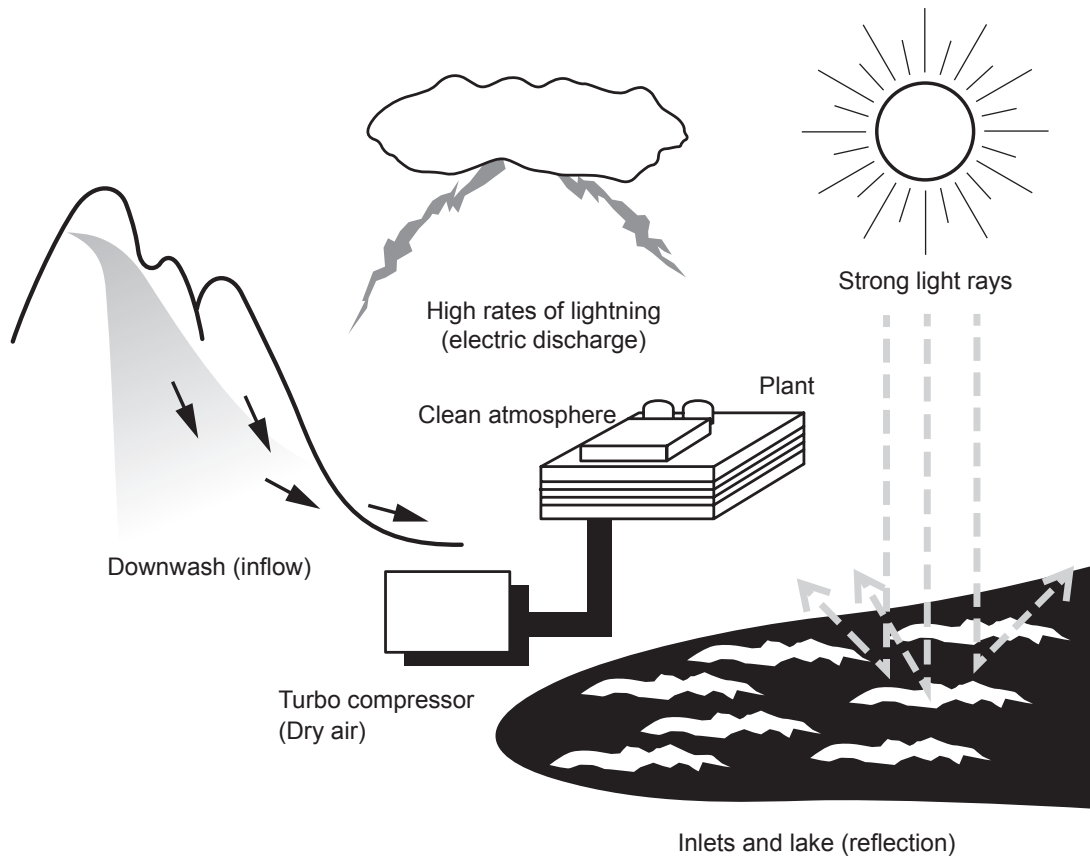


Ozone proof components

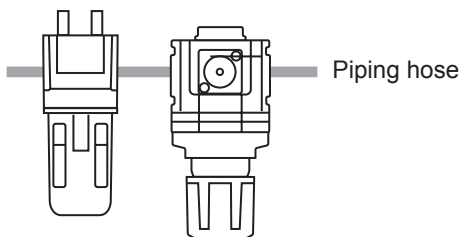
	Page
Influence of ozone	Ending 6
Ozone proof component selection range	Ending 7
Support by product group	Ending 8

Plant environments easily affected by ozone



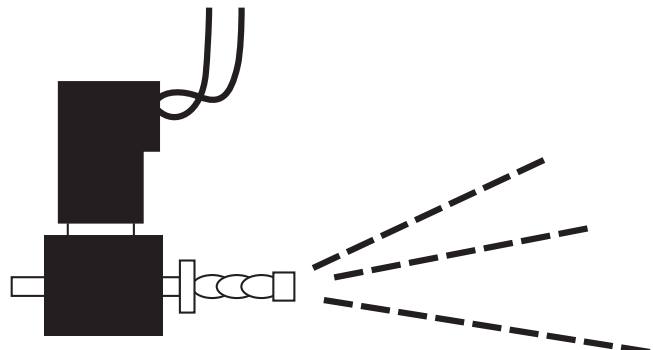
Pneumatic components affected by ozone

Diaphragm and valve seat of regulator



Repeated stress accelerates rubber deterioration

Valve seat of air blow valve

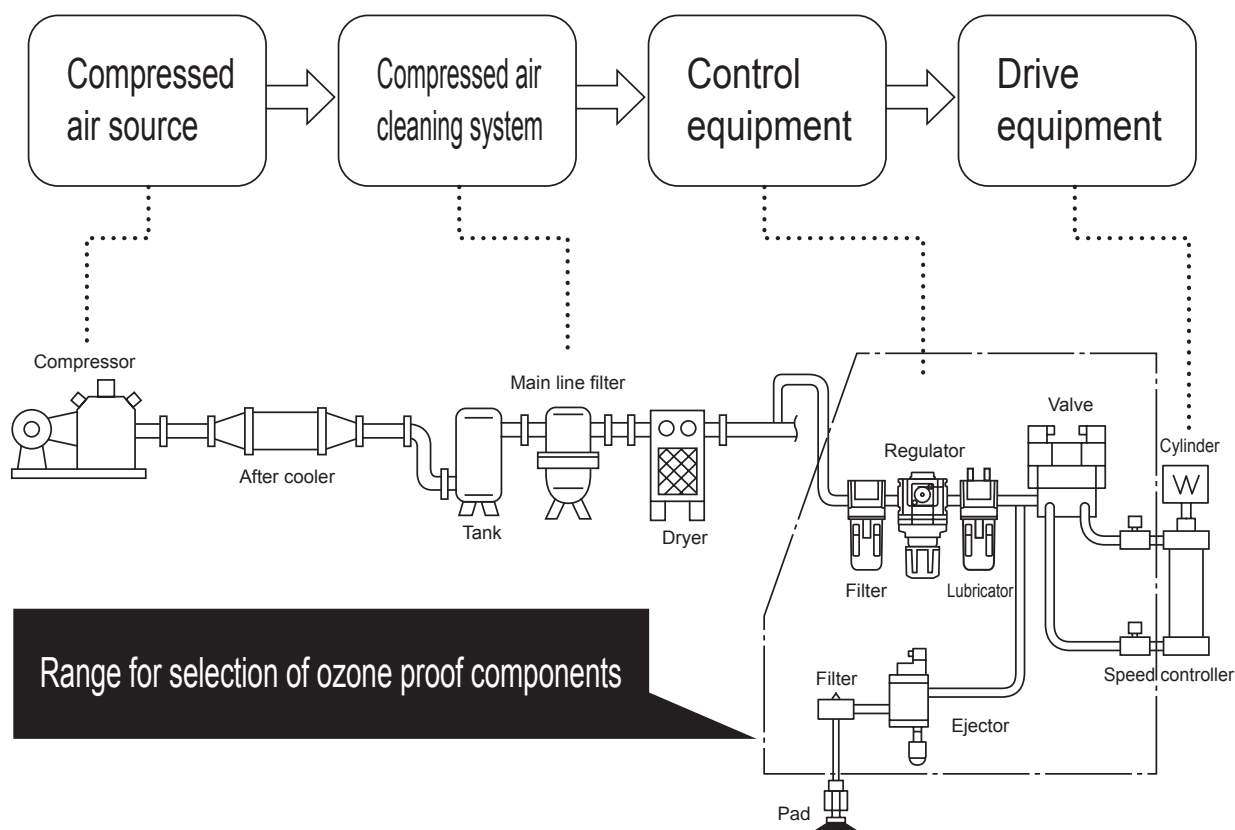


High air flow speed at orifice

Ozone proof component selection range

A typical pneumatic component system consists of the following devices.

Devices in require ozone countermeasures.



Safety precautions

Ozone-proof components use fluoro rubber or hydrogenated nitrile rubber for rubber parts.

Therefore, special working environments and conditions that differ from the standard products must be considered when evaluating performance and service life.

Support by product group

1. Pneumatic cylinders

Available as standard specifications.

2. Pneumatic valves

Pneumatic valves are available as indicated below.

● Option

Ozone-proof specifications are available as an option.

● -P11 compatible

Parts with ozone-proof specifications are available by adding -P11 at the end of the model No. (Custom order product)

Ozone countermeasures

The material of the rubber parts differs from standard products.

(Dimensions are the same as for standard products.)

Option compatible model

Series		Model No.	How to order
4G Series	4, 5-port valve	4G ^A _B * M4G ^A _B * MN4G ^A _B *	Selectable with option code A. Example) Single unit [Model No.] [Solenoid position] - [Port size] - [Electrical connections] [Option] A - [Rated voltage]
	3-port valve	3G ^A _B * M3G ^A _B * MN3G ^A _B *	
W4G2 Series	4, 5-port valve	W4GB2* MW4G ^A ₂ *	Example) Manifold [Model No.] [Solenoid position] - [Port size] - [Electrical connections] [Option] A - [Station No.] - [Rated voltage]
	3-port valve	MW3GA2*	
MN4E0 Series	4-port valve	MN4E0*	
	3-port valve	MN3E0*	

-P11 compatible model

Series		Model No.	How to order
4S0 Series	5-port valve	4S ^A _B 0* M4S ^A _B 0*	Available by adding -P11 at the end of the model No. (Custom order product) Example) Discrete [Model No.] [Solenoid position] - [Port size] - [Manual operating device] [Electrical connections] [Option] - [Rated voltage] -P11
MN4S0 Series	4-port valve	MN4S0* MT4S0*	
	3-port valve	MN3S0* MT3S0*	
4K Series	4, 5-port valve	4K ^A _B * M4K ^A _B * MN4KB*	
	3-port valve	3KA* M3KA*	Example) Manifold [Model No.] [Solenoid position] - [Port size] - [Manual operating device] [Electrical connections] [Option] - [Station No.] - [Rated voltage] - P11
3M Series	3-port valve	3M ^A _B 0* M3M ^A _B 0*	
3P Series	3-port valve	3P ^A _B * M3P ^A _B *	

3. Refining and pressure adjusting components (F.R.L.)

Refer to the "How to order" of each model (Ending Pages 144 to 151).

4. Pneumatic auxiliary components

Pneumatic auxiliary components are available as follows:

● Option

Ozone-proof specifications are available as an option.

● -P11 compatible

Parts with ozone-proof specifications are available by adding -P11 at the end of the model No. (Custom order product)

Ozone countermeasures

The material of the rubber parts differs from standard products.

(Dimensions are the same as the standard products.)

Option compatible model

Series	Model No.	How to order
Speed controller	SC1	Selectable with option code "X1".
Medium bore size		SC1-[Piping port size]-X1

-P11 compatible model

Series	Model No.	How to order
Speed controller	SC3R	SC3R - [Piping port size] - [Option] P11
Direct piping/elbow		
Speed controller	SC3W	SC3W - [Piping size] - [Compatible tube O.D.] - [Option] P11
Elbow with push-in fitting		
Miniature fitting	F	F[Shape] [Flow path shape] [Compatible tube] - [Piping size] - P11
Fitting	GW	GW [Shape] [Compatible tube] - [Piping size] - [Other combination] - P11
Fitting stainless steel	ZW	ZW-[Shape] [Compatible tube O.D.]-[Piping size]-P11

* The following models are available as standard.

Speed controller SCL2/SCD2 Series, silencer SLM/SLW Series, stainless steel fitting ZJ Series, tube F.U.KX

5. Sensors

* The following models are available as standard.

- Mechanical pressure switch (reed small pressure switch) P*100-W Series
- Pressure switch P4000-W Series



Filter regulator Standard White Series: Ozone proof

W1000-W/W3000-W W4000-W/W8000-W-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Rc1/8 to Rc1

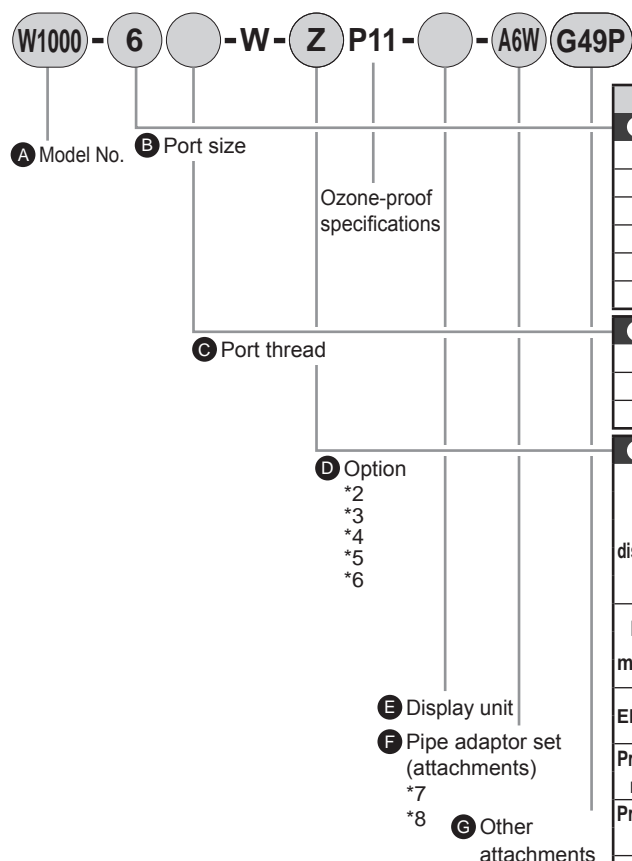
JIS symbol



RoHS

CAD

How to order



		A Model No.			
		W1000	W3000	W4000	W8000
Code		Content			
B Port size					
6	1/8	●			
8	1/4	●	●	●	
10	3/8		●	●	
15	1/2			●	
20	3/4				●
25	1				●
C Port thread		*9			
Blank	Rc thread	●	●	●	●
N	NPT thread	●	●	●	●
G	G thread	●	●	●	●
D Option					
Drain discharge	Blank	Manual drain cock	●	●	●
	F	Auto-drain manual override (NO)		●	●
	F1	Auto-drain manual override (NC)		●	●
	FF	Large auto-drain with manual override (NO)			●
	FF1	Large auto-drain with manual override (NC)			●
Bowl material	Blank	Polycarbonate bowl	●	●	●
	Z	Nylon bowl	●	●	●
	M	Metal bowl		●	●
Element	Blank	5 μm	●	●	●
	Y	0.3 μm (submicron)		●	●
Pressure range	Blank	0.05 to 0.85 MPa	●	●	●
	L	0.05 to 0.35 MPa	●	●	●
Pressure relief	Blank	With relief mechanism	●	●	●
	N	Non-relief	●	●	●
Pressure gauge	Blank	With standard pressure gauge (G401)	●	●	●
	T	No pressure gauge (gauge port (1/4) is assembled sealed)	●	●	●
	T8	Pressure gauge ready option (gauge port (1/4) is left open)	●	●	●
	X1	IN/OUT reverse flow (right to left)	●	●	●
E Display unit					
Blank		MPa display (Rc thread), psi display (NPT thread), bar display (G thread)	●	●	●
J1		MPa display (NPT, G thread)	●	●	●
F Pipe adaptor set (attachments)		*10			
Blank		Without enclosed product	●	●	●
A6*W		1/8 pipe adaptor set	●		
A8*W		1/4 pipe adaptor set	●	●	
A10*W		3/8 pipe adaptor set	●	●	
A15*W		1/2 pipe adaptor set		●	
A20*W		3/4 pipe adaptor set			●
A25*W		1 pipe adaptor set			●
A32*W		1 1/4 pipe adaptor set			●
* Adaptor thread					
Blank		Rc thread	●	●	●
N		NPT thread	●	●	●
G		G thread	●	●	●
G Other attachments		*11			
Blank		Without enclosed product	●	●	●
BW		C-bracket	●	●	●
B3W		L-bracket	●	●	●
G49P		Pressure gauge: G49D-8-P10 (L: G49D-8-P04)	●	●	●
G59P		Pressure gauge: G59D-8-P10 (L: G59D-8-P04)	●	●	●
G40P		Pressure gauge: G40D-8-P10 (L: G40D-8-P04)	●	●	●

⚠ Precautions for model No. selection

- *1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.
- *2: Select options for the drainage, bowl material, element and regulator.
When selecting options for several items, list options in order from the top.
- *3: If "L" is selected for pressure range option, a low-pressure gauge (0 to 0.4 MPa) is used.
- *4: In the case of option code "F", the min. working pressure of the auto-drain is 0.1 MPa.
Air is purged with initial drain until pressure reaches 0.1 MPa.
- *5: In the case of option code "F1", the min. working pressure of the auto-drain is 0.15 MPa.
- *6: For "T", a gauge plug is assembled instead of a pressure gauge.
- *7: Pipe adaptor set A*00-**-W is enclosed.
- *8: The pipe adaptor set and C-bracket cannot be used together.
- *9: G threads and NPT threads are available for IN, OUT, gauge port and drain outlet (metal bowl with auto-drain).
- *10: The adaptor port size can be selected from Rc, NPT or G.
Blank: Rc thread, N: NPT thread, G: G thread.
(Example) A8G
- *11: If NPT is selected for ©Port thread, an NPT pressure gauge is supplied. If Rc or G thread is selected, an R thread pressure gauge is supplied.

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".



Reverse filter and regulator Standard White Series: Ozone proof

W1100-W/W3100-W W4100-W/W8100-W-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Rc1/8 to Rc1

JIS symbol



How to order

A Model No. **B Port size** **C Port thread** **D Option** **E Display unit** **F Pipe adaptor set (attachments)** **G Other attachments**

W1000 - 6 - W - Z P11 - - A6W G49P

Ozone-proof specifications

*2
*3
*4
*5
*6
*7
* Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for the explanation of the option.

		A Model No.			
		W1100	W3100	W4100	W8100
Code	Content				
B Port size					
6	1/8	●			
8	1/4	●	●	●	
10	3/8		●	●	
15	1/2			●	
20	3/4				●
25	1				●
C Port thread *10					
Blank	Rc thread	●	●	●	●
N	NPT thread	●	●	●	●
G	G thread	●	●	●	●
D Option					
Drain discharge	Blank	Manual drain cock	●	●	●
	F	Auto-drain manual override (NO)		●	●
	F1	Auto-drain manual override (NC)		●	●
	FF	Large auto-drain with manual override (NO)			●
	FF1	Large auto-drain with manual override (NC)			●
Bowl material	Blank	Polycarbonate bowl	●	●	●
	Z	Nylon bowl	●	●	●
	M	Metal bowl		●	●
Element	Blank	5 μm	●	●	●
	Y	0.3 μm (submicron)		●	●
Pressure Range	Blank	0.05 to 0.85 MPa	●	●	●
	L	0.05 to 0.35 MPa	●	●	●
Pressure relief	Blank	With relief mechanism	●	●	●
	N	Non-relief	●	●	●
Pressure gauge	Blank	With standard pressure gauge (G401)	●	●	●
	T	No pressure gauge (gauge port (1/4) is assembled sealed)	●	●	●
	T8	Pressure gauge ready option (gauge port (1/4) is left open)	●	●	●
X1		IN/OUT reverse flow (right to left)	●	●	●
E Display unit					
Blank	MPa display (Rc thread), psi display (NPT thread), bar display (G thread)	●	●	●	●
J1	MPa display (NPT, G thread)	●	●	●	●
F Pipe adaptor set (attachments) *11					
Blank	Without enclosed product	●	●	●	●
A6*W	1/8 pipe adaptor set	●			
A8*W	1/4 pipe adaptor set	●	●	●	
A10*W	3/8 pipe adaptor set	●	●	●	
A15*W	1/2 pipe adaptor set		●	●	
A20*W	3/4 pipe adaptor set			●	●
A25*W	1 pipe adaptor set				●
A32*W	1 1/4 pipe adaptor set				●
* Adaptor thread					
Blank	Rc thread	●	●	●	●
N	NPT thread	●	●	●	●
G	G thread	●	●	●	●
G Other attachments *12					
Blank	Without enclosed product	●	●	●	●
BW	C-bracket	●	●	●	●
B3W	L-bracket	●	●	●	
G49P	Pressure gauge: G49D-8-P10 (L: G49D-8-P04)	●	●	●	●
G59P	Pressure gauge: G59D-8-P10 (L: G59D-8-P04)	●	●	●	●
G40P	Pressure gauge: G40D-8-P10 (L: G40D-8-P04)	●	●	●	●

⚠ Precautions for model No. selection

- *1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.
- *2: Select options for the drainage, bowl material, element and regulator.
When selecting options for several items, list options in order from the top.
- *3: If "L" is selected for pressure range option, a low-pressure gauge (0 to 0.4 MPa) is used.
- *4: **Positions of check valve and pressure gauge cannot be changed.**
If the IN and OUT directions must be reversed, indicate "X1" at the end of the option field.
- *5: In the case of option code "F", the min. working pressure of the auto-drain is 0.1 MPa.
Air is purged with initial drain until pressure reaches 0.1 MPa.
- *6: In the case of option code "F1", the min. working pressure of the auto-drain is 0.15 MPa.
- *7: For "T", a gauge plug is assembled instead of a pressure gauge.
- *8: Pipe adaptor set A*00-*W is enclosed.
- *9: The pipe adaptor set and C-bracket cannot be used together.
- *10: G threads and NPT threads are available for IN, OUT, gauge port and drain outlet (metal bowl with auto-drain).
- *11: The adaptor port size can be selected from Rc, NPT or G.
Blank: Rc thread, N: NPT thread, G: G thread.
(Example) A8G
- *12: If NPT is selected for ©Port thread, an NPT pressure gauge is supplied. If Rc or G thread is selected, an R thread pressure gauge is supplied.

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".

Ozone proof components

Ending



Regulator Standard White Series: Ozone proof

R1000-W/R2000-W/R3000-W R4000-W/R6000-W/R8000-W-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Rc1/8 to Rc1

JIS symbol



RoHS



How to order

R1000 - **6** - **-W-** **L** **P11** - **-A6W** **BW**

A Model No.

B Port size

C Port thread

D Option

*2

*3

*4

* Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for the explanation of the option.

E Display unit

F Pipe adaptor set (attachments)

*5

*6

⚠ Precautions for model No. selection

*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.

*2: When selecting options for several items, list options in order from the top.

*3: If "L" is selected for pressure range option, a low-pressure gauge (0 to 0.4 MPa) is used.

*4: For "T", a gauge plug is assembled instead of a pressure gauge. Working temperature is 5 to 50°C.

*5: Pipe adaptor set A*00--W is attached.

*6: The pipe adaptor set and C-bracket cannot be used together.

*7: G and NPT threads are available for IN, OUT and gauge ports.

*8: The adaptor port size can be selected from Rc, NPT or G. Blank: Rc thread, N: NPT thread, G: G thread. (Example) A8G

*9: If NPT is selected for C/Port thread, an NPT pressure gauge is supplied. If Rc or G thread is selected, an R thread pressure gauge is supplied.

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".

A Model No.					
R1000	R2000	R3000	R4000	R6000	R8000

Code	Content					
B Port size						
6	1/8	●				
8	1/4	●	●	●	●	
10	3/8		●	●	●	
15	1/2				●	
20	3/4				●	●
25	1				●	●

C Port thread *7						
Blank	Rc thread	●	●	●	●	●
N	NPT thread	●	●	●	●	●
G	G thread	●	●	●	●	●

D Option						
Pressure range	Blank	0.05 to 0.85 MPa	●	●	●	●
	L	0.05 to 0.35 MPa	●	●	●	●
Pressure relief	Blank	With relief mechanism	●	●	●	●
	N	Non-relief	●	●	●	●
Pressure gauge	Blank	With standard pressure gauge (G401)	●	●	●	●
	T	No pressure gauge (gauge port (1/4) is assembled sealed)	●	●	●	●
	T8	Pressure gauge ready option (gauge port (1/4) is left open)	●	●	●	●
X1	IN/OUT reverse flow (right to left)		●	●	●	●

E Display unit						
Blank	MPa display (Rc thread), psi display (NPT thread), bar display (G thread)		●	●	●	●
J1	MPa display (NPT, G thread)		●	●	●	●

F Pipe adaptor set (attachments) *7						
Blank	Without enclosed product		●	●	●	●
A6*W	1/8 pipe adaptor set		●			
A8*W	1/4 pipe adaptor set		●	●	●	
A10*W	3/8 pipe adaptor set		●	●	●	
A15*W	1/2 pipe adaptor set			●	●	
A20*W	3/4 pipe adaptor set				●	●
A25*W	1 pipe adaptor set					●
A32*W	1 1/4 pipe adaptor set					●

* Adaptor thread						
Blank	Rc thread		●	●	●	●
N	NPT thread		●	●	●	●
G	G thread		●	●	●	●

G Other attachments *8						
Blank	Without enclosed product		●	●	●	●
BW	C-bracket		●	●	●	●
B3W	L-bracket		●	●	●	●
B4W	B-bracket			●		
G49P	Pressure gauge: G49D-8-P10 (L: G49D-8-P04)		●	●	●	●
G59P	Pressure gauge: G59D-8-P10 (L: G59D-8-P04)		●	●	●	●
G40P	Pressure gauge: G40D-8-P10 (L: G40D-8-P04)		●	●	●	●



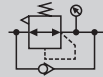
Reverse regulator Standard White Series: Ozone proof

R1100-W/R2100-W/R3100-W R4100-W/R6100-W/R8100-W-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Rc1/8 to Rc1

JIS symbol



How to order

R1100 - **6** - **W** - **L** **P11** - **A6W** **BW**

A Model No.

B Port size

C Port thread

D Option

*2

*3

*4

* Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for the explanation of the option.

E Display unit

F Pipe adaptor set (attachments)

*5

*6

⚠ Precautions for model No. selection

*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.

*2: When selecting options for several items, list options in order from the top.

*3: If "L" is selected for pressure range option, a low-pressure gauge (0 to 0.4 MPa) is used.

*4: Positions of check valve and pressure gauge cannot be changed. If the IN and OUT directions must be reversed, indicate "X1" at the end of the option field. For "T", a gauge plug is assembled instead of a pressure gauge.

*5: Pipe adaptor set A*00-**-W is enclosed.

*6: The pipe adaptor set and C-bracket cannot be used together.

*7: G and NPT threads are available for IN, OUT and gauge ports.

*8: The adaptor port size can be selected from Rc, NPT or G. Blank: Rc thread, N: NPT thread, G: G thread. (Example) A8G

*9: If NPT is selected for ©Port thread, an NPT pressure gauge is supplied. If Rc or G thread is selected, an R thread pressure gauge is supplied.

Dimensions

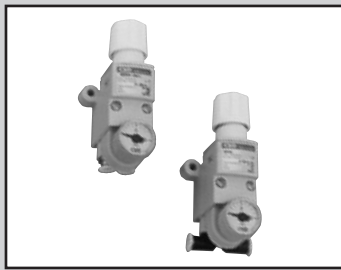
Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".

G Other attachments

		A Model No.					
		R1100	R2100	R3100	R4100	R6100	R8100
Code	Content						
B Port size							
6	1/8	●					
8	1/4	●	●	●	●		
10	3/8		●	●	●		
15	1/2				●		
20	3/4					●	●
25	1					●	●
C Port thread *7							
Blank	Rc thread	●	●	●	●	●	●
N	NPT thread	●	●	●	●	●	●
G	G thread	●	●	●	●	●	●
D Option							
Pressure range	Blank	0.05 to 0.85 MPa	●	●	●	●	●
	L	0.05 to 0.35 MPa	●	●	●	●	●
Pressure relief	Blank	With relief mechanism	●	●	●	●	●
	N	Non-relief	●	●	●	●	●
Pressure gauge	Blank	With standard pressure gauge (G401)	●	●	●	●	●
	T	No pressure gauge (gauge port (1/4) is assembled sealed)	●	●	●	●	●
	T8	Pressure gauge ready option (gauge port (1/4) is left open)	●	●	●	●	●
X1	IN/OUT reverse flow (right to left)	●	●	●	●	●	●
E Display unit							
Blank	MPa display (Rc thread), psi display (NPT thread), bar display (G thread)	●	●	●	●	●	●
J1	MPa display (NPT, G thread)	●	●	●	●	●	●
F Pipe adaptor set (attachments) *8							
Blank	Without enclosed product	●	●	●	●	●	●
A6*W	1/8 pipe adaptor set	●					
A8*W	1/4 pipe adaptor set	●	●	●	●		
A10*W	3/8 pipe adaptor set	●	●	●	●		
A15*W	1/2 pipe adaptor set		●	●	●		
A20*W	3/4 pipe adaptor set				●	●	●
A25*W	1 pipe adaptor set					●	●
A32*W	1 1/4 pipe adaptor set					●	●
* Adaptor thread							
Blank	Rc thread	●	●	●	●	●	●
N	NPT thread	●	●	●	●	●	●
G	G thread	●	●	●	●	●	●
G Other attachments *9							
Blank	Without enclosed product	●	●	●	●	●	●
BW	C-bracket			●	●		
B3W	L-bracket			●	●		
B4W	B-bracket		●				
G49P	Pressure gauge: G49D-8-P10 (L: G49D-8-P04)	●	●	●	●	●	●
G59P	Pressure gauge: G59D-8-P10 (L: G59D-8-P04)	●	●	●	●	●	●
G40P	Pressure gauge: G40D-8-P10 (L: G40D-8-P04)	●	●	●	●	●	●

Ozone proof components

Ending



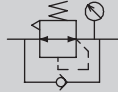
Compact regulator: Ozone proof

RB500-P11 Series

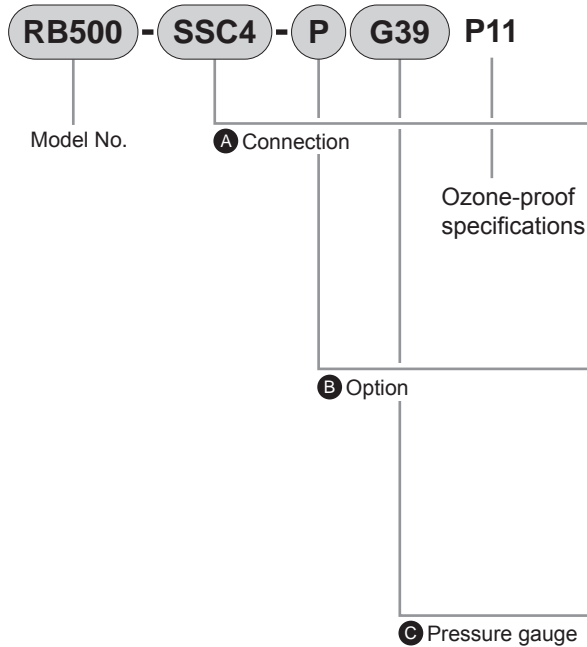
Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Push-in fitting ø4, ø6

JIS symbol



How to order



Code		Content	
A Connection			
Direction	IN	S	Straight
		L	Elbow
	OUT	S	Straight
		L	Elbow
Bore size		C4	ø4
		C6	ø6
B Option			
Panel Mount		Blank	Without nut
		P	With nut *3
Pressure range		Blank	0.05 to 0.7 MPa
		L	0.05 to 0.35 MPa
Pressure relief		Blank	Relief
		N	Non-relief
C Pressure gauge			
T		No pressure gauge	
Blank (Press range: Blank)		With pressure gauge (G29D-6-P10)	
Blank (Pressure range: L)		With pressure gauge (G39D-6-P04)	
G39		With pressure gauge (G39D-6-P10)	

⚠ Precautions for model No. selection

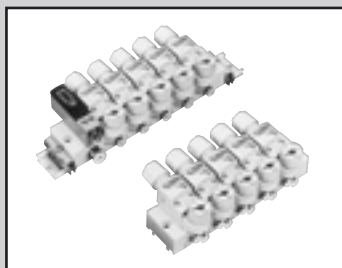
*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications.

*2: ø21 0 to 1.0 MPa pressure gauge is standard.
For low pressure, ø27 0 to 0.4 MPa low pressure gauge is provided.

*3: Indicate option code "P" for panel mounting.

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".



Block manifold regulator: Ozone proof

MNRB500-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Push-in fitting ø4, ø6, ø8



How to order

MNRB500A - SSC64 - 5 - N G39 - D P11

A Model No. *1

B Fitting

C Port size

D Station No. *2

E Option *3

F Mounting method

Ozone-proof specifications

E Pressure gauge *4

JIS symbol

Common supply
Individual supply

IN
OUT

IN
OUT

IN
OUT

IN
OUT

Code	Content
A Model No.	
MNRB500A	Common supply
MNRB500B	Individual supply
B Fitting	
IN direction	
S	Straight
L	Elbow
OUT direction	
S	Straight
L	Elbow
C Port size IN/OUT	
	MNRB500A MNRB500B
C64	IN; ø6, OUT; ø4
C66	IN; ø6, OUT; ø6
C84	IN; ø8, OUT; ø4
C86	IN; ø8, OUT; ø6
C4	IN, OUT; ø4
C6	IN, OUT; ø6
D Station No. *3	
1	1 station
2	2 stations
⋮	⋮
10	10 stations
E Option	
	MNRB500A MNRB500B
Pressure range	Blank 0.05 to 0.7 MPa (pressure gauge: G29D-6-P10)
	L 0.05 to 0.35 MPa (gauge: G39D-6-P04)
Pressure relief	Blank Relief
	N Non-relief
Pressure gauge *4	Blank With pressure gauge
	T Without pressure gauge (gauge port Rc 1/8)
	G39 With pressure gauge (G39D-6-P10)
Flow direction	Blank Standard flow (left → right)
	X1 Reverse flow (right → left)
F Mounting method	
Blank	DIN rail mount
D	Direct mount

⚠ Precautions for model No. selection

*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications.

*2: The air supply block is one station.

When using three or more stations simultaneously with the common supply, increase one supply block station for every three stations.

Designate with mix manifold specifications sheet.

*3: Up to five direct mounting stations can be used.

*4: Options and pressure gauges for each regulator block are the same.

*5: ø21 0 to 1.0 MPa pressure gauge is standard.

For low pressure, ø27 0 to 0.4 MPa low-pressure gauge is provided.

*6: When other than basic model specifications, ask CKD to issue the mix manifold specifications on page 331.

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".

Ozone proof components



Regulator: Ozone proof

B2019-P11 Series

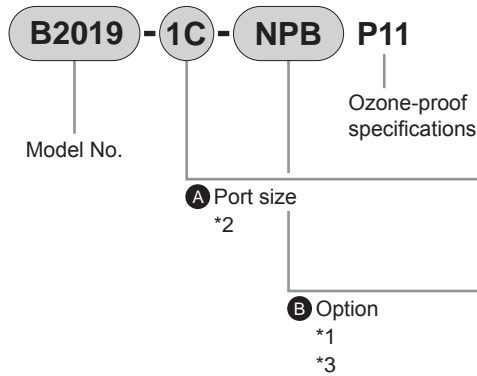
Fluoro rubber or hydrogenated nitrile rubber, etc., used for rubber part materials.

● Port size: Rc1/8, Rc1/4

JIS symbol



How to order



Code		Content
A Port size		
1C		Rc1/8
2C		Rc1/4
B Option		
Regulator	Blank	Standard
	N	Non-relief
	L	Low pressure (0.02 to 0.34 MPa)
	P	Panel mount
Attached product	Blank	Without enclosed product
	G	Pressure gauge
	B	Bracket

⚠ Precautions for model No. selection

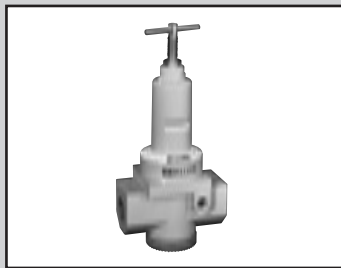
*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.

*2: If port size NPT thread is selected, do not indicate nominal size C. Example) B2019-1

*3: The pressure gauge supplied is G49D-6-P10 (G49D-6-P04 for low pressure).

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".



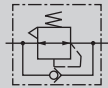
Reverse regulator (chuck valve integrated): Ozone proof

2415-P11 Series

Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

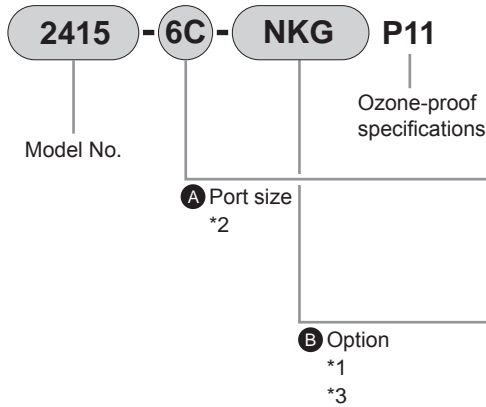
● Port size: Rc3/4, Rc1, Rc1 1/2

JIS symbol



RoHS

How to order



Code	Content	
A Port size		
6C	Rc3/4	
8C	Rc1	
10C	Rc1 1/2	
B Option		
Regulator	Blank	Standard
	N	Non-relief
	K	Plastic knob
Attached product	Blank	Without attached product
	G	Pressure gauge

⚠ Precautions for model No. selection

*1: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for specifications and attachments.

*2: If port size NPT thread is required, do not indicate nominal size C. Example) 2415-6

*3: The pressure gauge supplied is G59D-8-P10 (G59D-8-P04 for low pressure).

Dimensions

Same as standard products. Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)".

Custom order products

Available as a custom order. Contact CKD for details.

SC-M5 speed controller: Ozone-proof

- Rubber material is changed to fluoro rubber
- Port size: M5



2QV/3QV Quick Valve: Ozone-proof

- Rubber part materials changed to fluoro rubber or hydrogenated nitrile rubber, etc.
- 2- and 3-port valves are available



DSC speed controller with adjusting dial: Ozone-proof

- Rubber part materials changed to fluoro rubber or hydrogenated nitrile rubber, etc.
- Port size: Rc1/8, Rc1/4, Rc3/8, Rc1/2



Ozone proof components

Ending

International System of Units (SI units)

■ Conversion of SI units and conventional units

SI units (International System of Units) are used in this catalog.

Conversion for SI and conventional units are shown below.

■ SI unit conversion table (SI units are indicated with bold line.)

Conversion example (for pressure) $1 \text{ kgf/cm}^2 \Rightarrow 9.80665 \times 10^{-2} \text{ MPa}$ $1 \text{ MPa} \Rightarrow 1.01972 \times 10 \text{ kgf/cm}^2$

● Force

N	dyn	kgf
1	1×10^5	1.01972×10^{-1}
1×10^{-5}	1	1.01972×10^{-6}
9.80665	9.80665×10^5	1

● Viscosity

Pa·s	cP	P
1	1×10^3	1×10
1×10^{-3}	1	1×10^{-2}
1×10^{-1}	1×10^2	1

Note: $1 \text{ P} = 1 \text{ dyn} \cdot \text{s/cm}^2 = 1 \text{ g/cm} \cdot \text{s}$,
 $1 \text{ Pa} \cdot \text{s} = 1 \text{ N} \cdot \text{s/m}^2$, $1 \text{ cP} = 1 \text{ mPa} \cdot \text{s}$

● Stress

Pa or N/m ²	MPa or N/mm ²	kgf/mm ²	kgf/cm ²
1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}
1×10^6	1	1.01972×10^{-1}	1.01972×10
9.80665×10^6	9.80665	1	1×10^2
9.80665×10^4	9.80665×10^{-2}	1×10^{-2}	1

Note: $1 \text{ Pa} = 1 \text{ N/m}^2$, $1 \text{ MPa} = 1 \text{ N/mm}^2$

● Kinematic viscosity

m ² /s	cSt	St
1	1×10^6	1×10^4
1×10^{-6}	1	1×10^{-2}
1×10^{-4}	1×10^2	1

Note: $1 \text{ St} = 1 \text{ cm}^2/\text{s}$, $1 \text{ cSt} = 1 \text{ mm}^2/\text{s}$

● Pressure

Pa	kPa	MPa	bar	kgf/cm ²	atm	mmH ₂ O or mmAq	mmHg or Torr
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}	9.86923×10^{-6}	1.01972×10^{-1}	7.50062×10^{-3}
1×10^3	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	9.86923×10^{-3}	1.01972×10^2	7.50062
1×10^6	1×10^3	1	1×10	1.01972×10	9.86923	1.01972×10^5	7.50062×10^3
1×10^5	1×10^2	1×10^{-1}	1	1.01972	9.86923×10^{-1}	1.01972×10^4	7.50062×10^2
9.80665×10^4	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1	9.67841×10^{-1}	1×10^4	7.35559×10^2
1.01325×10^5	1.01325×10^2	1.01325×10^{-1}	1.01325	1.03323	1	1.03323×10^4	7.60000×10^2
9.80665	9.80665×10^{-3}	9.80665×10^{-6}	9.80665×10^{-5}	1×10^{-4}	9.67841×10^{-5}	1	7.35559×10^{-2}
1.33322×10^2	1.33322×10^{-1}	1.33322×10^{-4}	1.33322×10^{-3}	1.35951×10^{-3}	1.31579×10^{-3}	1.35951×10	1

Note: $1 \text{ Pa} = 1 \text{ N/m}^2$

● Work/energy/quantity of heat

J	kW·h	kgf·m	kcal
1	2.77778×10^{-7}	1.01972×10^{-1}	2.38889×10^{-4}
3.600×10^6	1	3.67098×10^5	8.6000×10^2
9.80665	2.72407×10^{-6}	1	2.34270×10^{-3}
4.18605×10^3	1.16279×10^{-3}	4.26858×10^2	1

Note: $1 \text{ J} = 1 \text{ W} \cdot \text{s}$, $1 \text{ J} = 1 \text{ N} \cdot \text{m}$ $1 \text{ cal} = 4.18605 \text{ J}$ (according to the Measurement Act)

● Thermal conduction ratio

W/(m·k)	kcal/(h·m·°C)
1	8.6000×10^{-1}
1.16279	1

Note: $1 \text{ cal} = 4.18605 \text{ J}$ (according to the Measurement Act)

● Coefficient of heat transfer

W/(m ² ·k)	kcal/(h·m ² ·°C)
1	8.6000×10^{-1}
1.16279	1

Note: $1 \text{ cal} = 4.18605 \text{ J}$ (according to the Measurement Act)

● Power (power/motivity) heat flow

W	kgf·m/s	PS	kcal/h
1	1.01972×10^{-1}	1.35962×10^{-3}	8.6000×10^{-1}
9.80665	1	1.33333×10^{-2}	8.43371
7.355×10^2	7.5×10	1	6.32529×10^2
1.16279	1.18572×10^{-1}	1.58095×10^{-3}	1

Note: $1 \text{ W} = 1 \text{ J/s}$, PS: French horsepower

$1 \text{ PS} = 0.7355 \text{ kW}$ (according to the Act for Enforcement of the Measurement Act)

$1 \text{ cal} = 4.18605 \text{ J}$ (according to the Measurement Act)

● Specific heat

J/(kg·k)	kcal/(kg·°C) cal/(g·°C)
1	2.38889×10^{-4}
4.18605×10^3	1

Note: $1 \text{ cal} = 4.18605 \text{ J}$ (according to the Measurement Act)