

**Pressure Regulator
with Air Filter (Airset)
Model: KZ03**

User's Manual



Yamatake Corporation

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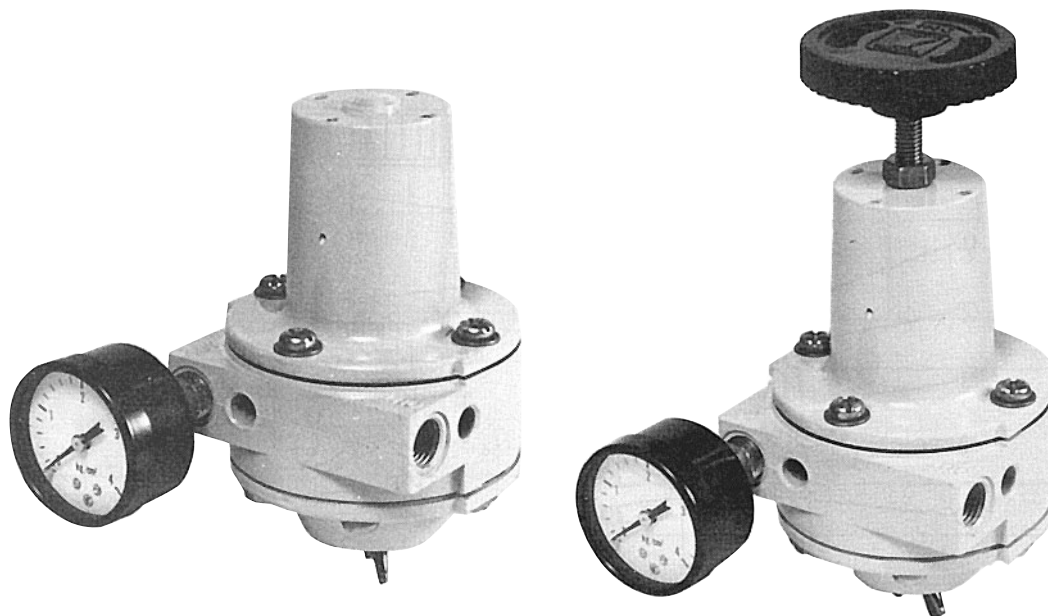
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1 : Description

The Pressure Regulators with Air Filter control the air pressure so each point of use off the air line is supplied with constant air pressure.



KZ03-1 140 kPa (image with gauge)

KZ03-2 for Variable output (Max. 400 kPa)
KZ03-3 for Variable output (Max. 700 kPa)

~Note *The number "7" is stamped with permanent ink on the body of KZ03-3 to tell apart from KZ03-2*

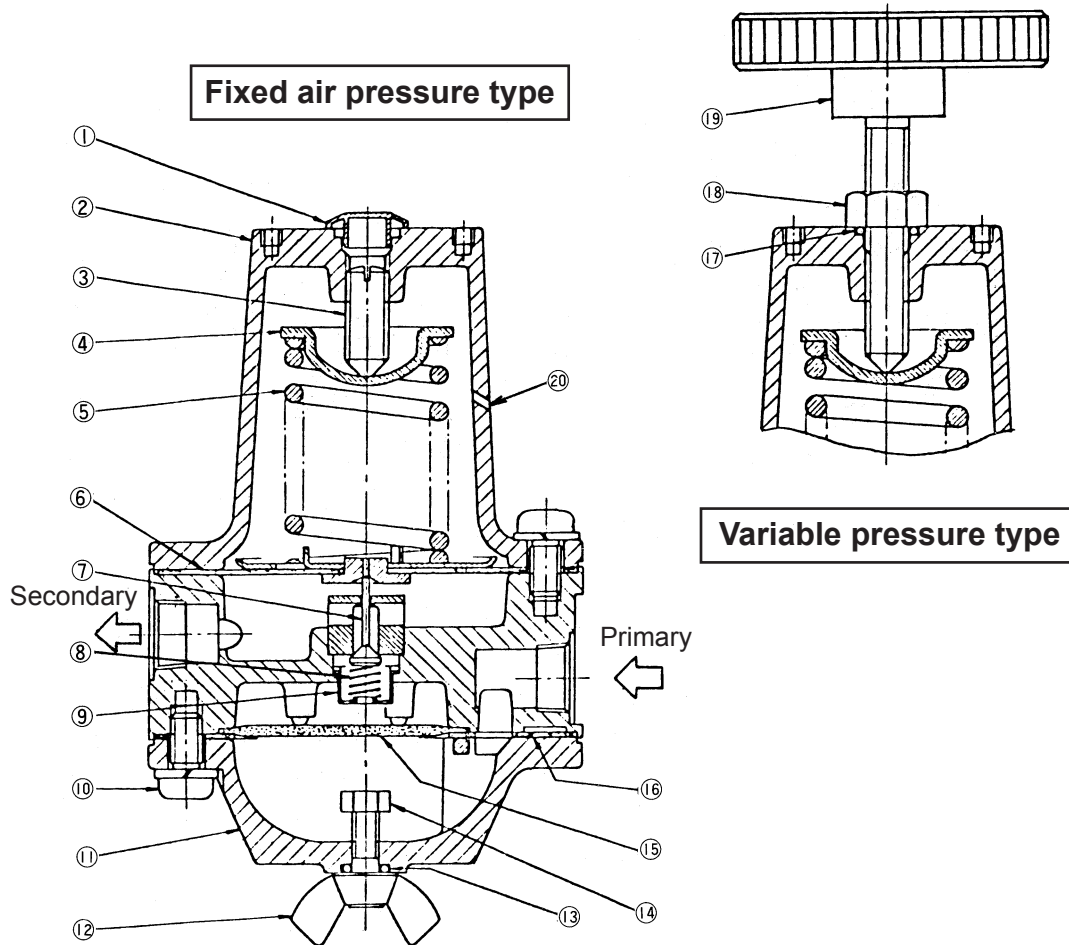
2 : Characteristics

- Compact / Light-body700 g
- Superior Flow Characteristics
- Withstand severe conditions of temperature, corrosive atmosphere, etc.
- Optimum handling operability with benefit of human engineering

3 : Operational Principal (Refer to the illustrations in page 2)

The air supply from the primary air intake goes through the filter (15), filtrating the dust and water. The air keeps flowing to the secondary air side until the secondary pressure balances off with the set spring (15) and shut off poppet valve [7]. If the secondary pressure goes up higher than the set pressure, the diaphragm [6] will raise, letting the extra air through the gap between the poppet and the seat ring, and the bleeding hole.

4 : Structure



No.	Parts	Material	Qty.
1	Cap	Nylon 6	1
2	Bonnet	Aluminum diecast	1
3	Setscrew	Stainless steel rod	1
4	Spring support	Stainless steel rod	1
5	Adjustment spring	Piano string SWPB	1
6	Diaphragm	BunnaN coated Tetrin cloth *1Copper Alloyed sheet C3713P Copper Alloyed rod C3604B D	1
7	Poppet	Alloyed steel rod C3604B D	1
8	Poppet spring	piano string SWPA	1
9	Poppet spring receiver	Stainless steel sheet SUS304	1
10	Screw with washer	Stainless steel sheet SUS304	10

No.	Parts	Material	Qty.
11	Filter cover	Aluminum diecast ADC12 Stainless steel rod SUS304	1
12	Wing bolt	Stainless steel rod SUS305	1
13	O-ring	BunnaN	1
14	Hex nut	Stainless steel SUS304	1
15	Filter	Sponge Bel-ita *2 A-3230	1
16	Gasket	NBR	1
17	O-ring	BunnaN	1
18	Hex nut	Stainless steel SUS304	1
19	Set Knob	ABS resin Stainless steel rod SUS304	
20	Bleeding Hole	---	

5 : Standard Specifications

The Pressure Regulators with Air Filter control the air pressure so each point of use off the air line is supplied with constant air pressure.

Type	KZ03-1	KZ03-2	KZ03-3	
Primary pressure (kPa)	Secondary pressure + more than 50 (970 max.)			
Secondary pressure (kPa)	140 ± 4 (constant)	12 - 400 (variable)	12 - 700 (variable)	
Characteristics				
Pressure characteristic	Change in secondary pressure (kPa)	For every 200 - 970 primary pressure: 140±4	For every 450 - 970 primary pressure: 400±4	For every 800 - 970 primary pressure: 700±4
Flow characteristic (kPa)	<p>1) KZ03-1 (primary pressure 300 - 900) 2) KZ03-2 (primary pressure 500 - 900) 3) KZ03-3 (primary pressure 800 - 900)</p>			
Amt. of air consumption	0.951 l/min(N) or less			
Materials	Filter 3 μm Sponge (optional 5 m stainless steel fiber) Case Aluminum die-cast External screw and wing bolt (for drain) w/o drain: stainless			
Temp. of environ.	-30 to +80°C (-20 to 176°F)			
Air pressure connection	Rc1/4 or 1/4NPT internal screw			
Draining capacity	22 cm ³			
Weight	0.7 g			

6 : Maintenance

- 1) Loosen the wing bolt (12) periodically to drain
- 2) When the air filter becomes dirty, replace it with a new one. Do not attempt to wash it with water and detergent.

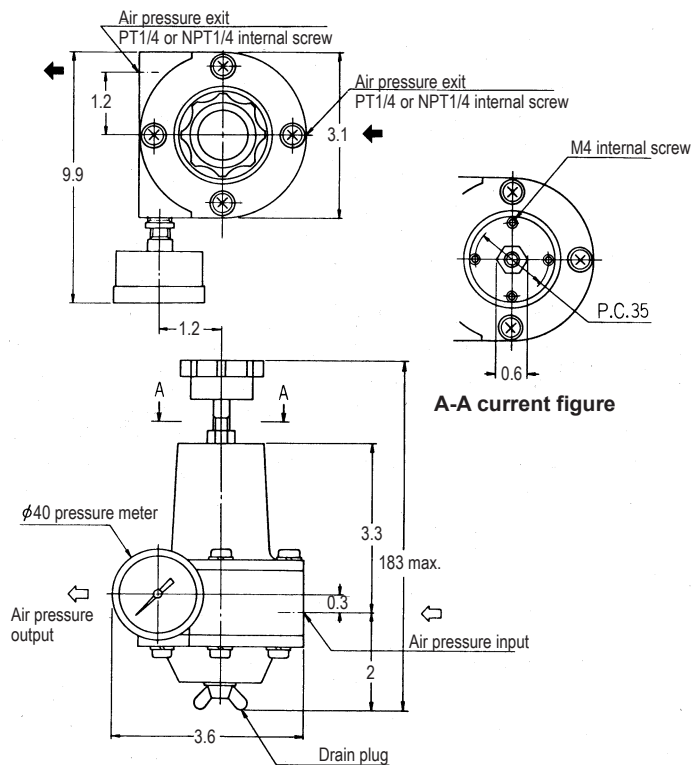
7 : Model Selection

Model	Selection specification		Optional selection	Selection condition, specification of pressure gauge, others
KZ03	-1	II	-III, -IV	

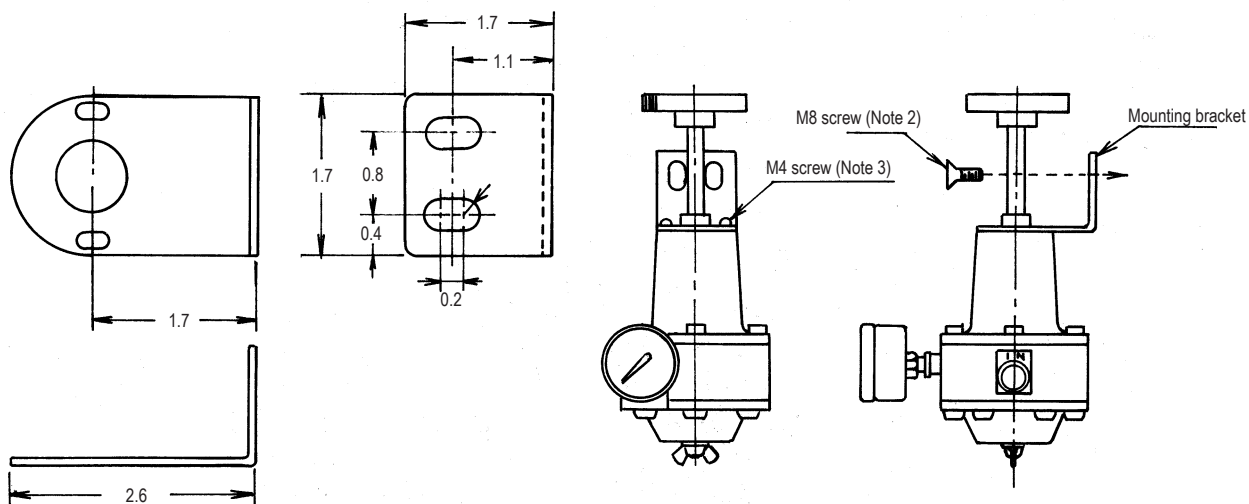
Model	Set pressure	Piping	Pressure gauge	
KZ03				
	-1			Available supply pressure (Ps): $Ps = 140 + 4 \text{ kPa}$
	-2			Available supply pressure (Ps): $Ps \leq 400 \text{ kPa}$ (with pressure adjustment wheel)
	-3			Available supply pressure (Ps): $400 < Ps \leq 700 \text{ kPa}$ (with pressure adjustment wheel)
		A		Rc1/4 inch (internal)
		B		1/4 inch NPT thread (internal)

	-XX			Recommended supply pressure
	Without pressure gauge			
	1½ inch (40 mm) with pressure gauge (scale)			
	Primary maximum scale & unit	Secondly unit		
-1A	2	kgf/cm ²	none	$Ps \leq 1.5 \text{ kgf/cm}^2$
-1B	4			$1.5 < Ps \leq 3.0 \text{ kgf/cm}^2$
-1N	6			$3.0 < Ps \leq 4.5 \text{ kgf/cm}^2$
-1C	10			$4.5 < Ps \leq 7.0 \text{ kgf/cm}^2$
-1D	30	psi	none	$Ps \leq 22 \text{ psi}$
-1E	60			$22 < Ps \leq 45 \text{ psi}$
-1P	100			$45 < Ps \leq 65 \text{ psi}$
-1F	150			$65 < Ps \leq 100 \text{ psi}$
-1G	2	bar	none	$Ps \leq 1.5 \text{ bar}$
-1H	4			$1.5 < Ps \leq 3.0 \text{ bar}$
-1Q	6			$3.0 < Ps \leq 4.5 \text{ bar}$
-1J	10			$4.5 < Ps \leq 7.0 \text{ bar}$
-1K	200	kPa	none	$Ps \leq 150 \text{ kPa}$
-1L	400			$150 < Ps \leq 300 \text{ kPa}$
-1R	600			$300 < Ps \leq 450 \text{ kPa}$
-1M	1000			$450 < Ps \leq 700 \text{ kPa}$
-1S	0.2	MPa	none	$Ps \leq 0.15 \text{ MPa}$
-1T	0.4			$0.15 < Ps \leq 0.3 \text{ MPa}$
-1U	0.6			$0.3 < Ps \leq 0.45 \text{ MPa}$
-1V	1			$0.45 < Ps \leq 0.7 \text{ MPa}$
-2A	2	kgf/cm ²	kPa	$Ps \leq 1.5 \text{ kgf/cm}^2$
-2B	4			$1.5 < Ps \leq 3.0 \text{ kgf/cm}^2$
-2N	6			$3.0 < Ps \leq 4.5 \text{ kgf/cm}^2$
-2C	10			$4.5 < Ps \leq 7.0 \text{ kgf/cm}^2$
-3A	2	kgf/cm ²	MPa	$Ps \leq 1.5 \text{ kgf/cm}^2$
-3B	4			$1.5 < Ps \leq 3.0 \text{ kgf/cm}^2$
-3N	6			$3.0 < Ps \leq 4.5 \text{ kgf/cm}^2$
-3C	10			$4.5 < Ps \leq 7.0 \text{ kgf/cm}^2$
-4K	200	kPa	kgf/cm ²	$Ps \leq 150 \text{ kPa}$
-4L	400			$150 < Ps \leq 300 \text{ kPa}$
-4R	600			$300 < Ps \leq 450 \text{ kPa}$
-4M	1000			$450 < Ps \leq 700 \text{ kPa}$
-5S	0.2	MPa	kgf/cm ²	$Ps \leq 0.15 \text{ MPa}$
-5T	0.4			$0.15 < Ps \leq 0.3 \text{ MPa}$
-5U	0.6			$0.3 < Ps \leq 0.45 \text{ MPa}$
-5V	1			$0.45 < Ps \leq 0.7 \text{ MPa}$

8 : Dimensions and Installation



Note: The diagram includes a variable handle and $\phi 40$ pressure meter.

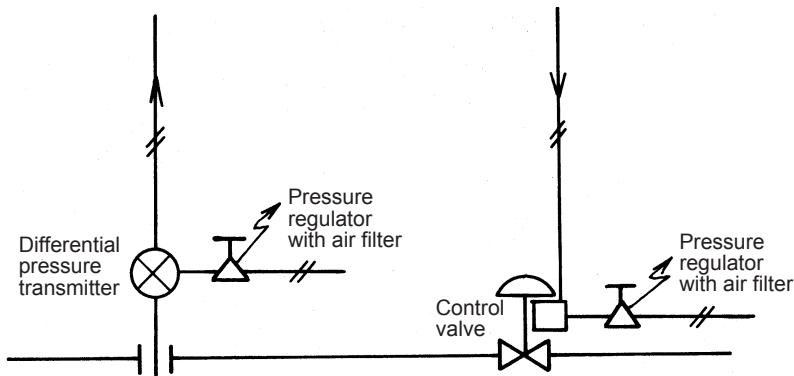


Mounting bracket (Note 1)

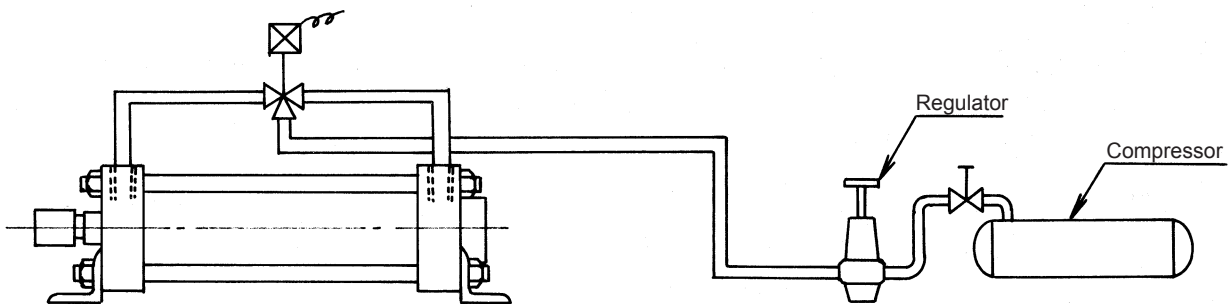
- ~Note 1: Mounting bracket (parts no. 80330401-001) is not a standard accessory. Please specify for its inclusion if needed.
- 2: You must supply the screws(M8) to your panel.
- 3: KZ03-2, KZ03-3 models come with the screws (M4) to the filtered pressure regulator.

9 : Applications

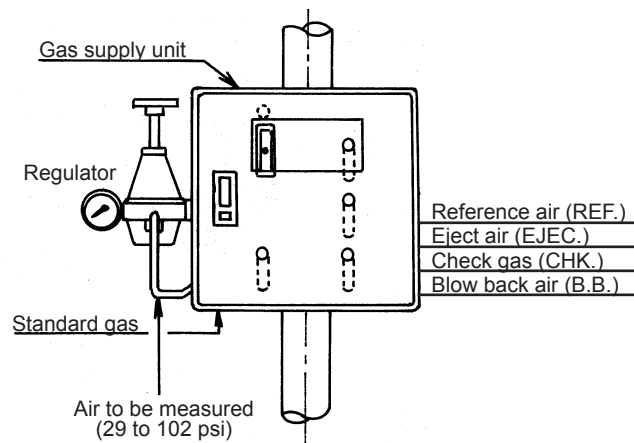
1. Supplying air to field instruments and valve etc. (process control, air control)



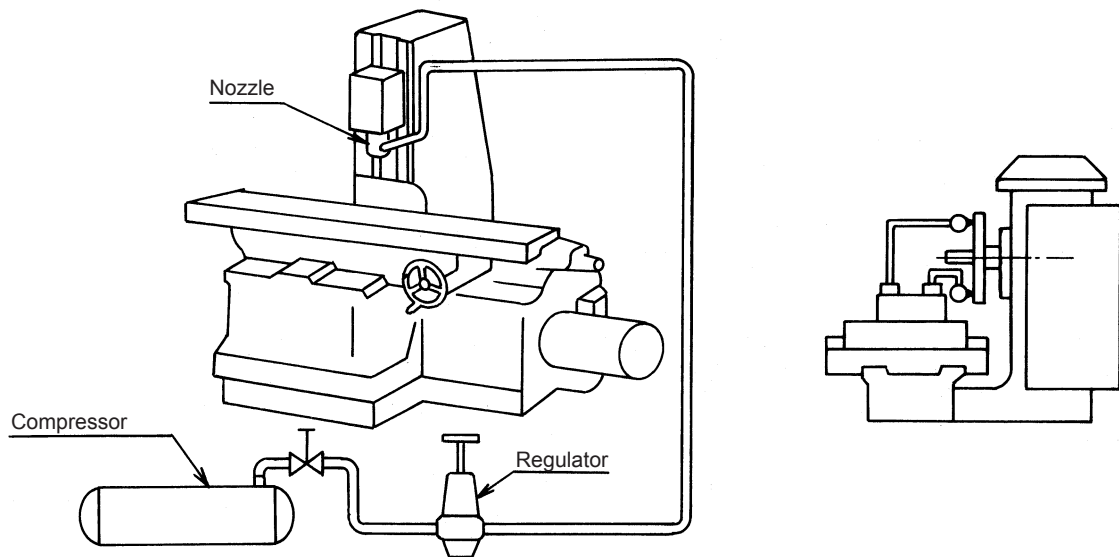
2. Operate air pressure cylinder compressor, motor, etc.



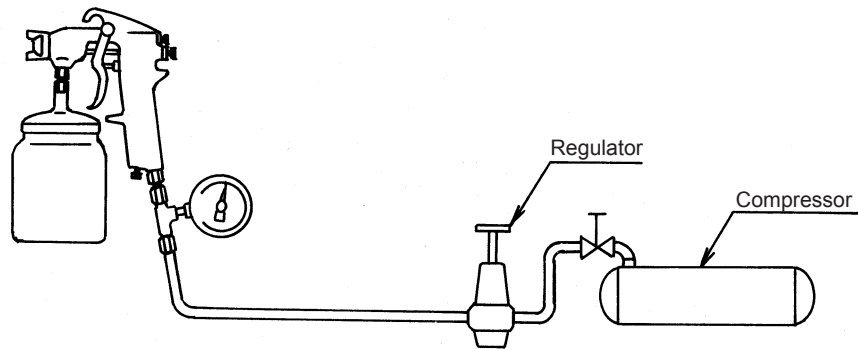
3. Supplying gas to gas analyzer



4. Discarding of chips, parts cleaning, air chucking



5. Spray gun



6. Other

Air driver, nut runner, wire wrapping, etc. of auto assembly machine, and train car-door closer

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Yamatake Corporation
Advanced Automation Company

1-1-32 New Stage Yokohama, Shin-urashima-cho,
Kanagawa-ku, Yokohama, Kanagawa-ken 221-0031, Japan
Tel : +81-45-461-8631
Fax : +81-45-461-2658

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