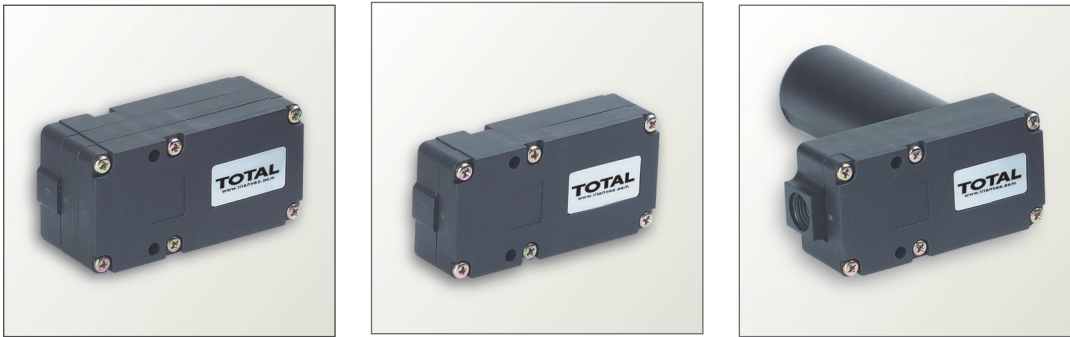


1) TCVM/X: Mini Chip Type

Equipped with multi-stage nozzle, realize the max. vacuum flow by the min. air supply.
Can save energy 2(two) times more than the current single nozzle pumps.

►Use of Application – vacuum lifting Device, vacuum packaging/cartonning, valve leakage inspection, semiconductor, pharmaceutical reactor, other manufacturing automation



Performance and Specifications Outline

Max. Vacuum Level	Max. 645 (mmHg.G) Max. -25.40 (inHg) Max. -86 (kPa)
Max. Vacuum Flow	Max. 36~215 (N. ℓ /min) Max. 1.271~7.592 (scfm)
Supply Air Condition	Compressed Air
Compressed Air Pressure	4~6.2 bar (Max. 6.2 bar) 58.01~89.92 psi
Working Temperature	-20℃~+80℃ -4°F~+176°F
Noise Level	51~68 dBA

Ordering Information

TCVM	5, 10, 20, 30	-A, B, C	N	Option
Total Chip Type Vacuum Pump (Medium Vacuum)	Pump's Size (Open Flow)	Base Type	Seal Material	Vacuum S/W & Others
	5	A: Airin (M5) B: Airin (1/8") Exhaust: internal silencer C: Airin (1/8") Exhaust: 3/8" external silencer	(Check V/V – basic installed) N: Nitrile V: Viton E: EPDM	-None : Standard
	10			
	20			
	30			

TCVM Series: Mini Chip Type

Characteristics / Medium 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)
TCVM5-A	645 25.39 86	36 1.271	15~22 0.530~0.777	57~68	26 0.917	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVM5-B		36 1.271	15~22 0.530~0.777	57~64	33 1.164	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVM5-C		36 1.271	15~22 0.530~0.777	52~62	44 1.552	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVM10-A		72 2.542	30~42 1.059~1.483	57~68	26 0.917	≥2 0.08"	≥8 0.32"	≥10 0.39"
TCVM10-B		72 2.542	30~42 1.059~1.483	57~64	33 1.164	≥2 0.08"	≥8 0.32"	≥10 0.39"
TCVM10-C		72 2.542	30~42 1.059~1.483	52~65	44 1.552	≥2 0.08"	≥8 0.32"	≥10 0.39"
TCVM20-B		144 5.085	60~84 2.119~2.966	61~69	44 1.552	≥4 0.16"	≥10 0.39"	≥3/8"
TCVM20-C		144 5.085	60~84 2.119~2.966	61~69	55 1.940	≥4 0.16"	≥10 0.39"	≥3/8"
TCVM30-C		215 7.592	90~107 3.178~3.778	61~69	66 2.330	≥6 0.24"	≥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
TCVM5		36 1.271	25 0.883	15 0.530	13 0.459	10 0.353	8 0.282	5.7 0.201	2.4 0.085	0.70 0.025	
TCVM10		72 2.542	47 1.660	30 1.059	27 0.953	20 0.706	16 0.565	11.8 0.417	4.8 0.169	1.32 0.047	
TCVM20		144 5.085	97 3.425	60 2.119	49 1.730	39 1.377	31 1.095	22.4 0.791	9.7 0.343	2.60 0.092	
TCVM30		215 7.592	146 5.155	93 3.284	74 2.613	60 2.119	46 1.624	31.2 1.102	16 0.565	4.00 0.141	

TCVM5: A, B, C type available TCVM20: B, C type available
TCVM10: A, B, C type available TCVM30: only C type (external silencer) available

TCVX Series: Mini Chip Type

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)
TCVX5-A	712.5 28.05 95	31.2 1.102	21.6~24.3 0.763~0.858	61~66	26 0.917	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVX5-B		31.2 1.102	21.6~24.3 0.763~0.858	58~65	33 1.164	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVX5-C		31.2 1.102	21.6~24.3 0.763~0.858	52~62	44 1.552	≥2 0.08"	≥5.2 0.20"	≥8 0.32"
TCVX10-A		62 2.189	43.2~48.6 1.525~1.716	62~66	26 0.917	≥2 0.08"	≥8 0.32"	≥10 0.39"
TCVX10-B		62 2.189	43.2~48.6 1.525~1.716	60~66	33 1.164	≥2 0.08"	≥8 0.32"	≥10 0.39"
TCVX10-C		62 2.189	43.2~48.6 1.525~1.716	52~62	44 1.552	≥2 0.08"	≥8 0.20"	≥10 0.39"
TCVX20-B		123 4.343	86.4~97 3.051~3.425	60~66	44 1.552	≥4 0.16"	≥10 0.39"	3/8"
TCVX20-C		123 4.343	86.4~97 3.051~3.425	52~64	55 1.940	≥4 0.16"	≥10 0.39"	3/8"
TCVX30-C		184 6.497	130~145 4.590~5.120	52~64	66 2.33	≥6 0.24"	≥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
TCVX5		31.2 1.102	18.2 0.643	9 0.318	7.9 0.279	6.6 0.233	5.4 0.191	4.2 0.148	3 0.106	1.2 0.042	0.5 0.018
TCVX10		62 2.189	36 1.271	18 0.636	15.8 0.558	13.5 0.477	11 0.388	8.3 0.293	5.2 0.184	2.4 0.085	0.9 0.032
TCVX20		123 4.343	73 2.578	35 1.236	32.3 1.141	27 0.953	22 0.777	17.6 0.621	11.7 0.413	4.9 0.173	1.8 0.064
TCVX30		184 6.497	111 3.919	52.8 1.864	47.2 1.667	40.8 1.441	32.5 1.148	26 0.918	17.7 0.625	7.5 0.265	2.8 0.099

TCVX5: A, B, C type available TCVX20: B, C type available
TCVX10: A, B, C type available TCVX30: only C type (external silencer) available

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

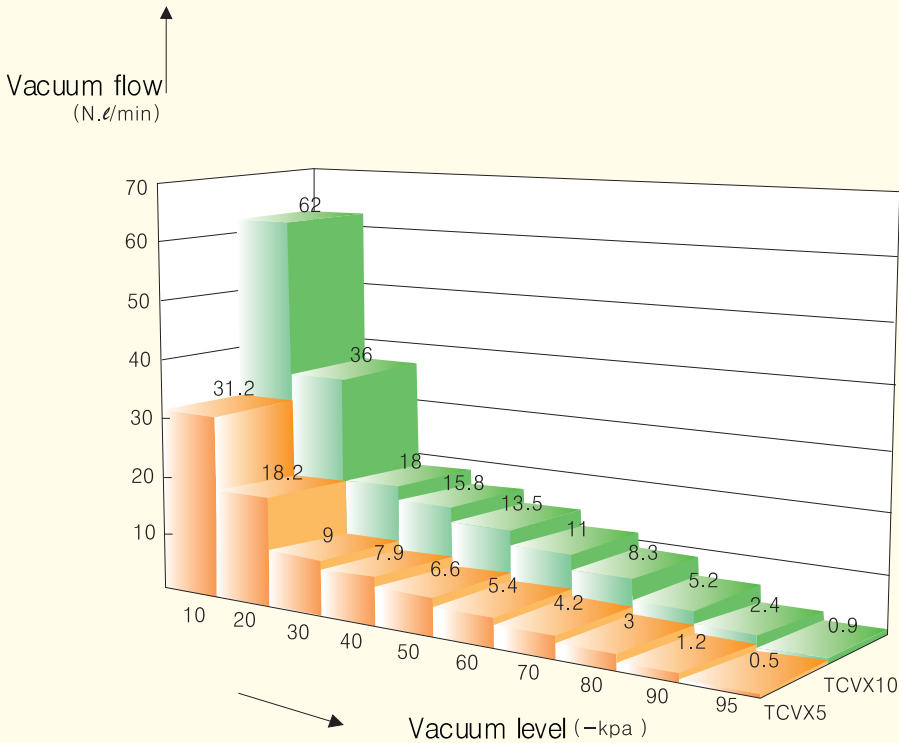
Pump Model	Vacuum Level	Evacuation Time (sec/ ℓ) (sec/cf)									
		0 0 0	75 2.95 10	150 5.91 20	225 8.86 30	300 11.81 40	375 14.76 50	450 17.72 60	525 20.67 70	600 23.62 80	675 26.57 90
TCVM5	0	0.200 5.660	0.660 18.777	1.300 36.400	1.690 47.658	2.720 76.704	4.400 122.320	6.500 179.400	12.900 363.780	—	—
TCVM10	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	—	—
TCVM20	0	0.062 1.755	0.150 4.268	0.270 7.560	0.420 11.844	0.630 17.766	0.910 25.298	1.400 38.640	2.620 73.884	—	—
TCVM30	0	0.041 1.160	0.112 3.186	0.188 5.264	0.316 8.911	0.455 12.831	0.654 18.181	1.020 28.152	1.980 55.836	—	—
TCVX5	0	0.270 7.641	0.820 23.329	1.540 43.120	2.600 73.320	3.650 10.293	4.930 137.054	7.000 193.200	10.800 304.560	—	—
TCVX10	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	—	—
TCVX20	0	0.068 1.924	0.220 6.259	0.390 10.920	0.620 17.484	0.940 26.508	1.250 34.750	1.750 48.300	2.600 73.320	—	—
TCVX30	0	0.048 1.358	0.161 4.580	0.288 8.064	0.464 13.085	0.680 19.176	0.942 26.188	1.300 35.880	1.910 53.862	3.800 107.730	—



How to Read Graph

Compressed Air Pressure
at 4.0~6.2 bar

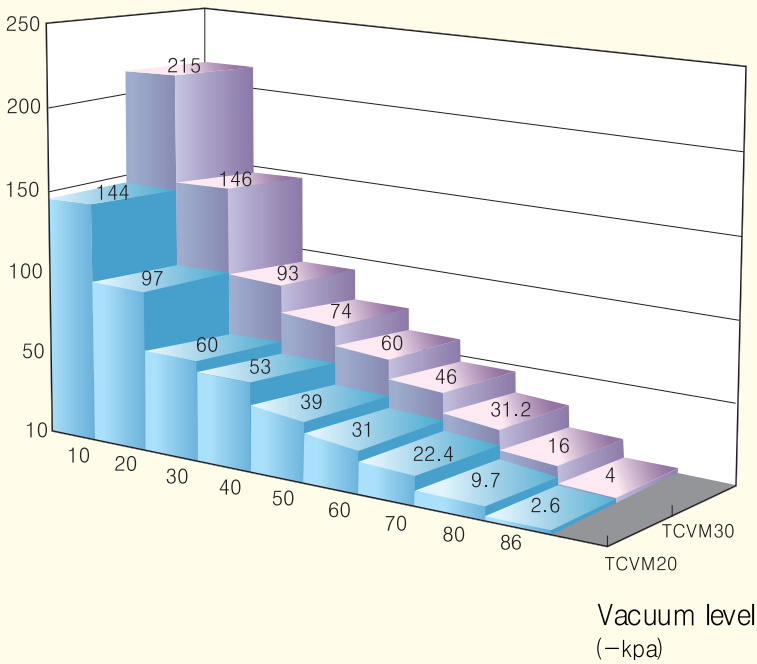
y : It shows the vacuum pump's vacuum flows.
Vacuum pump size is described by the volume (N ℓ /min, scfm, M³/hr)
of sucking flow in an atmospheric pressure when vacuum level is 0.



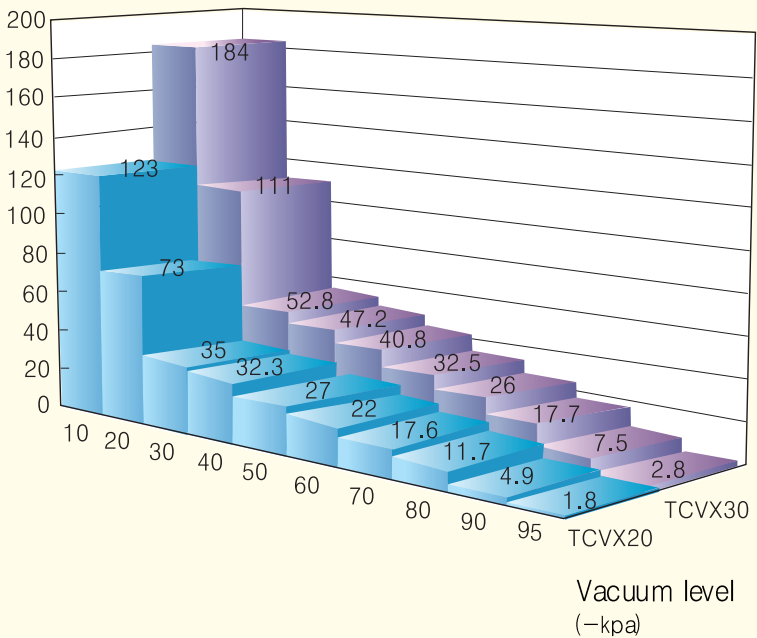
x: Vacuum level.
It shows vacuum level up to almost perfect vacuum,
-100 kPa in an atmospheric pressure.

Conclusion: This graph is an inverse proportion that shows that the
volume of vacuum pump's sucking flow is becoming near to 0(zero)
when vacuum level is getting increased.

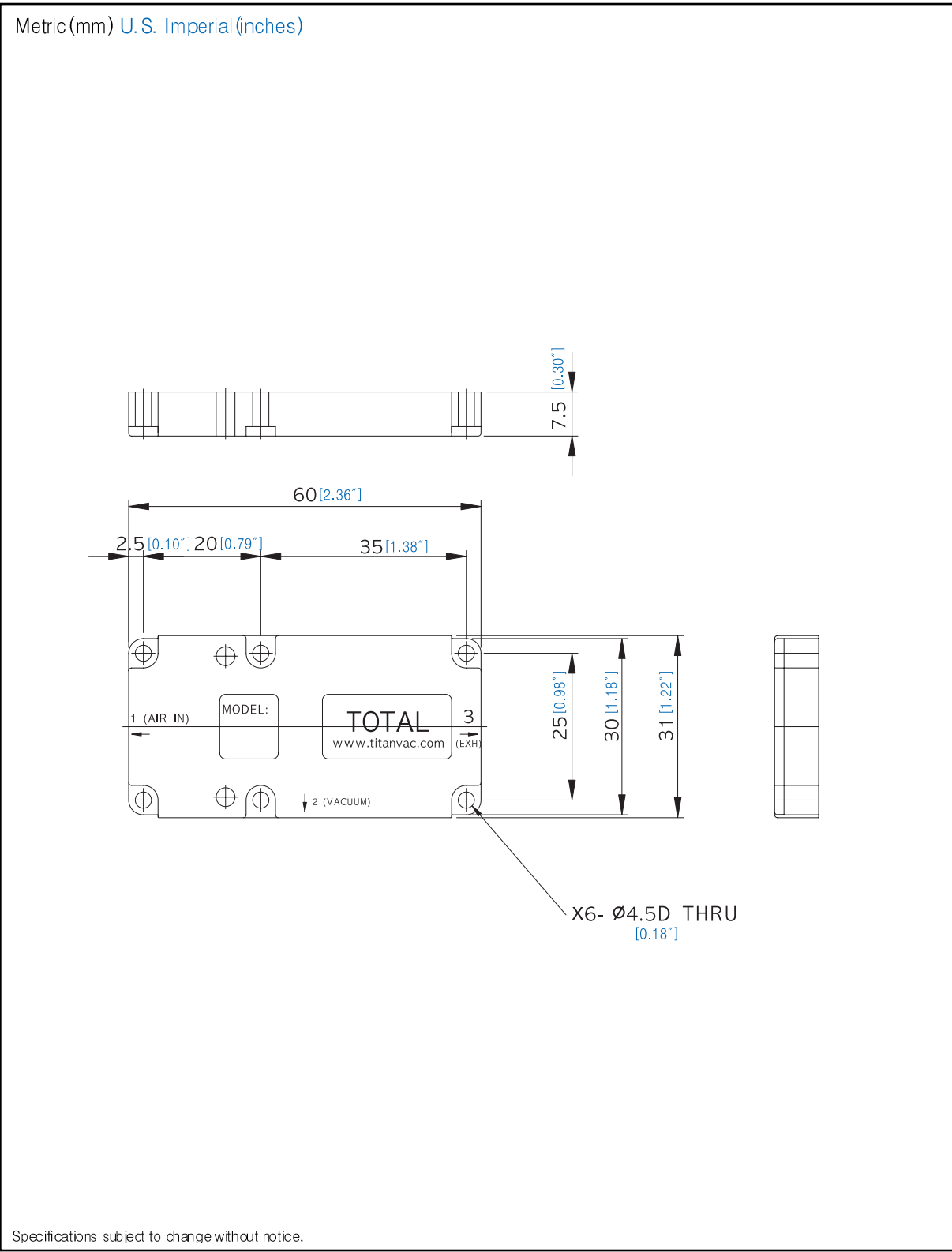
Vacuum flow
(N.ℓ/min)



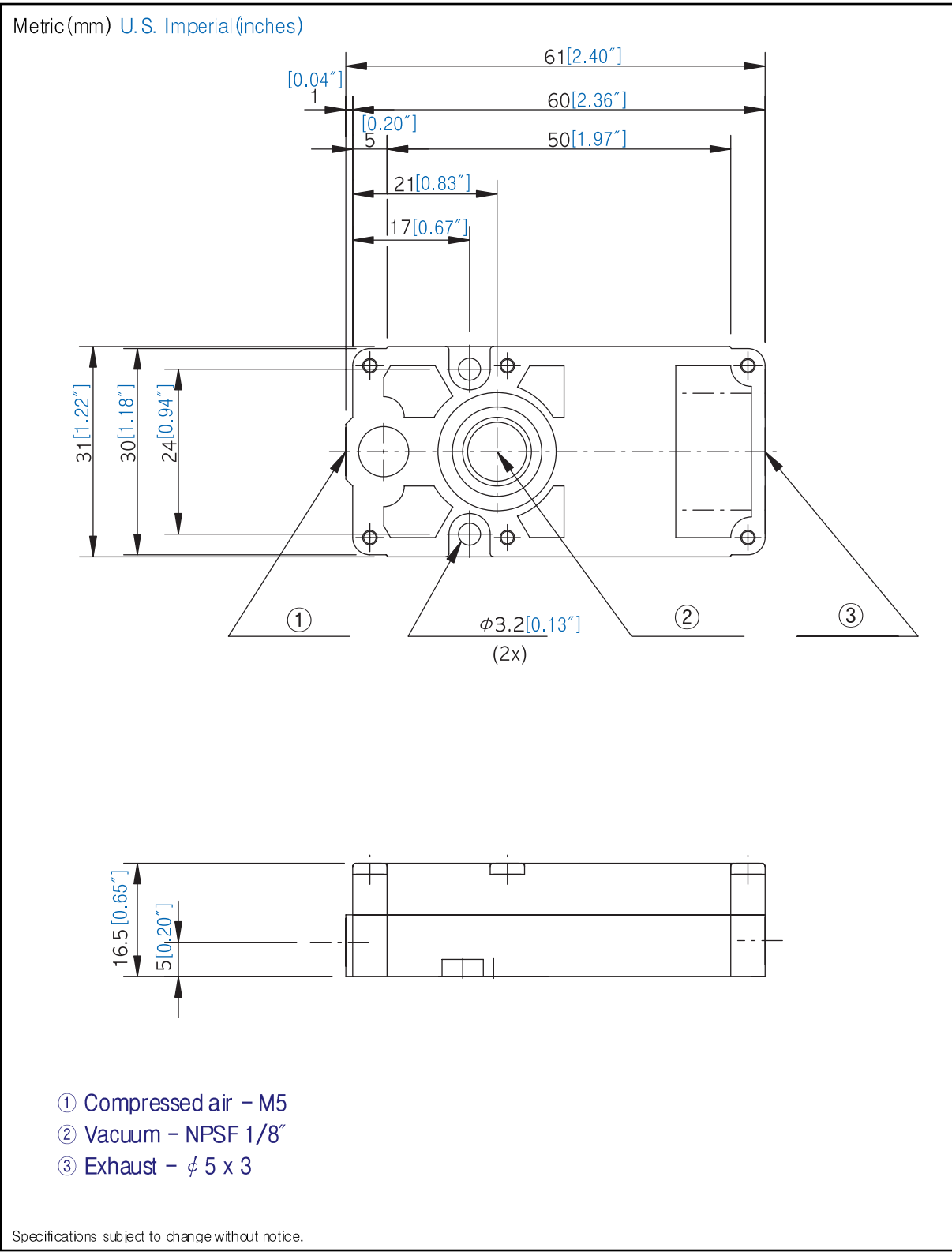
Vacuum flow
(N.ℓ/min)



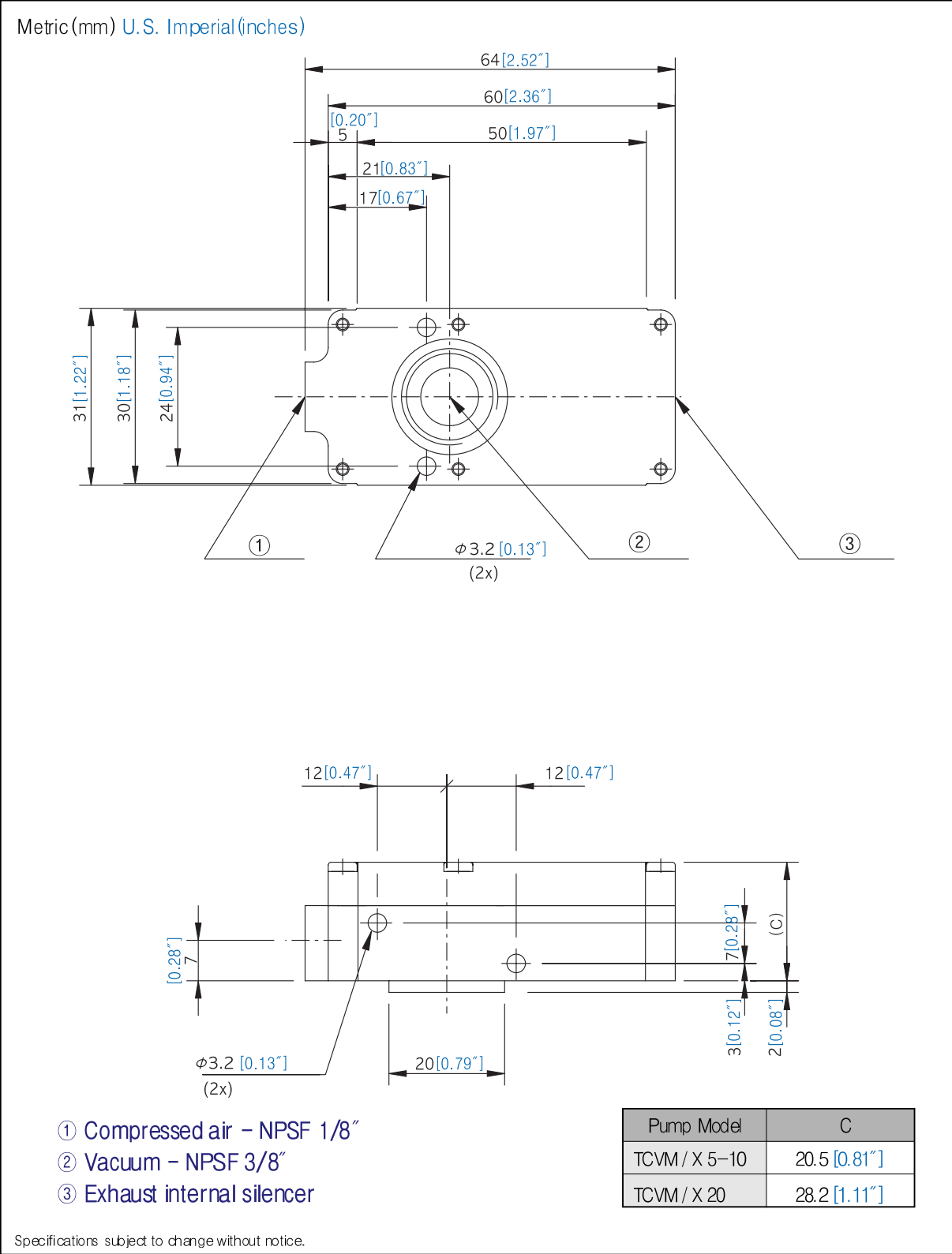
Mini Chip Type



TCVM / TCVX-A Type



TCVM / TCVX-B Type



TCVM / TCVX-C Type

