

**GAS SCRUBBING - GAS COOLING - EXHAUSTING - LIFTING - PRIMING - PUMPING
MIXING - COMPRESSING - AERATING - HUMIDIFYING - CONDENSING**

ELMRIDGE "TLGT" Series Liqui-Jet Exhausters use water or other liquids as the motive fluid, and pump proportionately small volumes of air or gas at high draft using water or other liquid as the motive fluid. The high-velocity jet of liquid discharged from the exhauster nozzle entrains the suction gas or vapour, creating a vacuum, and causing the suction fluid to be pumped. Gases, vapors etc., are drawn into the Exhauster where they mix intimately with, and are compressed by, the Motive liquid. Operating characteristics (water motive / air suction), for standard models are shown below, and special units are also available to meet your specifications. Standard materials of construction are Bronze/Brass, Cast Iron / Steel, 316L Stainless Steel, PVC, CPVC, PVDF, and polypropylene. Other materials are available upon request. Threaded, Flanged, or Sanitary Connections.



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Table TLGT-1

**Suction Capacity (scfh free air) for a TLGT5
Liqui-Jet Exhauster using 70 deg. F Water
(Atmospheric Discharge)**

Suction Press. (in. Hg abs.)	Operating Water Pressure (psig)								
	20	30	40	50	60	80	100	120	140
2	-	-	-	-	2	7	10	16	20
4	-	-	-	13	20	32	42	53	67
6	-	-	10	25	35	64	75	90	105
8	-	5	23	39	56	94	112	129	150
10	7	13	36	54	81	123	148	164	186
12	13	23	52	76	102	145	177	195	219
14	23	34	67	96	124	168	205	225	253
16	28	47	87	113	143	194	233	261	286
18	37	62	104	138	165	223	264	290	323
20	48	78	126	159	196	256	293	327	356
22	67	98	151	188	226	285	326	362	399
24	88	121	185	220	255	317	366	400	435
26	114	157	216	247	287	356	406	433	476
28	149	201	258	293	327	407	446	477	519
29.9	180	243	304	354	385	464	500	537	575
Power Water Consumption (usgpm)	12.0	14.2	16.5	18.2	19.7	22.5	25.0	27.2	29.4

Capacity Factors

Model	TLGT00	TLGT0	TLGT1	TLGT2	TLGT3	TLGT4	TLGT5	TLGT6	TLGT7	TLGT8	TLGT9	TLGT10	TLGT11	TLGT12	TLGT13	TLGT14
Capacity Factor	0.027	0.050	0.091	0.165	0.30	0.55	1.00	1.80	3.24	4.30	5.71	7.57	10.10	13.30	17.70	23.50

PUMPING GASES

APPLICATION EXAMPLES

Table TLGT-2

Approx. Evacuation Time (min. per 100 cu. ft.)
to Given Vacuum for a TLGT5 Liqui-Jet Exhauster using
70 deg. F Water (Atmospheric Discharge)

Suction Press. (in. Hg abs.)	Operating Water Pressure (psig)								
	20	30	40	50	60	80	100	120	140
2	-	-	-	-	34.9	26.8	23.3	21.2	19.2
4	-	-	-	36.1	30.3	23.3	20.3	18.5	16.7
6	-	-	38.6	31.2	26.2	20.2	17.6	16.0	14.6
8	-	48.8	32.8	26.7	22.5	17.4	15.2	13.9	12.6
10	58.3	40.9	27.8	22.7	19.2	15.0	13.1	12.0	10.9
12	48.2	33.8	23.2	19.1	16.3	12.8	11.2	10.3	9.37
14	39.2	27.7	19.2	15.9	13.7	10.8	9.48	8.69	7.95
16	31.5	22.3	15.7	13.1	11.3	8.95	7.91	7.26	6.65
18	24.6	17.5	12.5	10.5	9.12	7.28	6.46	5.94	5.45
20	18.6	13.4	9.68	8.21	7.16	5.76	5.14	4.73	4.35
22	13.4	9.76	7.18	6.14	5.40	4.37	3.91	3.62	3.33
24	9.04	6.65	4.99	4.31	3.83	3.11	2.79	2.60	2.39
26	5.42	3.99	3.09	2.68	2.40	1.96	1.78	1.66	1.53
28	2.43	1.80	1.42	1.24	1.12	0.92	0.85	0.79	0.73
29.9	-	-	-	-	-	-	-	-	-
Power Water Consumption (usgpm)	12.0	14.2	16.5	18.2	19.7	22.5	25.0	27.2	29.4

Table TLGT-3

Approx. Priming Time (min. per 100 cu. ft.)
to Given Lift for a TLGT5 Liqui-Jet Exhauster using
70 deg. F Water (Atmospheric Discharge)

Suction Lift (feet of Water)	Operating Water Pressure (psig)								
	20	30	40	50	60	80	100	120	140
28	-	-	-	-	76.9	59.0	51.3	46.7	42.3
26	-	-	-	79.5	66.7	51.2	44.6	40.6	36.8
24	-	-	85	68.6	57.6	44.3	38.7	35.3	32.1
22	-	107	72.2	58.8	49.5	38.3	33.4	30.6	27.8
20	128	90	61.1	50.0	42.2	33.0	28.8	26.4	24.0
18	106	74	51.1	42.0	35.8	28.1	24.6	22.6	20.6
16	86	61	42.3	35.1	30.1	23.7	20.9	19.1	17.5
14	69	49	34.4	28.8	24.8	19.7	17.4	16.0	14.6
12	54	38.5	27.5	23.1	20.1	16.0	14.2	13.1	12.0
10	41	29.4	21.3	18.1	15.7	12.7	11.3	10.4	9.6
8	29	21.5	15.8	13.5	11.9	9.6	8.6	8.0	7.3
6	19.9	14.6	11.0	9.5	8.4	6.8	6.1	5.7	5.3
4	11.9	8.8	6.8	5.9	5.3	4.3	3.9	3.6	3.4
2	5.3	4.0	3.1	2.7	2.5	2.0	1.9	1.7	1.6
0	-	-	-	-	-	-	-	-	-
Power Water Consumption (usgpm)	12.0	14.2	16.5	18.2	19.7	22.5	25.0	27.2	29.4

EXAMPLE 1:

It is required to evacuate a 25 cubic foot vessel to a pressure of 10 in-Hg abs. in a period of 18 minutes using 100 psig water.

- From table TLGT-2, the TLGT5 exhauster operating with 100 psig water will evacuate a 100 cubic foot volume to a pressure of 10 in-Hg abs. in a time of 13.1 minutes. Therefore, a TLGT5 will evacuate a 25 cubic foot volume to 10 in-Hg abs. in:

$$(25 / 100) \times 13.1 = 3.28 \text{ minutes}$$

- As the required evacuation time is 18 minutes, the required Capacity Factor is:

$$3.28 / 18 = 0.181$$

- The TLGT3 exhauster with a Capacity Factor of 0.30 should be used.

EXAMPLE 2:

The volume of the pump casing and the suction pipe of a pump totals 10 cubic feet. It is required to prime them to a 20 foot lift in a time of 8 minutes using 80 psig water.

- From Table TLGT-3, a TLGT5 exhauster using 80 psig water will prime a 100 cubic foot volume to a lift of 20 feet in a period of 33.0 minutes. Therefore, a TLGT5 will prime 10 cubic feet to a lift of 20 feet in:

$$(10 / 100) \times 33.0 = 3.3 \text{ minutes}$$

- As the required priming time is 8 minutes, the required Capacity Factor is:

$$3.3 / 8 = 0.413$$

- The model TLGT4 exhauster with a Capacity Factor of 0.55 should be used.

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PUMPING GASES