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Eiettori a misura di futuro

LIQUID JET MIXER

Installed inside tanks or basin **GEX type**

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

They ensure efficient and continuous mixing, promoting liquid homogenization and preventing stratification of liquids with different densities, as well as avoiding solid 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 petro chemical plants, pharmaceutical application, cosmetics and biotechnology industry.

Mode of Operation **GEX type**

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.
The typical suction ratio is 3 :1.

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Materials — GEX type

- All plastic Body and Nozzle
  (PVC, PP, PVC-C, PVDF, PTFE etc.)
- All Stainless Steel Body and Nozzle
  AISI 304L / AISI 316L
- Carbon steel Body
  Stainless Steel Nozzle
- Special materials on request

Installation — GEX type

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.

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, diluition.
They are also utilized to dissolve powders.

Typical installation

GEX type

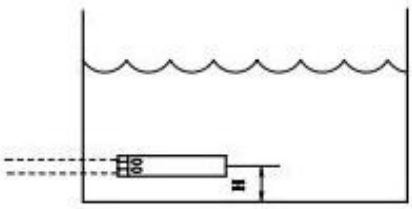

fig.1

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"

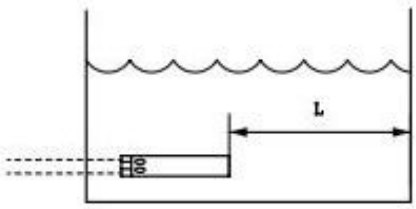

fig.2

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

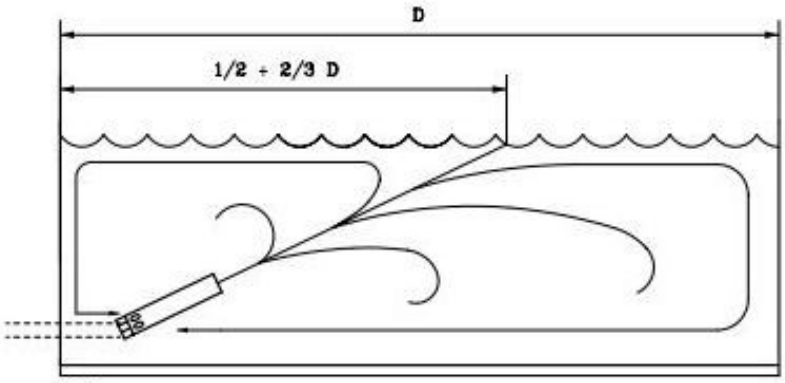

fig.3

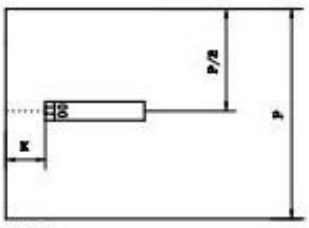

fig 4

~ 130-200 mm

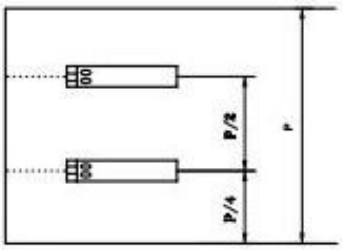

fig 5

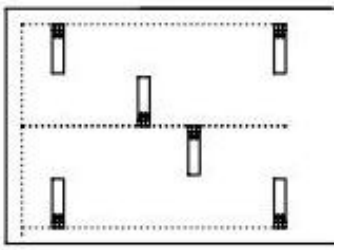

fig 6

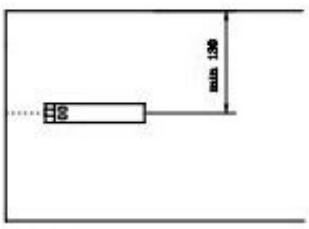

fig 7

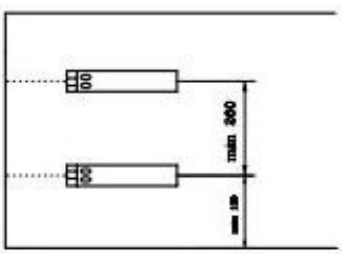

fig 8

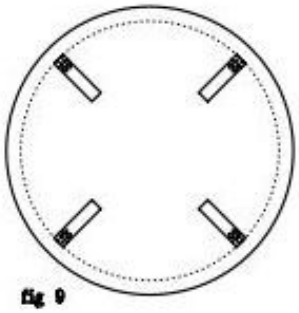

fig 9

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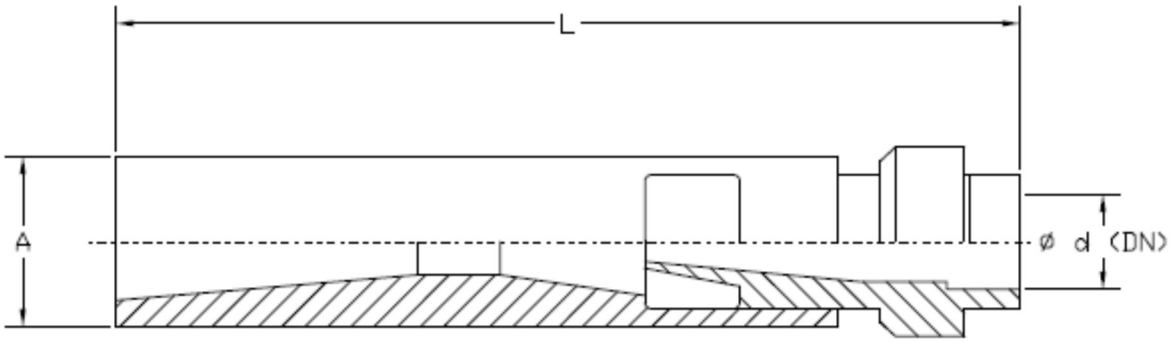
Connections **GEX type pipe union/threaded**



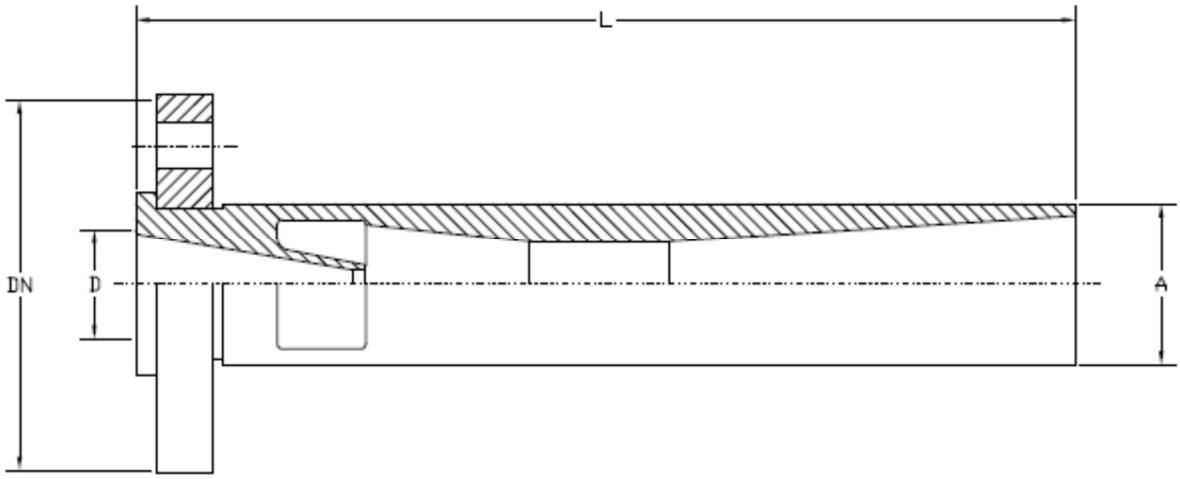
Mod.	DN	Ø d	L	Ø A	Weight kg
GEX*-20**	20 - ¾”	25	215	40	0.8
GEX*-25**	25 - 1”	32	280	50	1.0
GEX*-32**	32 - 1 ¼ “	40	335	50	1.2
GEX*-40**	40 - 1 ½ “	50	420	60	1.5
GEX*-50**	50 - 2”	63	500	80	2.1
GEX*-65**	65 - 2 ½ “	75	560	100	3.0
GEX*-80**	80 - 3”	90	630	120	4.2
GEX-100FL	100 - 4”	100	770	150	7.0

* 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)

Overall dimensions **GEX type-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)

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Flow rate chart **GEX type**

Connections	DN 20 ¾"		DN 25 1"		DN 32 1 " 1/4	
Pressure [bar g]	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	
Pressure [bar g]	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	77.9
4,0	9,67	33,36	17,98	62,03	24.48	84.5
5,0	10,81	37,83	20,1	70,35	27.37	95.8
6,0	11,84	42,03	22	78,10	30	106.4
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

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Flow rate chart **GEX type**

Connections	DN 80 3”		DN 100 4”		
Pressure [bar g]	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	