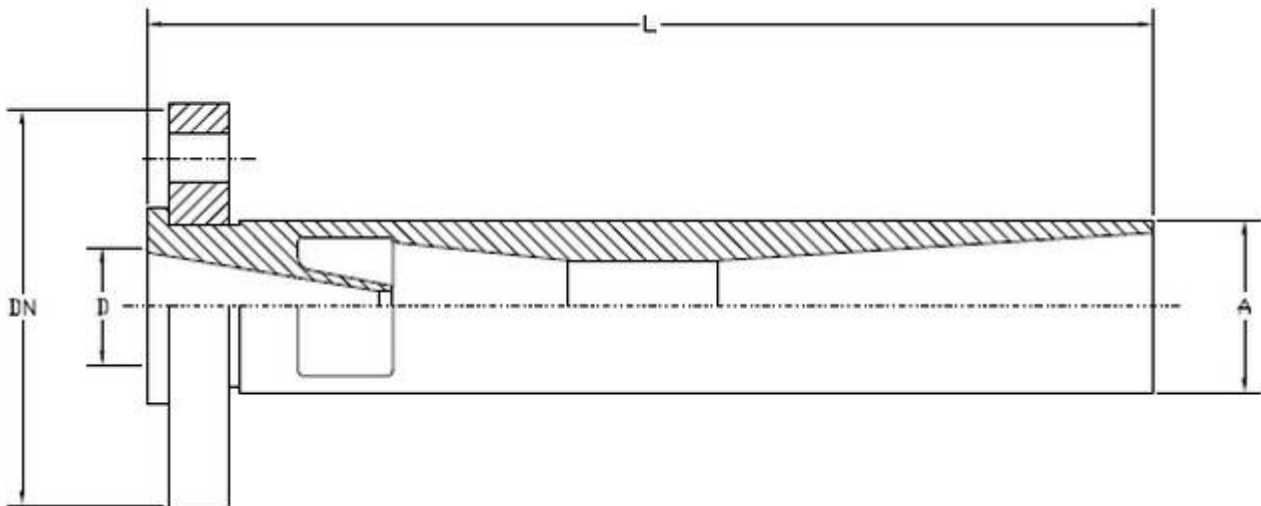
*V=PVC-U *VC=PVC-C *P=PP *PF=PVDF

**B=PIPE UNION **F=THREADED

Example : GEXVC-20B = liquid jet mixer in PVC-C (GEXVC) pipe union (20B)

Size characteristics

Mod. GEX-flanged



Mod.	DN Flange Lap Joint	Ø D	A	L	Weight kg
GEX*-20FL**	20 - ¾"	20	38	185	0.7
GEX*-25FL**	25 - 1"	25	45	248	1.0
GEX*-32FL**	32 - 1 ¼ "	32	50	295	1.3
GEX*-40FL**	40 - 1 ½ "	40	60	373	1.7
GEX*-50FL**	50 - 2"	50	80	443	2.4
GEX*-65FL**	65 - 2 ½ "	65	100	550	3.0
GEX*-80FL**	80 - 3"	80	120	665	4.5
GEX*-100FL**	100 - 4"	100	150	805	9.0

*V=PVC-U *VC=PVC-C *P=PP *PF=PVDF

**I=ISO **A=ANSI

Example : GEXP-20FLI = liquid jet mixer in PP (GEXP) ISO (20FLI)

Flow-rate chart

Mod. GEX

Connections	DN 20 ¾"		DN 25 1"		DN 32 1 " 1/4	
	M _m [m ³ /h]	M _s [m ³ /h]	M _m [m ³ /h]	M _s [m ³ /h]	M _m [m ³ /h]	M _s [m ³ /h]
0,5	0,71	1,42	1,19	2,38	2,04	4,08
1,0	1,00	2,48	1,69	4,19	2,89	7,17
1,5	1,22	3,29	2,07	5,59	3,54	9,56
2,0	1,41	4,09	2,38	6,90	4,08	11,83
2,5	1,58	4,90	2,67	8,28	4,56	14,14
3,0	1,73	5,62	2,92	9,49	5,0	16,25
3,5	1,87	6,36	3,16	10,74	5,4	18,36
4,0	2,0	6,90	3,38	11,66	5,77	19,91
5,0	2,23	7,80	3,77	13,19	6,46	22,61
6,0	2,45	8,70	4,14	14,70	7,07	25,10
8,0	2,82	10,15	4,77	17,17	8,17	29,41
10,0	3,16	11,69	5,34	19,76	9,13	33,78

Connections	DN 40 1" ½		DN 50 2"		DN 65 2 " ½	
	M _m [m ³ /h]	M _s [m ³ /h]	M _m [m ³ /h]	M _s [m ³ /h]	M _m [m ³ /h]	M _s [m ³ /h]
0,5	3,42	6,84	6,36	12,72	8,67	17,34
1,0	4,84	12,00	8,99	22,29	12,24	30,35
1,5	5,92	15,98	11	29,70	15	40,5
2,0	6,84	19,84	12,7	36,83	17,3	50,17
2,5	7,65	23,71	14,22	44,08	19,35	60
3,0	8,37	27,20	15,6	50,70	21,2	68,9
3,5	9,05	30,77	16,8	57,12	22,9	77,86
4,0	9,67	33,36	17,98	62,03	24,5	84,5
5,0	10,81	37,83	20,1	70,35	27,4	95,8
6,0	11,84	42,03	22	78,10	30	106,42
8,0	13,68	49,25	25,4	91,44	34,6	124,6
10,0	15,29	56,57	28,4	105,08	38,7	143,2

Flow-rate chart

Mod. GEX

Connections	DN 80 3"		DN 100 4"		
	M _m [m ³ /h]	M _s [m ³ /h]	M _m [m ³ /h]	M _s [m ³ /h]	
0,5	11	22.1	20.6	41.2	Mm = Motive flow rate
1,0	16	39.66	29.13	72.24	
1,5	19.57	52.84	35.68	96.34	
2,0	22.6	65.54	41.2	119.48	
2,5	25.28	78.37	46.06	142.78	
3,0	27.68	90	50.46	164	
3,5	29.9	101.67	54.5	185.3	Ms = Suction flow rate
4,0	31.97	110.3	58.27	201	
5,0	35.7	125	65.14	228	
6,0	39.1	138.8	71.36	253.3	
8,0	45.21	162.76	82.4	296.6	
10,0	50.55	187	92	340.4	

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