





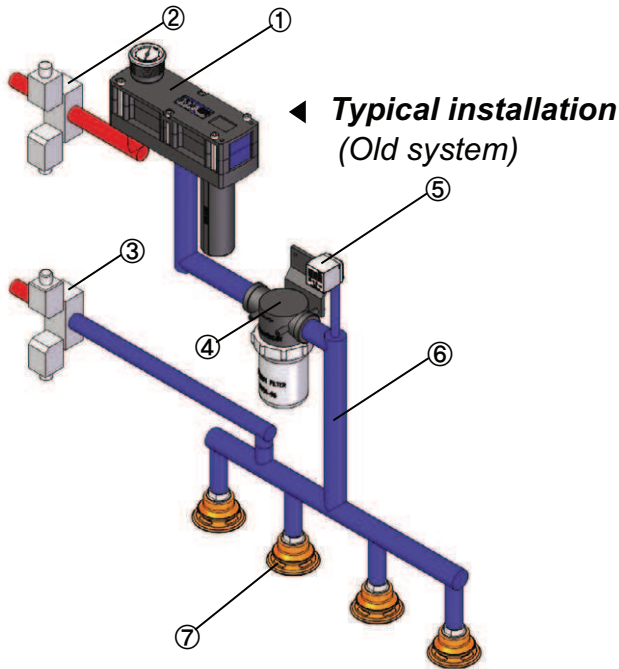
# TURTLE PUMPS



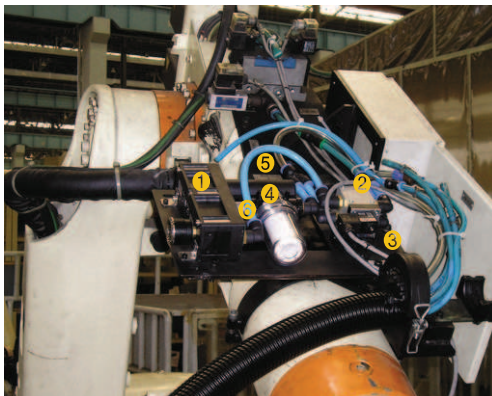


Effective cost saving with VMECA improved system

VMECA® Turtle pump with integral vacuum filter and silencer can be combined with the optional vacuum On/Off control valve, vacuum release valve and vacuum switch to create an optimal vacuum solution for many applications. The VMECA® Turtle pump and optional components, due to the compact design and size, can be mounted close to the point of use reducing system volume and maintenance while improving cycle time.

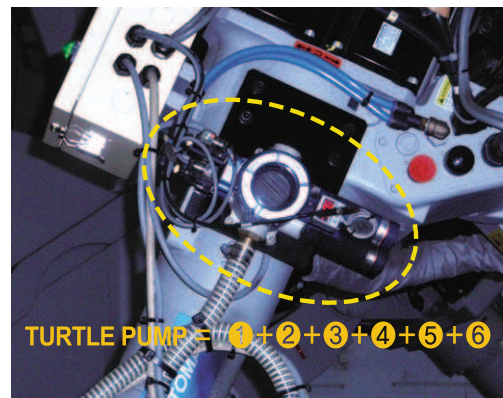
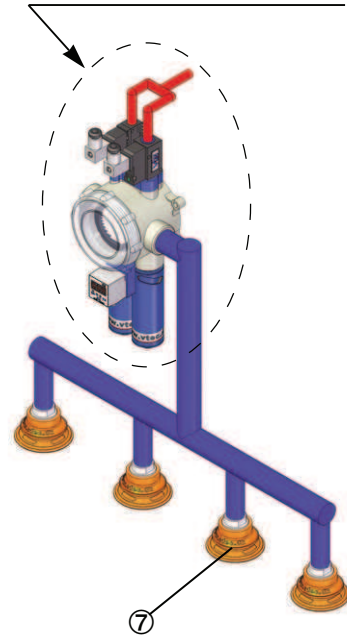


- ① Vacuum pump
- ② Air control valve
- ③ Vacuum release control valve
- ④ Vacuum filter
- ⑤ Vacuum switch
- ⑥ Vacuum pipe line
- ⑦ Suction cup



▼ VMECA® Improved system (New solution with Turtle Pump)

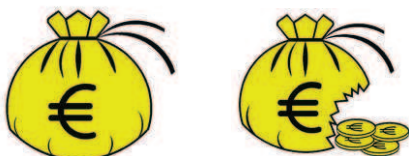
①+②+③+④+⑤+⑥



If each items goes through under the process same as below?

Select model → Quotation → PO → Store in → Q.C → Installation → Payment  
 (Technical dept) (Purchase dept.) (Inventory) (QC dept.) (assembly dept.) (Account)

High installation and maintenance Costs !!



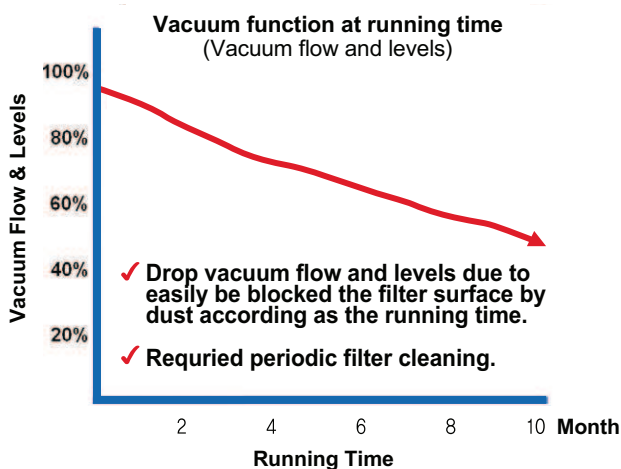
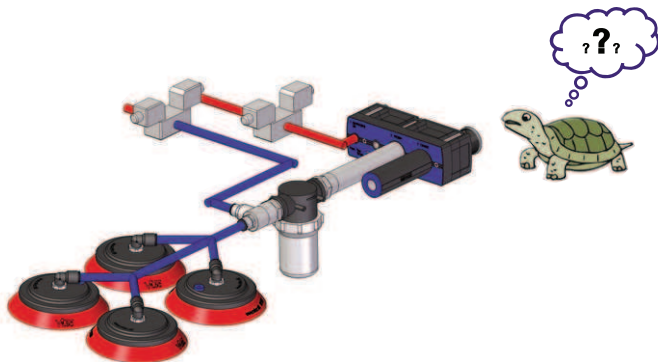
Very LOW installation and maintenance Costs !!



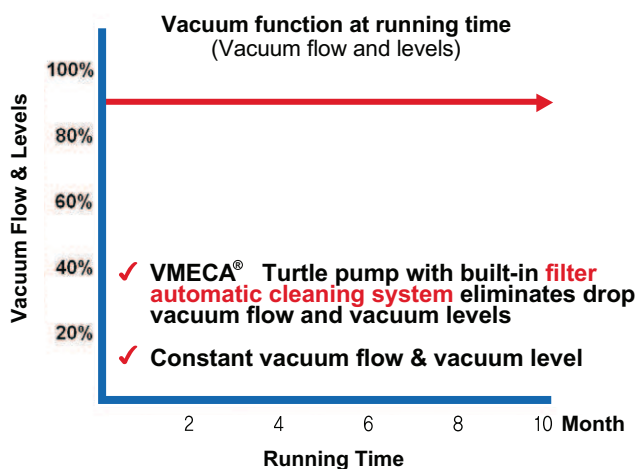
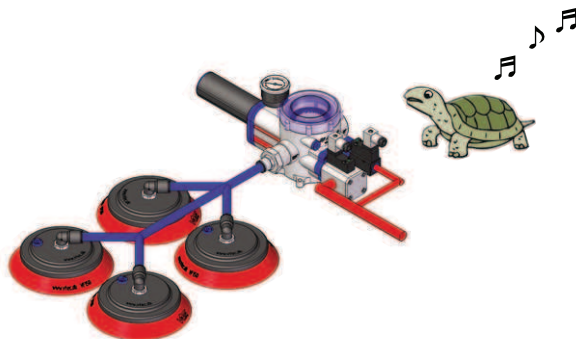


## Comparison of Vacuum Efficiency

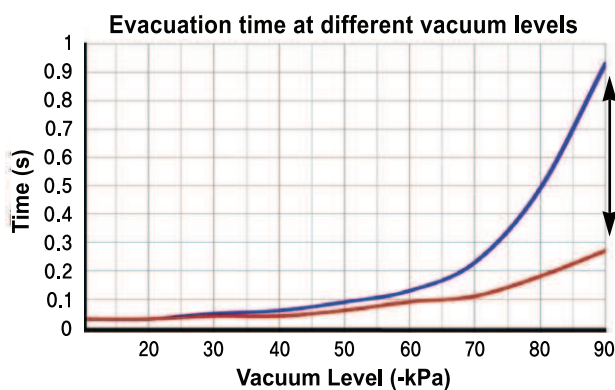
### ▼ Typical installation (Old system)



### ▼ VMECA® Improved system (New solution with Turtle Pump)



## Comparison of Evacuation time at different Vacuum levels



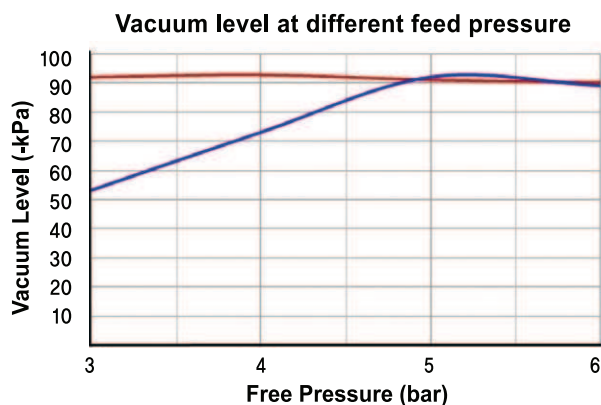
■ Typical installation (Old System)

About 3 times faster !!

■ VMECA® Improved System VTC3031.. Quick evacuation time by minimizing vacuum area with all-in-one system



## Comparison of Vacuum level at different feed pressure



■ VMECA® Improved System  
■ Typical installation (Old System)

• High operational reliability despite fluctuating or low compressed air pressure (Vacuum level  $\pm 2\%$ )



Enable to decide the series of VMECA TURTLE PUMP the performance you need.

**MIDI 3031 Series**



► **VTC Series**

**High vacuum level** (-92 kPa) at **low compressed air pressure** (3~6 bar).

High vacuum flow rate to compensate for fluctuating or low compressed air pressure.

Suitable for sealed system applications such as lifting metal sheets or glass plate.

► **VTCL Series**

**Extra high vacuum flow rate** and suitable for **non-sealed system** applications.

Vacuum level of -75 kPa at a compressed air pressure of 6 bar.

Enable to decide the series of VMECA TURTLE PUMP the performance you need.

**MIDI** 3032 Series



► **VTC Series**

**High vacuum level** (-92 kPa) at **low compressed air pressure** (3~6 bar).

High vacuum flow rate to compensate for fluctuating or low compressed air pressure.

Suitable for sealed system applications such as lifting metal sheets or glass plate.

► **VTCL Series**

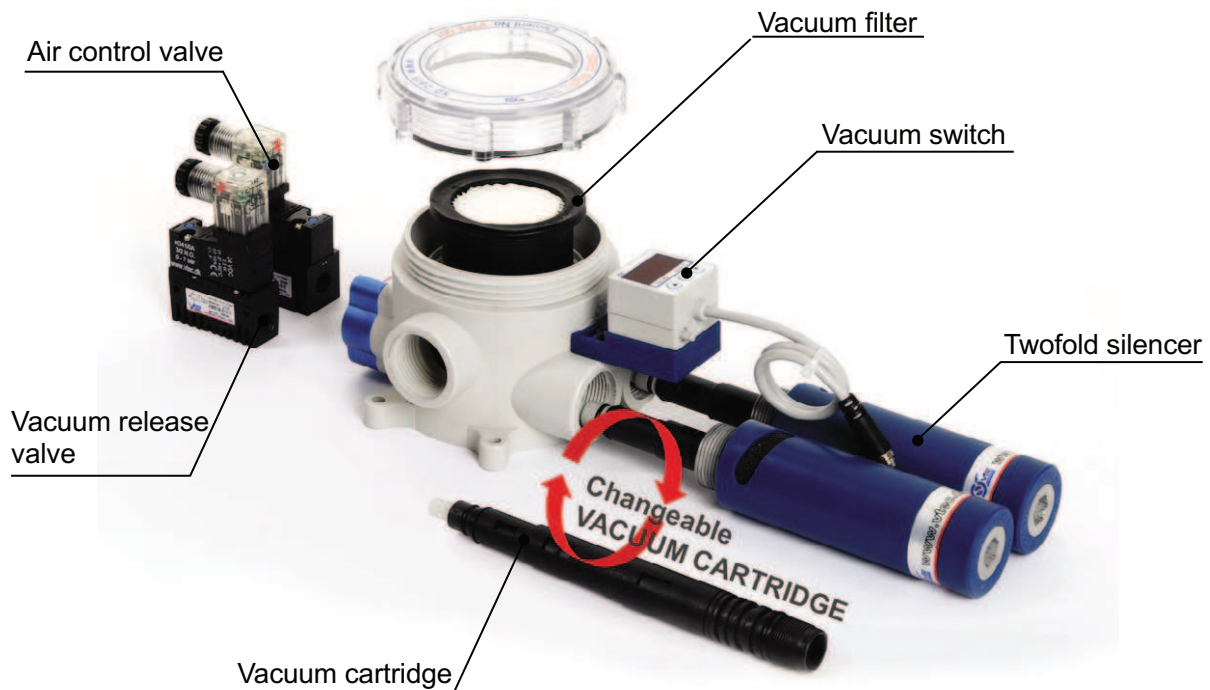
**Extra high vacuum flow rate** and suitable for **non-sealed system** applications.

Vacuum level of -75 kPa at a compressed air pressure of 6 bar.

**Structure and Main advantage of Midi Turtle Pump**

The VMECA Turtle Pump is recommended for applications requiring a compact, complete and easy to install, minimal maintenance.

**MIDI**



- ✓ **Patented design**
- ✓ **All-in-one compact design**
- ✓ **Light weight**
- ✓ **Multi vacuum ports**
- ✓ **Vacuum filter self cleaning system**
  - Eliminates periodic maintenance
- ✓ **VMECA Vacuum Cartridge**
  - High vacuum flow rate
  - High operational reliability despite fluctuating or low compressed air pressure
- ✓ **Twofold silencer**
  - Designed specially assure low noise level

Structure and Main advantage of Mega Turtle Pump

MEGA

■ VMECA® vacumm filter

- Prevents dust coming into the pump
- Pleated media for high dirt holding capacity
- Moisture, oil resistant
- Washable

■ VMECA® air control valve

- Single or Double solenoid valve

■ VMECA® vacuum gauge or sensor

- Indicates vacuum level
- Digital output signal when set vacuum level is achieved

■ VMECA® free-flow silencer

- Assures low noise level
- Free air flow design to minimize vacuum loss due to back flow
- No dust collection

■ VMECA® vacumm release control valve

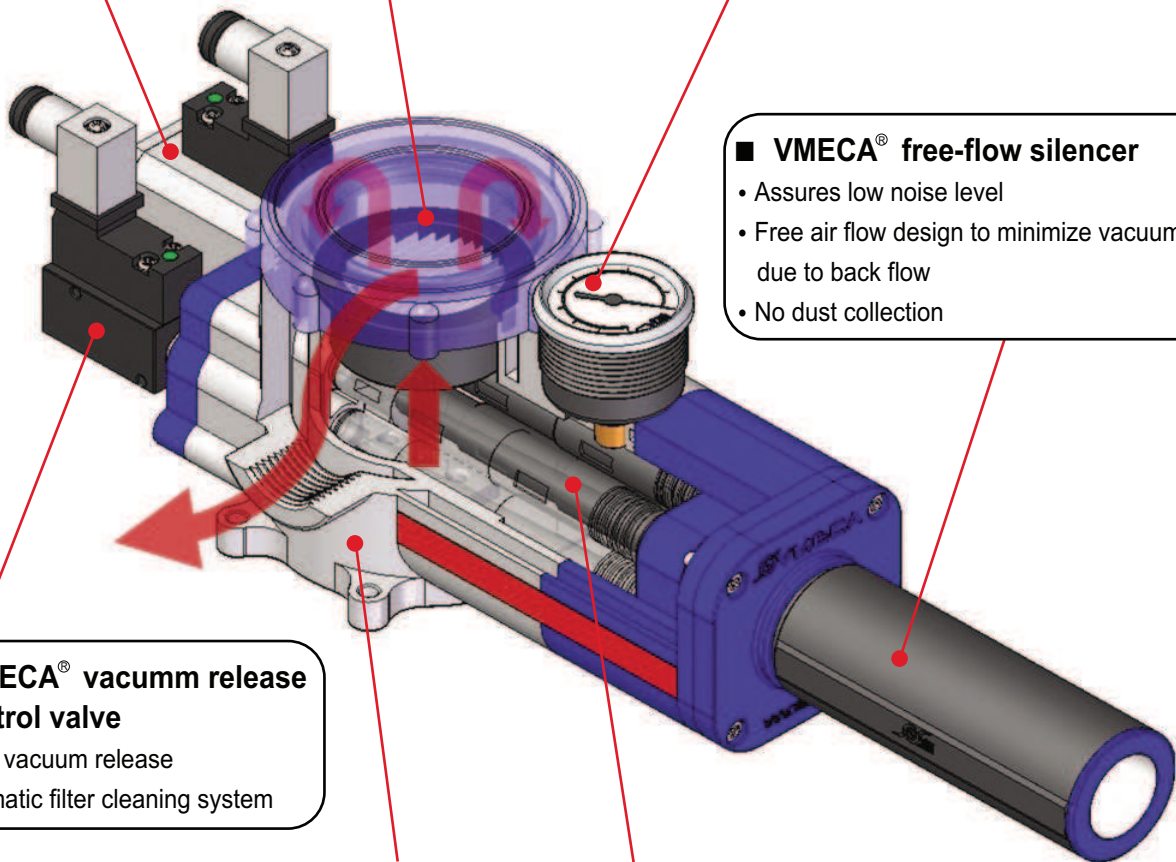
- Quick vacuum release
- Automatic filter cleaning system

■ Body

- Durable engineering plastic material
- Corrosion resistant
- Light weight
- Two vacuum ports : 3/4" and 1"

■ VMECA® patented Vacuum Cartridge System

- Multiple Vacuum cartridge available up to 4 pcs
- High operational reliability despite fluctuating or low compressed air pressure
- Air-Saving (AS) kit available to minimize energy consumption (about 20times less)
- Easily mountable and interchangeable vacuum cartridge

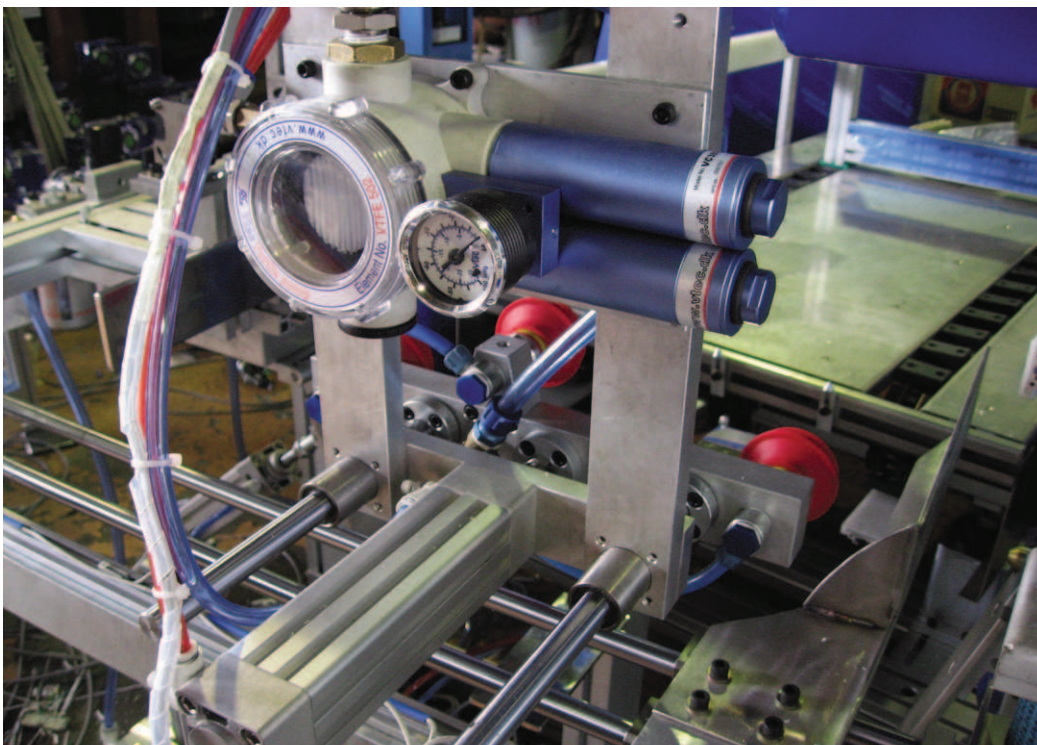




APPLICATIONS

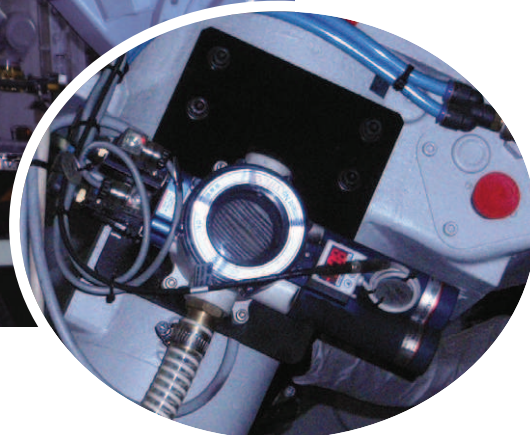
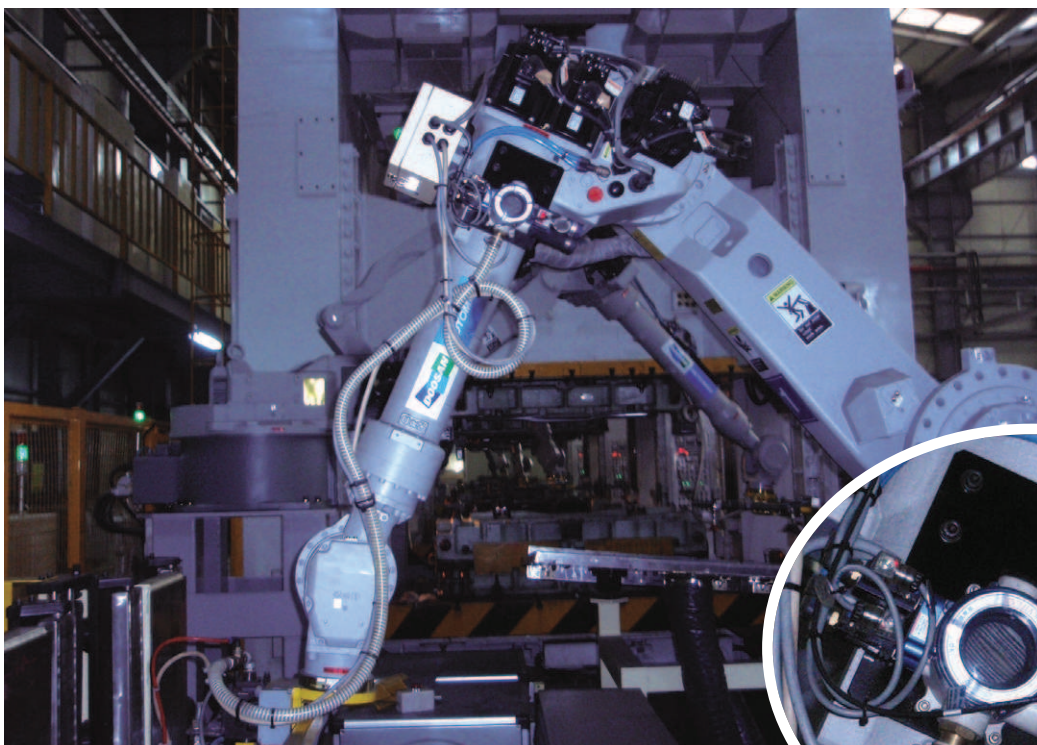


▲ Rotary Packaging machine (VTC3031)

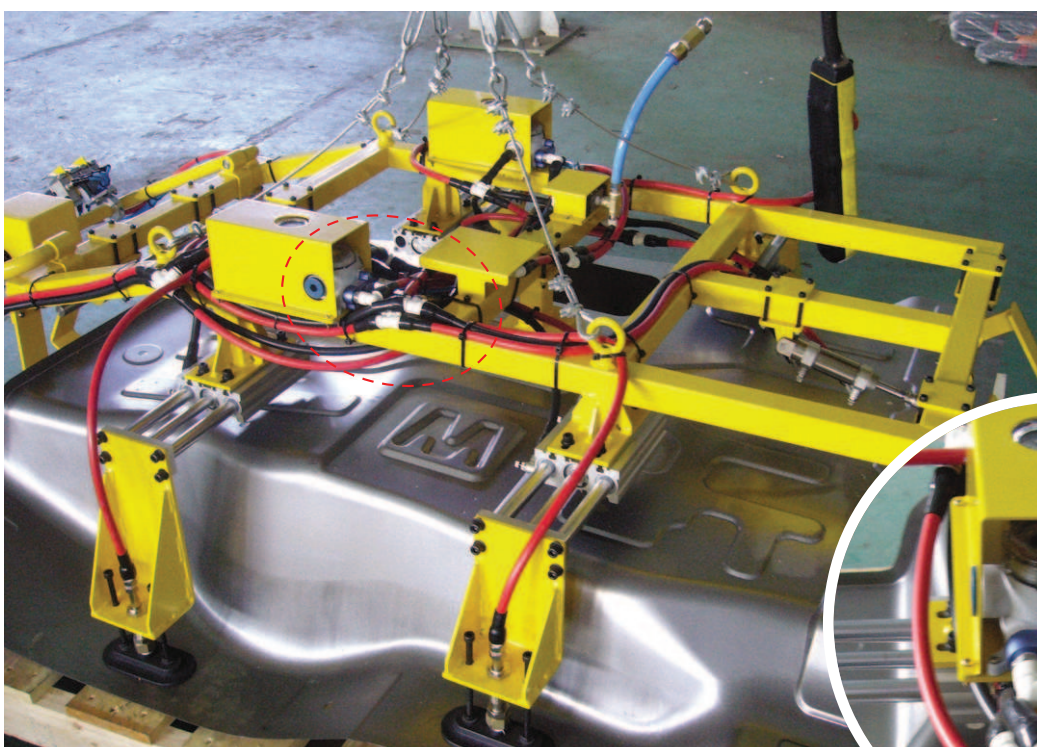


▲ Packaging machine : Carton boxes opening (VTC3032)

APPLICATIONS



▲ Robot Arm : Automobile Press stamping line (VTC3031)



▲ Automobile Fuel Tank lifting (VTC3031 X 2 pcs)



VACUUM  
PUMPS

## VTC 3031/3021 Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 341 NI/min (12.04 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 97~152 NI/min (3.43~5.37 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



### Main advantages

- Patented design.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Integrated high dirt holding capacity pleated filter.
- VMECA Twofold Silencer<sup>PT</sup> assures low noise levels.
- Optional Air-Saving(AS) kit available to minimize energy consumption.
- Optional factory installed Air control/Vacuum release valves and Vacuum switch available.
- Compact size and light weight.
- Easily mountable and interchangeable vacuum cartridge.

### Order No.

## VTC 3031 - 2 - AS - A3 R3 - CL - S2 N V

①                      ②                      ③                      ④                      ⑤                      ⑥                      ⑦                      ⑧                      ⑨

#### ① Model

VTC 3021 - Two stage nozzle

- **VTC 3031(P)** - Three stage nozzle

※ Remark:..(P)

↳ G3/8"Exhaust Port

#### ② Filter element & Connection port

Material	Connection port
• <b>2</b> Polyester (PE)	BSP Thread(G)

#### ③ Air saving kit ( 108)

No mark - Standard

- **AS** - Air saving kit

#### ④ Voltage of air supply control valve

A1 - AC110V

A2 - AC220V

- **A3** - DC24V

D1\* - AC110V

D2\* - AC220V

D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥

#### ⑤ Voltage of vacuum release control valve

R1 - AC110V

R2 - AC220V

- **R3** - DC24V

#### ⑥ Solenoid Terminal

DN - DIN type without lead wire

DL - DIN type with lamp without lead wire

- **CL\*** - Connector type with lamp & 0.3 m lead wire

2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)

3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ **About 'BUS cable'** (  340, 341)

#### ⑦ Vacuum switch

No mark - Vacuum gauge.

- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.

SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.

SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑧ Non-return valve

No mark - Standard

- **N** - Non-return valve.

#### ⑨ Sealing

No mark - Standard

- **V** - Viton<sup>®</sup>

**E** - EPDM



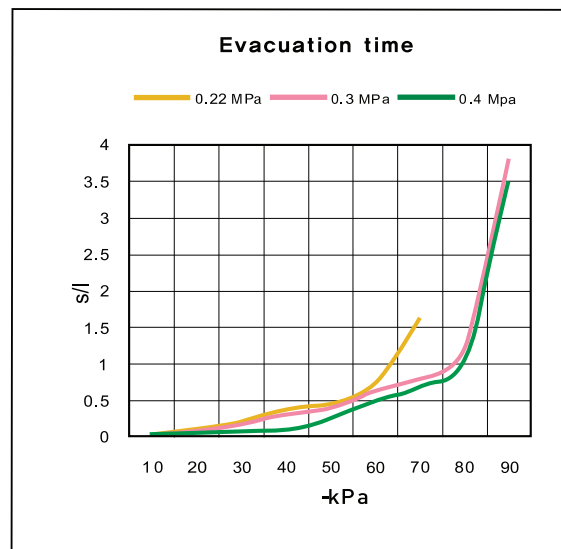
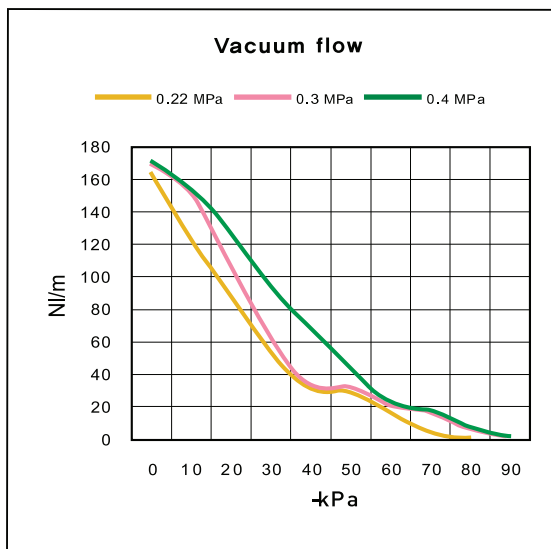
Performance Data

Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow (NI/min) at different vacuum level -kPa(-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTC3021..	75	0.22	164	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	170	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	171	154	127.5	94	69	43	23.3	17.3	6.9	2.1
VTC3031..	75	0.22	302	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	338	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	341	154	127.5	94	69	43	23.3	17.3	6.9	2.1

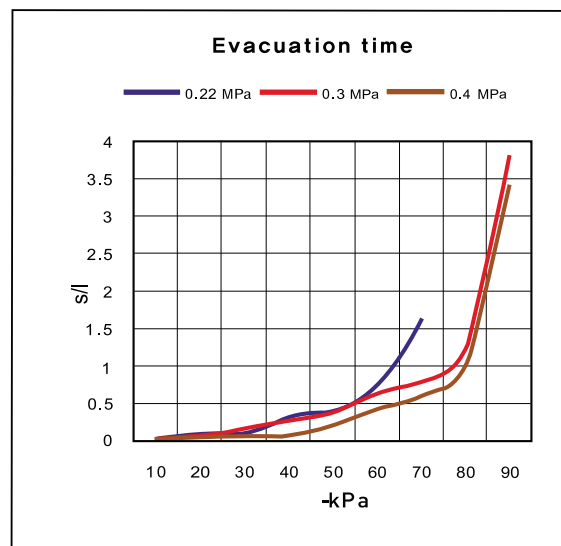
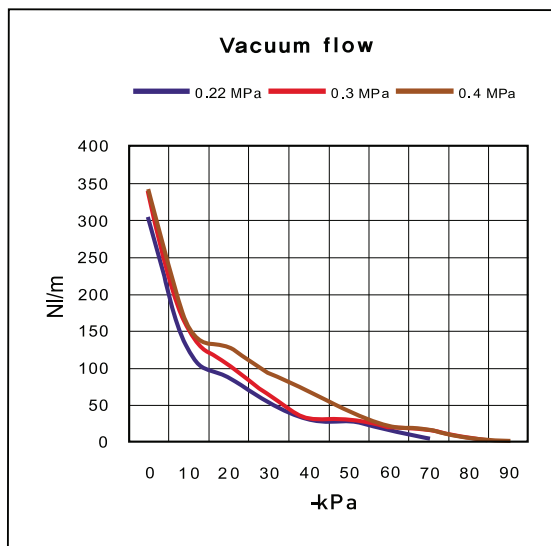
  

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum level -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
VTC3021..	0.22	97	0.03	0.12	0.21	0.38	0.47	0.73	1.62	-	-	
	0.3	118	0.027	0.1	0.19	0.3	0.4	0.64	0.8	1.2	3.8	
	0.4	152	0.026	0.058	0.09	0.1	0.25	0.5	0.69	1.05	3.5	
VTC3031..	0.22	97	0.019	0.09	0.1	0.32	0.42	0.73	1.62	-	-	
	0.3	118	0.015	0.07	0.18	0.28	0.38	0.64	0.8	1.2	3.8	
	0.4	152	0.01	0.048	0.07	0.09	0.2	0.42	0.6	1	3.4	

▼ VTC-3021..



▼ VTC-3031..



VACUUM PUMPS

## VTCL 3031/3021 Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 362 NI/min (12.79 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 70~104 NI/min (2.47~3.67 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



### Main advantages

- Patented design.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Integrated high dirt holding capacity pleated filter.
- VMECA Twofold Silencer<sup>PT</sup> assures low noise levels.
- Optional Air-Saving(AS) kit available to minimize energy consumption.
- Optional factory installed Air control/Vacuum release valves and Vacuum switch available.
- Compact size and light weight.
- Easily mountable and interchangeable vacuum cartridge.

### Order No.

**VTCL 3031 - 2 - AS - A3 R3 - CL - S2 N V**

①                      ②                      ③                      ④                      ⑤                      ⑥                      ⑦                      ⑧                      ⑨

#### ① Model

VTCL 3021 - Two stage nozzle

- **VTCL 3031(P)** - Three stage nozzle

※ Remark:..(P)

↳ G3/8"Exhaust Port

#### ② Filter element & Connection port

	Material	Connection port
• 2	Polyester (PE)	BSP Thread(G)

#### ③ Air saving kit ( 108)

No mark - Standard

- **AS** - Air saving kit

#### ④ Voltage of air supply control valve

A1 - AC110V

A2 - AC220V

- **A3** - DC24V

D1\* - AC110V

D2\* - AC220V

D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥

#### ⑤ Voltage of vacuum release control valve

R1 - AC110V

R2 - AC220V

- **R3** - DC24V

#### ⑥ Solenoid Terminal

DN - DIN type without lead wire

DL - DIN type with lamp without lead wire

- **CL\*** - Connector type with lamp & 0.3 m lead wire

2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)

3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ **About 'BUS cable'** (  340, 341)

#### ⑦ Vacuum switch

No mark - Vacuum gauge.

- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.

SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.

SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

- ② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑧ Non-return valve

No mark - Standard

- **N** - Non-return valve.

#### ⑨ Sealing

No mark - Standard

- **V** - Viton®

**E** - EPDM

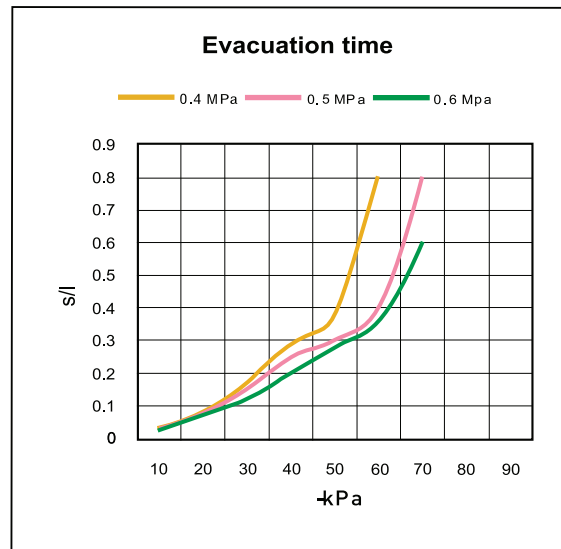
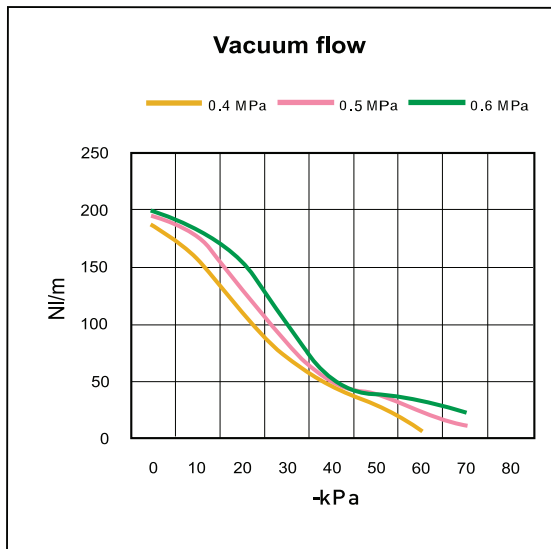


Performance Data

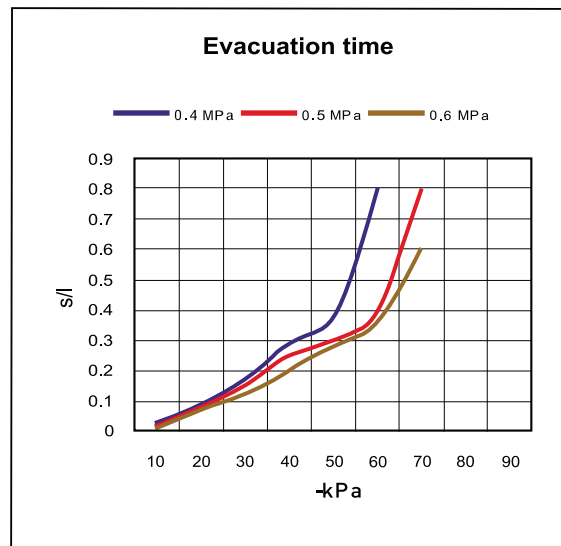
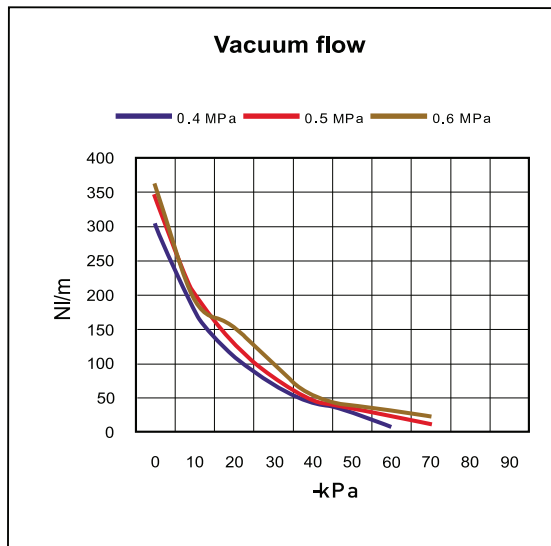
Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow (NI/min) at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTCL3021..	60	0.4	188	158	110	70	46	28	6.8	-	-	-
	70	0.5	195	176	130	82	50	37.5	23	11.3	-	-
	75	0.6	200	183	154	100	52	38	32	22	-	-
VTCL3031..	60	0.4	302	176	110	70	46	28	6.8	-	-	-
	70	0.5	344	200	130	82	50	37.5	23	11.3	-	-
	75	0.6	362	194	154	100	52	38	32	22	-	-

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
VTCL3021..	0.4	70	0.035	0.084	0.17	0.29	0.38	0.8	-	-	-	
	0.5	85	0.027	0.08	0.15	0.25	0.3	0.4	0.8	-	-	
	0.6	104	0.028	0.08	0.12	0.2	0.28	0.36	0.6	-	-	
VTCL3031..	0.4	70	0.028	0.09	0.17	0.29	0.38	0.8	-	-	-	
	0.5	85	0.013	0.08	0.15	0.25	0.3	0.4	0.8	-	-	
	0.6	104	0.012	0.07	0.12	0.2	0.28	0.36	0.6	-	-	

▼ VTCL-3021..



▼ VTCL-3031..



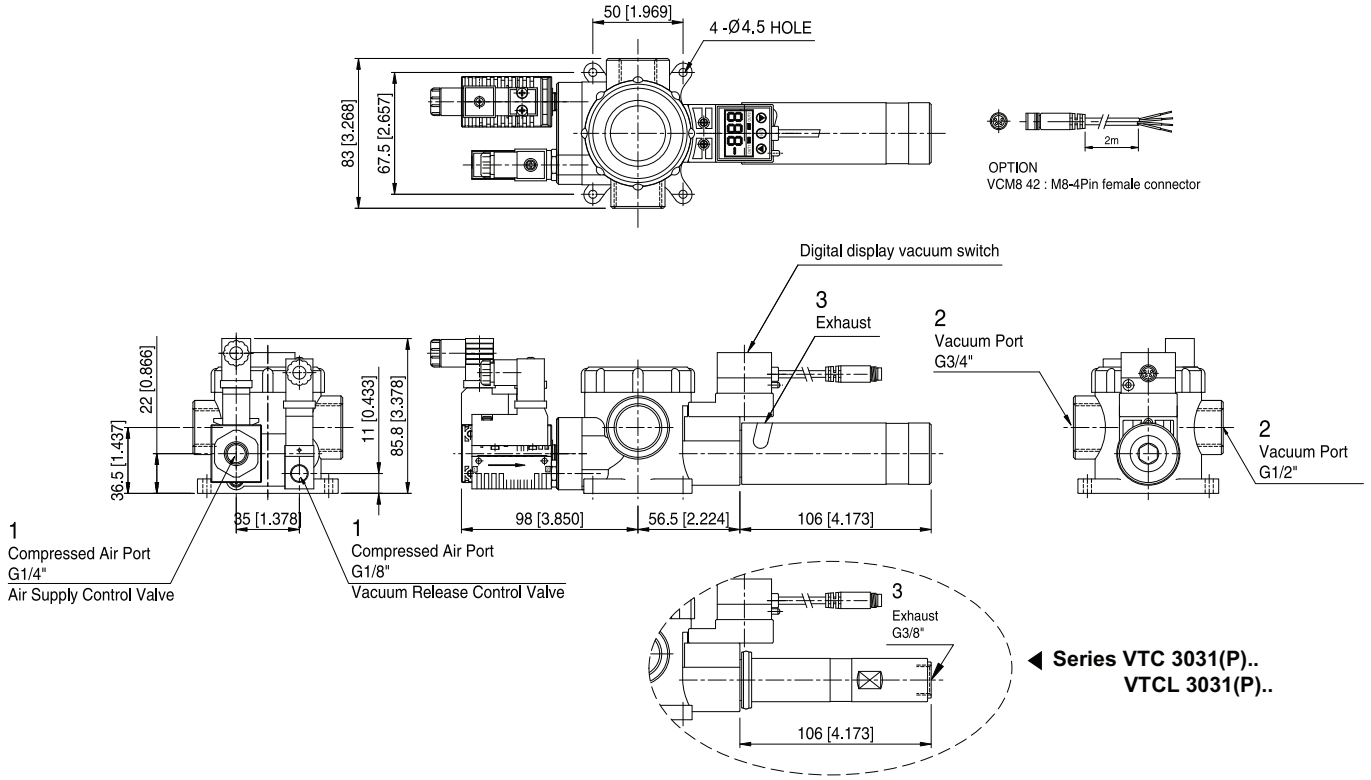
VACUUM PUMPS



Dimensional Information

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

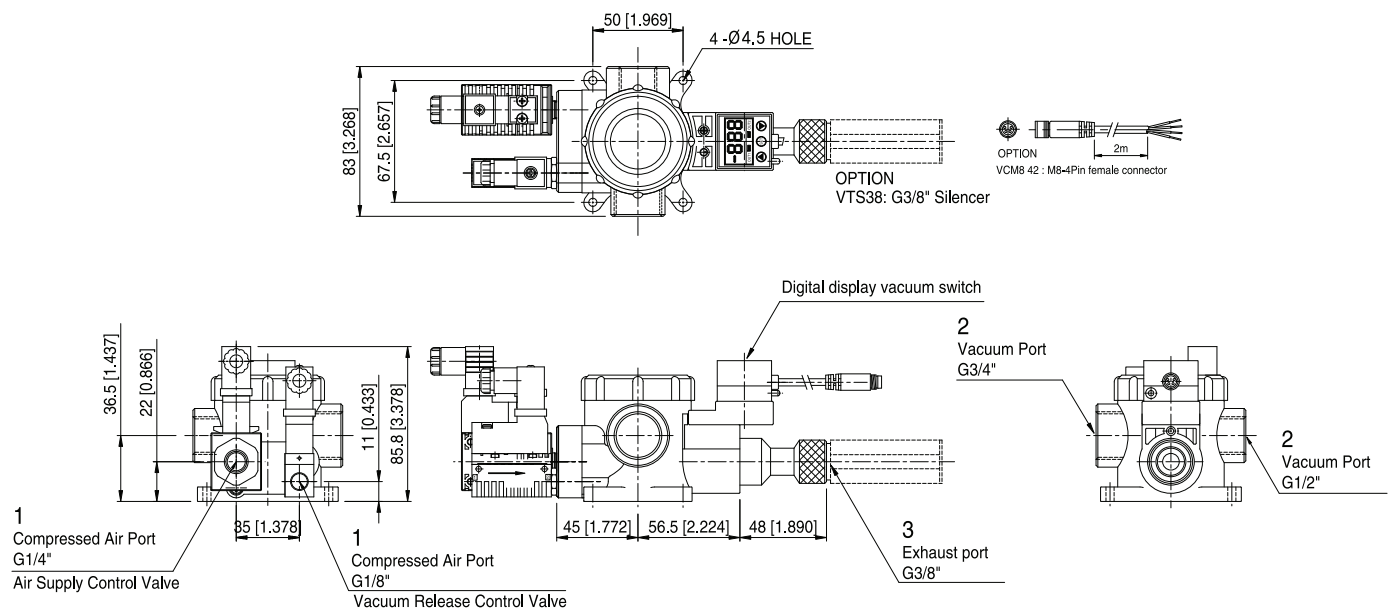
Series VTC 3031.. / VTCL 3031..



Measure unit : mm [in]

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

Series VTC 3021.. / VTCL 3021..



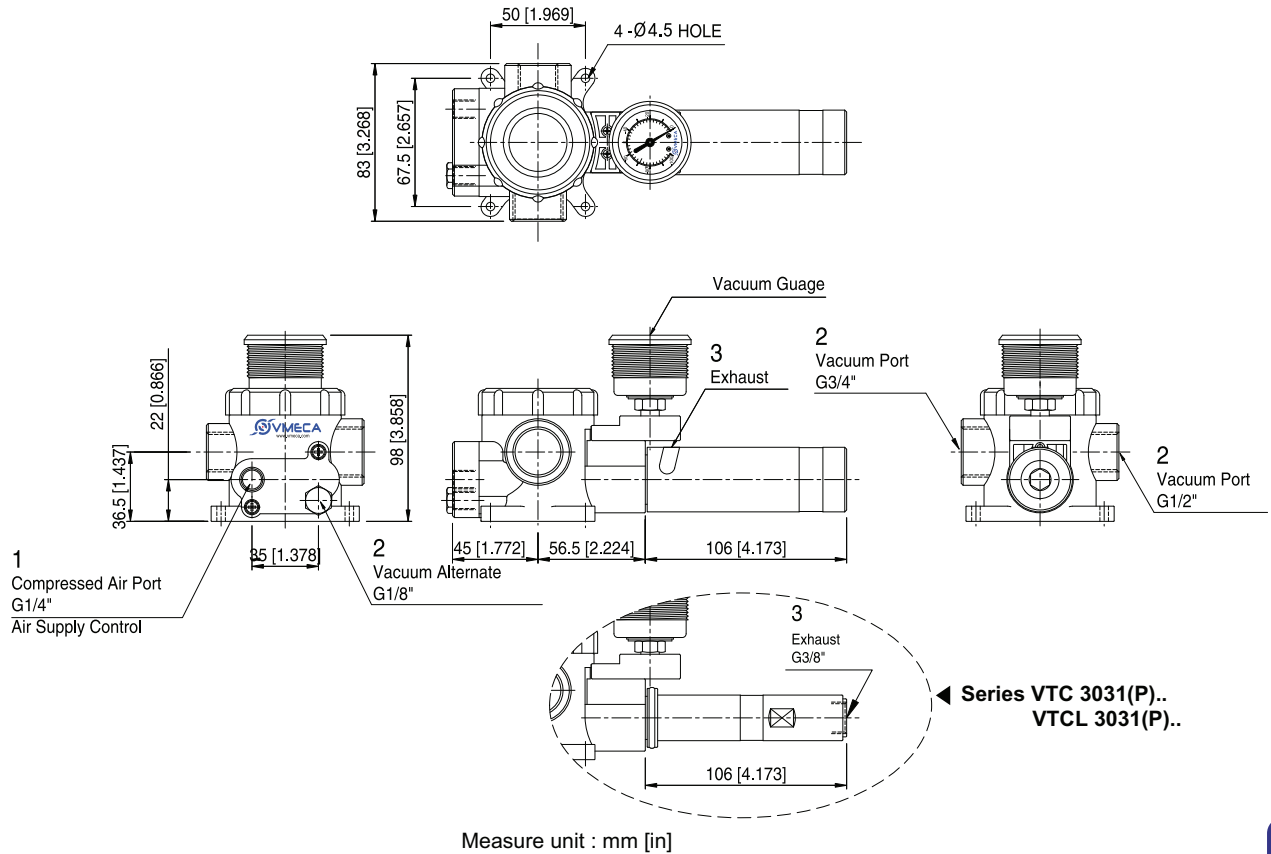
Measure unit : mm [in]



Dimensional Information

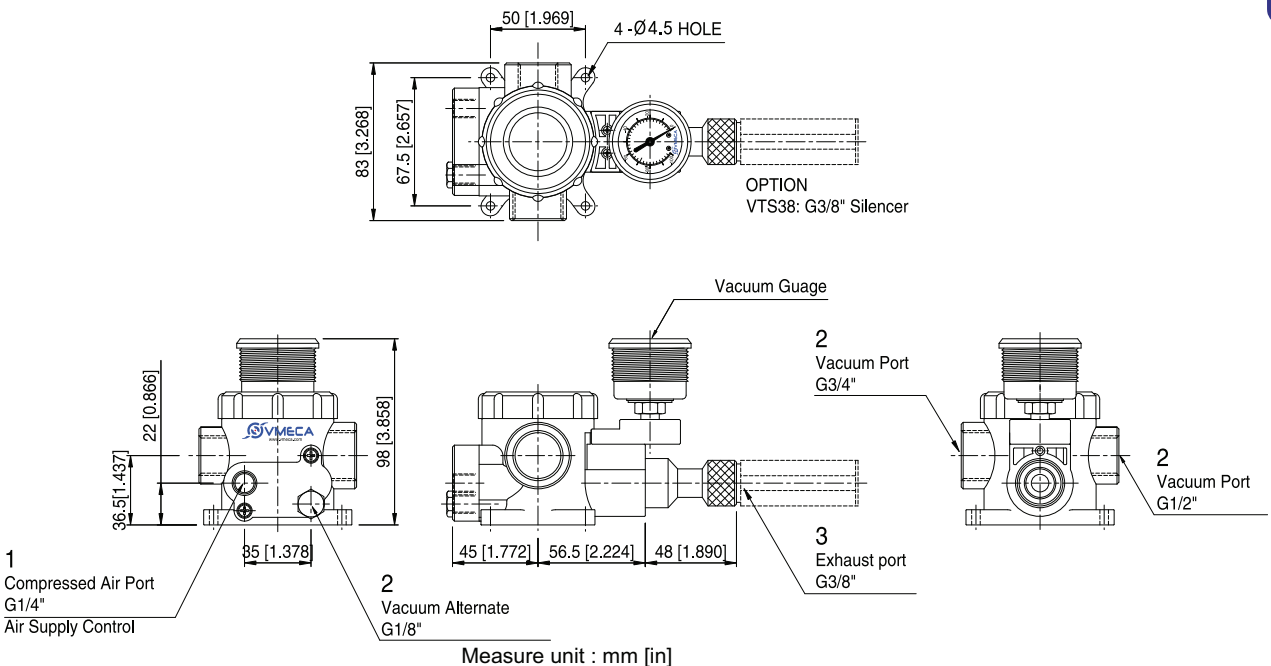
Standard

Series VTC 3031.. / VTCL 3031..



Standard

Series VTC 3021.. / VTCL 3021..



VACUUM PUMPS



## VTC 3032 / 3022 Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 688 NI/min (24.3 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 194~304 NI/min (6.85~10.74 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



### Main advantages

- Patented design.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Integrated high dirt holding capacity pleated filter.
- VMECA Twofold Silencer<sup>PT</sup> assures low noise levels.
- Optional Air-Saving(AS) kit available to minimize energy consumption.
- Optional factory installed Air control/Vacuum release valves and Vacuum switch available.
- Compact size and light weight.
- Easily mountable and interchangeable vacuum cartridge.

### Order No.

**VTC 3032 - 2 - AS - A3 R3 - CL - S2 N V**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

#### ① Model

VTC 3022 - Two stage nozzle

- **VTC 3032(P)** - Three stage nozzle

※ Remark:..(P)

↳ G3/8"Exhaust Port

#### ② Filter element & Connection port

Material	Connection port
• <b>2</b> Polyester (PE)	BSP Thread(G)

#### ③ Air saving kit (108)

No mark - Standard

- **AS** - Air saving kit

#### ④ Voltage of air supply control valve

A1 - AC110V

A2 - AC220V

- **A3** - DC24V

D1\* - AC110V

D2\* - AC220V

D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥

#### ⑤ Voltage of vacuum release control valve

R1 - AC110V

R2 - AC220V

- **R3** - DC24V

#### ⑥ Solenoid Terminal

DN - DIN type without lead wire

DL - DIN type with lamp without lead wire

- **CL\*** - Connector type with lamp & 0.3 m lead wire

2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)

3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ About 'BUS cable' (340, 341)

#### ⑦ Vacuum switch

No mark - Vacuum gauge.

- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.

SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.

SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑧ Non-return valve

No mark - Standard

- **N** - Non-return valve.

#### ⑨ Sealing

No mark - Standard

- **V** - Viton®

**E** - EPDM



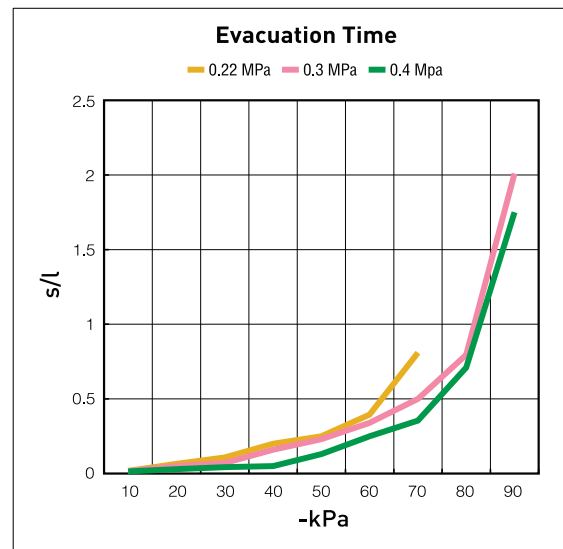
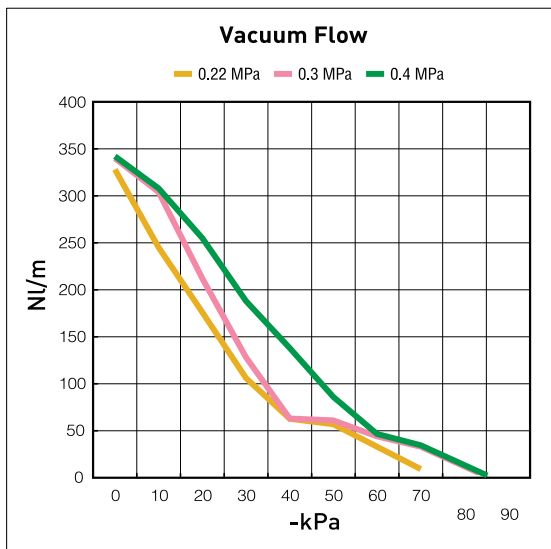
Performance Data

Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTC3022..	75	0.22	328	245	176	106	62.8	57	33	9.2	-	-
	93	0.3	340	304	212	128	66	64	44	33	12.8	3.8
	93	0.4	342	308	255	188	138	86	46.6	34.6	13.8	4.2
VTC3032..	75	0.22	604	245	176	106	62.8	57	33	9.2	-	-
	93	0.3	676	304	212	128	66	64	44	33	12.8	3.8
	93	0.4	682	308	255	188	138	86	46.6	34.6	13.8	4.2

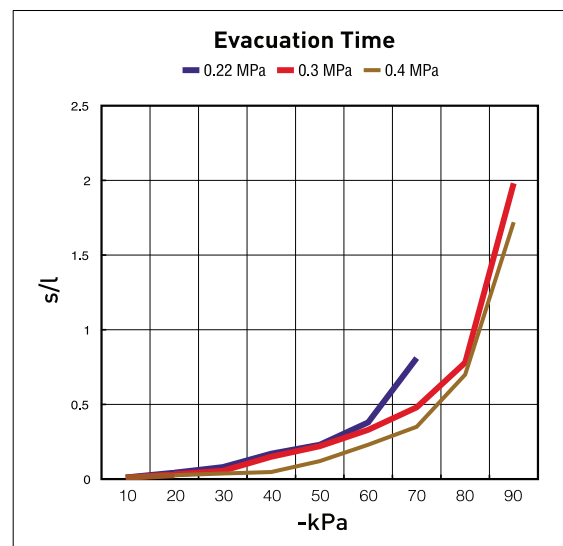
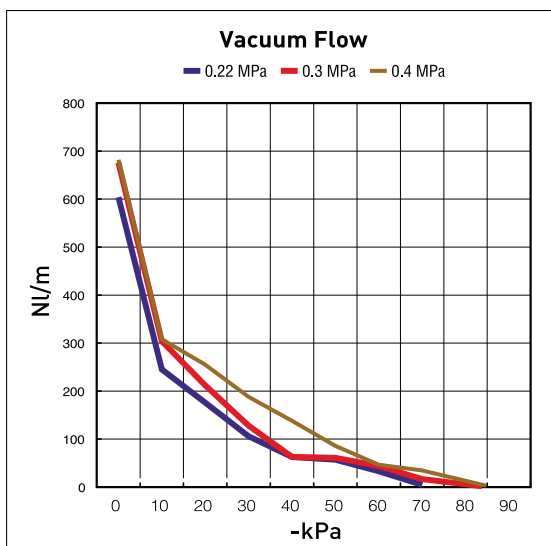
  

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
VTC3022..	0.22	194	0.018	0.065	0.108	0.2	0.25	0.395	0.81	-	-	
	0.3	236	0.016	0.05	0.07	0.16	0.23	0.34	0.5	0.795	2.01	
	0.4	304	0.014	0.029	0.043	0.05	0.13	0.25	0.355	0.71	1.75	
VTC3032..	0.22	194	0.011	0.043	0.05	0.17	0.23	0.38	0.81	-	-	
	0.3	236	0.01	0.032	0.055	0.15	0.22	0.33	0.48	0.78	1.98	
	0.4	304	0.01	0.026	0.037	0.047	0.12	0.23	0.35	0.7	1.72	

▼ VTC-3022..



▼ VTC-3032..



VACUUM PUMPS

## VTCL 3032 / 3022 Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 724 NI/min (25.57 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 140~208 NI/min (4.94~7.35 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



### Main advantages

- Patented design.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Integrated high dirt holding capacity pleated filter.
- VMECA Twofold Silencer<sup>PT</sup> assures low noise levels.
- Optional Air-Saving(AS) kit available to minimize energy consumption.
- Optional factory installed Air control/Vacuum release valves and Vacuum switch available.
- Compact size and light weight.
- Easily mountable and interchangeable vacuum cartridge.

### Order No.

**VTCL 3032 - 2 - AS - A3 R3 - CL - S2 N V**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

#### ① Model

VTCL 3022 - Two stage nozzle

- **VTCL 3032(P)** - Three stage nozzle

※ Remark:..(P)

↳ G3/8"Exhaust Port

#### ② Filter element & Connection port

Material	Connection port
• <b>2</b> Polyester (PE)	BSP Thread(G)

#### ③ Air saving kit ( 108)

No mark - Standard

- **AS** - Air saving kit

#### ④ Voltage of air supply control valve

A1 - AC110V

A2 - AC220V

- **A3** - DC24V

D1\* - AC110V

D2\* - AC220V

D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥

#### ⑤ Voltage of vacuum release control valve

R1 - AC110V

R2 - AC220V

- **R3** - DC24V

#### ⑥ Solenoid Terminal

DN - DIN type without lead wire

DL - DIN type with lamp without lead wire

- **CL\*** - Connector type with lamp & 0.3 m lead wire

2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)

3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ **About 'BUS cable'** (  340, 341)

#### ⑦ Vacuum switch

No mark - Vacuum gauge.

- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.

SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.

SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑧ Non-return valve

No mark - Standard

- **N** - Non-return valve.

#### ⑨ Sealing

No mark - Standard

- **V** - Viton<sup>®</sup>

**E** - EPDM

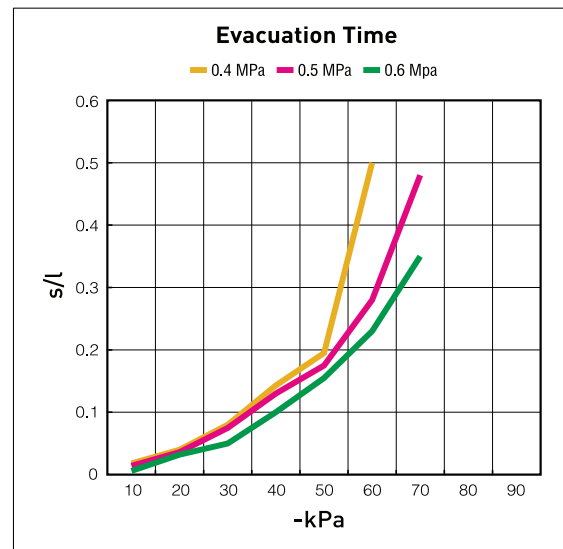
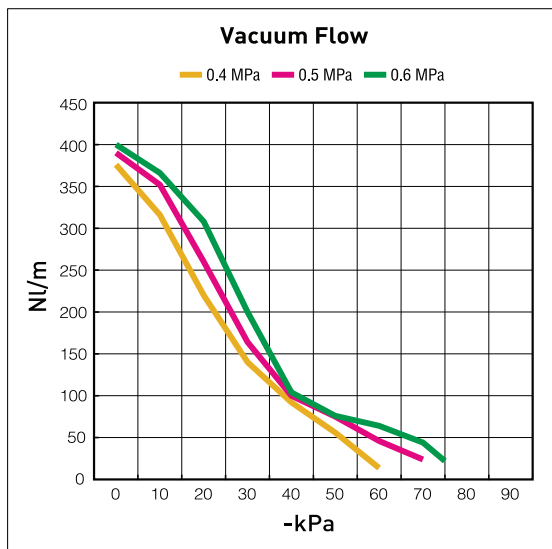


Performance Data

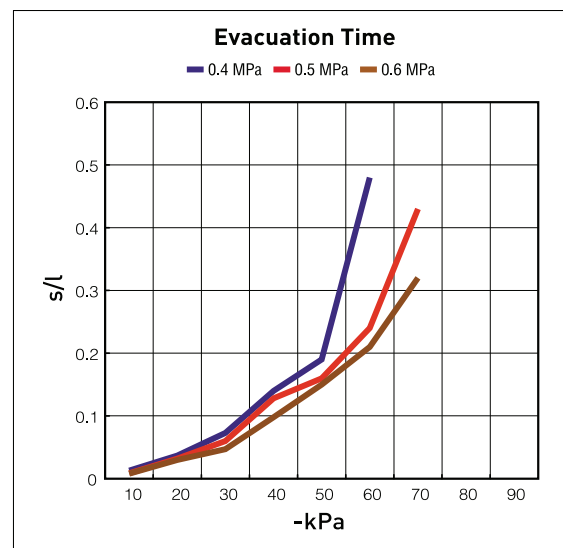
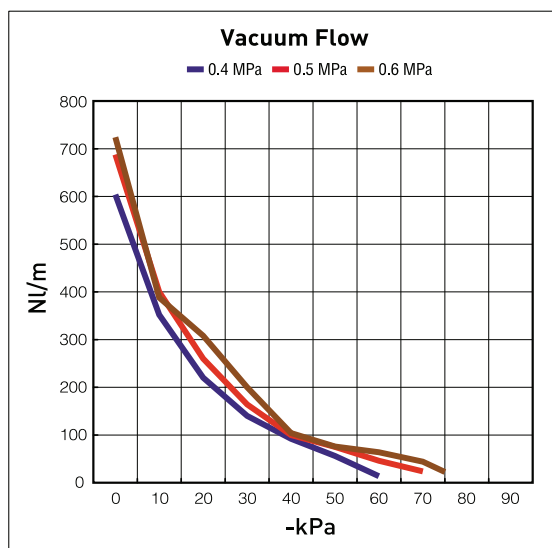
Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTCL3022..	60	0.4	376	316	220	140	92	56	13.6	-	-	-
	70	0.5	390	352	260	164	100	75	46	23.8	-	-
	75	0.6	400	366	308	200	104	76	64	44	-	-
VTCL3032..	60	0.4	604	352	220	140	92	56	13.6	-	-	-
	70	0.5	688	392	260	164	100	75	46	23.8	-	-
	75	0.6	724	415	308	200	104	76	64	44	-	-

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)								
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTCL3022	0.4	140	0.018	0.04	0.08	0.145	0.195	0.5	-	-	-
	0.5	170	0.014	0.036	0.075	0.125	0.15	0.2	0.4	-	-
	0.6	208	0.013	0.032	0.06	0.1	0.155	0.18	0.35	-	-
VTCL3032	0.4	140	0.013	0.037	0.073	0.14	0.19	0.45	-	-	-
	0.5	170	0.009	0.032	0.06	0.128	0.16	0.25	0.43	-	-
	0.6	208	0.006	0.03	0.047	0.098	0.15	0.2	0.32	-	-

▼ VTCL-3022..



▼ VTCL-3032..



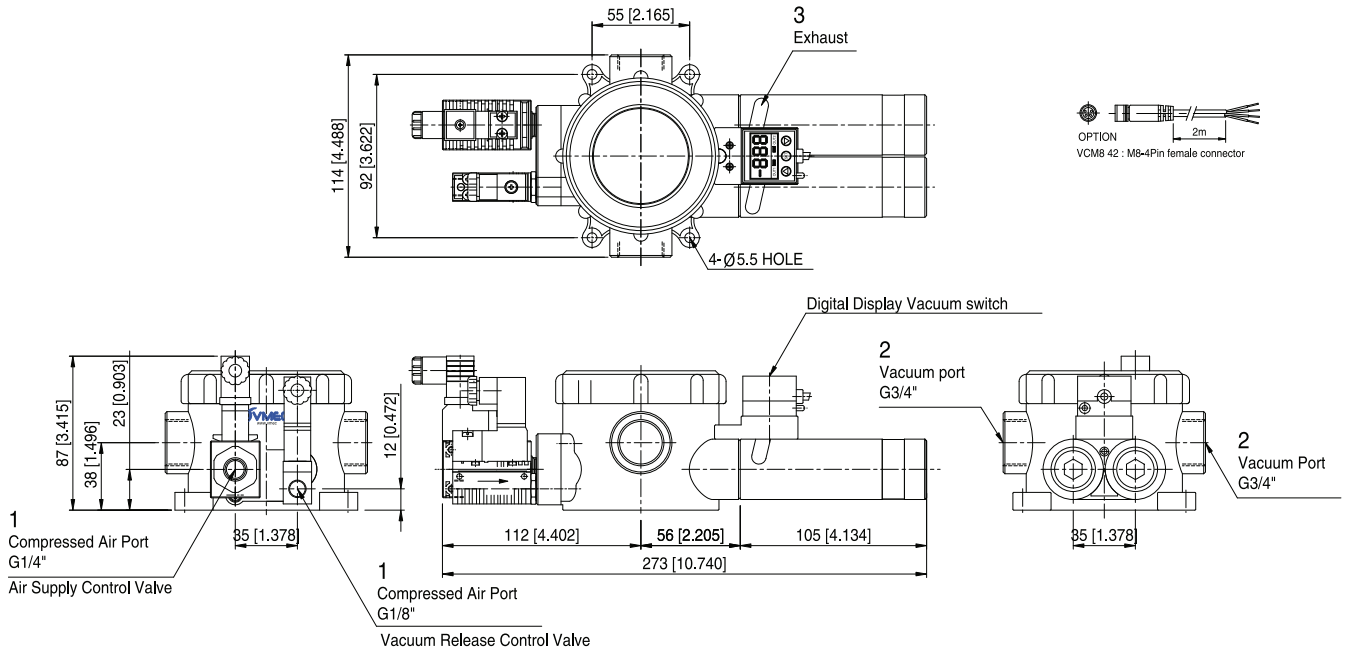
VACUUM PUMPS



**Dimensional Information**

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

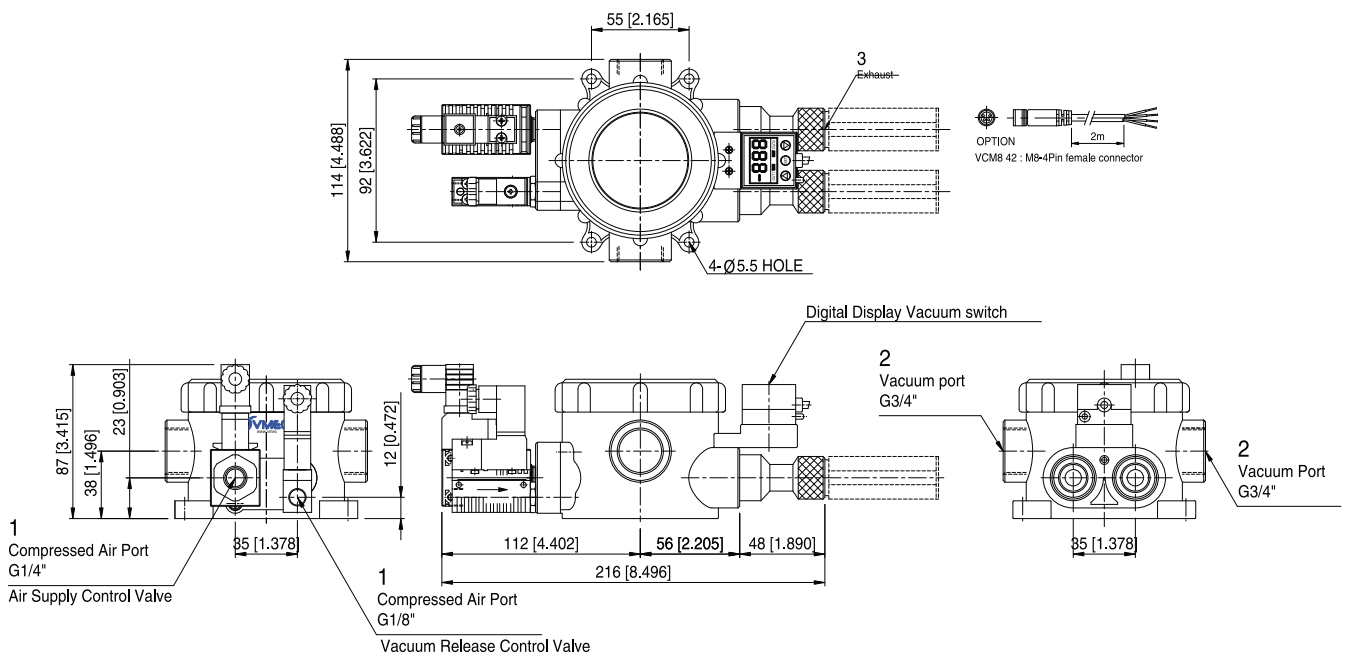
**VTC 3032.. / VTCL 3032..**



Measure unit : mm [in]

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

**VTC 3022.. / VTCL 3022..**

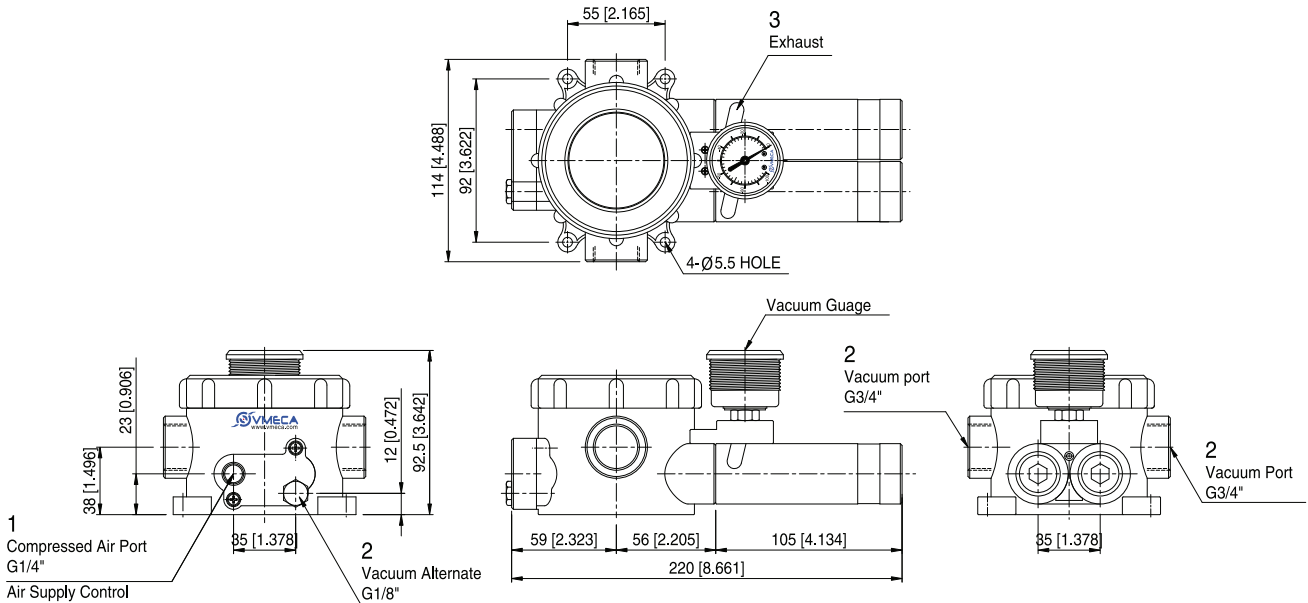


Measure unit : mm [in]

**Dimensional Information**

Standard

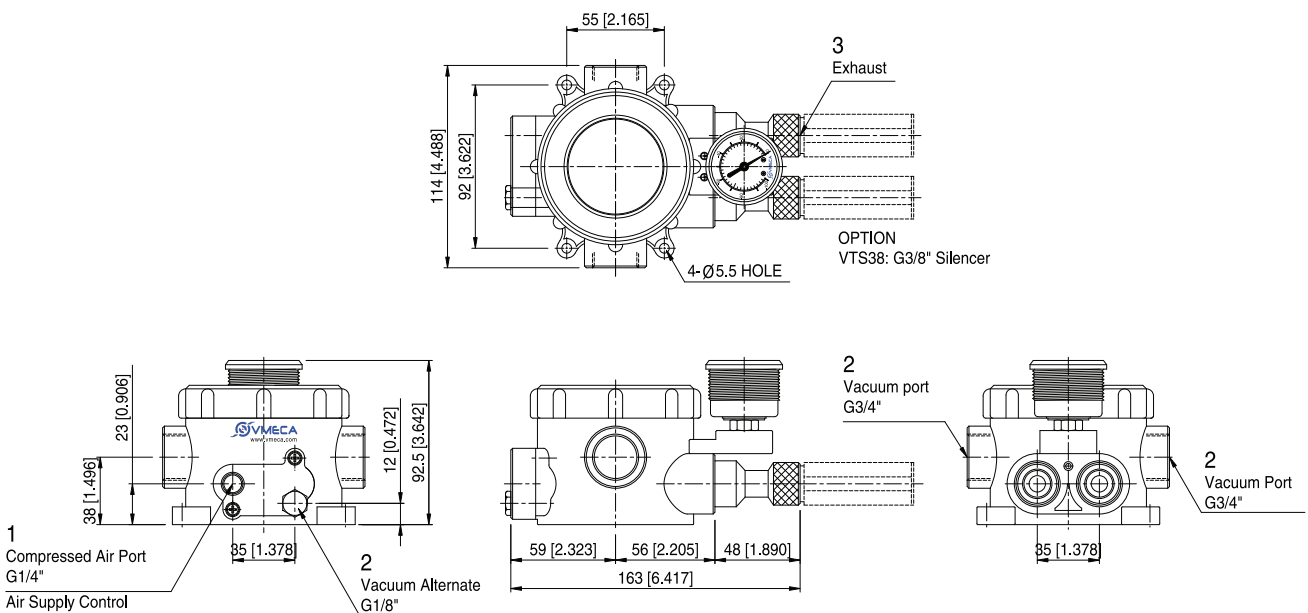
**VTC 3032.. / VTCL 3032..**



Measure unit : mm [in]

Standard

**VTC 3022.. / VTCL 3022..**



Measure unit : mm [in]

VACUUM PUMPS

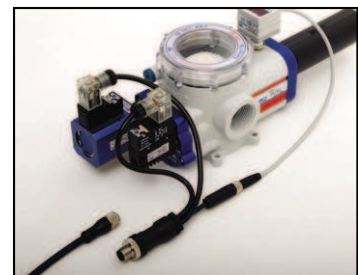
## VTC Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 1,364 NI/min (48.17 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 194~608 NI/min (6.85~21.47 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 60~65 dBA



### Main advantages

- Patented design.
- High vacuum flow and vacuum level.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Intergrated high dirt holding capacity pleated filter.
- Automatic vacuum filter cleaning system.
- Compact size and light weight.
- Minimize energy consumption with AS-KIT (Air-saving kit)
- Air control / Vacuum release valves and Vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge
- Long life time.



▲ BUS Cable

### Order No.

**VTC 3134 - 2 - AS - A3 R3 - CL - S2 N V**

	①		②		③		④		⑤		⑥		⑦		⑧		⑨					
① Series																						
VTC3122 - 2 stage nozzle x 2 ea																						
VTC3123 - 2 stage nozzle x 3 ea																						
VTC3124 - 2 stage nozzle x 4 ea																						
VTC3132 - 3 stage nozzle x 2 ea																						
VTC3133 - 3 stage nozzle x 3 ea																						
• <b>VTC3134</b> - 3 stage nozzle x 4 ea																						
② Filter element & Connection port																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Material</th> <th style="width: 85%;">Connection port</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td>Polyester (PE) BSP Thread(G)</td> </tr> </tbody> </table>	Material	Connection port	2	Polyester (PE) BSP Thread(G)																		
Material	Connection port																					
2	Polyester (PE) BSP Thread(G)																					
③ Air saving kit <span style="float: right;">( 108 )</span>																						
No mark - Not attached																						
• <b>AS</b> - Attached																						
④ Voltage of air supply control valve																						
A1 - AC110V																						
A2 - AC220V																						
• <b>A3</b> - DC24V																						
D1* - AC110V																						
D2* - AC220V																						
D3* - DC24V																						
* D. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥																						
⑤ Voltage of vacuum release control valve																						
R1 - AC110V																						
R2 - AC220V																						
• <b>R3</b> - DC24V																						
⑥ Solenoid Terminal																						
DN - DIN type without lead wire																						
DL - DIN type with lamp without lead wire																						
• <b>CL*</b> - Connector type with lamp & 0.3 m lead wire																						
2B* - DIN type with '2 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v)</small>																						
3B* - DIN type with '3 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v + Digital switch)</small>																						
* Can not available with double solenoid valve																						
※ Remark																						
CL : Available only with DC24V																						
3B : Available only with DC24V																						
Available only with 'S2' or 'S2P', section ⑦																						
☞ About 'BUS cable' ( 340, 341 )																						
⑦ Vacuum switch																						
No mark - Vacuum gauge.																						
• <b>S2(P)</b> - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.																						
SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.																						
SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.																						
※ Remark: ① S..(P)																						
└─ Output type :PNP open collector																						
② VCM8 42 : M8-4Pin connector wire. Only for type S2 or S2(P).																						
⑧ Non-return valve																						
No mark - Standard																						
• <b>N</b> - Non-return valve.																						
⑨ Sealing																						
No mark - Standard																						
• <b>V</b> - Viton®																						
E - EPDM																						



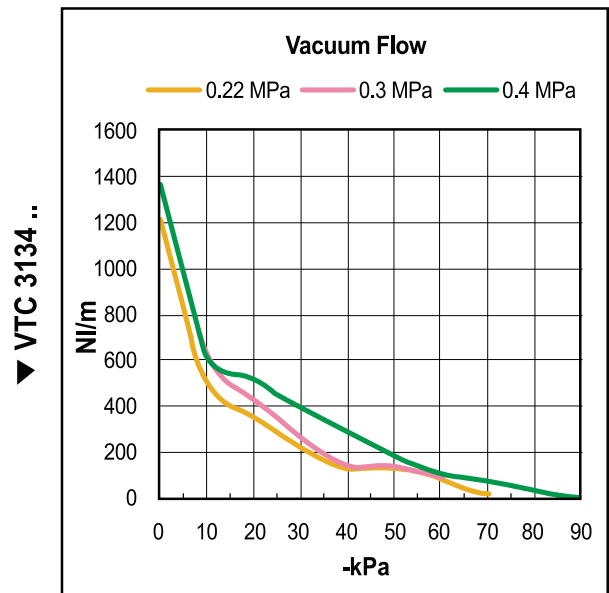
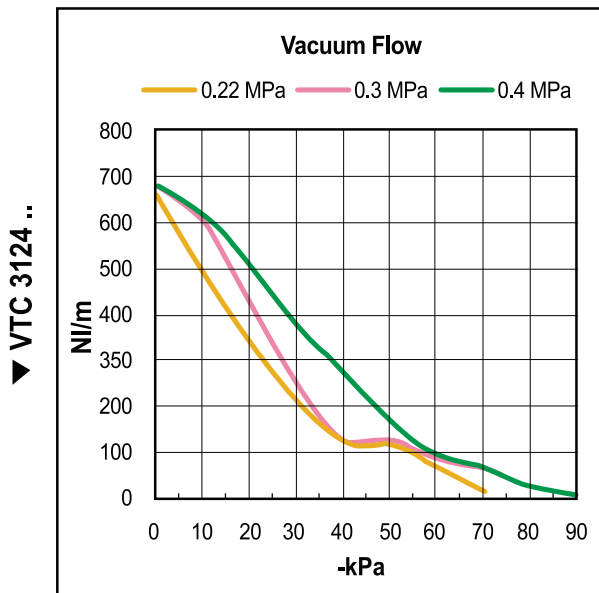
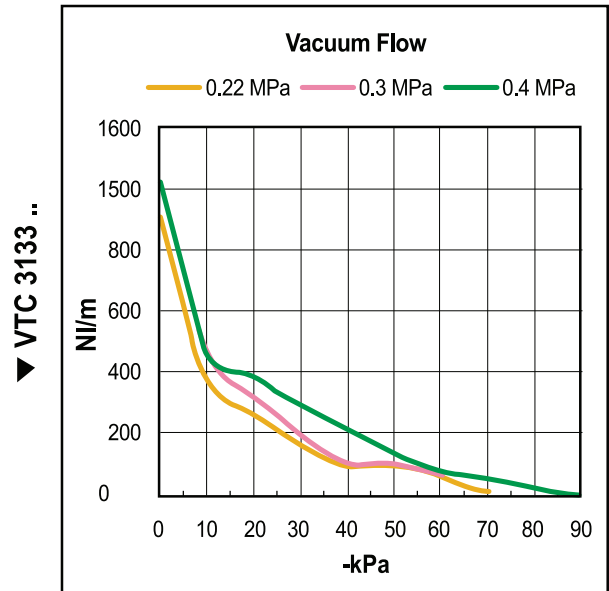
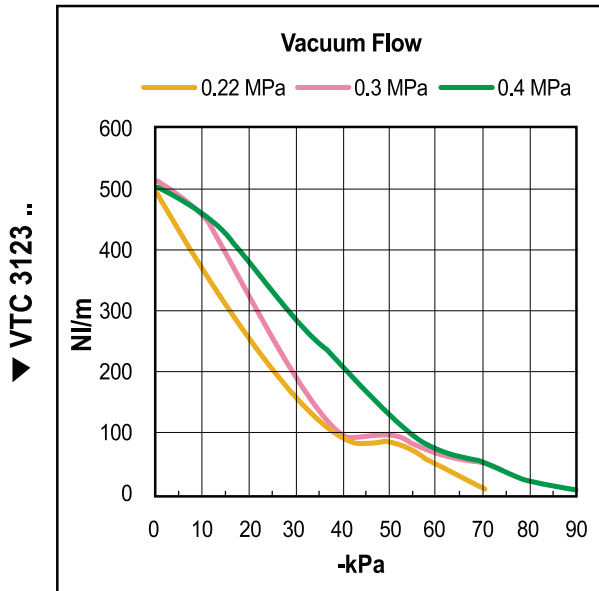
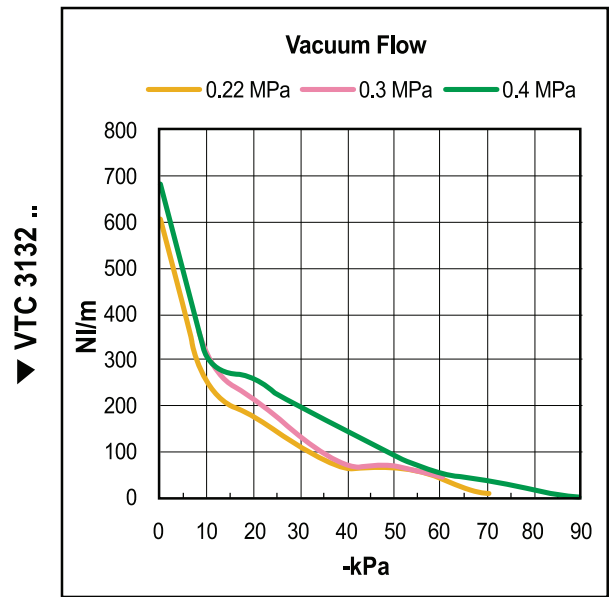
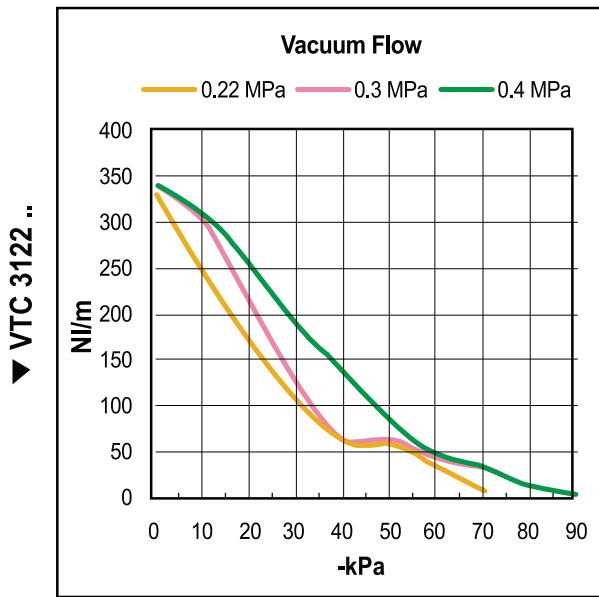
Performance Data

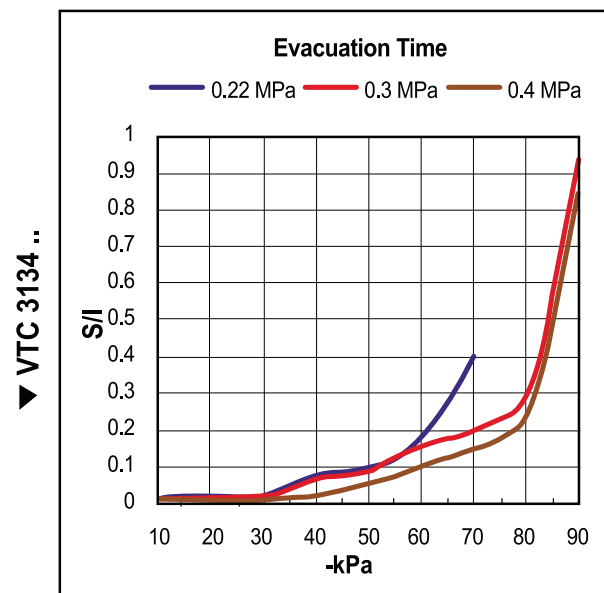
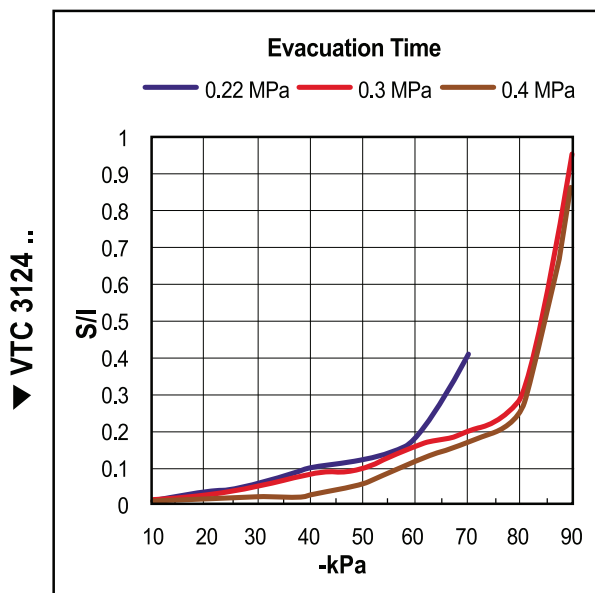
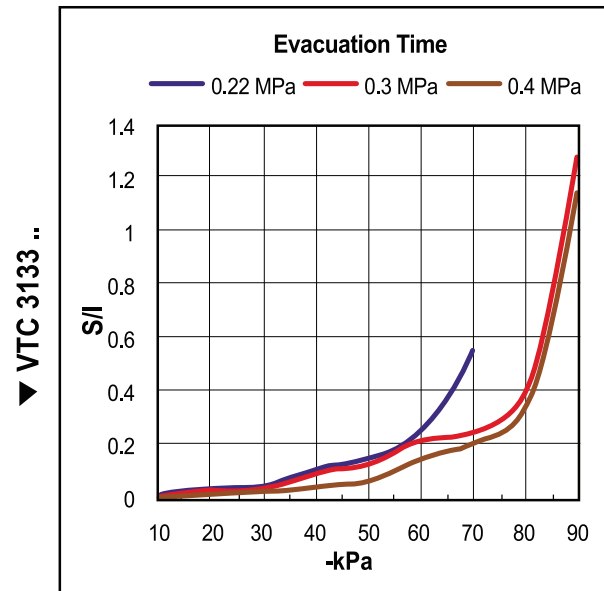
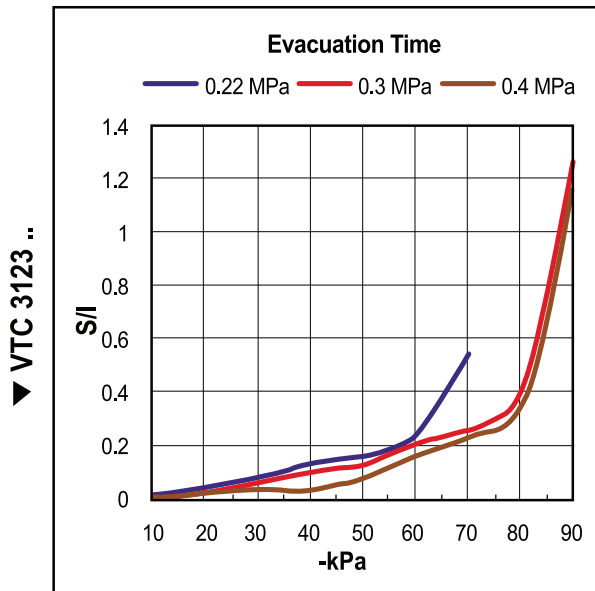
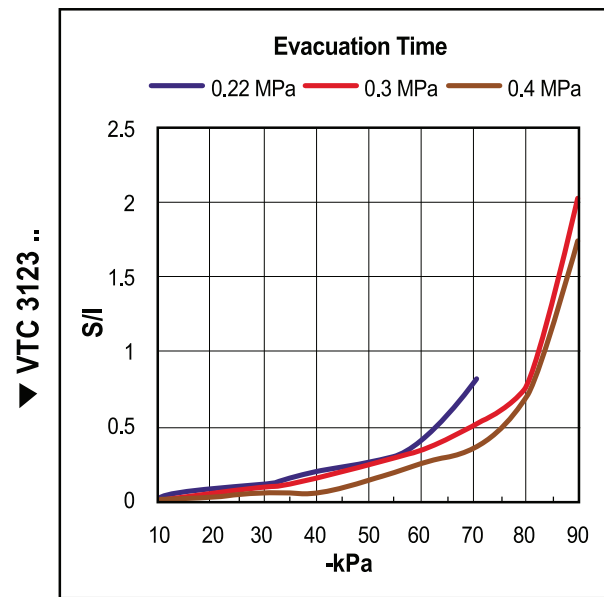
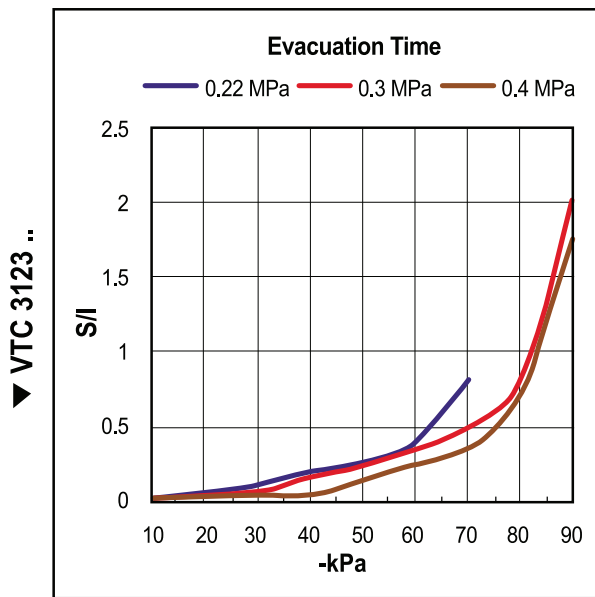
Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTC 3122	75	0.22	328	245	176	106	62.8	57	33	9.2	-	-
	93	0.3	340	304	212	128	66	64	44	33	12.8	3.8
	93	0.4	342	308	255	188	138	86	46.6	34.6	13.8	4.2
VTC 3123	75	0.22	492	367	264	159	94	86	50	14	-	-
	93	0.3	510	456	318	192	99	96	66	50	19	6
	93	0.4	513	462	383	282	207	129	70	52	21	6.3
VTC 3124	75	0.22	656	490	352	212	126	114	66	18	-	-
	93	0.3	680	608	424	256	132	128	88	66	26	7.6
	93	0.4	684	616	510	376	276	172	93	69	28	8.4
VTC 3132	75	0.22	604	245	176	106	62.8	57	33	9.2	-	-
	93	0.3	676	304	212	128	66	64	44	33	12.8	3.8
	93	0.4	682	308	255	188	138	86	46.6	34.6	13.8	4.2
VTC 3133	75	0.22	902	368	264	159	94	86	50	14	-	-
	93	0.3	1014	456	318	192	99	96	66	50	19	6
	93	0.4	1023	462	383	282	207	129	70	52	21	6.3
VTC 3134	75	0.22	1208	490	352	212	126	114	66	18	-	-
	93	0.3	1352	608	424	256	132	128	88	66	26	7.6
	93	0.4	1364	616	510	376	276	172	93	69	28	8.4

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
VTC 3122	0.22	194	0.018	0.065	0.108	0.2	0.25	0.395	0.81	-	-	
	0.3	236	0.016	0.05	0.07	0.16	0.23	0.34	0.5	0.795	2.01	
	0.4	304	0.014	0.029	0.043	0.05	0.13	0.25	0.355	0.71	1.75	
VTC 3123	0.22	291	0.01	0.04	0.07	0.13	0.16	0.24	0.54	-	-	
	0.3	354	0.009	0.03	0.06	0.1	0.13	0.21	0.26	0.4	1.27	
	0.4	456	0.008	0.019	0.03	0.033	0.08	0.16	0.23	0.35	1.17	
VTC 3124	0.22	388	0.008	0.03	0.05	0.095	0.12	0.18	0.4	-	-	
	0.3	472	0.007	0.025	0.048	0.08	0.1	0.16	0.2	0.3	0.95	
	0.4	608	0.006	0.015	0.023	0.025	0.06	0.12	0.17	0.26	0.87	
VTC 3132	0.22	194	0.011	0.043	0.05	0.17	0.23	0.38	0.81	-	-	
	0.3	236	0.01	0.032	0.045	0.15	0.22	0.33	0.48	0.78	1.98	
	0.4	304	0.01	0.026	0.037	0.047	0.12	0.23	0.35	0.7	1.72	
VTC 3133	0.22	291	0.006	0.03	0.038	0.1	0.14	0.24	0.54	-	-	
	0.3	354	0.005	0.02	0.03	0.09	0.12	0.21	0.24	0.4	1.27	
	0.4	456	0.004	0.01	0.02	0.03	0.06	0.14	0.2	0.33	1.13	
VTC 3134	0.22	388	0.005	0.02	0.027	0.08	0.1	0.18	0.4	-	-	
	0.3	472	0.004	0.018	0.02	0.07	0.09	0.16	0.2	0.3	0.95	
	0.4	608	0.003	0.01	0.01	0.02	0.05	0.1	0.15	0.25	0.85	

VACUUM PUMPS







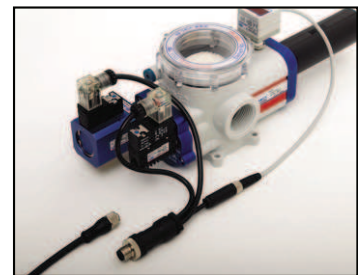
## VTCL - Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 1,448 NI/min (51.13 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 140~416 NI/min (4.94~14.69 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 60~65 dBA



### Main advantages

- Patented design.
- High vacuum flow and vacuum level.
- High operational reliability despite fluctuating or low compressed-air pressure.
- Intergrated high dirt holding capacity pleated filter.
- Automatic vacuum filter cleaning system.
- Compact size and light weight.
- Minimize energy consumption with AS-KIT (Air-saving kit)
- Air control / Vacuum release valves and Vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge
- Long life time.



▲ BUS Cable

### Order No.

## VTCL 3134 - 2 - AS - A3 R3 - CL - S2 N V

	①	②	③	④	⑤	⑥	⑦	⑧	⑨									
① Series	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>VTCL3122 - 2 stage nozzle x 2 ea</td></tr> <tr><td>VTCL3123 - 2 stage nozzle x 3 ea</td></tr> <tr><td>VTCL3124 - 2 stage nozzle x 4 ea</td></tr> <tr><td>VTCL3132 - 3 stage nozzle x 2 ea</td></tr> <tr><td>VTCL3133 - 3 stage nozzle x 3 ea</td></tr> <tr><td>• <b>VTCL3134</b> - 3 stage nozzle x 4 ea</td></tr> </table>		VTCL3122 - 2 stage nozzle x 2 ea	VTCL3123 - 2 stage nozzle x 3 ea	VTCL3124 - 2 stage nozzle x 4 ea	VTCL3132 - 3 stage nozzle x 2 ea	VTCL3133 - 3 stage nozzle x 3 ea	• <b>VTCL3134</b> - 3 stage nozzle x 4 ea	⑤ Voltage of vacuum release control valve		⑦ Vacuum switch							
VTCL3122 - 2 stage nozzle x 2 ea																		
VTCL3123 - 2 stage nozzle x 3 ea																		
VTCL3124 - 2 stage nozzle x 4 ea																		
VTCL3132 - 3 stage nozzle x 2 ea																		
VTCL3133 - 3 stage nozzle x 3 ea																		
• <b>VTCL3134</b> - 3 stage nozzle x 4 ea																		
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>R1 - AC110V</td></tr> <tr><td>R2 - AC220V</td></tr> <tr><td>• <b>R3</b> - DC24V</td></tr> </table>		R1 - AC110V	R2 - AC220V	• <b>R3</b> - DC24V	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>No mark - Vacuum gauge.</td></tr> <tr><td>• <b>S2(P)</b> - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.</td></tr> <tr><td>SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.</td></tr> <tr><td>SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.</td></tr> </table>		No mark - Vacuum gauge.	• <b>S2(P)</b> - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.	SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.	SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.					
R1 - AC110V																		
R2 - AC220V																		
• <b>R3</b> - DC24V																		
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② Filter element & Connection port	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Material</th> <th style="width: 50%;">Connection port</th> </tr> </thead> <tbody> <tr> <td>• <b>2</b> Polyester (PE)</td> <td>BSP Thread(G)</td> </tr> </tbody> </table>		Material	Connection port	• <b>2</b> Polyester (PE)	BSP Thread(G)	⑥ Solenoid Terminal		⑧ Non-return valve									
Material	Connection port																	
• <b>2</b> Polyester (PE)	BSP Thread(G)																	
③ Air saving kit <span style="font-size: small;">( 108 )</span>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>No mark - Not attached</td></tr> <tr><td>• <b>AS</b> - Attached</td></tr> </table>		No mark - Not attached	• <b>AS</b> - Attached	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>DN - DIN type without lead wire</td></tr> <tr><td>DL - DIN type with lamp without lead wire</td></tr> <tr><td>• <b>CL*</b> - Connector type with lamp &amp; 0.3 m lead wire</td></tr> <tr><td>2B* - DIN type with '2 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v)</small></td></tr> <tr><td>3B* - DIN type with '3 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v + Digital switch)</small></td></tr> </table>		DN - DIN type without lead wire	DL - DIN type with lamp without lead wire	• <b>CL*</b> - Connector type with lamp & 0.3 m lead wire	2B* - DIN type with '2 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v)</small>	3B* - DIN type with '3 in 1' BUS cable <small>(Air control v/v + Vacuum release v/v + Digital switch)</small>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>No mark - Standard</td></tr> <tr><td>• <b>N</b> - Non-return valve.</td></tr> </table>		No mark - Standard	• <b>N</b> - Non-return valve.			
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• <b>AS</b> - Attached																		
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No mark - Standard																		
• <b>N</b> - Non-return valve.																		
④ Voltage of air supply control valve	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>A1 - AC110V</td></tr> <tr><td>A2 - AC220V</td></tr> <tr><td>• <b>A3</b> - DC24V</td></tr> <tr><td>D1* - AC110V</td></tr> <tr><td>D2* - AC220V</td></tr> <tr><td>D3* - DC24V</td></tr> </table>		A1 - AC110V	A2 - AC220V	• <b>A3</b> - DC24V	D1* - AC110V	D2* - AC220V	D3* - DC24V	<p>* Can not available with double solenoid valve</p> <p>※ Remark                      CL : Available only with DC24V                      3B : Available only with DC24V                      Available only with 'S2' or 'S2P', section ⑦</p> <p>☞ About 'BUS cable' ( 340, 341 )</p>		⑨ Sealing							
A1 - AC110V																		
A2 - AC220V																		
• <b>A3</b> - DC24V																		
D1* - AC110V																		
D2* - AC220V																		
D3* - DC24V																		
					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>No mark - Standard</td></tr> <tr><td>• <b>V</b> - Viton®</td></tr> <tr><td><b>E</b> - EPDM</td></tr> </table>		No mark - Standard	• <b>V</b> - Viton®	<b>E</b> - EPDM									
No mark - Standard																		
• <b>V</b> - Viton®																		
<b>E</b> - EPDM																		

\* D. : Double solenoid valve is available only with 'DN' or 'DL', section ⑥



**Performance Data**

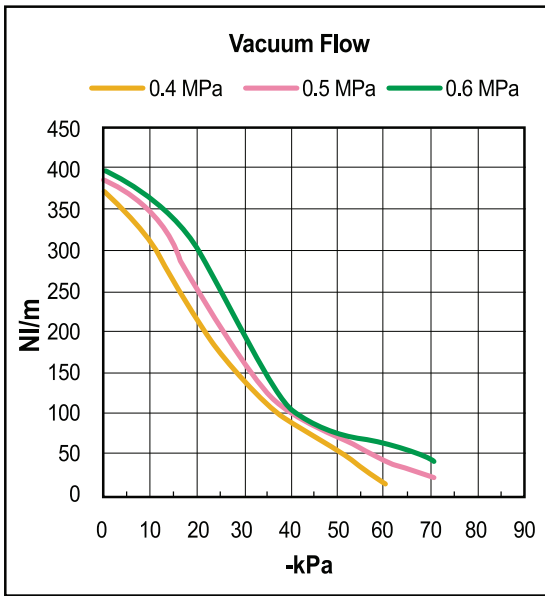
Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTCL 3122	60	0.4	376	316	220	160	92	56	13.6	-	-	-
	70	0.5	390	352	260	164	100	75	46	23.8	-	-
	75	0.6	400	366	308	200	104	76	64	44	-	-
VTCL 3123	60	0.4	564	474	330	210	138	84	20.4	-	-	-
	70	0.5	585	528	390	246	150	112.5	69	33.9	-	-
	75	0.6	600	549	462	300	156	114	96	66	-	-
VTCL 3124	60	0.4	752	632	440	280	184	112	27.2	-	-	-
	70	0.5	780	704	520	328	200	150	92	45.2	-	-
	75	0.6	800	732	616	400	208	152	128	88	-	-
VTCL 3132	60	0.4	604	344	220	140	92	56	13.6	-	-	-
	70	0.5	688	392	260	164	100	75	46	23.8	-	-
	75	0.6	724	415	308	200	104	76	64	44	-	-
VTCL 3133	60	0.4	906	516	330	210	138	84	20.4	-	-	-
	70	0.5	1032	588	390	246	150	112.5	69	34	-	-
	75	0.6	1086	621	462	300	156	114	96	66	-	-
VTCL 3134	60	0.4	1208	688	440	280	184	112	27	-	-	-
	70	0.5	1376	784	520	328	200	150	92	45	-	-
	75	0.6	1448	828	616	400	208	152	128	88	-	-

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)								
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VTCL 3122	0.4	140	0.018	0.04	0.08	0.145	0.195	0.5	-	-	-
	0.5	170	0.014	0.036	0.075	0.125	0.15	0.2	0.4	-	-
	0.6	208	0.013	0.032	0.06	0.1	0.155	0.18	0.35	-	-
VTCL 3123	0.4	210	0.012	0.029	0.057	0.097	0.127	0.27	-	-	-
	0.5	255	0.009	0.028	0.05	0.083	0.1	0.13	0.26	-	-
	0.6	312	0.009	0.027	0.04	0.06	0.09	0.12	0.2	-	-
VTCL 3124	0.4	280	0.01	0.025	0.04	0.07	0.09	0.2	-	-	-
	0.5	340	0.0067	0.02	0.037	0.065	0.075	0.1	0.2	-	-
	0.6	416	0.006	0.02	0.03	0.055	0.073	0.09	0.15	-	-
VTCL 3132	0.4	140	0.017	0.037	0.073	0.14	0.19	0.45	-	-	-
	0.5	170	0.014	0.032	0.06	0.128	0.16	0.25	0.43	-	-
	0.6	208	0.012	0.03	0.047	0.098	0.15	0.2	0.32	-	-
VTCL 3133	0.4	210	0.016	0.03	0.05	0.09	0.12	0.26	-	-	-
	0.5	255	0.0085	0.028	0.05	0.08	0.1	0.13	0.26	-	-
	0.6	312	0.0079	0.02	0.04	0.06	0.09	0.12	0.2	-	-
VTCL 3134	0.4	280	0.0089	0.023	0.04	0.07	0.09	0.2	-	-	-
	0.5	340	0.0057	0.018	0.03	0.063	0.075	0.1	0.2	-	-
	0.6	416	0.0053	0.015	0.029	0.052	0.071	0.09	0.15	-	-

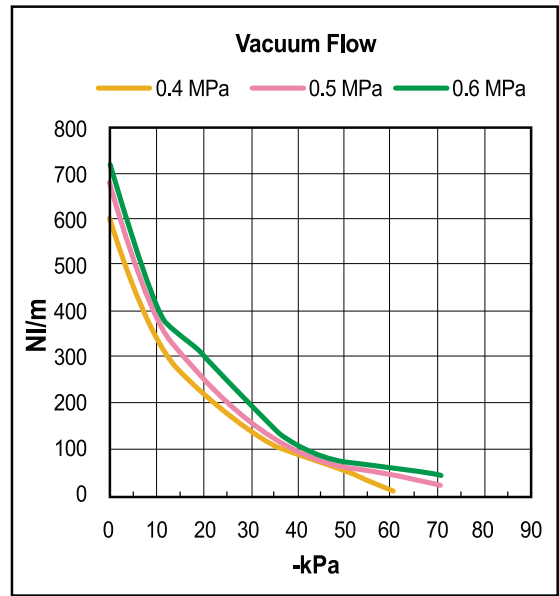
VACUUM PUMPS



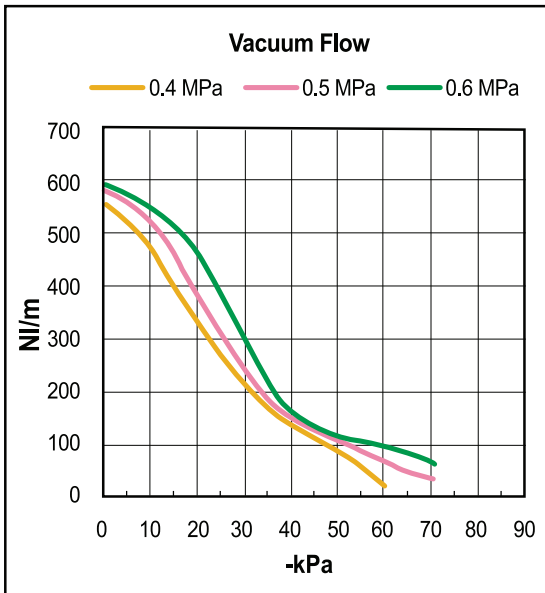
▼ VTCL 3122 ..



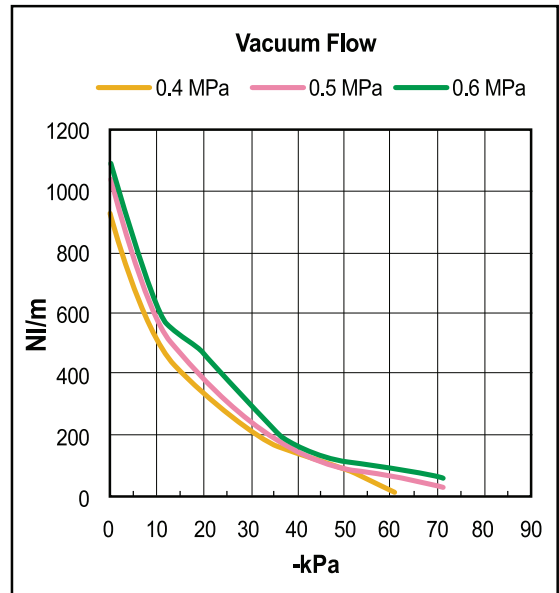
▼ VTCL 3132 ..



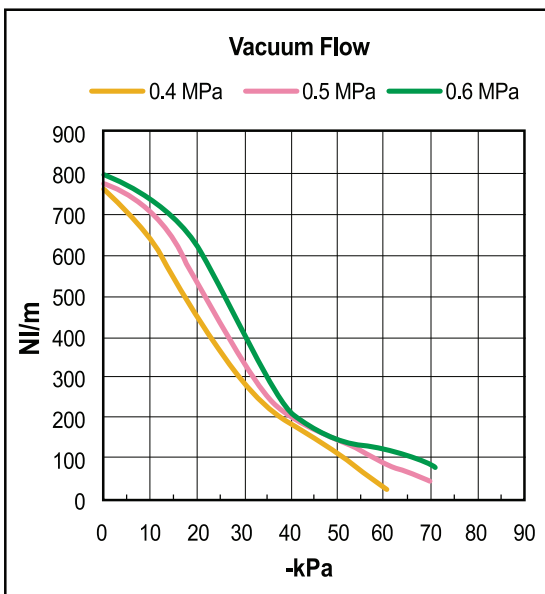
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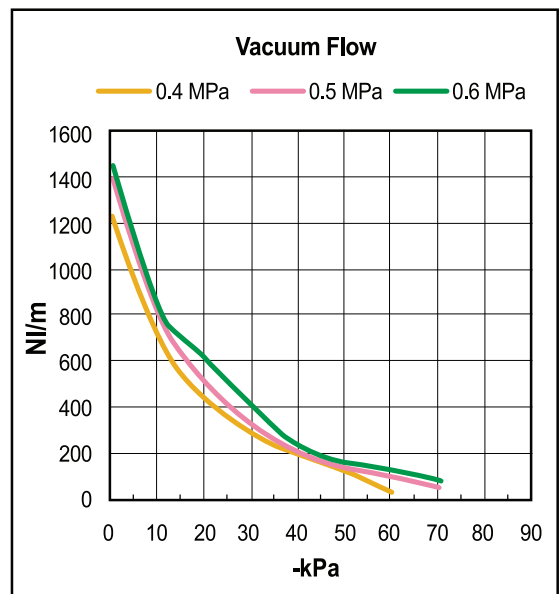
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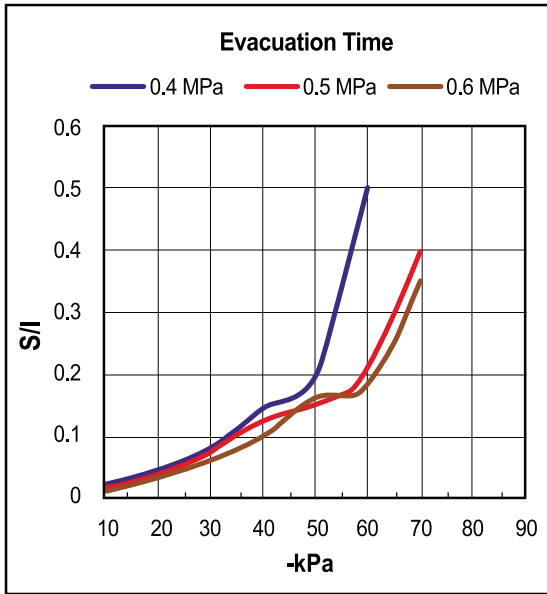
▼ VTCL 3124 ..



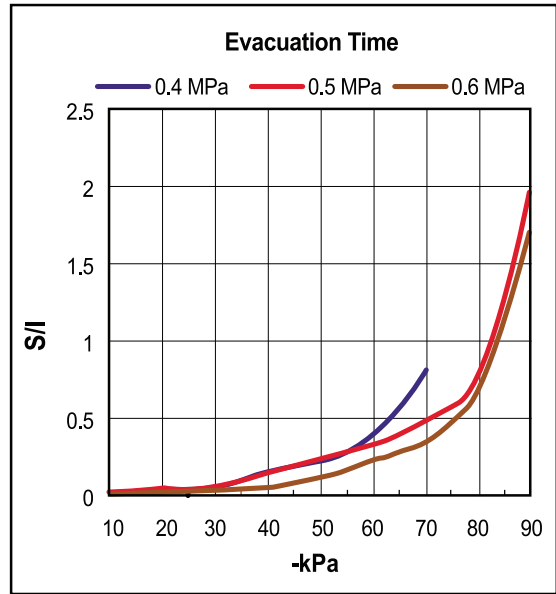
▼ VTCL 3134 ..



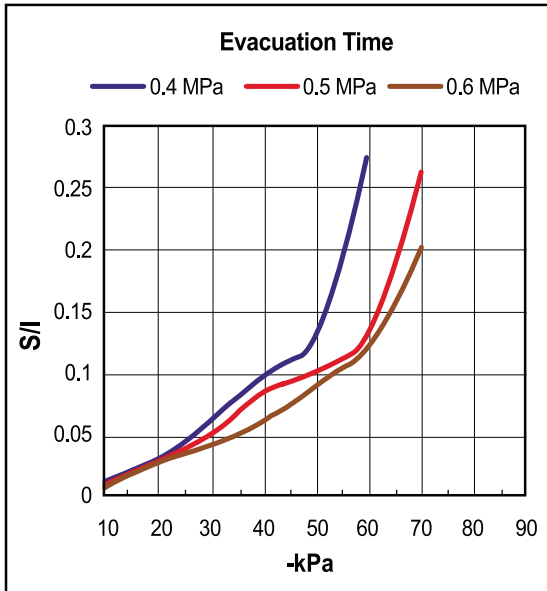
▼ VTCL 3122 ..



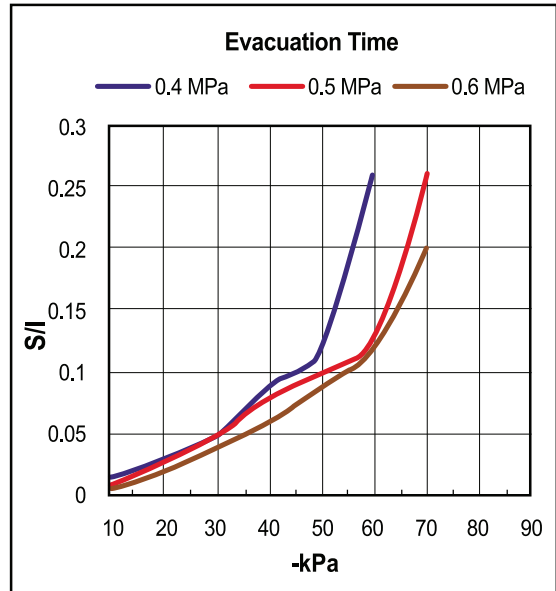
▼ VTCL 3132 ..



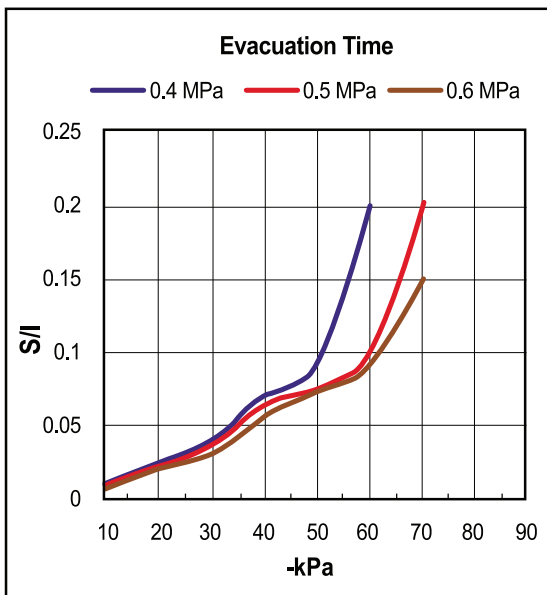
▼ VTCL 3123 ..



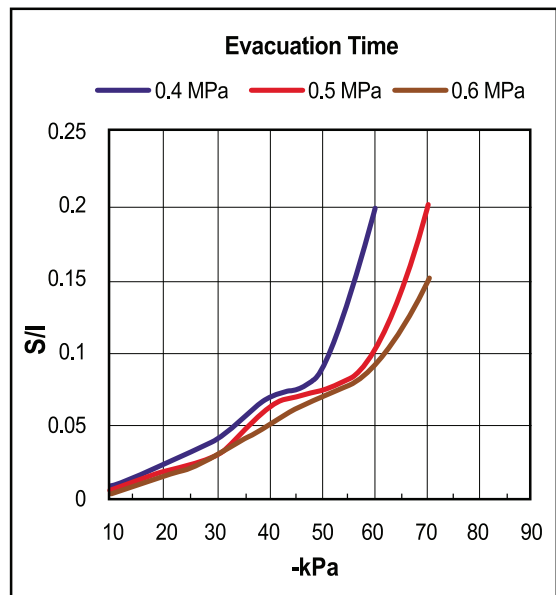
▼ VTCL 3133 ..



▼ VTCL 3124 ..



▼ VTCL 3134 ..

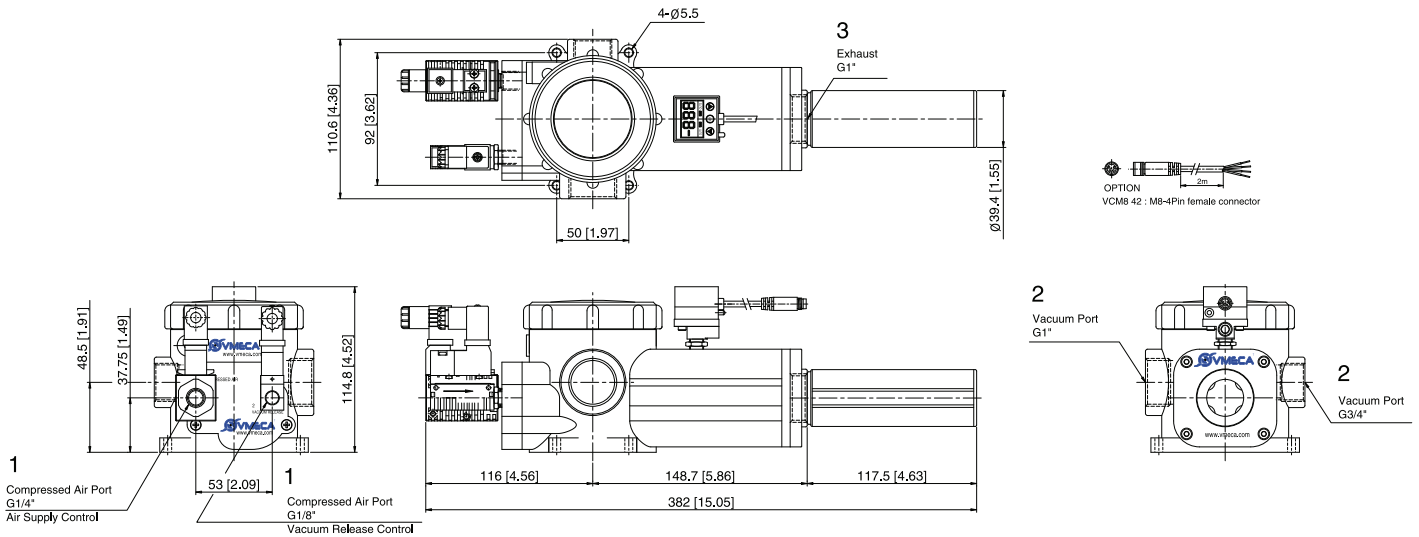


VACUUM PUMPS

**Dimensional Information**

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

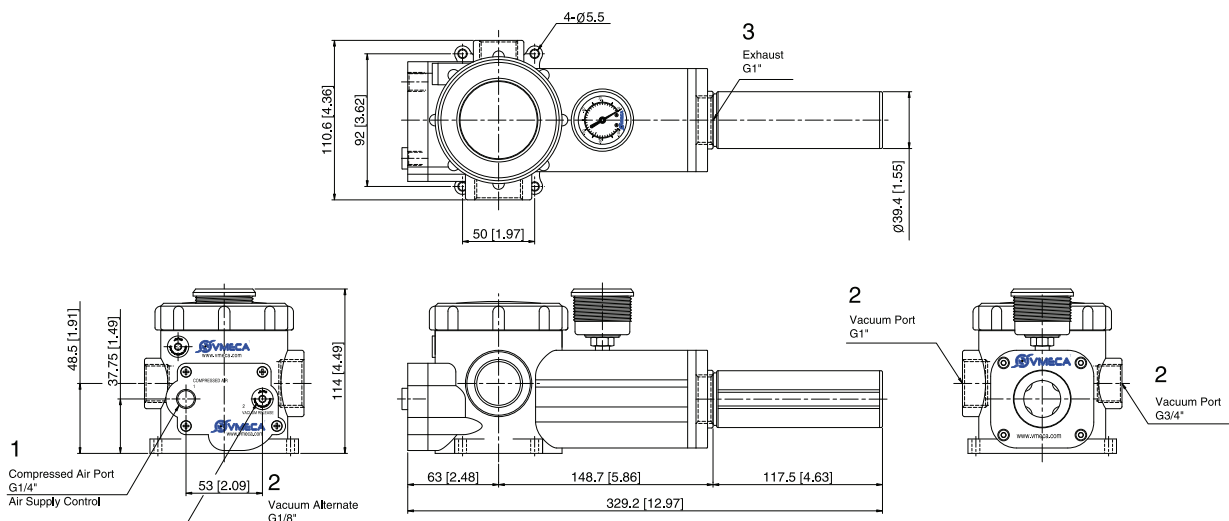
▼ Series VTC 313( ).. / VTCL 313( )..



Measure unit : mm [in]

**Standard**

▼ Series VTC 313( ).. / VTCL 313( )..

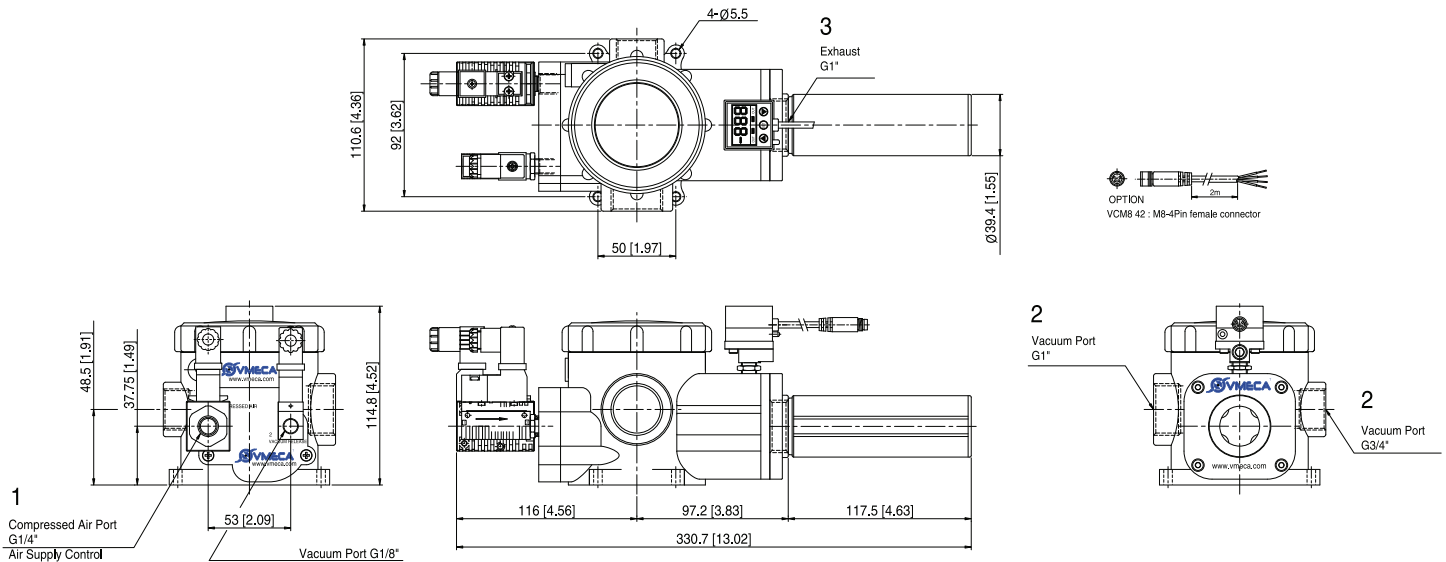


Measure unit : mm [in]

**Dimensional Information**

With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

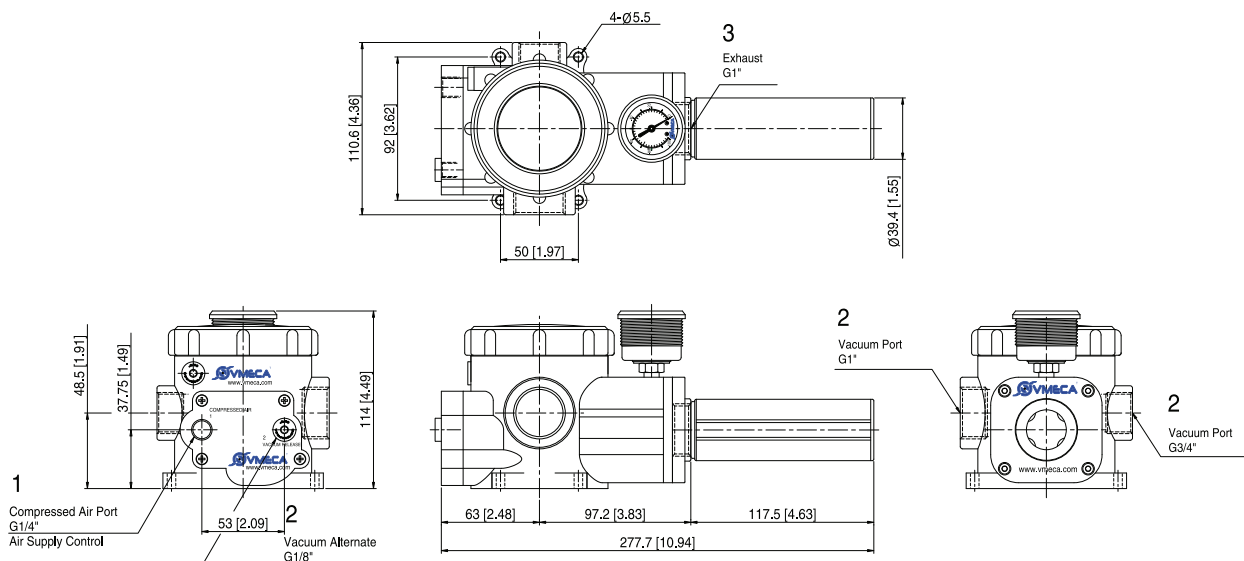
▼ Series VTC 312( ).. / VTCL 312( )..



Measure unit : mm [in]

**Standard**

▼ Series VTC 312( ).. / VTCL 312( )..



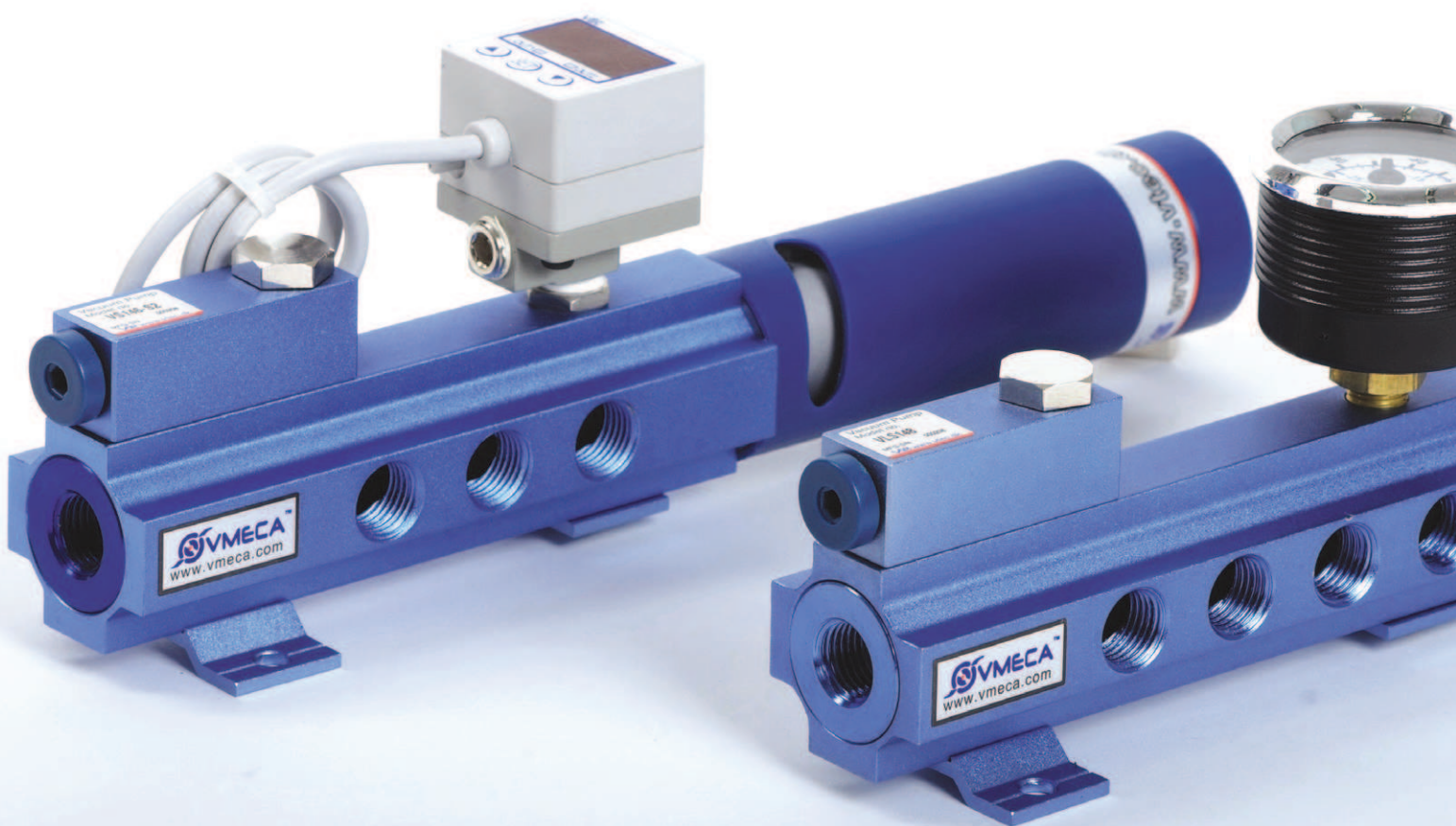
Measure unit : mm [in]

VACUUM PUMPS

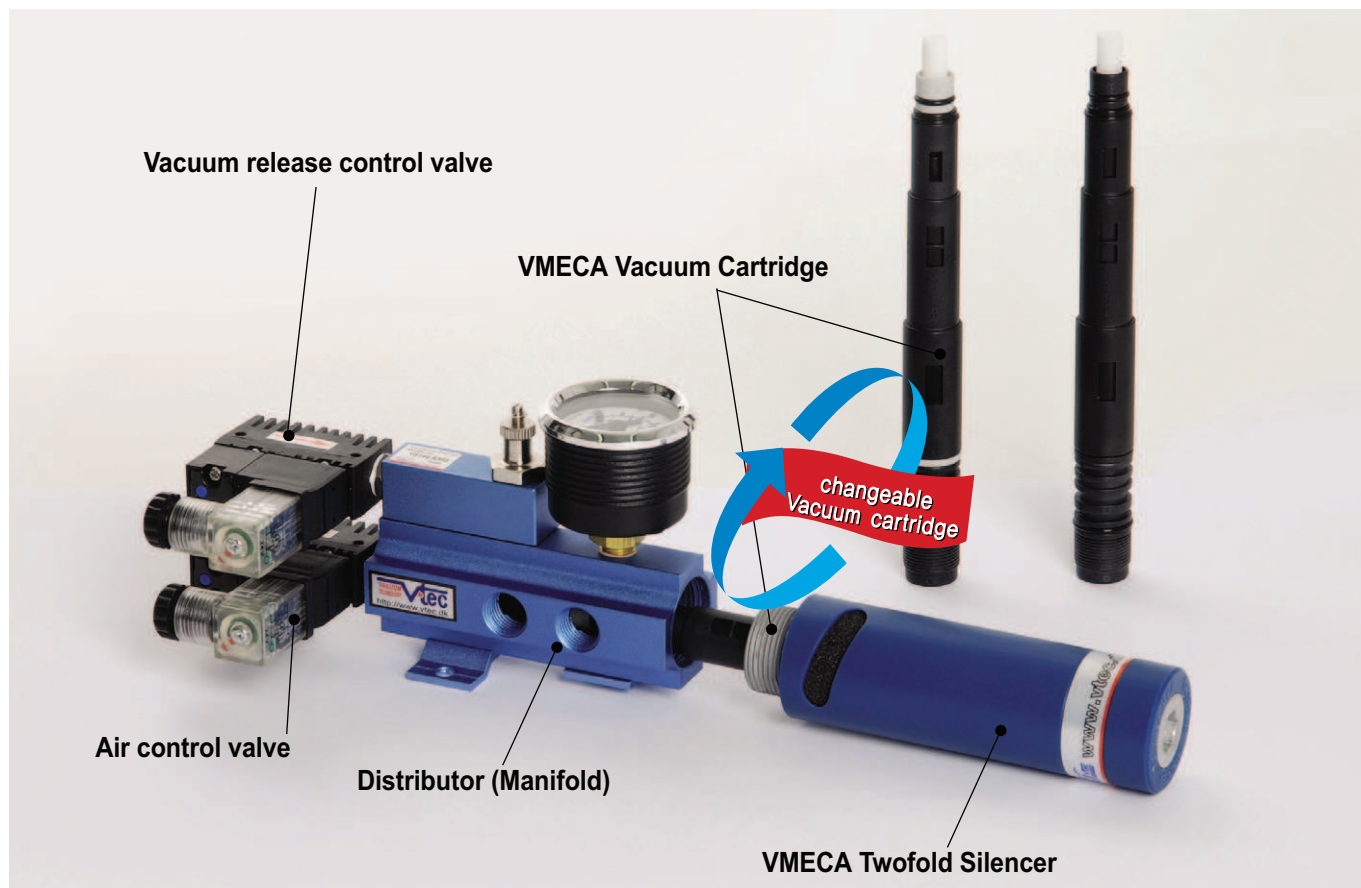




# V-PUMPS



Enable to decide the series of VMECA V-PUMP the performance you need.



## ► VS Series

**High vacuum level (-93 kPa)** at low compressed inlet air pressure (3~6 bar).

High vacuum flow rate to compensate for fluctuating or low compressed air pressure.

Suitable for sealed system applications such as lifting metal sheets of glass plate.

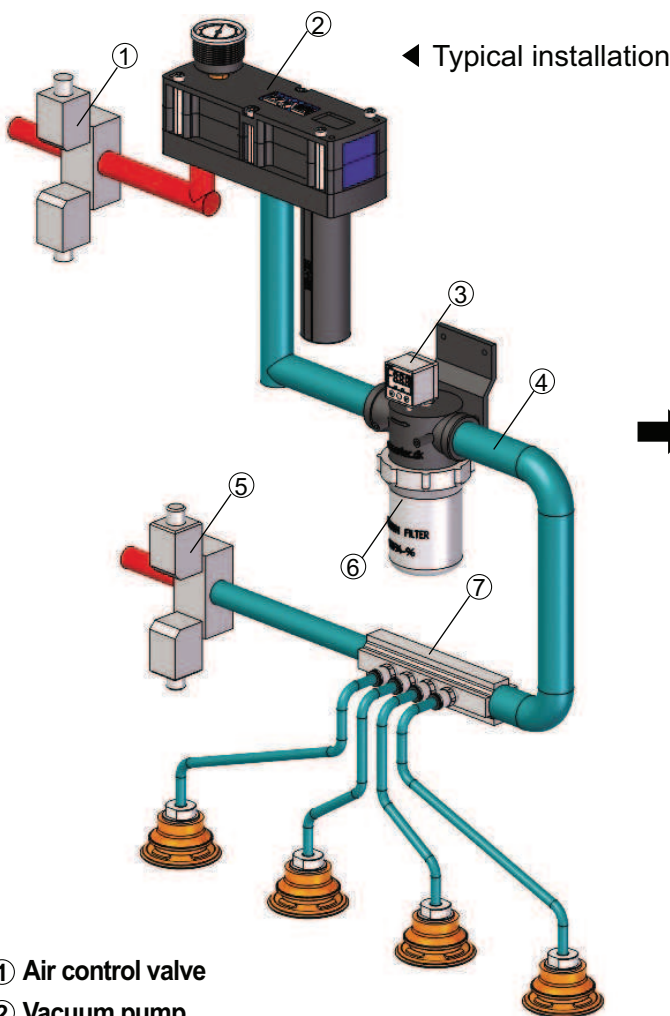
## ► VLS Series

Vacuum level (-75 kPa) at general inlet air pressure (6 bar)

**Extra high vacuum flow rate** and suitable for non-sealed system application.

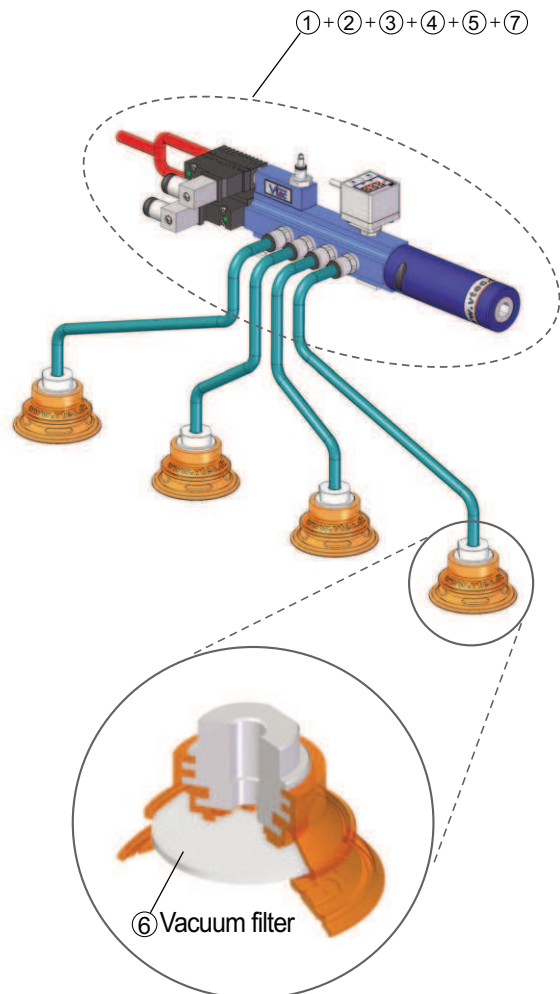
## The VMECA® V-PUMP's features

- Multiple connection alternatives up to 8 ports.
- Minimum installation space.
- Lower capital cost.
- Faster response time.
- Easy to install.
- Easy to maintain and repair.
- Long life time.

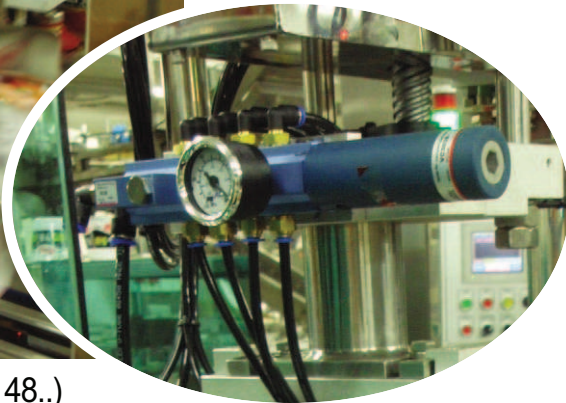
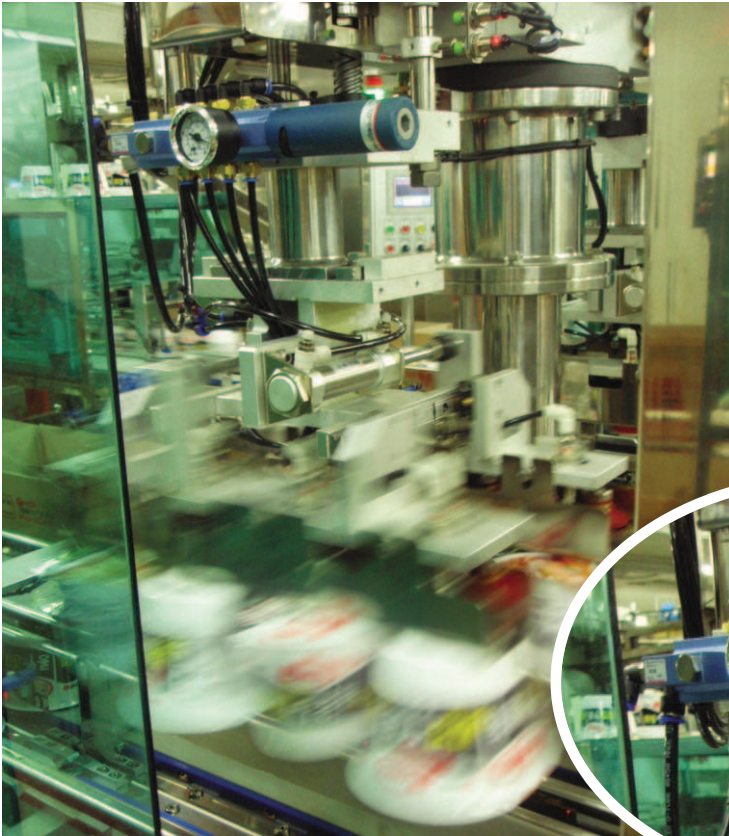


- ① Air control valve
- ② Vacuum pump
- ③ Digital Vacuum switch
- ④ Main vacuum pipe line
- ⑤ Vacuum release control valve
- ⑥ Vacuum filter
- ⑦ Distributor (Manifold)

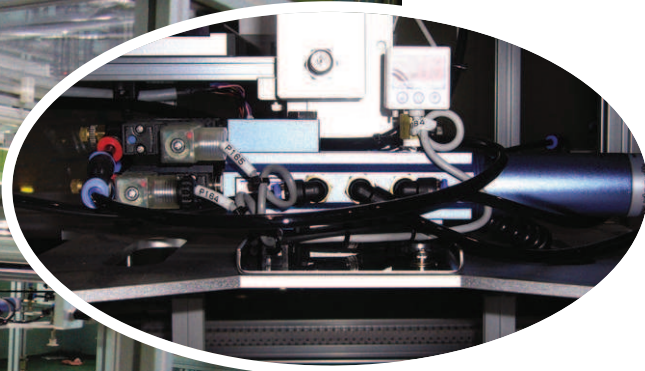
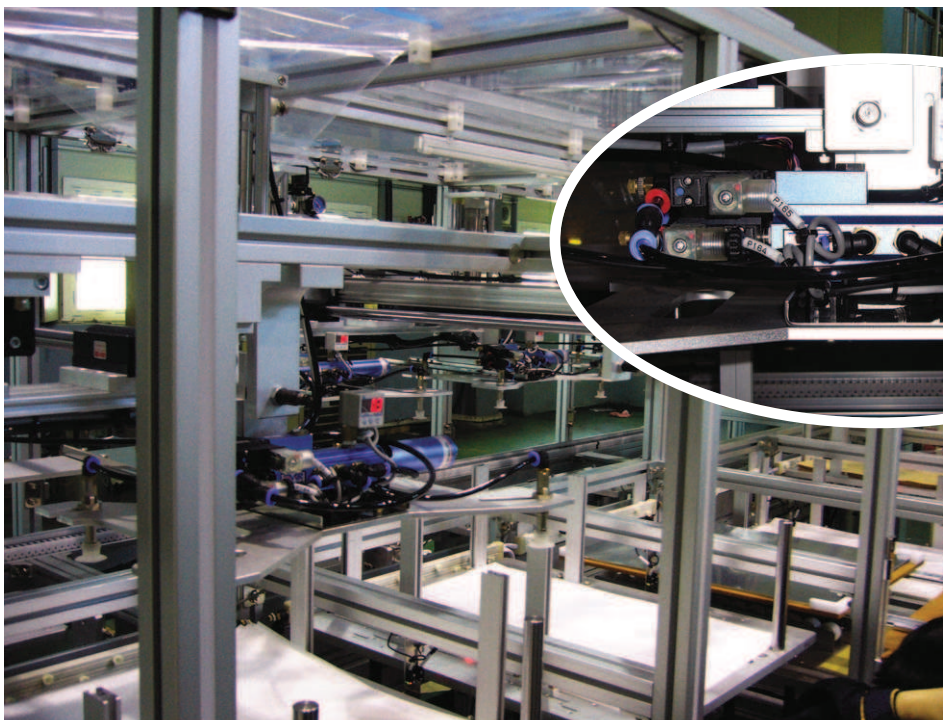
▼ New solution with VMECA V-PUMP



APPLICATIONS



▲ Cup noodle Packaging machine (VS148..)



▲ Thin Film loading (VS146..)

## VS - Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 341 NI/min (12.04 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 97~152 NI/min (3.43~5.37 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



### Main advantages

- High operational reliability despite fluctuating.
- Quick response time.
- VMECA Tworfold Silencer<sup>PT</sup> assures low noise levels.
- Easy to distribute vacuum. (Multiple connection alternatives up to 9 ports.)
- Optional Air-Saving(AS)kit available to minimize energy consumption.
- Optional factory installed air control/vacuum release valves and vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge.

### Order No.

## VS 144 - AS - A3 R3 - CL A - S2 N V

①
②
③
④
⑤
⑥
⑦
⑧
⑨

#### ① Vacuum Port

- **144** - G1/4" X 4EA
- 146 - G1/4" X 6EA
- 148 - G1/4" X 8EA

#### ② Air saving kit ( 108)

- No mark - Standard
- **AS** - Air saving kit attached

#### ③ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑤

#### ④ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

#### ⑤ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ About 'BUS cable' ( 340, 341)

#### ⑥ Vacuum release flow adjust

- No mark - Standard
- **A** - Attached

#### ⑦ Vacuum switch

No mark - Vacuum gauge.

- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.

SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.

SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire. Only for type S2 or S2(P).

#### ⑧ Non-return valve

No mark - Standard

- **N** - Non-return valve.

#### ⑨ Sealing

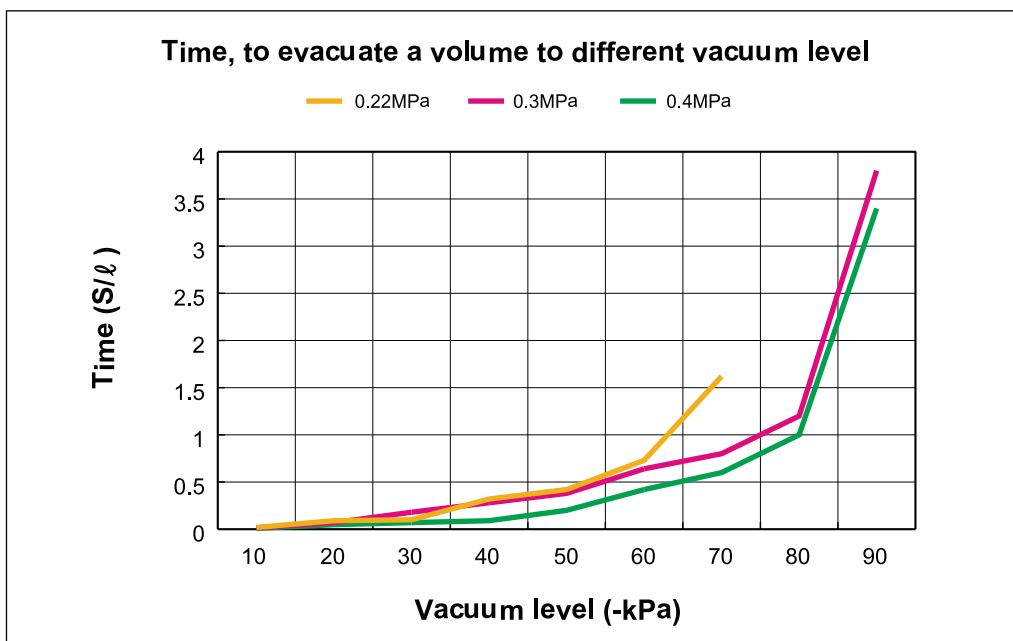
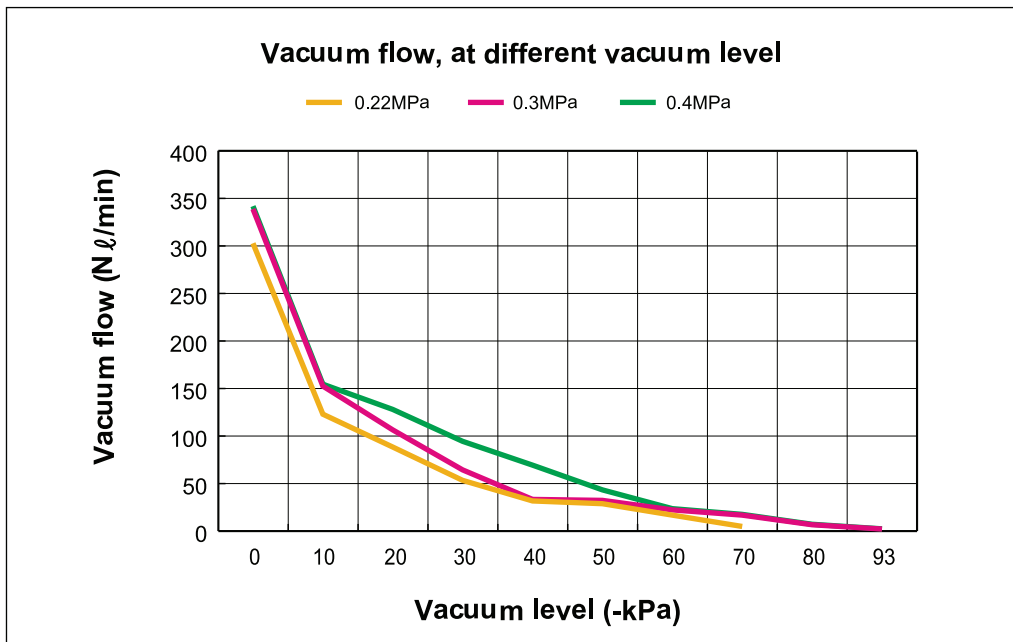
No mark - Standard

- **V** - Viton®
- E** - EPDM

## Performance Data

Series	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VS	75	0.22	302	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	338	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	341	154	127.5	94	69	43	23.3	17.3	6.9	2.1

Series	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)								
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VS	0.22	97	0.019	0.09	0.1	0.32	0.42	0.73	1.62	-	-
	0.3	118	0.015	0.07	0.18	0.28	0.38	0.64	0.8	12	3.8
	0.4	152	0.01	0.48	0.07	0.09	0.2	0.42	0.8	1	3.4



## VLS-Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 362 NI/min (12.79 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 70~104 NI/min (2.47~3.67 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



## Main Advantages

- High operational reliability despite fluctuating.
- Quick response time.
- VMECA Twofold Silencer<sup>PT</sup> assures low noise levels.
- Easy to distribute vacuum. (Multiple connection alternatives up to 8 ports.)
- Optional Air-Saving(AS) kit available to minimize energy consumption.
- Optional factory installed air control/vacuum release valves and vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge.

## Order No.

### VLS 144 - AS - A3 R3 - CL A - S2 N V

①                      ②                      ③                      ④                      ⑤                      ⑥                      ⑦                      ⑧                      ⑨

#### ① Vacuum Port

- **144** - G1/4" X 4EA
- 146 - G1/4" X 6EA
- 148 - G1/4" X 8EA

#### ② Air saving kit (108)

- No mark - Standard
- **AS** - Air saving kit attached

#### ③ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑤

#### ④ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

#### ⑤ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑦

☞ About 'BUS cable' (340, 341)

#### ⑥ Vacuum release flow adjust

- No mark - Standard
- **A** - Attached

#### ⑦ Vacuum switch (108)

- No mark - Vacuum gauge.
- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.
- SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.
- SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑧ Non-return valve

- No mark - Standard
- **N** - Non-return valve.

#### ⑨ Sealing

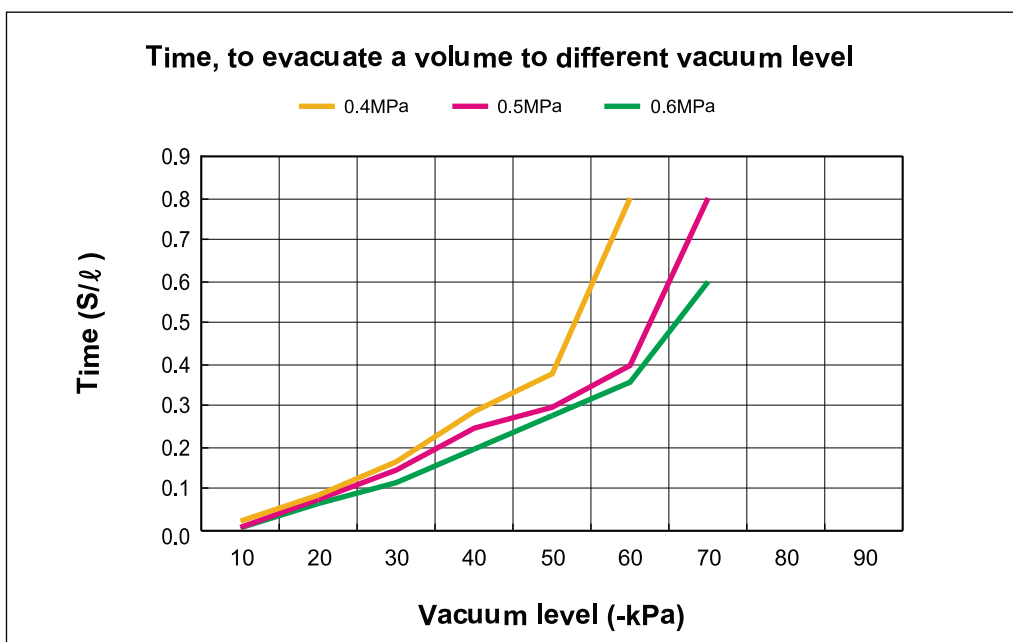
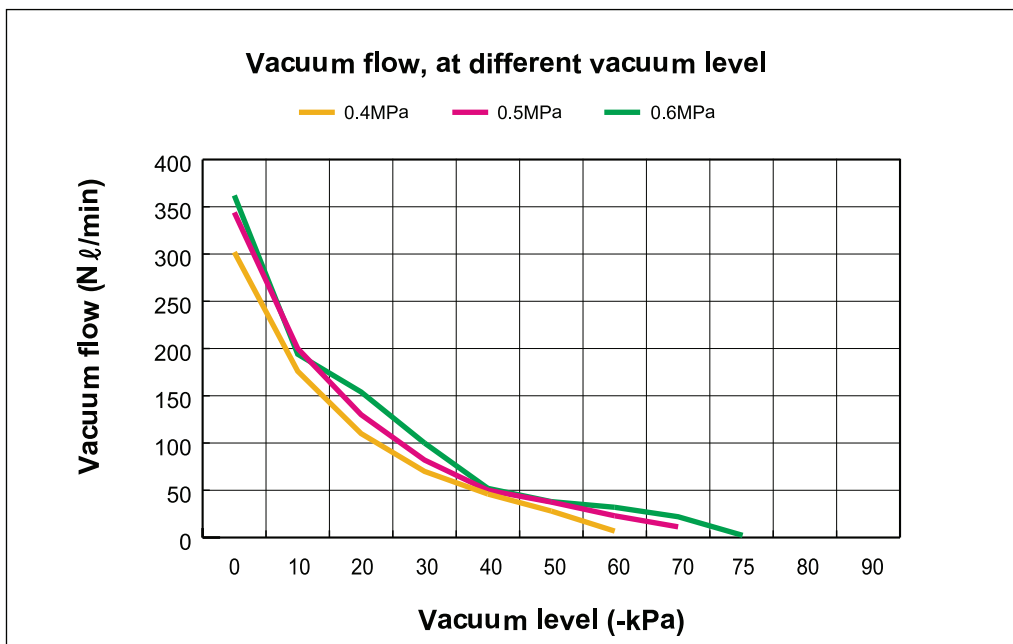
- No mark - Standard
- **V** - Viton®
- E** - EPDM



## Performance Data

Series	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum level -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VLS	60	0.4	302	176	110	70	46	28	6.8	-	-	-
	70	0.5	344	200	130	82	50	37.5	23	11.3	-	-
	75	0.6	362	194	154	100	52	38	32	22	-	-

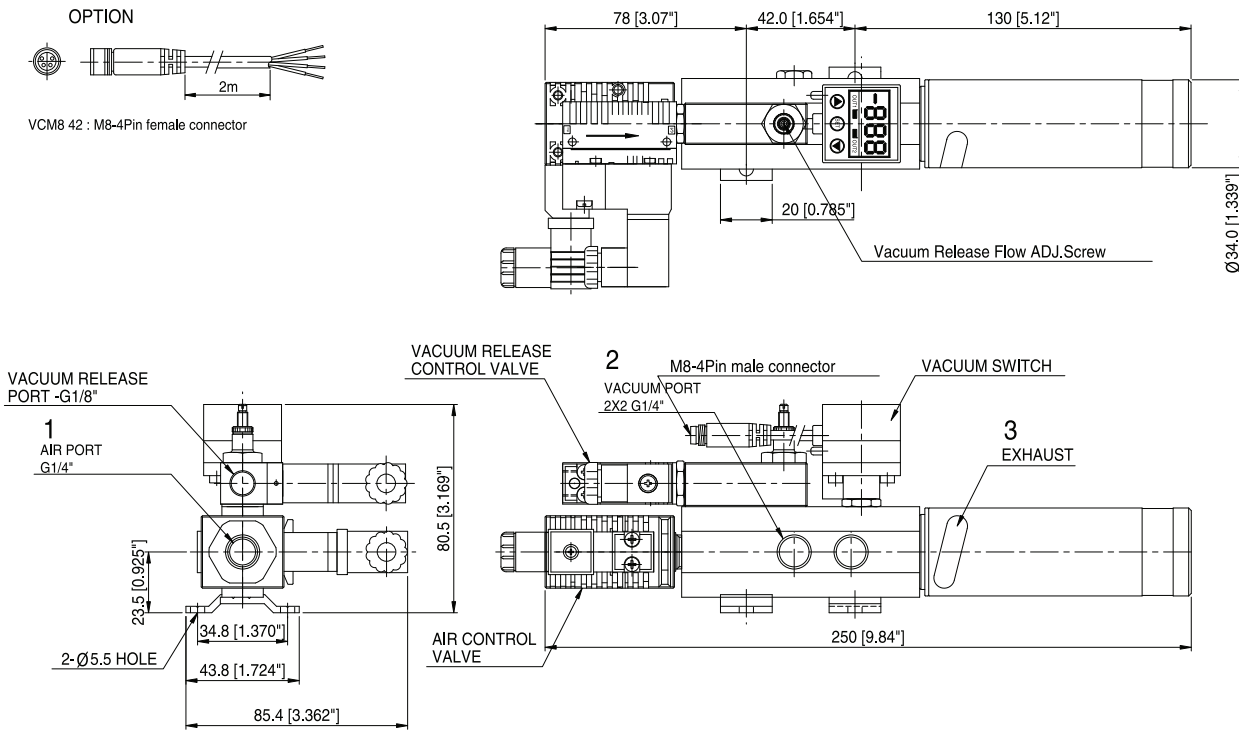
Series	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum level -kPa (-mmHg)								
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
VLS	0.4	70	0.028	0.09	0.17	0.29	0.38	0.8	-	-	-
	0.5	85	0.013	0.08	0.15	0.25	0.3	0.4	0.8	-	-
	0.6	104	0.012	0.07	0.12	0.2	0.28	0.36	0.6	-	-



## Dimensional Information

With Vacuum control valve, Vacuum release control valve and Digital Vacuum Switch

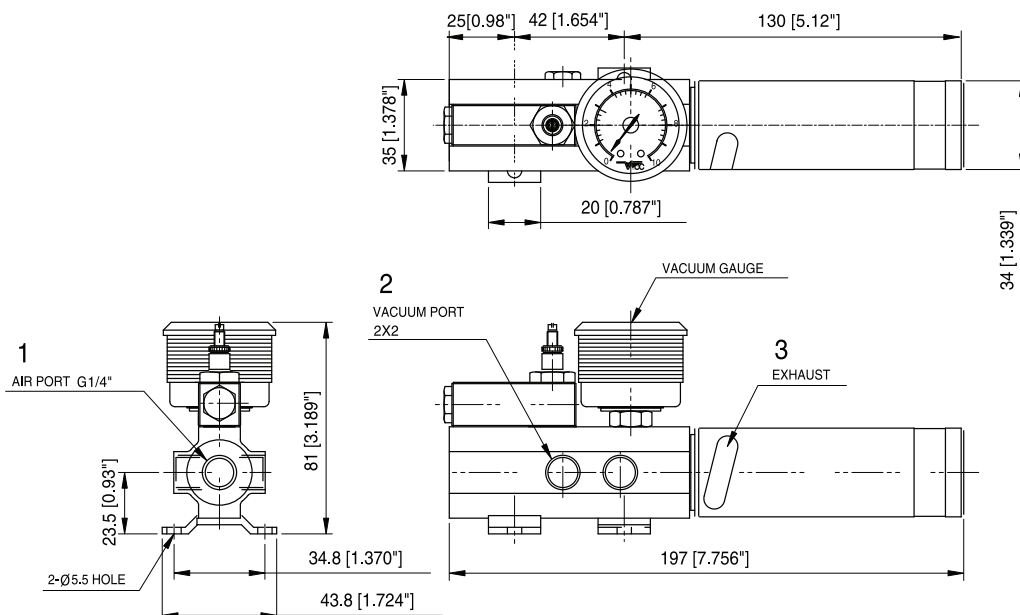
### ▼ Series VS 144.. / VLS 144..



Measure unit : mm [in]

### Standard

### ▼ Series VS 144.. / VLS 144..



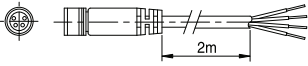
Measure unit : mm [in]

## Dimensional Information

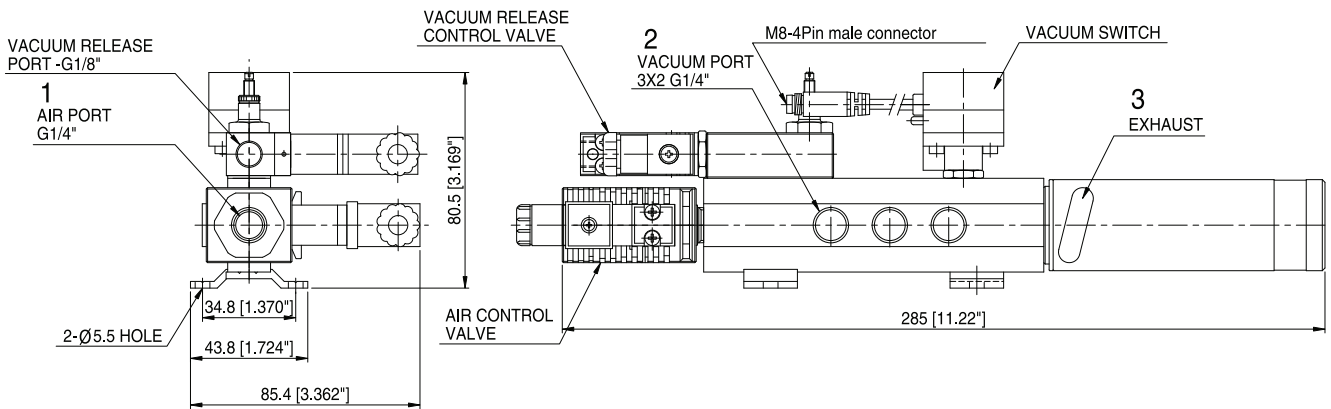
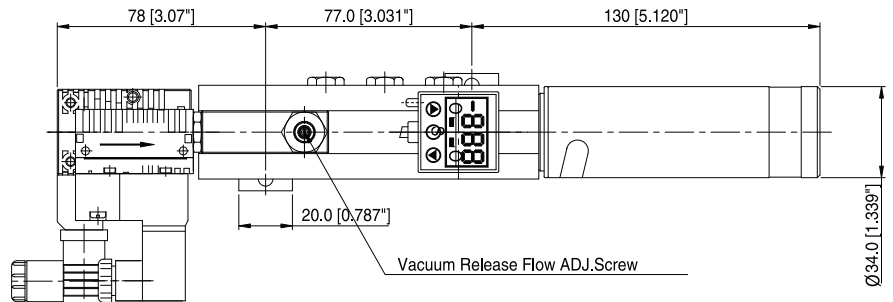
With Vacuum control valve, Vacuum release control valve and Digital Vacuum Switch

### ▼ Series VS 146.. / VLS 146..

OPTION



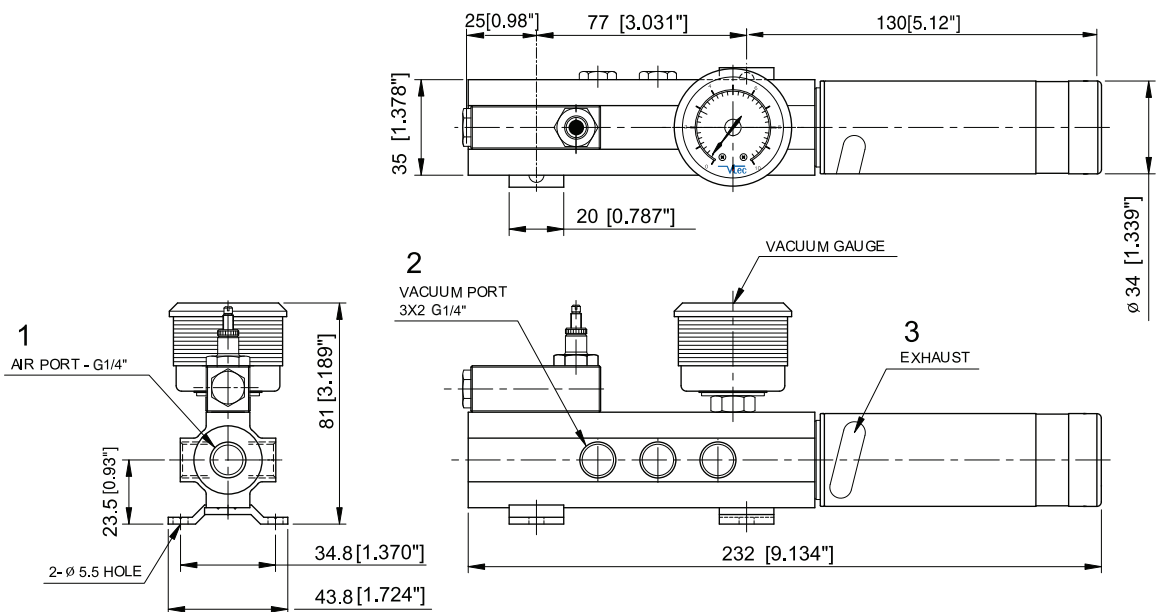
VCM8 42 : M8-4Pin female connector



Measure unit : mm [in]

### Standard

### ▼ Series VS 146.. / VLS 146..

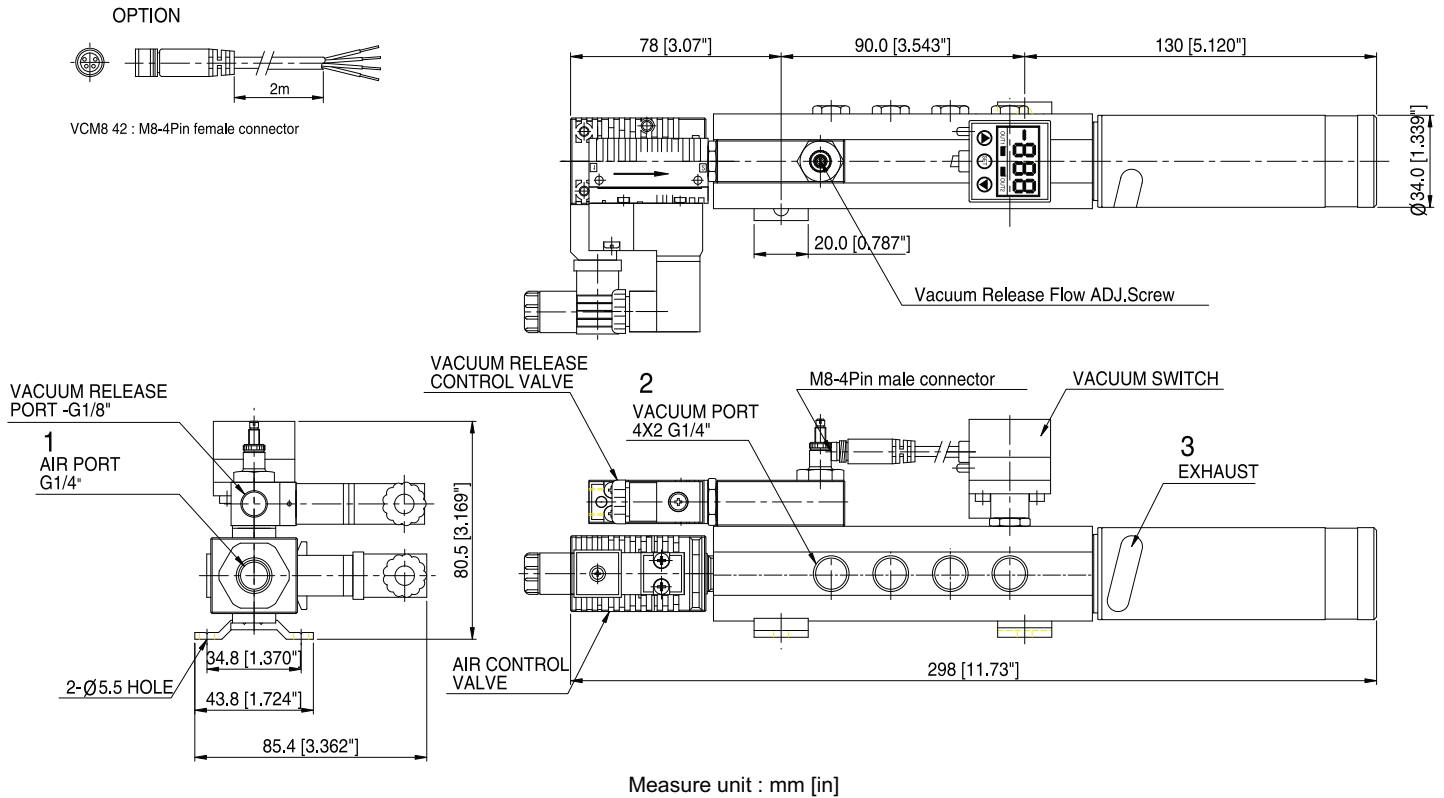


Measure unit : mm [in]

## Dimensional Information

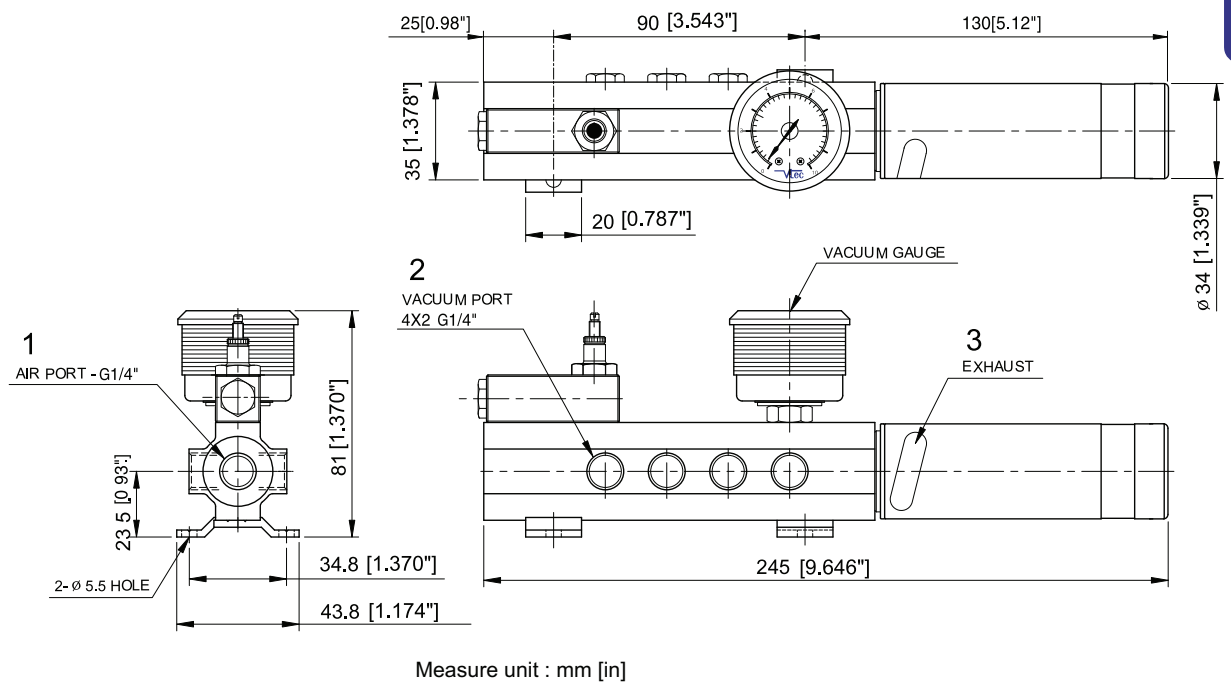
With Vacuum control valve, Vacuum release control valve and Digital Vacuum Switch

### ▼ Series VS 148.. / VLS 148..



### Standard

### ▼ Series VS 148.. / VLS 148..



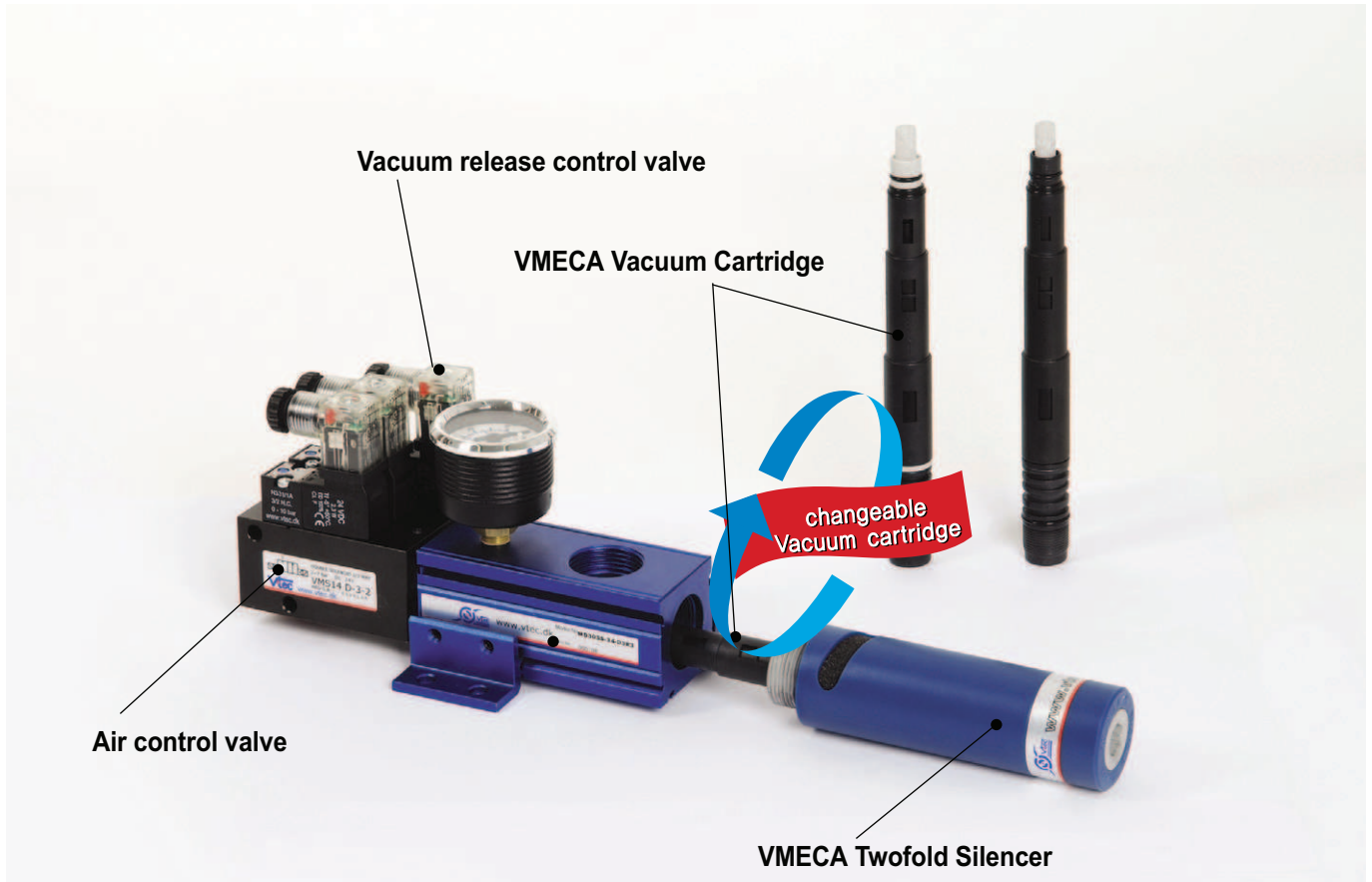
VACUUM PUMPS



# ***MD-PUMPS***



Enable to decide the series of VMECA MD-PUMP the performance you need.



## ► MD Series

**High vacuum level (-93 kPa)** at low compressed inlet air pressure (3~6 bar).

High vacuum flow rate to compensate for fluctuating or low compressed air pressure.

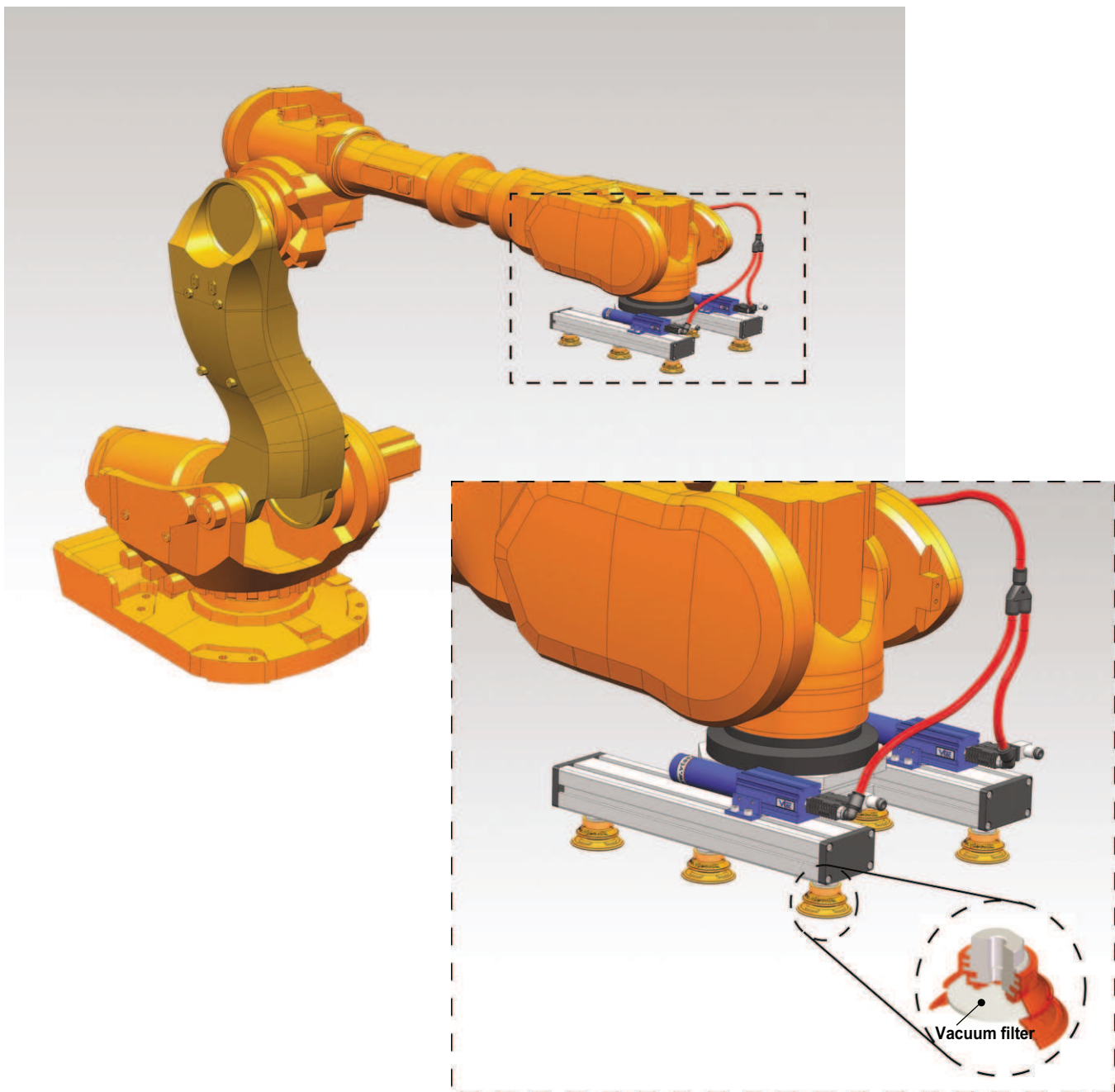
Suitable for sealed system applications such as lifting metal sheets of glass plate.

## ► MDL Series

Vacuum level (-75 kPa) at general inlet air pressure. (6 bar)

**Extra high vacuum flow rate** and suitable for non-sealed system application.

## APPLICATIONS

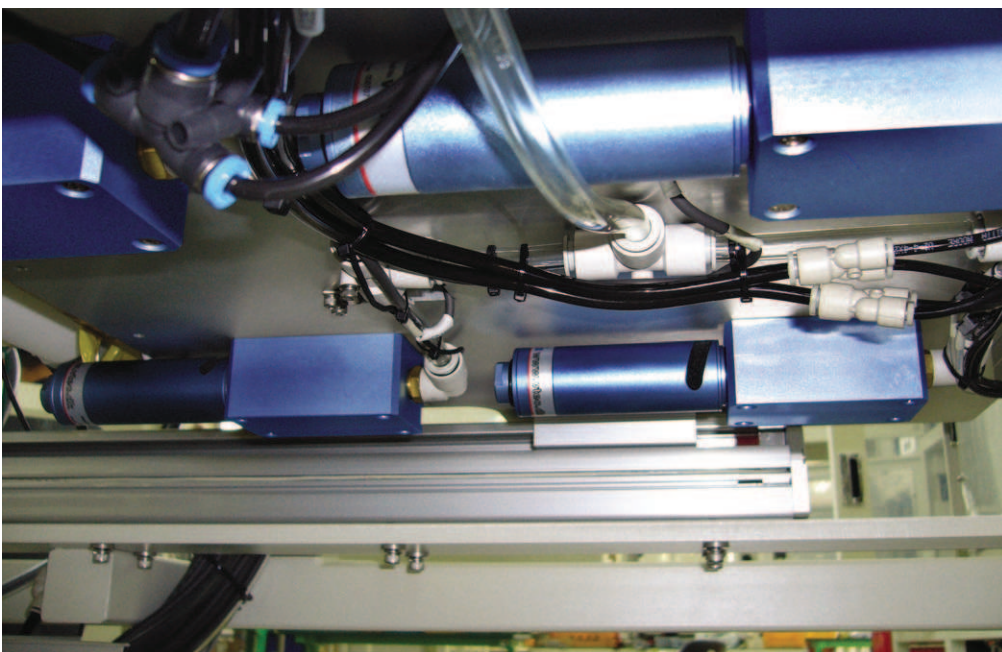
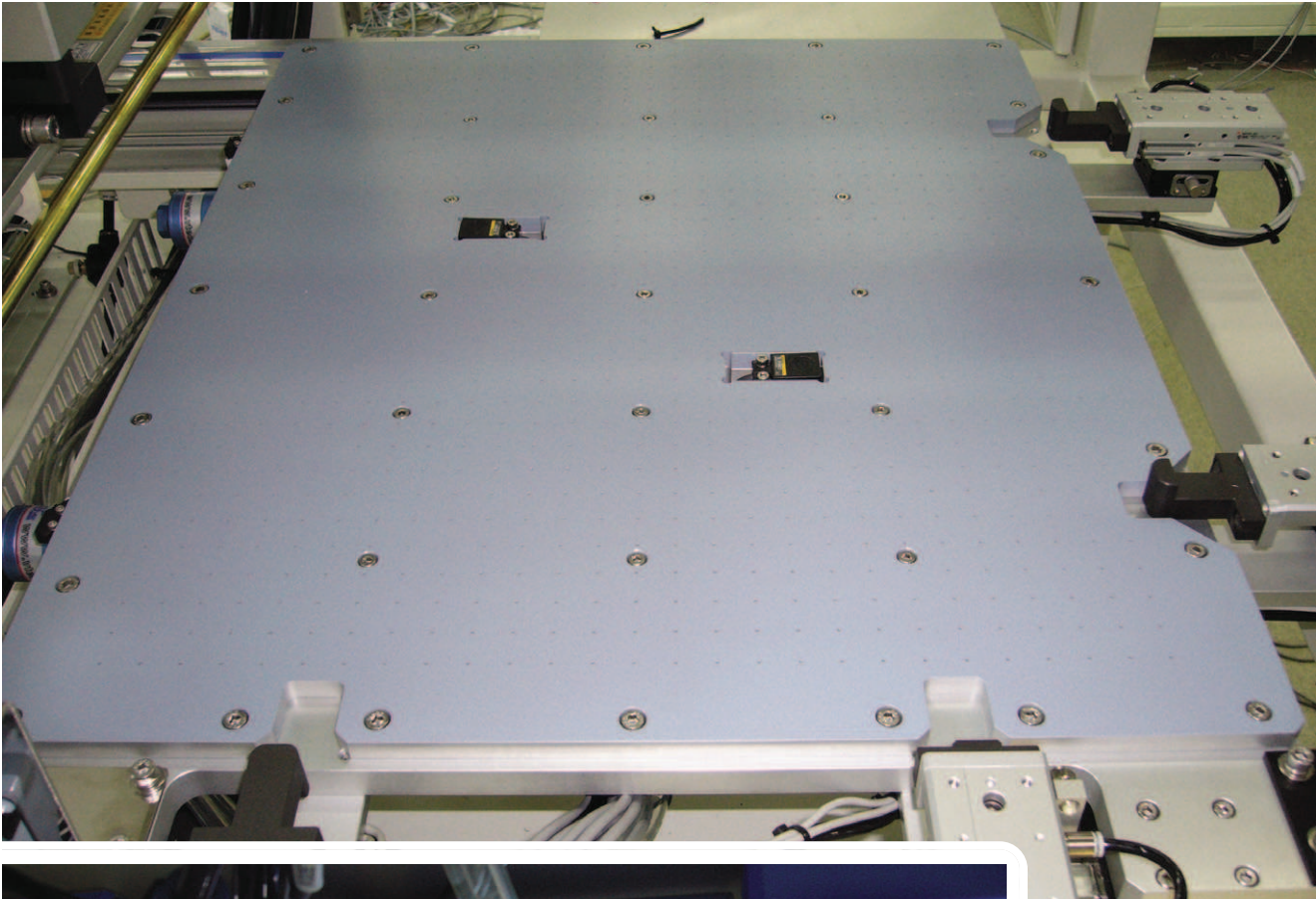


VACUUM PUMPS

Lightweight design of the VMECA MD-PUMP reduces the robot size requirement through direct mount on a robot-controlled gripper and improves the production time mounted close to the point of use.



APPLICATIONS



▲ Circuit Board holding plate

## MD-Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 341 NI/min (12.04 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 97~152 NI/min (3.43~5.37 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



## Main Advantages

- Located at or near the point of use thus reducing system volume, increase and reducing cycle time
- Compact in size and light weight
- Maintain vacuum despite fluctuations and drops in air pressure
- VMECA TWOFOLD SILENCER<sup>PT</sup> assures low noise levels (about 30% lower than conventional silencer)
- Adjustable exhaust direction
- Optional Air-saving kit (AS-KIT) available to minimize energy consumption.
- Optional factory installed air control / vacuum release valves and digital vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge (save the maintenance time)

## Order No.

**MD 303 S - 34 AS A3 R3 - CL A - S2 - N V**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

### ① Model

- **MD 303** - 3 stage nozzle
- MD 302 - 2 stage nozzle

### ② Exhaust type

- **S\*** - Twofold Silencer
- P - G3/8" port

\*S : Only for MD303..

### ③ Vacuum port

- **34** - G3/4"
- H22\* - Ø22 Hole

\* H22 : For direct installation

### ④ Air saving kit ( 108 )

- No mark - Standard
- **AS** - Air saving kit

### ⑤ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑦

### ⑥ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

### ⑦ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve  
 ※ Remark  
 CL : Available only with DC24V  
 3B : Available only with DC24V  
 Available only with 'S2' or 'S2P', section ⑨  
 ☞ About 'BUS cable' ( 340, 341 )

### ⑧ Vacuum release flow adjust

- No mark - Standard
- **A** - Attached

### ⑨ Vacuum switch

- No mark - Vacuum gauge.
- **S2(P)** - Digital display output 2points, No analog supply  
M8-4Pin Connector type 0.3m lead wire.
- SG2(P) - Digital display output 2 points, No analog supply  
Grommet type 4-Core 2m lead wire.
- SG3(P) - Digital display output 2 points, Analog supply  
Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)  
 ↳ Output type :PNP open collector  
 ② VCM8 42 : M8-4Pin connector wire.  
 Only for type S2 or S2(P).

### ⑩ Non-return valve

- No mark - Standard
- **N** - Non-return valve.

### ⑪ Sealing

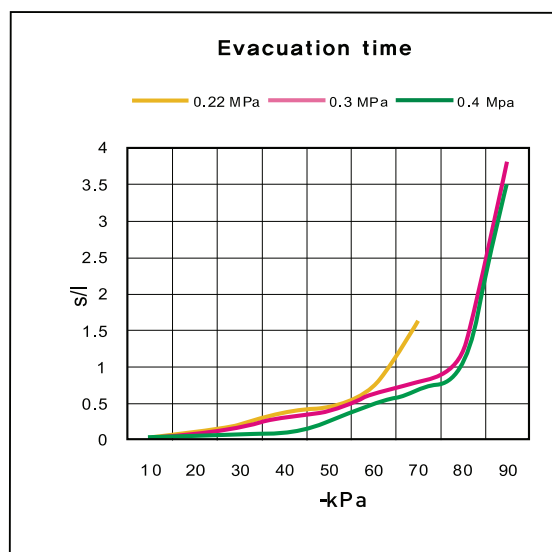
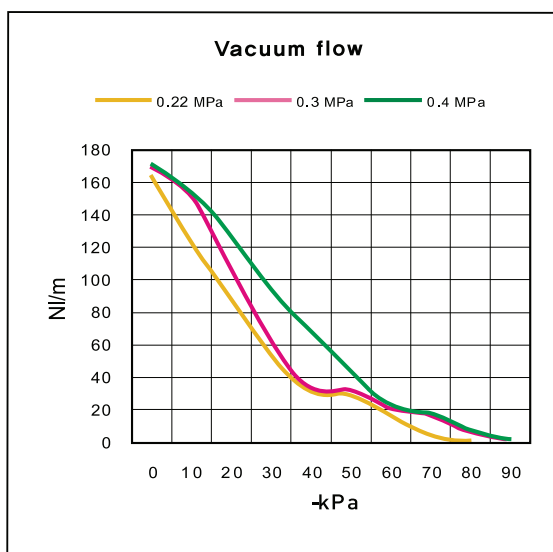
- No mark - Standard
- **V** - Viton®
- E - EPDM

## Performance Data

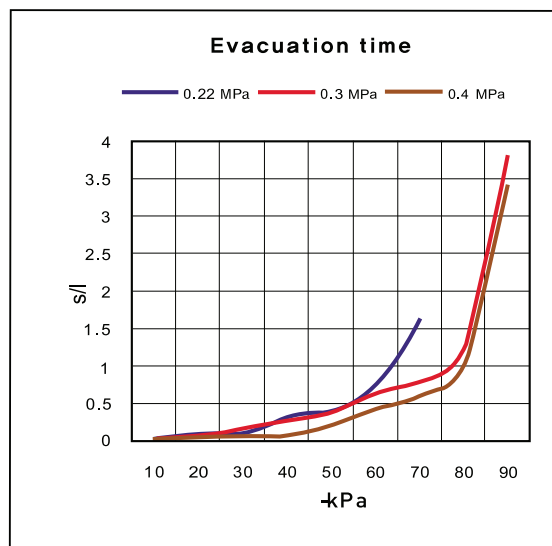
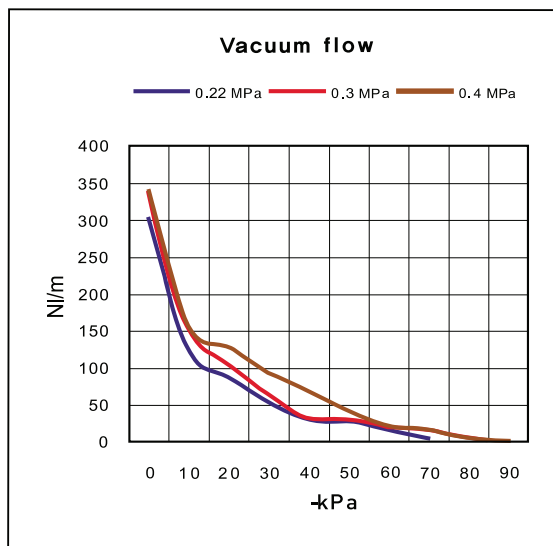
Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
MD 302..	75	0.22	164	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	170	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	171	154	127.5	94	69	43	23.3	17.3	6.9	2.1
MD 303..	75	0.22	302	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	338	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	341	154	127.5	94	69	43	23.3	17.3	6.9	2.1

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
MD 302..	0.22	97	0.03	0.12	0.21	0.38	0.47	0.73	1.62	-	-	
	0.3	118	0.027	0.1	0.19	0.3	0.4	0.64	0.8	1.2	3.8	
	0.4	152	0.026	0.058	0.09	0.1	0.25	0.5	0.69	1.05	3.5	
MD 303..	0.22	97	0.019	0.09	0.1	0.32	0.42	0.73	1.62	-	-	
	0.3	118	0.015	0.07	0.18	0.28	0.38	0.64	0.8	1.2	3.8	
	0.4	152	0.01	0.048	0.07	0.09	0.2	0.42	1.6	1	3.4	

▼ MD-302..



▼ MD-303..



## MDL-Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 362 NI/min (12.79 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 70~104 NI/min (2.47~3.67 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 50~60 dBA



## Main Advantages

- Located at or near the point of use thus reducing system volume, increase and reducing cycle time
- Compact in size and light weight
- Maintain vacuum despite fluctuations and drops in air pressure
- VMECA TWOFOLD SILENCER<sup>PT</sup> assures low noise levels (about 30% lower than conventional silencer)
- Adjustable exhaust direction
- Optional Air-saving kit (AS-KIT) available to minimize energy consumption.
- Optional factory installed air control / vacuum release valves and digital vacuum switch available.
- Easily mountable and interchangeable vacuum cartridge (save the maintenance time)

## Order No.

**MDL 303 S - 34 AS A3 R3 - CL A - S2 - N V**

①    ②    ③    ④    ⑤    ⑥    ⑦    ⑧    ⑨    ⑩    ⑪

### ① Model

- **MDL 303** - 3 stage nozzle
- MDL 302 - 2 stage nozzle

### ② Exhaust type

- **S\*** - Twofold Silencer
- P - G3/8" port

\*S : Only for MDL303..

### ③ Vacuum port

- **34** - G3/4"
- H22\* - Ø22Hole

\* H22 : For direct installation

### ④ Air saving kit ( 108 )

- No mark - Standard
- **AS** - Air saving kit

### ⑤ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑦

### ⑥ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

### ⑦ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve  
 ※ Remark  
 CL : Available only with DC24V  
 3B : Available only with DC24V  
 Available only with 'S2' or 'S2P', section ⑨  
 ☞ About 'BUS cable' ( 340, 341 )

### ⑧ Vacuum release flow adjust

- No mark - Standard
- **A** - Attached

### ⑨ Vacuum switch

- No mark - Vacuum gauge.
- **S2(P)** - Digital display output 2points, No analog supply M8-4Pin Connector type 0.3m lead wire.
- SG2(P) - Digital display output 2 points, No analog supply Grommet type 4-Core 2m lead wire.
- SG3(P) - Digital display output 2 points, Analog supply Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)  
 ↳ Output type :PNP open collector  
 ② VCM8 42 : M8-4Pin connector wire.  
 Only for type S2 or S2(P).

### ⑩ Non-return valve

- No mark - Standard
- **N** - Non-return valve.

### ⑪ Sealing

- No mark - Standard
- **V** - Viton®
- E** - EPDM

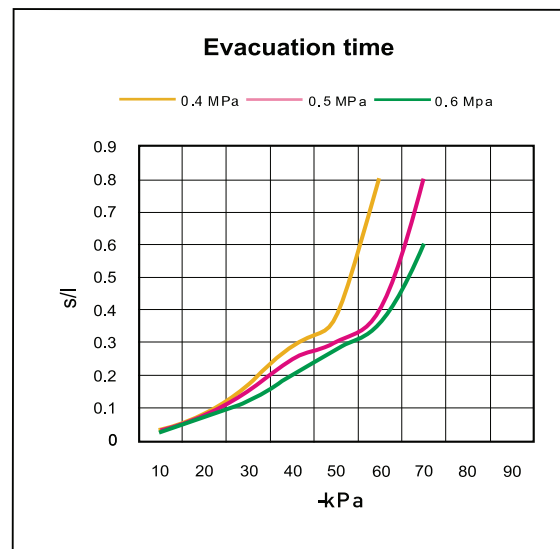
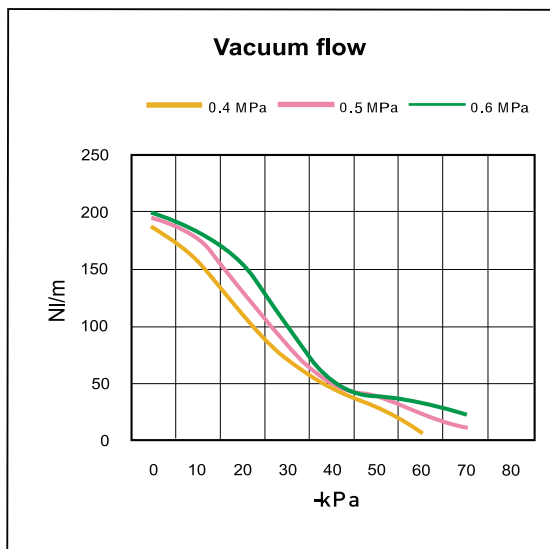
## Performance Data

Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)									
			0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
MDL 302..	60	0.4	188	158	110	70	46	28	6.8	-	-	-
	70	0.5	195	176	130	82	50	37.5	23	11.3	-	-
	75	0.6	200	183	154	100	52	38	32	22	-	-
MDL 303..	60	0.4	302	176	110	70	46	28	6.8	-	-	-
	70	0.5	344	200	130	82	50	37.5	23	11.3	-	-
	75	0.6	362	194	154	100	52	38	32	22	-	-

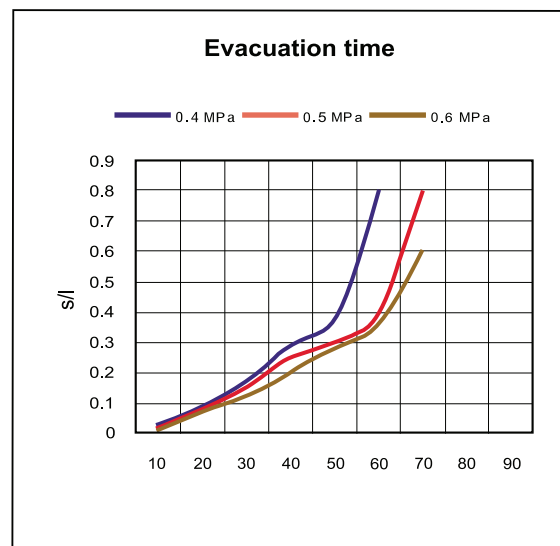
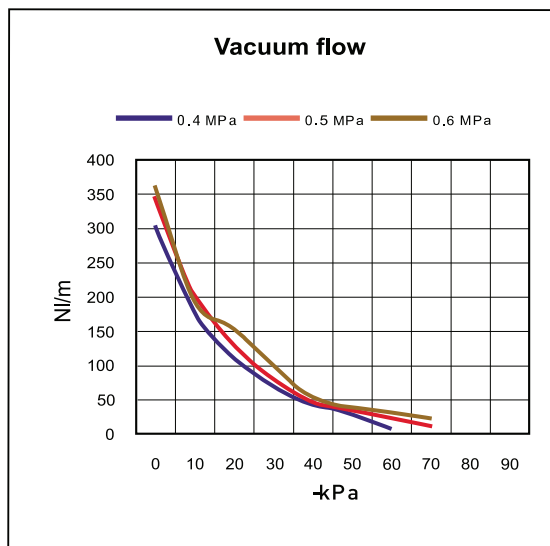
  

Model	Feed pressure (MPa)	Air consumption (NI/min)	Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)									
			10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)	
MDL 302..	0.4	70	0.035	0.084	0.17	0.29	0.38	0.8	-	-	-	
	0.5	85	0.027	0.08	0.15	0.25	0.3	0.4	0.8	-	-	
	0.6	104	0.028	0.08	0.12	0.2	0.28	0.36	0.6	-	-	
MDL 303..	0.4	70	0.028	0.09	0.17	0.29	0.38	0.8	-	-	-	
	0.5	85	0.013	0.08	0.15	0.25	0.3	0.4	0.8	-	-	
	0.6	104	0.012	0.07	0.12	0.2	0.28	0.36	0.6	-	-	

▼ MDL-302..



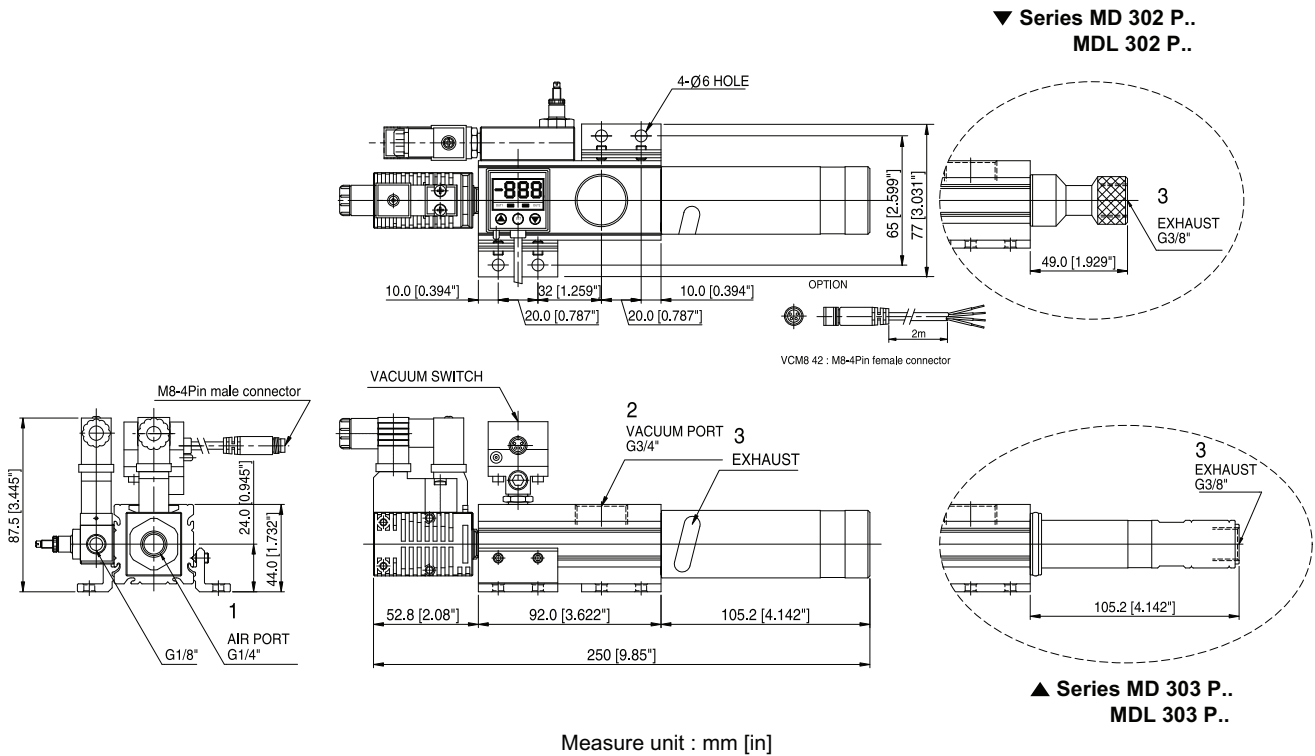
▼ MDL-303..



## Dimensional Information

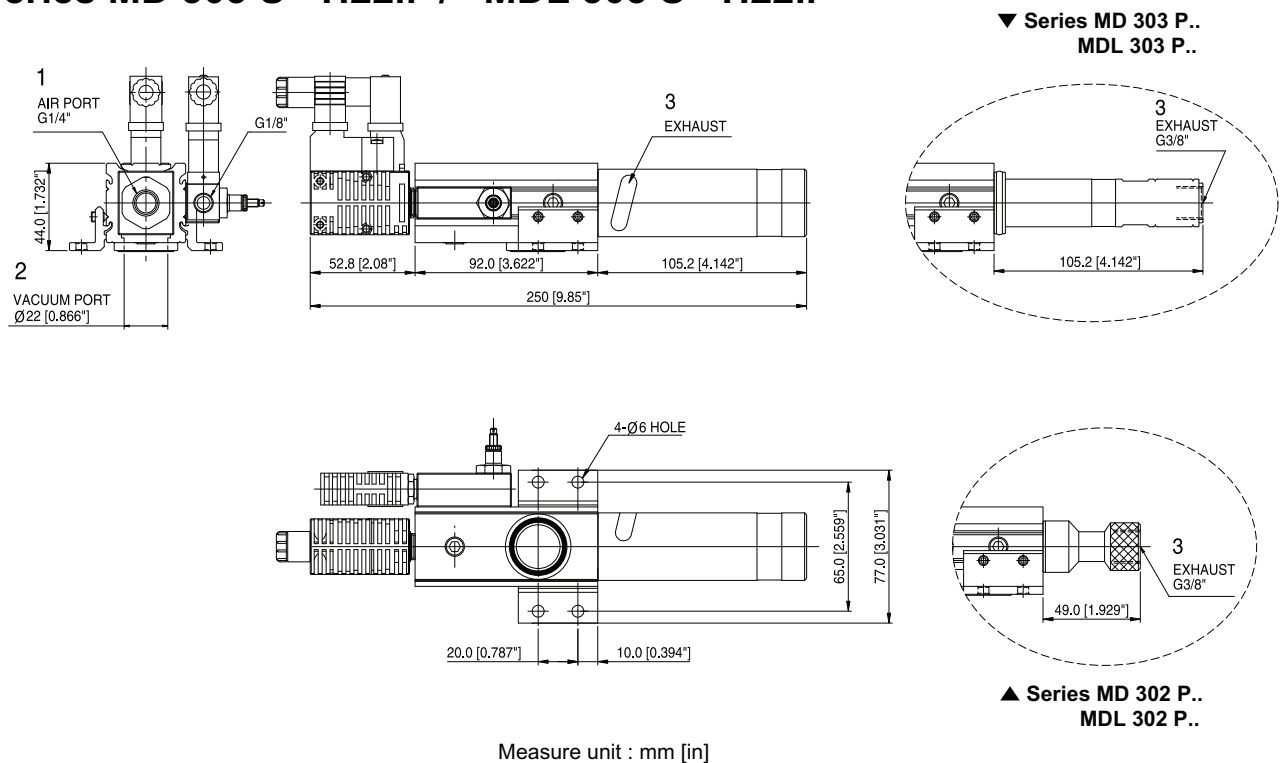
With Air Control valve, Vacuum Release Control valve and Digital Vacuum Switch

### ▼ Series MD 303 S - 34.. / MDL 303 S - 34..



With Air Control valve, Vacuum Release Control valve

### ▼ Series MD 303 S - H22.. / MDL 303 S - H22..

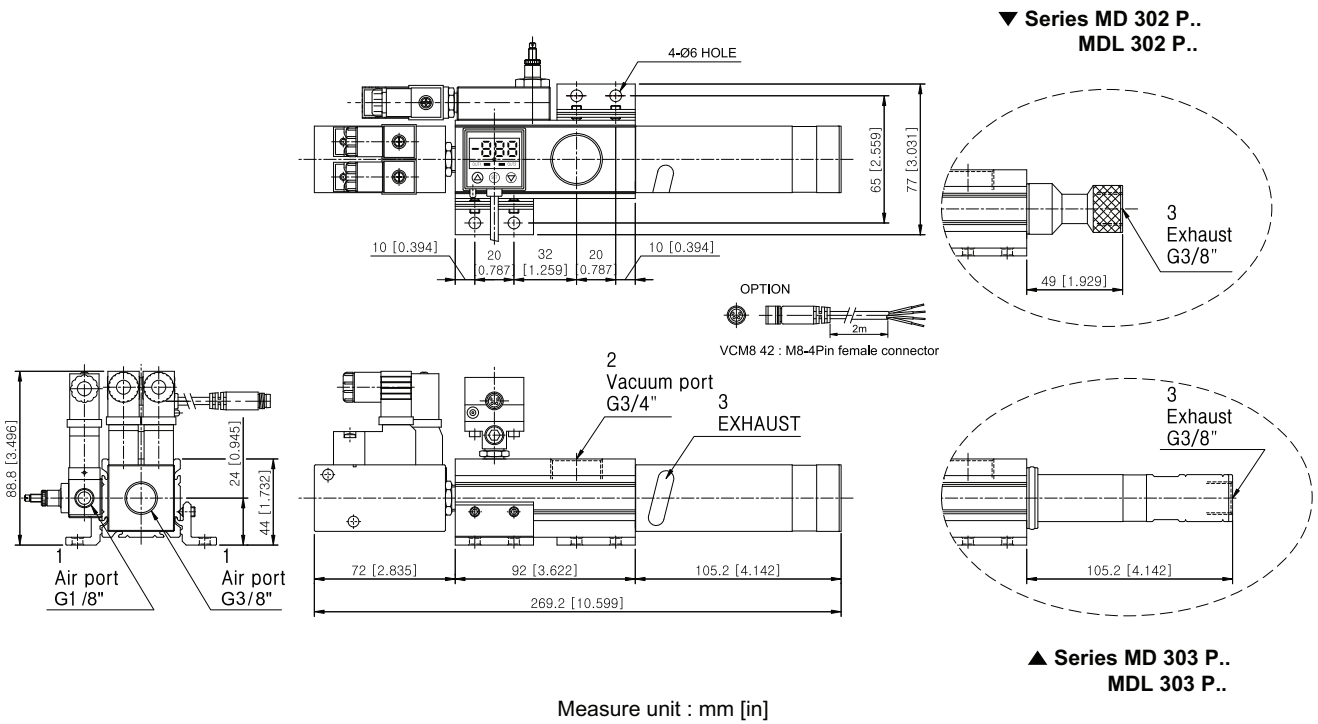


VACUUM PUMPS

## Dimensional Information

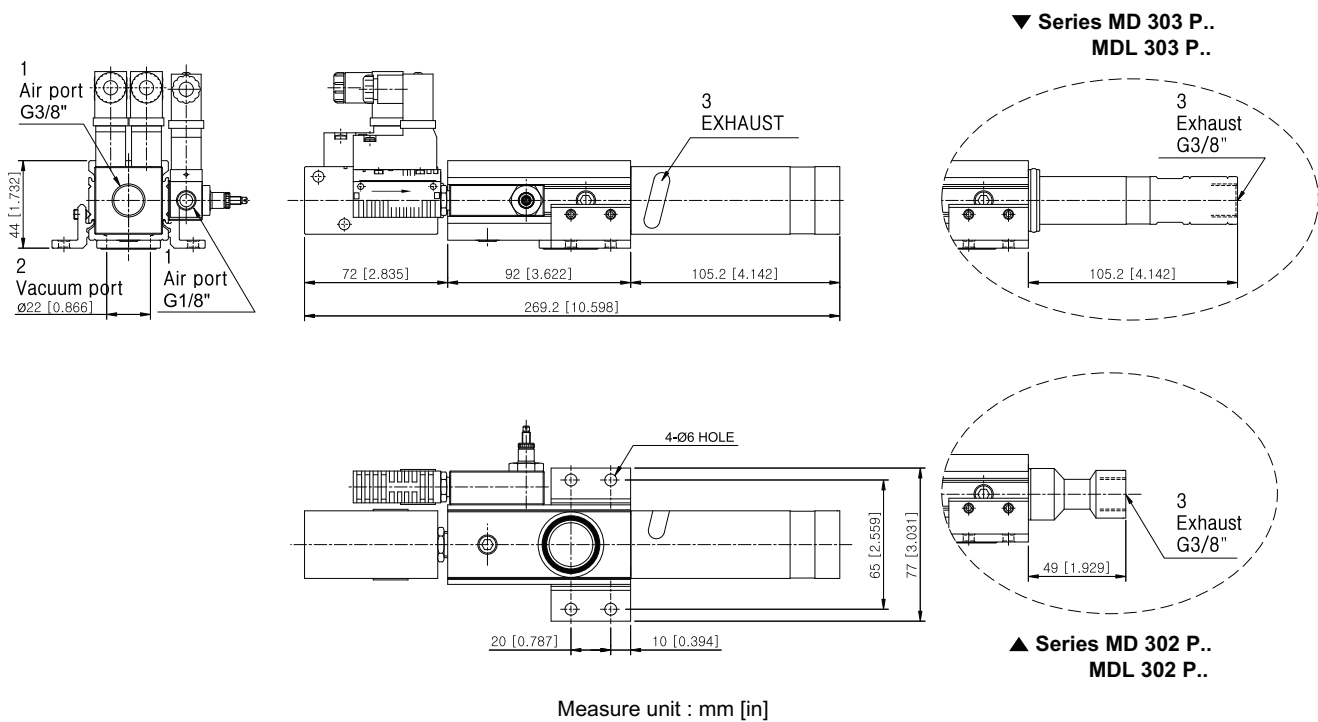
With Air Control valve (Double sol.type), Vacuum Release Control valve and Digital Vacuum Switch

### ▼ Series MD 303 S - 34.. / MDL 303 S - 34..



With Air Control valve (Double sol.type), Vacuum Release Control valve

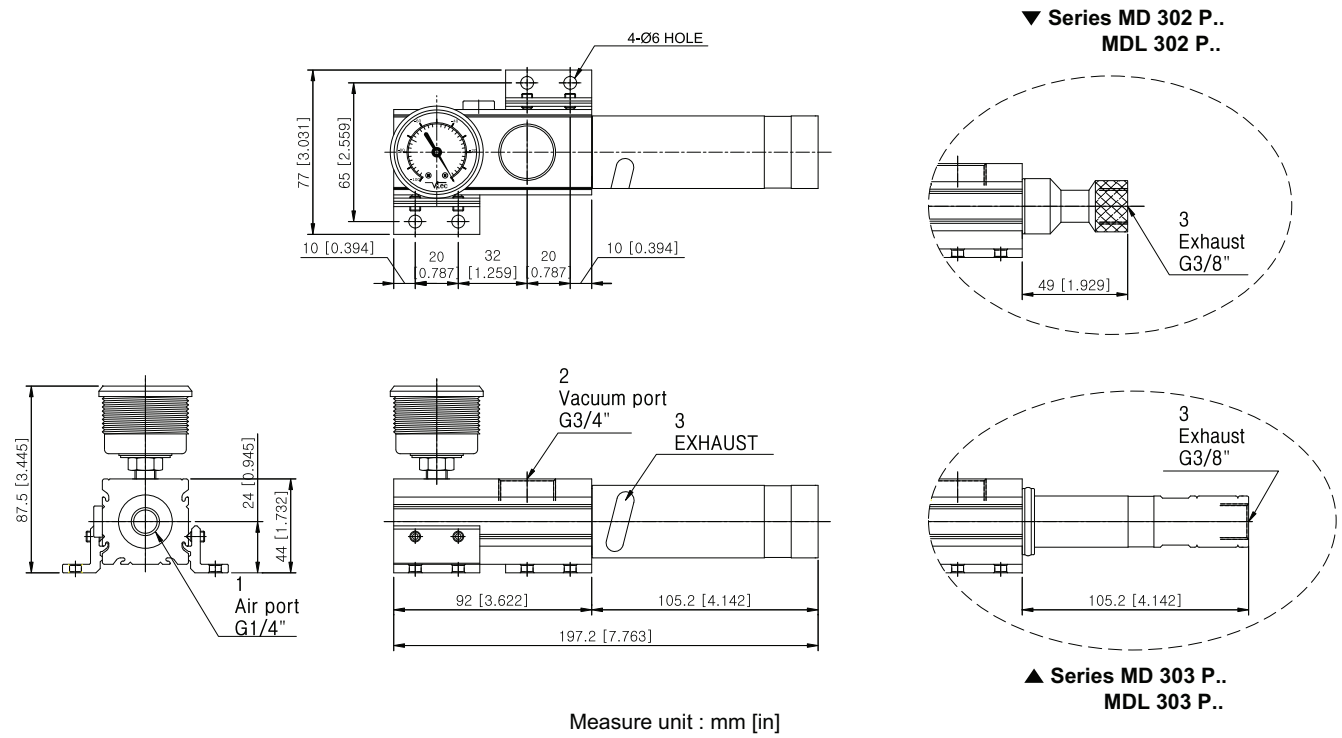
### ▼ Series MD 303 S - H22.. / MDL 303 S - H22..



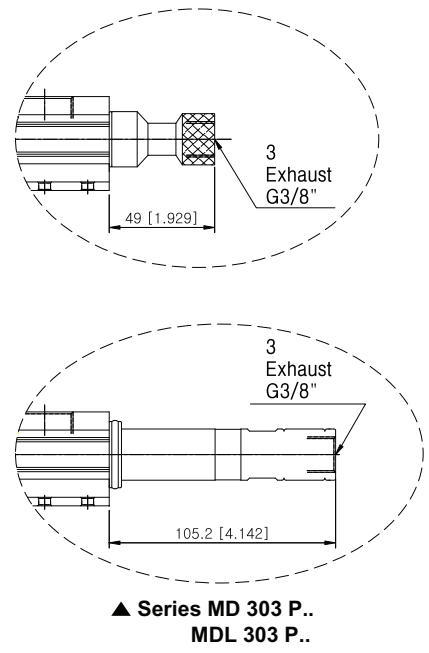
## Dimensional Information

Standard

### ▼ Series MD 303 S - 34.. / MDL 303 S - 34..

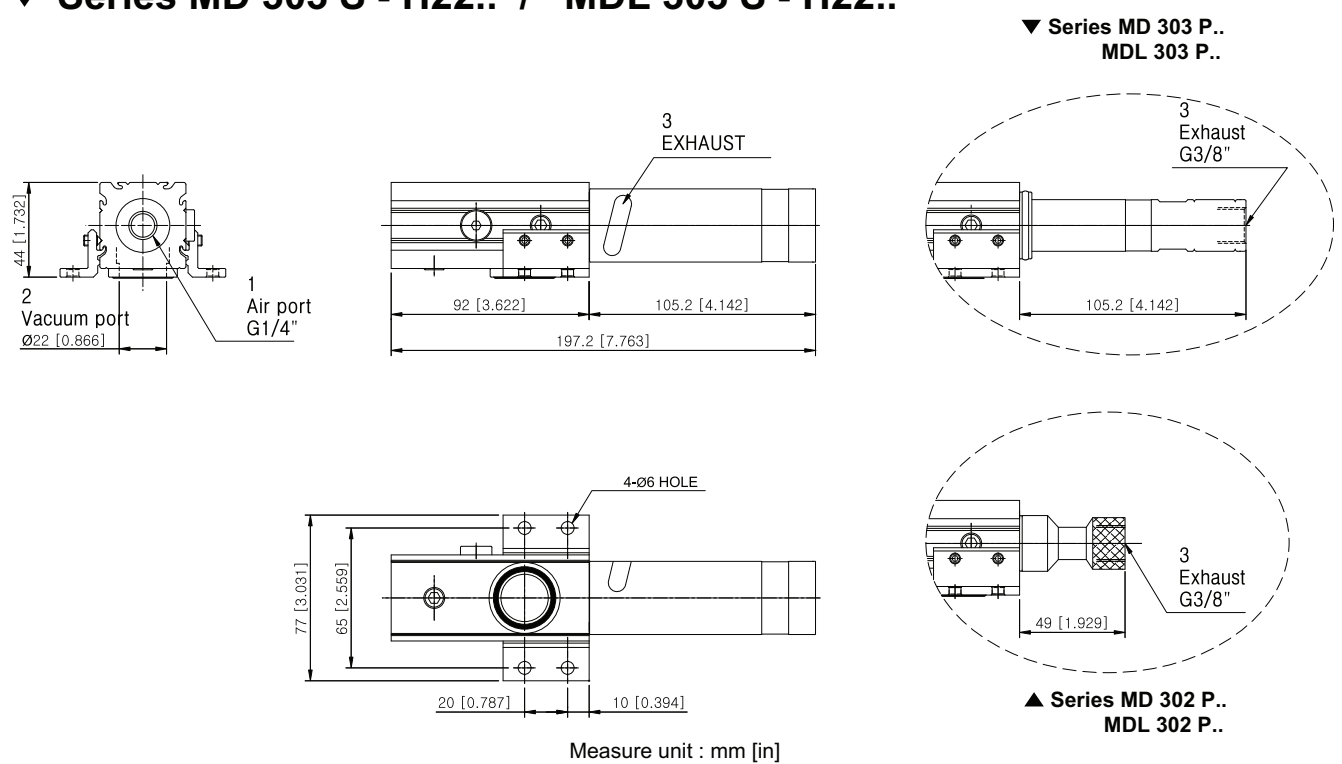


### ▼ Series MD 302 P.. / MDL 302 P..

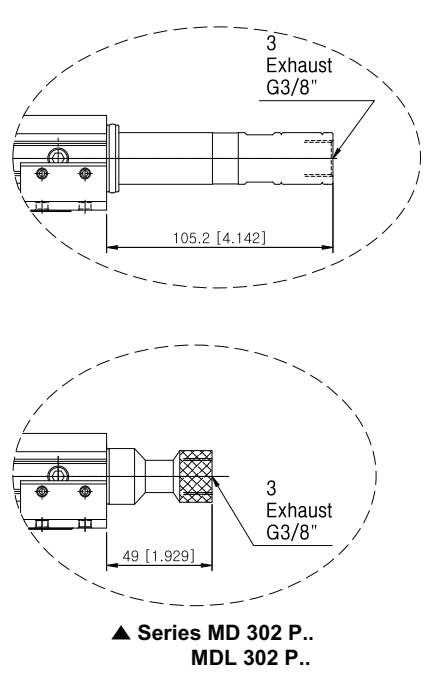


Standard

### ▼ Series MD 303 S - H22.. / MDL 303 S - H22..



### ▼ Series MD 303 P.. / MDL 303 P..



VACUUM PUMPS





# ***PREMIUM PUMPS***



Choose the VMECA PREMIUM PUMP that is right for your application.



## ► **PM Series**

**High vacuum level (-93 kPa)** at low compressed air pressure (3~6 bar).

High vacuum flow rate despite fluctuating or low compressed air pressure.

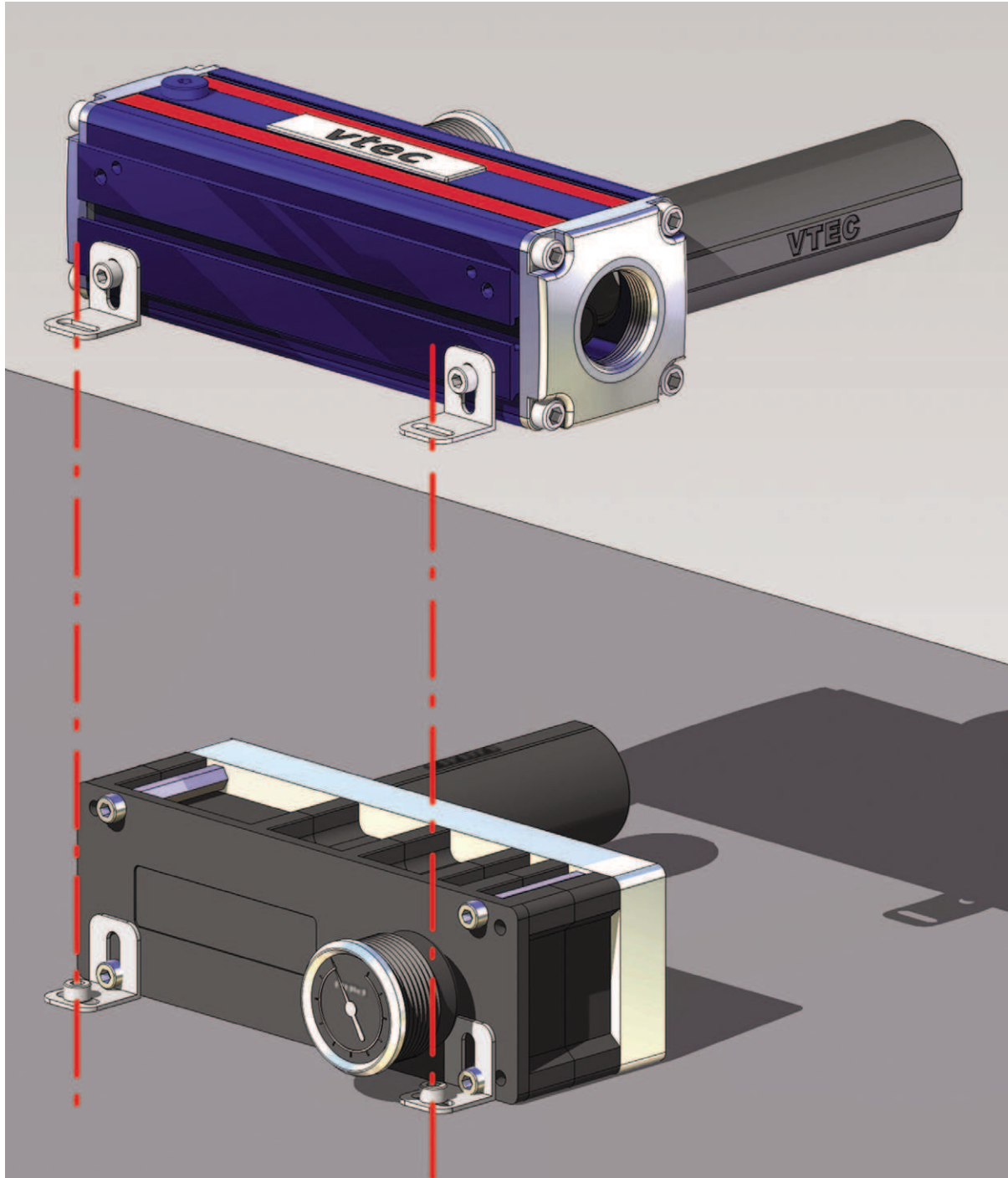
Suitable for sealed system applications such as lifting metal sheets or glass plate.

## ► **PML Series**

**Extra high vacuum flow rate** and suitable for non-sealed system applications.

Vacuum level of -75 kPa at a compressed air pressure of 6 bar.

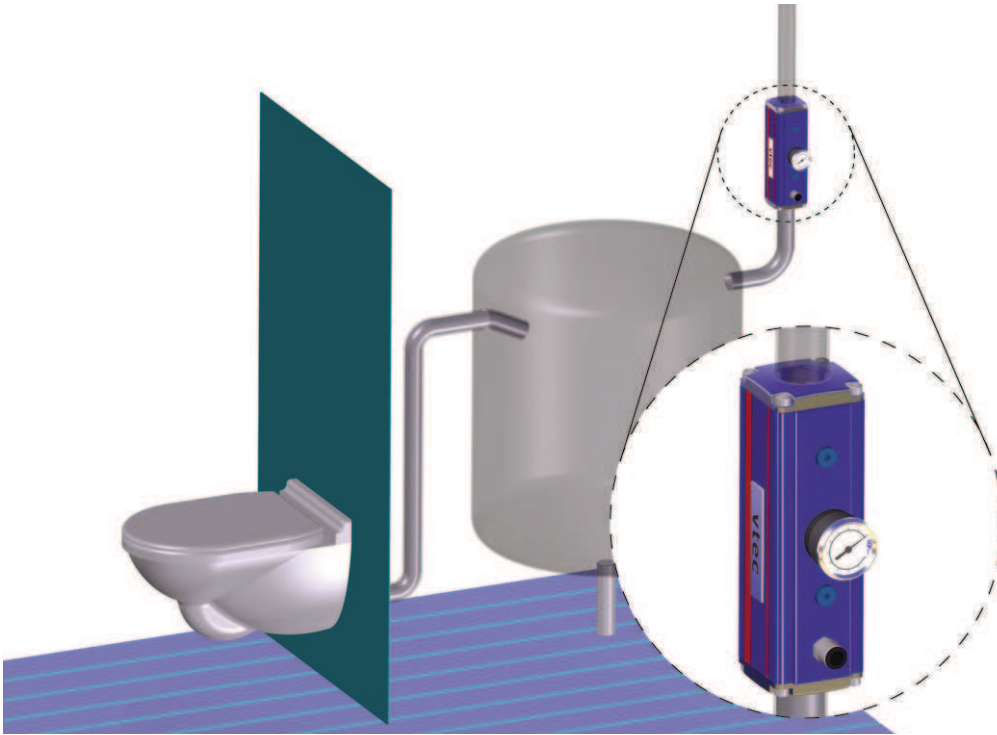
## APPLICATIONS



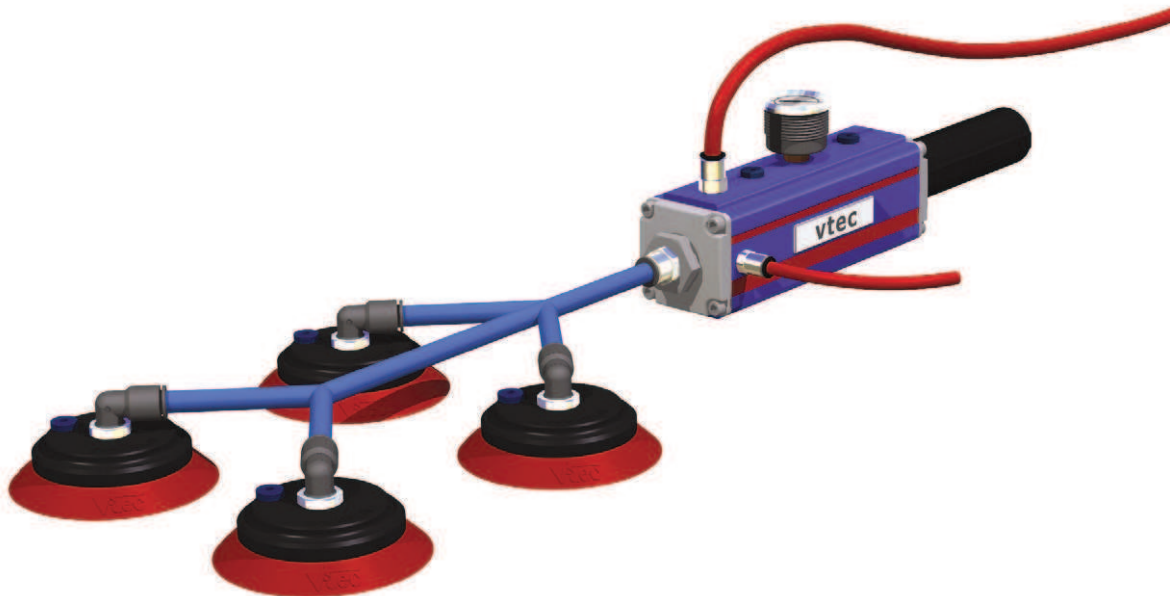
The VMECA PREMIUM VACUUM PUMP can directly replace a Classic Vacuum Pump without changing mounting holes or brackets.

VACUUM PUMPS

## APPLICATIONS



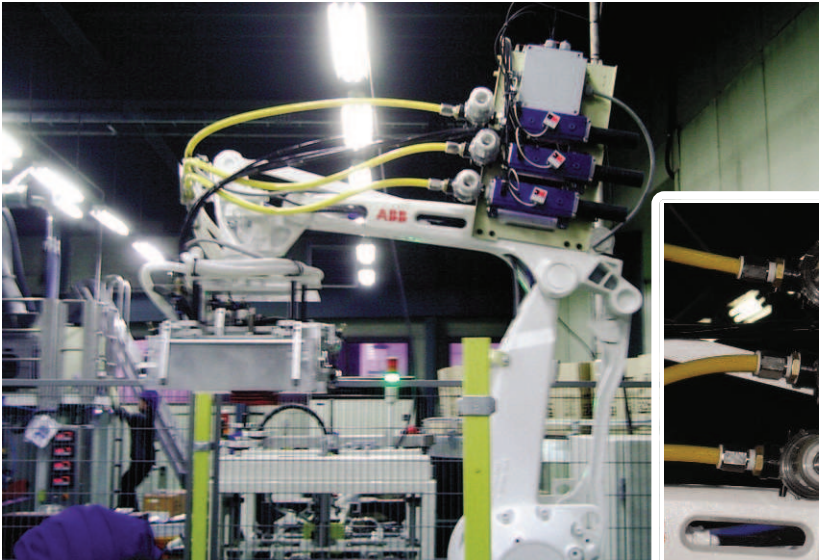
The VMECA PREMIUM VACUUM PUMP can be mounted directly in-line to save space and is suitable for applications requiring high suction flows or evacuation of large volumes of air (i.e. vacuum chamber)



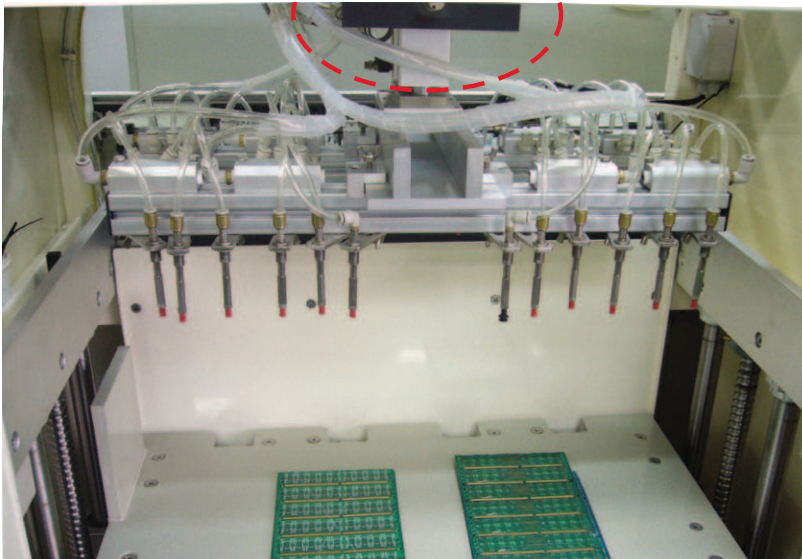
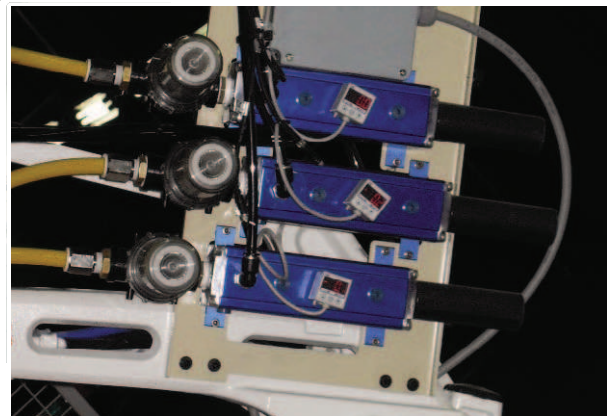
Despite fluctuations and drops in air pressure, the PREMIUM PUMP maintains a high flow rate along with a high and stable vacuum level eliminating lost or interrupted cycles.

This pump is excellent for non-sealed system applications or where large suction cups are used.

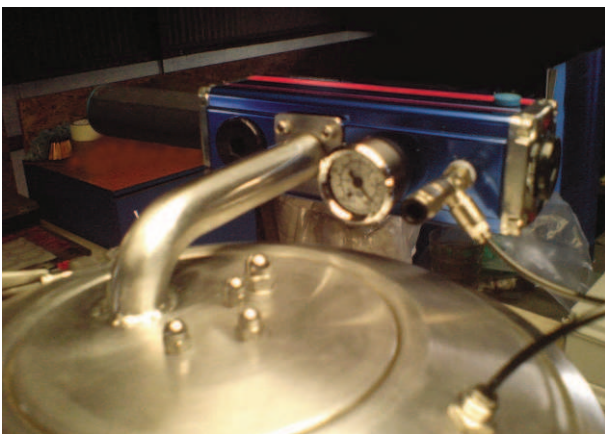
## APPLICATIONS



▲ Robot Arm



▲ Circuit board roasting



◀ Vacuum conveyor

VACUUM PUMPS

## PM-Series

- Max. vacuum level : -93 kPa (-27.46 inHg)
- Max. flow rate : 341~1364 NI/min (12.04~48.17 scfm)
- Supply air pressure : 3 ~ 6 bar, max 7 bar  
(43.5~87 psi, max 101.5 psi)
- Air consumption : 97~608 NI/min (3.43~21.47 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 60~65 dBA



### Main Advantages

- Maintains vacuum despite fluctuations and drops in air pressure.
- Various connection ports available.
- Fast evacuation time.
- Optional Air-Saving Kit (AS-KIT) available to minimize energy consumption.
- Optional factory installed air control / vacuum release valves and digital vacuum switches available.
- Strong aluminum body.
- Easily mountable and maintainable with interchangeable vacuum cartridge.

### Order No.

**PM 303X1 A - 34 - B1 - AS - A3 R3 - CL - S2 N V**  

①②③④⑤⑥⑦⑧⑨⑩⑪

#### ① Model (Vacuum flows)

- **PM303 X 1** - 341 NI/min
- PM303 X 2 - 682 NI/min
- PM303 X 3 - 1023 NI/min
- PM303 X 4 - 1364 NI/min

#### ② Body type

- **A** - Vacuum port on side
- B - Vacuum port on top & side

#### ③ Vacuum port

- **34\*** - G3/4"
  - 01 - G1"
- \* 34 : Body type B is available only with vacuum port 34

#### ④ Mounting bracket

- No mark - Not included
- **B1** - 4 Point support
- B2 - 2 Point L-type

#### ⑤ Air saving kit ( 108 )

- No mark - Not included
- **AS** - Air saving kit

#### ⑥ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D.. : Double solenoid valve is available only with 'DN' or 'DL', section ⑧

#### ⑦ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

#### ⑧ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(Air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(Air control v/v + Vacuum release v/v + Digital switch)

\* Can not available with double solenoid valve

※ Remark  
CL : Available only with DC24V  
3B : Available only with DC24V  
Available only with 'S2' or 'S2P', section ⑨

☞ About 'BUS cable' ( 340, 341 )

#### ⑨ Vacuum switch

- No mark - Vacuum gauge attached
- **S2(P)** - Digital output 2 points, No analog supply. M8-4Pin male connector. (0.3m lead wire)
- SG2(P) - Digital output 2 points, No analog supply. Grommet type 4-Core 2m lead wire
- SG3(P) - Digital output 2 points, Analog supply. Grommet type 5-Core 2m lead wire.

※ Remark: ① S..(P)  
└─ Output type :PNP open collector  
② VCM8 42 : M8-4Pin connector wire.  
Only for type S2 or S2(P).

#### ⑩ Non-return valve

- No mark - Not included
- **N** - Non-return valve

#### ⑪ Sealing

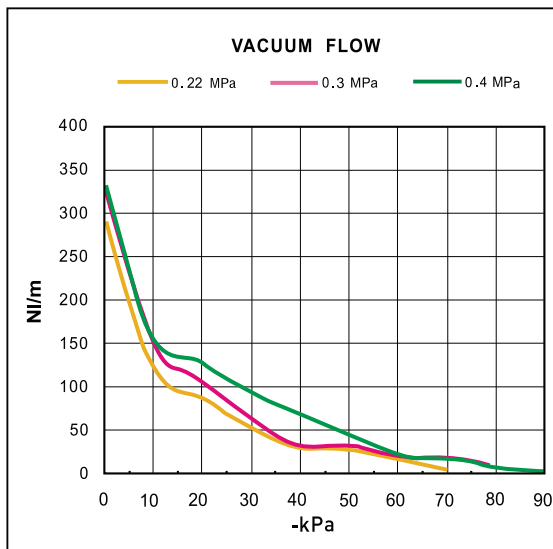
- No mark - NBR
- **V** - Viton®
- E - EPDM

## Performance Data

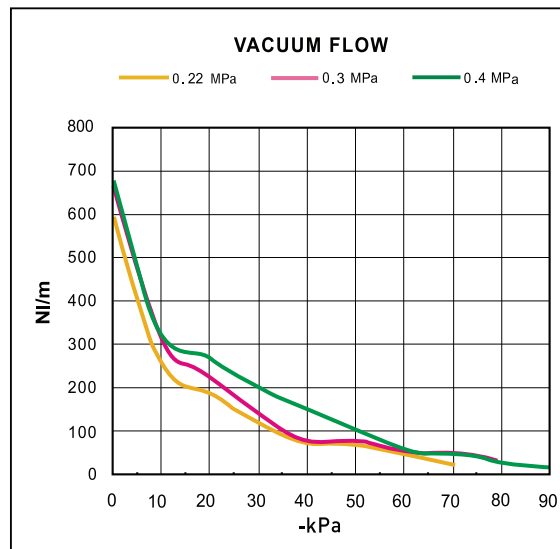
Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)

Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
PM 303X1..	75	0.22	302	122.5	88	53	31.4	28.5	16.5	4.6	-	-
	93	0.3	338	152	106	64	33	32	22	16.5	6.4	1.9
	93	0.4	341	154	127.5	94	69	43	23.3	17.3	6.9	2.1
PM 303X2..	75	0.22	604	245	176	106	62.8	57	33	9.2	-	-
	93	0.3	676	304	212	128	66	64	44	3.3	12.8	3.8
	93	0.4	682	308	255	188	138	86	46.6	34.6	13.8	4.2
PM 303X3..	75	0.22	902	368	264	159	94	86	50	14	-	-
	93	0.3	1014	456	318	192	99	96	66	50	19	6
	93	0.4	1023	462	383	282	207	129	70	52	21	6.3
PM 303X4..	75	0.22	1208	490	352	212	126	114	66	18	-	-
	93	0.3	1352	608	424	256	132	128	88	66	26	7.6
	93	0.4	1364	616	510	376	276	172	93	69	28	8.4

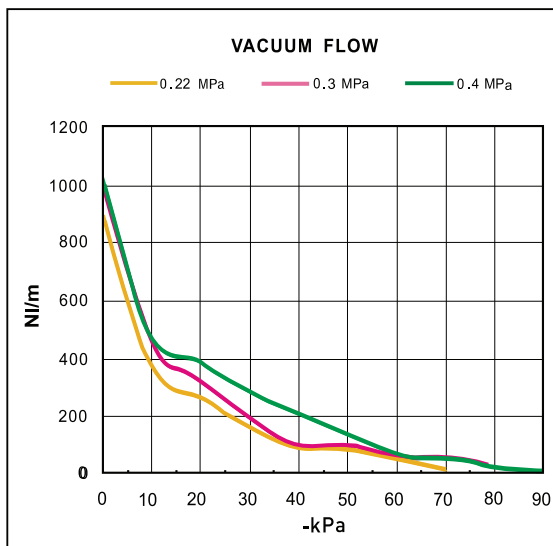
▼ PM 303 X1 ..



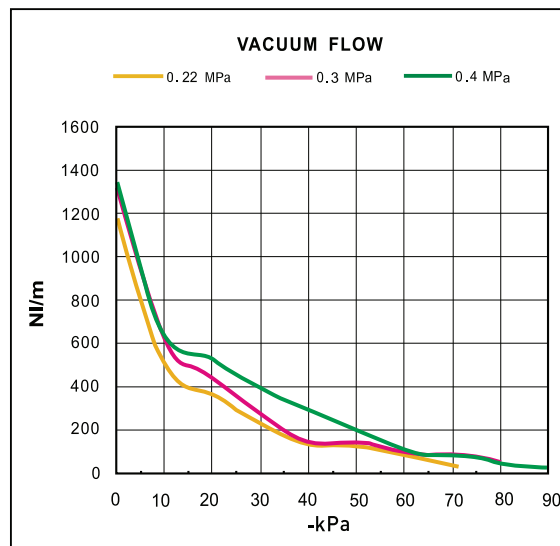
▼ PM 303 X2 ..



▼ PM 303 X3 ..



▼ PM 303 X4 ..



VACUUM PUMPS

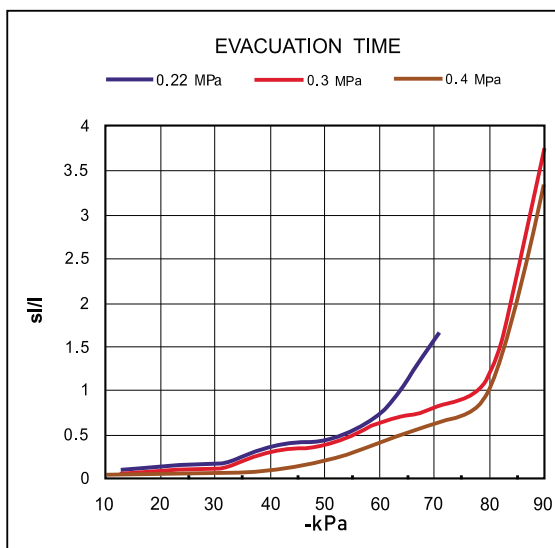


## Performance Data

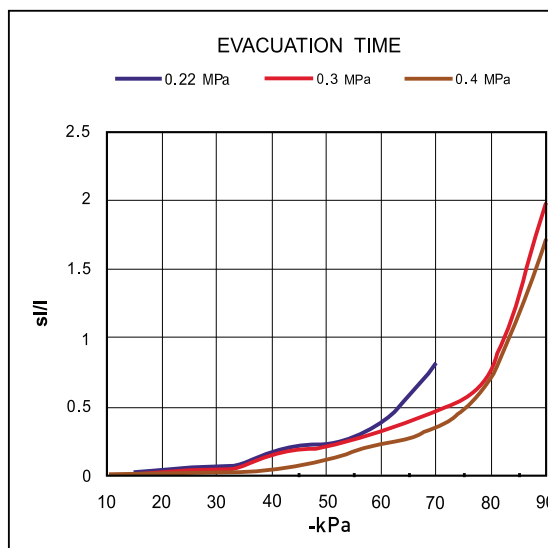
Time, s/l, to evacuate a volume to different vacuum levels -kPa (-mmHg)

Model	Feed pressure (MPa)	Air consumption (NI/min)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
PM 303X1..	0.22	97	0.019	0.009	0.16	0.32	0.42	0.73	1.62	-	-
	0.3	118	0.015	0.07	0.1	0.28	0.38	0.64	0.8	1.2	3.8
	0.4	158	0.01	0.048	0.07	0.09	0.2	0.42	0.6	1	3.4
PM 303X2..	0.22	194	0.011	0.043	0.05	0.17	0.23	0.38	0.81	-	-
	0.3	236	0.01	0.032	0.045	0.15	0.22	0.33	0.48	0.78	1.98
	0.4	304	0.01	0.026	0.037	0.047	0.12	0.23	0.35	0.7	1.72
PM 303X3..	0.22	291	0.006	0.03	0.038	0.1	0.14	0.24	0.54	-	-
	0.3	354	0.005	0.02	0.03	0.09	0.12	0.21	0.24	0.4	1.27
	0.4	456	0.004	0.01	0.02	0.03	0.06	0.14	0.2	0.33	1.13
PM 303X4..	0.22	388	0.005	0.02	0.027	0.08	0.1	0.18	0.4	-	-
	0.3	472	0.004	0.018	0.02	0.07	0.09	0.16	0.2	0.3	0.95
	0.4	608	0.003	0.01	0.01	0.02	0.05	0.1	0.15	0.25	0.85

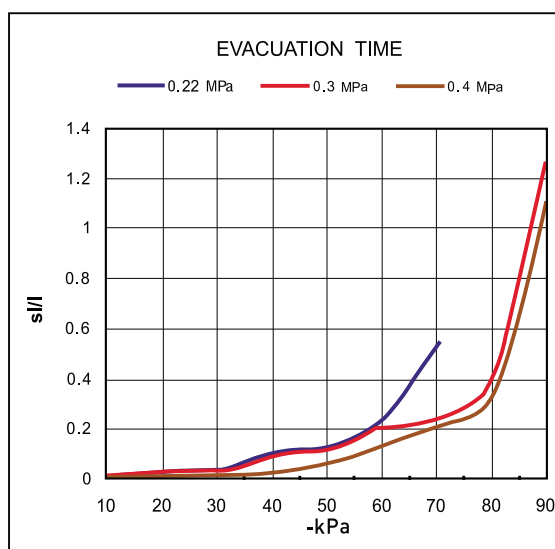
▼ PM 303 X1 ..



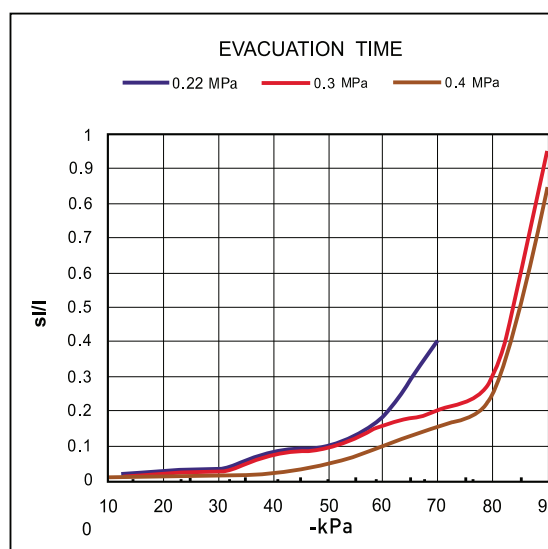
▼ PM 303 X2 ..



▼ PM 303 X3 ..



▼ PM 303 X4 ..

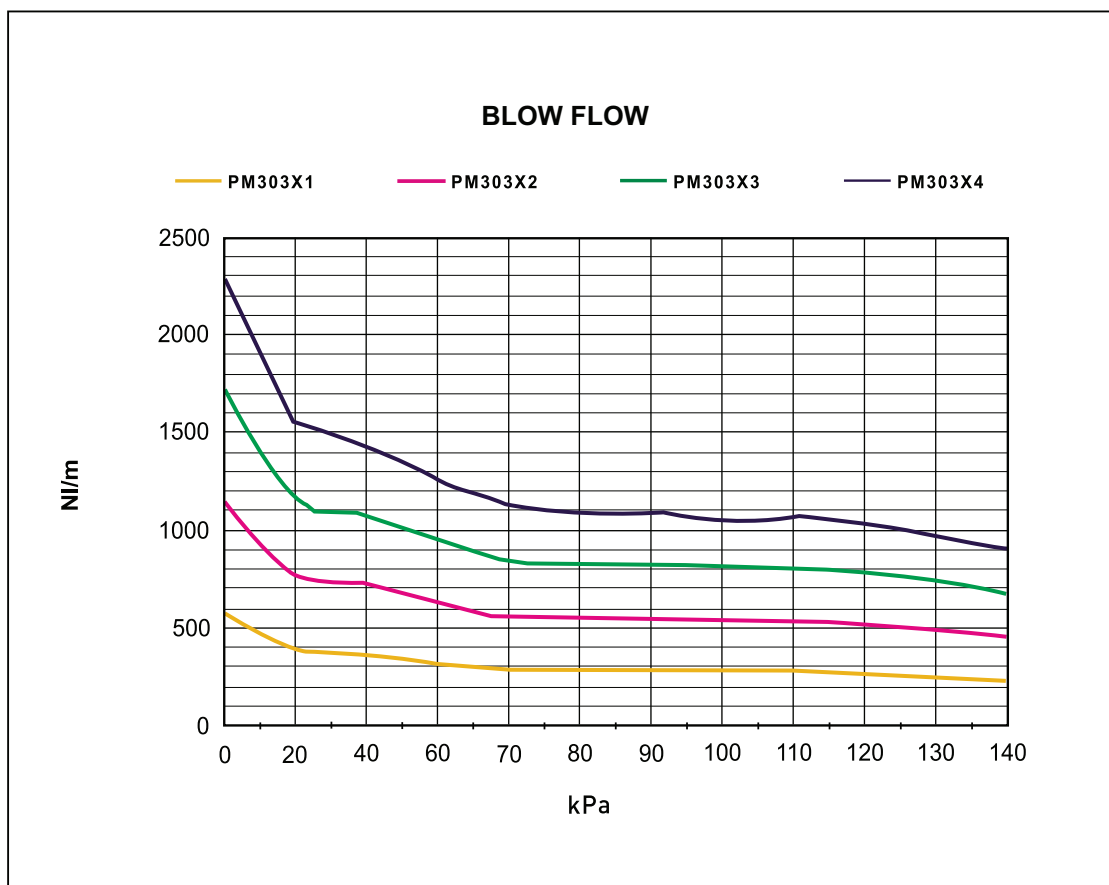


Performance Data

Blow flow, NI/min, at different internal pressure levels kPa (mmHg)

Model	Feed pressure (MPa)	Air consumption (NI/min)	0 (0)	20 (150)	40 (300)	60 (450)	70 (525)	80 (600)	90 (675)	100 (750)	110 (825)	120 (900)	130 (975)	140 (1050)
PM 303X1..	0.6	210	572	387	359	315	280	272	274	271	269	259	242	225
PM 303X2..	0.6	420	1144	774	718	630	560	544	548	542	538	518	484	450
PM 303X3..	0.6	630	1716	1161	1077	945	840	816	822	813	807	777	747	675
PM 303X4..	0.6	840	2288	1548	1436	1260	1120	1088	1096	1084	1076	1036	968	900

\* Remark : Choose the 'A' body type (Vacuum port on side) for blowing function.



## PML-Series

- Max. vacuum level : -75 kPa (-22.15 inHg)
- Max. flow rate : 362~1448 NI/min (12.78~51.14 scfm)
- Supply air pressure : 4 ~ 6 bar, max 7 bar  
(58~87 psi, max 101.5 psi)
- Air consumption : 70~416 NI/min (3.43~21.47 scfm)
- Supply air type : Dry compressed air
- Working temperature : -20°C to +80°C
- Noise level : 60~65 dBA



## Main Advantages

- Large vacuum flow rate yet low air consumption.
- Various connection ports available.
- Fast evacuation time.
- Optional Air-Saving Kit (AS-KIT) available to minimize energy consumption.
- Optional factory installed air control / vacuum release valves and digital vacuum switches available.
- Strong aluminum body.
- Easily mountable and maintainable with interchangeable vacuum cartridge.

## Order No.

**PML 303X1 A - 34 - B1 - AS - A3 R3 - CL - S2 N V**

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### ① Model (Vacuum flows)

- **PML303 X 1** - 362 NI/min
- PML303 X 2 - 724 NI/min
- PML303 X 3 - 1086 NI/min
- PML303 X 4 - 1448 NI/min

### ② Body type

- **A** - Vacuum port on side
- B - Vacuum port on top & side

### ③ Vacuum port

- **34**\* - G3/4"
- 01 - G1"

\* 34 : Body type B is available only with vacuum port 34

### ④ Mounting bracket

- No mark - Not included
- **B1** - 4 Point support
- B2 - 2 Point L-type

### ⑤ Air saving kit ( 108 )

- No mark - Not included
- **AS** - Air saving kit

### ⑥ Voltage of air supply control valve

- A1 - AC110V
- A2 - AC220V
- **A3** - DC24V
- D1\* - AC110V
- D2\* - AC220V
- D3\* - DC24V

\* D. : Double solenoid valve is available only with 'DN' or 'DL', section ⑧

### ⑦ Voltage of vacuum release control valve

- R1 - AC110V
- R2 - AC220V
- **R3** - DC24V

### ⑧ Solenoid Terminal

- DN - DIN type without lead wire
- DL - DIN type with lamp without lead wire
- **CL\*** - Connector type with lamp & 0.3 m lead wire
- 2B\* - DIN type with '2 in 1' BUS cable  
(air control v/v + Vacuum release v/v)
- 3B\* - DIN type with '3 in 1' BUS cable  
(air control v/v + Vacuum release v/v) + Digital switch

\* Can not available with double solenoid valve

※ Remark

CL : Available only with DC24V

3B : Available only with DC24V

Available only with 'S2' or 'S2P', section ⑨

☞ About 'BUS cable' ( 340, 341 )

### ⑨ Vacuum switch

No mark - Vacuum gauge attached

- **S2(P)** - Digital output 2 points, No analog supply. M8-4Pin male connector. (0.3m lead wire)
- SG2(P) - Digital output 2 points, No analog supply. Grommet type 4-Core 2m lead wire
- SG3(P) - Digital output 2 points, Analog supply. Grommet type 5-Core 2m lead wire.

※ Remark: ① S.(P)

↳ Output type :PNP open collector

② VCM8 42 : M8-4Pin connector wire. Only for type S2 or S2(P).

### ⑩ Non-return valve

No mark - Not included

- **N** - Non-return valve

### ⑪ Sealing

No mark - NBR

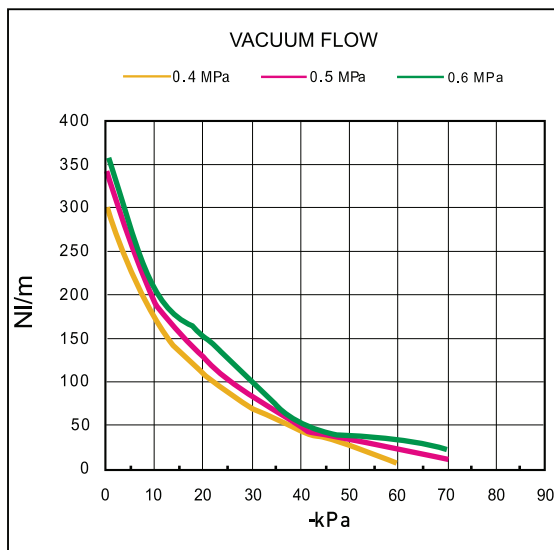
- **V** - Viton®
- E - EPDM

## Performance Data

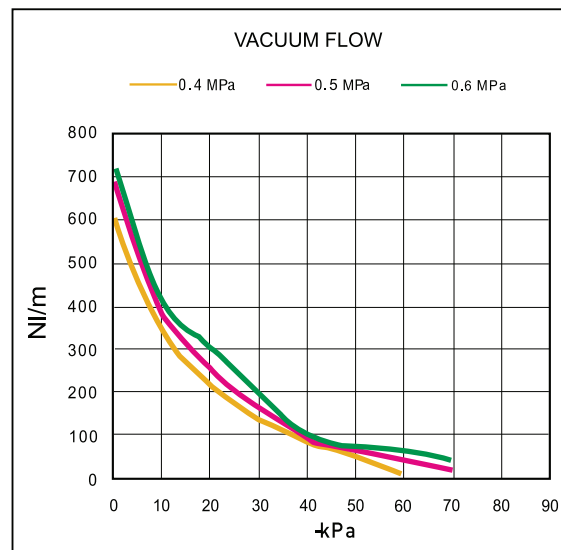
Vacuum flow, NI/min, at different vacuum levels -kPa (-mmHg)

Model	MAX. Vacuum (-kPa)	Feed pressure (MPa)	0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
PML 303X1..	60	0.4	302	172	110	70	46	28	6.8	-	-	-
	70	0.5	344	196	130	82	50	37.5	23	11.3	-	-
	75	0.6	362	207	154	100	52	38	32	22	-	-
PML 303X2..	60	0.4	604	344	220	140	92	56	13.6	-	-	-
	70	0.5	688	392	260	164	100	75	46	23.8	-	-
	75	0.6	724	415	308	200	104	76	64	44	-	-
PML 303X3..	60	0.4	906	516	330	210	138	84	20.4	-	-	-
	70	0.5	1032	588	390	246	150	112.5	69	34	-	-
	75	0.6	1086	621	462	300	156	114	96	66	-	-
PML 303X4..	60	0.4	1208	688	440	280	184	112	27	-	-	-
	70	0.5	1376	784	520	328	200	150	92	45	-	-
	75	0.6	1448	828	616	400	208	152	128	88	-	-

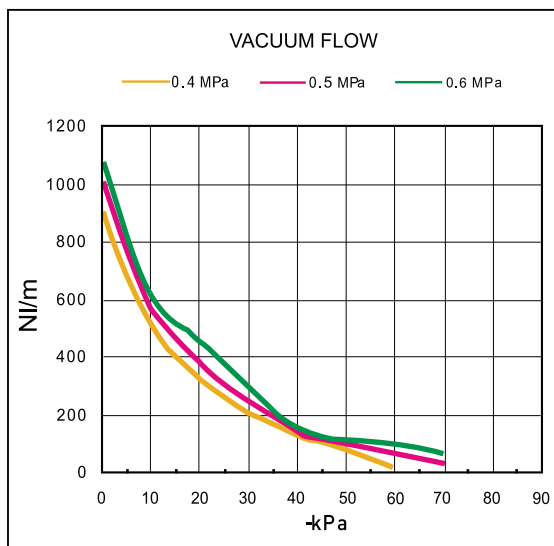
▼ PML 303 X1 ..



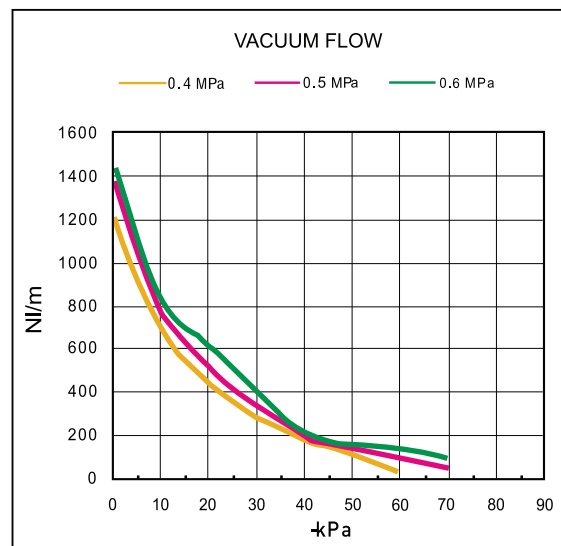
▼ PML 303 X2 ..



▼ PML 303 X3 ..



▼ PML 303 X4 ..

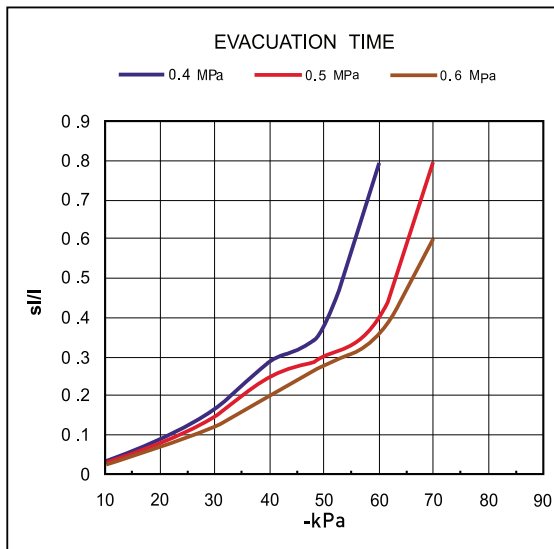


## Performance Data

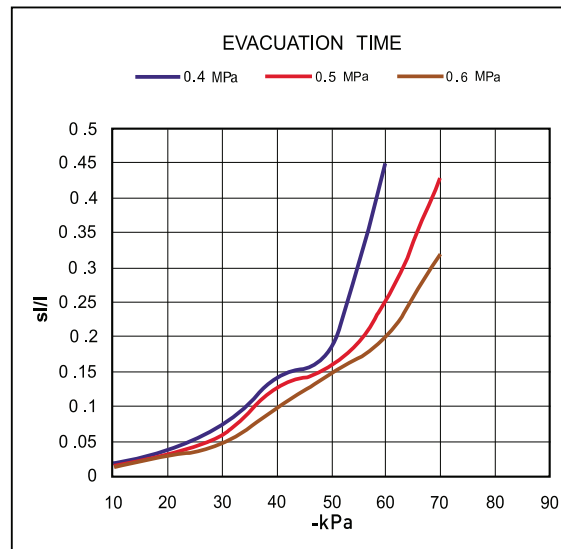
Time, s/l, to evacuate a volume to different vacuum levels -kPa(-mmHg)

Model	Feed pressure (MPa)	Air consumption (NI/min)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)	80 (600)	90 (675)
PML 303X1..	0.4	70	0.032	0.09	0.17	0.29	0.38	0.8	-	-	-
	0.5	85	0.023	0.08	0.15	0.25	0.3	0.4	0.8	-	-
	0.6	104	0.022	0.07	0.12	0.2	0.28	0.36	0.6	-	-
PML 303X2..	0.4	140	0.017	0.037	0.073	0.14	0.19	0.45	-	-	-
	0.5	170	0.014	0.032	0.06	0.128	0.16	0.25	0.43	-	-
	0.6	208	0.012	0.03	0.047	0.098	0.15	0.2	0.32	-	-
PML 303X3..	0.4	210	0.016	0.03	0.05	0.09	0.12	0.26	-	-	-
	0.5	255	0.0085	0.028	0.05	0.08	0.1	0.13	0.26	-	-
	0.6	312	0.0079	0.02	0.04	0.06	0.09	0.12	0.2	-	-
PML 303X4..	0.4	280	0.0089	0.023	0.04	0.07	0.09	0.2	-	-	-
	0.5	340	0.0057	0.018	0.03	0.063	0.075	0.1	0.2	-	-
	0.6	416	0.0053	0.015	0.029	0.052	0.071	0.09	0.15	-	-

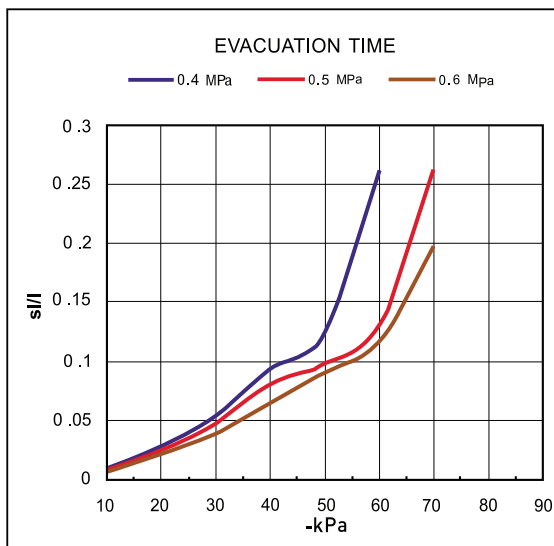
### ▼ PML 303 X1 ..



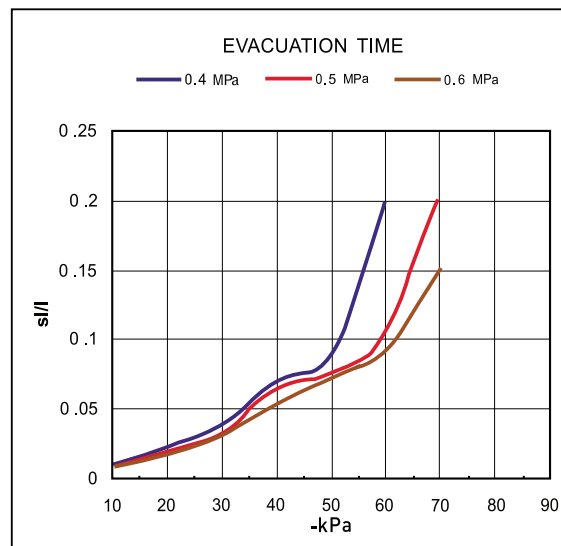
### ▼ PML 303 X2 ..



### ▼ PML 303 X3 ..



### ▼ PML 303 X4 ..

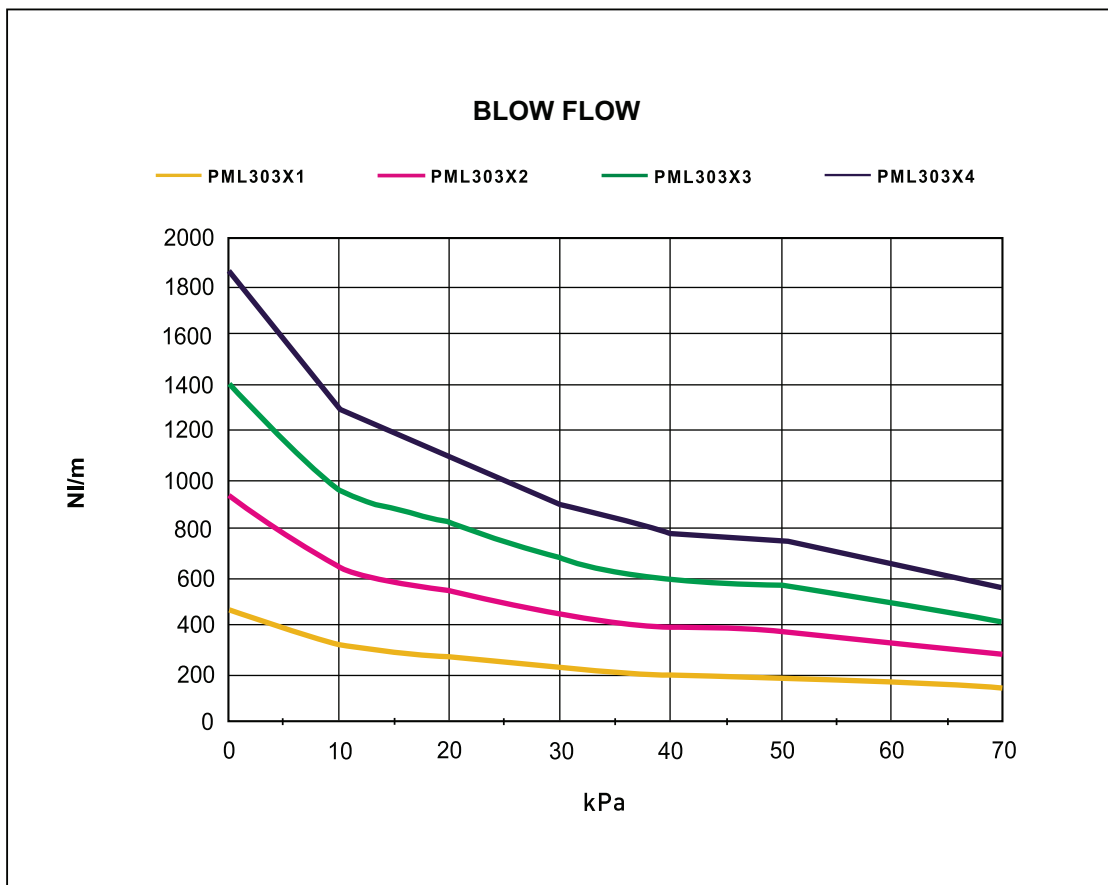


**Performance Data**

Blow flow, NI/min, at different internal pressure levels kPa (mmHg)

Model	Feed pressure (MPa)	Air consumption (NI/min)	0 (0)	10 (75)	20 (150)	30 (225)	40 (300)	50 (375)	60 (450)	70 (525)
PML 303X1..	0.6	104	470	320	272	225	196	189	165	140
PML 303X2..	0.6	208	940	640	544	450	392	378	330	280
PML 303X3..	0.6	312	1404	966	822	678	589	564	492	416
PML 303X4..	0.6	416	1868	1284	1096	904	784	752	656	556

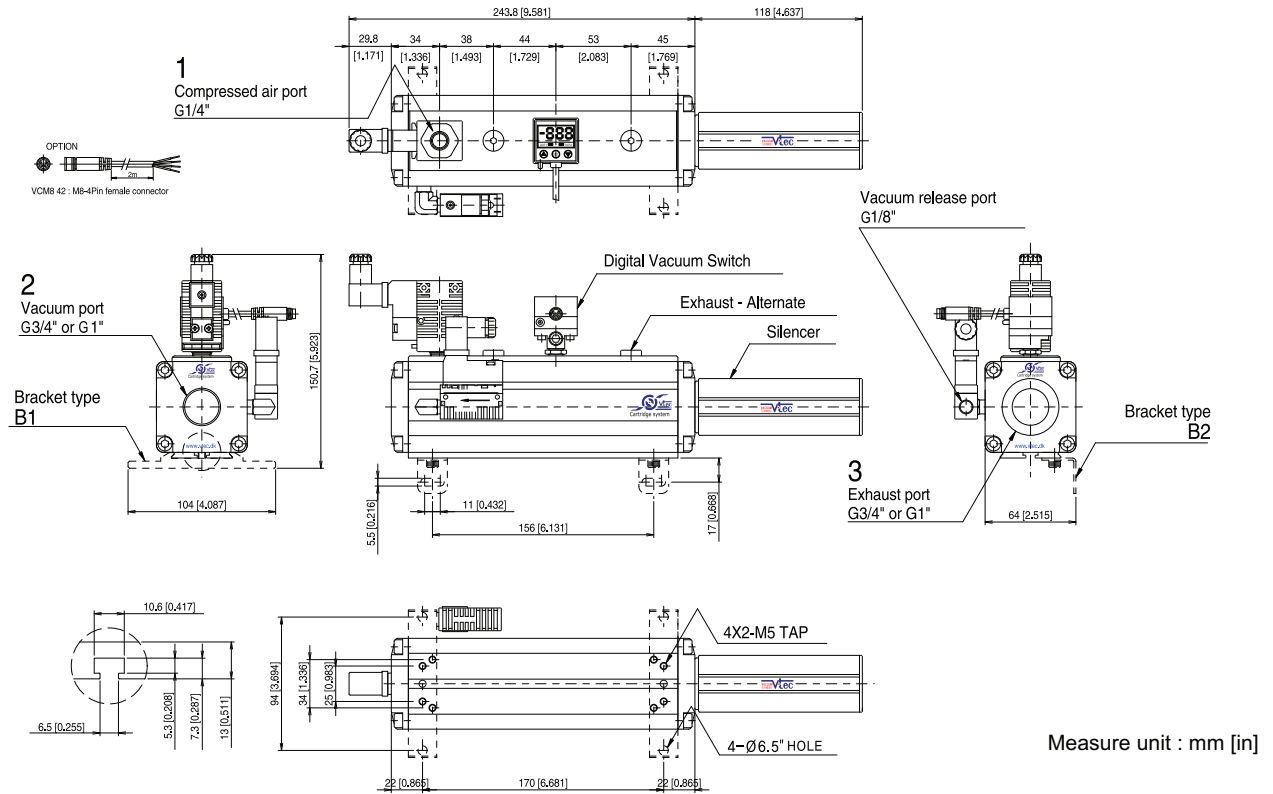
\* Remark : Choose the 'A' body type (Vacuum port on side) for blowing function.



## Dimensional Information

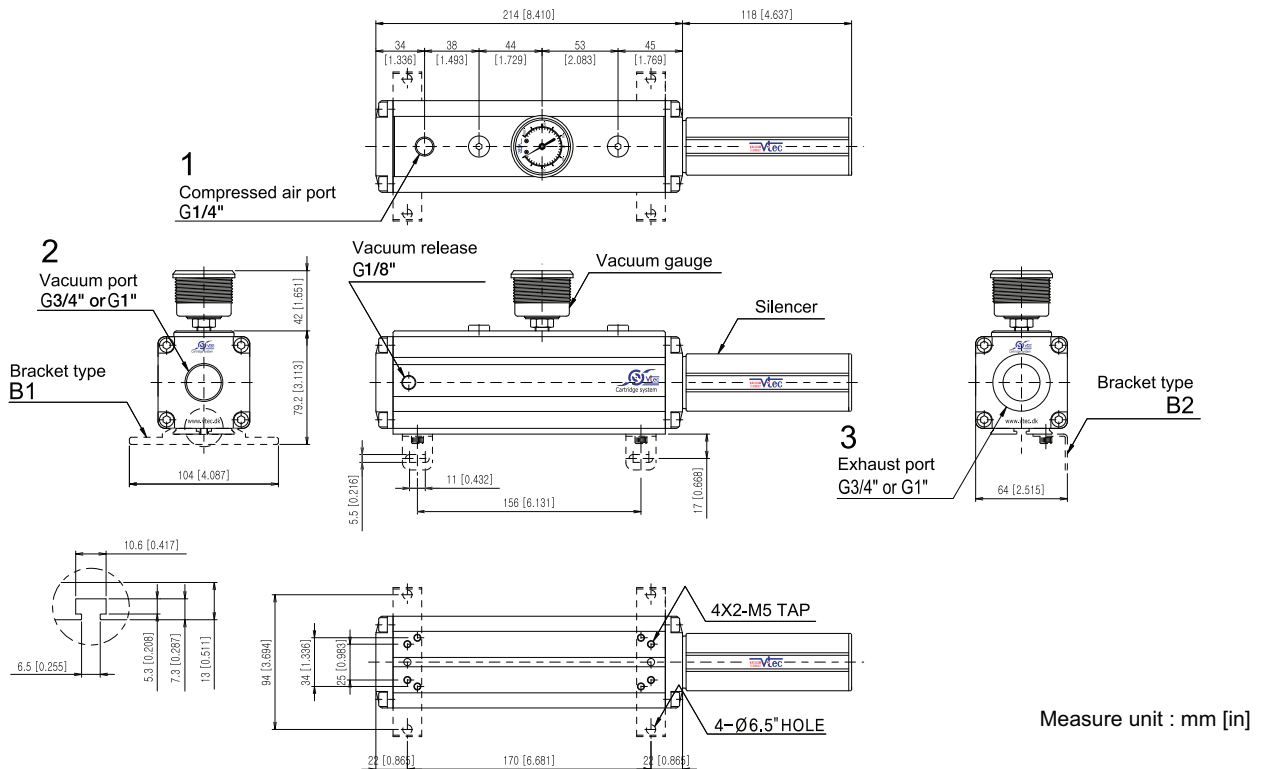
With Air Control valve, Vacuum release control valve, Digital vacuum switch

### ▼Series PM 303X( )..A.. / PML 303X( )..A..



Standard

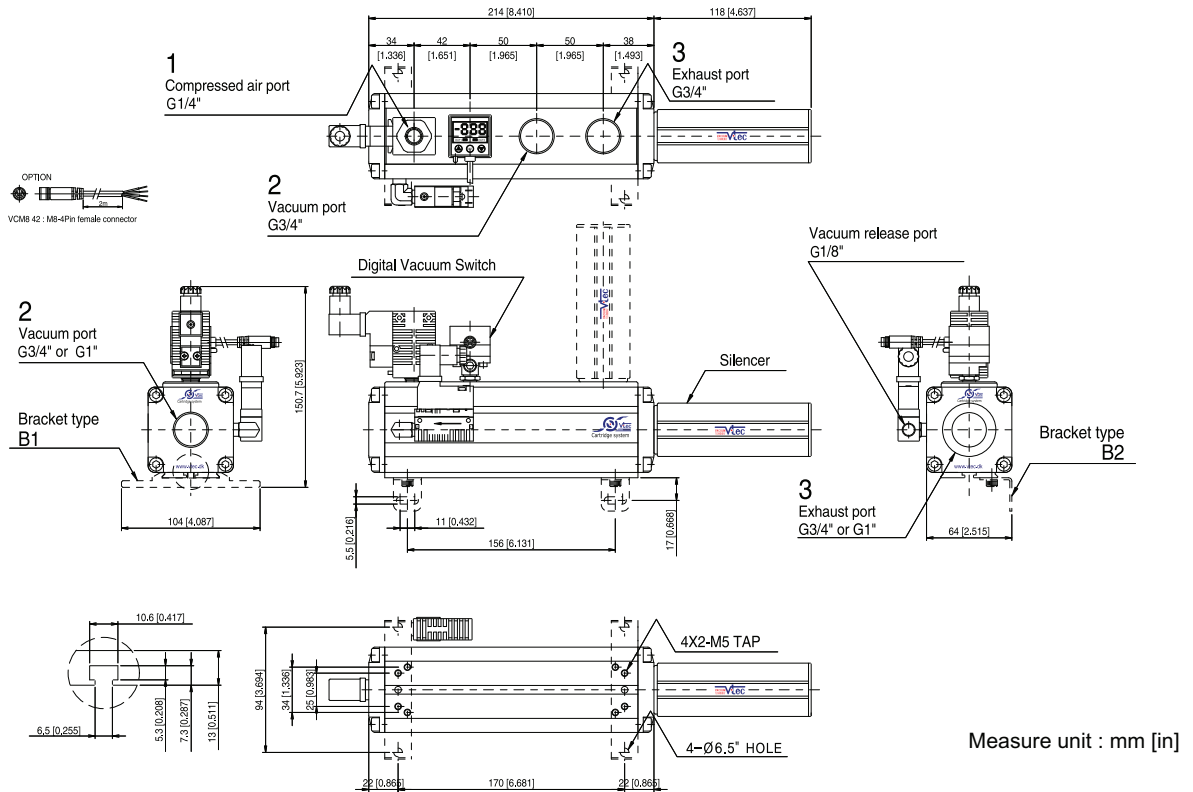
### ▼Series PM 303X( )..A.. / PML 303X( )..A..



## Dimensional Information

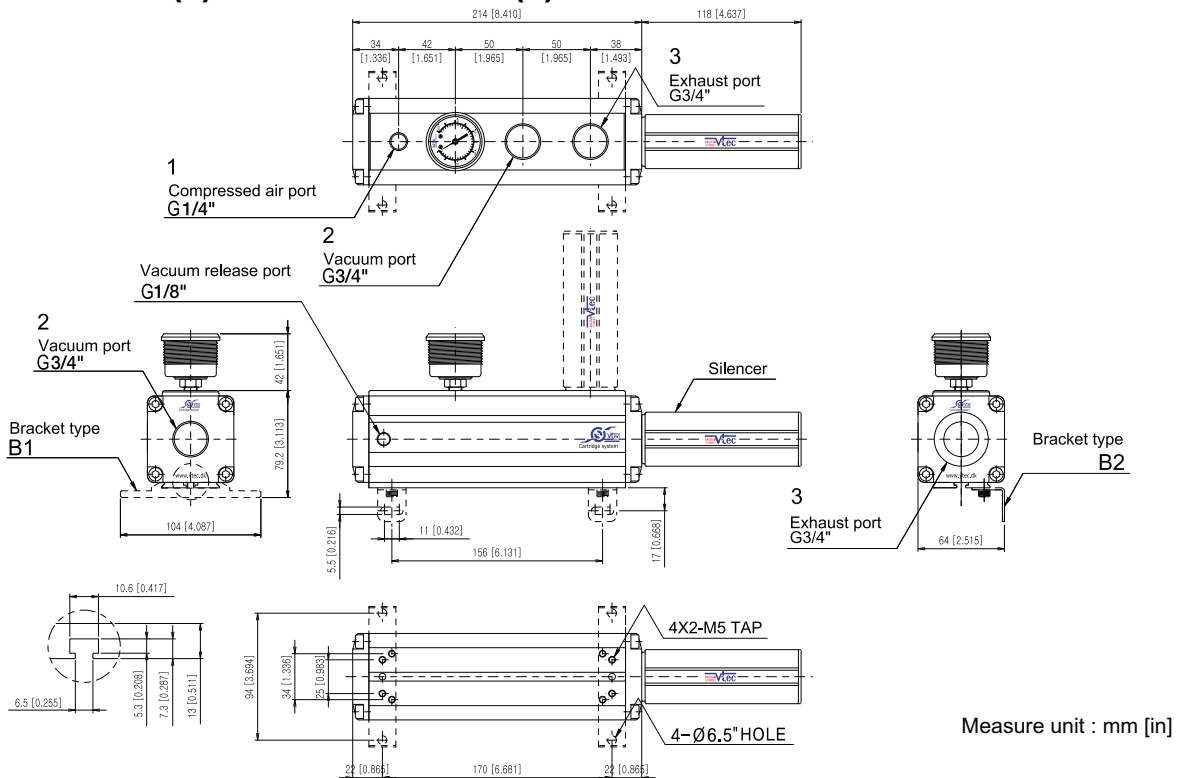
With Air Control valve, Vacuum release control valve, Digital vacuum switch

### ▼ Series PM 303X( )..B.. / PML 303X( )..B..



Standard

### ▼ Series PM 303X( )..B.. / PML 303X( )..B..



VACUUM PUMPS