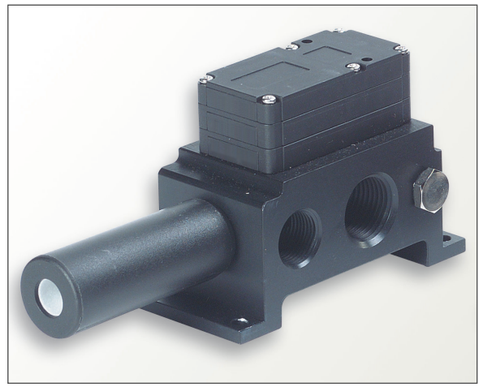
2) TCVM/X-D1: Mini Duplex Type



Mini chip type of pumps in the aluminum connection plate for multiple connections to maximize workability and reliability.

Performance and Specifications Outline

Max. Vacuum Level	Max. 645.16 ~ 712.68 (mmHg.G) Max. −86 ~ −95 (kPa) Max. −25.40 ~ −28.06 (inHg)
Max. Vacuum Flow	Max. 216 (N ℓ /min) Max. 7.627 (scfm)
Supply Air Condition	Compressed Air
Compressed Air Pressure	4~6.2 bar 58.01~89.92 psi
Working Temperature	−20℃~+80℃ −4°F~+176°F
Noise Level	57~65 dBA

Ordering Information

TCVM TCVX	-D1	-5, 10, 20, 30	N	Options
M: Medum Vacuum (-86 kPa) X: Extra Vacuum (-95 kPa) TOTAL Chip Type Vacuum Pump Chip Base Type	Chip base Blocktype	Pump's Size 5 10 20 30	Seal Material (Check V/V – basic installed) N: Nitrile V: Viton E: EPDM	Vacuum S/W -None: Standard -S/W: With Switch -CXC: With External Check V/V

TCVM-D1 / TCVX-D1 Series

Characteristics / Medium Vacuum & Extra Vacuum

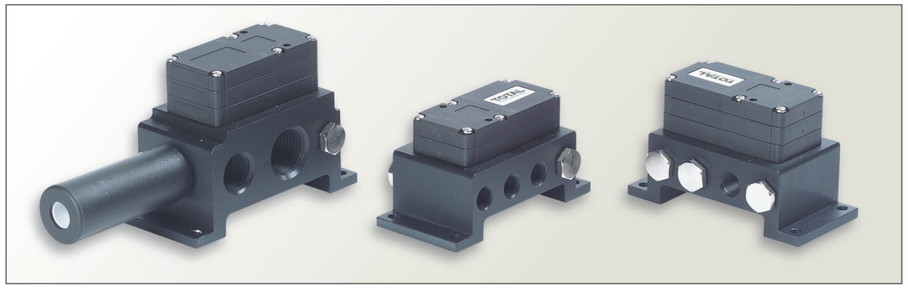
Pump Model	Max. Vacuum (mmHg · G) (-inHg) (-kPa)	Max. Vacuum Flow (N ℓ /min) (scfm)	Air Consumption (N ℓ /min) (scfm)	Noise Level (dBA)	Net Weight (g) (oz)	Pipe Arrangement (∅) Compressed Air (mm) (inches)	Vacuum (mm) (inches)	Exhaust (mm) (inches)
TCVM-D1-5	645 25.39 86	36 1.271	15~21 0.530~0.742	57~63	178 6.278	>2 0.08″	>5 0.20″	1/8″
TCVM-D1-10		72 2.542	30~42 1.059~1.483	58~65	178 6.278	>2 0.08″	>8 0.32″	1/8″
TCVM-D1-20		144 5.085	60~84 2.119~2.966	58~65	278 9.805	>4 0.16″	>10 0.39″	3/8″
TCVM-D1-30		216 7.627	90~125 3.178~4.414	58~65	289 10.193	>4 0.16″	>12 0.47″	3/8″
TCVX-D1-5	712.5 28.05 95	31.4 1.109	21.6 0.763	57~63	178 6.278	>2 0.08″	>5 0.20″	1/8″
TCVX-D1-10		62 2.189	43.2 1.525	60~68	178 6.278	>2 0.08″	>8 0.32″	1/8″
TCVX-D1-20		123 4.343	86.5 3.054	60~68	278 9.805	>4 0.16″	>10 0.39″	3/8″
TCVX-D1-30		188 6.638	129 4.555	60~68	289 10.193	>4 0.16″	>12 0.47″	3/8″

Vacuum flow in (N ℓ /min) (scfm) at different vacuum levels (mmHg · G) (-inHg) (-kPa)

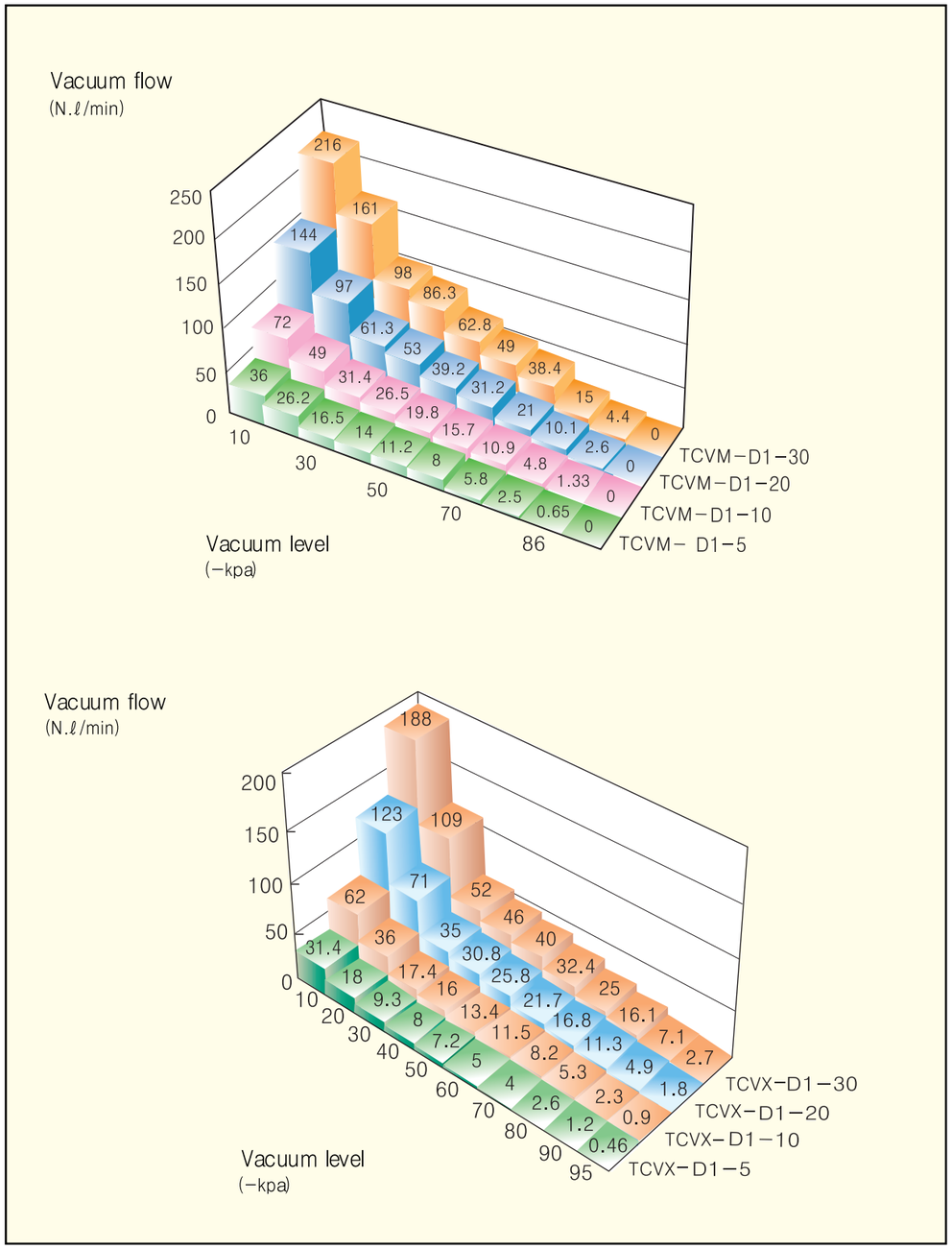
Pump Model \ Vacuum Level	Vacuum Flow (N ℓ /min) (scfm)									
	0 0 0	75 2.95 10	150 5.91 20	225 8.86 30	300 11.81 40	375 14.76 50	450 17.72 60	525 20.67 70	600 23.62 80	675 26.57 90
TCVM-D1-5	36 1.271	26.2 0.925	16.5 0.583	14 0.494	11.2 0.395	8 0.282	5.8 0.205	2.5 0.088	0.65 0.023	–
TCVM-D1-10	72 2.542	49 1.730	31.4 1.109	26.5 0.936	19.8 0.699	15.7 0.554	10.9 0.385	4.8 0.169	1.33 0.047	–
TCVM-D1-20	144 5.085	97 3.425	61.3 2.165	53 1.871	39.2 1.384	31.2 1.102	21 0.742	10.1 0.357	2.6 0.092	–
TCVM-D1-30	216 7.627	161 5.685	98 3.460	86.3 3.047	62.8 2.218	49 1.730	38.4 1.356	15 0.530	4.4 0.155	–
TCVX-D1-5	31.4 1.109	18 0.636	9.3 0.328	8 0.282	7.2 0.254	5 0.177	4 0.141	2.6 0.092	1.2 0.042	0.46 0.016
TCVX-D1-10	62 2.189	36 1.271	17.4 0.614	16 0.565	13.4 0.473	11.5 0.406	8.2 0.290	5.3 0.187	2.3 0.081	0.9 0.032
TCVX-D1-20	123 4.343	71 2.507	35 1.236	30.8 1.088	25.8 0.911	21.7 0.766	16.8 0.593	11.3 0.399	4.9 0.173	1.8 0.064
TCVX-D1-30	188 6.638	109 3.849	52 1.836	46 1.624	40 1.412	32.4 1.144	25 0.883	16.1 0.569	7.1 0.251	2.7 0.095

Time to evacuate a volume (sec/ℓ) (sec/cf) at different vacuum levels (mmHg · G) (-inHg) (-kPa)

Vacuum Level / Pump Model	Evacuation Time (sec/ℓ) (sec/cf)									
	0 0 0	75 2.95 10	150 5.91 20	225 8.86 30	300 11.81 40	375 14.76 50	450 17.72 60	525 20.67 70	600 23.62 80	675 26.57 90
TCVM-D1-5	0	0.200 5.660	0.560 15.932	1.050 29.400	1.610 45.402	2.400 67.680	3.480 96.744	5.440 150.144	11.200 315.840	–
TCVM-D1-10	0	0.100 2.830	0.280 7.966	0.540 15.120	0.800 22.560	1.190 33.558	1.800 50.040	2.750 75.900	5.950 167.790	–
TCVM-D1-20	0	0.050 1.415	0.140 3.983	0.260 7.280	0.420 11.844	0.620 17.484	0.920 25.576	1.420 39.192	2.830 79.806	–
TCVM-D1-30	0	0.040 1.132	0.110 3.130	0.170 4.760	0.310 8.742	0.430 12.126	0.650 18.070	1.030 28.428	2.040 57.528	–
TCVX-D1-5	0	0.270 7.641	0.810 23.045	1.540 43.120	2.400 67.680	3.660 103.212	4.950 137.610	7.030 194.028	10.400 293.280	19.400 549.990
TCVX-D1-10	0	0.130 3.679	0.420 11.949	0.790 22.120	1.190 33.558	1.870 52.734	2.500 69.500	3.480 96.048	5.800 163.560	9.900 280.665
TCVX-D1-20	0	0.070 1.981	0.220 6.259	0.390 10.920	0.640 18.048	0.920 25.944	1.290 35.862	1.750 48.300	2.580 72.756	4.900 138.915
TCVX-D1-30	0	0.050 1.415	0.080 2.276	0.110 3.080	0.250 7.050	0.370 10.434	0.590 16.402	0.980 27.048	1.640 46.248	3.380 95.823

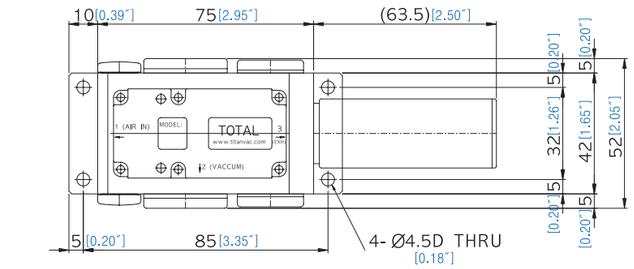


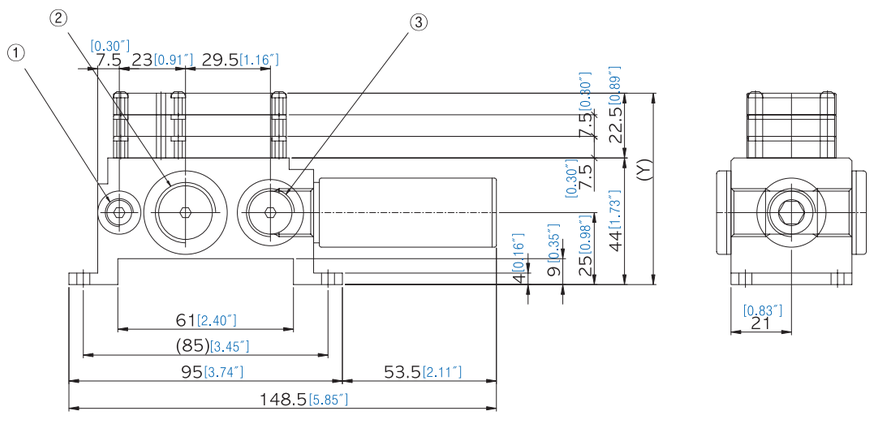
Experimental Performance Curve



TCVM/X-D1
Dimension

Metric(mm) U.S. Imperial(inches)



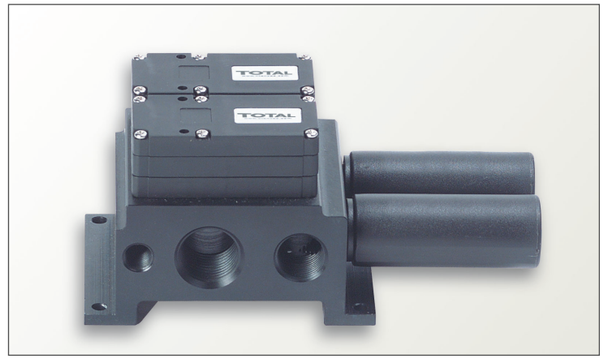


Pump Model	(Y)
TCVM/X-CB5~10	51.5 [2.03"]
TCVM/X-CB20	59 [2.32"]
TCVM/X-CB30	66.5 [2.62"]

① Compressed air - NPSF 1/8"
② Vacuum - NPSF 1/2"
③ Exhaust - NPSF 3/8"

Specifications subject to change without notice.

3) TCVM/X-2: Mini Duplex Type



Mini chip type of pumps with multi-stage nozzle in the aluminum connection plate that has vacuum port and exhaust port together to make it easy to be laid out and maximize the vacuum flow.

Performance and Specifications Outline

Max. Vacuum Level	Max. 645.16 ~ 712.68 (mmHg.G) Max. -86 ~ -95 (kPa) Max. -25.40 ~ -28.06 (nHg)
Max. Vacuum Flow	Max. 403 (N ℓ/min) Max. 14.230 (scfm)
Supply Air Condition	Compressed Air
Compressed Air Pressure	4~6.2 bar 58.01~89.92 psi
Working Temperature	-20℃~+80℃ -4°F~+176°F
Noise Level	57~65 dBA

Ordering Information

TCVM TCVX	-D2	-20, 30, 40, 60	N	Options
M: Medum Vacuum (-86 kPa) X: Extra Vacuum (-95 kPa) TOTAL Chip Type Vacuum Pump	Duplex Type	Pump's Size 20 30 40 60	Seal Material (Check V/V – basic installed) N: Nitrile V: Viton E: EPDM	Vacuum S/W -None: Standard -S/W: With Switch -CXC: With External Check V/V