Vacuum Gripper System (Foam Type)

(RoHS) **O**IO-Link

Suitable for the palletizing and depalletizing of corrugated cardboard, etc.



Depending on the compatible robot

Weight

1.3 kg (200 x 120) **1.8 kg** (300 x 180) 3.9 kg (400 x 240)



CO₂ emissions (Air consumption)

Max. 15% reduction (SMC comparison)

Ejector with new design **227** L/min (ANR) ← 270 L/min (ANR) Compared to ZL6H (Supply pressure: 0.6 MPa)

Lifting force

440 N (200 x 120) (At -63 kPa) 880 N (300 x 180) (At -63 kPa) 2144 N (400 x 240) (At -75 kPa)



Vacuum Gripper System (Foam Type) ZGS Series







Application Examples



SMC

Ejector Unit

Newly designed ejector for the Vacuum Gripper System

- •Number of ejector assemblies (2 pcs, 4 pcs, 6 pcs) can be selected.
- Energy-saving (Air consumption) reduced by up to 15% compared to ZL6H) Flow rate characteristics improvement in the practical range below -50 kPa





LED indicator for supply and release valve operation.





Easy tool changing due to common tool changer*1

*1 Only for sizes 300 x 180 and 200 x 120

Easy tool changing (Manual changer)

- · Tools can be secured by simply tightening the 2 clamper bolts.
- Reduces work-hours
- * Note that the lifting force may be limited when the tool plate and main plate are used.
- See the Suction Plate Selection Guide for details. Main plate ZGS-PL3-7-A Clamper bolt Tool plate Tool plate ©swr. Electric Vacuum Gripper for Collaborative Robots **ZXPE5** Series Vacuum Gripper System



Selectable pressure detection ports (300 mm x 180 mm, 200 x 120 mm)

- · Select from base plate pressure detection or foam hole pressure detection via the part number.
- Having the pressure detection ports within the ejector unit allows for a sleek appearance without any visible piping.

This also eliminates the risk of piping getting pulled out.

• The pressure detection ports can be changed by the customer later.





Suction Plate

2 suction plates can be selected according to the workpiece size.

Vacuum saving valve type



Significantly suppresses vacuum pressure drop when used with multiple workpieces or when workpiece is smaller than the suction plate. →Various-sized workpieces can be adsorbed by 1 unit.



Fixed orifice type

Suitable for use with workpiece that is approximately same size as suction plate Suppresses vacuum pressure drop



* The above illustration is only for reference and differs from the actual construction.

2 foam thicknesses can be selected according to the workpiece surface shape.





* Based on SMC's test conditions at 70% of compression.



Without stopper (Fixed orifice type)





Suction Plate

Suction Plate Selection Guide

Foam size 400 mm x 240 mm		Vacuum saving valve type		Fixed orifice type			
		Suctio	on area [%]*4	100%	Approx. 50%	100%	Approx. 50%
	Standard	Number of suction holes [pcs.]		91/91	42/91	91/91	42/91
Number of ejector assemblies	supply pressure ^{*3} [MPa]	Workpied	ce: Acrylic plate		00000000000000000000000000000000000000		00000000000000000000000000000000000000
		Vacuum	pressure [kPa]*1	-75.0	-3.6	-75.0	-11.1
		Lifting	g force [N]*2	2144	*5	2144	146
2 pcs. 0.58	58 Lifting force considering	Horizontal lifting (Safety factor: 4)	536	_	536	36	
	safety factor [N]	Vertical lifting (Safety factor: 8)	268	_	268	18	
		Vacuum	pressure [kPa]*1	-75.0	-57.0	-75.0	-27.6
		Lifting force [N]*2		2144	752	2144	364
4 pcs.	4 pcs. 0.6	0.6 Lifting force considering safety factor [N]	Horizontal lifting (Safety factor: 4)	536	188	536	91
			Vertical lifting (Safety factor: 8)	268	94	268	45
		Vacuum	pressure [kPa]*1	-75.0	-61.2	-75.0	-33.6
		Lifting	g force [N]*2	2144	808	2144	443
6 pcs. 0.	0.6	Lifting force considering	Horizontal lifting (Safety factor: 4)	536	201	536	110
		safety factor [N]	Vertical lifting (Safety factor: 8)	268	100	268	55

*1 The vacuum pressure is the actual measured value when non-leakage workpiece (acrylic plate) is suctioned at the standard supply pressure. It is not guaranteed values. *2 The lifting force is an actual value measured by SMC at the above vacuum pressure and is not a guaranteed value. It is necessary to judge the suitability for the workpiece with actual condition of use.

*3 This is the pressure immediately before the air pressure supply (P) port of the vacuum gripper system during suction. It is affected by air supply capacity, pipe size, air consumption of other equipment operating simultaneously, etc. During vacuum generation, the pressure immediately before the air pressure supply (P) port of the vacuum gripper system during suction. It is affected by air supply capacity, pipe size, air consumption of other equipment operating simultaneously, etc. During vacuum generation, the pressure immediately before the air pressure supply (P) port of the vacuum gripper system may fall below the standard supply pressure.

*4 Vacuum saving valve may not be activated when suction area is small.

*5 This indicates that vacuum saving valves don't work.

Suction Plate Selection Guide

Foam size 300 mm x 180 mm		Vacuum saving valve type		Fixed orifice type											
		Suctio	on area [%]*4	100%	Approx. 50%	100%	Approx. 50%								
Number of ejector assemblies	Standard	Number of s	suction holes [pcs.]	39/39	19/39	39/39	19/39								
	supply pressure*3 [MPa]	Workpied	ce: Acrylic plate	000000000 000000000 000000000000000000	000000000 000000000 000000000000000000	00000000000000000000000000000000000000	000000000 000000000 000000000000000000								
		Vacuum p	pressure [kPa]*1	-63.0	-5.0	-63.0	-15.4								
		Lifting	g force [N]*2	880 (400)	_*5	880 (400)	107								
1 pc. 0.45	0.45	Lifting force considering	Horizontal lifting (Safety factor: 4)	220 (100)	—	220 (100)	26								
		safety factor [N]	Vertical lifting (Safety factor: 8)	110 (50)	_	110 (50)	13								
		Vacuum p	pressure [kPa]*1	-62.0	-51.0	-62.0	-27.7								
		Lifting force [N]*2		880 (400)	350	880 (400)	186								
2 pcs. 0.45	0.45	Lifting force considering	Horizontal lifting (Safety factor: 4)	220 (100)	87	220 (100)	46								
											safety factor [N]	Vertical lifting (Safety factor: 8)	110 (50)	43	110 (50)
		Vacuum p	pressure [kPa]*1	-60.0	-52.0	-60.0	-36.8								
3 pcs. 0.45		Lifting	g force [N]*2	880 (400)	357	880 (400)	237								
	0.45	Lifting force considering	Horizontal lifting (Safety factor: 4)	220 (100)	89	220 (100)	59								
		safety factor [N]	Vertical lifting (Safety factor: 8)	110 (50)	44	110 (50)	29								

*1 The vacuum pressure is the actual measured value when non-leakage workpiece (acrylic plate) is suctioned at the standard supply pressure. It is not guaranteed values.
*2 The lifting force is an actual value measured by SMC at the above vacuum pressure and is not a guaranteed value. (Values in parentheses indicate values when the tool plate and main plate are used.) It is necessary to judge the suitability for the workpiece with actual condition of use.

*3 This is the pressure immediately before the air pressure supply (P) port of the vacuum gripper system during suction. It is affected by air supply capacity, pipe size, air consumption of other equipment operating simultaneously, etc. During vacuum generation, the pressure immediately before the air pressure supply (P) port of the vacuum gripper system may fall below the standard supply pressure.

*4 Vacuum saving valve may not be activated when suction area is small.

*5 This indicates that vacuum saving valves don't work.

Suction Plate

Suction Plate Selection Guide

Foam size 200 mm x 120 mm				Eine die viffie eitere e			
		-		Vacuum savii	ng valve type	Fixed ori	fice type
		Suction area [%]*4		100%	Approx. 50%	100%	Approx. 50%
	Standard	Number of suction holes [pcs.]		22/22	11/22	22/22	11/22
Number of ejector assemblies	Sumber of ejector ssemblies [MPa]		ce: Acrylic plate	$\left(\begin{array}{c} \oplus \oplus$	$\left(\begin{array}{c} \oplus \oplus \oplus \\ \\ \oplus \\$	$\left(\begin{array}{c} \oplus \oplus$	$\left(\begin{array}{c} \oplus \ \oplus $
		Vacuum p	oressure [kPa]*1	-63.0	-51.0	-63.0	-26.8
		Lifting	g force [N]*2	440 (400)	190	440 (400)	80
1 pc.	oc. 0.45	0.45 Lifting force considering safety factor [N]	Horizontal lifting (Safety factor: 4)	110 (100)	47	110 (100)	20
			Vertical lifting (Safety factor: 8)	55 (50)	23	55 (50)	10
		Vacuum p	oressure [kPa]*1	-62.0	-57.0	-62.0	-42.8
		Lifting	g force [N]*2	440 (400)	210	440 (400)	140
2 pcs. 0.45	0.45	Lifting force considering	Horizontal lifting (Safety factor: 4)	110 (100)	52	110 (100)	35
		safety factor [N]	Vertical lifting (Safety factor: 8)	55 (50)	26	55 (50)	17

*1 The vacuum pressure is the actual measured value when non-leakage workpiece (acrylic plate) is suctioned at the standard supply pressure. It is not guaranteed values.

*2 The lifting force is an actual value measured by SMC at the above vacuum pressure and is not a guaranteed value. (Values in parentheses indicate values when the tool plate and main plate are used.)

It is necessary to judge the suitability for the workpiece with actual condition of use.

*3 This is the pressure immediately before the air pressure supply (P) port of the vacuum gripper system during suction. It is affected by air supply capacity, pipe size, air consumption of other equipment operating simultaneously, etc. During vacuum generation, the pressure immediately before the air pressure supply (P) port of the vacuum gripper system may fall below the standard supply pressure.

*4 Vacuum saving valve may not be activated when suction area is small.

Variations

Foam specifications		- Suction plate		Number of ejector assemblies					
Th	ickness				(Max. suction flow rate)				
Level of workpiece front/ back surface unevenness		Workpiece size		Air leak a wo	age from rkpiece	400 x 240	300 x 180	200 x 120	
Even	20 mm	Small	Vacuum saving valve type	L	ow	1 pc. x 2 = 2 pcs. (322 L/min (ANR))	1 pc. (162 L/min (ANR))	1 pc. (162 L/min (ANR))	
	or		or			2 pcs. x 2 = 4 pcs. (646 L/min (ANR))	2 pcs. (352 L/min (ANR))	2 pcs. (352 L/min (ANR))	
Uneven	30 mm	Large	Fixed orifice type	н	ligh	3 pcs. x 2 = 6 pcs. (1022 L/min (ANR))	3 pcs. (515 L/min (ANR))	_	

SMC

CONTENTS

Vacuum Gripper System (Foam Type) ZGS Series



• Foam Size: 400 mm x 240 mm

How to Order	····· p. 11
Specifications	······p. 12
Ejector Flow Rate Characteristics	······p. 12
Ejector Exhaust Characteristics	······p. 13
Dimensions	

• Foam Size: 300 mm x 180 mm, 200 mm x 120 mm

How to Order	. 19
Specifications p	. 20
Ejector Flow Rate Characteristics p	. 20
Ejector Exhaust Characteristics	. 21
Dimensions p	. 22

Connector Cable for Compatible Robot	p. 33
Robot Mounting Flange	······ p. 33
Specific Product Precautions	····· p. 37



How to Order



Compatible robot

Symbol		Robot	Supported model	Switch output	Valve polarity
Identification symbol Output type manufa		manufacturer	Supported model	Switch output	valve polarity
N	Р		Coporal purposo	PNP	-COM
IN	Ν	—	- General purpose		+COM
011			UR10e		
011	Р	BOBOTS	UR16e	PNP	-COM
012		noboro	UR20		
			TM12(S)		+COM
		OMRON/ N TECHMAN ROBOT	TM14(S)		
021	Ν		TM16	NPN	
			TM20		
			TM25S		
	Р		MOTOMAN-HC10(S)DTP		COM
042	YASKAWA	MOTOMAN-HC20(S)DTP		-00101	
043	N	Electric	MOTOMAN-HC10(S)DTP	NDN	
N			MOTOMAN-HC20(S)DTP		+COM
			CRX-10iA(L)		
051	Р	FANUC	CRX-20iA	PNP	-COM
			CRX-25iA	1	

Supply valve/Release valve

Symbol	Supply valve	Release valve
В	N.O.	N.C.
κ	N.C.	N.C.
Nil	None	None

3 Foam size

400240 400 mm x 240 mm

4 Foam

Α	Thickness 20 mm (Number of holes: 91)
В	Thickness 30 mm (Number of holes: 91)

5 Suction plate

S	Vacuum saving valve type	
М	Fixed orifice type	
T I : I : I : I		

* The vacuum saving valve type has a stopper, and the fixed orifice type has no stopper.

6 Number of ejector assemblies

2	2 pcs.
4	4 pcs.
6	6 pcs.

 Total number of 2 ejector units Refer to page 12 for the flow rate characteristics.

Connector cable for compatible robot (Refer to page 33.)

Nil	With cable (For compatible models)
R	With cable (Discrete wire)
Ν	Without cable

When "Identification symbol: N" is selected in
 Compatible robot, "Nil: With cable (For compatible models)" cannot be selected.

For compatible robot



Length 3 m

8 Pressure switch unit specifications

Symbol	Switch unit
С	With unit switching function
Μ	SI unit only

 Under the New Measurement Act, switches with the unit switching function are not permitted for use in Japan.
 (Only symbol: M can be selected in Japan)

(Only symbol: M can be selected in Japan.)

P Robot mounting flange (Refer to page 33.)

Nil	Without robot mounting flange				
1	Basic type (Conforming to ISO 9409-1-50-4-M6)				
2	Basic type (Conforming to ISO 9409-1-50-4-M6) + Offset flange				

Symbol "2" can only be selected for compatible robot 021N (OMRON/TECHMAN ROBOT). (For other compatible robots, "2" cannot be selected.) In addition, the basic type, symbol "1," cannot be selected for compatible robot 021N (OMRON/TECHMAN ROBOT). (However, "Nil: Without robot mounting flange" can be selected.)

Air pressure supply (P) port

U	P	
C8	Motrio	ø8 One-touch fitting
C10	weinc	ø10 One-touch fitting
N9	Inch	ø5/16" One-touch fitting
N11	Inch	ø3/8" One-touch fitting

Vacuum Gripper System Specifications



Number of ejector assemblies	2	4	6	
Fluid		Air		
Operating pressure range [MPa]		0.3 to 0.7		
Operating temperature range [°C]		5 to 50		
Standard supply pressure [MPa]	0.58	0.6	0.6	
Max. vacuum pressure [kPa]	-75			
Air consumption [L/min (ANR)]	228	454	661	
Weight [kg]*1	3.9			
Power supply voltage [V] 24 VDC ±10%				
Power consumption [W]	2.7			
Supply valve/Release valve	Equivalent to JSY3140-5MOZ-			
Vacuum pressure switch	Equivalent to ZSE10-00-			
1 For ZGSNPK-400240BS4-RM1C8				

Refer to the JSY3000 series **Web Catalog** for the specifications of the supply valve and release valve. Refer to the ZSE10 series **Web Catalog** for vacuum pressure switch specifications.





Foam Size: **400** mm x **240** mm

Foam Size: **300** mm x **180** mm **200** mm x **120** mm

Ejector Flow Rate Characteristics (Reference value)*1



*1 Suction flow rates are measured under SMC test conditions and are not guaranteed. The dotted lines and values in parentheses in the table below are estimates based on measured values.

Suction flow rate for each number of ejector assemblies

Number of ejector	Supply pressure		S	Suction flow rat	e [L/min (ANR)]	for each vacuur	n pressure [kPa]	
assemblies	[MPa]	0	-10	-20	-30	-40	-50	-60	-70
2 pcs.	0.58	(322)	286	238	168	110	80	46	22
4 pcs.	0.6	(646)	574	490	350	222	172	104	54
6 pcs.	0.6	(1022)	(864)	706	498	338	250	144	66

SMC

Exhaust Noise (Reference value)

Exhaust noise [dB(A)] 70

* Actual values under SMC's measurement conditions (Not guaranteed values)

Ejector Exhaust Characteristics (Reference value)*1

*1 Measured under SMC test conditions and are not guaranteed



Number of ejector assemblies: 2

Number of ejector assemblies: 4



Number of ejector assemblies: 6

13



Dimensions

Robot mounting flange: Basic type



Part no.	t	Α	В
ZGS -400240A	20	81	75
ZGS -400240B - 000	30	91	85

Foam/ Pressure switch 2/

Part no.	D	E
ZGSDD-400240DD-DDC8	51.4	ø8
ZGS -400240 - C C 10	52	ø10
ZGS -400240	51.4	ø5/16"
ZGS -400240 - N11	51.9	ø3/8"

Foam Size: 400 mm x 240 mm

Foam Size: **300** mm x **180** mm **200** mm x **120** mm

Connector Cable Robot Mounting Flange

Dimensions

Without robot mounting flange



Part no.	t	Α	F
ZGS400240A	20	81	65
ZGS	30	91	75

Part no.	D	E
ZGS400240C8	51.4	ø8
ZGS -400240 - C10	52	ø10
ZGS400240N9	51.4	ø5/16"
ZGS -400240 N11	51.9	ø3/8"

Dimensions



Robot mounting flange: Basic type + Offset flange

Part no.	t	Α	В
ZGS021N□-400240A□□-□□2□	20	81	91
ZGS021N□-400240B□□-□□2□	30	91	101

Part no.	D	E
ZGS021N-400240C8	51.4	ø8
ZGS021N-400240C10	52	ø10
ZGS021N-400240N9	51.4	ø5/16"
ZGS021N-400240N11	51.9	ø3/8"

Foam Size: 400 mm x 240 mm

Dimensions

Robot mounting flange



Dimensions

Offset flange







Foam Size: 400 mm x 240 mm

Vacuum Gripper System (Foam Type) **ZGS Series** (E CA Foam Size: 300 mm x 180 mm, 200 mm x 120 mm RoHS

How to Order



Compatible robot

Symbol		Robot	Current and sea del	Quuitale autout	Value pelerity
Identification symbol	Output type	manufacturer	Supported model	Switch output	valve polarity
	Р			PNP	-COM
N	Ν	—	General purpose	NPN	+COM
	Н			IO-Link co	mpatible
			UR3e		
011			UR5e		
011	Р	BOBOTS	UR10e	PNP	-COM
		NODOTS	UR16e		
012			UR20		
	N		TM5(S)		+COM
021		OMRON/ TECHMAN ROBOT	TM7S	NPN	
			TM12(S)		
			TM14(S)		
			TM16		
			TM20		
			TM25S	1	
	Р		MOTOMAN-HC10(S)DTP		0014
042	Р	YASKAWA	MOTOMAN-HC20(S)DTP	FINE	-00101
043	N	Electric	MOTOMAN-HC10(S)DTP		+COM
	IN		MOTOMAN-HC20(S)DTP		
			CRX-5iA		
051	п		CRX-10iA(L)		-COM
051	Р	FANUC	CRX-20iA		
			CRX-25iA		

3 Foam size/**4** Foam/**5** Suction plate/**6** Number of ejector assemblies

		4 Foam		6
Symbol	Soam size	Thickness	Suction plate	Number of ejector
		(Number of holes)		assemblies
300180AS1			6.	1: 1 pc.
300180AS2			S. Vacuum saving valve type	2: 2 pcs.
300180AS3		A: 20 mm	vacuum saving valve type	3: 3 pcs.
300180AM1		(39 holes)	N.4.	1: 1 pc.
300180AM2			IVI. Fixed orifice type	2: 2 pcs.
300180AM3	300180:		Tixed office type	3: 3 pcs.
300180BS1	300 mm x 180 mm		6.	1: 1 pc.
300180BS2			S. Vacuum saving valve type	2: 2 pcs.
300180BS3		B: 30 mm	vacuum saving valve type	3: 3 pcs.
300180BM1		(39 holes)	S) M: Eixed crifice type	1: 1 pc.
300180BM2				2: 2 pcs.
300180BM3			Tixed office type	3: 3 pcs.
200120AS1			S:	1: 1 pc.
200120AS2		A: 20 mm	Vacuum saving valve type	2: 2 pcs.
200120AM1		(22 holes)	M:	1: 1 pc.
200120AM2	200120:		Fixed orifice type	2: 2 pcs.
200120BS1	200 mm x 120 mm		S:	1: 1 pc.
200120BS2		B: 30 mm	Vacuum saving valve type	2: 2 pcs.
200120BM1		(22 holes)	M:	1: 1 pc.
200120BM2			Fixed orifice type	2: 2 pcs.

* The vacuum saving valve type has a stopper, and the fixed orifice type has no stopper.

2 Supply valve/Release valve

_				
Symbol	Supply valve	Release valve		
В	N.O.	N.C.		
Κ	N.C.	N.C.		
Nil	None	None		

When "H" is selected for the compatible robot output type, "Nil" cannot be selected.

7 Connector cable for compatible robot

Symbol	Connector cable for compatible robot
Nil	With cable (For compatible models)
R	With cable (Discrete wire)
Ν	Without cable

When "Symbol: N (P, N)" is selected in ① Compatible robot, "Nil: With cable (For compatible models)" cannot be selected. In addition, when "NH" is selected for the ① compatible robot, only "N" (Without cable) can be selected. (Refer to page 33 for details on the connector cable for compatible robots.)

8 Pressure switch unit specifications

Symbol	Switch unit	Pressure detection location
W	With unit switching	Pressure in base plate
Х	function	Pressure in a foam hole
Y	Shupitophy	Pressure in base plate
Z	Si unit only	Pressure in a foam hole

 Under the New Measurement Act, switches with the unit switching function are not permitted for use in Japan.
 (For use within Japan, symbols "Y" or "Z" can be selected.)

Property of the second seco

Symbol	Robot mounting flange*1
Nil	Without robot mounting flange
1	Tool plate + Main plate
2	Offset flange*2
3	Tool plate only*3

*1 The following two options are available for mounting the gripper on the robot:

- Offset flange

- Tool plate + Main plate.

Depending on the robot supported, an additional flange is provided. See the Robot Mounting Flange options for details.

Note that the lifting force may be limited when the tool plate and main plate are

- used. See the Suction Plate Selection Guide for details.
- *2 For Compatible robot: 021 (OMRON TECHMAN ROBOT), two options are available:
- (no flange required) and 2.
- *3 3: Tool plate only is available for users who already have the main plate (ZGS-PL3-7-A).

Air pressure supply (P) port

<u> </u>	•				
Symbol		Air pressure supply (P) port			
C8	Metric	Metric Straight	ø8 One-touch fitting		
C10			ø10 One-touch fitting		
N9	Inch Straigh		ø5/16" One-touch fitting		
N11	Inch	Straight	ø3/8" One-touch fitting		



Vacuum Gripper System Specifications



Number of ejector assemblies		1	2	3
Fluid		Air		
Operating pressure	range [MPa]	0.3 to 0.7		
Operating tempera	ture range [°C]	5 to 50		
Standard supply pr	essure [MPa]	0.45		
Max. vacuum press	ure [kPa]	-63 -62 -60		
Air consumption [L	/min (ANR)]	92 177 257		
Weight [kg]	Size 300 x 180*1	1.8		
	Size 200 x 120*2	1.3		_
Power supply volta	ge [V]	24 VDC ±10%		
Power consumptio	n [W]		1.4	
Supply valve/Relea	se valve	Equiva	lent to JSY3140-5N	∕IOZ-□
Vacuum pressure s	witch	Equ	ivalent to ZSE10-0	0-🗆
*1 For ZGSNPK-300 *2 For ZGSNPK-200	180AM3-RY1C8 120AM2-RY1C8			
Refer to the JSY300 of the supply valve a Refer to the ZSE10	0 series Web Cata and release valve. series Web Catal	log for the specific og for vacuum pr	essure	

JSY3000

ZSE10

Foam Size: 400 mm x 240 mm

Foam Size: **300** mm x **180** mm

Ejector Flow Rate Characteristics (Reference value)*1

switch specifications.



*1 Suction flow rates are measured under SMC test conditions and are not guaranteed. The dotted lines and values in parentheses in the table below are estimates based on measured values.

Suction flow rate for each number of ejector assemblies

Number of ejector	Supply pressure	Suction flow rate [L/min (ANR)] for each vacuum pressure [kPa]					
assemblies	נועור מן	0	-10	-20	-30	-40	-50
1 pc.		(162)	130	99	67	47	26
2 pcs.	0.45	(352)	275	198	128	88	48
3 pcs.		(515)	(407)	292	191	127	63

Exhaust Noise (Reference value)

Exhaust noise	Size 300 x 180	64
[dB(A)]	Size 200 x 120	60

* Actual values under SMC's measurement conditions (Not guaranteed values)

Ejector Exhaust Characteristics (Reference value)*1

*1 Measured under SMC test conditions and are not guaranteed



Number of ejector assemblies: 1

Number of ejector assemblies: 2



Number of ejector assemblies: 3



Dimensions: 300 mm x 180 mm



Robot mounting flange: Tool plate + Main plate + Flange Y Compatible robot: 043P/043N (YASKAWA Electric)



- 1		
20	81	105
30	91	115
	20 30	20 81 30 91

Part no.	D	E
ZGS	51.4	ø8
ZGS	52	ø10
ZGS	51.4	ø5/16"
ZGS	51.9	ø3/8"

Foam Size: 400 mm x 240 mm

300 mm x **180** mm **200** mm x **120** mm

Foam Size:

Connector Cable Robot Mounting Flange

Dimensions: 300 mm x 180 mm

Robot mounting flange: Tool plate + Main plate + Flange U Compatible robot: 012P (UNIVERSAL ROBOTS UR20)



Part no.	t	Α	В
ZGS012P□-300180A□□-□□1□	20	81	102.5
ZGS012P-300180B1	30	91	112.5

Part no.	D	E
ZGS	51.4	ø8
ZGS	52	ø10
ZGS	51.4	ø5/16"
ZGS	51.9	ø3/8"

Robot mounting flange: Offset flange Compatible robot: NP/NN/NH (General purpose) 011P (UNIVERSAL ROBOTS) 051P (FANUC) 021N (OMRON/TECHMAN ROBOT)



Part no.	t	Α	В
ZGS	20	81	78.5
ZGS	30	91	88.5

Part no.	D	E
ZGS	51.4	ø8
ZGS	52	ø10
ZGS	51.4	ø5/16"
ZGS	51.9	ø3/8"

Dimensions: 300 mm x 180 mm

Robot mounting flange: Offset flange + Flange U Compatible robot: 012P (UNIVERSAL ROBOTS UR20)



Robot mounting flange: Offset flange + Flange Y Compatible robot: 043P/043N (YASKAWA Electric)



Part no.	t	Α	В
ZGS043(P/N)□-300180A□□-□□2□	20	81	102
ZGS043(P/N) -300180B	30	91	112

Part no.	D	E
ZGS	51.4	ø8
ZGS	52	ø10
ZGS300180N9	51.4	ø5/16"
ZGS	51.9	ø3/8"

51.9

ø3/8"

Dimensions: 300 mm x 180 mm

Without robot mounting flange



Part no.	t	В
ZGS	20	65
ZGS	30	75

Part no.	D	E
ZGS	51.4	ø8
ZGS	52	ø10
ZGS	51.4	ø5/16"
ZGS	51.9	ø3/8"

Dimensions: 200 mm x 120 mm



Robot mounting flange: Tool plate + Main plate + Flange Y
Compatible robot: 043P/043N (YASKAWA Electric)

30

91

115



Part no.	D	E
ZGS200120C8	51.4	ø8
ZGS200120C10	52	ø10
ZGS200120N9	51.4	ø5/16"
ZGS200120N11	51.9	ø3/8"

ZGS__-200120___-_N9

ZGS -200120 - N11

51.4

51.9

ø5/16'

ø3/8"



Dimensions: 200 mm x 120 mm

Robot mounting flange: Tool plate + Main plate + Flange U Compatible robot: 012P (UNIVERSAL ROBOTS UR20)



Part no.	t	Α	В
ZGS012P□-200120A□□-□□1□	20	81	102.5
ZGS012P-200120B11	30	91	112.5

Part no.	D	E
ZGS200120C8	51.4	ø8
ZGS -200120 - C10	52	ø10
ZGS200120N9	51.4	ø5/16"
ZGS -200120	51.9	ø3/8"

Robot mounting flange: Offset flange Compatible robot: NP/NN/NH (General purpose) 011P (UNIVERSAL ROBOTS) 051P (FANUC) 021N (OMRON/TECHMAN ROBOT)



ZGS--200120----N11

51.9

ø3/8"

Dimensions: 200 mm x 120 mm





Part no.	t	A	В		Part no.	D	E
ZGS043(P/N)□-200120A□□-□□2□	20	81	102	-	ZGS200120C8	51.4	ø8
ZGS043(P/N) -200120B	30	91	112		ZGS -200120 - C10	52	ø10
					ZGS200120N9	51.4	ø5/16"
					ZGS200120N11	51.9	ø3/8"

Dimensions: 200 mm x 120 mm

Without robot mounting flange





ם	
	Pressure switch

Part no.	t	В
ZGS -200120A	20	65
ZGS -200120B - 0	30	75

Part no.	D	E
ZGS -200120 - C C8	51.4	ø8
ZGS -200120 - C10	52	ø10
ZGS200120N9	51.4	ø5/16"
ZGS -200120 - N11	51.9	ø3/8"

Dimensions

Main plate Compatible robot: NP/NN/NH (General purpose) 011P/012P (UNIVERSAL ROBOTS) 043P/043N (YASKAWA Electric) 051P (FANUC)



Tool plate Compatible robot: NP/NN/NH (General purpose) 011P/012P (UNIVERSAL ROBOTS) 043P/043N (YASKAWA Electric) 051P (FANUC)







Dimensions

Flange Y

Compatible robot: 043P/043N (YASKAWA Electric)



Flange U Compatible robot: 012P (UNIVERSAL ROBOTS UR20)



ω

31

Dimensions

Offset flange

Compatible robot: 021N (OMRON/TECHMAN ROBOT)



Foam Size: 400 mm x 240 mm

Connector Cable for Compatible Robot



Symbol	Robot manufacturer	① Vacuum gripper system side	② Robot side	Part no.	Cable length [mm]
011P	UNIVERSAL ROBOTS		M8 8-pin connector (Socket)	RMH-A00-11-A	220
012P					
043N	043N YASKAWA Electric		M8 8-pin connector (Socket)	RMH-A00-11-A	220
051P	FANUC	M8 8-pin connector (Socket)			
NP					2000
NN	_		Discrete wire		3000
021N	OMRON/TECHMAN ROBOT		M8 8-pin connector (Plug)	ZGS-LW1-14-A	300
NH	—	M8 4-pin connector (Socket)	For customers already in possession of an M12 cable, be sure to prepare an M8 to M12 conversion con		conversion connector.

*1 For UR20, please also use it in conjunction with the tool cable adapter that comes with the robot.

Robot Mounting Flange (Foam Size: 400 mm x 240 mm)

	Description	Quantity	Note	
ZGS-PL3-1-A Parallel pin (øl Basic type Parallel pin (øl Version (M6 × 18) Parallel pin (øl Basic type Parallel pin (øl (Conforming to ISO 9409-1-50- 4-M6) Hexagon soch head cap scree (M8 × 20)	Robot mounting flange Basic type	1		Robet
	Parallel pin (ø6 x 10)	1		
	Hexagon socket head cap screw (M6 x 18)	4	For securing the robot flange to the robot ^{*1}	Flange cover Regardless of whether the robot
	Parallel pin (ø8 x 15)	1		mounting flange is selected or not,
	Hexagon socket head cap screw (M8 x 20)	6	For securing the robot flange to the robot* ¹	Robot mounting flange
	Parallel pin (ø5 x 10)	2		Basic type
	Hexagon socket head cap screw (M6 x 14)	8	For securing the robot flange to the ejector unit	
	Flat washer (M6)	8		
	Offset flange	1		
700 01 5 4 4	Parallel pin (ø6 x 10)	1		ZGS-PL3-1-A*2 ZGS-PL5-1-A*2
Offset flange	Hexagon socket head cap screw (M6 x 23)	4	For securing the offset flange to the robot	*2 The parts within the dotted lines are included with the product.

 $\ast 1$ Select the most suitable option for the robot to be used. 33

Robot Mounting Flange (Foam Size: 300 mm x 180 mm, 200 mm x 120 mm)



Robot Mounting Flange (Foam Size: 300 mm x 180 mm, 200 mm x 120 mm)



Offset flange Compatible robot: 043P/043N (YASKAWA Electric)



	Description	Qty.	Note
	Flange U	1	
ZGS-PL3-5-A Flange U	Hexagon socket head cap screw (M8 x 18)	6	For securing the
	Parallel pin (8 x 15)	1	
	Offset flange	1	
	Hexagon socket head cap screw (M6 x 16)	4	For securing the
ZGS-PL3-4-A	Flat washer (M6)	4	eiector unit
Offset flange	Parallel pin (5 x 10)	2	
	Parallel pin (6 x 10)	1	For securing the
	Hexagon socket head cap screw (M6 x 20)	4	flange U to the offset flange

	Description	Qty.	Note
ZGS-PL3-6-1-A Flange Y	Flange Y	1	
	Hexagon socket head cap screw (M6 x 45)	4	For securing the flange Y + offset
	Parallel pin (6 x 10)	1	flange to the robot
	Offset flange	1	
	Hexagon socket head cap screw (M6 x 16)	4	For securing the
700 010 4 4	Flat washer (M6)	4	eiector unit
ZGS-PL3-4-A	Parallel pin (5 x 10)	2	-,
Onset hange	Parallel pin (6 x 10)	1	For securing the flange Y to the offset flange
	Hexagon socket head cap screw (M6 x 20)	4	It comes with the product but is not used.

Robot Mounting Flange (Foam Size: 300 mm x 180 mm, 200 mm x 120 mm)



	Description	Qty.	Note
	Flange U	1	
ZGS-PL3-5-A Flange U	Hexagon socket head cap screw (M8 x 18)	lexagon socket head cap crew (M8 x 18) 6 For secu flange U	
	Parallel pin (8 x 15)	1	robot
	Main plate	1	
	Clamper	2	
ZGS-PL3-7-A Main plate	Hexagon socket thin head cap screw (M5 x 25)	2	For securing the clamper
	Hexagon socket thin head cap screw (M6 x 10)	4	For securing the main plate to the
	Parallel pin (6 x 10)	1	flange U
	Tool plate	1	
ZGS-PL3-3-A Tool plate	Hexagon socket head cap screw (M6 x 16)	cket head cap 4 For secur (16) 4 tool plate	
	Flat washer (M6)	4	ejector unit

Tool plate + Main plate Compatible robot: 043P/043N (YASKAWA Electric)



	Description	Qty.	Note
ZGS-PL3-6-A Flange Y	Flange Y	1	
	Hexagon socket thin head cap screw (M6 x 35)	4	For securing the flange Y + main plate to the robot
	Parallel pin (6 x 10)	1	For securing the flange Y to the robot
	Main plate	1	
	Clamper	2	
ZGS-PL3-7-A Main plate	Hexagon socket thin head cap screw (M5 x 25)	2	For securing the clamper
	Hexagon socket thin head cap screw (M6 x 10)	4	It comes with the product but is not used.
	Parallel pin (6 x 10)	1	For securing the main plate to the flange Y
	Tool plate	1	
ZGS-PL3-3-A Tool plate	Hexagon socket head cap screw (M6 x 16) 4 For sect tool plat		For securing the tool plate to the
	Flat washer (M6)	4	ejector unit



ZGS Series Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For vacuum equipment precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Handling

Marning

When the foam comes into contact with a workpiece, do not put a finger between the foam and the workpiece; it can be caught during suction.

≜Caution

1. Strictly observe the precautions on vacuum equipment and safety when using the product. Take safety measures so that any accident, such as

the dropping of a workpiece, does not occur during adsorption transfer.

2. Use the product within the specification range.

Use exceeding the voltage may result in serious damage due to reduced product performance.

3. Exhaust air is released from the opening in the product.

Therefore, this exhaust air opening must not be blocked or restricted.

4. Before suction, press the foam onto the workpiece so that the foam adapts to the unevenness of the workpiece surface in order to avoid the suction failure.

It is recommended that the foam is compressed to approximately 50% of its original thickness.

5. Do not pressurize the product with the ejector cover removed; ejector assembly may jump out.

Environment

Marning

This product is not designed to be explosion proof, dustproof, or drip proof.

Do not use in an environment where flammable gas or explosive gas is present.

≜Caution

If liquids such as water, oil, or chemicals are adsorbed, it may accumulate inside the product causing damage and reducing the performance. Therefore, this product cannot be used in an environment where liquids such as water, oil content, or chemicals are present.

In addition, if the product adsorbs a workpiece that is adhered to such liquids, it will reduce the product life and require early maintenance. Do not use the product in a place where static electricity is a problem. Otherwise, failure or malfunction of the system can result. Design

Marning

Design the equipment with safety in mind, taking into account a vacuum pressure drop caused by a power or air supply failure.

Provide preventive measures against the fall of workpieces where this may cause danger.

Maintenance

MWarning

Perform maintenance inspection according to the procedures indicated in the operation manual.

If handled improperly, malfunction or damage of the product may occur.



These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

н

Danger : Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury. Marning: Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Caution: Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

A Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. SMC products cannot be used beyond their specifications. They are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not allowed.
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, combustion equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
 - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots etc.

SMC develops, designs, and manufactures products to be used for automatic control equipment, and provides them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not allowed.

Products SMC manufactures and sells cannot be used for the purpose of transactions or certification specified in the Measurement Act of each country. The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".

Read and accept them before using the product.

Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
 - *2) Suction cups (Vacuum pads) are excluded from this 1 year warranty. A suction cup (vacuum pad) is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the suction cup (vacuum pad) or failure due to the deterioration of rubber material are not allowed by the limited warranty.

Compliance Requirements

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision History

Edition B * Foam sizes 300 mm x 180 mm and 200 mm x 120 mm have been added. The number of pages has been increased from 16 to 40.

A Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

SMC Corporation https://www.smcworld.com

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer. © 2025 SMC Corporation All Rights Reserved