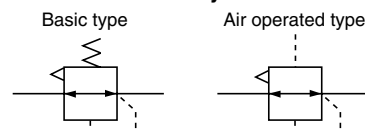


Precision Regulator

Series IR1000/2000/3000

RoHS

JIS Symbol



Standard Specifications

Model	Basic type			Air operated type	
	IR10□0	IR20□0	IR30□0	IR2120	IR3120
Max. supply pressure	Max. 1.0 MPa				
Min. supply pressure ⁽¹⁾	Set pressure + 0.05 MPa		Set pressure + 0.1 MPa	Set pressure + 0.05 MPa	Set pressure + 0.1 MPa
Regulating pressure range	IR1000: 0.005 to 0.2 MPa IR1010: 0.01 to 0.4 MPa IR1020: 0.01 to 0.8 MPa	IR2000: 0.005 to 0.2 MPa IR2010: 0.01 to 0.4 MPa IR2020: 0.01 to 0.8 MPa	IR3000: 0.01 to 0.2 MPa IR3010: 0.01 to 0.4 MPa IR3020: 0.01 to 0.8 MPa	0.01 to 0.8 MPa	0.01 to 0.8 MPa
Input signal ⁽²⁾ pressure	—			0.01 to 0.8 MPa	0.01 to 0.8 MPa
Sensitivity	Within 0.2% of full span				
Repeatability	Within ±0.5% of full span				
Linearity ⁽³⁾	—			Within ±1% of full span	
Air consumption ⁽⁴⁾ (At supply pressure of 1.0 MPa)	4.4 ℓ/min (ANR) or less	4.4 ℓ/min (ANR) or less	11.5 ℓ/min (ANR) or less	4.4 ℓ/min (ANR) or less	11.5 ℓ/min (ANR) or less
Port size	Rc 1/8	Rc 1/4	Rc 1/4, 3/8, 1/2	Rc 1/4	Rc 1/4, 3/8, 1/2
Pressure gauge port	Rc 1/8 (2 locations)				
Ambient and fluid temperature	-5 to 60°C (No freezing)				
Mass (kg)	0.14	0.30	0.64	0.35	0.71

Note 1) With the condition of no flow on the output side. Together with the set pressure, be sure to maintain a minimum differential pressure of 0.05 MPa for models IR1000 and IR2000, and 0.1 MPa for model IR3000.

Note 2) Applicable only to air operated types IR2120 and IR3120. The basic type is excepted.

Note 3) Indicates the linearity of the output pressure with respect to the input signal pressure.

Note 4) Air is normally being discharged to the atmosphere from a bleed hole or an exhaust port.

How to Order

IR 2 0 0 0 — 02 — — —

Precision regulator

Body size

1	IR1000
2	IR2000
3	IR3000

Type of setting

0	Basic type (Handle)
1	Air operated type (Series IR2000/3000 only)

Regulating pressure range

For series IR1000/2000

0	0.005 to 0.2 MPa
1	0.01 to 0.4 MPa
2	0.01 to 0.8 MPa

Note) Air operated type is model IR2120 only.

For series IR3000

0	0.01 to 0.2 MPa
1	0.01 to 0.4 MPa
2	0.01 to 0.8 MPa

Note) Air operated type is model IR3120 only.

Thread type

Nil	Rc
N	NPT*
F	G*

* Option

Port size

Symbol	size	Application
		IR1000 IR2000 IR3000
01	1/8	●
02	1/4	●
03	3/8	●
04	1/2	●

Suffix 1

Nil	—
T	For high temp. environments (-5 to 100°C) (Max. 80°C with pressure gauge.)
L	For low temp. environments (-30 to 60°C)

Suffix 2

Nil	—
Note) R	Pressure gauge, Bracket, Name plate, Mounting on the opposite side

Note) The standard mounting position of the pressure gauge is on the front, when viewing the regulator with the SUP side to the left and OUT side to the right.

Accessory

Nil	None
B	With bracket
G	With pressure gauge*

* Pressure gauge is included, (but not assembled).

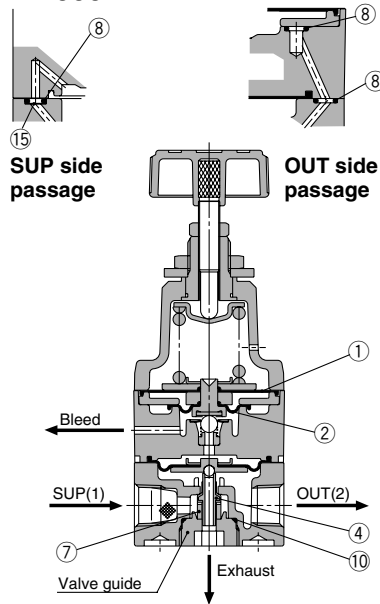
Made to Order Specifications (Refer to page 560)

Symbol	Specifications/Content
X1	Non-grease specifications
X120	Compatible with modular connection brackets(Refer to page 554)
X465□	With digital pressure switch (ISE30A)

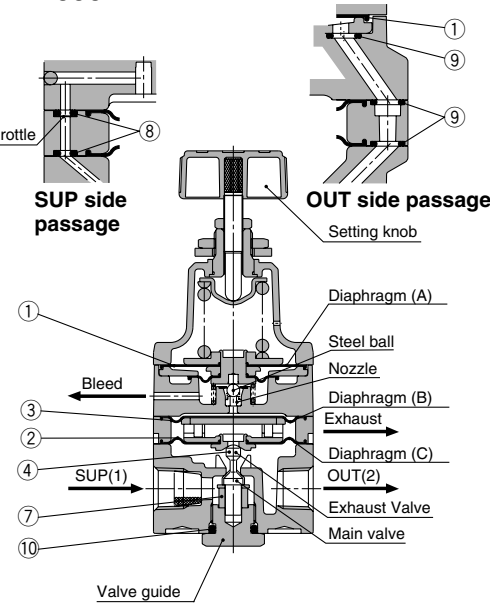
* 1 Add prefix (10-) for the clean room specification.
* 2 Add prefix (20-) for the copper-free and fluorine-free specification.
* 3 Add prefix (80-) for the ozone-resistant specification.
* 4 Manifold specification is available for IR1000 and IR2000. (Except IR2120 and IR3000)

Construction

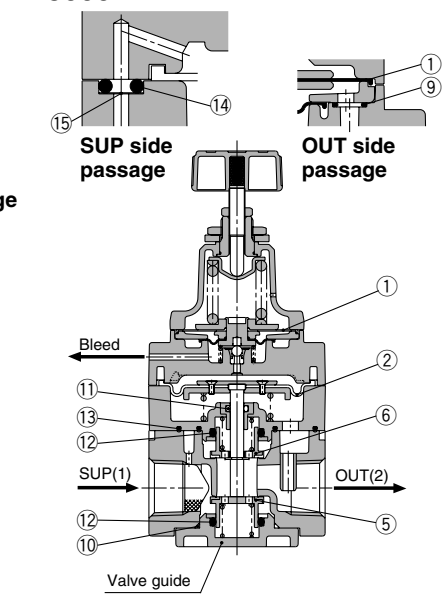
IR1000



IR2000



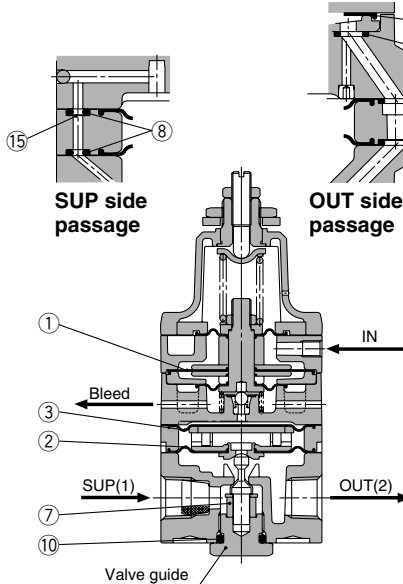
IR3000



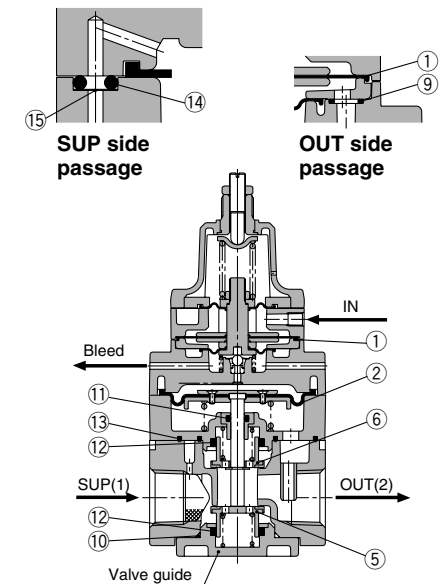
Working principle (For IR2000)

When the setting knob is turned, the nozzle is closed by the flapper allowing the supply air that flows in from the upstream side to pass through the fixed throttle. It then acts on diaphragm B as nozzle back pressure, the main valve is pushed down by the generated force, and the supply pressure flows out to the downstream side. The air pressure that flows in acts on diaphragm C. While opposing the force generated by diaphragm B it also acts on diaphragm A, opposing the compression force of the setting spring and becomes the set pressure. If the set pressure rises too high, diaphragm A is pushed up, the interval between the flapper and the nozzle widens, the nozzle back pressure drops, the balance of diaphragms B and C is broken, the main valve closes, the exhaust valve opens and the excess pressure from the downstream side is discharged to the atmosphere. In this way fine pressure variations are detected by the nozzle/flapper type pilot mechanism, and precise pressure adjustment is performed.

IR2120



IR3120



Replacement Parts

No.	Description	Material	IR10□0		IR20□0		IR30□0		IR2120		IR3120	
			Part no.	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.	Qty.
1	Diaphragm assembly	NBR, other	P362010-1	1	P362020-2	1	P362020-2	1	P362020-13	1	P362020-13	1
2	Diaphragm assembly	NBR, other	P362010-2	1	P362020-5	1	P362030-1	1	P362020-5	1	P362030-1	1
3	Diaphragm	NBR, other	—	—	P36202019	1	—	—	P36202019	1	—	—
4	Valve	Stainless steel, NBR	P36201058	1	P36202068#1	1	—	—	P36202068#1	1	—	—
5	Valve	Brass, NBR	—	—	—	—	P36203009#1	1	—	—	P36203009#1	1
6	Valve	Brass, NBR	—	—	—	—	P36203010#1	1	—	—	P36203010#1	1
7	Damper	NBR, other	P36201021	1	P36202026	1	—	—	P36202026	1	—	—
8	O-ring	H-NBR	ø2.5 x 1.05	3	ø1.42 x 1.52	2	—	—	ø1.42 x 1.52	2	—	—
9	O-ring	NBR	—	—	ø4.5 x 1	3	ø4.5 x 1	1	ø4.5 x 1	3	ø4.5 x 1	1
10	O-ring	NBR	ø10 x 1.3	1	JISB2401P11	1	ø27.8 x 1.5	1	JISB2401P11	1	ø27.8 x 1.5	1
11	O-ring	NBR	—	—	—	—	JISB2401P5 Note)	1	—	—	JISB2401P5 Note)	1
12	O-ring	NBR	—	—	—	—	JISB2401P16 Note)	2	—	—	JISB2401P16 Note)	2
13	Seal (A)	NBR	—	—	—	—	P36203015	1	—	—	P36203015	1
14	Seal (B)	NBR	—	—	—	—	P36203016	3	—	—	P36203016	3
15	Fixed throttle	Stainless steel	P36202018	1	P36202018	1	P36203017	1	P36202018	1	P36203017	1
Repair kit no. (A set of above nos. ① to ⑮.)			KT-IR1000		KT-IR2000		KT-IR3000		KT-IR2120		KT-IR3120	

Note) Use mini-flick type.