

**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 1

**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

Table 2 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 3

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 4

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 3, 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 4, 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