Techman Robot × Vacuum Gripper

Check out the application video
VRG Related Video : https://www.pisco.co.jp/en/product/r/r08/#product-video
VMG Related Video : https://www.pisco.co.jp/en/product/r/r10/#product-video

Characteristics of rectangular ring type VRG and general-purpose type VMG

- Vacuum grippers suitable for lifting large workpieces.
- Built-in high flow vacuum generator.
  Max. suction flow: 760 ℓ/min (For models with 3 built-in ejectors).

Large Flow Vacuum Generator Specifications

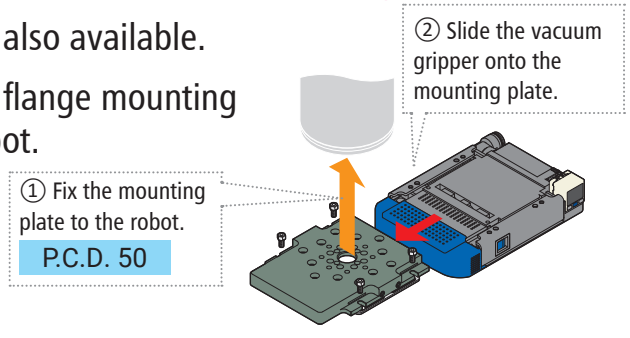
Rated supply pressure (MPa)	0.5								
Final vacuum (kPa)	-94								
Suction flow (ℓ/min)	290	Saved approx. 62%	Approx. 2.6 times	550	Saved approx. 60%	Approx. 2.5 times	76	Saved approx. 57%	Approx. 2.3 times
Air consumption (ℓ/min)	110			220			330		
No. of nozzles (pcs)	1			2			3		

Air consumption is saved up to 62% relative to suction flow. (Air Saving)

Suction flow rate is up to 2.6 times the air consumption. (Large Flow)

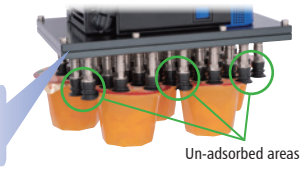
Capable of lifting even porous workpieces.

- **External vacuum pump compatible type** is also available.
- Can be **easily installed** by sliding it onto the flange mounting plate once the plate has been fixed to the robot.
  Improved operability and **safety**.



Three types of suction surfaces

Two sponge types (rectangular ring type and whole surface type) and aligned vacuum pads type.

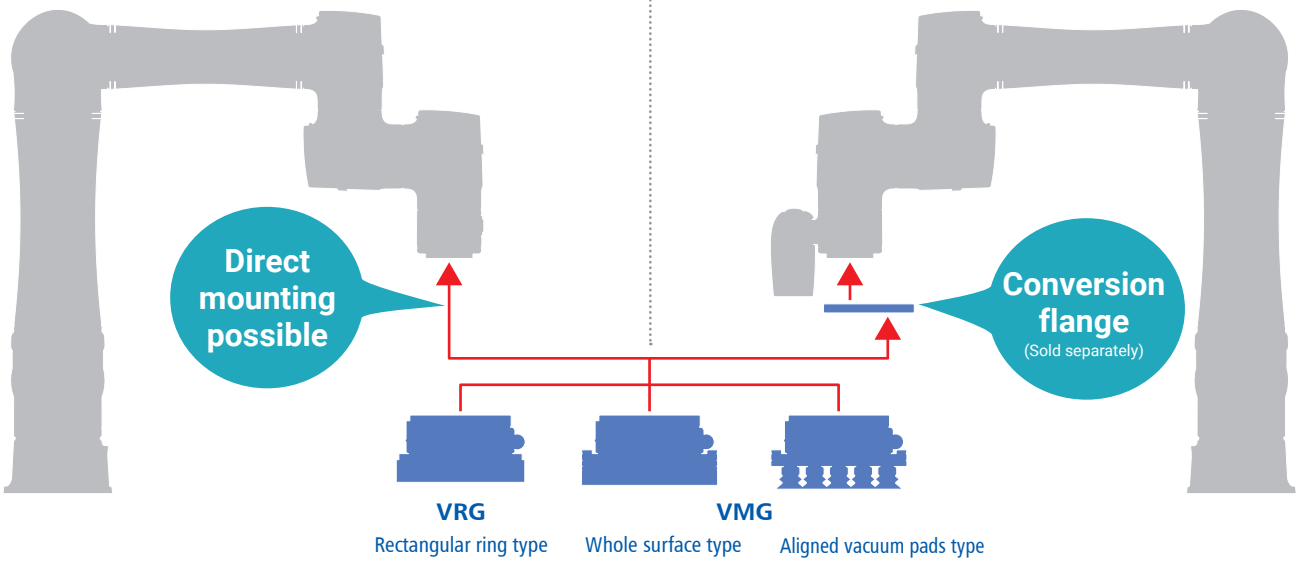
	Rectangular ring type / **VRG**	General-purpose type / **VMG**	
Type	Sponge Theoretical max. suction force 1512.7 N (※1) 	Sponge (Whole surface) Theoretical max. suction force 1546.4 N (※1) 	Aligned vacuum pads Theoretical max. suction force 2369.5 N (※1) 
Recommended workpieces	Large bags such as multiwall bags Shrink-wrapped plastic bottles  Supple sponge pad conforms to and lifts uneven or deformed surfaces of workpieces.	Uneven workpieces, such as wood and exterior wall decoration materials 	Cardboard boxes and bagged items 
Pad replacement	Replaceable by replacing the VRG sponge plate.	Replaceable by replacing the VMG sponge plate.	Vacuum pad + pad screw set (pad connection configuration code: M6) can be mounted. (※2)
		◀ VMG common plate is available for easy pad/sponge switching ▶	
Accessories	Spacer (included)	Fixed orifice (optional)	Fixed orifice or orifice coupling (optional)
	The stroke can be adjusted to suit the workpiece by changing the height of the adjusting plate on the inside of the pad. Four suction strokes in total: 10, 15, 20, and 25 mm (factory setting: 25 mm). Adjustable in 5 mm increments. * For VRG1515: 8, 13, 18, and 23 mm (factory setting: 23mm).	Suppresses vacuum degradation due to leakage from non-absorbed areas by attaching an orifice to regulate the flow rate. The orifice coupling type makes it easy to attach/detach the pads. The pads unnecessary for suction can be removed thanks to the socket's built-in shutoff valve. **Capable of lifting even if there are un-adsorbed areas.**  Un-adsorbed areas	

※1. Safety factor 1/4 considered.
※2. Bellows-type vacuum pads are provided as standard. If other pads are to be installed, order "No pad".(Vacuum pads are sold separately.)

Easy to install on **Techman robot**.

Without camera

With camera



Can be **installed directly to the robot flange**.
No adapter plate required.

Adjust the installation position of the vacuum gripper using the **Conversion flange** (sold separately) to ensure that **the camera is not obstructed**.

※ Available for Vacuum gripper type : VRG1515, VRG2817 and VMG2618

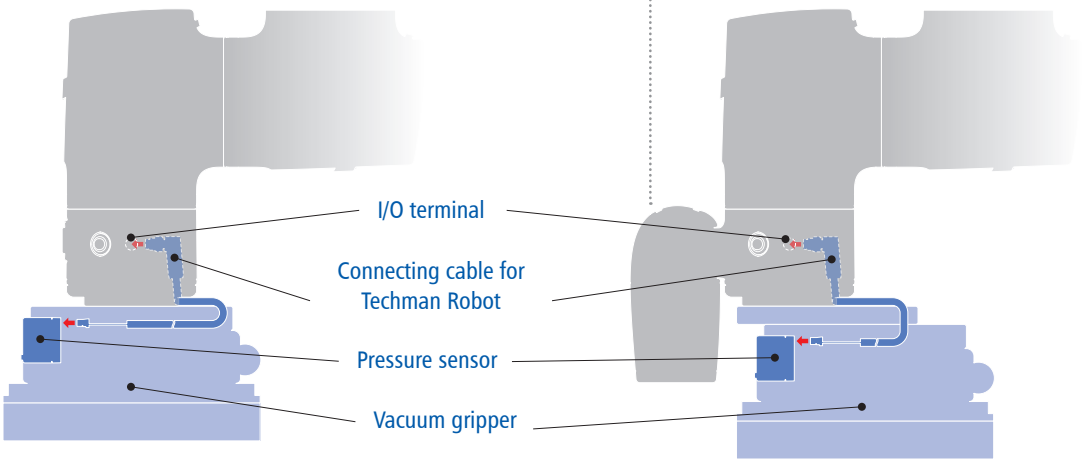
Model code : VMG-RFA-D50

Connecting cable for **tool end I/O terminal** is available. (Sold separately)

Connecting cable to connect the pressure sensor that comes standard with the vacuum gripper to the I/O terminal on the end of the Techman Robot.

Without camera

With camera



Model code : VMG-SC-C35-TM
(Cable length : 350 mm)
※ If you need a cable length other than the above, please contact us.

Connection example

Model code when both conversion flange and connecting cable are required for camera-equipped type : VMG-RFA-SC-SET-TM

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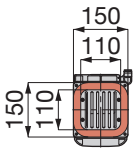
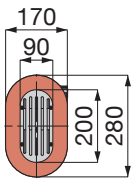
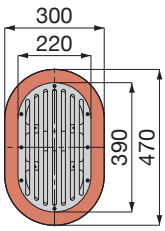
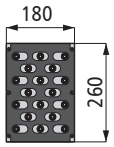
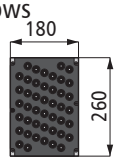
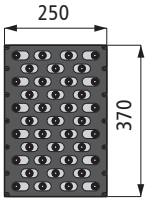
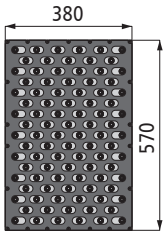
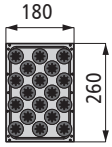
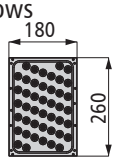
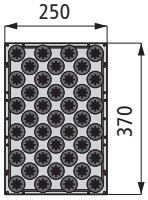
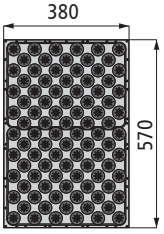
Vacuum gripper shape / Size list

Type		Rectangular ring type (sponge) / **VRG**		
Pad O.D. size code		**1515**	**2817**	**4730**
Size (mm)				
Applicable techman robot	Without camera	✓	✓	✓
	With camera	✓	✓	×
Fluid medium		Air, Vacuum (※1)		
Operating pressure range	Only for vacuum generator spec.	0.3～0.7 MPa		
Rated supply pressure		0.5 MPa		
Noise level		70 dB (A)		
Operating vacuum pressure		-100～0 kPa (Only for External Vacuum Pump spec)		
Operating temp. range		5～50 °C (No freezing)		
Theoretical suction force (※2, ※3)	FoS 1/4 (Horizontal lifting)	235.8 N	326.2 N	1512.7 N
	FoS 1/8 (Vertical lifting)	117.9 N	163.1 N	756.4 N

Type		General-purpose type / **VMG**					
		Sponge (whole surface type)			Aligned vacuum pads type		
Plate size code		**2618**	**3725**	**5738**	**2618**	**3725**	**5738**
Size (mm)		5 rows  7 rows 	7 rows 	11 rows 	5 rows  7 rows 	7 rows 	11 rows 
Applicable techman robot	Without camera	✓	✓	✓	✓	✓	✓
	With camera	✓	×	×	✓	×	×
Fluid medium		Air, Vacuum (※1)					
Operating pressure range	Only for vacuum generator spec.	0.3～0.7 MPa					
Rated supply pressure		0.5 MPa					
Noise level		70 dB (A)					
Operating vacuum pressure		-100～0 kPa (Only for External Vacuum Pump spec)					
Operating temp. range		5～50°C (No freezing)					
Theoretical suction force (※2, ※3)	FoS 1/4 (Horizontal lifting)	296.1 N (5 rows) 277.3 N (7 rows)	641.6 N	1546.4 N	453.7 N (5 rows) 277.3 N (7 rows)	983.1 N	2369.5 N
	FoS 1/8 (Vertical lifting)	148.1 N (5 rows) 138.6 N (7 rows)	320.8 N	773.2 N	226.9 N (5 rows) 138.6 N (7 rows)	491.5 N	1184.7 N

※1) "Fluid medium: vacuum" is only for external vacuum pump spec.

※2) Theoretical suction force at a vacuum of -80 kPa.

※3) Do not exceed the maximum load capacity of 980N of the main body mounting section, including the weight of the gripper body and inertia forces during transport.

Mindman

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More product information