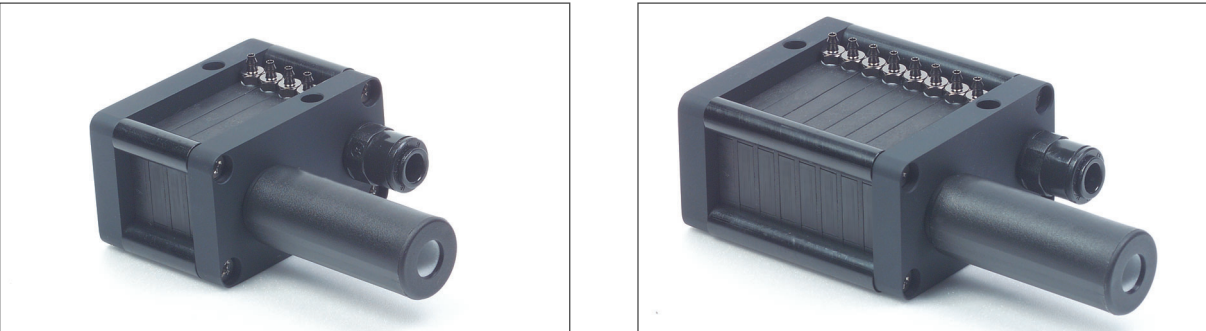


5) TCVM/X SM: Mini Multiple Stack Type

Integrated of mini chip type of pumps with multi-stage nozzle as a manifold.
Possible to be put together from 2(two) to max. 12(twelve), and can be operated by 1(one) air supply line.
When a line has vacuum breaking, there is no effect on the other line of pumps.
Therefore, this can improve reliability on the process having much vacuum leakage or on the process using many suction cups.



Performance and Specifications Outline

Max. Vacuum Level	Max. 712.68 (mmHg.G) Max. -95 (kPa) Max. -28.06 (inHg)
Max. Vacuum Flow	Different by the number of stacks. Max. 31.2~ 980 (N ℓ/min) Max. 1.102 ~ 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	51~68 dBA

Ordering Information

TCVM TCVX	5, 10	X()	SM	N	Option
M: Medium Vacuum (-86 kPa) X: Extra Vacuum (-95 kPa) TOTAL Chip Type Vacuum pump	Basic Stack Pump's Size 5: 31.2 (N ℓ/min) 1.102 (scfm) 10: 61.8 (N ℓ/min) 2.182 (scfm)	The Number of Pumps Can be stacked from 2(two) to 12 (twelve),	Stack Manifold Type	Seal Material (Check V/V – basic installed) N: Nitrile V: Viton E: EPDM	Vacuum S/W -None: Standard -S/W: With switch -CXC: External Check V/V

TCVM5, 10x() SM Type: Mini Stack Manifold

Characteristics / Medium Vacuum

Pump Model	Max. Vacuum (mmHg · G) (-inHg) (-k Pa)	Max. Vacuum Flow (N ℓ/min) (scfm)	Air Consumption (N ℓ/min) (scfm)	Noise Level (dBA)	Net Weight (g) (oz)	Pipe Arrangement (Ø)		
						Compressed Air (mm) (inches)	Vacuum (mm) (inches)	Exhaust (mm) (inches)
TCVM5x2 SM	645 25.39 86	36 x 2 1.278 x 2	31~42 1.095~1.483	54~68 dBA	137 4.832	≥2 0.08"	≥4 0.16"	3/8" x 1
TCVM5x3 SM		x 3	46~64 1.624~2.260		155 5.467	≥2 0.08"	≥4 0.16"	3/8" x 1
TCVM5x4 SM		x 4	40~84 1.412~2.966		173 6.102	≥4 0.16"	≥4 0.16"	3/8" x 1
TCVM5x5 SM		x 5	74~104 2.613~3.672		191 6.737	≥4 0.16"	≥4 0.16"	3/8" x 1
TCVM5x6 SM		x 6	90~126 3.178~4.449		209 7.371	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM5x7 SM		x 7	105~148 3.708~5.226		227 8.006	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM5x8 SM		x 8	120~168 4.237~5.932		245 8.641	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVM5x9 SM		x 9	138~190 4.873~6.709		263 9.276	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVM5x10 SM		x 10	152~211 5.367~7.451		281 9.910	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVM5x11 SM		x 11	166~234 5.862~8.263		299 10.546	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVM5x12 SM		x 12	184~259 6.497~9.145		317 11.181	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVM10x2 SM	645 25.39 86	72 x 2 2.542 x 2	60~85 2.119~3.001	57~68 dBA	137 4.832	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM10x3 SM		x 3	91~128 3.213~4.520		155 5.467	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM10x4 SM		x 4	122~172 4.308~6.073		173 6.102	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM10x5 SM		x 5	153~215 5.403~7.592		191 6.737	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM10x6 SM		x 6	182~261 6.427~9.216		209 7.371	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVM10x7 SM		x 7	214~303 7.556~10.699		227 8.006	≥8 0.32"	≥4 0.16"	3/8" x 1
TCVM10x8 SM		x 8	246~341 8.686~12.041		245 8.641	≥8 0.32"	≥4 0.16"	3/8" x 2
TCVM10x9 SM		x 9	275~384 9.710~13.559		263 9.276	≥8 0.32"	≥4 0.16"	3/8" x 2
TCVM10x10 SM		x 10	304~430 10.734~15.184		281 9.910	≥8 0.32"	≥4 0.16"	3/8" x 2
TCVM10x11 SM		x 11	338~472 11.935~16.667		299 10.546	≥8 0.32"	≥4 0.16"	3/8" x 2
TCVM10x12 SM		x 12	372~512 13.136~18.079		317 11.181	≥8 0.32"	≥4 0.16"	3/8" x 2

TCVX5, 10x() SM Type: Mini Stack Manifold

Characteristics / 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 (Ø)		
						Compressed Air (mm) (inches)	Vacuum (mm) (inches)	Exhaust (mm) (inches)
TCVX5x2 SM	712.5 28.05 95	31.2 x 2 1.102x 2	40~55 1.412~1.942	57~68 dBA	137 4.832	≥2 0.08"	≥4 0.16"	3/8" x 1
TCVX5x3 SM		x 3	59~84 2.083~2.966		155 5.467	≥2 0.08"	≥4 0.16"	3/8" x 1
TCVX5x4 SM		x 4	77~109 2.719~3.849		173 6.102	≥4 0.16"	≥4 0.16"	3/8" x 1
TCVX5x5 SM		x 5	96~135 3.390~4.767		191 6.737	≥4 0.16"	≥4 0.16"	3/8" x 1
TCVX5x6 SM		x 6	117~164 4.131~5.791		209 7.371	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVX5x7 SM		x 7	136~192 4.802~6.780		227 8.006	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVX5x8 SM		x 8	156~218 5.508~7.698		245 8.641	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVX5x9 SM		x 9	180~247 6.356~8.722		263 9.276	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVX5x10 SM		x 10	198~275 6.992~9.710		281 9.910	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVX5x11 SM		x 11	216~305 7.627~10.770		299 10.546	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVX5x12 SM		x 12	239~337 8.439~11.900		317 11.181	≥6 0.24"	≥4 0.16"	3/8" x 2
TCVX 10x2 SM	645 25.39 86	61.8 x 2 2.182x 2	79~112 2.790~3.955	57~68 dBA	137 4.832	≥2 0.24"	≥4 0.16"	3/8" x 1
TCVX 10x3 SM		x 3	117~166 4.131~5.862		155 5.467	≥2 0.24"	≥4 0.16"	3/8" x 1
TCVX 10x4 SM		x 4	158~222 5.579~7.839		173 6.102	≥4 0.24"	≥4 0.16"	3/8" x 1
TCVX 10x5 SM		x 5	199~280 7.027~9.887		191 6.737	≥4 0.24"	≥4 0.16"	3/8" x 1
TCVX 10x6 SM		x 6	236~340 8.333~12.006		209 7.371	≥6 0.24"	≥4 0.16"	3/8" x 1
TCVX 10x7 SM		x 7	277~394 9.781~13.912		227 8.006	≥6 0.32"	≥4 0.16"	3/8" x 1
TCVX 10x8 SM		x 8	320~445 11.299~15.713		245 8.641	≥6 0.32"	≥4 0.16"	3/8" x 2
TCVX 10x9 SM		x 9	356~499 12.571~17.620		263 9.276	≥6 0.32"	≥4 0.16"	3/8" x 2
TCVX 10x10 SM		x 10	396~560 13.983~19.774		281 9.910	≥6 0.32"	≥4 0.16"	3/8" x 2
TCVX 10x11 SM		x 11	440~613 15.537~21.645		299 10.546	≥6 0.32"	≥4 0.16"	3/8" x 2
TCVX 10x12 SM		x 12	483~665 17.055~23.482		317 11.181	≥6 0.32"	≥4 0.16"	3/8" x 2

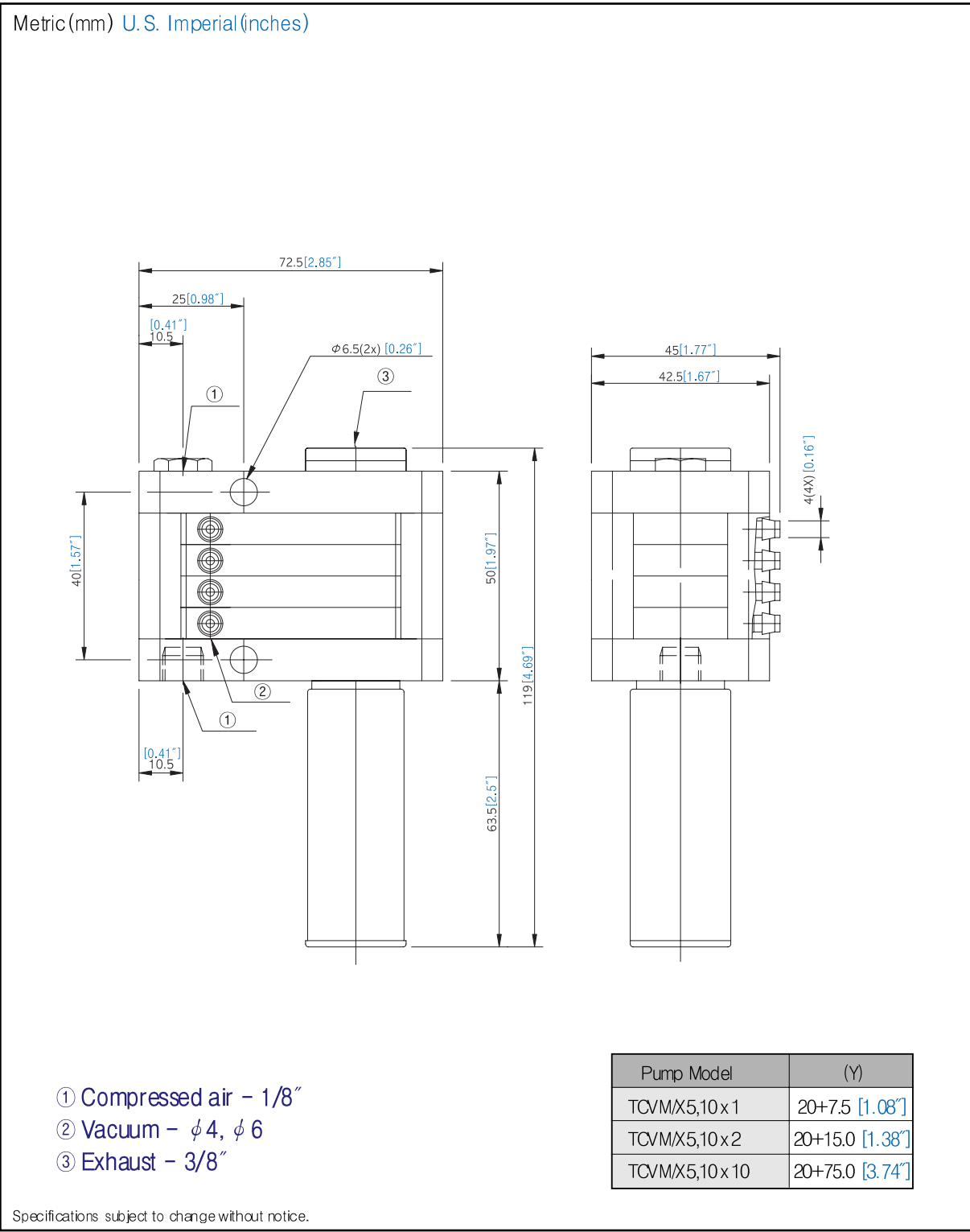
Vacuum flow in (N ℓ /min) (scfm) at different vacuum levels (mmHg · G) (-inHg) (-kPa)

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
TCVM5x1 SM	36.2 1.278	22 0.777	12 0.424	9.7 0.343	8 0.282	5.6 0.198	4.7 0.166	2.1 0.074	0.78 0.028	—
TCVM10x1 SM	72.0 2.542	45.4 1.603	23 0.812	19.8 0.699	16.3 0.576	12.6 0.445	9.3 0.328	4.3 0.152	1.48 0.052	—
TCVX5x1 SM	31.2 1.102	19 0.671	9.8 0.346	8.3 0.293	7.1 0.251	4.9 0.173	4 0.141	2.8 0.099	1.3 0.046	0.47 0.017
TCVX 10x1 SM	61.8 2.182	38 1.342	19.6 0.692	17 0.600	14 0.494	11 0.388	8 0.282	5.6 0.198	2.6 0.092	0.94 0.033

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

Pump Model	Vacuum Level									
	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
TCVM5x1 SM	0	0.200 5.660	0.660 18.777	1.300 36.400	1.690 47.658	2.720 76.704	4.400 122.320	6.500 179.400	12.900 363.780	—
TCVM10x1 SM	0	0.120 3.396	0.280 7.966	0.580 16.240	0.810 22.842	1.220 34.404	1.840 51.152	2.880 79.488	5.320 150.024	—
TCVX5x1 SM	0	0.270 7.641	0.820 23.329	1.540 43.120	2.600 73.320	3.650 102.930	4.930 137.054	7.000 193.200	10.800 304.560	—
TCVX 10x1 SM	0	0.130 3.679	0.410 11.665	0.770 21.560	1.240 34.968	1.840 51.888	2.510 69.778	3.520 97.152	5.900 166.380	—

TCVM(X)5, 10 x 4 SM
Dimension



TCVM(X)5, 10 x 8 SM
Dimension

