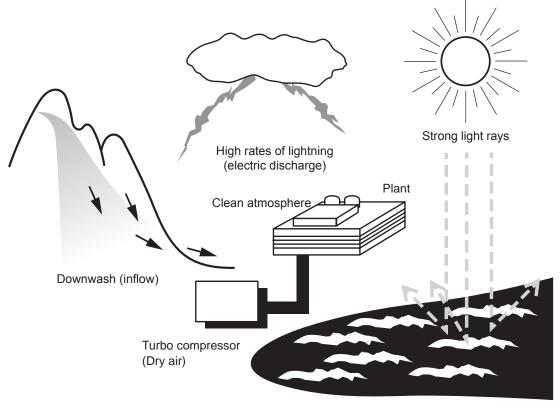
Ozone proof components

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

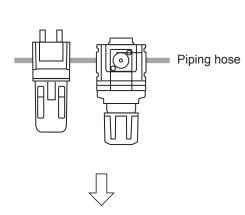
Plant environments easily affected by ozone



Inlets and lake (reflection)

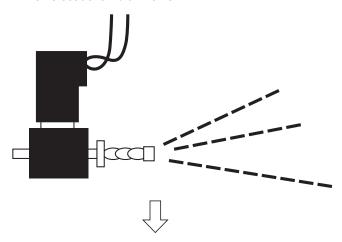
Pneumatic components affected by ozone

Diaphragm and valve seat of regulator



Repeated stress accelerates rubber deterioration

Valve seat of air blow valve



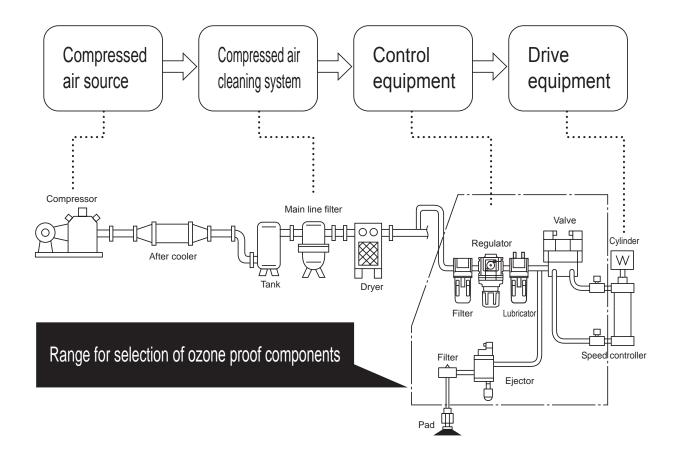
High air flow speed at orifice

Ozone proof components

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

-P11 compatible model

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

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

Refer to the "How to order" of each model (Ending Pages 10 to 19).

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. (Made-to-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	COW [Dining size] [Compatible tube O.D.] [Option] B11					
Elbow with push-in fitting		SC3W - [Piping size] - [Compatible tube O.D.] - [Option] P11					
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. 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.

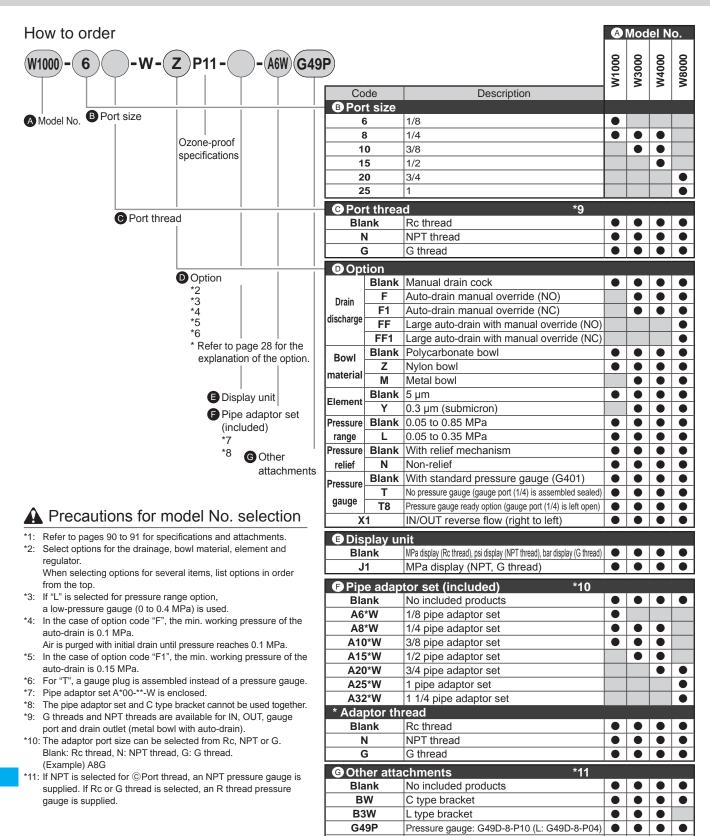
Port size: Rc1/8 to Rc1

JIS symbol









G59P

G40P

Pressure gauge: G59D-8-P10 (L: G59D-8-P04)

Pressure gauge: G40D-8-P10 (L: G40D-8-P04)

Dimensions

Ending



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 ord	ler							A	Mod	el N	0.
W1000 - 6	-w-(Z P	11-(-A6W G49	P			W1100	W3100	W4100	W8100
					Co	de	Description	>	>	>	>
					B Por		Возоприот				
Model No. B	Port size					1 3126 3	1/8				
iviouci ivo.						3 3	1/4				
		Ozon	e-proof				3/8				
		specif	fications			0		-	_		
						5	1/2	-			
						0	3/4				
						5	1				
	O D	<u>.</u>		<u> </u>	© Por	t threa	d *10				
	Port threa	ad			Bla	nk	Rc thread		•		
					1	1	NPT thread	•	•	•	•
						3	G thread	•	•	•	
					© Ор	lion					
		D Op	otion		e Op		Manual drain cock				
		*2				F	Auto-drain manual override (NO)				
		*3 *4			Drain	F1	` '		-	-	
		^4 *5			discharge	FF	Auto-drain manual override (NC)		•	•	
		*6			"		Large auto-drain with manual override (NO)	_			
		*7				FF1	Large auto-drain with manual override (NC)				
				age 28 for the	Bowl	Blank	Polycarbonate bowl	•	•	•	
		е	explanation	on of the option.	material	Z	Nylon bowl		•		•
					material	М	Metal bowl		•	•	
			Disp	lay unit	Element	Blank			•		
			(Dine	adaptor set	Licinoni	Υ	0.3 µm (submicron)		•	•	•
				uded)	Pressure	Blank	0.05 to 0.85 MPa		•		•
			*8	uucu)	Range	L	0.05 to 0.35 MPa				
			*9	G Other	Pressure	Blank	With relief mechanism				
			Ü	attachments	relief	N	Non-relief		•	•	
				allaciiiieiils	Pressure	Blank	With standard pressure gauge (G401)		•		
🛕 Precau	tions for m	nodel	No s	selection		Т	No pressure gauge (gauge port (1/4) is assembled sealed		•	•	•
					gauge	T8	Pressure gauge ready option (gauge port (1/4) is left open)	•	•	•	•
	s 98 to 99 for spe				Х	1	IN/OUT reverse flow (right to left)	•	•	•	
z: Select option regulator.	for the drainage,	, bowi m	іатепаі, е	iement and	A Dic	play uı	ait				
•	ng options for seve	eral item	ns. list op	tions in order		piay ui ank	MPa display (Rc thread), psi display (NPT thread), bar display (G thread				
from the top.	.g -p		,			1	MPa display (NPT, G thread)				
B: If "L" is select	ed for pressure ra	inge opt	ion, a low	/-pressure							
	4 MPa) is used.						tor set (included) *11				
	check valve and	pressu	re gauge	cannot be	Bla	nk	No included products		•		•
changed.	OUT directions n	at ba		d indicate "V4"	A6	*W	1/8 pipe adaptor set				
	the option field.		reverse	i, iliuicate XI	A8	*W	1/4 pipe adaptor set		•		
	option code "F", t		working	pressure of the	A10)*W	3/8 pipe adaptor set		•		
auto-drain is	•				A15	5*W	1/2 pipe adaptor set				
Air is purged	vith initial drain unt				A20)*W	3/4 pipe adaptor set			•	
*6: In the case of option code "F1", the min. working pressure of the			A25	5*W	1 pipe adaptor set				•		
auto-drain is					A32	2*W	1 1/4 pipe adaptor set				•
*7: For "T", a gauge plug is assembled instead of a pressure gauge.				ssure gauge.		ptor th					
	set A*00-**-W is e			o used together		nk	Rc thread	•	•	•	1
	otor set and C type of NPT threads are			•		V	NPT thread		•	•	1
	outlet (metal bov					3	G thread				•
•	ort size can be se			,			·	Ť			=
	ead, N: NPT threa		,	-			chments *12				
(Example) A8	G					nk w	No included products		•		_

BW

B3W

G49P

G59P

G40P

C type bracket

L type bracket

Pressure gauge: G49D-8-P10 (L: G49D-8-P04)

Pressure gauge: G59D-8-P10 (L: G59D-8-P04) Pressure gauge: G40D-8-P10 (L: G40D-8-P04)

Dimensions

gauge is supplied.

Ending

Ozone proof components

•

*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



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







How to order							A Model No.					
(R1000) - (6) - W - (L) P11 - (-A6W) (BW)												
Ozone proof G Other attachments							R4000	R6000	R8000			
Ozone-proof specifications				R1000	R2000	R3000	"	-	-			
A Model No.	Co		Description									
B Port size	B Port		1.0									
	6		1/8	•								
	8		1/4				•					
	10		3/8			•	•					
	15		1/2									
	20		3/4					•				
	25		1					•	_			
Port thread	© Port		*7									
or or timeau	Bla		Rc thread	•	•	•	•	•	•			
	N	<u> </u>	NPT thread		•	•		•	•			
	G	i	G thread			•						
	Option	on										
D Option *2	Pressure		0.05 to 0.85 MPa	•	•	•		•				
*3	range	L	0.05 to 0.35 MPa	•	•	•	•	•				
*4	Pressure	Blank	With relief mechanism	•	•	•	•	•				
* Refer to page	relief	N	Non-relief			•		•				
28 for the explanation of		Blank	With standard pressure gauge (G401)		•	•	•	•				
the option.	Pressure	Т	No pressure gauge (gauge port (1/4) is assembled sealed)	•	•	•	•	•				
		T8	Pressure gauge ready option (gauge port (1/4) is left open)	•	•	•	•	•	•			
■ Display unit	X.	1	IN/OUT reverse flow (right to left)		•	•	•	•				
F Pipe adaptor set	∄ Disp	lav uni	•									
(included)	Bla		MPa display (Rc thread), psi display (NPT thread), bar display (G thread)									
*5	J1 MPa display (NPT, G thread)		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•								
*6									$\dot{=}$			
			or set (included) *7									
A. B. C. C. LINI 1 C.	Bla		No included products	•		•	•	•				
A Precautions for model No. selection	A6*W		1/8 pipe adaptor set	•								
*1: Refer to pages 136 to 137 for specifications and	A8*W		1/4 pipe adaptor set				•					
attachments. *2: When selecting options for several items, list options in	A10*W		3/8 pipe adaptor set				•					
order from the top.	A15*W		1/2 pipe adaptor set			•						
*3: If "L" is selected for pressure range option, a low-	A20*W		3/4 pipe adaptor set									
pressure gauge (0 to 0.4 MPa) is used. *4: For "T", a gauge plug is assembled instead of a pressure	A25*W		1 pipe adaptor set									
gauge.	A32		1 1/4 pipe adaptor set						-			
Working temperature is 5 to 50°C.		tor thre										
*5: Pipe adaptor set A*00-**-W is attached. *6: The pipe adaptor set and C type bracket cannot be used	Bla		Rc thread									
together.	N N		NPT thread									
*7: G and NPT threads are available for IN, OUT and gauge	G		G thread		<u> </u>							
ports. *8: The adaptor port size can be selected from Rc, NPT or G.			hments *8									
Blank: Rc thread, N: NPT thread, G: G thread.		nk	No included products	•	•	•	•	•	•			
(Example) A8G	B\	N	C type bracket		•	•	•	•	•			
*9: If NPT is selected for ©Port thread, an NPT pressure gauge is supplied. If Rc or G thread is selected, an R	В3	W	L type bracket	•	•	•	•	•				
thread pressure gauge is supplied.	B4	W	B type bracket		•							
	G49	9P	Pressure gauge: G49D-8-P10 (L: G49D-8-P04)	•	•	•	•		•			

G59P

G40P

Pressure gauge: G59D-8-P10 (L: G59D-8-P04)

Pressure gauge: G40D-8-P10 (L: G40D-8-P04)

Same as standard products. Refer to pages 140 to 142.

Ending

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







				ı								
How to order								del N	lo.			
R1100-6-W-	R1100	R2100	R3100	R4100	R6100	R8100						
	Ozone-proof	6 Other	Other attachments				R3.	R4	R6	R8,		
A Model No.	specifications	Cod	de	Description								
B Port size		B Port	size									
Port size		6		1/8								
		8		1/4								
		10)	3/8		•						
		15	5	1/2								
		20		3/4					•	•		
		25	5	1					•			
	<u> </u>	© Port	© Port thread *7									
© Port threa	ad	Blai	nk	Rc thread	•	•	•	•	•	•		
				NPT thread	•	•		•	•	•		
		G		G thread	•	•	•		•	•		
		Option	on									
	Option *2	Pressure	Blank	0.05 to 0.85 MPa	•	•	•	•	•	•		
	*3	range	L	0.05 to 0.35 MPa	•	•	•		•	•		
	*4	Pressure	Blank	With relief mechanism		•	•					
	* Refer to page 28 for the	relief	N	Non-relief		•			•	•		
	explanation	Pressure	Blank	With standard pressure gauge (G401)		•			•	•		
	of the option.	gauge	Т	No pressure gauge (gauge port (1/4) is assembled sealed)	•	•			•	•		
	gauge	T8	Pressure gauge ready option (gauge port (1/4) is left open)	•	•			•	•			
	X1	X1 IN/OUT reverse flow (right to left) • • •							•			
	Pipe adaptor set	■ Disp	lay unit	Ė								
	Blai		MPa display (Rc thread), psi display (NPT thread), bar display (G thread)	•	•	•	•	•	•			
	(included) *5	J1	J1 MPa display (NPT, G thread)						•			
	*6	0.51										

Precautions for model No. selection

- *1: Refer to pages 144 to 145 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 lowpressure 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 type bracket cannot be used together.
- *7: G and NPT threads are available for IN, OUT and gauge
- *8: The adaptor port size can be selected from Rc, NPT or G. Blank: Rc thread, N: NPT thread, G: G thread. (Example)
- *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 pages 148 to 150.

F Pipe adaptor set (included) **Blank** No included products 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 NPT thread G thread G *9 © Other attachments **Blank** No included products BW C type bracket B3W L type bracket B4W B type 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



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

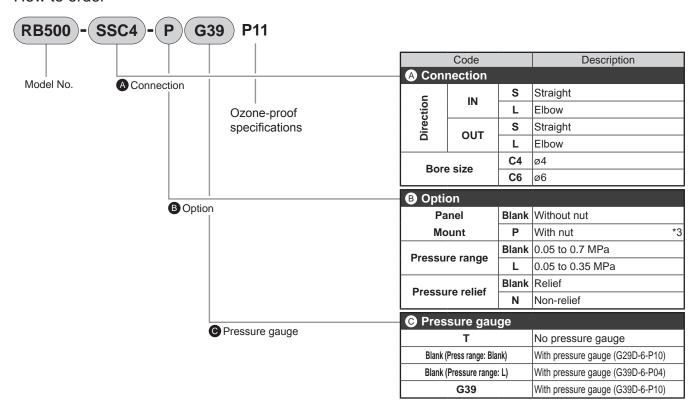
JIS symbol







How to order



A Precautions for model No. selection

- *1: Refer to page 386 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 page 387.

Block manifold regulator: Ozone proof

MNRB500-P11 Series

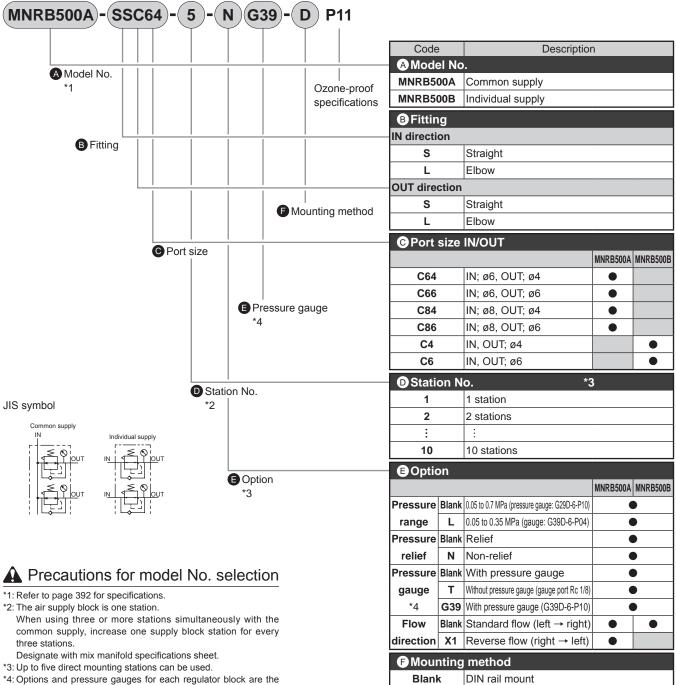
Fluoro rubber and hydrogenated nitrile rubber, etc., used for rubber part materials.

Port size: Push-in fitting ø4, ø6, ø8





How to order



D

Direct mount

- *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 405.

Ozone proof components

Dimensions



Regulator: Ozone proof

B2019-P11 Series

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

Port size: Rc1/8, Rc1/4

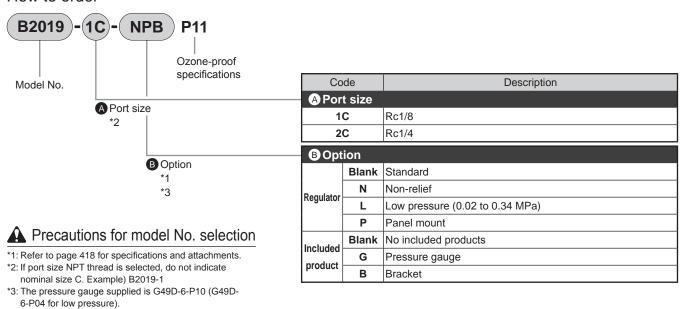
JIS symbol







How to order



Dimensions

Same as standard products. Refer to page 419.

Reverse regulator (chuck valve integrated): Ozone proof

2415-P11 Series

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

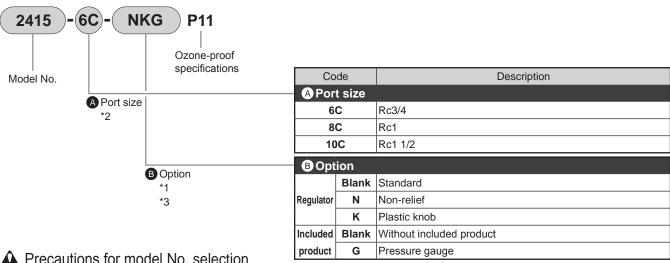
Port size: Rc3/4, Rc1, Rc1¹/₂

JIS symbol





How to order



A Precautions for model No. selection

- *1: Refer to page 462 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 page 463.

Made-to-order products

Available as made-to-order products. 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



Ending